FINAL
CART Route Optimization Study

WORKING PAPER 1: EXISTING CONDITIONS
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1. Introduction

The Central Arizona Regional Transit (CART) system provides intercity feeder transit service between Casa Grande, Coolidge, Florence, and Eloy in Pinal County, Arizona. CART Ridership has declined over recent years, an issue that was exacerbated by the COVID-19 pandemic and has resulted in the system providing less community benefit for the investment. The Sun Corridor Metropolitan Planning Organization (SCMPO) is conducting a study in partnership with the City of Coolidge that will develop recommendations for improving the efficiency and ridership of the CART system.

The 2016 Coolidge Transit Plan took an in-depth look at both the CART and Cotton Express transit services, operated by the City of Coolidge, and developed recommendations for expanding the coverage and usability of these systems. Since 2016, there have been updates to the CART route to enhance connectivity and transit coverage. There has also been a large amount of growth and employment development within the region since the 2016 study. The combination of these factors means that reevaluating the CART routing against regional demographics and destinations could reveal opportunities for improving the efficiency and attractiveness of the system to riders.

Goals and Objectives

Goals of the CART Route Optimization Study are:

Evaluate the current system, including the current routing, ridership, where transit is most needed, and how CART compares to similar systems.

Identify constraints of CART's staff, vehicle inventory, and funding to recommend improvements to the efficiency of the CART route.

Evaluate the existing organizational structure of the City of Coolidge Transit staff and associated administrative activities to potentially reduce time or cost of administration of the CART system.

Design marketing materials meant to aid the City of Coolidge in increasing awareness and ultimately ridership of the CART system.

Specific objectives and project steps include:

- Review data and findings from the 2016 Coolidge Transit Study, as well as annual ridership surveys, to determine if additional information should be collected through a community survey.
- Evaluate the CART system's performance by conducting a transit propensity analysis, a peer system analysis, and analyze CART ridership data to identify potential areas for improvement.
- Develop recommendations with the goal of improving efficiency and ridership while ensuring operating expenses are used wisely.
- Engage the public on the draft recommendations to ensure that both existing and potential riders are in favor of the proposed changes.
- Design system marketing materials to increase the public's knowledge of the system, including where it serves and when it runs.

Purpose of this Document

The purpose of the Existing Conditions document is to provide background information on the status of CART, including services, safety, transit assets, route system performance, fares, area demographics specific to

transit propensity, and financial performance. These areas provide a baseline for understanding the strengths and challenges of the CART system. The information will provide insight for the development of recommendations for the Route Optimization Study.

Study Area

The CART Route Optimization Study area includes portions of the Cities of Coolidge, Casa Grande, and Eloy, as well as a portion of the Town of Florence and unincorporated Pinal County. **Figure 1** shows the study area and the existing CART route alignment.

Figure 1. Study Area
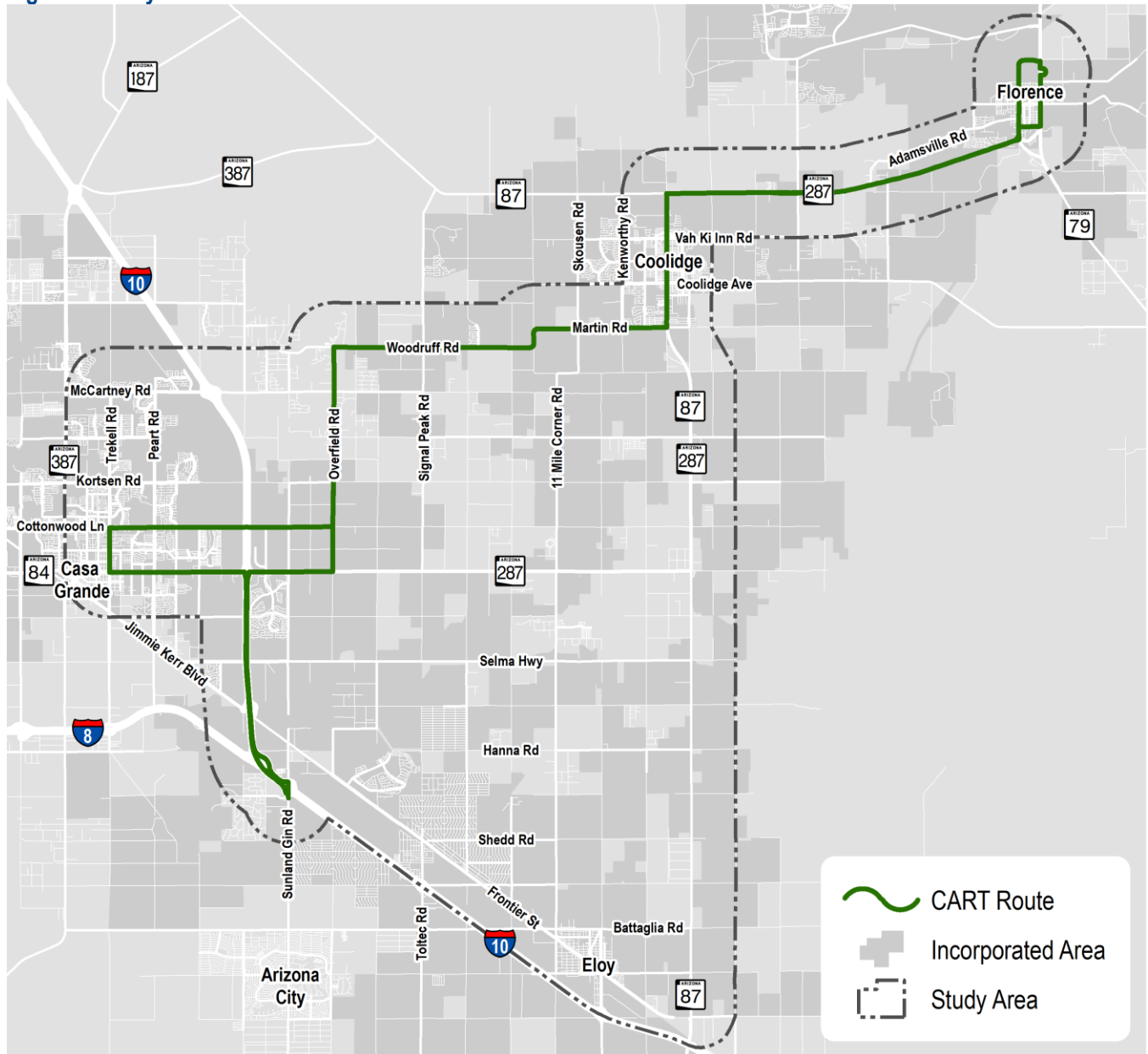
The study area primarily consists of a one-mile buffer around the existing CART route alignment, with two additional pieces:

- The area along McCartney Road and Trekell Road north and west of the existing alignment where CART service has historically run to evaluate if moving the service to Cottonwood Lane misses likely riders or major activity centers.
- The area east of the existing CART route and north of Interstate 10 (I-10) to incorporate much of Eloy and southern Coolidge. This area was included because there is a demonstrated need for additional transit service between Eloy and Coolidge in the SCMPO Eloy Transit Feasibility Study.

Other Recent Transit Studies

Eloy Transit Feasibility Study (2019)

The Eloy Transit Feasibility Study explored the city's current transit needs and identified opportunities to improve transit readiness for future services. Goals of the study included:

- Provide internal and external mobility for the residents of Eloy
- Implement cost effective transit opportunities where need is present
- Provide efficient pick up and drop off services to riders on time and at established intervals

The study resulted in a short-term transit plan for the Town, identifying key destinations within central Eloy, and connecting to Toltec, Robson, and Casa Grande at Promenade Mall, Banner Health, and Walmart. The feasibility study identifies a need for transit service connecting downtown Eloy and shares the importance of partnership with CART to provide service to the area and connection the region.

Casa Grande Transit Development Plan (2019)

The City of Casa Grande performed a comprehensive Transit Development Plan which evaluated existing and future conditions, developed short-term recommendations, and created a long-term vision for transit in the city. The primary short-term recommendation was to implement a deviated fixed route service but after plan completion, the City pursued a demand-response system serving central Casa Grande. This service will accommodate short-distance trips with curb-to-curb service.

As a result of the Transit Development Plan and further discussion, the City of Casa Grande is implementing the recommended demand-response transit service. The demand-response service area is shown in **Figure 2**. The proposed service area will encompass the existing stops CART maintains in Casa Grande.

Figure 2. Casa Grande Demand Response Service Area

2. CART Service Overview

CART is a fixed-route service that connects the Cities of Coolidge, Casa Grande, and Eloy, the Town of Florence, and unincorporated Pinal County between these areas. The service is divided into two routes: Eastbound and Westbound, as shown in **Figure 3**. The Eastbound route begins at the intersection of Florence Boulevard and Trekell Road in central Casa Grande and ends at the Pinal County Courts Complex in Florence. The Westbound Route has the opposite starting and ending locations, forming a loop between the two routes.

