

SHORT RANGE TRANSIT PLAN

The City of Las Cruces
RoadRUNNER Transit

December 2021

TABLE OF CONTENTS

1	Fixed Route Existing Conditions	1-1
	Introduction	1-2
	Operational Characteristics	1-4
	Fare Structure	1-5
	Intersecting with Other Transit Providers	1-6
	RoadRUNNER Route Profiles	1-10
	Ridership Analysis	1-21
	Peak Times	1-27
	Route Productivity	1-28
	Transit Market Analysis	1-29
	Market Score Indicators	1-29
	Market Score Results	1-33
	Key Destinations	1-35
	Travel Patterns Analysis	1-37
	Methods	1-37
	Findings	1-37
	Summary of Travel Patterns	1-46
2	Demand Response Existing Conditions	2-1
	Demand-Response Overview	2-2
	Travel Patterns	2-3
	Vehicles and Efficiency	2-9
3	Public Engagement	3-1
	Introduction	3-2
	Virtual Events	3-3
	Stakeholder Meetings	3-3
	Public Meetings	3-4
	Virtual Public Meetings	3-4
	Open House	3-7
	Surveys And Other Digital Engagement	3-7
	Bus Operator Survey	3-7
	Public Survey	3-8
	Website	3-11
	Conclusion	3-14
4	Alternatives & Recommendations	4-1

Introduction	4-2
Fixed Route Analysis	4-2
Microtransit Simulation and Analysis	4-3
Alternative Development	4-3
Prioritization Tool.....	4-3
Microtransit Simulations	4-6
Transit Alternatives	4-12
Fixed Route Alternatives	4-13
Microtransit Alternatives.....	4-17
Public Input	4-17
Locally Preferred Alternative	4-19
5 Implementation and Funding	5-1
Implementation Overview.....	5-2
Phased Implementation	5-2
Phase I	5-2
Phase II	5-7
Phase III	5-7
Cost Estimation and Funding Impacts.....	5-9
Performance Metrics.....	5-11
Conclusion	5-11

EXECUTIVE SUMMARY

Introduction

RoadRUNNER Transit provides both fixed-route bus service and Dial-a-Ride paratransit service to residents in the City of Las Cruces, New Mexico. Operating on a dual hub and spoke system, the network revolves around two central locations: the Mesilla Valley Intermodal Transit Terminal (MVITT) and Mesilla Valley Mall (MVM). As ridership increased, service levels were updated in 2016 as a result of the 2016 Short Range Transit Plan (SRTP). The COVID-19 pandemic had a significant impact on ridership levels in 2020; however, RoadRUNNER was able to keep service running with minimal interruptions and service was provided fare-free for the duration of the pandemic.

Planning Process

The project team began the planning process for this SRTP with the following vision: *Efficient, reliable transit that connects people*. The team sought to create a plan that answered the questions: “How can we move and connect people in Las Cruces,” and “How can we do it efficiently, save time, and provide a more dependable system?”

The first portion of the planning process included a technical analysis that reviewed the existing conditions of both the fixed route and paratransit systems. The technical analyses built a strong foundation for a targeted public outreach effort, which included key stakeholders and various members of the public within the study area. In addition, a survey was made available to the public which helped gather vital qualitative and quantitative data the team used to inform and develop transit alternatives. With feedback from the public about the analysis and the results of the survey the project team created three alternatives with RoadRUNNER Transit and project partners. These alternatives were then vetted through another round of public engagement. The project team used feedback to isolate the weaknesses and identify the strengths of each alternative and develop a hybrid alternative which became the locally preferred alternative (LPA). The LPA includes an implementation plan and cost analysis that can be achieved over the next five years, providing clear goals and action steps to improve transit in Las Cruces. The LPA is truly a community supported plan that will help shape transit over the next five years and beyond.

This SRTP revealed the following key findings:

- Transit plays a critical role in moving people within, into, and out of the community.
- RoadRUNNER Transit routes align with the underlying transit markets.
- A focus on providing more frequency will save people time and make service easier to use.
- The introduction of a mobility on demand type service that functions as a RoadRUNNER taxi service will provide a more complete mobility profile for the community.
- The community wants faster and more reliable service.

1

Fixed Route Existing Conditions



INTRODUCTION

The first step in developing the RoadRUNNER Short Range Transit Plan (SRTP) is to establish a baseline and understand the state of transit as it operates today. Understanding the existing system will help establish thresholds used for the development of future service. The operational analysis also reveals what aspects of the existing transit system work well and identifies opportunities for improvements, which will in turn inform the development of recommendations such as route alignment modifications and service level adjustments. This process helps pinpoint the strengths and eliminate the weaknesses of the system in a manner that improves transit for existing passengers and positions it to attract new passengers.

The analysis of existing conditions in Las Cruces includes the following:

- Profiles of Each Route
- Ridership Analysis
- Market Analysis
- Desire Line Analysis

Each part of the existing conditions analysis is discussed in greater detail below.

Figure 1-1: Overview of Study Area

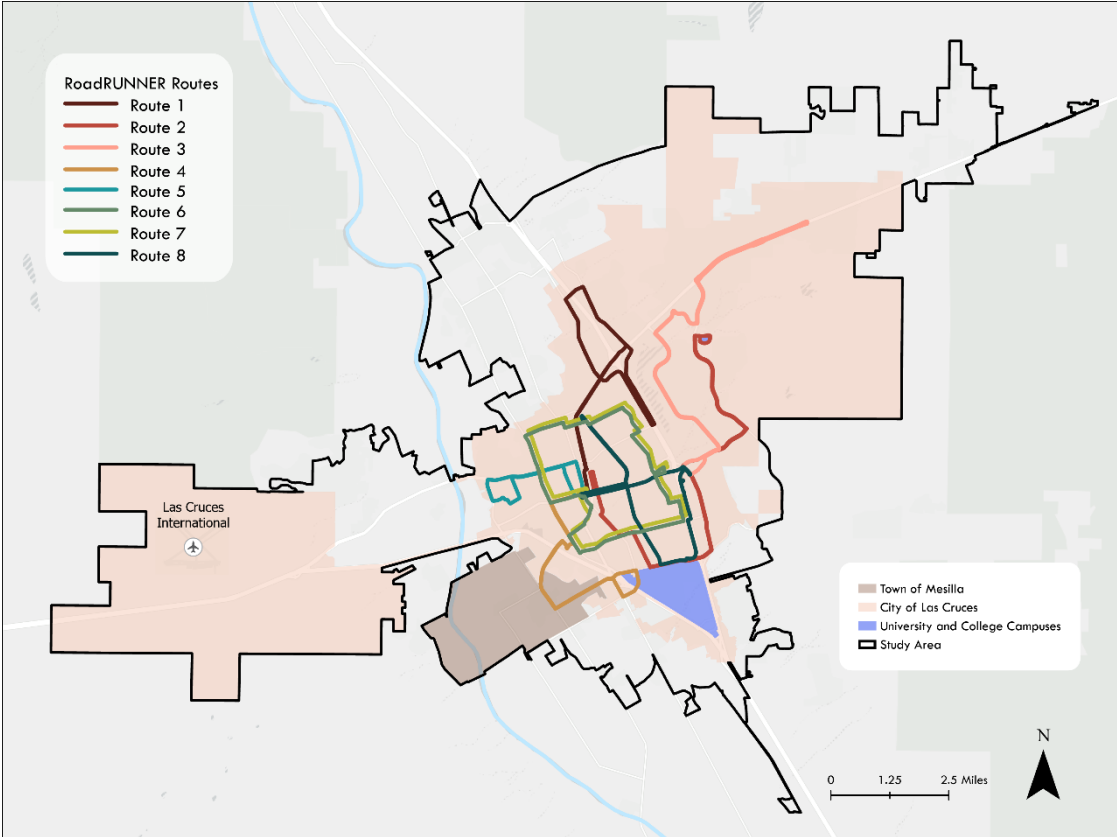
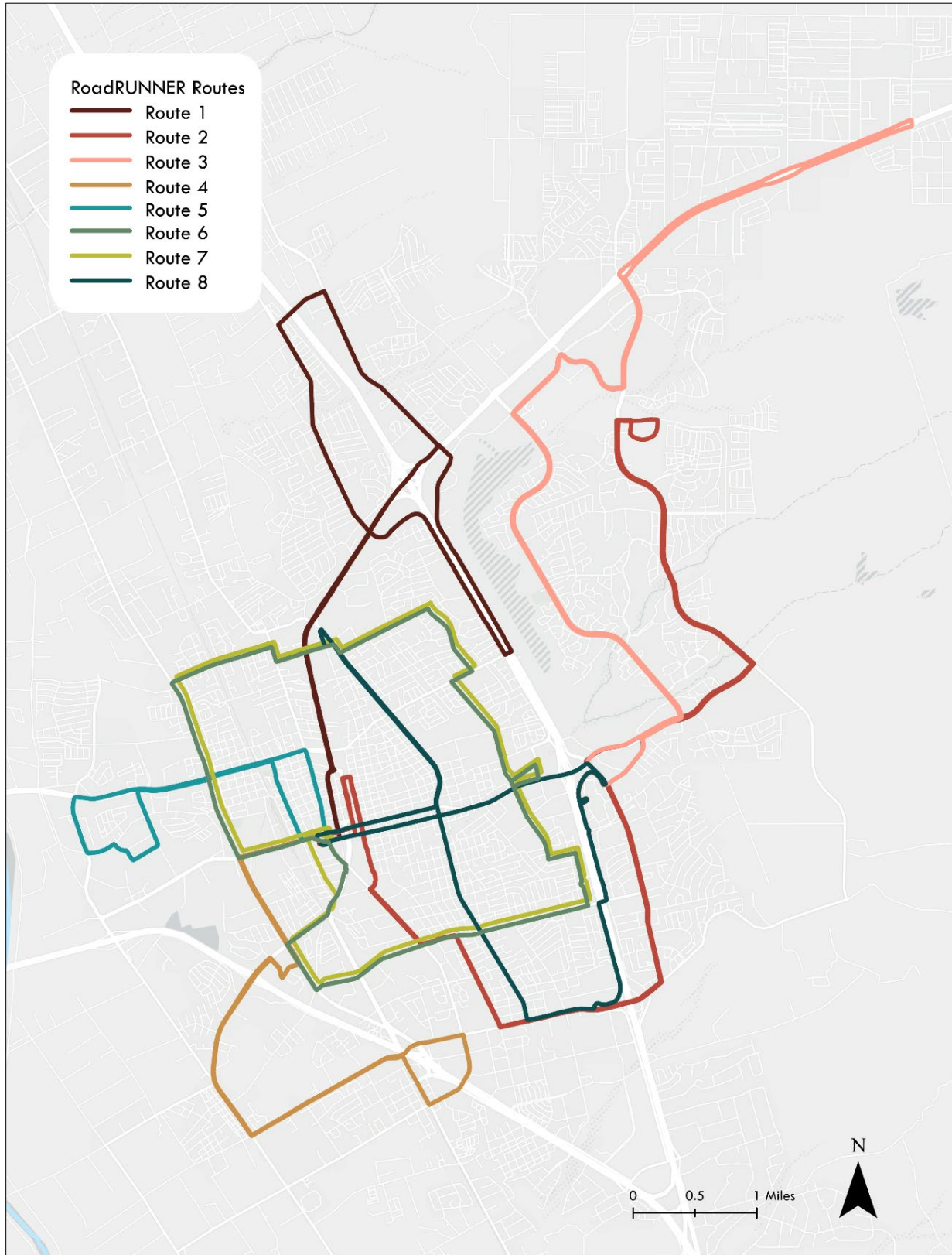


Figure 1-2: System Overview Map



OPERATIONAL CHARACTERISTICS

RoadRUNNER Transit currently operates 8 American with Disabilities Act (ADA) accessible fixed routes that originate at the Mesilla Valley Intermodal Transit Terminal located at W. Lohman Ave. and S. Alameda Blvd. RoadRUNNER fixed routes include eight different routes, as seen in Figure 1. RoadRUNNER Transit also provides fare-free ADA paratransit service, referred to locally as ADA Dial-A-Ride, which provides on-demand service for senior citizens or persons whose disability creates challenges to using the fixed route service. A detailed analysis of RoadRUNNER paratransit service can be found in Chapter 2.

While most transit systems operate on a “hub and spoke model,” RoadRUNNER transit operates on a dual hub and spoke model. Instead of having one major transit hub, RoadRUNNER has two: Mesilla Valley Intermodal Transit Terminal (MVITT) and Mesilla Valley Mall (MVM). Each RoadRUNNER route has a connection to one of the two transit hubs, and several have connections to both, making transferring between lines easier. Additionally, several routes intersect with each other, as shown in Table 1-1 below.

Table 1-1: RoadRUNNER Shared Stops

Stop Name	Route	Route 2
Missouri across from Wok-N-World	2	6
Telshor @ Hotel Encanto	2	3
Foothills, Horizon View	2	3
Lohman West & Roadrunner	2	3
Lohman @ Dunkin Donuts	2	3
Telshor @ Mesilla Valley Mall	2	8
University @ Pan Am Plaza	2	8
University & Jordan	2	8
Missouri before Durazno	2	7
Lohman across Ross & Marshalls	3	2
Amador & Mesilla	4	7
Amador & Gospel Rescue Mission	4	7
Amador & McSwain	4	6
Divot across from Walnut	6	7
Mesilla Valley Mall	8	3

The eight RoadRUNNER routes currently cover over 1,500 miles each day, providing service from 6:30am to 11:00pm each weekday and from 9:00am to 6:00 pm each Saturday. The frequency of most routes is 60 minutes, but Routes 2 and 5 provide 30-minute frequency, as shown in Table 2.

Table 1-2: RoadRUNNER Routes Level of Service

Routes	Service Day	Span	Frequency	Average Daily Boardings	Annual Boardings	Peak Bus
Route 1	Weekdays + Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00 pm Saturdays	60 min	157	47,704	1
Route 2	Weekdays + Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00 pm Saturdays	30 min	494	151,127	3
Route 3	Weekdays + Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00 pm Saturdays	60 min	122	37,333	1
Route 4	Weekdays + Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00 pm Saturdays	60 min	162	49,295	1
Route 5	Weekdays + Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00 pm Saturdays	30 min	203	62,146	1
Route 6	Weekdays + Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00 pm Saturdays	60 min	181	55,152	1
Route 7	Weekdays + Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00 pm Saturdays	60 min	140	42,801	1
Route 8	Weekdays + Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00 pm Saturdays	60 min	238	72,666	1
Aggie Green Route	Weekdays	7:00am – 6:00pm	10 min	361	66,130	2
Aggie Blue Route	Weekdays	7:00am – 6:00pm	20 min	231	19,759	1
RoadRUNNER System	Monday - Saturday	--	--	2,141	604,113	1.25

Fare Structure

Fares for the RoadRUNNER transit system cost \$1.00 per ride for adults age 19 to 59. Some riders may be eligible for a \$.50 reduced fare, including youth (ages 6 to 18), senior citizens (60 and older), persons with disabilities, Medicare holders, or students with valid school identification.

Children younger than five can ride for free. Day passes are also available for \$2.00 at full fare and \$1.00 reduced fare, as well as other types of passes shown below. Tickets can be bought with a credit card at Albertsons, City Hall, East Mesa Customer Service Center, and the MVITT Center. Funding for RoadRUNNER transit is provided by fare revenues and supplementary funding through the City of Las Cruces. Additionally, service to DACC-East Mesa Campus on Route 2 is partially subsidized by DACC.

Table 1-3: RoadRUNNER Fare Passes

Pass Type	Cost
Daily Passes	\$2.00 at full fare and \$1.00 for reduced fare
Weekly Passes	\$8 at full fare and \$4 for reduced fare
31-Day Passes	\$30 at full fare and \$15 for reduced fare
30-Ride Passes	\$30 at full fare and \$15 for reduced fare

Intersecting with Other Transit Providers

In addition to the 8 routes that RoadRUNNER transit operates, they commonly intersect with South Central Regional Transit (SCRTD) routes, New Mexico Department of Transportation (NMDOT) routes, Z Trans (a service operated by a nonprofit), and Aggie Routes, which is a transit line operated by RoadRUNNER transit for New Mexico State University (NMSU). Table 1-4 shows the available transfers between different providers, and the maps below display their routes.

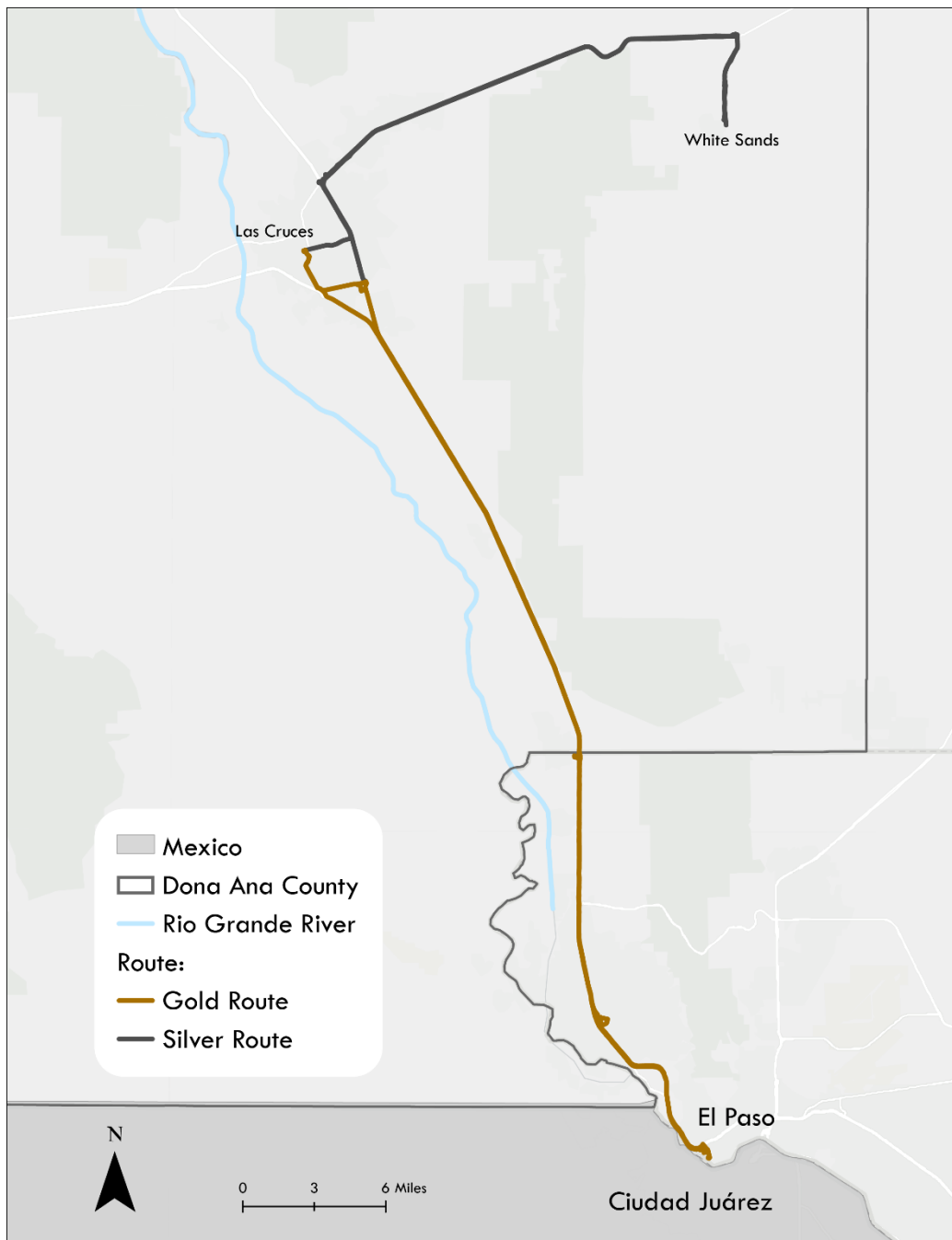
Table 1-4: RoadRUNNER Routes that Transfer to Other Providers

Route	SCRTD Routes	NMDOT Routes	Z Trans	Aggie Routes
Route 1	Yes – Green Line	Yes	Yes	No
Route 2	Yes – Red Line	Yes	Yes	No
Route 3	Yes – Green Line	No	Yes	No
Route 4	Yes – Red Line	Yes	Yes	Yes
Route 5	Yes – Red Line	Yes	Yes	No
Route 6	Yes - Red Line	Yes	Yes	No
Route 7	Yes – Red Line	Yes	Yes	No
Route 8	Yes – Red Line	Yes	Yes	No

NMDOT ROUTES

The NMDOT operates multiple park & ride locations during peak commute times to increase mobility options for the general public in New Mexico. While the service coverage includes multiple municipalities, the routes intersect with RoadRUNNER transit in the Gold and Silver Lines specifically. The Gold Route runs from Las Cruces to El Paso, and the Silver Route runs from Las Cruces to the White Sands Missile Range, as shown in Figure 1-3.

Figure 1-3: NMDOT Gold and Silver Lines



AGGIE ROUTES

Aggie Transit is operated by RoadRUNNER transit and provided by NMSU at no cost to students. The service operates on campus Monday through Friday while class is in session (including the summer session), and services stop operating during school breaks and holidays. Figure 1-4 shows the Aggie Routes.

Figure 1-4: Aggie Routes



Z-TRANS

Z-Trans, now known as the Orange Route, is a public transportation provider in the Tularosa Basin and nearby region. Since 2001, Z-Trans has been operating and moving people to and from Alamogordo, Holloman AFB, La Luz, Tularosa, Mescalero Apache Reservation, and Las Cruces. Specifically, the route that connects to RoadRUNNER service runs from Alamogordo to Las Cruces. The transit service is made possible by Zia Therapy Center, Inc. in Alamogordo. Z-Trans is partially subsidized by SCRDT to provide service to the Las Cruces area from Alamogordo, and the City of Las Cruces provides partial funding for this service through SCRDT.

SCRDT ROUTES

SCRDT Routes serve communities throughout Dona Ana County, including the following municipalities: Las Cruces, Hatch, Mesilla, Sunland Park, the Village of Dona Ana, and El Paso. As a regional transit district, the SCRDT allows for greater connection between a variety of providers and local governments. Table 1-5 Figure 1-5 shows SCRDT and Z-Trans routes.

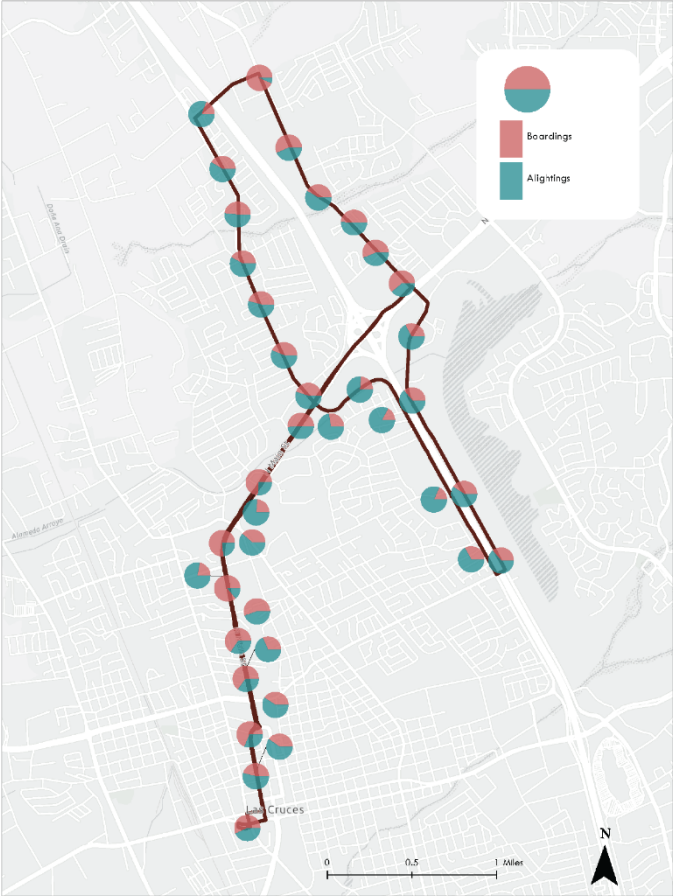
Figure 1-5: SCRDT and Z Trans Routes



RoadRUNNER Route Profiles

ROADRUNNER TRANSIT 1

Route 1 provides service to north-central Las Cruces, making a loop around the I-25 and Main Street interchange. Like many of the RoadRUNNER routes, Route 1 begins and ends at Mesilla Valley Intermodal Transit Terminal (MVITT). While there are no significant transfers to other RoadRUNNER routes, Route 1 does transfer to SCRTD Routes, NMDOT, and Ztrans via the MVITT station. Ridership is at its highest during the middle of the day and starts to drop off heavily at 5:00 pm.



AVERAGE DAILY BOARDINGS

157

ANNUAL RIDERSHIP

47,704

6.2 AVERAGE BOARDINGS PER REVENUE HOUR

- KEY DESTINATIONS:**
- Mesilla Valley Hospital
 - US Post Office
 - Jornada Elementary
 - Walgreens / CVS
 - Las Cruces VA Clinic
 - La Academia Charter School
 - Big Brothers Big Sisters
 - Broken Spoke Taphouse
 - Central Elementary
 - Branigan Cultural Center
 - Corner Deli

Service Day	Span of Service	Frequency	Daily Trips
Weekdays and Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00pm Saturdays	60 minutes	17 trips

1

Peak Buses

244

Route Miles

\$13.17

Cost per Boarding



ROADRUNNER TRANSIT

1



Timepoints

OUTBOUND

MVITTT

N Main across from Taco Bell

N Telshor Blvd & Summit Ct

Del Rey & Engler

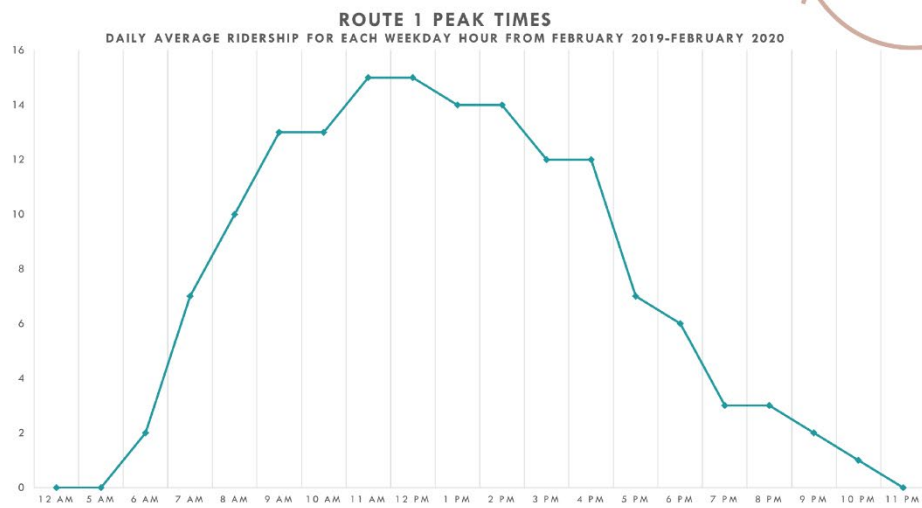
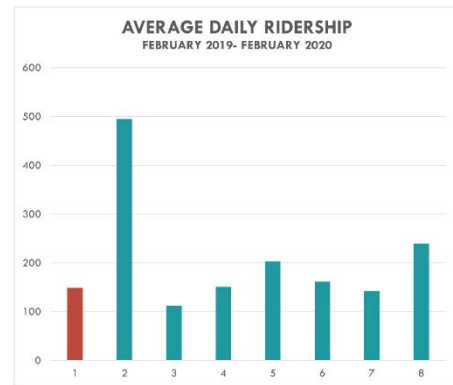
INBOUND

Del Rey & Engler

N Main @ Sonic

N Main @ Mountain

MVITT



Ridership is average compared to other RoadRUNNER routes.



MVITT

ROADRUNNER TRANSIT 2

Route 2 provides crucial connections between the MVITT and college campuses in Las Cruces. Additionally, Route 2 connects the dual hubs within the RoadRUNNER system; MVITT and Mesilla Valley Mall. Transfers to Routes 3, 6, 7, 8 are available through 7 different stops on route 2. Many of these connections occur on E Foothill Rd, as well E Lohman, where the routes intersect. Notably, Route 2 is the most productive RoadRUNNER route. Peak times for Route 2 include 9:00am and noon, but ridership begins to increase greatly at 7:00am.

AVERAGE DAILY BOARDINGS

494

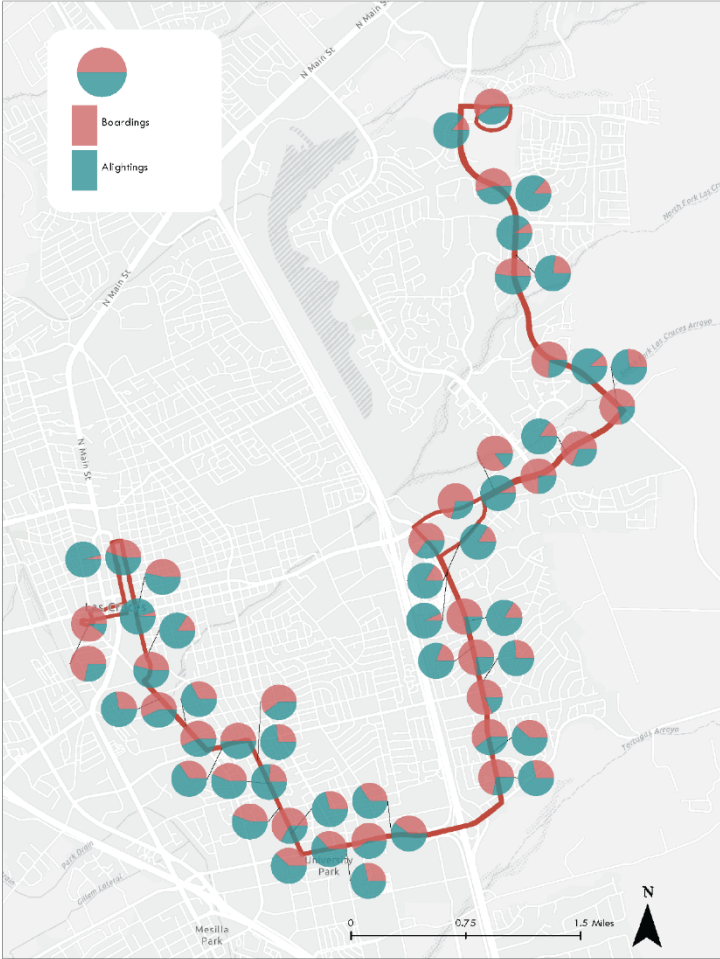
ANNUAL RIDERSHIP

151,127

14.4 BOARDINGS PER REVENUE HOUR

KEY DESTINATIONS:

- New Mexico State University
- DACC
- DACC East Mesa Campus
- Walmart
- Sonoma Ranch Apartments
- Mountainview Regional
- Walgreens
- Citizens Bank of Las Cruces



Service Day	Span of Service	Frequency	Daily Trips
Weekdays and Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00pm Saturdays	30 minutes	33 trips



Peak Buses

356

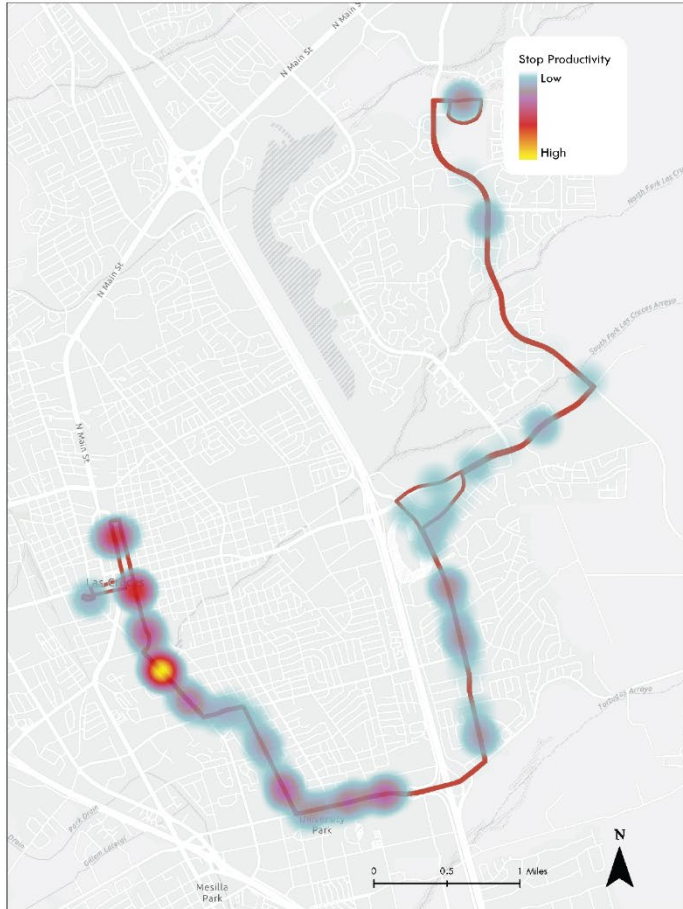
Route Miles

\$10.90

Cost per Boarding

ROADRUNNER TRANSIT

2



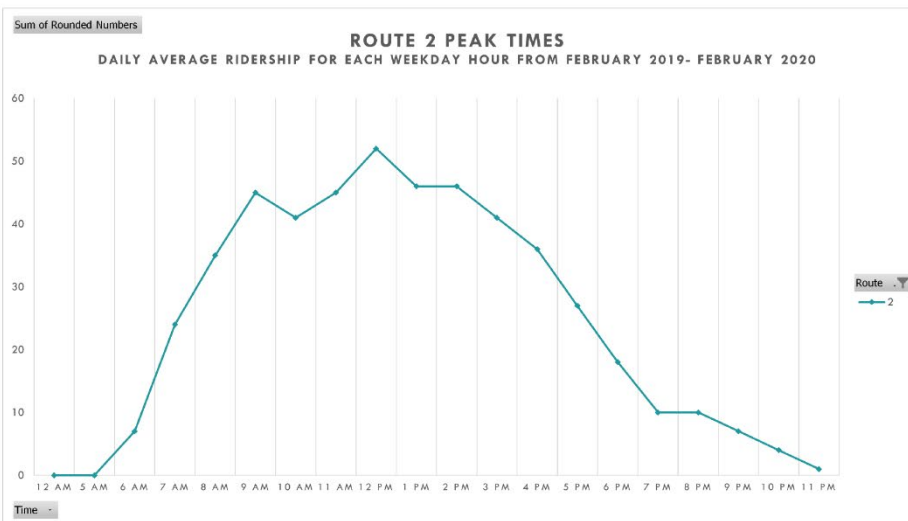
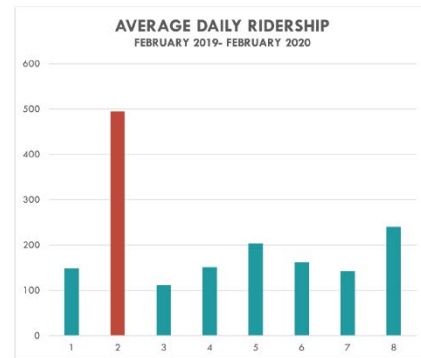
Timepoints

OUTBOUND

- MVITT
- S Espina St & Plain St
- S Telshor Blvd & Missouri Ave
- Lohman (Across from MVMRC)
- Dona Ana Community College

INBOUND

- Dona Ana Community College
- Lohman at MVRMC
- Telshor & Fairway
- Espina across from Boba Café
- Church St. & Las Cruces
- MVITT



- MVITT, MVM
- Route 3
- Route 6
- Route 8

ROADRUNNER TRANSIT 3

Route 3 begins at Mesilla Valley Mall and goes all the way to Porter Avenue on Bataan Memorial, providing the farthest northeast service in Las Cruces. Riders can also transfer to Route 2 via multiple stops on Lohman Avenue. Route 3 has the lowest ridership of all routes, but with very distinct peak times; ridership spikes at 9:00am, spikes again at 1:00 to 2:00 pm, and then decreases steadily throughout the day.

AVERAGE DAILY BOARDINGS

122

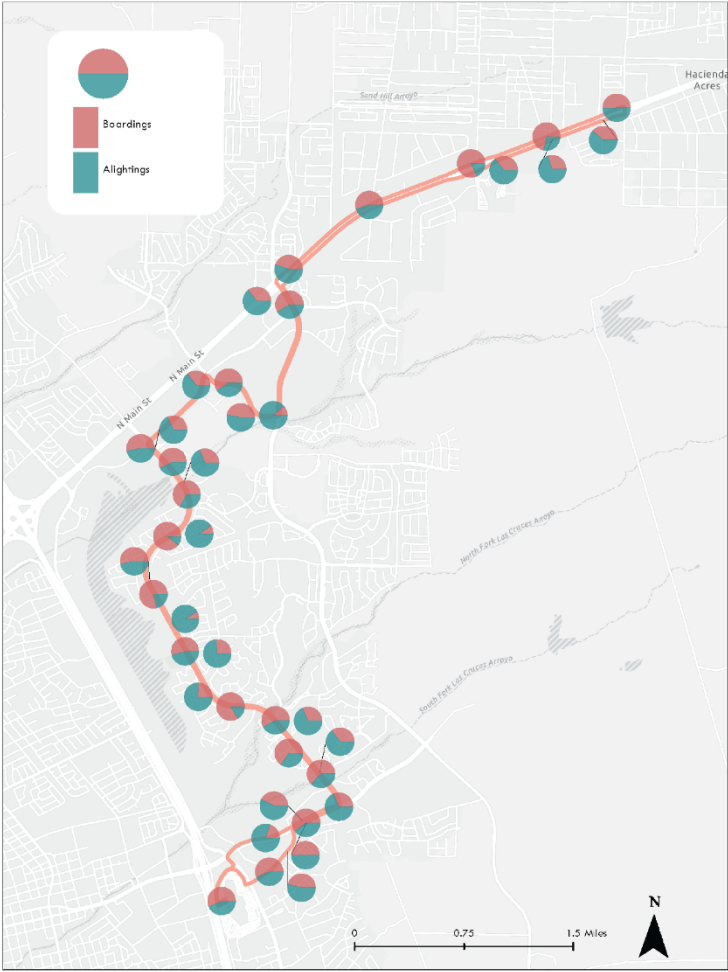
ANNUAL RIDERSHIP

37,333

4.9

BOARDINGS PER REVENUE HOUR

- KEY DESTINATIONS:**
- East Mesa Recreation Center
 - Sunrise Meza Family Community
 - DACC East Mesa Campus
 - River Oaks Mobile Homes
 - Marshalls
 - Bank of America
 - Little Tumbleweed Daycare
 - Sonoma Elementary
 - Memorial Urgent Care
 - Lotus Salon
 - Sonoma Palms Apartment Homes
 - Mountainview Medical Group
 - Mesilla Valley Mall
 - Walmart



Service Day	Span of Service	Frequency	Daily Trips
Weekdays and Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00pm Saturdays	60 minutes	16 trips



Peak Buses

307

Route Miles

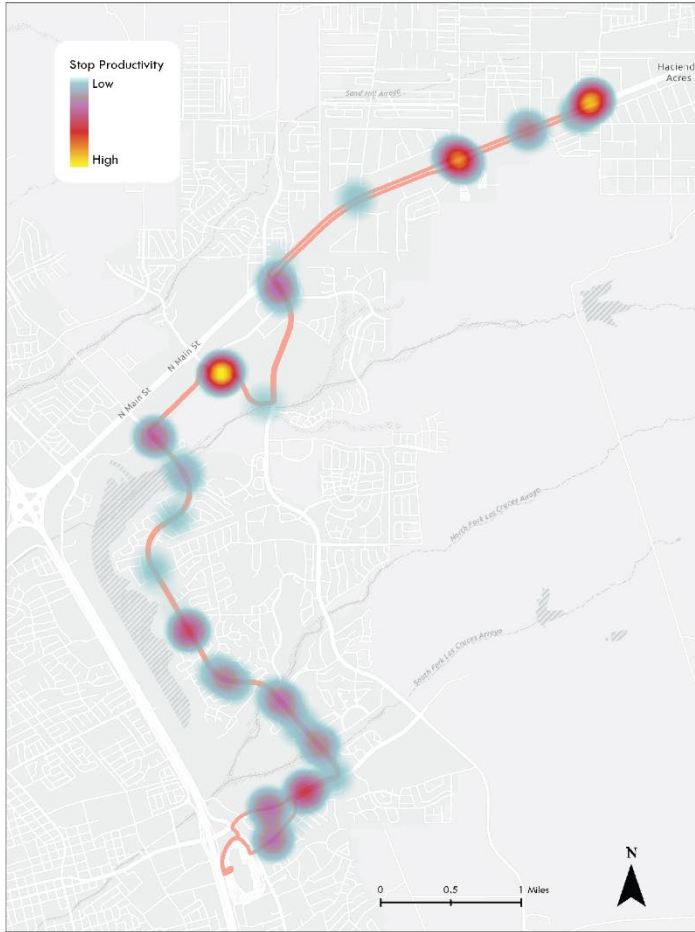
\$17.01

Cost per Boarding



ROADRUNNER TRANSIT

3



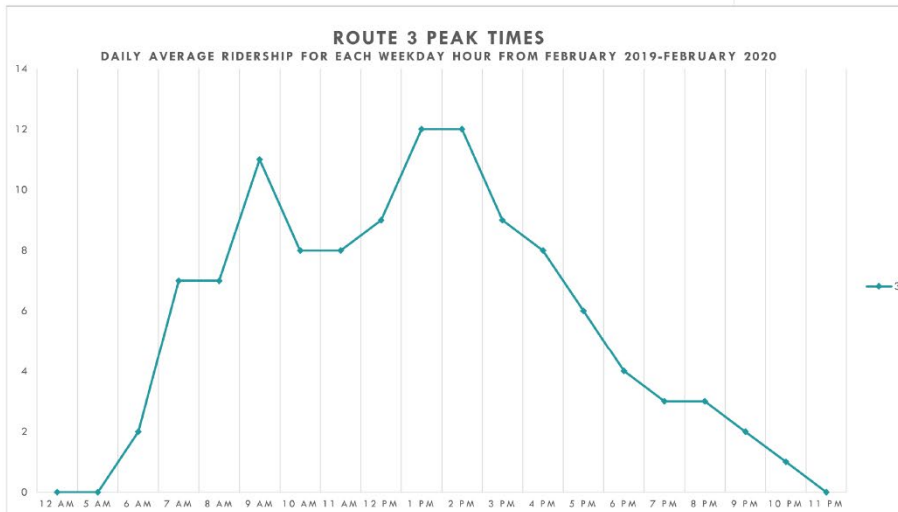
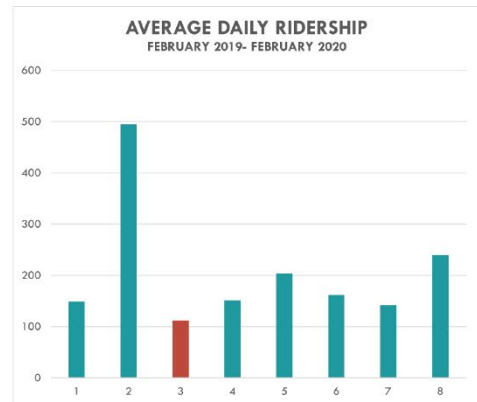
Timepoints

OUTBOUND

- Mesilla Valley Mall (MVM)
- N Roadrunner Pkwy &
- Stagecoach Avenue
- Northrise @ Rinconada
- Bataan Memorial West & Porter

INBOUND

- Bataan Memorial West & Porter
- RoadRunner & Northrise
- Roadrunner @ Golden Mesa
- Mesilla Valley Mall (MVM)



MVM

Route 2

Route 8

ROADRUNNER TRANSIT 4

Route 4 begins at MVITT and runs south down Avenida de Mesilla before cutting east to New Mexico State University. Route 4 also connects to Aggie Routes , providing students with a transfer connection to MVITT. Riders can also transfer to Routes 6 and 7 at stops along Amador Avenue by the transit center. Ridership increases steadily and spikes at noon and 3:00pm, taking a steep decline after the 3:00pm rush.

AVERAGE DAILY BOARDINGS

162

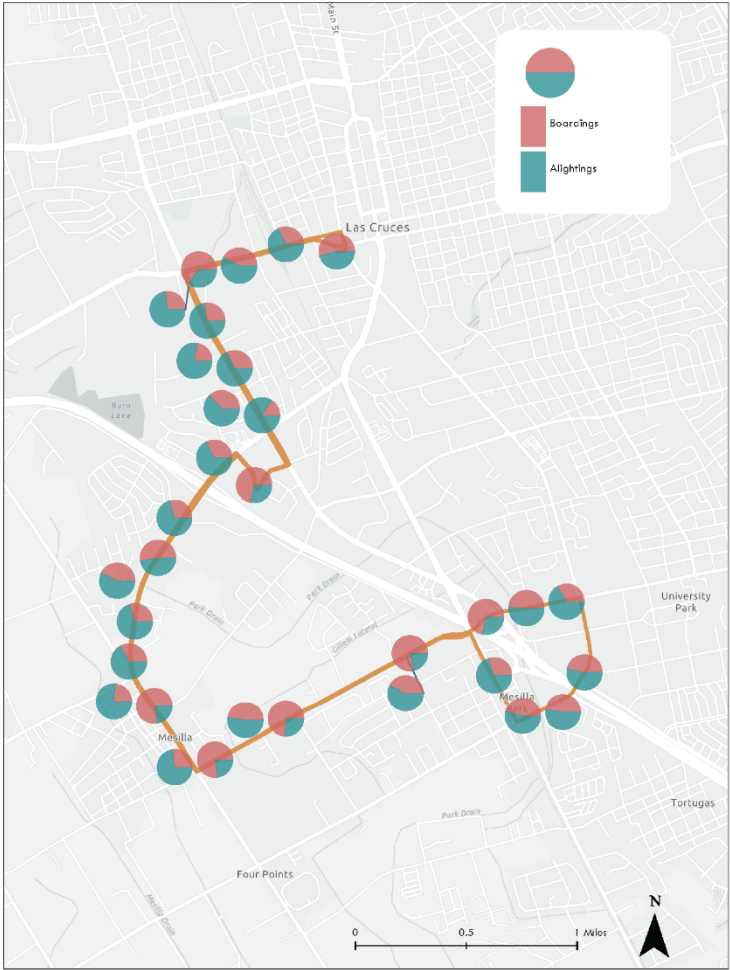
ANNUAL RIDERSHIP

49,925

6.3 BOARDINGS PER REVENUE HOUR

KEY DESTINATIONS:

- New Mexico State University
- MVITT
- Dona Ana Community College
- Las Cruces Convention Center
- Picacho Coffee Roasters
- The Blue Door Venue
- Applebee's
- Mesilla Valley Produce
- Gospel Rescue Mission
- The Verge Apartments
- Rio Grande Prep
- Zia Middle School
- Walmart



Service Day	Span of Service	Frequency	Daily Trips
Weekdays and Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00pm Saturdays	60 minutes	16 trips



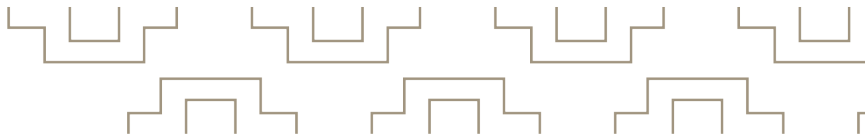
Peak Buses

195

Route Miles

\$12.82

Cost per Boarding



ROADRUNNER TRANSIT

4



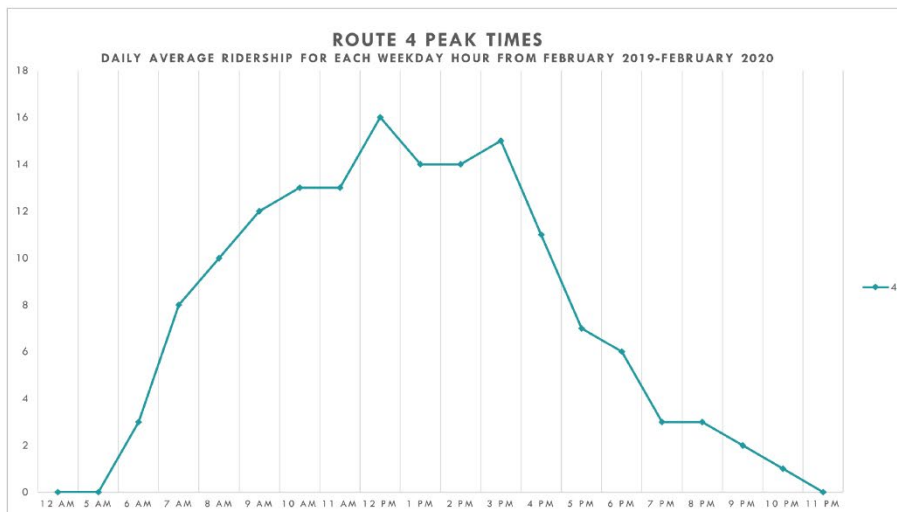
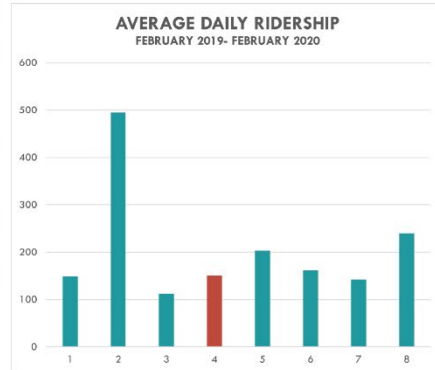
Timepoints

OUTBOUND

- MVITT
- Avenida de Mesilla @ Applebee's
- University & Bowman
- University @ Whataburger

INBOUND

- University @ Whataburger
- Avenida De Mesilla @ United Rental
- W Amador Ave & McSwain Dr
- MVITT



KEY TRANSFERS

MVITT

Route 6

Route 7

ROADRUNNER TRANSIT 5

Route 5 begins at MVITT on Alameda and runs west on Picacho Avenue. Route 5 then makes a loop via Copper Loop and 17th Street and another loop via 5 Melendres before returning to MVITT. Other than the transit center, Route 5 has no shared stops. Route 5 has the third-highest ridership of all RoadRUNNER routes. Ridership increases greatly at 7:00am and is highest at noon and 3:00pm; ridership begins to drop off after 5:00pm.

