

Dial-a-Ride and Microtransit Service Area Analysis

August 14, 2025

Presenters:

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Agenda



Introductions



Second Round of Public Involvement



Service Opportunity Areas + Simulations



Proposed Phasing



Title VI + Equity Analysis




Air Quality Analysis



Recommendations + Implementation



Discussion

A large green circle is positioned on the left side of the page, partially overlapping the white background. It contains the text for the public involvement phase.

Public Involvement Phase 2 March 18-21

Technical Meetings:

PAG Technical Committee / PAG TPC

Pop-up Events:

Green Valley Library

Transit Centers:

Tohono Tadaí / Roy Laos / Rondstadt

Focus Groups:

Ajo WPCCC / PCDOT / Vail Chamber – School District /
Senior Centers – Interfaith / Oro Valley / Marana /
Citizens for Picture Rocks

On-Site Public Involvement Take-aways

Technical Meetings:

Connectivity to fixed-route service is important

Modifications to the proposed zones were discussed, effects of fares, marketing

Community Focus Groups:

Vail – include the school districts in the boundaries

Oro Valley – dial-a-ride service is very valuable to the community; same day service is not a priority for the community

Ajo – very supportive of any changes that could strengthen current service

Picture Rocks – very supportive and in need of transit service

General - Provide access to key destinations outside of the zone

Implementation will require a public campaign

Transportation for vulnerable population is needed

Pop-up Events/Transit Centers/Library:

Community is very supportive of microtransit, particularly same day service

Weekend/Sunday service is needed

Simulations of Service Opportunity Zones

Simulation Overview



Supply

Number of vehicles

Available seats

Operating hours

Demand

Current ridership

Car ownership

Population

Activity centers

Service Quality

Walking distance

Met demand

Detour

Wait time

Microtransit Opportunity Zones

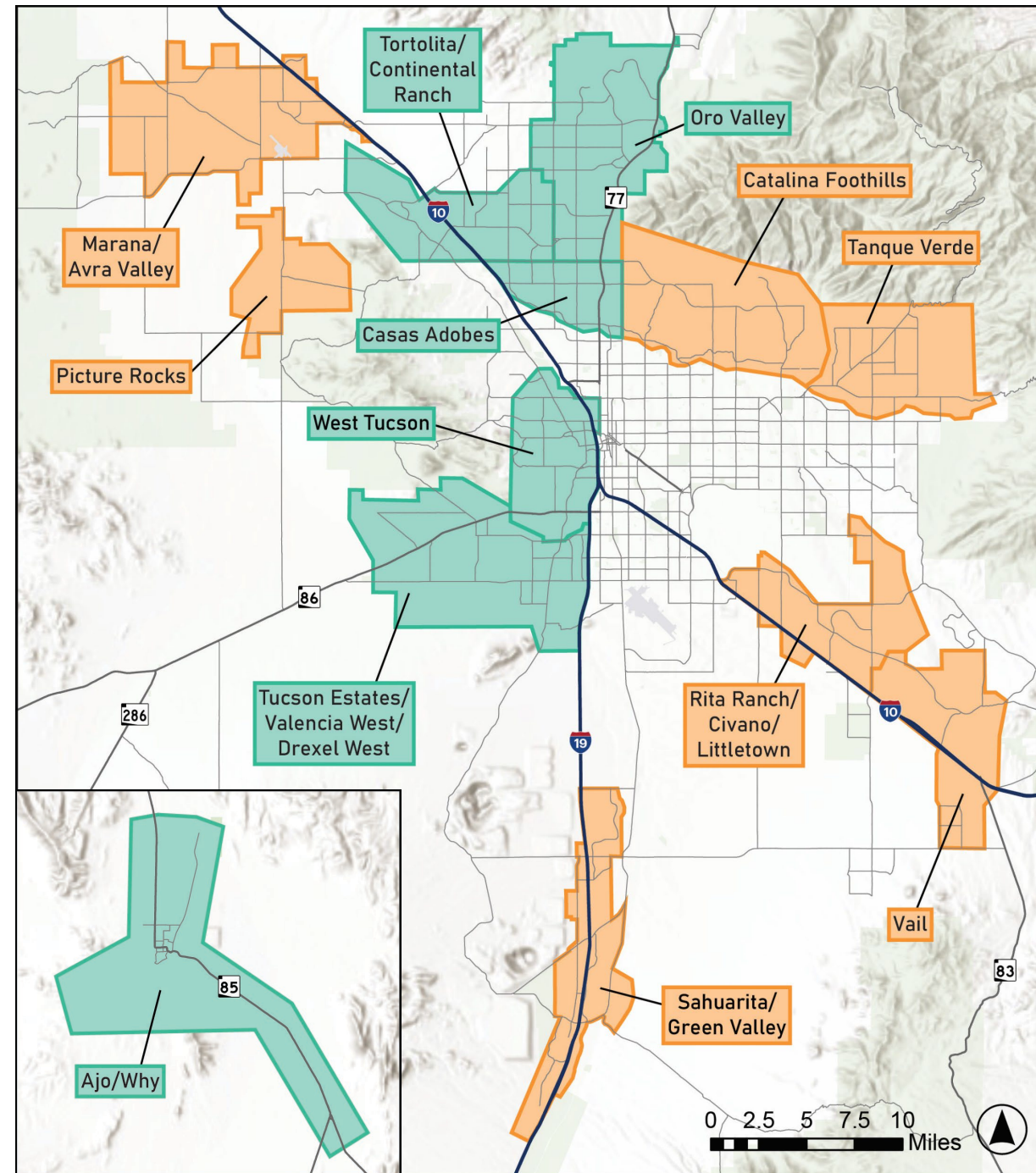
- Two service tiers used as input of simulation process
- Actual service characteristics to be determined at later stage

Weekday Service Zones






- More rural
- Less residents/jobs
- Lower transit propensity
- Lower expected ridership

Extended Service Zones

- More urban
- More residents/jobs
- Higher transit propensity
- Higher expected ridership



Service Design Parameters

	Zone	Weekday	Extended
	Travel Rules	Anywhere-to- Anywhere + Points of Interest/Transfer Points	
	Booking Model	Target wait time of 20 - 25 minutes Maximum wait time of 60 minutes	Target wait time of 10 - 15 minutes Maximum wait time of 30 minutes
	Bus Stop Model	Curb-to-Curb	
	Fleet	Minivans (capacity for 5 ambulatory passengers) + Wheelchair accessible minivans (with capacity for 2 ambulatory passengers and a wheelchair space) <i>Minimum 20% (or at least one) wheelchair accessible vehicle per service.</i>	
	Service Hours	Weekdays 7:00 AM - 6:00 PM	Weekdays 6:00 AM - 8:00 PM; Saturdays & Sundays: 9:00 AM - 6:00 PM

