

Concho Valley Transit District Transit Development Plan



Draft ***Final Report***

November 2022



Austin, TX | Bethesda, MD



Contents

EXECUTIVE SUMMARY	ES-1
CONCHO VALLEY REGION	ES-1
CURRENT SERVICE DESCRIPTION	ES-1
NEW SERVICES AND STRATEGIES	ES-2
<i>Overall Urban and Rural Recommendations</i>	ES-2
<i>Urban Recommendations</i>	ES-2
<i>Rural</i>	ES-3
IN SUMMARY	ES-3
CHAPTER NO. 1: INTRODUCTION	1-1
CONCHO VALLEY REGION	1-1
CURRENT SERVICE DESCRIPTION	1-1
THE TRANSIT DEVELOPMENT PLAN	1-2
CHAPTER NO. 2: STUDY GOALS AND OBJECTIVES — CVT TRANSIT DEVELOPMENT PLAN	2-1
INTRODUCTION	2-1
<i>Project Initiation</i>	2-1
OVERARCHING GOAL	2-2
STUDY GOALS AND OBJECTIVES	2-2
KEY THEMES	2-3
CHAPTER NO 3: REVIEW OF EXISTING SERVICES — URBAN AND RURAL	3-1
INTRODUCTION	3-1
RURAL SERVICES: TRIPS AND RIDERSHIP PATTERNS BY COUNTY	3-1
<i>West Region</i>	3-3
<i>Irion County</i>	3-7
<i>Crockett County</i>	3-10
NORTH REGION	3-13
<i>Sterling County</i>	3-14
<i>Coke County</i>	3-17
TOM GREEN COUNTY (EXCEPT SAN ANGELO)	3-20
EAST REGION	3-23
<i>Concho County</i>	3-24
<i>McCulloch County</i>	3-27
<i>Menard County</i>	3-30
<i>Kimble County</i>	3-33
SOUTH REGION	3-36
<i>Schleicher County</i>	3-37
<i>Sutton County</i>	3-40
SAN ANGELO: A REVIEW OF SERVICE	3-43
CHAPTER NO 4: REVIEW OF DEMOGRAPHICS, LAND USES, AND TRAVEL PATTERNS	4-1
INTRODUCTION	4-1

POPULATION PROFILE	4-1
<i>Population Trends</i>	4-2
<i>Transit Dependent Populations</i>	4-5
<i>Summary of Transit Dependent Populations</i>	4-9
TITLE VI DEMOGRAPHIC ANALYSIS	4-10
LAND USE PROFILE	4-13
<i>Major Trip Generators - Urban</i>	4-13
<i>MAJOR Trip Generators – Rural</i>	4-18
<i>Employment Travel Patterns</i>	4-19
SUMMARY OF DEMOGRAPHIC AND LAND USE ANALYSIS	4-22
CHAPTER NO 5: CVT REVIEW OF NEEDS	5-1
INTRODUCTION.....	5-1
<i>Identification of Urban and Rural Public Transit Needs</i>	5-1
<i>Unmet Needs</i>	5-2
CHAPTER NO 6: CVT – TRANSIT DEVELOPMENT PLAN: RECOMMENDATIONS AND STRATEGIES FOR THE FUTURE.....	6-1
INTRODUCTION.....	6-1
<i>Change will be the Future – The New Normal</i>	6-2
STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS	6-3
<i>Strengths</i>	6-3
<i>Weaknesses</i>	6-3
<i>Opportunities</i>	6-4
<i>Threats</i>	6-4
KEY TRANSIT CONCEPTS	6-4
<i>Understanding Productivity</i>	6-5
<i>Service Designs: The Best Fit for CVT – Urban and Rural</i>	6-5
<i>Rural Services – Strategies for the Future</i>	6-8
URBAN TRANSIT SERVICE – STRATEGIES FOR THE FUTURE	6-10
<i>Fixed Route Guidelines</i>	6-10
<i>Bus Stops</i>	6-12
<i>Urban Transit – Fixed Route Strategies</i>	6-17
<i>Urban Transit – ADA Paratransit</i>	6-41
VEHICLES AND FACILITIES.....	6-42
<i>Urban Fixed Route Vehicles</i>	6-43
<i>Fuels – Urban Buses</i>	6-44
<i>Urban Paratransit Vehicles</i>	6-47
<i>Rural Service Vehicles</i>	6-47
GOALS AND PERFORMANCE MEASURES.....	6-48
MARKETING AND BRANDING	6-50
<i>Developing the Brands</i>	6-51
FINANCIAL	6-53
<i>System Costs and Sustainability for the Future</i>	6-53
IMPLEMENTATION PLANNING	6-56
APPENDIX A.....	A-1
MAJOR TRIP GENERATORS BY CATEGORIES	A-1

Executive Summary

The Concho Valley Transit District (CVT) Transit Development Plan (TDP) is a five-year plan designed to help improve and expand CVT service in both the rural and urban areas. This report documents the TDP planning process and resulting strategies.

CVT is a well-managed transit system with good ridership that has diversified its funding base. Unlike some systems, ridership has now recovered for the most part and productivity is reasonable. At the same time, it is clear that CVT can expand upon this base for little additional expense. The focus of this TDP is to build upon this ridership as well as expand sustainability while meeting the region's needs through a variety of strategies including maximizing coordination between urban and rural services. This TDP has a five-year planning horizon that:

- Reviews the existing conditions and transit services in the Concho Valley Region,
- Evaluates unmet urban and rural transit needs, and
- Provides strategies that not only help to enhance existing service but also:
 - Introduce new services (applying innovation and traditional approaches),
 - Upgrade branding, and
 - Tap into new and sustainable funding sources.

Concho Valley Region

CVT provides public transportation in the twelve-county Concho Valley Region. This region comprises three entirely distinct types of service areas: Urban — City of San Angelo (county seat of Tom Green County) where most of the residents of the Concho Valley reside, small city – Brady where there are numerous origins and destinations and Rural — a large, sparsely populated eleven-county area with few destinations.

Current Service Description

CVT currently operates a traditional fixed route service in the City of San Angelo, a network of nine fixed routes (six full time routes) in San Angelo, ADA complementary paratransit service and Medicaid transportation. Ridership is good compared to peers, but a series of low – no cost changes could significantly increase ridership.

The rural counties are served by regional demand response services that operate on an advanced reservation basis in each county. This service is combined with Medicaid transportation. The majority of the rural service is regional to San Angelo with very little local service. The only significant local service in the rural 11 counties is in Brady.

New Services and Strategies

A number of rural and urban changes are recommended. These changes are designed to improve ridership and productivity, while providing more direct service to riders. These can all be accomplished for little to no additional operating expense.

Overall Urban and Rural Recommendations

These first set of recommendations are for urban and rural areas and include the following:

Branding the Services

The system should have branding for the urban, rural and on-demand services. It is recommended that CVT develop a new paint scheme, logo and branding by service. Sponsorships should be offered to local governments and businesses and can incorporate the sponsor's logo in the design for a premium cost.

Coordinating Urban, Rural and Medicaid Transportation Services

CVT has done a good job of coordinating rural and urban service as vehicles arrive in San Angelo. This should continue and if the existing technology allows, add the Medicaid transportation to this mix. Maximizing this opportunity can reduce costs for paratransit in San Angelo and Tom Green County.

Urban Recommendations

There are a variety of **low or no cost changes** designed to reduce travel time and increase ridership and customer convenience. These are summarized as follows:

- Revisions to Existing Routes – Eliminate all loop routes which extend ride time and suppress ridership.
 - To the greatest extent possible existing routing was maintained
 - Apply on-demand service in low ridership areas – replace Rt. 7 fixed route with an on-demand zone.
 - Designate new and accessible bus stops – **“Transit’s Front Door”**
- Combine paratransit services to include on-demand, ADA paratransit, county service and Medicaid transportation.

- Procure **larger medium or heavy duty vehicles**
 - These buses can carry more passengers in greater comfort
 - 30 – 35 foot buses
 - Low match – 20 percent or lower makes a strong argument for medium or heavy duty buses
 - Heavy duty buses, while costing a little more, are the best option for the long term. Light duty buses should not be deployed for San Angelo fixed route.
 - These buses can last 10 – 15 years in reliable service as opposed to 5 – 7 years.
 - **Electric buses should be considered for the future.** Will probably require working with the city and county to build the needed infrastructure. However, when San Angelo decides to go with electric vehicles , CVT should do so as well.

Rural

With the exception of McCulloch County, all of the other rural counties have very low population and very few destinations and as a result very low ridership, most of which is focused on specialized medical needs in San Angelo. There are a number of **no or low cost** recommendations to increase ridership and improve service quality for riders. These include:

- For each county, a schedule will be **developed** (based on the existing schedules). This schedule (days and times in each county) will inform riders and health care providers of the schedule for each county.
 - Try to get all trips including Medicaid to follow the schedule
 - The regional vehicles will typically serve more than one county
 - The schedule will detail when the vehicle goes to San Angelo and when the vehicle works locally.
- **Brady** with major destinations can **have state of the art local on- demand service**, similar to similar sized cities in Texas. Riders, using an app or calling can access a ride in town within 15 minutes of the request. The quality of service rises at little to no cost.

In Summary

CVT is a well run rural and urban transit system, that has an appropriate level of management and generates revenue from a number of local, state ad federal sources. Most appropriate, there are a number of improvements that CVT can make and they are capable of doing it right.

Chapter No. 1

Introduction

The Concho Valley Transit District (CVT) Transit Development Plan (TDP) is a five-year plan designed to help improve and expand CVT service in both the rural and urban areas. This report documents the TDP planning process and resulting strategies, that was conducted for the CVT in 2022.

CVT has seen significant changes in its transit services since the pandemic. The overall system ridership declined during the pandemic at different rates in the urban and rural areas. Additionally, the post-pandemic period is riddled with near-term uncertainties that impact transit use. While the ridership is now slowly recovering to its pre-pandemic levels, the focus of this TDP is to build upon this ridership as well as expand it through a variety of ways while achieving the maximum possible coordination between urban and rural services.

This TDP thoroughly reviews the existing conditions and services in the Concho Valley Region, evaluates unmet urban and rural transit needs, and provides strategies that not only help to enhance existing service design but also introduce new services (emerging innovative technologies), upgrade brand image, and tap into new and sustainable funding sources. Recommendations are provided for a five-year planning horizon while considering the latest issues with the COVID pandemic and the anticipated post-pandemic changes in the transit operating environment — the 'New Normal.'

Concho Valley Region

Concho Valley is a region in West Texas that is named after the Concho river. CVT provides public transportation in the twelve-county Concho Valley Region. This region comprises two entirely distinct types of service areas: Urban — City of San Angelo (county seat of Tom Green County) where most of the population of Concho Valley area resides and Rural — a large, remote, and sparsely populated eleven-county area which is most of the service area in Concho Valley.

Current Service Description

CVT currently operates a traditional fixed route service in the City of San Angelo, a network of nine fixed routes with over 110 bus stop locations around San Angelo and an ADA complementary paratransit service. All routes operate on weekdays and some on Saturdays while there is no service on Sundays. Timed CVT bus transfers as well as connection to Greyhound intercity bus are available at the San Angelo Transit Center.

The rural counties, including the rural portion in Tom Green County, are served by regional on-demand services that operate on an advanced reservation basis in each county. Limited regional service to San Angelo is provided in the rural counties which is free of charge for both intra-county and inter-county rides. CVT also operates charter services for a variety of events within Concho Valley that are charged on an hourly basis.

The Transit Development Plan

The TDP consists of six chapters. Each chapter encapsulates each of the key tasks in this study, except the first chapter. A short description of these five chapters is given below.

- **Chapter No. 2: Goals and Objectives** – This chapter formulated the goals, objectives, and key issues which guided the TDP planning process.
- **Chapter No. 3: Review of Existing Services** – The existing service (both urban and rural service by route) is reviewed as well as examining the interaction of the two services.
- **Chapter No. 4: Review of Demographics, Land Uses, and Travel Patterns** – key demographics and trip generators for both urban and rural areas are depicted and coupled with travel patterns.
- **Chapter No. 5: Review of Needs** – Based on the review of existing services and the demographic/land uses chapter, the study team determined the unmet need.
- **Chapter No. 6: Recommendations and Strategies for the Future** – Based on the results of the previous tasks, a number of service strategies are recommended to enhance ridership and secure funding for the future. This chapter also includes the implementation plan.

Chapter No. 2

Study Goals and Objectives – CVT Transit Development Plan

Introduction

This transportation development plan (TDP) is a short-range plan that should be updated on a regular basis. The TDP reviews the system performance, then provides a set of strategies for the future. It provides the opportunity for CVT to:

- Review and assess current transit conditions,
- Identify areas where CVT excels and areas where the system needs improvement,
- Develop an appropriate course of action to address:
 - Service design issues
 - Operational issues

The completed TDP will serve as a guide for CVT, providing a roadmap for implementing operational changes and improvements. It can also serve as a basis for preparing grant applications for transit funding.

Project Initiation

This project was kicked off in November 2021 through a meeting with CVT management. Staff has also provided the consultant team with data as requested. Based on these meetings and the review of the data supplied, these goals were established. The goals and objectives guided the study through its various phases allowing the consultant team to target issue areas, as necessary.

Overarching Goal

First, the consultant team would like to point out the overarching goal for this study:

The Overarching Goal for Transit

For each of our projects we have one overarching goal which we believe is shared by all of our clients:

Help provide for more trips for more people while providing cost effective, high quality, and safe transportation for our community.

This goal maximize ridership, quality and safety, while at the same time ensuring a cost effective service that the region can be proud to have.

Following are the specific goals and objectives identified at the start of the project. These goals were developed based on multiple discussions with CVT management and the study committee as well as an analysis of the data. The final section, Key Themes, offers further refinement of objectives.

Study Goals and Objectives

1. **Review both urban and rural services – Two different types of services**
 - a. Introduce new service designs
 - b. Coordinate to the maximum extent
2. **Improve System Performance** – Seek improvements in the service designs
 - a. Understanding the historical, political and cultural issues in each county.
 - b. First do no harm – Routes that have high ridership will be maintained.
 - c. Seeking efficiencies – Doing things right.
 - d. Seeking effectiveness – Doing the right things.
 - e. Change fixed route model from loop routes to out and back type routes.
 - f. Maintain existing fixed route structure to the maximum extent
3. **Identify New Opportunities** - Review service delivery elements.
 - a. Identify areas that could use a new service design
 - b. Seek opportunities to reach agreement with dialysis centers and other health care providers.

4. **Sustainability for the Future** – Examine funding issues with an emphasis on local support, review new funding opportunities from the public and private sectors and establish a sustainable program with local support.
 - a. Develop recommendations that are in essence operating cost neutral
 - b. Identify private sector partnerships and sponsorships.
 - c. Examine fares.
 - d. Expand ridership – Success is a powerful force.
 - e. Generate local government support – a critical element to sustainability
5. **Marketing the Service** - Develop a re-branding planning effort
 - a. Noticed throughout the service area.
 - b. Rebrand to promote service for all.
 - c. Educating community, business and political leaders.

Key Themes

- **Efficiency and Effectiveness** – Doing things right (efficiency) and doing the right things (effectiveness) are central to this analysis. Often the service mode inhibits ridership due to inherently low productivity and poor service design. The study team made a determination in the urban and rural areas.
- **Building Ridership** – Expanding ridership speaks volumes. Building a brand (see the last bullet in this section) and expanding ridership will open many doors to funding.
- **Local Support: From All Jurisdictions** – Local support through funding or in-kind is critical to CVT's future survival as it is required to match federal transit funds. Each jurisdiction should support the service with funds or in-kind support.
- **Local Support: Sponsorships and Partnerships** – Businesses benefit from transit. They also advertise on transit. There are a variety of public/private partnerships that can be developed to help fund the service, some of which CVT is already doing.
- **Branding and Marketing** – As in any other business, image is critical. Do stakeholders see the service as primarily for seniors? Does the public even know the service exists? Do the vehicles look institutional? Branding and marketing efforts need to encompass the wide range of potential riders and businesses.

Chapter No. 3

Review of Existing Services – Urban and Rural

Introduction

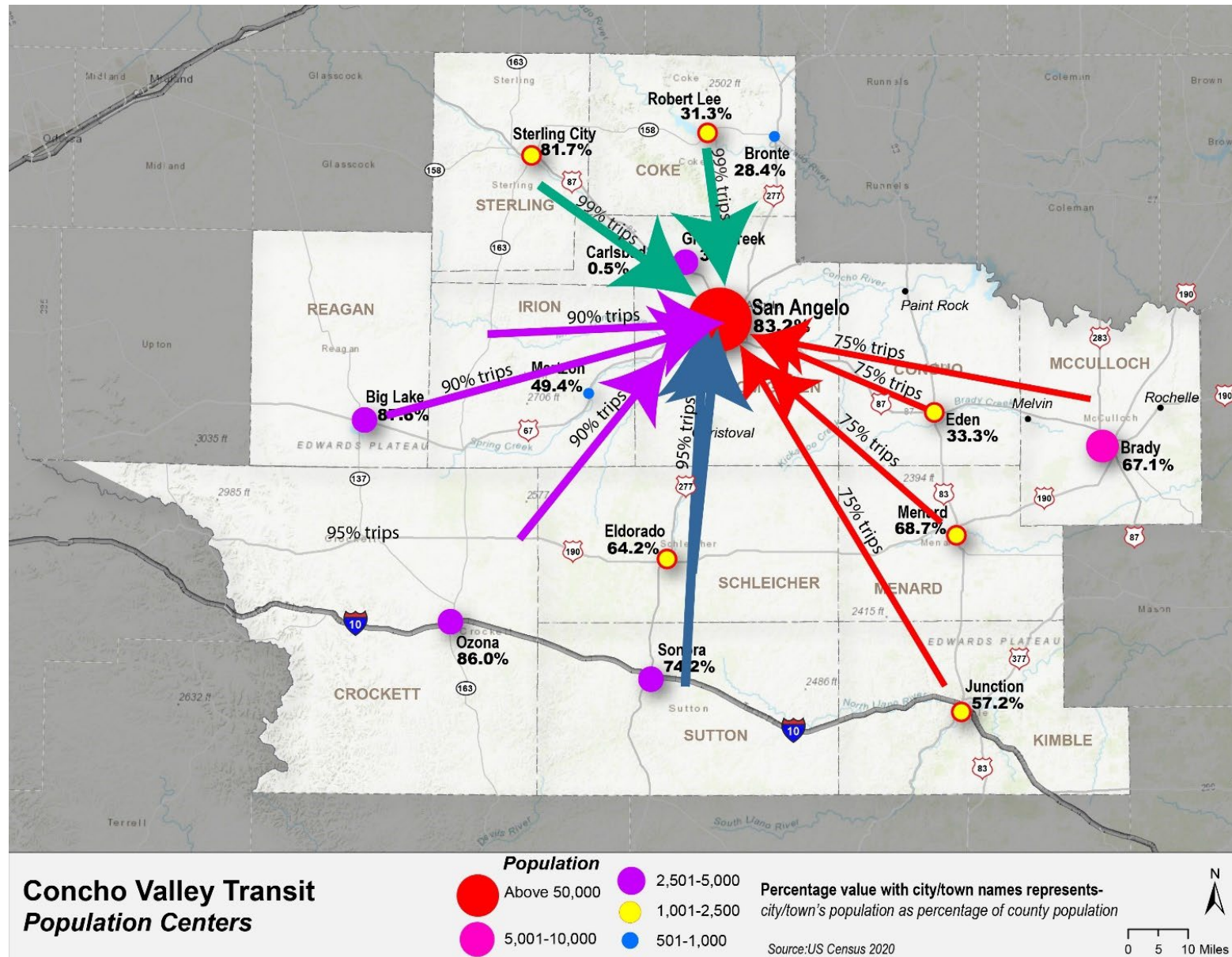
The purpose of this chapter is to assist the Concho Valley Transit District (CVT) in reviewing and analyzing the existing services provided by CVT in both rural and urban areas.

Beyond the urban services in San Angelo, CVT offers a limited level of service in most of the outlying counties throughout the Concho Valley. CVT's regional services are provided through the TxDOT and FTA Funding through the Section 5311 program and Non-Emergency Medical Transportation (NEMT). These programs operate demand-response public transit, provided through the TxDOT and FTA funding through FTA Section 5311 program and Non-Emergency Medical Transportation services for the entire Concho Valley Region employing approximately 49 revenue service vehicles at 13 transportation centers in 12 counties. CVT offers public transportation to the outlying counties of the region as well as rural Tom Green County.

CVT's regional services operate on an advanced reservation basis within each county. The majority of counties provide service primarily to San Angelo for medical purposes, many of whom are on dialysis and have set schedules three days per week. Passengers are asked to provide at least 24-hour prior notification for seat reservations when traveling either in town or out of county. Passengers are picked up at their homes, provided access to medical facilities, nutrition centers, shopping centers, social service agencies, learning centers, employment, and other sites for which a demand exists, and returned to their homes. Out-of-county trips typically require an early morning pick-up, providing enough time for passengers to meet their appointments, serve other stops (social services, shopping, etc.) and return home on the same day.

Rural Services: Trips and Ridership Patterns by County

Figure 3-1 displays a rough estimate of the percentage of trips (provided by CVT) from rural counties with San Angelo as a final destination in contrast to trips that are local to each respective county. Table 3-1 details basic ridership data by county. Trips+ from the "West" counties of the CVT service area, which include Reagan, Crockett and Irion Counties are estimated to be 90% to San Angelo. Trips from the "North" Counties (Sterling and Coke) and the "South" Counties (Schleicher and Sutton) are almost all going to San Angelo (99% from the North and 95% from the South). Finally, about 75% of trips from the "East" which include Concho, Menard, Kimble and McCulloch Counties are estimated to be going to San Angelo. Every county has one bus per day and usually it is coming into San Angelo except for the

Figure 3-1: Rural County Routes and Estimated Trip Percentage to San Angelo

East in McCullough where there are three drivers in Brady to meet local demand. It should be noted that McCullough County and specifically, Brady is the only rural community that can justify the need for full time local service.

Due to an ongoing driver shortage, rides originating from any city with San Angelo as a destination coordinates its rides by sharing one vehicle with other riders in its respective regional quadrant: East, West, North or South. For example, riders in the North from Robert Lee will stop by Bronte on the way to San Angelo, while riders in the West from Big Lake will stop by Mertzon. When drivers arrive in San Angelo at the Concho Valley bus depot, they coordinate with the central dispatch team to either do local paratransit or park at the bus depot and take a break.

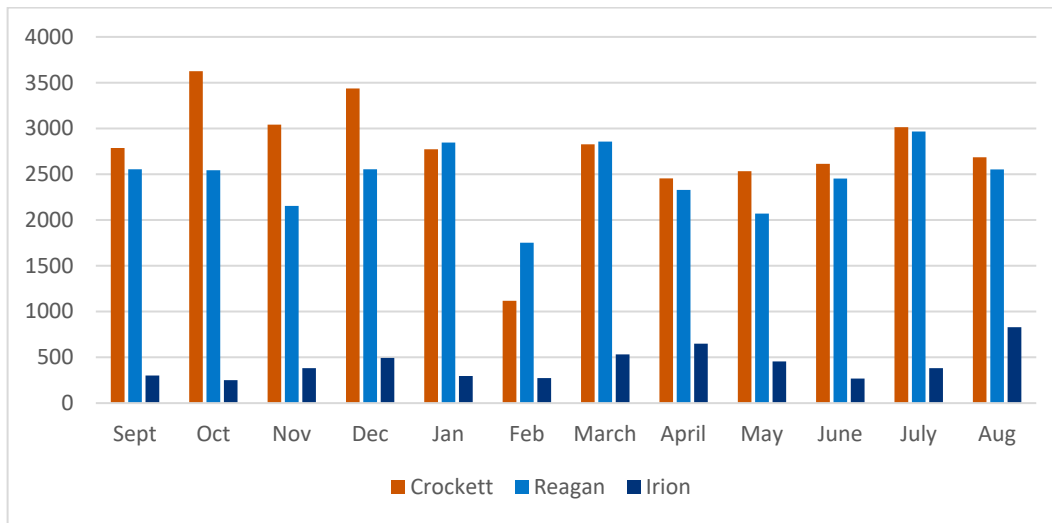
Table 3-1: FY-2021 Ridership by Rural Counties

County	Annual Ridership	Annual Revenue Miles	Annual Revenue Hours	Percent Local
Concho	1543	49,058.1	2442.4	25%
Coke	1503	35,176.6	1608.31	1%
Crockett	1252	32903.5	1593.4	10%
Irion	377	5112.3	238	10%
Kimble	578	7087.4	363.4	25%
McCulloch	5821	59828	3498.1	25%
Menard	188	5497.4	250.6	25%
Reagan	1135	29629.6	1313.8	10%
Schleicher	782	16193.7	764.8	5%
Sterling	318	11442.1	546.3	1%
Sutton	602	17690.5	837.1	5%
Tom Green (except San Angelo)	3441	59437.4	2973	1%

Please note that all of this data is from CVT.

West Region

Counties in the West Region of the CVT service area include Reagan, Irion and Crockett Counties. Since October 2021, there have been no local trips in the West region due to a driver shortage. Trips from these counties are grouped as there is just one vehicle in Reagan County, two vehicles from Crockett and none originating from Irion. CVT estimates that roughly 10% of trips originating in the West Region end in the county, while 90% that originate here have San Angelo as a final destination. Figure 3-2 shows that the vast majority of revenue hours are from Crockett and Reagan Counties, which have about 4-5 times the number of hours per month as Irion.

Figure 3-2: West Region FY 2021 Revenue Hours

Reagan County

The major population center of the county is Big Lake (2020 pop. 3,661). Trips originating in Reagan County use one vehicle for all trips. In FY 2021, revenue miles ranged between about 1700 – 3000 miles per month, peaking in July. Meanwhile, revenue hours ranged from between 80 – 130 hours per month. Riders are picked up by one vehicle, which makes a stop at Mertzon in Irion County on the way to San Angelo. Ridership data from the county is displayed in Table 3-2, mileage in Figures 3-3, and 3-4.

Table 3-2: Reagan County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local	% Trips SA
Jan 2018	152	3234.7	151.17			
Feb 2018	147	2850	133.47			
March 2018	250	3785	219			
April 2018	189	2877	180.41			
May 2018	142	2808	127.57			
June 2018	116	2164	119.25			
July 2018	147	2912	149.89			
Aug 2018	148	2931.2	133.3			
FY 2018 TOTAL	1291	23561.9	1214.06	1	~10%	~90%
Sept 2018	163	3096	142.47			
Oct 2018	179	3847.1	206.41			

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local	% Trips SA
Nov 2018	218	3492	178.45			
Dec 2018	150	2671.3	136.11			
Jan 2019	149	2130.9	94.84			
Feb 2019	141	2666.1	119.38			
Mar 2019	129	3153	147.47			
April 2019	162	3225	141.16			
May 2019	136	2892	137.15			
June 2019	111	2618	116.51			
July 2019	147	2912	131.31			
Aug 2019	148	2931.2	133.3			
FY 2019 TOTAL	1833	35634.6	1684.56	1	~10%	~90%
Sep 2019	126	3381.3	134.13			
Oct 2019	148	3502.5	151.49			
Nov 2019	132	2776.5	131.91			
Dec 2019	116	2895.7	150.44			
Jan 2020	112	2869.7	146.3			
Feb 2020	105	2154.1	101.9			
Mar 2020	116	2784.5	132.32			
April 2020	101	2555.2	119.06			
May 2020	91	2531.5	116.16			
June 2020	114	3196.2	137.62			
July 2020	82	1998	87.91			
Aug 2020	139	3320.6	131.36			
FY 2020 TOTAL	1382	33965.8	1540.6	1	~10%	~90%
Sep 2020	100	2553.5	112.36			
Oct 2020	99	2543.2	116.46			
Nov 2020	82	2154.2	98.59			
Dec 2020	95	2554.3	114.05			
Jan 2021	109	2846	124.45			
Feb 2021	65	1752.3	78.14			
Mar 2021	104	2856.9	120.25			
April 2021	78	2328	106.68			
May 2021	84	2070.2	97.53			
June 2021	84	2453.1	94.85			

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local	% Trips SA
July 2021	129	2966.2	129.02			
Aug 2021	106	2551.7	121.44			
FY 2021 TOTAL	1135	29629.6	1313.82	1	~10%	~90%
Sep 2021	82	2492.6	102.15	1	~10%	~90%
Oct 2021	65	2333.6	107.23	1	0	100%

Figure 3-3: Reagan County Revenue Miles by Month

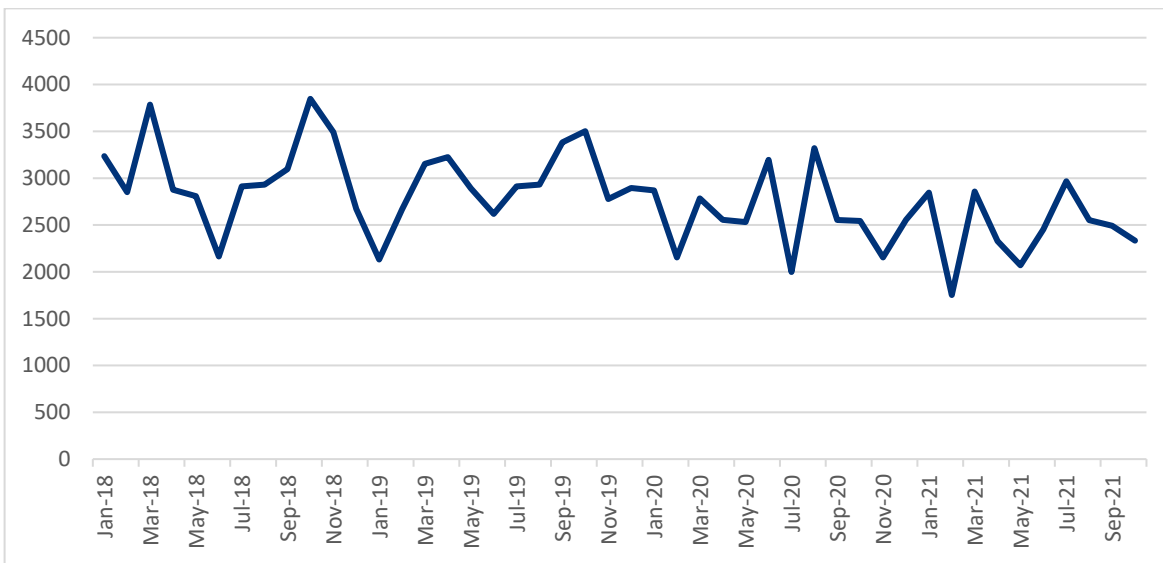
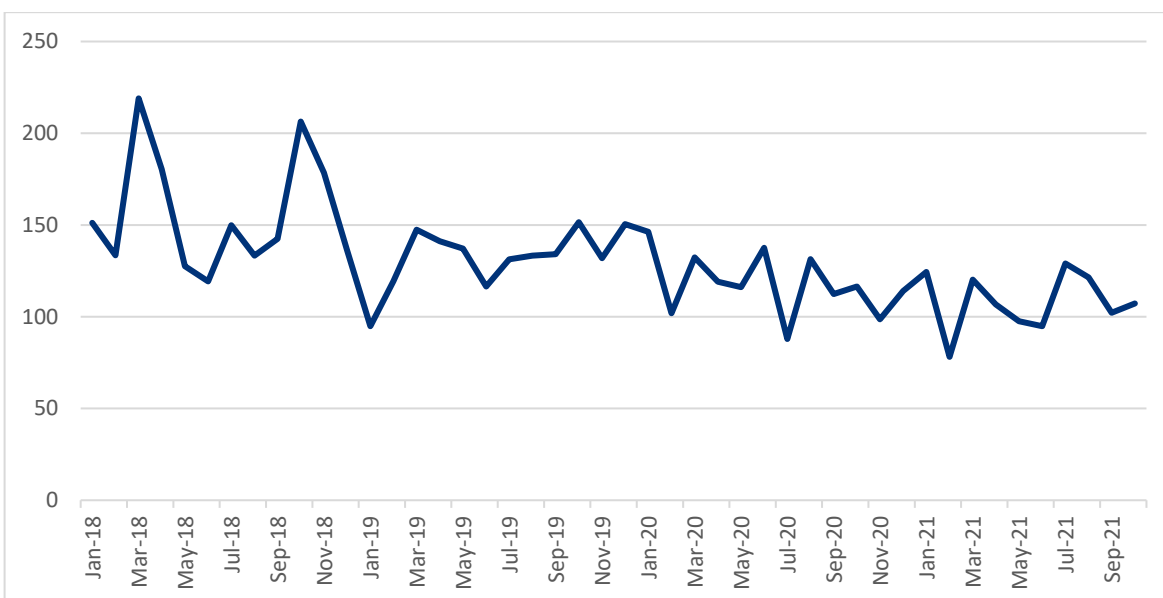


Figure 3-4: Reagan County Revenue Hours by Month



Irion County

The major population center of the county is Mertzon (2020 pop. 770) . There are no vehicles originating from Irion County, so local passengers heading to San Angelo board vehicles originating from neighboring Reagan and Crockett Counties. In FY 2021, revenue miles ranged between about 250 – 830, peaking in August, while revenue hours ranged between about 10 – 40 hours, which is the lowest number of hours in the CVT service area. Ridership data from the county is displayed in Table 3-3. Miles and hours are displayed in Figures 3-5 and 3-6. Interestingly ridership increased during the pandemic.

Table 3-3: Irion County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local	% Trips San Angelo
Jan 2018	4	38.4	1.63			
Feb 2018	19	255.9	10.18			
March 2018	15	124.9	5.73			
April 2018	17	143.7	5.91			
May 2018	22	282.2	12.97			
June 2018	19	338.7	16.88			
July 2018	23	367.5	22.33			
Aug 2018	32	659.3	27.5			
FY 2018 TOTAL	151	2210.6	103.13	0	~10%	~90%
Sept 2018	38	510.4	20.47			
Oct 2018	32	446.5	19.36			
Nov 2018	21	174.2	7.96			
Dec 2018	8	102.3	4.63			
Jan 2019	2	15.4	0.64			
Feb 2019	4	51.3	2.18			
Mar 2019	7	115.8	5.42			
April 2019	4	52.6	2.36			
May 2019	5	108.5	4.83			
June 2019	60	888.6	38.9			
July 2019	50	654.7	26.94			
Aug 2019	35	436.2	19.7			
FY 2019 TOTAL	266	3556.5	153.39	0	~10%	~90%

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local	% Trips San Angelo
Sep 2019	31	343.8	14.63			
Oct 2019	32	594.6	25.99			
Nov 2019	27	378.1	17.78			
Dec 2019	38	707.8	30.29			
Jan 2020	30	480.4	20.5			
Feb 2020	30	445.9	20.66			
Mar 2020	21	347.6	17.35			
April 2020	1	31.4	0.87			
May 2020	0	0	0			
June 2020	8	160.3	7.36			
July 2020	18	432.2	21.09			
Aug 2020	20	371.3	15.52			
FY 2020 TOTAL	256	4293.4	192.04	0	~10%	~90%
Sep 2020	16	302.2	14.73			
Oct 2020	14	251.1	11.42			
Nov 2020	22	381.7	17.17			
Dec 2020	27	493.2	21.23			
Jan 2021	15	296.1	15.14			
Feb 2021	22	272.8	14.9			
Mar 2021	29	531.8	26.02			
April 2021	36	648.8	29.45			
May 2021	40	454.7	20.57			
June 2021	26	269	11.94			
July 2021	46	381.1	17.35			
Aug 2021	84	829.8	38.1			
FY 2021 TOTAL	377	5112.3	238.02	0	~10%	~90%
Sep 2021	59	839.5	35.31	0	~10%	~90%
Oct 2021	56	661	32.36	0	0%	100%

Figure 3-5: Irion County Revenue Miles by Month

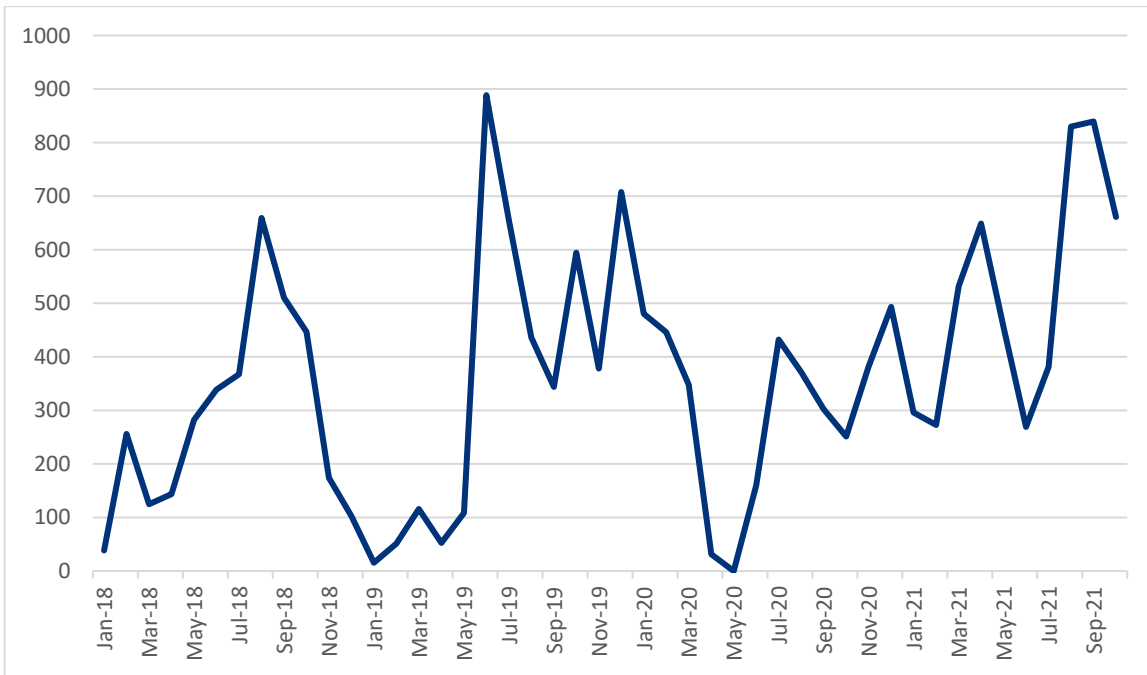


Figure 3-6: Irion County Revenue Hours by Month



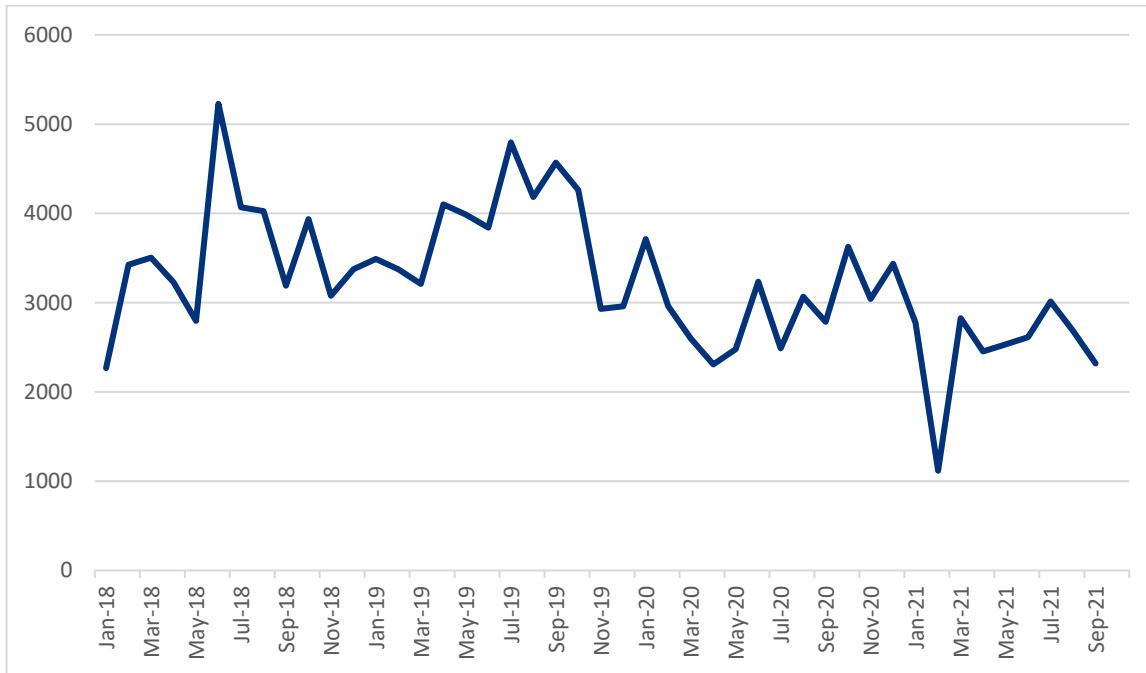
Crockett County

The major population center of the county is Ozona (2020 pop. 2,930) with 96 percent of the county's population. Crockett County has two vehicles to use for trips. In FY 2021, revenue miles ranged from about 1000 - 3600 miles per month, peaking in October. Revenue hours ranged from about 100 - 165 hours. Ridership data from the county is displayed in Table 3-4. Miles and hours are displayed in Figures 3-7 and 3-8.

Table 3-4: Crockett County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local	% Trips San Angelo
Jan 2018	64	2267.2	104.62			
Feb 2018	252	3425.3	188.78			
March 2018	252	3504.8	238.91			
April 2018	290	3229.7	191.38			
May 2018	253	2795.3	165			
June 2018	254	5228.0	147.96			
July 2018	312	4068.4	202.23			
Aug 2018	289	4025.6	201.36			
FY 2018 TOTAL	1966	96914.3	1440.24	2	~10%	~90%
Sept 2018	211	3190.8	158.09			
Oct 2018	303	3935.9	210.76			
Nov 2018	268	3076.8	171.01			
Dec 2018	263	3375.2	185.93			
Jan 2019	276	3490.5	186.3			
Feb 2019	212	3373.8	178.38			
Mar 2019	233	3211.1	199.91			
April 2019	290	4100.7	230.69			
May 2019	323	3987.1	239.61			
June 2019	259	3841.2	215.93			
July 2019	308	4795.3	249.78			
Aug 2019	305	4184	240.94			
FY 2019 TOTAL	3251	44562.4	2467.33	2	~10%	~90%

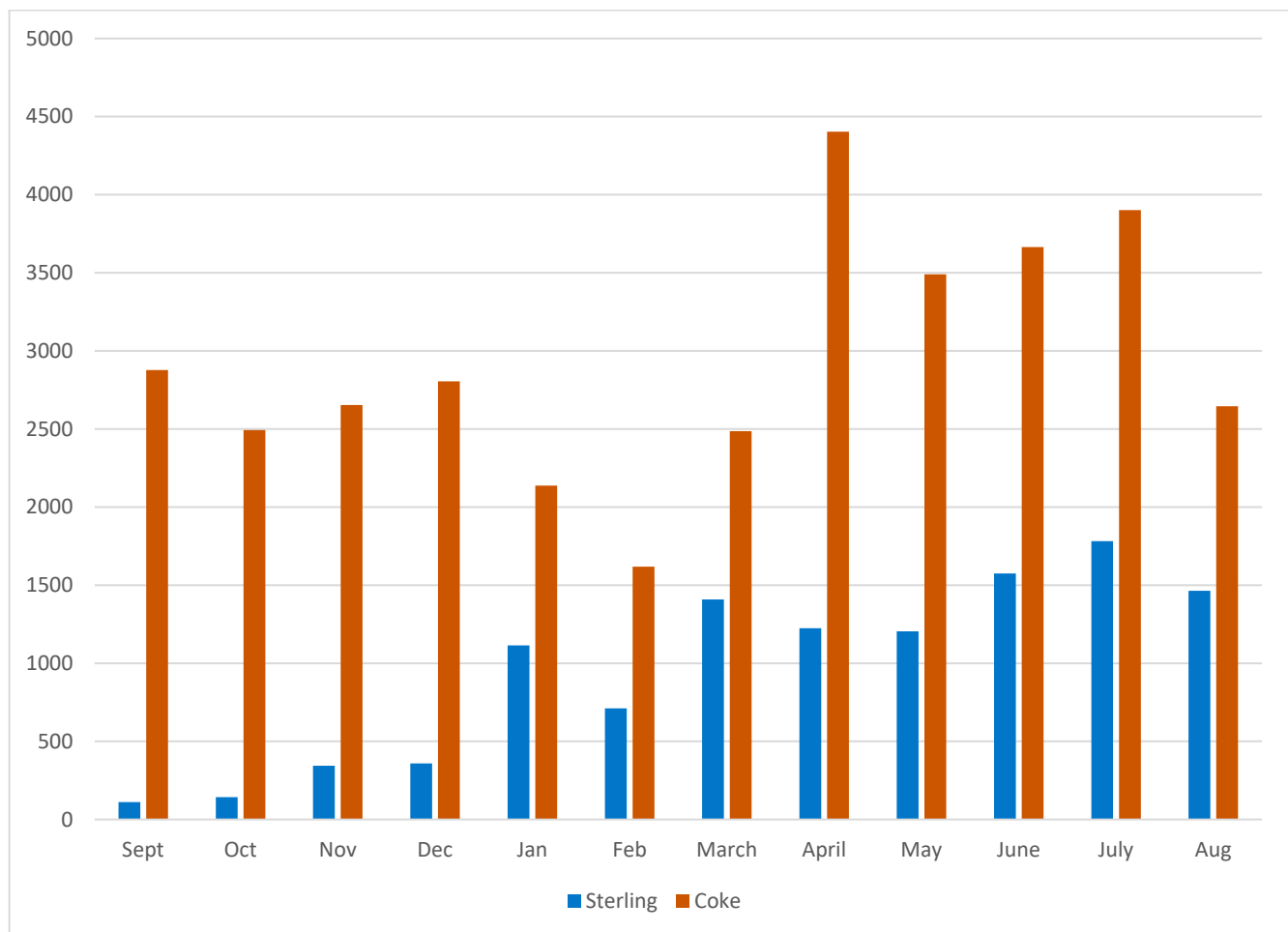
Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local	% Trips San Angelo
Sep 2019	254	4569.8	233.45			
Oct 2019	292	4261.9	232.37			
Nov 2019	217	2931.4	179.82			
Dec 2019	202	2959.6	171.41			
Jan 2020	236	3711.9	195.4			
Feb 2020	161	2961	155.09			
Mar 2020	219	2598.2	167.84			
April 2020	186	2309.1	166.11			
May 2020	62	2479.7	130.03			
June 2020	87	3234.5	149.8			
July 2020	53	2487	101.88			
Aug 2020	62	3066.6	110.55			
FY 2020 TOTAL	2031	37570.7	1993.75	2	~10%	~90%
Sep 2020	69	2785.8	124.47			
Oct 2020	80	3625.3	140.7			
Nov 2020	104	3042	144.47			
Dec 2020	95	3436	148.65			
Jan 2021	106	2772.2	139.27			
Feb 2021	87	1117.3	84.52			
Mar 2021	138	2827.4	165.18			
April 2021	95	2453.9	130.83			
May 2021	136	2532.4	128.32			
June 2021	126	2613.2	130.72			
July 2021	112	3013.4	140.6			
Aug 2021	104	2684.6	115.64			
FY 2021 TOTAL	1252	32903.5	1593.37	2	~10%	~90%
Sep 2021	71	2320	97.74	2	~10%	~90%
Oct 2021	108	17129.7	130.48	2	0%	100%

Figure 3-7: Crockett County Revenue Miles by Month**Figure 3-8: Crockett County Revenue Hours by Month**

North Region

Counties in the North Region of the CVT service area include Sterling and Coke Counties. The main population centers for Sterling County are Sterling City while Coke County includes Robert Lee and Bronte. Trips from these counties to San Angelo are grouped and coordinated with Coke County using two vehicles and Sterling County using one. CVT estimates that nearly all trips that originate in the North region end in the county, while 99% of trips originating in the North are estimated to have San Angelo as a final destination. Figure 3-9 shows that revenue miles from Coke County doubled the miles of Sterling County's in the latter half of FY 2021.