AVERAGE DAILY BOARDINGS

203

ANNUAL RIDERSHIP

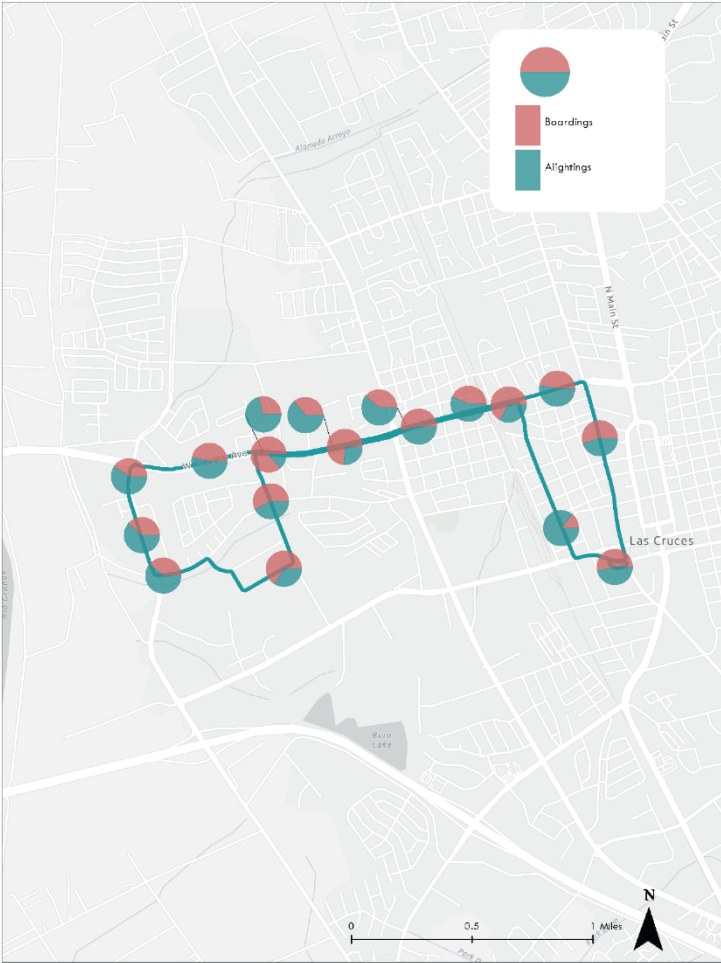
62,146

AVERAGE BOARDINGS PER REVENUE HOUR

17.4

KEY DESTINATIONS:

- Dollar General
- Desert Palms Apartment
- Sonic Drive-In
- Alma D'arte Charter High School
- Thrift Store
- Forrester Elementary
- Trine's Nail Creations
- Nessa's Café
- Big Larry's Flower Co.
- New Mexico Workforce Connections



Service Day	Span of Service	Frequency	Daily Trips
Weekdays and Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00pm Saturdays	30 minutes	33 trips



Peak Buses



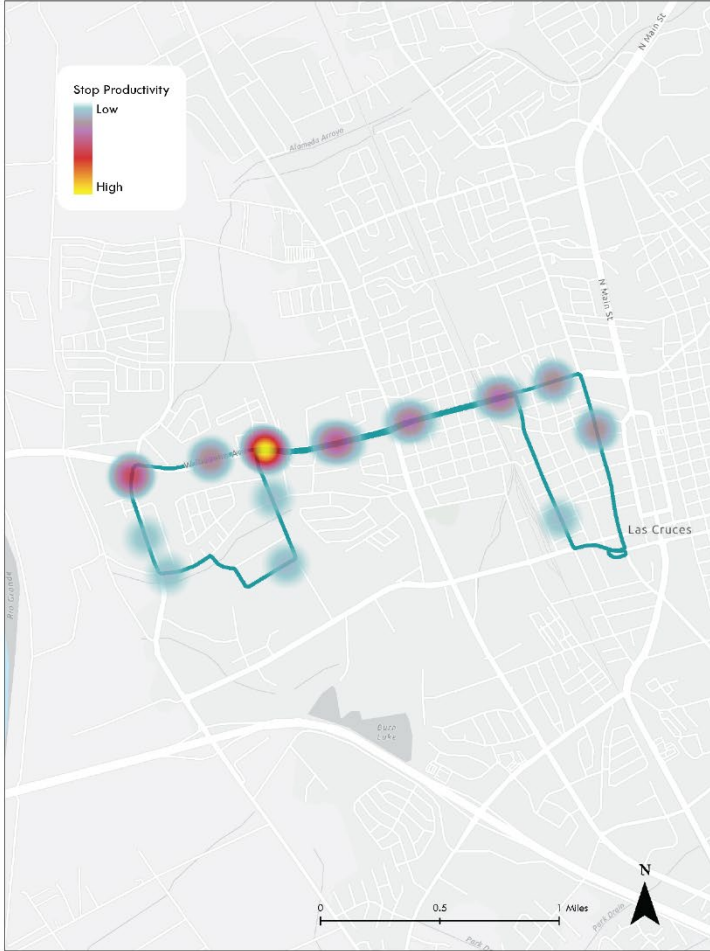
Route Miles



Cost per Boarding



ROADRUNNER TRANSIT 5



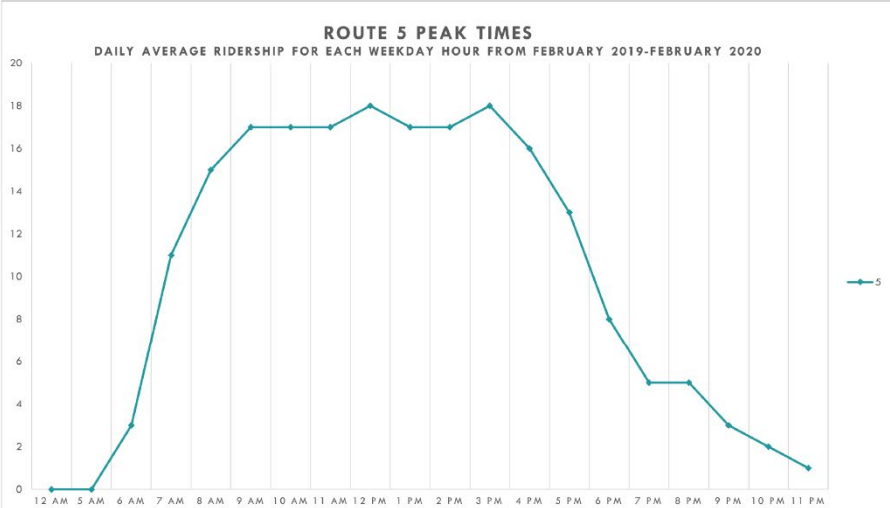
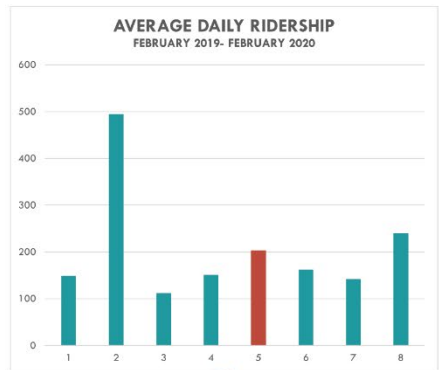
Timepoints

OUTBOUND

- MVITT
- Motel & Picacho Plaza

INBOUND

- Motel & Picacho Plaza
- Picacho @ Lions Park
- MVITT



Ridership is high compared to other RoadRUNNER routes.



MVITT

ROADRUNNER TRANSIT 6

Route 6 makes a loop around Main Street, running counter-clockwise on Valley Dr, Boutz Rd, Walnut St, Madrid Ave., and Hoagland Rd. Riders are able to transfer to Route 4, 2, and 7 at multiple stops throughout the route. Route 6 also has distinct ridership patterns. Similar to other routes, ridership increases greatly by 7:00am, but then the ridership drastically increases at 9:00am. Two smaller spikes occur at noon and 3:00pm before ridership begins to steadily decline.



AVERAGE DAILY BOARDINGS

181

ANNUAL RIDERSHIP

55,152

7.4

BOARDINGS PER REVENUE HOUR

KEY DESTINATIONS:

- Mountain States Cinema
- Dollar General
- Las Cruces High School
- Cricket Wireless
- Sierra Middle School
- Alta Tierra Apartments
- Loma Heights Elementary School
- Woodcrest Apartment Homes
- Ocate Greens Mobile Home Park
- McDonald's
- Walgreens
- Walmart

Service Day	Span of Service	Frequency	Daily Trips
Weekdays and Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00pm Saturdays	60 minutes	17 trips



Peak Buses

210

Route Miles

\$10.90

Cost per Boarding



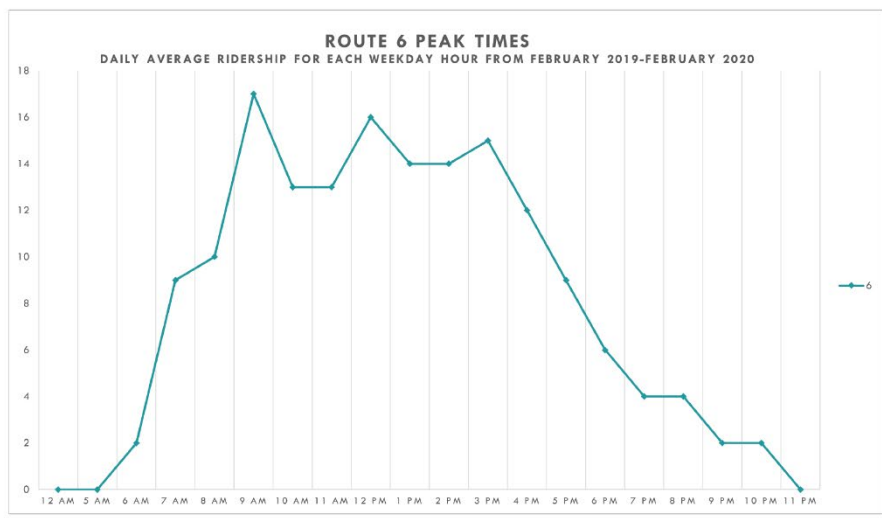
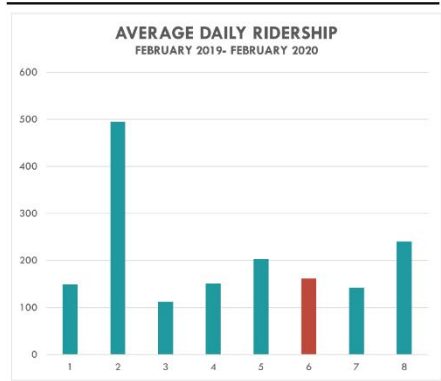
ROADRUNNER TRANSIT 6



Timepoints

- OUTBOUND**
 - MVITT
 - Boutz @ El Paseo
 - Walnut & Lester
 - Walnut St & Capitan Ave

- INBOUND**
 - N Walnut St & Capitan Ave
 - Hoagland East Of Rose
 - W Amador Ave & McSwain Dr
 - MVITT



KEY TRANSFERS

- MVITT
- Route 2
- Route 4
- Route 7

ROADRUNNER TRANSIT 7

Route 7 is Route 6's clockwise counterpart; while traveling in the opposite direction, it covers almost the exact same route. Riders can transfer to routes 2, 4, and 6 on multiple stops throughout the route. Route 7 ridership steadily increases throughout the day and peaks at 1:00 – 2:00pm before steadily decreasing.

AVERAGE
DAILY BOARDINGS

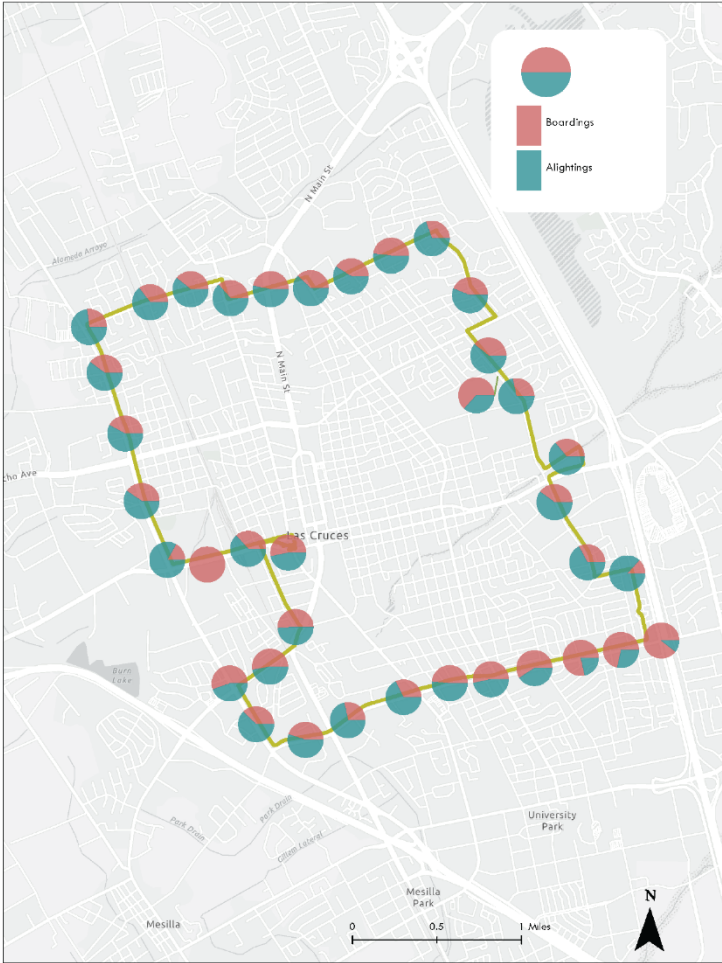
140

ANNUAL RIDERSHIP

42,801

5.9

AVERAGE
BOARDINGS
PER REVENUE
HOUR



KEY DESTINATIONS:

- Mountain States Cinema
- Dollar General
- Las Cruces High School
- Cricket Wireless
- Sierra Middle School
- Alta Tierra Apartments
- Loma Heights Elementary School
- Woodcrest Apartment Homes
- Onate Greens Mobile Home Park
- McDonald's
- Walgreens
- Walmart

Service Day	Span of Service	Frequency	Daily Trips
Weekdays and Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00pm Saturdays	60 minutes	17 trips



Peak Buses

212

Route Miles

\$14.01

Cost per Boarding



ROADRUNNER TRANSIT

7



Timepoints

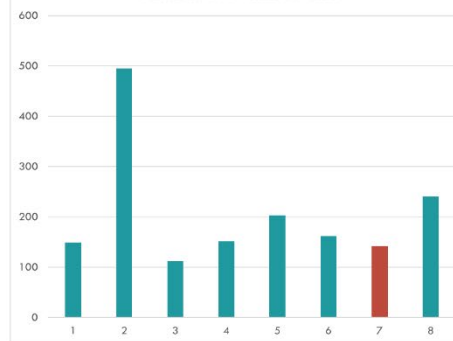
OUTBOUND

- Hoagland Rd & Del Mar Ave
- Walnut & Capitan
- Missouri Ave & La Fonda Dr

INBOUND

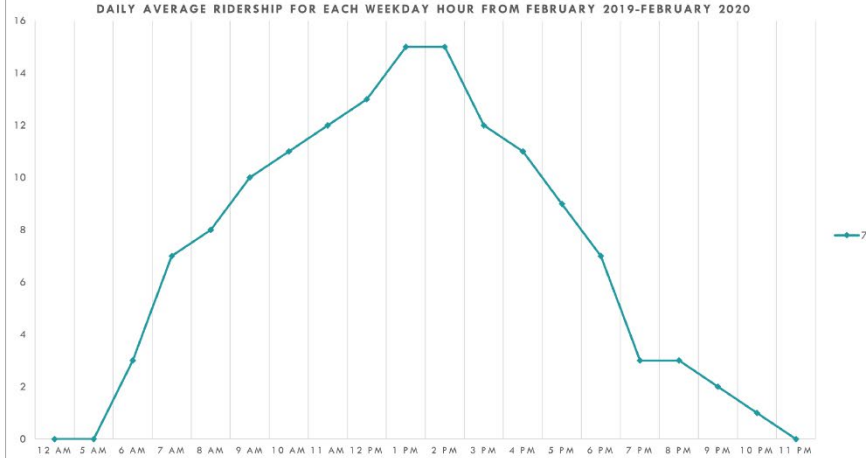
- Missouri Ave & La Fonda Dr
- Boutz & Calle de Ninos
- Melendrez & Main
- MVITT

AVERAGE DAILY RIDERSHIP
FEBRUARY 2019- FEBRUARY 2020



ROUTE 7 PEAK TIMES

DAILY AVERAGE RIDERSHIP FOR EACH WEEKDAY HOUR FROM FEBRUARY 2019-FEBRUARY 2020



MVITT

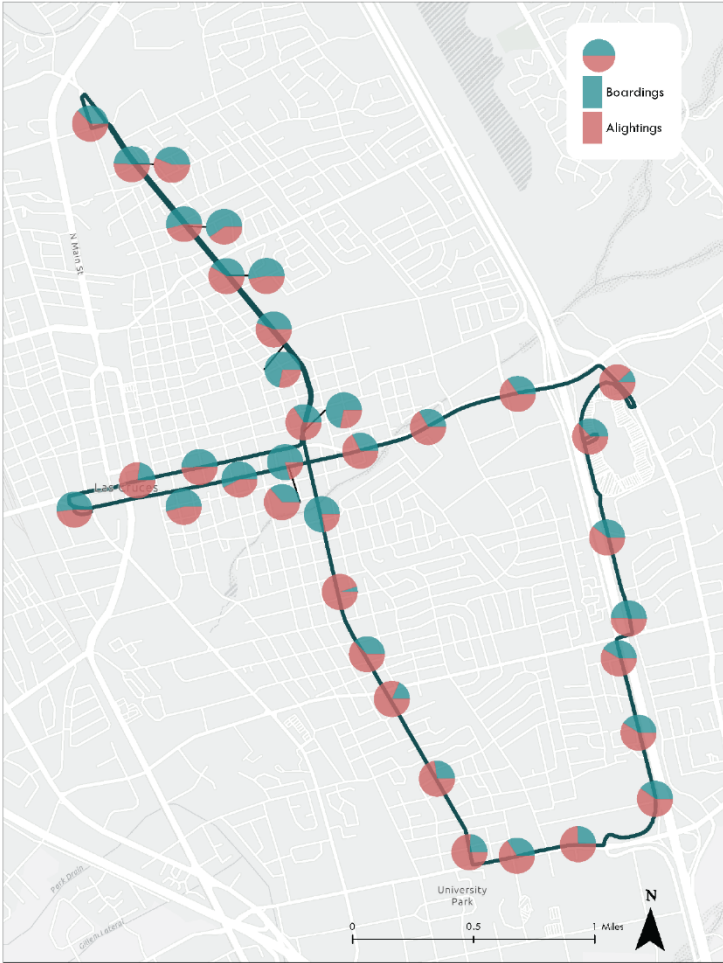
Route 2

Route 4

Route 6

ROADRUNNER TRANSIT 8

Route 8 has the second-highest ridership of all RoadRUNNER routes and provides another crucial connection between the two transit hubs: MVITT and Mesilla Valley Mall. Route 8 starts at MVITT and makes a loop around Missouri Avenue on S. Trivis, East University, and S. Solano Drive. Route 8 also travels north on Solano Drive to E. Madrid Avenue before returning to MVITT. Ridership begins to increase at 7:00am and peaks at 1:00 – 2:00 pm. By 7:00pm, most ridership has declined.



AVERAGE DAILY BOARDINGS

238

ANNUAL RIDERSHIP

72,666

19.3 BOARDINGS PER REVENUE HOUR

- KEY DESTINATIONS:**
- New Mexico State University
 - Dona Ana Community College
 - Old Navy
 - Southwest Family Dental
 - Omni Apartments
 - University Art Gallery
 - Mountain View Primary Care
 - College Heights Kindergarten
 - Desert Springs Christian Academy
 - Loretto Barber Shop
 - Family Dollar Store

Service Day	Span of Service	Frequency	Daily Trips
Weekdays and Saturdays	6:30am – 10:30pm weekdays, 9:30am – 6:00pm Saturdays	60 minutes	17 trips



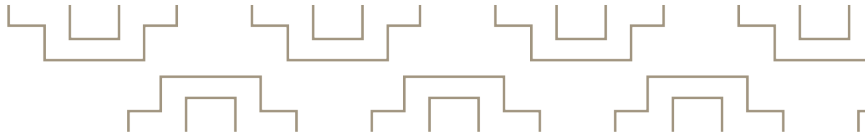
Peak Buses

106

Route Miles

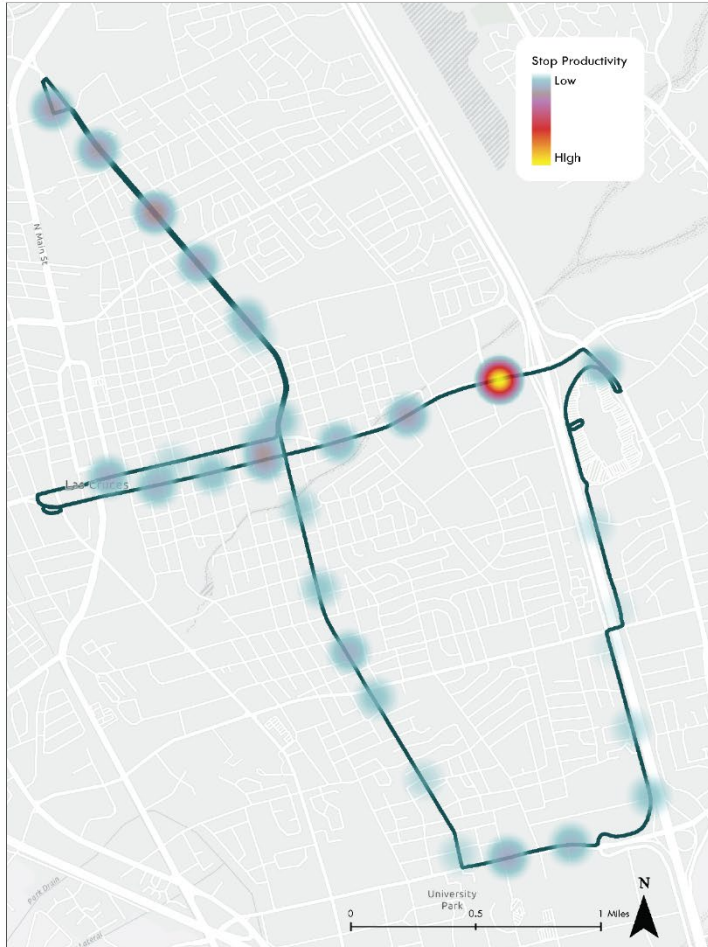
\$3.59

Cost per Boarding



ROADRUNNER TRANSIT

8



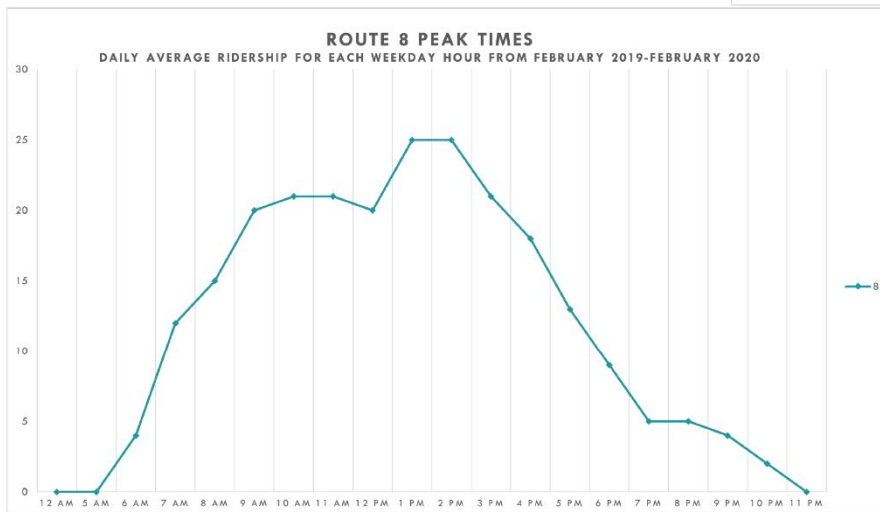
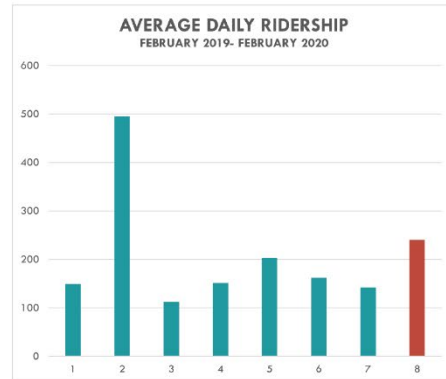
Timepoints

OUTBOUND

- MVITT
- Mesilla Valley Mall (MVM)
- E University Ave & Jordan Rd
- Solano Past Colorado Ave.

INBOUND

- Solano Past Colorado Ave.
- Solano & Oasis
- Amador & Tornillo
- MVITT



MVITT, MVM

Route 2

Route 3

RIDERSHIP ANALYSIS

Ridership analysis is an important piece of understanding the existing conditions in Las Cruces. Ridership data can reveal where people most often get on the bus, where they most often get off the bus, and which routes are the most productive. Figure 1-6 below shows that Route 2 has the most ridership by far, with Route 8 and Route 5 trailing behind. The bar chart looks similar for the Saturday data, as shown in Figure 1-7; Route 2 is the most productive route in the system.

Figure 1-6: Average Daily Ridership on Weekdays

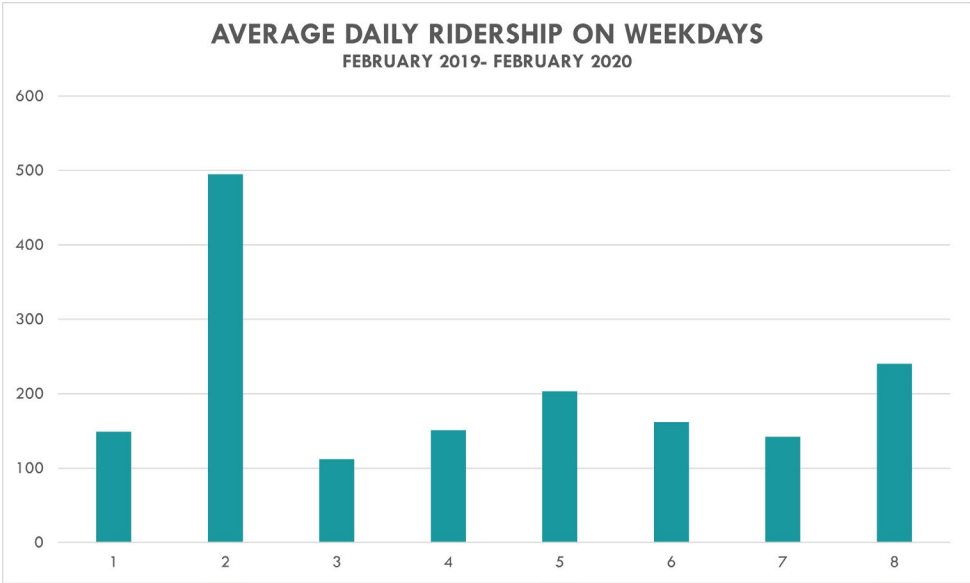
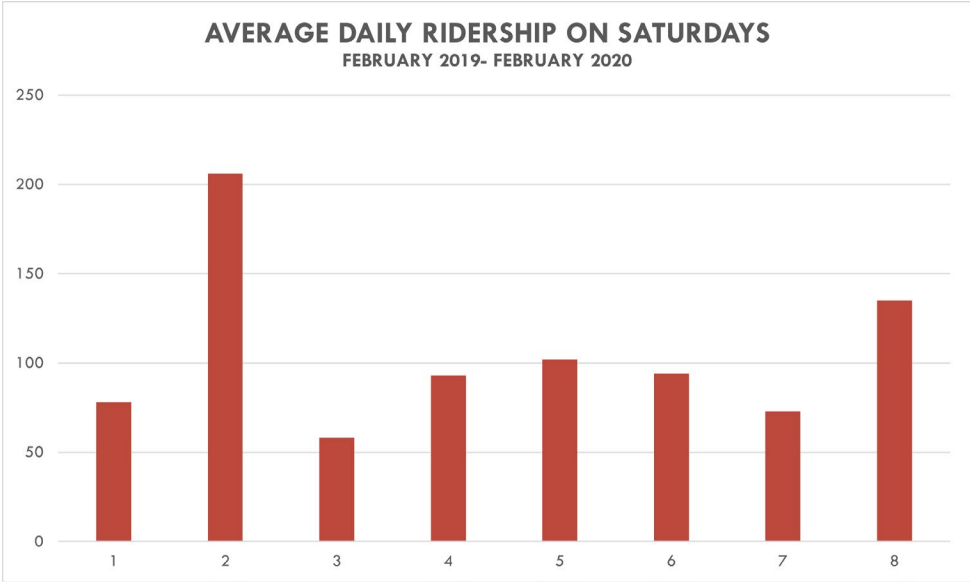
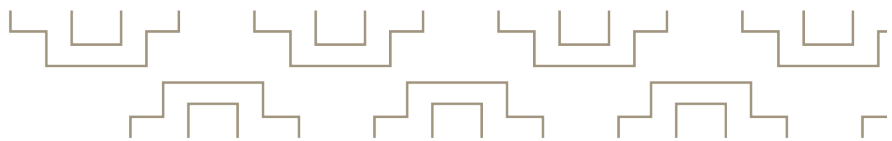


Figure 1-7: Average Daily Ridership on Saturdays

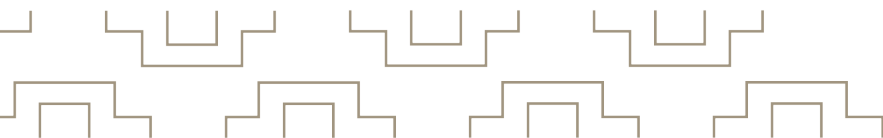
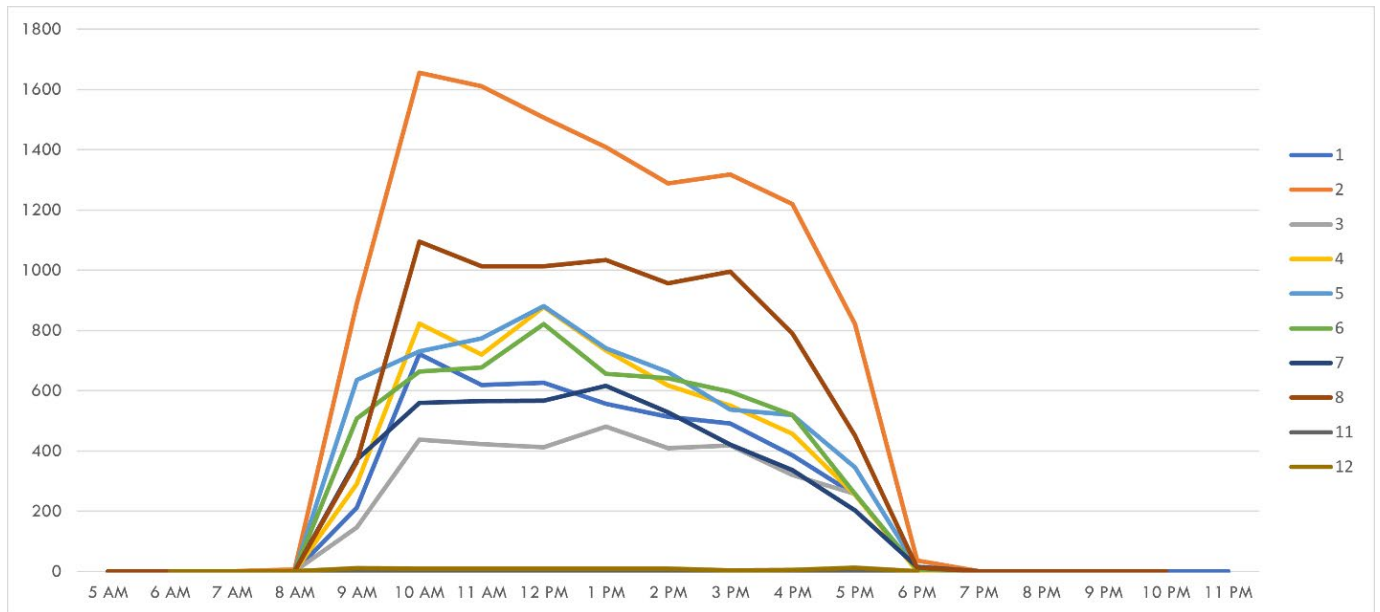




Peak Times

In addition to understanding which routes are performing better than others, it is helpful to understand *when* routes are performing best. For many of the routes, there was a clear spike at commuting times and at lunch time; the most frequent surges of ridership occurred at 9:00am, noon or 1:00pm, and 3:00pm. The data in Figure 1-8 shows the composite graph of all ridership and their average peak times throughout the course of a year.

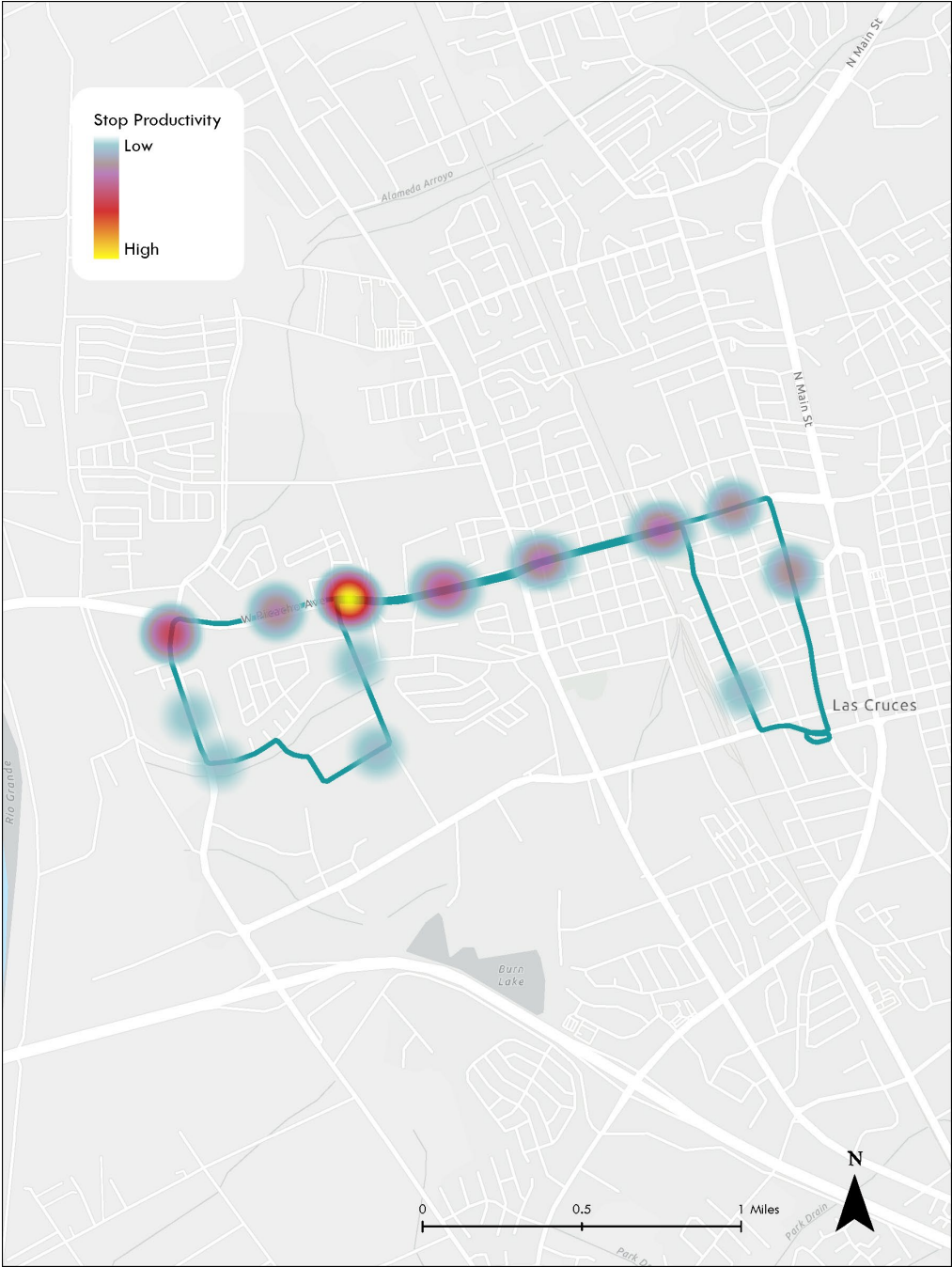
Figure 1-8: Route Ridership and Peak Times



Route Productivity

The average boardings and average alightings for each stop were added together to get a productivity score. Once each stop had its own productivity score, heat maps were used to visualize which segments of the routes had the most boardings and alightings. Figure 1-9 below shows an example; Route 5's productivity varies throughout the route, with the MVITT stop bringing in the most productivity. However, the west side of Picacho is clearly showing a high level of activity as well. Each route's heat map can be found in their route profile.

Figure 1-9: Route 5 and Productivity



TRANSIT MARKET ANALYSIS

The way transit service operates in any given area is only part of the transit system's story. Understanding the community that the transit system serves is just as important as the operational characteristics of a system, if not more so. Why? The greater the support from the community, the more successful the transit system. Transit-supportive land uses and dense populations of people who need or desire to use transit are the true impetus for growth of a transit system. In addition, a road network that is designed for transit vehicles and other modes of non-vehicular transportation provide better connectivity in the region, and places where people can ride bikes, walk, or take part in other forms of active transportation can complement transit, creating a more seamless experience for the transit user. The transit market analysis is a data-driven approach to understanding more of the transit system's story. Traffic Analysis Zones (TAZs) with high transit demand, clusters of key destinations, and patterns among popular transit stop are all clues how people are traveling, how they'd like to travel, and the overall transit culture in the area.

The Market Analysis for the RoadRUNNER SRTP included four primary steps:

1. Gathering and normalizing data.
2. Scoring each (TAZ) based on how many indicators existed in comparison to the average of the whole study area.
3. Creating a map to visualize the highest-demand TAZs.
4. Comparing high-demand TAZs to the key destinations and landmarks in the area to understand why the TAZ has a high demand.

Market Score Indicators

There are multiple factors at play when analyzing the market demand for transit. It is important to look at circumstances that would make people more likely to need transit—i.e., not having a vehicle, or being unable to drive because of age or disability. Additional factors include population and employment density; people are much more likely to take transit if it gets them where they live, work, or shop. Each of these indicators were closely examined in each TAZ to see if the amount of high-demand factors was greater than the average of the study area. Then, every TAZ was assigned a composite score for its level of indicators.

For example, if a TAZ has a high population density, employment density, poverty density, and households without vehicles density, that TAZ would receive a **high** transit market score. If the TAZ only had a high level of one of those indicators, it would receive a **lower** transit market score. The goal is to examine which places in Las Cruces have the most need and the most opportunity to provide transit service. Table 5 shows a breakdown of each indicator and how they were assigned a point value.

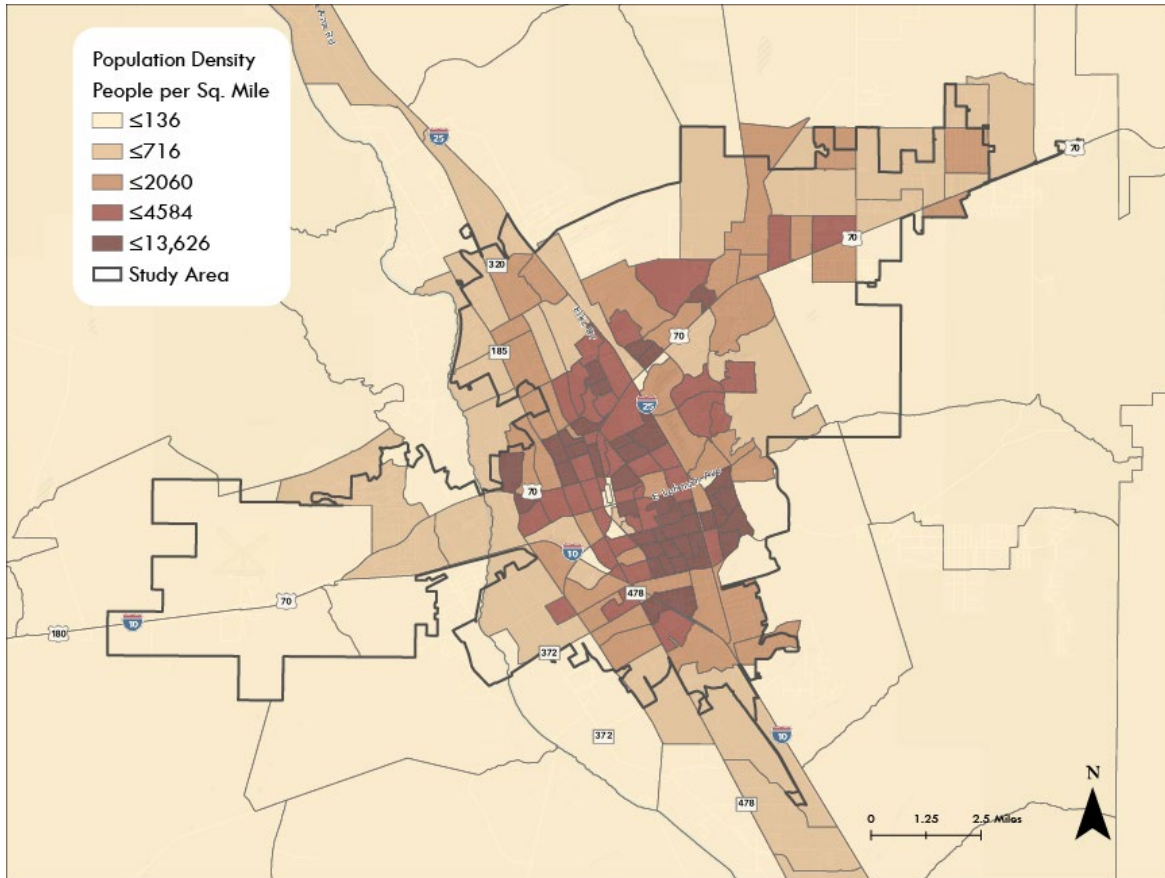
Table 1-5: Market Indicators Scoring Matrix

	POINT SCORES									
	1		2		3		4		5	
	Low	High	Low	High	Low	High	Low	High	Low	High
Population Density	0	830	831	2,220	2,221	4,100	4,101	6,600	6,601	13,700
Employment Density	0	900	901	2,850	2,851	6,000	6,001	11,800	11,801	20,020
Poverty Density	0	115	116	320	321	620	621	1,220	1,221	2,609
Minority Population Density	0	740	741	2,100	2,101	3,850	3,851	6,000	6,001	11,006
Disabled Population Density	0	110	111	330	331	700	701	1,200	1,201	2,805
Limited English Proficiency Density	0	30	31	110	111	200	201	430	431	822
Households without Vehicles Density	5,102	2,641	2,640	1,641	1,640	881	880	311	310	0

POPULATION DENSITY

The population density in Las Cruces is highest in the southeast part of the City, but all of central Las Cruces has a fairly high population density, as shown in Figure 1-10.

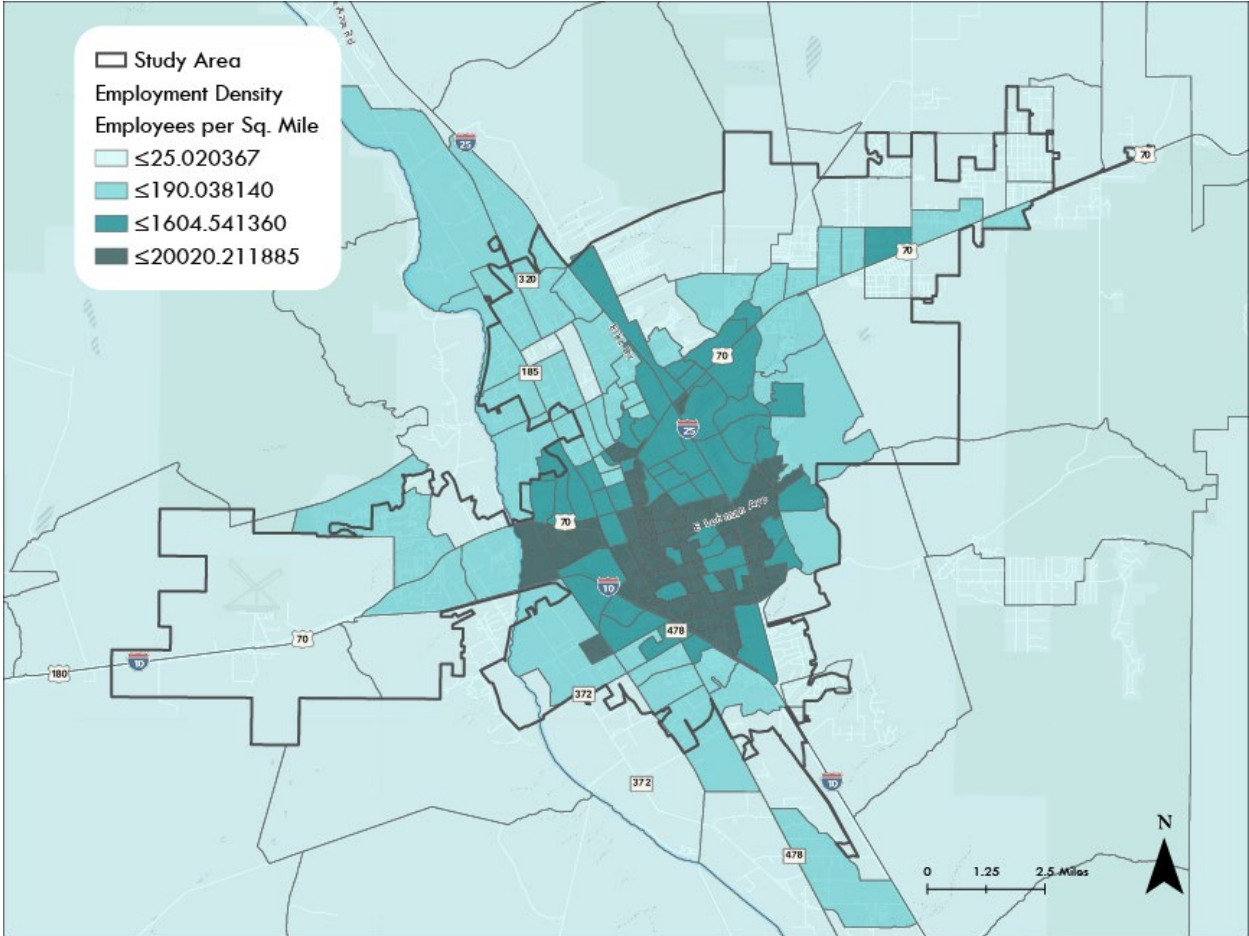
Figure 1-10: Population Density in Las Cruces



EMPLOYMENT DENSITY

Employment density in Las Cruces also appears to favor the southside of the City, however the western edge of Central Las Cruces shows very high employment density as well, as shown in Figure 1-11.

Figure 1-11: Employment Density



Market Score Results

Once all indicators have been scored individually, the result is the map in Figure 1-12 that displays each TAZ's **total** score. The City of Las Cruces' composite transit market score seemed to be highest in the south-central portions of the City, as shown in the figure below.

Figure 1-13 breaks the market score results down even further, showing only TAZs that scored higher than 18 (meaning multiple indicators scored highly for the TAZs). Each area of high transit demand and their correlating key destinations are then described in greater detail.

Figure 1-12: Market Scores in RoadRUNNER Study Area TAZs

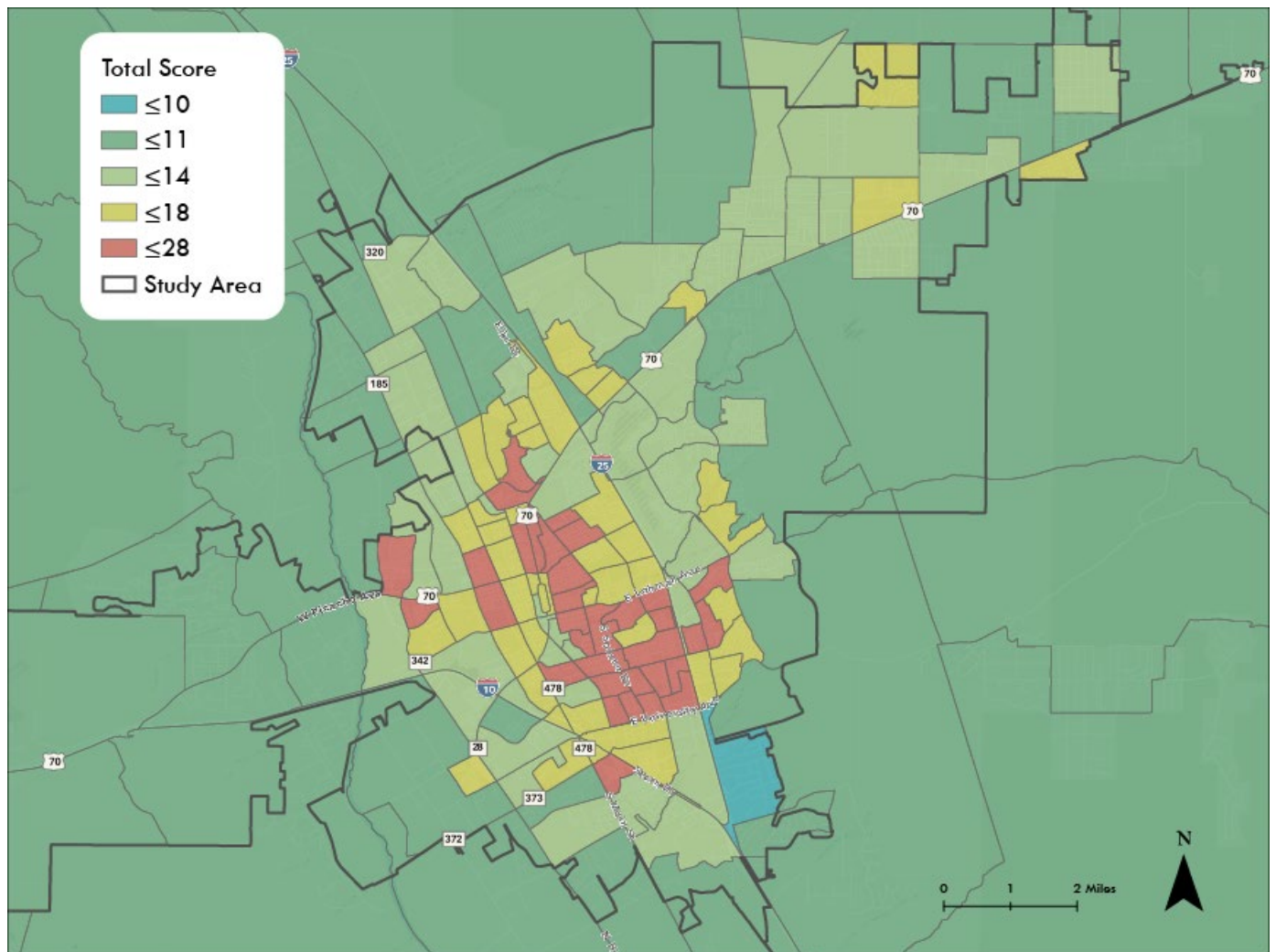


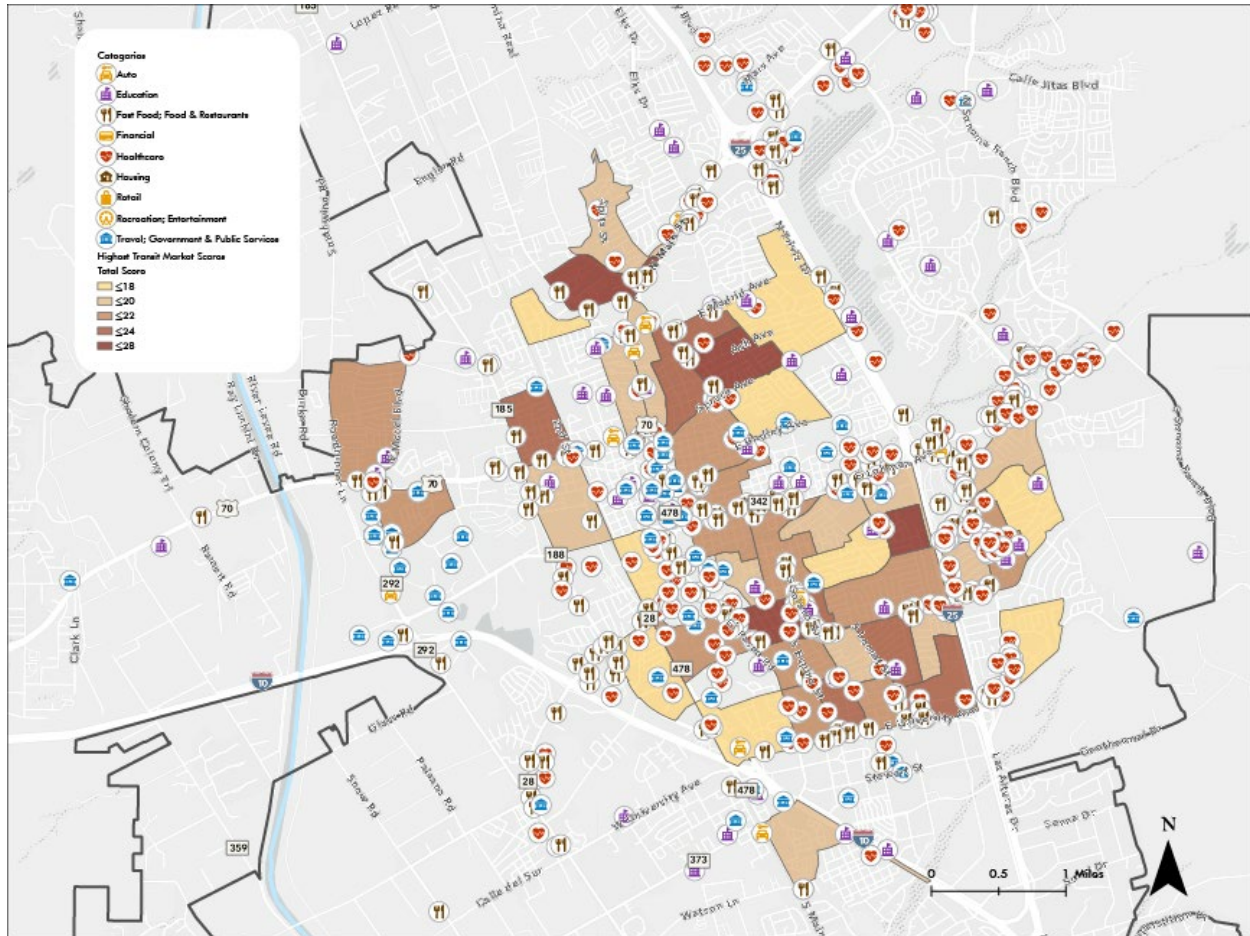
Figure 1-13: TAZs with Highest Transit Demand



Key Destinations

After analyzing the highest-demand TAZs based on their indicator scores, the study area was examined for key destinations. Key destinations can help determine why some areas have a higher transit demand than others, as well as expose areas that may not be accurately represented by the market score alone. Over one thousand key destinations were sourced from ArcGIS Business Analyst and then categorized and overlaid with the market score results, as shown in Figure 1-14.

