

# Dial-a-Ride and Microtransit Service Area Analysis

March 18, 2025

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**Via**

# Agenda



Introductions




On-Going Public Involvement



Service Opportunity Areas + Simulations



Discussion

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On-Site Public  
Involvement  
Phase 2  
March 18-20

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**Technical Meetings:**

PAG Technical Committee / PAG TPC

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**Pop-up Events:**

Green Valley Library

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**Transit Centers:**

Tohono TaDai / Roy Laos / Rondstadt

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**Focus Groups:**

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

# 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

## 2 Zones Categories Created for Simulations

### Group 1: Weekday Service

- More rural
- Fewer residents & jobs
- Lower transit propensity
- Overall lower expected ridership

### **Zones:**

- Marana/Avra Valley
- Picture Rocks
- Tanque Verde
- Vail
- Sahuarita/Green Valley
- Rita Ranch/Civano
- Catalina Foothills

### Group 2: Extended Service

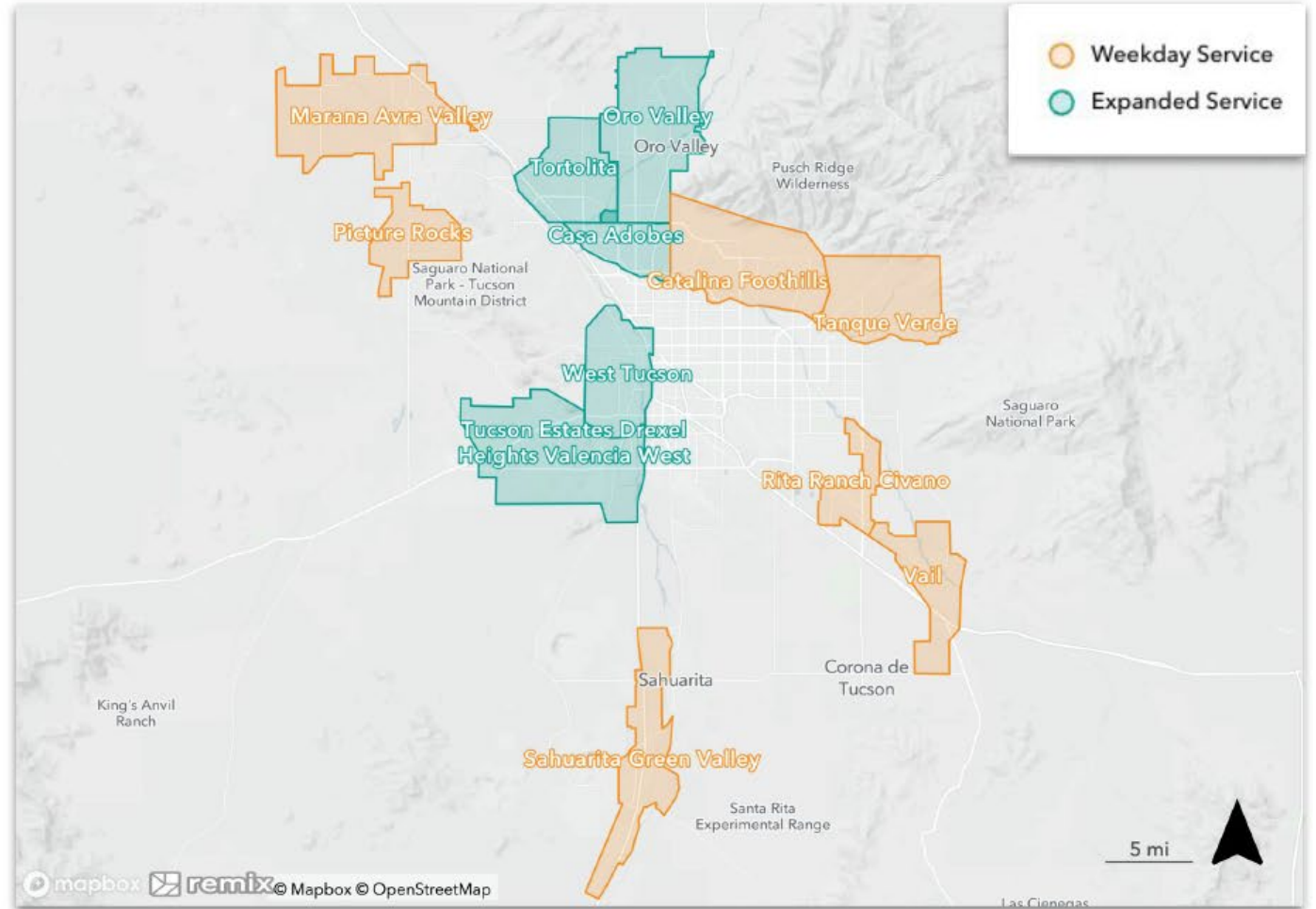
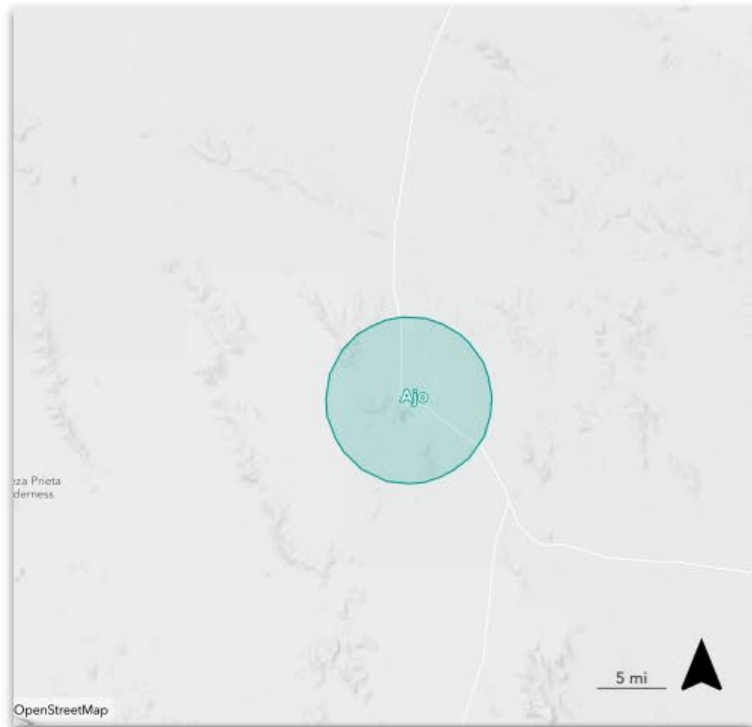
- More densely populated
- More residents & jobs
- Higher transit propensity
- Overall higher expected ridership