Figure 3-9: North Region FY 2021 Revenue Hours



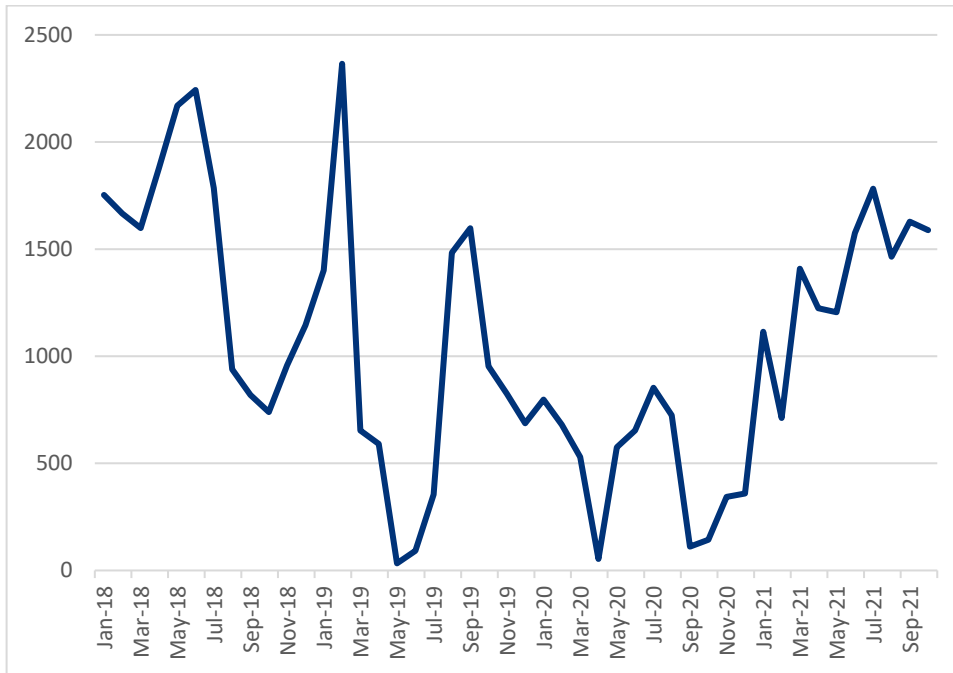
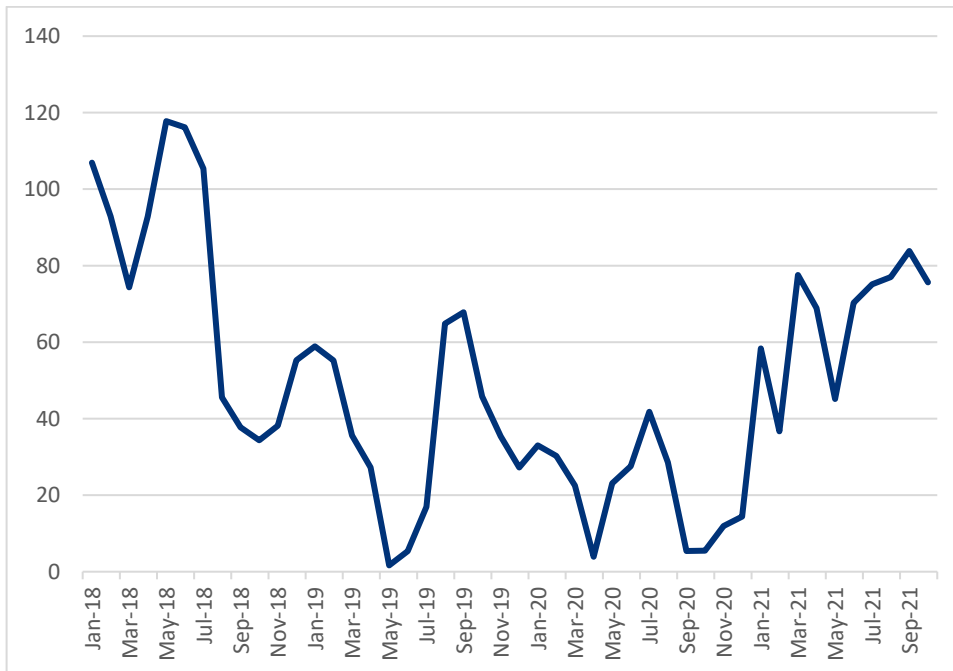
Sterling County

The major population center of the county is Sterling City (2020 pop. 977). In FY 2021, Sterling County's revenue miles ranged between about 100 – 1800 miles, peaking during July at about 1800 miles. Revenue hours peaked at about 80 hours. Ridership data from the county is displayed in Table 3-5. Miles and hours are displayed in Figures 3-10 and 3-11.

Table 3-5: Sterling County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Jan 2018	68	1753	106.94			
Feb 2018	79	1665.9	92.91			
March 2018	111	1598	74.35			
April 2018	112	1877.3	92.84			
May 2018	106	2169.6	117.78			
June 2018	101	2242.9	116.16			
July 2018	91	1785.1	105.37			
Aug 2018	62	938.6	45.57			
FY 2018 TOTAL	730	14030.4	751.92	1	1%	99%
Sept 2018	45	819.6	37.76			
Oct 2018	50	739	34.36			
Nov 2018	55	957.1	38.14			
Dec 2018	61	1145.1	55.25			
Jan 2019	69	1400.7	58.92			
Feb 2019	70	2365.2	55.24			
Mar 2019	47	653.5	35.62			
April 2019	37	590.7	27.26			
May 2019	16	33.2	1.65			
June 2019	26	91.9	5.38			
July 2019	33	354.6	16.95			
Aug 2019	63	1483.5	64.84			
FY 2019 TOTAL	572	10634.1	431.37	1	1%	99%
Sep 2019	66	1597.7	67.8			

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Oct 2019	56	953.3	45.8			
Nov 2019	54	824.7	35.38			
Dec 2019	41	687.2	27.23			
Jan 2020	63	797.8	33.03			
Feb 2020	63	680.3	30.25			
Mar 2020	52	529.6	22.5			
April 2020	19	54	3.9			
May 2020	22	575.1	23.1			
June 2020	33	653.6	27.56			
July 2020	40	852.5	41.81			
Aug 2020	20	724.2	28.6			
FY 2020 TOTAL	529	8930	386.96	1	1%	99%
Sep 2020	4	111	5.39			
Oct 2020	6	143.1	5.51			
Nov 2020	11	343.8	11.92			
Dec 2020	12	359.2	14.42			
Jan 2021	31	1114.4	58.35			
Feb 2021	22	711.7	36.68			
Mar 2021	46	1408.6	77.57			
April 2021	29	1224	68.92			
May 2021	23	1205.1	45.14			
June 2021	42	1574.9	70.27			
July 2021	54	1781.9	75.15			
Aug 2021	38	1464.4	77.02			
FY 2021 TOTAL	318	11442.1	546.34	1	1%	99%
Sep 2021	40	1628.2	83.83	1	1%	99%
Oct 2021	49	1588.4	75.65	1	1%	99%

Figure 3-10: Sterling County Revenue Miles by Month**Figure 3-11: Sterling County Revenue Hours by Month**

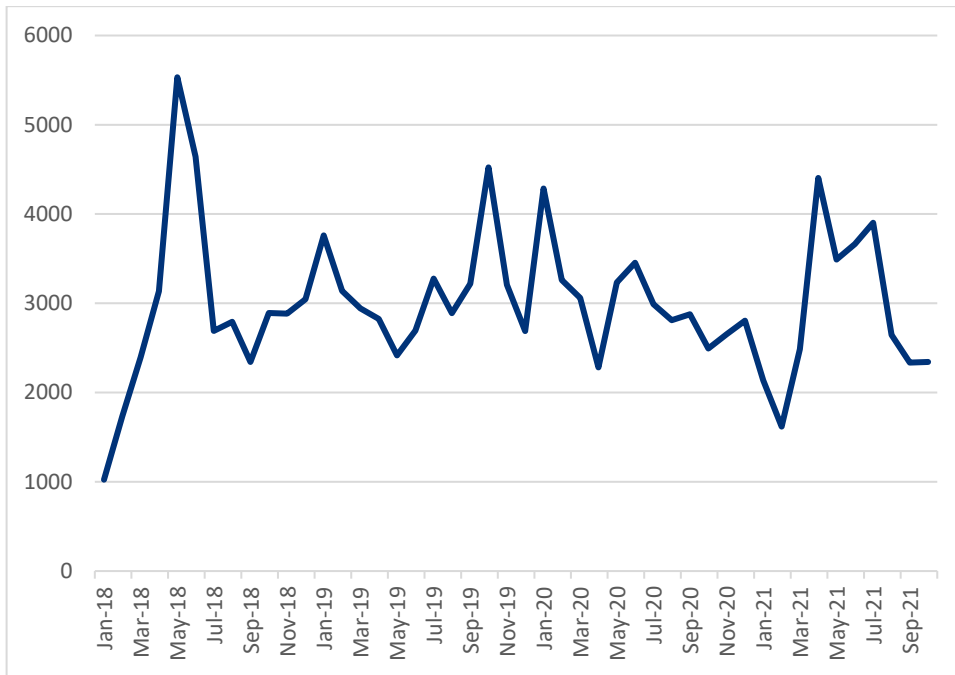
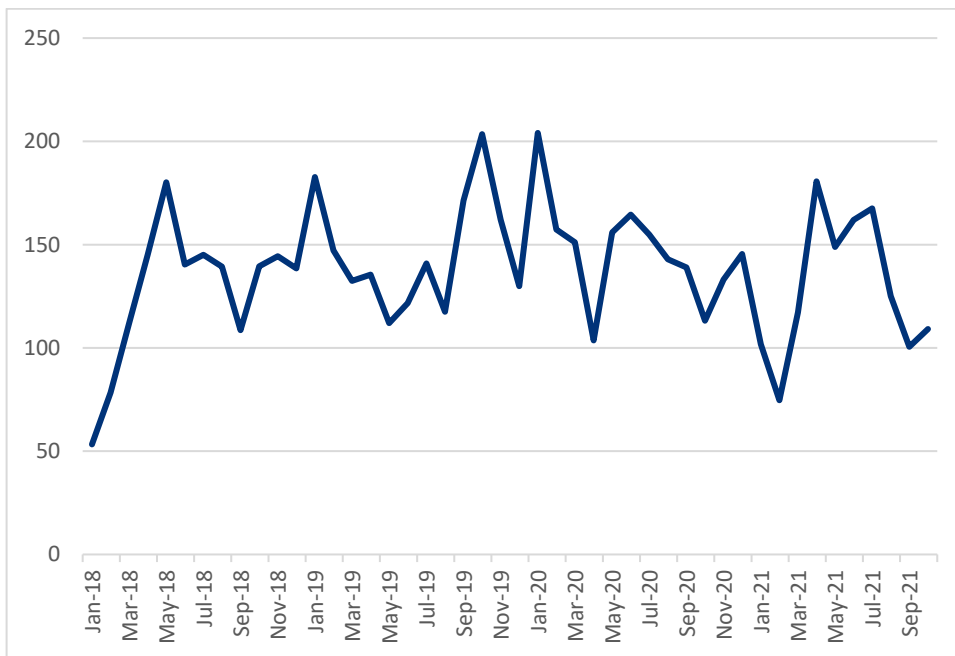
Coke County

The major population centers of the county are Robert Lee (2020 pop. 1,072) and Bronte (2020 pop. 1,020). In FY 2021, revenue miles ranged from 1600 – 4400 miles per month. Revenue hours ranged from 75 - 180 per month. The county has a contract with a local nursing facility to provide transit services but provides no local transit service elsewhere. Two vehicles are based in Coke County. Ridership data from the county is displayed in Table 3-6. Miles and hours are displayed in Figures 3-12 and 3-13.

Table 3-6: Coke County Ridership and Trip Patterns

Month/ Year		Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Jan	2018	60	1023.8	53.29			
Feb	2018	69	1733.1	78.37			
March	2018	115	2395.6	112.04			
April	2018	160	3135.3	145.15			
May	2018	208	5532	180.16			
June	2018	134	4642	140.35			
July	2018	138	2690.3	145.11			
Aug	2018	121	2792.6	139.37			
FY 2018 TOTAL		1005	23944.7	993.84	2	1%	99%
Sept 2018		153	2342.9	108.63			
Oct 2018		188	2890.6	139.54			
Nov 2018		173	2884.2	144.41			
Dec 2018		164	3045.5	138.52			
Jan 2019		216	3760.1	182.76			
Feb 2019		163	3139.1	147.15			
Mar 2019		176	2944	132.49			
April 2019		195	2824.8	135.47			
May 2019		149	2416.5	112.04			
June 2019		206	2694.4	121.72			
July 2019		224	3277	140.93			
Aug 2019		182	2889.2	117.5			
FY 2019 TOTAL		2189	35108.3	1621.16	2	1%	99%
Sep 2019		267	3219.5	171.39			

Month/ Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Oct 2019	225	4523.0	203.50			
Nov 2019	187	3205.9	162.03			
Dec 2019	177	2688.1	129.90			
Jan 2020	236	4285.7	204.09			
Feb 2020	165	3259.7	157.29			
Mar 2020	126	3059.9	151.11			
April 2020	69	2282.1	103.67			
May 2020	117	3232.7	155.93			
June 2020	146	3454.9	164.55			
July 2020	108	2990.2	154.85			
Aug 2020	95	2809.8	142.93			
FY 2020 TOTAL	661	17829.6	873.04	2	1%	99%
Sep 2020	137	2877	138.93			
Oct 2020	149	2493.1	113.13			
Nov 2020	110	2653.4	133.04			
Dec 2020	100	2804.9	145.46			
Jan 2021	94	2137.3	101.78			
Feb 2021	87	1618.3	74.67			
Mar 2021	108	2486.5	117.22			
April 2021	143	4403.6	180.63			
May 2021	149	3490.7	148.87			
June 2021	121	3664.6	161.94			
July 2021	171	3901.4	167.57			
Aug 2021	134	2645.8	125.07			
FY 2021 TOTAL	1503	35176.6	1608.31	2	1%	99%
Sep 2021	115	2335.2	100.54	2	1%	99%
Oct 2021	118	2341.9	109.14	2	1%	99%

Figure 3-12: Coke County Revenue Miles by Month**Figure 3-13: Coke County Revenue Hours by Month**

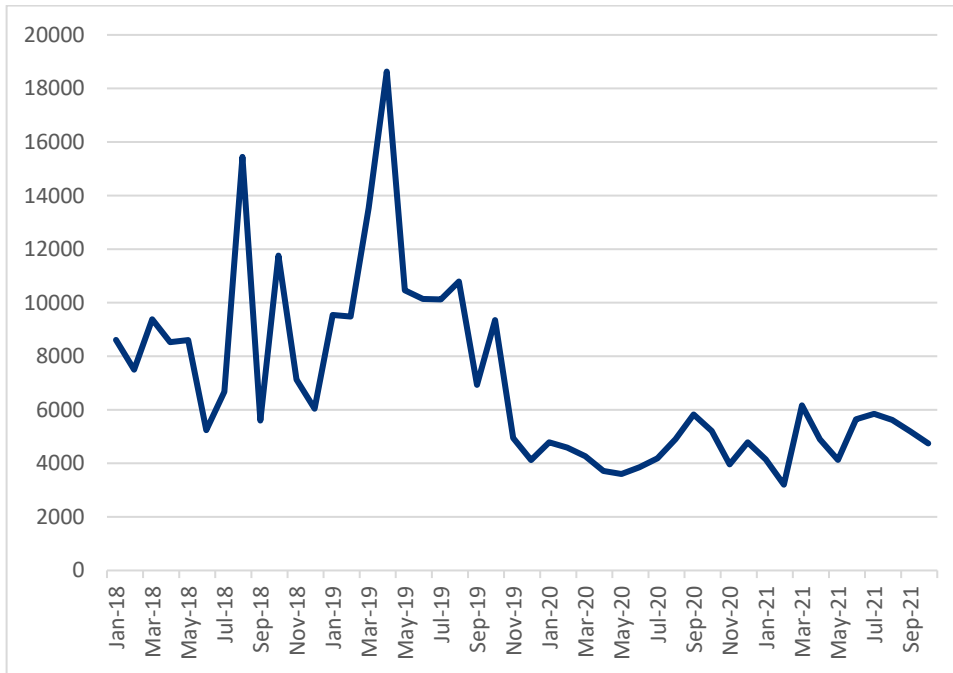
Tom Green County (Except San Angelo)

Other than San Angelo, the major population centers of the county include Grape Creek and Carlsbad. In August 2018, service became fare-free, resulting in significant spikes in ridership in Tom Green County outside of San Angelo (Table 3-7), with revenue miles peaking in April 2019 at about 18,000 miles. After the analysis of the first year of fare-free service in September 2019, the county began using one bus for the morning trip to San Angelo and another bus for the evenings for efficiency purposes. In FY 2021, revenue miles ranged from 3200 – 6200 miles, peaking in March. Revenue hours ranged between 180 – 320 hours (Figures 3-14 – 3-15).

Table 3-7: Tom Green County (Except San Angelo) Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Jan 2018	423	8610	384	2		
Feb 2018	386	7497	364			
March 2018	469	9378	480			
April 2018	445	8525	477			
May 2018	444	8604	409			
June 2018	392	5239	380			
July 2018	474	6675	449			
Aug 2018	488	15446	452			
FY 2018 TOTAL	3521	69974	3395		1%	99%
Sept 2018	450	5598	388	2		
Oct 2018	571	11760	768			
Nov 2018	562	7127	485			
Dec 2018	487	6040	440			
Jan 2019	500	9539	469			
Feb 2019	547	9479	473			
Mar 2019	578	13540	508			
April 2019	595	18631	531			
May 2019	588	10463	504			
June 2019	541	10141	491			
July 2019	557	10119	497			
Aug 2019	566	10788	509			
FY 2019 TOTAL	6542	123225	6063		1%	99%
Sep 2019	441	6932	348	2		

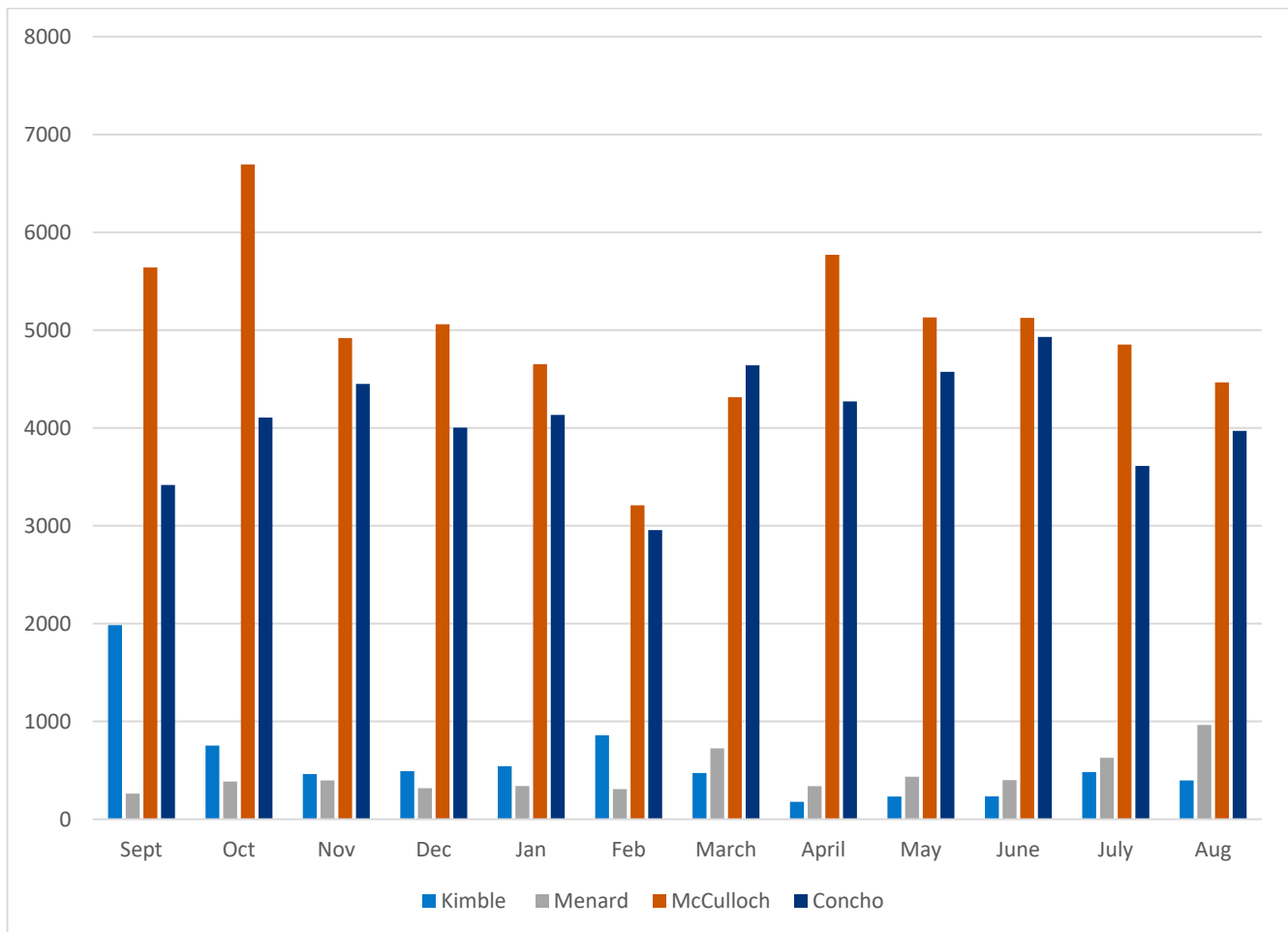
Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Oct 2019	485	9349	352			
Nov 2019	330	4947	240			
Dec 2019	297	4121	218			
Jan 2020	367	4788	237			
Feb 2020	358	4586	227			
Mar 2020	289	4268	222			
April 2020	187	3717	195			
May 2020	213	3603	197			
June 2020	229	3851	211			
July 2020	260	4188	220			
Aug 2020	255	4905	231			
FY 2020 TOTAL	3711	59255	2898		1%	99%
Sep 2020	283	5825	266	2		
Oct 2020	286	5208	270			
Nov 2020	225	3961	203			
Dec 2020	265	4784	255			
Jan 2021	243	4148	213			
Feb 2021	204	3203	176			
Mar 2021	355	6165	316			
April 2021	253	4899	241			
May 2021	239	4126	216			
June 2021	355	5644	276			
July 2021	387	5851	281			
Aug 2021	346	5623.4	260			
FY 2021 TOTAL	3441	59437.4	2973		1%	99%
Sep 2021	304	5195	251	2	1%	99%
Oct 2021	274	4742	238	2	1%	99%

Figure 3-14: Tom Green County (Except San Angelo) Revenue Miles by Month**Figure 3-15: Tom Green County (Except San Angelo) Revenue Hours by Month**

East Region

Counties in the East Region of the CVT service area include Concho, McCulloch, Menard and Kimble Counties. The main population centers include Eden, Brady, Menard and Junction. Trips from these counties to San Angelo are grouped, with McCullough County using five vehicles, and Menard County using two. Three of the drivers are in Brady in McCullough County, which is more than any other county. CVT estimates that roughly 75% of trips that originate in the East region end in San Angelo. Figure 3-16 shows that revenue miles among McCulloch and Concho Counties were similar, while Kimble and Menard Counties had similar miles but were much less in number.

Figure 3-16: East Region FY 2021 Revenue Miles



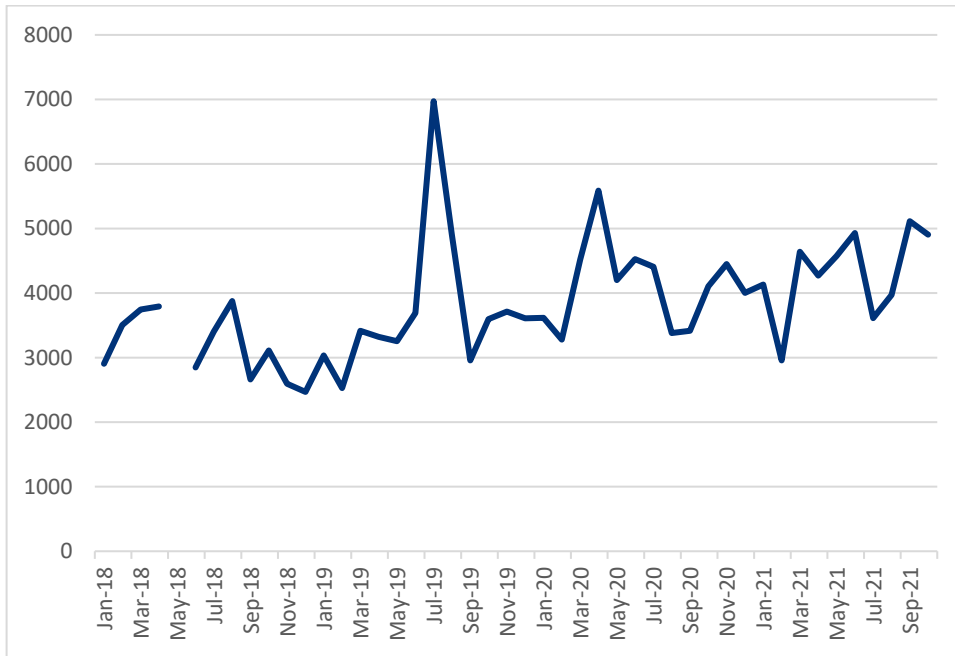
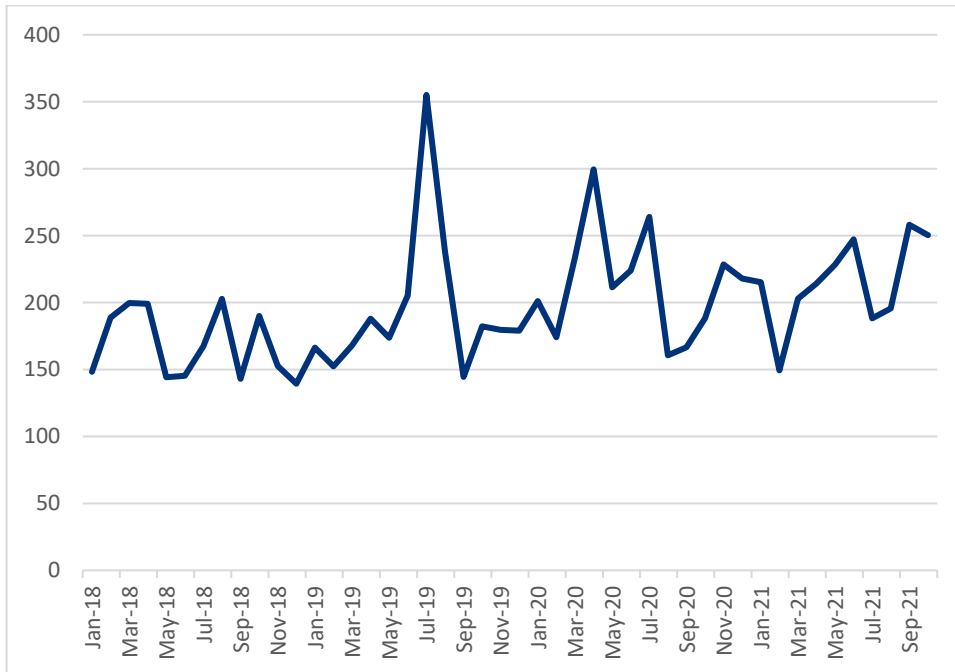
Concho County

The major population center of the county is Eden (2020 pop. 1,345). In FY 2021, revenue miles had a wide range of between about 3000 – 5000 miles per month. June and September had the most miles, while February had the lowest number of miles. Revenue hours ranged from 150 - 250 per month. Concho County passengers heading to San Angelo board buses originating from McCullough County. Ridership data from the county is displayed in Table 3-8. Miles and hours are displayed in Figures 3-17 and 3-18.

Table 3-8: Concho County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Jan 2018	126	2904.7	148.35			
Feb 2018	135	3504.1	188.85			
March 2018	155	3745.8	199.63			
April 2018	180	3791.7	199.07			
May 2018	140	NA	144.25			
June 2018	131	2848.6	145.28			
July 2018	193	3402.9	167.42			
Aug 2018	212	3876.6	202.74			
FY 2018 TOTAL	1272	41143.2	1395.59	1	25%	75%
Sept 2018	127	2661.9	143.04			
Oct 2018	171	3111	190.04			
Nov 2018	127	2594.1	152.58			
Dec 2018	132	2468.8	139.4			
Jan 2019	150	3033.1	166.35			
Feb 2019	139	2528.5	152.39			
Mar 2019	148	3414.6	167.99			
April 2019	141	3322.1	188.02			
May 2019	147	3255.2	173.77			
June 2019	153	3690	205.27			
July 2019	219	6972.1	355.1			
Aug 2019	228	4903.2	238.06			
FY 2019 TOTAL	1882	41954.6	2272.01	1	25%	75%

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Sep 2019	188	2957.7	144.42			
Oct 2019	202	3597.1	182.27			
Nov 2019	198	3713.4	179.56			
Dec 2019	207	3608.6	179.01			
Jan 2020	207	3617.3	201.08			
Feb 2020	190	3279.5	174.15			
Mar 2020	168	4518.9	233.5			
April 2020	151	5586.8	299.5			
May 2020	122	4202.2	211.45			
June 2020	149	4527.1	223.98			
July 2020	156	4407.8	263.99			
Aug 2020	117	3380.3	160.66			
FY 2020 TOTAL	2055	47396.7	2453.57	1	25%	75%
Sep 2020	108	3416.4	166.55			
Oct 2020	139	4105.5	188.25			
Nov 2020	122	4449.2	228.46			
Dec 2020	128	4003.2	217.93			
Jan 2021	111	4132.4	215.19			
Feb 2021	94	2956.5	149.36			
Mar 2021	144	4639.4	202.88			
April 2021	159	4271.2	214.32			
May 2021	139	4572.8	228.33			
June 2021	155	4929.4	247.3			
July 2021	102	3612.4	188.22			
Aug 2021	142	3969.7	195.65			
FY 2021 TOTAL	1543	49058.1	2442.44	1	25%	75%
Sep 2021	148	5114.1	258.07	1	25%	75%
Oct 2021	140	4904.5	250.41	1	25%	75%

Figure 3-17: Concho County Revenue Miles by Month**Figure 3-18: Concho County Revenue Hours by Month**

McCulloch County

The major population center of the county is Brady (2020 pop. 5,118). Trip ridership within McCulloch County is higher than any other county. Brady is the largest city in the CVT service area outside of San Angelo and has a Walmart which is a major trip generator for county residents. CVT also dedicates three in-service vehicles in Brady. In FY 2021, revenue miles ranged from about 3,200 – 7,000 per month, peaking in October (Figures 3-19 and 3-20). Revenue hours ranged from about 200 to 470 per month. Ridership data from the county is displayed in Table 3-9.

Table 3-9: McCulloch County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Jan 2018	702	5646	382.43			
Feb 2018	718	5101.8	349.51			
March 2018	739	6099.7	359.88			
April 2018	705	3900	294.71			
May 2018	780	5267	384.75			
June 2018	690	5873	326.61			
July 2018	594	5304.6	329.21			
Aug 2018	710	5388	372.52			
FY 2018 TOTAL	5638	132642.5	2799.62	3	25%	75%
Sept 2018	596	3530.6	272.5			
Oct 2018	703	7188.7	336.27			
Nov 2018	622	4190.7	270.19			
Dec 2018	616	4638.6	307.44			
Jan 2019	659	3839.9	292.34			
Feb 2019	638	4304.5	286.32			
Mar 2019	775	6029.1	278.27			
April 2019	829	6525.2	413.08			
May 2019	777	6571.6	397.85			
June 2019	706	5700.7	370.34			
July 2019	848	6635.9	385.01			
Aug 2019	788	7231.1	439.29			
FY 2019 TOTAL	8557	66386.6	4048.9	3	25%	75%
Sep 2019	746	6943.1	424.82			

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Oct 2019	902	7345.8	482.73			
Nov 2019	706	5750	385.23			
Dec 2019	731	5994.4	395.26			
Jan 2020	806	7103.2	477.37			
Feb 2020	648	4638.8	326.37			
Mar 2020	602	5685.1	399.13			
April 2020	540	4584.3	332.03			
May 2020	550	4489.4	286.03			
June 2020	596	5096.8	316.9			
July 2020	643	5476.2	316.58			
Aug 2020	460	4850.1	256.22			
FY 2020 TOTAL	7930	67957.2	4398.67	3	25%	75%
Sep 2020	560	5640.1	365.3			
Oct 2020	591	6693.9	382.51			
Nov 2020	554	4918.5	290.07			
Dec 2020	491	5060.4	315.76			
Jan 2021	477	4650.9	307.17			
Feb 2021	386	3208.6	219.66			
Mar 2021	565	4313.3	220.94			
April 2021	537	5770.5	327.32			
May 2021	458	5129.2	305.16			
June 2021	422	5125.1	273.16			
July 2021	402	4852.3	256.44			
Aug 2021	378	4465.2	234.57			
FY 2021 TOTAL	5821	59828	3498.06	3	25%	75%
Sep 2021	439	4476.9	236	3	25%	75%
Oct 2021	374	4087.4	199.11	3	25%	75%

Figure 3-19: McCulloch County Revenue Miles by Month

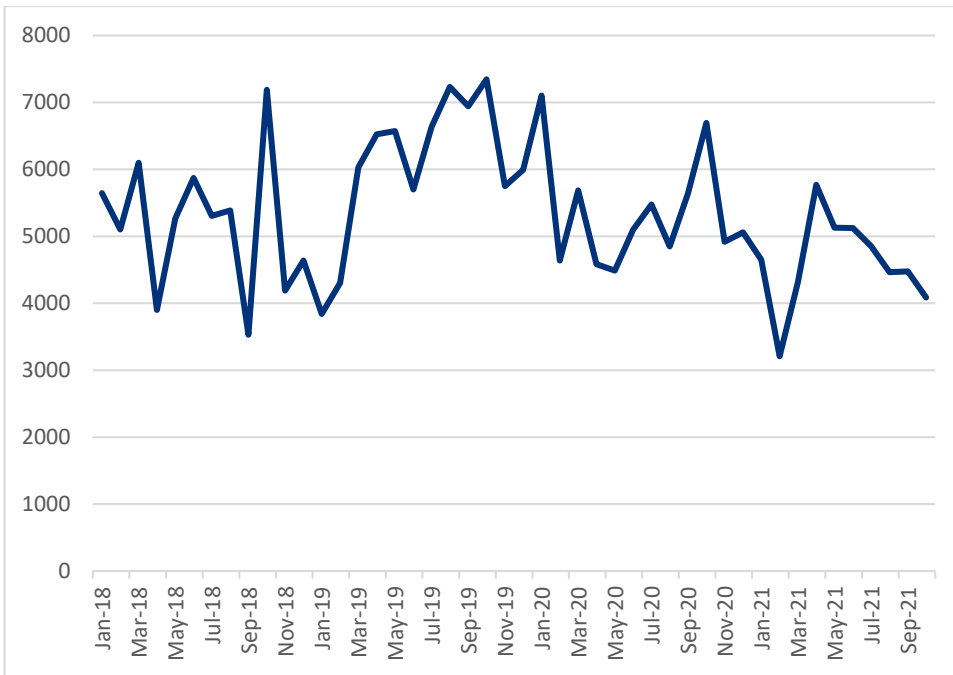
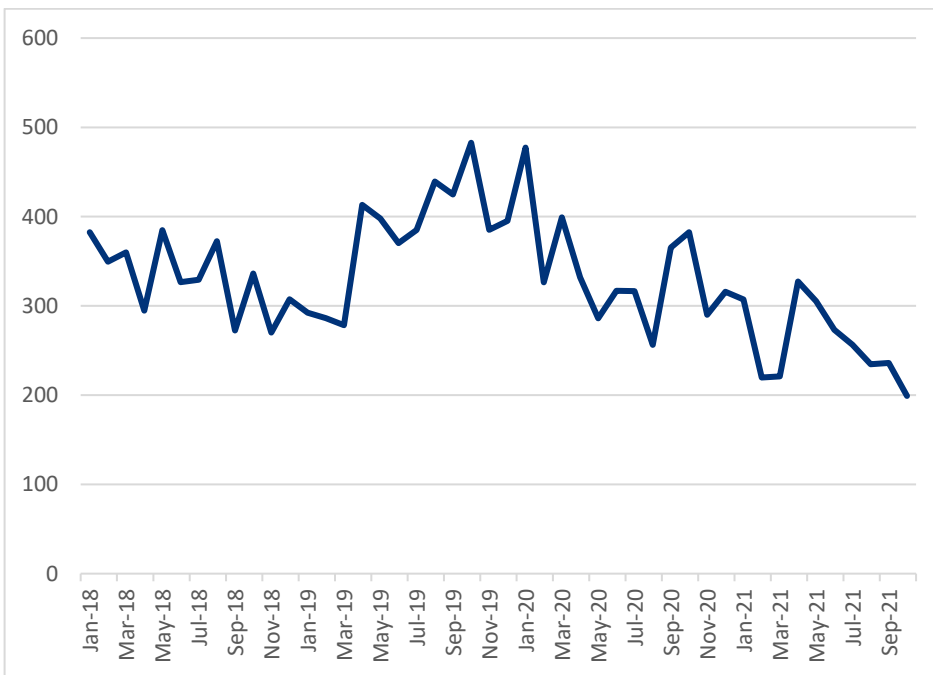


Figure 3-20: McCulloch County Revenue Hours by Month



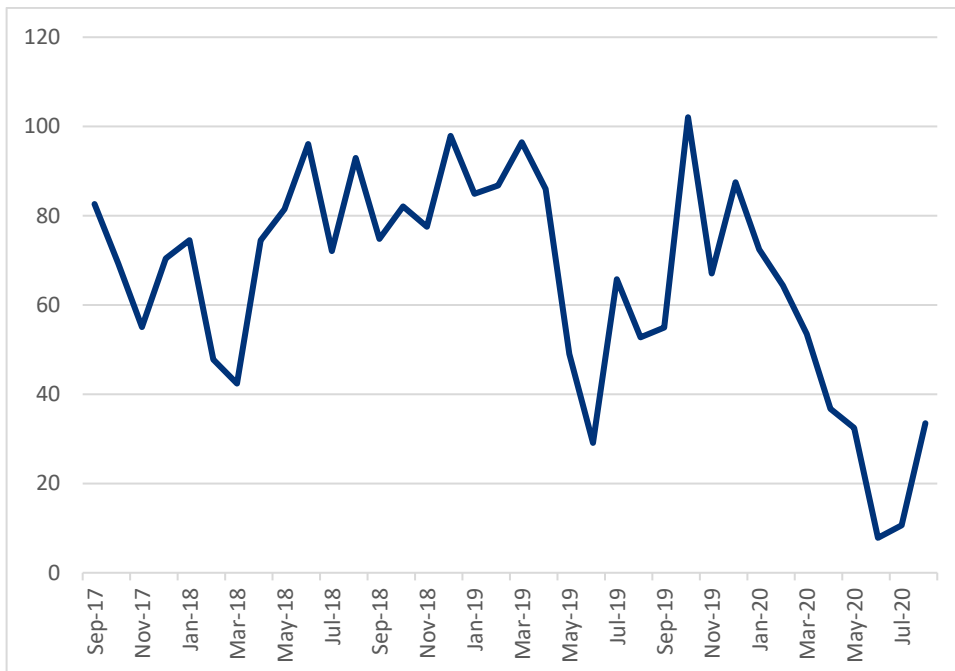
Menard County

The major population center of the county is Menard (2020 pop. 1,440). In FY 2021, revenue miles ranged from 260 – 960 miles per month, peaking in August (Figures 3-21 and 3-22). Revenue hours ranged from 10 – 50 hours per month, which is the lowest number of hours in the East region. The county has no local transit service and no non-emergency medical trip services. Ridership data from the county is displayed in Table 3-10.

Table 3-10: Menard County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	Est. % Trips Local	Est. % Trips San Angelo
Jan 2018	61	1475.1	74.53			
Feb 2018	32	900.4	47.79			
March 2018	45	921.9	42.39			
April 2018	62	1730.9	74.5			
May 2018	56	2003.9	81.47			
June 2018	78	2208.9	96.08			
July 2018	64	1775.6	72.07			
Aug 2018	88	2097	92.96			
FY 2018 TOTAL	486	13113.7	581.79	1	25%	75%
Sept 2018	60	3719.9	74.81			
Oct 2018	47	1745.8	82.1			
Nov 2018	63	1844	77.53			
Dec 2018	63	1766.1	97.9			
Jan 2019	66	2009	84.93			
Feb 2019	65	1816.2	86.79			
Mar 2019	82	1989	96.45			
April 2019	63	1753	85.99			
May 2019	44	1051.3	49.02			
June 2019	24	618.5	29.11			
July 2019	56	1485.3	65.76			
Aug 2019	54	1205.5	52.76			
FY 2019 TOTAL	687	21003.6	883.15	1	25%	75%
Sep 2019	42	1163.9	54.94			
Oct 2019	87	1871.4	102.07			

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	Est. % Trips Local	Est. % Trips San Angelo
Nov 2019	62	1551.4	67.05			
Dec 2019	68	1863.7	87.49			
Jan 2020	68	1558.4	72.45			
Feb 2020	40	1057	64.36			
Mar 2020	36	1067.1	53.52			
April 2020	26	730.8	36.72			
May 2020	22	704.5	32.45			
June 2020	5	194.5	7.83			
July 2020	10	329.8	10.62			
Aug 2020	18	536.8	33.51			
FY 2020 TOTAL	484	12629.3	623.01	1	25%	75%
Sep 2020	17	261.7	13.32			
Oct 2020	13	385.6	24.01			
Nov 2020	18	396.5	16.63			
Dec 2020	15	318.2	14.86			
Jan 2021	7	339.3	13.77			
Feb 2021	11	307.4	10.68			
Mar 2021	27	725.1	27.24			
April 2021	12	337.5	12.96			
May 2021	8	435.1	12.58			
June 2021	16	399.3	18.37			
July 2021	18	627.3	36.36			
Aug 2021	26	964.4	49.84			
FY 2021 TOTAL	188	5497.4	250.62	1	25%	75%
Sep 2021	28	1181	47.33	1	25%	75%
Oct 2021	3	129	3.66	1	25%	75%

Figure 3-21: Menard County Revenue Miles by Month**Figure 3-22: Menard County Revenue Hours by Month**

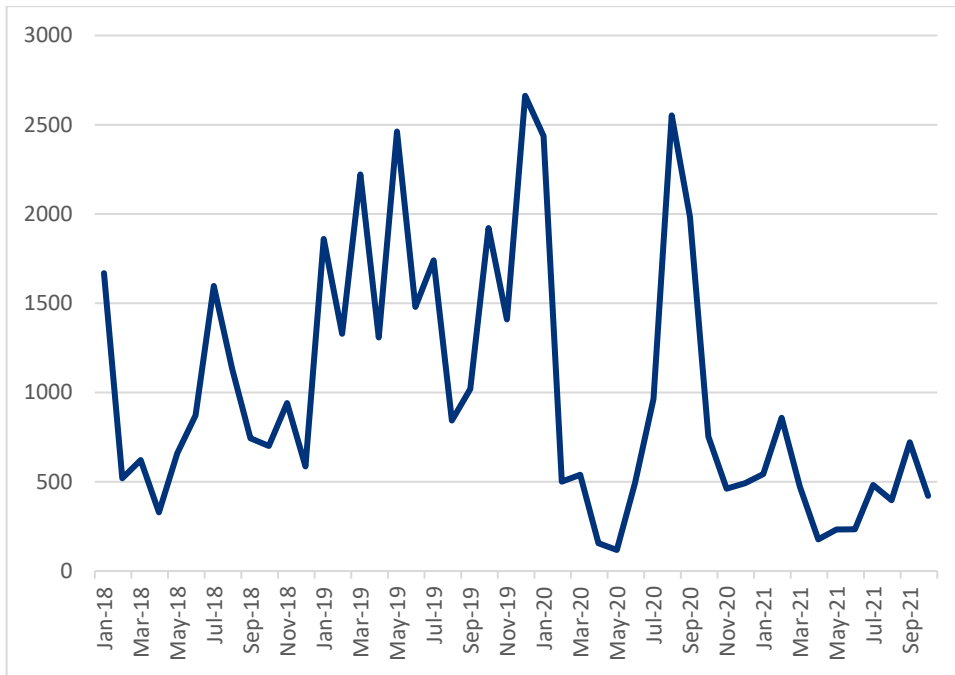
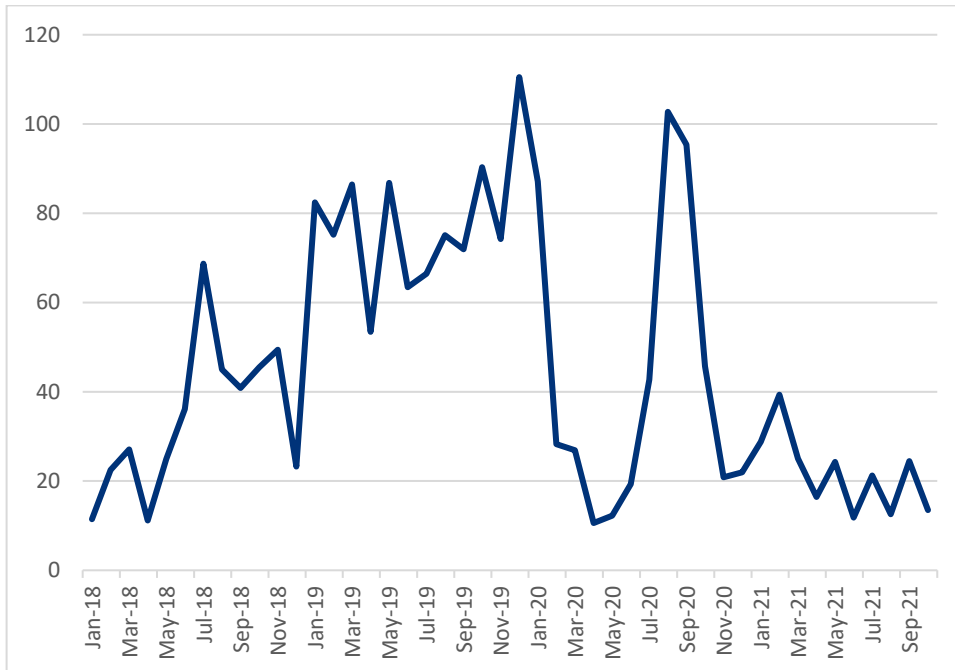
Kimble County

The major population center of the county is Junction (2020 pop. 2,395). In FY 2021, revenue miles ranged from about 500 – 2800 miles per month, peaking in July. Revenue hours ranged from about 30 – 120 hours per month, similar to Sutton County (Figures 3-23 and 3-24). One major obstacle for the county was hiring sufficient bus drivers. The county has no vehicles or local transit service. Ridership data from the county is displayed in Table 3-11.