Figure 1-14: High Demand TAZs with Key Destinations



AREAS FOR CONSIDERATION

Some of the areas not highlighted in the market score results were the N Main St. and Telshor Blvd area and the east side of Lohman Avenue. Both areas had clusters of key destinations, including a variety of clinics and hospitals near Lohman Avenue. Areas with key destinations, such as those in Figure 1-15 and Figure 1-16 below, will be taken into account when making final recommendations for the SRTP.

Figure 1-15: N Main and Telshor Key Destinations

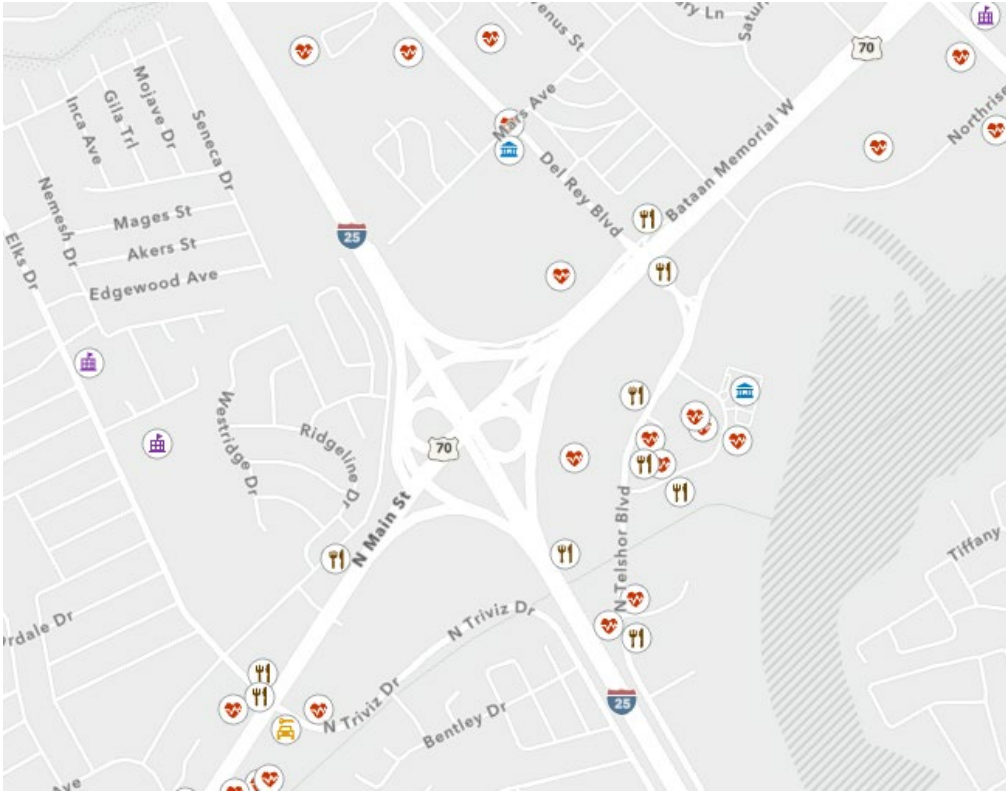
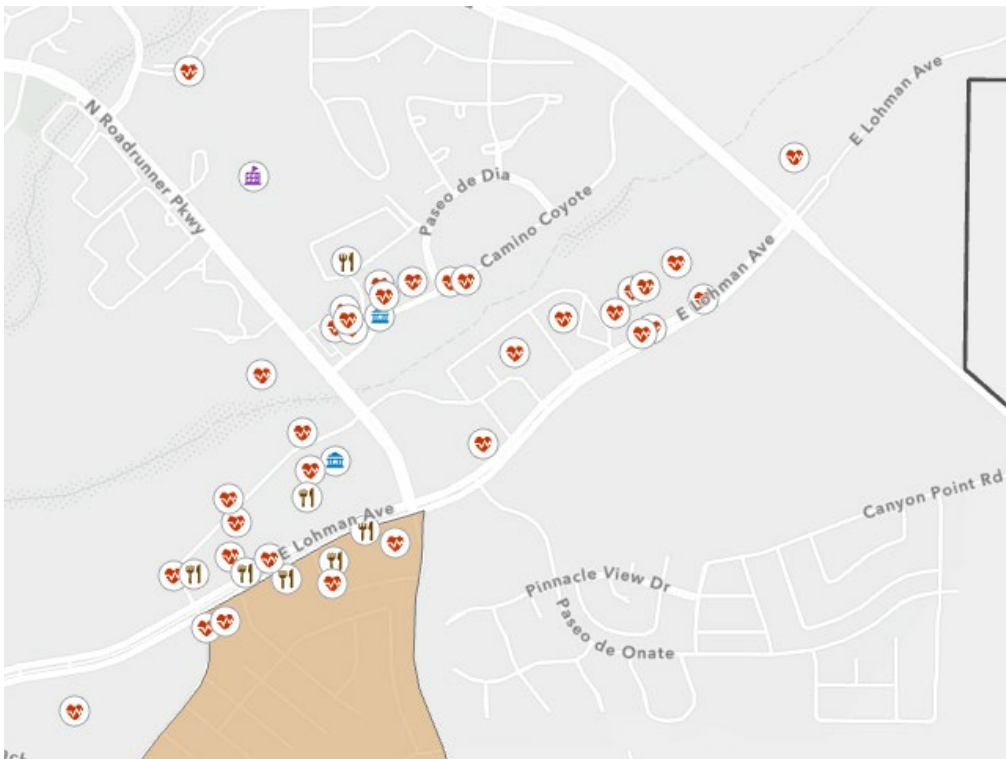


Figure 1-16: East Lohman Healthcare Destinations



TRAVEL PATTERNS ANALYSIS

Automobile travel accounts for most trips within the city of Las Cruces. Analyzing where and why the population is traveling helps reveal travel patterns, or ‘desire lines,’ in the region. Identifying these desire lines will allow the project team to develop route recommendations that mimic existing travel behavior, positioning the RoadRUNNER system to attract new passengers and encourage a mode shift.

For this travel patterns analysis, the ‘study area’ refers to the land area covered by the city limits of Las Cruces.

Methods

The MVMPO Travel Demand Model (TDM) was used to determine the Traffic Analysis Zones (TAZs), a unit of geography used for TDM demographic inputs, that account for substantial trip production within the study area. Forecast year (2040) outputs were used to generate desire lines that help visualize travel patterns in the study area. Travel was measured by the average number of trips taken by a person, regardless of mode, per day.

Desire lines represent trip interchanges between selected TAZ pairs. For example, if “TAZ A” and “TAZ B” account for 40 trip interchanges, this means that during the measured daily period 40 trips go from “TAZ A” to “TAZ B” and vice versa. Trip interchanges between TAZs can be thought of as commute trips. If you leave your house to go to the store or work, you will most likely make the reverse of that trip to return home.

Top TAZ pairs were selected and mapped for trips occurring within the study area (i.e., local trips within the city of Las Cruces), trips from Las Cruces to TAZs in the surrounding region, and trips from the surrounding region to Las Cruces. Local desire lines can highlight where there is potential for mobility on demand (MOD) or local fixed route service, while regional desire lines can show where there may be potential demand for express or commuter transit service in the future.

Findings

Analyzing future travel patterns and existing land uses allows for the creation of service recommendations and alternatives that will be effective in near- and long-term scenarios. Desire lines were overlaid with the study area, relevant jurisdictional boundaries, and key destinations as part of a Geographic Information Systems (GIS) analysis performed to provide a detailed understanding of where people are traveling in and around Las Cruces. Milestone year maps for morning and afternoon travel patterns are provided below for three scenarios.

WITHIN LAS CRUCES

Travel patterns within the city of Las Cruces are commonly centered around TAZs with single-family residential land uses and those bordering major corridors, which often contain a high concentration of commercial and retail destinations. Several high-volume desire lines to the north are seen connecting TAZs adjacent to the I-25 corridor, which is the location of big box retail shopping centers, restaurants, and multifamily apartments with nearby TAZs that are primarily residential with some neighborhood shopping centers. Mesilla Valley Mall, several schools, and medical facilities such as Mountain View Regional Medical Center also draw activity to the area.

TAZs that encompass New Mexico State University – Las Cruces and Doña Ana Community College campuses just north of I-10 also experience a high volume of trips from nearby TAZs in the study area. Desire lines also indicate travel across E University Ave. between campus and single- and multi-family housing, retail, and restaurants.

Figure 1-17: Desire Lines within Las Cruces, AM

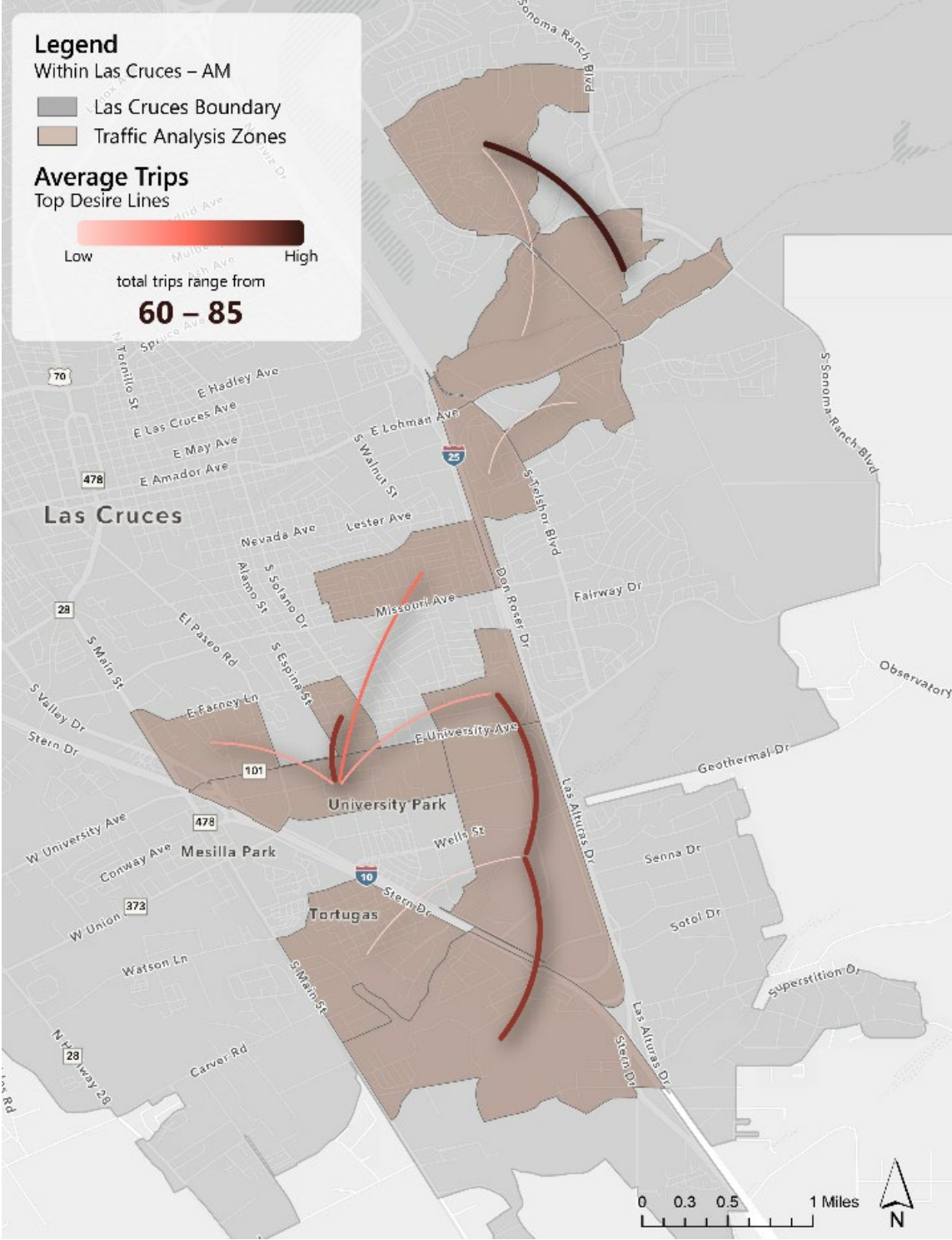
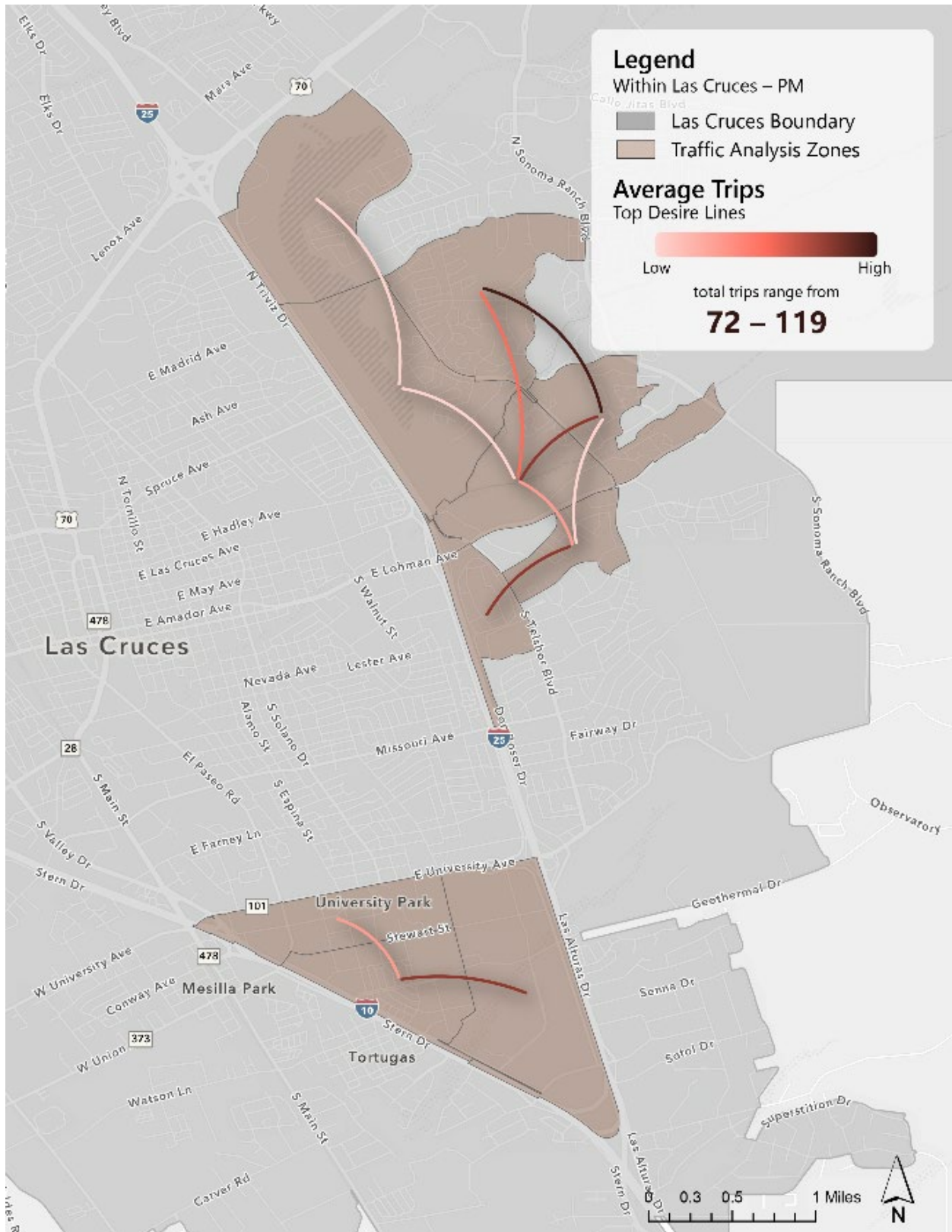


Figure 1-18: Desire Lines within Las Cruces, PM



FROM LAS CRUCES

While the total volume of trips from Las Cruces to TAZs farther away is significantly less than internal desire lines, there is still activity drawing a few daily trips from the city to other parts of the region. To the northwest, the towns of Hatch and Salem are located in a top TAZ. To the southwest, the Las Cruces International Airport is an activity generator. White Sands and the Organ Mountains National Monument are located to the east. To the southeast is the New Mexico/Texas border, where the Dona Ana County International Jetport and smaller towns such as Santa Teresa are located.

Figure 1-19: Desire Lines from Las Cruces, AM

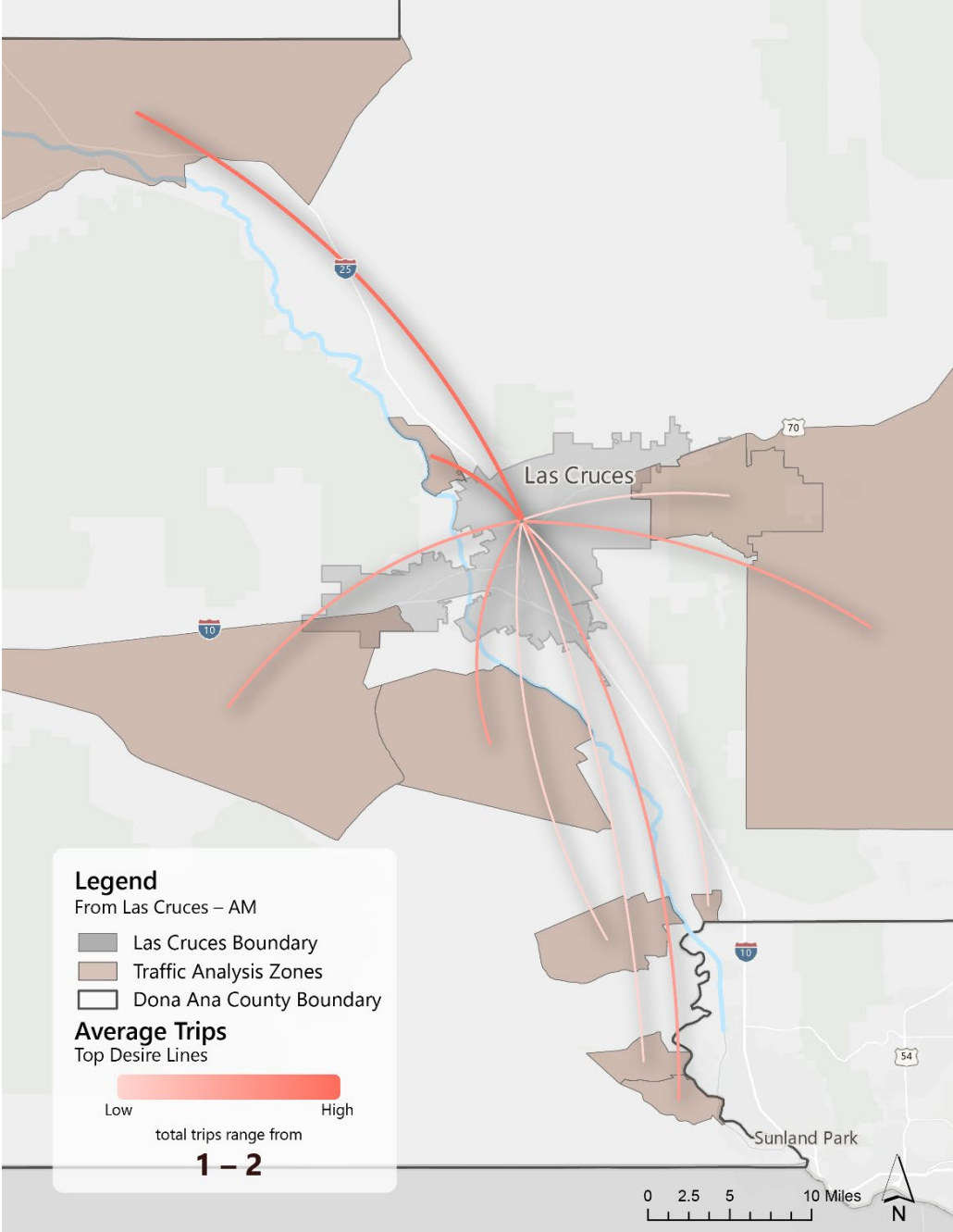
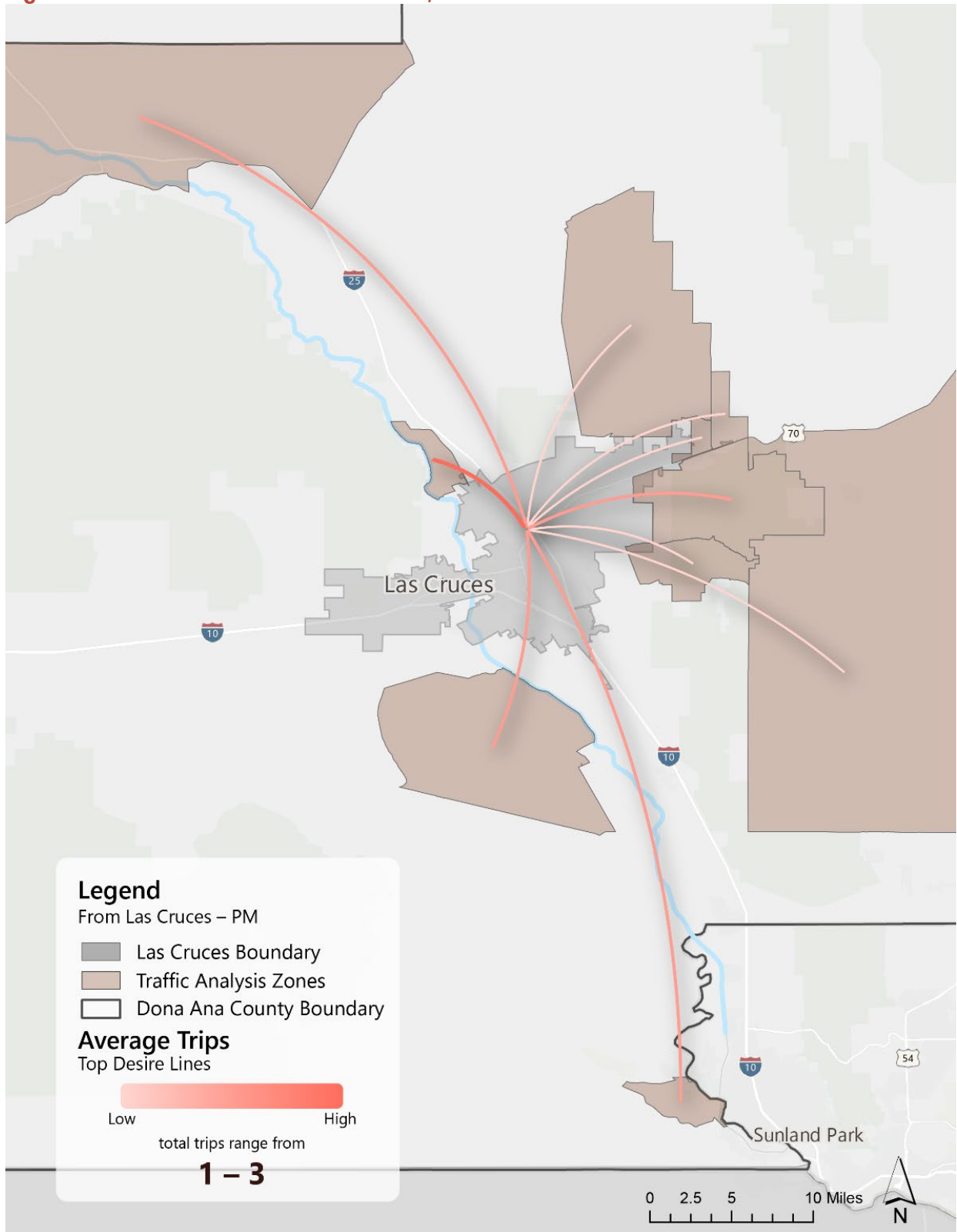


Figure 1-20: Desire Lines from Las Cruces, PM



TO LAS CRUCES

Trip activity originating from outside the study area is higher coming from the areas east and south of Las Cruces. These TAZs are largely rural with some low-density housing. Study area TAZs where high-activity destinations are located, including NMSU Las Cruces, Doña Ana Community College, Mesilla Valley Mall, and Mountain View Regional Medical Center, experience the most travel from external areas.

Figure 1-21: Desire Lines to Las Cruces, AM

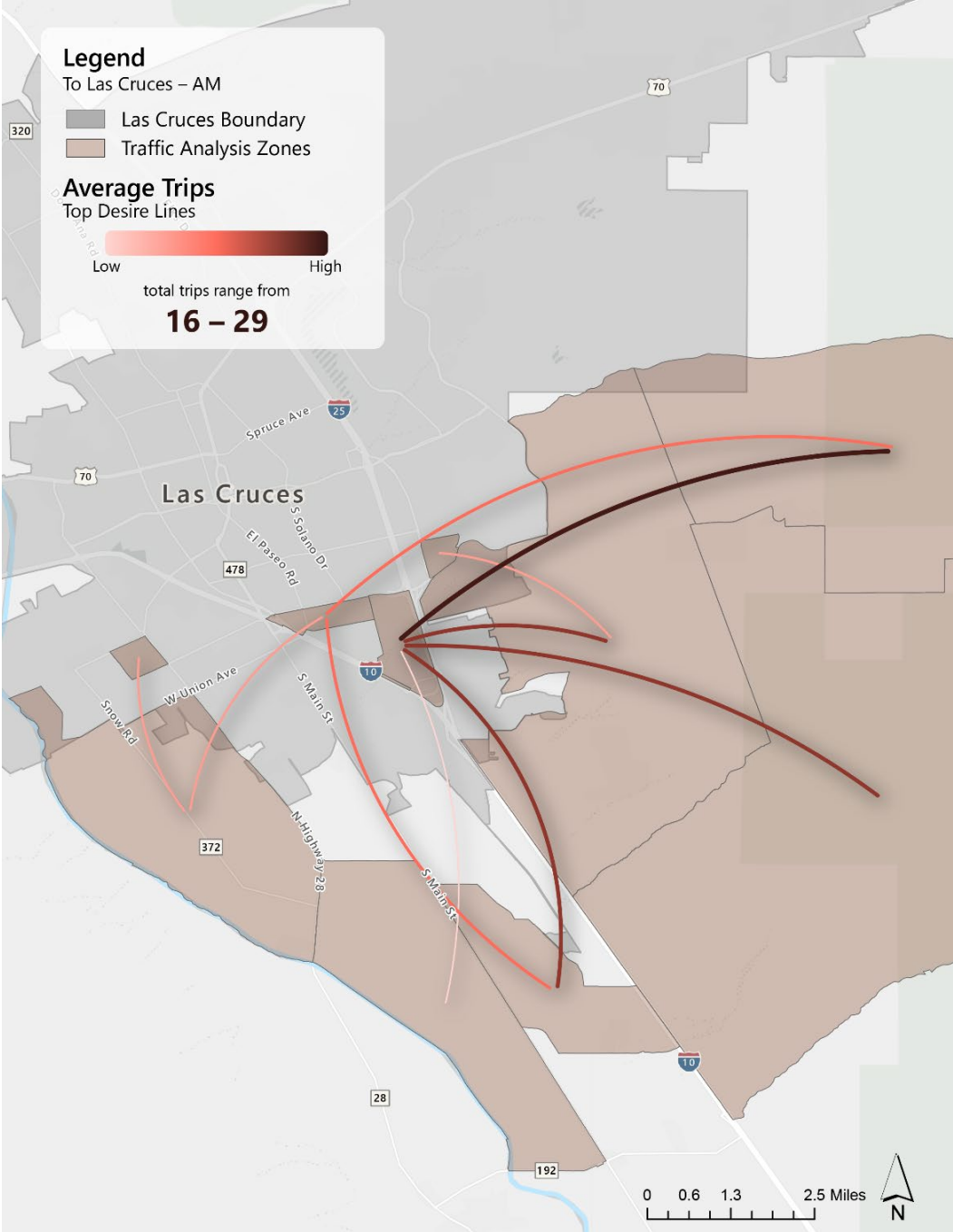
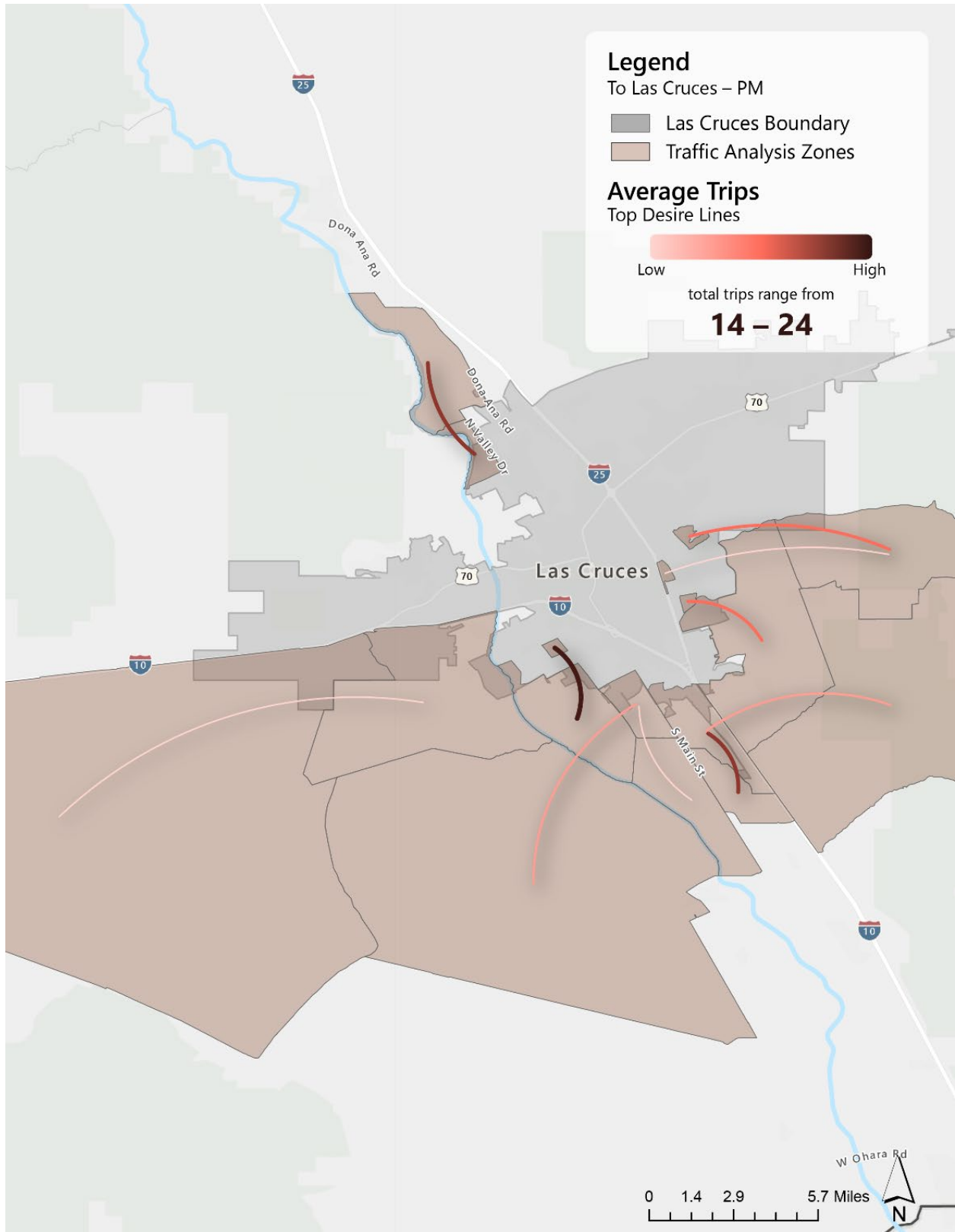


Figure 1-22: Desire Lines to Las Cruces, PM



HIGH VOLUME TAZ

Figure 1-23 shows the TAZs in Las Cruces that experience the most trip activity across all three of the above scenarios. Table 1-6 summarizes the land use and key destinations found in each of the high volume TAZs.

Figure 1-23: High Volume TAZs

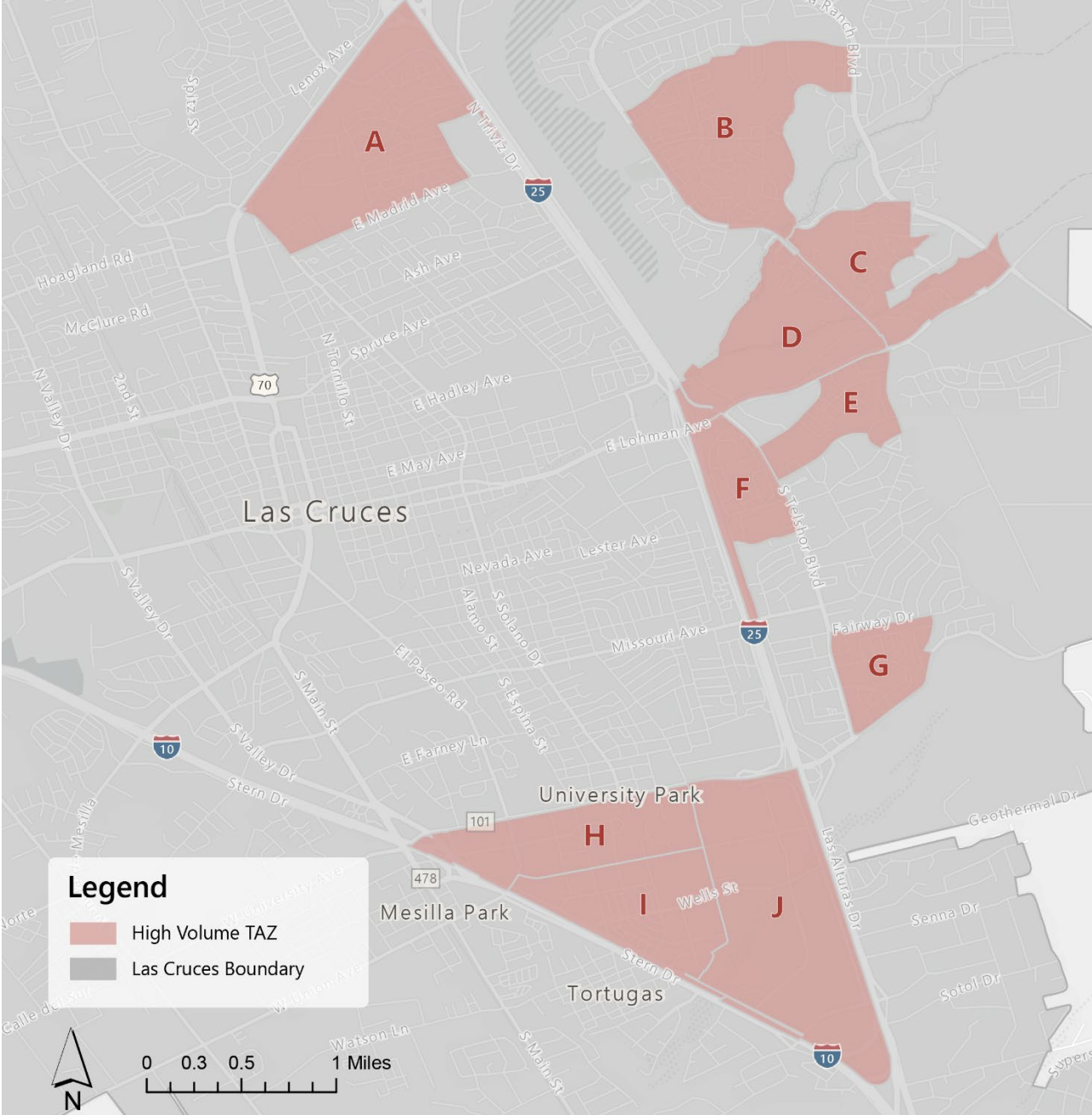


Table 1-6: High Volume TAZ Characteristics

TAZ	Location	Land Use	Key Destinations
A	I-25 and US 70	Commercial, Single-Family Residential	Lowe's, Kohl's, Rio Grande Medical Group
B	N Roadrunner Pkwy and Sonora Springs Blvd	Single-Family Residential, Park	Desert Trails Community Park, Mission Lutheran Church
C	N Roadrunner Pkwy and E Lohman Ave (NE)	Commercial, Educational, Single-Family and Multi-Family Residential	Mountain View Regional Medical Center, Mountain View Surgery Center, Desert Hills Elementary School, Pavilions at Southfork
D	No Roadrunner Pkwy and E Lohman Ave (SW)	Commercial, Single- and Multi-Family Housing, Undeveloped	Quail Ridge Apartments, Target, Albertsons, Solstice Senior Living
E	E Lohman Ave and S Telshor Blvd	Commercial, Single-Family Housing	Telshor Tower Plaza, Hotel Encanto, Natural Grocers, Walgreen's, Renal Medicine Association, NM Kidney Care
F	I-25 and E Lohman Ave	Commercial, Office	Mesilla Valley Mall, Las Cruces Primary Care, NM Cardiac Care
G	S Telshor Blvd and E University Ave	Commercial, Single- and Multi-Family Housing, Park	Park Place Apartments, Mountain View Medical Group, La Buena Vida Park, Memorial Medical Center
H	E University Ave and I-10	Public, University, Commercial	New Mexico State University dormitories and academic buildings, Las Cruces Convention Center, NMSU Bookstore, Aggie Health and Wellness Center
I	I-10 and Stewart St	University, Single-Family Housing	New Mexico State University, Dona Ana Community College, NM Department of Agriculture, NMSU academic buildings
J	I-25 and E University Ave	University, Educational, Office, Multi-Family Housing	New Mexico State University academic buildings and sports facilities, Chamisa Village Apartments, Arrowhead Park Early College High School, Burrell College

Summary of Travel Patterns

The desire line analysis reveals the location of activity centers that drive trip behavior in and around Las Cruces. A significant number of trips occur between TAZs where retail and commercial centers are located, as well as key destinations such as Mesilla Valley Mall, New Mexico State University, and Mountain View Regional Medical Center.

High-volume TAZs are often located along major interstate/highway corridors including I-25, I-10, and US 70. Desire lines concentrated around these hubs often connect to surrounding TAZs where there are lower density, single-family residential neighborhoods.

Understanding the areas people are traveling within, into, and out of in relation to the RoadRUNNER service area is important to assessing transit service and determining how it can be improved to best serve riders on both a local and regional scale. Findings from the travel patterns analysis will help the project team determine service recommendations that are locally sensitive and appropriate for the transit market in the region.



2

**Demand
Response
Existing
Conditions**

DEMAND-RESPONSE OVERVIEW

RoadRUNNER Transit provides an origin to destination demand-response for individuals with disabilities (as defined by the Americans with Disabilities Act) and senior citizens age 60 or older within Las Cruces city limits. A qualitative and quantitative analysis of RoadRUNNER Transit's current demand-response service concluded the following:

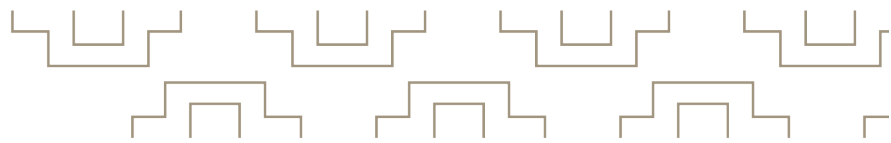
- **Senior and ADA ridership show significantly different demand patterns.** Senior ridership is heavily concentrated between 9am – 12pm and primarily includes trips to or from day centers (e.g., Munson Senior Center, Frank O'Brien Papen Center, Eastside Community Center, Benavidez Community Center), while ADA ridership is more evenly distributed across Las Cruces and throughout the service day.
- **Seniors compose of two-thirds of total monthly ridership on average.** Seniors are the primary customers of RoadRUNNER Transit's demand-response service with the remaining passengers eligible for a trip under ADA guidelines.
- **The service is most efficient between 9am and 12pm and shows signs of potential oversupply in the afternoon.** As senior ridership substantially decreases in the afternoon, a significant number of vehicles remain on the road, perhaps indicating that there is an opportunity to better adjust vehicle supply to match demand.
- **When compared to peer transit agencies, RoadRUNNER Transit has a relatively low operating cost per vehicle hour, but it could improve service efficiency relative to its peers.** RoadRUNNER Transit benefits from relatively low direct operating costs, but it lags two-thirds of peers in the number of trips served per vehicle revenue hour.
- **RoadRUNNER Transit has comparatively high annual trips per 1,000 people in the service area, likely reflecting senior eligibility.** Among demand-response services of peer agencies, RoadRUNNER Transit's relative trip volume is high, which may reflect how all seniors age 60 and over are eligible for service as compared to peer agencies that may have more restrictive eligibility requirements.

Service Description

RoadRUNNER Transit provides an origin to destination demand-response for individuals with disabilities (as defined by the Americans with Disabilities Act) and senior citizens age 60 or older within Las Cruces city limits. ADA customers must apply in order to become eligible for the service, while senior citizens must be registered with the Dial-A-Ride program. For all passengers, the fare is \$1 for a one-way trip.¹ Prior to the COVID-19 pandemic, the service operated from 6:30am - 10:30 pm Monday through Friday, and 9:00am to 6:00pm on Saturday (hours have been temporarily shortened due to the decrease in ridership resulting from COVID-19).

ADA customers are able to book a trip up to 24 hours in advance, while seniors must book at least 14 days in advance to secure a scheduled trip; otherwise, senior bookings will be accepted on a standby basis and passengers must call the day before their scheduled trip for confirmation. Same-day service is not provided except in an emergency situation. When a customer books their trip, the scheduler can negotiate the actual scheduled trip time +/- 1 hour from the requested time. Further, the driver is allowed

¹ Due to the COVID-19 pandemic, transit users can temporarily ride fare-free.



a pickup window of +/- 15 minutes from the scheduled time for the trip to be considered an on-time pickup.²

DATA

Demand-response ridership data were provided by RoadRUNNER Transit. Detailed trip level data were provided for two typical weeks of travel (1/27/2020 - 2/8/2020). Aggregate data were provided on a monthly basis for the 2019 calendar year. 2020 ridership data were not used for this project due to the impact of the COVID-19 pandemic, which significantly reduced ridership. It is expected that ridership will return to pre-COVID levels once the pandemic has ended.

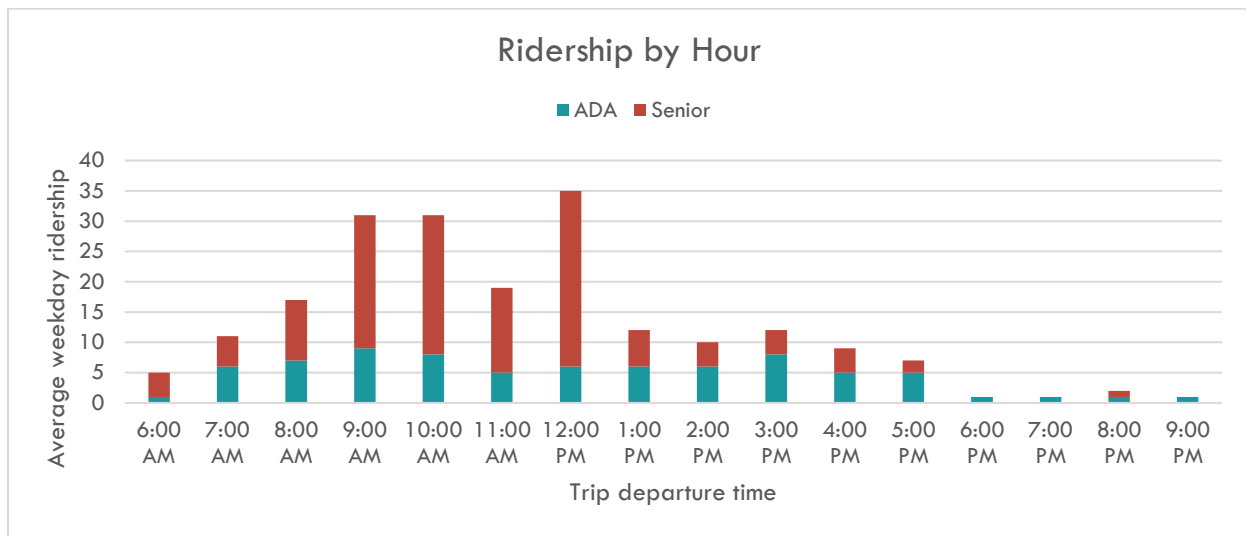
Travel Patterns

This section of the report examines the ridership patterns of demand-response public transit.

TIME OF DAY

The graph below shows the average number of weekday trips per hour based on departure times. Peak hour travel is from 12 - 1 PM, with approximately 35 passengers. A smaller peak occurs between 9 - 11 AM. Both peaks correspond with the times that many seniors travel to and from group meals and other social activities. These peaks are largely driven by senior trips, with ADA demand more evenly distributed across the day.

Figure 2-1: Ridership by Hour

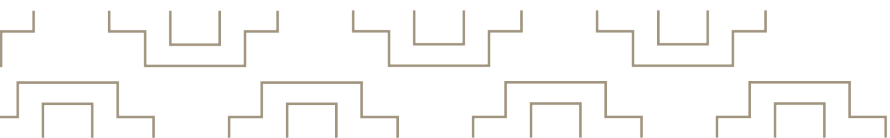


Source: RoadRUNNER Transit

DAY OF WEEK

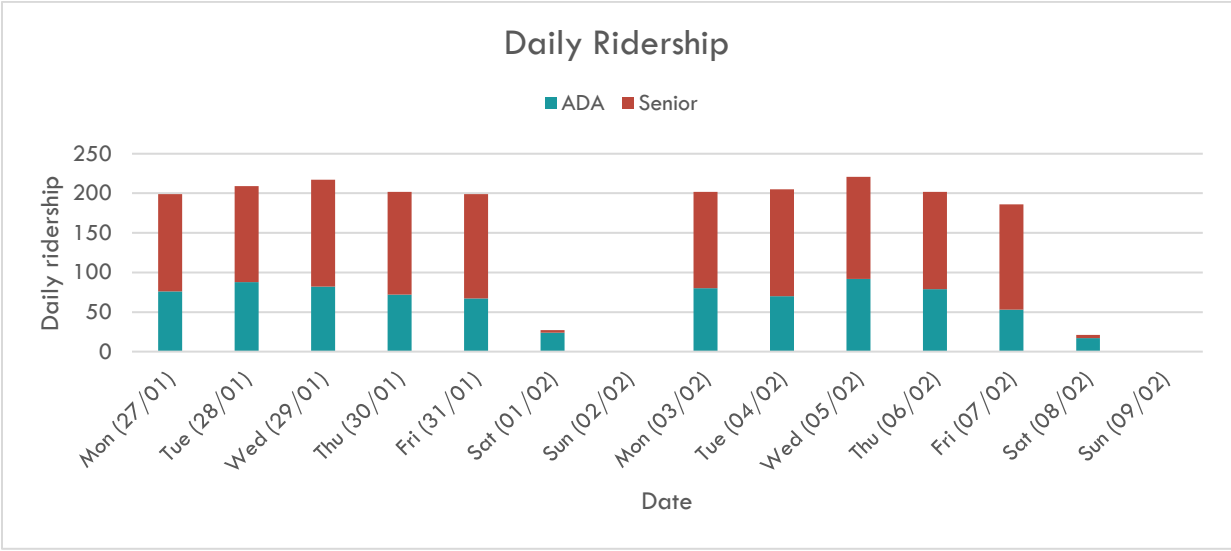
The graph below shows ridership per day for the two weeks of data provided. The average weekday ridership is approximately 200 passengers per day and the average Saturday ridership is approximately 25 passengers per day (there is no service on Sunday). Low Saturday ridership is in part due to senior

² For medical appointments, the allowed on-time window is 30 minutes before drop off. For trips to/from work, the allowed negotiated trip time adjusts to ensure customers do not arrive late or get picked up before the workday has ended.



ridership primarily being driven by recurring weekday activities. Ridership is relatively stable across the weekdays, with Wednesdays having slightly higher ridership than other days.

Figure 2-2: Daily Ridership

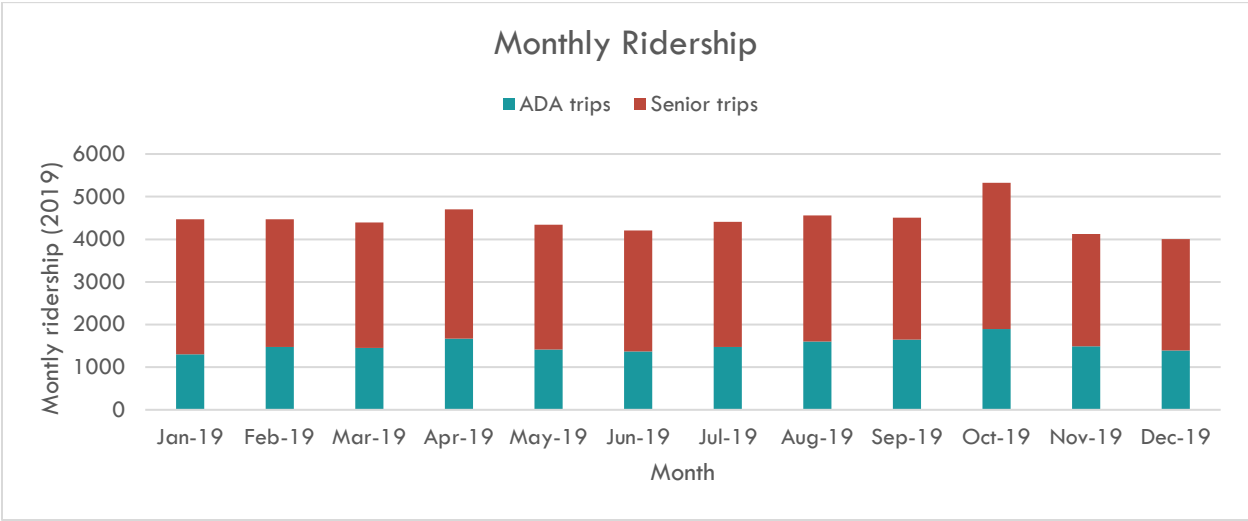


Source: RoadRUNNER

MONTHLY RIDERSHIP

The graph below shows the monthly ridership of approximately 4,500 trips. Ridership during October 2019 was higher than other months, which is likely due to an increased number of major events in Las Cruces during this month. Seniors compose about two-thirds of monthly ridership.

Figure 2-3: Monthly Ridership

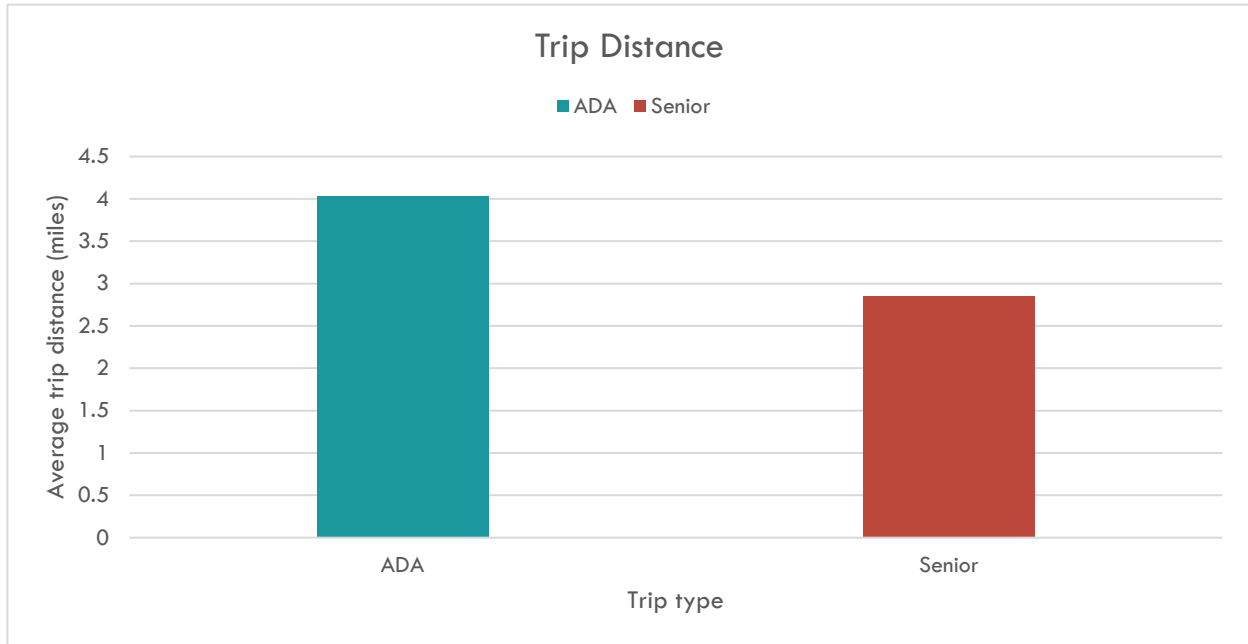


Source: RoadRUNNER Transit

TRIP DISTANCE

The average trip distance is 3.3 miles. The average ADA trip is roughly one mile longer than the average senior trip.