Figure 3. Existing CART Service
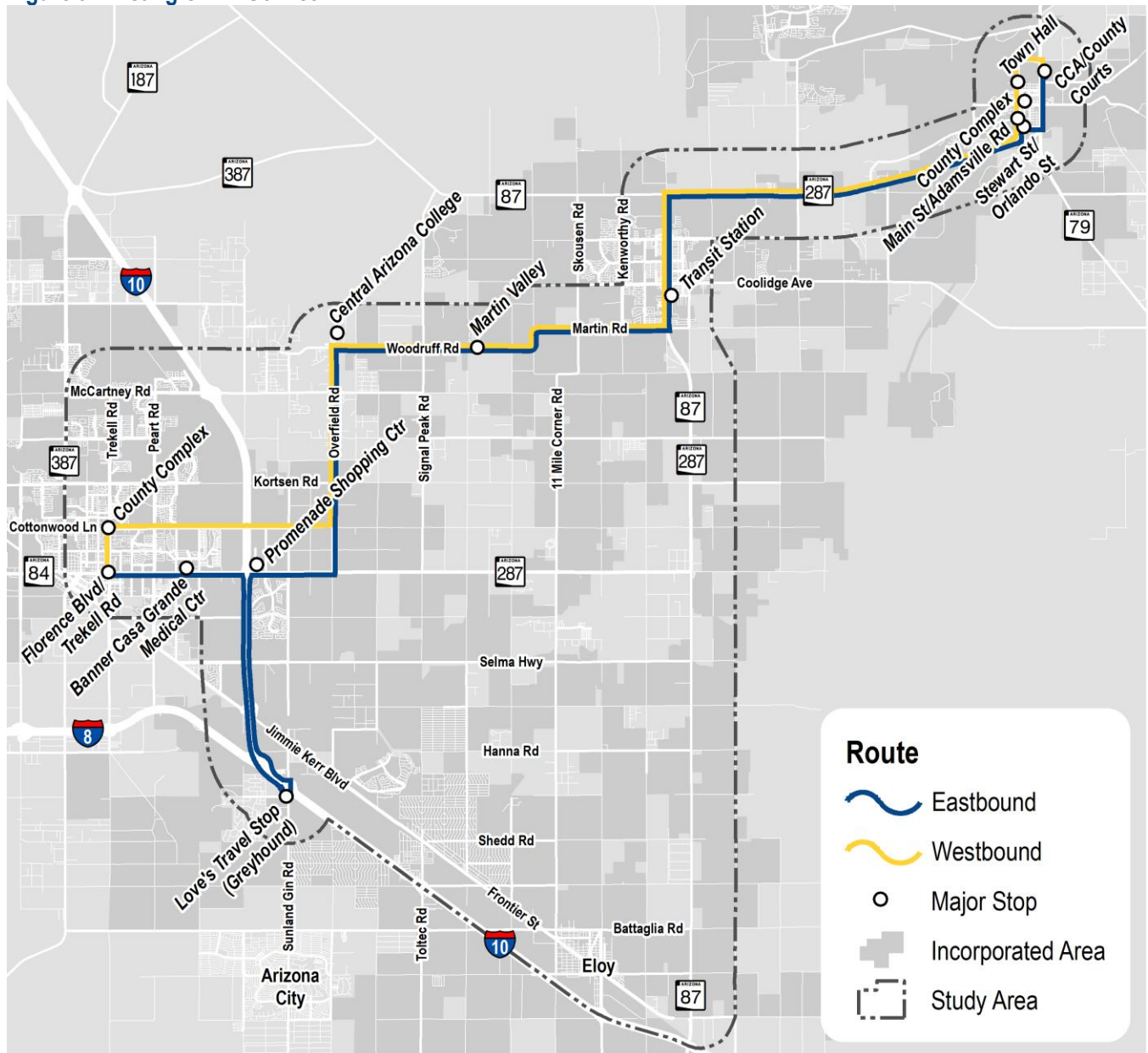
There are five loops of the Eastbound and Westbound routes each day, which take approximately 2.5 hours each. **Table 1** provides the schedule for the five standard loops on the Eastbound and Westbound routes.

Table 1. CART Schedule

Westbound Route						
Town Hall – Florence	-	7:04 AM	9:50 AM	12:36 PM	3:22 PM	6:10 PM
County Complex – Florence	-	7:07 AM	9:53 AM	12:39 PM	3:25 PM	6:13 PM
Main St/Adamsville Rd	-	7:10 AM	9:56 AM	12:42 PM	3:28 PM	6:16 PM
Transit Station – Coolidge	-	7:30 AM	10:16 AM	1:02 PM	3:50 PM	6:36 PM
Martin Valley	-	7:40 AM	10:26 AM	1:12 PM	4:00 PM	6:46 PM
Central Arizona College	-	7:50 AM	10:36 AM	1:22 PM	4:10 PM	6:56 PM
County Complex – Casa Grande	-	8:07 AM	10:53 AM	1:39 PM	4:27 PM	7:13 PM
Florence Blvd/Trekell Rd	-	8:12 AM	10:58 AM	1:44 PM	4:32 PM	7:18 PM
Eastbound Route						
Banner Casa Grande Medical Ctr	-	8:21 AM	11:07 AM	1:53 PM	4:41 PM	7:27 PM
Love's Travel Stop (Greyhound)	-	8:36 AM	11:22 AM	2:08 PM	4:57 PM	7:42 PM
Promenade Shopping Ctr	-	8:47 AM	11:33 AM	2:19 PM	5:07 PM	7:53 PM
Central Arizona College	-	9:00 AM	11:46 AM	2:32 PM	5:20 PM	8:06 PM
Martin Valley	-	9:06 AM	11:52 AM	2:38 PM	5:26 PM	8:12 PM
Transit Station – Coolidge	6:35 AM	9:21 AM	12:07 PM	2:53 PM	5:41 PM	8:22 PM
Stewart St/Orlando St	6:53 AM	9:39 AM	12:25 PM	3:11 PM	5:59 PM	-
CCA/County Courts	7:00 AM	9:46 AM	12:32 PM	3:18 PM	6:06 PM	-

In addition to the standard Eastbound and Westbound routes, CART runs two Commuter routes each day, one in the morning and one in the afternoon. The Commuter routes follow the same alignment as the Eastbound and Westbound routes, except for the diversion on I-10 to the Love's Travel Stop to access Greyhound service. **Table 2** provides the schedule for the AM and PM Commuter routes.

Table 2. CART Commuter Route Schedule

AM Commuter Route		PM Commuter Route	
Transit Station – Coolidge	5:05 AM	Transit Station – Coolidge	4:40 PM
County Complex – Casa Grande	5:37 AM	Stewart St/Orlando St	4:58 PM
Banner Casa Grande Medical Ctr	5:49 AM	CCA/County Courts	5:04 PM
Promenade Shopping Ctr	5:54 AM	Town Hall – Florence	5:04 PM
Transit Station – Coolidge	6:19 AM	County Complex – Florence	5:11 PM
Stewart St/Orlando St	6:37 AM	Main St/Adamsville Rd	5:13 PM
CCA/County Courts	6:41 AM	Transit Station – Coolidge	5:32 PM
Town Hall – Florence	6:45 PM	Promenade Shopping Ctr	6:01 PM
County Complex – Florence	6:47 AM	Banner Casa Grande Medical Ctr	6:08 PM
Main St/Adamsville Rd	6:49 AM	County Complex – Casa Grande	6:23 PM
Transit Station – Coolidge	7:07 AM	Transit Station – Coolidge	6:59 PM

3. System Assessment

Nine performance indicators were examined to assess the performance of the existing CART service:

- Fleet Management
- Annual Ridership
- Ridership by Stop
- Revenue Miles per Capita

- Passengers per Revenue Mile
- Cost per Revenue Mile
- Cost per Trip
- Fares

Data used to assess each performance indicator is based on data provided by CART that is reported to the National Transit Database (NTD) and is confirmed through monthly reports from CART to the Arizona Department of Transportation (ADOT). NTD data reporting is based on the fiscal year and is standardized across agencies, allowing for accurate peer system analysis.

Data from NTD was collected for a five-year period, spanning from 2015 to 2019. 2020 was included separately due to the impact of the COVID-19 Pandemic. NTD data was also used to identify four peer systems.

Peer Systems Development

Peer system candidates were identified to compare CART's performance to routes with similar characteristics. Candidates for peer systems were identified by filtering agencies reporting to NTD by commuter bus routes with similar service characteristics. A range of geographic locations were chosen to accurately compare the route to peer systems across the West. The peer systems are identified below, with brief descriptions of the agencies and their commonalities with CART.

Madera County Connection Transit
Madera, CA

Rural Resources Community Action
Colville, WA

Columbia Area Transit
Hood River, OR
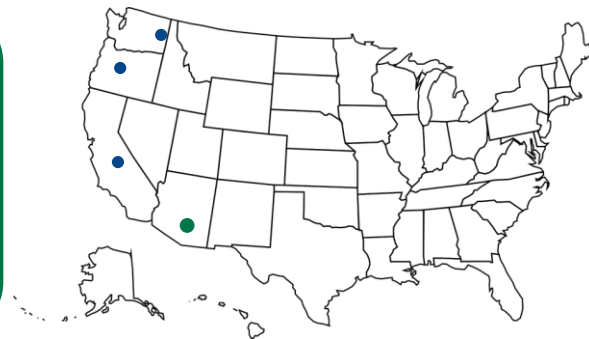
Madera County Connection Transit (MCCT)

The MCCT system is comprised of four fixed routes, serving a local college campus as well as Eastin Arcola, Chowchilla, and Eastern Madera County, CA. The transit system has a total of 16 stops along all routes. The eastern Madera County route provides two morning routes and one evening route at the various stops. The eastern Arcola route and offers one morning and evening route. The current services do not provide weekend service for riders. The route spanning from Chowchilla to Fairmead offers two morning routes, two evening routes, and one mid-day route. The transit agency offers fare per ride, reduced fare for children, ticket booklets, and monthly passes. The MCCT system was selected as a peer system due to its intercity service of a rural area in addition to serving a local college campus, similar to CART's service of Central Arizona College.

Rural Resources Community Action (RRCA) Commuter Bus

The RRCA Commuter Bus services the towns of Colville, Kettle Falls, and Chewelah, WA. The commuter bus offers two routes, connecting Colville to Kettle Falls and Colville to Chewelah. The fixed route between Colville to Kettle Falls offers two morning and evening routes, respectively, with a maximum of five stops per one-way route. The route connecting Colville to Chewelah runs once in the morning and once in the afternoon, stopping

at six stops from Chewelah to Colville and four stops from Colville to Chewelah. There is currently no weekend service for the commuter bus routes. The RRCA Commuter Bus was selected as a peer system for CART because the areas serviced are rural populations and the length of the route is comparable to CART.

Columbia Area Transit (CAT)

The CAT system, serving Hood River, OR is comprised of one route with 13 stops along the route. The route is serviced in 45-minute intervals from 8:30 AM to 7:00 PM on weekdays, with reduced service times on weekends, providing service from 9:15 AM to 4:00 PM. The CAT system added the Columbia Gorge Express Bus in November of 2018, resulting in increases in performance metrics. The CAT system was identified as a peer system due to the service schedule and the Hood River route length being comparable to CART.

