

Dial-a-Ride and Microtransit Service Area Analysis

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Presenters:

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Agenda



Introductions



Public Involvement Summary



Draft Service Opportunity Areas



Second Phase of Public Involvement



Discussion

Public Engagement Summary

- First round from October 22 to October 24
 - Pop-up events:
 - Tucson Meet Yourself
 - Transit Center at Tohono Tadaí
 - University of Arizona
 - Transit Center at Roy Lao
 - Transit Center at Ronstadt
 - Open Houses
 - Vail Open House, W. Anne Gibson-Esmond Station Library
 - Picture Rocks Open House, Picture Rocks Community Center
 - Focus Groups
 - Sun Shuttle
 - Sun Tran – On Demand (Microtransit)
 - Sun Tran – Fixed Route
 - Interview – Oro Valley
 - Surveys (127)

Public Engagement Summary

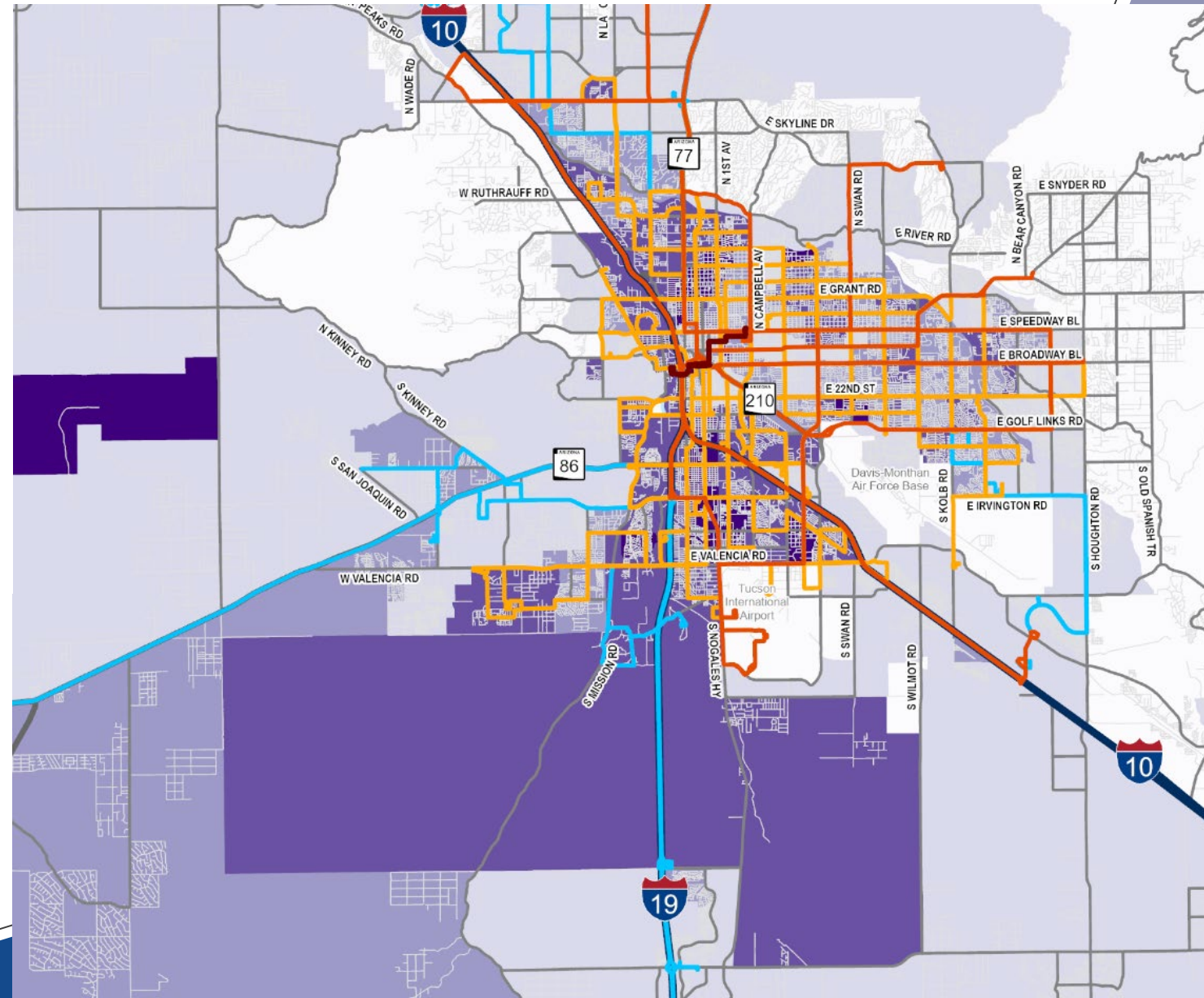
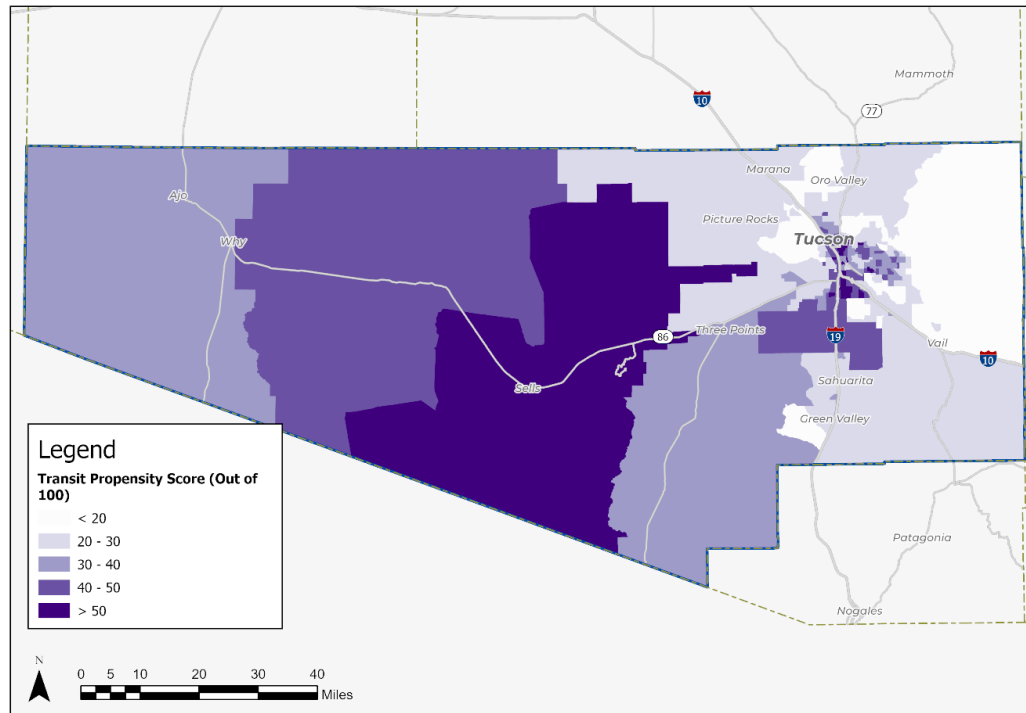
Public input feedback

- Extend/provide weekend service
- Extend weekday service hours
- More frequent service on existing routes
- Interest in using microtransit:
80% yes

