Downtown Mesa Micromobility & Parking Plan

Appendix

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Appendix
Final Public Meeting Presentation
March 2025

Downtown Mesa Micromobility & Parking Study

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Transforming Downtown Mesa

Small Businesses	Small businesses have a lot to do; red tape shouldn't be one of them.
Development Assistance	From site selection to certificate of occupancy, we provide personal project management services at no cost to you.
City and Community Synergy	The Downtown Transformation Team brings together the diverse disciplines of the City into one point of contact.
Utilities	We have access to the tools and expertise to analyze capacity and provide solutions for utility upgrades or connections, all in one place.

Study Purpose and Vision

Downtown Mesa is launching a Micromobility and Parking Plan to enhance transportation options as the area grows.

With recent investments attracting more residents and visitors, the city aims to evaluate and improve mobility for all.

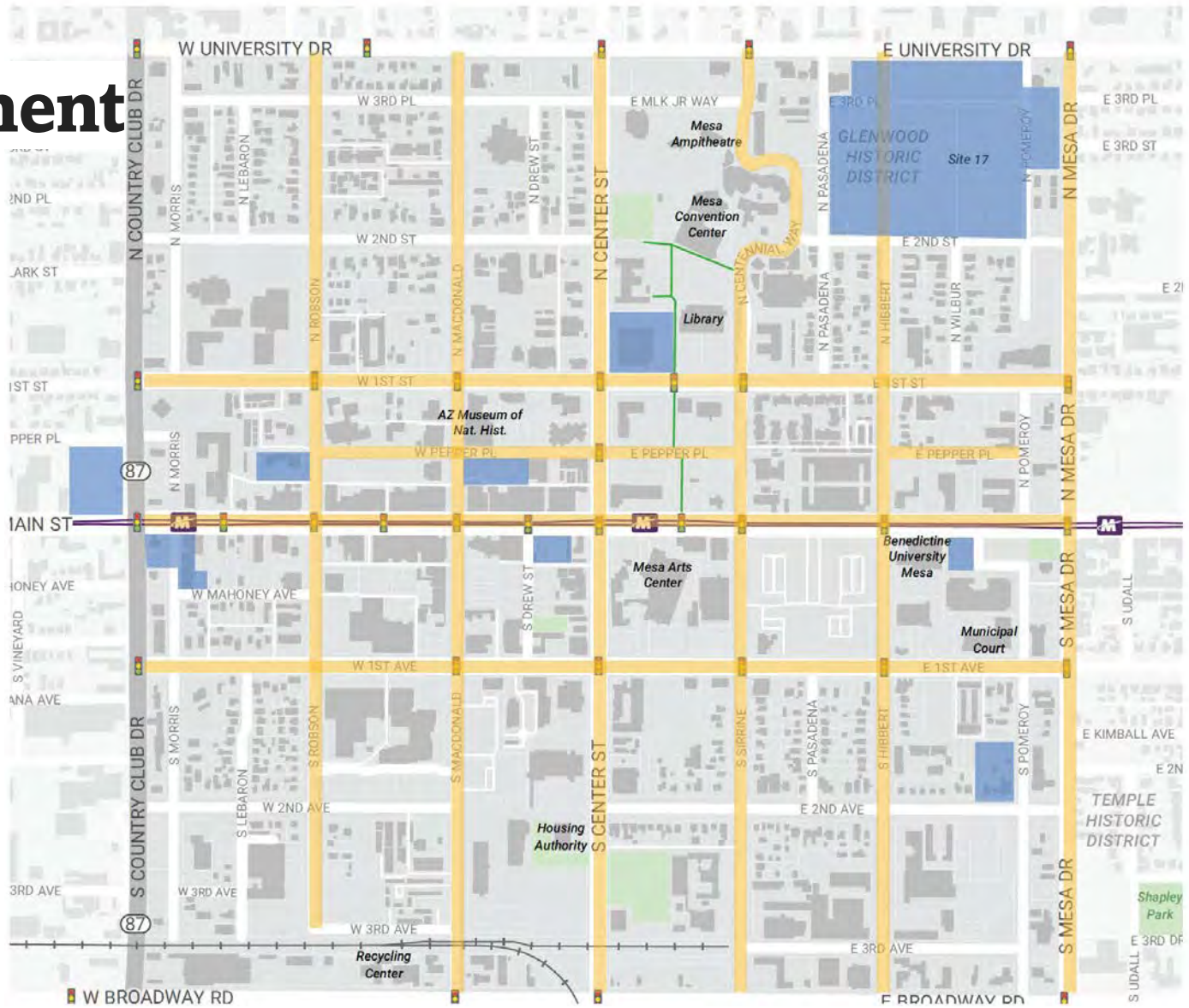
Currently home to 3,200 residents and nearly 20,000 workers, Downtown Mesa anticipates increased evening, nightlife, and weekend activities in the years ahead.

The Plan will focus on creating a sustainable, multimodal transportation network to explore options for improved connectivity between surrounding neighborhoods and downtown businesses.