Fleet Management

CART has a fleet of five medium-duty buses. The agency owns one additional nonrevenue vehicle. The Federal Transit Administration (FTA) sets a default benchmark to determine the state of good repair for vehicle fleets, called the Useful Life Benchmark (ULB). States can either choose to use FTA's default ULB or can determine their own applicable benchmarks. The State of Arizona has opted to use FTA's default benchmark, using both years and/or mileage to determine the

> **Note:** No peer analysis was performed for fleet management as fleet and ULB information is not readily available through NTD.

replacement of a vehicle. The ULB of a vehicle is dependent on the vehicle type and assesses each vehicle by mileage and/or service years. Medium-duty buses have a ULB of 7 years or a total mileage of 200,000, the useful life mileage (ULM) of the vehicle type.

When a vehicle reaches the ULB threshold, replacement is recommended, per FTA. The assessment of CART's fleet for ULB and ULM is shown in **Table 3**. CART's existing fleet of five vehicles has three vehicles that have not reached their useful life benchmark with two vehicles exceeding ULB. Vehicle 16 was recently acquired to replace Vehicle 13; Vehicle 13 will be removed from service when the City of Coolidge receives clearance from ADOT.

**Table 3. CART Revenue Vehicles Remaining Service Life**

Vehicle Number	Year	Mileage	Minimum ULM	Remaining ULM	Minimum ULB (Years)	Years in Service	Remaining Service Life
Vehicle 12	2013	366,890		-83%		9	-2
Vehicle 13*	2013	436,747		-118%		9	-2
Vehicle 14	2018	136,271	200,000	32%	7	4	3
Vehicle 15	2021	28,549		86%		1	6
Vehicle 16	2021	27,417		86%		1	6

To be removed from fleet once approval from ADOT is received.
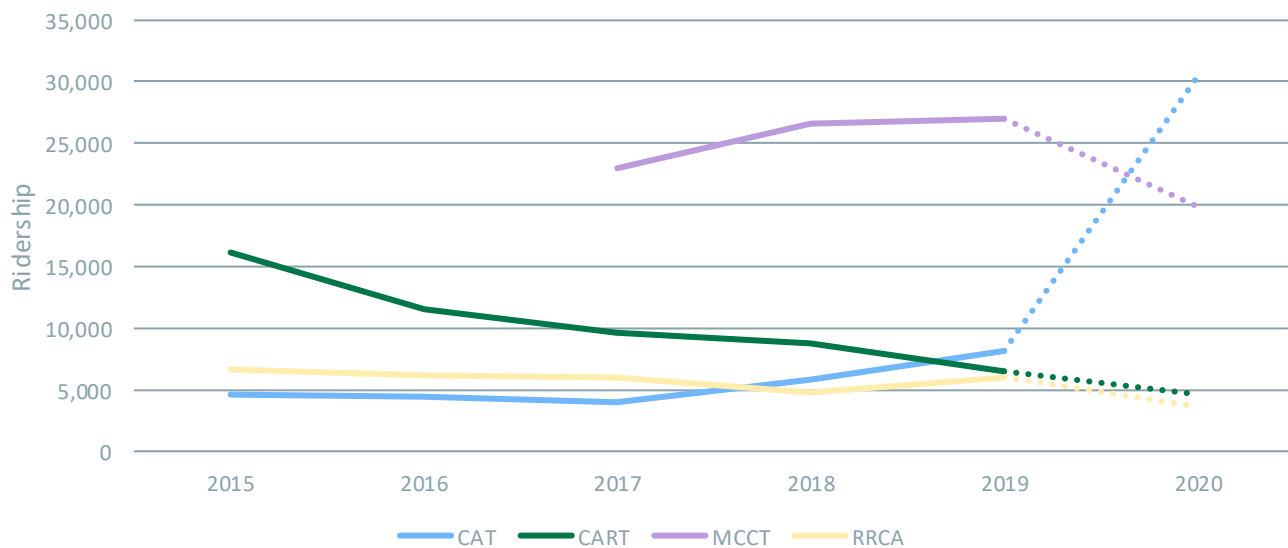
Annual Ridership

Annual ridership depicts the number of passenger trips the service has provided during a given year. CART ridership for 2015 through 2020 is shown in **Figure 4**. 2020 ridership is shown with a dashed line to reflect that service was likely heavily impacted by the COVID-19 pandemic and may be unrepresentative. The service's ridership has been declining over the past five-years, with the highest reduction in ridership observed between 2015 and 2016 as well as 2019 and 2020, with a decline of 29%.

Figure 4. CART Annual Ridership
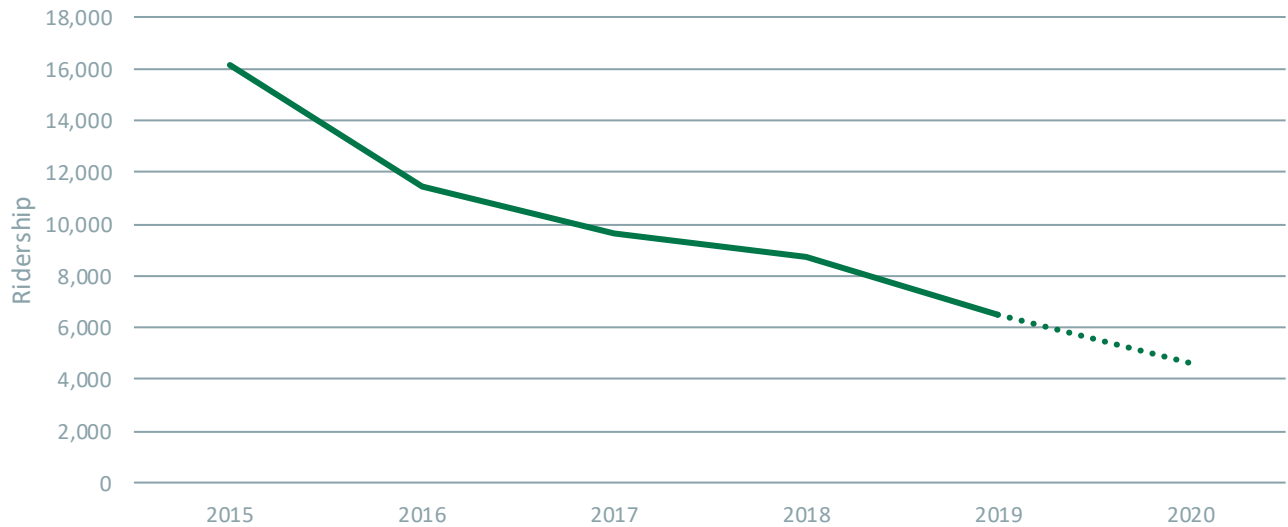
Peer agencies were assessed for annual ridership trends from 2015 through 2020. Annual ridership for the peer systems are shown in **Figure 5**.

**Figure 5. Annual Ridership Peer System Comparison**

Annual ridership for MCCT is highest of the observed peer systems. The transit agency also has the highest drop in ridership from 2019 to 2020, with a 26% ridership reduction. RRCA ridership has slowly declined over the observed five-year period and experienced an increased reduction between 2019 and 2020. CAT ridership steadily increased over the observed five-year period, with an increase of 73% from 2019 to 2020 (likely a result of adding the Columbia Gorge Express route).

Compared to peer systems, CART ridership has been typically higher than RRCA and CAT, with a ridership of greater than 15,000 riders in 2015 but declined at a faster rate than its peers. CART's annual ridership declined by approximately 71% over 2015 through 2020, whereas RRCA declined at 45% and MCCT declined by 13% over five years, and CAT saw an increase in ridership.

Ridership by Stop

Monthly boardings and deboardings were analyzed to observe ridership at each stop throughout the route. Data was utilized from October of 2021 for a representative sample of typical monthly ridership. Boarding ridership was highest at the Transit Station in central Coolidge. The next highest boardings were observed at Pinal County Courts and the County Complex in Casa Grande. Lowest boardings were seen at the Stewart St/Orlando St stop, Martin Valley stop, and the Florence Library. Boardings by stop are shown in **Figure 6**.