Figure 2-4: Trip Distance



Source: RoadRUNNER Transit

TRIPS BY LOCATION

The maps on the following pages show the demand-response origin and destination pairs. The size of the circle represents the number of origins or destinations associated with a unique address. Most trips are to or from central and west Las Cruces, including key locations such as Munson Senior Center, Eastside Community Center, Benavidez Community Center, and Fresenius Kidney Care. Trip volume at these key locations is primarily attributed to senior ridership. For ADA customers, demand is more dispersed throughout the city, and there is also noticeable trip volume at Doña Ana Community College’s East Mesa Campus in north Las Cruces.

Figure 2-5: All Origin-Destination Pairs 1/27/20 - 2/8/20

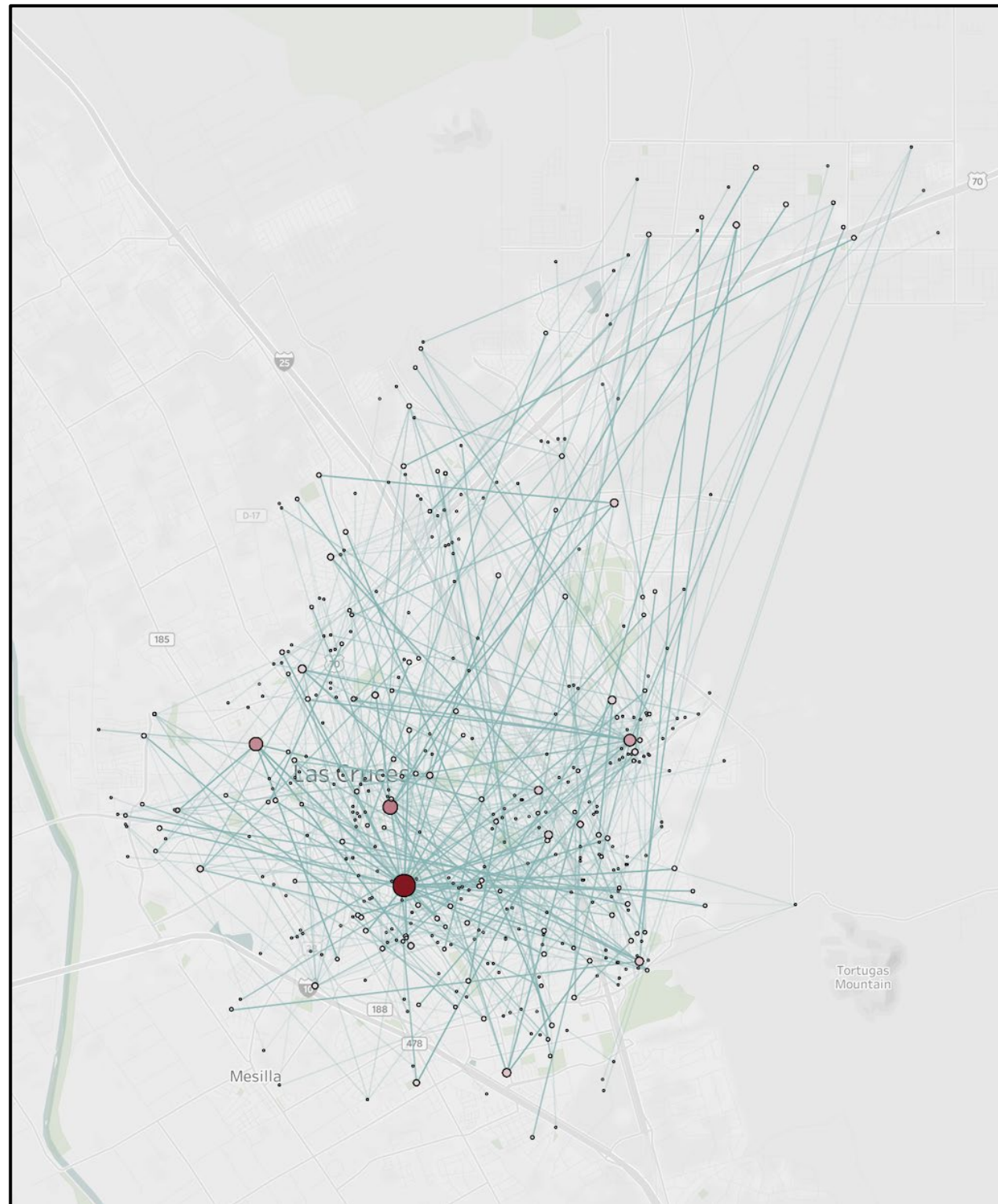


Figure 2-6: All Origin-Destination Pairs 2/6/20

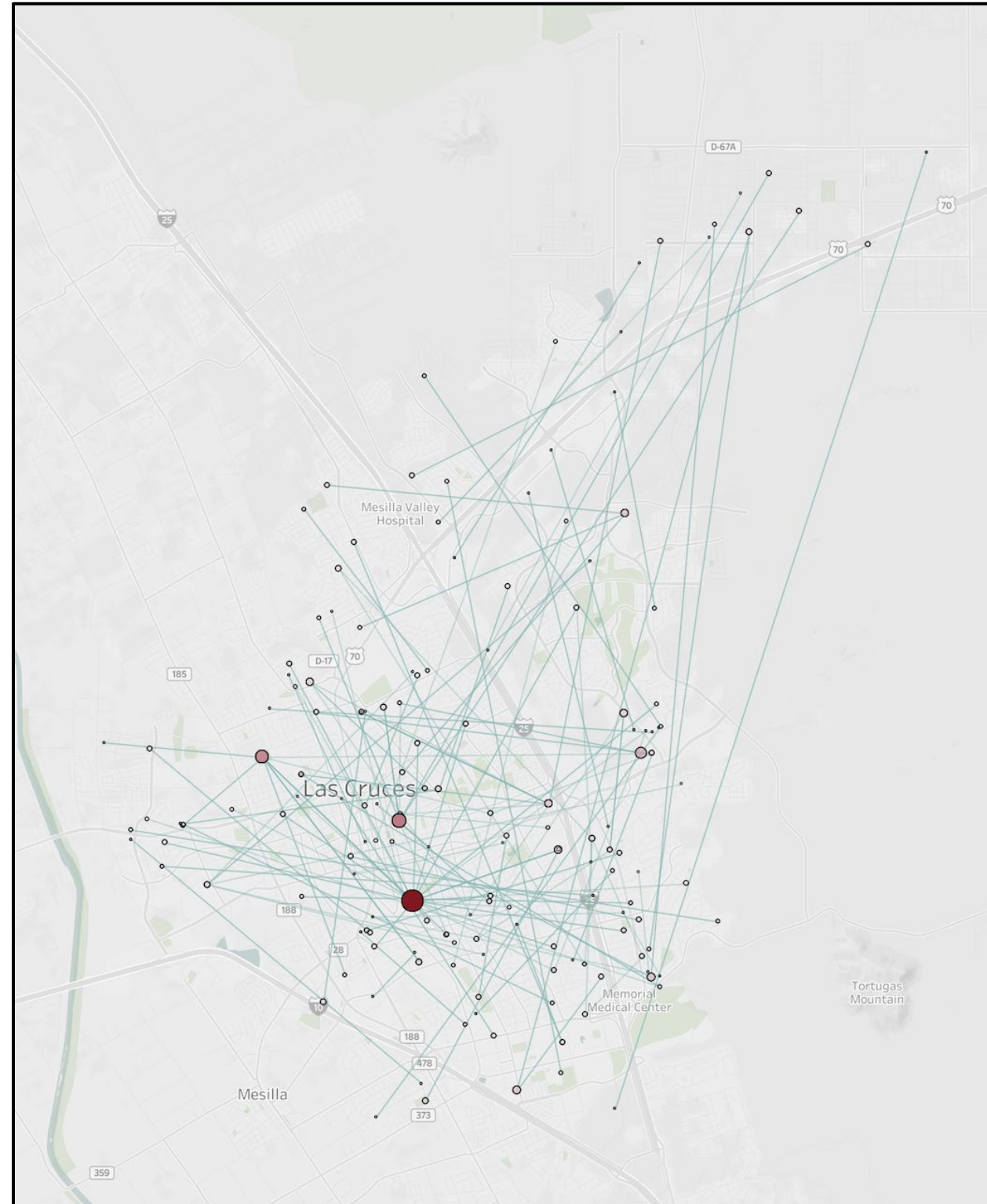


Figure 2-7: Only Senior Origin-Destination Pairs 1/27/20 - 2/8/20

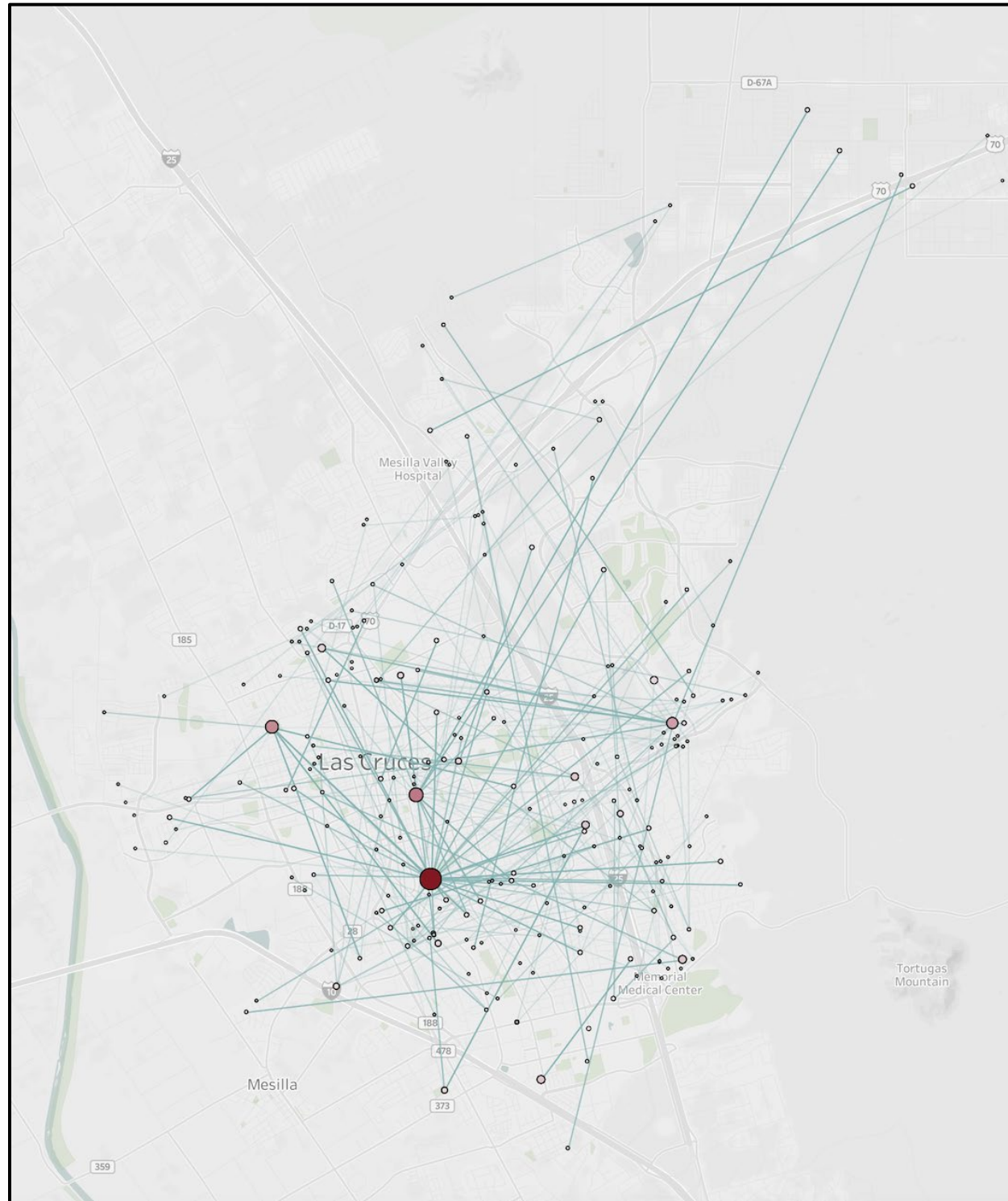


Figure 2-8: Only ADA Origin-Destination Pairs 1/27/20 - 2/8/20

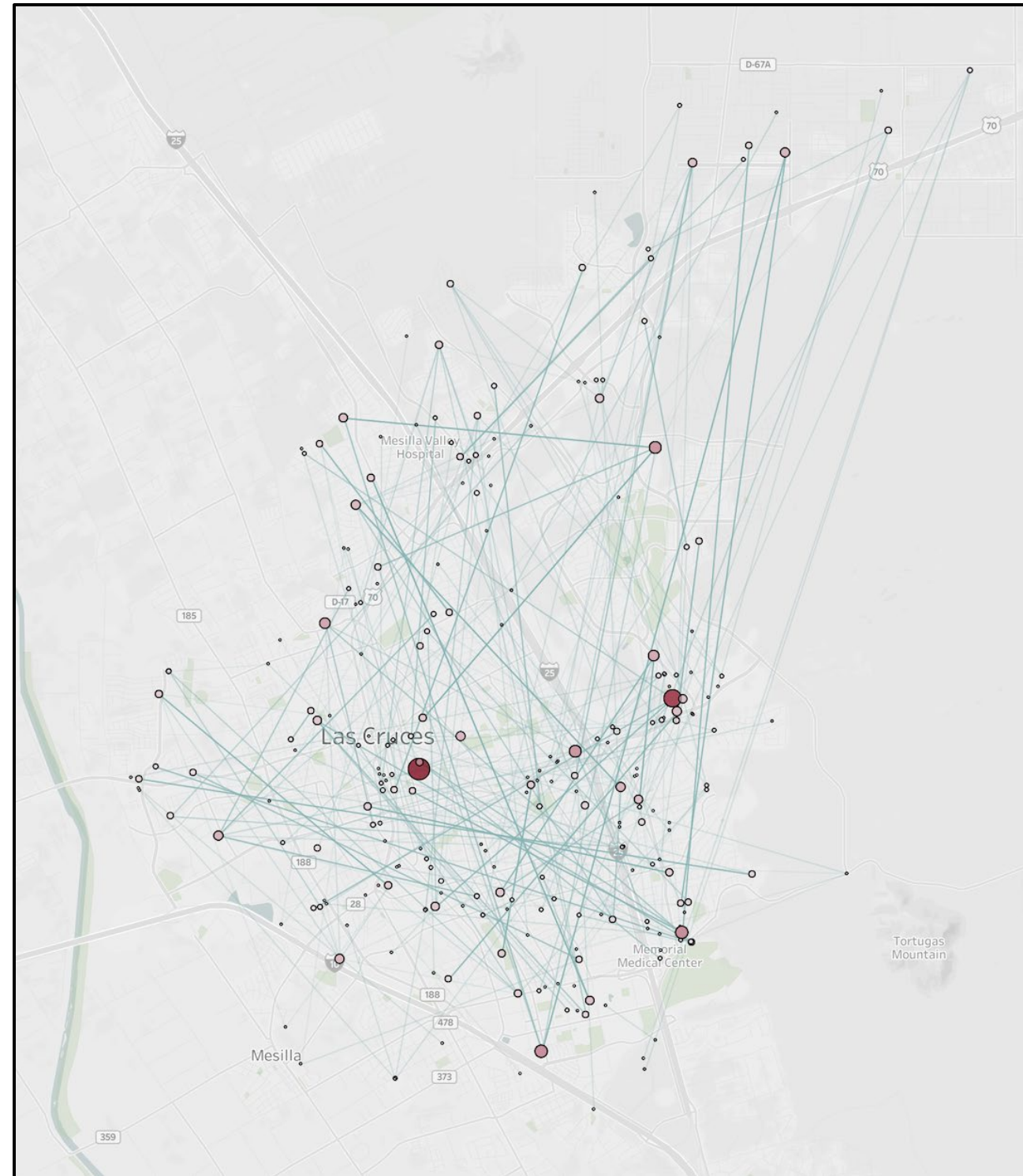
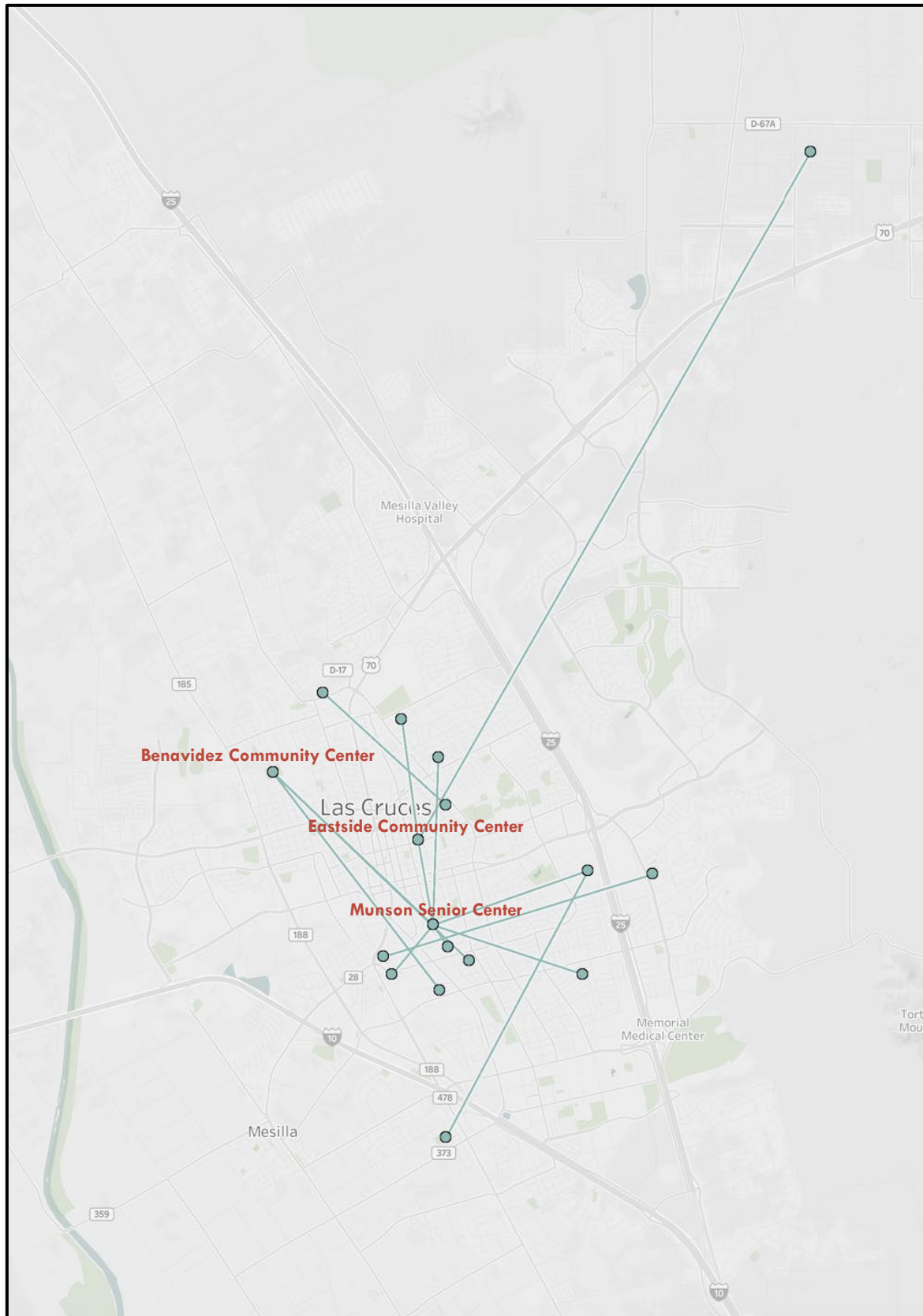


Figure 2-9: Top Origin Destination Pairs 1/27/20 - 2/8/20



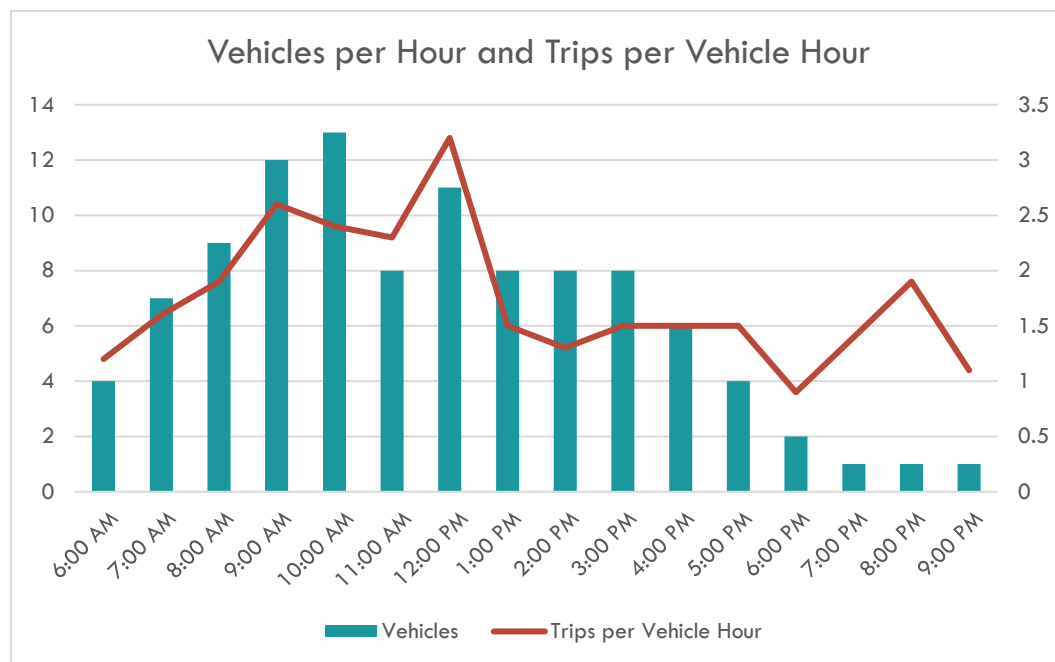
Vehicles and Efficiency

This section of the report examines supply, efficiency, and comparative cost metrics for demand-response public transit. All metrics are included in Table 1: RoadRUNNER Transit Benchmarking.

AVERAGE VEHICLES BY TIME OF DAY

The graph below illustrates the average number of vehicles in operation each hour on weekdays. On average, the service uses 13 vehicles at peak times, while using a maximum number of 14 vehicles on certain days. Average trips per hour are shown by the red line (right vertical axis). This chart suggests that the service is most efficient at 12:00pm by achieving over 3 passengers per vehicle hour, while showing signs of potential oversupply in the mid-afternoon hours, when the number of vehicles is relatively high compared to ridership at about 1.5 passengers per vehicle hour.

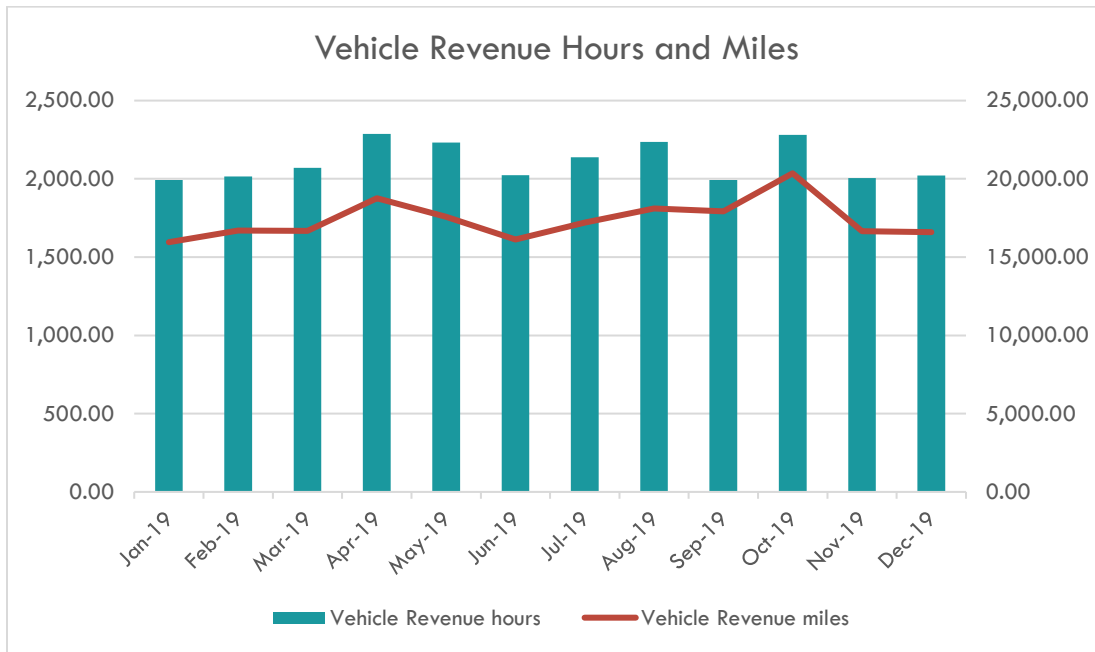
Figure 2-10: Vehicles per Hour and Trips per Vehicle Hour



Source: RoadRUNNER Transit

TOTAL VEHICLE HOURS AND MILES

The service averages 2,100 revenue hours and 17,400 revenue miles per month. There are modest seasonal peaks in April/May and October due to the university schedule and more activities occurring in the city, respectively.

Figure 2-11: Vehicle Revenue Hours and Miles

Source: RoadRUNNER Transit

BENCHMARKING VS PEER TRANSIT AGENCIES

In the following section, we compare RoadRUNNER Transit's demand-response service with similar demand-response services based on geography, population, and annual trips. While Las Cruces benefits from a comparatively low cost per vehicle hour, service efficiency (passengers per vehicle hour) is lower relative than the peer average. Additionally, annual trips per 1,000 people in the service area are comparatively high, which likely reflects RoadRUNNER Transit's decision to allow all seniors age 60 and over to request trips, while many peer agencies have more restrictive eligibility requirements.

COST PER VEHICLE REVENUE HOUR

RoadRUNNER Transit has a comparatively low cost per vehicle hour at \$55 and directly operates its demand-response service. The average cost per vehicle revenue hour includes items such as driver wages, vehicle maintenance, fuel, dispatch labor, and overhead.

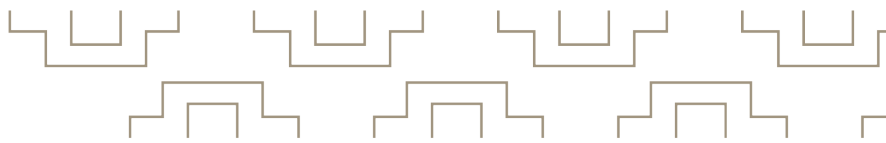
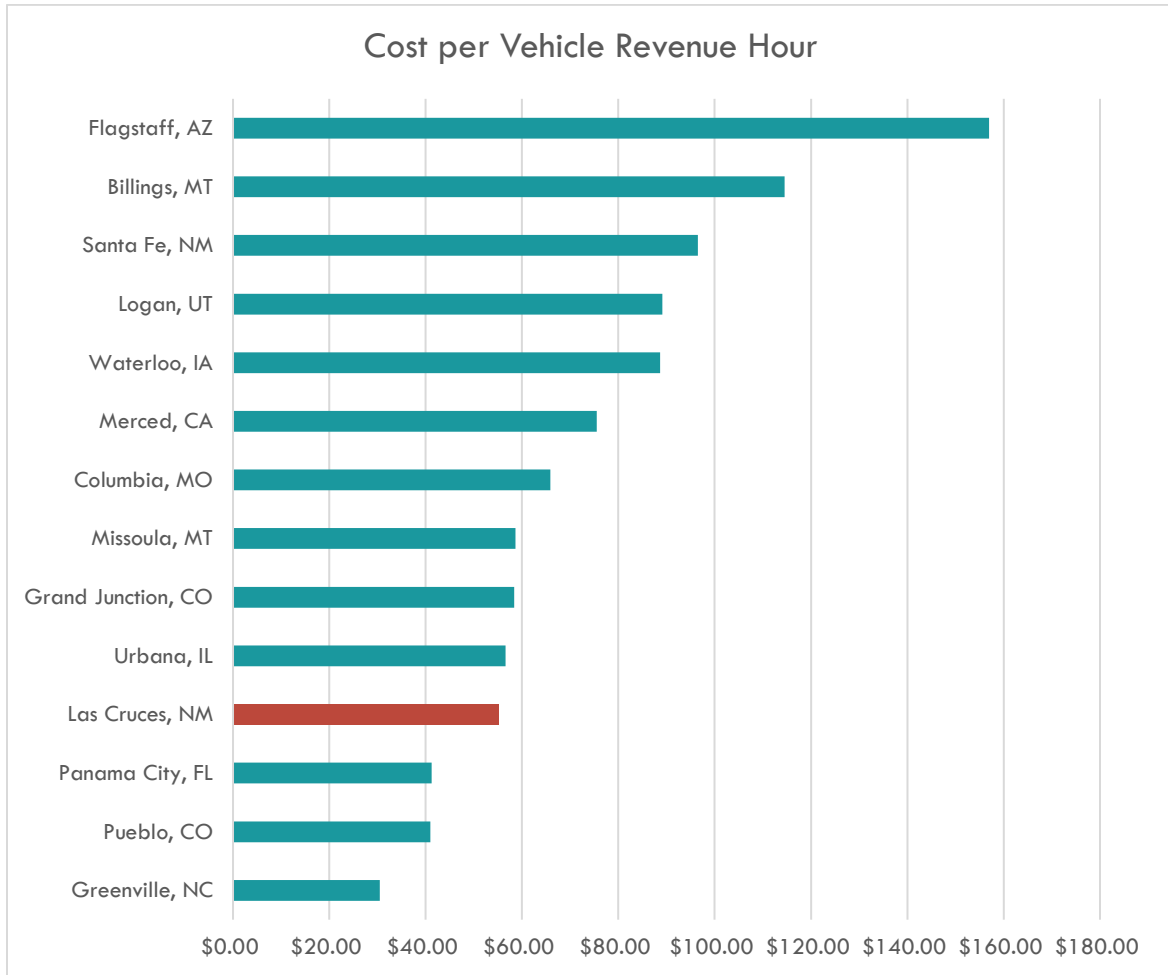
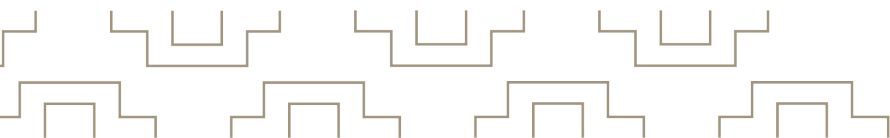


Figure 2-12: Cost per Vehicle Revenue Hour



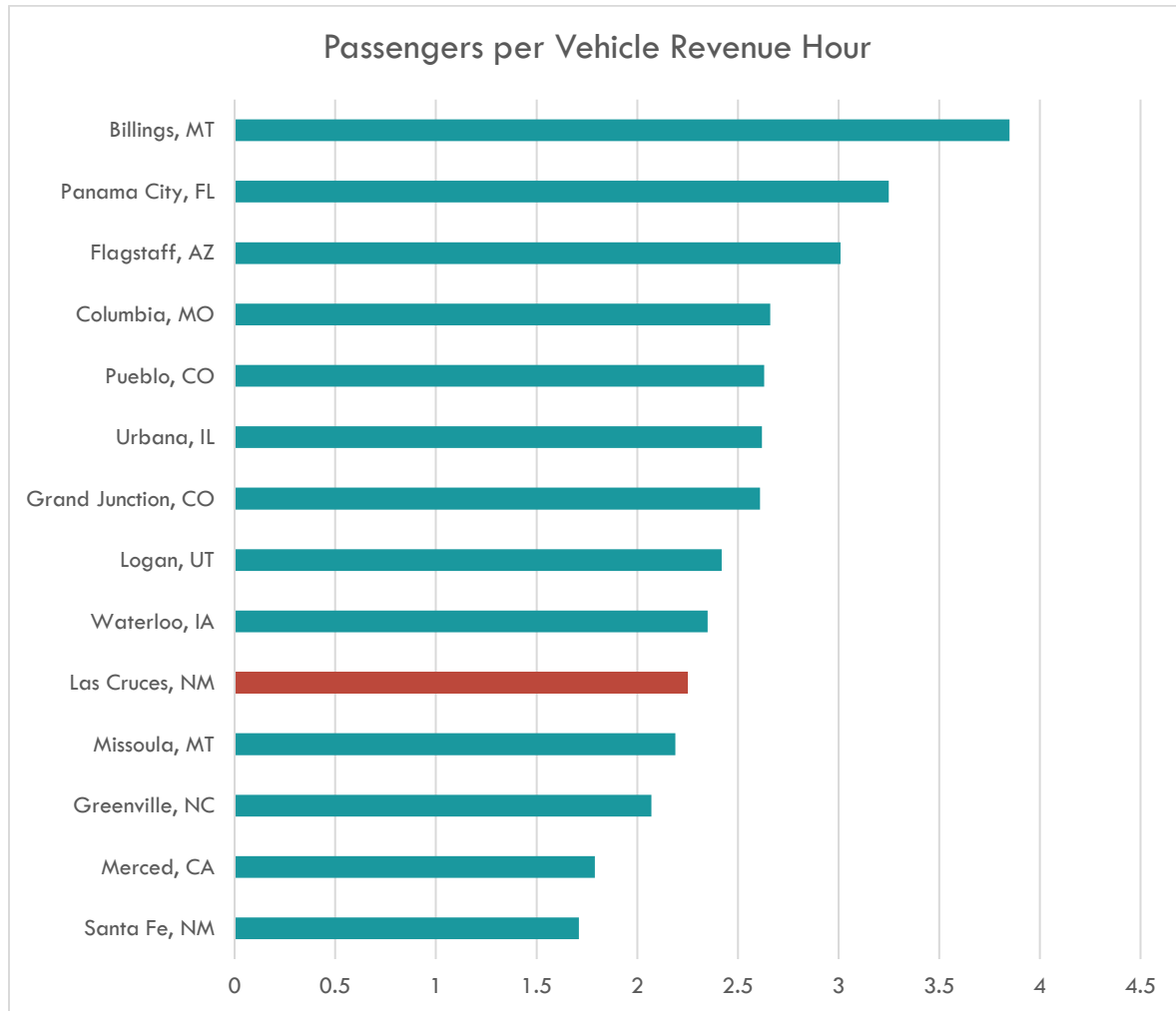
Source: National Transit Database 2019



PASSENGERS PER VEHICLE REVENUE HOUR

RoadRUNNER Transit completes an average of 2.25 passenger trips per vehicle revenue hour in 2019. This is an important metric for service efficiency and is affected by how efficient trips are aggregated and scheduled. Increasing the number of passengers transported per vehicle hour results in fewer vehicle revenue hours to serve the same number of trips, therefore reducing the average cost of each trip.

Figure 2-13: Passengers per Vehicle Revenue Hour

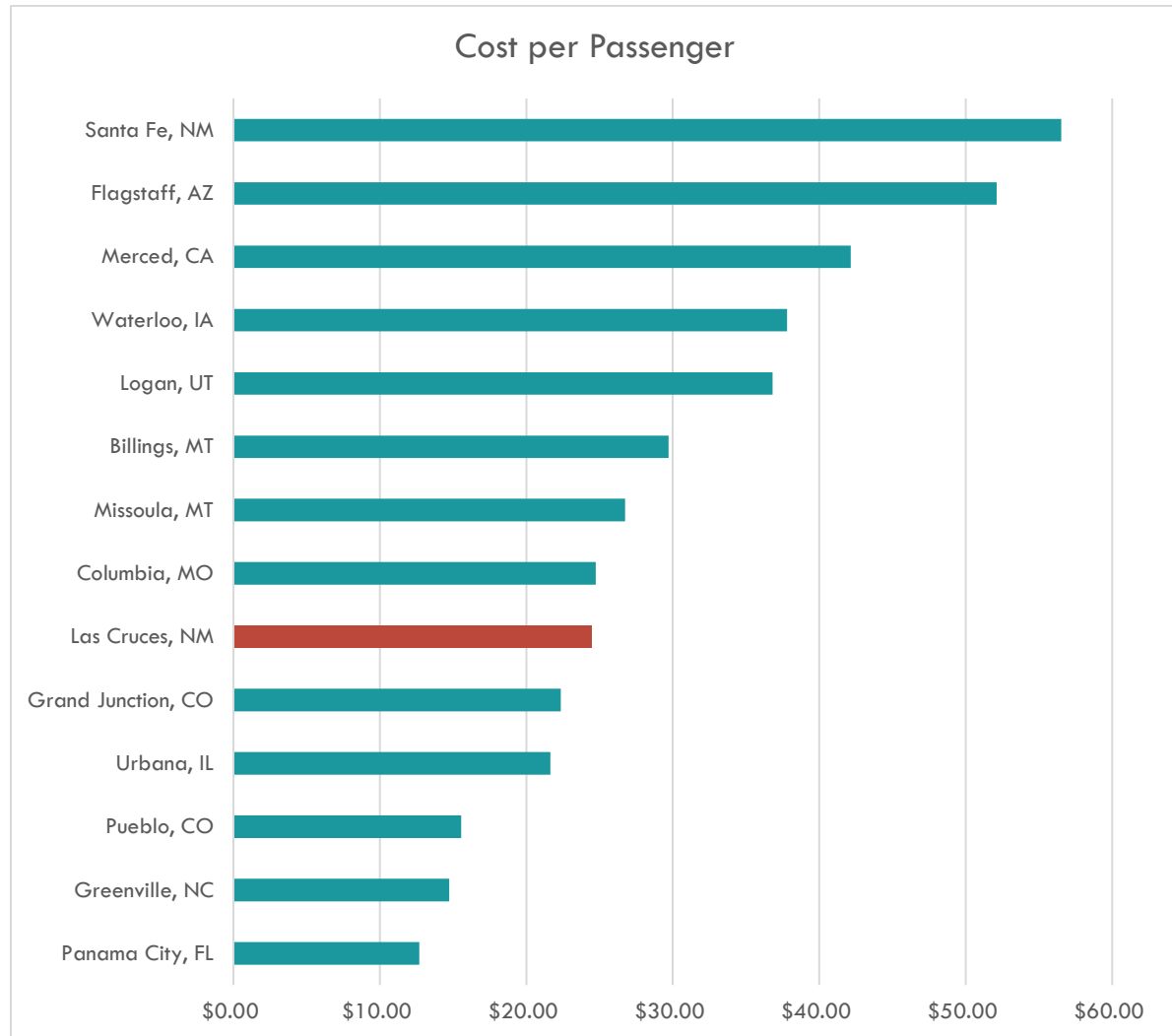


Source: National Transit Database 2019

COST PER PASSENGER

RoadRUNNER Transit has a lower cost per passenger than two-thirds of peer agencies, primarily due to its comparatively low cost per vehicle revenue hour. Cost per passenger is derived from the cost of a vehicle revenue hour, and how many passengers an operator can transport per vehicle revenue hour, both of which are discussed in the “Cost per Vehicle Revenue Hour” and “Passengers per Vehicle Revenue Hour” sections.

Figure 2-14: Cost per Passenger

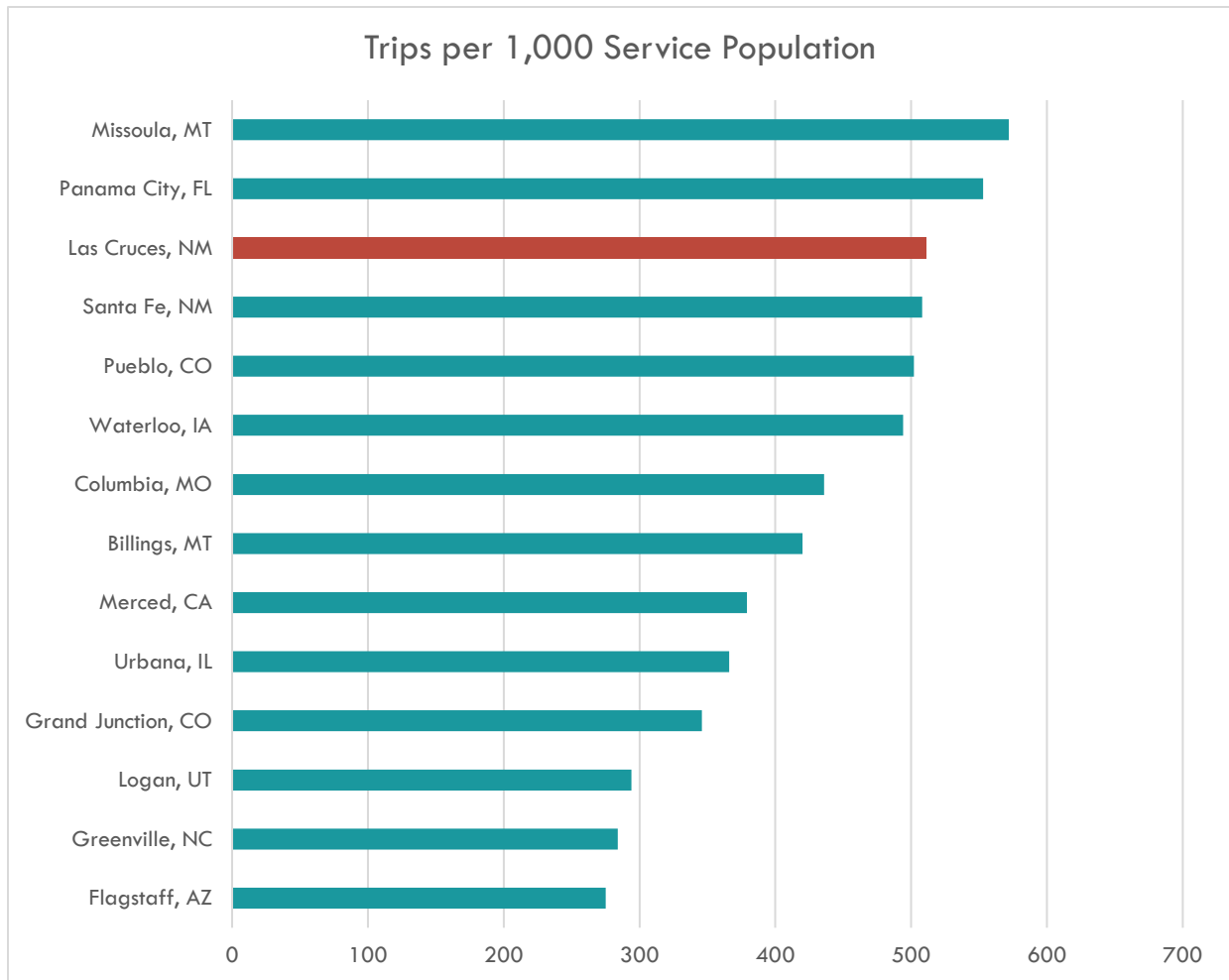


Source: National Transit Database 2019

TRIPS PER 1,000 SERVICE POPULATION

RoadRUNNER Transit's comparatively high trip volume relative to its service population may reflect the fact all seniors are eligible to use the demand-response service. Some agencies tend to be more restrictive in demand-response eligibility requirements, limiting the number of potential customers that can use the service and identifying transit alternatives to traditional demand-response.

Figure 2-15: Trips per 1,000 Service Population



Source: National Transit Database 2019

Table 2-1: RoadRUNNER Transit Benchmarking

Location	Total Passenger Trips	Primary UZA Population	Service Area Population	Service Area Square Miles	Service Area Density (population per square mile)	Cost per Vehicle Revenue Hour	Passengers per Vehicle Revenue Hour	Cost per Passenger	Total Demand Response Operating Expenses	Total Vehicle Revenue Hours	Trips per 1,000 population
Panama City, FL	58,150	143,280	105,192	58	1,814	\$41.22	3.25	\$12.68	\$737,629	17,896	553
Pueblo, CO	56,442	136,550	112,398	39	2,882	\$40.98	2.63	\$15.56	\$878,231	21,433	502
Las Cruces, NM	54,656	128,600	107,025	55	1,946	\$55.06	2.25	\$24.43	\$1,335,458	24,256	511
Waterloo, IA	53,654	113,418	108,519	51	2,128	\$88.67	2.35	\$37.79	\$2,027,436	22,865	494
Columbia, MO	52,868	124,748	121,351	65	1,867	\$65.86	2.66	\$24.73	\$1,307,554	19,855	436
Merced, CA	51,946	136,969	136,957	310	442	\$75.49	1.79	\$42.15	\$2,189,560	29,004	379
Urbana, IL	50,427	145,361	137,693	41	3,358	\$56.61	2.62	\$21.64	\$1,091,303	19,279	366
Greenville, NC	49,448	117,798	174,263	652	267	\$30.47	2.07	\$14.73	\$728,229	23,901	284
Billings, MT	46,304	114,773	110,323	44	2,507	\$114.55	3.85	\$29.72	\$1,376,247	12,014	420
Missoula, MT	41,918	82,157	73,340	70	1,048	\$58.65	2.19	\$26.73	\$1,120,368	19,104	572
Grand Junction, CO	35,248	128,124	101,846	66	1,543	\$58.36	2.61	\$22.36	\$788,004	13,502	346
Santa Fe, NM	34,517	89,284	67,947	41	1,657	\$96.53	1.71	\$56.52	\$1,950,738	20,209	508
Logan, UT	28,079	94,983	95,500	33	2,894	\$89.12	2.42	\$36.81	\$1,033,540	11,597	294
Flagstaff, AZ	19,765	71,957	71,917	29	2,480	\$156.95	3.01	\$52.12	\$1,030,246	6,564	275

Source: National Transit Database 2019

A close-up photograph of a person's hand typing on a silver laptop keyboard. The background is blurred, showing other people in a meeting or office environment. The image has a dark, semi-transparent overlay. On the right side, there is a solid vertical orange-red bar.

3 Public Engagement

INTRODUCTION

Public engagement is a crucial part of the planning process. When done well, outreach efforts will result in a strong and widely-supported transit plan. The public engagement process for the RoadRUNNER Short Range Transit Plan (SRTP) lasted from November 2020 to September 2021 and aimed to gain insights from both a diverse group of stakeholders and the general public. Together, the project team—along with project partners the City of Las Cruces, RoadRUNNER Transit, and the Mesilla Valley Metropolitan Planning Organization (MVMPO)—used multiple strategies throughout the engagement process to ensure a broad audience was reached and received an opportunity to leave feedback on the transit system. The ultimate goal of the public engagement process was to:

“Inform the public about the plan and solicit their feedback through an interactive and engaging process, ensuring the community’s thoughts and opinions are the driving force shaping the future transit system in Las Cruces.”

Public surveys and virtual meetings were the core elements used to gain insight into the transportation needs and desires within the Las Cruces community. Due to the COVID-19 pandemic, the project team relied heavily on virtual engagement throughout the planning process. When possible, in person engagement was achieved through an open house at the intermodal facility that lasted two weeks and allowed the public to view the draft scenarios. While participation was widely successful via the online surveys and virtual meetings, the project team took careful consideration to ensure Las Cruces residents without digital access were also able to participate. The following memo describes all methods and results of the SRTP public outreach in detail.

WHO IS THE ‘PUBLIC’?

The “public” is a broad term that encompasses the following groups:

- **The General Public:** The team engaged with anyone throughout the City of Las Cruces area who wanted to contribute to the engagement process. ATG and the project team looked to capture input that both helps improve transit for existing users and makes it more appealing for non-users.
- **Key Stakeholders** (see list in **Appendix A**): Stakeholders are a key to the public engagement process because they are already involved in the community, and they often represent residents who may be harder to reach. The stakeholders engaged through the SRTP process not only provided incredible insights throughout the virtual meetings, but they also served as “brand ambassadors,” promoting the public survey and telling the project team who else needed to be contacted.
- **City Leadership:** Working with the City of Las Cruces was vital for learning about the transit needs of each area in the city. Their firsthand experience helped develop customized solutions that best serve the City as a whole.
- **RoadRUNNER Transit:** No one knows or sees more than the front-line team dedicated to delivering transit service to the community. RoadRUNNER transit staff helped the project team better understand the quirks and intricacies of each route, as well as the challenges bus drivers and riders face on a daily basis.

PUBLIC ENGAGEMENT PLAN OBJECTIVES:

The following objectives were developed as a means to evaluate the success of the project team's outreach efforts and ensure the goal of the public engagement process was met:

- Understand the current state of transit in Las Cruces and how it affects each individual community.
- Understand how the community uses the existing transit system (i.e., where they go and want to go, existing travel patterns, when they are riding, etc.).
- Inform the public about the SRTP and the benefits associated with an improved transit system.
- Present sustainable, implementable transit solutions in a simple and transparent way, demonstrating the benefits and drawbacks associated with each proposed option.
- Develop a shared understanding with the public about how each proposed transit option will impact the community.
- Make recommendations that are informed by the public engagement process, customized for each community, and result in a regional transit system that provides freedom of movement.

VIRTUAL EVENTS

Stakeholder Meetings

The initial list of stakeholders was a combination of contacts provided by the MVMPO, the City of Las Cruces, and RoadRUNNER Transit. ATG added groups to the list after researching the area and looking for groups that may not have been represented in the past. The stakeholders represent various businesses, nonprofits, educational institutions, and government agencies. The full list of stakeholders can be found in **Appendix A**.

STAKEHOLDER KICKOFF

The stakeholder kickoff meeting was held on April 7, 2021, via Microsoft Teams. ATG, the City of Las Cruces, the MVMPO, and Via led the meeting, and 21 stakeholders attended. The meeting began with an introduction to the SRTP planning process and then allowed time for stakeholders to discuss their concerns and priorities for transit in Las Cruces. Stakeholders gave their feedback regarding survey design and integration with other local plans, and they asked questions about how well the plan would account for factors driving transit, such as population age, locations of grocery stores, and affordable housing. The entire minutes for the stakeholder kickoff meeting can be found in **Appendix B**.

ECONOMIC DEVELOPMENT STAKEHOLDER MEETING

In the stakeholder kickoff meeting, the City of Las Cruces Economic Development Department suggested meeting with the STRP project team to discuss coordinating with updates to the City's Long-Range Plan, Elevate Las Cruces, so a meeting took place on April 29, 2021. The meeting largely focused on the up-and-coming Las Cruces Innovation and Industrial Park on the west side of the city, south of the Las Cruces International Airport, and the possibility of connecting it to transit. The Las Cruces Innovation and Industrial Park is a rebranding of the existing industrial park near the Las Cruces International Airport. It was formerly known as the West Mesa Industrial Park. The discussion was devoted to how transit can serve the present and future needs on the

industrial park. The group concluded that while fixed-route transit would be underutilized if implemented currently, there is potential to poll industrial park businesses and their employees for a possible vanpool or rideshare option. In the future, further investment could be warranted to ensure workers have options for commuting to the industrial park area.

AFFORDABLE HOUSING STAKEHOLDER MEETING

The project team met with City representatives on April 29, 2021, to discuss how upcoming affordable housing developments would affect future transit demand, and how specific locations could best be served by RoadRUNNER. The project team was provided with a list of all present and future plans for affordable housing units so the locations could be considered throughout the development of route recommendations.

PUBLIC MEETINGS

Virtual Public Meetings

The SRTP public meetings were held on August 25th, 2021, at 12:00 p.m. and 6:00 p.m. MST. The two sessions presented the same material but provided opportunity for engagement at two different times of the day. Attendees were able to login via Microsoft teams through a link on the City of Las Cruces website. There were 23 total residents in attendance, and the presentation was made available on the alternatives website for residents who were unable to participate live. Each alternative was discussed at length, followed by an opportunity for the public to provide live feedback on each alternative on Zoom via an online polling platform. The Project Team used an interactive map to take location-specific notes about the concerns participants voiced.

Some of the key issues that were discussed in both sessions include:

- Support for keeping Route 8 as is; several residents expressed that Route 8 was a key part of their commute on a daily basis
- Ensuring seniors have easy access to congregate meals at the senior centers in the Las Cruces area
- Discussions about how much microtransit would cost to use; the team clarified that microtransit fare would be similar to transit fare
- Pedestrian infrastructure should be improved along with bus stop improvements
- Support for ensuring the DACC East Mesa Campus is connected to the main DACC campus and NMSU through a direct route, either through fixed route or microtransit
- Concern for bike racks to be available on microtransit vehicles

The full minutes of the virtual public meetings and the interactive comments on the map can be found in Appendix C.