The city aims to create a dense, urban environment that incorporates improved walkability, autonomous shuttles, micromobility, and shared parking solutions.

The plan will also explore the best utilization of existing parking resources and anticipation of future parking needs.

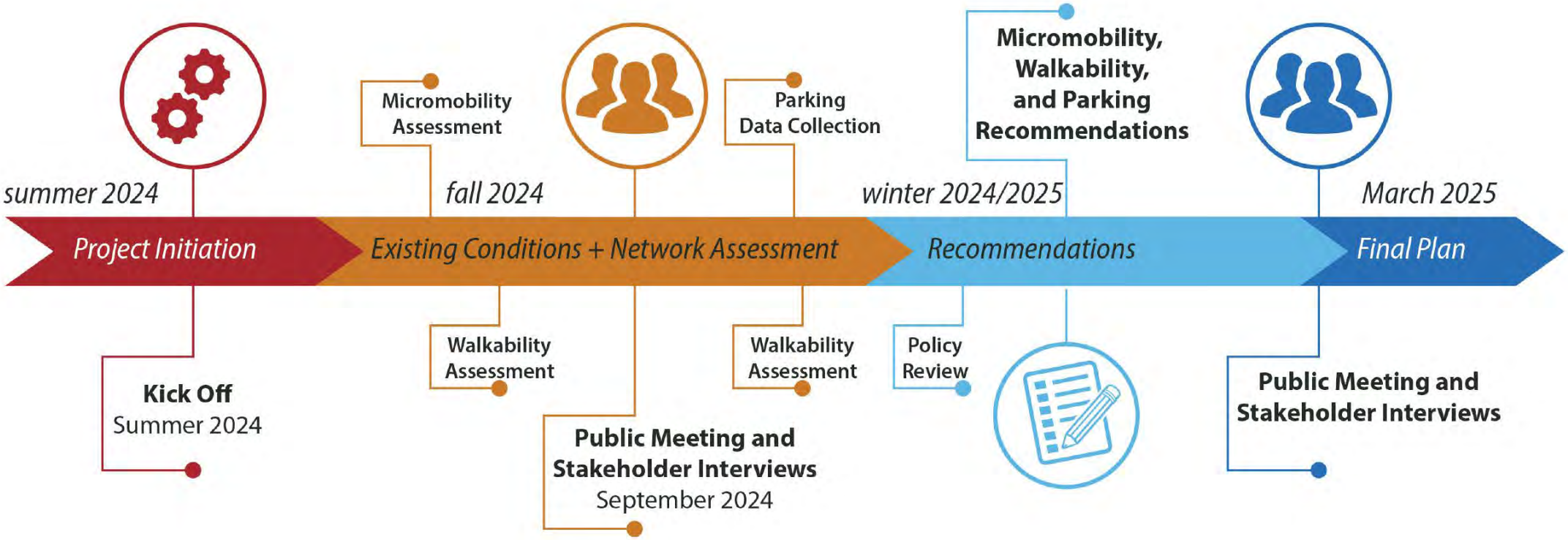
Upcoming Development



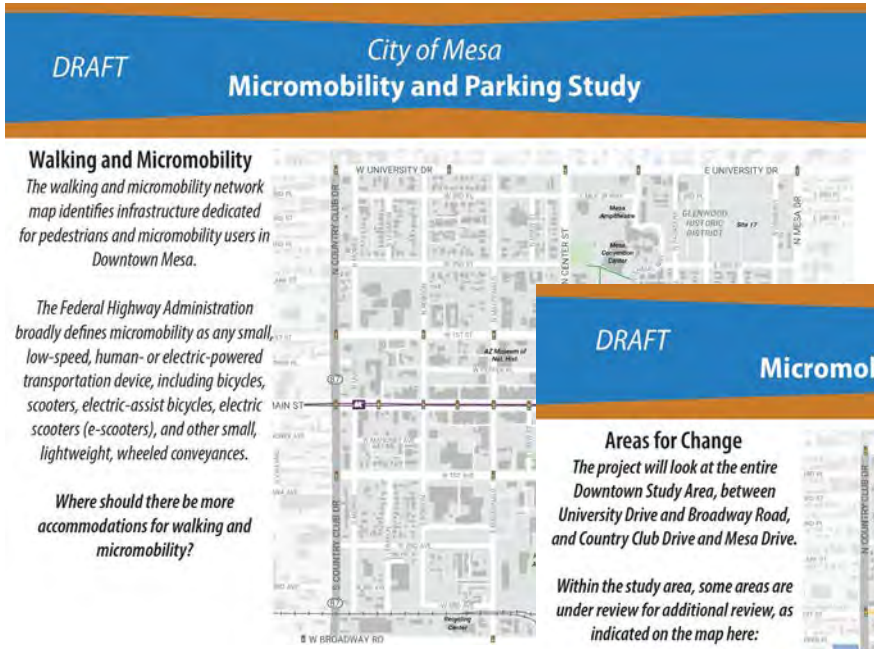
Project Goals

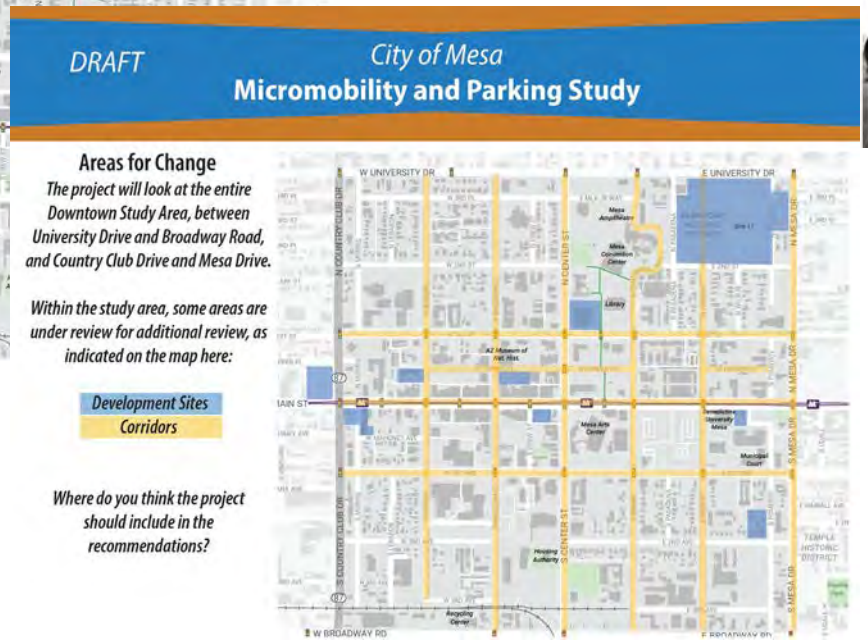
- *Foster a welcoming, vibrant, and thriving downtown environment, without displacing residents and businesses*
- *Integrate parking solutions that support and enhance downtown activity*
- *Recommend infrastructure improvements to promote a multimodal downtown, incorporating dynamic curbside access and activity*
- *Ensure safety for all road users, including pedestrians, transit riders, and bicyclists*
- *Improve pedestrian and cyclist crossings and major intersections and across the light rail corridor*
- *Enhance wayfinding systems throughout Downtown*
- *Identify upgrades to pedestrian amenities along Main Street (e.g. shade, lighting) to improve safety and comfort*
- *Enhance cyclist, light rail, and bus facilities within the core study area to improve safety and comfort (e.g. separated lanes, designated parking, signage)*

