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

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Public Involvement Phase 2 March 18-21

Technical Meetings:

PAG Technical Committee / PAG TPC

Pop-up Events:

Green Valley Library

Transit Centers:

Tohono Tadai / 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

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Simulations of Service Opportunity Zones

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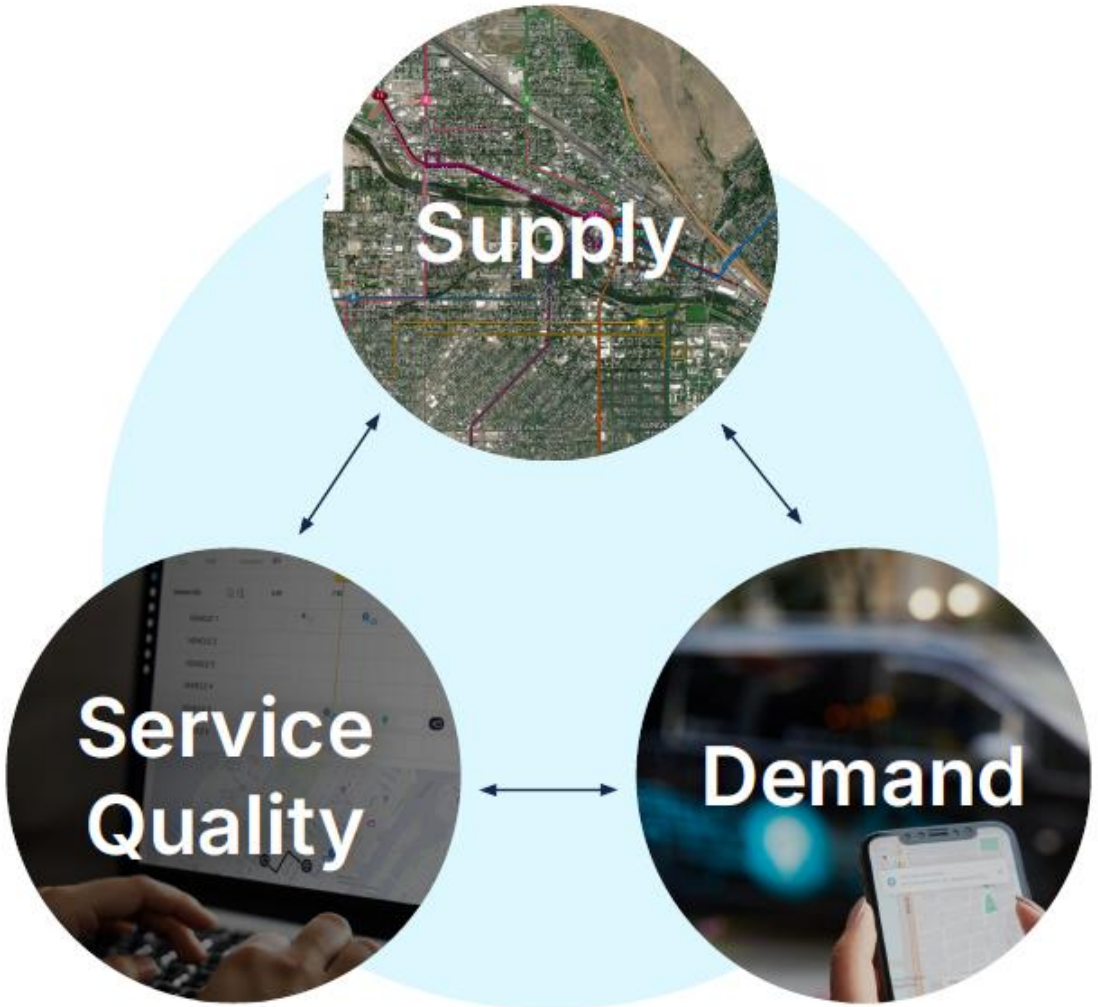
Simulation Overview



Supply

- Number of vehicles
- Available seats
- Operating hours

Demand

- Current ridership
- Car ownership
- Population
- Activity centers

Service Quality

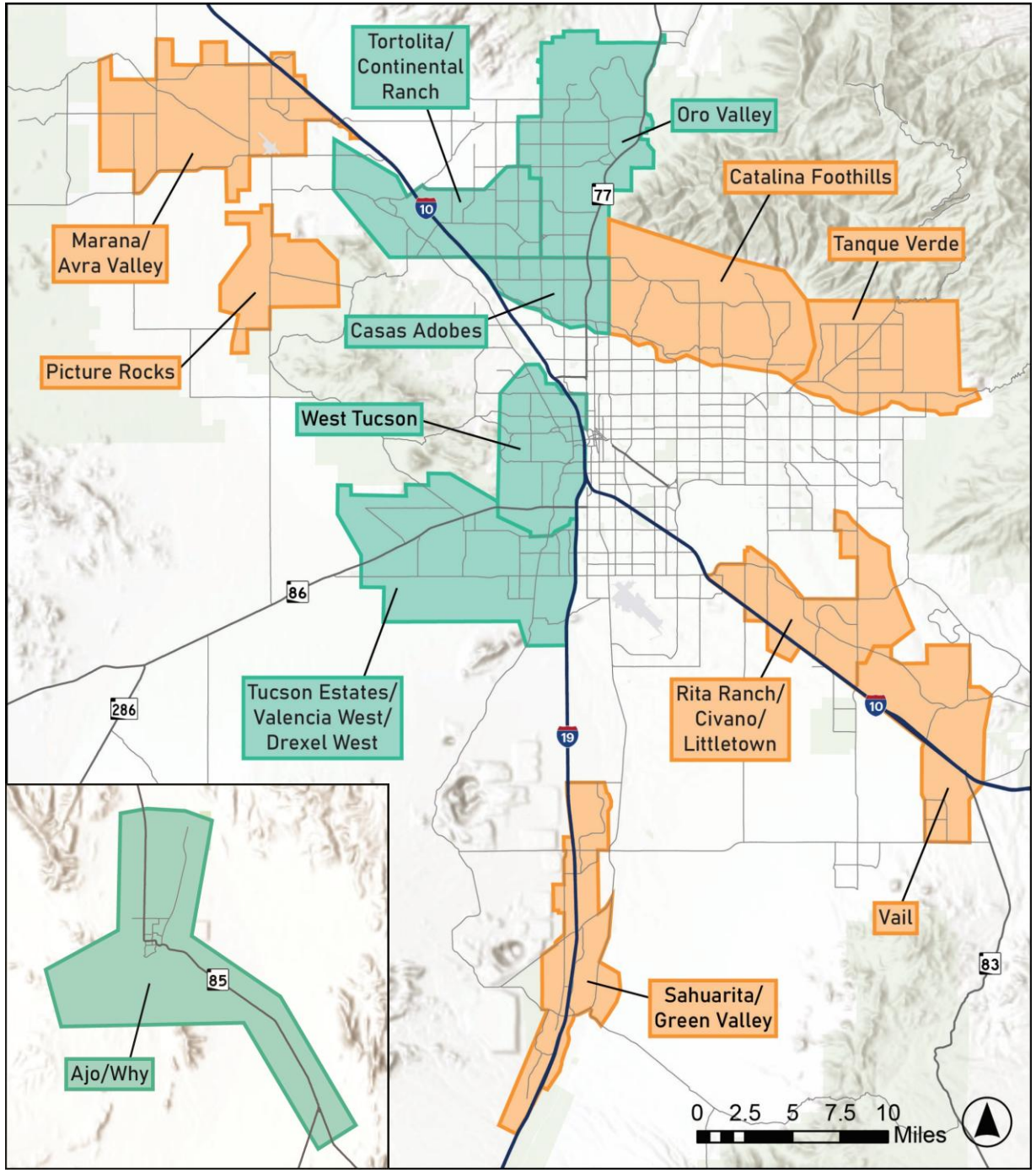
- Walking distance
- Met demand
- Detour
- Wait time

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) *Minimum 20% (or at least one) wheelchair accessible vehicle per service.*	
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