### **Zones:**






- Tortolita
- Oro Valley
- Casa Adobes
- Tucson Estates
- West Tucson
- Ajo

## Zone Overview

# Map of Weekday Service Zones and Expanded Service Zones



# Recommended Microtransit Parameters

Zone	Weekday	Extended
 <b>Travel Rules</b>	Anywhere-to- Anywhere + Points of Interest/Transfer Points	
 <b>Booking Model</b>	On-Demand <b>Weekday:</b> Targeted average wait times of 20 - 25 minutes (maximum 60 minutes). <b>Extended:</b> Targeted average wait times of 10 - 15 minutes (maximum 30 minutes).	
 <b>Bus Stop Model</b>	Curb-to-Curb	
 <b>Fleet</b>	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>	
 <b>Service Hours</b>	Weekdays 7:00 AM - 6:00 PM	Weekdays 6:00 AM - 8:00 PM; Saturdays & Sundays: 9:00 AM - 6:00 PM



# Summary of Demand Estimates

Zone Name	Phasing	Weekday Average			Annual
		Low*	Medium	High	Medium
Picture Rocks	Long Term	5	15	20	4,000
Tanque Verde	Long Term	15	35	50	9,000
Vail	Long Term	15	40	60	11,000
Marana/Avra Valley	Long Term	15	40	65	11,000
Ajo**	<b>Near Term</b>	15	40	65	12,000
Rita Ranch/Civano	<b>Near Term</b>	25	60	95	16,000
Catalina Foothills	Long Term	40	110	160	28,000
Sahuarita/Green Valley	<b>Near Term</b>	45	115	175	30,000
Tortolita	<b>Near Term</b>	55	150	225	43,000
Casa Adobes	<b>Near Term</b>	55	150	225	43,000
West Tucson	Medium Term	65	170	255	49,000
Oro Valley	Medium Term	80	195	290	56,000
Tucson Estates	Medium Term	80	205	310	59,000

\*We would expect to see the low ridership estimates should the PAG returned to a fared service.

\*\*Based on FY2024 ridership.

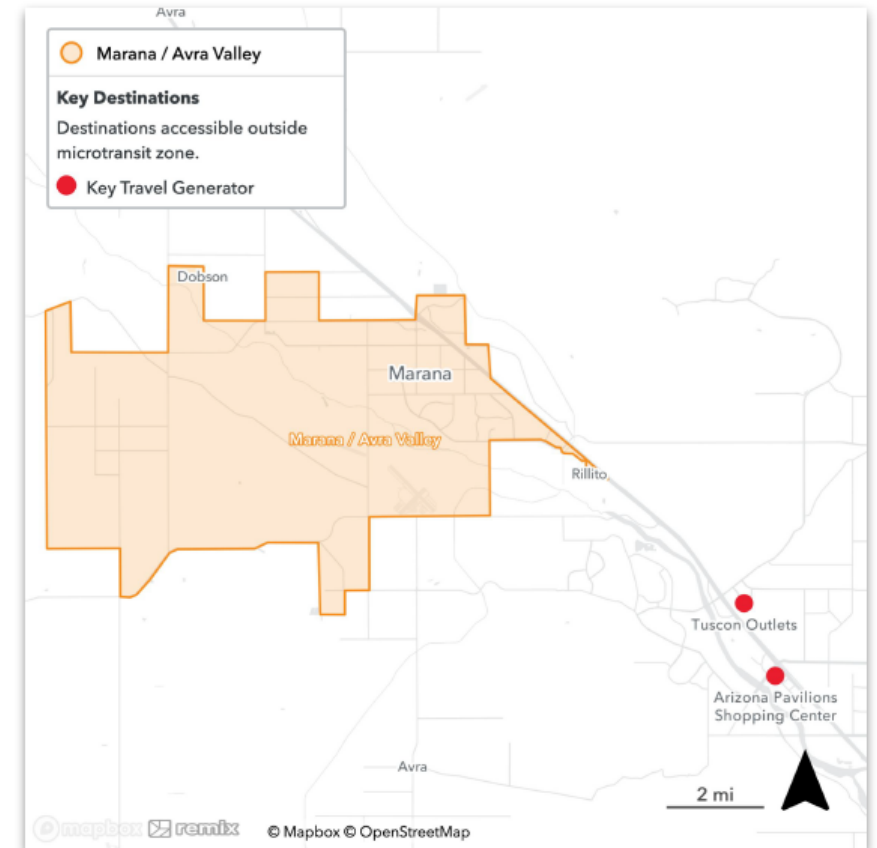
## Simulation Results

# 1 | Marana/Avra Valley

### Modeling Results

<b>Fleet Size</b> <i>Vehicles required at peak (excl. spares)</i>	<b>2 - 4</b>
<b>Weekday Ridership</b> <i>Boardings</i>	<b>15 - 65</b>
<b>Daily Avg. Microtransit Productivity</b> <i>Boardings / Revenue Hour</i>	<b>0.7 - 2.1</b>
<b>Typical Wait (Peak Period)</b> <i>Minutes</i>	<b>17 - 21</b>
<b>Typical Ride Duration (Peak Period)</b> <i>Minutes</i>	<b>28 - 34</b>
<b>Annual Ridership</b> <i>Passenger Boardings</i>	<b>4,000 - 17,000</b>
<b>Annual Vehicle-Hours</b> <i>Hours</i>	<b>4,000 - 9,200</b>
<b>Annual Estimated Cost</b> <i>Dollars</i>	<b>\$0.3M - \$0.7M</b>
<b>Estimated Cost Per Ride</b> <i>Dollars</i>	<b>\$44 - \$77</b>

## Weekday Service



Area inside zone boundary: **44.9 mi<sup>2</sup>**  
Type: **DAR Conversion/ FR Replacement**