Figure 6. Boardings by Stop
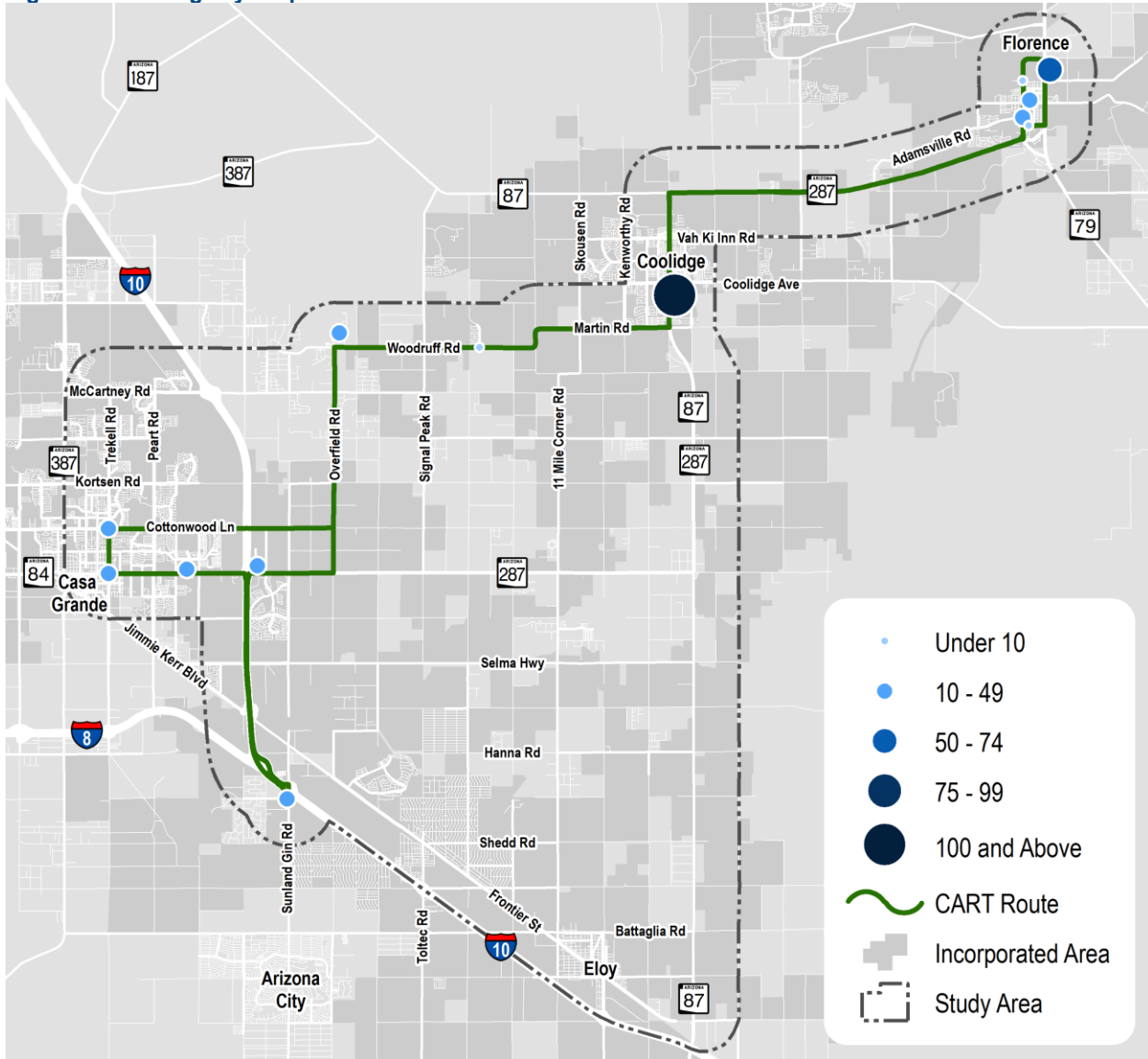
Deboardings were highest at the Transit Station in Central Coolidge, with 240 riders deboarding over the course of a month. The County Complex in Casa Grande, and the stop at Banner Casa Grande Medical Center also had relatively high deboardings. The lowest deboardings were observed at the Florence Library and Martin Valley, where 1 and 0 deboardings were observed, respectively. Deboardings by stop is shown in **Figure 7**.

Figure 7. Deboardings by Stop
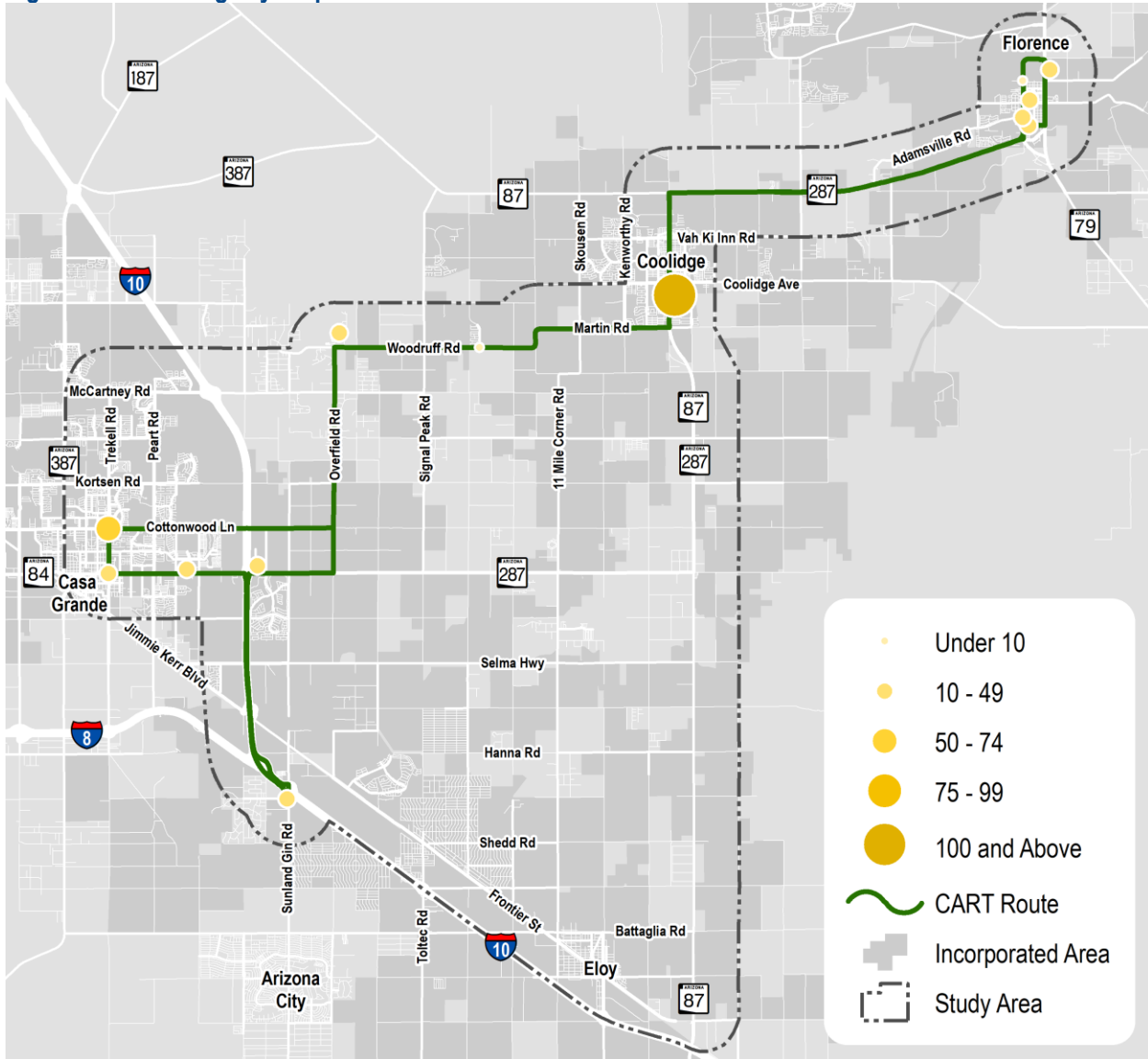
Revenue Miles per Year

Revenue miles per year defines the number of miles traveled by paying passengers over the course of a year. Revenue miles for CART and the associated peer systems are shown in **Figure 8**. MCCT has the highest revenue miles of the peer systems over the observed years. CAT and RRCA observed similar annual revenue miles from 2015 to 2018. CAT annual revenue miles increased by 198% percent between 2018 and 2019, this increase is likely due to the addition of the Columbia Gorge Express Bus in November of 2018.

Figure 8. Revenue Miles per Year
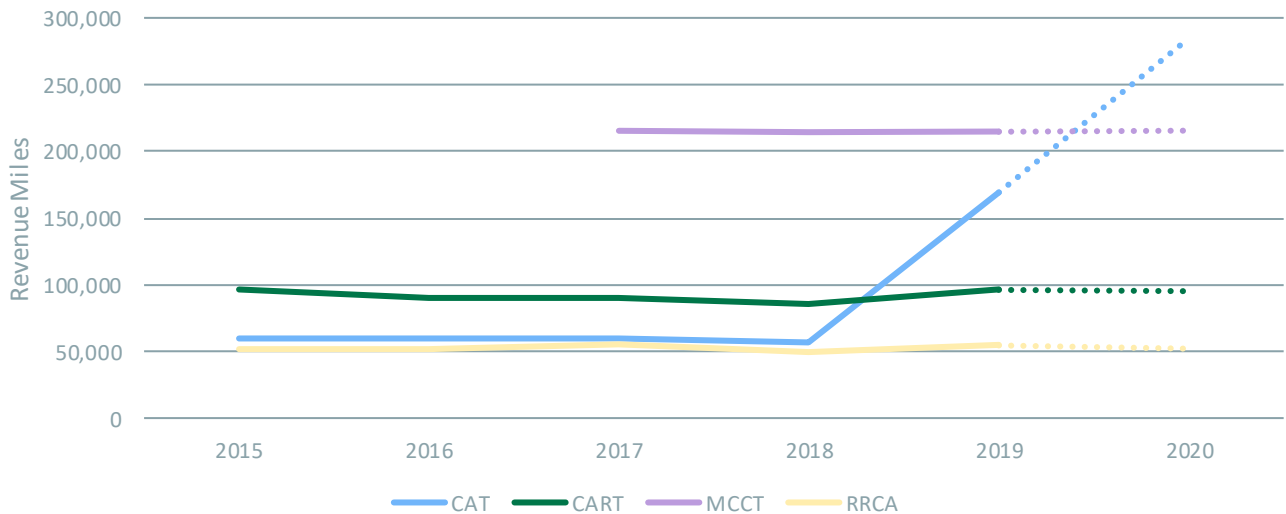
Revenue Miles per Capita

The metric of revenue miles per capita captures how much service is delivered based on the population within the service area. The population used to calculate revenue miles per capita is from the 2020 Census and includes the population of Casa Grande, Coolidge, and Florence. Eloy was not included in the population total since CART only serves the very northwest corner of the city and does not serve any of the population centers in Eloy. CART's and its peer systems revenue miles per capita for 2015 through 2020 are shown in **Figure 9**.