Table 3-11: Kimble County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Jan 2018	32	1668.6	11.45			
Feb 2018	40	519.3	22.48			
March 2018	52	621.6	27.08			
April 2018	17	328.6	11.17			
May 2018	33	660.1	24.94			
June 2018	32	872.4	36.13			
July 2018	55	4715.4	68.7			
Aug 2018	58	1132	44.99			
FY 2018 TOTAL	319	10518	246.94	0	25%	75%
Sept 2018	191	3921.6	200.01			
Oct 2018	194	2963.2	167.7			
Nov 2018	211	3325.1	182.5			
Dec 2018	115	2559.8	137.09			
Jan 2019	125	2411.1	122.57			
Feb 2019	173	2851.6	138.52			
Mar 2019	144	2671.3	124.83			
April 2019	155	2538.6	128.97			
May 2019	146	2806	142.57			
June 2019	156	2485.7	132.49			
July 2019	151	2880.3	143.87			
Aug 2019	166	2758.1	139.95			
FY 2019 TOTAL	1927	34172.4	1761.07	0	25%	75%
Sep 2019	142	2569.5	128.09			
Oct 2019	134	2275.8	119.87			

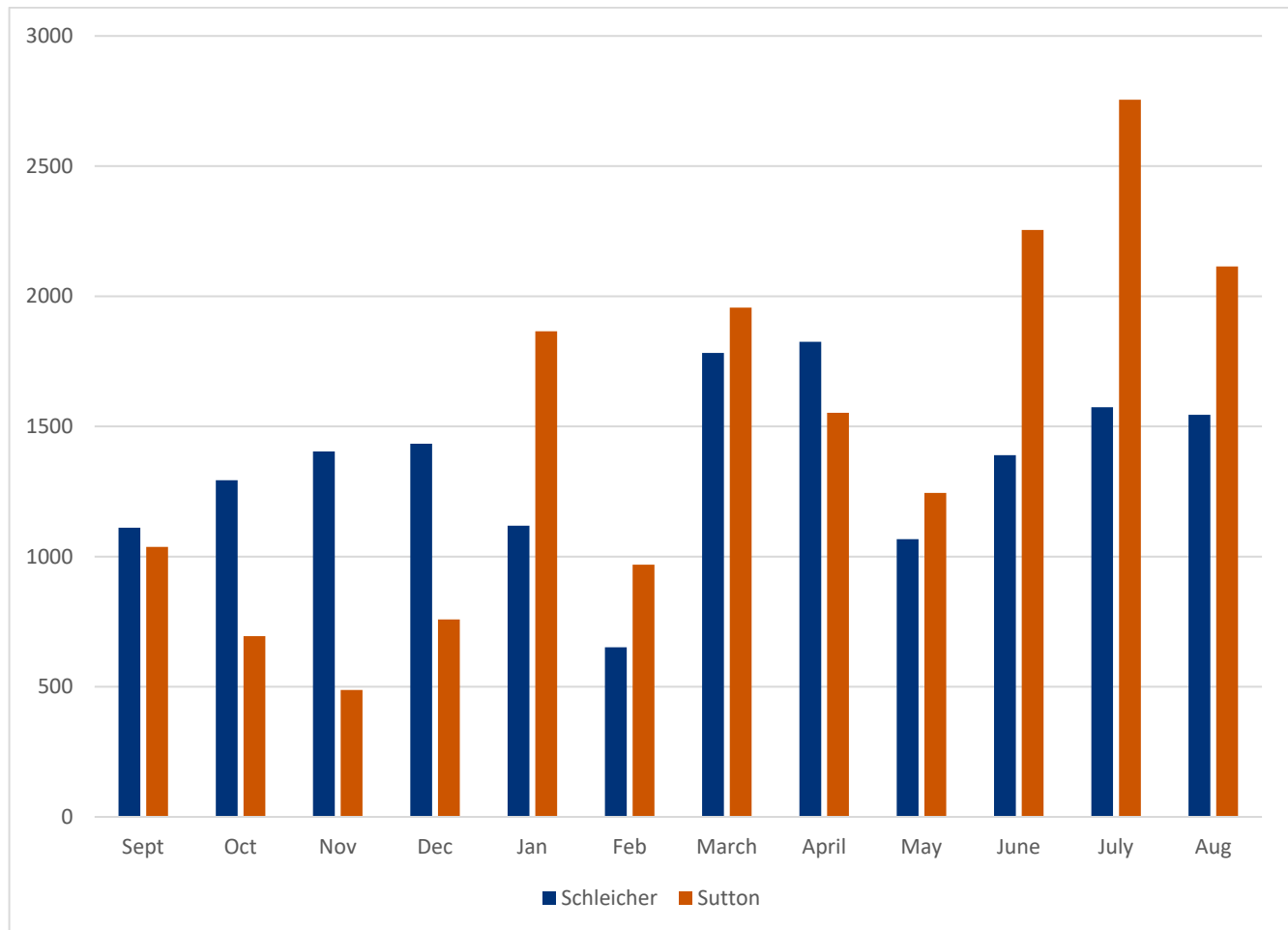
Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Nov 2019	111	1904.8	96.28			
Dec 2019	151	2652.5	135.52			
Jan 2020	168	2871.1	134.56			
Feb 2020	215	2890.9	160.03			
Mar 2020	132	2063.3	107.67			
April 2020	35	1074.3	50.12			
May 2020	53	796.1	40.78			
June 2020	100	1165.2	82.43			
July 2020	57	666.7	40.37			
Aug 2020	58	849.8	42.33			
FY 2020 TOTAL	1356	21780	1138.05	0	25%	75%
Sep 2020	46	1037	49.13			
Oct 2020	40	694.6	34.42			
Nov 2020	21	487.8	27.31			
Dec 2020	27	758.7	35.49			
Jan 2021	69	1865.5	91.37			
Feb 2021	29	969	43.77			
Mar 2021	83	1956.2	99.3			
April 2021	51	1552.6	72.1			
May 2021	44	1244.5	60.72			
June 2021	57	2255	100.37			
July 2021	64	2754.9	124.21			
Aug 2021	71	2114.7	98.94			
FY 2021 TOTAL	602	17690.5	837.13	0	25%	75%
Sep 2021	66	1695.6	72.15	0	25%	75%
Oct 2021	61	1599.2	64.89	0	25%	75%

Figure 3-23: Kimble County Revenue Miles by Month**Figure 3-24: Kimble County Revenue Hours by Month**

South Region

Counties in the South region of the CVT service area include Schleicher and Sutton Counties. The main population centers include Eldorado and Sonora. Trips from these two counties to San Angelo are grouped, with Sonora using two vehicles and Schleicher using one. CVT estimates that nearly all or 95% of trips that originate in the South region end in San Angelo. As displayed in Figure 3-25, revenue miles from Sutton County surpassed Schleicher County's in the last few months of FY 2021.

Figure 3-25: South Region FY 2021 Revenue Miles



Schleicher County

The major population center of the county is Eldorado (2020 pop. 1,432). In FY 2021, revenue miles ranged from 650 – 1800 miles per month, peaking in April. Revenue hours ranged from 50 – 85 hours per month (Figures 3-26 and 3-27). The county has no local transit service. Ridership data from the county is displayed in Table 3-12.

Table 3-12: Schleicher County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Jan 2018	100	1732.3	78.11			
Feb 2018	85	1618.8	83.7			
March 2018	118	1539.7	76.7			
April 2018	120	1530.3	82.96			
May 2018	130	1659.4	83.86			
June 2018	137	1968.7	112.98			
July 2018	99	1357.4	67.79			
Aug 2018	124	1570.3	79.19			
FY 2018 TOTAL	913	196607.1	665.29	1	5%	95%
Sept 2018	106	998.7	53.09			
Oct 2018	127	1254.2	68.12			
Nov 2018	123	1217.4	70.47			
Dec 2018	107	1009.1	65.58			
Jan 2019	89	976	54.73			
Feb 2019	98	901.4	44.03			
Mar 2019	92	1011.3	51.52			
April 2019	93	746.6	38.56			
May 2019	103	1033.6	59.29			
June 2019	125	1038.2	60.98			
July 2019	118	1069.6	61.84			
Aug 2019	134	1548.4	78.57			
FY 2019 TOTAL	1315	12804.5	706.78	1	5%	95%
Sep 2019	123	1268.9	71			

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Oct 2019	111	1255.6	59.8			
Nov 2019	111	1147.8	66.65			
Dec 2019	97	834.4	46.58			
Jan 2020	146	1260.7	72.31			
Feb 2020	94	998.3	44.72			
Mar 2020	113	1313.5	67.77			
April 2020	56	1100.2	57.52			
May 2020	70	1293	57.08			
June 2020	72	1258	63.32			
July 2020	69	1346.4	77.69			
Aug 2020	60	1283.4	46.46			
FY 2020 TOTAL	1122	14360.2	730.9	1	5%	95%
Sep 2020	62	1111.1	57.3			
Oct 2020	81	1293.1	75.97			
Nov 2020	61	1403.9	75.57			
Dec 2020	55	1433.7	56.47			
Jan 2021	55	1118.4	61.32			
Feb 2021	36	651.4	30.76			
Mar 2021	73	1782.4	69.05			
April 2021	76	1825.2	84.54			
May 2021	55	1066.7	55.09			
June 2021	68	1389.3	65.5			
July 2021	81	1573.9	60.77			
Aug 2021	79	1544.6	72.48			
FY 2021 TOTAL	782	16193.7	764.82	1	5%	95%
Sep 2021	67	1135.5	51.75	1	5%	95%
Oct 2021	42	1403.2	55.17	1	5%	95%

Figure 3-26: Schleicher County Revenue Miles by Month

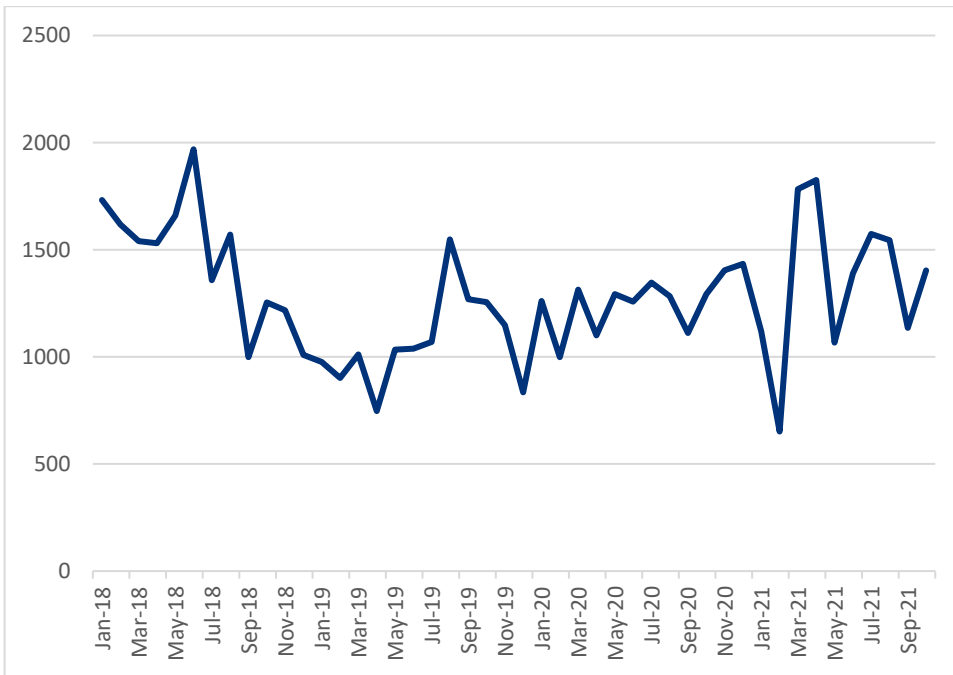
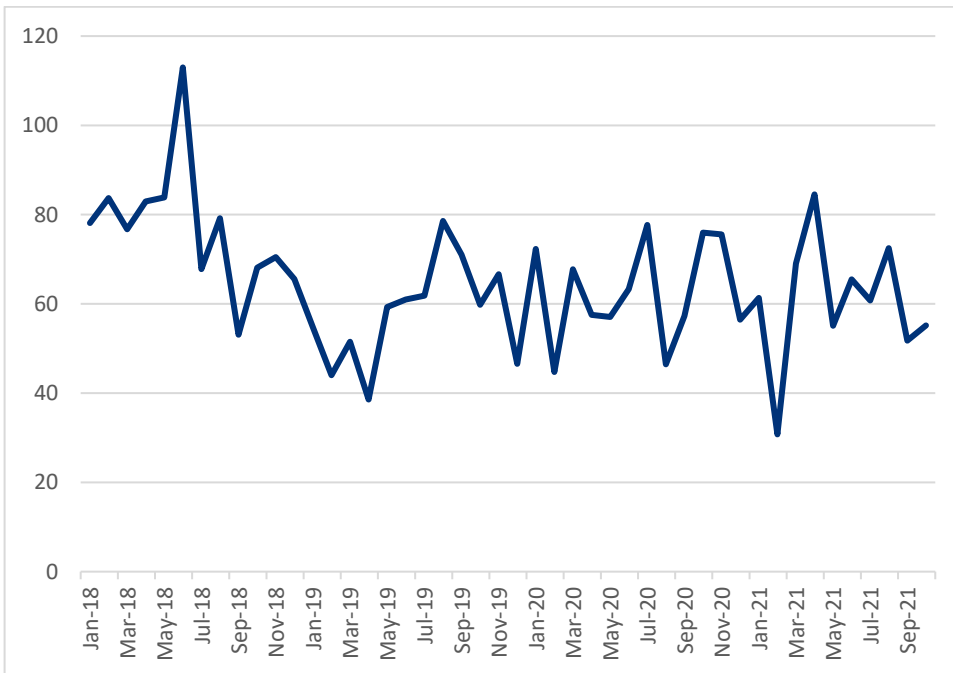


Figure 3-27: Schleicher County Revenue Hours by Month



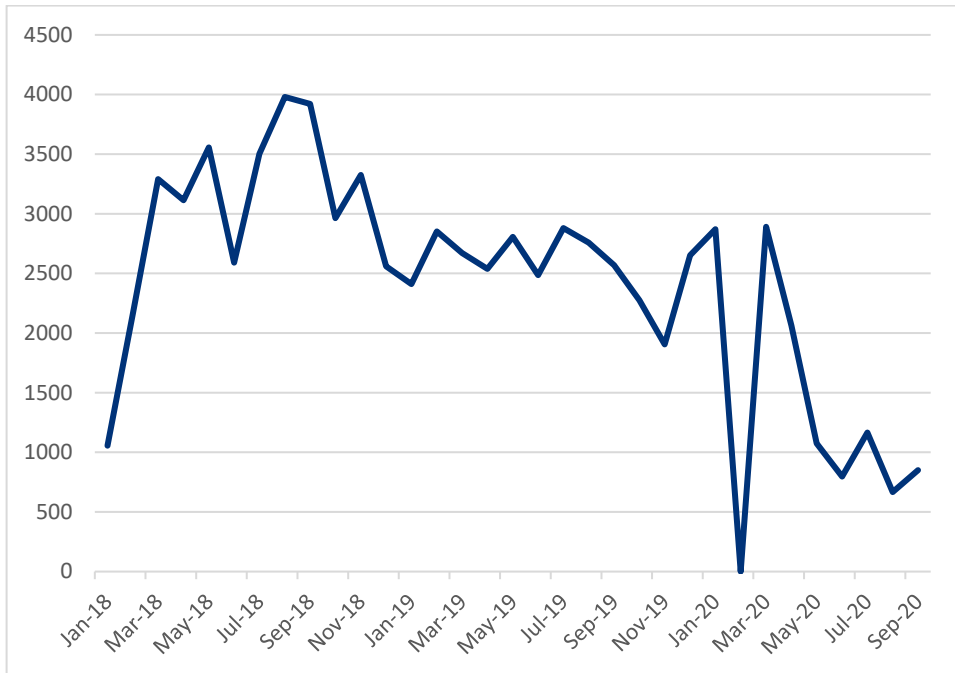
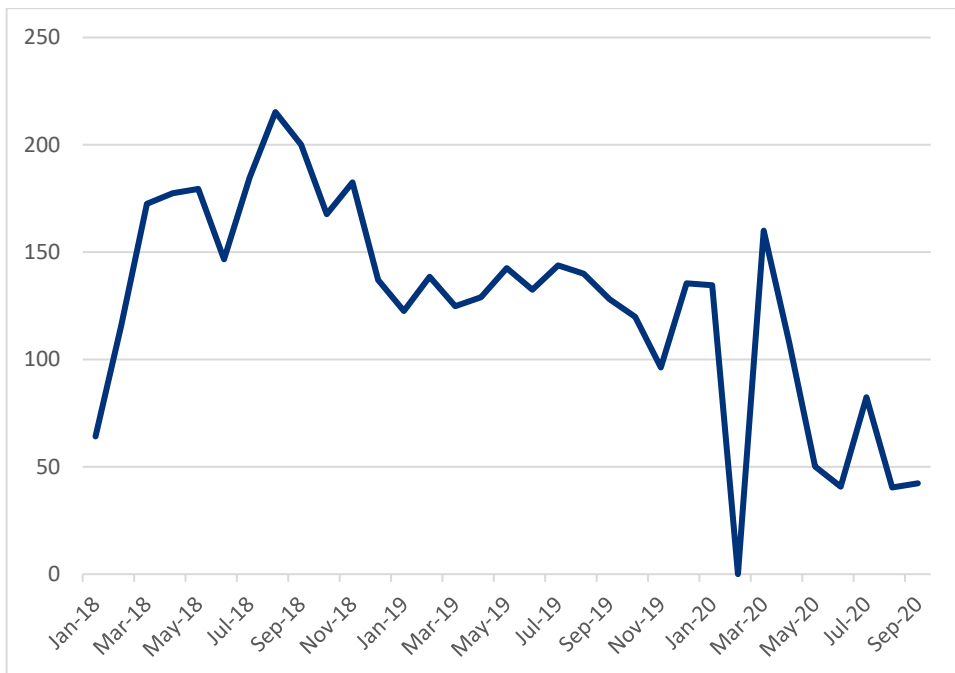
Sutton County

The major population center of the county is Sonora (2020 pop. 2,843). In FY 2021, revenue miles ranged from 950 – 2800 miles per month, peaking in July. Revenue hours ranged from about 30 – 120 hours per month (Figures 3-28 and 3-29). Two vehicles are stationed in Sonora and pick up passengers in Eldorado on the way to San Angelo. Ridership data from the county is displayed in Table 3-13.

Table 3-13: Sutton County Ridership and Trip Patterns

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Jan 2018	81	1056.1	64.18			
Feb 2018	124	2161.3	115.66			
March 2018	283	3290.4	172.54			
April 2018	253	3114.1	177.44			
May 2018	273	3556.9	179.48			
June 2018	188	2590.6	146.66			
July 2018	214	3503.3	184.74			
Aug 2018	220	3979.7	215.26			
FY 2018 TOTAL	1636	93044.4	1255.96	2	5%	95%
Sept 2018	191	3921.6	200.01			
Oct 2018	194	2963.2	167.7			
Nov 2018	211	3325.1	182.5			
Dec 2018	115	2559.8	137.09			
Jan 2019	125	2411.1	122.57			
Feb 2019	173	2851.6	138.52			
Mar 2019	144	2671.3	124.83			
April 2019	155	2538.6	128.97			
May 2019	146	2806	142.57			
June 2019	156	2485.7	132.49			
July 2019	151	2880.3	143.87			
Aug 2019	166	2758.1	139.95			
FY 2019 TOTAL	1927	34172.4	1761.07	2	5%	95%
Sep 2019	142	2569.5	128.09			
Oct 2019	134	2275.8	119.87			

Month/Year	Unlinked Trips	Revenue Miles	Revenue Hours	In-Service Vehicles	% Trips Local (estimate)	% Trips San Angelo
Nov 2019	111	1904.8	96.28			
Dec 2019	151	2652.5	135.52			
Jan 2020	168	2871.1	134.56			
Feb 2020	215	2890.9	160.03			
Mar 2020	132	2063.3	107.67			
April 2020	35	1074.3	50.12			
May 2020	53	796.1	40.78			
June 2020	100	1165.2	82.43			
July 2020	57	666.7	40.37			
Aug 2020	58	849.8	42.33			
FY 2020 TOTAL	1356	21780	1138.05	2	5%	95%
Sep 2020	46	1037	49.13			
Oct 2020	40	694.6	34.42			
Nov 2020	21	487.8	27.31			
Dec 2020	27	758.7	35.49			
Jan 2021	69	1865.5	91.37			
Feb 2021	29	969	43.77			
Mar 2021	83	1956.2	99.3			
April 2021	51	1552.6	72.1			
May 2021	44	1244.5	60.72			
June 2021	57	2255	100.37			
July 2021	64	2754.9	124.21			
Aug 2021	71	2114.7	98.94			
FY 2021 TOTAL	602	17690.5	837.13	2	5%	95%
Sep 2021	66	1695.6	72.15	2	5%	95%
Oct 2021	61	1599.2	64.89	2	5%	95%

Figure 3-28: Sutton County Revenue Miles by Month**Figure 3-29: Sutton County Revenue Hours by Month**

San Angelo: A Review of Service

CVT's regular full-time routes currently are Routes 1, 2, 3, 4, 5 and 7. The routes that are part-time and have varying operation hours include Routes 6, 20 and 21 (all fare-free) which appear dotted, as displayed in Figure 3-30. Most ridership data presented was from the Fall season, however only data from the full-time routes with the exception of Route 6 are displayed in Table 3-14 below. Route 20 and Route 21 ridership data is not displayed because ridership and service hours vary widely from month to month.

Average daily ridership from Routes 1 - 4 ranges from about 110 – 130 riders. Route 5 has the highest daily average of 187 riders, while Route 7 has the lowest daily average at 56 riders. Route 6, which has limited service to Park University at Goodfellow Air Force Base, has about a quarter of the average daily ridership of Route 7. Route 5's weekday productivity was the highest of all routes at about 16, compared to Route 2 and 3 which had the lowest average weekday productivity at 9.5.

Figure 3-31 display all major origins and destinations for San Angelo routes. Origins entail higher density residential locations such as multi-family apartments, low-income / senior housing or student housing. The majority of these units are located in southern San Angelo in the vicinity of West Loop 306 which is served by Route 1, 6, 7 and 20. Destinations such as shopping centers, medical centers and human service organizations are spread throughout the city, but many are concentrated at the center of the city near the San Angelo Transit Center which is served by all regular routes. Trip generators are also found along Sherwood Way which is served by Route 5 and along the West Loop 306 which is also served by Routes 1, 6, 7 and 20.

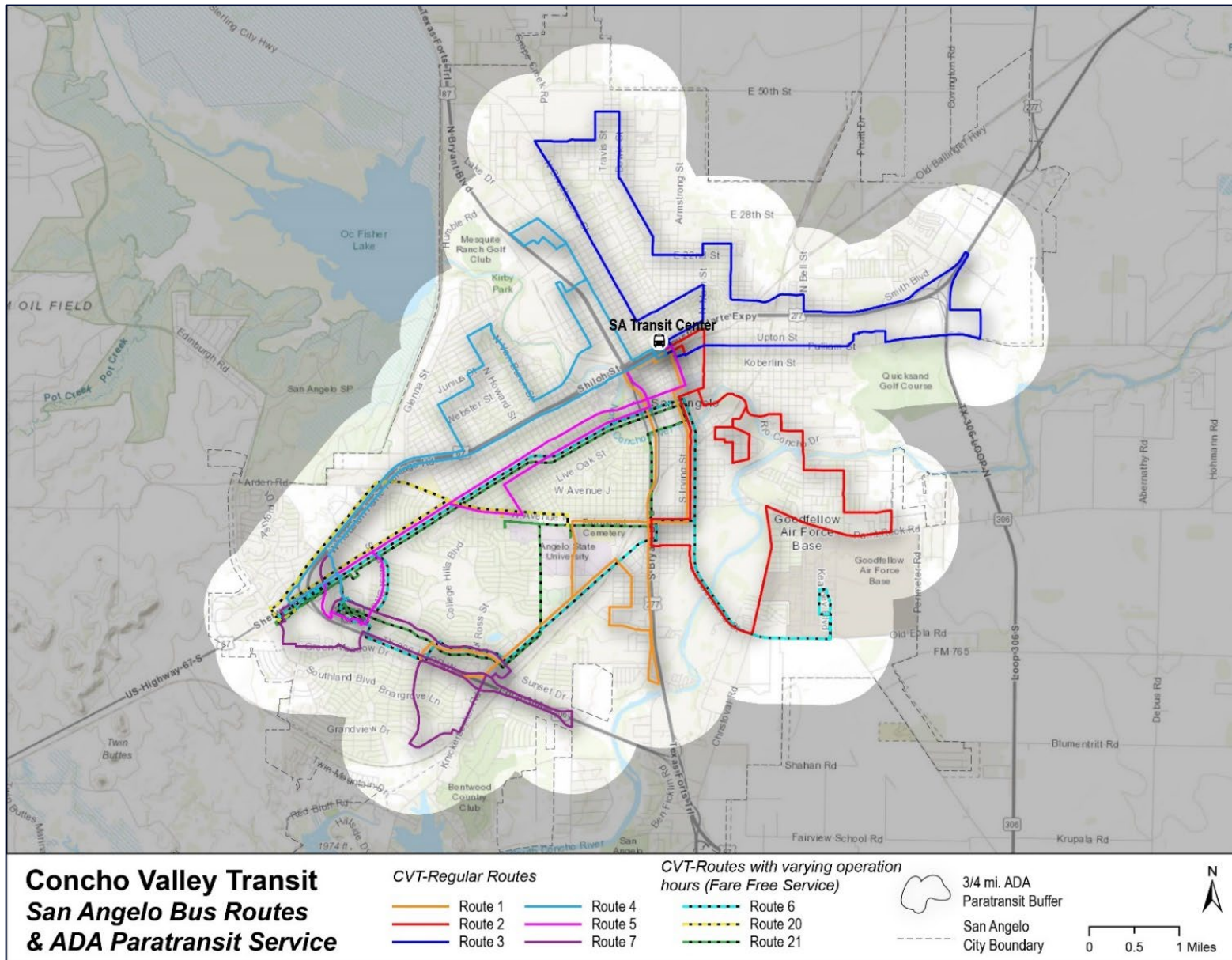
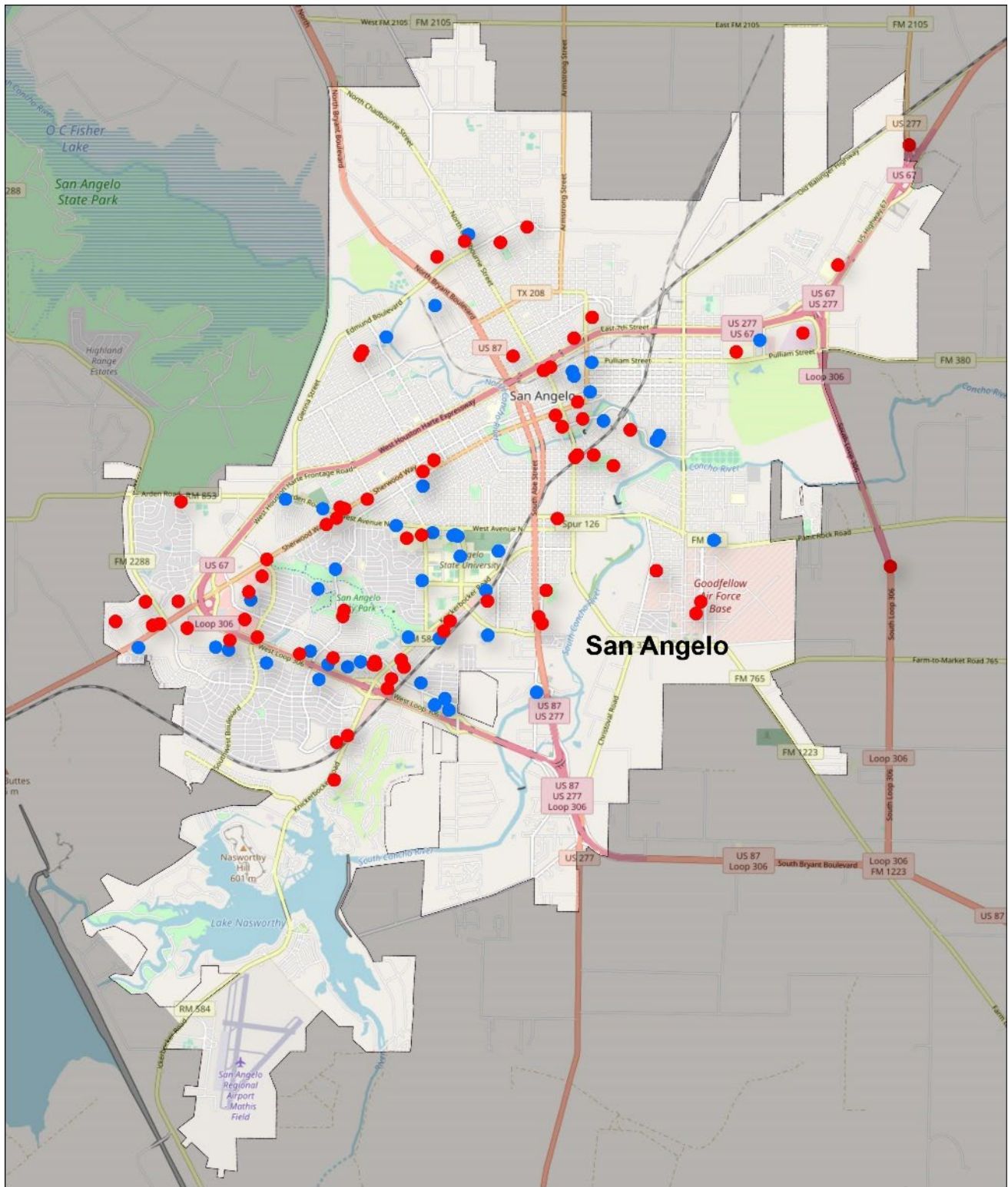
Figure 3-30: San Angelo – All Routes

Figure 3-31: San Angelo – All Routes Origins and Destinations



**Concho Valley Transit
San Angelo-Trip Generators**

- Major Destinations
- Major Origins

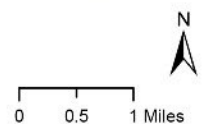


Table 3-14: All Routes Ridership and Productivity – Sample Months

Route	Sample Month	Ridership	Route Length (Miles)	Revenue Hours	Revenue Miles	Total Weekday Ridership	Avg Daily Weekday Ridership	Total Saturday Ridership	Avg Saturday Ridership	Avg Productivity
1	Oct 2018	3,544	16.8	318.89	5630	3,255	142	289	72	11.1
2	Aug 2019	3,037	16.2	311.90	4995	2,728	124	309	62	9.74
3	Apr 2019	2,958	17.3	305.85	5519	2,708	123	250	63	9.67
4	Oct 2018	3,456	18	318.14	5623	3,174	138	282	70	10.85
5	Nov 2018	4,683	13.5	296.01	4588	4,271	203	412	103	15.82
7	Feb 2020	1,405	13.9	309.70	4884	1,250	63	155	31	4.5
6	Aug 2019	586	19.7	202.00	2293	425	85	161	32	2.9

Route 1

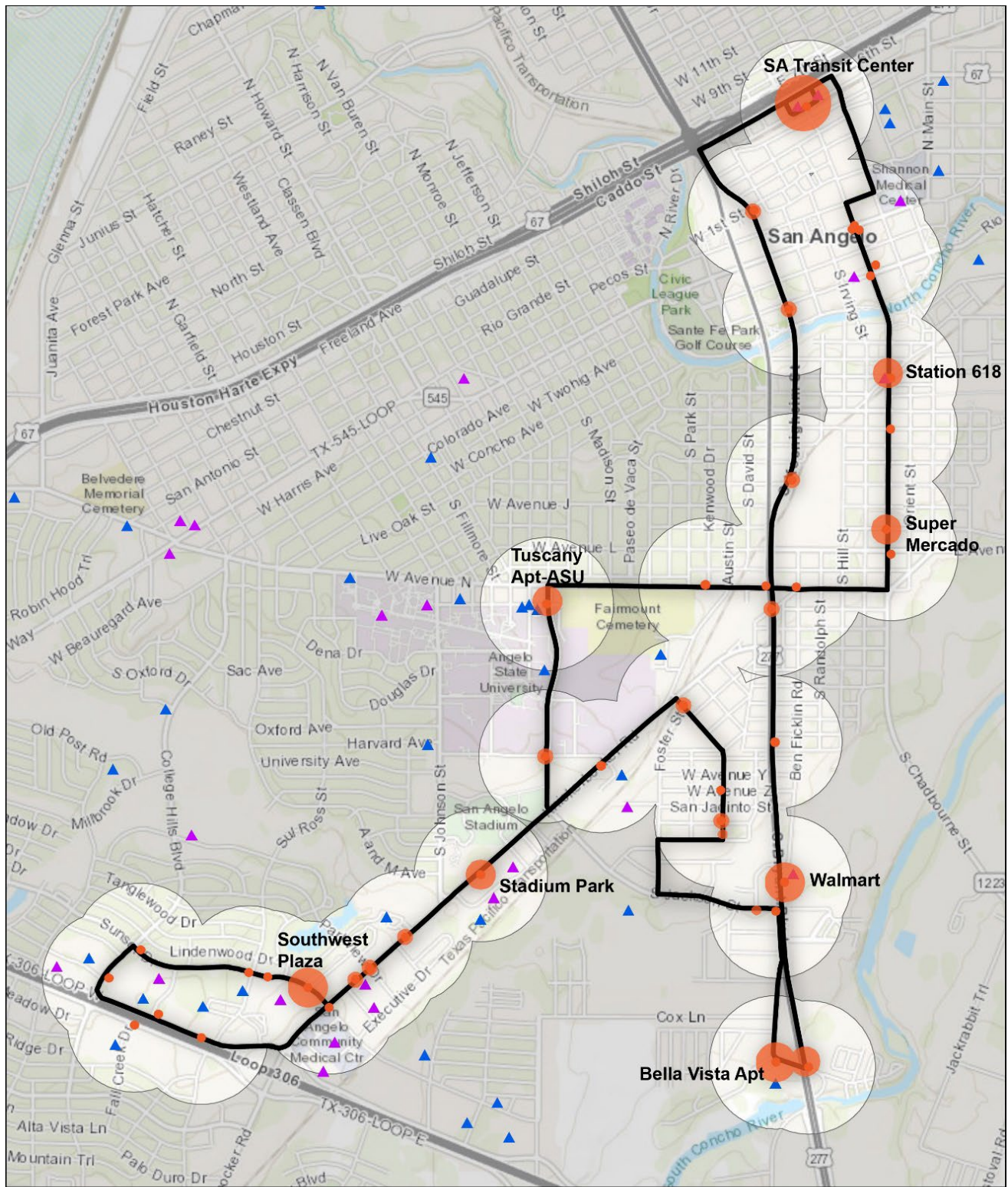
Route 1 S. Chadbourne starts at the Transit Center then heads south to Angelo State University, then to Southwest Plaza, the Walmart, and returns to the Transit Center. As displayed in Table 3-14, Route 1 has among the highest ridership and revenue hours (319) of all routes. Average productivity is about 11 riders/hour (Table 3-15).

Figures 3-32 and 3-33 display the stop activity of major trip destinations along Route 1, which displays the highest activity near San Angelo Transit Center, Angelo State University and Tuscany Apartments, Walmart, Southwest Plaza and Bella Vista Apartments. Areas which have very little activity includes a 4 mile stretch along S. Abe Street between Walmart and the Transit Center and West Ave North between the Super Mercado on Chadbourne St and the Tuscany Apartments. Weekday service appears to be slightly higher than on the weekend, with the exception of some stops which have noticeably large ridership on the weekdays such as Southwest Plaza, Tuscany Apartments, Station 618 and the Super Mercado.

Table 3-15: Route 1 Ridership and Productivity

Ridership	3,544	Avg. Daily Weekday Ridership	142
Route Length (Miles)	16.8	Avg. Sat. Ridership	72
Revenue Hrs.	318.9	Total Weekday Ridership	3255
Revenue Miles	5630	Total Saturday Ridership	289
Sample Month	Oct. 2018	Avg. Productivity	11.11

Figure 3-32: Route 1 Weekday Stop Activity



**Concho Valley Transit
Route Profile- Route 1
Weekday Stop Activity**

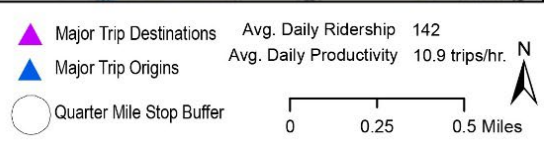
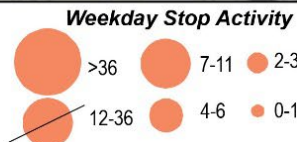
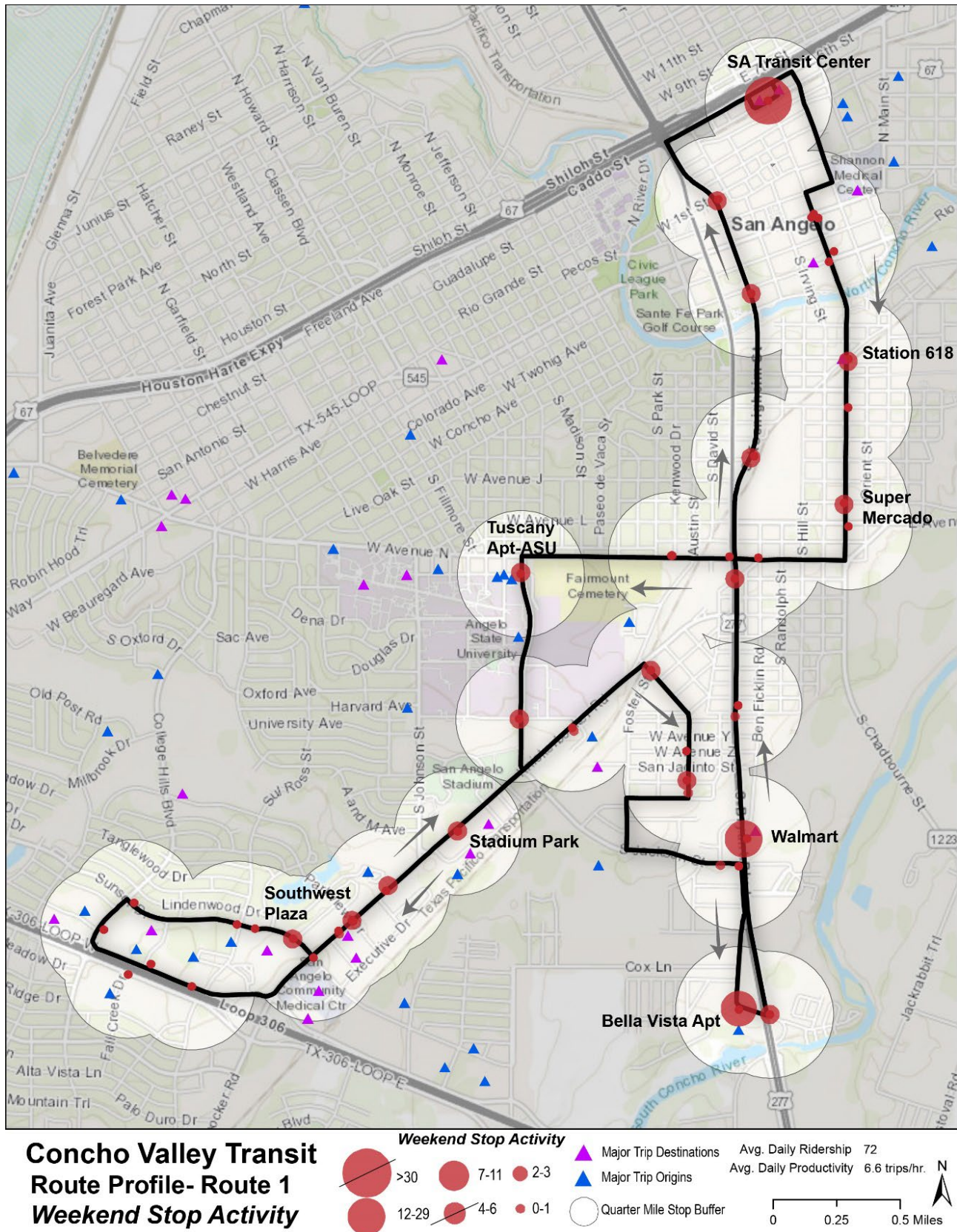


Figure 3-33: Route 1 Weekend Stop Activity



Route 2

Route 2 North Main connects the Transit Center and Shannon Medical Center, then heads south to Goodfellow Airforce Base and returns to the Transit Center. As displayed in Table 3-16, Route 2 has about 312 revenue hours per month, which is among the highest of all routes. However, average productivity is about 9.7 riders/hour), which is below-average compared to the other full-time routes (Table 3-16).

Figure 3-34 and 3-35 displays the stop activity of major trip destinations along Route 2, which displays the highest activity near San Angelo Transit Center, Shannon Medical Center, River Points Apartments and Goodfellow Air Force Base. On the weekends activity among these stops are not too different, with the exception of the Air Force Base which averages just a few passengers. Areas which have very little to no activity includes a stretch along S. Chadbourne St. and Christoval Rd. between Diego's Burritos and the Air Force Base.

Table 3-16: Route 2 Ridership and Productivity

Ridership	3,037	Avg. Daily Weekday Ridership	124
Route Length (Miles)	16.2	Avg. Sat. Ridership	62
Revenue Hrs.	311.9	Total Weekday Ridership	2,728
Revenue Miles	4995	Total Saturday Ridership	309
Sample Month	Aug. 2019	Avg. Productivity	9.74

Figure 3-34: Route 2 Weekday Stop Activity

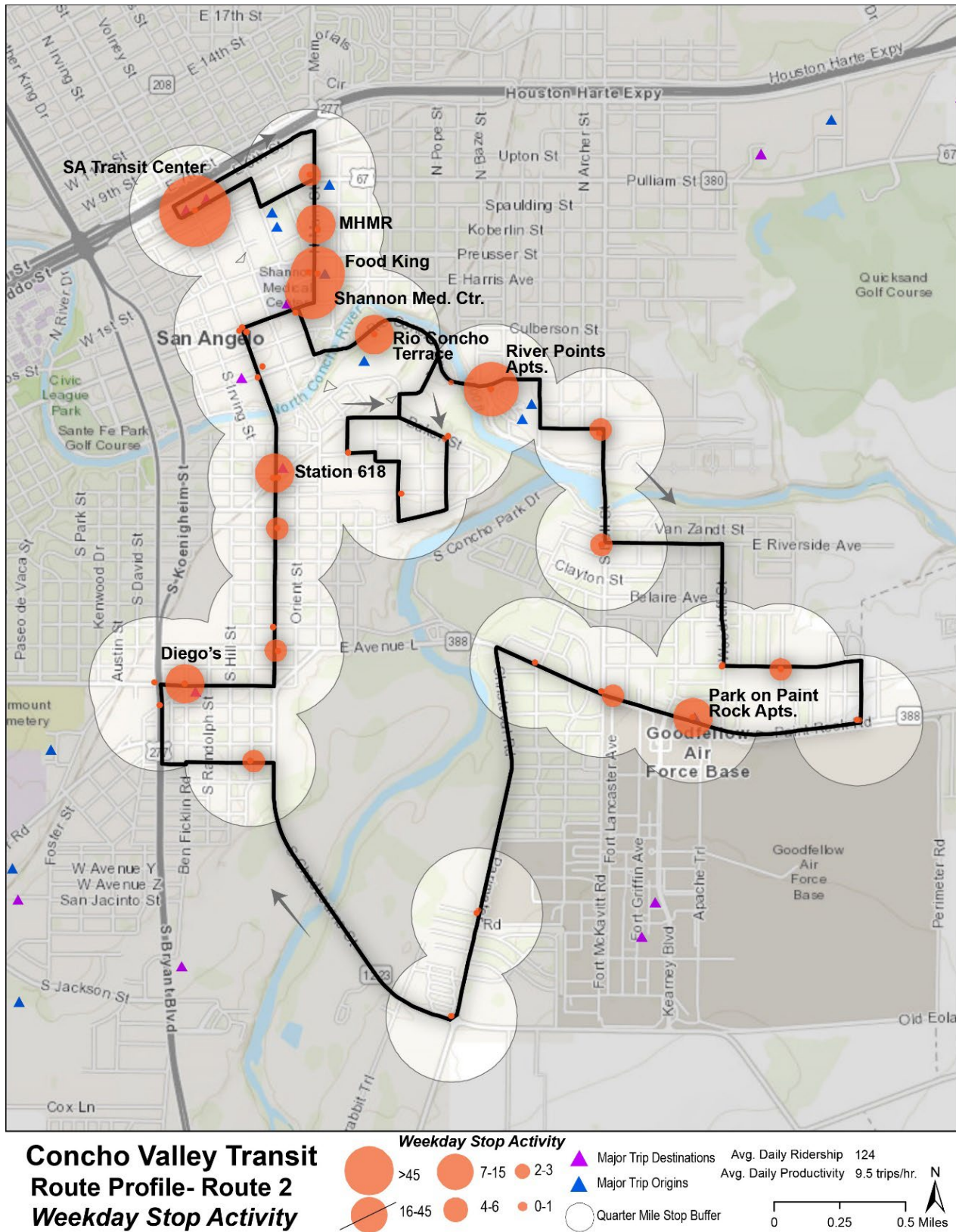
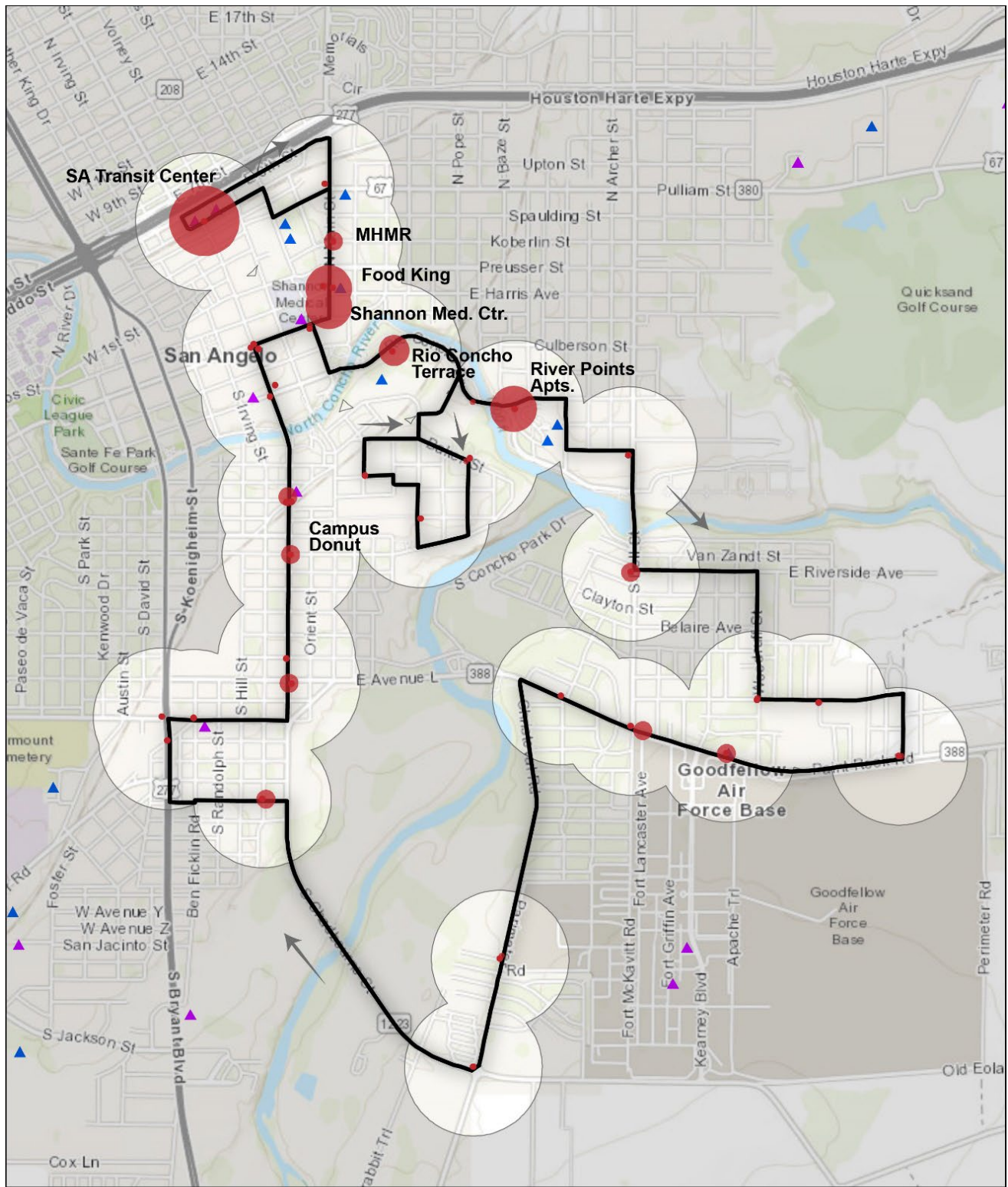
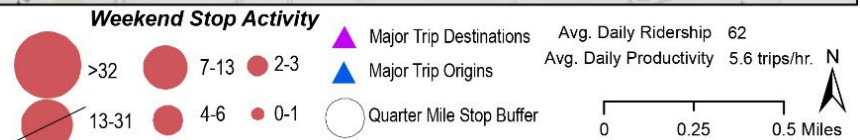


Figure 3-35: Route 2 Weekend Stop Activity



**Concho Valley Transit
Route Profile- Route 2
Weekend Stop Activity**



Route 3

Route 3 connects Howard College, the Transit Center and the Library North Branch along streets including Pulliam Way and N. Chadbourne Street. As displayed in Table 3-17, Route 3 had about 306 revenue hours in a month, but also had below-average productivity compared to other routes (Table 3-17) with about 9.7 riders/hour, similar to Route 2.