Figure 3-1: Interactive Comment Map

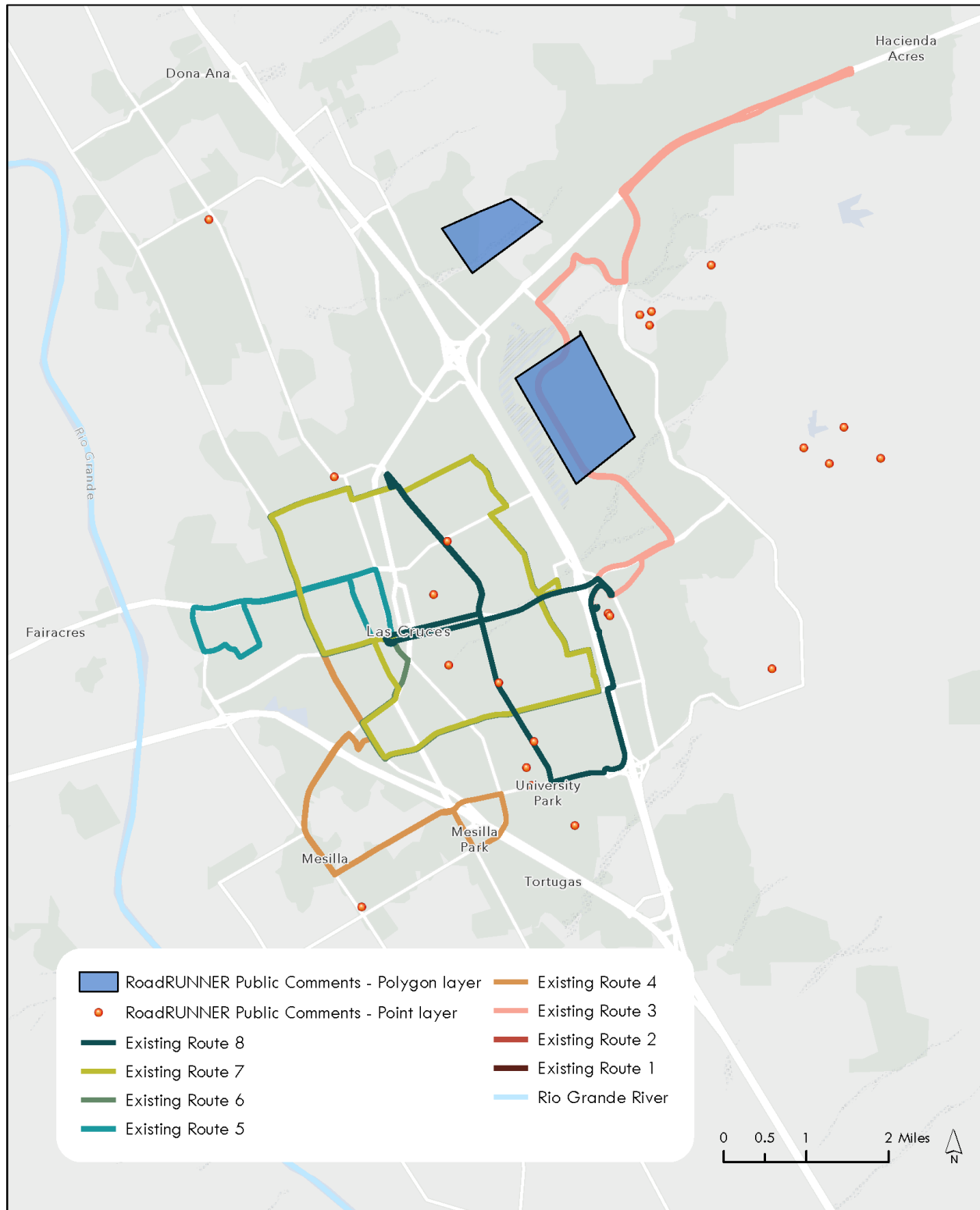
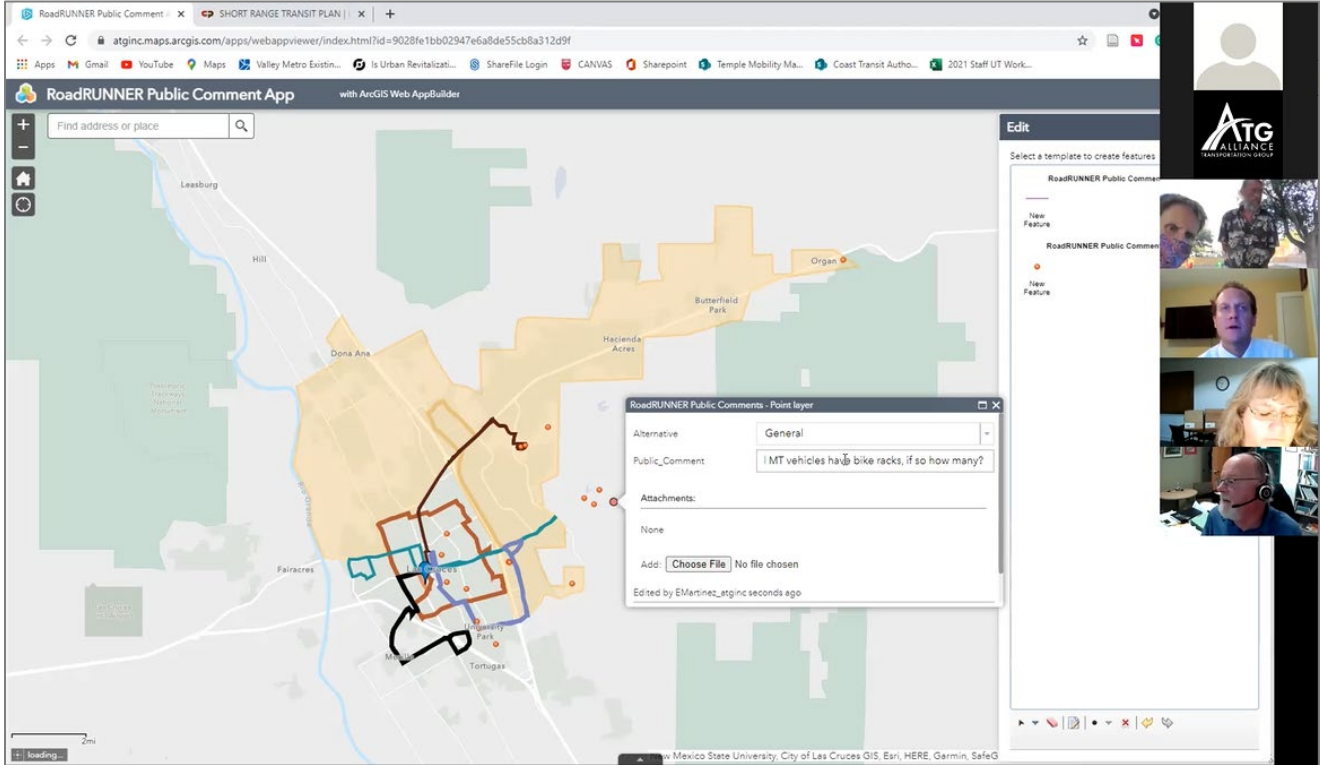


Figure 3-2: Screenshot of 6:00 p.m. Virtual Public Meeting



PROMOTING THE PUBLIC MEETING

There were two ways the public meeting was promoted outside of engagement with Las Cruces stakeholders: traditional media and social media promotion. Each are described below.

TRADITIONAL MEDIA

A press release was given to local media outlets for promotion of the public meeting. The outreach to local media resulted in significant news coverage, including stories from *Las Cruces Sun News*, *KRWG Public Media*, and *KFOX 14*. A full version of the press release and links to the corresponding news coverage can be found in **Appendix D**.

MUNICIPAL SOCIAL MEDIA PLATFORMS

The City of Las Cruces promoted the public meeting through their Facebook page, using the image shown in Figure 3-3.

Figure 3-3: Image Used for Social Media Promotion



Open House

For those who were unable to attend a virtual meeting, RoadRUNNER staff set up an exhibit at the Mesilla Valley Intermodal Transit Terminal (MVITT) available August 23rd – September 12th, 2021. The exhibit showcased maps of the alternatives, the benefits associated with each alternative, and an explanation of microtransit. Participants at the MVITT were able to fill out a printable version of the online survey to provide their feedback.

Figure 3-4: Scanned Survey Received at Intermodal Facility Open House

QUESTIONS/ PREGUNTAS:	Alternative/ Alternativa C
<p>1. True or False: The proposed transit recommendations in the alternative will save me time. / Verdadero o Falso: Las recomendaciones de tránsito propuestas en la alternativa me ahorrarán tiempo.</p> <p>If false, please explain why / Si esto es falso, por favor explicaré por qué.</p>	<p><input checked="" type="checkbox"/> True/Verdadero <input checked="" type="checkbox"/> False/Falso</p> <p><u>I use Route 8 to go between campus and Mesquite+Madrid. Getting rid of it would impact my commute.</u></p>

SURVEYS AND OTHER DIGITAL ENGAGEMENT

Bus Operator Survey

In order to learn where the bus system was experiencing high and low ridership or having trouble keeping on schedule, the project team surveyed bus operators about their experiences (prior to the COVID-19 pandemic and its associated service cuts and decline in ridership). The survey also solicited qualitative and quantitative responses about what challenges the bus operators face and what they felt needs to improve about the system.

30
operators
responded

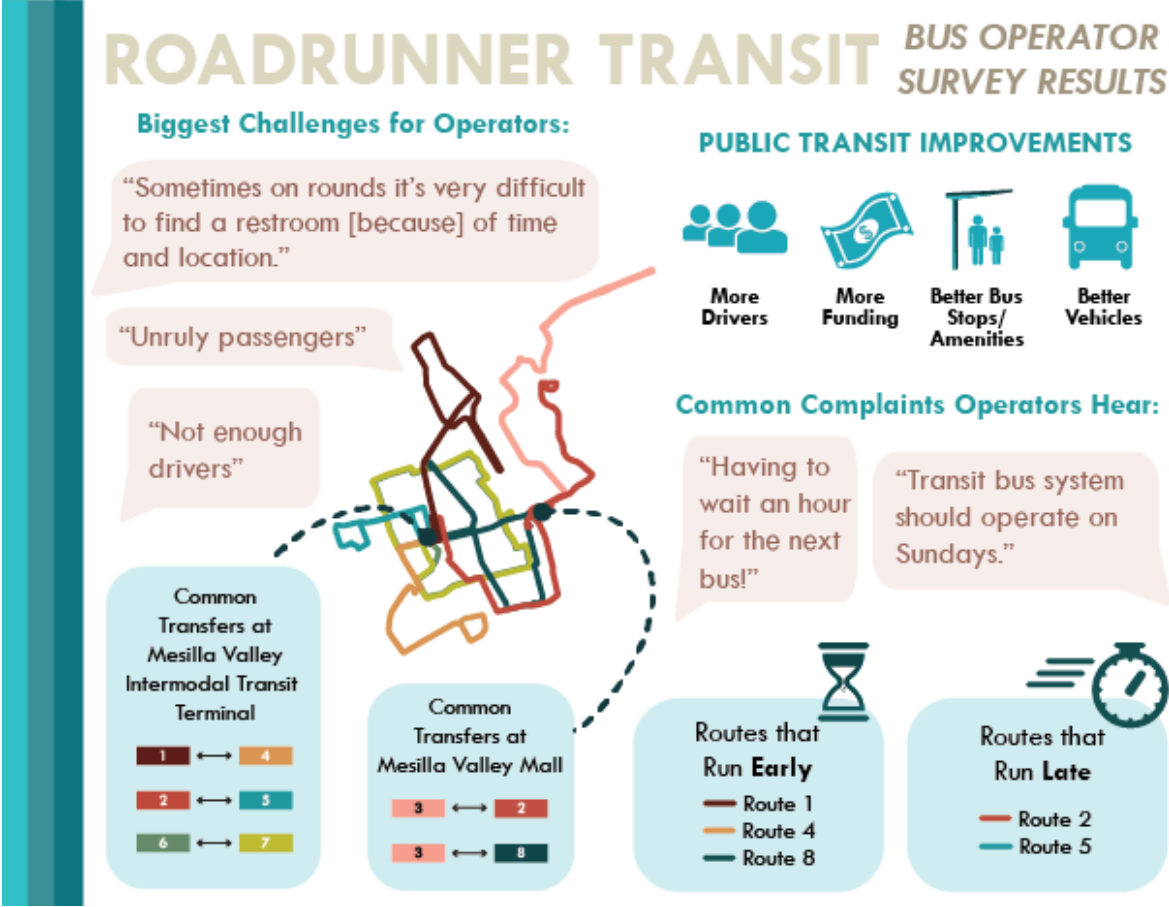
The survey was given both virtually via QuestionPro as well as a printable form. All operators used the digital survey. The survey was promoted primarily through emailing operators, with several reminders to take the survey before the survey was officially closed. Thirty operators filled out part or all of the survey. The survey was open from February 5th, 2021, to March 16th, 2021.

Bus operators found limited staffing and difficulties with passengers to be some of the biggest challenges in their job. They also described how transit in Las Cruces could be improved, primarily through increasing transit staff and funding but also by updating bus stop amenities, increasing accessibility, and acquiring newer and better buses. When asked what complaints they most frequently heard from passengers, operators reported that passengers complained of infrequent

service at limited times. A list of comments from bus operator respondents can be found in **Appendix E**.

Operators were also asked to report which routes most often fell behind schedule and which most often ran ahead of schedule. The two buses of 30-minute frequency, routes 2 and 5, were the two most likely to run late, and Route 8 was most likely to be ahead of schedule. They also listed the most common transfers at RoadRUNNER’s two hubs, the MVITT downtown and the Mesilla Valley Mall. Survey results can be shown below in Figure 3-5.

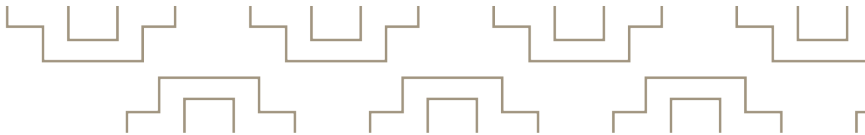
Figure 3-5: Bus Operator Survey Results Infographic



Public Survey

The public survey was distributed both online and in paper forms and was made available in both English and Spanish from January 15th, 2021, to May 23rd, 2021. The survey was promoted through several means: a media release was sent out by the City of Las Cruces, emails were sent to all stakeholder contacts, and City social media platforms displayed promotions for the survey. Stakeholders were highly encouraged to promote the survey to community members they serve, and they distributed it predominantly by emailing residents or advertising to their social media followers. Screenshots

336
people
responded



below show the stakeholders' efforts in promoting the survey online. In large part because of their efforts to distribute the survey, 336 responses were received.

Figure 3-6: Screenshots of Social Media Efforts to Promote Survey



The survey consisted of 20 questions about residents' demographics and travel patterns, aiming to gain insight about riders' level of support for public transit, preferences when using transit, and any barriers that hinder riders from using transit.

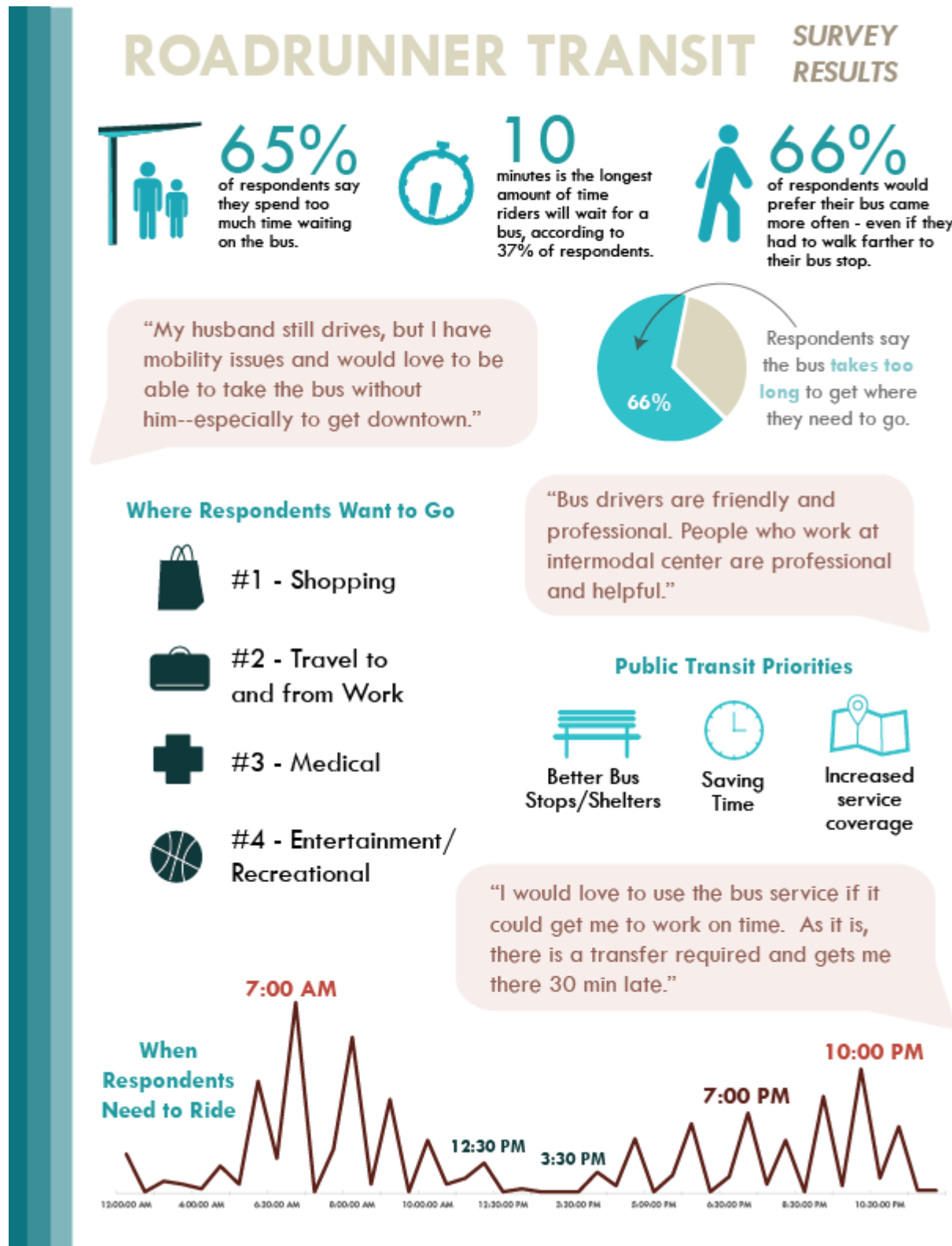
The survey provided a look at transit from a Las Cruces resident's perspective. An overwhelming majority of respondents (98%) said they support public transit regardless of whether they ride it, but many of them also said that riding the bus takes too long to get to their destination. The following were some of the key takeaways from the survey:

- 98% of respondents support public transit.
- 37% of respondents would be willing to wait 10 minutes maximum for a bus to arrive.
- 47% of respondents would be willing to wait 20 minutes maximum for a bus to arrive.
- 65% of respondents said they spend too much time waiting for their bus to arrive.
- 66% of respondents said they prefer a bus that came more often, even if it meant a longer walk to the bus stop.

When asked about where they would like to go on public transit, most respondents said they would utilize transit for shopping. Commuting to work was a close second trip purpose, followed by "medical appointments" and "entertainment / recreational activities." Additionally, respondents said they would utilize transit the most during early morning commute hours (around

7:00a.m.) and in the evening (around 10:00p.m.). More survey results can be shown below in Figure 3-7, and a full list of comments from respondents can be found in **Appendix F**.

Figure 3-7: Public Survey Results Infographic



Website

Web engagement was funneled through two mediums: the RoadRUNNER SRTP web page (hosted by the City of Las Cruces) and an ArcGIS Online website that provided content regarding the transit alternatives and opportunities for feedback. Each method is described below.

ROADRUNNER SRTP PAGE

To advertise the work being done on the RoadRUNNER SRTP, ATG created content for the City of Las Cruces to display on their website. The content discussed plans for future transit improvements and encouraged website visitors to take the public survey, attend a public meeting, or contact the City. This included a website banner to help direct more attention and responses. Additionally, the website was used as an information hub, providing materials after public meetings for those who were unable to attend and a link to the ArcGIS online site. Figure 3-8, Figure 3-9, and Figure 3-10 show some of the graphics used on the RoadRUNNER SRTP page.

Figure 3-8: Vision Statement Graphic for Website

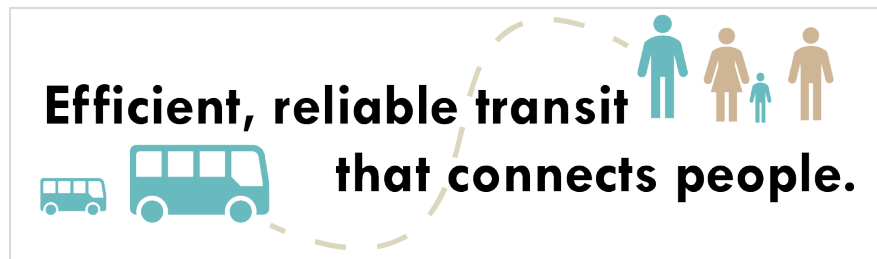


Figure 3-9: Website Banner

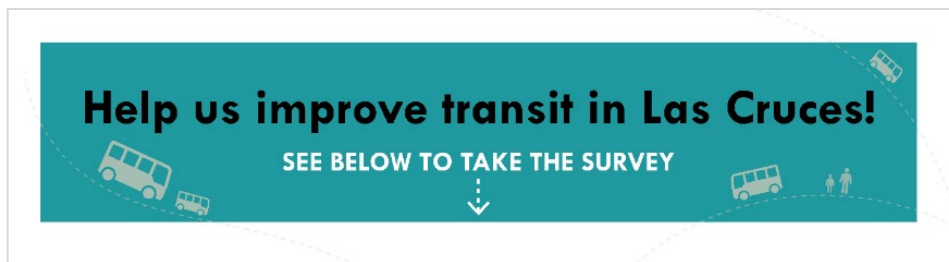
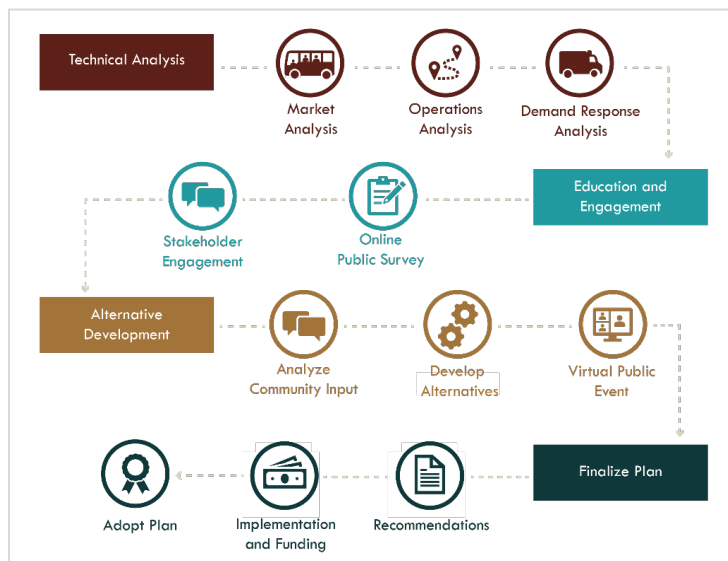


Figure 3-10: Schedule Graphic for Website



ARCONLINE WEBSITE

The ArcGIS online website was created to provide additional engagement opportunities for after the alternatives were presented to the public. The site included dynamic maps showing the existing routes as well as Alternatives A, B, and C. Below each alternative, users had the option to take a survey and give feedback, as shown in Figure 3-11 below. The surveys regarding each alternative asked a series of true or false questions:

- 1) True or False: The proposed transit recommendations in this alternative will save me time.
- 2) True or False: The proposed transit recommendations in this alternative will improve my ability to get where I need to go.
- 3) True or False: The proposed transit recommendations in this alternative will improve my ability to move around the greater Las Cruces area.

If a user responded, “False,” they were asked to explain why they chose that answer. A full list of comments from the alternatives survey can be found in Appendix G, and the results of this survey are discussed more in the Alternatives and Recommendations chapter. A screenshot of the map and survey on the ArcGIS online website is shown in Figure 3-12.

Figure 3-11: Alternatives A, B, and C True and False Responses

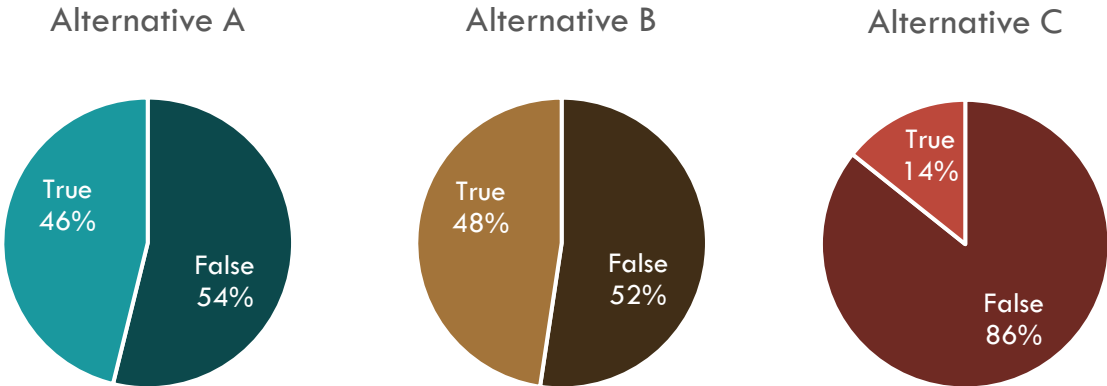


Figure 3-12: Screenshot of the Alternative A Map and Adjacent Survey

The screenshot displays a web application interface for a transit survey. At the top, it is titled "RoadRUNNER SRTP" and "Alternative A". The main visual is a map of Las Cruces, New Mexico, with several transit routes overlaid in different colors: Route 1A (dark red), Route 2A (red), and Route 3A (orange). A legend on the right side of the map identifies these routes. Below the map, there is a Google Forms survey titled "Alternative A Survey". The survey is in Spanish and asks the user to indicate if the proposed transit recommendations will save them time. The question is: "True or False: The proposed transit recommendations in Alternative A will save me time. // Verdadero o Falso: Las recomendaciones de tránsito propuestas en la Alternativa A me ahorrarán tiempo." There are two radio button options: "True / Verdadero" and "False / Falso". The survey includes navigation buttons for "Back", "Next", and "Clear form". At the bottom, there is a Google Forms logo and a small icon in the bottom right corner.

CONCLUSION

The public in Las Cruces demonstrated overwhelming support for public transit as a mode of transportation and high investment in seeing it grow and improve. Stakeholder support and participation ensured that public engagement efforts had broad reach and that public transit plans integrated with other planning efforts in the city. Comments from both bus operators and members of the public stressed the need for easily available information on route locations and frequencies, as well as for greater frequency and more direct routes to destinations. Bus operators also earned frequent praise for their courtesy and friendliness.

As the City of Las Cruces continues to grow, so must the reliability of its transit system. Buses that come more often and provide greater connection to the places riders want to go will create a more convenient system, saving transit users time. Over the next five years (and beyond), the public has shown broad support for changes to increase the efficiency of their system—providing a better experience for riders and operators alike.



4 Alternatives & Recommendations

INTRODUCTION

Several analyses served as the basis for the development of RoadRUNNER alternatives, all of which were discussed at length in the Existing Conditions chapters. Public engagement was the other foundational element of the alternative development; while the technical analyses gave the project team a well-rounded understanding of the bus operations, the feedback from project partners and residents in Las Cruces provided critical local context. The results of these analyses and public outreach processes and their impact on the alternative development are discussed below.

Fixed Route Analysis

RIDERSHIP ANALYSIS

The ridership analysis revealed opportunities for improvements in Las Cruces' current transit system. As discussed in Chapter 1, project partners and RoadRUNNER staff provided boarding and alighting data for the analysis. The results revealed low-performing route segments, prompting the development of alternatives with different versions of Routes 1 and 3. The project team also considered connecting high-performing routes and interlining routes that were intuitively located near one another, developing alternatives with more direct and efficient routes.

TRANSIT MARKET SCORE

The transit market score quantified the propensity for transit throughout the study area. The scores provided insight on where service might need to be expanded, and where it may need to be decreased. Ultimately, many of the high-scoring areas shown in the transit market score analysis received the same or improved service in each alternative.

TRAVEL PATTERNS ANALYSIS

By analyzing the travel patterns of modes other than transit (primarily the travel patterns of vehicles), the project team was provided with information about where people who are driving want and need to go. The zones with the highest demand were near University Park, a zone just north of E Madrid Avenue, and six zones on the east side of I-25. This information informed the development of the preferred microtransit zone, in which all zones on the east side of Las Cruces are provided coverage in each alternative. The other high-volume zones still received fixed route service.

KEY DESTINATIONS

On top of the quantitative analyses above, the project team considered a variety of key destinations when developing transit alternatives. Using a list of destinations obtained through ArcGIS Business Analyst, the project team reviewed the important places riders may want to go when riding transit. Affordable housing and grocery stores were also key destinations that were mentioned by stakeholders in public engagement meetings. The project team developed alternatives that provided easy access to grocery stores throughout the RoadRUNNER network, and a meeting with the department of Housing and Neighborhood Services confirmed all current and future affordable housing locations were included in the final development of alternatives.

Microtransit Simulation and Analysis

COMPARING THE SENIOR AND ADA RIDERSHIP

The project team analyzed the travel patterns of both seniors and ADA riders, and the results showed vastly different travel patterns between the two groups. The senior ridership occurred mostly during 9am to noon while ADA ridership was spread out throughout the day, meaning that a microtransit solution may have more demand in the early morning if seniors were to utilize the service. Seniors also made up the majority (65%) of monthly ridership, so the senior demographic was a key factor when developing the microtransit zones.

COMPARING THE SERVICE TO PEER TRANSIT AGENCIES

The project team utilized simulation tools to analyze existing demand response service in Las Cruces. Overall, RoadRUNNER transit had a low cost per vehicle hour for demand-response services, but their service efficiency lagged behind similar sized agencies. The technology report in Appendix I details solutions that could increase efficiency if demand-response technology were upgraded.

ORIGIN DESTINATION ANALYSIS

The origins and destinations were analyzed regarding senior and ADA trips. Most of the trips were to or from central and west Las Cruces, including several senior and community centers as well as a dialysis center. However, ADA trips were more dispersed across the Las Cruces area. The travel patterns of seniors and ADA riders (along with input from project partners and the public) shaped the development of the microtransit zone alternatives.

ALTERNATIVE DEVELOPMENT







Prioritization Tool

In addition to the technical analyses conducted in the Existing Conditions analysis and public engagement efforts, the project team utilized a prioritization tool to compare the performance of routes. The tool provided insight on how each route recommendation would impact the Las Cruces community, laying the groundwork for a roadmap to implementation.

If a route is listed as low priority, removing that route would have the lowest impact on the community. For example, the cumulative prioritization score for Routes 1 and 3 were the lowest, because they don't serve as many people or employment centers, and the areas they serve aren't expected to grow as much as some other areas in the city. Thus, the route prioritization tool has ranked them as "low priority."

The indicators used for the prioritization tool are shown in Figure 4-1, along with a screenshot of the tool itself in Figure 4-2.

Figure 4-1: Indicators Used for the Route Prioritization Tool

<p>Average Population Density</p> <p><i>Does the route serve the existing population well?</i></p> 	<p>Average 2025 Employment Density</p> <p><i>Will the route serve areas that are expected to have more employment?</i></p> 
<p>Average Employment Density</p> <p><i>Does the route go to areas with high levels of employment density?</i></p> 	<p>Average Transit Dependency Score</p> <p><i>Does the route go to places where people are dependent on transit?</i></p> 
<p>Average 2025 Population Density</p> <p><i>Will the route serve the future population well?</i></p> 	<p>Buses per Hour</p> <p><i>Will the route perform efficiently?</i></p> 

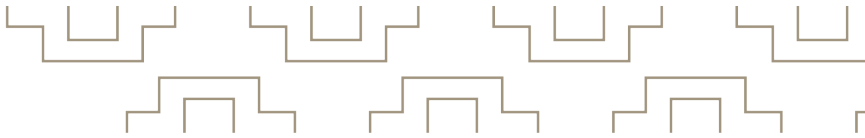


Figure 4-2: Prioritization Tool

Existing	Route/Zone	Scores by Route within Alternatives		Scores by Alternative	
		Prioritization Score	Overall Rank	Prioritization Score	Overall Rank
Existing	1	43	5	0	4
	2	14	7		
	3	0	8		
	4	29	6		
	5	57	4		
	6	86	2		
	7	71	3		
	8	100	1		
Alternative A	1	38	6	100	1
	2	63	4		
	3	13	8		
	4	25	7		
	5	50	5		
	6	75	2		
	7	75	3		
	8	100	1		
	Microtransit Zone	0	9		
Alternative B	1	38	6	67	2
	2	88	2		
	3	13	8		
	4	25	7		
	5	50	5		
	6	75	3		
	7	63	4		
	8	100	1		
	Microtransit Zone	0	9		
Alternative C	1	43	5	33	3
	2	100	1		
	3	29	6		
	4	14	7		
	5	57	4		
	6	86	2		
	7	71	3		
	Microtransit Zone	0	8		

Microtransit Simulations

To understand the potential ridership and operating costs for microtransit in Las Cruces, the project team designed, modeled, and simulated the performance of several service options. This exercise explores the feasibility and operational requirements to operate a microtransit service in specific areas of Las Cruces. The project team simulated the performance of RoadRUNNER's service using a demand-response simulation tool intended to identify the optimal vehicle routing and trip assignment for a given set of trip origins and destinations. The simulation results quantify the potential efficiency gains if RoadRUNNER were to improve upon its trip routing and aggregation.

WHAT IS MICROTRANSIT?

Microtransit or on-demand transit is similar to a bus in that passengers are asked to walk to meet a vehicle at a 'virtual bus stop' that may be up to $\frac{1}{4}$ or $\frac{1}{2}$ of a mile from their requested location. However, it is different from a bus in that there are no schedules or route maps. Instead, trips must start and end within zones that fill gaps in the bus network.

Passengers can book a trip using a smartphone application ("app"), a website, or through a call center. To book a ride, a passenger starts by indicating the number of passengers in their party and their desired pickup and drop-off locations. When booking using the app, passengers will clearly see the geofenced zone in which service is offered. Requesting a trip beyond this zone is not possible, so passengers always know where the microtransit service is available. Once the passenger submits a trip request, they are given a proposal that tells them when the vehicle will arrive and where to meet it. Typically, passengers must wait between 5 and 20 minutes for a trip, although this may vary depending on the level of demand and the number of vehicles available. Passengers can track the vehicle in real-time using the app. The passenger is provided with vehicle information—for example: license plate, driver name, driver photo, and vehicle ID number. Passengers can usually cancel a ride at any time before pickup.

Figure 4-3: Example of a Microtransit Bus



Once the vehicle arrives, the driver confirms the passenger's details using the driver app. Passengers can pay using credit and debit cards, transit passes, cash, vouchers, and more. Most microtransit providers take care to include payment options for people without credit cards or bank accounts to ensure that the service is accessible to all. The passenger is then taken to their destination. Along the way, the vehicle will pick up and drop off other passengers heading in the same direction, but care is taken to avoid lengthy detours for passengers already on board. The passenger can track their progress using the app. After each trip, passengers may be automatically emailed a receipt. Passengers may also be able to provide real-time and post-trip feedback through the app.

SIMULATION PROCESS

Using the demand data provided by RoadRUNNER, the project team conducted simulations to determine the fleet size required by time of day to complete all trips, while meeting (or exceeding) quality of service requirements. This exercise leverages a simulation tool (as shown in Figure 4-4), which allows us to test the potential for more efficient routing and supply planning. Below we outline the basic steps used to simulate RoadRUNNER's ADA Paratransit and Senior Transportation service:

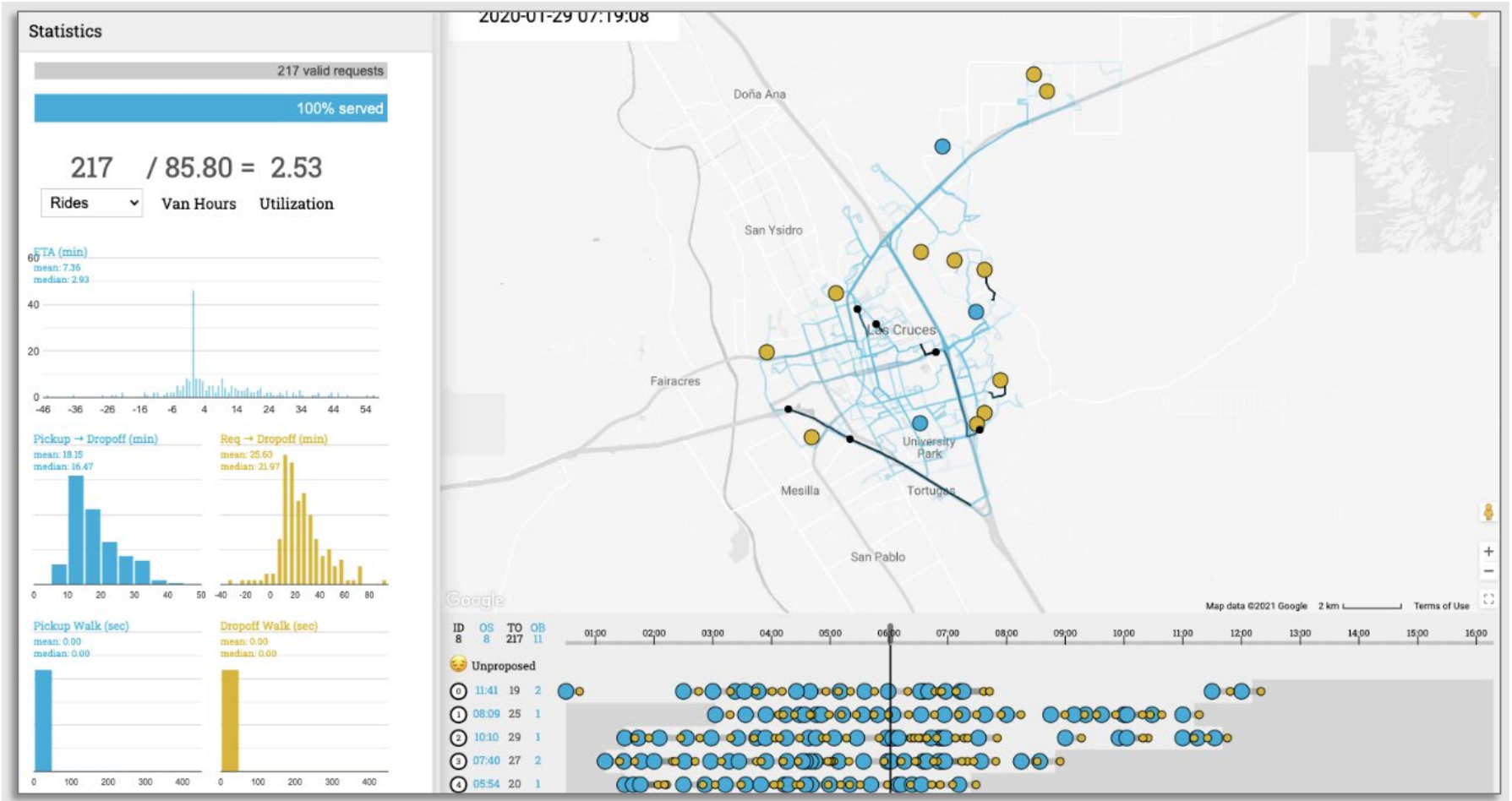
1. **Upload demand-response service zone polygon.** RoadRUNNER's existing Dial-a-Ride service operates within the Las Cruces city limits. The existing service served as the foundation of the simulation that was extrapolated to understand how improved Dial-a-Ride and microtransit service would work in the Las Cruces area.
2. **Generate underlying road map** by pulling data within the service zone boundaries from OpenStreetMap, including all roads categorized by functional classification, turn restrictions, directionality, and street walkability and drivability information.
3. **Determine traffic speeds** by querying Google's Maps APIs for traffic speeds specific to the time of day during which the service is being simulated. This ensures that wait times and trip times of the simulated service reflect real-world traffic data at the time of day for which service is being modeled.
4. **Set "terminals,"** to designate staging areas for vehicles that do not have active ride assignments. Terminals are safe parking areas that are distributed throughout the service zone, typical at transfer centers, park-and-ride facilities, or large shopping centers. When empty, vehicles will be routed to the terminal where the system has predicted demand. This ensures that each vehicle is used efficiently and that passengers will benefit from the shortest possible wait times.
5. **Determine potential stopping locations,** which are safe places for pickups and drop-offs. The simulation can be configured to assess curb-to-curb, corner-to-corner, or bus-stop-to-bus-stop service for riders. When determining safe stopping locations, the simulation tool considers unique features of the zone, such as the pedestrian walking map, no parking/standing areas, and existing bus stops. For the demand-response simulation of RoadRUNNER's origin-to-destination service, a curb-to-curb service was modeled.
6. **Create or upload demand scenario(s) to simulate the number and types of trip requests we expect to see in a given zone.** Using information gathered in the demand analysis phase, combined with the consultant's fixed-route and demand-response transit experience, we can estimate travel patterns within the zone, and input them into the simulation tool. For the demand-response simulation, we uploaded the demand data provided by RoadRUNNER, which allowed for the simulation to reflect actual days of service.
7. **Set simulation parameters by determining the optimal configuration** for achieving RoadRUNNER's service quality and passenger aggregation targets. These inputs — like fleet size, vehicle capacity, pickup windows, and detour allowance — are those we adjust when creating and iterating upon a new service. After these variables are set, the scenario is ready to run. We perform several different simulations, demonstrating how adjusting service parameters will impact the quality of service, capacity, and efficiency.

Key parameters were established with input from City staff, including:

- **Dwell time** (the time required to pick-up and drop-off a passenger): 5 minutes for wheelchair users; 3 minutes for ambulatory passengers

- **Pickup window** (a pickup can occur before or after the scheduled pickup time): +/- 15 minutes
- **Negotiated trip window** (the dispatcher can schedule a trip before or after the requested pickup time): +/- 60 minutes
- **Detour allowance** (the detour allowed to pick up additional passengers): set to achieve an average ride time of 20-23 minutes or better, which is the average ride time of the current service

Figure 4-4: Screenshot of The Simulation Tool



DEMAND-RESPONSE FINDINGS

These simulations identified the following opportunities to improve RoadRUNNER's ADA Paratransit and Senior Transportation service:

1. **Maximize the number of shared trips.** A simulation of historic RoadRUNNER ridership suggests that not all similar trips were aggregated, resulting in lower vehicle utilization and sharing.
2. **Broker trips with Transportation Network Companies (TNCs) or taxis for overflow demand.** In situations where a trip may be difficult to complete with the existing fleet, it may be more cost-effective to broker these trips to a TNC or taxi instead of dispatching an additional RoadRUNNER Transit vehicle.
3. **Reroute vehicles to address live issues (e.g., cancellations, road closures).** Rerouting vehicles in real-time could reduce operational costs associated with live issues, such as trip cancellations. This could be through transit software that allows for dynamic routing, without any action required from the dispatcher. Dynamic routing refers to the ability for the transit software to adjust routing after a Dial-a-Ride schedule has been set and drivers are on the road. Specifically, a driver follows turn-by-turn directions on a driver app, and the software automatically updates the directions on the driver app if there are live issues (e.g., trip cancellations, road closures).

Simulations have indicated that there is an opportunity to operate the demand-response service more efficiently. The simulation tool (shown above in Figure 4-4) shows the potential for improving vehicle routing and trip sharing, which could reduce the peak number of vehicles operating from 12 vehicles to as low as 9 vehicles while meeting or exceeding the required quality of service. In particular, the number of vehicles could be reduced in the peak period between 9am and 1pm, and between 2pm and 5pm. Example improvement is shown by the charts on the following pages, while comparative results are shown below.

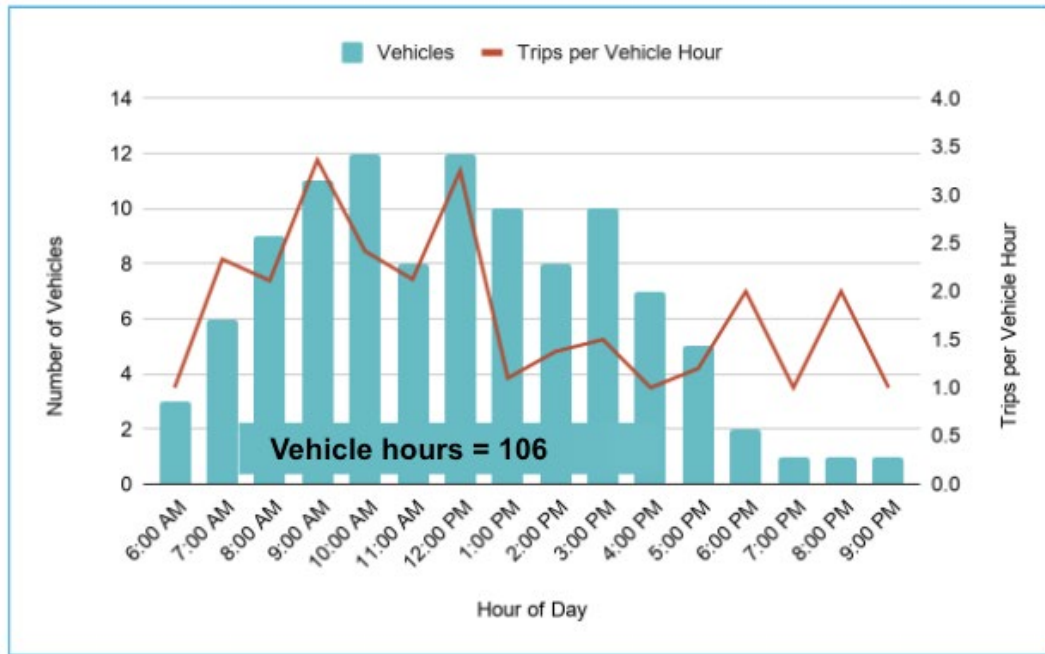
Table 4-1: Comparative Service Statistics

Service Metrics	RoadRUNNER Demand-Response Results	Simulation Results
Total passengers	217	
Passengers per vehicle hour	2.1	2.6
Avg difference between requested time and actual pickup time (minutes)	9.9	11.7
Avg ride time (minutes)	20	18
Max vehicle requirement	12	9

ROADRUNNER DEMAND-RESPONSE TRANSIT: EXISTING RESULTS

The chart below shows the number of passengers per vehicle hour ("vehicle utilization") and the number of vehicles required throughout the day. The number of vehicles peaks during the main period of demand between 9am and 1pm, causing overall utilization to be lower than if supply could be more consistently reduced. Further, the utilization of about 1.0 - 1.3 between 1pm and 5pm implies that each vehicle trip likely has only one passenger. However, demand may be high enough in this period to increase vehicle sharing, and therefore improve service efficiency.

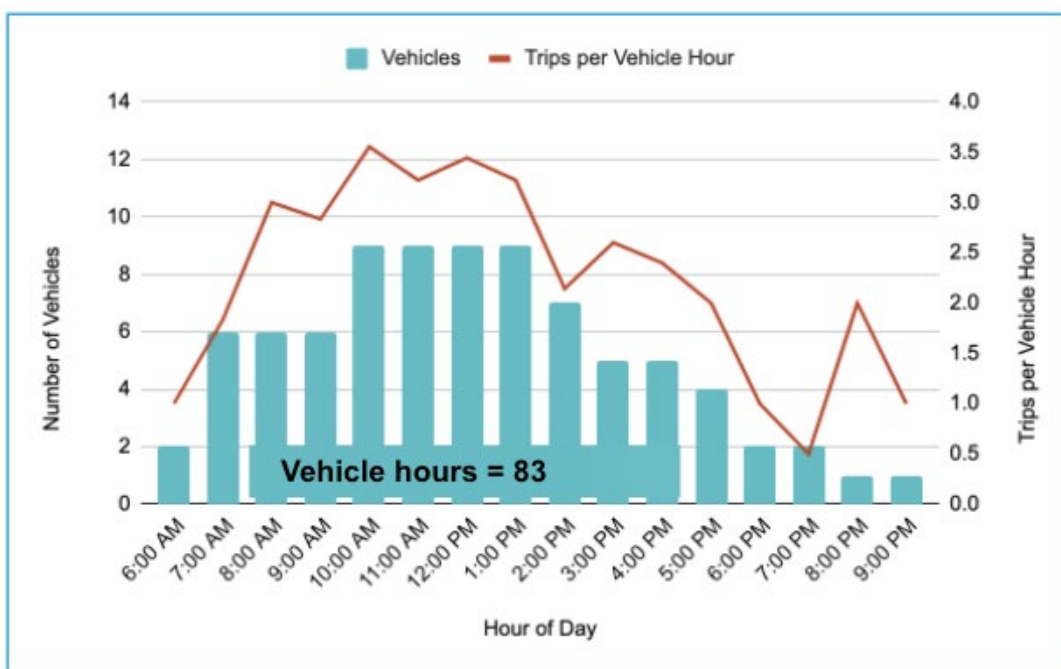
Figure 4-5: Existing RoadRUNNER Demand-Response Service Metrics



SIMULATION RESULTS: POTENTIAL IMPROVEMENT

The simulation demonstrates how improved trip sharing and routing could reduce the number of vehicles required. The number of vehicles is lower in the peak demand period between 9am and 1pm, achieving a consistent utilization of between 3.0 - 3.5 trips per vehicle hour. Further, the fleet in the mid- and late afternoon is also smaller and implies a higher rate of vehicle sharing.

Figure 4-6: Potential RoadRUNNER Demand-Response Service Metrics



MICROTRANSIT FINDINGS

Table 4-2 displays results from the microtransit simulations. Given the low density and large size of the service zone, the service has a fairly low utilization across all demand scenarios. For comparative purposes, the RoadRUNNER's current Dial-a-Ride service has an average utilization of about 2.1, while the simulation of the demand-response service implies the potential for a utilization of 2.7. Even though Dial-a-Ride is curb-to-curb (with additional assistance to the door if necessary) and microtransit is corner-to-corner—and Dial-a-Ride therefore should inherently be less efficient—the relative similarity in efficiency is due to the Dial-a-Ride service predominately serving senior demand that is concentrated in a much smaller area in central Las Cruces.

To estimate potential demand for microtransit service, the project team calculated the total population and employment within the proposed microtransit zone and estimated what proportion of these individuals would use the service daily. This estimate is based on observed levels of demand from microtransit services in geographies that are most similar to the proposed microtransit service in Las Cruces. We then assessed several demand scenarios (low, medium, high) that allow us to model the fleet size required at different demand levels. For example, the first 6 months of service is likely to have lower demand (e.g., new riders learning about the service) than when the service reaches its steady state.

Key parameters were established, including:

- Maximum pickup and drop off walk: ¼ mile
- Maximum wait time: 40 minutes
- Seats per vehicle: 6
- Service hours: Weekdays 6:30 am to 10:30 pm, Saturdays 9:15 am to 6 pm

Table 4-2: Microtransit Simulation Results

Demand Scenario	Daily Weekday Demand	Avg. Weekday Utilization	Weekday Peak Utilization	Maximum Weekday Vehicles Required	Avg. Wait Time	Annual Vehicle Hours
Units:	Passenger trips	Passengers per vehicle hour		Vehicles	Minutes	Vehicle hours
Low	100	2.5	2.7	3 - 4	16 - 18	10,500 - 12,800
Medium	180	2.7	3.0	5 - 6	17 - 18	17,500 - 21,400
High	320	3.1	3.4	8 - 9	17 - 19	27,300 - 33,300

TRANSIT ALTERNATIVES

This section provides an overview of the various service scenarios developed by the project team. Additionally, the benefits and tradeoffs that differ between each scenario are described. Each alternative has a map with performance metrics. The project team presented these alternatives to the community, city leadership, and RoadRUNNER staff for input. The alternatives were presented in a manner that asked questions about how each scenario performed, instead of asking the

community to choose one alternative over the other. The project team asked the following true/false questions, as described in detail in the public engagement chapter:

- Does this alternative save you time?
- Does this scenario improve your ability to move around Las Cruces?
- Does this scenario improve your ability to get where you need to go?

Conducting the input process in this way enabled the project team to isolate the strengths and eliminate the weaknesses of the various alternatives to determine the preferred alternative that had the support of the community, city leadership, project partners, and RoadRUNNER staff.

The alternatives below show the differences when compared to existing Las Cruces transit service. In addition, comparing the alternatives to one another was a helpful exercise for stakeholders and staff to determine which might benefit their community the most.

Fixed Route Alternatives

Figure 4-7, Figure 4-8, and Figure 4-9 display each fixed route alternative and its associated benefits. The alternatives also progress from *least* impact on the existing system to *most* impact on the existing system, e.g. Alternative A's changes are minimal outside of the microtransit zone, and Alternative C includes more drastic measures, such as the removal of service on Solano Drive in Route 8. Alternative A and Alternative B showcase a more conservative version of the microtransit zone, whereas Alternative C's microtransit zone is much larger (as shown in Figure 4-10 , as part of the next section).