Figure 9. Revenue Miles per Capita per Year
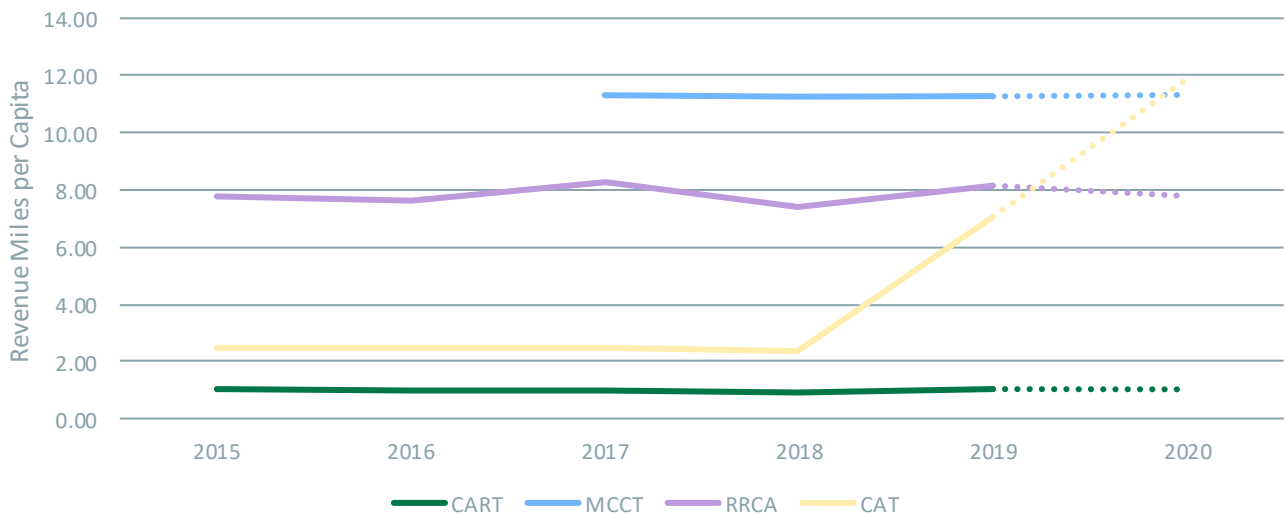
CART has the lowest revenue miles per capita, with a ratio of 1.03 in 2019 compared to an average of 8.82 for the peer systems. CART's revenue miles from 2015 to 2020 stayed relatively constant, with a percent change of -1%. Average revenue miles over the observed five-year period were 92,097 revenue miles per year.
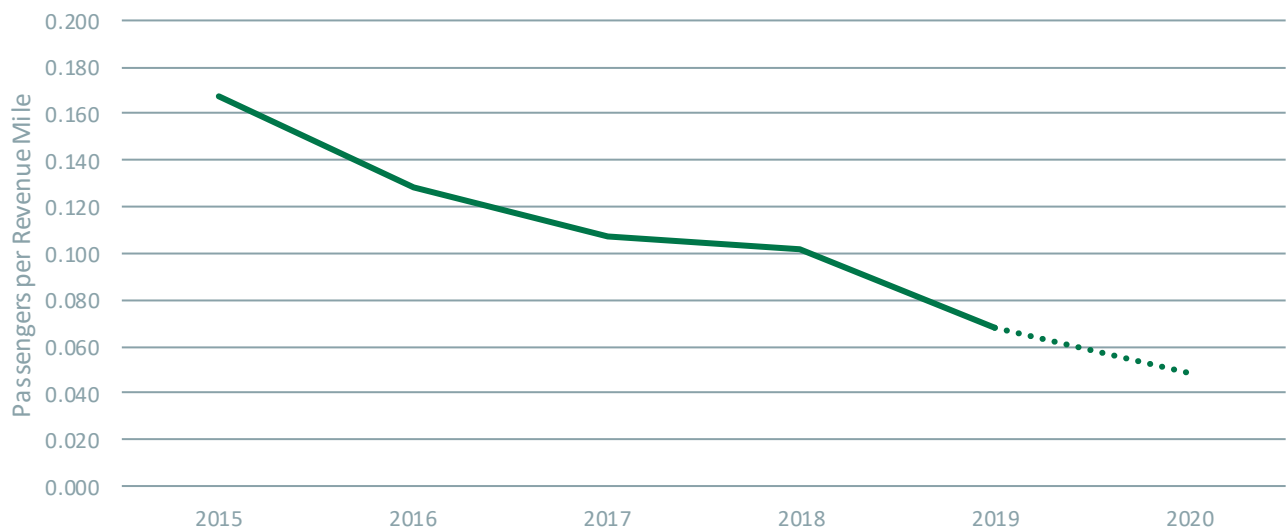
Passengers per Revenue Mile

Passengers per revenue mile compares the total number of passengers served to the number of revenue miles operated. This metric indicates how productive the service is per mile. Passengers per revenue mile varied over time, with the highest passengers per revenue mile in 2015 at 0.17. In 2019, the CART's commuter route carried 0.06 passengers per revenue mile, decreasing to 0.05 passengers per revenue mile in 2020. From 2015 through 2020, CART serviced an average of 0.1 passengers per revenue mile. CART's passengers per revenue mile from 2015 to 2020 is shown in **Figure 10**.

> **Peer Systems Average Passengers per Revenue Mile:**
>
> **0.1**

Figure 10. Passengers per Revenue Mile

All peer systems maintained a metric of 0.1 passenger per revenue mile from 2015 through 2019, although the average passengers per revenue mile in 2019 dropped from 0.1 to 0.067. A similar decrease in passengers per revenue mile was observed with CART in 2019, with 0.068 passengers per revenue mile.

Cost per Revenue Mile

Cost per revenue mile analyzes the operating cost of the service compared to the number of service miles during a given year. In 2015, CART's cost per revenue mile was $2.63, reaching a peak cost in 2018 of $3.06, and reducing back to $2.21 per revenue mile in 2019. In 2020, CART's cost per revenue mile increased 7%, likely due to the impacts of the COVID-19 pandemic.

Table 4. Average Cost per Revenue Mile

Transit System	Average Cost per Revenue Mile
CART	**$2.58**
MCCT	$2.57
RRCA	$3.21
CAT	$2.68

The peer systems were evaluated against CART for cost per revenue. Over the observed six-year period, CART had a relatively low average cost per revenue mile compared to the analyzed peer systems, as shown in **Table 4**.

On average, RRCA had the highest cost per revenue mile, with an average of $3.21 per revenue mile over the years surveyed. RRCA and CAT had varying cost per revenue mile metrics over the five-year period, while the annual cost per revenue mile of MCCT stayed relatively constant, with an average of $2.68 per service mile. The cost per revenue mile from 2015 to 2019 for CART and the peer systems are shown in **Figure 11**.

Figure 11. Cost per Revenue Mile
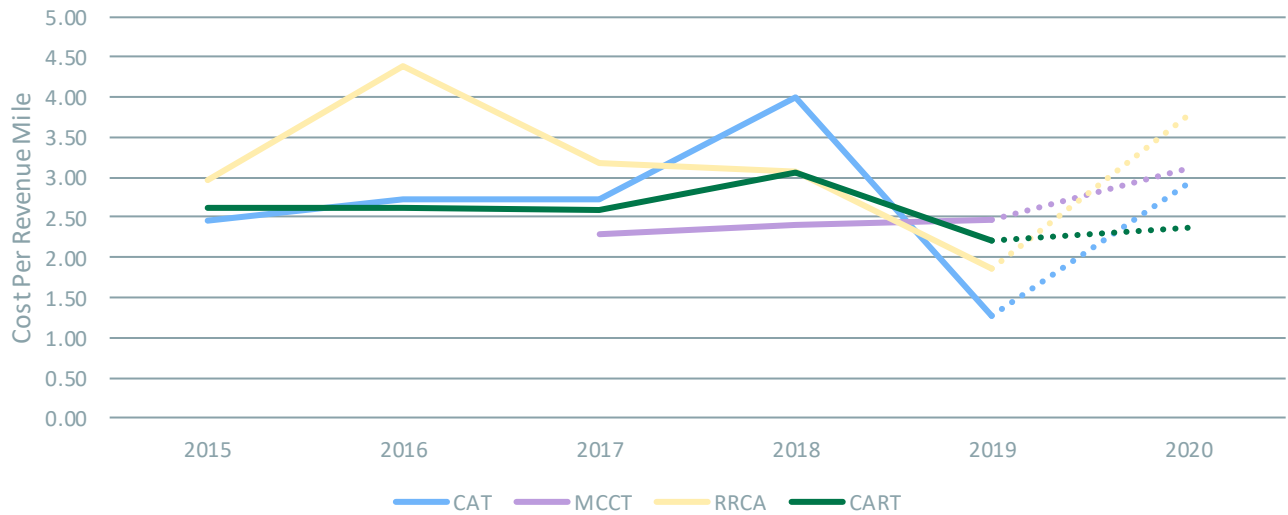
Cost per Trip

Cost per trip assesses the operational costs of service compared to the number of trips provided annually. This metric aids in indicating how efficient the system delivers service. CART's cost per trip was lowest in 2015, with each trip costing $15.68, and highest in 2020 with a cost of $48.67, an increase of 68% over six years. The highest increase in cost per trip was observed between 2019 and 2020, with an increase of $15.93 per trip, likely due to a reduction in ridership from the COVID-19 pandemic. The CART system also incurred additional costs for COVID-19 prevention measures, such as shields, masks, and hand sanitizer on buses. A comparison of CART's cost per trip and peer systems from 2015 to 2019 is shown in **Figure 12**.

Figure 12. Cost per Trip
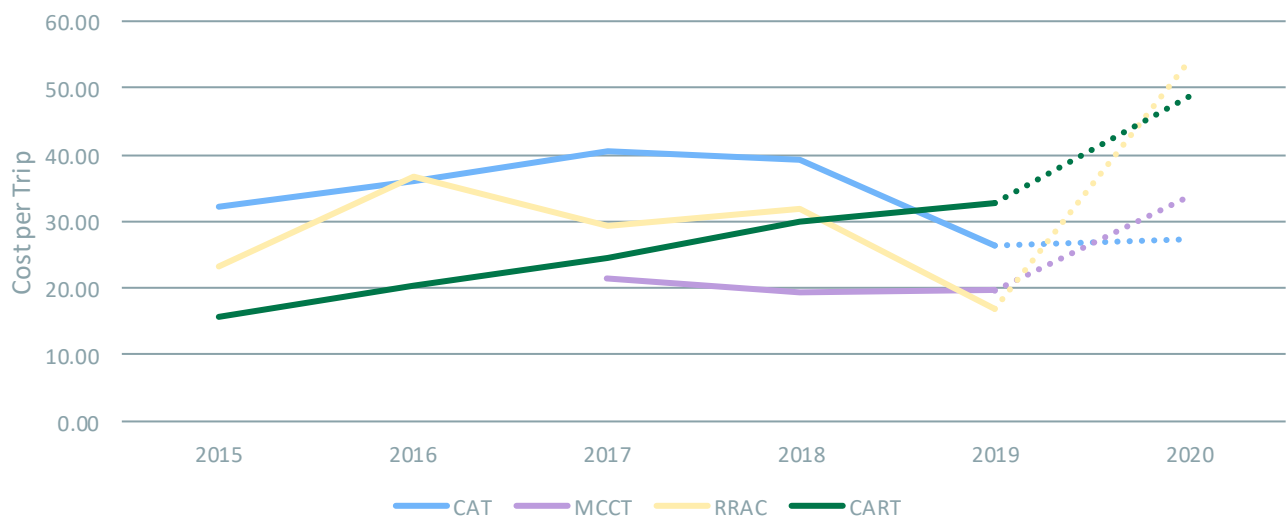
The peer systems costs per trip range from $16.87 per trip to $53.96 per trip over the observed six-year period. Of the peer systems analyzed, MCCT has the lowest average cost per trip, with an average of $23.52 per trip. MCCT also had the steadiest cost per trip over time, whereas the other peer systems were more variable. The RCCA route cost per trip dropped to the lowest of the peer systems in 2019 but increased substantially in 2020 likely due to the impacts of the COVID-19 pandemic.