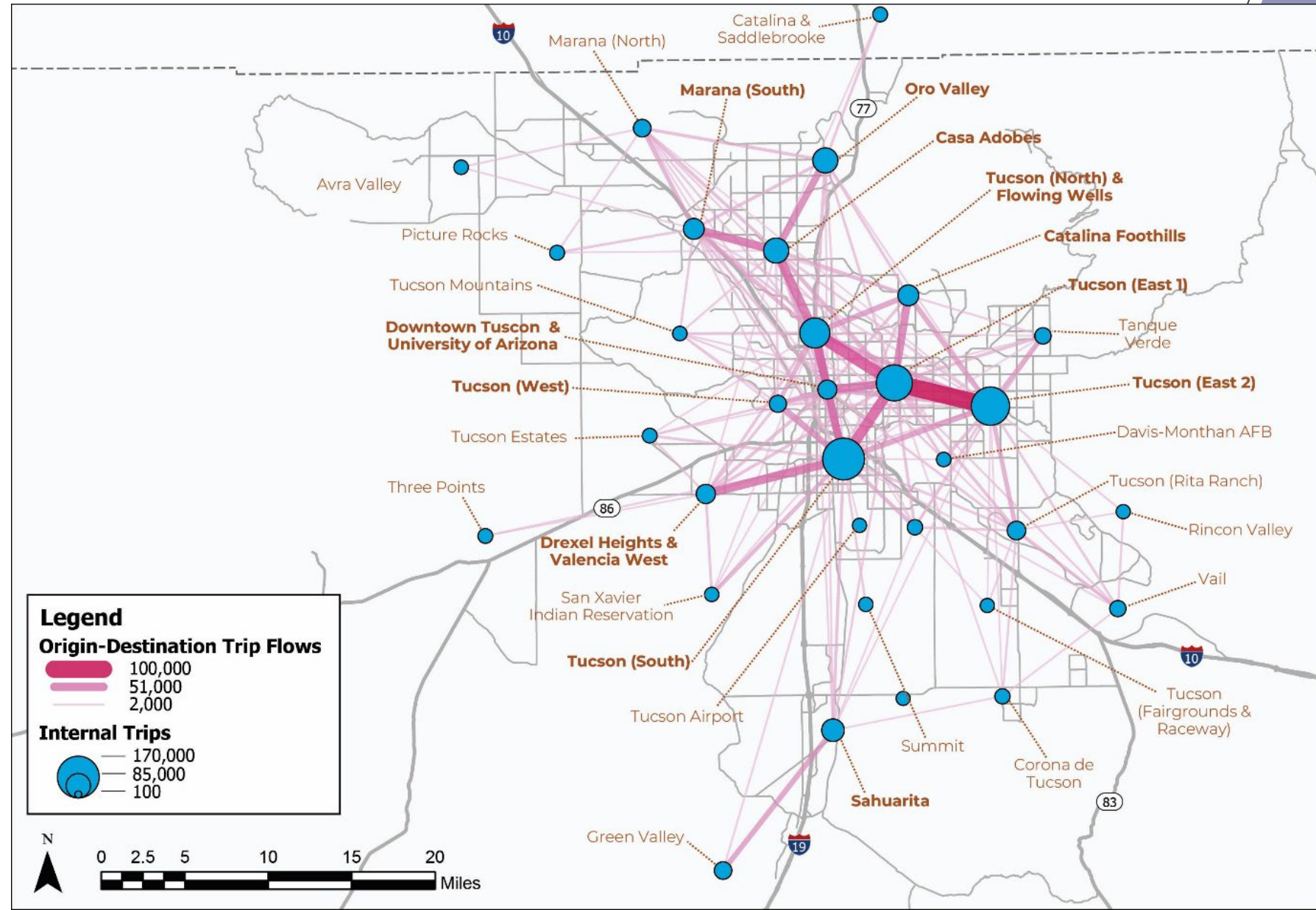


Draft Service Opportunity Zones

Background: Transit Propensity



Travel Demand



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 Zone 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