Figure 3-36 and 3-37 displays the stop activity of major trip destinations along Route 3, which displays the highest activity near San Angelo Transit Center, Howard College and the North Branch Library. On the weekends, stop activity among the library and Transit Center is similar, but there is little to no activity at bus stops serving educational facilities such as Howard College, St. John's Campus and Lakeview High School. Areas which have very little to no activity have even less on the weekend and includes a stretch between the North Branch Library and Lakeview High School along Chadbourne St., as well as Howard College and Stripes along the Houston Harte Expressway.

Table 3-17: Route 3 Ridership and Productivity

Ridership	2,958	Avg. Daily Weekday Ridership	123
Route Length (Miles)	17.3	Avg. Sat. Ridership	63
Revenue Hrs.	305.85	Total Weekday Ridership	2,708
Revenue Miles	5519	Total Saturday Ridership	250
Sample Month	Apr. 2019	Avg. Productivity	9.67

Route 4

Route 4 Martin Luther King connects the Transit Center with Walmart North, multifamily apartments and HEB South along W Houston Harte Expressway. As displayed in Table 3-18, Route 4 had about 318 revenue hours in a month, and had a similar average productivity to Route 1 (Table 3-15) at about 10.9 riders/hour

Figures 3-38 and 3-39 display the stop activity of major trip destinations along Route 4, which displays the highest activity near San Angelo Transit Center, Walmart (North), Food King and apartments along N Howard St. On the weekends, average activity among these stops is about the same or slightly higher, particularly at the Walmart and Transit Center. Areas which have the least activity includes the stops along the return trip to the Transit Center from Stripes on Houston Harte Expressway / State Highway 67.

Table 3-18: Route 4 Ridership and Productivity

Ridership	3,456	Avg. Daily Weekday Ridership	138
Route Length (Miles)	18	Avg. Sat. Ridership	70
Revenue Hrs.	318.4	Total Weekday Ridership	3,174
Revenue Miles	5623	Total Saturday Ridership	282
Sample Month	Oct. 2018	Avg. Productivity	10.85

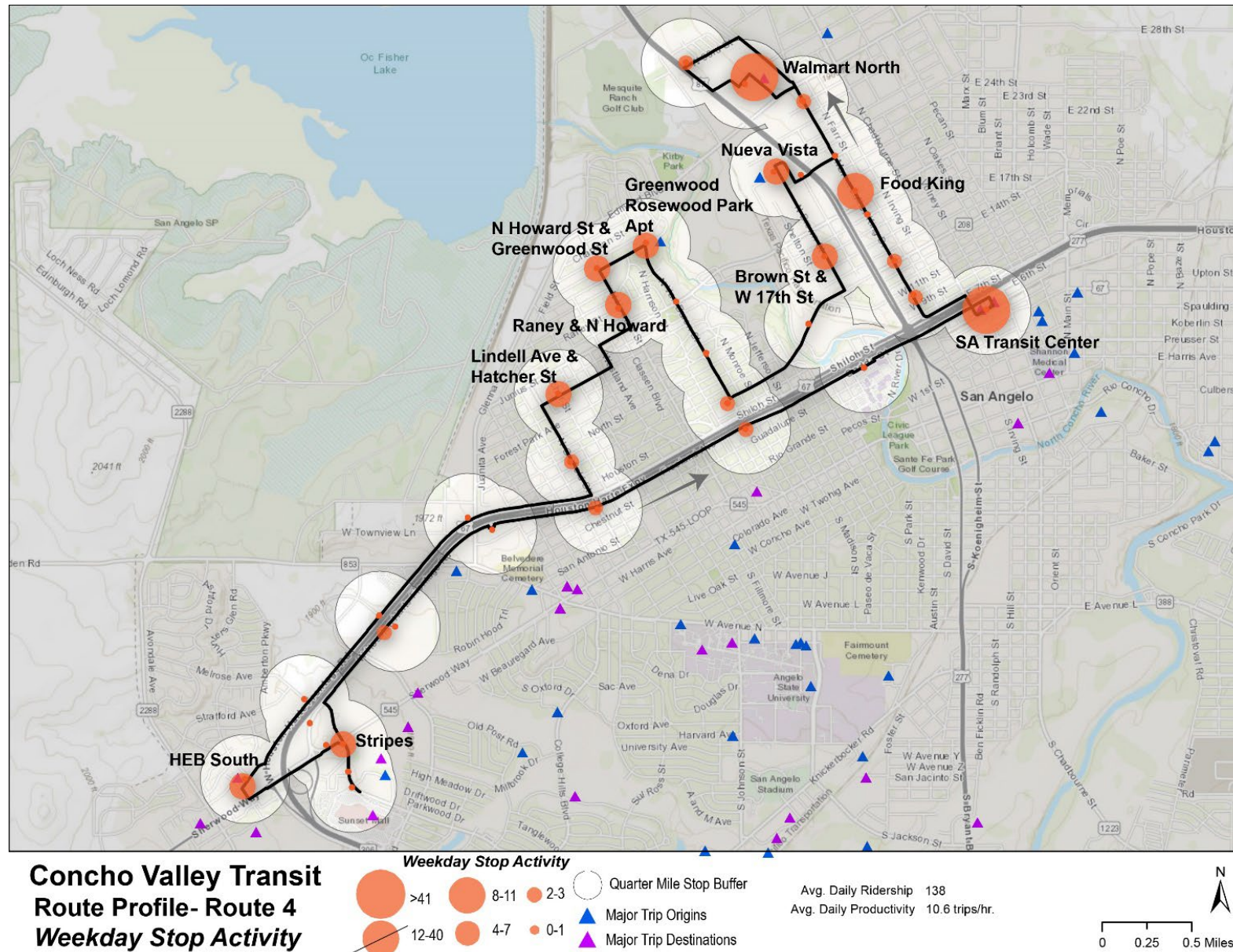
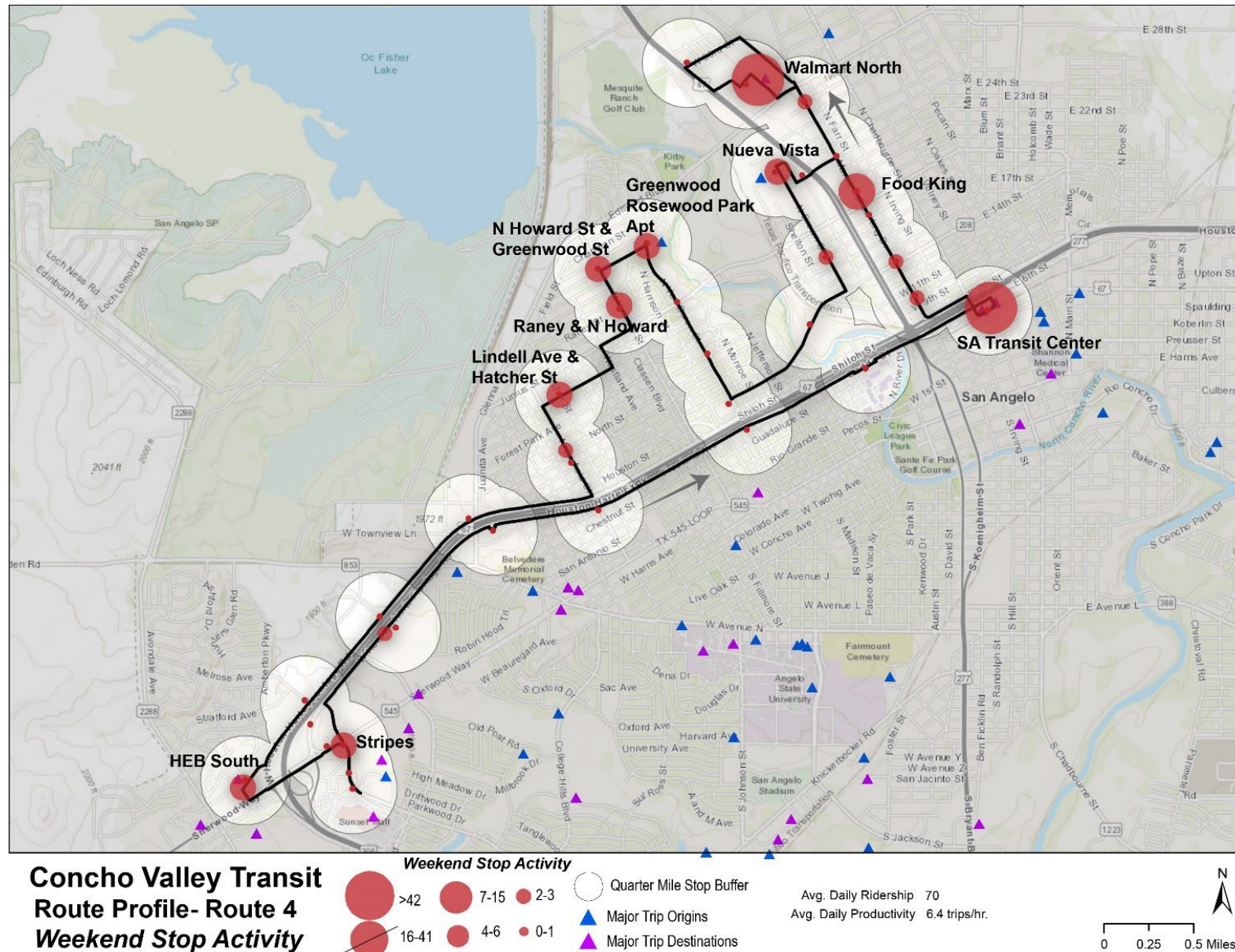
Figure 3-38: Route 4 Weekday Stop Activity

Figure 3-39: Route 4 Weekend Stop Activity

Route 5

Route 5 Sherwood Way connects the Transit Center with the Sunset Mall primarily along Sherwood Way and West Beauregard Ave. Route 5 had about 296 revenue hours in a month, and 203 average daily riders (as displayed in Table 3-19), which is the highest of all full-time routes (Table 3-19) and about sixty riders more than Route 1's average of 142 daily weekday riders. Average productivity is about 15.8 riders/hour which is the highest overall productivity among all routes.

Figures 3-40 and 3-41 display the stop activity of major trip destinations along Route 5, which displays the highest activity near San Angelo Transit Center and the Sunset Mall South Entrance. On the weekends, activity among these stops is comparable to the weekdays, even at multiple stops along the West Houston Harte Expressway such as the Village Shopping Center and MHMR Concho Valley (mental health services). However, there is little to no activity on the weekends at Angelo State University. Two route segments that have a lower activity relative to the rest of Route 5 are between Cedar Crest Apartments and the Sunset Mall along Sherwood Way / Southwest Blvd (there's a stop at the Social Security Administration building) as well as between the HEB/Walgreens and Village Shopping Center along West Avenue North and South Campus Blvd which has a stop at Angelo State University.

Table 3-19: Route 5 Ridership and Productivity

Ridership	4,683	Avg. Daily Weekday Ridership	203
Route Length (Miles)	13.5	Avg. Sat. Ridership	103
Revenue Hrs.	296.01	Total Weekday Ridership	4,271
Revenue Miles	4588	Total Saturday Ridership	412
Sample Month	Nov. 2018	Avg. Productivity	15.82

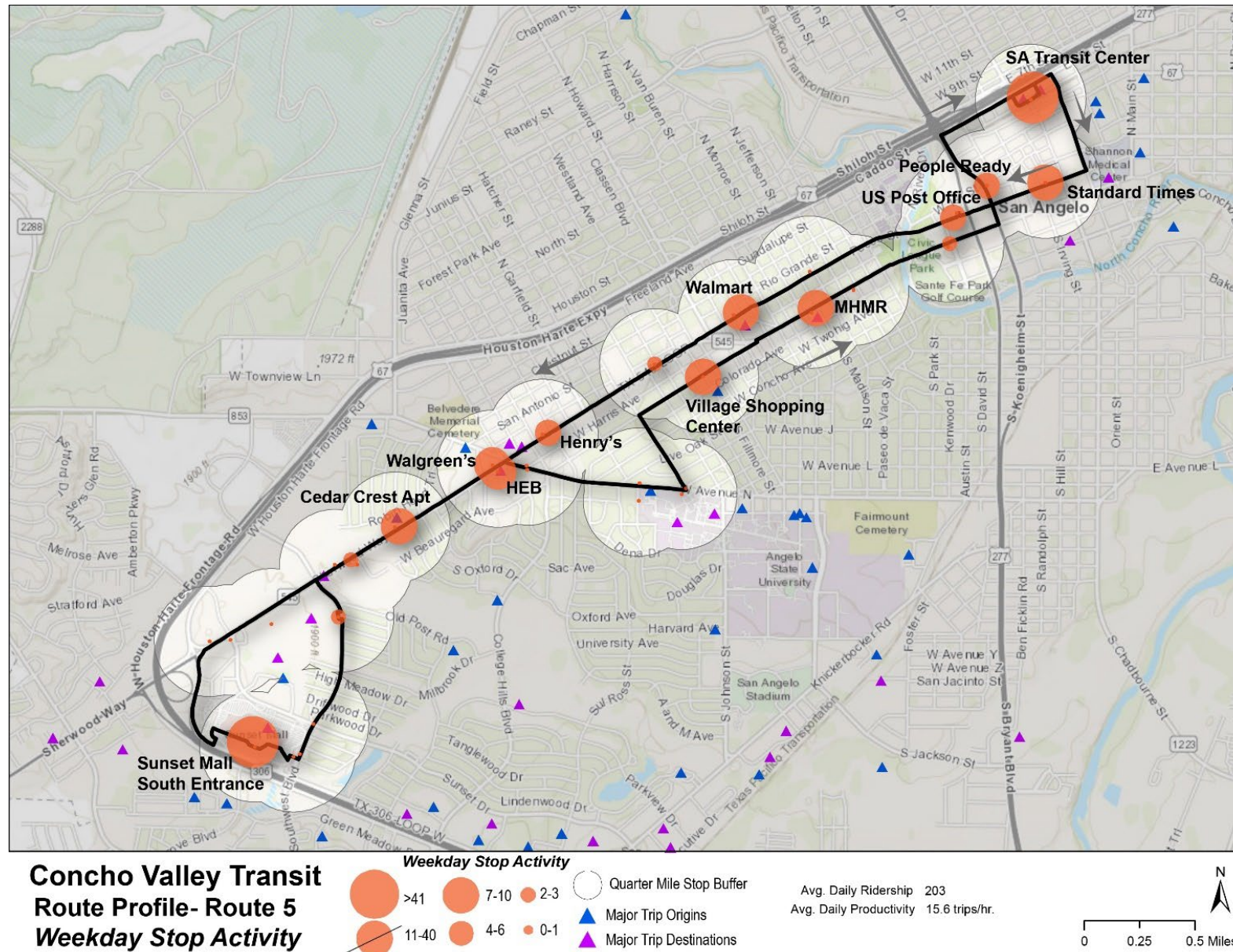
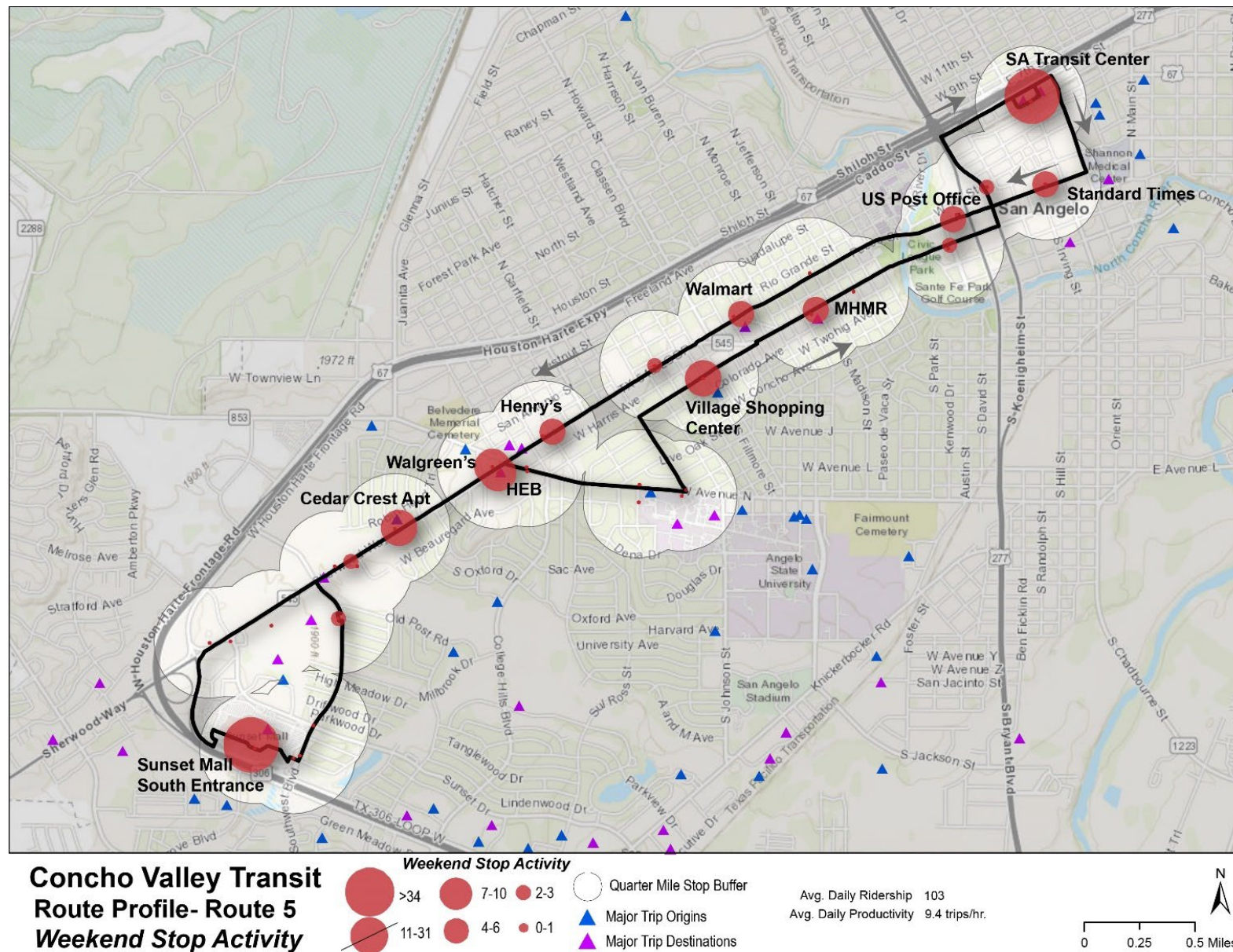
Figure 3-40: Route 5 Weekday Stop Activity

Figure 3-41: Route 5 Weekend Stop Activity

Route 6

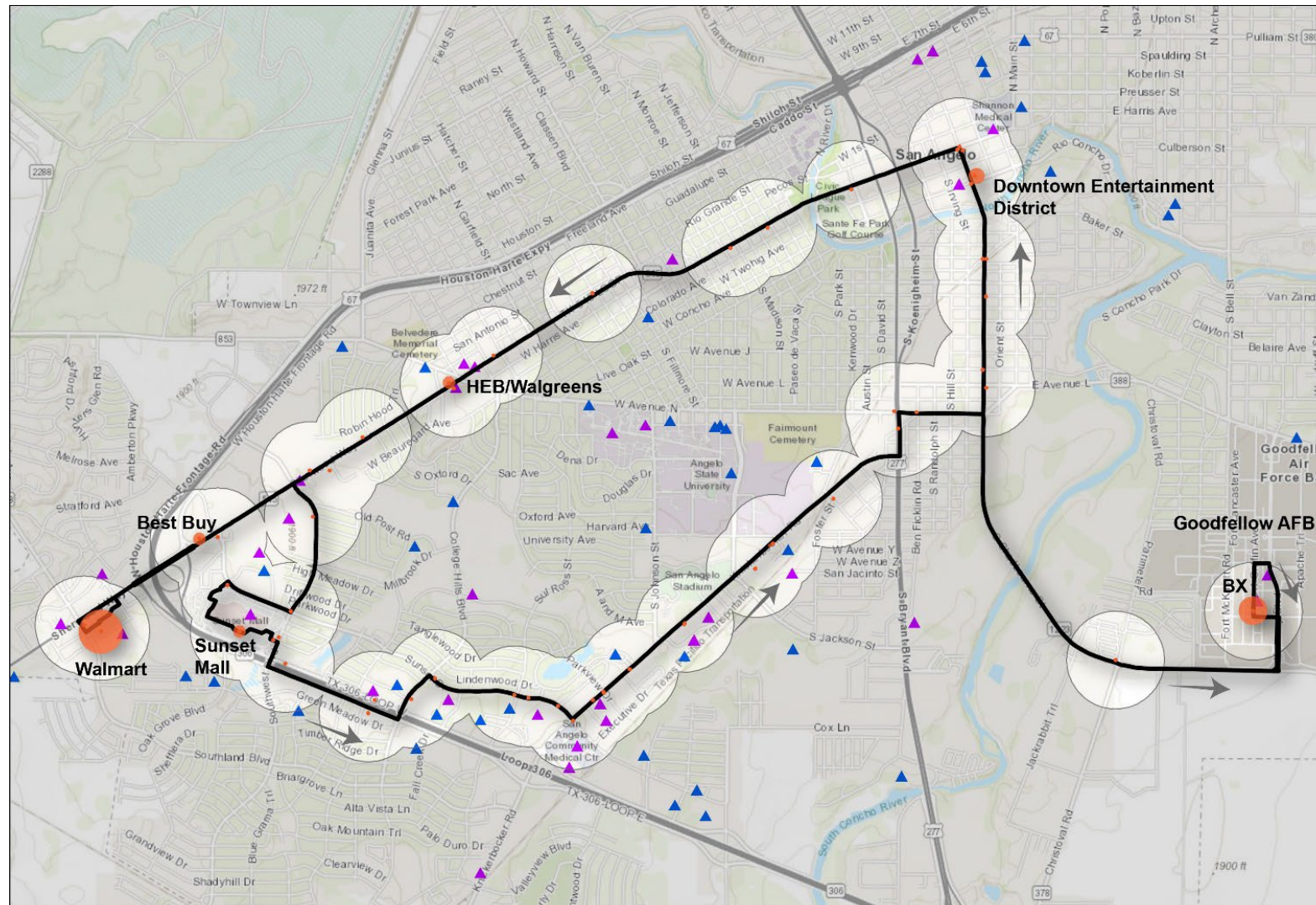
The Route 6 Goodfellow Express is a part-time route connecting the Downtown Entertainment District, Sunset Mall & Knickerbocker Square with fare-free and limited service on Fridays and Saturdays. As displayed in Table 3-20, Route 6 had about 202 revenue hours in a month, and 85 average daily weekday riders. Unlike the full-time routes, Route 6 provides just 8 weekday service hours and 14 weekend service hours per week.

This is a looper route, where every round trip requires one hour even if the destination is 10 minutes away. For example, if one wanted to go out for dinner, it is about a 15 minute ride to the downtown entertainment district. After dinner, the ride back to the base is 45 minutes. Not something that most people would want to do after a nice dinner out. A round trip to the Walmart or HEB requires one hour. As a result, the average weekday productivity is a very low 2.9 riders/hour.

Figures 3-42 and 3-43 display the stop activity of major trip destinations along Route 6, which displays the highest activity near Walmart and the Goodfellow Air Force Base. On the weekends, activity among major stops is higher than on weekdays, especially at the Goodfellow Air Force Base, Downtown Entertainment District and the Sunset Mall. There are some route segments which have very low activity including between the Downtown Entertainment District and Walmart along W Beauregard Ave and Sherwood Way, in addition to between the Sunset Mall and the Air Force Base along the West 306 Loop and Knickerbocker Road.

Table 3-20: Route 6 Ridership and Productivity

Ridership	586	Avg. Daily Weekday Ridership	85
Route Length (Miles)	19.7	Avg. Sat. Ridership	32
Revenue Hrs.	202	Total Weekday Ridership	425
Revenue Miles	2293	Total Saturday Ridership	161
Sample Month	Aug. 2019	Avg. Productivity	2.9

Figure 3-42: Route 6 Weekday Stop Activity

**Concho Valley Transit
Route Profile- Route 6
Weekday Stop Activity**

Weekday Stop Activity- Friday service 5:30 pm- 1:30 am

- >8
- 4-6
- 2-3
- 1
- Quarter Mile Stop Buffer
- ▲ Major Trip Origins
- ▲ Major Trip Destinations

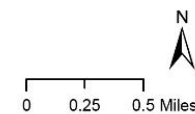
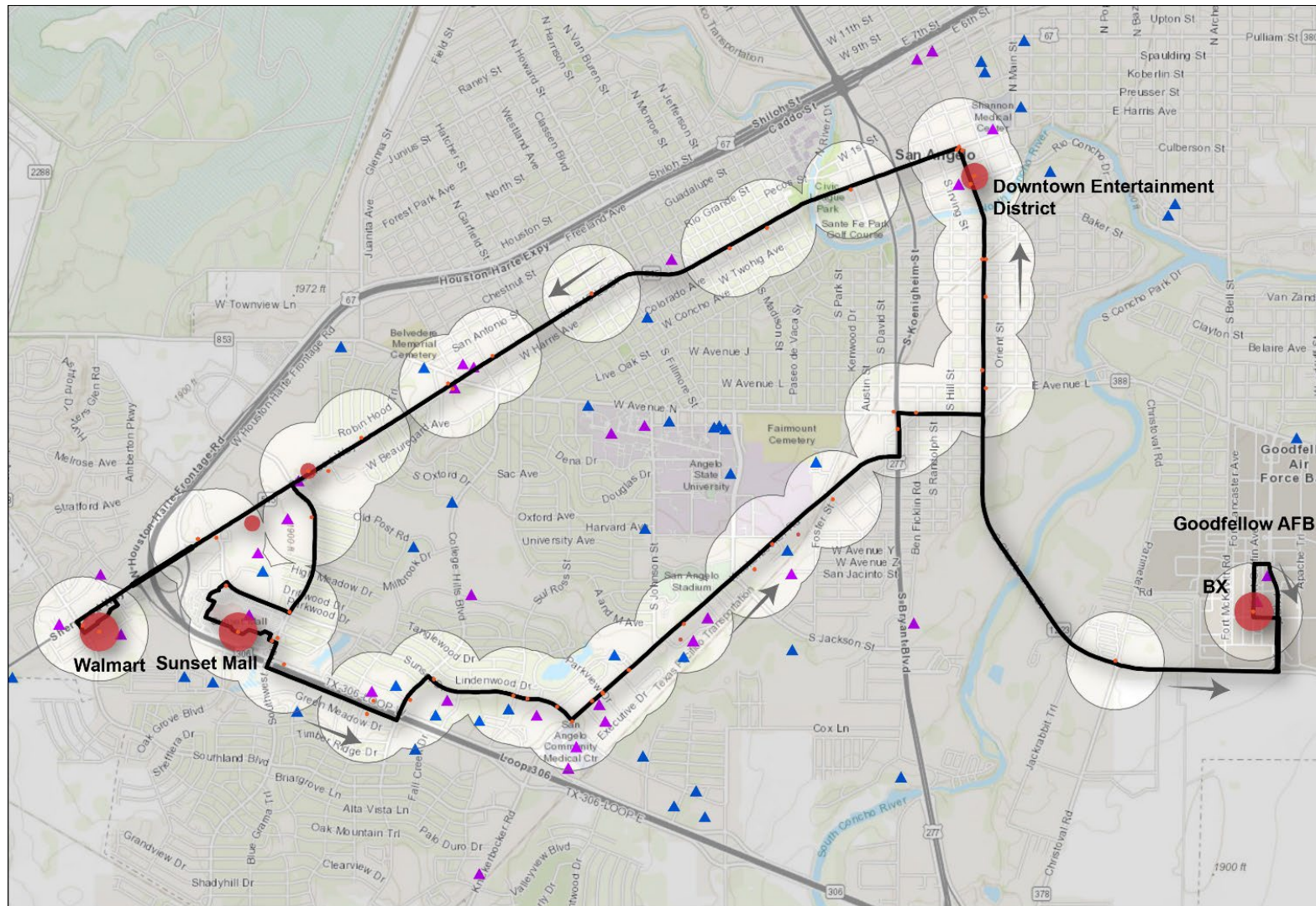
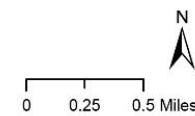


Figure 3-43: Route 6 Weekend Stop Activity

**Concho Valley Transit
Route Profile- Route 6
Weekend Stop Activity**

Weekend Stop Activity-Service on Saturdays 11:30 am-1:30 am



Route 7

The Route 7 Sunset is a full-time route connecting the Council of Government, Walmart, Sunset Mall and Community Hospital along Sunset Dr and the West Loop 306. As displayed in Table 3-21, Route 7 had about 309 revenue hours in a month, and 63 average daily weekday riders. Route 7 has the lowest productivity of full-time routes (Table 3-21) at 4.5 riders/hour.

Figures 3-44 and 3-45 display the stop activity of major trip destinations along Route 7, which displays the highest activity near the Sunset Mall and Community Hospital. On the weekends, activity is higher at Walmart and lower at Community Hospital. There are some route segments which have very low activity including the segment after Walmart along Sherwood Way towards Community Hospital.

Table 3-21: Route 7 Ridership and Productivity

Ridership	1,405	Avg. Daily Weekday Ridership	63
Route Length (Miles)	13.9	Avg. Sat. Ridership	31
Revenue Hrs.	309.7	Total Weekday Ridership	1,250
Revenue Miles	4884	Total Saturday Ridership	155
Sample Month	Feb. 2020	Avg. Productivity	4.5

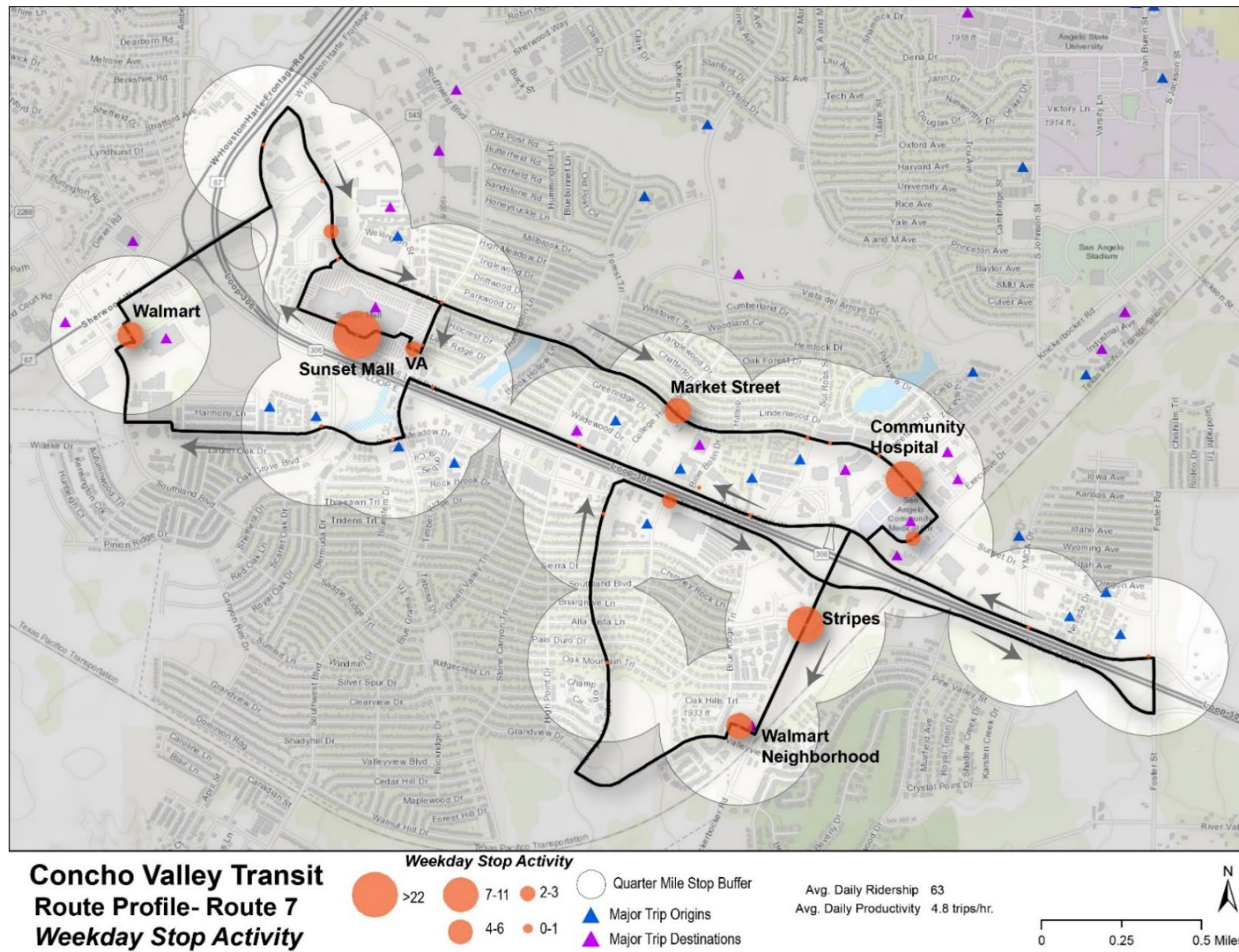
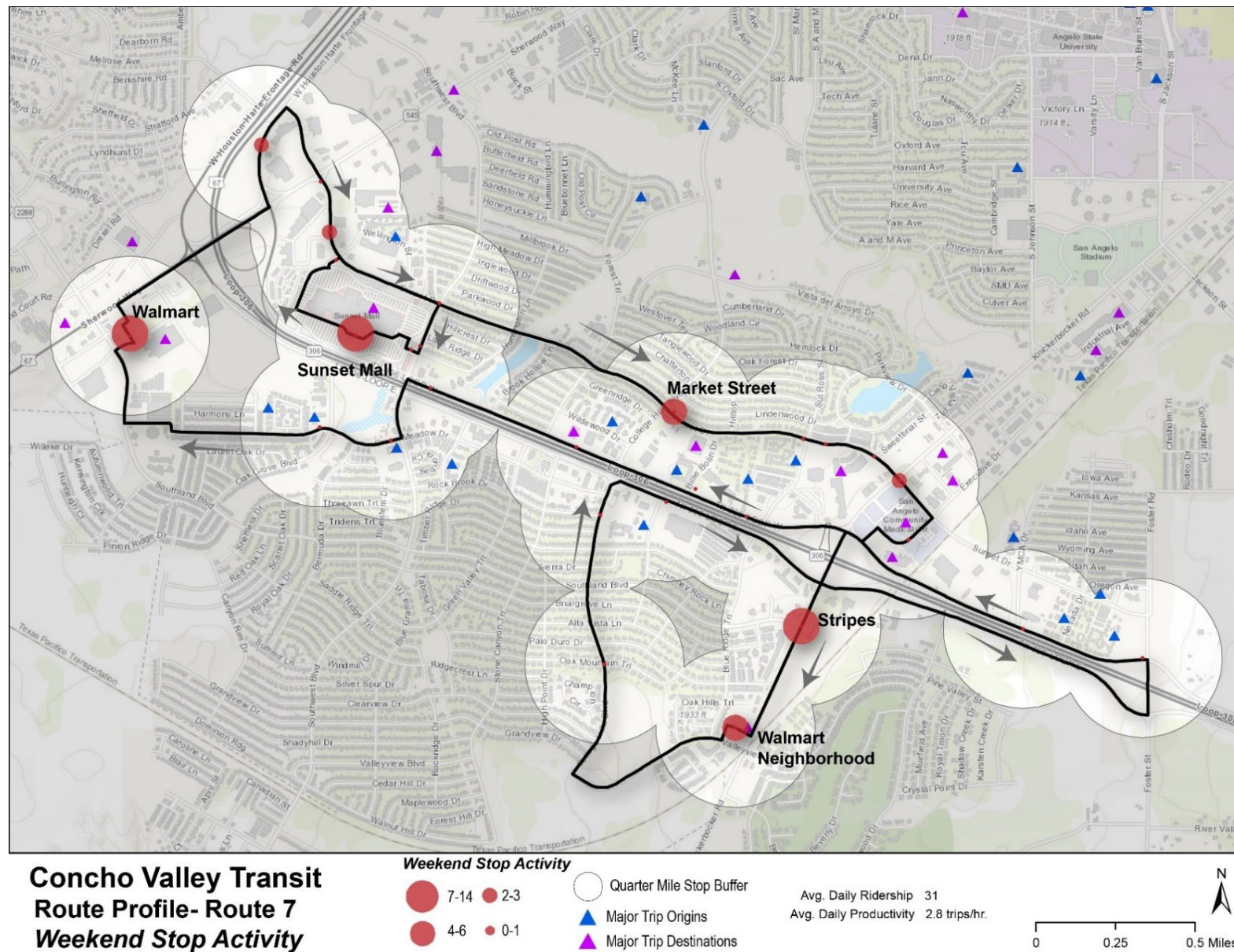
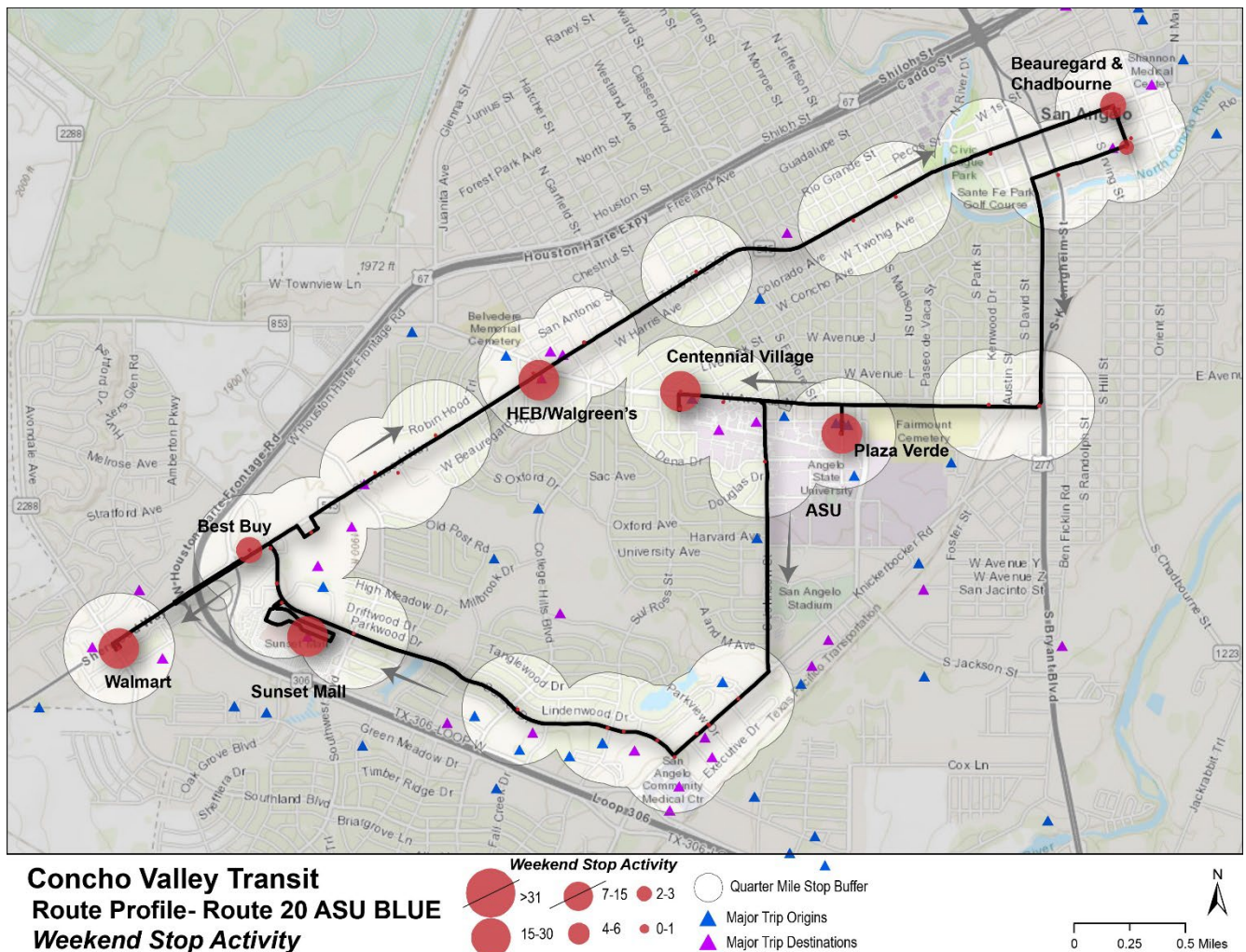
Figure 3-44: Route 7 Weekday Stop Activity

Figure 3-45: Route 7 Weekend Stop Activity

Route 20

The Route 20 Ram Tram Blue is a fare-free route (along with Routes 6 and 21) which connects Angelo State University (ASU), Sunset Mall, Walmart and the Downtown Entertainment District. Route 20 ridership data was not displayed because ridership and service hours have varied widely from month to month. Figure 3-46 displays a sample of weekend stop activity of major trip destinations along Route 20, which displays the highest activity near the Walmart and spread about evenly between Sunset Mall, HEB/Walgreens, Centennial Village and Plaza Verde (ASU). Note the significant distances with no usage. Based on the ridership patterns this route could be deleted and be replaced by an expanded Route 5, which this route duplicates.

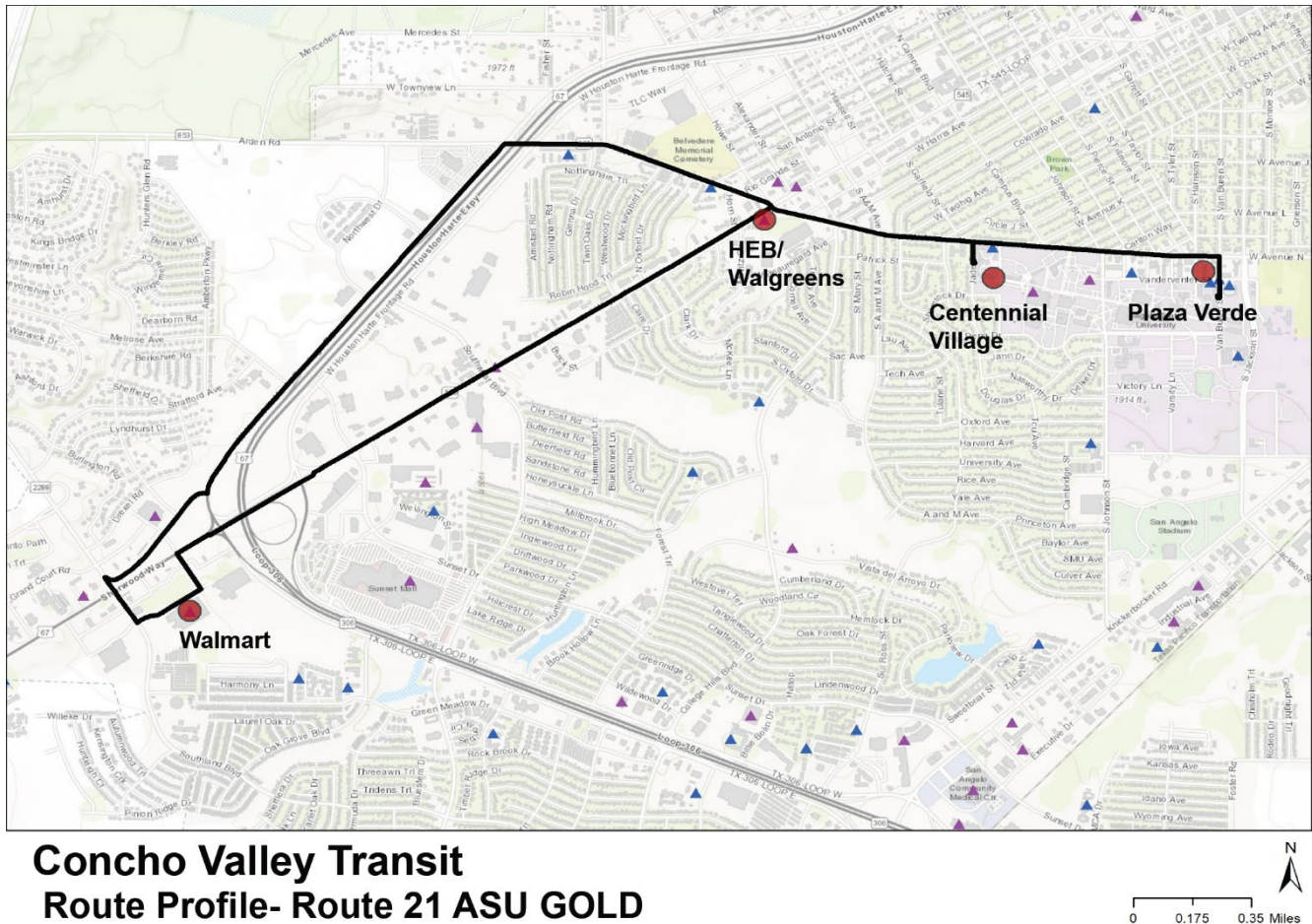
Figure 3-46: Route 20 Weekend Stop Activity



Route 21

The Route 21 Ram Tram Gold is a fare-free route (along with Routes 6 and 20) running primarily on West Houston Harte Expressway and Sherwood Way, connecting Angelo State University (ASU) and the Shopping District including Walmart and Centennial Village. Route 21 ridership data was not available. Figure 3-47 displays Route 21 and its stops. This route duplicates Route 21 in terms of ridership.

Figure 3-47: Route 21



Chapter No. 4:

Review of Demographics, Land Uses, and Travel Patterns

Introduction

This chapter analyzes demographic and land use data to assess the need for transit in the Concho Valley Transit District (CVT) service area. It is the second step in the three-part process of determining needs and most important, unmet needs. The transit needs assessment will include:

- **Review of Existing Service** – it documents the current level of service and where it operates (Chapter No. 3).
- **A Review of Demographics, Land Uses, and Travel Patterns** – it identifies where potential transit users live and where people are going (Chapter No 4).
- **Identification of Unmet Needs (Gap Analysis)** – it compares the areas of need to the level of service provided, to assess how the needs are met and where unmet needs may exist (Chapter No. 5).

In this chapter, historical, current and projected population trends are captured in the following sections along with a description of transit-dependent populations. These are socio-economic demographic groups that typically show a propensity to use transit services. This memo provides a Title VI demographic analysis that examines low-income, minority, and limited English proficiency populations. Major trip generators in the area are also reviewed. Community and regional travel patterns are examined in this chapter. Data sources include the 2010 and 2020 Census and the American Community Survey (ACS) 2015-2019 5-year estimates.

Population Profile

The following section provides a general population profile for the Concho Valley Transit District region, identifies and evaluates underserved population subgroups, and reviews the demographic characteristics pertinent to a Title VI analysis.