The average cost per passenger trip for all peer systems was $30.49, while CART's average trip was $28.63 per trip. CART typically has a lower cost per trip compared to peer systems, though CART's cost has been steadily increasing and the peer systems have been trending down. In 2019, the peer systems had an average cost per trip of $20.95 while CART reported a cost per trip of $32.74.

Fares

CART fares are dependent on the characteristics of the rider; there are fares specific to children 12 and under, students, adults, and senior or disabled citizens. Fares also are dependent on the type of ride. CART users can purchase fare for a one-way trip, daily, or monthly use. The associated fares for each rider and fare combination are shown in **Table 5**.

Table 5. CART Route Fares

Fare	One-Way Fare	Daily Fare	Month Fare
Ages 2 and Under	Free		
Children 12 and Under or Students	$1.00	$2.00	$30.00
Adults (Ages 13-54)	$2.00	$4.00	$60.00
Senior (55 and older)/Disabled	$2.00	$4.00	$60.00

Fare options vary across the peer systems. The fares and passes available to CART and its peer systems are shown below in **Table 6**.

Table 6. Comparison of Fares

Peer System	One-Way Fare	Daily Fare	Month Fare
Madera County Connection Transit	$2.00	-	$40.00
Rural Resources Community Action	$0.50	-	$40.00
Columbia Area Transit	$1.00	-	
Average	**$1.17**		**$40.00**
CART	**$2.00**	**$4.00**	**$60.00**

CART provides a wide variety of fare options for its users compared to peer systems. Peer systems analyzed had an average daily fare of $1.17 per ride. Monthly fare amongst peer systems charged $40.00 per month. For the available fares that are common across CART and its peer systems, CART has a higher fare charge than commonly observed from the peer systems.

Farebox Recovery Ratio

The farebox recovery ratio encompasses the amount of revenue generated through fare collection compared to the total operating costs of the system. This ratio determines whether current fare rates are appropriate for the system.

The CART system had a farebox recovery ratio of 3.83% in 2019, a decline from 2015's farebox recovery ratio of 14.83%. A few factors in 2019 negatively impacted CART's farebox recovery ratio in 2019, including a high percentage of monthly pass users and free ride promotions.

In 2019, the average farebox recovery ratio among the peer systems was 7.2%, approximately 4.4% above CART's observed ratio. CAT had the highest farebox recovery ratio, with an average of 14.7%. The farebox recovery ratios for the peer systems are shown in **Table 7**.

Table 7. CART and Peer System Farebox Recovery Ratios (2015-2020)

Peer System	2015	2016	2017	2018	2019	2020	Average
Madera County Connection Transit	-	-	8.2%	8.4%	8.9%	5.7%	**7.8%**
Rural Resources Community Action	1.7%	1.7%	1.4%	1.2%	2.6%	1.1%	**1.6%**
Columbia Area Transit	26.8%	12.1%	10.7%	16.6%	10.1%	11.8%	**14.7%**
CART	14.83%	6.82%	5.43%	3.99%	3.83%	2.84%	6.3%

Key Takeaways

The performance indicators observed for CART and its peer systems are provided in **Table 8** to identify key takeaways for CART's existing conditions. The performance indicators show that CART has seen a decrease in both revenue and ridership over the observed period and is underperforming compared to peer systems.

Table 8. Peer System Analysis Key Takeaways

Service Indicators	CART Performance (2019)	Peer System Average (2019)	CART vs Peer Systems Performance Comparison
Annual Ridership	6,491	13,723	✗
Revenue Miles	96,085	146,073	✗
Revenue Miles per Capita	1.03	8.82	✗
Passengers per Revenue Mile	0.067	0.068	✗
Cost per Revenue Mile	$2.21	$1.87	✗
Cost per Trip	$32.74	$20.95	✗
Farebox Recovery Ratio	3.83%	7.2%	✗

4. Transit Propensity

A transit propensity analysis was conducted to identify areas of potential transit demand within the study area. This section outlines the transit propensity analysis methodology and presents the transit propensity analysis results.

Methodology

Transit propensity represents people's potential inclination or tendency to utilize transit. Historically, transit propensity is evaluated considering demographic groups that have been shown to have a higher-than-average tendency to use transit. These demographic groups include women, minority populations, low-income households, disabled persons, immigrants, persons age 65 and older, and persons age 19 to 29. The methodology is based on research documented in Transit Cooperative Research Program (TCRP) Report 28[1].

Transit demand is also affected by population and employment density – a higher population density and employment density correlates with a greater demand for transit. In addition, the CART transit propensity analysis considers population density, employment density, and proximity to parks, bus stops, schools, colleges, and major shopping areas.

The propensity analysis methodology divides the study area into five-acre hexagonal cells. A propensity score was calculated for each cell. Scores range from 0 to 30 and are based on demographic data (25 out of 30 points) and proximity to destinations (5 out of 30 points) as outlined in the following sections.

Demographic Transit Propensity

Demographic data for Pinal County were obtained from the United States Census Bureau. **Table 9** shows demographic factors (based on TCRP Report 28) used in the analysis along with transit indices for each factor. The transit index represents the change in transit demand per person due to the factor. A propensity score was calculated by multiplying the transit index by the corresponding factor's block group population. These values were summed up for each block group, as illustrated in the following equation:

$$Demographic\ Propensity\ Score = Population\ Density + \sum Transit\ Index\ x\ Population\ Subgroup$$

Demographic propensity constituted 25 out of 30 points of the total propensity. The 95th percentile score and above received 25 points. Scores less than the 95th percentile were factored to be a percentage of the 25 possible points based on score relative to the 95th percentile score.

Table 9. Transit Propensity Demographic Factors

Demographic Factor	Transit Index
Population Density (Population / Square Miles)*	
Employment Density	0.60
Gender – Male	-0.15
Gender – Female	0.18
Race – White	-0.32
Race – Black	1.72
Race – Asian	0.74
Race – Hispanic	0.73
Households with No Car	4.76
Households with Car	-0.32
Households below Poverty Line	0.24

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[1] http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_28-a.pdf

Demographic Factor	Transit Index
Households above Poverty Line	-0.23
Immigrant	1.08
Non-Immigrant	-0.16
Mobility Limitation	1.14
Work Disabled	0.25
Age – 19 to 29	0.14
Age – 65 and above	0.05

Calculated differently than other factors

Proximity Transit Propensity

Destinations such as schools, colleges, parks, shopping centers, and bus stops can attract transit riders. **Table 10** shows each location type that was used to determine additional proximity transit propensity. Proximity transit propensity constituted 5 out of 30 points of total propensity. If a hexagonal cell was within ½ mile of any of the proximity locations, that cell was given the additional corresponding points.

Table 10. Transit Propensity Proximity Factors

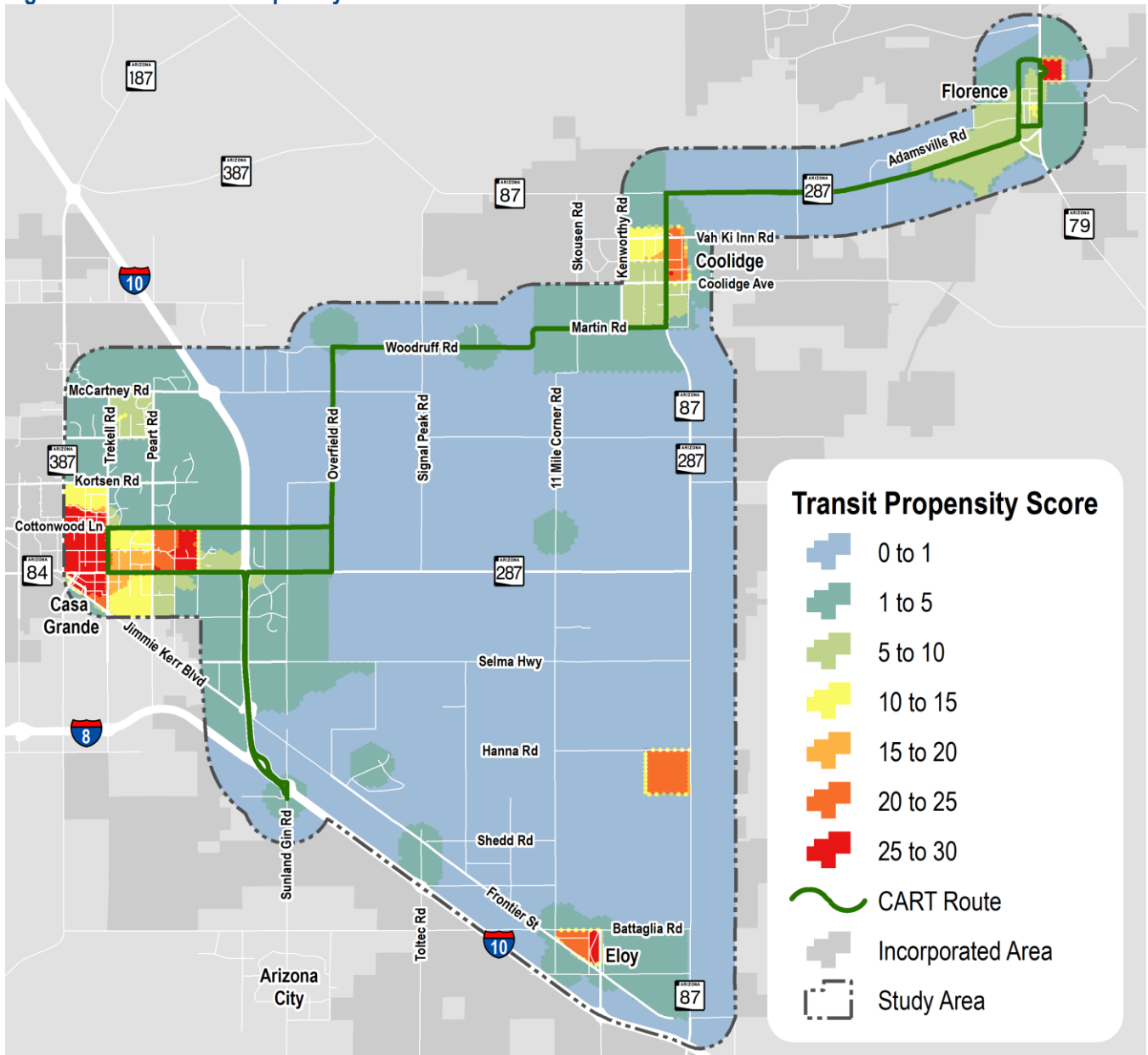| Locations	Proximity Buffers	Points
Schools	½ mile	1
Colleges	½ mile	1
Parks	½ mile	1
Shopping Centers	½ mile	1
Bus Stops	½ mile	1