Estimated Demand

Opportunity Zone	Service Tier	Weekday Average			Annual
		Low	Medium	High	
Tucson Estates/Drexel Heights/Valencia West	Extended	80	205	310	59,000
Tortolita/Continental Ranch	Extended	75	200	300	57,000
Oro Valley	Extended	80	195	290	56,000
West Tucson	Extended	65	170	255	49,000
Casas Adobes	Extended	55	150	225	43,000
Rita Ranch/Civano/Littletown	Weekday	50	130	200	35,000
Sahuarita/Green Valley	Weekday	45	115	175	30,000
Catalina Foothills	Weekday	40	110	160	28,000
Ajo/Why	Extended	15	40	65	12,000
Marana/Avra Valley	Weekday	15	40	65	11,000
Vail	Weekday	15	40	60	11,000
Tanque Verde	Weekday	15	35	50	9,000
Picture Rocks	Weekday	<10	15	20	4,000

Summary of Results – Medium Demand Scenario

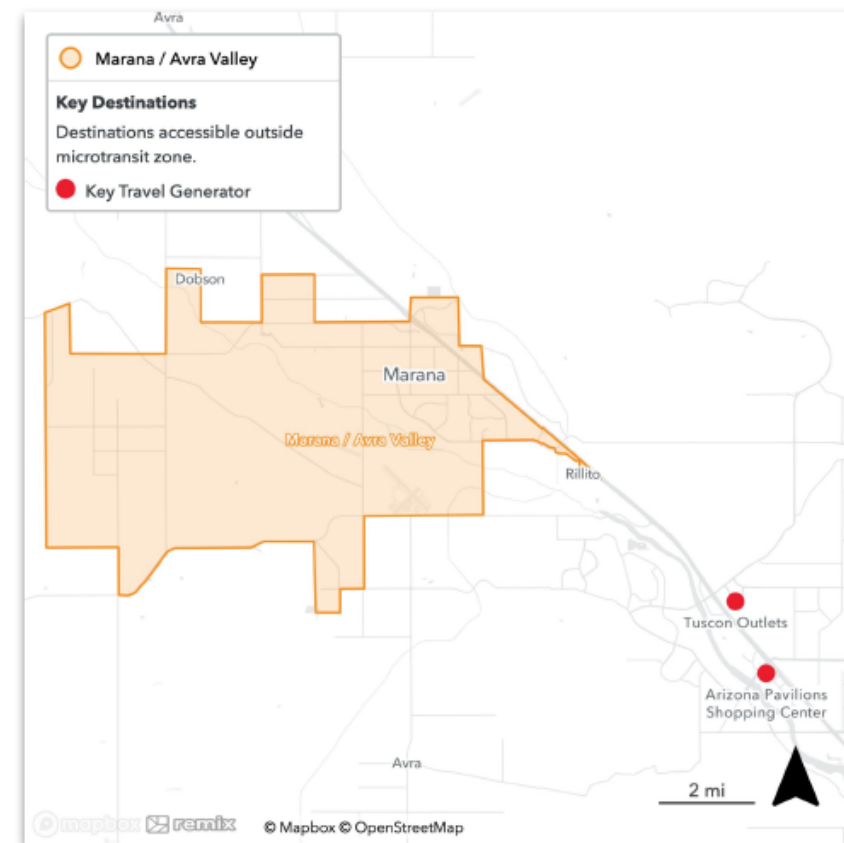
Zone Name	Service Tier	Annual Ridership	Fleet Size	Productivity (Boardings/Revenue-Hour)	Average Wait Time (Minutes)	Average Trip Duration (Minutes)	Operating Cost Per Trip
Tucson Estates/Valencia West/Drexel Heights	Extended	59,000	8	2.0 – 2.6	14 – 18	22 – 26	\$30
Tortolita/Continental Ranch	Extended	57,000	6	2.7 – 3.3	13 – 17	19 – 23	\$28
Oro Valley	Extended	56,000	8	2.2 – 2.8	12 – 16	19 – 23	\$32
West Tucson	Extended	49,000	5	2.7 – 3.3	11 – 15	13 – 17	\$27
Casas Adobes	Extended	43,000	5	2.4 – 3.0	10 – 14	12 – 16	\$30
Rita Ranch/Civano/Littletown	Weekday	35,000	5	3.1 – 3.7	22 – 26	21 – 25	\$23
Sahuarita/Green Valley	Weekday	31,000	4	3.1 – 3.7	14 – 18	13 – 17	\$23
Catalina Foothills	Weekday	28,000	4	2.8 – 3.4	20 – 24	18 – 22	\$26
Ajo/Why	Extended	12,000	2	1.8 – 2.4	6 – 10	7 – 11	\$39
Marana/Avra Valley	Weekday	11,000	3	1.4 – 2.0	17 – 21	30 – 34	\$50
Vail	Weekday	11,000	2	2.1 – 2.7	11 – 15	15 – 19	\$34
Tanque Verde	Weekday	9,000	2	1.9 – 2.5	12 – 16	11 – 15	\$41
Picture Rocks	Weekday	4,000	2	0.7 – 1.3	18 – 22	22 – 26	\$80

Simulation Results

1 | Marana/Avra Valley

Weekday Service

Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	2	3	4
Weekday Ridership <i>Boardings</i>	15	40	65
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	0.7 - 1.3	1.4 - 2.0	1.5 - 2.1
Typical Wait (Peak Period) <i>Minutes</i>	17 - 21	17 - 21	17 - 21
Typical Ride Duration (Peak Period) <i>Minutes</i>	28 - 32	30 - 34	28 - 32
Annual Ridership <i>Passenger Boardings</i>	4,000	11,000	17,000
Annual Vehicle-Hours <i>Hours</i>	4,000	6,400	9,200
Annual Estimated Cost <i>Dollars</i>	\$300,000	\$550,000	\$700,000
Estimated Cost Per Ride <i>Dollars</i>	\$77	\$50	\$44