Population Trends

As of the 2020 Decennial Census, the total population in the Concho Valley Region was 155,660. This represents about a 3.6 percent increase in population from 2010 and overall growth of about 8 percent in the last two decades. Tom Green County is an urban area with the largest population in the region, by far. Its largest city, San Angelo has a population of 99,893, which alone composes of 64 percent of the entire population of the CVT region and makes up most of the region's population growth. McCulloch County has the second highest population of 7,630 in 2020 while Sterling County has the lowest (1,372).

The historical and current population trends are depicted in Table 4-1. Population growth in the last twenty years among the counties in the region is concentrated between a few counties: Tom Green, Sterling and to an extent Reagan. All other counties in the region have seen steady population decreases of between 2 and 25 percent in 20 years. The counties with the largest population decreases by percentage are Crockett (24 percent), Sutton (17 percent) and Menard (17 percent).

Table 4-1: Population Trends in the CVT Region

County	2000	2010	2020	Percent Change 2000-2010	Percent Change 2010-2020	Percent Change 2000-2020
Coke	3,864	3,320	3,285	-14.1%	-1.1%	-15.0%
Concho	3,966	4,087	3,303	3.1%	-19.2%	-16.7%
Crockett	4,099	3,719	3,098	-9.3%	-16.7%	-24.4%
Irion	1,771	1,599	1,513	-9.7%	-5.4%	-14.6%
Kimble	4,468	4,607	4,286	3.1%	-7.0%	-4.1%
McCulloch	8,205	8,283	7,630	1.0%	-7.9%	-7.0%
Menard	2,360	2,242	1,962	-5.0%	-12.5%	-16.9%
Reagan	3,326	3,367	3,385	1.2%	0.5%	1.8%
Schleicher	2,935	3,461	2,451	17.9%	-29.2%	-16.5%
Sterling	1,393	1,143	1,372	-17.9%	20.0%	-1.5%
Sutton	4,077	4,128	3,372	1.3%	-18.3%	-17.3%
Tom Green	104,010	110,224	120,003	6.0%	8.9%	15.4%
Total Service Area	144,474	150,180	155,660	3.9%	3.6%	7.7%
State of Texas	20,851,820	25,145,561	29,145,505	20.59%	15.91%	39.77%

Source: Decennial Census Total Population, Years 2020 and 2010: Table P1; Year 2000: Table P001

Population centers in each county are described as follows and are illustrated in Figure 4-1:

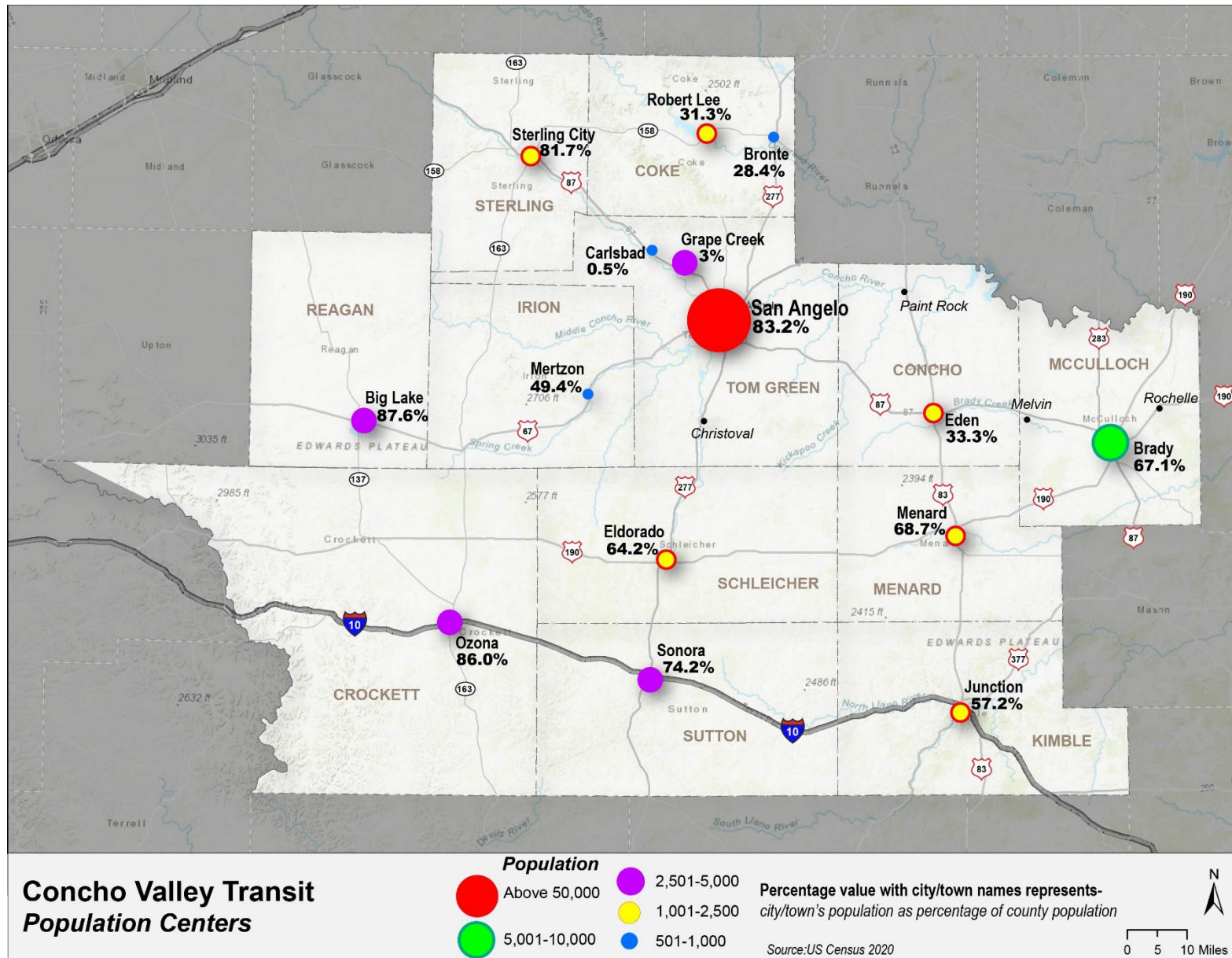
- **Coke County**, located north of San Angelo is a rural county. The county seat and largest town is Robert Lee (2020 pop. 1027).
- **Concho County** is located east of San Angelo in the Edwards Plateau. The county seat is Paint Rock (2020 pop. 237). Eden, a census-designated place, is the most populous place in the county with a 2020 population of 1100.
- **Crockett County** is located in the south-western portion of the region. The county seat and largest city is Ozona (2020 pop. 2663), which makes up 86 percent of the county's population.

- **Irion County** is located west of San Angelo, and is one of the least-populated counties in the CVT region with a 2020 population of 1513. The county seat and largest community is Mertzon (population 747). More than half of the county live in Mertzon and an even higher percentage lives within 2 – 3 miles of town.
- **Kimble County**, located in the south-eastern portion of the region and had a 2020 population of 4,286, the third-largest county in the region. The county seat and largest city in Kimble is Junction (2020 pop. of 2451) with over 50 percent of the population.
- **McCulloch County** is located east of Concho County and San Angelo, and is the second-largest county in the region. The county seat and largest city is Brady (2020 pop. 5118), the second-largest city in the region with almost 70 percent of the population.
- **Menard County** is located south of Concho County and southeast of San Angelo. The county seat and largest city is Menard (2020 pop. 1348). 70 percent of the population is in the town, while an even higher percentage are within 2 miles of town.
- **Reagan County** is located west of San Angelo. The county seat and largest city is Big Lake (2020 pop. 2965), where 90 percent of the county's population resides.
- **Schleicher County** is located south of San Angelo. The county seat and largest city is Eldorado (2020 pop. 1574), where 65 percent of the county's population resides.
- **Sterling County** is located northwest of San Angelo. The county seat and largest community is Sterling City (2020 pop. 1121), where 80 percent of the county's population resides.
- **Sutton County** is located south of San Angelo and Schleicher county. The county seat and largest city is Sonora (2020 pop. 2502), where 75 percent of the county's population resides.
- **Tom Green County** is the largest county (2020 pop. 120,003) in the CVT and is located near the center of the region. Tom Green county has 77 percent of the region's population. The largest city is San Angelo (2020 pop. 99,893), where 83 percent of the county's population resides.

Population Density

Population density is often an effective indicator of the types of public transit services that are most feasible within a service area. While exceptions always exist, an area with a density of 2,000 persons per square mile will generally be able to sustain frequent, daily fixed-route transit service. Conversely, an area with a population density below this threshold but above 1,000 persons per square mile may be better suited for flex route or on-demand services. The only city in the CVT region with a sufficient density to sustain daily fixed-route service is San Angelo. The only city with the density to sustain on-demand paratransit is Brady.

Figure 4-1: Population Centers CVT Service Area



Future Population Projections

Projections developed by the Texas Demographics Center shown in Table 4-2, estimate that the CVT Region population will steadily increase by about 9 percent over the next thirty years (to 214,207 in 2050), compared to the population growth rate of the state of 62 percent. This growth rate is a reversal of the last twenty years for some counties in the CVT region (Concho, Crockett, McCulloch, Schleicher, Sutton) which saw a general decline in population in the last twenty years and is contributed by the population growth of small urban areas and towns such as Eden, Brady, Eldorado and Sonora.

Table 4-2: Future Population Projections for CVT Service Area

County	2020*	2030	2040	2050	Change 2020- 2030	Change 2030- 2040	Change 2040- 2050	Change 2020- 2050
Coke	3,285	3,150	3,039	2,958	-4.1%	-3.5%	-2.7%	-10.0%
Concho	3,303	4,130	3,992	3,863	25.0%	-3.3%	-3.2%	17.0%
Crockett	3,098	4,212	4,209	4,224	36.0%	-0.1%	0.4%	36.3%
Irion	1,513	1,463	1,390	1,264	-3.3%	-5.0%	-9.1%	-16.5%
Kimble	4,286	4,011	3,646	3,325	-6.4%	-9.1%	-8.8%	-22.4%
McCulloch	7,630	8,921	8,751	8,531	16.9%	-1.9%	-2.5%	11.8%
Menard	1,962	2,119	1,985	1,854	8.0%	-6.3%	-6.6%	-5.5%
Reagan	3,385	5,253	6,514	8,150	55.2%	24.0%	25.1%	140.8%
Schleicher	2,451	3,479	3,702	3,858	41.9%	6.4%	4.2%	57.4%
Sterling	1,372	1,325	1,373	1,328	-3.4%	3.6%	-3.3%	-3.2%
Sutton	3,372	4,485	4,379	4,229	33.0%	-2.4%	-3.4%	25.4%
Tom Green	120,003	138,225	153,918	170,623	15.2%	11.4%	10.9%	42.2%
Service Area Total	155,660	180,773	196,898	214,207	16.1%	8.9%	8.8%	37.6%
State of Texas	29,145,505	34,894,452	40,686,496	47,342,105	19.72%	16.60%	16.36%	62.43%

Source: Texas Demographic Center Projections

*2020 Decennial Census Table P1

Transit Dependent Populations

Public transportation needs are defined in part by identifying the relative size and location of those segments within the general population that are most likely to use transit services. These transit dependent populations include individuals who may not have access to a personal vehicle or are unable to drive themselves due to age or income status. Determining the location of these populations assists in the evaluation of current transit services and the extent to which the services meet community needs.

Table 4-3: Transit Dependent Populations in CVT Service Area

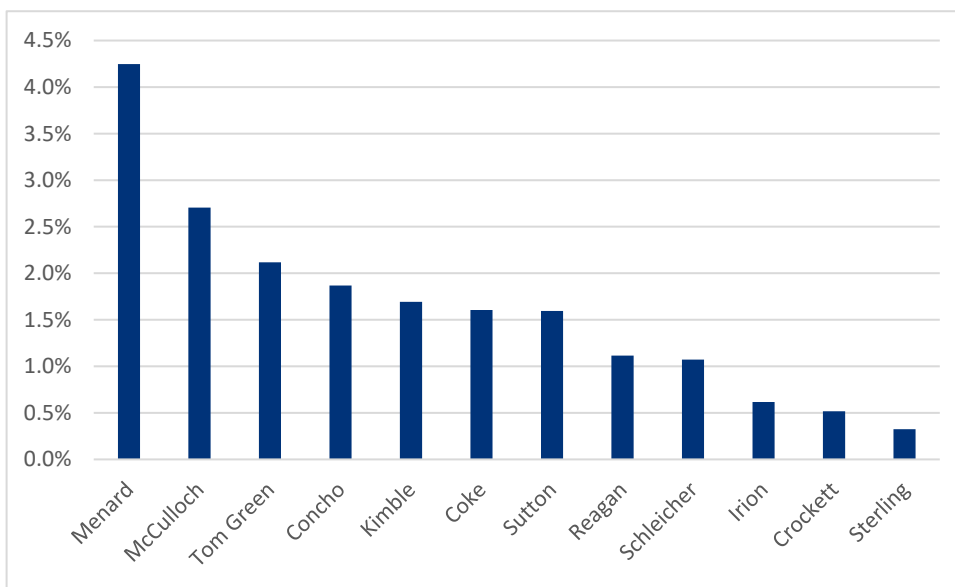
	Coke	Concho	Crockett	Irion	Kimble	McCulloch	Menard	Reagan	Schleicher	Sterling	Sutton	Tom Green	Total Service Area
Total Pop	3,303	3,266	3,484	1,620	4,373	8,057	2,119	3,766	2,983	1,231	3,824	117,986	156,012
Total Households	1,644	912	1,354	682	1,783	3,143	1,014	1,084	1,075	458	1,412	43,314	57,875
Minority Title VI	786	1,540	2,180	488	1,064	3,182	957	2,645	1,607	653	2,520	55,134	72,756
Low Income Title VI	398	268	637	241	964	1,326	276	357	467	29	531	15,164	20,658
Youth below 17	425	256	393	190	480	850	154	476	351	195	435	12,671	16,876
Elderly 65+	941	652	521	273	1,267	1,759	666	308	560	156	691	17,837	25,631
Autoless households	53	61	18	10	74	218	90	42	32	4	61	2,499	3,162
Individuals w/ Disabilities 18+	545	264	261	180	777	1,347	574	290	333	146	323	13,858	18,898
Total Transit Dependent	1,964	1,233	1,193	653	2,598	4,174	1,484	1,116	1,276	501	1,510	46,865	85,225
% Transit Dependent	59%	38%	34%	40%	59%	52%	70%	30%	43%	41%	39%	40%	55%
% Minority - Title VI	23.8%	47.2%	62.6%	30.1%	24.3%	39.5%	45.2%	70.2%	53.9%	53.0%	65.9%	46.7%	46.6%
% Low Income Title VI	12.0%	8.2%	18.3%	14.9%	22.0%	16.5%	13.0%	9.5%	15.7%	2.4%	13.9%	12.9%	13.2%
% Youth below 17	12.9%	7.8%	11.3%	11.7%	11.0%	10.5%	7.3%	12.6%	11.8%	15.8%	11.4%	10.7%	10.8%
% Elderly 65+	28.5%	20.0%	15.0%	16.9%	29.0%	21.8%	31.4%	8.2%	18.8%	12.7%	18.1%	15.1%	16.4%
% Autoless households	3.2%	6.7%	1.3%	1.5%	4.2%	6.9%	8.9%	3.9%	3.0%	0.9%	4.3%	5.8%	5.5%
% Disability	16.5%	8.1%	7.5%	11.1%	17.8%	16.7%	27.1%	7.7%	11.2%	11.9%	8.4%	11.7%	12.1%

Source: ACS 2019 5 Year Estimate

Autoless Households

Households without at least one personal vehicle are more likely to depend on the mobility offered by public transit than those households with access to a car. Displaying autoless households in the population is important since most land uses in the service area are at distances too far for non-motorized travel. Figure 4-2 displays the relative number of autoless households in the service area by county. The counties with the highest percentage of autoless households are in Menard (9%), and McCulloch (7%). Counties in the eastern portion of the region, while the lowest percentages are found in Sterling (1%) and Crockett (1%).

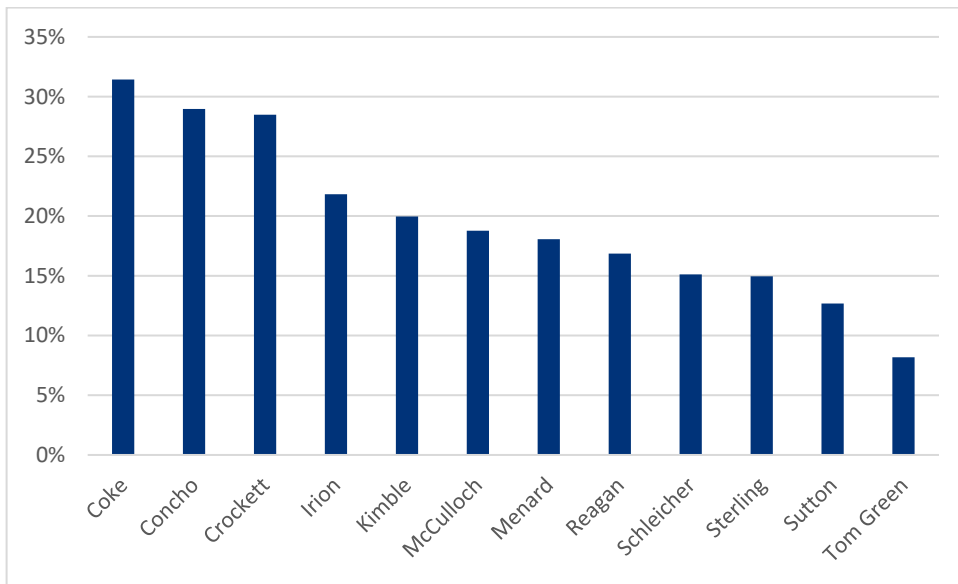
Figure 4-2: Percent of Autoless Households by County



Older Adult Population

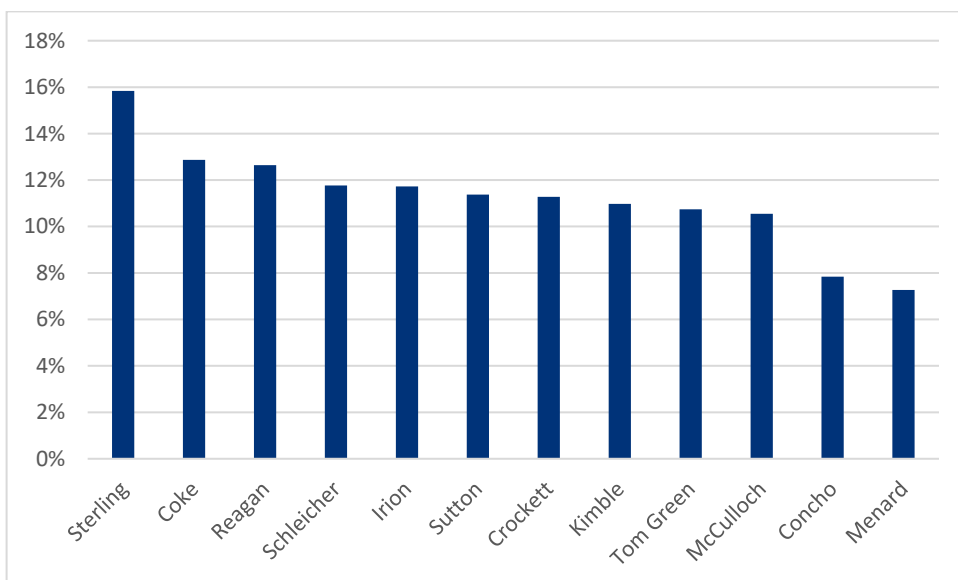
A second socioeconomic group analyzed by the TDI and TDIP indices is the older adult population. Individuals 65 years and older may scale back their use of personal vehicles as they age, leading to greater reliance on public transportation compared to those in other age brackets. Figure 4-3 displays the percentage of older adults in the service area by county.

The counties with the highest percentage of older adults are found in Menard (31%), Kimble (29%) and Coke (29%), while the lowest percentages are in Reagan (8%) and Sterling (13%).

Figure 4-3: Percent of Older Adults by County

Youth Population

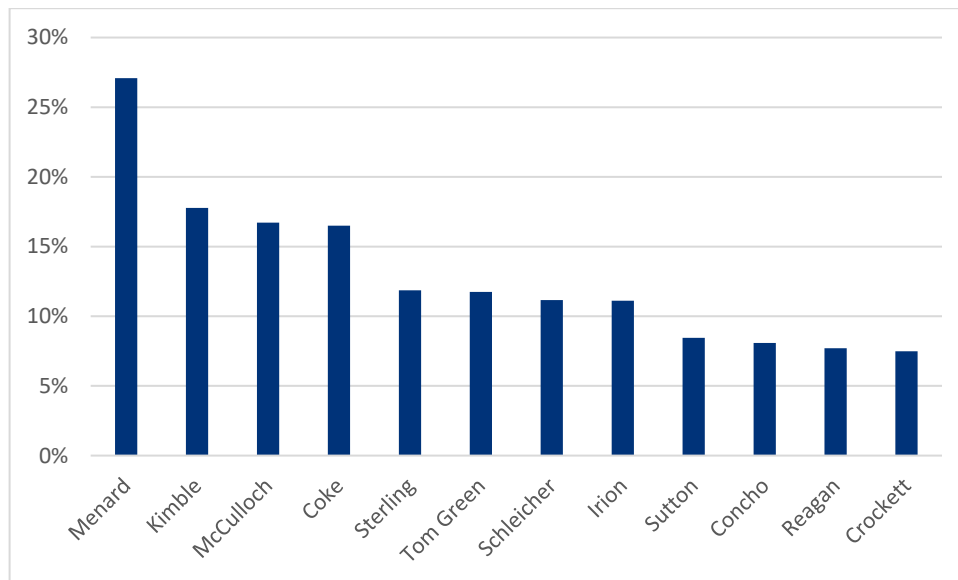
Youths and teenagers, ages 10 to 17 years, who cannot drive or are just beginning to drive but do not have an automobile available, appreciate the continued mobility from public transportation. While most counties in the service area have a youth population percentage of around 10 – 12%, the county with the highest percentage of youth by county is in Sterling (16%) while the lowest percentage is in Menard and Concho (7%), which is displayed in Figure 4-4.

Figure 4-4: Percent of Youth by County

Individuals with Disabilities

Individuals with disabilities may be unable to operate a personal vehicle and consequently more likely to rely on public transportation. The percent of individuals with disabilities was estimated using Census 2021 data which includes those individuals with disabilities between the age of 18 and 65. As displayed in Figure 4-5, the counties with the highest percentage of individuals with disabilities in their county population (between 12-14%) include Kimble, McCulloch, Menard and Concho, while the counties with the lowest percentage (between 2-4%) are Reagan, Sterling, and Sutton counties.

Figure 4-5: Percent of Individuals with Disabilities (Ages 18-65) by County



Summary of Transit Dependent Populations

In the previous section, the percentage of transit dependent populations out of the total county population was calculated. In Table 4-4, a relative rank from 1-5 (1 as highest) is displayed for the top 5 counties in each population group to identify which counties have higher percentages of transit dependent populations. Counties which have higher percentages (ranked 1-5) among at least two transit dependent populations are highlighted in bold. These counties are Coke, Concho, Irion, Kimble, Menard, Sterling and Tom Green. Among these counties, there are some counties which stand out. For example, Coke County has the highest percentage of older adults and second-highest percentage of youth. Menard County has the highest percentage of both autoless households and individuals with disabilities. Coke County has the highest percentage of older adults, the second-highest for youth, and third-highest for individuals with disabilities.

Table 4-4: Top Five Counties of Transit Dependent Populations (By Percentage)

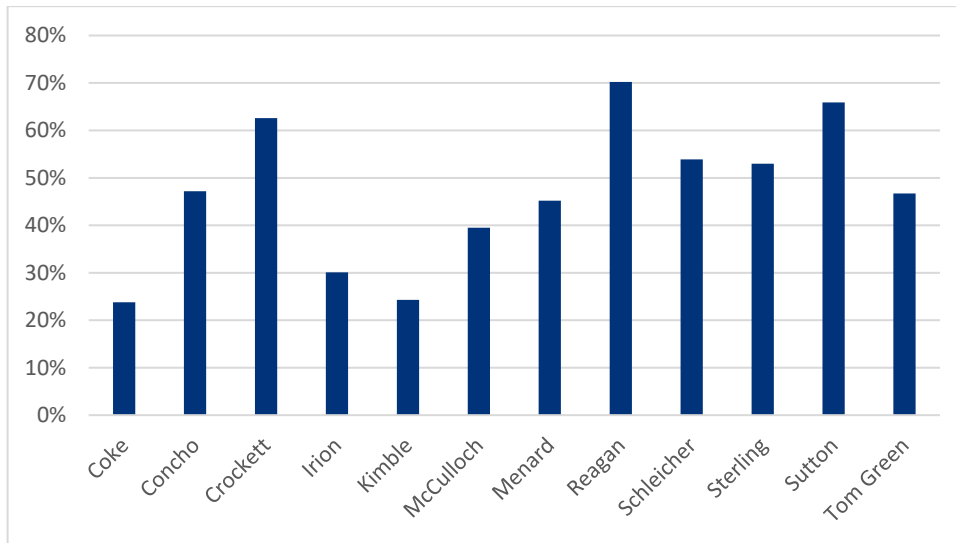
County	Autoless Households	Older Adults	Individuals w/ Disabilities	Youth
Coke		1	3	2
Concho	4	2		
Crockett		3		
Irion		4		5
Kimble	5	5	2	
McCulloch	2			
Menard	1		1	
Reagan				3
Schleicher				4
Sterling			4	1
Sutton				
Tom Green	3		5	

Title VI Demographic Analysis

As part of the Civil Rights Act of 1964, Title VI prohibits discrimination based on race, color, or national origin in programs and activities receiving federal subsidies. This includes agencies providing federally funded public transportation. The following section examines the minority and below poverty populations within the CVT Region. It then summarizes the prevalence of residents with Limited-English Proficiency (LEP).

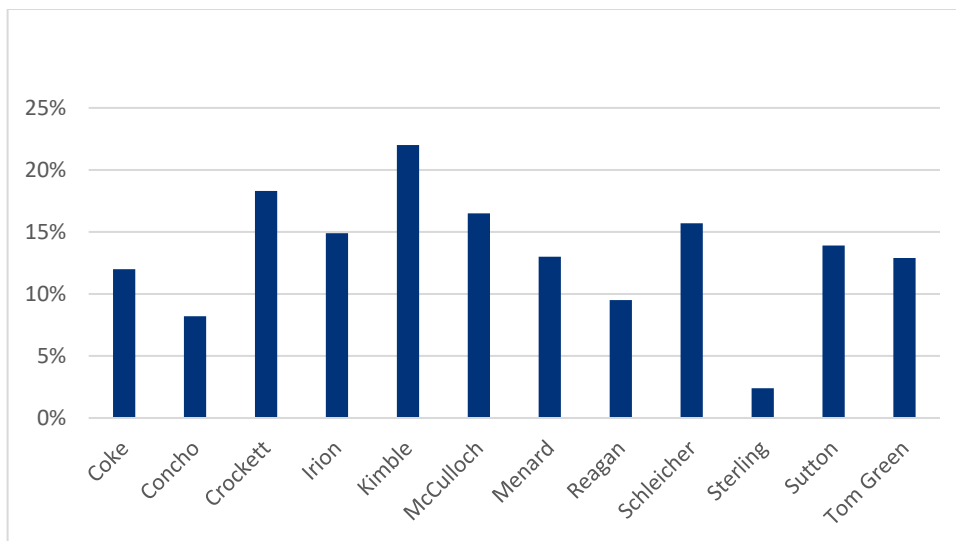
Minority Population

It is important to ensure that areas with an above average percentage of racial and/or ethnic minorities are not disproportionately impacted by any proposed alterations to existing public transportation services. As displayed in Figure 4-6, the counties with the highest percentage of minorities are in Reagan (70%), Sutton (66%) and Crockett (63%). Reagan and Sutton are in the western part of the service area. The counties with the lowest percentage are Coke (24%), Kimble (24%), and Irion (30%). Coke and Irion are adjacent to Tom Green County and San Angelo.

Figure 4-6: Percent of Minority Population by County

Low-Income Population

The second socioeconomic group included in the Title VI analysis represents those individuals who earn less than the federal poverty level. These individuals face financial hardships that may make the ownership and maintenance of a personal vehicle difficult. In such cases, they may be more likely to depend on public transportation. Low-income populations can vary widely by county in the service area. Kimble (20%) and Crockett county (18%) have the highest percentage of low-income populations, while Sterling (2%) and Concho (8%) have the lowest, as displayed in Figure 4-7.

Figure 4-7: Percent of Low-Income Population by County

Limited-English Proficiency

In addition to providing public transportation for a diversity of socioeconomic groups, it is also important to serve and disseminate information to those of different linguistic backgrounds. Limited English Proficiency (LEP) population is a count of people who do not speak English as their primary language and their ability to speak English is less than “very well.” Title VI’s Safe Harbor Provision stipulates that recipients of federal funding must provide written translations of all “vital documents” for each language group with an LEP population that makes up 5 percent or 1,000 persons (whichever is less) of the total population of the service area.

As shown in Table 4-5, the population residing inside the CVT service area predominately speaks English (72.6%). Spanish is the next most prevalent language in the entire region. The total number of Spanish speaking LEP persons (8,906) within the CVT service region meets the Safe Harbor threshold which makes it mandatory for CVT to serve the Spanish speaking LEP populace in the entire service area and additionally provide all their vital documents in the Spanish language

A majority of the Spanish speaking LEP population in the whole region resides in Concho, Reagan and Sutton counties. After Spanish, the next most prevalent language is Korean. However, the total number of Korean speaking LEP persons does not meet the Safe Harbor threshold.

Table 4-5: Limited English Proficiency for CVT Service Area

County	Total Pop. (5 yrs. and over)	Speak only English		Spanish or Spanish Creole	
				Est. LEP	% LEP
Service Area Total	145,815	105,797	72.6%	8,906	6.1%
Coke	3,210	2,862	89.2%	135	4.2%
Concho	3,172	2,052	64.7%	824	26.0%
Crockett	3,314	1,660	50.1%	147	4.4%
Irion	1,554	1,254	80.7%	-	0.0%
Kimble	4,093	3,405	83.2%	217	5.3%
McCulloch	7,545	5,926	78.5%	366	4.9%
Menard	2,110	1,466	69.5%	264	12.5%
Reagan	3,438	1,551	45.1%	536	15.6%
Schleicher	2,766	1,491	53.9%	213	7.7%
Sterling	1,154	842	73.0%	49	4.2%
Sutton	3,494	1,612	46.1%	378	10.8%
Tom Green	109,965	81,676	74.3%	5,777	5.3%

Est. LEP=Estimated LEP population

% LEP=% LEP of County Population

Source: American Community Survey, Five-Year Estimates (2019), Table C16001

Land Use Profile

This profile displays the location of major trip generators for each county in the CVT Region, which are common origins and destinations which include multi-unit housing, medical facilities or hospitals, human service organizations or agencies grocers and major employers. Trip generators were documented through a search on Google Maps or the region's economic development website's list of major employers. Usually, major trip generators were only found in one or two cities per county and generally were limited to one or two medical facilities (if any) and at least one grocer or market. Some of the larger cities included a medical clinic, and human service organizations or agencies.

Major Trip Generators - Urban

Identifying land uses and major trip generators in the CVT Region complemented the above demographic analysis by indicating where transit services may be most needed. Trip generators attract transit demand and include common origins and destinations, like multi-unit housing, major employers, medical facilities, educational facilities, non-profit and governmental agencies, and shopping centers.

San Angelo is the largest city (2020 population of 103,989), and trip destination for the CVT region. It has a concentration of a variety of trip generators including Angelo State University, human service organizations, medical centers, multi-family apartments, student housing (near Angelo State University) and employers such as Blue Cross, Sitel Corporation, Walmart Supercenter and Ethicon Inc. Another major trip generator is Goodfellow Air Force Base which has a population of about 5,500, half of whom are students.

The rural areas have few destinations that are accessed by transit. As was seen in Chapter 3, the vast majority of service requests are for service to San Angelo. Most of the rural service is directed to medical facilities in San Angelo. Brady is the one exception as it has local destinations such as Walmart and service to match its local needs.

A comprehensive list of all the major trip generators by categories within San Angelo is provided in Appendix A while a summarized version of trip generator categories by place, origin and destination are illustrated in Figures 4-8 (Origins), Figure 4-9 (Destinations) and Figure 4-10 (Origins and Destinations). Key observations derived from the land use analysis by trip generator categories are as follows:

- **Medical:** Concho Valley Regional Hospital and Shannon South Hospital, Shannon Medical Center are major hospitals in San Angelo, while the Heart of Texas Healthcare System in Brady are major trip generators as well as major employers. Dialysis centers are also located here.
- **Shopping:** The most common big box stores within the CVT Region include Walmart and H-E-B. In San Angelo, Sunset Mall and Village Shopping Center are also major trip generators.
- **Education:** Angelo State University and Howard Community College are major trip generators.

- **Human Service:** There are many human service agencies or organizations in San Angelo that include but are not limited to libraries, community centers, senior centers, food pantries, civic buildings, correction facilities, nursing and assisted living facilities, and mental health and rehabilitation centers. Some of these agencies are located in the major towns of each county.

Figure 4-8: San Angelo Major Origins

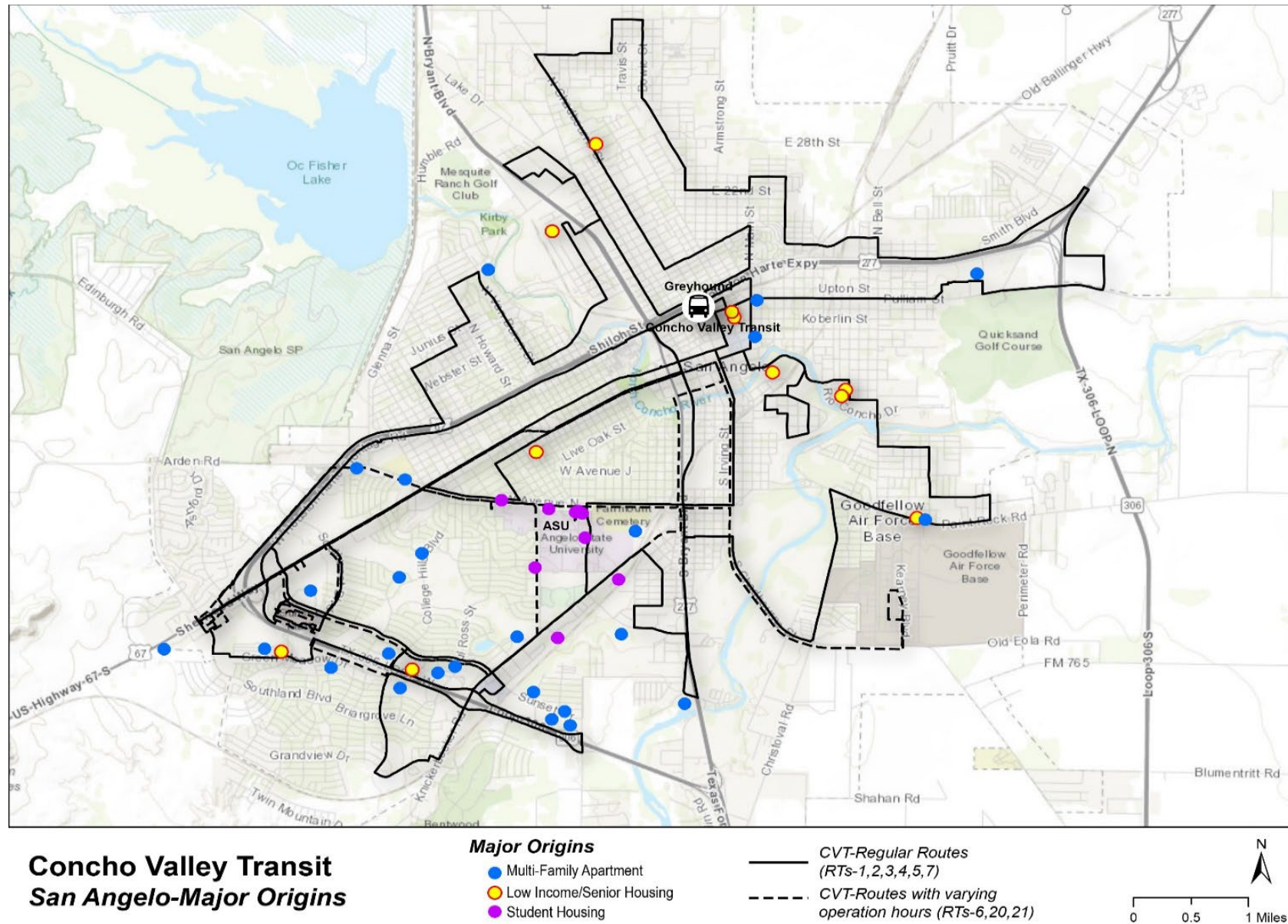
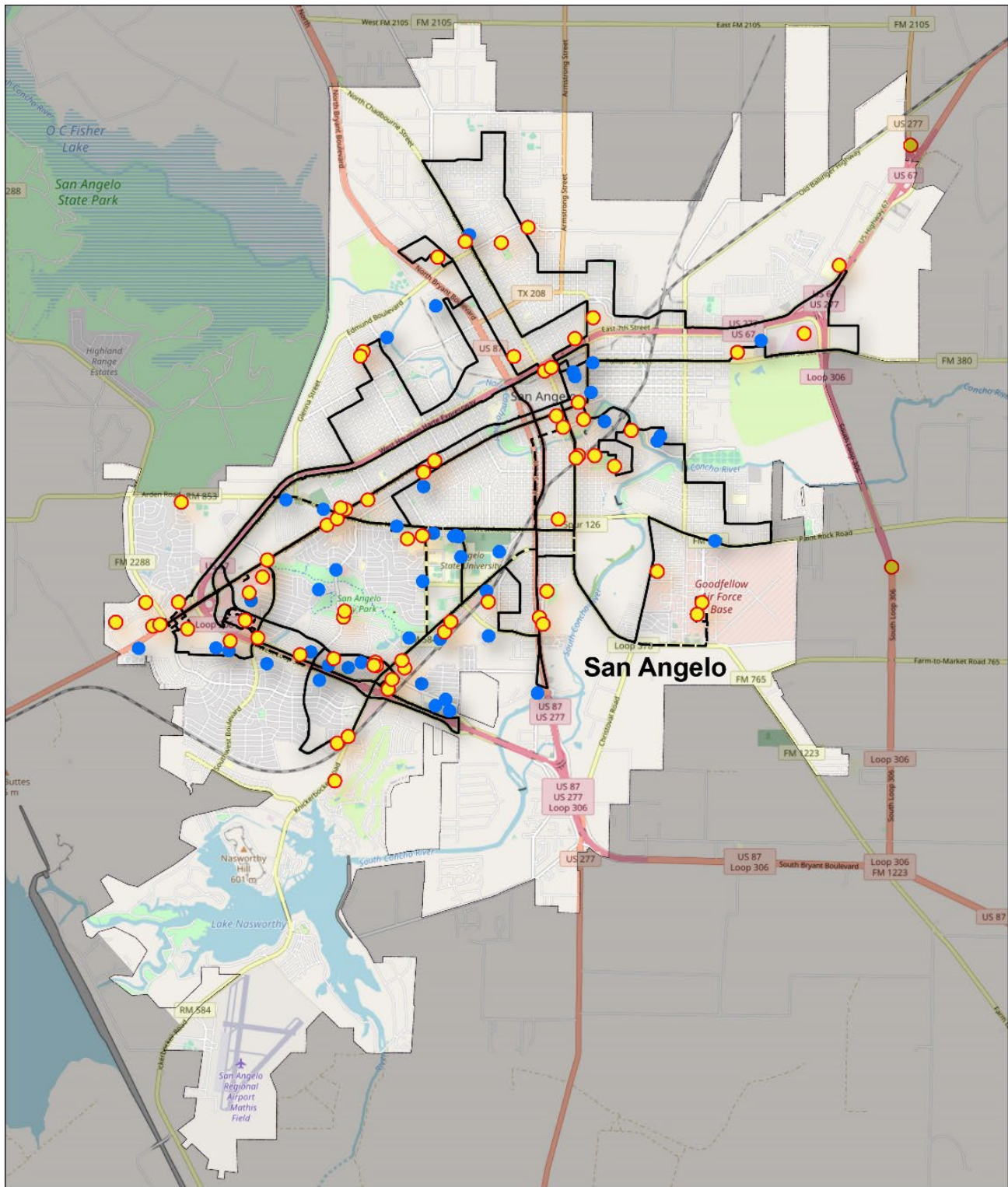


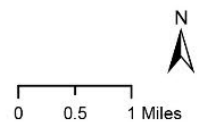
Figure 4-10: San Angelo Major Origins and Destinations



**Concho Valley Transit
San Angelo-Trip Generators**

- Major Destinations
- Major Origins

- CVT-Regular Routes (RTs-1,2,3,4,5,7)
- - - CVT-Routes with varying operation hours (RTs-6,20,21)



- **Multifamily:** San Angelo has the largest number of multi-family apartment buildings or low-income / senior housing apartments in the CVT region, most of which are located along the West 306 Loop in the southside of the city and in the vicinity of Angelo State University.
- **Major Employers:** Other than Walmart, Shannon South Hospital, and Angelo State University which are already major trip generators in other categories, major employers include but are not limited to Goodfellow Air Force Base, Blue Cross, Sitel Corporation, and Ethicon Inc.

Major Trip Generators – Rural

There are very few shopping, medical, commuter or other destinations in all of the rural counties with the exception of McCullough County. The vast majority of destinations are in San Angelo: All but the most basic grocery shopping; medical; and personal business. These are reviewed as follows:

- **Coke County** - About 31% of Coke County residents reside in Robert Lee, the county's largest city which includes at least a couple grocers, human service organizations such as a senior center and nursing home facility. Bronte, about twelve miles east of Robert Lee, and where about 28% of county residents reside. Bronte has a senior center, two grocers and the county courthouse.
- **Concho County** - Eden is the largest city in Concho county, with nearly a third of the county's population. About 13% of county residents commute to Eden, and another 13% commute to San Angelo. Eden has at least two grocers, two medical clinics, a library and a low-security detention center run by the Corrections Corporation for America which is also used by Immigration and Customs Enforcement. All of these trip generators are located along Broadway Street. The detention center employs about 200 people.
- **Crockett County** - Ozona is the largest city in Crockett County, with 86% of residents residing in Ozona. Ozona has at least a few multi-family residential apartments, one medical clinic and a senior center. Iraan is a community 50 miles west that lies just outside of Crockett County on the border of Pecos County. Iraan has at least one grocer and medical clinic.
- **Kimble County** - About 58% of Kimble County residents reside in Junction, which includes a few grocers, at least two medical clinics and the Texas Tech University Center at Junction. A major regional employer includes the Cedar Fiber Company. London is a small town located about 20 miles northeast of Junction which has a small grocer and post office.
- **Menard County** - About 24% of all Menard County residents commute to Menard, which includes at least one grocer, a county courthouse, at least one medical clinic, a community center and library. About 69% of all county residents reside in the city of Menard.
- **McCulloch County** - Brady is the second largest city (2020 population of 5118), in the CVT region and is located in McCulloch county. About 39 percent of McCulloch county commuters work in Brady. Major employers include Loadcraft Industries, Walmart and Carmeuse Industrial Sands. Other trip generators in Brady include an emergency room, the only dialysis center in the service area, a few human service organizations and the county courthouse.

- **Reagan County** - The largest community in Reagan County is Big Lake, where about 88% of the county's population resides. Big Lake has a couple of grocers and medical clinics including Reagan Hospital District.
- **Schleicher County** - Eldorado is the largest city in Schleicher County, where 27 percent of residents commute to San Angelo. The city has at least one grocer and two medical clinics. About 64% of county residents reside in Eldorado.
- **Sterling County** - About 82% of Sterling County residents reside in Sterling City, which includes at least a few grocers, one medical clinic, and a few human service organizations such as a senior center, nursing home and food pantry.
- **Sutton County** - Sonora is the largest town in Sutton County, with about 74% of county residents residing in the city. Sutton has at least two medical clinics, two grocers and a few multi-family residential apartment buildings.

Employment Travel Patterns

In addition to considering the locations of major employers, it is also important to account for the commuting patterns of residents working inside and outside of the counties in the CVT Region. According to 2019 ACS five-year estimates, over thirty percent of Coke, Concho, Irion and Schleicher counties workers work at locations outside their county of residence while in Crockett, McCulloch, Menard, and Sutton counties this number is close to ten percent. That said, the number of workers working outside their county of residence in Kimble (22.6%) is higher than the Texas State average of 22.4 percent. Also, a majority of CVT Region residents (78.5%) drive alone to work comparable to the state average of 80.5 percent. Journey to work patterns are provided in Table 4-6.

Another source of data that provides an understanding of employee travel patterns is the Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) dataset. As of 2019, the top five employment destinations for primary jobs for each county resident in the CVT Region are provided in Table 4-7. San Angelo is the topmost employment destination in addition to the major towns in the county of residence, and generally Houston is among the top five for destinations too. Coke and Irion counties adjacent to Tom Green County, have more than 20% of its commuters working in San Angelo. Concho, Crockett, Menard, Schleicher and Sutton counties have about 8% of its commuters traveling to San Angelo.