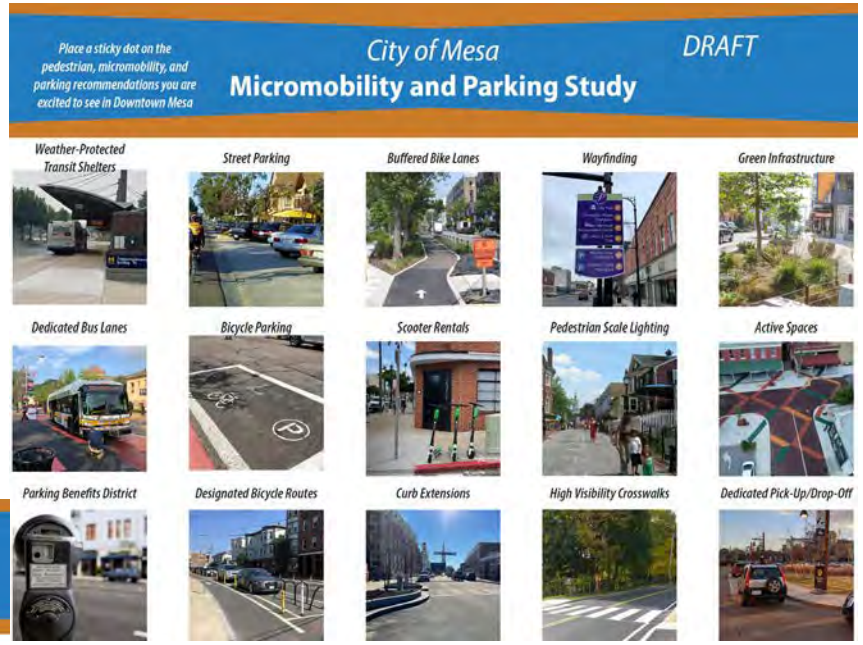
Project Schedule



Public Meeting #1 Summary

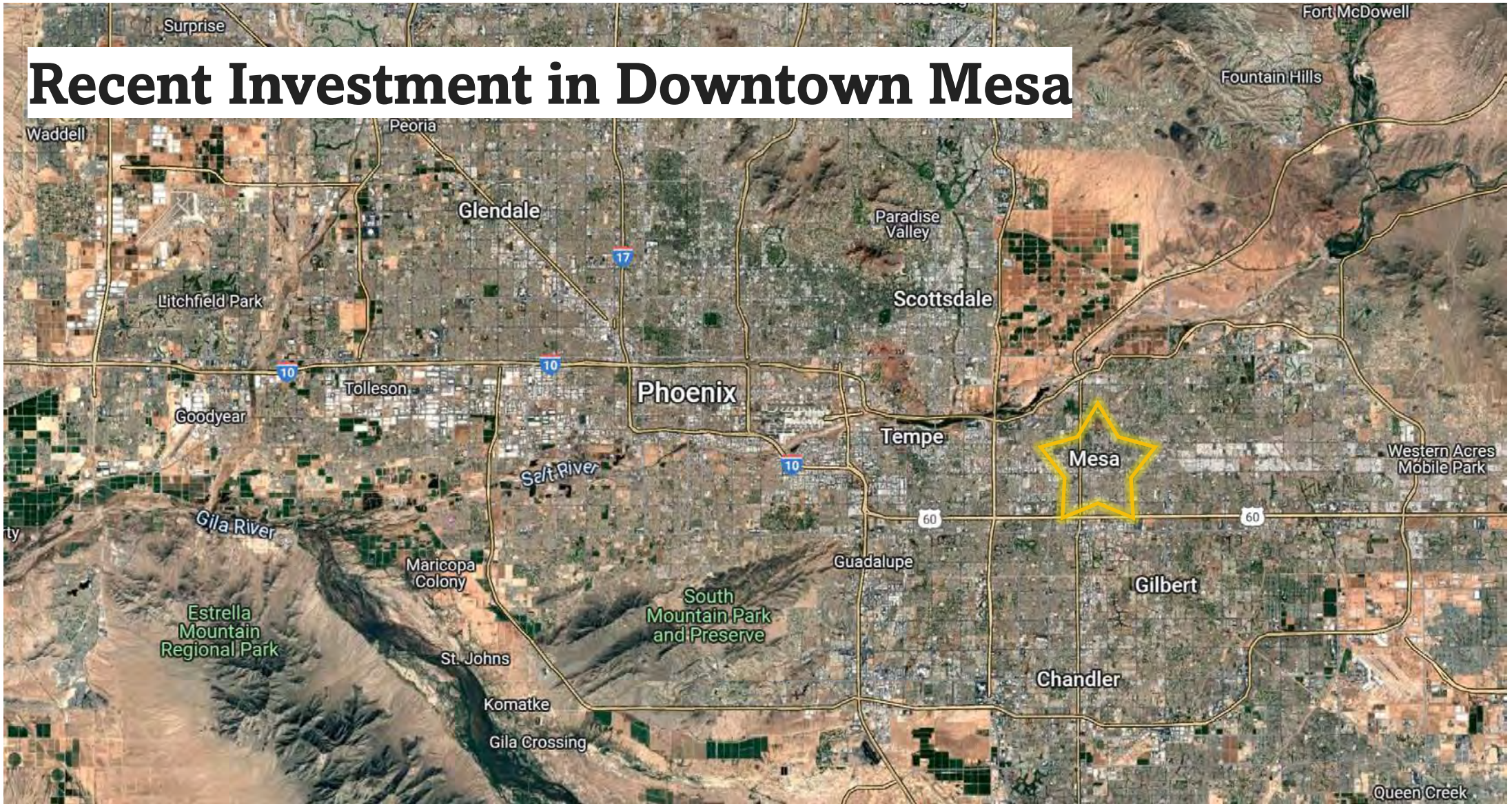