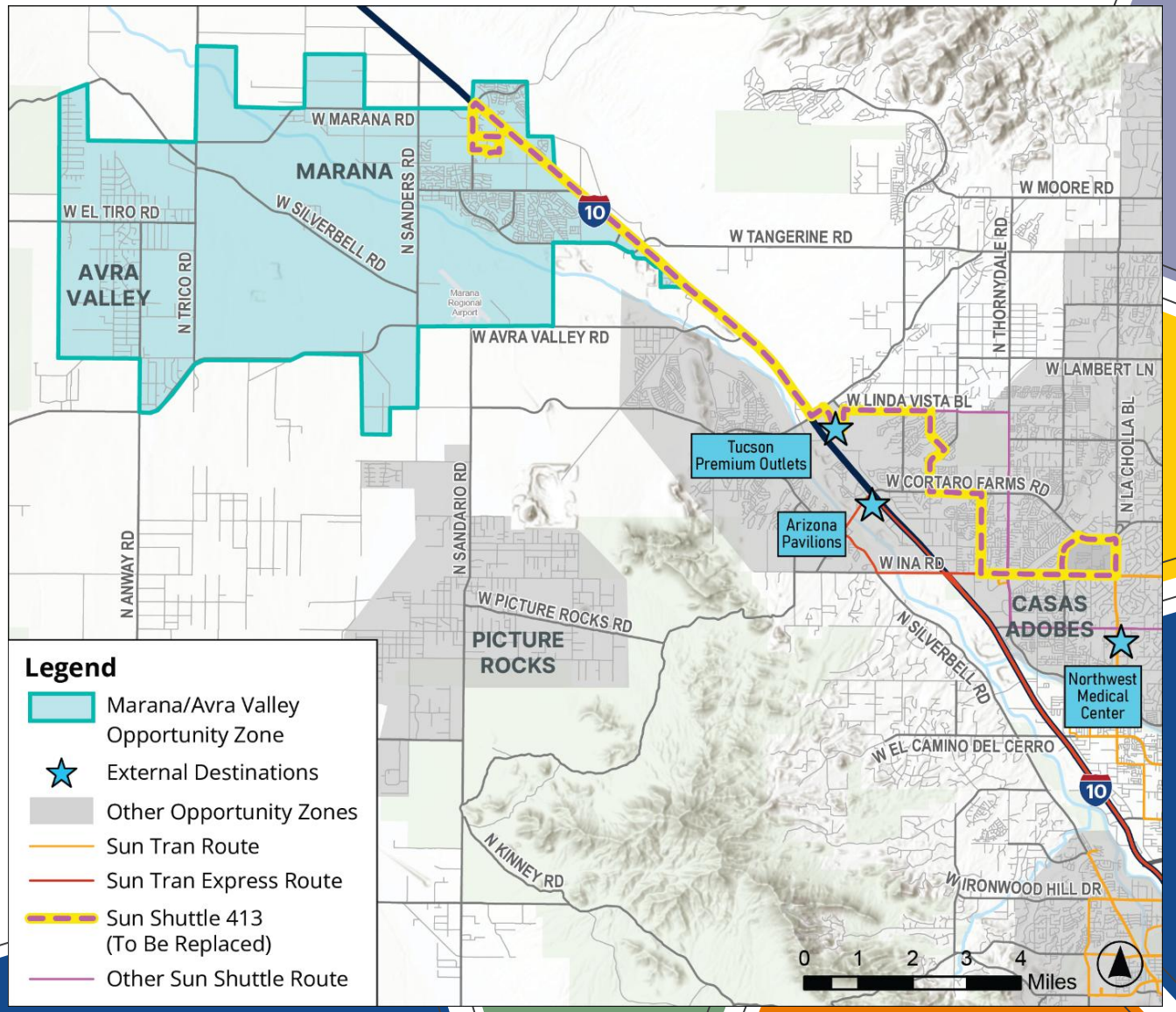
Opportunity Zone	Service Tier	Weekday Average			Annual
		Low	Medium	High	
Tucson Estates/Drexel Heights/Valencia West	Extended	80	205	310	59,000
Tortolita/Continental Ranch	Extended	75	200	300	57,000
Oro Valley	Extended	80	195	290	56,000
West Tucson	Extended	65	170	255	49,000
Casas Adobes	Extended	55	150	225	43,000
Rita Ranch/Civano/Littletown	Weekday	50	130	200	35,000
Sahuarita/Green Valley	Weekday	45	115	175	31,000
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	10,000
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 Needed at Peak	Utilization (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	10,000	2	2.1 – 2.7	11 – 15	15 – 19	$36
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

Marana / Avra Valley

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	15	40	65
Annual Ridership	4,000	11,000	17,000
Fleet Size Needed at Peak (Vehicles)	2	3	4
Typical Wait Time (Minutes)	17 – 21	17 – 21	17 – 21
Typical Ride Duration (Minutes)	28 – 32	30 – 34	28 – 32
Utilization (Riders per Hour)	0.7 – 1.3	1.4 – 2.0	1.5 – 2.1
Estimated Annual Cost	$300,000	$550,000	$700,000
Cost Efficiency	$77/ride	$50/ride	$44/ride



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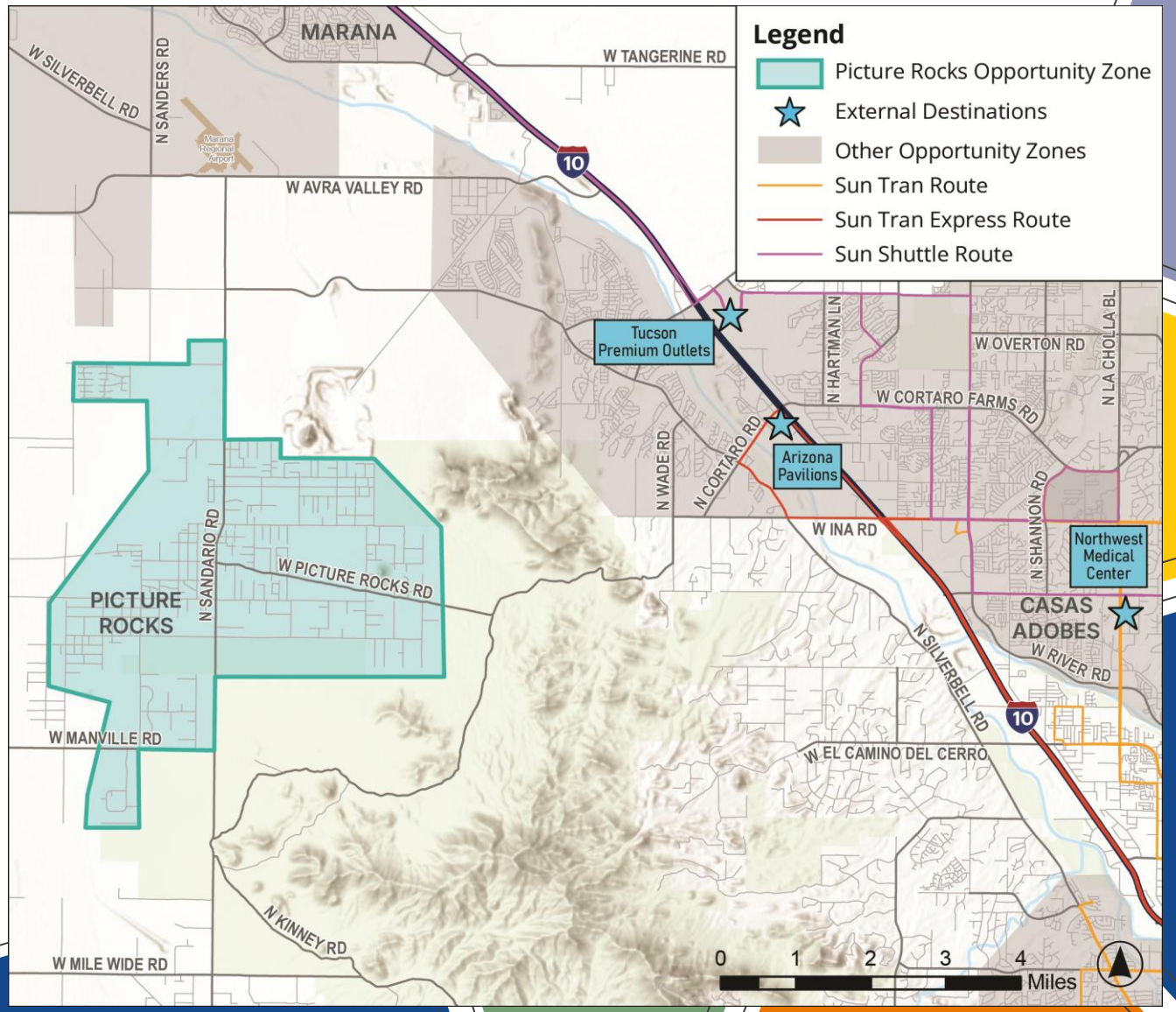
Picture Rocks

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	<10	15	20
Annual Ridership	<2,000	4,000	6,000
Fleet Size Needed at Peak (Vehicles)	2	2	2
Typical Wait Time (Minutes)	10 – 14	18 – 22	12 – 16
Typical Ride Duration (Minutes)	18 – 22	22 – 26	18 – 22
Utilization (Riders per Hour)	0.2 – 0.8	0.7 – 1.3	0.7 – 1.3
Estimated Annual Cost	$200,000	$300,000	$500,000
Cost Efficiency	>$100/ride	$80/ride	$80/ride