Table 4-6: Journey to Work Patterns for CVT Region

County			Location of Employment				Means of Transportation to Work					
		Total 16 years or older	Worked in state of residence	In county of residence	Outside county of residence	Worked outside state of residence	Car, truck, or van - drove alone:	Car, truck, or van - carpooled:	Public transportation (excluding taxicab):	Walked:	Taxicab, motorcycle, bicycle, or other means:	Worked from home
Coke	#	1,391	1,385	796	589	6	1,110	121	-	11	12	137
	%		99.6%	57.5%	42.5%	0.4%	79.8%	8.7%	0.0%	0.8%	0.9%	9.8%
Concho	#	1,216	1,212	806	406	4	853	229	-	82	-	52
	%		99.7%	66.5%	33.5%	0.3%	70.1%	18.8%	0.0%	6.7%	0.0%	4.3%
Crockett	#	1,752	1,752	1,557	195	-	1,460	171	-	51	37	33
	%		100.0%	88.9%	11.1%	0.0%	83.3%	9.8%	0.0%	2.9%	2.1%	1.9%
Irion	#	784	784	393	391	-	580	86	2	32	25	59
	%		100.0%	50.1%	49.9%	0.0%	74.0%	11.0%	0.3%	4.1%	3.2%	7.5%
Kimble	#	2,188	2,188	1,693	495	-	1,629	343	-	110	14	92
	%		100.0%	77.4%	22.6%	0.0%	74.5%	15.7%	0.0%	5.0%	0.6%	4.2%
McCulloch	#	3,620	3,608	3,247	361	12	2,827	498	-	121	55	119
	%		99.7%	90.0%	10.0%	0.3%	78.1%	13.8%	0.0%	3.3%	1.5%	3.3%
Menard	#	922	922	815	107	-	722	72	-	93	27	8
	%		100.0%	88.4%	11.6%	0.0%	78.3%	7.8%	0.0%	10.1%	2.9%	0.9%
Reagan	#	1,602	1,602	1,328	274	-	1,236	298	-	32	-	36
	%		100.0%	82.9%	17.1%	0.0%	77.2%	18.6%	0.0%	2.0%	0.0%	2.2%
Schleider	#	1,462	1,444	908	536	18	1,162	133	-	38	21	108
	%		98.8%	62.9%	37.1%	1.2%	79.5%	9.1%	0.0%	2.6%	1.4%	7.4%
Sterling	#	577	573	480	93	4	409	42	-	14	17	95
	%		99.3%	83.8%	16.2%	0.7%	70.9%	7.3%	0.0%	2.4%	2.9%	16.5%
Sutton	#	1,820	1,813	1,611	202	7	1,463	227	-	42	26	62
	%		99.6%	88.9%	11.1%	0.4%	80.4%	12.5%	0.0%	2.3%	1.4%	3.4%
Tom Green	#	52,513	52,299	49,848	2,451	214	41,351	5,163	182	2,966	1,020	1,831
	%		99.6%	95.3%	4.7%	0.4%	78.7%	9.8%	0.3%	5.6%	1.9%	3.5%

Source: Source: ACS, Five-Year Estimates (2015 - 2019), Table B08130

Table 4-7: Top 5 Places of Work for the Residents of Each County in CVT Region

Coke County, TX			Concho County, TX			Crockett County, TX		
Destination	County	Percent	Destination	County	Percent	Destination	County	Percent
San Angelo, TX	Tom Green	30.4%	Eden, TX	Concho	12.8%	Ozona, TX	Crockett	25.8%
Robert Lee, TX	Coke	11.8%	San Angelo, TX	Tom Green	12.8%	San Angelo, TX	Tom Green	8.7%
Bronte, TX	Coke	3.6%	Houston, TX	Harris	4.2%	Midland, TX	Midland	5.7%
Abilene, TX	Taylor	2.2%	Lubbock, TX	Lubbock	3.8%	Houston, TX	Harris	3.3%
Sterling City, TX	Sterling	2.2%	Abilene, TX	Taylor	3.4%	Lubbock, TX	Lubbock	2.7%

Irion County, TX			Kimble County, TX			McCulloch County, TX		
Destination	County	Percent	Destination	County	Percent	Destination	County	Percent
San Angelo, TX	Tom Green	21.9%	Junction, TX	Kimble	38.6%	Brady, TX	McCulloch	38.5%
Mertzon, TX	Irion	8.3%	Kerrville, TX	Kerr	4.2%	San Angelo, TX	Tom Green	4.7%
Midland, TX	Midland	6.3%	San Angelo, TX	Tom Green	4.1%	Abilene, TX	Taylor	2.9%
Houston, TX	Harris	4.1%	Houston, TX	Harris	2.5%	Houston, TX	Harris	2.1%
Odessa, TX	Ector	3.6%	Lubbock, TX	Lubbock	1.9%	Brownwood, TX	Brown	2.0%

Menard County, TX			Reagan County, TX			Schleicher County, TX		
Destination	County	Percent	Destination	County	Percent	Destination	County	Percent
Menard, TX	Menard	23.9%	Big Lake, TX	Reagan	24.6%	Eldorado, TX	Schleicher	27.0%
San Angelo, TX	Tom Green	7.7%	Midland, TX	Midland	11.0%	San Angelo, TX	Tom Green	12.7%
Houston, TX	Harris	3.6%	San Angelo, TX	Tom Green	7.0%	Midland, TX	Midland	5.2%
Eden, TX	Concho	3.3%	Odessa, TX	Ector	2.7%	Sonora, TX	Sutton	3.0%
Mason, TX	Mason	2.5%	Houston, TX	Harris	2.1%	Houston, TX	Harris	2.9%

Sterling County, TX			Sutton County, TX			Tom Green County, TX		
Destination	County	Percent	Destination	County	Percent	Destination	County	Percent
Sterling City, TX	Sterling	16.7%	Sonora, TX	Sutton	27.3%	San Angelo, TX	Tom Green	63.2%
Midland, TX	Midland	7.2%	San Angelo, TX	Tom Green	8.4%	Abilene, TX	Taylor	2.2%
San Angelo, TX	Tom Green	4.8%	Eldorado, TX	Schleicher	3.0%	Midland, TX	Midland	1.6%
Odessa, TX	Ector	4.6%	Houston, TX	Harris	2.8%	Austin, TX	Travis	1.5%
Big Spring, TX	Howard	4.2%	Ozona, TX	Crockett	2.7%	Houston, TX	Harris	1.1%

Source: Census Bureau, OnTheMap Application and LEHD Origin-Destination Employment Statistics, 2019

Summary of Demographic and Land Use Analysis

When combining the demographic, land-use, and commuter trends contained within this section, the following needs and themes emerge:

- Tom Greene County gained population, Reagan County had a slight increase, while all the other counties have lost population over the last 20 years. These trends are predicted to continue.
- The transit-dependency analysis showed that some counties have a higher percentage of one or more of the transit dependency cohorts in the CVT region. Coke, Concho, Crockett, Irion, Kimble, Menard, Sterling and Tom Green have higher concentrations of transit dependent populations relative to the CVT region. Some counties stand out more as more transit-dependent; for example, Coke County has the highest percentage of older adults and second-highest percentage of youth, while Menard County has the highest percentage of both autoless households and individuals with disabilities. Meanwhile this analysis suggests Reagan, Schleicher and Sutton have the lowest overall transit dependency in the CVT region.
- While San Angelo is the major trip destination for the CVT Region, Brady (the second largest city in the CVT region) also qualifies as an important trip origin and destination due to the concentration of a variety of trip generators such as a regional hospital, a dialysis clinic, major employers, a Walmart (the only one in the region outside of San Angelo), human service agencies, and multi-unit housing apartments.
- The journey to work data postulates that just about 9 percent of all CVT regional workers commute to neighboring counties for employment. However, there is a large variation, with 40-50 percent of workers from Coke and Irion County commuting to neighboring counties, in contrast to less than 12 percent of workers from Crockett, McCulloch, Menard, Sutton and Tom Green counties. The largest employment locations for primary jobs are San Angelo in Tom Green County. This indicates that the majority of commuters outside of Tom Green County commute to work outside their county and even outside of the CVT region in urbanized areas where more jobs are available.

Chapter No. 5

CVT Review of Needs

Introduction

CVT is a large rural and urban transit district with a wide variety of isolated rural, small city and urban service needs. These needs vary significantly from isolated counties such as Crockett County to urban San Angelo. The vast majority of the service area – 10 rural counties have similar needs, while one county with a larger population has differing needs. Urban San Angelo is completely different from the rest of the service area.

The needs were identified through the following analysis:

- Chapter No. 3 – Review of Existing Services – where each county’s service levels and ridership are identified.
- Chapter No. 4 – Demographics and Land Uses – this gives the study team information about the population makeup of each county and identifies the transit dependent population.
- Discussions with management – Management has an excellent understanding of the region’s needs.
- Observations of the consultants – the consultant has travelled through most counties and has conducted numerous observations.
- Review of 2021 Coordinated Plan for the region – This plan was developed, just as this TDP process was starting. It has provided numerous insights into unmet needs. The study team depended on the outreach conducted for that study.

Identification of Urban and Rural Public Transit Needs

The 2021 Concho Valley Regional Coordination Transportation Plan identified 13 needs statements as listed below. These needs statements were reviewed and included in the 2021 Coordination Plan’s assessment of needs. In this plan, significant outreach was conducted which this study relied on.

- **Scheduling:** More frequent and convenient stops and destinations with consistent run times. Historically, the demand-response system serving the rural Region 10 areas has had scheduling inefficiencies, and there are no regularly scheduled stops and destinations.
- **Awareness:** Increase public information and awareness of transit services.

- **Accessibility:** More accessibility for transit-dependent populations not being served.
- **Seniors:** improve awareness and access to transit services for the senior population in the region.
- **Capacity:** Increase vehicles and services in rural areas; enable more intra-county and intra-city service.
- **Appointments:** Improve appointment procedures and scheduling in demand-response services; resolve issues over scheduling Medicaid and other priority riders.
- **Low Vehicle Access:** Improve awareness and access to transit services by regional residents lacking access to vehicles.
- **Veterans:** Improve awareness and access to transit services by veterans, active-duty service personnel, and their families, especially for medical and workforce purposes.
- **Uninsured:** Improve awareness and access to transit services for medical purposes by medically uninsured residents in the region.
- **Low Income:** Improve awareness and access to transit services for low-income residents of the region.
- **Disabilities:** Improve awareness and access to transit services for the residents with disabilities in the region.
- **Worker Utilization:** Increase utilization of transit services for the trip to/from work, where feasible
- **Medicaid Service:** Improve services for Medicaid patients in rural areas.

Unmet Needs

Unmet needs vary by type of area. Isolated rural areas with low population typically have low ridership and relatively low needs.

Rural Counties

Chapter No. 3 – Review of Existing Services reveals that ridership, while low in numbers is reasonable for rural isolated areas. Most rural counties have very low population and the ridership in these counties is typical of remote rural areas. Concho, Coke, Crockett and Reagan Counties have over 1,000 annual trips, which tells us that these numbers are quite reasonable for counties that size, while Irion, Kimble, Menard, Schleicher, Sterling and Sutton Counties have much lower numbers. This is particularly true for Menard County. McCulloch County is the exception in the rural counties, with much higher population and a small city with a Walmart (always a major destination). In fact, ridership in McCulloch County is almost four times higher than any other rural county.

These ridership numbers indicate that in particular Menard County is producing very little ridership. The study team believes that these counties would benefit from scheduled service either daily or less than daily.

Urban San Angelo

The fixed route service in San Angelo has surprisingly good ridership for a community of its size. The average productivity system wide (for full time public routes) is 10 one way trips per hour. This indicates that the service is well used and meeting many needs, based on that ridership. While there are still unmet needs for a variety of reasons, as discussed below, a revision of existing routes can capture much of that need.

Specific Needs

The major unmet needs in the service area were identified in the Coordinated Plan as well as through the consultants review and observation. These needs include:

- **Scheduling of service** – Schedules should be posted and promoted in rural counties. Schedules of out of county service should be set and marketed. Due to the greatest needs (health care and particularly dialysis transportation) schedules will most likely be set to meet dialysis needs – not conducive to employment transportation. However, dialysis schedules are conducive to shopping and health care needs.
- **Fixed route bus stops and routing** – Improvements are needed to eliminate loop routes as they are very inefficient. Bus stops will be reconfigured for safety and operational reasons.
- **Branding and awareness of the service** – Service awareness and marketing in rural areas was indicated as a need based on interviews and surveys. The current vehicles are institutional white and often are not noticed. Branding with colorful buses is the best marketing tool a rural system can have.
- **Employment transportation in rural areas** – We believe that this need is low as rural areas have limited employment options and those employed typically have vehicles.

In summary, CVT the level of service in most of the counties is appropriate with the possible exception of Menard County. The needs are focused on seniors, veterans, persons with disabilities, low income residents and those with medical transportation needs.

Chapter 6

CVT – Transit Development Plan: Recommendations and Strategies for the Future

Introduction

Based on the results of the previous tasks, the study team has assessed service, identified issue areas and working with CVT management, developed a number of recommendations and strategies that will help improve the service. As needed, the latest issues with the COVID pandemic will be taken into consideration as we develop strategies that can help Concho Valley Transit (CVT) build ridership.

This memorandum will include the following:

1. **Introduction: Strategies for the Future** – The new normal and the changes in the operating environment.
2. **Strengths, Weaknesses, Opportunities and Threats** – CVT is well positioned at this time and has no critical threats.
3. **Key Transit Concepts** – This includes a discussion related productivity and performance
4. **Service Design and Provision** – Ensuring the system is operating effectively and appropriately across the region.
 - a. In the rural areas the study team will look at innovative approaches to service provision and moving away from one-on-one paratransit, where feasible.
 - b. In San Angelo, the focus will be on revising the fixed routes and paratransit.
5. **Vehicles and Facilities** – CVT has a relatively low mileage fleet, compared to peers. It also has an excellent San Angelo transfer facility and headquarters.
6. **Use of Technology** – CVT uses Ecolane technology. Ecolane supports on-demand service a key element for future service.
7. **Performance Measurement** – Ensuring that the service is moving forward. Every system should monitor these numbers.
8. **Marketing and Branding** – CVT should develop different brands for urban and rural service.

9. **Financial Alternatives and Funding Sources** – Local funding is critical to success. There are private sector options as well.

Change will be the Future – The New Normal

CVT has seen significant change in its rural service since the pandemic. Rural services have dropped from between 15 percent and 70 percent, with one very small county seeing a slight increase when comparing FY 2019 and FY 2021. Unlike most systems across the country CVT fixed route service only saw a 25 percent drop in service from FY2019 – a peak year to FY 2021. This compared to a more typical drop of over 50 percent ridership. Urban paratransit followed the national pattern more closely by experiencing about a 60 percent drop in ridership during the same period. Ridership continues to slowly climb back to 2019 levels.

The New Normal

*No one can predict the future with any degree of certainty; however, it is easy to predict that change will be the future of transit. COVID has changed everything and will have a **long-term impact on** transit well after it is gone. That impact is not necessarily due to fear of the virus but rather a reduction in the need to travel as more people go online rather than go out.*

The country has changed significantly since COVID. Travel patterns have changed perhaps most of all. For example, the new normal will include, but not be limited to the following changes in our travel patterns:

- **Tele-Medicine** – The numbers of persons using tele-medicine is on the rise. Insurance companies are encouraging this in many cases, and it will reduce health care related travel.
- **Tele-Health** – This too has seen an increase in non-medical health care such as counseling or therapy for example. Again, insurance companies are encouraging this in many cases to reduce costs.
- **Tele-Monitoring** – The monitoring of health remotely is gaining traction and will reduce the need for these types of trips.
- **Delivery services** – The delivery industry has exploded in growth. Groceries, dog food, tools, and just about anything else can be delivered to the front door, reducing shopping trips.
- **Working from home** – The pandemic has shown us that many people can and want to work from home and in some cases, businesses are encouraging this.

- **Microtransit, fixed schedule and other new modes** – New modes will change the way people travel by bus. We are already seeing this in rural and urban areas.

Strengths, Weaknesses, Opportunities and Threats

CVT's services have been shrinking in recent years, through a variety of reasons that are now in the past. The focus at this time is on making some basic changes to the service, developing a brand and introducing new, more productive and attractive service.

This section summarizes the strengths, weaknesses, opportunities and threats facing CVT at this time. There are significant challenges for CVT to move forward, but on a positive note it has the capability at this time to effect the changes needed to grow and become relevant to a wider range of residents.

Strengths

CVT has been in existence for over forty years, first as a coordinated human service transportation program and later as a human service/public transit system. Its strengths include:

- **Attached to CVCOG** – The Council of Governments provides support services and political support.
- **Professional management** – Management is knowledgeable and skilled in transportation issues. They have the ability to adapt and change.
- **Tenured, veteran vehicle operators** – Experienced vehicle operators will go a long way toward ensuring a safe, quality service.
- **Transit Center** – The transit center is well placed and has the space needed for the near term.

Weaknesses

CVT has not changed its route structure in a number of years.

- **The brand needs an upgrade** – Plain white vehicles look institutional and do not attract riders.
- **The rural service area is sparsely populated** – Large counties with very low population density makes transit very difficult.
- **Service design, urban** – The routes are in need of restructuring to move from loop routes.

Opportunities

There are a number of opportunities for CVT to initiate at low or no cost that will have significant positive impact on service.

- **Branding** – At this time, the service has minimal branding and very little recognition. Grass roots branding can make a difference.
- **Introducing new services** – Upgrade fixed routes, develop fixed schedules and on-demand service where appropriate. These are all service enhancements that do not cost more money.
- **Sponsorships** – It is possible to generate private sector funding through sponsorships.

Threats

In general, CVT is well positioned for the future.

- **Vehicle operators and vehicles** – As with most transit systems across the country, hiring and retaining operators and other key staff is a challenge and threat to the daily operations. Vehicle deliveries have also significantly slowed and new orders for vehicles should be initiated immediately, based on the age of vehicles
- **Sustainability** – The future requires sustainability with a combination of Federal, state, local and perhaps private funding sources.

Key Transit Concepts

Before the study committee and stakeholders consider the service strategies directly, the consultant team presents a variety of key transit concepts that should be understood prior to selecting strategies. We will discuss the following:

1. Understanding productivity
2. The service designs considered – strengths and weaknesses
3. Guidelines for fixed route design
4. Seek grant funding for facilities, technology, and vehicles

Understanding Productivity

To understand the rationale for a particular service design, it is important to first understand the concept of system **productivity** and how it relates to cost.

More than anything else in the transportation world, productivity drives the cost per trip. Productivity is measured as one way trips per vehicle service hour. Productivity, which must be balanced with providing a safe (social distancing is critical at the time of this report), timely and comfortable service, is critical to cost control.

For example, if the service costs \$50 to operate one vehicle for one hour and the productivity is 1.5 passengers per vehicle hour, then the cost per trip is \$33.33. If productivity is increased to three one way trips per hour, then the cost per trip is \$16.67. Six trips per hour would yield a cost per trip of \$8.33. The more trips per hour, the lower the cost per trip. In essence, productivity drives cost per trip.

One of the best ways to lower transportation costs is through productivity improvements. The service design selected will determine, in large part, the productivity of the service. The end result will depend on the mode(s) selected.

Service Designs: The Best Fit for CVT – Urban and Rural

Proper service design is paramount to any transit system. Improper service typologies and designs often result in lower ridership and lower productivity (measured as one way trips per vehicle hour) while applying the right service design can improve performance often at no extra cost.

With an understanding of the importance of productivity, the next step is to look at service design. The objective is to apply the most appropriate service design(s) for the transportation needs. CVT is using the most appropriate modes for its urban and rural areas in most cases. These changes will not add to the system costs, but will increase ridership and lower per trip costs.

- **Fixed Route – Urban** – Issues arise when reviewing the fixed routes in San Angelo. The loop routes should be eliminated and dead space minimized.
- **Rural Service** - in rural areas service should be scheduled and promoted in the community.
- **ADA Complementary Paratransit** – This door-to-door service is complementary to fixed route and is required by Federal regulation, within $\frac{3}{4}$ mile of fixed routes, for persons who because of a disability can't get to or can't ride fixed route. Passengers must be certified as eligible for this service. This service can be part of a on-demand service as long as it meets the requirements for ADA complementary paratransit. CVT has an appropriate paratransit service and uses its rural vehicles in ADA service when they are in San Angelo – this is a good practice and should be used

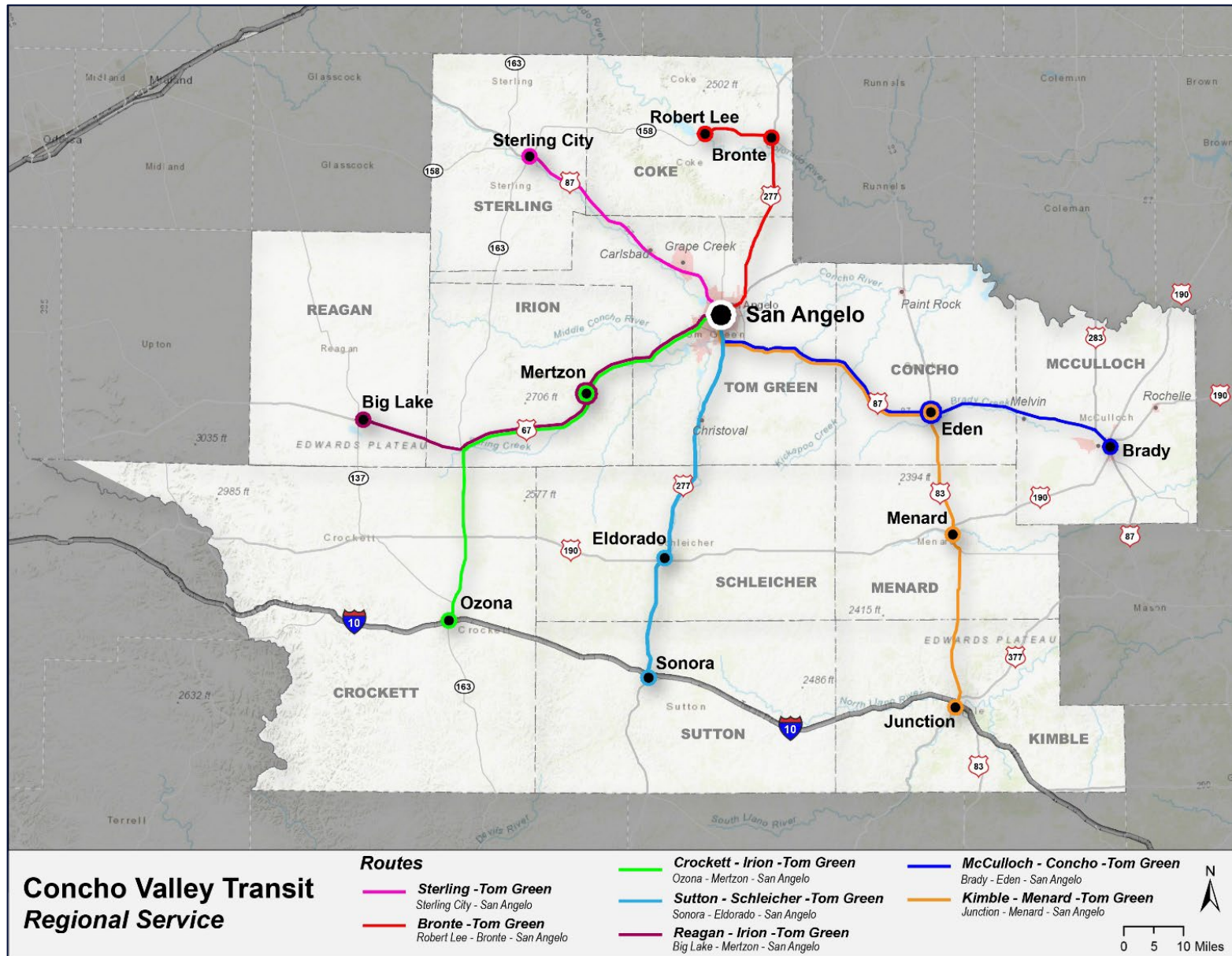
to the maximum extent feasible, reducing the need for dedicated ADA vehicles. CVT must never let Medicaid trips take precedence over ADA trips.

- **On-demand** – This app based service (or riders can access service by telephone) is a general public shared ride service designed for lower density areas that are very difficult to serve, especially for fixed route. This service is basically “dial a ride” with an app. Passengers use this service to connect to fixed route and also as a local circulator. These services are typically door to door or often the rider is required to go to the nearest intersection at one or both legs of the trip (corner to corner). This service is recommended for low density communities in San Angelo and for Brady – the only rural community in the service area that could sustain on-demand service.

Regional service to San Angelo from each of the rural counties is typically based on dialysis and/or other healthcare needs. Figure 6-1 depicts the various routes rural vehicles can take to get to San Angelo. Commuter service needs are low and could be accommodated with vanpools and/or carpools. Service designs for regional service include:

- **Fixed Schedule - Daily Service into San Angelo** – Most counties are provide service on a daily basis into San Angelo for health care and shopping needs.
- **Combining outer ring counties with inner ring** – For example, service from Ozona should come through other towns on a schedule and pick up those riders, rather than using two separate vehicles and to a great extent this is being accomplished.
- **Commuter Service: Subscription Bus, Vanpool and Carpooling** – The three levels of pooling. There is no entity functioning as a rideshare/pooling coordinator for trips in the Concho Valley. This is an opportunity for CVT to step in and manage a modest carpool/vanpool service. This could also include service from the Concho Valley to Midland and Odessa. If over time, demand warranted it a subscription bus or bus pool may be effective.

Figure 6-1: CVT Regional Service



Rural Services – Strategies for the Future

Service design will dictate the productivity of the service. Productivity is essential to enhancing ridership and lowering costs.

- **On-demand in Brady** – It takes seconds to schedule a trip, not 24 hours. There are now apps that can provide a trip within 30 minutes or less of the request. There are two candidates for on-demand service at this time., one urban and one rural. With 1 – 3 buses in town at any time, Brady is an excellent choice for rural on-demand service at no additional cost. This can be done through Ecolane software in real time. This will generate higher ridership for no additional cost.
- **Local and Intercounty service should be on a fixed schedule basis**, based on the current needs and schedules to (typically) dialysis clinics in San Angelo. Schedules should be posted across each community as well as dialysis clinics, and other medical facilities. It is important to get the cooperation of health care organizations. In the CVT service area, most of the local service will be focused on the largest town/city.

As discussed in Chapter 5 – Needs, the rural counties with the exception of McCulloch County have low needs due to the very low populations. The city of Brady however has the population to justify an on-demand service for similar levels of funding. There are two service modes that should be deployed in the rural counties:

- Concho, Coke, Crockett, Irion, Kimble, Menard, Reagan, Schleicher, Sterling and Sutton Counties all should make slight modifications to provide fixed schedule local and regional services. For those counties with current runs to San Angelo, the days will be dependent on dialysis schedules. It will be important to work with dialysis clinics to ensure service is provided on the appropriate days. An excellent example of how this type of service works is in Exhibit 1 a schedule for Bastrop County.

Exhibit 1: Sample of Fixed Schedule Service

Effective date January 4, 2016

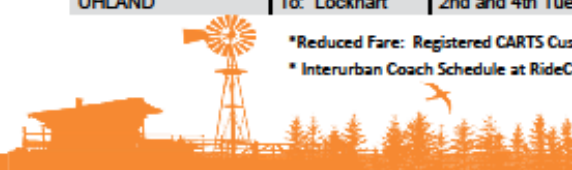
CARTS

CARTS RIDE LINE 1-512-456-RIDE (7433)

CALDWELL COUNTY

RIDES ARE SCHEDULED MONDAY-FRIDAY FROM 8:00 AM TO 4:00 PM / 24 HOURS ADVANCE NOTICE RECOMMENDED LOCAL
VEHICLES SERVE NEIGHBORING TOWNS SO LOCAL RIDE TIMES MAY VARY

Community Served	Destination	Route Day	Departure	Return	One-Way Fare	Reduced Fare*
DALE	To: San Marcos	Monday & Friday	7:30a	12:00p	\$6.00	\$3.00
	To: Lockhart	Monday & Friday	7:30a	12:00p	\$4.00	\$2.00
FENTRESS	To: San Marcos	Thursday	9:00a	12:00p	\$6.00	\$3.00
	To: Lockhart	Monday	9:00a	1:00p	\$4.00	\$2.00
	To: Luling	Friday	9:00a	12:00p	\$4.00	\$2.00
LOCKHART	Local Service	Monday thru Friday	8:00a to 4:30p		\$2.00	\$1.00
	To: Austin	On the Interurban Coach *	Mon, Wed. and Fri.		\$6.00 All Day Pass	
	To: San Marcos	Monday, Wednesday & Friday	8:00a & 2:00p	12:00a & 3:00p	\$6.00	\$3.00
	To: Luling	Tuesday & Thursday	9:00a	1:00p	\$4.00	\$3.00
LULING	Local Service	Monday thru Friday	8:00a to 4:30p		\$2.00	\$1.00
	To: Austin	On the Interurban Coach *	Mon, Wed. and Fri.		\$6.00 All Day Pass	
	To: Lockhart	Tuesday & Thursday	8:00a	2:00p	\$4.00	\$2.00
	To: San Marcos	Thursday	9:00a	12:00p	\$6.00	\$3.00
	To: Seguin	Wednesday	9:00a	12:00p	\$6.00	\$3.00
LYTTON SPRINGS	To: Lockhart	2nd & 4th Thursday	8:45a	1:00p	\$4.00	\$2.00
MARTINDALE	To: Austin	Monday & Wednesday	8:15a	2:00p	\$6.00	\$3.00
	To: San Marcos	Monday, Wednesday & Friday	9:15a	3:00p	\$6.00	\$3.00
	To: Lockhart	Wednesday	11:30a	2:00a	\$4.00	\$2.00
MAXWELL	To: Austin	Tuesday & Thursday	8:30a	2:00p	\$6.00	\$3.00
	To: San Marcos	Monday, Wednesday & Friday	9:30a	3:00p	\$6.00	\$3.00
	To: Lockhart	Wednesday	11:30a	2:00p	\$4.00	\$2.00
	To: Lockhart	1st and 3rd Monday	8:45a	12:00p	\$4.00	\$2.00
McMAHAN	To: Lockhart	Monday	9:00a	12:00p	\$4.00	\$2.00
McNEIL	To: Luling	Friday	9:00a	12:00p	\$4.00	\$2.00
	To: Lockhart	2nd & 4th Thursday	8:30a	1:00p	\$4.00	\$2.00
MENDOZA	To: San Marcos	Tuesday & Thursday	9:00a	12:00p	\$6.00	\$3.00
NEIDERLAND	To: Lockhart	2nd & 4th Thursday	8:30a	1:00p	\$4.00	\$2.00
	To: Luling	Friday	9:00a	12:00p	\$4.00	\$2.00
PRAIRIE LEA	To: San Marcos	Thursday	9:00a	12:00p	\$6.00	\$3.00
	To: San Marcos	Monday, Wednesday & Friday	8:30a	12:00p	\$6.00	\$3.00
REEDVILLE	To: Austin	Monday & Wednesday	8:00a	2:00p	\$6.00	\$3.00
	To: Luling	Friday	9:00a	12:00p	\$4.00	\$2.00
STAIRTOWN	To: San Marcos	Thursday	9:00a	12:00p	\$6.00	\$3.00
	To: Lockhart	2nd and 4th Tuesday	8:30a	1:00p	\$4.00	\$2.00



*Reduced Fare: Registered CARTS Customers, Seniors 65 and older, Persons with Disabilities, and Children Under 12

* Interurban Coach Schedule at RideCARTS.com





RideCARTS.com

Urban Transit Service – Strategies for the Future

In order to best understand the nuances of fixed route service, the consultants first review the key concepts of fixed route in San Angelo.

Fixed Route Guidelines

Proper service design is paramount to any transit system. Improper service typologies and designs often result in lower ridership and lower productivity while applying the right service design can improve performance often at no extra cost.

As an introduction to the service strategies, the study team presents our guidelines for service design. The guidelines are critical in the development of appropriate strategies and it is important for the reader to understand the context for our recommendations.

Fixed route is generally the least expensive mode of transit on a per trip basis and also the most efficient and effective. Following are the guidelines:

1. **Maximize Use of Fixed Route** – Fixed route should be the first option in many areas of San Angelo, particularly in areas with higher densities and locations with significant transit attributes.
2. **Do it Right or don't do it** - Small cities can use at a minimum, about one fixed route bus per 8-12,000 population and one on-demand bus for every 6,000 persons. Providing two buses when six are needed to "see how it goes" is like opening a grocery store and only stocking one-third of the aisles. San Angelo meets this guidance
3. **Minimum Density** - Fixed-route service works best in-town with communities of at least 1,000 persons per square mile, as well as areas with major destinations or tourism. On-demand service can function at much lower densities. San Angelo meets this threshold.
4. **Minimum Productivity** – Our research indicates that fixed routes with lower than five one way trips per hour should look to alternative service designs such as on-demand . Only one route does not meet the fixed route minimums.
5. **When is Service Provided?** – When the service is provided is as important as where service goes. For in town service at a minimum 6:30 or 7:00 a.m. to 6:00 or 7:00 p.m. Monday through Friday. Based on the surveys, interviews and meetings riders prefer later hours over earlier hours. Saturday service typically generates half the ridership of weekday service and Sunday service usually one-third.
6. **Out and Back / Avoid the Loopers** – Long (over 30 minutes) one-way loop routes kill ridership. Out and back is the normal form of fixed-route transit. If there is a stop on one side of the street there should be a stop on the other side (in most cases). Ride time on long loop routes is almost always excessive. Loop routes do not pass the **ice cream test**, 10 minutes to get to the store, but

50 minutes to get home. Despite the current loop routes, ridership and productivity are good. Eliminating the loops will generate additional ridership by significantly reducing ride time.

7. **Simplicity in Fixed Route Design** – Avoid connecting the dots and keep the meandering of fixed routes to a minimum. For San Angelo, with good ridership, where possible existing route structures were left intact, while eliminating loops.
 - a. In most cases let the riders walk to the bus stop rather than having the bus go to the riders. Major stops are an exception or those willing to pay for a stop.
 - b. Do not try to do too much with one route.
 - c. Some routes should be origin based and some should be destination based.
 - d. Rather than having a one and a half hour loop, have three half hour routes.
8. **Timed Transfers and Interlining** – Fixed routes will meet at the designated transfer point at the same time and then often become a second route (interlining). This reduces the need for transfers. Origin based routes should be matched with destination based routes. On-demand buses will also meet at the transfer point (or outlying designated transfer point). These services will also be timed to meet other buses. San Angelo meets the timed transfer requirements.
9. **Transfer Locations** - Major transfer points should be at major trip generators such as: big box stores, downtown, at a mall with proper access. This will reduce the number of transfers and decrease travel time. CVT's transfer facility is downtown – a major trip generator.
10. **Frequency and Coverage** – Frequency is the time between buses going in the same direction on the same route. Going from a frequency of an hour to ½ hour is great, but it doubles the cost. Service elasticities tell us that when service is doubled ridership will probably increase about 50 percent. While coverage is not good for ridership, as some parts of the service area will never be productive, but fairness and politics tell us that sometimes coverage is important. The key here is putting the best service design in place for each part of the service area.
11. **Accessible Bus Stops and Pathways** – The bus stop is transit's front door. Care must be taken in selecting bus stops for location, safety and accessibility. Stops should be every ¼ mile.
12. **Timing Points** - Timing points should be every 7 to 10 minutes. For San Angelo service, NEVER have every stop as a timing point as this will result in slow service and the bus sitting around waiting to ensure it doesn't leave the stop early.
13. **Proper Streets and Turns** - Routing should avoid unprotected left turns on busy streets as well as any other difficult maneuvers. The bus must be able to easily traverse a narrow street without impediment. Never back up as part of a route. Test the route with the bus you will use.
14. **Vehicles** - Are your vehicles appropriate for your ridership? Size/capacity – is the bus big enough or will you "need a bigger bus?" For fixed route bigger is usually better (to a point) unless there are maneuverability issues on the route. Note that in this pandemic, there is a distinct advantage to using bigger buses – the need to social distance.

15. **Consistency of Service** – “Every weekday without fail, every time without fail.” Customers must have service every day. If they can’t count on the bus showing up, then they will only ride if desperate. Try to have the bus come by the same location, in the same direction at the same time every hour (or half hour).
16. **Do Not Compete with Yourself** – Do not operate a competing paratransit service covering the same service area. On-demand service should feed the fixed route.
17. **Looking Good/Marketing** - While services need to be professionally marketed and promoted, the best advertising is good looking buses with an attractive paint scheme and logo and professional drivers that the community can be proud of. Plain white vehicles will blend into the background and be invisible to the community, never good for ridership. As with any business it is important to be noticed (in a good way). Monitor the service to ensure everything is appropriate and performance measures are being met.
18. **Sometimes there are Exceptions** – These guidelines are not universal. Context dictates the service design and provision.

Bus Stops

Stops should be examined for pedestrian access, safety and security with considerations for stop improvements/enhancements. Some stops will have only a pole in the ground, where others may have a bench or a shelter. Review and prioritize safety, accessibility, pathways, shelters, benches, lighting and other improvements. Shelters can cost between \$8,000 and \$15,000 installed, less if the city does the installation with existing staff.





Placing this stop 100 feet down the street with a sidewalk and crosswalk would make it accessible (They moved it).



This unusable stop flooded and was moved.

Transit's Front Door - Bus Stop Recommendations

Having safe, accessible and inviting bus stops are critical to the success of transit. Bus stops are typically placed every one-quarter mile unless there is no reason to have a stop. A stop with a pole and a sign, by itself does not have to be accessible, but if there are any improvements it should be accessible – with a pad for boarding and a connection to an intersection. In some cases where there is a grass verge a pad will be required to connect the sidewalk to the curb. There may be opportunities to partner with a local business to place a shelter at specific stops. The detailed discussion regarding stops and shelters will be in the next step as the routes are determined.

Stops should be examined for pedestrian access, safety and security with considerations for stop improvements/enhancements. Some stops will have only a pole in the ground, where others may have a bench or a shelter. Review and prioritize safety, accessibility, pathways, shelters, benches, lighting and other improvements.

Basic Bus Stop Guidelines

Transit's front door requires careful consideration. The placement and condition of stops is crucial as the bus stop is transit's front door.

1. **All bus riders are pedestrians** – Bus stops should be placed and designed for safe and accessible pedestrian access.
2. **Transit's front door** – Accessible, inviting, safe and unless dead space, stops should be placed every ¼ mile.
3. **Out and back service** – If there is a stop on one side of the street there should also be a stop across the street or in close proximity. In most cases.
4. **Ensuring safe access on both sides of the street** – On busy streets place stops alongside protected crosswalks and/or traffic control devices. **Do not use unprotected mid-block stops if customers may be at risk crossing the street.**

Do not set up customers for danger – Stops should virtually always be at a crosswalk or controlled intersection. Stops that require customers to navigate a busy street without benefit of safe access are setting up customers for danger. Work with the city and/or county to ensure safe access at key stops that are not near an intersection.

Exhibit 2: An Example - Placing Riders in a Dangerous Position



5. Accessible Bus Stops and Pathways – Care must be taken in selecting bus stops for safety and accessibility.

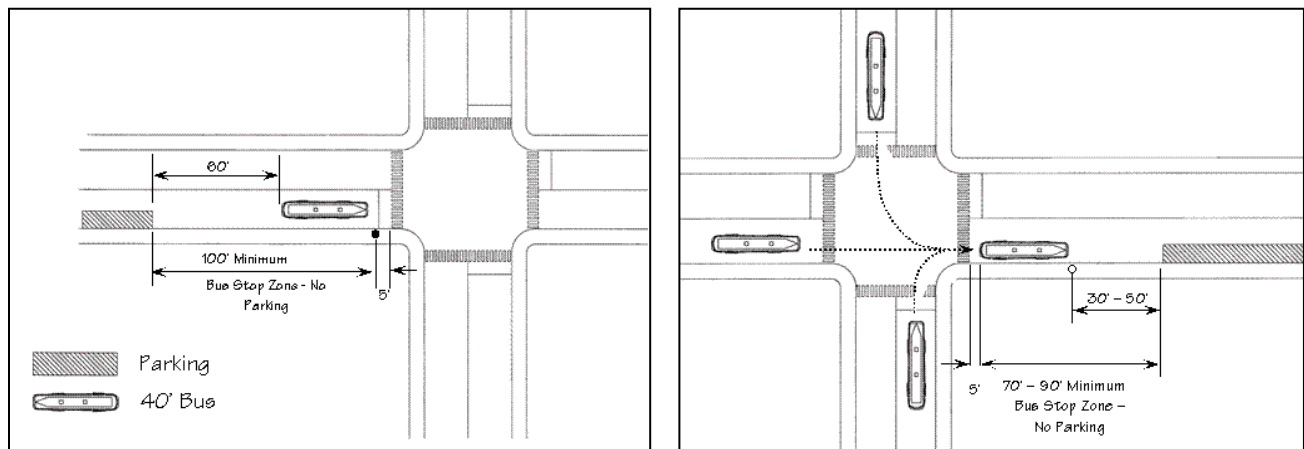
- a. Issues such as stops on the near side or far side of the intersection cause different sets of issues (see below). Neither is perfect, however transit should be guided, where appropriate by the destinations at that intersection.
- b. The bottom line for customers: safety, accessibility and proximity to major trip generators.
- c. Pay attention to pathways. Set up stops alongside accessible pathways whenever possible.
- d. Never leave the placement of the stop, shelter or other amenities up to the installation crew. Be specific about exactly where the stop should be placed, down to the foot.

6. Near Side or Far Side Stops– There are advantages and disadvantages to both near side and far side stops.

- a. Near side stops where the bus stops before the intersection are typically used in transit. The primary issue is when other drivers from the left lane, attempt to turn right in front of the bus.

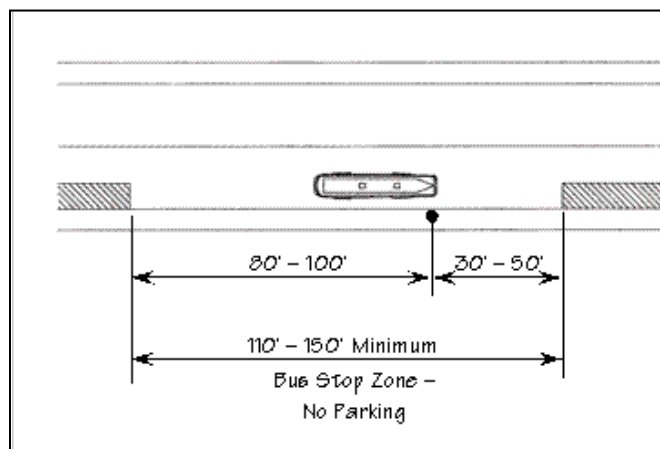
- b. Far side stops where the bus stops just beyond the intersection have a tendency to back up traffic into the intersection. Therefore, these stops have to be placed a little further beyond the intersection.
- c. Mid-block stops are only recommended when a protected crosswalk or controlled intersection is in close proximity. If this safety issue is violated, riders will cross anyway as seen in Exhibit 2 above and the transit system may bear responsibility in the event of an accident.
- d. The bottom line? Place stops where they maximize customer convenience, accessible pathways and safety, with the default being near side stops. For example, if the big box store or other major trip attractor is on the near side of the intersection, then place the stop on the near side. If the big box is on the far side, put the stop on the far side.

Exhibit 3: Bus Stop Placement Types



Near Side Stop

Far Side Stop



Mid-Block Stop

7. **Bus Stops and Timing Points** – for this type of service in San Angelo, stops should be about ¼ mile apart, with the exception being dead space. Timing points (the times given to customers) should be every 6 – 8 minutes and definitely not every stop.
8. **Amenities** – this includes considerations for: benches, shelters, lights and information kiosks for example. Prioritizing based on funding for amenities at a specific stop (a big box or hospital for example) and actual usage.
9. **Work with local governments** – Usually transit must depend on local governments to support accessible pathways.
 - a. Transit can identify where pathways are needed to maximize accessibility and use of transit.
 - b. The local governments can put these improvements in their Transportation Improvement Plans (TIP) for future funding and transit can often provide funds as well.
10. **Conduct a Bus Stop Improvement Plan** – Bus stops are capital assets that should be inventoried and prioritized for improvements.
 - a. Conduct a full inventory and assessment of each stop and pathways, identifying and prioritizing needs and capital requirements.
 - b. Adopt similar standards for all stops.
 - c. Coordinate planning with the local governments/MPO Bicycle and pedestrian plans.
 - d. Secure capital funding for improvements at the Federal, state, local government and private sector levels.

Urban Transit – Fixed Route Strategies

The revised services will consist of the same number of routes as the present with the same service hours (Figure 6-2) and costs. Most of the existing routes are of a one-way loop nature (termed loopers) taking one hour for a round trip. Due to the loops this requires most passenger round trips to take one hour, even if the destination is 10 minutes away. Worse if a rider has to transfer to another route, the round trip becomes a two-hour commitment. That is the nature of a one-way loop route.

How to Suppress Ridership

These “Loopers” suppress ridership (Table 29) and are less productive than the traditional “out and back” model of fixed route design seen in virtually every larger city in the country. It should be pointed out that Route 5 is the only route that would not be considered a looper and has about 50 percent greater ridership than any other route.

Figure 6-2: Proposed CVT Fixed Routes

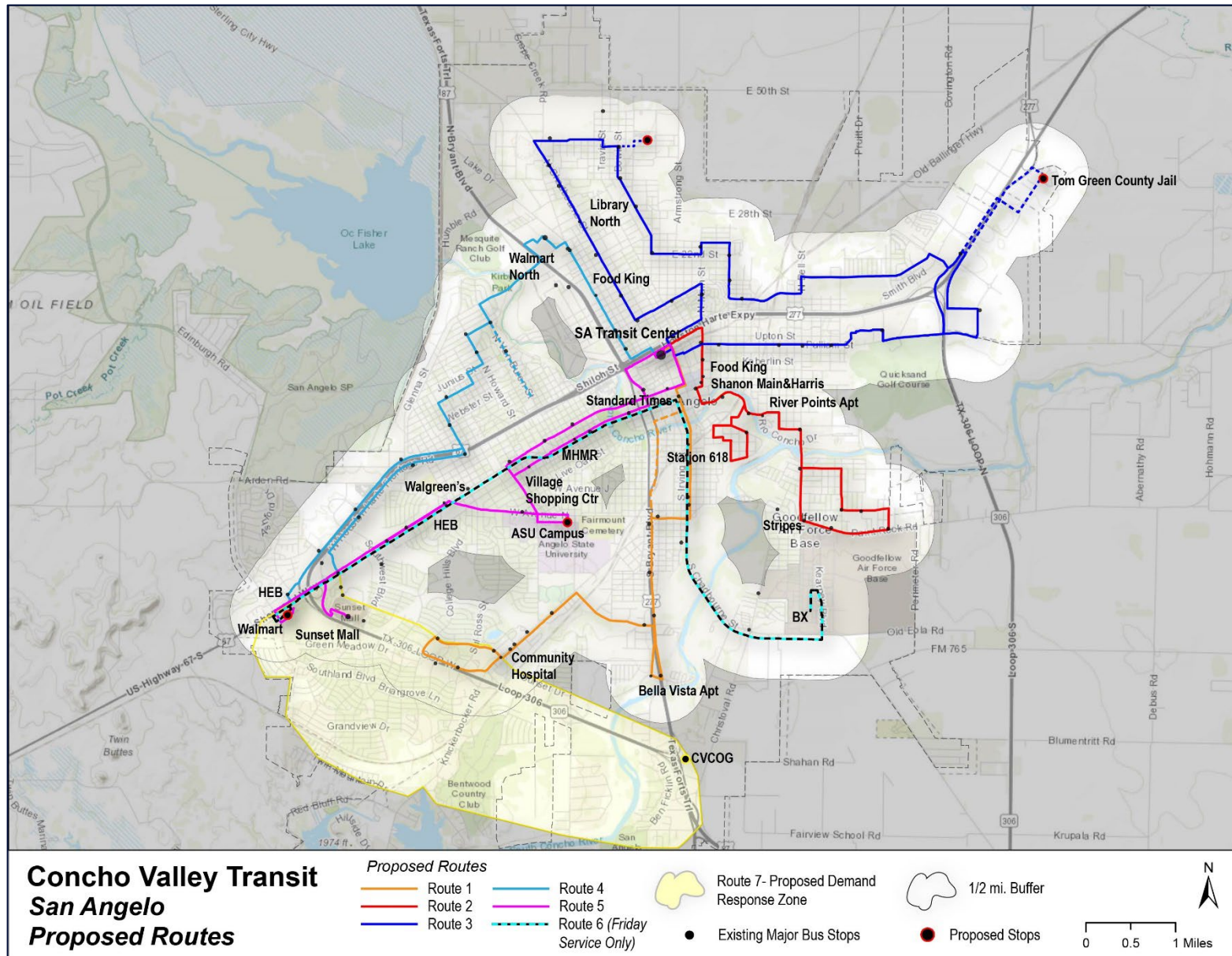


Table 6-1: All Routes Ridership and Productivity – Sample Months

Route	Sample Month	Ridership	Route Length (Miles)	Revenue Hours	Revenue Miles	Total Monthly Weekday Ridership	Avg Est. Daily Weekday Ridership	Total Est. Saturday Ridership	Avg Est. Saturday Ridership	Avg Productivity
1	Oct 2018	3,544	16.8	318.89	5630	3,255	142	289	72	11.1
2	Aug 2019	3,037	16.2	311.90	4995	2,728	124	309	62	9.74
3	Apr 2019	2,958	17.3	305.85	5519	2,708	123	250	63	9.67
4	Oct 2018	3,456	18	318.14	5623	3,174	138	282	70	10.85
5	Nov 2018	4,683	13.5	296.01	4588	4,271	203	412	103	15.82
7	Feb 2020	1,405	13.9	309.70	4884	1,250	63	155	31	4.5
6	Aug 2019	586	19.7	202.00	2293	425	85	161	32	2.9

Development of the Fixed Route Strategies

While considering that the system ridership and productivity are better than expected, the following issues will help guide the route strategies and the development of revised routes. These strategies that follow attempt to meet the following requirements:

- **Faster service and shorter ride times** – Typically bus rider value shorter ride time very highly. The advantages of the changes are shorter travel time and higher ridership. This will be a primary marketing approach for the changes.
- **Eliminate long one way loops** – These loops guarantee long ride times and suppress ridership. In general, if there is a stop on one side of the street there should be one across the street.
- **Follow the fixed route guidelines** – The fixed route guidelines (above), while not absolute, should be utilized to the greatest extent possible.
- **Transit's front door** - Appropriate bus stops approximately every ¼ mile, and accessible where possible. These stops should be inviting and safe.
- **If it works, keep it** - Maintain as much of the existing route structure as possible where it is successful.
- **Eliminate duplication and where possible, dead space** - There were a number of instances where two routes travelled on the same streets and where feasible, these have been eliminated.
- **Keep average speed to about 18 miles per hour** - With considerations for the different routes. For example, Route 4 has the greatest round trip distance, but since about 20 percent of the route is at 55 MPH with few intersections and stops, this can be accomplished.
- **Consider on-demand services** - Where Route 7 operates now. Productivity is too low for fixed route.