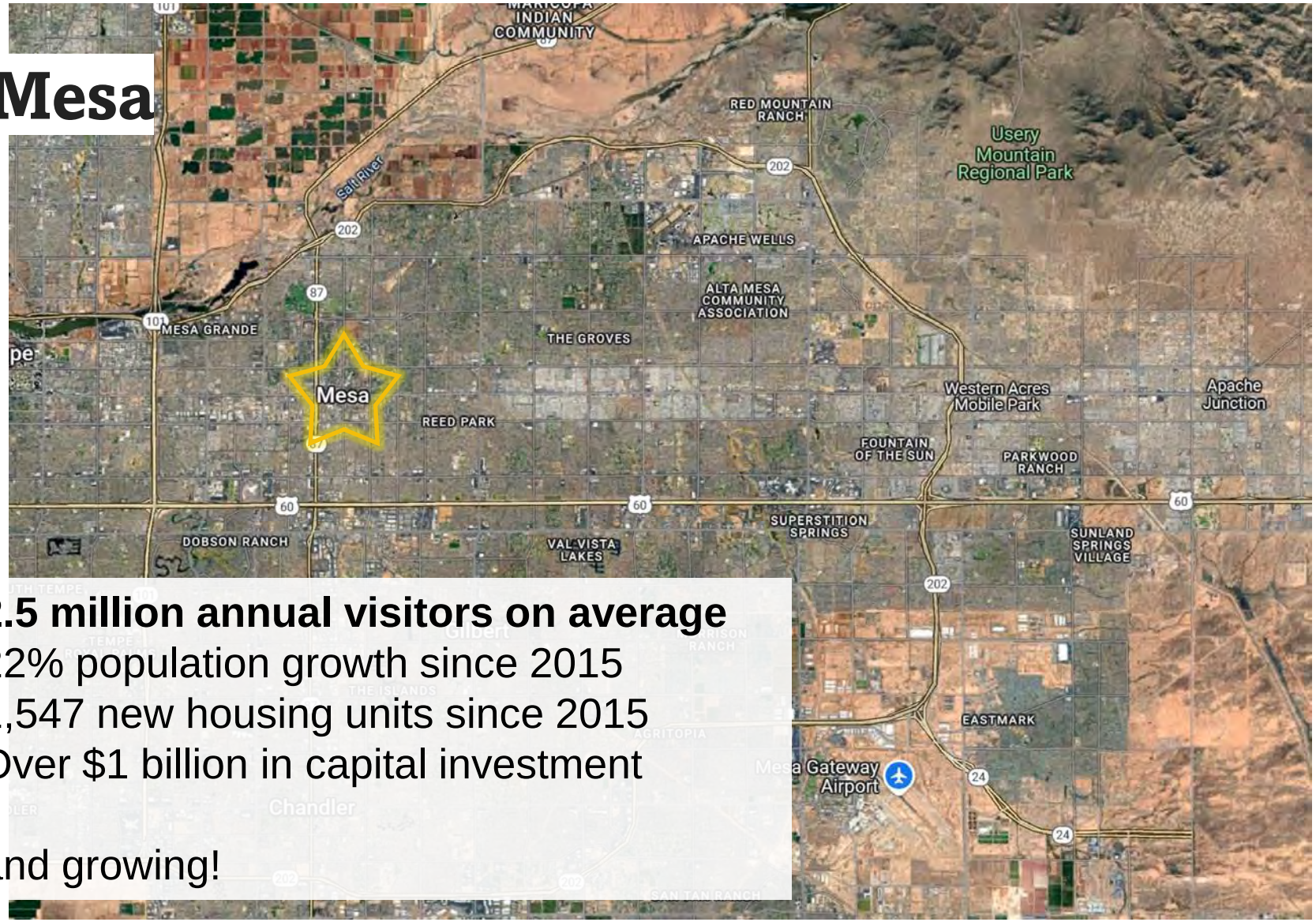


1 Why Downtown Mesa

Recent Investment in Downtown Mesa



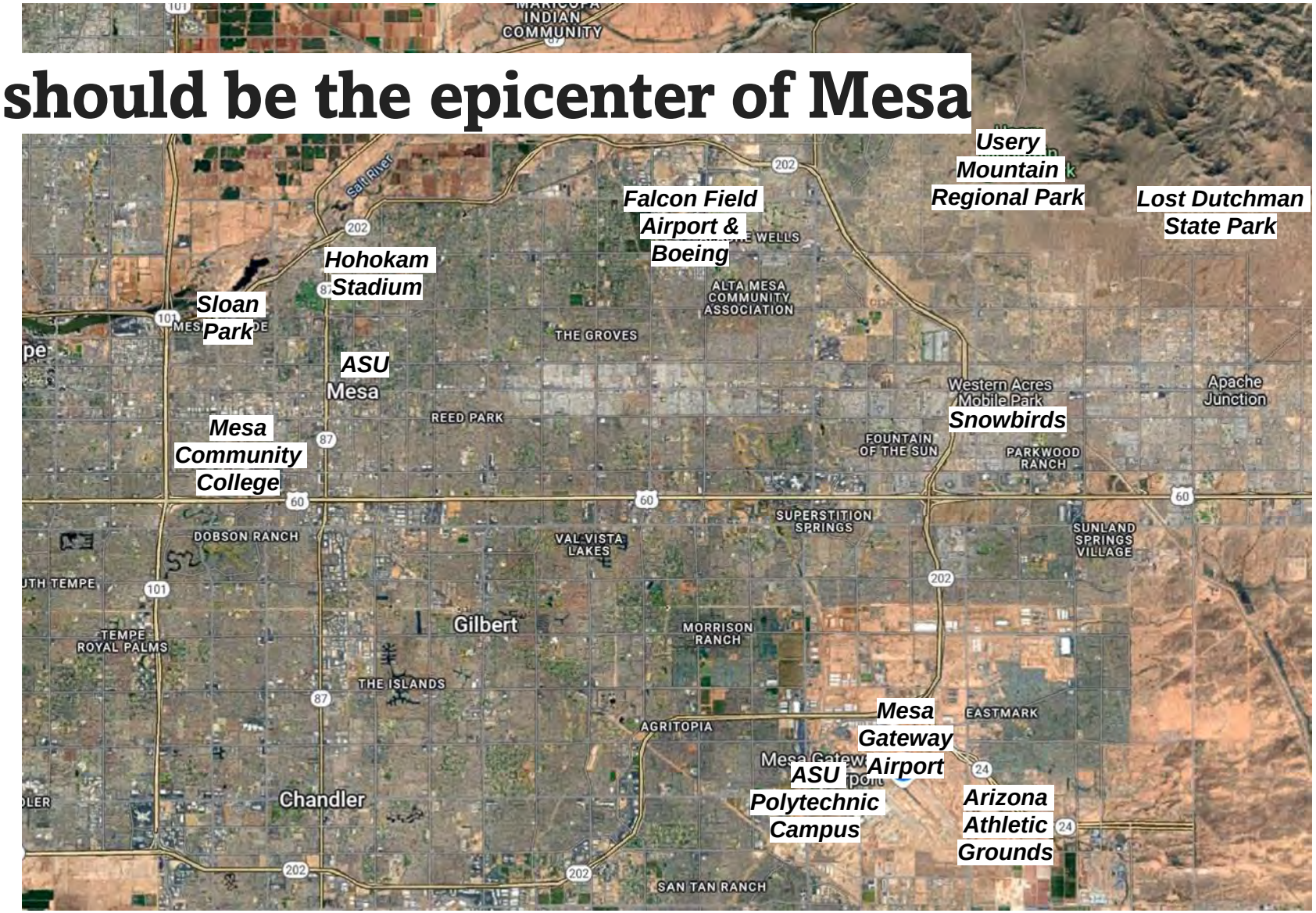
Downtown Mesa