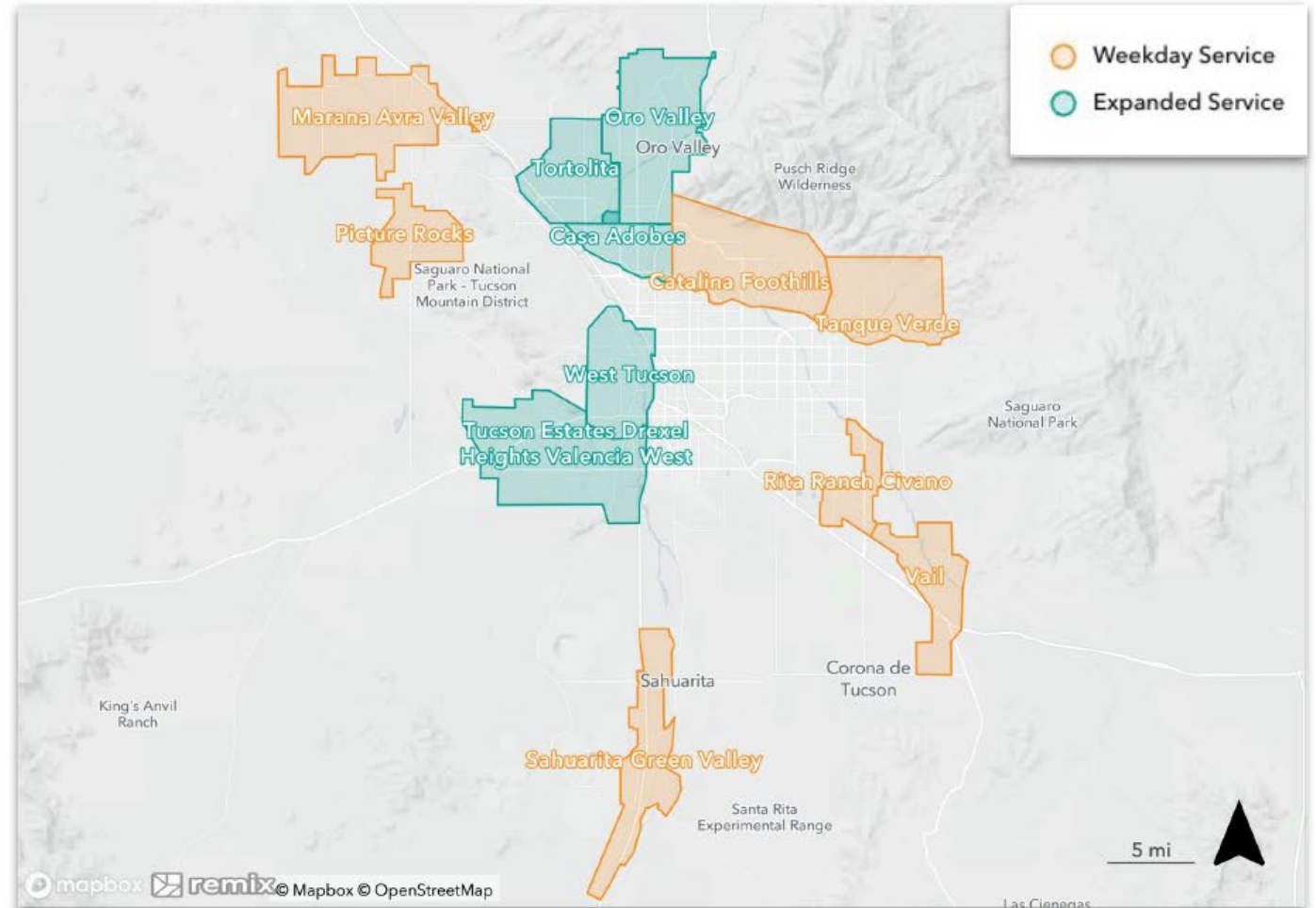
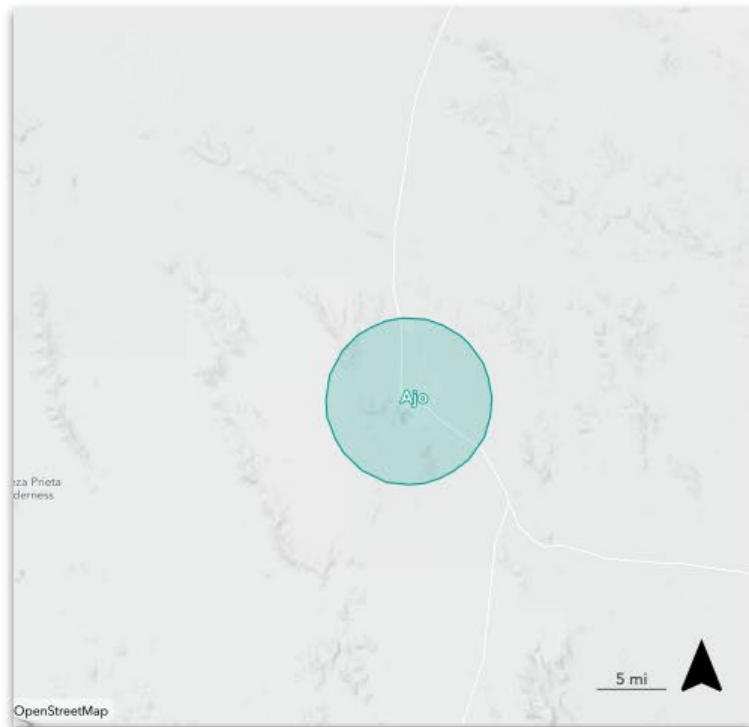
- More densely populated
- More residents & jobs
- Higher transit propensity
- Overall higher expected ridership