Total Propensity

Demographic transit propensity for each hexagonal cell was added to proximity transit propensity to calculate a total propensity score for each grid cell (30 point maximum).

Results

Figure 13 shows the total transit propensity for the study area. Most of the study area consists of low transit propensity since much of the area is rural in nature. Areas with medium-high to high transit propensity are in central Casa Grande, downtown Coolidge, and downtown Eloy. The two major prison facilities in Eloy and Florence are showing up with relatively high transit propensity but are overstated due to the population of prisoners included in the population densities. However, these are still important destinations because of high employment.

Figure 13. Total Transit Propensity

Transit Propensity Score

- 0 to 1
- 1 to 5
- 5 to 10
- 10 to 15
- 15 to 20
- 20 to 25
- 25 to 30
- CART Route
- Incorporated Area
- Study Area

5. Public Engagement

A variety of public engagement has been performed to identify the community's use of CART and what factors may be stopping people from utilizing CART more frequently. Previous and current public engagement efforts were assessed to determine trends in needs of those within the community and CART ridership. The following public engagement efforts are summarized below:

Coolidge Transit Study Survey (*2016*)

For the 2016 Coolidge Transit Plan, two surveys were released to assess opinions of CART riders and community members. Two surveys were released: the CART On-Board Survey and Community (Non-Rider) Survey.

City of Coolidge Transit Rider Survey (*2021*)

In 2021, the City of Coolidge released a transit rider survey to track transit ridership within the community, including ridership of both CART and Cotton Express.

Eloy Transit Feasibility Study (*2019*)

For the Eloy Transit Feasibility study, a survey and online mapping commentary was released to gather input from the community. The survey was distributed using various stations throughout the community with paper copies as well as online versions.

Casa Grande Transit Development Plan (*2019*)

In 2017, initial transit alternatives were presented to the public through online interactive mapping, allowing community members to pinpoint areas of interest on the map and provide comments in specific location.

2016 Coolidge Transit Study Survey

For the 2016 Coolidge Transit Plan, two surveys were released to understand the public's experience with transit in Coolidge, including an On-Board Rider Survey and a Community (Non-Rider) Survey.

For the On-Board Rider Survey, riders were presented with a survey while boarding CART and Cotton Express vehicles across a four-day period, spanning from November 30th, 2015 through December 4th, 2015. The survey aimed to assess demographics of riders, travel and frequency patterns, customer satisfaction, possible service improvements, and determine how riders access transit information.

The survey had a total of **81 respondents**, with the CART having an average daily ridership of 110 riders at the time of release. A summary of key takeaways from the 2015 On-Board Survey is below.

CART On-Board Survey

- 70% of riders reported service frequency as good or excellent.
- 84% of respondents reported service reliability as good or excellent.
- 36% of riders reported that hours of operations are fair or poor, where 19% of respondents shared a desire for service to begin earlier and 16% shared a need for weekend service.
- Travel time was considered too long by 25% of respondents.
- Majority of respondents received service information on the route from information at the bus stop or from a bus driver. Respondents were least likely to obtain it from the City of Coolidge information Line.

The Community (Non-Rider) Survey was mailed to 500 random addresses across Coolidge, Florence, and unincorporated Pinal County in addition to making it available online. The survey inquired about CART and Cotton Express separately. The Non-Rider Survey received a total of **155 responses.** The following shows key takeaways from the non-rider specific survey in relation to CART.

Community (Non-Rider) Survey

- The primary reason reported for not using CART was preference of personal vehicle use, respondents also reported that the route does not go where they need to travel.
- The most common destination reported by non-users were CAC and Banner Casa Grande Regional Medical Center.
- The most common trip purpose reported for CART was access to work, accounting for 48% of responses, and 24% for shopping or personal errands.
- Respondents reported that satisfaction was highest in Fare/Cost, and Accessibility of Service, with each being rated excellent by at least 60% of respondents.
- Offering different destinations is most likely to increase CART ridership among those that do not ride transit, including San Tan Valley and Phoenix.
- 25% of respondents reported fair or poor satisfaction for the time it takes to travel, with similarly low satisfaction in Operating Hours.

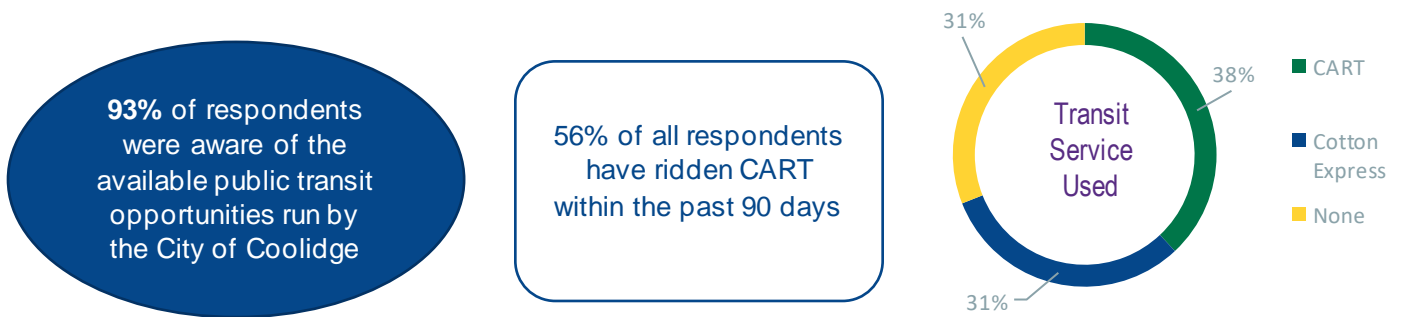## 2021 City of Coolidge Transit Rider Survey

The 2021 Coolidge Transit Rider survey is the latest in an ongoing, annual survey of riders meant to better understand the community's use of CART and Cotton Express. The results are shown below.
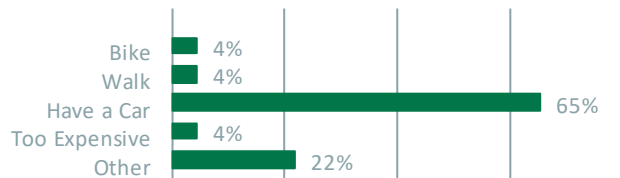
Survey Respondent Profile

The following is a summary of the typical respondent profile derived from demographic-focused questions within the survey, received from the 2021 Transit Survey Analysis.
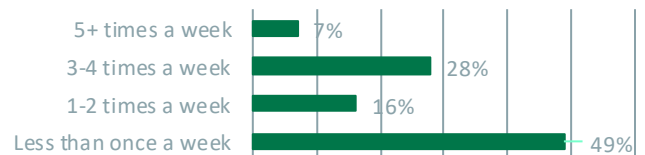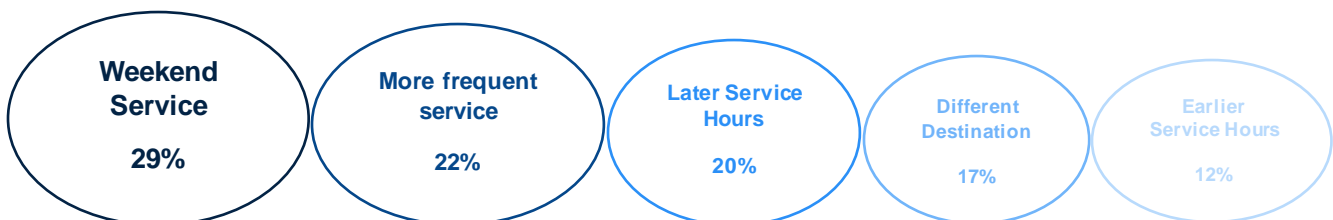
43 Responses

85128

Between **35-64 years old** and **female**, with a household of **2 or less**

Are employed **full-time** with an annual income of **$35,000 - $49,000**

Has **not** ridden transit

Hispanic or White and most commonly spoke English only

Survey Results

93% of respondents were aware of the available public transit opportunities run by the City of Coolidge

56% of all respondents have ridden CART within the past 90 days

Transit Service Used

- CART — 38%
- Cotton Express — 31%
- None — 31%

Other Primary Method of Transportation

- Bike — 4%
- Walk — 4%
- Have a Car — 65%
- Too Expensive — 4%
- Other — 22%

Rides per Week

- 5+ times a week — 7%
- 3-4 times a week — 28%
- 1-2 times a week — 16%
- Less than once a week — 49%