- **2.5 million annual visitors on average**
- 22% population growth since 2015
- 1,547 new housing units since 2015
- Over $1 billion in capital investment

- and growing!

Downtown should be the epicenter of Mesa



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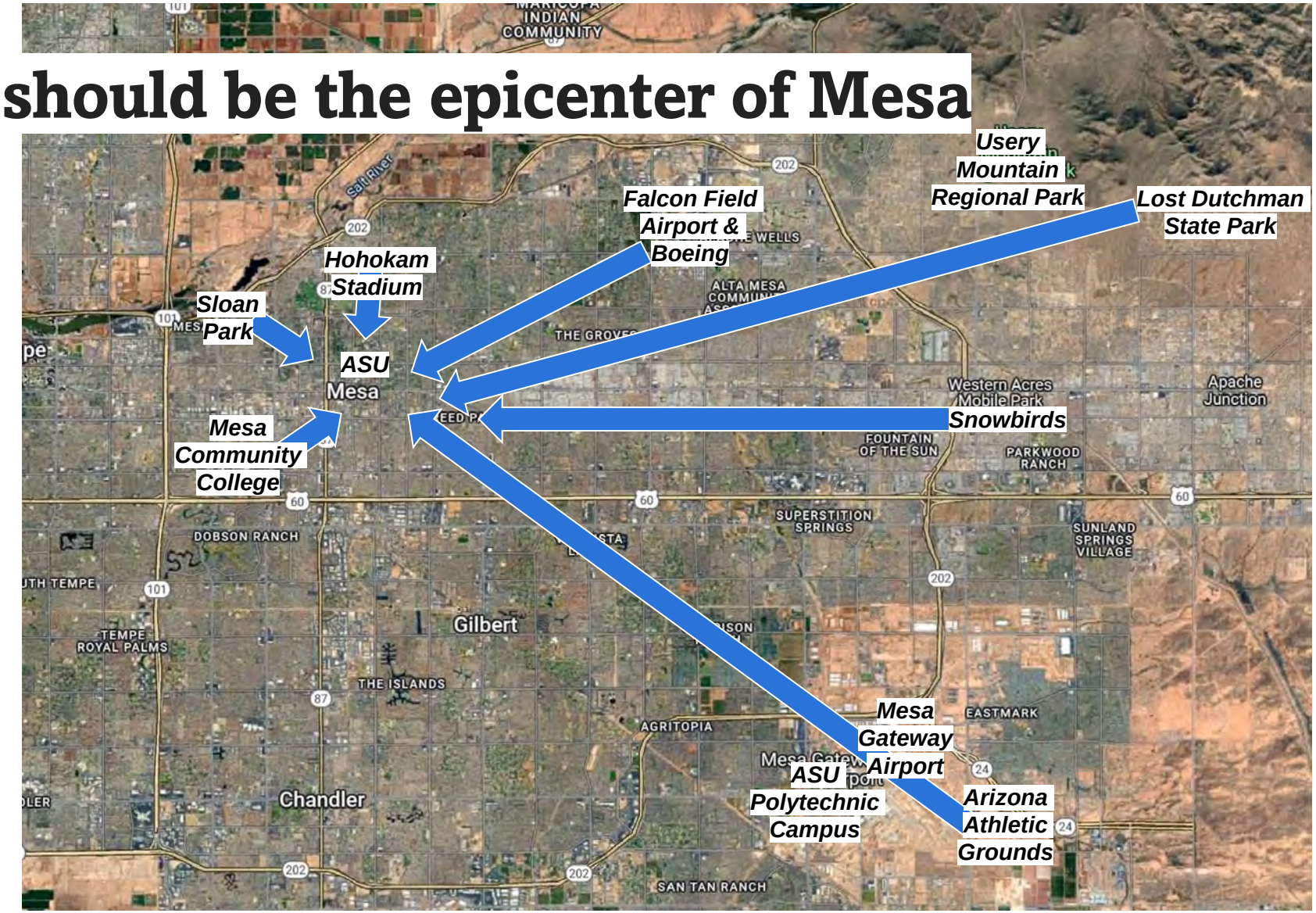