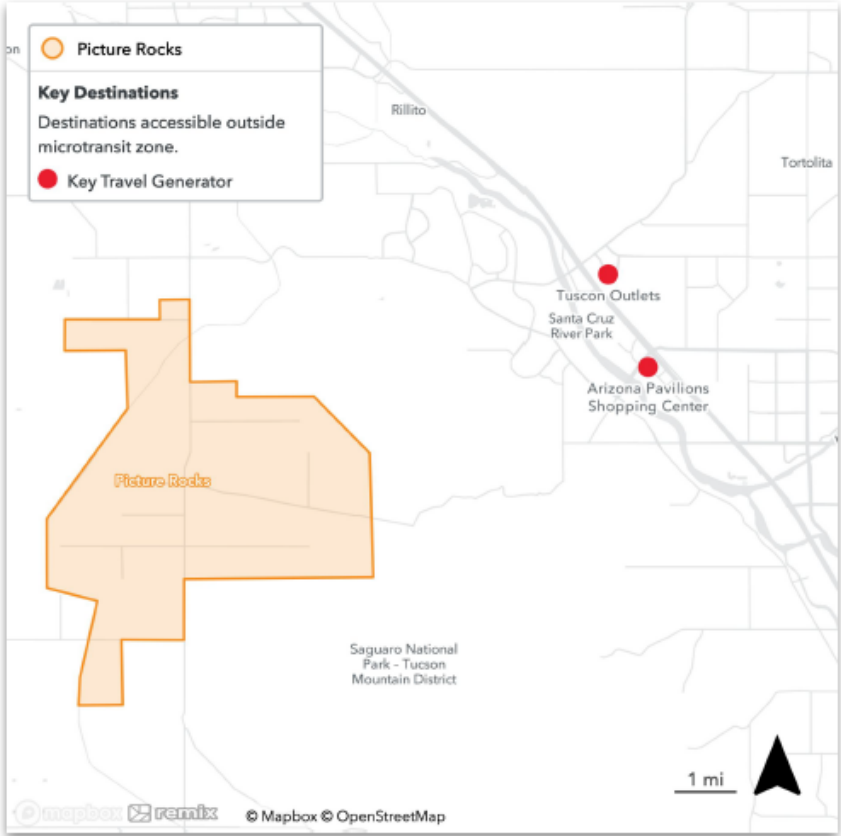


Simulation Results

2 | Picture Rocks

Weekday Service

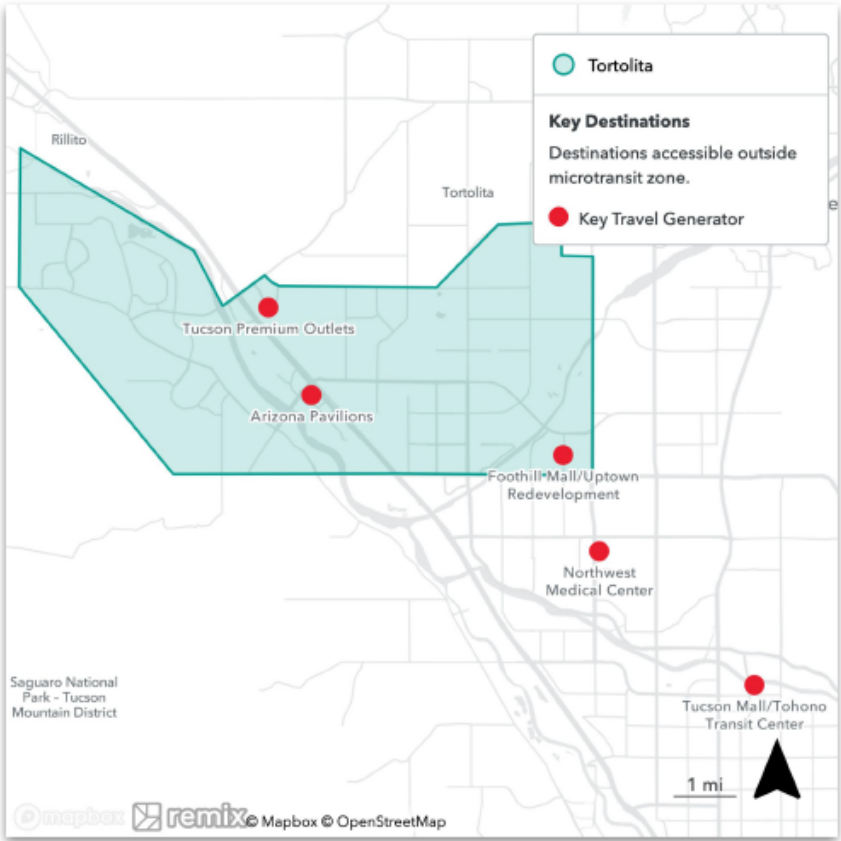
Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	2	2	2
Weekday Ridership <i>Boardings</i>	<10	15	20
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	0.2 - 0.8	0.7 - 1.3	0.7 - 1.3
Typical Wait (Peak Period) <i>Minutes</i>	10 - 14	18 - 22	12 - 16
Typical Ride Duration (Peak Period) <i>Minutes</i>	18 - 22	22 - 26	18 - 22
Annual Ridership <i>Passenger Boardings</i>	2,000	4,000	6,000
Annual Vehicle-Hours <i>Hours</i>	2,900	4,000	5,700
Annual Estimated Cost <i>Dollars</i>	\$200,000	\$300,000	\$500,000
Estimated Cost Per Ride <i>Dollars</i>	\$150	\$80	\$84



Extended Service

3 | Tortolita/Continental Ranch

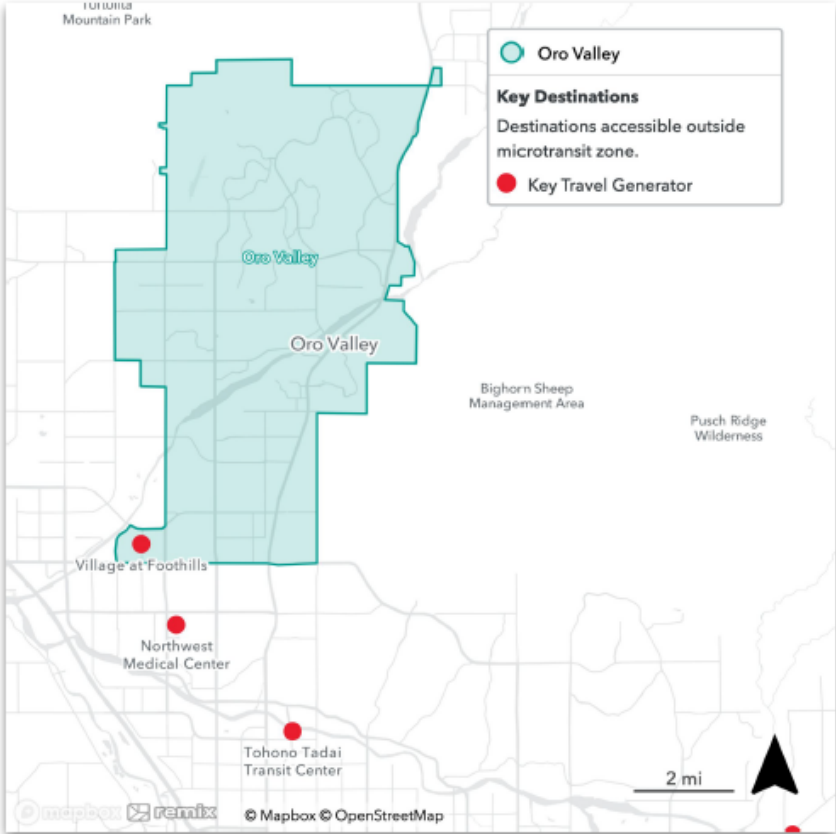
Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	3	6	8
Weekday Ridership <i>Boardings</i>	75	200	300
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	1.9 - 2.5	2.7 - 3.3	3.3 - 3.9
Typical Wait (Peak Period) <i>Minutes</i>	12 - 16	13 - 17	15 - 19
Typical Ride Duration (Peak Period) <i>Minutes</i>	15 - 19	19 - 23	19 - 23
Annual Ridership <i>Passenger Boardings</i>	22,000	57,000	86,000
Annual Vehicle-Hours <i>Hours</i>	10,300	19,800	24,200
Annual Estimated Cost <i>Dollars</i>	\$825,000	\$1.6M	\$1.9M
Estimated Cost Per Ride <i>Dollars</i>	\$38	\$28	\$23