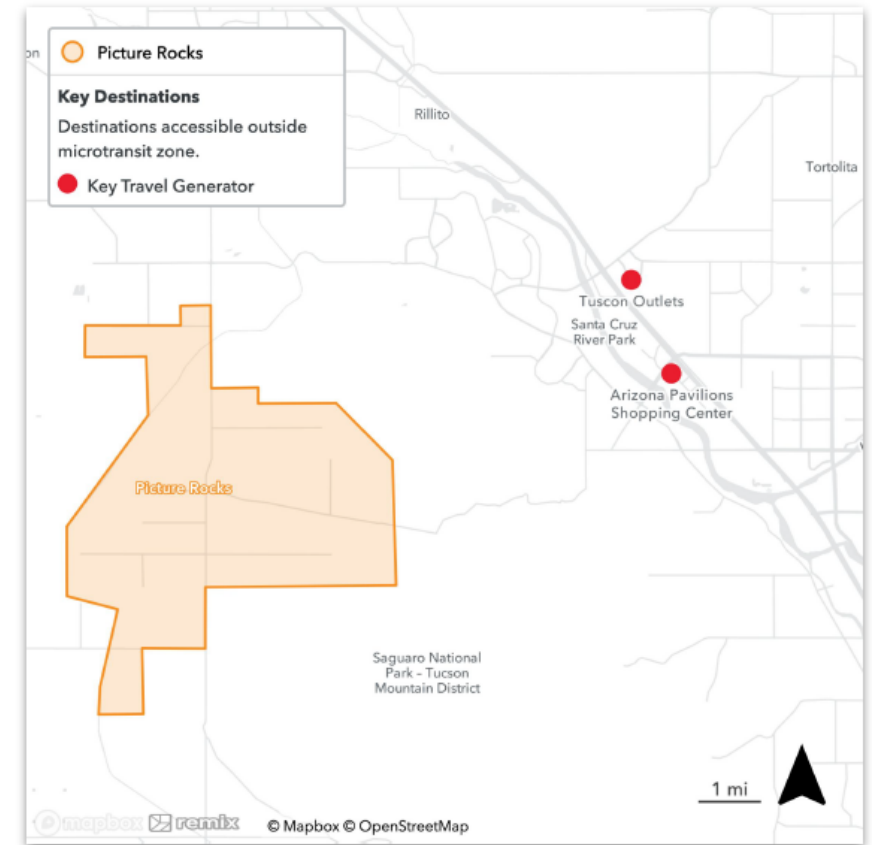
*Travel also allowed to NW Medical Center (not shown)*

# 2 | Picture Rock

**Weekday Service**

## Modeling Results

<b>Fleet Size</b> <i>Vehicles required at peak (excl. spares)</i>	<b>2</b>
<b>Weekday Ridership</b> <i>Boardings</i>	<b>&lt;10 - 20</b>
<b>Daily Avg. Microtransit Productivity</b> <i>Boardings / Revenue Hour</i>	<b>0.2 - 1.3</b>
<b>Typical Wait (Peak Period)</b> <i>Minutes</i>	<b>10 - 22</b>
<b>Typical Ride Duration (Peak Period)</b> <i>Minutes</i>	<b>18 - 26</b>
<b>Annual Ridership</b> <i>Passenger Boardings</i>	<b>2,000 - 6,000</b>
<b>Annual Vehicle-Hours</b> <i>Hours</i>	<b>2,900 - 5,700</b>
<b>Annual Estimated Cost</b> <i>Dollars</i>	<b>\$0.2M - \$0.5M</b>
<b>Estimated Cost Per Ride</b> <i>Dollars</i>	<b>\$80 - \$150</b>



Area inside zone boundary: **17.9 mi<sup>2</sup>**  
 Type: **Transit Expansion**

*Travel also allowed to NW Medical Center (not shown)*

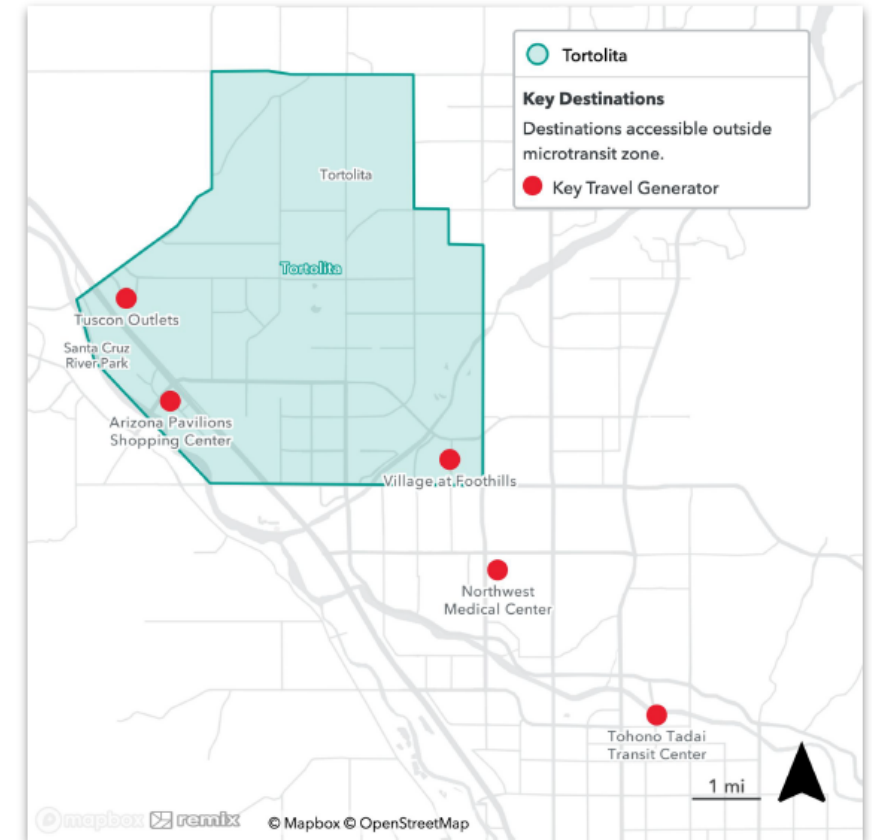
## Simulation Results

# 3 | Tortolita

### Modeling Results

<b>Fleet Size</b> <i>Vehicles required at peak (excl. spares)</i>	<b>3 - 6</b>
<b>Weekday Ridership</b> <i>Boardings</i>	55 - 225
<b>Daily Avg. Microtransit Productivity</b> <i>Boardings / Revenue Hour</i>	<b>1.4 - 3.6</b>
<b>Typical Wait (Peak Period)</b> <i>Minutes</i>	9 - 13
<b>Typical Ride Duration (Peak Period)</b> <i>Minutes</i>	10 - 14
<b>Annual Ridership</b> <i>Passenger Boardings</i>	<b>16,000 - 64,000</b>
<b>Annual Vehicle-Hours</b> <i>Hours</i>	9,900 - 19,300
<b>Annual Estimated Cost</b> <i>Dollars</i>	\$0.8M - \$1.5M
<b>Estimated Cost Per Ride</b> <i>Dollars</i>	<b>\$24 - \$49</b>