Zones:

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

Zone Overview

Map of Weekday Service Zones and Expanded Service Zones



Microtransit Parameter Options



Travel Rules

Anywhere-to-Anywhere: No restriction on travel locations as long as within service area

Anywhere-to-hub: Trips must start **or** end at a key destination

Hub-to-hub (or bus stop-to-bus stop): Trips must start **and** end at a key destination or bus stop



Booking Model

On-Demand: Riders book when they want to ride. Maximum wait times of ~30 minutes.

Pre-Scheduled: Riders must book at least by night before. Riders are provided a trip +/- 60 minutes of their request time. At the time of booking, riders are given a 30-minute window in which their trip is assigned.



Bus Stop Model

Corner-to-corner: Requires riders walk to/from nearby intersection (maximum walk is usually no more than ¼ mile). Curb-to-curb rides available for passengers with disabilities.

Curb-to-curb: Riders picked up/dropped at the closest curb.



Fleet






Vehicle(s) and vehicle capacity for operating the service.



Service Hours

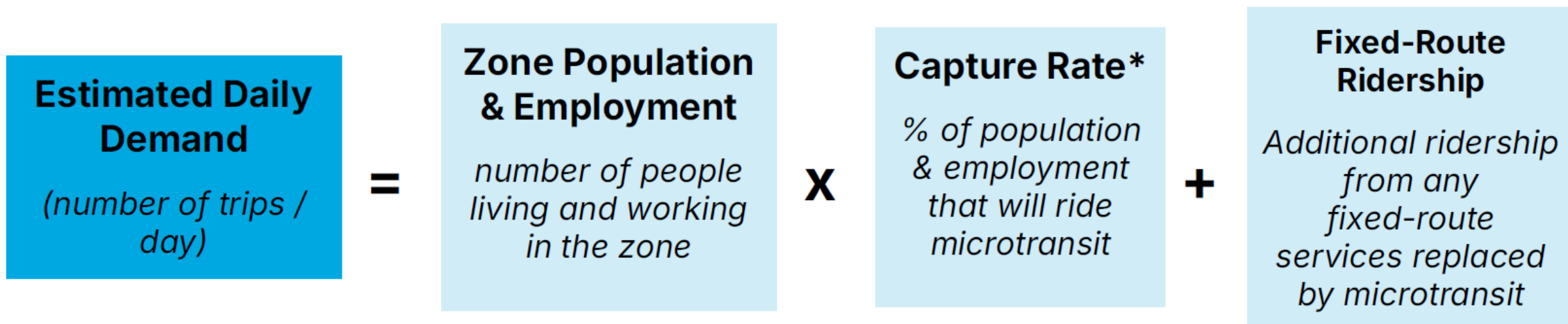
Hours during which a passenger can book a trip.