4 | Oro Valley

Extended Service

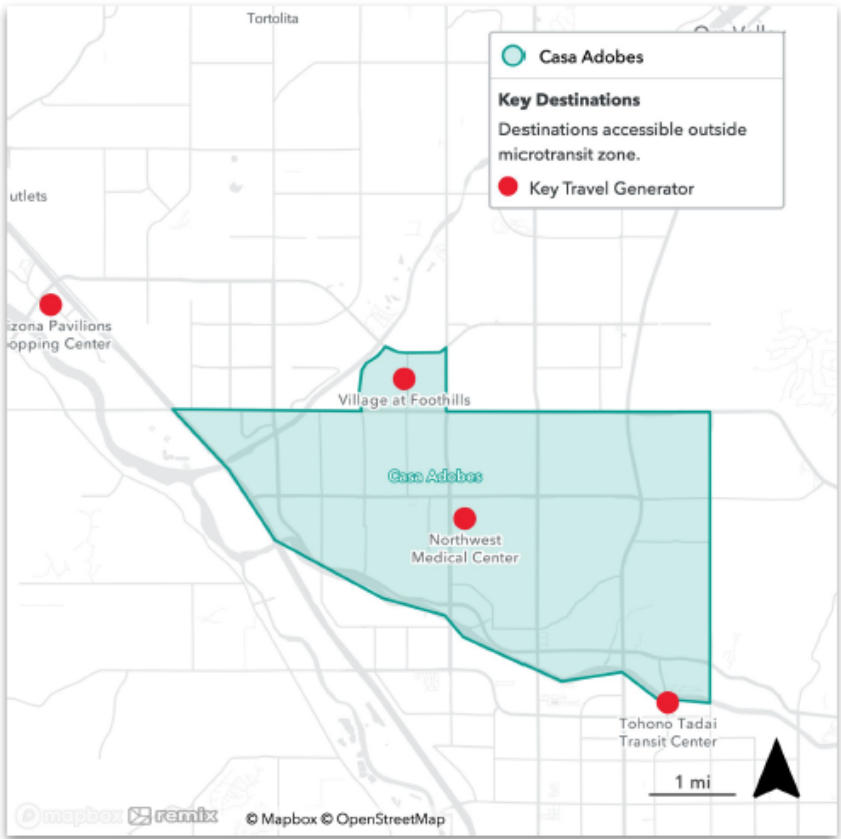
Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	5	8	10
Weekday Ridership <i>Boardings</i>	80	195	290
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	1.3 - 1.9	2.2 - 2.8	2.5 - 3.1
Typical Wait (Peak Period) <i>Minutes</i>	11 - 15	12 - 16	11 - 15
Typical Ride Duration (Peak Period) <i>Minutes</i>	16 - 20	19 - 23	18 - 22
Annual Ridership <i>Passenger Boardings</i>	23,000	56,000	83,000
Annual Vehicle-Hours <i>Hours</i>	14,200	22,300	29,900
Annual Estimated Cost <i>Dollars</i>	\$1.1M	\$1.8M	\$2.4M
Estimated Cost Per Ride <i>Dollars</i>	\$55	\$32	\$29



5 | Casas Adobes

Extended Service

Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	3	5	6
Weekday Ridership <i>Boardings</i>	55	150	225
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	1.3 - 1.9	2.4 - 3.0	3.0 - 3.6
Typical Wait (Peak Period) <i>Minutes</i>	8 - 12	10 - 14	8 - 12
Typical Ride Duration (Peak Period) <i>Minutes</i>	10 - 14	12 - 16	13 - 17
Annual Ridership <i>Passenger Boardings</i>	16,000	43,000	64,000
Annual Vehicle-Hours <i>Hours</i>	9,900	16,100	19,300
Annual Estimated Cost <i>Dollars</i>	\$800,000	\$1.3M	\$1.5M
Estimated Cost Per Ride <i>Dollars</i>	\$50	\$30	\$23