Changes likely to influence respondents to ride CART

- **Weekend Service** — 29%
- **More frequent service** — 22%
- **Later Service Hours** — 20%
- **Different Destination** — 17%
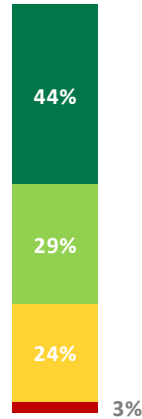- **Earlier Service Hours** — 12%

Respondents were asked to rate their overall satisfaction with the service, ranging from **Poor**, **Fair**, **Good**, and **Excellent**.
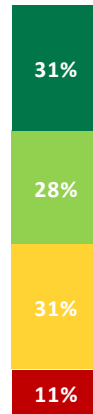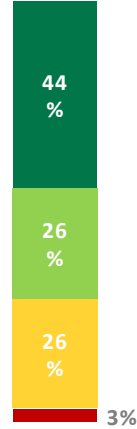
Service Frequency

- 40%
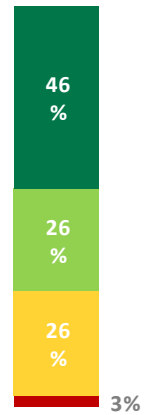- 23%
- 26%
- 11%

Travel Time

- 44%
- 29%
- 24%
- 3%

Operating Hours

- 31%
- 28%
- 31%
- 11%

Comfort Onboard Vehicle

- 44%
- 26%
- 26%
- 3%

Safety Onboard Vehicle

- 46%
- 26%
- 26%
- 3%

Fare or Cost

- 56%
- 26%
- 15%
- 3%

Safety of Bus

- 53%
- 22%
- 25%

Reliability of Service

- 47%
- 18%
- 24%
- 12%
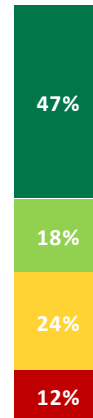
Availability of Service Info

- 47%
- 14%
- 28%
- 8%

Overall Satisfaction

- 49%
- 29%
- 17%
- 6%

Trip Purpose

- Healthcare
- School
- Shopping/Personal Errands
- Social/Recreation
- Work

2.3% 4.7%
39.5%
39.5%
9.3%
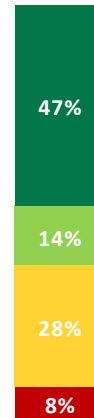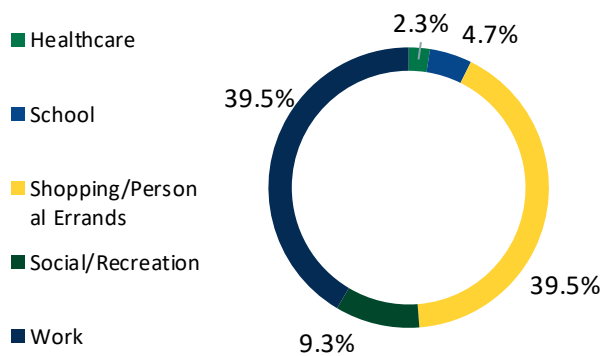
Transit Information is typically accessed…

At the bus stop	5%
Printed Schedule Brochure	23%
Online	33%
Driver/Onboard	13%
City of Coolidge Information Line	13%
Other	15%
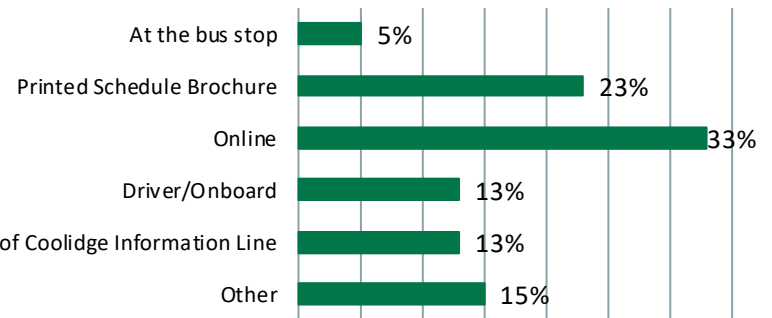
Exposure to CART Marketing within the past 90 days

43%
Yes No
58%
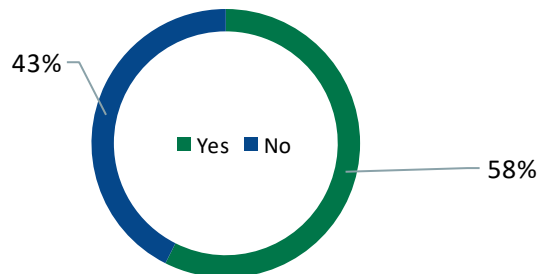
Key Takeaways

- Respondents have typically either been a long-time user of transit or have never ridden transit.
- Although 93% of respondents were aware that transit opportunities are available, only 56% have ridden transit in the past 90 days, with CART accounting for more ridership than Cotton Express.
- Of those who do not ride public transit, they mostly travel by vehicle and would be more likely to ride CART if service was more frequent, especially weekend service.
- Respondents that do ride CART typically use the service less than once a week, with only 28% of respondents riding transit 3-4 times a week.
- Trips are most frequently used for work and shopping, each accounting for 40% of responses.
- 19% of respondents reported being extremely satisfied with CART and Cotton Express.
  - All service categories surveyed were most commonly rated excellent satisfaction, besides Operating Hours, which performed with 31% of responses reporting excellent satisfaction.
  - 12% of respondents reported poor satisfaction for Service Reliability.
- Over half of respondents have been exposed to CART marketing materials within the past 90 days, information on the transit route is most accessed online or from a printed schedule brochure. Information at the bus stop is least used to obtain transit service information.

Eloy Transit Feasibility Study

The Eloy Transit Feasibility Study conducted a variety of public engagement opportunities to supplement the development of the study. Engagement activities included two public open houses, a public survey, and an online mapping opportunity.

From the public open house, community members noted that there is a need for service to the Greyhound Bus Station. Comments also included public support of partnerships with CART.

The survey was released both online and in paper form, utilizing survey stations. The survey generated 327 paper responses and an additional 81 responses online, for a total of **408 responses**. Key findings from the survey include:

- 81% of respondents live in Eloy
- Most respondents (74%) reported that they would use a transit system, if available
- The most popular reason to use transit would be for shopping/personal trips (43%) or health-related trips (33%)
- The most popular destination for a regional service would be access to Casa Grande, specifically Walmart, medical services, and Fry's

Casa Grande Transit Development Plan

To assess the alternatives identified in the feasibility study, the City of Casa Grande used an interactive mapping tool to gain public comment. Users were able to view the proposed routes and note comments on each alternative on the map by placing a point at an area of interest. The survey was provided in a variety of different languages and resulted in **72 responses**. Public response resulted in the following takeaways:

- Need for service in the downtown area to capture nearby neighborhoods and access to social services
- Need for more service to the neighborhoods adjacent to Pinal Avenue
- Implementation of a downtown loop would be beneficial
- The City needs to service the areas that CART does not, rather than trying to compete for ridership at the same locations

Resident input in the Casa Grande Transit Development Plan shows an overall need for service of Downtown Casa Grande and shows a need for CART's existing route to be considered as Casa Grande develops a transit plan. Service on Pinal Avenue was deferred to a later phase of implementation to focus more on the Florence Boulevard corridor.

6. Key Takeaways

To evaluate the key takeaways provided throughout this document, a Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis has been conducted to identify where to focus on developing recommendations that can feasibly be addressed by CART and the City of Coolidge. **Figure 14** shows the overall structure of SWOT analyses and the following sections organize key takeaways into the four groupings.

Figure 14. SWOT Analysis Components

Strengths

Strengths are topics or metrics that are both helpful in CART's continued sustainability and within the control of CART or the City of Coolidge (of internal origin). Strengths of the CART system include:

- CART already serves many of the areas within the study area with a high propensity for transit, based on demographics and proximity to major activity centers.
- In the 2016 Coolidge Transit Study survey, 70% of riders reported the service frequency as good or excellent and 84% of riders said CART's reliability was good or excellent.
- Many respondents to the 2016 and 2021 surveys indicated that additional service hours, the weekend in particular, would increase their likelihood of riding CART.

Weaknesses

Weaknesses are topics or metrics that are harmful to CART's continued sustainability but are within the control of CART or the City of Coolidge (of internal origin). Weaknesses of the CART system include:

- CART has two vehicles that are beyond their FTA-designated ULB.
- CART is underperforming the peer system average in the performance metrics that were evaluated, which included annual ridership, annual revenue miles, revenue miles per capita, passengers per revenue mile, cost per revenue mile, cost per trip, and farebox recovery ratio.
- Eloy has a relatively high propensity for transit but is not served by CART other than the transfer point to Greyhound in the far northwestern part of the city.
- In the 2016 Coolidge Transit Study survey and 2021 Coolidge Transit Survey, riders and non-riders indicated their biggest complaints about CART surrounded the limited hours of operation, long travel times, and limitation of destinations served.

Opportunities

Opportunities are topics or metrics that are helpful in CART's continued sustainability but are largely out of the control of CART or the City of Coolidge (of external origin) and are more a result of the general environment. Opportunities of the CART system include:

- In the 2021 Coolidge Transit Survey, 93% of respondents were aware that transit services are available, indicating that there is a general awareness of transit in the region. Over 50% of respondents had seen CART marketing materials in the past 90 days.

Threats

Threats are topics or metrics that are harmful in CART's continued sustainability but are largely out of the control of CART or the City of Coolidge (of external origin) and are more a result of the general environment. Threats of the CART system include:

- CART's service area covers a large area with isolated population centers, causing a large amount of revenue miles that have limited potential for transit ridership.
- Eloy (and Arizona City per the Eloy Transit Framework Study) has areas of strong transit propensity, but the high-propensity areas are isolated from CART's existing service corridors.
- In the 2016 Coolidge Transit Study survey and 2021 Transit Survey, non-riders indicated that their primary reason for not riding CART was that they had a preference to drive their own personal vehicles.