Figure 4-7: Alternative A

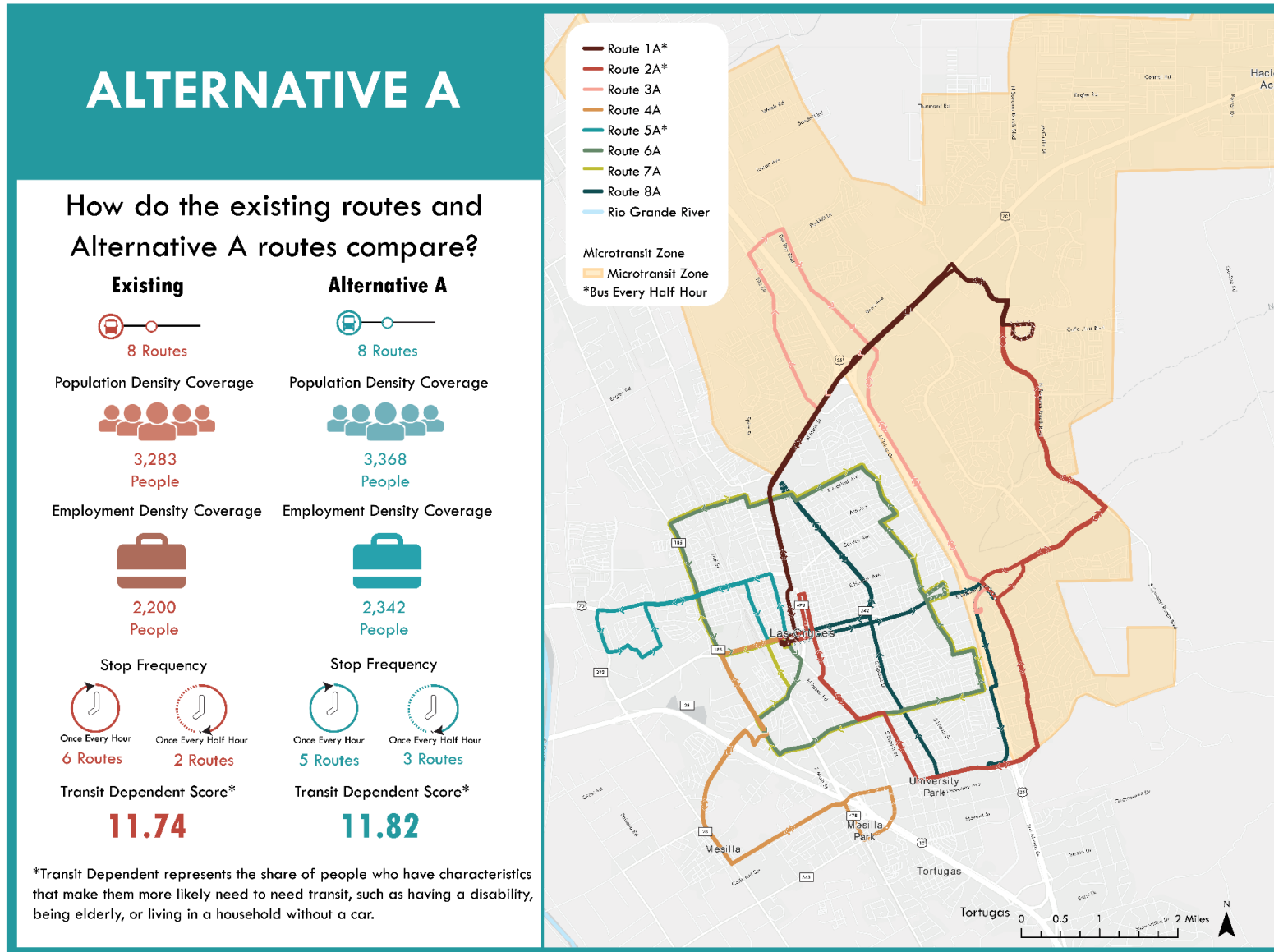


Figure 4-8: Alternative B

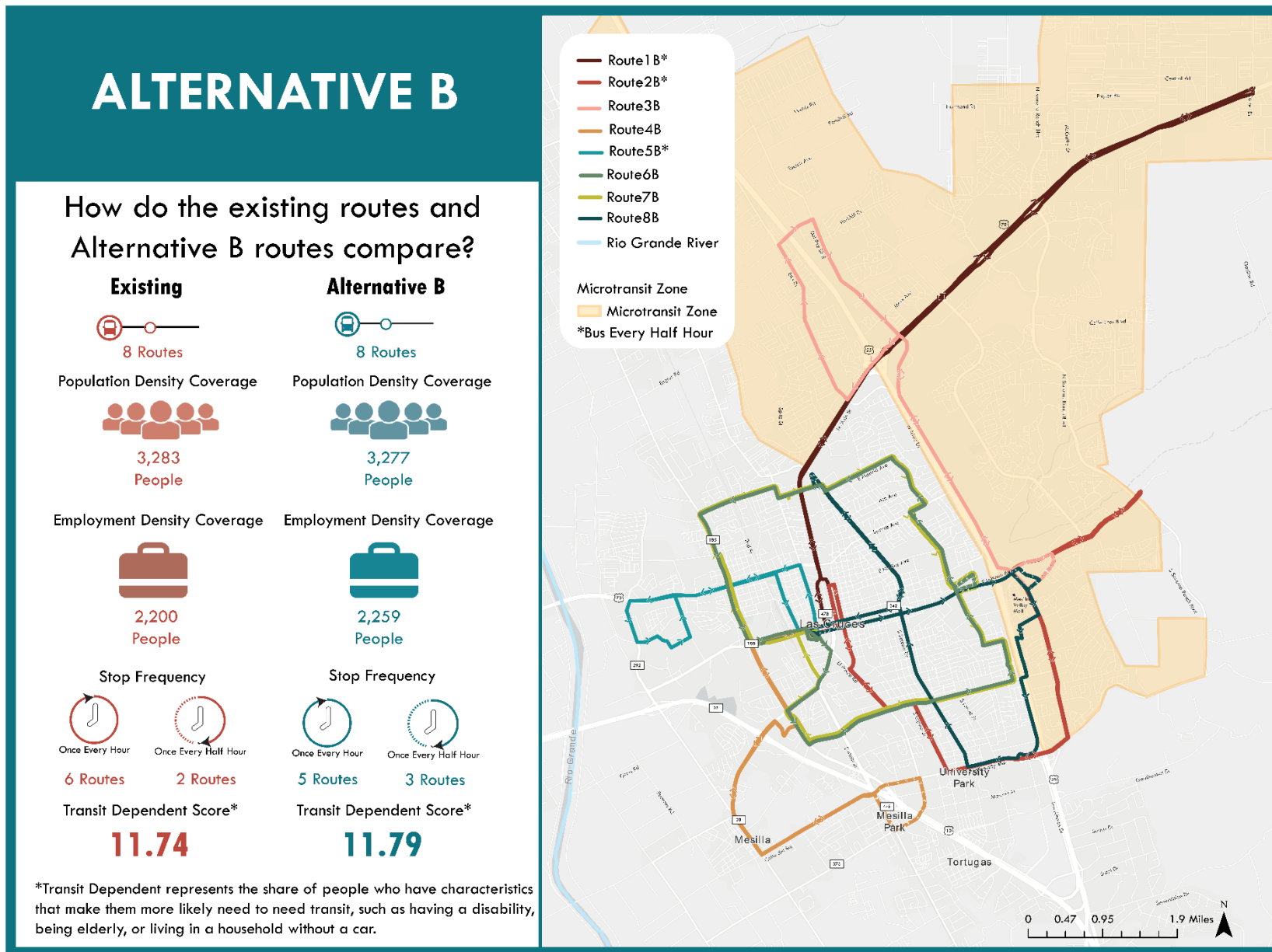
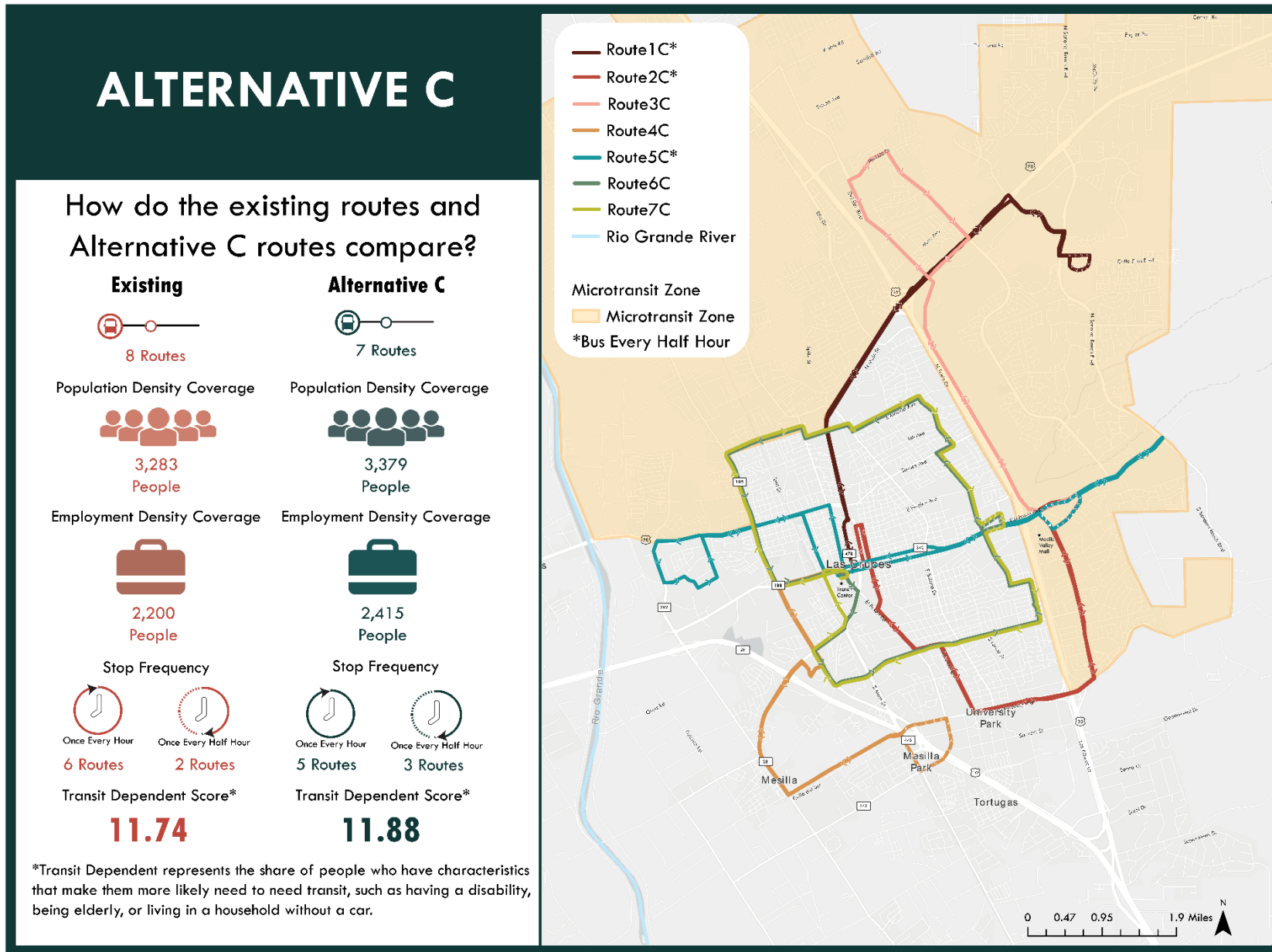


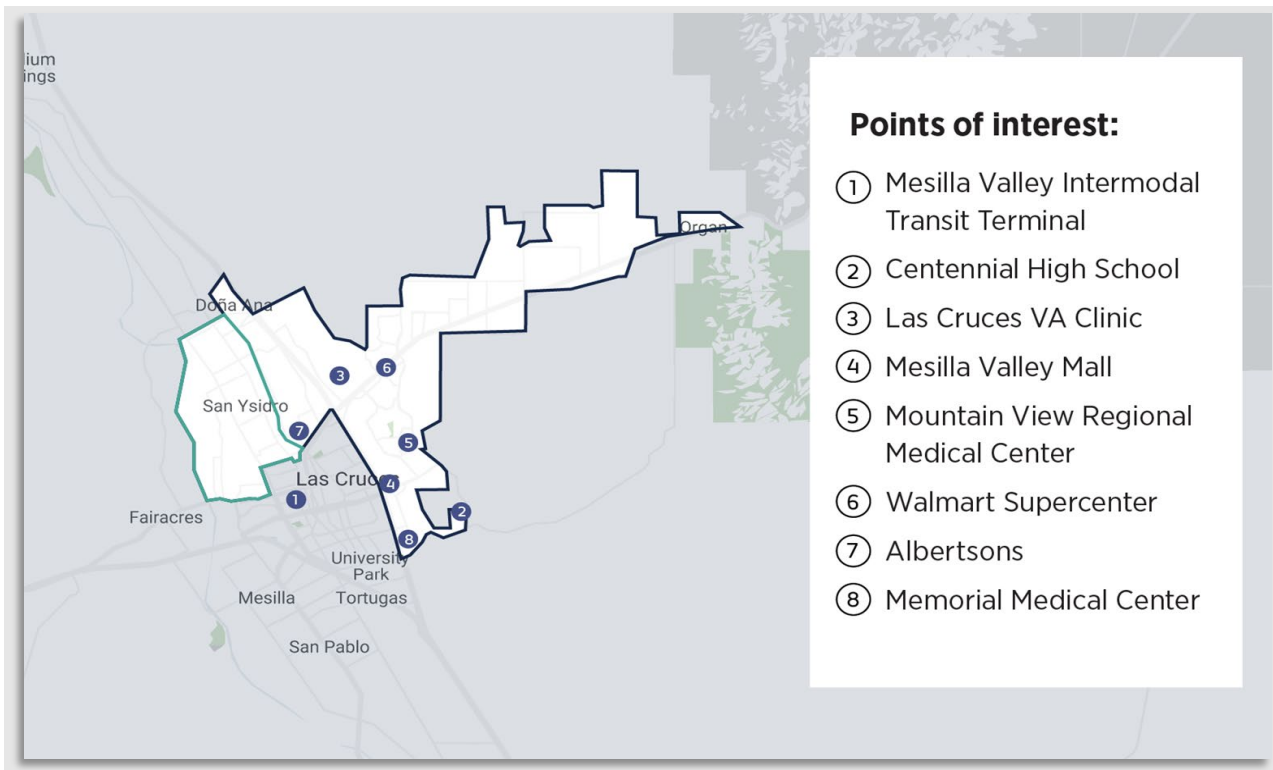
Figure 4-9: Alternative C



Microtransit Alternatives

As shown in each of the above alternatives, there were two proposed microtransit zones. In Alternative A and B, the microtransit zone was mostly covering only the east side of Las Cruces. In Alternative C, the microtransit zone covered the same area as in the previous alternatives with some added coverage on the west side of I-25. Alternatives B and C also included a microtransit hub at the Intermodal Facility outside of the zone, as shown in Figure 4-10 in point number one.

Figure 4-10: Microtransit Zones in Alternatives



PUBLIC INPUT

The public input had a great impact on the outcome for the final recommendations. For example, based on feedback at the community event, the decision to remove service from Solano drive was abandoned. Service will remain on the corridor so that RoadRUNNER can continue to monitor ridership and determine if the transit market matures enough to sustain fixed route or if in the future microtransit could possibly be a viable solution for the corridor. The highlights of the public feedback regarding alternatives are shown in Table 4-3.

Table 4-3: Public Input Regarding Transit Alternatives

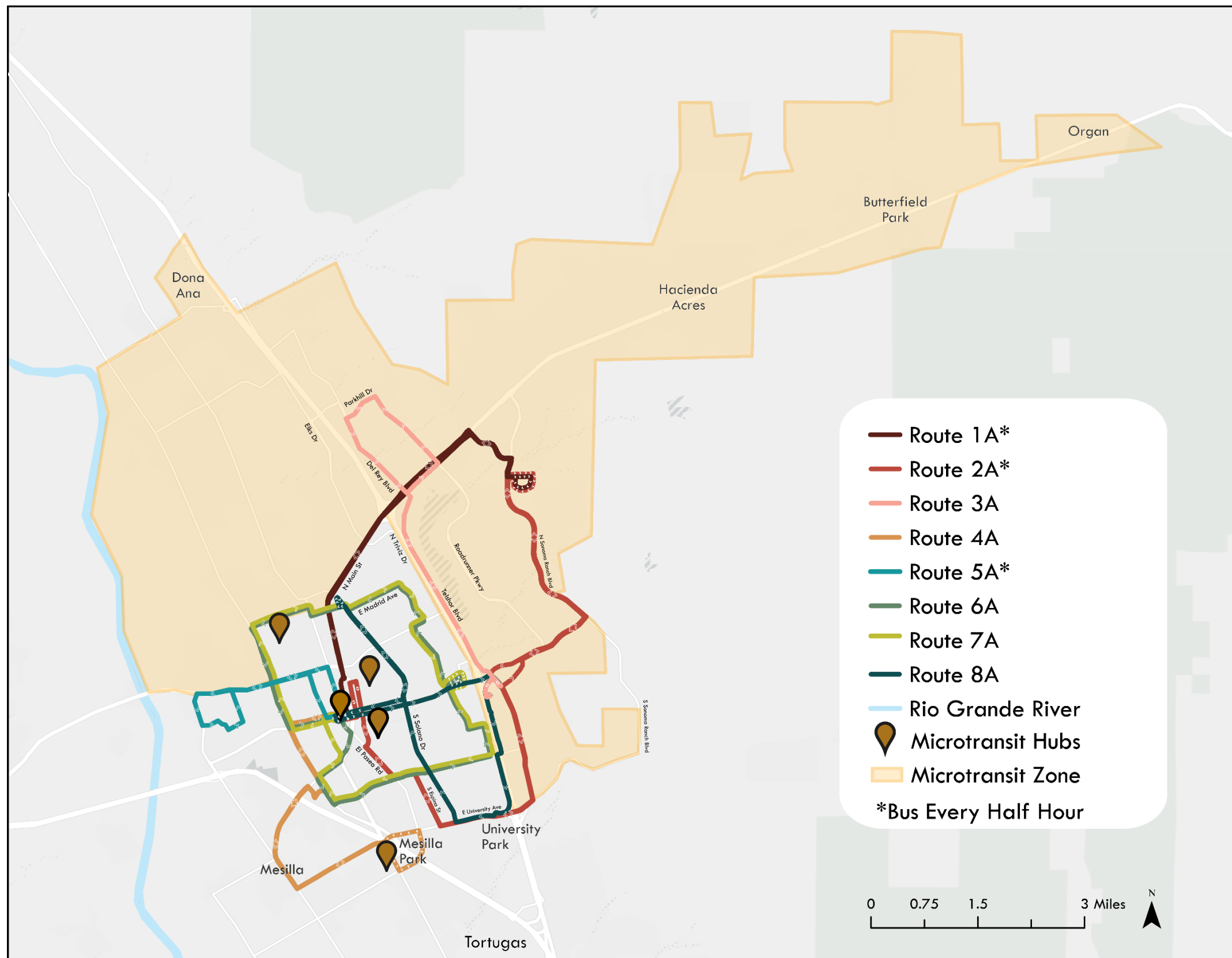
Format	Alternative	Comment
Alternatives Survey	A and B	<i>"There is not enough expansion of coverage. None of the proposed routes include the poorer areas of Three Crosses and Dona Ana Rd.</i>
Public Meeting	All	<i>Feedback in public meeting confirmed that Centennial High School needs service in microtransit zones</i>
Alternatives Survey	A and B	<i>"No service to Roadrunner... Lots of people take Route 3 and get on/off on Roadrunner. Very few use the Sonoma Ranch part of Route 2."</i>
Alternatives Survey	All	<i>"I am getting older. Now I can walk the 1.5 miles to Roadrunner/Lohman intersection and catch the bus, but my ability to do this will decline as I age. I can foresee no ability to use Roadrunner at all in a few [years] with this route."</i>
Alternatives Survey	Alt B	<i>"Will not save me time from where I live but may save me time on interconnection with revised Route 1 if that route also goes to every 1/2 hour.</i>
Alternatives Survey	All	<i>"I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services."</i>
Public Meeting	General	<i>The microtransit zone doesn't connect DACC and NMSU, and this is problematic because it requires a transfer. DACC students/teachers would prefer Alt A or Alt C</i>
Public Meeting	General	<i>"Pedestrian connectivity from Telshor to the mall needs improvement - since we are changing the drop off point in Alt B and C, improving walkable connections would be important"</i>
Alternatives Survey	Alt C	<i>"I use Route 8 to go between campus and Mesquite and Madrid. Getting rid of it would impact my commute."</i>
Alternatives Survey	Alt C	<i>"It eliminates Route 8"</i>
Alternatives Survey	Alt C	<i>"Solano needs serviced. People go to places such as COAS book store... and some doctors, such as my podiatrist are all on Solano. If I'm needing to see my podiatrist, on Solano, with this route, I can't get to him without spending even more on a taxi/Uber/Lyft"</i>
Public Meeting	Alt C	<i>Stakeholder frequently takes Route 8 to get downtown</i>
Public Meeting	Alt C	<i>Area south of Mesilla has lots of people who could use transit. Could MT possibly be expanded to that area?</i>
Public Meeting	Alt C	<i>Stakeholder noted that he lives off of Espina and takes Route 8 frequently -takes it from intermodal to mall to take Route 3</i>

LOCALLY PREFERRED ALTERNATIVE

Using the market analysis, comprehensive operational analysis, and community input, the project team was able to isolate the strengths and weaknesses of each scenario to develop a hybrid of the three scenarios. The result was a the Locally Preferred Alternative (LPA), as shown in Figure 4-11, which included fixed route segments from several alternatives and the microtransit zone from Alternative C. The LPA is a culmination of the RoadRUNNER SRTP effort and the final recommendation of the project team, and it will represent the first two phases of the three-phase implementation plan described in the following chapter.

- **The Addition of Microtransit Service**
The largest lift in the LPA will be the addition of a microtransit service. The addition of microtransit service expands and improves coverage across the entire network, allowing riders from outside of the city core to commute into downtown more easily via the Intermodal Facility Island.
- **Microtransit Islands for Easy Access to Key Destinations**
As a result of the public's desire to access senior centers and the recommendation of RoadRUNNER project partners, several microtransit hubs were added at each senior center in the Las Cruces area (except the Sage Center, which is already located within the microtransit zone).
- **Improved Route Alignments on Routes 1 and 3**
Routes 1 and 3 have more direct routes while still serving key destinations, such as grocery stores, the social security office, and the VA clinic.
- **Increased Frequency on Route 1**
The frequency of Route 1 will increase from 60 minutes to 30 minutes, giving more flexibility for riders.
- **College Connectivity**
The connection to DACC's satellite campus and NMSU remains intact and is improved via service on both Routes 1 and 2, which will both provide 30-minute service.

Figure 4-11: Locally Preferred Alternative



A white bus is parked on a street. The destination sign above the windshield displays "FREE RIDES" in orange letters. The bus has a blue and white striped stripe along its side. The background shows a building and some greenery.

5 Implementation and Funding

IMPLEMENTATION OVERVIEW

This implementation plan will serve as a guide for phasing in the locally preferred alternative over the next five years. The implementation guidelines were shaped by the technical analyses, transit best practices, and input from the public and RoadRUNNER project partners. As the plan advances through each phase with realistic and incremental financial increases, the changes made to the network will improve connectivity and save people time.

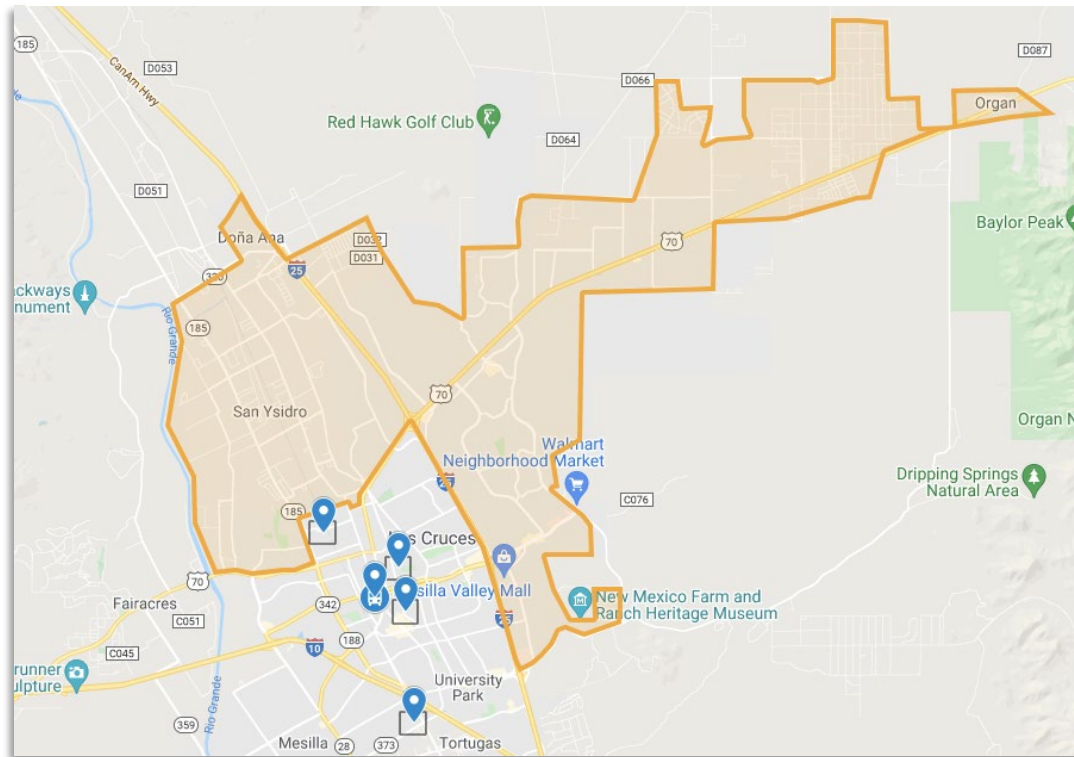
PHASED IMPLEMENTATION

The project team divided the implementation into three distinct phases. Phase I will include implementation of the microtransit service and route alignment adjustments for Route 1 and Route 3. Phase II builds on Phase I by increasing frequency on Route 1. Phase III is exploratory in nature and includes long-term recommendations for further microtransit service coverage and potential fixed route recommendations that will be based on performance metrics of Phases I and II. The recommended timeline for this implementation plan is:

- Phase I: 2022-2024
- Phase II: 2024-2026
- Phase III: 2026 and beyond

Phase I

Phase I will serve as the building block for all other phases. The goals of the implementation in Phase I are the introduction of microtransit service, as shown in Figure 5-1, and the route alignment adjustments to Route 1 and Route 3. The changes made to Routes 1 and 3 will require the microtransit service to be operating at full capacity, due to segments of the routes that will no longer have any fixed route service. Portions of existing Routes 1 and 3 will only have access to microtransit service.

Figure 5-1: Microtransit Zone to be Implemented in Phase I

MICROTRANSIT SERVICE DESIGN

In consultation with the City, the project team developed a potential microtransit service zone, shown in Figure 5-1, for microtransit to expand coverage in hard-to-serve areas and replace several existing Route 3 bus stops. The service zone is approximately 49 square miles. Trips must start and end in the zone, and valid trips can occur anywhere within the zone. Additionally, the service is designed to accommodate seniors who live in the microtransit zone for recurring trips to senior centers; the service will allow “out-of-zone” trips to the following locations, which the project team have called “microtransit hubs:”

- Mesilla Valley Intermodal Transit Center
- Munson Senior Center
- Eastside Senior Center
- Henry R Benavidez Center
- Frank O'Brien Papen Community Center

In addition to the microtransit hub locations, customers will be able to access the following key destinations within the microtransit zone (along with any other destination the rider desires within the zone):

- Las Cruces VA Clinic
- Rinconada Walmart
- DACC East Mesa Campus
- Mountain View Regional Medical Center and Memorial Hospital

This zone will expand transit into several unserved areas and provide RoadRUNNER with an opportunity to pilot microtransit technology and gather public feedback. As many trips will require transfers, some passengers may experience long travel times.

Implementation of microtransit in Phase I will require two additional vehicles and a significant technology upgrade. Technology-specific upgrades can be found in Table 5-1 below, along with a complete list in the Technology Report, in Appendix I.

Table 5-1: Recommendations for Transportation Technologies

Recommendation	Description
Improve Trip Routing	<p><i>Improve trip routing to increase the number of shared trips, reduce the cost per passenger, and increase the capacity of this service.</i></p> <p>RoadRUNNER's ADA paratransit and Senior Transportation service operates using routes and schedules that maximize the number of shared trips by pooling passengers together. By optimizing routing, simulations have indicated it may be possible to use fewer vehicles for the same number of passenger trips, enabling RoadRUNNER to decrease its operating costs.</p>
Allow Booking through Multiple Channels	<p><i>Allow booking through multiple channels including mobile phones and a website.</i></p> <p>Many agencies, including RoadRUNNER Transit, only allow paratransit bookings to be made through the call center, which can be time-consuming for passengers and costly for operations. Call centers also often have limited operating hours. To make the booking process more convenient and efficient, agencies could consider offering a website and/or smartphone booking system.</p>
Allow Real-Time Vehicle Tracking	<p><i>Allow real-time vehicle tracking.</i></p> <p>RoadRUNNER Transit passengers are provided with a pickup window when booking a trip. During this time, they must watch for the vehicle and, in some cases, they may not be aware that their vehicle has arrived. By implementing technology that allows passengers to track their vehicle and journey progress (usually using a mobile phone or computer), passengers will have an improved overall transportation experience. Streamlined communication regarding the timing of pickups will result in fewer calls to dispatch, allowing staff to focus on booking trips rather than helping passengers find their vehicle.</p>
Allow On-Demand or Same-day Bookings	<p><i>Allow on-demand or same-day bookings.</i></p> <p>Many passengers don't know their exact travel requirements until the day of travel. However, paratransit services usually require a passenger to book the day prior to travel. RoadRUNNER Transit could allow same-day requests using the existing paratransit fleet. They may be able to accommodate some requests on the same day without negatively impacting overall system performance or the experiences of other passengers, particularly during hours when demand is lower. Increased demand for same day service may require an increase in the overall fleet over time.</p>

Although the changes in fleet size and technology may take some time, the most challenging portion of the microtransit implementation will likely be the educational campaign to inform riders how to use microtransit. The introduction of microtransit will require a significant public engagement and education campaign to support the community's understanding of a relatively new concept of public transit, so substantial time and budget should be allocated to helping riders understand the benefit and ease of use associated with microtransit. This new mode will allow RoadRUNNER to match service delivery with the underlying market and provide a more complete mobility profile for the community. Once the proof of concept is established it can be expanded to allow for more optimization to occur at the network level.

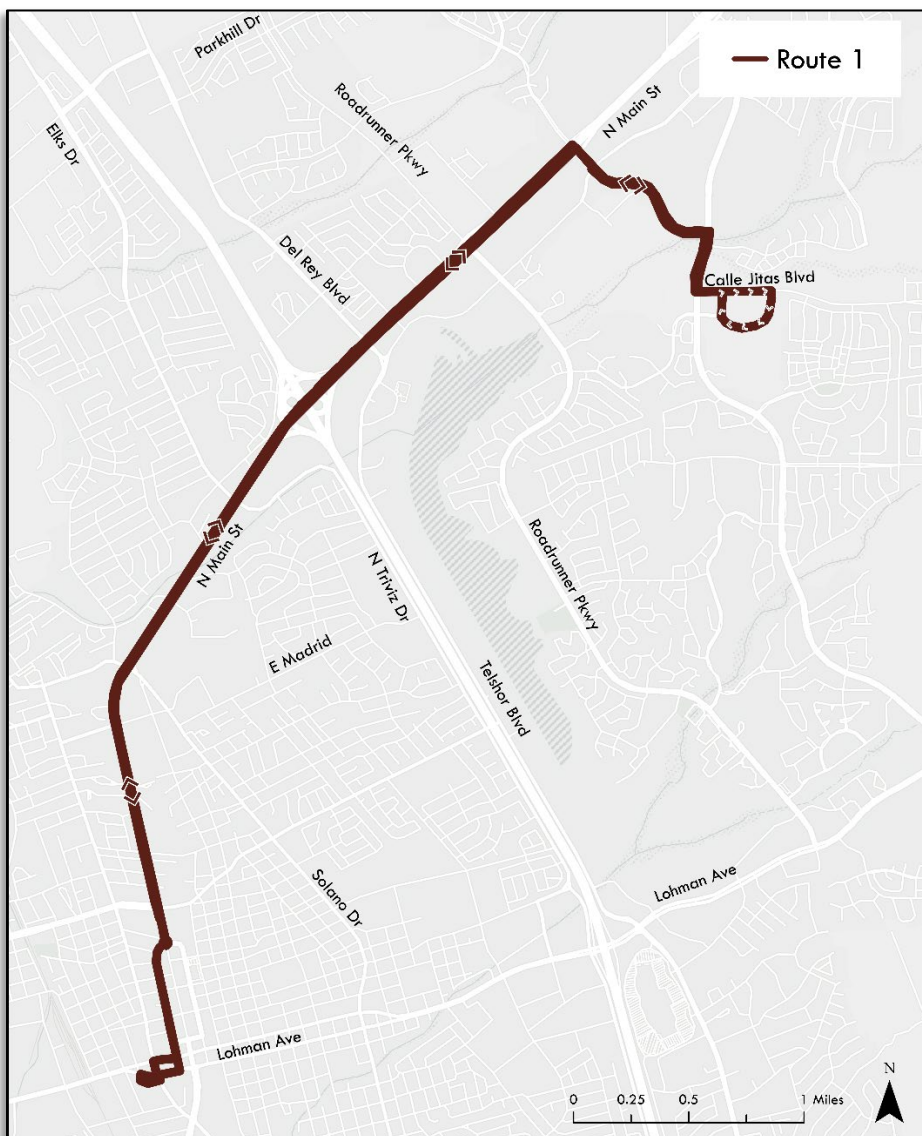
FIXED ROUTE SERVICE DESIGN

Changes to the fixed route service were developed directly in response to the feedback from stakeholders and members of the public, as previously discussed in Chapter 4. The implementation will include simultaneous changes to Route 1 and 3. Both routes had segments of low ridership and scored low on the prioritization tool; with the following adjustments, the routes can be optimized and their performance improved.

PROPOSED ROUTE 1

The implementation of proposed Route 1 will result in removed service on the northwestern side of I-25, which will be replaced with existing microtransit service (implemented simultaneously in Phase I). The route will terminate at the Dona Ana Community College (DACC). Figure 5-2 shows the Proposed Route 1.

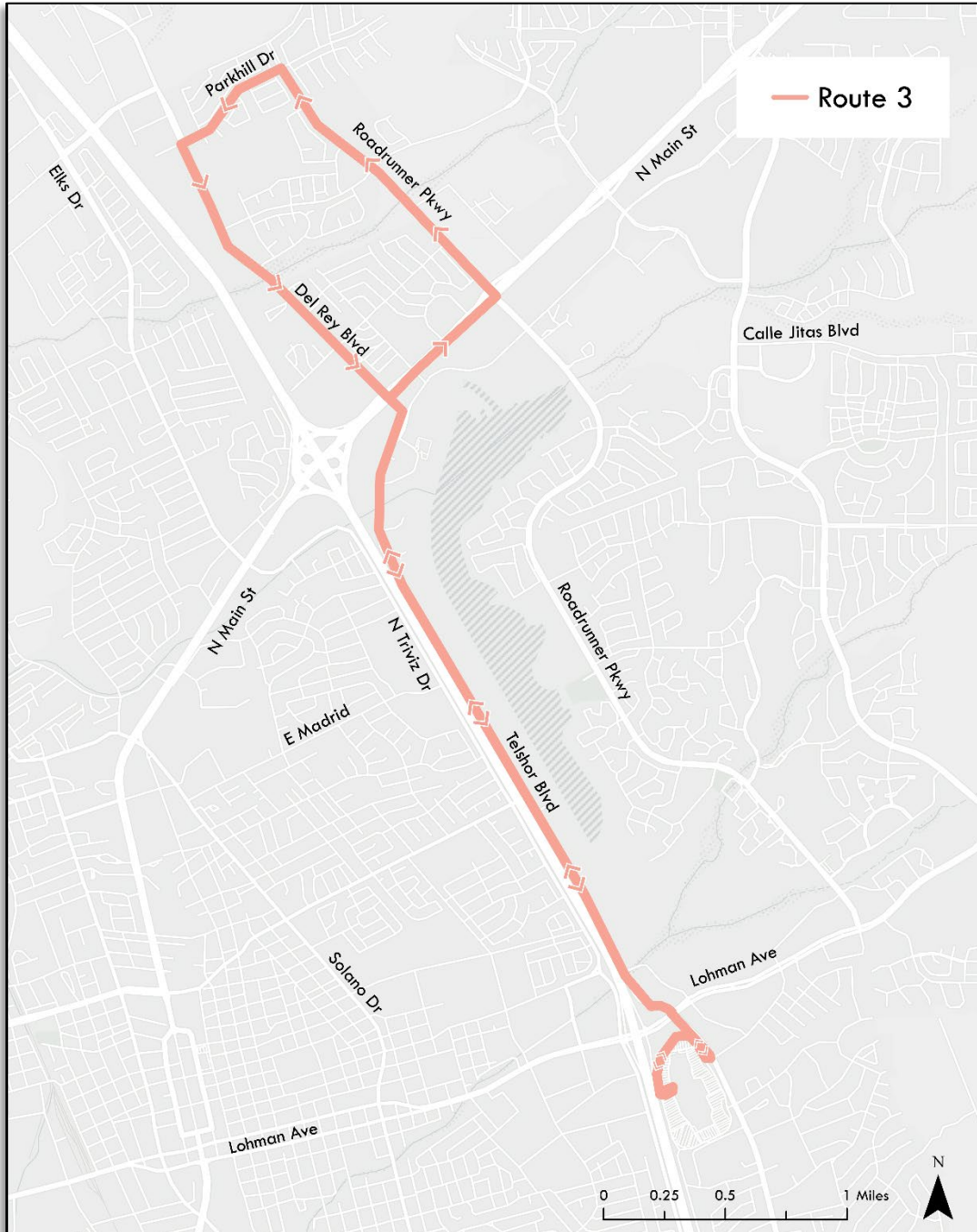
Figure 5-2: Proposed Route 1



PROPOSED ROUTE 3

The implementation of proposed Route 3 will result in removed fixed route service along Roadrunner Parkway that will be covered with instead microtransit service (implemented in Phase I). Additional service will be added to the area just east of I-25, on Roadrunner Parkway, Parkhill Drive, Del Rey Blvd, , as well as Telshor Drive until the route terminates at the Mesilla Valley Mall. A full list of the proposed bus stops that should be implemented with this route alignment can be found in the Bus Stop Analysis in Appendix H, and Figure 5-3 shows the Proposed Route 3 alignment.

Figure 5-3: Proposed Route 3



Phase II

Phase II will include minor changes as a response to the fully-implemented changes in Phase 1. First, frequency on Route 1 will be increased from 60 minutes to 30 minutes. Because RoadRUNNER transit already possesses the additional bus needed to increase the frequency on Route 1, the only costs associated with Phase II implementation are the operating costs associated with increasing frequency. The costs of the implementation are discussed later in this chapter.

Additionally, RoadRUNNER will evaluate the ridership on the newly implemented Route 3 to consider further route alignment or service changes.

Phase III

This RoadRUNNER Short Range Transit Plan (SRTP) was based on a five-year planning horizon, and Phases one and two of this implementation detail action steps to implement the preferred alternative within that time frame. However, the project team uncovered several insights in the SRTP planning process that presented opportunities for improvements to the RoadRUNNER transit system that go beyond five years.

The third phase of implementation provides a starting point for exploring more long-term transit solutions in Las Cruces. As the local and regional transit markets continue to develop, it is important that the RoadRUNNER team assess the need to expand service coverage or improve passenger wait times. The project team identified the following concepts that should be explored as potential long-term transit investments.

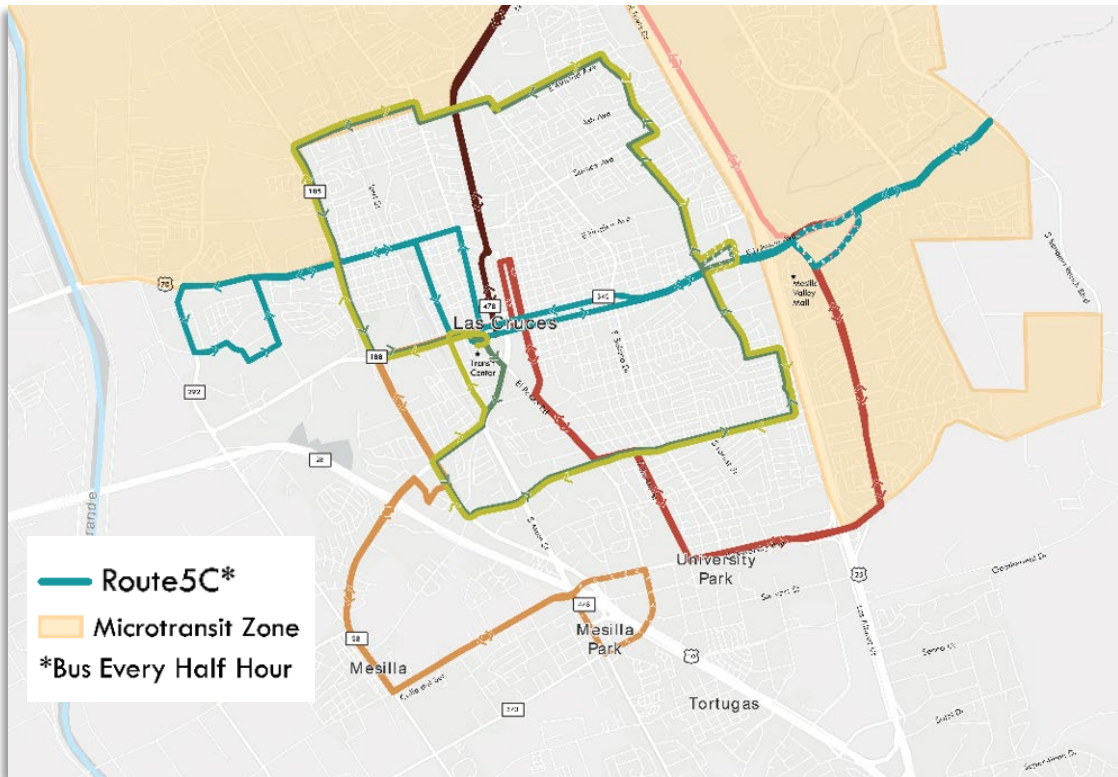
CITY-WIDE MICROTRANSIT

The demand for microtransit in the next five years may preclude an expansion of the microtransit zone to a city-wide boundary and a decrease in service on low-performing segments of fixed routes.

POTENTIAL FOR INTERLINING SCHEDULES

Once service proposed for Phase I and II has been implemented, RoadRUNNER transit can use runtime data to further refine schedules and look for opportunities for interlining. The RoadRUNNER team should seek to pair route schedules that have excess runtime with schedules that are running tight. Once such schedules are identified, there may be opportunity for frequency improvements that can be made with existing resources. One example of this is the Route 5 and Route 8 interlining combination, as shown in Figure 5-4.

Figure 5-4: Example of Interlining, Taken from Alternative C



ORIGIN AND DESTINATION DATA AND ANALYSIS

Once the microtransit service in the locally preferred alternative has been implemented, the technology would allow for origin and destination data to provide insights on how to better improve fixed route alignments.

Once Phase II is implemented and in place for at least a year an origin and destination (O&D) study should be conducted to develop a deeper understanding that goes beyond where along the route ridership occurs. An O&D study will inform RoadRUNNER about the first and last mile of transit trips and how passengers are using the system. This type of study will reveal transfer activity between routes and allow RoadRUNNER to make service adjustments that will be more efficient, save passengers time, and make service more attractive to new riders.

INDUSTRIAL PARK SERVICE COVERAGE

The industrial park is a rapidly developing area and may warrant RoadRUNNER service coverage in the future. The RoadRUNNER team should continue working with employers to offer employee-specific transportation to and from work as a precursor to RoadRUNNER service expansion in the industrial park.

INCREASED FREQUENCY

As the RoadRUNNER team continuously evaluates their transit service and fixed route network, they may consider expanding their vehicle fleet to increase frequency on high-performing routes. The performance metrics at the end of this chapter may provide insight and ways to assess which routes need increased headway in the future.

COST ESTIMATION AND FUNDING IMPACTS

The cost estimates for this implementation plan vary based on the phase. The cost estimate for Phase I includes the implementation of microtransit service, for which the cost per hour is \$55 (based on the hourly rate for paratransit service in Las Cruces). This rate is fully allocated and includes the operating hours and miles of travel; the cost of additional software costs for microtransit is also included in the hourly rate. Phase I also includes the cost estimate for fixed route alignment changes to Routes 1 and 3, which was based on the operating hours and miles of travel with a cost per hour of \$78.03 (the existing rate for fixed route). This hourly rate is also fully allocated, including the costs of labor, fuel, and operations. The cost estimate for Phase II—which used the same hourly rate used for fixed route in Phase I—was minimal, as it only included the increasing of frequency for Route 1.

In both Phases I and II, additional costs for necessary vehicle purchases were added on to the total cost, as shown in Table 5-2. FTA grants are available to fund the following:

- 50% of operating costs
- 85% of revenue vehicle capital costs
- 80% of non-vehicle capital costs

Local funds would pay for the remaining 50% of operating costs, 15% of revenue vehicle capital costs, and 20% of non-vehicle capital costs, as shown in Table 5-3. Because Phase III is a long-term implementation goal, no cost analysis was completed for Phase III.

Table 5-2: Annual Costs of Implementation Phases

Scenario	Hours		Cost of Additional Hours		Capital Costs			Totals		
	Additional Microtransit Hours	Additional Fixed Route Hours	Cost of Additional MT Hours	Cost of Additional FR Hours	Additional Buses Needed	Cost of Additional Buses (Based on Cutaway Bus)	Cost of Adding or Decommissioning Bus Stops	Total Cost to Implement	Total Operating Costs During Each Phase	Cost Percent Increase Relative to Prior Phase
Existing	-	-	\$ -	\$ -	0	\$ -	\$ -	\$ -	\$ 3,587,803.90	0%
Phase I	12,800.00	(78.21)	\$ 704,000.00	\$ (6,102.96)	2	\$ 183,712.00	\$ 2,300.00	\$ 883,909.04	\$ 4,285,700.94	19%
Phase II	-	4,348.51	\$ -	\$ 339,314.58	0	\$ -	\$ -	\$ 339,314.58	\$ 4,625,015.52	8%
Totals	12,800.00	4,270.30	\$ 704,000.00	\$ 333,211.62	2	\$ 183,712.00	\$ 2,300.00	\$ 1,223,223.62	NA	NA

***Marketing costs may be expected to add \$40,000 (\$35,000 in Phase I and \$5,000 in Phase II).

Table 5-3: Annual Miles, Hours, and Cost by Phase

High Level Cost Estimates												
Phase	Hours	Annual										
		Capital Cost (annualized)						Operational Cost				Total Cost
		Revenue Vehicle Capital		Non-Vehicle Capital		Total Capital Cost	FTA Match (50%)	Local Match (50%)	Total Operational Cost			
		FTA Match (85%)	Local Match (15%)	FTA Match (80%)	Local Match (20%)							
Current	45,980	\$0	\$0	\$0	\$0	\$0	\$1,793,902	\$1,793,902	\$3,587,804	\$3,587,804		
Future	Microtransit	12,800	\$156,155	\$27,557	\$0	\$0	\$183,712	\$352,000	\$352,000	\$704,000	\$887,712	
	Phase I Reroute routes 1 and 3; adjust bus stops	45,902	\$0	\$0	\$1,840	\$460	\$2,300	\$1,790,850	\$1,790,850	\$3,581,701	\$3,584,001	
	Phase II Route 1 to 30-minute frequency	50,250	\$0	\$0	\$0	\$0	\$0	\$1,960,508	\$1,960,508	\$3,921,016	\$3,921,016	
Totals	63,050	\$156,155	\$27,557	\$1,840	\$460	\$186,012	\$2,312,508	\$2,312,508	\$4,625,016	\$4,808,728		

PERFORMANCE METRICS

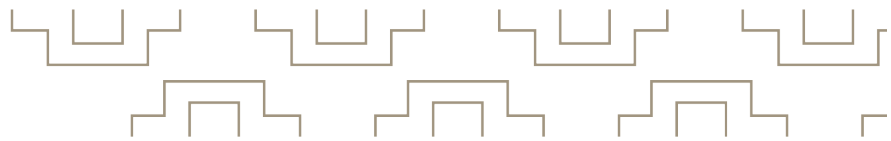
Moving forward, the City of Las Cruces should annually evaluate the quality of RoadRUNNER transit service using the same performance metrics every year. The following metrics can be used to assess Key Performance Indicators (KPIs), System Design, Transit Operation, and Public Involvement, shown in Figure 5-5 below.

Figure 5-5: Performance Tracking

Key Performance Indicators (KPI)	System Design	Transit Operations	Public Involvement
<ul style="list-style-type: none"> • Travel Time • Service Coverage • Frequency • Span of Service • Connectivity • On-Time Performance • Ridership 	<ul style="list-style-type: none"> • Route Design • Network Design • Stop Spacing Time Points 	<ul style="list-style-type: none"> • ADA Access • Stop Access • Stop Amenities • Travel Patterns 	<ul style="list-style-type: none"> • Public Feedback • Surveys • Agency or Community Group Collaboration • Events • External Communication

CONCLUSION

The mobility needs of residents throughout the study area depend on the RoadRUNNER transit system. The option to take public transit—as opposed to driving a personal vehicle, walking, or biking—is vital for those who are unable to drive because of their age or a disability. For some, transit provides a cost-saving alternative to using a car, or aids in mitigating poor air quality and further effects of climate change. Expanding the travel options for residents in Las Cruces is an expansion of quality of life, imperative to any city that is experiencing growth.

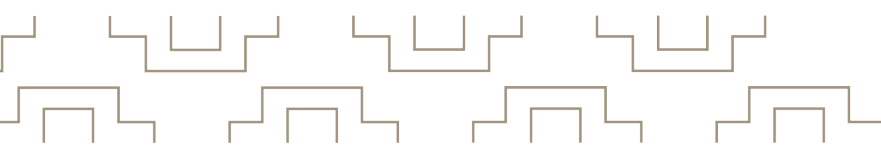


Appendix A

LAS CRUCES STAKEHOLDERS

Table A-1: Stakeholder List

Stakeholder Contacts (Organizations)	
Adelante Community Resources	La Clinica de Familia, Inc.
Aggie Transit	La Piñon Sexual Assault Recovery Services
Angel Care of New Mexico	Las Cruces Economic Development
Arrowhead Park Early College High School	Las Cruces Gospel Rescue Mission
Big Brothers Big Sisters Mountain Region	Las Cruces High School
Boys and Girls Club of Las Cruces	Las Cruces International Airport
Casa De Peregrinos	Las Cruces Public Schools
Catholic Charities	Live United Way
Centennial High School	Living Word Family Church
Chamber of Commerce	Mayfield High School
City of Las Cruces, Traffic Department	Mesilla Valley Hospice
City of Las Cruces, Community Development	Mesilla Valley Community of Hope/Abode, Inc.
City of Las Cruces, Economic Development	Mesilla Valley Economic Development Alliance
City of Las Cruces, Information Technology	Mesilla Valley Film Society / Fountain Theatre
City of Las Cruces, Quality of Life	Mesilla Valley Habitat for Humanity
City of Las Cruces, Senior Programs	Mesilla Valley Mall
Community Action Agency of Southern New Mexico	Munson Senior Center
Community Foundation of Southern New Mexico	New Mexico Farm and Ranch Heritage Museum
Community Options Inc.	New Mexico State University
Cruces Creatives	Ngage New Mexico
Doña Ana Arts Council	Organ Mountain High School
Doña Ana Communities United	Picacho Coffee Roasters
Doña Ana Community College	Picacho Arts District
Downtown Las Cruces Partnership	Rio Grande Preparatory Institute
Families and Youth, Inc (FYI)	Social Justice Group
Gadsden Museum	South Central Regional Transit District
High Tech Consortium of Southern New Mexico	State of New Mexico Chamber of Commerce
Hispanic Chamber of Commerce	The Southwest Environmental Center
Interagency Council	Visit Las Cruces
Jardin de los Niños	Volunteer Network (City of Las Cruces)
La Casa, Inc.	



Appendix B

ROADRUNNER STAKEHOLDER MEETING NOTES

April 7, 2021

1. TEAM INTRODUCTION

Microsoft Teams

Tim started by introducing Microsoft Teams and how to mute mics. He emphasized that we want feedback from stakeholders and it will directly shape the short range plan. He said to put questions in the chat at any time and encouraged people to speak up if they had something to add to the meeting.