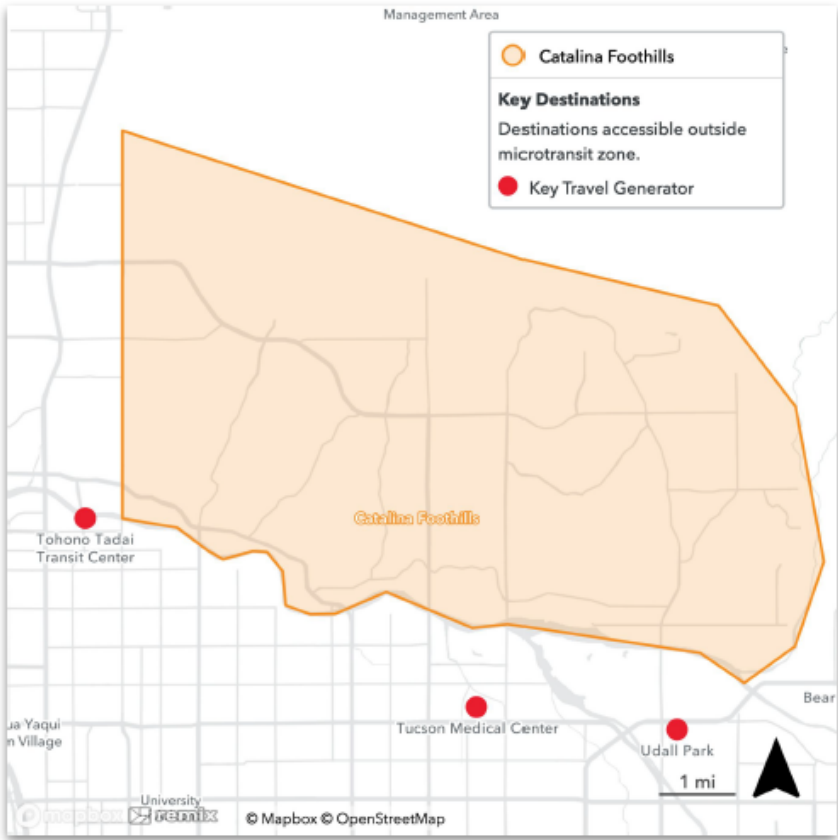


Simulation Results

6 | Catalina Foothills

Weekday Service

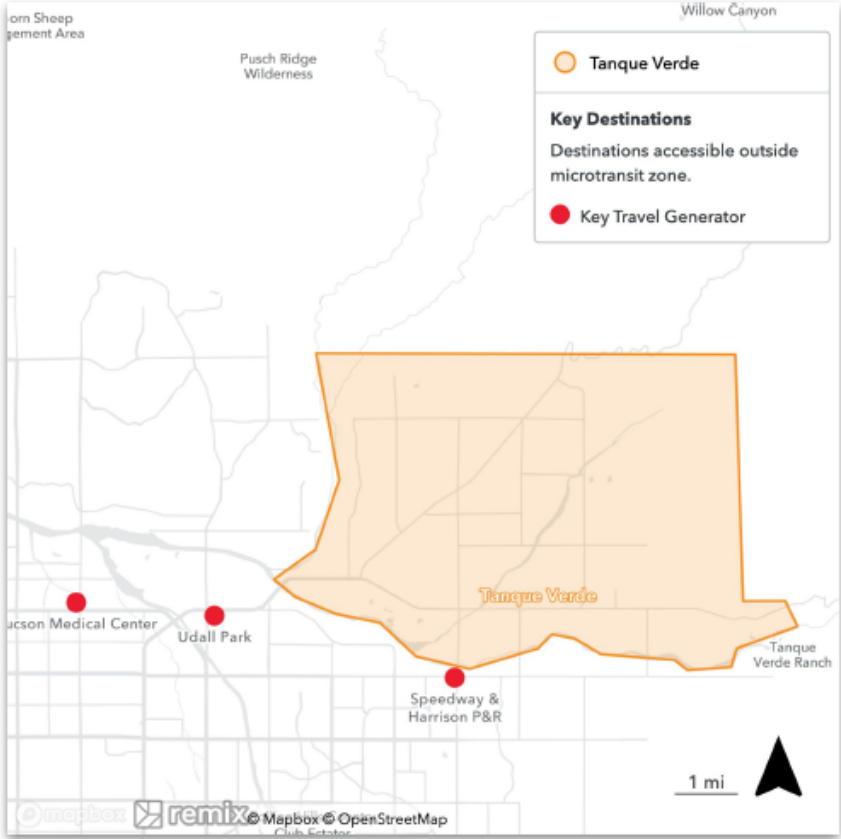
Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	2	4	5
Weekday Ridership <i>Boardings</i>	40	110	160
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	2.0 - 2.6	2.8 - 3.4	3.0 - 3.6
Typical Wait (Peak Period) <i>Minutes</i>	22 - 26	20 - 24	24 - 28
Typical Ride Duration (Peak Period) <i>Minutes</i>	20 - 24	18 - 22	24 - 28
Annual Ridership <i>Passenger Boardings</i>	11,000	28,000	42,000
Annual Vehicle-Hours <i>Hours</i>	4,600	9,200	12,900
Annual Estimated Cost <i>Dollars</i>	\$400,000	\$700,000	\$1M
Estimated Cost Per Ride <i>Dollars</i>	\$34	\$26	\$26



7 | Tanque Verde

Weekday Service

Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	2	2	3
Weekday Ridership <i>Boardings</i>	15	35	50
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	0.6 - 1.2	1.9 - 2.5	1.9 - 2.5
Typical Wait (Peak Period) <i>Minutes</i>	10 - 14	12 - 16	10 - 14
Typical Ride Duration (Peak Period) <i>Minutes</i>	11 - 15	11 - 15	10 - 14
Annual Ridership <i>Passenger Boardings</i>	3,000	9,000	14,000
Annual Vehicle-Hours <i>Hours</i>	3,700	4,000	6,900
Annual Estimated Cost <i>Dollars</i>	\$300,000	\$300,000	\$500,000
Estimated Cost Per Ride <i>Dollars</i>	\$95	\$41	\$41