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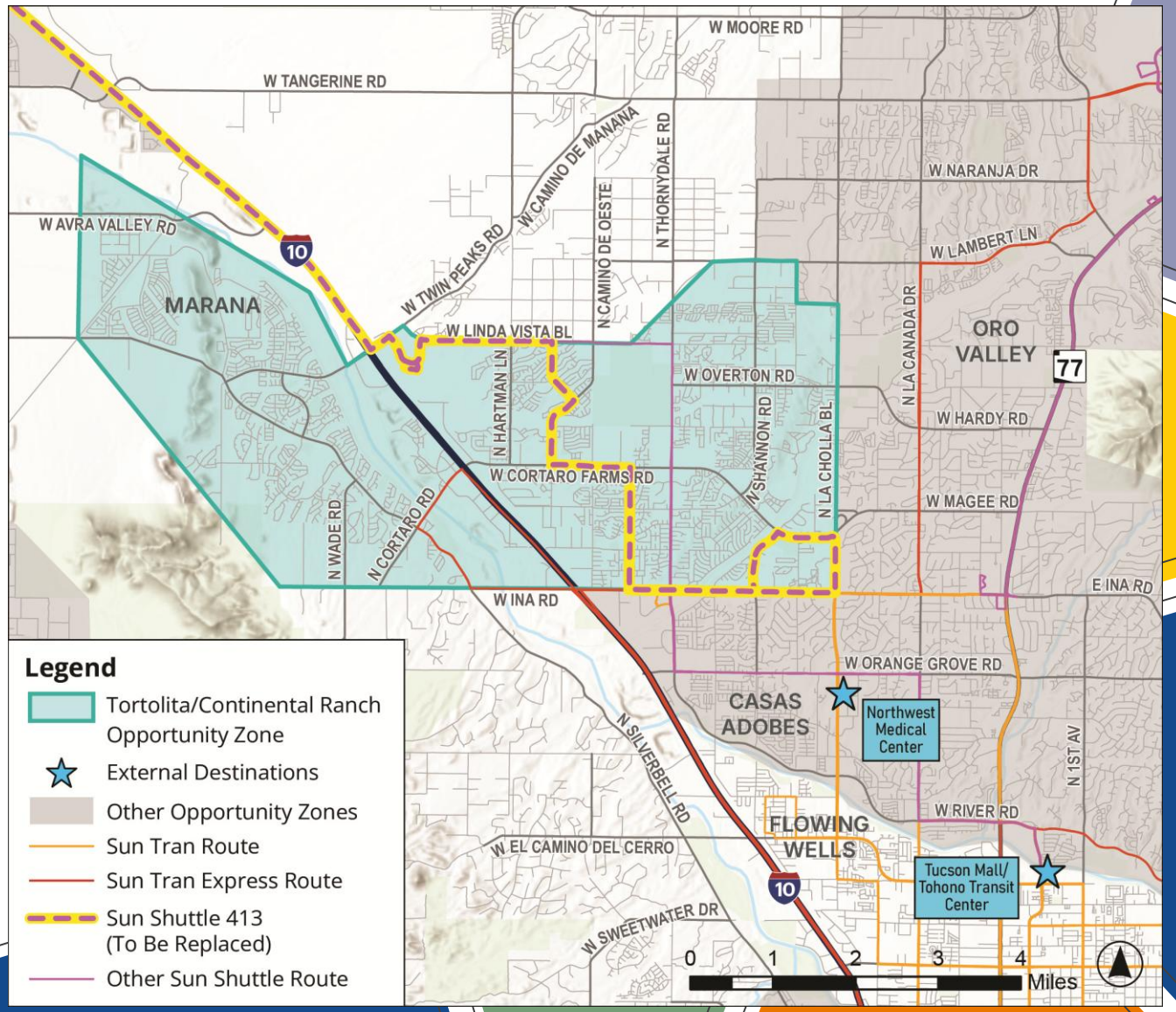
Tortolita / Continental Ranch

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	75	200	300
Annual Ridership	22,000	57,000	86,000
Fleet Size Needed at Peak (Vehicles)	3	6	8
Typical Wait Time (Minutes)	12 – 16	13 – 17	15 – 19
Typical Ride Duration (Minutes)	15 – 19	19 – 23	19 – 23
Utilization (Riders per Hour)	1.9 – 2.5	2.7 – 3.3	3.3 – 3.9
Estimated Annual Cost	$800,000	$1.6M	$1.9M
Cost Efficiency	$38/ride	$28/ride	$23/ride



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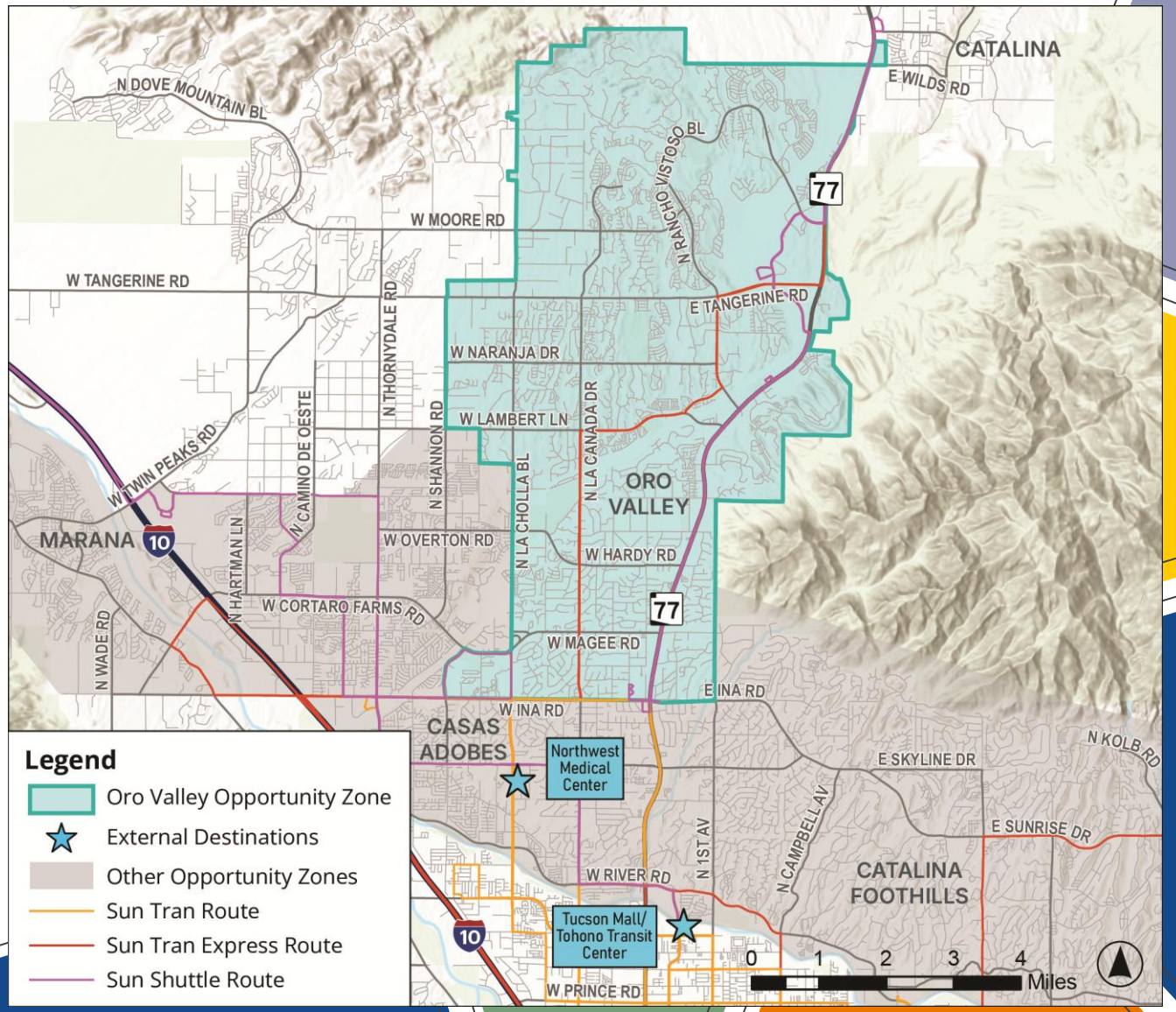
Oro Valley

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	80	195	290
Annual Ridership	23,000	56,000	83,000
Fleet Size Needed at Peak (Vehicles)	5	8	10
Typical Wait Time (Minutes)	11 – 15	12 – 16	11 – 15
Typical Ride Duration (Minutes)	16 – 20	19 – 23	18 – 22
Utilization (Riders per Hour)	1.3 – 1.9	2.2 – 2.8	2.5 – 3.1
Estimated Annual Cost	$1.1M	$1.8M	$2.4M
Cost Efficiency	$49/ride	$32/ride	$29/ride