Recommended Microtransit Parameters

	Zone	Weekday: Marana/Avra Valley, Picture Rocks, Tanque Verde, Vail, Sahuarita/Green Valley, Ajo	Extended: Tortolita, Oro Valley, Casa Adobes, Catalina Foothills, Rita Ranch/Civano, Tucson Estates, West Tucson
	Travel Rules	Anywhere-to- Anywhere + Points of Interest/Transfer Points	
	Booking Model	On-Demand Weekday: Targeted average wait times of 20 - 25 minutes (maximum 60 minutes). Extended: Targeted average wait times of 10 - 15 minutes (maximum 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

Estimating Ridership Demand

We estimate **low**, **medium**, and **high** capture rates to give a full range of the potential demand over time.



* **Capture rate** is based on Via's internal demand model. This proprietary model compares on-demand and fixed-route bus services using factors such as vehicle ownership levels, commute mode, access to existing public transportation, and population characteristics (e.g. income, percent of seniors, and percent of people with disabilities, etc.) to develop a capture rate tailored to characteristics of a proposed service area.

Demand Estimates

Zone	Phasing	Weekday Average			Annual
		Low*	Medium	High	Medium
Marana/Avra Valley	Short Term (2-4 years)	15	40	65	11,000
Sahuarita/Green Valley	Short Term (2-4 years)	45	120	175	30,500
Picture Rocks	Medium Term (4-6 years)	<10	15	20	4,000
Vail	Medium Term (4-6 years)	15	40	60	10,500
Rita Ranch/Civano	Medium Term (4-6 years)	25	60	95	16,000
Tanque Verde	Long Term (6+ years)	15	45	65	11,000
Catalina Foothills	Long Term (6+ years)	50	135	205	35,000
Ajo**	Immediate (as a pilot)	15	42	65	12,200
Oro Valley	Immediate (as a pilot)	80	195	290	55,500
Tortolita	Medium Term (4-6 years)	60	150	225	43,000
Casa Adobes	Medium Term (4-6 years)	60	150	225	43,000
Tucson Estates / Drexel Heights / Valencia West	Medium Term (4-6 years)	80	205	310	59,000
West Tucson	Long Term (6+ years)	65	170	260	49,000