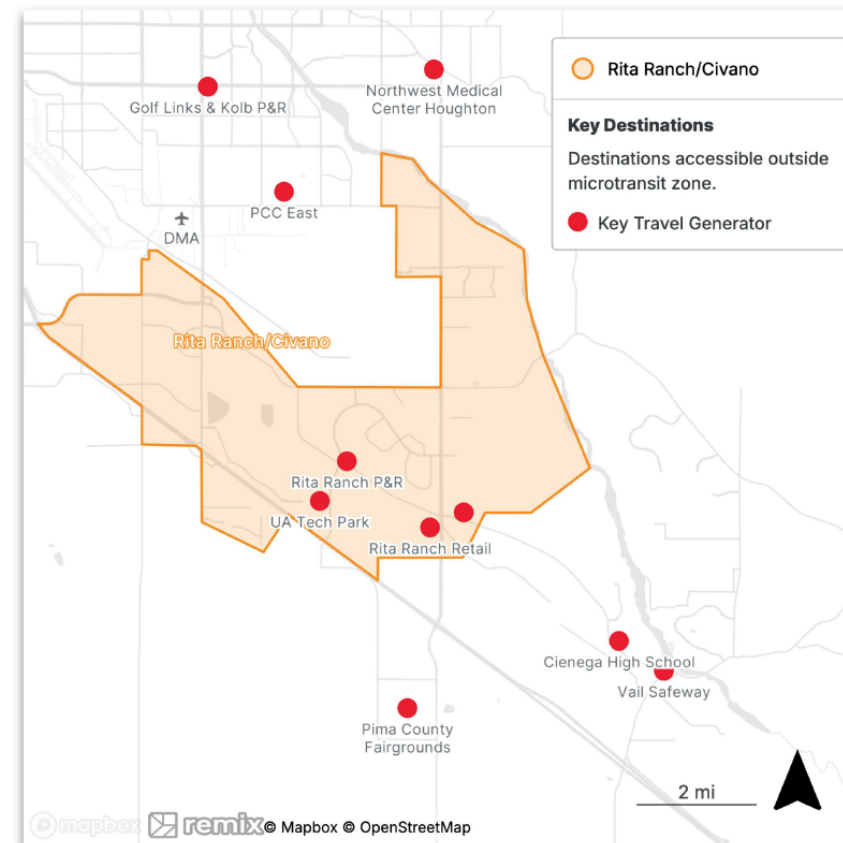


Simulation Results

8 | Rita Ranch/Civano/Littletown

Weekday Service

Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	2	5	6
Weekday Ridership <i>Boardings</i>	50	130	200
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	2.6 - 3.2	3.1 - 3.7	3.5 - 4.1
Typical Wait (Peak Period) <i>Minutes</i>	26 - 30	22 - 26	26 - 30
Typical Ride Duration (Peak Period) <i>Minutes</i>	17 - 21	21 - 25	25 - 31
Annual Ridership <i>Passenger Boardings</i>	13,100	34,500	51,800
Annual Vehicle-Hours <i>Hours</i>	4,600	10,000	13,700
Annual Estimated Cost <i>Dollars</i>	\$400,000	\$800,000	\$1.1M
Estimated Cost Per Ride <i>Dollars</i>	\$28	\$23	\$21



Simulation Results

9 | Vail

Weekday Service

Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	2	2	3
Weekday Ridership <i>Boardings</i>	15	40	60
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	0.9 - 1.5	2.1 - 2.7	2.1 - 2.7
Typical Wait (Peak Period) <i>Minutes</i>	8 - 12	11 - 15	10 - 14
Typical Ride Duration (Peak Period) <i>Minutes</i>	13 - 17	15 - 19	12 - 16
Annual Ridership <i>Passenger Boardings</i>	4,000	10,000	16,000
Annual Vehicle-Hours <i>Hours</i>	3,400	4,300	6,900
Annual Estimated Cost <i>Dollars</i>	\$280,000	\$330,000	\$550,000
Estimated Cost Per Ride <i>Dollars</i>	\$66	\$34	\$34

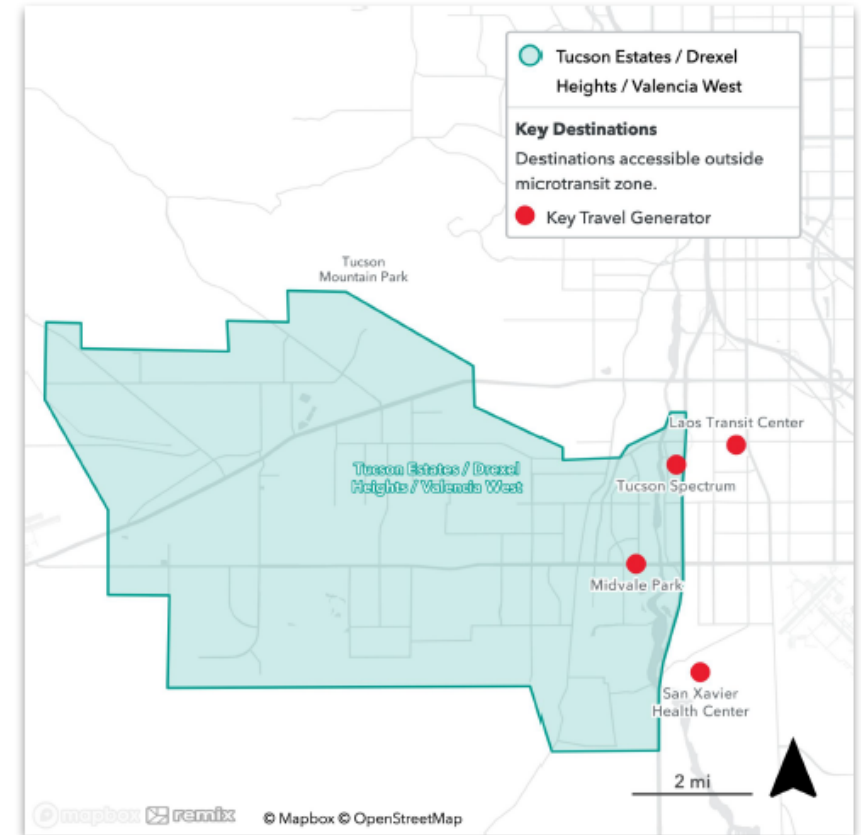


Simulation Results

10 | Tucson Estates / Drexel Heights / Valencia West

Extended Service

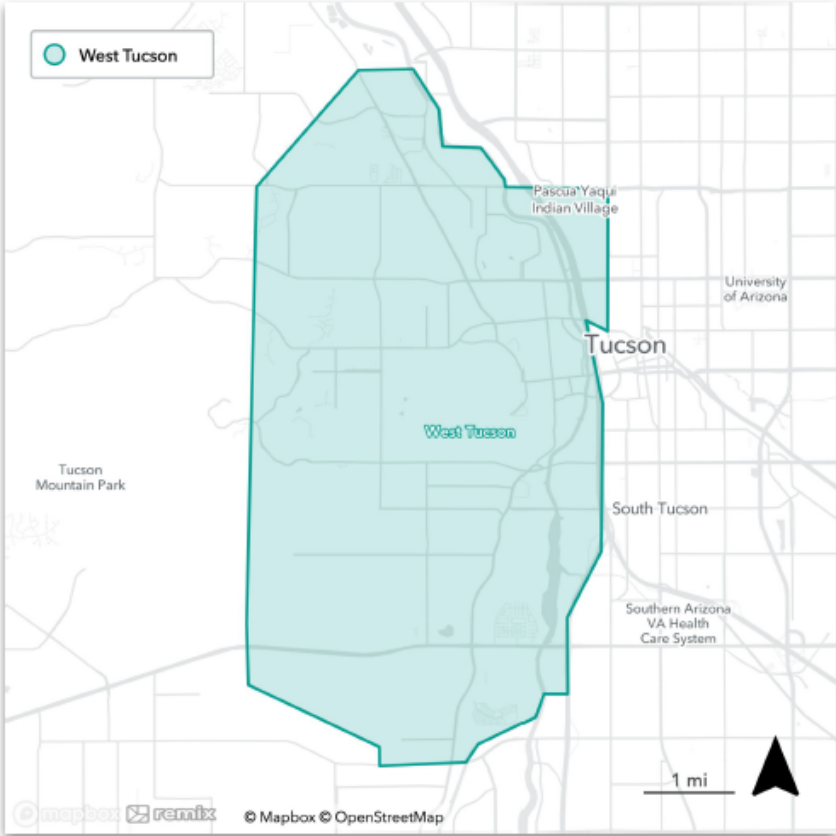
Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	5	8	10
Weekday Ridership <i>Boardings</i>	80	205	310
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	1.1 - 1.7	2.0 - 2.6	2.6 - 3.2
Typical Wait (Peak Period) <i>Minutes</i>	8 - 12	14 - 18	6 - 10
Typical Ride Duration (Peak Period) <i>Minutes</i>	15 - 19	22 - 26	11 - 15
Annual Ridership <i>Passenger Boardings</i>	22,000	59,000	88,000
Annual Vehicle-Hours <i>Hours</i>	16,100	25,200	29,900
Annual Estimated Cost <i>Dollars</i>	\$1.3M	\$2.0M	\$2.4M
Estimated Cost Per Ride <i>Dollars</i>	\$57	\$30	\$27