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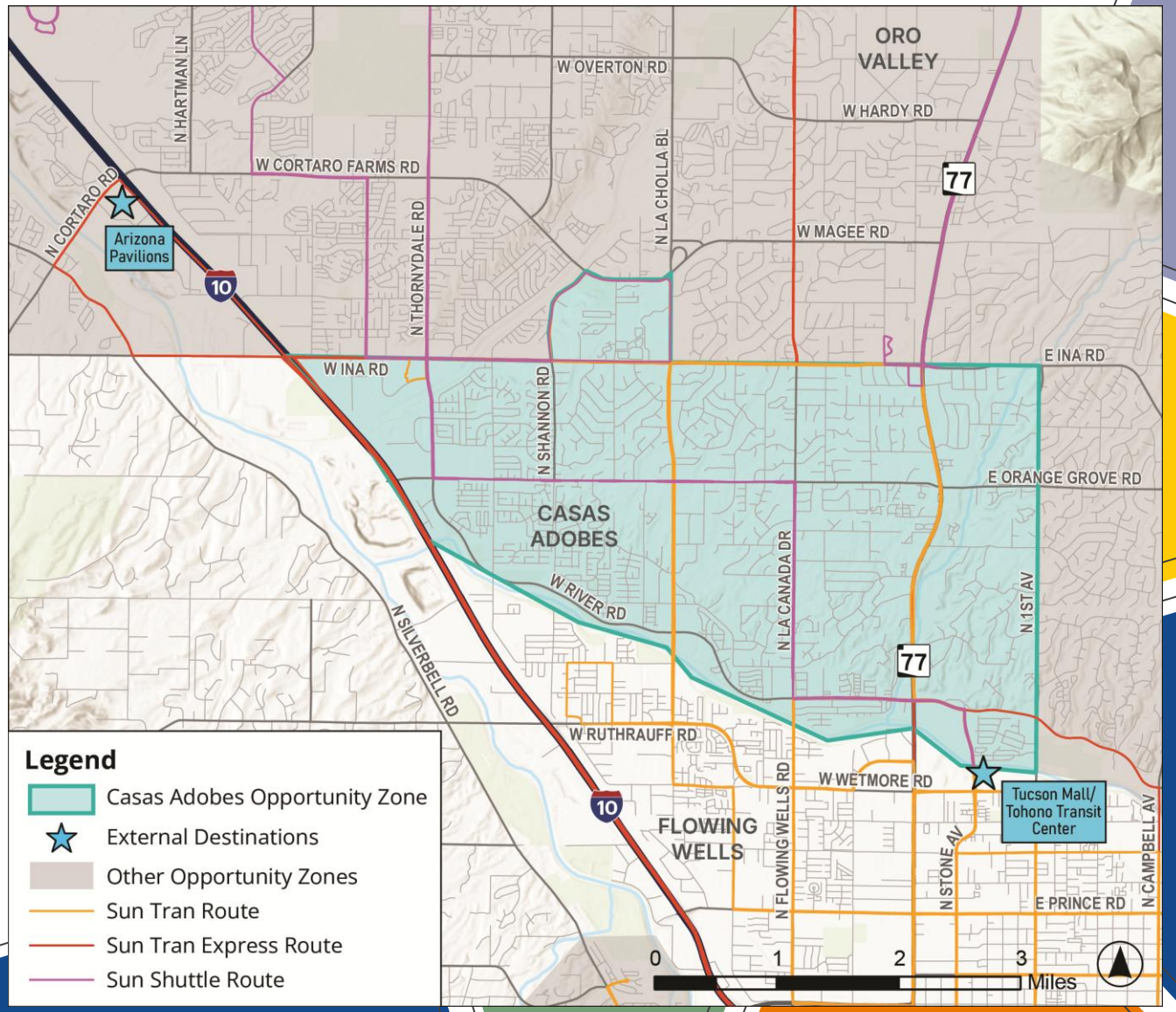
Casas Adobes

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	55	150	225
Annual Ridership	16,000	43,000	64,000
Fleet Size Needed at Peak (Vehicles)	3	5	6
Typical Wait Time (Minutes)	8 – 12	10 – 14	8 – 12
Typical Ride Duration (Minutes)	10 – 14	12 – 16	13 – 17
Utilization (Riders per Hour)	1.3 – 1.9	2.4 – 3.0	3.0 – 3.6
Estimated Annual Cost	$800,000	$1.3M	$1.5M
Cost Efficiency	$50/ride	$30/ride	$23/ride



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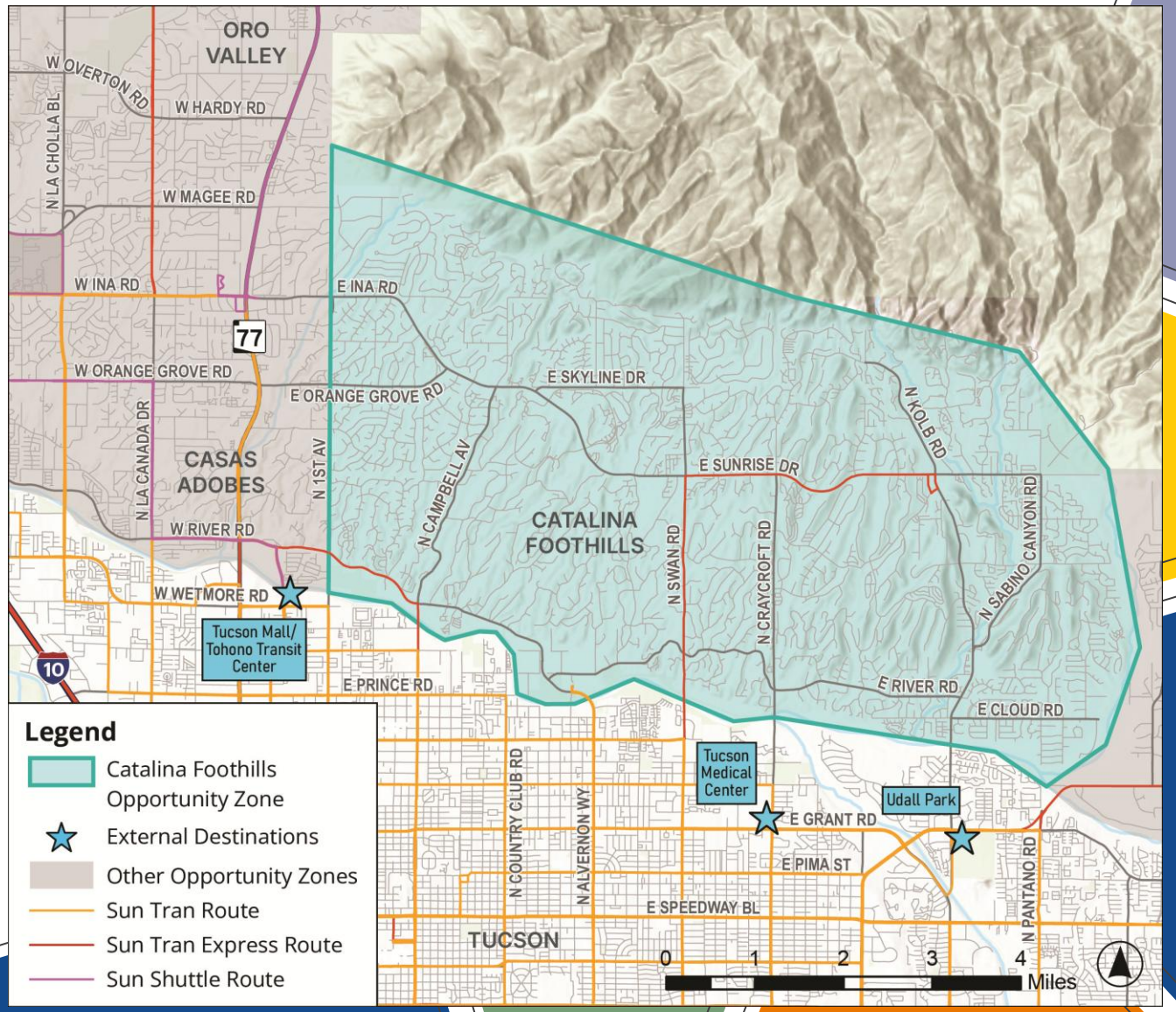
Catalina Foothills