Recommended Changes

The daily routes are discussed first – Routes 1, 2, 3, 4, 5 and 7. Route 6 a Friday evening and Saturday only service follows and Routes 20 and 21 were also reviewed.

Route 1

Route 1 was modified to meet the requirements of an effective fixed route. (Figure 6-3 depicts the revised route with changes noted and Figure 6-4 looks at the new route compared to bus stop usage from the current route) In its current form this route meanders and loops. These and other flaws were remedied. Most of the route remained in-tact with one notable exception – the ASU stop. Route 5 is proposed to serve this stop (a better option for students). This route is 16.3 miles round trip easily enough time to accomplish in one hour.

Issues

- Performance – At a productivity of 11 one way trips per vehicle hour this is a mid-level performing route. This can be improved upon.
- Looping sections – The looping nature of the route needs to be modified.
- Duplication on Chadbourne St. – with Route 2
- Securing a convenient stop at Walmart with efficient access and egress

Changes

- Eliminate loop nature of the route,
- Eliminates ASU stop (replaced by Rt. 5 a much more viable route for students),
- Significantly reduces travel time by providing direct service.
- Optional return to the transfer station on S. Koenigheim St., which creates a one hour loop for riders getting on or off on that street or Chadbourne St.

Figure 6-3: CVT Route 1 Alternative

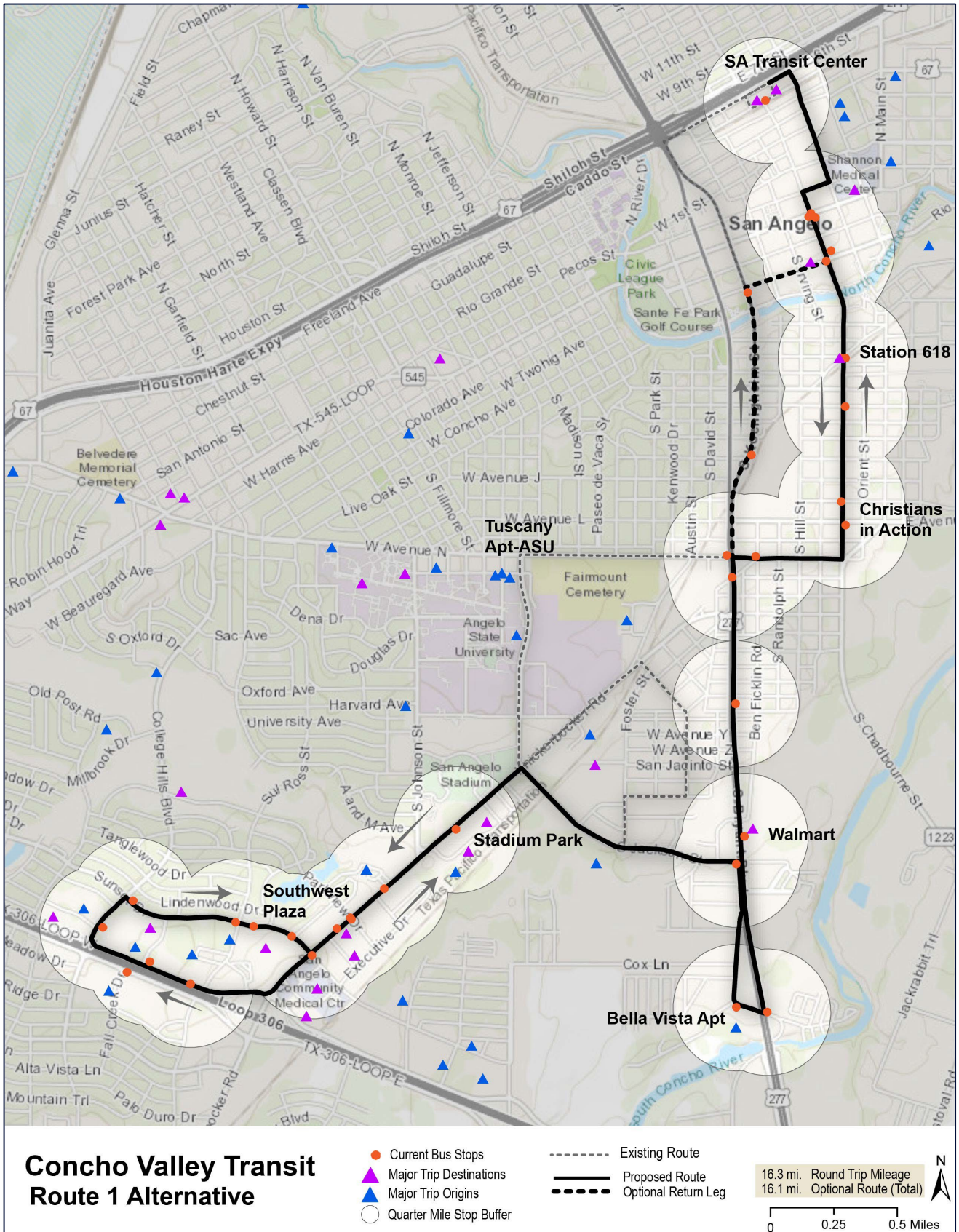
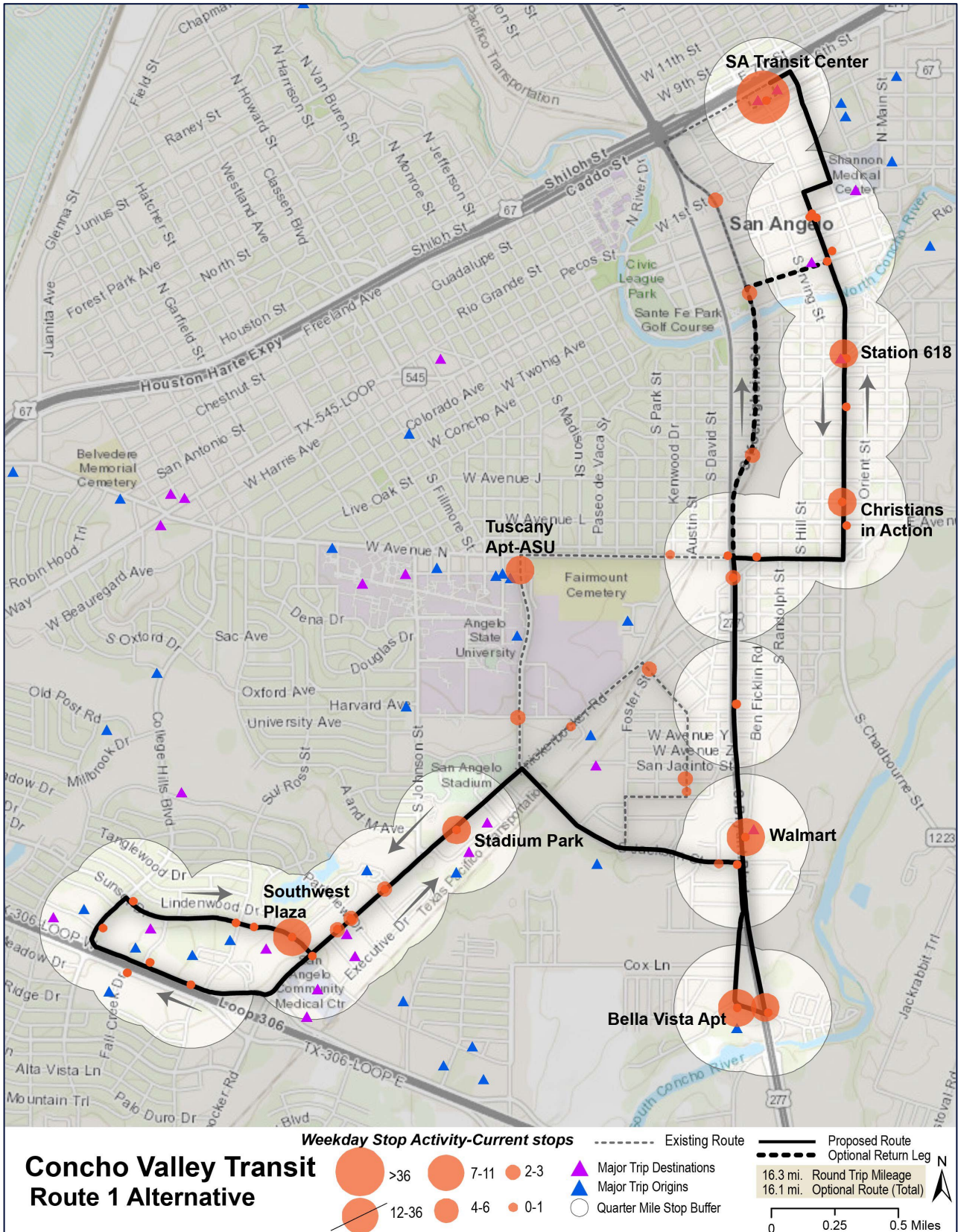


Figure 6-4: CVT Route 1 Alternative with Existing Stop Activity



Route 2

Route 2 is currently a loop route that serves a variety of human service agencies and Goodfellow AFB (Figures 6-5 and 6-6). At 9.5 trips per hour, it is a low performer in large part due to the long loop. This route is modified to be an out and back route, eliminating service along Chadbourne which is served by Route 1. This revised route is about 14.5 miles round trip for service to the base and then return straight north on S. Bell St., reversing the route from there. This reduces the travel time for all with the exception of the base, which is at the end of the route.

Issues

- This is a long loop route
- Below average performer
- Duplication on Chadbourne St. – Rt. 1

Changes

- Eliminate loop route
- Eliminate duplication with Rt. 1
- Significantly reduces travel time, most particularly where the human service agencies are located.

Figure 6-5: CVT Route 2 Alternative

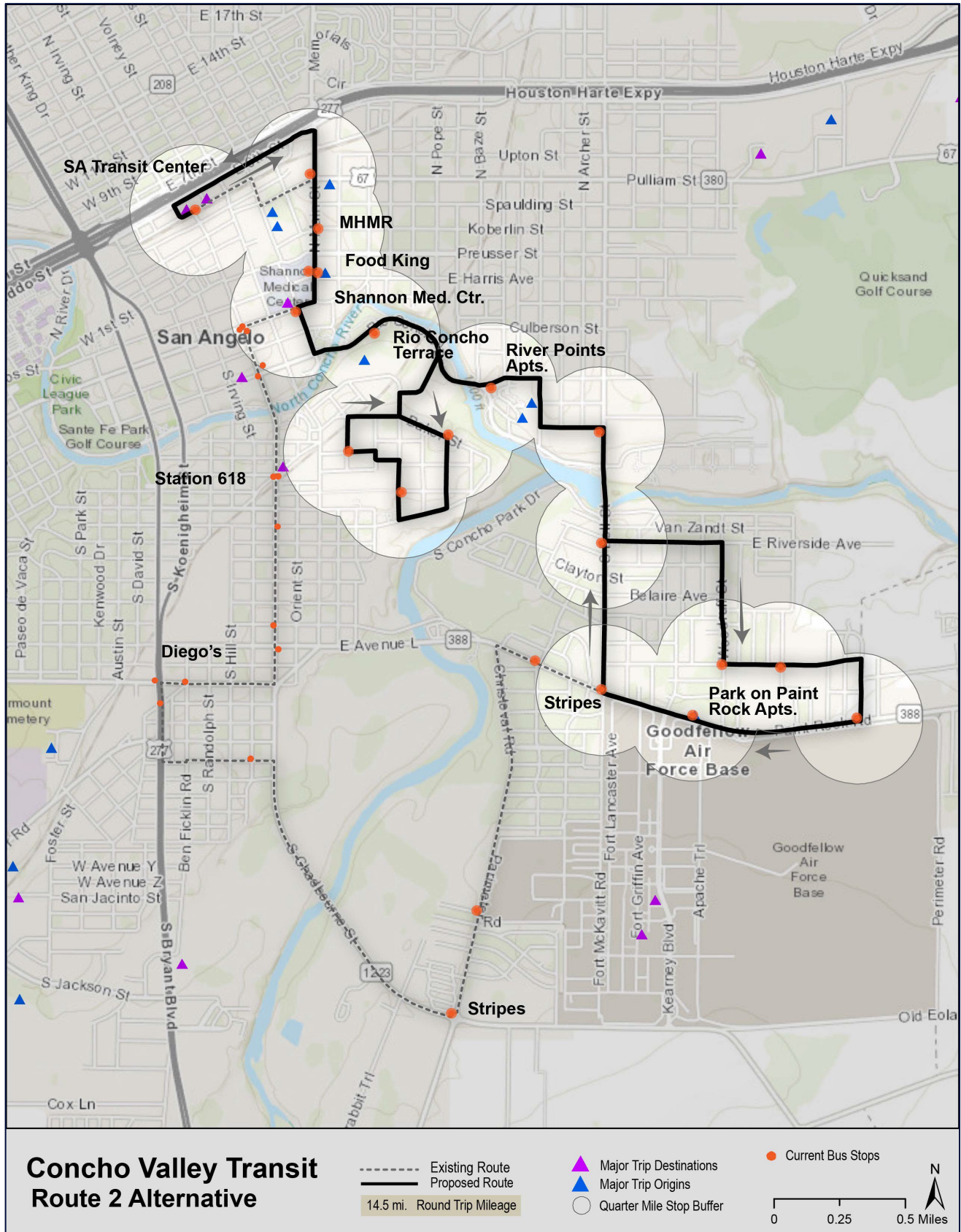
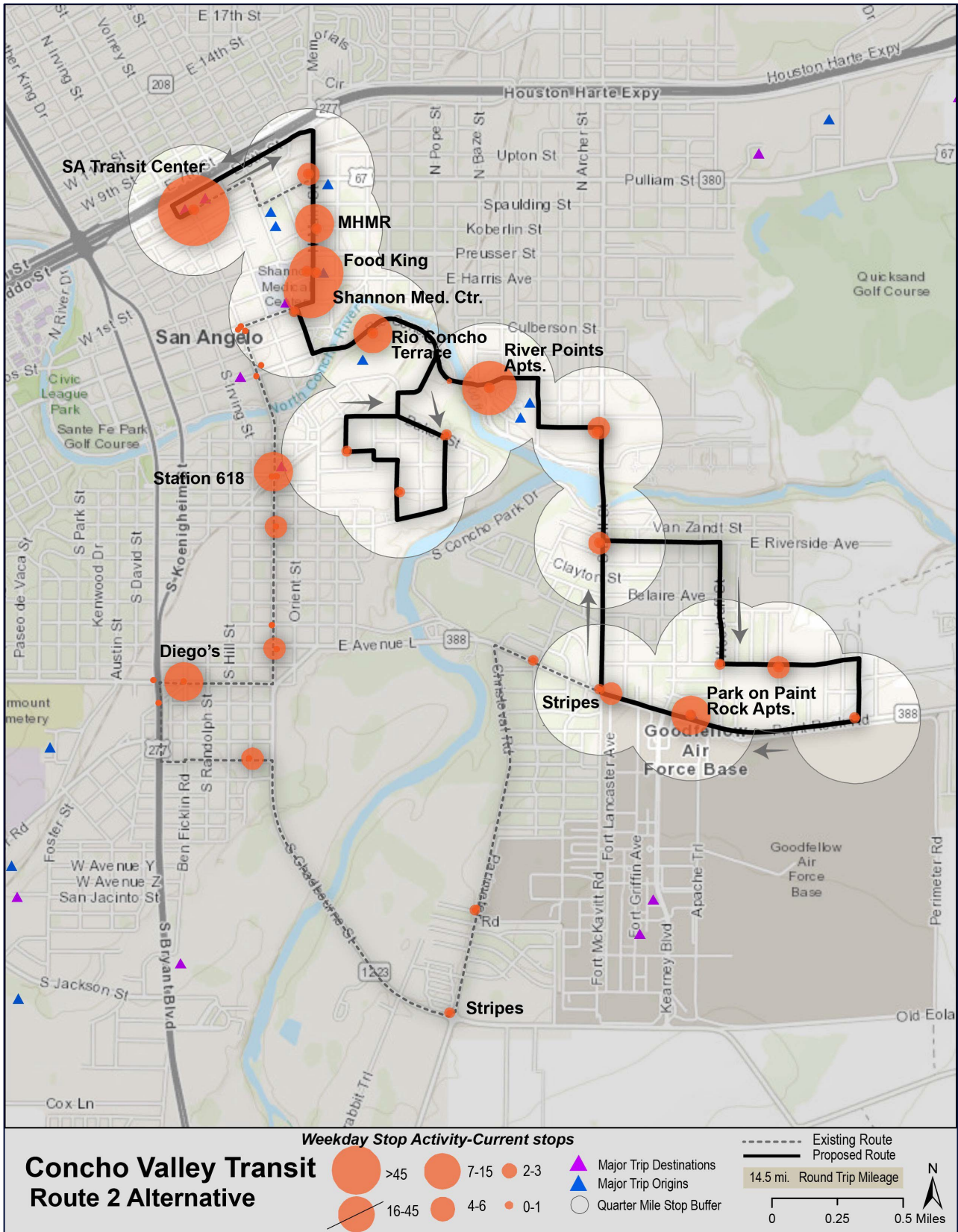


Figure 6-6: CVT Route 2 Alternative with Existing Stop Activity



Route 3

This northern loop route serves Howard College, the San Angelo Parole office and soon, the Jail along the eastern segment of the route (Figures 6-7 and 6-8). The western segment has a high school and a number of stops that see 5 – 10 riders a day. This is one of the lowest performing routes as it has few major origins, few major destinations and it follows a long loop. Saturday service is particularly low as most major destinations are closed. The eastern segment of the route sees almost no Saturday ridership.

This revised route is split into two out and back routes – resulting in a two-hour headway, but significantly reducing travel time for many. This is depicted in the maps for this route. The round trip mileage is about 17 miles for each segment.

On- Demand service should be considered on Saturdays using one vehicle with service geared for the transit center.

Issues

- Loop Route
- Lowest performing route (with the exception of Route 7).
- Significant dead space – There is considerable dead space on the eastern end of the route and past Howard College as the route heads west.

Changes

- Eliminate one-way long loop, and one hour travel time
- Three options:
 - Operate as two separate routes Rt. 3 East and 3 West and one bus would operate alternatively each route.
 - Operate as one route alternating as a clockwise route and a counterclockwise route, every hour
 - Saturday on-demand service
- Eliminate some dead space and more direct service – Use Ricks Drive instead of the frontage road
- Significantly reduces travel time
- The route is reduced to a two hour headway
- Takes two trips to jail – work with jail management to determine the best time
- The route will be timed to ensure that the bus serves the high school during peak hours in the most appropriate direction.

Figure 6-7: CVT Route 3 Alternative

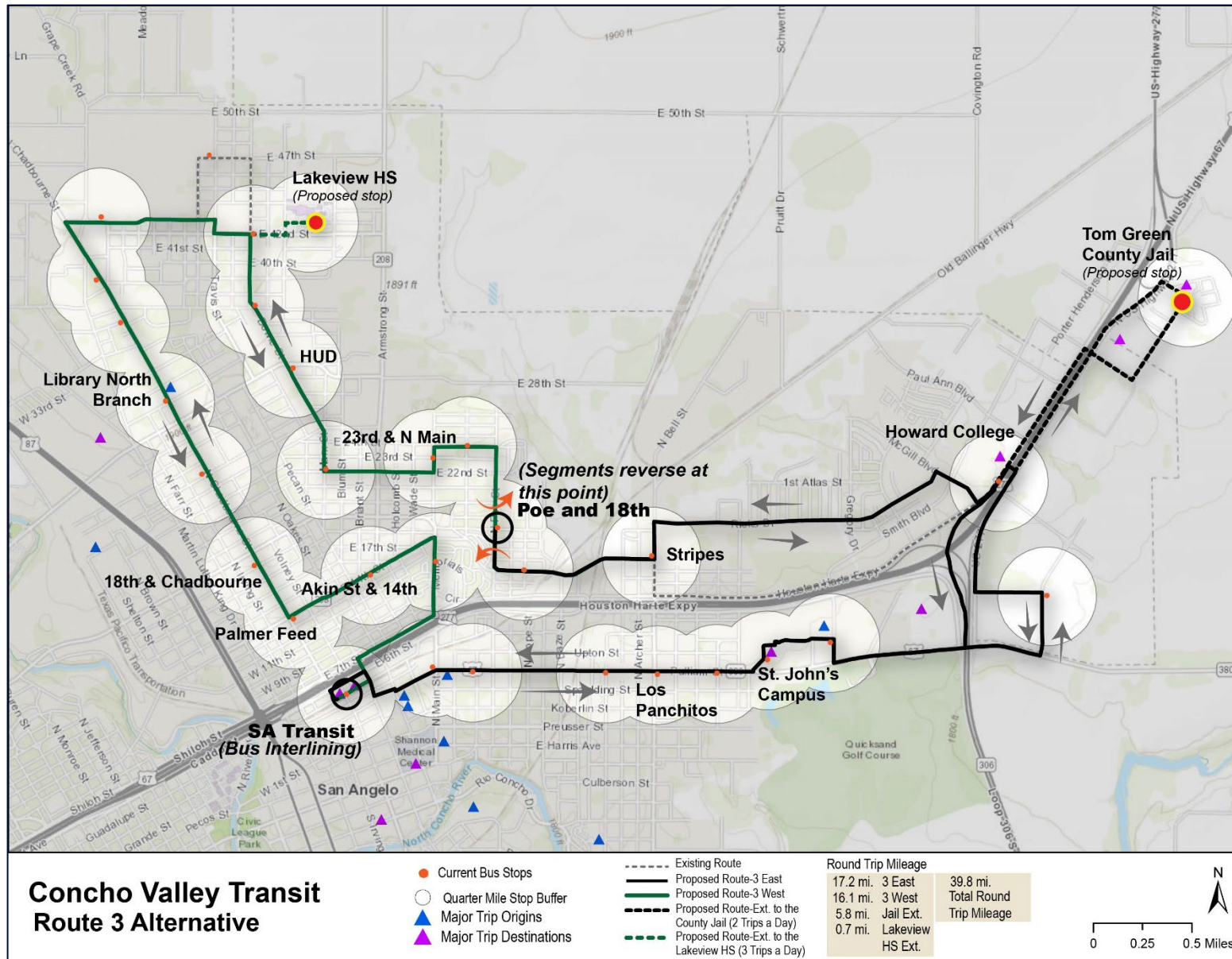
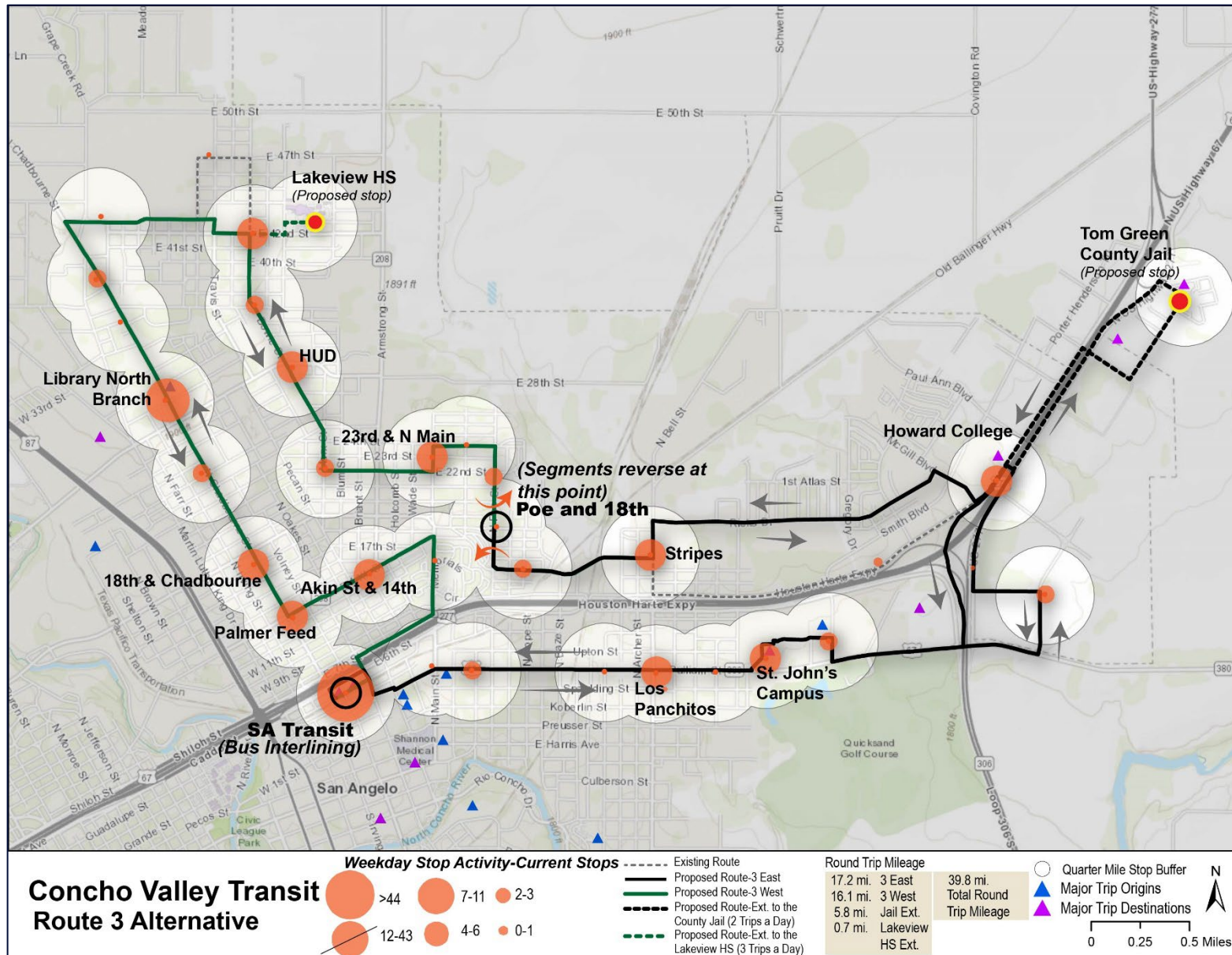


Figure 6-8: CVT Route 3 Alternative with Existing Stop Activity



Route 4

The current circuitous loop route provides service to residents of the neighborhoods of West San Angelo. The needs in the area are evident that despite the long loop, ridership is about 11 one way trips per hour.

The changes eliminate much of the loop nature as depicted in Figures 6-9 and 6-10. The advantage here is the shorter round trip travel times and multiple shopping options. Instead of an hour round trip, round trips can be as little as 10 minutes or less, but never more than an hour for riders at the end of the route. The round trip mileage is 17.6 miles, with much of it on 55 MPH frontage roads, allowing the bus to meet its schedule and flex to Austin Elementary School while still keeping to a tight schedule for those two runs.

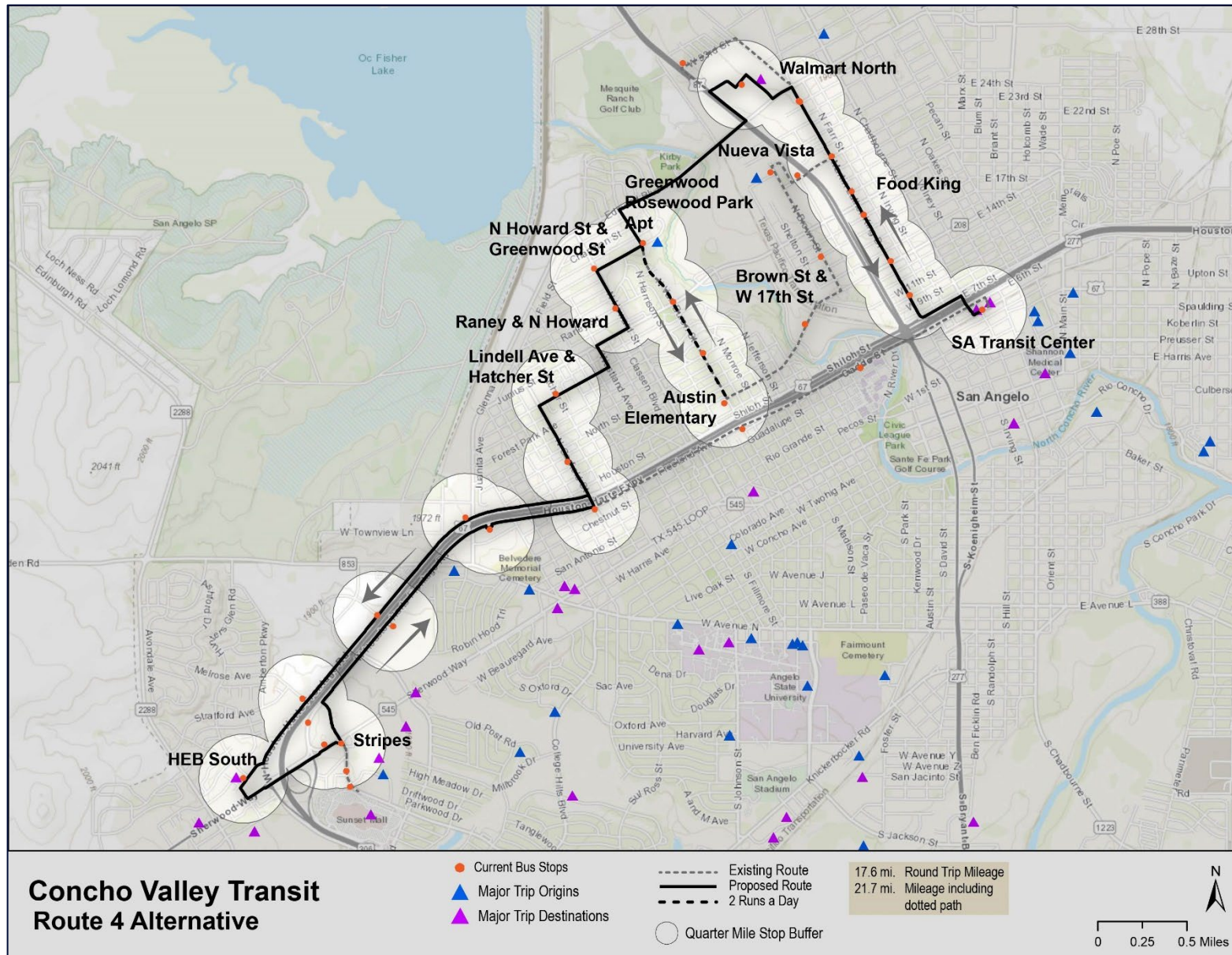
Issues

- Loop Route
- Meandering
- Average performer
- Significant dead space on the frontage roads along the west end of the route.

Changes

- Eliminate loop,
- Eliminate some dead space
- Direct service significantly reduces travel time
- Add a segment to flex south on Van Buren to Austin Elementary for a morning drop off and an afternoon return.

Figure 6-9: CVT Route 4 Alternative



Route 5

This is the highest ridership route in the system. It is mostly an out and back route rather than a loop, connecting a number of key stops (Figures 6-11 and 6-12). This route also has many key destinations – Walmart, HEB, the mall, human services, and ASU, making this a major connector for the city. This is a high ridership route that should only see minimal change. The most significant change is adding a stop on the ASU campus, replacing the one deleted from Route 1. Placing ASU on this route will give students far more access to key destinations than they had on Route 1.

Changes

An extension on W. Avenue N to the ASU campus to replace the stop eliminated from Route 1.

Options

Reducing the headway - Given that this route will combine more key origins and destinations than any other route and that it will give ASU students additional options, may cause ridership on this route to spike. Consideration should be given to reducing the headway (time between buses) from one hour to 30 minutes. This would require a second bus on this route at a total operating cost of about \$300,000. This route would also provide ASU students with better options than Routes 20 and 21. Consideration should be given to deleting those two routes and expanding Route 5. If service expansion were to be considered, this would rank highly.

Figure 6-11: CVT Route 5 Alternative

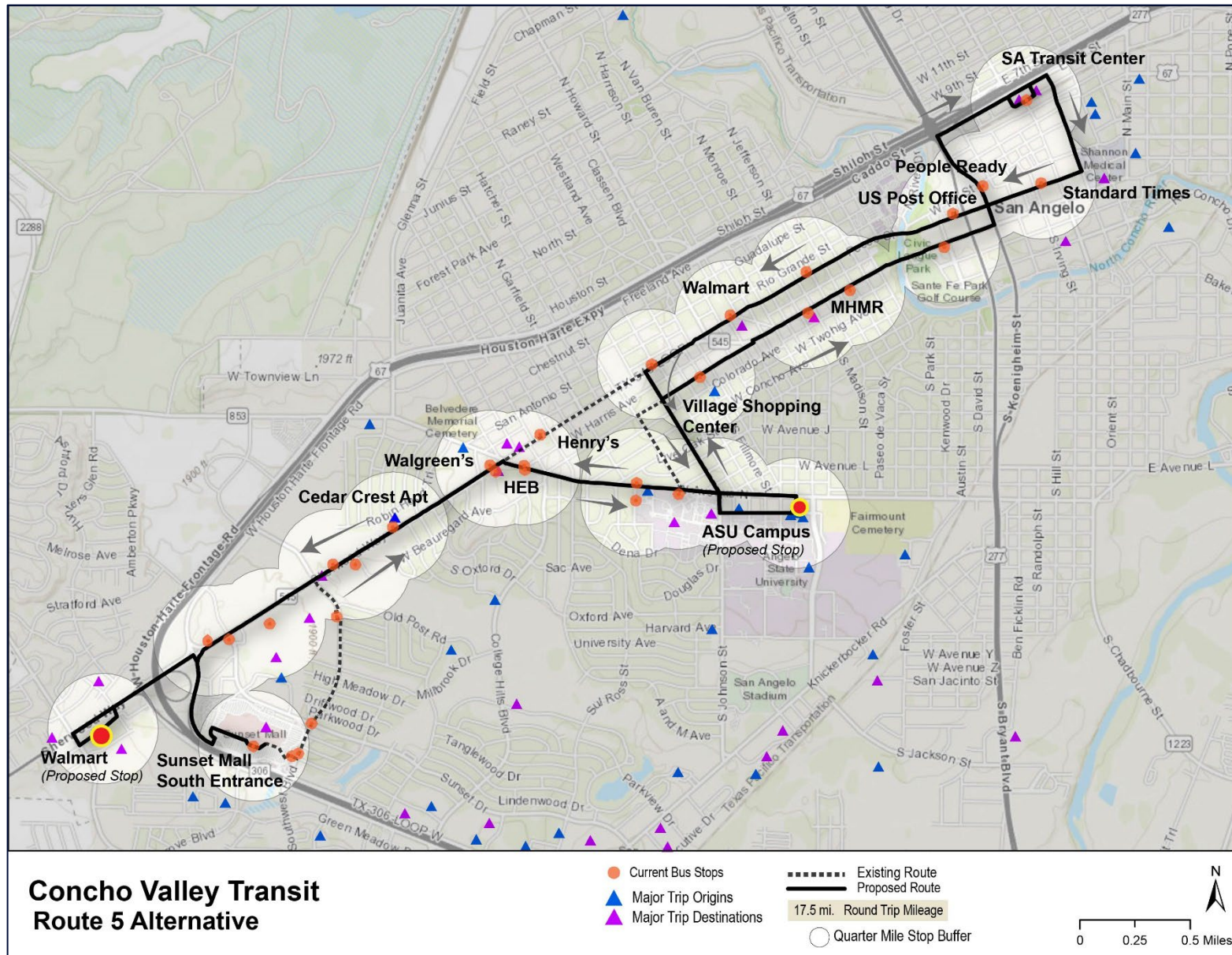
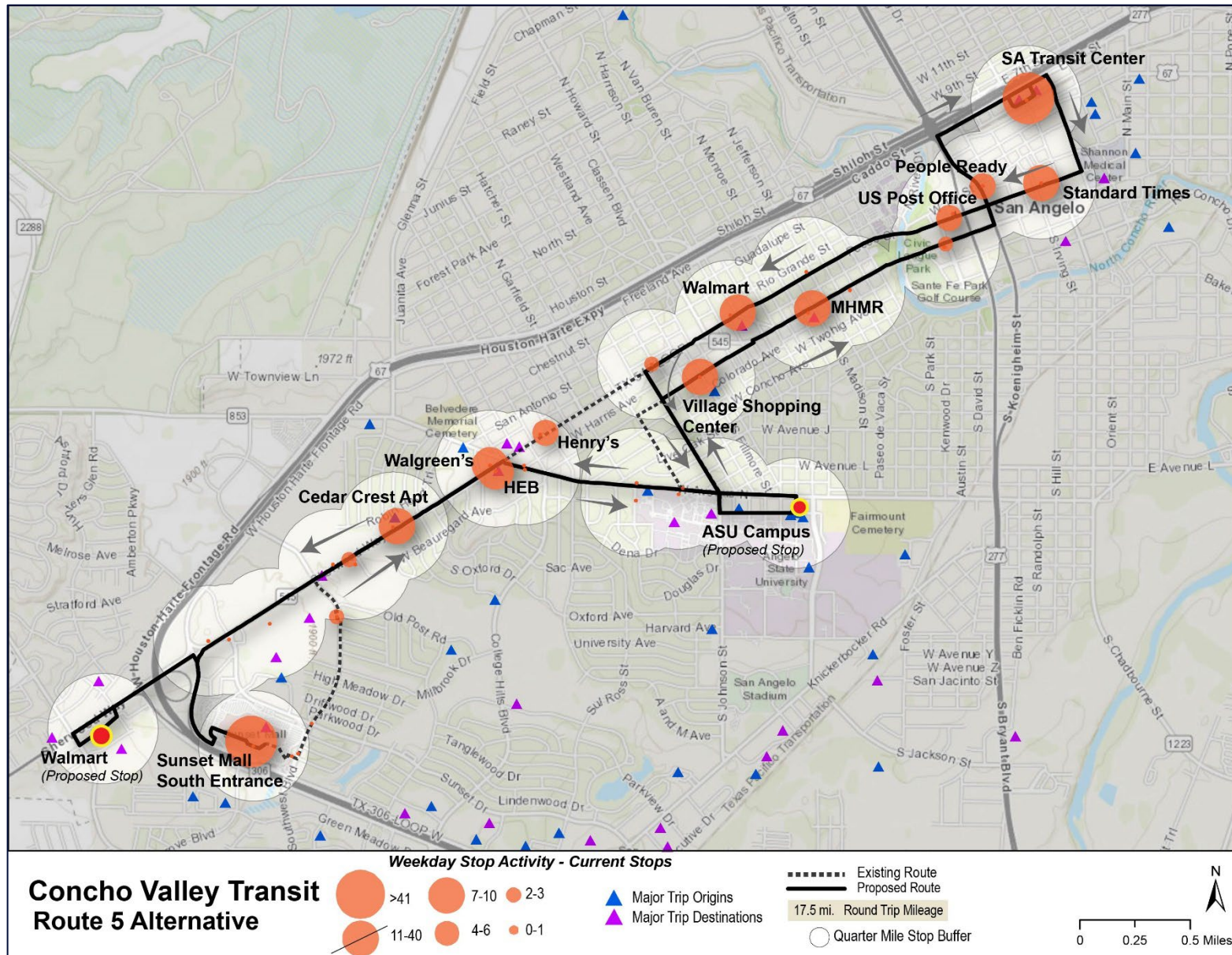


Figure 6-12: CVT Route 5 Alternative with Existing Stop Activity



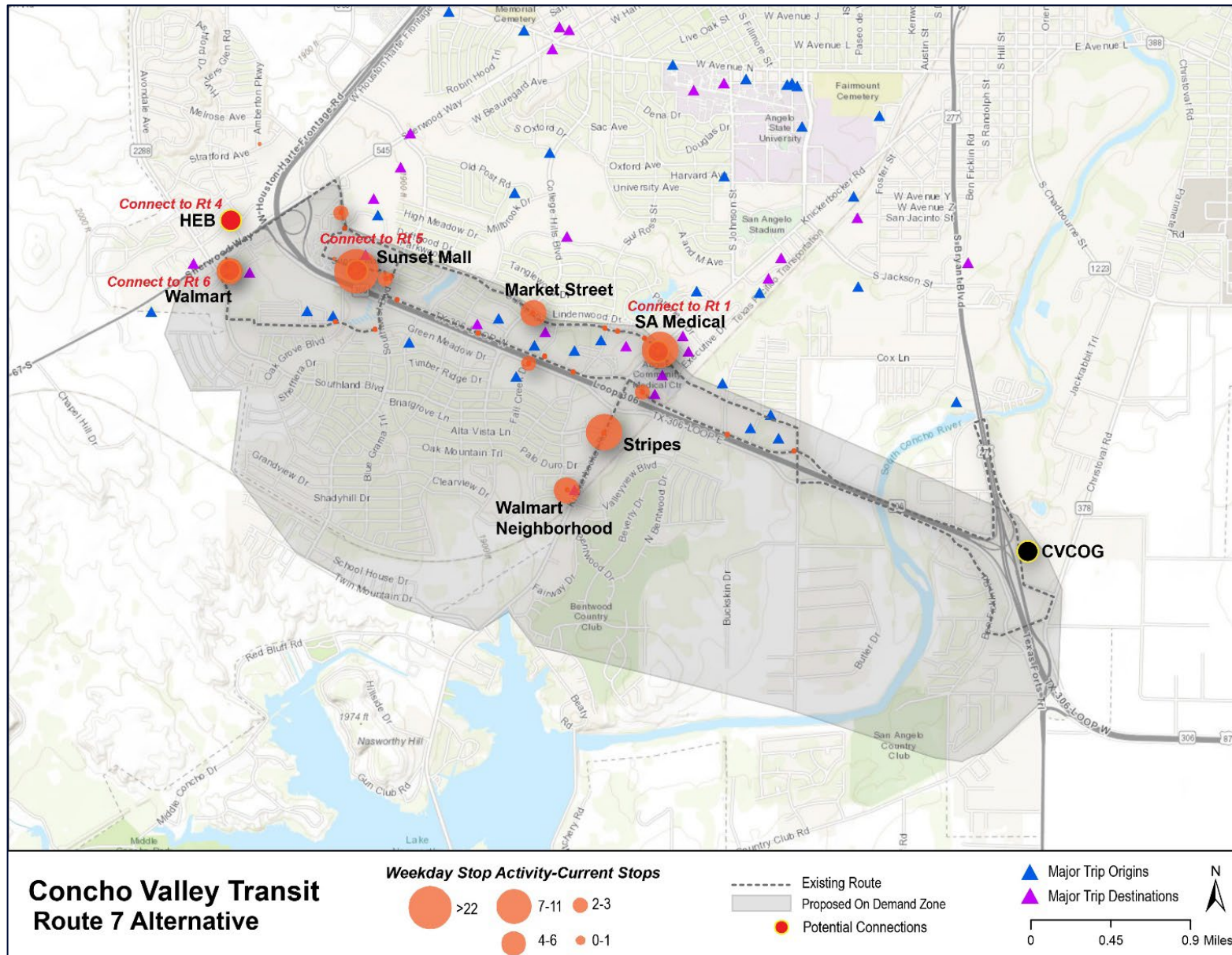
Route 7

This is the poorest performing daily route in the system, with 4.5 one way trips per hour, less than half of the other routes. This route as is, will never be productive as fixed route does not do well in low density area such as this southern part of the city.

Changes

- The change here is to shift to an on-demand service in this area as detailed in Figure 6-13. It can generate similar productivity, and at the same time, improve the quality of the service with curb to curb service and multiple connections to fixed route. This service typically uses an app (Ecolane technology) or phone. It can also be combined with ADA service to maximize productivity.

Figure 6-13: CVT Route 7 On-Demand



Rt 6 Shuttle or On-Demand Service – Friday and Saturday Service

This public transit service is operated Friday nights and Saturday – 11:30 AM to 1:30 AM to connect the Air Force base with the downtown night life and the shopping and restaurants along Sherwood Way. The existing route is a long one hour loop, so that those wanting to go to downtown from Goodfellow (10 minutes) face about a 46-minute return – often after having dinner. This is not conducive to ridership. This route generates less than 3 one way trips per hour.

There are a number of viable options to providing this service that are more attractive than the current design (Figure 6-14 and 6-15). These options feature direct service. On Friday and Saturday night, direct service to the downtown entertainment district and on Saturdays during the day, a shopper shuttle down Sherwood Way.

Issues

- Long loop route with very little activity
- Round trips are one hour, even for a 10 minute trip
- Very low ridership

Changes

- Provide service to downtown district from 6 PM until 1:30 AM Friday and Saturday and on Saturdays until 6 pm, serving as a shopper shuttle with direct service to major shopping.
 - Direct service to shopping – Shopper Shuttle
 - Direct service to entertainment – ensuring a safe way home – can be sponsored by restaurants and clubs as well as anti-drunk driving campaigns.
- Significantly reduces travel time

Options

There are a number of options available to improve upon the existing service.

- Provide a shopper shuttle, connecting to larger shopping districts such as HEB, Walmart, and the Mall (Sherwood Way).
- Provide service to downtown, then southwest on Sherwood Way to the Walmart and then return the same way. This reduces travel time for most. Eliminate Sherwood leg after 10 PM
- Provide an On-Demand service instead of a fixed route.