## Extended Service



Area inside zone boundary: **26.1 mi<sup>2</sup>**  
Type: **FR Replacement / Transit Expansion**

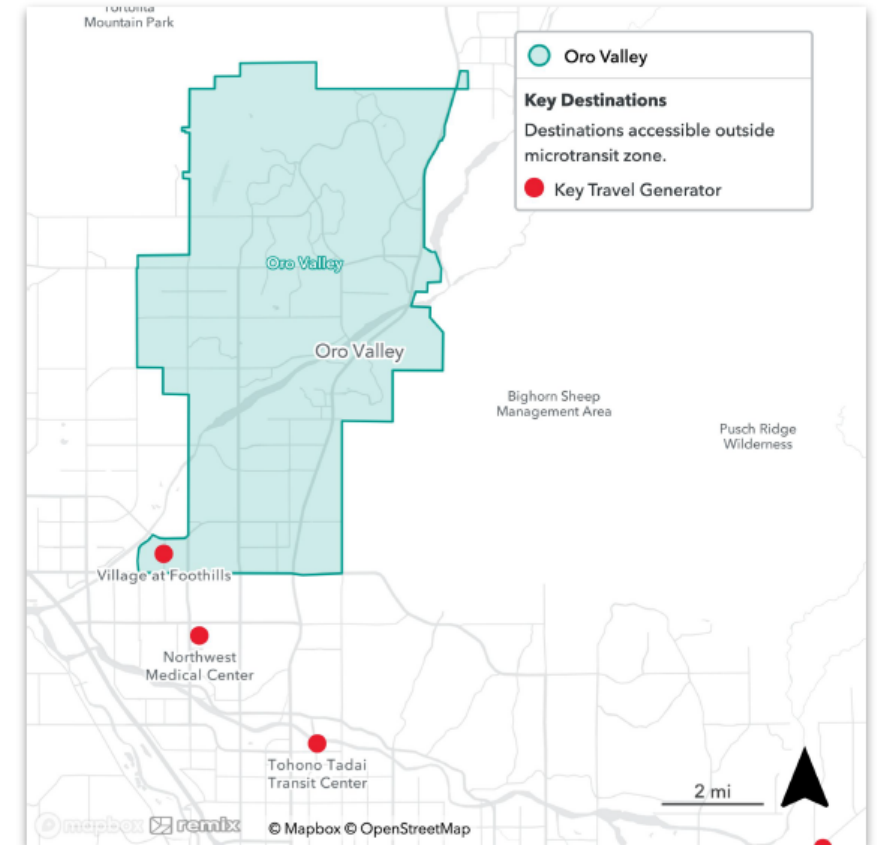
## Simulation Results

# 4 | Oro Valley

## Extended Service

### Modeling Results

<b>Fleet Size</b> <i>Vehicles required at peak (excl. spares)</i>	<b>5 - 10</b>
<b>Weekday Ridership</b> <i>Boardings</i>	80 - 290
<b>Daily Avg. Microtransit Productivity</b> <i>Boardings / Revenue Hour</i>	<b>1.3 - 3.1</b>
<b>Typical Wait (Peak Period)</b> <i>Minutes</i>	11 - 16
<b>Typical Ride Duration (Peak Period)</b> <i>Minutes</i>	16 - 23
<b>Annual Ridership</b> <i>Passenger Boardings</i>	<b>23,000 - 83,000</b>
<b>Annual Vehicle-Hours</b> <i>Hours</i>	14,200 - 29,900
<b>Annual Estimated Cost</b> <i>Dollars</i>	<b>\$1.1M - \$2.4M</b>
<b>Estimated Cost Per Ride</b> <i>Dollars</i>	\$29 - \$55