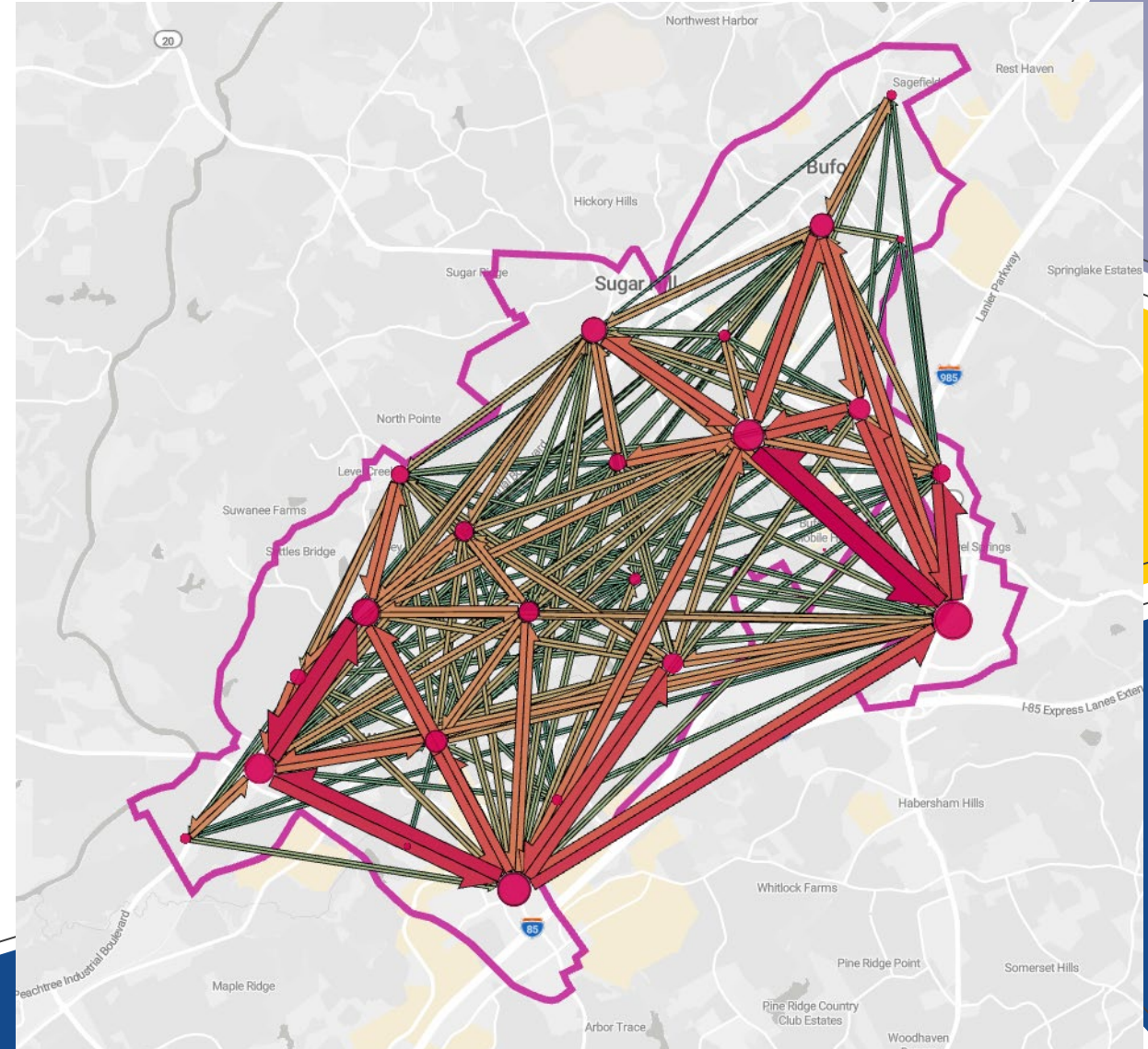
Simulate Operations



Simulate Operations

Inputs:

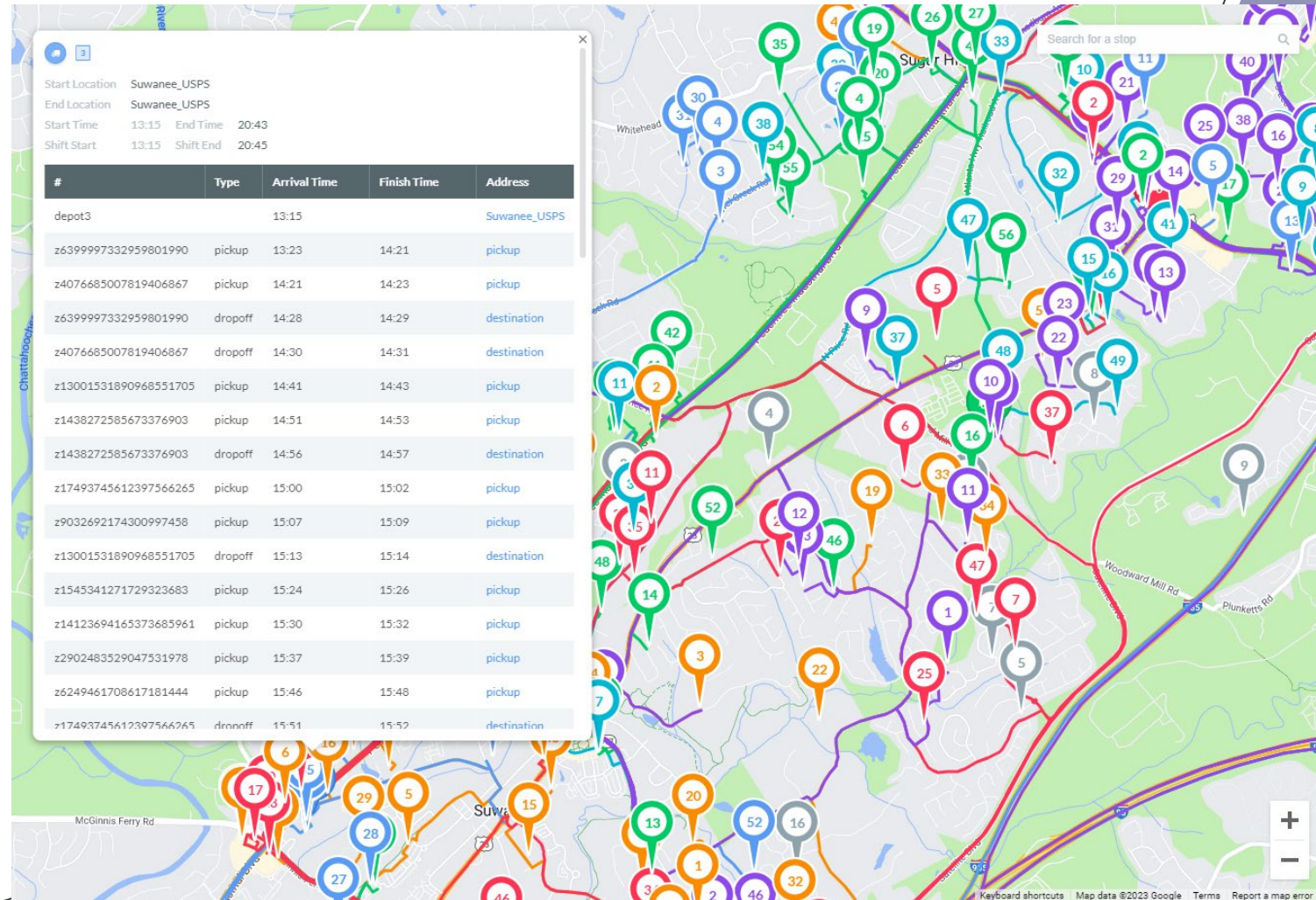
- Service zone
- Road network
- Microtransit parameters
 - Curb-to-curb
 - Target wait time
 - ..etc.
- Ridership estimate
- Available fleet



Simulate Operations

Outputs:

- Vehicles required
- Average wait times
- Driver hour requirements
- Vehicle utilization
- Shared ride duration
- Estimated cost



Simulate Operations

Example model output:

Demand Scenario	Low	Medium	High
Daily ridership	50	90	140
Fleet size	3	4	5
Average wait time	15 min	18 min	17 min
Average vehicle utilization	3.2 riders/hr	2.6 riders/hr	2.8 riders/hr
Shared ride percent	25%	32%	35%
Estimated cost per rider	\$35	\$27	\$20


Key Performance Indicators

KPIs that simulation estimates

Indicator	Typical Target
Average Wait Time	<ul style="list-style-type: none">• 10-15 min for Extended Service• 20-25 min for Weekday Service
Average Vehicle Utilization	> 2.0 riders per hour
Shared Ride Percent	> 20%
Cost Per Ride	< \$25
GHG Savings/ VMT Reduction	PAG to define

Other KPIs to track after service starts

Indicator	Typical Target
On-Time Performance	90%
Ridership Growth	Depends on Zone; Weekday Service expected to be lower
Customer Satisfaction	> 4.5 rating

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Public Involvement Phase 2 March 18-21

Scheduled Event:

Green Valley Heirloom Farmer's Market

Pop-up events:

Arizona Pavilions/Walmart-Houghton/Mary Ann
Cleveland/Picture Rock – Sandario Location

Transit Centers:

Tohono TaDai / Roy Laos / Rondstadt

Focus Groups:

Ajo WPCC / PAG Social Services / Vail Chamber – School
District / Council on Aging / Senior Centers – Interfaith /
Oro Valley

Timeline

Tasks	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Jun.
Goals and Objectives												
Needs Assessment: Microtransit/DAR/FS												
Public Outreach												
Service Models/Tech/Civil Rights												
Service Planning												
Implement/Transit Integration												
Recommendations												

Discussion