Figure 6-14: CVT Route 6 Alternative

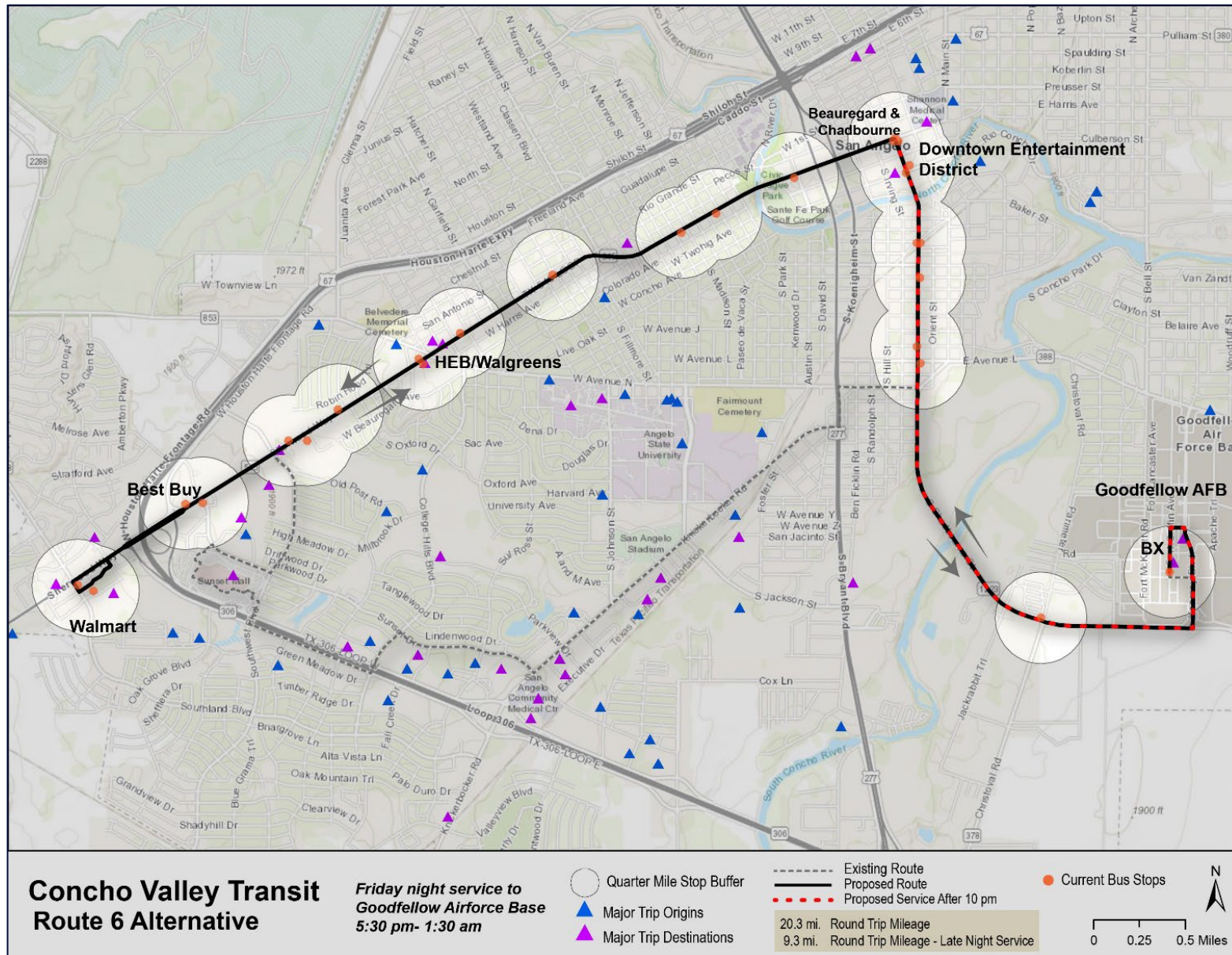
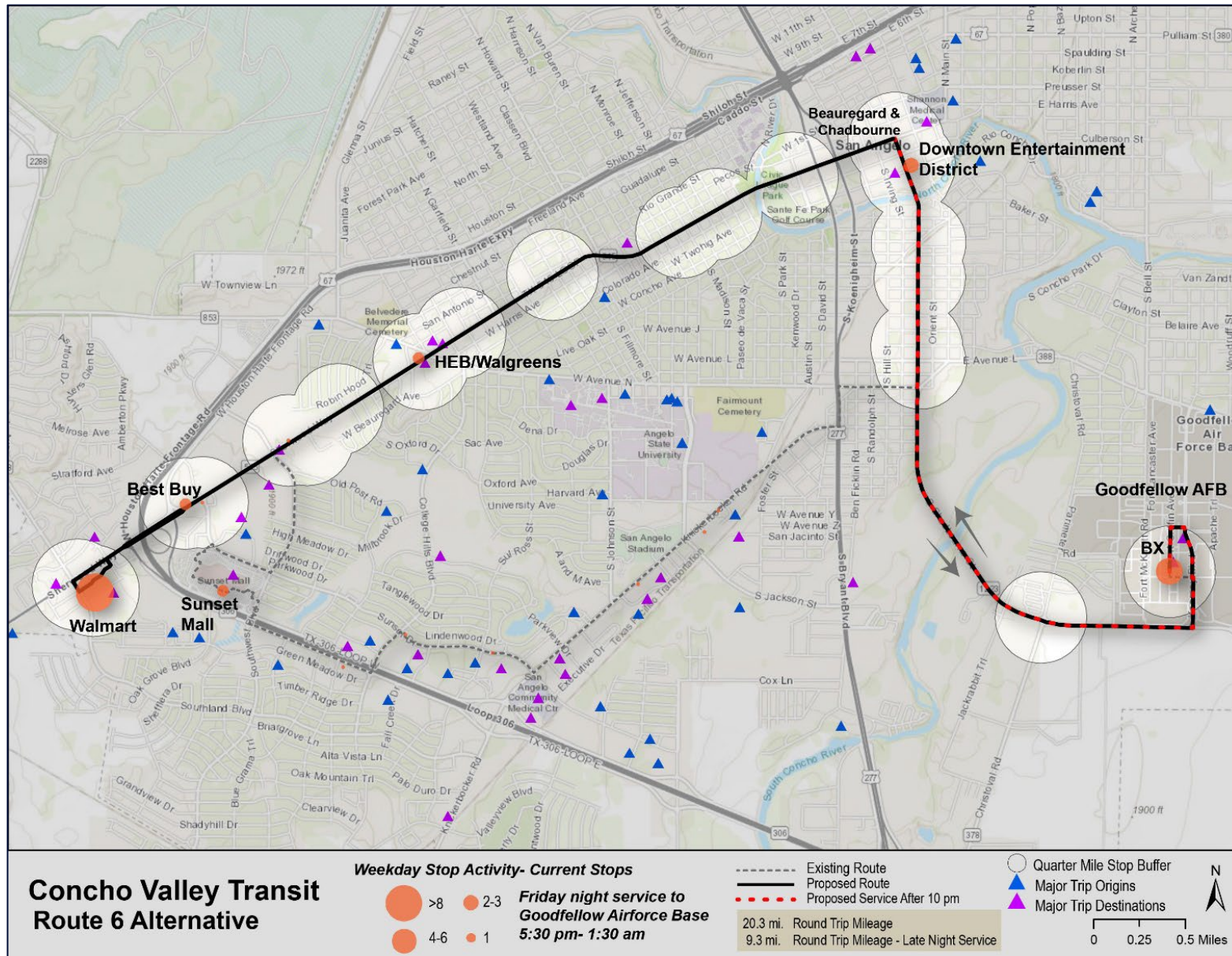


Figure 6-15: CVT Route 6 Existing Stops



Route 20 and 21 ASU Service – An Alternative

Routes 20 and 21 are contracted with ASU. These consist of a loop route and a semi direct route that both serve the same area to a great extent. These are low ridership routes. The ASU students and the university itself would be better served by funding a strengthen Route 5 with 30 minute headways. A second option would be to fund an on campus app based on-demand zone that can transport students within the zone and connect to Route 5. These strategies offer far superior service for students at no additional cost

Saturday Service

Consideration was given to turning Saturday service into an on-demand service however, each of the primary routes (with the exception of Route 3 and 7) show higher ridership and productivity on Saturdays than could be accomplished under most on-demand applications. In cities such as San Angelo, productivities of 3 – 4 are typical for on-demand service. Each of the fixed routes are producing higher ridership and productivity than can typically be accomplished with on-demand.

On-Demand Service

Using south San Angelo – the Route 7 service areas as a pilot, this service could be expanded to other fringe areas around the city (Route 3 on Saturdays for example).

Urban Transit – ADA Paratransit

ADA complementary paratransit is required throughout all portions of San Angelo within three quarters of a mile of a fixed route. As with many communities, CVT provides ADA paratransit service throughout the service area. Currently service is provided with dedicated vehicles and limited use of rural vehicles that are in the city for parts of the day.

Use of Rural Vehicles in San Angelo

As previously discussed CVT rural vehicles come into San Angelo on a daily basis from all directions. Most rural runs are for a limited number of dialysis riders, allowing these vehicles to be available about for service in San Angelo for 3 hours including allowing for a lunch break. These vehicles can be used for ADA paratransit and/or RT.7 On-Demand Service.

The use of these rural vehicle operators should be maximized while in San Angelo (with appropriate lunch and/or other breaks). This will reduce cost as it reduces the need for dedicated vehicles during these hours. It is imperative for CVT to ensure vehicle operators are properly trained for ADA paratransit (the requirement is to be “trained to proficiency”).

Medicaid Transportation

Medicaid transportation is provided by CVT through three regional brokers. Multiple brokers assign trips to CVT from the rural and urban areas. The rural areas yield about 185 one way trips per month, almost all to San Angelo. The majority of the Medicaid riders in rural areas all ride on one vehicle with other riders. Occasionally a special run is created. This usually occurs when there are out of region requests to San Antonio or for a discharge that is out of area.

In the urban area CVT provides about 462 one way trips monthly. These services are integrated into the existing ADA paratransit. It is recommended that the on-demand service – Route 7 become fully coordinated with these other services.

Contracting for these services allows CVT to diversify its funding base. While not a big money maker, Medicaid transportation funds can also be used as local match to pull down more Federal funds. CVT should continue operating as it has and ensuring that CVT does not lose money working with Medicaid transportation brokers.

Vehicles and Facilities

The need for transit vehicles has become a nationwide concern. Many transit systems are reporting up to a two-year wait for vehicles. CVT needs to look closely at its fleet and working through this process, determine vehicle needs over the next five to ten years. Delays in procuring vehicles could result in a shortage of vehicles.

Virtually the entire fleet are cutaway vehicles with different passenger configurations. There are 41 cutaway light duty vehicles. For the most part the smaller cutaway vehicles are used in rural areas, while the bigger cutaways are on fixed route.

These light duty vehicles typically have a “Useful Life” of five years and/or 150-200,000 miles. This is not to say that they can’t still be used or that they are not safe. With proper maintenance these vehicles can last longer, especially in light duty service in rural areas. The urban buses are subject to stop and go traffic and heavier loads, which will wear out a vehicle sooner. There are also a handful of MV-1s, a trolley, rarely used and a 24-year-old heavy duty bus. Virtually the entire fleet is gasoline powered.

The Right Vehicle for the Need

Different transit conditions require different transit vehicles. Service area characteristics may require smaller more nimble vehicles or larger vehicles with more capacity. During this pandemic, with social distancing being important, transit systems are using their biggest buses. Generally, transit systems prefer vehicles that are a little larger rather than smaller and that was before the social distancing was necessitated. Further, CVT will only pay 20 percent (or less) of the cost of vehicles. There have been grants offering zero local match for alternative powered vehicles. When it is time to procure vehicles, this should be a consideration. Now, bigger is better. All vehicles should be accessible to persons with disabilities. There should also be a 20 percent spare vehicle requirement.

Size and Type

The three basic services all require specific vehicles. Urban fixed route vehicles should be the largest and at least medium duty rated. Urban paratransit and on-demand services use smaller vehicles as typically there is not more than 2 – 3 people on board at a time. The paratransit vehicles can be light duty cutaways and should be small. Rural service also calls for cutaway vehicles or even sedans. In counties that don't have riders using wheelchairs, a sedan may be feasible, with an older cutaway available in the event a person using a wheelchair wants to ride.

Urban Fixed Route Vehicles

The CVT fixed route service uses 8 peak vehicles and 12 total vehicles, not including the trolley or the 24-year-old New Flyer bus. Most of these are large cutaway vehicles. There is a 50 percent spare ratio, which would be very high except for the fact that these are all high mileage vehicles - 174,000 miles on average, with an average age of 6 years old, 1 year beyond their useful lives.

The urban fleet will soon be in the need of replacement vehicles as these current vehicles are typically near the end of the useful lives and getting to the point where maintenance will be excessive. Consideration should be given to investing in medium or heavy duty transit coaches that have useful lives of 10 – 15 years. In addition, low floor vehicles with ramps should be used – now standard in the transit industry.

Recommended Buses – Urban Fixed Route

San Angelo is a city that is large enough to justify the use of medium to heavy duty buses. When factoring in the local match required, the cost of a heavy duty bus is not significantly more than a medium duty bus. The heavy duty coaches are the most comfortable and will last the longest. The study team recommends that CVT procure heavy duty coaches. Medium duty coaches can be acceptable but are second choice as the overall capital cost difference will be minimal.

Low Floor Medium Duty Transit Coach

Medium duty low floor buses (Figure 6-16), typically include buses that are 30 to 35 feet in length are practical in systems similar to San Angelo. These buses are designed to last up to 10 years and allow for a standard bus configuration without the cost of a heavy duty bus. These buses seat 20 – 25 passengers and can typically transport 2 to 6 persons using wheelchairs. These vehicles typically cost between \$300 – 400,000 each.

Figure 6-16: Low Floor Medium Duty Bus



Low Floor Heavy Duty Transit Coach

Most larger transit systems use heavy duty low floor buses for its regular fixed route service (Figure 6-17). These buses are generally 30, 35 and 40 feet in length and are designed to last 12 years in heavy duty service. The low floor and wide door allow for rapid boarding and alighting. These vehicles seat 30 to 40 with additional room for standing. This vehicle typology is useful for systems needing large capacity vehicles to meet demand. They can range from \$600,000 to \$750,000 per vehicle.

Figure 6-17: Low Floor Heavy Duty Bus



Fuels – Urban Buses

Consideration should be given to alternative fuels as the new vehicles will last for 10 – 15 years. CVT does not want to be faced with maintaining diesel buses in 15 years, when the infrastructure has shifted to renewables. Keep in mind that some fuel types such as hybrids and electric may be available for little or no match, making the economics work. Electric and hybrid buses are the future.

They scoffed when the horseless carriage was introduced. It would never replace the horse! They laughed when it was suggested that diesel locomotives could replace steam locomotives. Electric is now the near term future.



A study by the Carnegie Mellon University found that among the choices available to transit agencies, battery electric buses are the best option due to low life cycle agency costs and improved environmental and health impacts from greenhouse and air pollutant emissions. Further it reduces CVT's and the nation's dependence on oil.

Summary - Alternative Fuel Considerations

There are now a variety of fuel and battery choices for transit vehicles. Decisions on the type of fuel chosen are based on a number of factors that decision makers should consider:

- **Environmental Policy** – Alternative fuels and batteries can make a difference in the local environment. Decisions are often made on this basis alone.
- **Various benefits** – There are a variety of benefits from lower costs to ease of maintenance and then there is the environment.
 - Electric vehicles are coming of age and have **lower operating costs**
 - Hybrid buses are best in stop and go traffic
 - CVT would not have to deal with the vagaries of gas and diesel prices as well as the lack of future stability of this fuel source
 - Gas buses are the most expensive to operate.

- **Operational** – There are a number of operational issues and costs associated with alternative fuels, including but not limited to:
 - Infrastructure – Fueling/charging facilities, maintenance equipment
 - Expertise – Maintenance staff with specialties in electric and hybrid technologies would need to be hired.
 - Availability of specialty repair vendors, or
 - The move to renewables at this time should be conducted in conjunction with a larger entity, such as the City of San Angelo, Tom Green County or ASU for example. FTA funding is available for capital investment in facilities and equipment. CVT should be ready to join in a coalition to develop the infrastructure and expertise needed to maintain these buses.
- **Financial** – Vehicle and on-going costs vary and are a major consideration to the type of vehicle used.
 - Often the FTA will offer alternative fueled vehicles at a 90 percent or even 100 percent Federal match.
 - Electric vehicles have the lowest operating costs and do not need gasoline or diesel.

Infrastructure Costs

Hybrid and electric vehicles require significant facility investment if facilities are not available, and can require additional spare vehicles. However, understanding that capital expenses are typically limited to a 20 percent or lower match for local systems, making the switch to electric less costly from a capital perspective. Developing the expertise

Typically for a system the size of CVT, infrastructure costs should be shared with the city of San Angelo or Tom Green County. As these entities commit to the future, CVT should as well.

Potential bus fuel types include:

- **Electric Buses** – At this time, these vehicles would not be appropriate for rural areas due to a lack of infrastructure. Urban areas are starting to use electric with mostly good reviews. These vehicles will require an investment in new maintenance infrastructure and technicians. In the next 5 years many believe that electricity will be the least expensive solution as well as reducing carbon emissions. Electric battery technology has been improving over the last few years to the point where heavy duty fully electric buses are viable transit vehicles under certain conditions. As charging times decrease and battery ranges increase these vehicles are becoming more attractive. The fuel and preventative maintenance cost are much lower on these vehicles but the initial capital costs are often greater depending on vehicle size and battery configuration. Denver is an excellent example of the use of this technology. Electric battery bus prices vary greatly depending on the size and battery configuration. Buses can range from \$400,000 to \$2 million. This technology would require a major investment in infrastructure.

- **Hybrid Buses** – These diesel/hybrid buses work best in urban areas with significant stop and go traffic. These buses have been proven for over 20 years. These buses are common in larger cities and should be considered for San Angelo if there is little or no match required. These buses require additional maintenance tools and expertise. A heavy duty hybrid electric bus combines a conventional diesel internal combustion engine propulsion system with an electric propulsion system. Bus batteries store energy and recharge when the bus decelerates. When demand for power exceeds battery capacity, the diesel engine provides extra energy. Hybrid buses have lower emissions than other propulsion types and use less fuel. A typical hybrid 40 foot low-floor vehicle should cost between \$800,000 and \$900,000. This technology would require a major investment in infrastructure.

Urban Paratransit Vehicles

The urban demand response service includes 9 peak vehicles with 12 all together for a spare ratio of 33 percent. Six of the vehicles are over 220,000 miles, with an average mileage of 164,000 miles overall. And an average age of seven years with all vehicles either 6 or 8 years old. Replacements should be considered now.

Rural Service Vehicles

The rural service has 13 peak vehicles, with 18 vehicles all together for an almost 40 percent spare ratio. The average mileage of these vehicles is 125,000 miles and most are in good to excellent condition with an average age of five years. As stated above, these vehicles are in light duty service and with proper maintenance these vehicles have about 2 – 3 years of dependable service left. They are also used in San Angelo while in the city.

Bus Typologies

There are a number of fixed route bus types to consider. These three are the general categories. A cost range is introduced here and it should be understood that with an 80 percent Federal match, the cost to San Angelo for a medium duty bus is only about \$20,000 to \$30,000 more per bus than a light duty cutaway. For the additional cost, San Angelo would get vehicles that:

- Could last twice as long,
- Provide a more comfortable ride,
- Have a low floor and a ramp instead of a lift,
- Have greater capacity or more room for social distancing

Please note that the prices described below may be affected by the inflation we are experiencing right now and the increased cost due to the shortage of vehicles.

Cutaway – Small Bus

Cut-away chassis are smaller than buses and usually have a high floor (Exhibit 4). These vehicles customarily have a seating capacity of between 8 and 30 seats and their size can vary significantly from 15 to 30 feet long. The study team advises against procuring 30 foot cutaway vehicles. These vehicles have a 5–7-year life as a front line vehicle, less if used in heavy duty service.

They are used in a wide variety of applications. They are most often used as feeder buses, dial-a-ride and ADA paratransit service as well as lightly traveled rural routes. All must have lifts or low floor with ramp. These vehicles range from \$150,000 to \$200,000 in cost depending on size and configuration.

Exhibit 4: Cutaway Bus



Goals and Performance Measures

Tracking performance is a critical element to managing the operation and identifying trends in their earliest stages. This will help management identify potential problems before they become serious. Most, if not all, of the data management needed on a regular basis is tracked in the PTN report. However, CVT management needs this data in a timelier manner: in real time, daily, weekly and monthly as well. This data will also generate specific performance measures needed by management.

This section will focus on the information CVT needs to properly manage the service. But it's more than just the numbers and measures. Some of the measures should be collected daily, weekly or monthly. Each county should also be compiled separately.

The best description of the performance measures needed by CVT is in the Transit Cooperative Research Program's (TCRP) Research Report No. 136: *Guidebook for Rural Demand-Response Transportation: Measuring, Assessing, and Improving Performance*.

<http://www.trb.org/Publications/Blurbs/162701.aspx>

This publication was written by the KFH Group. Attention should be focused on Chapter 4 which details the measures management should be reviewing. This combined with the following narrative will give CVT the knowledge necessary to set up the new management reporting system in the Ecolane software.

The following activities should be set up to implement the enhanced tracking of service, using TCRP Report 136 as a guide.

Determine Performance Measures to be Used to Manage Performance

CVT files a PTN 128 report documenting a wide variety of data and performance measures for TxDOT. While all of these numbers and measures are important to track, this effort will focus on those numbers and measures critical to operating performance. Further, this does not preclude the monitoring of any other activities – these should be considered a minimum. For all services.

Data Collection

- | | |
|-------------------------|----------------------------|
| 1. One way trips | |
| 2. Vehicle-hours | 7. No-shows |
| 3. Vehicle-miles | 8. Missed trips |
| 4. Cost data | 9. Road calls/breakdowns |
| 5. Accidents, incidents | 10. Complaints/compliments |
| 6. On-time performance | |

Performance Measures

Performance measures are critical to monitoring performance. Some are tracked on a daily basis, while most of the others can be tracked on a monthly basis. Following are the recommended key measures for management to guide them in operations. In all cases these number and measures should be disaggregated by county. All should be collected monthly with the exception of those that should be collected daily. The measures should also be separated by route and service type. Paratransit service, rural service or fixed route should only be compared within each category and should never be compared to each other as they do different things.

*The key is to rapidly identify an issue before it becomes a **problem** and then find **solutions**.*

Key Measures

For all services separately

1. Passenger Trips per Vehicle-Hour – **Daily** - This is productivity, the most critical performance measure (excluding safety). It drives operating cost per trip and ultimately overall system cost.
2. Operating Cost per Vehicle-Hour – This is an important unit of cost and easily measurable. It reflects the cost to operate one vehicle for one hour. It should not fluctuate significantly from month to month unless a large one-time payment is made. It should not fluctuate significantly from year to year, unless costs such as fuel, insurance or other costs increase.
3. Operating Cost per Vehicle-Mile – Similar to operating cost per hour.

4. Operating Cost per Passenger Trip – This is partially a reflection of operating cost per hour but is most affected by system productivity as is discussed below.
5. Safety Incidents per 100,000 Vehicle-Miles – **Daily** - Can be tracked separately for incidents, accidents and other problems
6. On-Time Performance – **Daily** – Percentage of trips/runs that are on time compared to all completed trips.

Other Important Measures

All should be reported and reviewed month, with most reported daily.

1. No-Shows, Missed Trips (paratransit) - **Daily** – Either actual number or percentage of total trips
2. Road Calls/Breakdowns - Per 100,000 miles (Daily numbers)
3. Complaints/Complements - **Daily**
4. Miles per Hour and Average Trip Length – These should be used monthly to test accuracy of other measures. Monthly fluctuations of more than a few percentage points should be investigated, verified and explained. If fluctuations occur, this should be tracked daily until the problem is resolved.

The next step is to set up the software to track this information on a daily and monthly basis. Once this is complete initiate the monitoring of service. After two to three post COVID months have been measured, initial benchmarks can be set.

Developing Performance Goals

Developing goals requires understanding the benchmarks and increasing performance a modest amount over six months to a year. The goals should be achievable and should include an all-staff commitment to the goals. Once the goals are achieved, celebrate and then set new modest goals. Repeat continuously. As part of this TDP the study team will work with CVT to develop an initial set of goals.

Marketing and Branding

Like any other customer driven business, marketing and appropriate branding are critical to transit and are simple and low cost to implement. The current services have no names, specific, system identifiers nor a brand.

The best advertising is good looking buses with an attractive paint scheme, logo and professional drivers that the community can be proud of. Plain “institutional” white vehicles will blend into the background

and be invisible to the community, never good for ridership. As with any business it is important to be noticed (in a good way). Vehicles should be ordered from the factory with the specified paint scheme first, to ensure professionalism and second, to pay for the painting with the capital grant.

1. Monitor the service to ensure everything is appropriate and performance measures are being met.
2. Initiate marketing efforts 2 – 3 months prior to the changes, culminating in a significant promotional effort.

Developing the Brands

In parallel with the development of the new services a branding effort should begin. It is here that the brands should be determined. This can be done professionally or in-house but must look and sound professional in every way. It may be possible to take advantage of local resources such as colleges and high schools for naming or branding ideas (college). The following steps should be taken:

- **System name or nickname** – This is the name most will use. Perhaps a contest among students, combined with a full rebrand celebration.
 - **Recognizable** - Like VIA in San Antonio, the HOP, CARTS, Santa Fe Trails or any number of different systems that are recognized by their names. Sometimes a simple name like Paris Metro says it all.
 - **Identifies with the area** – Concho Valley is a theme. The color and nickname should be symbolic of the service area. For example: Heart Transit.



- **Catchy** – The Blue Bus is the system's nickname and is an instant identifier as all of their vehicles are bright blue.
- **Avoid acronyms in most cases** – Names like SCAT (the absolute worst), CUATS, and ETHRA, for example, have little to no meaning and sound terrible.
- **Vehicle colors and paint scheme** – This requires eye-catching vehicles that will be noticed and can instill pride. Is there a local color that symbolizes the area (green for example)? This scheme should be developed.
- **Bring in system sponsors** – Having sponsor names on the sides of the vehicles perhaps in a corner, can lend credibility to the system.



- **Branding each service type** - CVT should brand its different types of services with catchy names:
 - Rural and Regional Service – Names can be associated with fast service – Express or flyer, old themes – Concho Stage Lines for example
 - San Angelo fixed route – Should have its own catchy name. Avoid names like San Angelo Transit (SAT) or other plain names.
 - On-Demand service – Brady, and San Angelo – CARTS uses the name NOW for its on-demand service. Names like Direct and Fast say it all.
 - ADA Paratransit – These services are often called Mobility, Access and other terms that are based on these terms (Access Link for example)

- Bring in system sponsors – Having sponsor names on the sides of the vehicles perhaps in a corner, can also lend credibility to the system.



Naming the Routes

Routes should have a number and a name. The name should be reflective of the route. The current names don't always reflect what the route really does. It could be an "anchor" major destination, a direction, a community or other appropriate names. For example, Route 2 could be named Goodfellow, Route 5 could be called Southwest. For a corporate name such as Walmart, naming rights would require a sponsorship (see above).

Financial

This financial review looked at two primary issues related to the service. These are summarized below:

- A. **Service efficiency** – This includes operating efficiently (doing things right) and economizing where needed. Using the operating cost per revenue hour as an indicator, CVT is clearly a lean organization, with low contracted operators and maintenance. CVT operates at about \$79 per vehicle hour in the rural areas. This cost is reasonable and in line with peers. Urban costs are about \$97 for the same time period, also in line with peer costs.
- B. **Sustainability - Securing needed funding** - One of the greatest threats to rural transit systems is the lack of local funding for service. Lack of local funding can severely limit a system's ability to grow and meet more needs. CVT is currently well positioned receiving a diversity of funding including Medicaid, which can be used as local match in rural areas. CVT contracts with Angelo State University and Goodfellow Air Force Base, with both services open to the public. This is excellent diversity. In addition, the study team recommends developing a sponsorship program to improve sustainability.

System Costs and Sustainability for the Future

This plan calls for a cost neutral operating budget for the basic rural and urban services. That is, the changes to the routes and service design will increase ridership at no significant additional operating costs.

There are also options to add service in San Angelo to Route 5. As Route 5 is the highest ridership route, it may be advantageous to cut headways to 30 minutes by adding a bus. The cost of adding a full time bus for one year would be about \$336,000 at an hourly cost of \$80.

Future service will require continued sustainability. CVT already generates revenue from human service agencies. The one area where CVT can generate additional revenue is through the private sector.

- **Private sector sponsorship programs** – This is a good way to secure funding. Companies such as Walmart, HEB and others have provided support in other communities in the past. The healthcare community has often stepped up as well. Often these types of organizations have charitable foundations as well. These organizations typically have more funding available for community engagement than small cities and rural counties.

Sponsorship Programs: More than Advertising

Transit has a long history of providing advertising on and in buses for additional revenue. Many systems have engaged in advertising over the years, but a sponsorship program is more than simply advertising. Instead of the usual selling of just one form of advertising, CVT should sell sponsorship packages. Since sponsorship and advertising funds are an important source of local funding, this program can help expand the service. Walmart and HEB for example, have been known to support transit to their stores, creating a win-win for CVT and the retailers.

This is a potential source of revenue for CVT in the future. Large corporations have been known to participate in sponsorship programs and typically these companies (such as Walmart) have far more money than all the cities and counties in the service area combined.

This activity should be implemented at the end of the rebranding with new vehicles in the new paint scheme and the new name. Potential sponsors want to be associated with a first class service that the community can take pride in.

Identifying the Service

As discussed above, the program is designed to sell a service to both public and private sponsors. Possible services for sale can include (but should not be limited to):

1. Sponsorship services at any level
 - a. Recognized as a sponsor on CVT how to ride guide (system map and schedule).
 - b. Sponsored by... on all system literature and advertising.
 - c. Decal on side or back of the bus.
 - d. Dedicated shuttle.
 - e. Special promotions sponsorship.
2. Higher level sponsorship services
 - a. Company logo on CVT maps and brochures.
 - b. Placing of a shelter for customers and/or employees.
 - c. Placing of a stop conducive to customers and/or employees - this could include going into a parking lot and stopping next to the facility.
 - d. Route named for sponsor.
 - e. Bus wrap.

If properly packaged, these services have considerable value to businesses such as:

1. **Large retailers** – Walmart, Target, HEB and others: supermarkets are excellent examples, malls and big box stores are others.
2. **Hospitals** – And other health care facilities.
3. **Large local based corporations** – Are there any large corporations based in the area?
4. **Small local based companies** – Any local company can participate at a number of levels.
5. **Fast food restaurants** – Wrapped buses are popular with some of the largest chains.
6. **Television, radio stations, and local newspapers** – There are opportunities with these organizations. They can give CVT valuable advertising.

Develop Sponsorship Levels and Packages

After determining what will be for sale, the following activities should be accomplished:

1. **Price the items** – Attach value to each item for sale. Check with firms that wrap buses to determine the cost of a wrap. Items should be priced competitively with similar types of advertisements, such as billboards, and television and radio advertising. Think big! Both large and small firms should have opportunities. Set up multi-year packages for semi-permanent advertising such as bus wraps, shelter and bench signs.
2. **Develop sponsorship packages** – After pricing the various services to be provided, CVT should put them in sponsorship packages to maximize revenue. Each level of sponsorship should have a name to it. For example, gold, silver, bronze. Examples can include:
 - **High-End Sponsor (Five Star, Platinum, etc.)** – The value of these services is significant. High-end services should only go to those sponsors willing to pay over for example, \$10,000 per year (with 3 year contracts). Packages can be combined based on a customer/sponsors need. These high-end services include bus wraps, a shelter in front of facility, with advertising, an intercounty route named after sponsor (e.g., mall route, Hospital route or College route) and logo on CVT map. Each of these services should be worth up to \$10,000 per year and more if they are combined.
 - **Mid-Level Sponsors** – These sponsors should have access to a variety of packages that include advertising on a shelter(s), bench(s), and internal advertising. Decal on back of the bus, and name in the riders guide are also available. Other opportunities can include sponsoring special promotions.
 - **Entry-Level Sponsor** – Small local sponsors have a place in sponsorship as well. Packages can include advertising on benches, and internal advertising. Certain special promotions should be priced for the entry-level sponsor, and recognition as a sponsor should be on promotional material.

Sponsorship Implementation Tasks

- **Create promotional material** – Develop materials to sell the sponsorships. The material should be of high quality.
- **Recruit supporters** – Community and political leaders as well can be recruited to help sell the packages. Attempt to get local media outlets to assist.
- **Sell sponsorships** – After all of the preparation has been completed, sales can be initiated. Both large and small sponsors should be sought. For larger firms, first attempts should be with local contacts. If attempts with large firms fail at the local level - contact regional or corporate offices.

Limits on Advertising

CVT should set up standards for advertising on CVT transit vehicles. Advertising should be tasteful, within the normal bounds of advertising accepted in the community. It is recommended that CVT refuse any advertising of a political, religious, or adult oriented content or intent. This will only cause controversy where none is wanted.

Advertising should be of a quality design and application. All advertising should meet quality standards developed through CVT. It should be professionally designed and installed - it must look good.

Funding Potential

With an aggressive, professional sales approach this program has the potential to generate significant unencumbered cash for the organization. The vehicles serving as rolling billboards can generate more than \$500 per month per vehicle (after expenses). Assuming ten vehicles are wrapped, this approach can generate \$60,000 per year in revenue. Additional sponsorships can generate approximately \$10,000 annually for a net revenue of \$70,000 annually.

Implementation Planning

Implementing the recommendations will take careful consideration, testing of routes and outreach to the public. This implementation plan first describes the process recommended to gain community support and to engage the public, followed by route planning, training and preparation for implementation.

1. **Coalition Building** – Local support for the changes is essential. Local political leaders, business leaders and stakeholders can be most effective during an improvement.
2. **Develop Branding** – For all services and the organization as a whole:
 - a. **Developing a nickname, logo, paint scheme**

- Branding for each of the four future services – names and colors
- Name Contest – Perhaps open to high school and College students
- Logo and paint scheme professionally designed

3. Finalize routes – Conducting operations planning:

- a. **Exact routing** should be based on the routes developed in this plan, CVT planning staff will determine the exact turn by turn routes. Changes to hours, costs, implications and impact on customers should all be anticipated. Changes that require new run cutting should be planned as well.
- b. **Time the routes** and set up schedules using timing points not stops
 - Reset timing points where needed.
 - Using a vehicle operator and bus, each route change should be simulated and tested prior to finalization. Does the schedule work? Will it make the appropriate meets? Is it safe for the passengers and vehicle operator?
- c. **Bus stops** – there should be numerous stop relocations and new stops
 - As changes are made identify the most appropriate location for a stop. Safety, accessibility, specific location should all be considered. Follow the guidelines set near the beginning of this chapter.
 - Benches, shelters other amenities as appropriate based on ridership and willingness for a sponsor to fund a shelter.
- d. **On-demand service zone** – Route 7 will become an on-demand route – ensure that the zone planned meets needs.
- e. **Review future** plans to add a bus to Route 5 and expand On-Demand zones

4. Rural Services – Fixed Scheduling regional routes

- a. **Rural schedules** should be set up for each county by day of the week
- b. Schedules should be **based on existing dialysis runs** and other regular runs into San Angelo
- c. **All trips to San Angelo** should adhere to the schedules.
- d. **Schedules posted on websites** and other social media
- e. **Riders** should all **receive** emails and or hard copy of **changes**.
- f. **Set up new service in Brady**
 - Coalition building in Brady and McCullough County
 - Set up zone
 - Initiate technology
 - Outreach and public Information
 - Kick-off celebration

5. Coordinate Paratransit Services

- a. Integrate rural buses into ADA and On-Demand

6. Outreach and Public Engagement

- a. Get input on routes
- b. Meeting on a bus in rural areas

7. Train vehicle operators

- a. Set up a route template for each route with all stops and turns and specific training on each route, prior to being assigned.
- b. Train all operators on all fixed routes

8. Marketing the Service

- a. Once changes have been finalized and schedules and maps have been revised, it will be time to market the service. Connectivity, rapid and comfortable service should be marketed. Market renewed confidence in the service in anticipation of future efforts post-COVID.

9. Kick-off event

- a. Event either separate or tied to another event

10. Performance Review

- a. Set up **monitoring** system
- b. **Collect** data daily
- c. **Analyze** daily until service settles down
- d. **Making adjustments to schedules as needed**

Appendix A

Major Trip Generators by Categories

This is not an exhaustive list of all the trip generators in the CVT Region. The major source of this list is Google Search and the businesses recorded on Google Maps. The information on major employers for San Angelo is sourced from the Economic Development Corporation.

Medical Facilities:

Name of the Hospital	Place	County
Angelo State University Health Clinic	San Angelo, TX	Tom Green
Community Medical Associates	San Angelo, TX	Tom Green
Shannon Senior Health Center	San Angelo, TX	Tom Green
West Texas Medical Associates	San Angelo, TX	Tom Green
Concho Valley Regional Hospital/Shannon Medical Center/ St. Johns Campus	San Angelo, TX	Tom Green
Shannon Medical Center/Shannon West Texas Memorial Hospital	San Angelo, TX	Tom Green
Shannon South Hospital	San Angelo, TX	Tom Green
Heart of Texas Healthcare System - Emergency Room	Brady, TX	McCulloch
Brady Medical Clinic	Brady, TX	McCulloch
Frontera Healthcare- Brady	Brady, TX	McCulloch
Schleicher County Medical Center	Eldorado, TX	Schleicher
Brady Medical Clinic	Brady, TX	McCulloch
Sonora Medical Clinic	Sonora, TX	Sutton
Kimble Hospital	Junction, TX	Kimble
Family Clinic	Sterling City, TX	Sterling
Reagan Hospital	Big Lake, TX	Reagan
Frontera Healthcare	Menard, TX	Menard
Sonora Medical Clinic	Sonora, TX	Sutton
L M Hudspeth Memorial Hospital	Sonora, TX	Sutton
Family Health Center of Ozona	Ozona, TX	Crockett
Reagan Hospital	Big Lake, TX	Reagan

Major Dialysis Facilities:

Name of the Dialysis Facility	Place	County
DaVita San Angelo Dialysis	San Angelo, TX	Tom Green
Angelo Kidney Connection	San Angelo, TX	Tom Green

Fresenius Kidney Care Red Arroyo	San Angelo, TX	Tom Green
Fresenius Kidney Care San Angelo	San Angelo, TX	Tom Green
Shannon Dialysis Services	Brady, TX	McCulloch

Major Educational Facilities (College/University):

Name	Place	County
Angelo State University	San Angelo, TX	Tom Green
Howard College	San Angelo, TX	Tom Green
Park University at Goodfellow AFB	San Angelo, TX	Tom Green
Texas Tech University	Junction, TX	Kimble

Human Service Organizations or Agencies:

Name of the Human Service Agency or Organization	Place	County
San Angelo State Supported Living Center	San Angelo, TX	Tom Green
Biomat USA	San Angelo, TX	Tom Green
Vitalant - San Angelo	San Angelo, TX	Tom Green
Carl Ray Johnson Recreation Center	San Angelo, TX	Tom Green
Daybreak Community Services	San Angelo, TX	Tom Green
Northside recreation center	San Angelo, TX	Tom Green
South Side Recreation Center	San Angelo, TX	Tom Green
Concho Valley Regional Food Bank - Food Distribution Center	San Angelo, TX	Tom Green
Rust Street Ministries - Food Distribution Center	San Angelo, TX	Tom Green
Goodfellow Library	San Angelo, TX	Tom Green
Tom Green County Library - Angelo West Branch	San Angelo, TX	Tom Green
Tom Green County Library North Angelo Branch	San Angelo, TX	Tom Green
Tom Green County Library System--Stephens Central	San Angelo, TX	Tom Green
River Crest Hospital	San Angelo, TX	Tom Green
Shannon Rehabilitation Hospital/Encompass Health	San Angelo, TX	Tom Green
Arbor Terrace Healthcare Center	San Angelo, TX	Tom Green
Baptist Retirement Community	San Angelo, TX	Tom Green
Sante Fe Crossing-Senior Center	San Angelo, TX	Tom Green
STATION 618	San Angelo, TX	Tom Green
Health & Human Services	San Angelo, TX	Tom Green
Public Housing Authority	San Angelo, TX	Tom Green
Food Stamps	San Angelo, TX	Tom Green
San Angelo Nursing and Rehab	San Angelo, TX	Tom Green
Brayden Park Assisted Living & Memory Care	San Angelo, TX	Tom Green
Meadow Creek Nursing and Rehabilitation	San Angelo, TX	Tom Green
Rio Concho West	San Angelo, TX	Tom Green

Lyndale San Angelo Senior Living	San Angelo, TX	Tom Green
Sagecrest Care Center & The Cottage Homes	San Angelo, TX	Tom Green
Cedar Manor Nursing & Rehab	San Angelo, TX	Tom Green
Park Plaza Nursing & Rehabilitation	San Angelo, TX	Tom Green
Roy K Robb Corrections Facility	San Angelo, TX	Tom Green
Tom Green County Jail	San Angelo, TX	Tom Green
Fresenius Kidney Care Red Arroyo	San Angelo, TX	Tom Green
DaVita San Angelo Dialysis	San Angelo, TX	Tom Green
Angelo Kidney Connection	San Angelo, TX	Tom Green
Fresenius Kidney Care San Angelo	San Angelo, TX	Tom Green
Angelo Dialysis Center	San Angelo, TX	Tom Green
San Angelo VA Clinic	San Angelo, TX	Tom Green
Central Texas MHMR	Brady, TX	McCulloch
McCulloch County Resource Center	Brady, TX	McCulloch
The Texas Health and Human Services Commission	Brady, TX	McCulloch
Central Texas Opportunities	Brady, TX	McCulloch
McCulloch County Courthouse at Confederate Square	Brady, TX	McCulloch
Irion County Community Center	Mertzon, TX	Irion
Sterling County Nursing Home	Sterling City, TX	Sterling
Sterling County Senior Citizens Center	Sterling City, TX	Sterling
Sterling County Community Center	Sterling City, TX	Sterling
Sterling County Public Library	Sterling City, TX	Sterling
Providence House Food Pantry	Robert Lee, TX	Coke
Robert Lee Care Center	Robert Lee, TX	Coke
Coke County Senior Citizens	Robert Lee, TX	Coke
Bronte Health & Rehab Center	Bronte, TX	Coke
Menard County Community Center	Menard, TX	Menard
Menard Public Library	Menard, TX	Menard
San Angelo State Supported Living Center	Carlsbad, TX	Tom Green
Bronte Senior Citizens Center	Bronte, TX	Tom Green
Eden Public Library	Eden, TX	Tom Green
Crockett County Senior Center	Ozona, TX	Crockett

Major Shopping Centers/Grocery Stores:

Name of the Shopping Center	Place	County
H-E-B	San Angelo, TX	Tom Green
H-E-B	San Angelo, TX	Tom Green
Market Street	San Angelo, TX	Tom Green
Walmart Neighborhood Market	San Angelo, TX	Tom Green
Walmart Neighborhood Market	San Angelo, TX	Tom Green
Walmart Supercenter	San Angelo, TX	Tom Green
Walmart Supercenter	San Angelo, TX	Tom Green

Walmart Supercenter	San Angelo, TX	Tom Green
Jackson Square	San Angelo, TX	Tom Green
Knickbocker Square	San Angelo, TX	Tom Green
Sherwood Oaks Shopping Center	San Angelo, TX	Tom Green
Southwest Plaza Shopping Center	San Angelo, TX	Tom Green
Sunset Mall	San Angelo, TX	Tom Green
Sunset Shopping Center	San Angelo, TX	Tom Green
The Commons Shopping Center	San Angelo, TX	Tom Green
The Shops at Stadium Park	San Angelo, TX	Tom Green
Walmart Supercenter	Brady, TX	McCulloch
Dollar General	Brady, TX	McCulloch
Lowe's Market	Brady, TX	McCulloch
Lowe's Market	Big Lake, TX	Reagan
Family Dollar	Mertzon, TX	Irion
Family Dollar	Sterling City, TX	Sterling
Hitchin Post Grocery/Deli	Sterling City, TX	Sterling
Family Dollar	Robert Lee, TX	Coke
Bronte Grocery Store	Bronte, TX	Coke
Dollar General	Bronte, TX	Coke
Brady Lake Store	Brady, TX	McCulloch
Lowe's Market	Eldorado, TX	Schleicher
Lowe's Market	Eldorado, TX	Schleicher
Lowe's Market Sonora	Sonora, TX	Sutton
Family Dollar	Sonora, TX	Sutton
Short Stop Inc.	London, TX	Kimble
Dollar Tree	Junction, TX	Kimble
Family Dollar	Big Lake, TX	Reagan
H-E-B	San Angelo, TX	Tom Green
H-E-B	San Angelo, TX	Tom Green
Market Street	San Angelo, TX	Tom Green
Walmart Neighborhood Market	San Angelo, TX	Tom Green
Walmart Neighborhood Market	San Angelo, TX	Tom Green
Lowe's Market	Eden, TX	Concho
Family Dollar	Eden, TX	Concho
Lowe's Market	Iraan, TX	Crockett

Multi-Unit Housing:

Name of the Housing Apartment	Place	County
Arroyo Square Apartments	San Angelo, TX	Tom Green
Ashley Oaks Apartment San Angelo	San Angelo, TX	Tom Green
Bella Vista Apartments	San Angelo, TX	Tom Green
Bent Tree Apartments	San Angelo, TX	Tom Green
College Hills West Apartments	San Angelo, TX	Tom Green

Concho Terrace Apartments	San Angelo, TX	Tom Green
Creekside Apartments	San Angelo, TX	Tom Green
Encino Park Apartments	San Angelo, TX	Tom Green
Fall Creek Apartments	San Angelo, TX	Tom Green
Harris Ave Apartments	San Angelo, TX	Tom Green
Meadow Creek Village Apartments	San Angelo, TX	Tom Green
Monterra Apartments	San Angelo, TX	Tom Green
Plaza Square Apartments	San Angelo, TX	Tom Green
Pulliam St Apts	San Angelo, TX	Tom Green
River Ranch Apartments	San Angelo, TX	Tom Green
Rosewood Park Apartments	San Angelo, TX	Tom Green
Sedona Ranch Apartments	San Angelo, TX	Tom Green
Sonterra West Apartments	San Angelo, TX	Tom Green
Sunset Apartments	San Angelo, TX	Tom Green
The Annex Apartments	San Angelo, TX	Tom Green
The BLVD Apartments	San Angelo, TX	Tom Green
The Brixton Apartments	San Angelo, TX	Tom Green
The Park on Paint Rock	San Angelo, TX	Tom Green
Wellington Place	San Angelo, TX	Tom Green
Wildewood Apartments	San Angelo, TX	Tom Green
Candlelight Apartments	San Angelo, TX	Tom Green
Christian Village Senior Apartments	San Angelo, TX	Tom Green
Concho Village	San Angelo, TX	Tom Green
Magdalen Arms Apartments	San Angelo, TX	Tom Green
Nueva Vista Apartments	San Angelo, TX	Tom Green
Oak Grove Senior Apartments	San Angelo, TX	Tom Green
Rio Concho Manor Senior Housing	San Angelo, TX	Tom Green
River Place Apartments San Angelo	San Angelo, TX	Tom Green
River Pointe Apartments	San Angelo, TX	Tom Green
Stonegate Park Apartments	San Angelo, TX	Tom Green
Windy Meadows Apartments	San Angelo, TX	Tom Green
Angelo Place Apartments	San Angelo, TX	Tom Green
Centennial Village	San Angelo, TX	Tom Green
Harvard House Apartments	San Angelo, TX	Tom Green
Mary Massie Hall	San Angelo, TX	Tom Green
Plaza Verde	San Angelo, TX	Tom Green
Stadium Oaks Apartments	San Angelo, TX	Tom Green
Texan Hall	San Angelo, TX	Tom Green
Tuscany San Angelo	San Angelo, TX	Tom Green
University Oaks	San Angelo, TX	Tom Green
Vanderventer Apartments	San Angelo, TX	Tom Green
Sagebrush Apartments	Brady, TX	McCulloch
Acequia Properties, Apartments	Brady, TX	McCulloch
Trails of Brady Apartments	Brady, TX	McCulloch

Bel Aire Manor Apartments	Brady, TX	McCulloch
Housing Authority – Robert Lee	Robert Lee	Coke
Eldorado Place Apartments	Eldorado, TX	Schleicher
Sonora Seniors Apartments	Sonora, TX	Sutton
Sonora Sage Apartments	Sonora, TX	Sutton
Landmark Apartments	Sonora, TX	Sutton
Crockett Apartments	Ozona, TX	Crockett
Country Club View Apartments	Ozona, TX	Crockett

Major Employers:

Employer	Place	County
Blue Cross and Blue Shield of Texas	San Angelo, TX	Tom Green
CSA Materials, Inc.	San Angelo, TX	Tom Green
Ethicon Inc	San Angelo, TX	Tom Green
Gandy Ink Screen Printing	San Angelo, TX	Tom Green
Sitel Corporation	San Angelo, TX	Tom Green
TCP (TimeClock Plus®)	San Angelo, TX	Tom Green
Loadcraft Industries Ltd	Brady, TX	McCulloch
Carmeuse Industrial Sands (P.W. Gillibrand of Texas, Inc.)	Brady, TX	McCulloch
Goodfellow Air Force Base	San Angelo, TX	Tom Green
Kimble County Clerk's Office	Junction, TX	Kimble
San Angelo State Supported Living Center	Carlsbad, TX	Tom Green
Baptist Retirement Community	San Angelo, TX	Tom Green
Fixture Concepts	San Angelo, TX	Tom Green
Cedar Fiber Company	Junction, TX	Kimble
Loadcraft Industries Ltd	Brady, TX	McCulloch
Carmeuse Industrial Sands	Brady, TX	McCulloch

Source:

San Angelo: <https://economicdevelopmentsanangelo.com/workforce/major-employers/>

Concho Valley Economic Development District: <https://www.cvcog.org/cvcogedd/area%20economy.htm>