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	40	110	160
Annual Ridership	11,000	28,000	42,000
Fleet Size Needed at Peak (Vehicles)	2	4	5
Typical Wait Time (Minutes)	22 – 26	20 – 24	24 – 28
Typical Ride Duration (Minutes)	20 – 24	18 – 22	24 – 28
Utilization (Riders per Hour)	2.6 – 2.6	2.8 – 3.4	3.0 – 3.6
Estimated Annual Cost	$400,000	$700,000	$1M
Cost Efficiency	$34/ride	$26/ride	$24/ride



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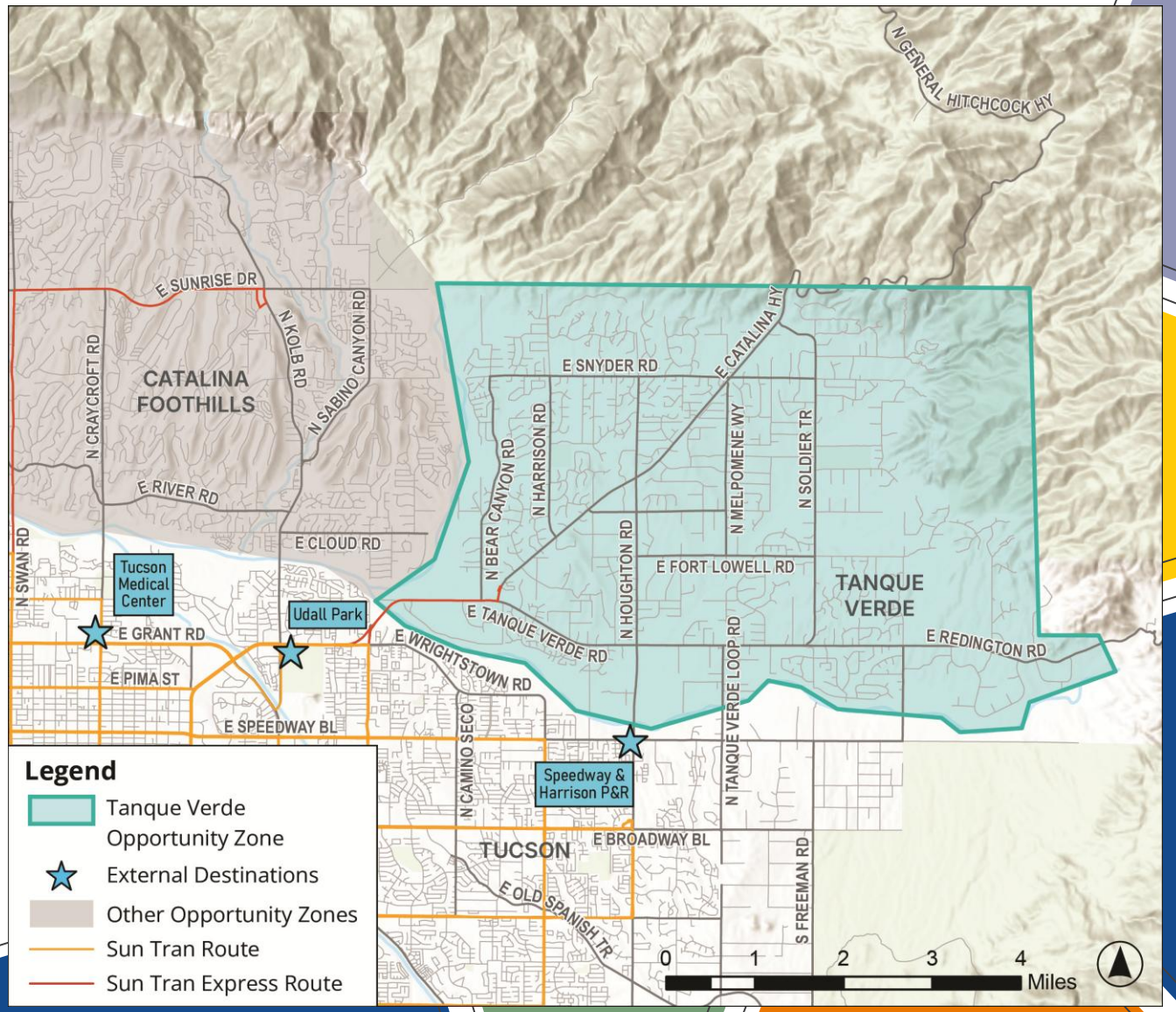
Tanque Verde

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	15	35	50
Annual Ridership	3,000	9,000	14,000
Fleet Size Needed at Peak (Vehicles)	2	2	3
Typical Wait Time (Minutes)	10 – 14	12 – 16	10 – 14
Typical Ride Duration (Minutes)	11 – 15	11 – 15	10 – 14
Utilization (Riders per Hour)	0.6 – 1.2	1.9 – 2.5	1.9 – 2.5
Estimated Annual Cost	$300,000	$350,000	$500,000
Cost Efficiency	$95/ride	$41/ride	$41/ride



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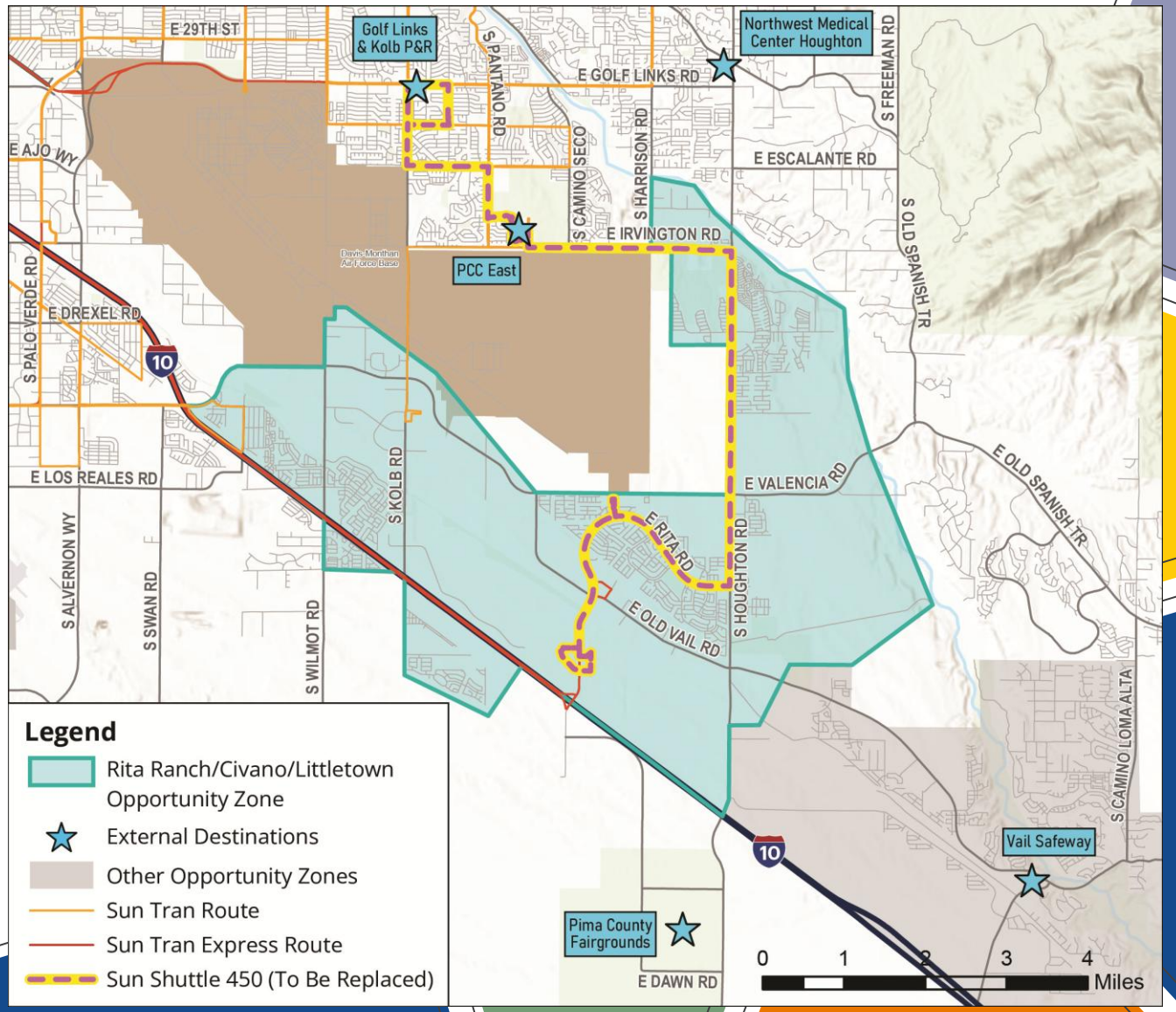
Rita Ranch / Civano / Littletown