Project Team

Tim introduced ATG. Mike Bartholomew introduced the City of Las Cruces and Mesilla Valley MPO Team, including Richard Hanway, Michael McAdams, Vero Franco, and Andrew Wray. Mike also went over the five objectives of the previous SRTP:

- Improve effectiveness of transit in Las Cruces.
- Identify service gaps.
- Improve dial-a-ride service for those with disabilities and seniors.
- Recommendations for technology improvement.
- Bus stop improvement plan.

2. STAKEHOLDER INTRODUCTIONS

Tim called out each stakeholder for them to introduce themselves and what organization they are representing.

- Craig Massey – New Mexico Farm and Ranch Heritage Museum
- Nicole Martinez – Mesilla Valley Community of Hope – Works to help people experiencing homelessness.
- David Armijo – SCRTD
- Terra Winter – President and CEO of Community Foundation of Southern New Mexico. They do a lot of grant work for organizations in Las Cruces.
- Andy Hume – Administrator for Las Cruces International Airport
- Ashleigh Curry – Safe Routes to School Coordinator at Las Cruces Public Schools
- Chel-Marie Barela - NMSU Parking & ID Services
- Kris Burns – CLC Senior Programs
- Dawn Hommer – CAC of Southern New Mexico
- Francisco Pallares – CLC Economic Development Department
- Kari Bachman – Dona Ana Communities United – Works to advance health equity initiatives in Las Cruces.

- Lea-Wise Surguy – Cruces Creatives – Local makers space. It's like a gym for tools. They have a woodshop, bicycle shop, textile lab, audio/video recording lab, 3D printing lab. "We try and have tools for the community to make what they want."
- Lynn Gallagher – CLC Director for Quality of Life
- Michelle Carbajal – NMSU Parking and Transportation
- Rochelle Hernandez- CLC Visit Las Cruces
- Scott Rodgers – Volunteer Coordinator CLC
- Sonia Saldana – Administrator Senior Programs
- Soogyu Lee – Traffic Management Administrator
- Srijana Basnynat – City Planner CLC
- Eric Enriquez – Assistant City Manager of CLC
- Sharon Thomas - Chair of the Planning and Zoning Commission and works with SCRTD.

3. VISION, HISTORY, AND OVERVIEW

Tim went over the vision, history, and overview of the RoadRUNNER SRTP. He described how the vision is to have efficient and reliable transit for everyone in Las Cruces. The previous plan was done about 5 years ago and much has been accomplished from that plan, but it's almost finished so it is time to update it. Tim also showed the study area and went over the timeline briefly.

4. MARKET ANALYSIS

Tim explained that the fixed route market analysis is different from demand response market analysis. He said there are typically two methods of looking at where to put a transit line: you can look for where you'll get the "biggest bang for your buck" and put transit where most of the people live, based on population density. Or you can look at where people need it most, but those people don't often live in the most dense area. The best way to analyze the transit market is to combine the two approaches - it is about finding the most holistic solution for the community. When we layer the different elements on top of each other (i.e., population density and poverty density), we get a transit market score.

5. OPERATIONAL ANALYSIS

Fixed Route

Tim explained that we want to understand how many people are riding and which stops and routes are most popular. This gives us an idea of what routes and stops are serving people well right now. We also did an analysis to see when people are riding. Finally, we look at desire lines, which is an analysis that tells us where people are driving. The hope is to provide fixed route transit service to places that people want to go and eventually cause a mode shift. Tim also showed an example of the route profiles and desire lines to give a high-level view of what the analysis will look like.

Dial-a-ride and On Demand

Josh went over the origin and destination pairs for the dial-a-ride service. He also discussed the ridership by hour. Tim asked Josh to define micro transit and ADA. Josh explained that ADA refers to riders that can't take fixed route service due to disability, and micro transit is an innovative transit delivery method in which people can book trips on demand. It's similar to Uber or Lyft, but it's a public transit agency instead.

Before showing the simulation, Josh explained that the simulation revealed that ADA dial-a-ride ridership is fairly consistent throughout the day, whereas senior ridership is more focused during hours around their congregate meals.

Josh then switched over to his software and went through the simulation. He explained that they use an algorithm to simulate performance for one day of micro transit service in Las Cruces. The black dots provide service throughout the day, the blue dots are pickup, and the yellow dots are drop off.

After showing the simulation, Josh briefly discussed the simulation results. He showed 2 charts and said that the blue bars are number of vehicles throughout the day, and the red lines are an efficiency metric – trips per vehicle hour. The simulation results show there might be some potential to make the service more efficient.

Josh then went over the next steps for the demand response portion of this project: 1) simulate the possible drop off and pick up zones using Via software, so that they can design a micro transit system that works closely with fixed route, and 2) complete a technology review for RoadRUNNER transit.

6. PUBLIC ENGAGEMENT

Tim reiterated that the project team needs stakeholder feedback, and they are needed to promote the surveys. While we will still have a public open house, the best way to get feedback right now is through the survey. COVID has made it difficult to reach people in person, so a digital survey is the most useful tool.

The survey doesn't have a close out day yet, but it will probably be the end of April / early May. We just want to ensure we have enough responses to get the feedback we need. After the survey is closed out, the project team will be working on alternatives and recommendations.

7. NEXT STEPS

Alternatives and Recommendations

The project team will present the alternatives to stakeholders later in the year. Stakeholders will be able to say what they like and don't like about the proposed alternatives, meaning they will be able to identify the strengths and weaknesses of each recommendation. The result of this community feedback should be a hybrid alternative that is really representative of the community.

Take and Promote the Survey

Get people to take the survey – it will inform the project team's recommendations. Stakeholder feedback will directly shape the SRTP.

8. QUESTION AND ANSWER

Why is cost not a part of the "what matters most to you" question in the survey?

Kari Bachman had a question that came from taking the survey. There's a section of "things that matter most to you," which include time, reliability, etc. She asked why there was not an option for price. Is it not listed because there have already been conversations about going to fare-free service at the MPO?

Tim said that no survey is perfect, so we are hoping people with feedback like hers will make use of the comment box on the survey. Mike Bartholomew also jumped in and said that the fare-free conversation is happening. They are looking into fare-free service to see what the impacts and costs would be. They are trying to consider how to do fare-free service and still be able to handle the

operations of it all. If you do fare free service on fixed route, you need to do dial-a-ride for free too, and that would be challenging since the dial-a-ride service is already at capacity. It would be free, and the City would have to increase service to meet the demand by hiring more drivers and expanding operations. Mike said they know that it is a desire from the community, and it is possible in the future that they would subsidize certain riders' fare at some point.

Can we meet to further coordinate on the update for the Master Plan?

Francisco from the City of Las Cruces Economic Development Department said that they are updating the master plan. There is an industrial park on the west side of the City and developers are showing some interest in the area. The topic regarding RoadRUNNER transit for the new developments is something that has come up. The Economic Development Department will be promoting the survey, and Francisco asked if they could have a meeting with the Economic Development people to discuss coordinating with the master plan update.

Mike said that would certainly be possible to set up a meeting. Tim said we would set up an individual meeting time.

Are grocery stores being taken into consideration with this new transit plan, and will service to grocery stores continue?

Sharon Thomas said that currently the buses stop at a lot of grocery stores. She said that they that's really important because it gives people access to food. Will service to grocery stores continue or be taken into consideration? Tim said that grocery stores are absolutely important and we don't want to disrupt the travel patterns of existing riders – we just want to make it more efficient. If there is a bus stop next to a grocery store that a lot of people are going to, then we will definitely want to keep it, but if there are stops near grocery stores where there are few boardings and alightings, then removing service from that stop might be a consideration. If anything, adding more grocery stores along a route would be something the project team would consider before removing any grocery stores currently served by transit.

Sharon noted that there's **also new Sprouts grocery store on Lohman's behind the McDonalds**, as well as a **Natural Grocers further out on Lohman** on the right-hand side.

Was age a consideration in the planning process? Many of the people riding transit are seniors.

Sharon also expressed concern about age being a factor, since that is a huge part of the population that rides transit or would be apt to ride transit. Tim said yes, absolutely, age was something that was considered as part of the transit market score process.

Are you aware of the new developments that will be built, particularly those with affordable housing?

Sharon expressed concern over making sure that we are looking at the places where there are new developments. Tim said that we are taking into consideration the new developments and where the City is growing, and Michael McAdams has been really helpful in letting us know where growth is happening too.

Sharon thanked the project team for answering her question and reiterated that those were her main concerns – grocery stores and affordable housing.

When will the survey close?

Terra Winter asked when the survey will close out. Tim said end of April / beginning of May.

Just a reminder to check out the Active Transportation Plan for the City in terms of leveraging the bike and ped focus areas.

Srijana Basnyat said to remember to look at the Active Transportation Plan. The project team will definitely be coordinating with other plans to ensure it's a unifying plan that will work with other parts of the City's goals and objectives.

Is the survey available in Spanish?

Yes, the survey is available in Spanish. Kari Bachman said, "Would be helpful to move the language question to the front page of the survey." Emma acknowledged and Tim said we can certainly make adjustments to the survey if necessary.

For those older individuals that don't have access to technology how are they being engaged to participate in the survey? These are some of the ones that may need transportation the most.

Tim said we are dependent on stakeholders to help us distribute that survey. Paper copies are available. Sonia Saldana, a representative for the City of Las Cruces senior services, asked this question. Tim said it may be helpful to work with Sonia further on that.

Tim wrapped up with a reminder for next steps and encouraged everyone to come to the public meeting.

Appendix C

VIRTUAL PUBLIC MEETING MINUTES

Session #1

RoadRUNNER Virtual Public Meeting – 12:00 PM MST Session

Attendees: Andrew Bencomo, Elizabeth Taylor, George Pearson, Gregory Shervanick, Jacinta Shams, Marvin Nakashima, Michelle Carbajal, Rosa Morales, Ryan Armendariz

RoadRUNNER Project Team: Michael Bartholomew, Michael McAdams, Richard Hanway

ATG Project Team: Tim Simon, Emma Martinez, Serena Powell

NOTES

Tim shared the presentation, and Emma shared the interactive map. The project team went through each alternative and then allowed time for question and answer. Tim also showed attendees where they can find the online survey; Richard mentioned to please comment on each alternative in the surveys and point out what you do and don't like.

QUESTION AND ANSWER

Will centennial high school be included on the micro? Many don't have transportation but have students that go there but kids have activities there.

Answer: Yes, it is.

In Route 1 for example, I could use micro transit from stop on Del Rey to get to a home in the Settler's Ridge subdivision?

Answer: Yes!

I use transit infrequently, but my destination up Lohman requires a transfer at the mall. Any plans for a direct route from the transit center to go straight up Lohman (e.g., to the hospital)?

Answer: You can utilize micro transit for this purpose, it will be much cheaper than the typical rideshare platforms (more like bus fare rates). Also, Alternative A still goes to the mall.

Michael Bartholomew follow up: Please note that there will be a higher frequency of rideshares unlike Uber and Lyft.

What kind of media campaign (social or other) could be used to increase [ridership]? Could AARP be a booster for older riders that need to get from district 5 & 6 to hospital to you have a routes that could make this happen?

Answer: There will be a marketing campaign that is currently being worked on or will begin shortly. Yes, AARP could technically be a booster for older riders.

Richard Hanway follow up: Route 2 is currently a major route that stops at most major hospitals in the area.

Is Munson Senior Center, 975 South Mesquite Street, accessible by any of the provided routes?

Answer: Yes, it is in close proximity to Route 2. Dial-A-ride also provides rides to that location, you'll only need to schedule a ride.

Is, Eastside Senior Center, 310 North Tornillo St., also accessible by any of the provided routes?

Answer: yes, it is by Routes 1 and 8.

What type of vehicles would be used for micro transit and would they be equipped with bike racks?

Answer: Could be comparable to large buses but most likely will use smaller, paratransit vehicles. Bike racks are currently optional.

Michael Bartholomew follow up: The vehicles are capable of having bike racks, especially the smaller ones.

The micro will be for everyone though, correct?

Answer: Micro transit will be for everyone.

What is the cost for the micro transit?

Answer: RoadRUNNER and the City are still formulating a set price, but the cost will be similar to current bus fares.

Would our transit monthly pass work on micro transit?

Answer: Yes!

Can you open up a map showing existent bus shelters?

Answer: We do not currently have a map of existing bus shelters, but we do have the data.

There are not a lot of bus shelters where I'm from, and with the hot weather and weight of items passengers bring it is important to put shelters where possible. Please look at density and make sure there are comfortable bus shelters where necessary.

Answer: Great comment, we will make sure to take this into consideration but there are financial constraints that don't allow us to have a bus shelter at every stop, along with other constraints such as topography and space. However, it is important that we have equitable distribution of bus shelters.

Michael McAdams follow up: Will have a detailed bus stop analysis that will help us make these important decisions.

Centennial HS part of this one? It's currently the only HS that's NOT part of any bus service and should be.

Answer: Yes, Centennial High School is covered in all three alternatives as part of the micro transit zone.

Can you go over the changes of route 8?

Answer: In Alternative C, we are proposing removing the north/south portion of route 8. The most utilized section of route 8 will remain and will be interlined with route 5. It will also run every 30 mins instead every hour.

Why has this change occurred? That corridor was barely served before and now seems as if it will not be at all.

Answer: Per the survey, riders would walk further to have more frequent routes. We have implemented this change based on public feedback.

Need to figure out a easier way to get to the mall from Telshor. Pedestrian connectivity needed.

Answer: Definitely taking that into consideration. Great comment, thank you.

Will Roadrunner coordinate with Public Works to ensure safe crossings where route changes mean a longer walk?

Answer: RoadRUNNER will ensure safe public crossings. We understand that if you cannot walk to the bus, then you won't use it. We will make sure bus stops are accessible by all modes of transportation.

Complete Comment Log

From Jacinta Shams to Everyone: 01:24 PM

so will centennial high school be included on the micro?

From Richard Hanway to Everyone: 01:25 PM

Yes it will.

From Jacinta Shams to Everyone: 01:25 PM

many don't have transportation but have students that go there but kids have activities there

ok

From Elizabeth Taylor to Everyone: 01:27 PM

In Rt 1 for example, I could use micro transit from stop on Del Ray to get to a home in the Settler's Ridge subdivision?

try Pine Trail

From George Pearson to Everyone: 01:29 PM

I use transit infrequently, but my destination up Lohman requires a transfer at the mall. Any plans for a direct route from the transit center to go straight up Lohman (e.g., to the hospital)?

From Elizabeth Taylor to Everyone: 01:29 PM

Good addendum question!

From Jacinta Shams to Everyone: 01:30 PM

would the micro be comparable to transit pricing, or taxi/Uber/Lyft pricing?

ok awesome! just confirming

From Gregory Shervanick to Everyone: 01:30 PM

What kind of media campaign (social or other) could be used to increase these users on these shorten routes. Could AARP be a booster for older riders that need to get from district 5 & 6 to hospital to you have a routes that could make this happen?

From George Pearson to Everyone: 01:36 PM

What type of vehicles would be used for microtransit and would they be equipped with bike racks?

From Jacinta Shams to Everyone: 01:37 PM

the micro will be for everyone though, correct

From Richard Hanway to Everyone: 01:39 PM

Microtransit will be for everyone.

From ? to Everyone: 01:40 PM

Would our transit monthly pass work on Microtransit?

From Rosa Morales to Everyone: 01:42 PM

Can you open up a map showing existent bus shelters?

From Jacinta Shams to Everyone: 01:50 PM

Centennial HS part of this one?

it's currently the only HS that's NOT part of any bus service and should be

From Emma Martinez (ATG) to Everyone: 01:52 PM

Jacinta - yes, Centennial high school is covered in all three alternatives as part of the Microtransit Zone.

From Elizabeth Taylor to Everyone: 01:57 PM

Will Roadrunner coordinate with Public Works to ensure safe crossings where route changes mean a longer walk?

From Gregory Shervanick to Everyone: 02:02 PM

So does that include Espina by University? Mr. McAdams?

Follow up on that near Gomez park

Thank you Mr. Bartholomew for your hard work.

From Tim Simon to Everyone: 02:07 PM

<https://www.las-cruces.org/2447/Short-Range-Transit-Plan>

From Elizabeth Taylor to Everyone: 02:12 PM

Thanks for the information and discussion! I love using public transport.

From Emma Martinez (ATG) to Everyone: 02:13 PM

If you have questions later, please feel free to contact the project team at RoadRUNNER@las-cruces.org



Session #2

RoadRUNNER Virtual Public Meeting – 6:00 PM MST Session

Attendees: Kari Bachman, Kevin & Stanley (participating with Kari), Gregory Shervanick, Kelly Brooks (DACC Representative), Mary Diesel, Cory Windorff

RoadRUNNER Project Team: Michael Bartholomew, Michael McAdams, Richard Hanway

ATG Project Team: Tim Simon, Emma Martinez, Tim McCarthy

NOTES

Tim shared the presentation, and Emma shared the interactive map. The project team went through each alternative and then allowed time for question and answer.

QUESTION AND ANSWER

ROUTE 8 DISCUSSION

For route 8, would you get rid of all of the route or pieces of it?

Tim answered that it depends on the alternative. Kevin says 95% of the time he uses Route 8 to get downtown and transfer to Route 3, or to go to the mall. He lives off Espina. Stanley added that he lives on Nevada and Route 8 is the only one on Solano. He frequently uses Route 8 to go downtown.

If a fixed-route bus like bus 8 is full, what option does a person have other than to catch the next bus?

Tim asks if that happens a lot and Stanley says it happens a fair bit. Michael at RoadRUNNER says that according to data, there are very few circumstances when the bus is full, but that doesn't mean it doesn't happen – please tell him more, he asks, because it's at odds with his experience. When it does happen, including if it happens due to seats being taken out for covid distancing, please call customer service for RoadRUNNER to let them know.

GENERAL QUESTIONS

What models went into making this plan?

Tim answered that the project team uses practices from the industry, which he has been working in his whole life, but of course every place is different and approaches need to be locally customized.

The areas south of Mesilla (served by route 4) has whole communities of people that go to local schools. Should there be service there?

Tim answers, they haven't seen much demand yet but it is worth considering.

Any chance RoadRUNNER could get outside funding to make transit permanently free?

Michael answers, there has been interest by the city council, but it would legally require RoadRUNNER to provide fare-free service on dial-a-ride service as well.

Could the use of barcoded tickets and passes help determine rider pickup and time?

Tim answered that micro transit would have the advantage of providing origin-destination data in a way that traditional fixed-route service does not.

One stakeholder commented on the ease of use of the micro transit, saying, “If you using a phone to pay bill why not click to ride from the app?”

Did the survey give a distance, people were will to walk if frequency was increased?

Tim answered the survey didn’t give a distance. The survey simply asks “are you willing to walk a little further versus wait longer.” Results showed that riders are only willing to wait about 10 mins for a bus.

MICRO TRANSIT DISCUSSION

Would trip destinations for micro transit only be within the micro transit area?

Tim says yes, although alternatives B & C do include direct rides to the Intermodal Facility.

What if someone doesn’t have a phone with which to make a call to microtransit?

Tim answers, yes, a phone would be necessary to place a request for microtransit, though not for fixed-route. Later in the meeting, Tim suggested that perhaps a kiosk be available to book microtransit rides at select locations in the city.

Would micro transit interfere within fixed-route service within the micro transit zone?

Tim says no, the fixed-route buses would still run as advertised.

If we didn’t have money invested in large buses, could micro transit be available citywide?

Tim answers, that has been considered, but since it’s a big paradigm shift that people without phones would struggle with, a proof of concept is needed first.

One stakeholder mentioned that having micro transit outside the city center, which is already somewhat neglected, may privilege those living outside along the highways.

Richard said that Route 3 was the least-ridden route, heading up Bataan Memorial Highway to Porter Drive—hence the desire to repurpose service in that area to micro transit. But DACC east campus was always a big consideration in this process, and this meeting is an important part of that.

Thanks for this presentation/public input. Would the micro transit vehicles be equipped w/ bike racks? If so, how many bikes could they carry?

Tim answered, yes, bike racks are an important part of the planning process; micro transit vehicles would probably have 2 bike spots.

How might [micro transit] connect to SCRTD?

The micro transit “island” at the Mesilla Valley Intermodal Terminal would allow easy connections. The app would prioritize fixed-route over micro transit unless there’s already a micro transit vehicle nearby.

One stakeholder commented, “the coordination of routes performed by the software sounds awesome. I hope to learn more and more. Thanks for this presentation.”

Another noted that demand-response routes could organically turn into a fixed-route, especially as more data on transportation demand is available.

DISCUSSION ON MICRO TRANSIT TO DACC

Kelly (from DACC) was particularly concerned that micro transit doesn’t go to from DACC to NMSU, but she thinks students would embrace the concept. Kelly also asked about riding buses from the east campus of DACC (Sonoma Ranch Blvd) to the main campus (Espina Road), and how alternatives like Alternative C

would require a transfer of buses to get from one to the other (although Tim notes that interlining might not require a person to leave the vehicle).

One stakeholder asked if Mary could give any indication of when during the day the most students would be leaving east campus to go to main campus. It looks like riders diminish during the lunch period until 1:30. Kelly answered that it depends on when classes are scheduled. Some classes run as late as 10:00 PM.

Follow up question –*Kelly, what integration could DACC help in developing a constant ridership to encourage more route modeling and increasing riders long term on fixed routes? Could DACC campus be a park & ride?* Kelly answered that the parking there is finite, and demand was pushing capacity pre-pandemic. Many DACC people live in the East Mesa area.

Kelly also noted that if students had access to technology that shows riders where buses are and how they'll take it, it would make transit much more attractive.

CONCLUSION

Tim wraps up the meeting thanking people for coming and asking people to continue to spread the survey around. Emma provides an email by which people can contact the group.

Follow-up email from Charles Clements:

Hello Emma,

This morning I stopped by the bus center and looked over the alternatives and filed a report.

This is a bit of an explanation. The revisions all place the service on Del Rey on Route 3. The Mesilla Valley Hospital, the VA clinic and a Ben Archer medical facility are located on the west side of Del Rey. Route 1 goes by the intersection of Del Rey and North Main, but I don't see any stops in a safe area. That intersection is a freeway overpass and frontage roads. It is a questionable intersection for pedestrian and disabled conveyances safety. To work for the majority of the city there would need to be a common bus stop at that intersection.

Thanks for your efforts. Sometimes it's like trying to share a pair of chicken feet with a family of twelve. Good luck.

Charles Clements



INTERACTIVE MAPPING COMMENTS

Table C-1: Comments from Interactive Map

Alternative	Public Comment
Alternative A	Confirmed that Centennial high school will be in the micro transit zone for Alternative A.
Alternative A	Munson Senior Center - luncheons occur here, it is close to Route 2 but there is also the free Dial-a-ride option.
Alternative A	Also a senior center here - serviced most by Route 1 or 8 if walking, but Dial a ride also services this center for luncheons / activities.
Alternative A	Confirmed that if you got off on Route 3 or Route 1 near the MT zone, the MT zone could take you home from the bus stop (for example, to Settlers Ridge Road).
Alternative A	Could AARP be a booster for older riders that need to get from district 5 & 6 to hospital to you have a routes that could make this happen?
Alternative B	Do residents need to take fixed route to get to DACC? If they are not in the zone, they'd need to get to the hub or take a fixed route
Alternative B	The micro transit zone doesn't connect DACC and NMSU, and this is problematic because it requires a transfer. DACC students/teachers would prefer Alt A or Alt C
Alternative C	Kevin noted that he lives off of Espina and takes Route 8 frequently -takes it from intermodal to mall to take Route 3
Alternative C	Stanley frequently takes Route 8 to get downtown
General	Is the cost of MT more like Uber or Transit? much more like transit fare, not as expensive as Uber or Lyft. Additionally, trips are most likely shared with other riders instead of a personal taxi.
General	Will there be bike racks on MT vehicles? Yes, Richard said they would put bike racks on any new vehicles for MT.
General	Bus stops are common, but bus shelters are less common - the weather is too hot and shelters need to be prioritized.
General	Public-private partnerships are a great way to provide funding for shelters/ amenities/ other transit projects
General	Pedestrian connectivity from Telshor to the mall needs improvement - since we are changing the drop off point in Alt B and C, improving walkable connections would be important
General	Will RR coordinate with public works to ensure safe crossings where route changes mean a longer walk? Michael McAdams noted that the bus stop analysis will help us figure out where changes need to be made, and yes pedestrian accessibility is very important
General	Espina at University - dangerous intersection, many bike/ped crashes, Michael noted that this is a key corridor and needs better striping. There is a signalized intersection and a hawk signal nearby which runs 24 hours a day. Needs better lighting as well
General	Pedestrian access at Gomez Park

Alternative	Public Comment
General	Mary expressed concern about signage / wayfinding to ensure people without digital access can easily use the bus system.
General	Discussion of scheduling more frequent service for DACC during peak class times
General	Would MT vehicles have bike racks, if so how many?
General	What integration could DACC help in developing constant ridership to encourage more route modeling and increasing riders long term on fixed routes. Can DACC be a park and ride?
General	How might micro transit connect to SCRTD?
General	Area south of Mesilla has lots of people who could use transit. Kelly asked if a MT zone could possibly be expanded to that area
General	Stanley said that Route 8 often has very full buses and he has to wait for the next bus.

Appendix D

PUBLIC MEETING PRESS RELEASE

City Seeks Public Input for Changes to Transit System

AUG 2, 2021 – RoadRUNNER Transit is calling on Las Cruces residents to help develop recommendations for a Short Range Transit Plan (SRTP)—a document that will provide guidance for changes to the local bus system over the next five years.

“Your thoughts and opinions at this point in the planning process are crucial; the final recommendation will likely be a combination of alternatives based on which aspects of each alternative you like the best,” said Tim Simon, a consultant and project manager on the RoadRUNNER SRTP project team.

The public meeting will be held virtually on August 25th, 2021, and participants have the option to join a Zoom call midday (noon to 1:30) or in the evening (6:00 – 7:30). Both virtual meetings will include a brief presentation of the proposed transit alternatives and time for residents to give feedback.

For those who cannot make the virtual meeting, the City is providing alternative ways to get involved.

“Your live participation in the virtual meetings is important to the planning process. However, if you do have a scheduling conflict and can’t make either of the events, you can still help,” said Simon.

Participants can visit the Mesilla Valley Intermodal Transit Terminal at any time during business hours August 23rd – September 3rd to view a physical exhibit and provide feedback in person. The [transit alternatives are also available](#) for viewing and providing feedback online, and a recorded version of the public meeting will be uploaded after the event.

Ultimately, the City is hoping for a great public turnout, as community input is the driving force behind the plan.

“Please help us get the word out and invite as many people as you can,” said Simon. “We need **all** the feedback we can get to ensure the SRTP is a plan that reflects **your** community values.”

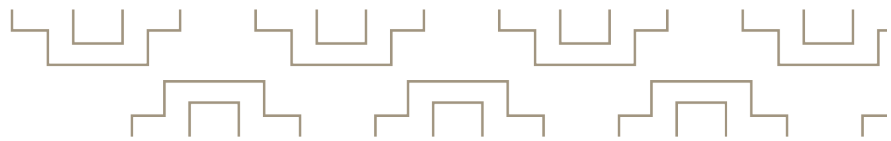
Information for how to join the virtual meeting can be found at bit.ly/RoadRUNNER-transit.

NEWS COVERAGE

City seeks input for changes to transit system. (n.d.). Las Cruces Sun-News. Retrieved September 23, 2021, from <https://www.lcsun-news.com/story/news/local/community/2021/08/07/city-seeks-input-changes-transit-system/5523591001/>

Las Cruces Seeks Input for Changes to Transit System | KRWG. (n.d.). Retrieved September 23, 2021, from <https://www.krwg.org/post/las-cruces-seeks-input-changes-transit-system>

Why doesn't Las Cruces' city bus service provide rides on Sunday? | KFOX. (n.d.). Retrieved September 23, 2021, from <https://kfoxtv.com/community/just-ask-john/why-doesnt-las-cruces-city-bus-service-provide-rides-on-sunday>



Appendix E

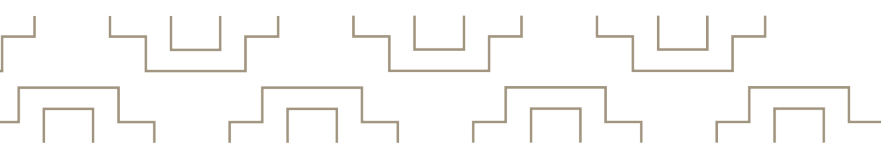
BUS OPERATOR COMMENTS

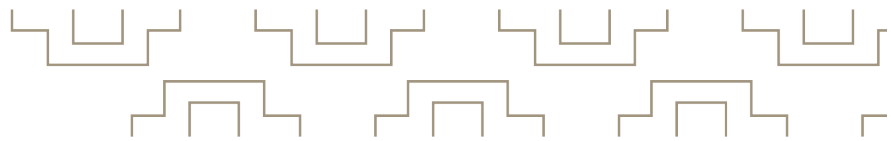
Table E-1: Comments from Bus Operator Survey: Challenges to Overcome

What would you say are the biggest issues that make it hard to do your job (i.e. not enough runtime, unruly passengers, etc.)?
Over working us.
Not enough drivers; cannot take time off. We need two buses on every route so that our passengers don't have to wait an hour for the next bus! More buses to replace old ones. Better advertising.
Management doesn't back us up when we call for them to deal with difficult passengers
unruly passengers
Passenger that [refuse] to follow [regulation] and they think that they can get away with it. Right now our schedule; it's a burn us out. Sametime on [routes] it's very difficult to find a restroom because of time and location
People coworkers that don't show up to work, calling sick or leaving early or taking advantage of the system.

Table E-2: Comments from Bus Operator Survey: Common Complaints

What is the most common complaint you hear from customers?
Having to wait an hour for the next bus!
Buses running late due to excessive time on wheelchairs, busses too cold, too hot
Transit bus system should operate on Sundays.
When are we going back to regular schedule but with no charge
When a [passenger needs] to go back to a certain stop on the last route at 5:30pm and is on the way back to the bus yard, some drivers don't want to take it there even do is on the way back because is after their 40 min (5:40pm) timepoint. For example, route 7 that ends up on [Hoagland], but goes all the way to Solano to go back and someone needs to get off there.



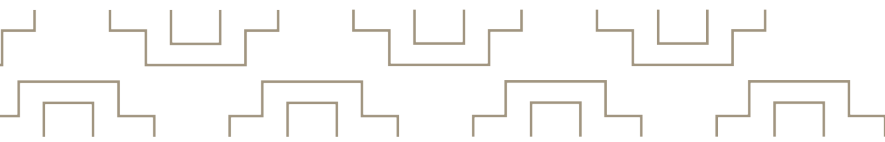


Appendix F

PUBLIC SURVEY COMMENTS

Table F-1: Comments from Public Survey

RoadRUNNER Public Comments from Survey
First couple questions add a tab for all routes in questions about which ones you use and a tab for all routes on which ones you transfer to. On the question where you rank the statements, there are 6 choices but the example say the fifth being the least, this should say sixth.
Public transit is a vital part of any community. I do not need the bus to get to work as I live close enough to walk to work, but I would love to be able to take a bus out to eat from the downtown corridor and back over the lunch hour to eat or run a quick errand. This is currently out of the question with the amount of time it takes to make a loop from downtown to anywhere useful. Transit should just be about getting people to and from work - but transporting those of us working downtown to business during the day so we can spend our money, too.
It appears that a lot of equipment is old and needs to be updated. I have also noticed more homeless people riding while the bus has been free. Are you going to start charging again? When will you go back to normal operating hours?
I would love to use the bus service if it could get me to work on time. As it is, there is a transfer required and gets me there 30 min late.
[Provide service] out to Dona Ana
I really appreciate that it is free to ride right now.
Buses come more often add more bus stops.
I actually haven't started using the service because of Covid, but I plan to soon. I want to get familiar with the routes so that when I can no longer drive I will be ready to use the service all the time. One reason I bought my house is that it is near two bus stops. I believe Las Cruces should move toward more public transportation and less auto traffic as our city grows. Many people moved here to get away from the traffic in larger cities. And our environment is screaming for less fossil fuel dependence.
Please expand in the East Mesa area.
Appreciate the considerate drivers.
My husband still drives, but I have mobility issues and would love to be able to take the bus without him-- especially to get downtown.
Have the bus come down England road. More populated than Battan road.
I would use the public transit more often if the hours were extended. COVID reduced the hours of operation, where I would be late for work and services terminate before I get off of work, not beneficial at the moment for me.
Better shelters, with seating and covered.
I would like to see free bus service continue beyond the pandemic. Is that on the table? I know community members who are using the bus more now because it is free. ABQ has done this for students. Also, stops near Community of Hope should be located closer to the entrance drive so people don't have to walk so far.



Bus drivers are friendly and professional. People who work at intermodal center are professional and helpful. Busses are clean. We need more shelters, tree canopies in 88001 area.

Keep it free

People will try using the bus once or twice but if it isn't like buses in the major cities, i.e. coming regularly, dropping within a few blocks of where I need to be, costing a reasonable amount, they will be forced to make other arrangements.

We need more of it!

Plentiful bike racks would be fantastic

not at this moment

People have told me that the buses are filthy - people do not respect the service and body fluids are no uncommon. There needs to be two drivers/attendees for each bus to oversee what is going on in the back of the bus. Seats are nasty.

How are people socially distancing ON the bus? And are you requiring masks on everyone aboard. There should be distancing and mask wearing. I am not sure I would ever ride on the bus the way the system is set up now to cater to low income people - which is great - but you should also be trying to alleviate traffic by encouraging routes that are commuter friendly - i.e. gaining daily commuters. Perhaps there should be a long term plan to ease commuter traffic by extending routes to higher income areas, people that work every day and would love to commute via public transport if given the opportunity to do so.

Extended hours for essential workers would be nice

Please contact the local AARP group. They are working with the City of Las Cruces to become an Age Friendly Community.

I would consider using it more often, but I find it's faster to ride my bike than take the bus most of the places I'd go.

I think you should work with the schools more to promote use of bus for field trips.

While your website is very informative, perhaps you could make it simpler on the home page and use that to provide links to other pages with more information. I would get rid of the 'Related Documents' and just list the Citywide RoadRUNNER Route Map as the top item under the 'Quick Links' menu. Also, is there an easy way to find this information for Spanish speakers? I could not see 'Para mas informacion en Espanol, clique aqui' por ejemplo.

I would know if there is currently a transit bus that can take people to and from el paso. That would really work for me since I sometimes need to go to medical appointments in El Paso and I can not drive in El Paso.

Please make the route 1 more convenient for going to lohmen area.it takes too much time to go anywhere.

I would like to have a bus run either a connector like Aggie Transit or Roadrunner have a stop on Las Alturas, so I could walk/ride my bike down from my house

It would be nice to keep the free pandemic price. It seems to help our folks who have fallen on hard times. Boarding the bus is much faster also.

Need cleaner busses, less exhaust from tailpipe, like electric busses. The service is very good.

Buses do not come into my neighborhood. I believe buses should come down main streets in neighborhoods so elderly people can make their way to a stop close enough to walk to.

I think the transit system should be promoted to the entire population. Eventually the buses should be electric or better yet, should revert back to the trolley and rail system. The cities that utilized this mass transit system covered more neighborhoods, recreation areas, downtown shopping, etc. than the buses that replaced them. City after city got rid of the rails and trolleys and put in stinky diesel buses, that blocked traffic and caused pollution. Several cities have started to bring back the city rail lines, and it has been a great success.
From limited amount I have used the bus, it is always on time. Stops are convenient for me, including near my home. I have heard of seniors who do not have stops close to home nor where they want to go.
Amazing people who work hard.
would like a simple route to get where I'm going instead of having to transfer from 1 bus to another
Get more information on what/where the bus routes are, where are the bus stops
Is it possible for Roadrunner Transit to have weekly routes from parts of the city to arts and cultural destinations in Las Cruces (Farm & Ranch Museum)? For example, Farm & Ranch offers free admission for New Mexico senior citizens on Wednesdays.
The buses need to start running after 5/6pm at least during the weekdays!! The current schedule ends way too early. And we absolutely need some minimal service on Sunday as well. People still need to get around on Sundays!!!!
I think shelters are key due to super-hot months.
Public transit is for those without their own cars... and should be easy for seniors and [those] without a license to use to get to [medical appointments], and other places to shop or entertainment
I'm in stage four renal failure. I have ALECT2 AMYLOIDOSIS disease. I am type two diabetic I'm thinking the best transit for me would be the bus for health care..Thank You
Public transportation is essential to the quality of life of our city. Not everybody is able to drive their own vehicle. Without public transportation those people would not be able to easily participate in our city's normal activities like shopping, attending concerts, and enjoying our parks and cultural areas. Public transit isn't a luxury---it's essential to the vitality of our city.
Access for county residents
I would use public transportation more in Las Cruces if the bus system was constructed in a way that ensured that I would arrive to my place of work on time, if I was able to ensure I would [be] able to get home after working late, and if the connections between routes were more easily accessible.
Perhaps you should ask about willingness/ability to pay for trips within the city??
Our community really needs reliable public transportation to ensure struggling workers & students can get to work & school.
Thank you for the survey.
[I'm] grateful for it thank you
I appreciate you asking for input!
I work with families on a daily basis and hear that it takes too long to get from A-B and that causes issues with getting places on time
Shelters should have sun protectors and wi-fi... Build an app that tells me how far the bus is from my stop and the time it's expected to reach my destination - many cities have such an app: San Antonio, LA, Boston, NY.

Every route should have at least 2 buses on it. It is too long to wait an hour for a bus. Most cities have buses every 15-20 minutes. More frequency of buses would really be helpful. Thank you.

Live in Mesilla and access to bus service is limited

The 'Rail Runner' should extend their service all the way to Las Cruces; think of the ENORMOUS revenue that could come into the city by making complete intrastate transit more accessible.

Rules and regulations should be running by video in Lobby continuously. A large majority of passengers are impaired either by a disability or under influence. This would help to reiterate safe riding for all. Also they should have either Security guards or Police officers doing ride-alongs in the buses to help deter bad or dangerous behaviors and to provide a sense of comfort and security for passengers and drivers. Also the Bus Drivers are seriously under paid. They are responsible for driving a very costly vehicle and more importantly, have the responsibility of transporting human beings safely under a huge variety of circumstances and factors. The current pay is not a factor in retaining Bus Drivers. The low pay is perhaps just an entry for CLC employment but not a factor in retaining drivers. It just creates a revolving door for drivers coming in and out. A great expensed is incurred in training, providing uniforms and other items, not to mention the time it takes to get drivers operable, just for drivers to seek alternative employment. A serious look should be reviewed on increasing Driver pay because of the huge responsibility they have. I myself would apply for a Bus Driver but it would send me to the Welfare Line because I could not support myself on these wages and I am a single person. I could not imagine having to support a family on these wages. Please consider increasing their salaries. They are an incredible group of people with a tremendous responsibility and should be compensated likewise.

I think that I would use the bus as much as possible if a stop were located within 3-4 blocks of my house. Dwellers of the South Las Alturas area have never had any buses out here since I arrived in 2002; the nearest full grocery stores are 5.3 miles, equidistant whether east or west. Traffic is such between here and either store that I wouldn't even consider riding a bike. I know. It's easy to say 'no need for buses out there; everybody has a car.' We do -- but many of us would use them much less if public transportation were available.

There's not enough room in bus shelters to accommodate those with wheelchairs or other mobility devices.

Public transportation needs to be efficient for the taxpayer as well as the user

- general system, build it and they will come.
- not sure but it would be nice to have a better east side transit hub then a handful of 'shelters' in front of the mall

Your survey is broken. If I say that I don't use the transit system, why does it still ask me about how I use it? If the system is not self-sustaining (i.e. pays for itself) then it should be dumped. People who do not use it should not be paying for it. Our city is too spread out to make transit a true alternative. The City does not push for high-density residential areas which would create a more transit-friendly community. Instead, we build homes further and further into the desert that have no commercial support and require people to drive themselves.

I appreciate that I can take my bike on the bus to work and then ride my bike home since the bus does not run at 10pm, but I also work on Sundays and have to find a ride to take my bike to work so it would be helpful to have options for Sunday workers.

We live off highway 28. My children would live to get jobs, but we have only seen a bus drive by once or twice. We have no clue how the system works here or if there is transportation even available out here in San Miguel. Hard to work and very discouraging when there's no transportation available.

The transit vehicles are almost empty most of the time, why are we paying for big vehicles?

I understand this job is stressful. Most passengers are or try to be considerate. The bus drivers are easily frustrated and rude. They do not always want to lower ramp for access. I do not look almost 70 but I am. It is hard to lift a cart and when I ask for it I am made to feel like a nuisance. The issue with carts is becoming problematic for many.

no
Consider redesign of routes 2 & 3. There are many who live along Roadrunner using RRT but few along Sonoma Ranch. Many NMSU people living along Roadrunner would use RRT if they did not have to transfer. My proposal: Route 2 leaves DACC, turns right on Sonora Springs, left on Roadrunner, same route after intersection with Lohman. Route 3: from pic-Quick on Sonoma Ranch goes right on Northrise, left on Rinconada, Right on Somona Ranch, right on Lohman, keeps normal route after intersection with Roadrunner.
Yes you need to extend route all the way up to Organ, Butterfield Park, Moongate. A lot of people don't have transportation.
Would use the bus more if it stopped on West Idaho by housing.
Stop running the air conditioners on the buses in March & April. Allow more open windows.
There is no reason none of stops I have seen around town don't have shelters.
I am a parent who has taken home 'stranded' kids from CHS. If they miss their school bus and do not have a phone OR familial support they are stranded. That school is too far away to not offer public transportation. Without public transportation, extracurricular activities are not an option for most kids without family support to get them there. For some, they can't even get to school regularly. We have to have public transportation access for ANY public school. I know the need is there. This must be done. Thank you
This survey is a big first step towards having convenient transportation in Las Cruces. Kudos to you! I look forward to having convenient transportation whenever I need to move around in the city. Each one of us residents needs to help decrease our carbon footprint. We only have ONE planet available to all of us, and we still persist in being self-centered and poisoning our atmosphere.
For me, the biggest reasons I do not always take the bus are: (1) I cannot simply walk to the bus stop on a whim and know the bus will arrive soon, (2) timing transfers between certain routes without a very long wait is almost impossible, and (3) buses sometimes get stuck in traffic meaning trips take longer than in personal vehicles (due to the addition making stops). I feel these hindrances can be addressed by increasing transit frequency and creating dedicated bus lanes, especially on major thoroughfares. Despite common belief to the contrary, having dedicated lanes for frequent and reliable buses on busy streets significantly reduces travel time for all modes of travel due to increased ridership taking cars off the street and reducing traffic congestion. There are ample cases throughout the world where this has shown to be true.
I would appreciate one or two 'express routes' which primarily service stops along the freeways.
I am pleased to hear that you are planning for electric buses.
If Las Cruces wants to grow to be a modern city that attracts younger people and less retirees they should invest in more public transportation. Especially train transportation between El Paso and Albuquerque.
There is an incredible lack of public transit culture in Las Cruces, which is too bad. I am not sure if it's because the transit system is not efficient or because there are not many centralized destinations that would necessitate better transit. In theory, I wish the transit system was more ubiquitous and used by more people, but in reality, it seems like it is a last resort for people who can't afford private vehicles and a transit service for elders. Until there are more clustered attractions, I think my dream of Las Cruces having a light rail system will have to wait.
Need buses to come more often. Not just once an hour.
I would use it but if I wanted to do shopping it would be very difficult to get back home bus stop too far. Also some of the bus stops are in areas that seem to be unsafe.
I am disabled and use public transportation to get around and to my support provider, when it opens again. I need transportation weekly.
We live in the country. It is never going to be convenient for us to use the bus.

I have no car, so I use the Transit system every week. Overall, Roadrunner Transit does an admirable job of servicing the non-driving public. Due to the COVID pandemic I have used the transit system sparingly and stayed mostly on the Route 2 which runs right past my street. Prior to the pandemic I road pretty much every route and went pretty much wherever I wanted to go that was serviced by the transit system. There are places that I would like to go but there is no service, i.e., The NM Ranch and Heritage Museum- no service at all; High Desert Brewery- no close service to name just 2. I also like to go out in the evening to eat dinner out but shutting down at around 5 pm has banished me to my apartment after 4:30pm. I would like to see what I call 'mini services: Say a small, Ford Van Bus from Memorial Hospital on S. Telshor to the Farm and Ranch Museum for special events (service is provided for the Renaissance Fair from the Mall to the park). I would even pay a small service fee of \$1 or 2\$ for a mini route. Is there any Senior Citizen interest in 'special trips'?: Such as a monthly service from the Transit Center to Ruidoso Downs, Inn of the Mtn Gods, or Ruidoso Mid Town?: Maybe White Sands or to La Union for the Nursery? A day long to Silver City(for a fee?).

These are just a few ideas: One could set a minimum # of passengers for a trip to say The Inn of the Mtn Gods or The Downs racetrack. Perhaps a survey could be devised for these 'special trips or routes. Surveys need more exposure. I only saw this because someone in my family saw the article in the LC Sun and cut it out for me. I am a retired Senior and do not subscribe to the paper. Feel free to contact me. I ride the bus often. Before the Pandemic shutdowns I rode at least 3 or 4 times per week and often more. I always bought a monthly Sr. Pass so I could go anywhere on the bus I wanted. I have attended several of the quarterly RTS meetings to voice concerns and just to see how it works.

We would like to see service into Trails West Community to avoid having to cross Avenida de Mesilla for service into Las Cruces.

I already did the survey and forgot to include my contact info: I ride the bus a lot. It does not go to places like the Farm and Ranch center, High Desert Brewery to name just 2 places I would go if I could. I have attended several of the quarterly transit meetings. I offered a number of other suggestions and said it was okay to contact me but forgot to leave contact information.

Would be good if fare free service can be maintained. Transit should be able to interact with bike share or e-scooter systems to provide 'last mile' service.

I wish that buses ran up and back on the same streets. I wish that buses came every 15-20 minutes. I wish the fare was written on the outside of the buses.

Safety is a big issue for me

none

I want you to get more federal dollars for expansion of service. I would love not having to drive. I wholeheartedly support public/mass transit systems

Word around town is the busses are [super] unsafe

I need stops in Dona Ana, so my daughter- 16 - can get to from school & work & home. And to know safety in place for a young girl out in the city: I need to know she's safe on a bus and that drivers can alert her to dangers.

The bus drivers are really nice we just need later transit times and notices when the bus stops are moved or gotten rid of.

Are workers using this mode of transportation?

I would like to see service explained to include the Dona Ana Area

Better roads for the buses, and more apparent crosswalks at the bus stop areas.

I see so many people nearly crash into the bus because of the sudden stops and late hazard light initiation that the drivers do

The answers to yes or no questions should be just that, YES or NO selections! What does AND IT IS or NOT mean? Did not understand that at all. In addition to using RoadRunner Transit, the destinations to the Greyhound bus stations should be linked together or at least in close proximity. I do not understand why the stop for Las Cruces is in Dona Ana, how does a student at NMSU get to campus as this is a 10-mile separation, plus not to mention no public transit to get you there.

privatize it.

Bus service is pretty good overall. Drivers are great. My biggest thing I would like is to be able to see a 7:30pm movie and be able to get a bus back when it's over instead of taking my car. Or some other evening event.

Las paradas de autobús deben tener refugios hechos de madera en lugar de metal y deben estar protegidos del sol y los vientos.

Tambien, Iniciar un programa para educar al público sobre la conveniencia y seguridad del transporte público.

Podrian ofrecer una app para ver donde va el autobus - asi se si tengo tiempo de llegar o me espero adentro. Podrian ofrecer mejores refugios - el sol esta muy fuerte durante el dia y no hay sombra Podrian ofrecer wi-fi en los vehiculos Las rutas son limitadas

how is the input of working class who don't own a vehicle or own an electronic device as the current main users of public transpiration, being collected?

Los choferes han sido muy amables durante la pandemia.

Appendix G

COMMENTS FROM ALTERNATIVES SURVEY

Table G-1: Alternative Survey Comments

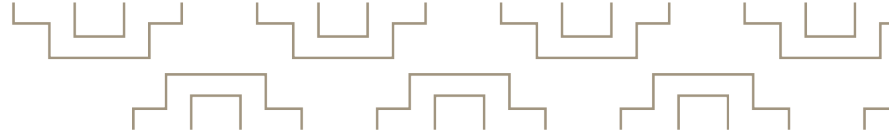
Alternative	Saving Time		Getting Where I Need to Go		Moving Around the Las Cruces Area	
	True or False: The proposed transit recommendations in this Alternative will save me time.	Please explain why you answered "false."	True or False: The proposed transit recommendations in this Alternative will improve my ability to get where I need to go.	Please explain why you answered "false."	True or False: The proposed transit recommendations this Alternative will improve my ability to move around the greater Las Cruces area.	Please explain why you answered "false."
A	TRUE		FALSE	It decreases the availability of services for a large portion of the city.	FALSE	Again, the routes cover less area. The outlying areas of the City, which are already underserved, are further alienated by this proposed route.
A	FALSE	I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services.	FALSE	I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services.	FALSE	I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services.
A	FALSE	No service to Roadrunner. People who plan this crap need to ride the bus all day like me. Lots of people take route 3 and get on/off on Roadrunner. Very few use the Sonoma Ranch part of Route 2. What idiot though up this plan. Fire him/her!	FALSE	I am getting older. Now I can walk the 1.5 miles to Roadrunner/Lohman intersection and catch the bus, but my ability to do this will decline as I age. I can foresee no ability to use Roadrunner at all in a few years with this route.	FALSE	Because I do not have a convenient way to get to a bus stop.
A	FALSE	There is not enough expansion of coverage. None of the proposed routes include the poorer areas of Three Crosses and Dona Ana Rd.	FALSE	I don't live near any of the changes.	FALSE	The alternative plans don't include Dona Ana Rd and Three Crosses Rd
A	TRUE		TRUE		TRUE	
A	TRUE		TRUE		TRUE	
A			FALSE		FALSE	
A	FALSE	For my usual destinations, especially for shopping, these changes don't effect my time spent on the bus.	TRUE		TRUE	
A	TRUE		TRUE		TRUE	

Alternative	Saving Time		Getting Where I Need to Go		Moving Around the Las Cruces Area	
	True or False: The proposed transit recommendations in this Alternative will save me time.	Please explain why you answered "false."	True or False: The proposed transit recommendations in this Alternative will improve my ability to get where I need to go.	Please explain why you answered "false."	True or False: The proposed transit recommendations this Alternative will improve my ability to move around the greater Las Cruces area.	Please explain why you answered "false."
B	FALSE	I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services.	FALSE	I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services.	FALSE	I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services.
B	FALSE	No service to Roadrunner. People who plan this crap need to ride the bus all day like me. Lots of people take route 3 and get on/off on Roadrunner. Very few use the Sonoma Ranch part of Route 2. What idiot though up this plan. Fire him/her!	FALSE	I will have difficulty getting to a bus stop as I get older. Tight now I am healthy enough to walk 1.5 miles to the nearest bus stop of plan B, but might not be able as I get older.	FALSE	There is no convenient bus stop under plan B. There is one now.
B	FALSE	None of your alternative routes include Dona Ana Rd and Three Crosses Ave. Route 6 or 7 should be re-routed through Three Crosses to Dona Ana Rd., to Dalrymple, to Valley Dr., OR from Main street to Spitz, left on El Camino Real, left on Carlton, left on Dona Ana Rd, to Three Crosses, right on Alameda.	FALSE	None of your alternative routes include Dona Ana Rd and Three Crosses Ave. Route 6 or 7 should be re-routed through Three Crosses to Dona Ana Rd., to Dalrymple, to Valley Dr., OR from Main street to Spitz, left on El Camino Real, left on Carlton, left on Dona Ana Rd, to Three Crosses, right on Alameda.	FALSE	None of your alternative routes include Dona Ana Rd and Three Crosses Ave. Route 6 or 7 should be re-routed through Three Crosses to Dona Ana Rd., to Dalrymple, to Valley Dr., OR from Main street to Spitz, left on El Camino Real, left on Carlton, left on Dona Ana Rd, to Three Crosses, right on Alameda.
B	TRUE		TRUE		TRUE	
B	FALSE	Will not save me time from where I live but may save me time on interconnection with revised Route 1 if that route also goes to every 1/2 hour.	TRUE		FALSE	Even with #1 route going to every half-hour, this proposed plan really doesn't significantly enhance my moving around timely.
B	TRUE		TRUE		TRUE	
B	TRUE		TRUE		TRUE	

Alternative	Saving Time		Getting Where I Need to Go		Moving Around the Las Cruces Area	
	True or False: The proposed transit recommendations in this Alternative will save me time.	Please explain why you answered "false."	True or False: The proposed transit recommendations in this Alternative will improve my ability to get where I need to go.	Please explain why you answered "false."	True or False: The proposed transit recommendations this Alternative will improve my ability to move around the greater Las Cruces area.	Please explain why you answered "false."
C	FALSE	I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services.	FALSE	I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services.	FALSE	I do not support any alternatives that offer less coverage for transit users. It would be better to expand service areas by lengthening routes, adding additional routes, and/or operating multiple smaller vehicles on a route to increase use/availability of services.
C	FALSE	No service to Roadrunner. People who plan this crap need to ride the bus all day like me. Lots of people take route 3 and get on/off on Roadrunner. Very few use the Sonoma Ranch part of Route 2. What idiot though up this plan. Fire him/her!	FALSE	There is no bus stop convenient to my house. I am healthy enough to walk there now, but I am getting older.	FALSE	No bus stop that I can conveniently access. I can access one now.
C	FALSE	This is the same person as before. It is a serious mistake to do this during the pandemic. See what it looks like when paying customers return. I can already tell that you have decided that people who live along Roadrunner are not important and have every intention of screwing them out of their bus service, and I feel that writing anything at all is a waste of time. I will be away from Las Cruces until May 2022, and sort of looked forward to the car-free live that I enjoyed before the pandemic. It looks like that is now gone!	FALSE	see previous	FALSE	see previous
C	FALSE	Solano needs serviced. People go to places such as COAS book store, the squatting center, and some doctors, such as my podiatrist are all on Solano.	FALSE	If I'm needing to see my podiatrist, on Solano, with this route, I can't get to him without spending even more on a taxi/Uber/Lyft	FALSE	Solano needs serviced as well. When I lived just off Solano, I would ride the bus, and I know there's others within walking distance to Solano that use the bus
C	TRUE		TRUE		TRUE	
C	FALSE	I use Route 8 to go between campus and Mesquite and Madrid. Getting rid of it would impact my commute.	FALSE	I use Route 8 to go between campus and Mesquite and Madrid. Getting rid of it would impact my commute.	FALSE	I use Route 8 to go between campus and Mesquite and Madrid. Getting rid of it would impact my commute.
C	FALSE	It eliminates Route 8 and sucks.	FALSE	It eliminates Route 8 and sucks.	FALSE	It eliminates Route 8 and sucks.