11 | West Tucson

Extended Service

Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	3	5	6
Weekday Ridership <i>Boardings</i>	65	170	255
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	1.6 - 2.2	2.7 - 3.3	3.5 - 4.1
Typical Wait (Peak Period) <i>Minutes</i>	9 - 13	11 - 15	16 - 20
Typical Ride Duration (Peak Period) <i>Minutes</i>	13 - 17	13 - 17	14 - 18
Annual Ridership <i>Passenger Boardings</i>	19,000	49,000	74,000
Annual Vehicle-Hours <i>Hours</i>	9,900	16,100	19,300
Annual Estimated Cost <i>Dollars</i>	\$800,000	\$1.3M	\$1.5M
Estimated Cost Per Ride <i>Dollars</i>	\$42	\$27	\$21



Simulation Results

12 | Sahuarita / Green Valley

Weekday Service

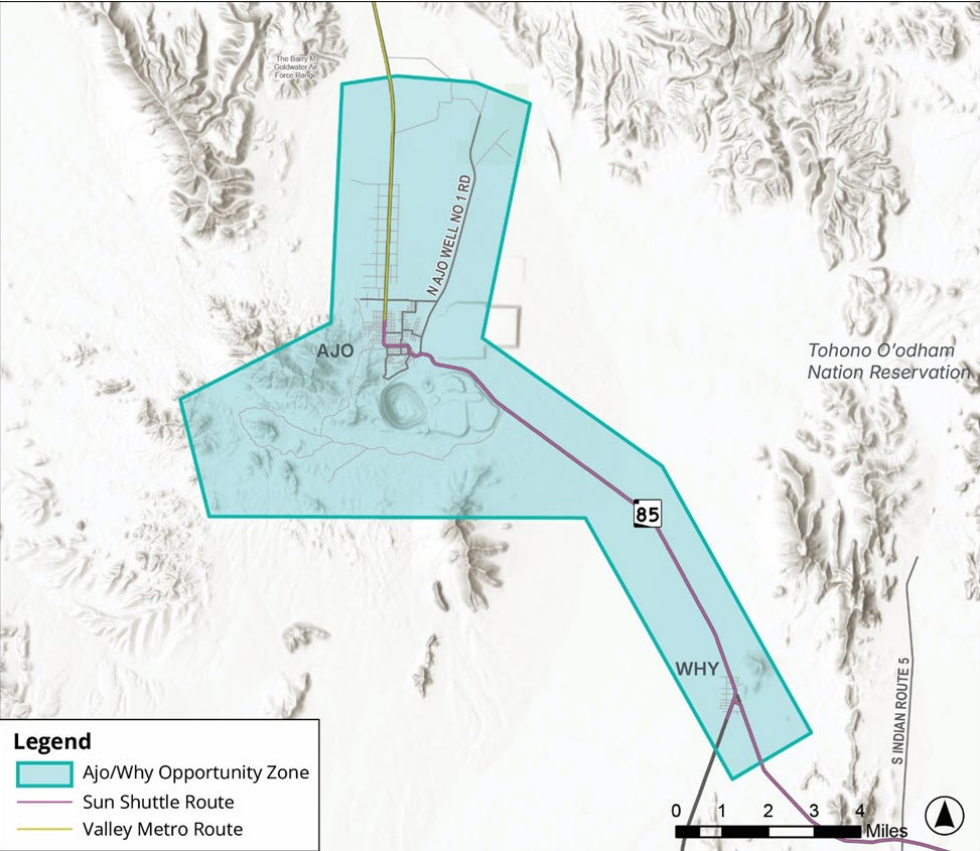
Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	2	4	5
Weekday Ridership <i>Boardings</i>	45	115	175
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	2.1 - 2.7	3.1 - 3.7	3.7 - 4.3
Typical Wait (Peak Period) <i>Minutes</i>	13 - 17	14 - 18	13 - 17
Typical Ride Duration (Peak Period) <i>Minutes</i>	15 - 19	13 - 17	14 - 18
Annual Ridership <i>Passenger Boardings</i>	11,000	31,000	46,000
Annual Vehicle-Hours <i>Hours</i>	4,600	8,900	11,400
Annual Estimated Cost <i>Dollars</i>	\$400,000	\$700,000	\$900,000
Estimated Cost Per Ride <i>Dollars</i>	\$32	\$23	\$20



13 | Ajo/Why

Extended Service

Ridership	Low	Medium	High
Fleet Size <i>Vehicles required at peak (excl. spares)</i>	2	2	3
Weekday Ridership <i>Boardings</i>	15	40	65
Daily Avg. Microtransit Productivity <i>Boardings / Revenue Hour</i>	0.7 - 1.3	1.8 - 2.4	1.8 - 2.4
Typical Wait (Peak Period) <i>Minutes</i>	5 - 9	6 - 10	8 - 12
Typical Ride Duration (Peak Period) <i>Minutes</i>	7 - 11	7 - 11	9 - 13
Annual Ridership <i>Passenger Boardings</i>	5,000	12,000	18,000
Annual Vehicle-Hours <i>Hours</i>	5,100	5,800	8,600
Annual Estimated Cost <i>Dollars</i>	\$400,000	\$500,000	\$700,000
Estimated Cost Per Ride <i>Dollars</i>	\$87	\$39	\$37



Title VI and Equity Analysis

- Proposed changes do not exceed the 20% threshold cumulatively
- There is localized impact to some communities but the new microtransit services reduce the impacts
- Additionally, there is redundant transit service that would mitigate hardship produced from the elimination of routes

Air Quality Analysis

- Looking at Vehicle Miles Traveled reduced and added for each one of the zones and for microtransit, dial-a-ride, buses and private vehicles
- Determines the level of pollutants as a result of the VMT analysis
- Determines the emissions avoided or added from all the modes
- Performs cost/benefit analysis