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	50	130	200
Annual Ridership	13,000	35,000	52,000
Fleet Size Needed at Peak (Vehicles)	2	5	6
Typical Wait Time (Minutes)	26 – 30	22 – 26	26 – 30
Typical Ride Duration (Minutes)	17 – 21	21 – 25	25 – 31
Utilization (Riders per Hour)	2.6 – 3.2	3.1 – 2.7	3.5 – 4.1
Estimated Annual Cost	$400,000	$800,000	$1.1M
Cost Efficiency	$28/ride	$23/ride	$21/ride



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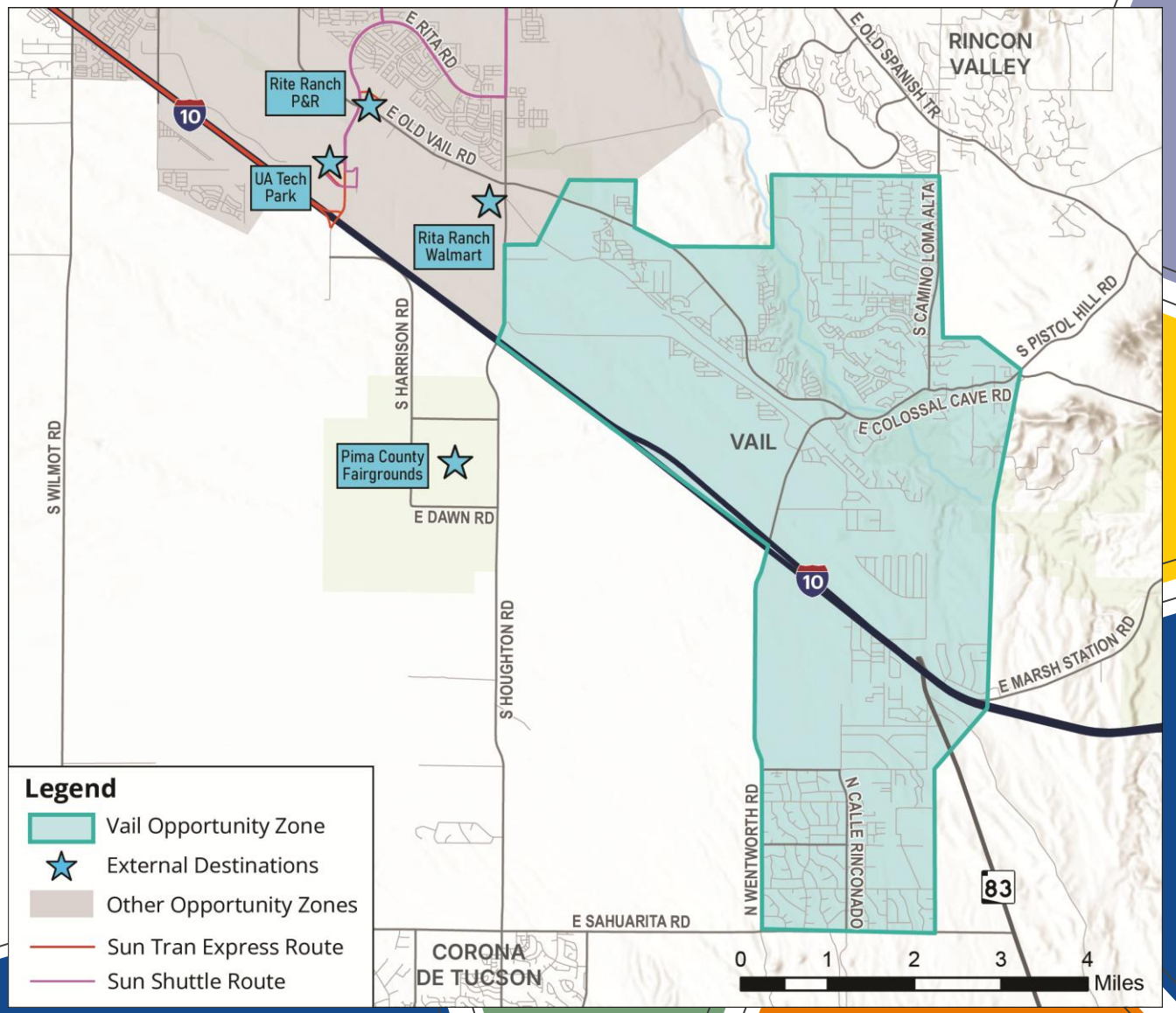
Vail

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	15	40	60
Annual Ridership	4,000	10,000	16,000
Fleet Size Needed at Peak (Vehicles)	2	2	3
Typical Wait Time (Minutes)	8 – 12	11 – 15	10 – 14
Typical Ride Duration (Minutes)	13 – 17	15 – 19	12 - 16
Utilization (Riders per Hour)	0.9 – 1.5	2.1 – 2.7	2.1 – 2.7
Estimated Annual Cost	$250,000	$350,000	$550,000
Cost Efficiency	$66/ride	$36/ride	$34/ride



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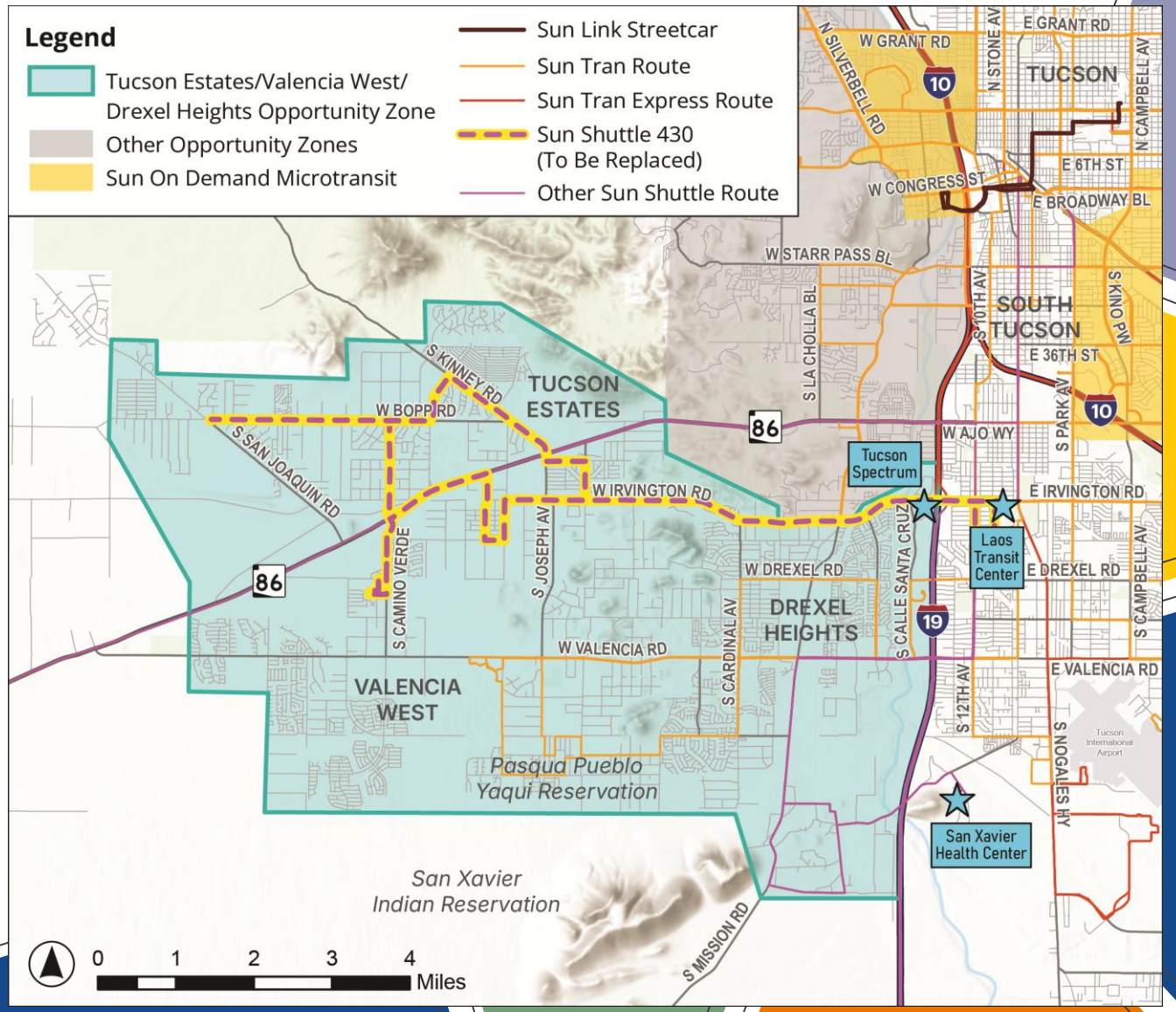
Tucson Estates / Drexel Heights / Valencia West