Place Matters More Than Ever

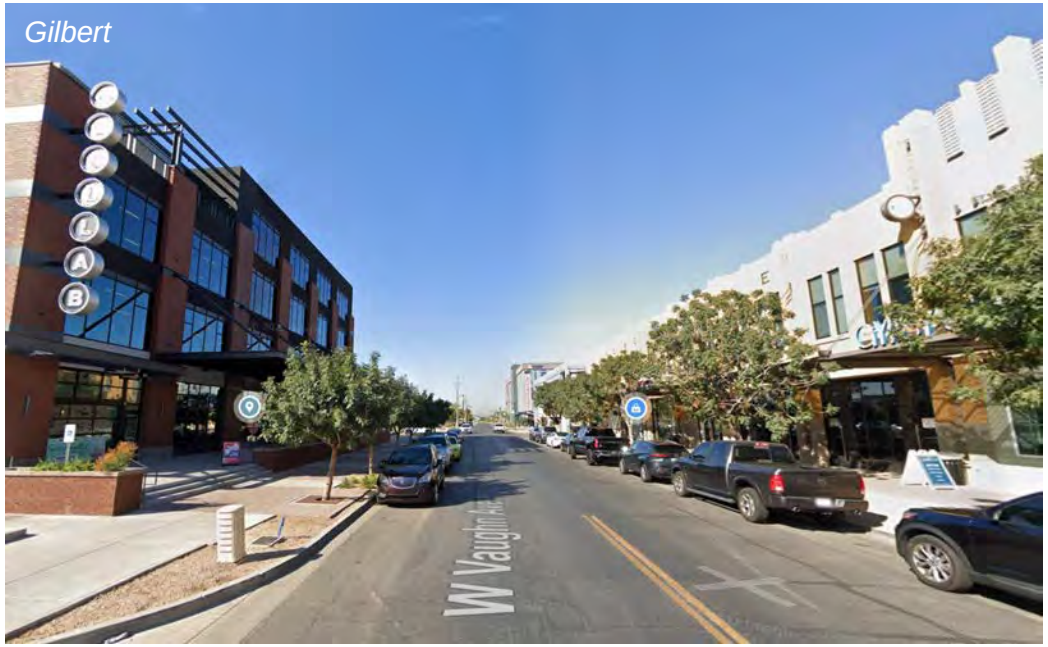

Gilbert


Parking
Wide Sidewalks
Bus Service
Multiuse Path
Gilbert


Parking
Light-Rail
Bus/Shuttle Service
Wide Sidewalks
Mesa

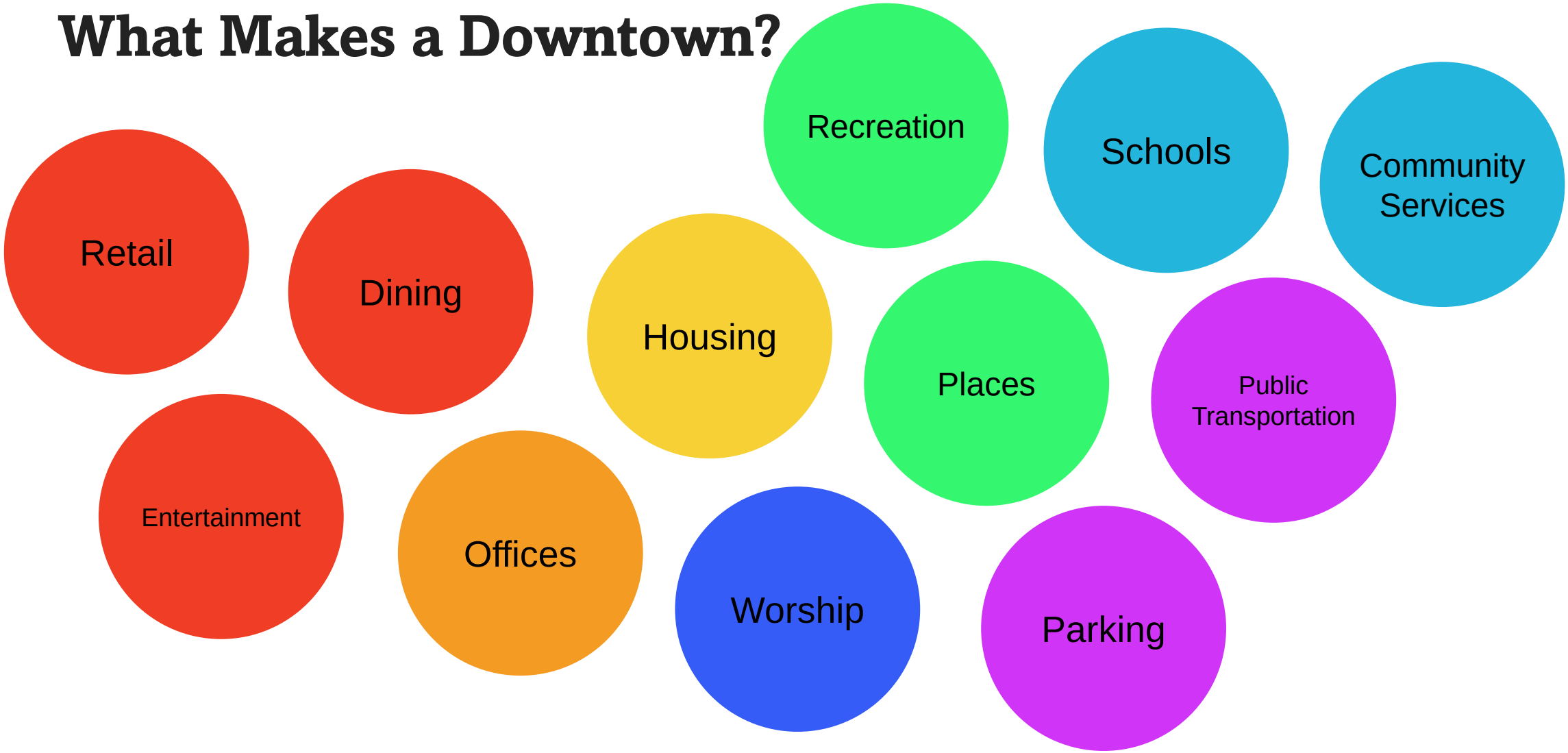

Parking
6,820 private spaces
6,611 public spaces
Light-Rail
Bus/Shuttle Service