Area inside zone boundary: **43.7 mi<sup>2</sup>**  
Type: **DAR Conversion**

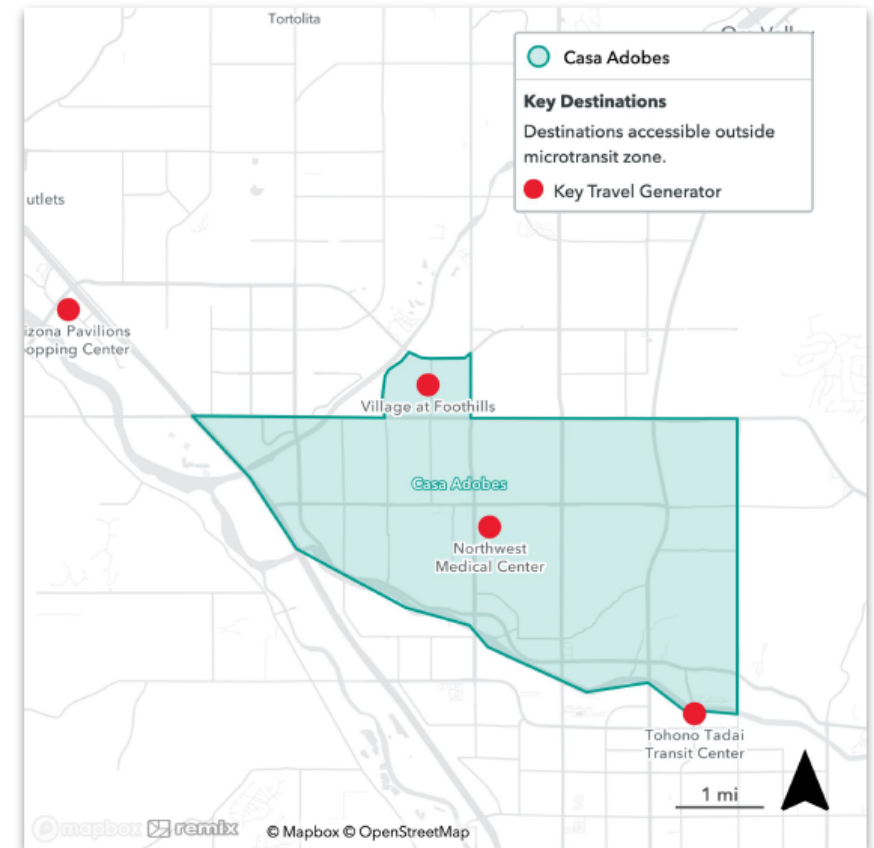
## Simulation Results

# 5 | Casa Adobes

### Modeling Results

<b>Fleet Size</b> <i>Vehicles required at peak (excl. spares)</i>	<b>3 - 6</b>
<b>Weekday Ridership</b> <i>Boardings</i>	<b>55 - 225</b>
<b>Daily Avg. Microtransit Productivity</b> <i>Boardings / Revenue Hour</i>	<b>1.3 - 3.6</b>
<b>Typical Wait (Peak Period)</b> <i>Minutes</i>	<b>8 - 14</b>
<b>Typical Ride Duration (Peak Period)</b> <i>Minutes</i>	<b>10 - 17</b>
<b>Annual Ridership</b> <i>Passenger Boardings</i>	<b>16,000 - 64,000</b>
<b>Annual Vehicle-Hours</b> <i>Hours</i>	<b>9,900 - 9,300</b>
<b>Annual Estimated Cost</b> <i>Dollars</i>	<b>\$0.8M - \$1.5M</b>
<b>Estimated Cost Per Ride</b> <i>Dollars</i>	<b>\$23 - \$50</b>

## Extended Service



Area inside zone boundary: **14.4 mi<sup>2</sup>**

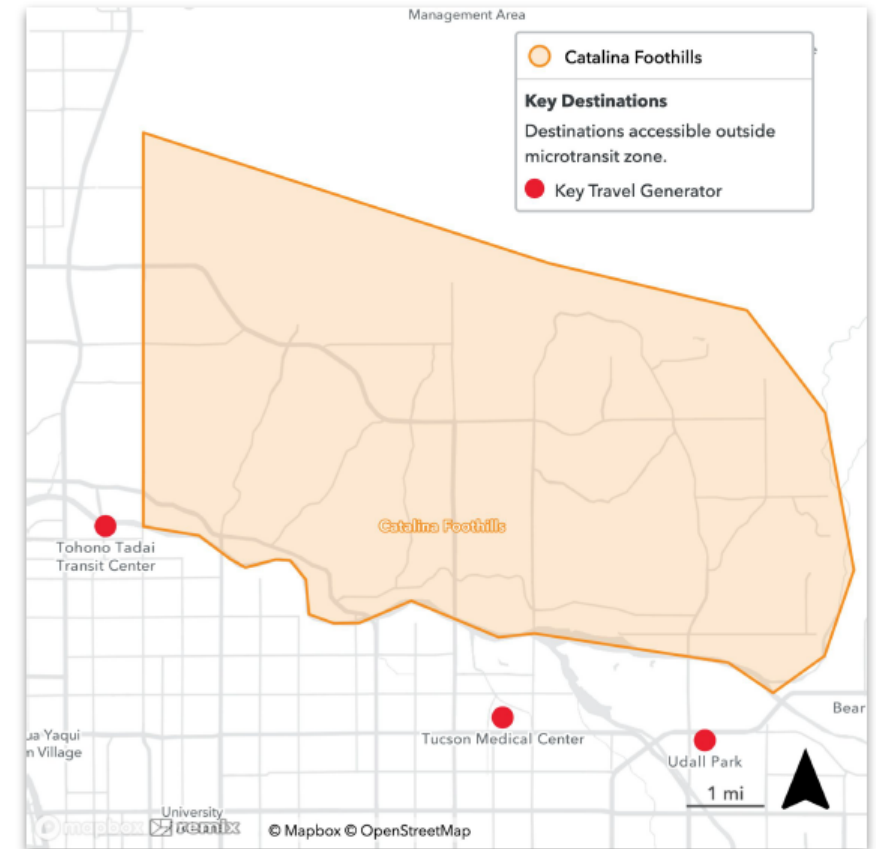
Type: **FR Replacement / Transit Expansion**

# 6 | Catalina Foothills

## Weekday Service

### Modeling Results

<b>Fleet Size</b> <i>Vehicles required at peak (excl. spares)</i>	<b>2 - 5</b>
<b>Weekday Ridership</b> <i>Boardings</i>	40 - 160
<b>Daily Avg. Microtransit Productivity</b> <i>Boardings / Revenue Hour</i>	<b>2.0 - 3.6</b>
<b>Typical Wait (Peak Period)</b> <i>Minutes</i>	20 - 28
<b>Typical Ride Duration (Peak Period)</b> <i>Minutes</i>	18 - 28
<b>Annual Ridership</b> <i>Passenger Boardings</i>	<b>11,000 - 42,000</b>
<b>Annual Vehicle-Hours</b> <i>Hours</i>	4,600 - 12,900
<b>Annual Estimated Cost</b> <i>Dollars</i>	<b>\$0.4M - \$1M</b>
<b>Estimated Cost Per Ride</b> <i>Dollars</i>	\$26 - \$34