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	80	205	310
Annual Ridership	22,000	59,000	88,000
Fleet Size Needed at Peak (Vehicles)	5	8	10
Typical Wait Time (Minutes)	8 – 12	14 – 18	6 – 10
Typical Ride Duration (Minutes)	15 – 19	22 – 26	11 – 15
Utilization (Riders per Hour)	1.1 – 1.7	2.0 – 2.6	2.6 – 3.2
Estimated Annual Cost	$1.3M	$2.0M	$2.4M
Cost Efficiency	$57/ride	$30/ride	$27/ride



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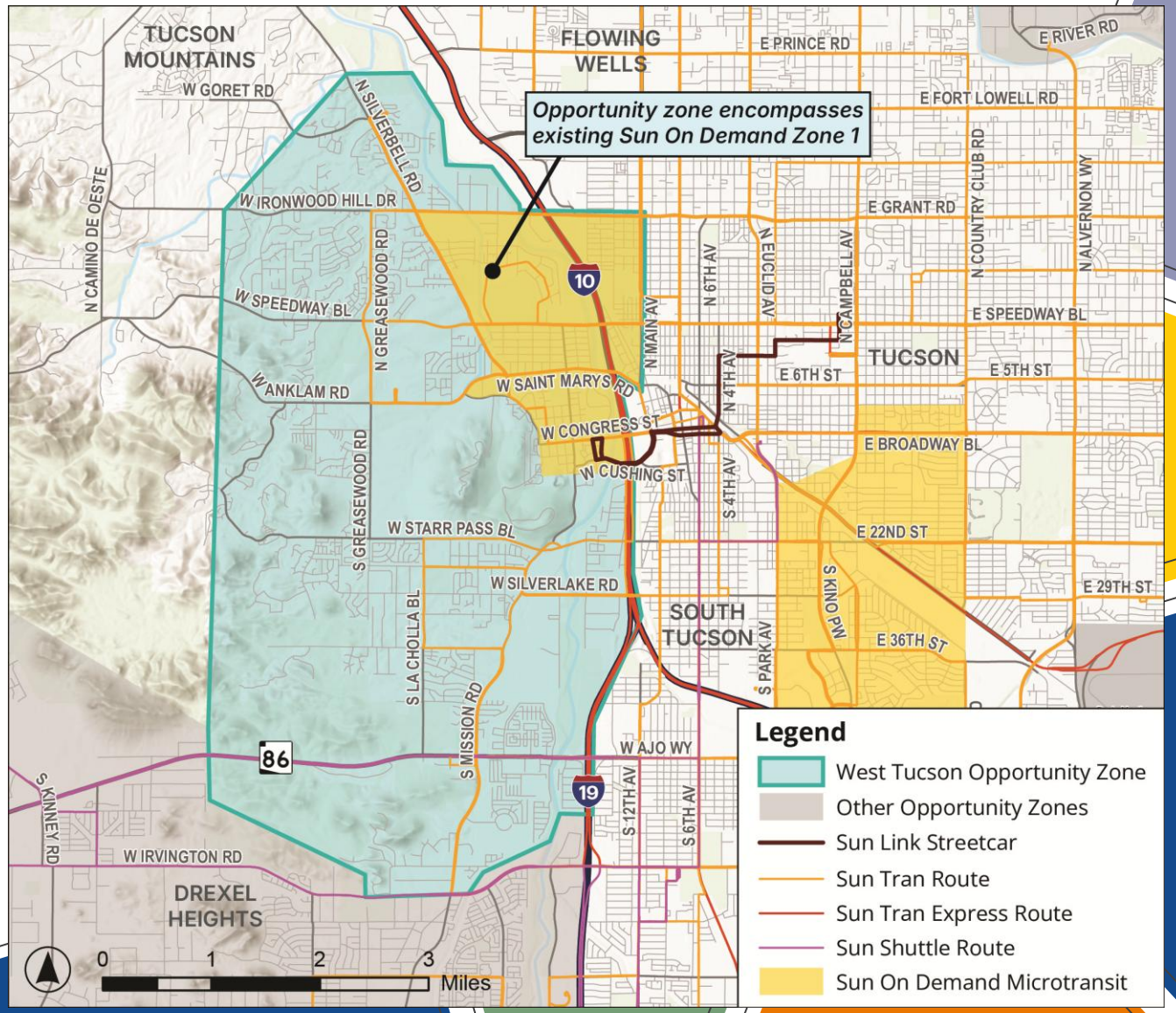
West Tucson

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	65	170	255
Annual Ridership	19,000	49,000	74,000
Fleet Size Needed at Peak (Vehicles)	3	5	6
Typical Wait Time (Minutes)	9 – 13	11 – 15	16 – 20
Typical Ride Duration (Minutes)	13 – 17	13 – 17	14 – 18
Utilization (Riders per Hour)	1.6 – 2.2	2.7 – 3.3	3.5 – 4.1
Estimated Annual Cost	$800,000	$1.3M	$1.5M
Cost Efficiency	$42/ride	$27/ride	$21/ride



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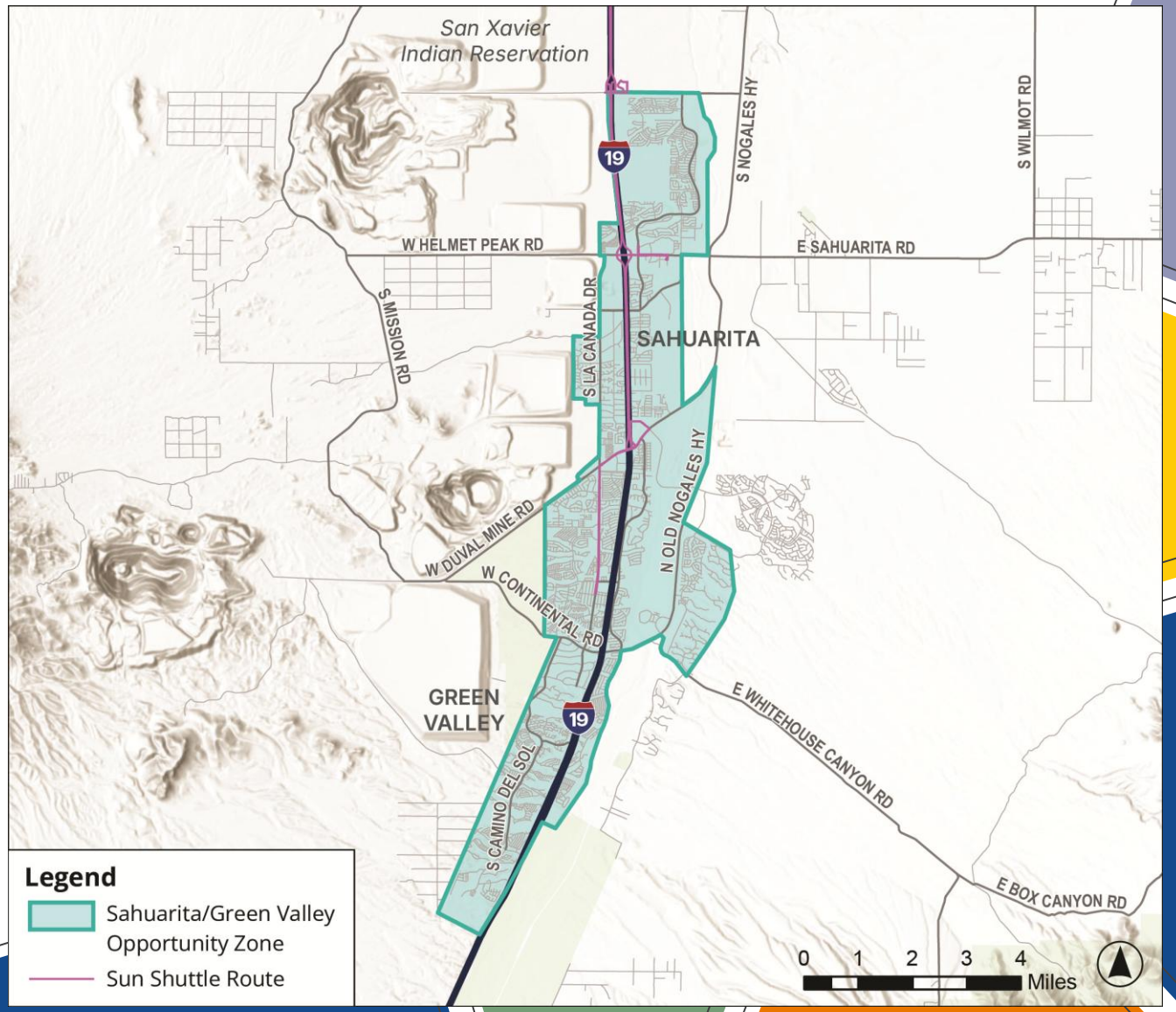
Sahuarita / Green Valley