Table G-2: Other Comments Regarding Alternatives

Other Comments from Written Alternative Surveys
<p>I like what you did in "Alternative C." Makes better sense to me: here's why.</p> <p>*Route 1 + 2: too separate college campuses will seem to flow better</p> <p>*Route 3: Good.</p> <p>*Route 4 Suggestion: Extend it up to Solano + back down to Lohman then back to transit the route of "8" &/or many possibilities with Route 4 extended to the old R.8</p> <p>*Route 5: Oh, I love 5. So much better for me for work.</p> <p>*Route 6+7: Same + good</p> <p>*A new route 8 suggestion: From MVITT, a bus that rides left, crossing the river at 70 and 10 highways and back again to the MVITT.</p> <p>Thank you.</p>
<p>(In response to Alternative A and B, this person said the proposed transit recommendations would save them time. They listed the following as the reason why.) Route 1 is useless for getting Del Rey. It goes by but you have to cross a traffic jungle to get to Route 3 or Del Rey.</p>

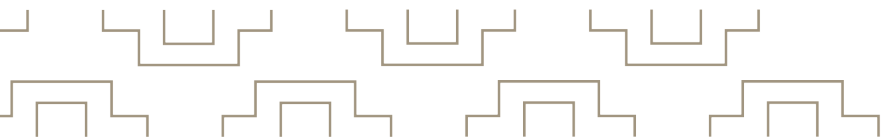


Appendix H

BUS STOP ANALYSIS

Background & Purpose

Through this portion of the study, the project team aimed to 1) increase the amount and quality of bus stop amenities throughout the network, and 2) optimize new bus stops along the updated route alignments in the preferred alternative. The existing RoadRUNNER transit system consists of around 300 bus stops, all with varying levels of amenities that provide safety and comfort for passengers. Of the existing bus stops, 41 will be decommissioned in the implementation of the locally preferred alternative. The project team also proposed eight new bus stops that will be implemented along Route 3 and one new bus stop to be implemented on Route 1 in the locally preferred alternative. This chapter details the analysis and prioritization methods used to improve the amenities and amenity standards throughout the system and the process of placing new bus stops in the preferred alternative.



Bus Stop Amenities Existing Inventory

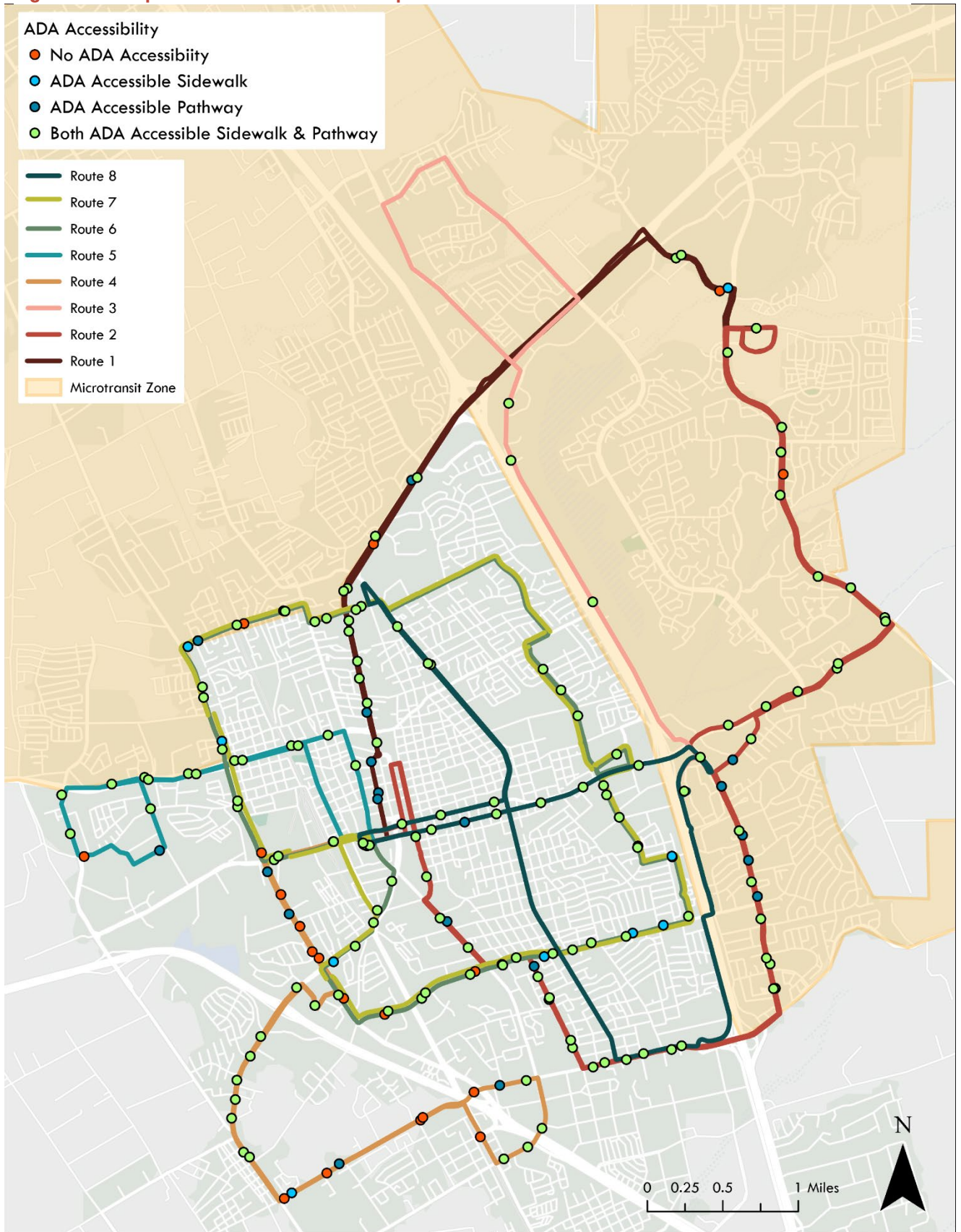
The improvement of bus stop amenities can include everything from better signage to the implementation of a full shelter and bus pad. The overall goal of the bus stop amenity analysis was to identify and prioritize locations for bus shelters, benches, sidewalk improvements, accessibility, and other amenities.

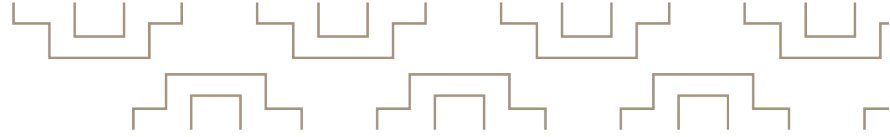
ADA accessibility is a particularly important factor, because any improvements denoting an area to be an official bus stop (i.e., installing a bus stop sign) must meet minimum ADA requirements. These requirements include bus stops with the following characteristics:

- A firm surface;
- A minimum clear length of 96 inches (from curb/vehicle road edge);
- A minimum clear width of 60 inches (parallel to vehicle roadway);
- A maximum slope of 1:50 (also referred as a 2% grade) for water drainage; and
- Connection to surrounding street/pedestrian infrastructure by an accessible route.

A map of existing bus stops and their level of ADA accessibility can be seen below in Figure H-2.

Figure H-2: Map of ADA Accessible Bus Stops





In addition to accessibility, a number of amenities were examined at each bus stop location. All existing amenity locations and associated data were provided by the Mesilla Valley MPO. A full list of all amenities examined at each stop location can be found in Table H-1.

Table H-1: List of Bus Stop Amenity Data

Bus Stop Amenity	Description
Covered	Does the bus stop have a shelter?
Shelter Condition	If the bus stop has a shelter, what is its condition?
Schedule Posted	Is a schedule available for riders to view upon arrival at the bus stop?
Bike Rack	Does the stop have a bike rack?
Bench	Is there a bench for passengers to rest?
Bench Condition	If there is a bench, what is its condition?
Lighting	Is there lighting at the stop?
Solar Lighting	Is there solar lighting at the stop?
Trashcan	Is there a trashcan?
Route Sign	Is there a route sign?
Route Sign Condition	What is the condition of the route signage?
Sidewalk Condition	What is the condition of the sidewalk?
Curb Ramp	Does the pathway have a curb ramp?
Adopt a Shelter	Is the stop an Adopt a Shelter location?
ADA Pathway	Does the pathway meet ADA standards?
ADA Sidewalk	Does the sidewalk meet ADA standards?

BUS STOP AMENITY SCORING

Existing bus stops were scored by the number of amenities they already have, receiving one point for each amenity shown in Table H-1 above. The map below in Figure H-3 displays the bus stops and their levels of amenities across the Las Cruces transit network.

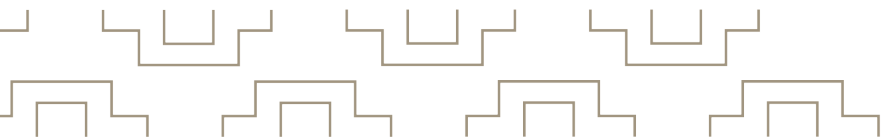
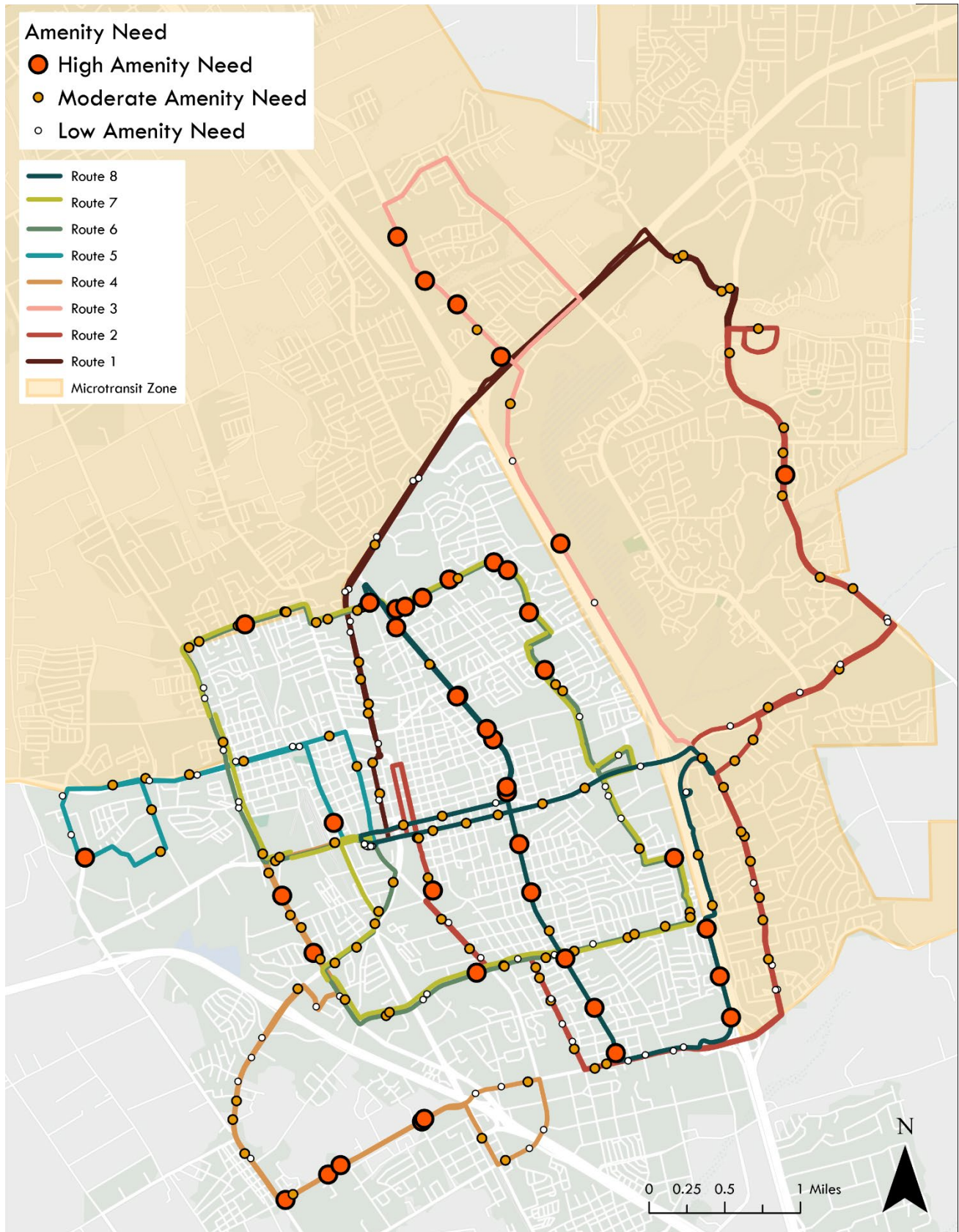
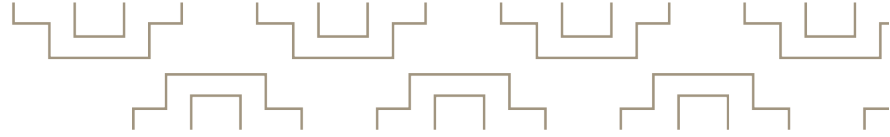


Figure H-3: Map of Bus Stops and Amenity Need





Bus Stop Prioritization

BUS STOP PRIORITIZATION

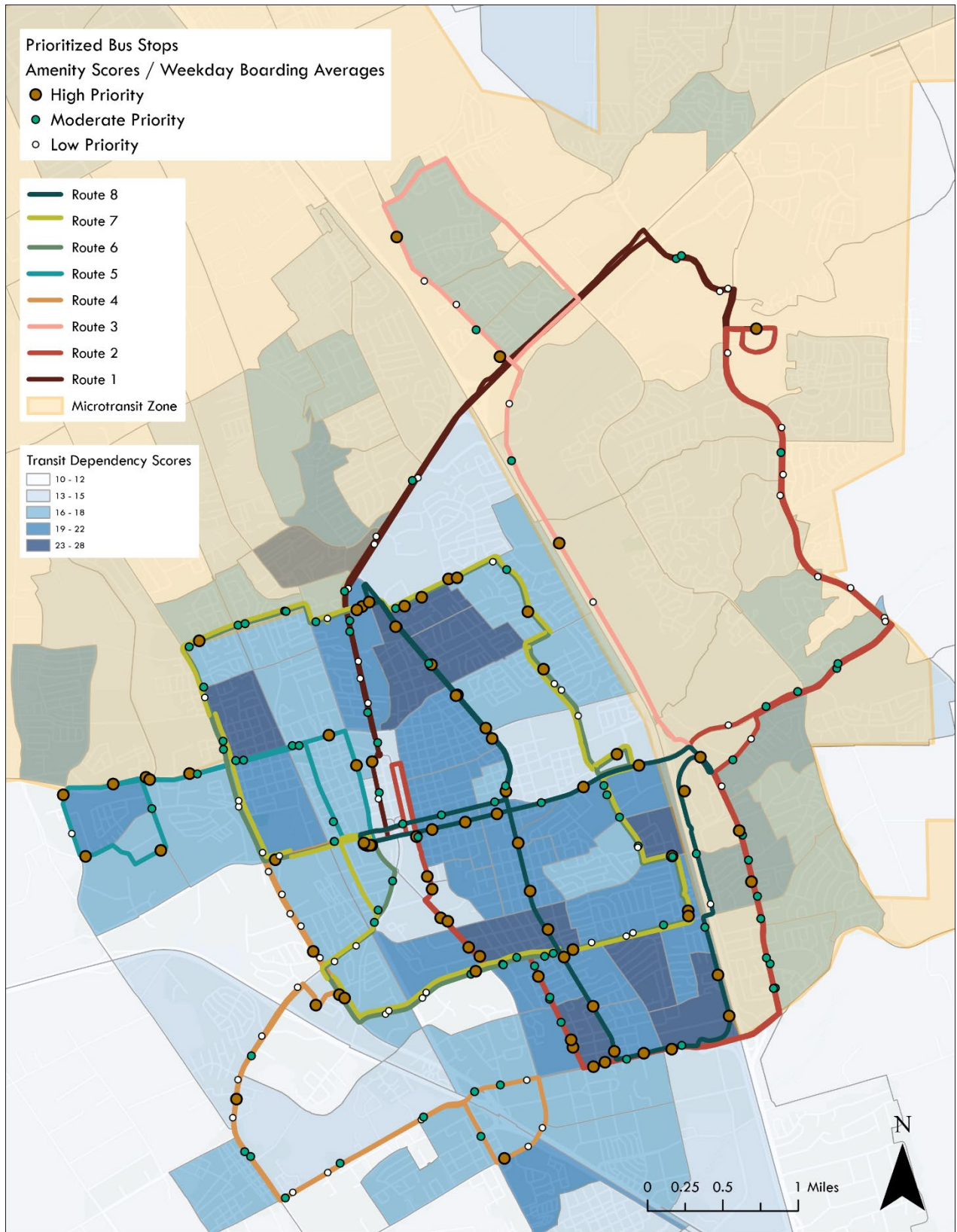
Following the completion of the inventory analysis, each amenity point was paired with ridership boarding data obtained during the study's ridership analysis. Stops with both a high daily boarding average and a low amenity score were given higher priority, as they would be stops used by the most riders(demand) but provide few amenities(supply).

EQUITY AND BUS STOP PRIORITIZATION

While the level of bus stop amenities and ridership are central to the prioritization process when choosing which bus stops should get the first updates, these metrics do not tell the whole story. Fifty percent of all bus stop improvements should be made to stops in transit-dependent areas, also prioritized by their level of amenities and ridership demand. The map in Figure H-4 shows all bus stops, their prioritization, and their location in relation to transit dependent areas of the study area.



Figure H-4: Map of Prioritized Bus Stops



Amenity Additions

Transit amenities can increase ridership and change public perception on transit comfort, safety, and accessibility when implemented appropriately. When adding new transit amenities to a fixed-routesystem, it is important to utilize ridership thresholdsfor amenity allocation. High performance stops (at least 26 average daily boardings) are priority for shelter amenities. Stops with at least 11 average daily boardings also qualify for shelters if they meet three of the following criteria:

- Adjacent to major transit attractors(commercial/entertainment center,employment area, etc)
- Adjacent to health care and social service facilities
- Adjacent to large residential units (250+units)
- Adjacent to educational facilities
- Located at a transfer point where two or more routes meet
- Service frequency is typically delayed (greater than 30 min)

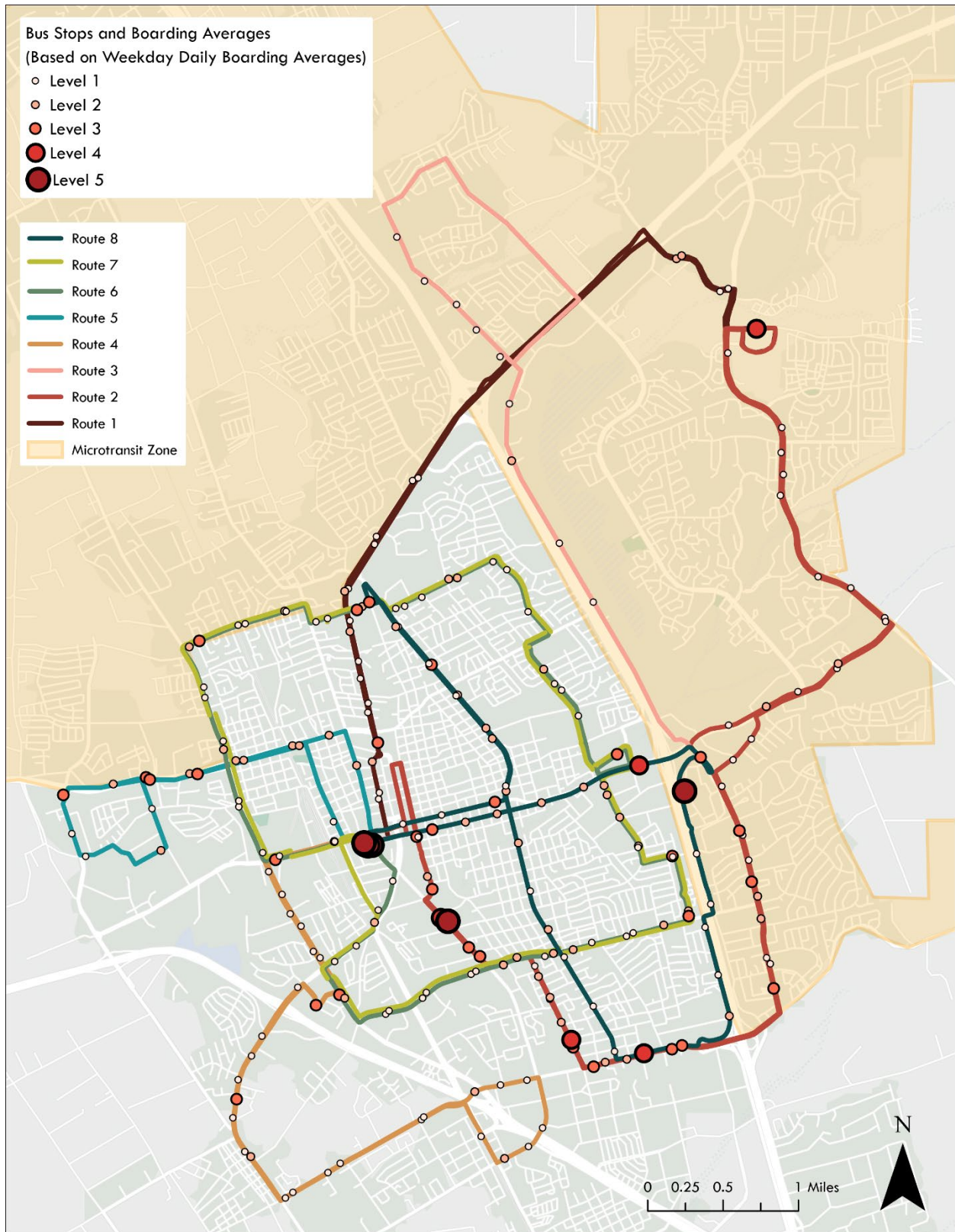
Any stop generating at least 11 daily boardings also qualifies for a bench/seated area. All stops containing amenities (bench, shelter, or both) should also offer a trash receptable. Finally, bike racks are optional, but preferable, at any high demand stop.

Table H-2: Ridership Thresholds and Bus Stop Amenities

Level	Amenities	Ridership Thresholds
Level 1 (Lowest Ridership)	Full ADA Accessibility Bus Sign	0 - 5 Average Daily Boardings
Level 2 (Moderate Ridership)	System Information	6 - 10 Average Daily Boardings
Level 3 (Moderately High Ridership)	Bench Sidewalk Connectivity Trashcan	11 - 25 Average Daily Boardings
Level 4 (High Ridership)	Shelter Safety Lighting	26 - 50 Average Daily Boardings
Level 5 (Highest Ridership)	Bicycle Parking Art/Placemaking Landscaping Planters	51+ Average Daily Boardings

Figure H-5 shows the bus stops and their assigned levels based on their weekday boarding averages.

Figure H-5: Bus Stop Levels Based on Boarding Averages



POTENTIAL CHALLENGES TO AMENITY ADDITIONS

When considering amenity locations, it is important to consider circumstances that may hinder implementation, such as but not limited to:

- Amenities that will negatively impact pedestrian or operational safety
- Lack of right-of-way
- Specific City, County, State, or Federal government regulations
- Excessive installation/maintenance costs
- The location is along a route which changes frequently

AMENITY ANALYSIS CONCLUSIONS

The RoadRUNNER urban fixed-route system contains a significant number of stop areas containing transit amenities (293 total). Amongst the stops with sufficient data, roughly 85% are located near ADA accessible pathways, 79% have an ADA accessible sidewalk, and 75% have both. Many of the stops with the highest ridership have a high number of amenities (e.g., MVITT), but there are still stops with high ridership demand and low levels of amenities.

Stop Location Placement

Stop location should consider user safety, equity, accessibility, and efficiency. For this study, it is recommended that far-side stop locations should be practiced for future amenity implementation. This refers to amenity location occurring after intersections and crosswalks, allowing transit vehicles to pass through the intersection prior to stopping and for alighting pedestrians to cross behind the bus allowing for full visibility.

METHODOLOGY

Using strategies and guidelines established by the National Association of City Transportation Officials¹ and Transit Cooperative Research Program (Sponsored by the Federal Transit Administration)², the following criteria was created for placement of bus stops.

- **Safety:** Street crossings and pedestrian safety.
- **Security:** Visibility, lighting, and proximity to aid/help.
- **Transit System Performance:** Walking distance and trip generation.
- **Accessibility/ADA:** Sidewalk quality, lack of obstacles, and drops no greater than 1/2inch.
- **Placement:** Far-side, near-side, or midblock stops.
- **Future Development:** Thinking about how future developments could affect population, ridership, pedestrian safety, and traffic.

¹ *Urban Design Guide: Bus stops*. National Association of City Transportation Officials. (2015, July 24).

² The Federal Transit Administration. (1996). *TCRP Report 19: Guidelines for the Location and Design of Bus Stops*. Transit Cooperative Research Program

SAFETY

Stops should be placed in a location free of danger and/or risk. This includes safe street crossings and adequate sidewalk width to allow for ample waiting distance from high-speed traffic. Passengers, bus operators, pedestrians, and private vehicles should all be taken into consideration. Additionally, it should be noted that when placing a bus stop next to a pedestrian crossing that is not at an intersection (i.e., a midblock stop) the bus stop should always be placed on the far side of the crossing.

SECURITY

Passengers should feel safe at their stop while boarding or alighting. Safety measures include adequate lighting, lack of hiding places, and bus stop visibility from street and nearby locations.

TRANSIT SYSTEM PERFORMANCE

The whole bus trip experience should be considered when placing a stop. The Transit Cooperative Research Program defines this as. “the time it takes to walk to the bus stop, the wait time for the bus, the actual in-vehicle travel time, and the time to walk to the destination.”³ All of the aforementioned factors are affected by bus stop location and the frequency of the bus stops.

ACCESSIBILITY

Bus stop locations should be evaluated for access from sidewalks and street crossings, level areas for loading, adequate lighting, and accessible amenities (i.e., shelter dimensions and width of walkways that can accommodate wheelchairs).

PLACEMENT

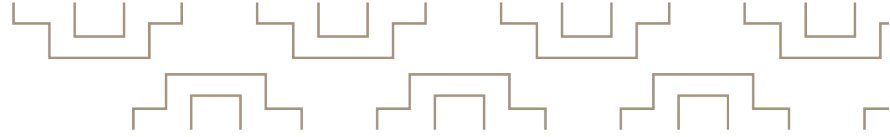
Far-Side Bus Stops:

Far side stops are located immediately after passing through an intersection. This is the most common placement of bus stops because the placement allows pedestrians to safely cross behind the bus.

Table H-3: Comparative Analysis of Far-Side Bus Stop Locations⁴

Advantages	Disadvantages
Minimized conflicting between right turning vehicles and buses	May result in intersections being blocked during peak periods by stopping buses
Provides additional right-turn capacity by making curb lane available for traffic	May obscure sight distance for crossing vehicles
Minimizes sight distance problems on approaches to intersection	May increase sight distance problems for crossing pedestrians
Encourages pedestrians to cross behind the bus	Can cause a bus to stop far side after stopping for a red light, which interferes with both bus operations and all other traffic
Creates shorter deceleration distances for buses since the bus can use the intersection to decelerate	May increase number of rear-end accidents since drivers do not expect buses to stop again after stopping at a red light
Results in bus drivers being able to take advantages of the gaps in traffic flow that are created at signalized intersections	Could result in traffic queued into intersection when a bus is stopped in travel lane

⁴ The Federal Transit Administration. (1996). *TCRP Report 19: Guidelines for the Location and Design of Bus Stops*. Transit Cooperative Research Program



Near-Side Bus Stop:

Near-side stops are located immediately before passing through an intersection. Near-side bus stops are typically used on long blocks with pedestrian destinations on the far-side of the block. They are also commonly used on one-way streets with prohibited passing or where driveways or allies are located on the far-side of the block. Near-side bus stops should be avoided on two lane streets that permit passing to avoid pedestrians passing in front of the vehicles and potentially being struck by a passing car.

Table H-4: Comparative Analysis of Near-Side Bus Stop Locations⁵

Advantages	Disadvantages
Minimizes interferences when traffic is heavy on the far side of the intersection	Increases conflict with right-turning vehicles
Allows passengers to access buses closest to crosswalks	May result in stopped buses obscuring curbside traffic control devices and crossing pedestrians
Results in the width of the intersection being available for the driver to pull away from curb	May cause sight distance to be obscured for cross vehicles stopped to the right of the bus
Eliminates the potential of double stopping	May block the through lane during peak period with queuing buses
Allows passengers to board and alight while the bus is stopped at a red light	Increases sight distance problems for crossing pedestrians
Provides driver with the opportunity to look for oncoming traffic, including other buses with potential passengers	

Midblock Bus Stop:

Stop is located within the block (towards the middle). These stops should be utilized when major destinations are located midblock or is a major transit stop with multiple buses queuing.

Table H-5: Comparative Analysis of Midblock Bus Stop Locations⁶

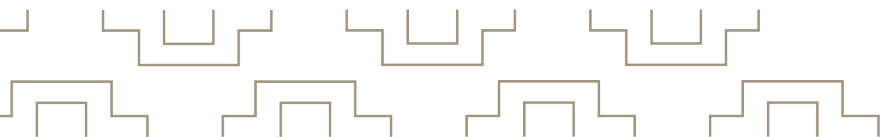
Advantages	Disadvantages
Minimizes sight distance problems for vehicles and pedestrians	Requires additional distance for no-parking restrictions
May result in passenger waiting areas experiencing less pedestrian congestion	Encourages patrons to cross street at midblock (jaywalking)
	Increases walking distance for patrons crossing at intersections

FUTURE DEVELOPMENT

The project team considered the transit impacts that developing areas near bus stop locations will have on the population, ridership, pedestrian safety, traffic, and ADA accessibility for each stop. The stops should be able to accommodate reasonable growth of the community and reside in locations that will remain safe and secure for passengers.

⁵ The Federal Transit Administration. (1996). *TCRP Report 19: Guidelines for the Location and Design of Bus Stops*. Transit Cooperative Research Program

⁶ The Federal Transit Administration. (1996). *TCRP Report 19: Guidelines for the Location and Design of Bus Stops*. Transit Cooperative Research Program



PROPOSED BUS STOPS

The following section of this report contains proposed bus stops for proposed Route 3. The stops are placed along the northern loop of the route, from North Main Street to Parkhill Drive (North/South) and Del Rey Boulevard to North Roadrunner Parkway (West/East).

The project team proposes nine new proposed stops to the Route 3 in the locally preferred alternative. Below, each of the proposed stops are listed in order of their placement on the outbound route alignment (traveling northbound on RoadRUNNER Parkway).

Figure H-5 shows the entire layout of the proposed bus stops. Red symbols represent the primary bus stop placement while the yellow symbols represent their corresponding alternatives.

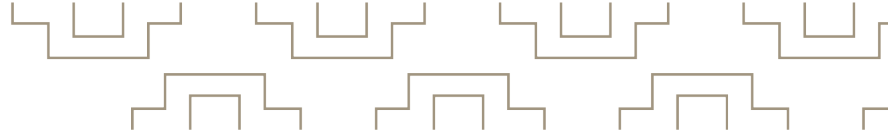


Figure H-6: Map of Proposed Bus Stops



Table H-6: Proposed Bus Stops in Route 3

Proposed Stop #	Route(s)	Proposed Stop	Type	Description
1	3	South Telshor @ Wells Fargo	Near Side	Near-side Bus Stop Shaded stop (highly requested from community) High visibility Direct access to businesses banks, restaurants, retail) Close proximity to pedestrian lighting New sidewalk with no apparent obstacles Located in turning lane to prevent traffic congestion
2	1 & 3	IHOP @ Del Rey	Far Side	Far-side Bus Stop Encourages passengers to cross behind the bus Direct access to businesses (gas station, restaurants, hotel) Next to street lighting Transfer point for Routes 1 and 3 to allow direct access to Walmart
3	3	Sunridge @ Roadrunner	Far Side	Far-side Bus Stop Encourages passengers to cross behind the bus Serves both Sunridge residents and potentially customers along the service road (Bataan Memorial)
4	3	Four Hills Apartments	Far Side	Far-side Bus Stop Encourages passengers to cross behind the bus High visibility Close to the main office of the apartment complex
5	3	Settlers Pass @ Roadrunner	Far Side	Provides access to residents on/off Settlers Pass Space for bus to pull out of the way of traffic and safely merge back into traffic Most central location for potential future development near the Settlers Pass and Roadrunner Parkway intersection
6	3	Foxtail Pine @ Roadrunner	Midblock	Most central location between Settlers Pass and Parkhill Drive Most central Location between Stone Pine Drive and Sugar Pine way Provides closer access to surrounding residents due to its central location Next to street lighting
7	3	Parkhill @ Roadrunner	Far Side	Close proximity to pedestrian lighting New sidewalk with no apparent obstacles High visibility
8	3	Hillsboro Loop Stop	Near Side	Close proximity to pedestrian lighting Close proximity nearby business (Purple Mountain Real Estate Office) New sidewalk with no apparent obstacles
9	3	Dollar General	Near Side	Midblock Bus Stop to allow for left turn Close proximity to key location New sidewalk with no apparent obstacles Can provide direct access to workers of surrounding stores and suppliers

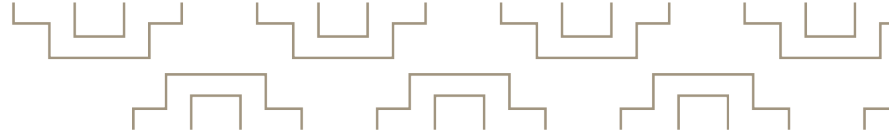


Figure H-7: Proposed Stop 1



Figure H-8: Proposed Stop 2

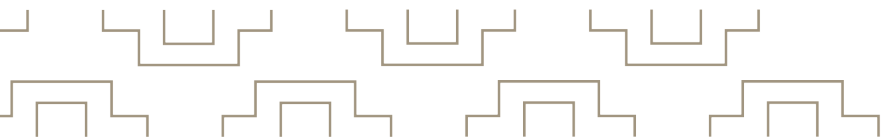
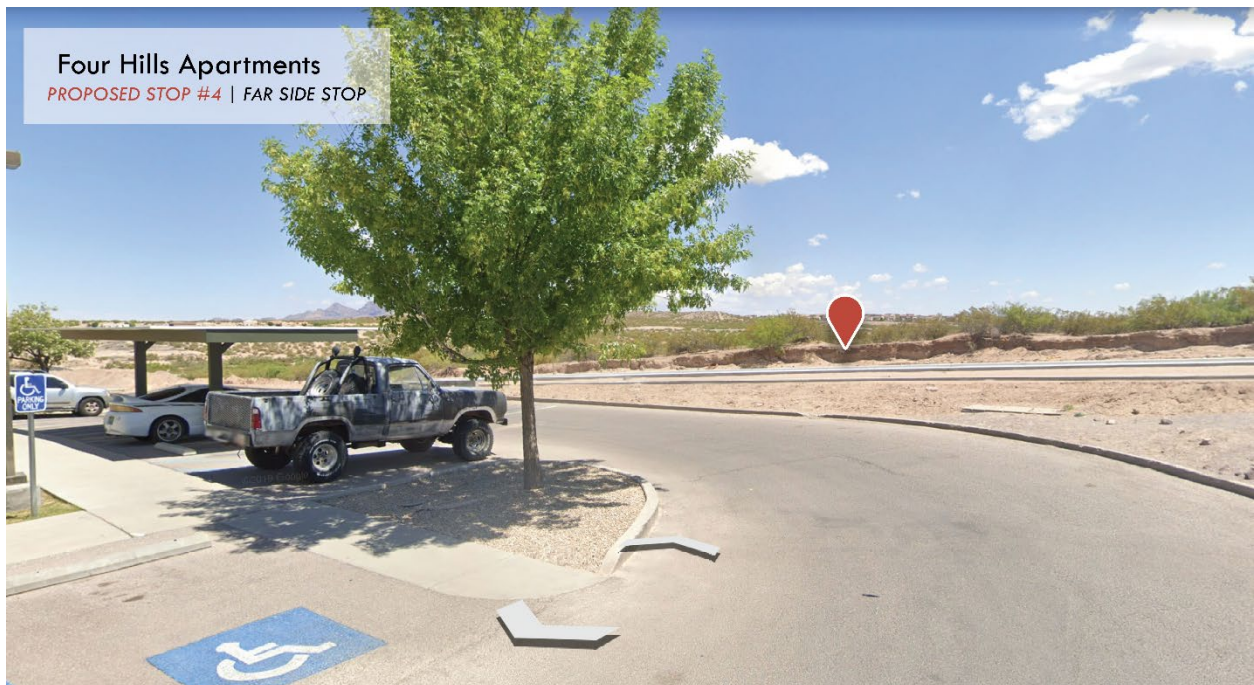


Figure H-9: Proposed Stop 3



Figure H-10: Proposed Stop 4



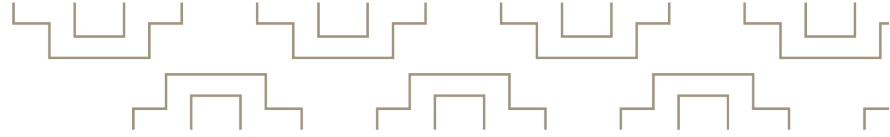


Figure H-11: Proposed Stop 5



Figure H-12: Proposed Stop 6

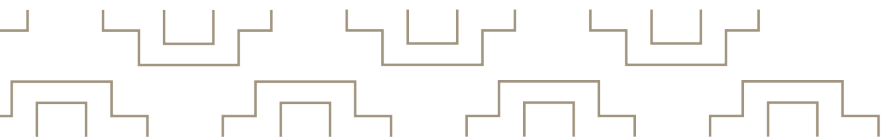


Figure H-13: Proposed Stop 7



Figure H-14: Proposed Stop 8



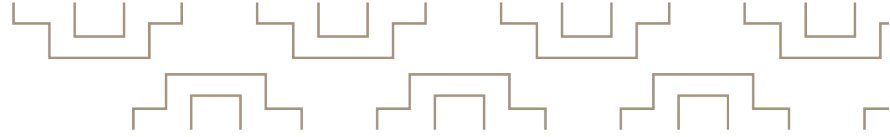
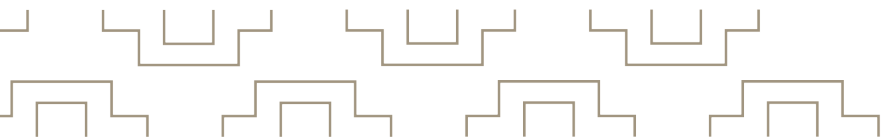


Figure H-15: Proposed Stop 9



Appendix I

TECHNOLOGY REVIEW

Microtransit and Mobility-As-A-Service Technologies

These recommendations relate to the technology platform for a potential microtransit service in Las Cruces. While not all features are required to provide a successful microtransit service, these are features that RoadRUNNER Transit may find beneficial.

OPERATIONS CONSOLE

- Create, edit and search for passenger accounts
- Enable operators to book journeys for passengers booking by phone
- View the current status of all live and upcoming trips
- Contact passengers or drivers directly through the console
- Suspend passenger accounts
- Create, edit and search for driver accounts
- Create and manage key vehicle information for a microtransit service
- Edit and create stop locations through a map editor
- Temporarily close off roads
- Access operations console via a web browser

PASSENGER APP (FOR PLANNING AND BOOKING MICROTRANSIT TRIPS)

- Enable passengers to book microtransit journeys on demand
- Enable passengers to see and plan trips on other RoadRUNNER bus services (Mobility-as-a-Service feature)
- Enable passengers to book multimodal journeys, where the first leg is completed by microtransit, and the second leg is completed by a regular bus, depending on the most efficient connections
- Enable passengers to select their origin and destination on a map, using current location as a starting point, or dropping a pin on the map
- Enable passengers to select origin and destination by address/postcode
- Store frequently used destinations (e.g. home or work) for quick booking
- Enable passengers to book seats for themselves, as well as other passengers travelling with them on the same journey
- Identify optimal pickup and drop-off locations, and show walking routes on map(incl. distances) from origin to pickup location, and drop-off location to destination
- Show clear and accurate available and expected pickup times
- Enable passengers to set up, edit and manage their passenger profiles (incl. whether they have specific mobility requirements, require a door-to-door service, etc.)
- Identify passengers who require a door-to-door service (e.g. because of mobility needs) and pick them up from their requested origin, rather than the nearest suitable stop
- Store passengers' debit card, credit card, Paypal, Apple Pay and/or Google Pay information, and take payment for journeys at the time of booking
- Enable passengers to also pay with cash or travel cards on the bus if they wish
- Accept discount travel passes and adjust prices accordingly
- Enable passengers to rate their journey and easily provide feedback on their experience
- View current and past journey bookings

- Allow cancellation/alteration of journeys, including optional charges for late cancellations and no shows
- Provide a website through which passengers can also book journeys and manage their account

PRE-BOOKED JOURNEYS

- Enable passengers to pre-book journeys in advance
- Flexibly configure window in which journeys can be pre-booked (e.g. from up to 5 minutes before bus arrives to up to 3 months in advance)
- Enable passengers to pre-book journeys to either depart from their origin at a specified time, or arrive at their destination by a specified time
- Configure stricter on-time standards for 'Arrive by' requests where a passenger cannot be late (e.g. for travel connections or medical appointments)
- Configure pickup window given to passengers upon making a booking (a wider pickup window offers greater flexibility to optimize the overall service, while a narrower pickup window offers passengers greater certainty over when they will travel)
- Inform passengers of their exact pickup time a configurable number of minutes before boarding
- Show passengers alternative proposals for journeys outside their selected booking window, if the passenger's preferred journey can't be served
- Allow passengers to set up recurring (e.g. daily or weekly) bookings
- Show a calendar of all past and upcoming journeys, so passengers can easily see the latest status of their journeys, and edit their journeys directly through the calendar if desired

PASSENGER COMMUNICATIONS

- Confirm bookings via SMS and app notification once a journey is booked
- Provide real-time service information for upcoming journeys, showing the live vehicle location and accurate ETAs on a map in the app
- Show passengers the name and vehicle registration details of their driver in the passenger app
- Notify passengers via SMS about their upcoming journey (e.g. 'Bus is X minutes away', 'Bus is running Y minutes late', etc.), especially passengers who have booked by phone
- Send group messages to all passengers booked onto one or more vehicles
- Flexibly configure and show service messages in the app (e.g. wear face coverings, service disruption, incidents, etc.)
- Enable marketing to users via email, SMS, and app notifications, based on their travel habits or other characteristics
- Enable passengers and drivers to message one another via SMS

DYNAMIC DISPATCH AND ROUTING

- Route services efficiently and dynamically using real-time traffic information
- Only route vehicles along roads accessible to them
- Configure maximum passengers' maximum detour time, to ensure efficient routing and good service quality for all passengers
- Flexibly configure vehicle details (e.g. number of seats, available wheelchair spaces, etc.)
- Enable operators to print out schedules/manifests to facilitate shift planning
- Flexibly assign drivers and vehicles to different shifts and services
- Flexibly configure driver rest periods at designated locations
- Configure the system to reflect different needs of different passengers (e.g. additional boarding time for disabled passengers, wheelchair users, etc.)
- Give wheelchair passengers priority access to wheelchair-accessible vehicles if the service also includes non-wheelchair-accessible vehicles

DRIVER APP

- Enable drivers to clock on and clock off their shifts
- Give clear visual and audio directions for where the driver must travel
- Clearly show where passengers are being picked up or dropped off
- Enable drivers to confirm when a passenger has boarded their bus and been dropped off
- Provide drivers additional information about their passengers where necessary (e.g. passengers who need help boarding, etc.)
- Enable drivers to contact passengers directly when appropriate
- Enable drivers to communicate directly with the dispatcher
- Let drivers provide feedback about passengers, and note any concerns, issues, and compliments that arise on their shifts
- Show a summary of driver schedule/manifest clearly in the driver app

SERVICE CONFIGURATION

- Configure where and when passengers can travel based on the zone that they are traveling to/from
- Determine the optimal location of vehicle stopping locations based on rules set by RoadRUNNER Transit
- Store information about microtransit stops to help identify different stops
- Set and flexibly adjust fares based on time, location, and distance of travel, as well as passenger details (e.g. discounts for certain passengers or groups)
- Set fares that dis-incentivize passengers to use on-demand services for trips that could be served by regular, fixed-route buses
- Offer promotional codes that give passengers discounted journeys at specific times
- Offer travel passes that let passengers pay upfront for multiple journeys (e.g. 10 trips for \$15, unlimited travel for a month, etc.)
- Provide effective training in using the microtransit technology platform

MULTIMODAL INTEGRATIONS

- Integrate regular bus services into the app, and show passengers offers to travel from origin to destination by fixed-route as well as microtransit
- Base regular fixed-route journey offers on static timetables
- Show passengers an offer for only a fixed-route bus if that offer meets criteria set out by the RoadRUNNER Transit (e.g. bus must arrive within 30 mins, must be no more than 15 mins slower than the microtransit option, etc.), to enable the microtransit vehicles to only serve journeys that can't be served by the rest of the network
- Show passengers all the bus services from any given bus stop, allowing them to order a pre-booked microtransit journey to get them to their stop or station in time for their onward journey
- Integrate additional modes of transport as desired
- Integrate local transport/payment cards

REPORTING

- Provide a wide range of user-defined management reports
- Provide summary reports on driver activity (incl. hours driven, distance traveled, journeys completed, etc.)
- Produce bespoke reports on ad-hoc basis as needed
- Provide a visual representation of service usage and travel patterns, so managers can refine their on-demand service and make informed decisions about developing the wider public transport network
- Download complete data set for analysis in other tools used by RoadRUNNER Transit

Paratransit and Senior Transportation Technologies

These recommendations relate to the current ADA Paratransit and Senior Transportation service operated by Las Cruces.

IMPROVE TRIP ROUTING TO INCREASE THE NUMBER OF SHARED TRIPS, REDUCE THE COST PER PASSENGER, AND INCREASE THE CAPACITY OF THIS SERVICE

- **Priority: High**
- RoadRUNNER's ADA paratransit and Senior Transportation service operates using routes and schedules that maximize the number of shared trips by pooling passengers together. By optimizing routing, simulations have indicated it may be possible to use fewer vehicles for the same number of passenger trips, enabling RoadRUNNER to decrease its operating costs.

ALLOW BOOKING THROUGH MULTIPLE CHANNELS INCLUDING MOBILE PHONES AND A WEBSITE

- **Priority: High**
- Many agencies, including RoadRUNNER Transit, only allow paratransit bookings to be made through the call center, which can be time-consuming for passengers and costly for operators. Call centers also often have limited operating hours. To make the booking process more convenient and efficient, agencies could consider offering a website and/ or smartphone booking system.

ALLOW REAL-TIME VEHICLE TRACKING

- **Priority: High**
- RoadRUNNER Transit passengers are provided with a pickup window when booking a trip. During this time, they must watch for the vehicle and, in some cases, they may not be aware that their vehicle has arrived. By implementing technology that allows passengers to track their vehicle and journey progress (usually using a mobile phone or computer), passengers will have an improved overall transportation experience. Streamlined communication regarding the timing of pickups will result in fewer calls to dispatch, allowing staff to focus on booking trips rather than helping passengers find their vehicle.

ALLOW ON-DEMAND OR SAME-DAY BOOKINGS

- **Priority: High**
- Many passengers don't know their exact travel requirements until the day of travel. However, paratransit services usually require a passenger to book the day prior to travel. RoadRUNNER Transit could allow same-day requests using the existing paratransit fleet. They may be able to accommodate some requests on the same day without negatively impacting overall system performance or the experiences of other passengers, particularly during hours when demand is lower. However, this may cause an increase in demand and require a larger overall fleet as customers become aware of this feature.

ALLOW ELECTRONIC FARE PAYMENT

- **Priority: Medium**
- RoadRUNNER currently accepts cash, check, or tokens. Passengers may not have the correct change or have cash, check, or tokens, making it difficult to pay for a trip. If RoadRUNNER decides to no longer accept cash or check fares, this may reduce operating costs as cash handling is

typically a time-intensive process. RoadRUNNER Transit could develop or solicit a tool to allow fares to be paid electronically using a credit or debit card. This tool could allow features such as auto top-ups when a passenger's balance is low, and the purchase of multi-trip passes. For passengers without access to a checking account, RoadRUNNER Transit could accept cash at select locations, allow a passenger to store a balance on their account. Alternatively, RoadRUNNER could bill passengers on a periodic basis for completed trips.

STREAMLINED TRIP CONFIRMATION AND/OR CANCELLATION

- **Priority: Medium**
- Many trips, particularly recurring trips, are scheduled several days in advance. During that time, the passenger's needs may change and they may wish to cancel or reschedule. The inability to easily make changes or adjustments to trips places a burden on customers who make recurring trip requests. Furthermore, requests to reschedule or change current trips increase call center volumes. RoadRUNNER could provide automatic trip confirmations via email, SMS, and/or voice message. This software should allow users to cancel trips without having to call an operator. Giving passengers the ability to cancel trips themselves allows the dispatcher more time to address other issues.

PROVIDE A THIRD-PARTY BOOKING PORTAL FOR SENIOR CENTERS AND HEALTHCARE FACILITIES

- **Priority: Medium**
- Many passengers rely on paratransit services for trips to and from senior centers and medical facilities. RoadRUNNER Transit could provide such institutions in its service area with a third-party portal to book rides on behalf of paratransit users. Administrators at these institutions could enter the patient's name, address, and appointment time, and a ride could be booked on behalf of the patient that ensures that he or she will arrive at his or her appointment on time.

PROVIDE AUTOMATED TRIP UPDATES FOR CAREGIVERS, FRIENDS, FAMILY, AND PROVIDERS

- **Priority: Medium**
- Due to the flexible nature of paratransit and variability in traffic and road conditions, actual pickup and dropoff times may differ from initial estimates provided when booking. As caregivers, friends, and family members often also meet the vehicle at the start and end of each trip, they often find it difficult to know when the vehicle will be arriving. RoadRUNNER transit could offer an SMS notification system to inform designated contacts about a passenger's trip progress.

SOLICIT PASSENGER FEEDBACK AFTER EACH TRIP

- **Priority: Low**
- Many popular TNC and taxi services request feedback after each trip, allowing them to gather detailed data on the quality of each vehicle, driver, and route. This can help to improve service by identifying what works well and poorly for passengers. Typically, passenger feedback tools ask the passenger to rate the trip and also provide more detailed feedback on what went well or poorly. RoadRUNNER Transit could develop or solicit technology that allows passengers to submit feedback after each trip. This could be by one of several methods, such as an email or SMS message.

ALLOW PASSENGERS TO ACCESS RIDE HISTORY

- **Priority: Low**
- Many common transportation tools, including some paratransit technology platforms, allow passengers to access their trip history. This can be useful for many reasons, including trip reimbursement from a third party. RoadRUNNER Transit could develop or solicit software to allow passengers to access their trip history, or incorporate trip history into the existing trip booking platform.