Area inside zone boundary: **43 mi<sup>2</sup>**  
Type: **Transit Expansion**

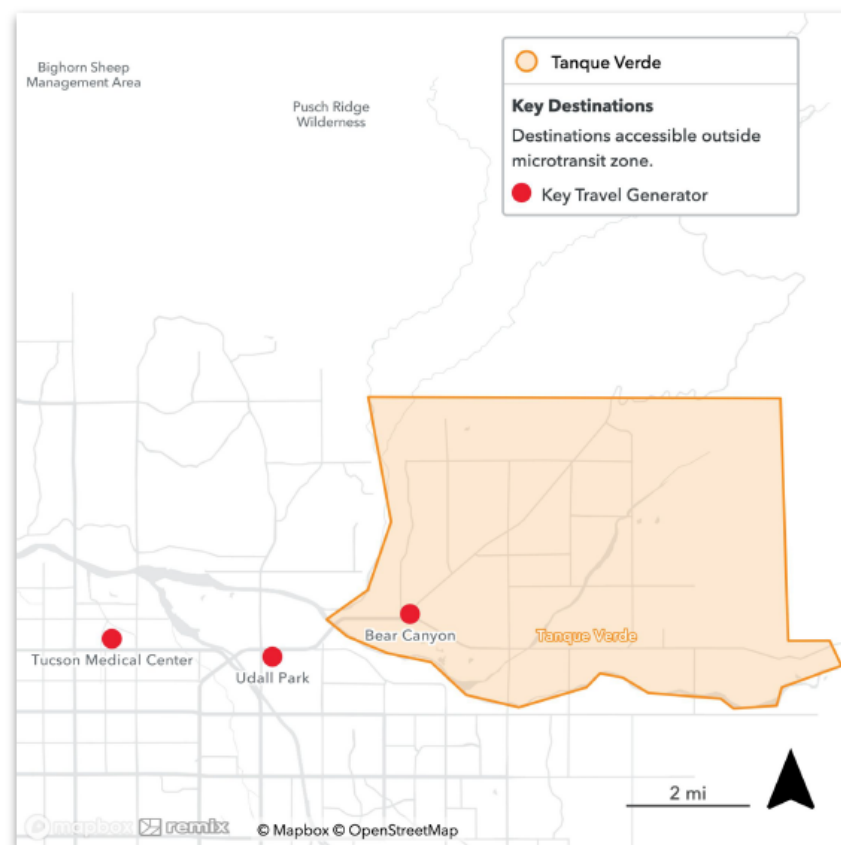
## Simulation Results

# 7 | Tanque Verde

## Weekday Service

### Modeling Results

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



Area inside zone boundary: **32 mi<sup>2</sup>**  
Type: **Transit Expansion**



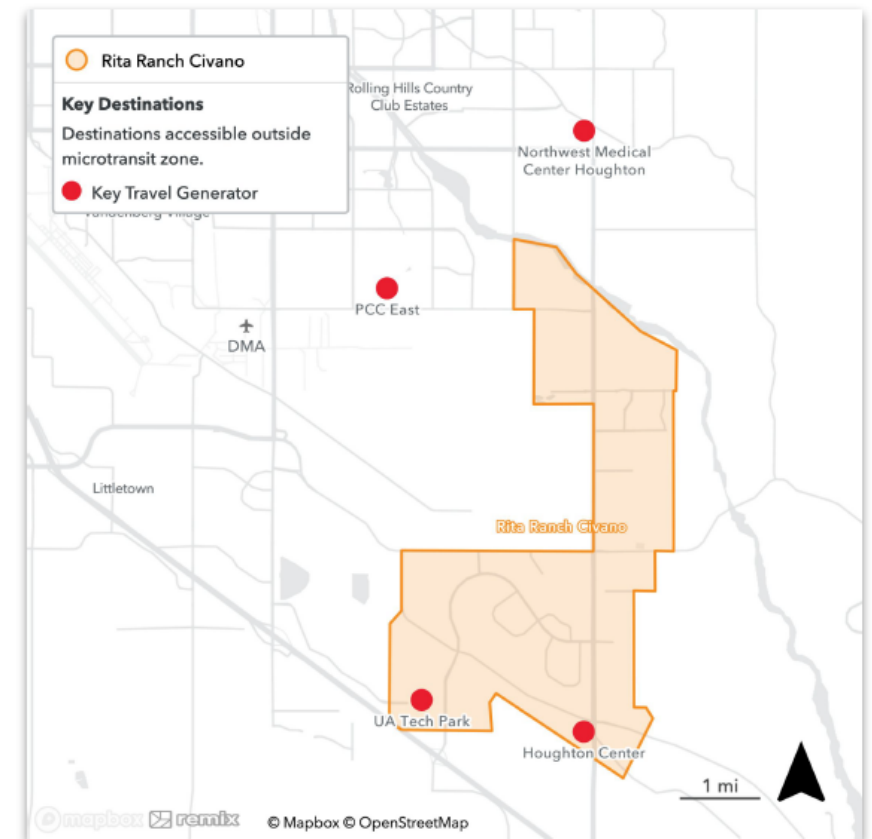
## Simulation Results

# 8 | Rita Ranch / Civano

### Modeling Results

<b>Fleet Size</b> <i>Vehicles required at peak (excl. spares)</i>	<b>2 - 3</b>
<b>Weekday Ridership</b> <i>Boardings</i>	25 - 95
<b>Daily Avg. Microtransit Productivity</b> <i>Boardings / Revenue Hour</i>	<b>1.5 - 3.9</b>
<b>Typical Wait (Peak Period)</b> <i>Minutes</i>	7 - 18
<b>Typical Ride Duration (Peak Period)</b> <i>Minutes</i>	11 - 20
<b>Annual Ridership</b> <i>Passenger Boardings</i>	<b>6,000 - 24,000</b>
<b>Annual Vehicle-Hours</b> <i>Hours</i>	3,400 - 6,900
<b>Annual Estimated Cost</b> <i>Dollars</i>	<b>\$300,000 - \$500,000</b>
<b>Estimated Cost Per Ride</b> <i>Dollars</i>	\$22 - \$44