Air Quality Analysis

- Adding microtransit service and expanding fixed-route bus service increases tailpipe CO₂e emissions in ten zones and decreases CO₂e emissions in three zones
- This results in an increase in CO₂e emissions across all zones valued at approximately \$78,700 based on the U.S. EPA's projected 2025 social cost of CO₂ emissions

Zone	Social Cost of CO ₂ Emissions (2023 forecast of 2025 value; \$220/metric ton)
Tucson Estates/Drexel Heights/Valencia West	\$26,579.90
Tortolita/Continental Ranch	\$4,558.88
Oro Valley	\$(30,129.79)
Rita Ranch/Civano/Littletown	\$9,594.13
West Tucson	\$27,261.80
Sahuarita/Green Valley	\$(6,458.37)
Casas Adobes	\$12,167.10
Catalina Foothills	\$18,615.93
Marana/Avra Valley	\$(30,979.96)
Vail	\$16,284.10
Picture Rocks	\$6,718.27
Tanque Verde	\$4,309.41
Ajo/Why	\$20,178.39
Total	\$78,699.80

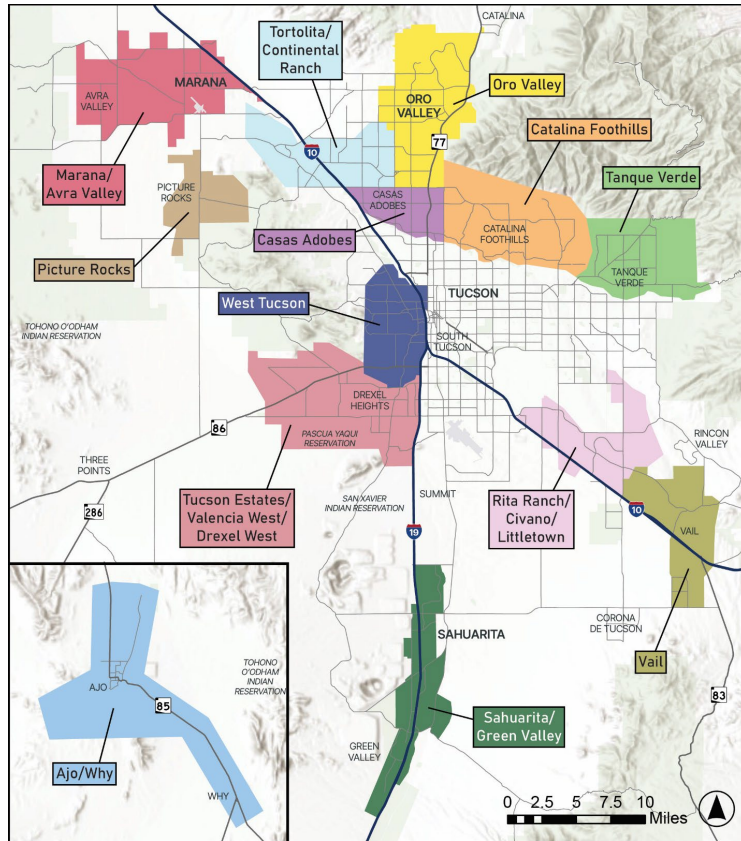
Implementing Microtransit – Operating Costs

Zone Name	Phasing	Operating Cost	Discontinued Services	Total
Tortolita/Continental Ranch	Near Term	\$1,600,000	\$318,000	\$1,282,000
Casa Adobes	Near Term	\$1,300,000		\$1,300,000
Rita Ranch/Civano/Littletown	Near Term	\$350,000	\$244,000	\$106,000
Sahuarita/Green Valley	Near Term	\$700,000	\$289,000	\$411,000
Ajo/Why	Near Term	\$500,000	\$240,000	\$260,000
Total Near Term		\$4,450,000		\$3,359,000
Oro Valley	Medium Term	\$1,800,000	\$284,000	\$1,516,000
Tucson Estates/Valencia West/Drexel Heights	Medium Term	\$2,000,000	\$284,000	\$1,716,000
West Tucson	Medium Term	\$1,300,000		\$1,300,000
Vail	Medium Term	\$330,000		\$330,000
Picture Rocks	Medium Term	\$300,000		\$300,000
Total Medium Term		\$5,730,000		\$5,162,000
Tanque Verde	Long Term	\$300,000		\$300,000
Catalina Foothills	Long Term	\$700,000		\$700,000
Marana/Avra Valley	Long Term	\$550,000	\$264,000	\$286,000
Total Long Term		\$1,550,000		\$1,286,000
Total Microtransit Operating Costs				\$9,807,000

Implementing Microtransit – Capital Costs

Zone Name	Phasing	Number of Vehicles	Total Costs
Tortolita/Continental Ranch	Near Term	6	\$ 246,000
Casa Adobes	Near Term	5	\$ 205,000
Rita Ranch/Civano/Littletown	Near Term	2	\$ 82,000
Sahuarita/Green Valley	Near Term	4	\$ 164,000
Ajo/Why	Near Term	2	\$ 82,000
Total Near Term		19	\$ 779,000
Oro Valley	Medium Term	8	\$ 327,000
Tucson Estates/Valencia West/Drexel Heights	Medium Term	8	\$ 327,000
West Tucson	Medium Term	5	\$ 205,000
Vail	Medium Term	2	\$ 82,000
Picture Rocks	Medium Term	2	\$ 82,000
Total Medium Term		25	\$ 1,023,000
Tanque Verde	Long Term	2	\$ 82,000
Catalina Foothills	Long Term	4	\$ 164,000
Marana/Avra Valley	Long Term	3	\$ 123,000
Total Long Term		9	\$ 369,000
Total Microtransit Capital Costs			\$ 2,171,000

Implementing Microtransit – Other Considerations



Service Model

Technology

Fares

Marketing and Outreach

Agency Coordination and Partnerships

Funding

Pilot Project (s)

Implementation Roadmap

Step	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Planning												
Develop DMP and EAP												
Select microtransit zone(s), pilot or regular service												
Conduct rider education and promote new microtransit service												
Design												
Select the microtransit service model												
Determine fare structure for the microtransit service												
Update the Rider Guide												
Procurement												
Procure microtransit software or turnkey provider												
Procure vehicles if operating service directly												
Hire drivers and supervisor if operating service directly												
Print Rider Guides												
Operations												
Identify a local maintenance provider												
Establish pre and post-trip processes and forms												
Secure parking for microtransit vehicles												
Update the Driver Handbook and Policies												
Test software and apps												
Review pick up/drop off locations												
Launch microtransit service												



Next Steps

Final Report to the PAG

Questions