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	45	115	175
Annual Ridership	11,000	31,000	46,000
Fleet Size Needed at Peak (Vehicles)	2	4	5
Typical Wait Time (Minutes)	13 – 17	14 – 18	13 – 17
Typical Ride Duration (Minutes)	15 – 19	13 – 17	14 – 18
Utilization (Riders per Hour)	2.1 – 2.7	3.1 – 3.7	3.7 – 4.3
Estimated Annual Cost	$400,000	$700,000	$900,000
Cost Efficiency	$32/ride	$23/ride	$20/ride



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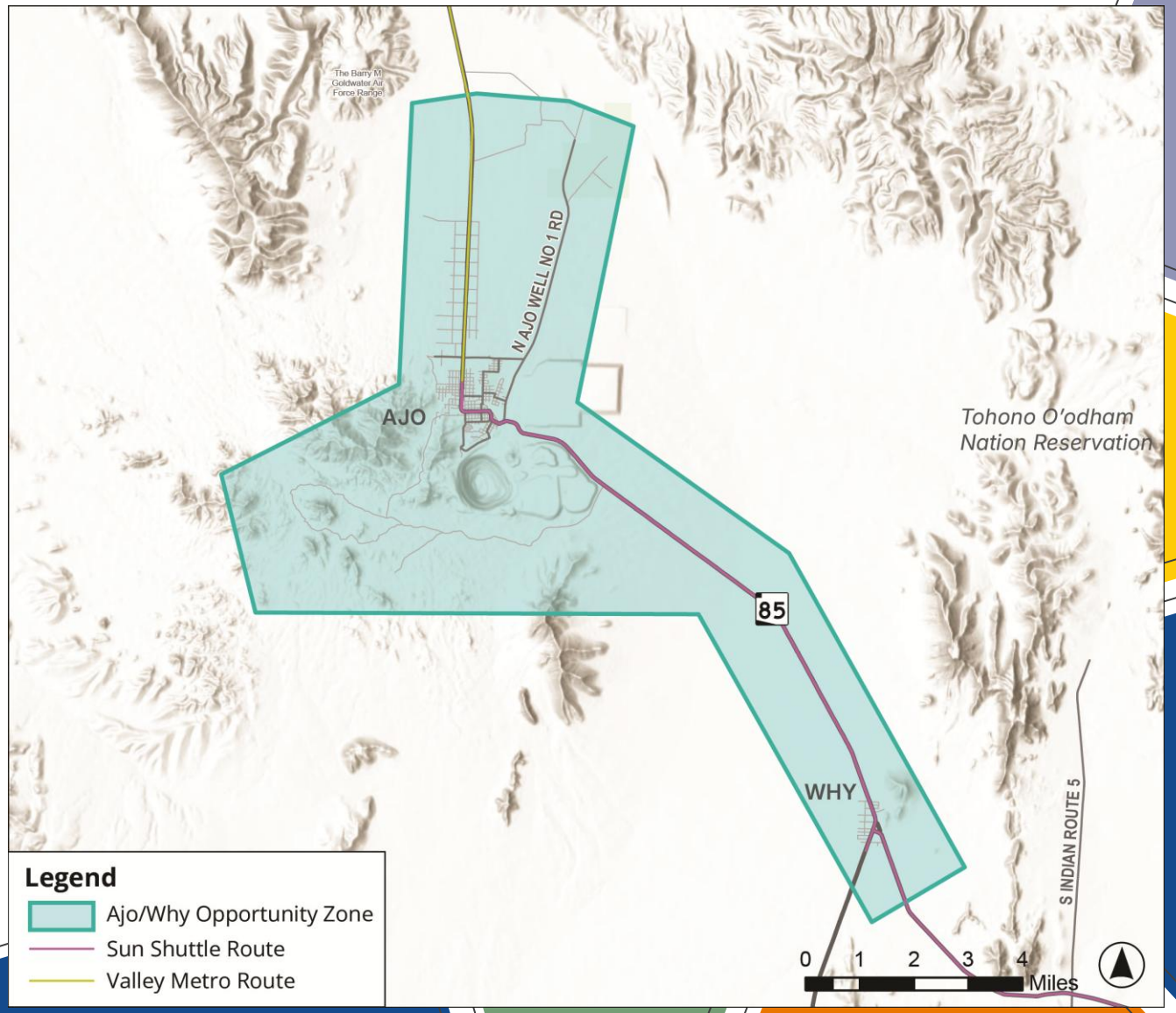
Ajo / Why

Simulation Results	Low Scenario	Medium Scenario	High Scenario
Weekday Ridership	15	40	65
Annual Ridership	5,000	12,000	18,000
Fleet Size Needed at Peak (Vehicles)	2	2	3
Typical Wait Time (Minutes)	5 – 9	6 – 10	8 – 12
Typical Ride Duration (Minutes)	7 – 11	7 – 11	9 – 13
Utilization (Riders per Hour)	0.7 – 1.3	1.8 – 2.4	1.8 – 2.4
Estimated Annual Cost	$400,000	$500,000	$700,000
Cost Efficiency	$87/ride	$39/ride	$37/ride



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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

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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

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Air Quality Analysis

- Adding microtransit service and expanding fixed-route bus service increases tailpipe CO_2e emissions in ten zones and decreases CO_2e emissions in three zones
- This results in an increase in CO_2e emissions across all zones valued at approximately $78,700 based on the U.S. EPA's projected 2025 social cost of CO_2 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**

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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	$800,000	$244,000	$556,000
Sahuarita/Green Valley	Near Term	$700,000	$289,000	$411,000
Ajo/Why	Near Term	$500,000	$240,000	$260,000
Total Near Term		**$4,900,000**		**$3,809,000**
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	$350,000		$350,000
Picture Rocks	Medium Term	$300,000		$300,000
Total Medium Term		**$5,570,000**		**$5,182,000**
Tanque Verde	Long Term	$350,000		$350,000
Catalina Foothills	Long Term	$700,000		$700,000
Marana/Avra Valley	Long Term	$550,000	$264,000	$286,000
Total Long Term		**$1,600,000**		**$1,336,000**
Total Microtransit Operating Costs		**$12,250,000**		**$10,327,000**

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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	5	$205,000
Sahuarita/Green Valley	Near Term	4	$164,000
Ajo/Why	Near Term	2	$82,000
Total Near Term		**22**	**$902,000**
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			**$2,294,000**

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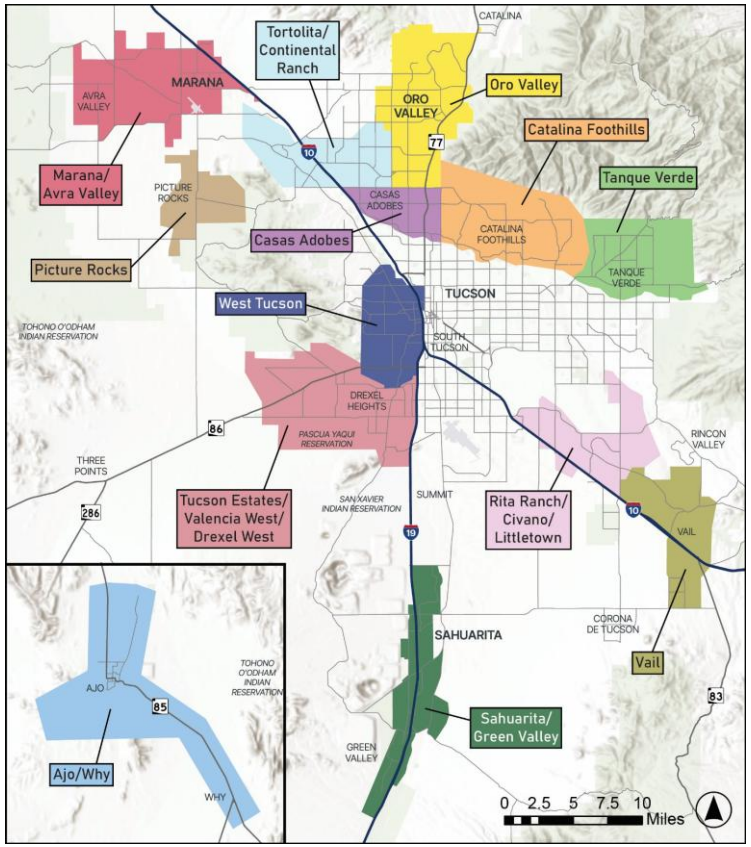
Implementing Microtransit – Other Considerations



- 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

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Questions

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