## Weekday Service



Area inside zone boundary: **11.5 mi<sup>2</sup>**

Type: **FR Replacement**

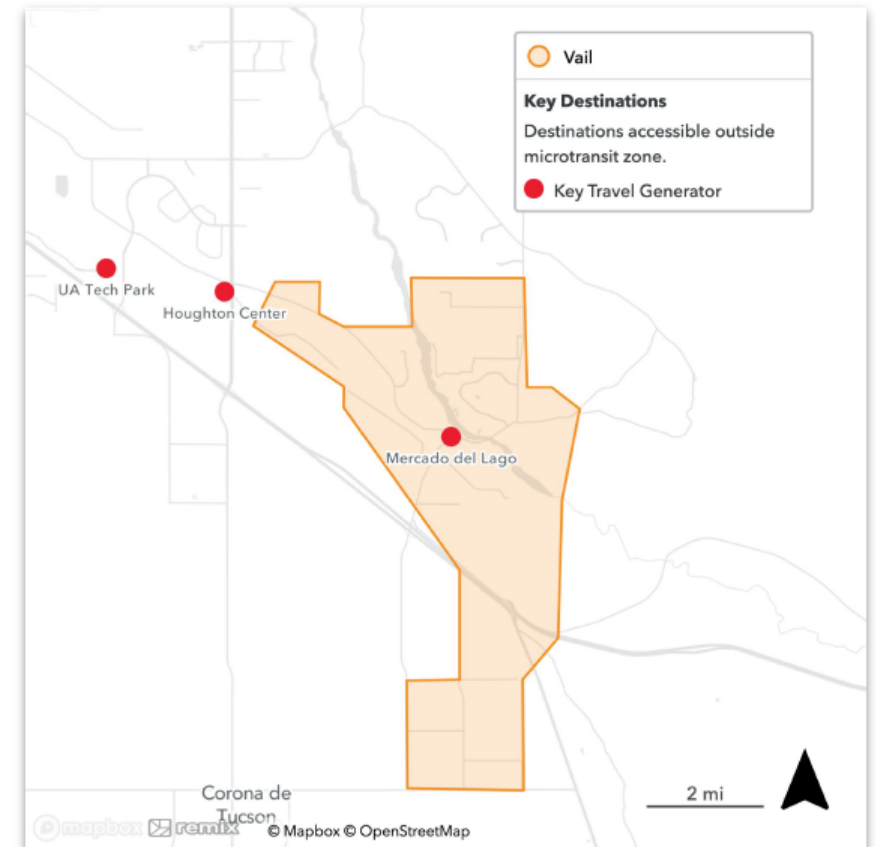
## Simulation Results

# 9 | Vail

### Modeling Results

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

## Weekday Service



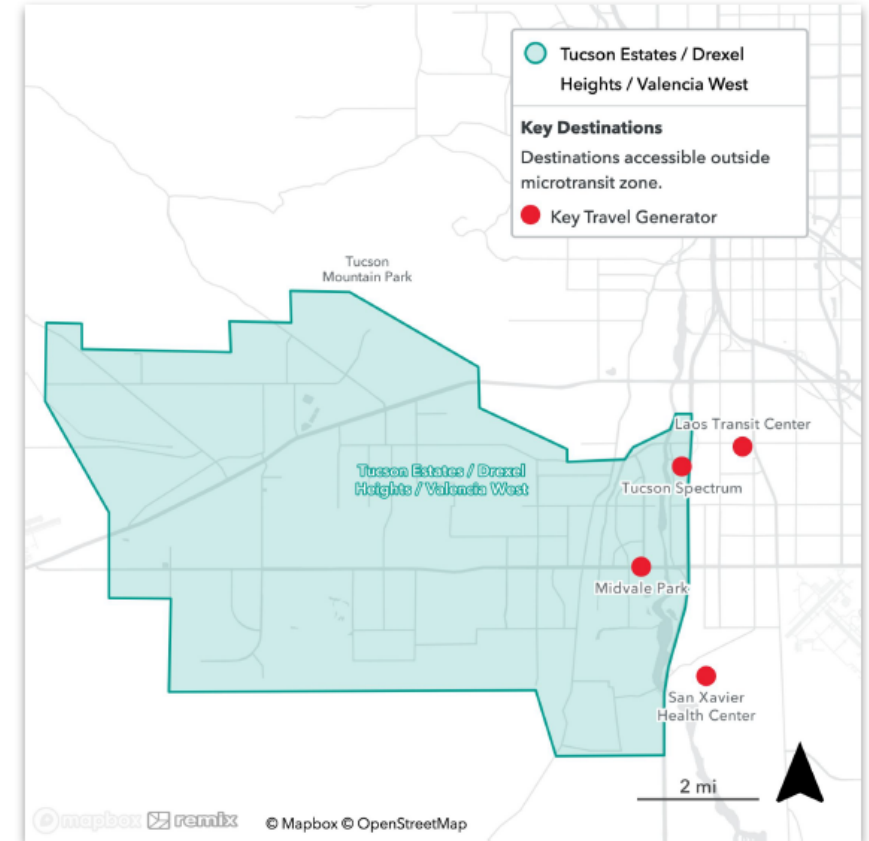
Area inside zone boundary: **22.2 mi<sup>2</sup>**  
Type: **Transit Expansion**

**Extended Service**

# 10 | Tucson Estates / Drexel Heights / Valencia West

## Modeling Results

<b>Fleet Size</b> <i>Vehicles required at peak (excl. spares)</i>	<b>5 - 10</b>
<b>Weekday Ridership</b> <i>Boardings</i>	<b>80 - 310</b>
<b>Daily Avg. Microtransit Productivity</b> <i>Boardings / Revenue Hour</i>	<b>1.1 - 3.2</b>
<b>Typical Wait (Peak Period)</b> <i>Minutes</i>	<b>6 - 18</b>
<b>Typical Ride Duration (Peak Period)</b> <i>Minutes</i>	<b>11 - 26</b>
<b>Annual Ridership</b> <i>Passenger Boardings</i>	<b>22,000 - 88,000</b>
<b>Annual Vehicle-Hours</b> <i>Hours</i>	<b>16,100 - 29,900</b>
<b>Annual Estimated Cost</b> <i>Dollars</i>	<b>\$1.3M - \$2.4M</b>
<b>Estimated Cost Per Ride</b> <i>Dollars</i>	<b>\$27 - \$57</b>



Area inside zone boundary: **52.7 mi<sup>2</sup>**  
Type: **FR Streamlining**

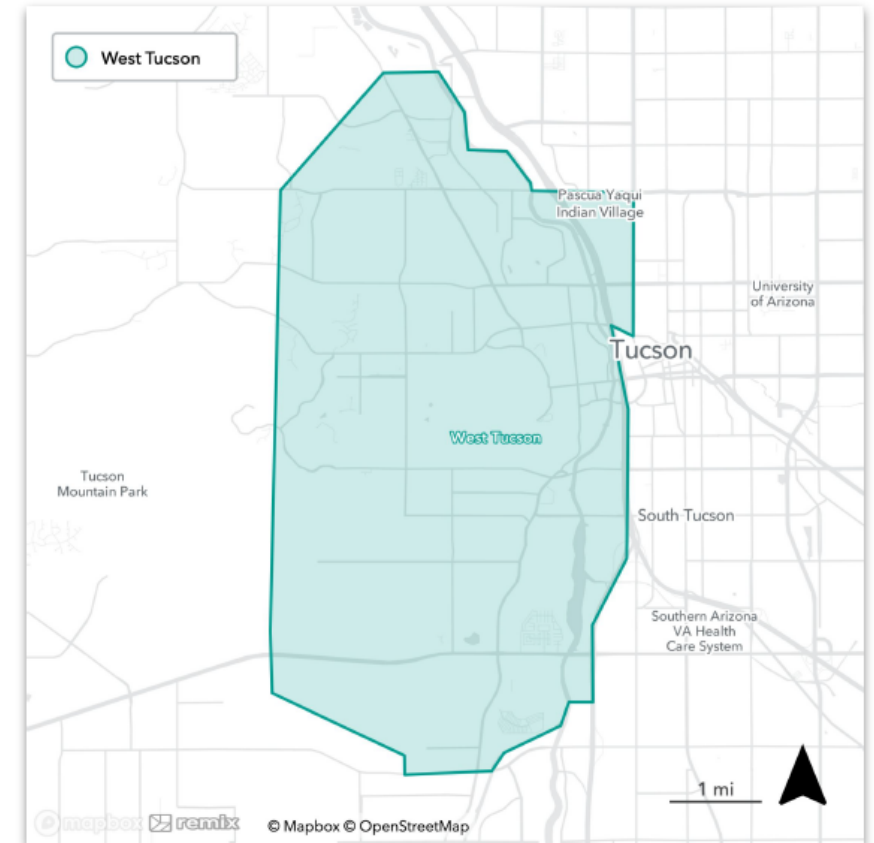
## Simulation Results

# 11 | West Tucson

## Extended Service

### Modeling Results

<b>Fleet Size</b> <i>Vehicles required at peak (excl. spares)</i>	<b>3 - 6</b>
<b>Weekday Ridership</b> <i>Boardings</i>	<b>65 - 255</b>
<b>Daily Avg. Microtransit Productivity</b> <i>Boardings / Revenue Hour</i>	<b>1.6 - 4.1</b>
<b>Typical Wait (Peak Period)</b> <i>Minutes</i>	<b>9 - 20</b>
<b>Typical Ride Duration (Peak Period)</b> <i>Minutes</i>	<b>13 - 18</b>
<b>Annual Ridership</b> <i>Passenger Boardings</i>	<b>19,000 - 74,000</b>
<b>Annual Vehicle-Hours</b> <i>Hours</i>	<b>9,900 - 19,300</b>
<b>Annual Estimated Cost</b> <i>Dollars</i>	<b>\$0.8M - \$1.5M</b>
<b>Estimated Cost Per Ride</b> <i>Dollars</i>	<b>\$21 - \$42</b>



Area inside zone boundary: **24.3 mi<sup>2</sup>**  
Type: **FR Replacement / Transit Expansion**

## Simulation Results

# 12 | Sahuarita / Green Valley

### Modeling Results

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

## Weekday Service



Area inside zone boundary: **29.9 mi<sup>2</sup>**  
Type: **DAR Conversion**

## Simulation Results

# 13 | Ajo

## Extended Service

### Modeling Results

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



Area inside zone boundary: **111.8 mi<sup>2</sup>**  
Type: **DAR Conversion**

# Summary of Results

■ Highest Performing  
■ Lowest Performing

Zone Name	Annual Ridership Boardings	Fleet Size Vehicles at <i>peak</i> (excl. spares)	Productivity Boardings / Revenue Hour	Trip Duration Average, minutes (peak time)	Cost per Trip Dollars, est*
Picture Rocks**	2k - 4k	2	0.2 - 1.3	18 - 26	\$80 - \$150
Tanque Verde	3k - 14k	2 - 3	0.6 - 2.5	10 - 15	\$41 - \$95
Vail	4k - 10k	2 - 3	0.9 - 2.7	12 - 19	\$34 - \$66
Marana/Avra Valley	4k - 17k	2 - 4	0.7 - 2.1	28 - 34	\$44 - \$77
Ajo	5k - 12k	2 - 3	0.7 - 2.4	7 - 13	\$37 - \$87
Rita Ranch/Civano	6k - 24k	2 - 3	1.5 - 3.9	11 - 20	\$22 - \$44
Catalina Foothills	11k - 42k	2 - 5	2.0 - 3.6	18 - 28	\$26 - \$34
Sahuarita/Green Valley	11k - 46k	2 - 5	2.1 - 4.3	13 - 19	\$20 - \$32
Tortolita	16k - 64k	3 - 6	1.4 - 3.6	10 - 14	\$24 - \$49
Casa Adobes	16k - 64k	3 - 6	1.3 - 3.6	10 - 17	\$23 - \$50
West Tucson	19k - 74k	3 - 6	2.7 - 4.1	13 - 18	\$21 - \$42
Oro Valley	23k - 83k	5 - 10	1.3 - 3.1	16 - 23	\$29 - \$55
Tucson Estates	22k - 88k	5 - 10	1.1 - 3.2	11 - 26	\$27 - \$57

## Key Takeaways

- The **efficiency** of each zone is largely **influenced by** the potential **ridership** demand and estimated **trip durations**.
- **Large zones and far away travel destinations lead to longer trips**, and thus less efficient services.
- We would recommend that each zone be operated with a **minimum of 2 vehicles** to ensure service reliability. In some scenarios, a second vehicle may not always be in use.
- Some of the zones with **2 vehicles and productivities of less than 2** boardings per revenue hour, should be considered for a **pre-scheduled service** to maximize efficiency and minimize use of the second vehicle (e.g., Picture Rocks).



# Next Steps

- Refine the simulations and adjust timeframes
- Develop the preferred scenario
- Perform Title VI analysis
- Analyze air quality benefits and VMT reductions
- Develop the recommendations

# Discussion