Wide Sidewalks
Mesa

Gilbert



Mesa (MacDonald)

What Makes a Downtown?

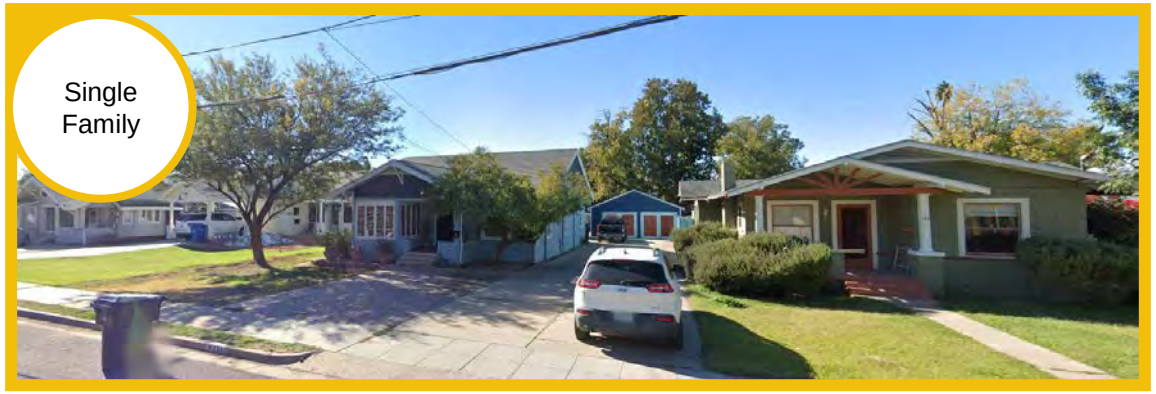


Downtown for Mesa Residents

Downtown for Downtown Mesa Residents

Senior Living

Multi-Family



Single Family

Churches

Downtown for Visitors

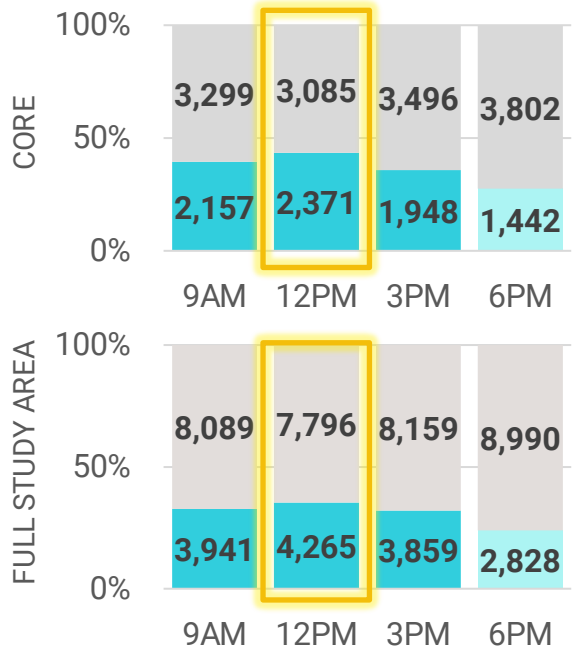
2 Transforming Downtown

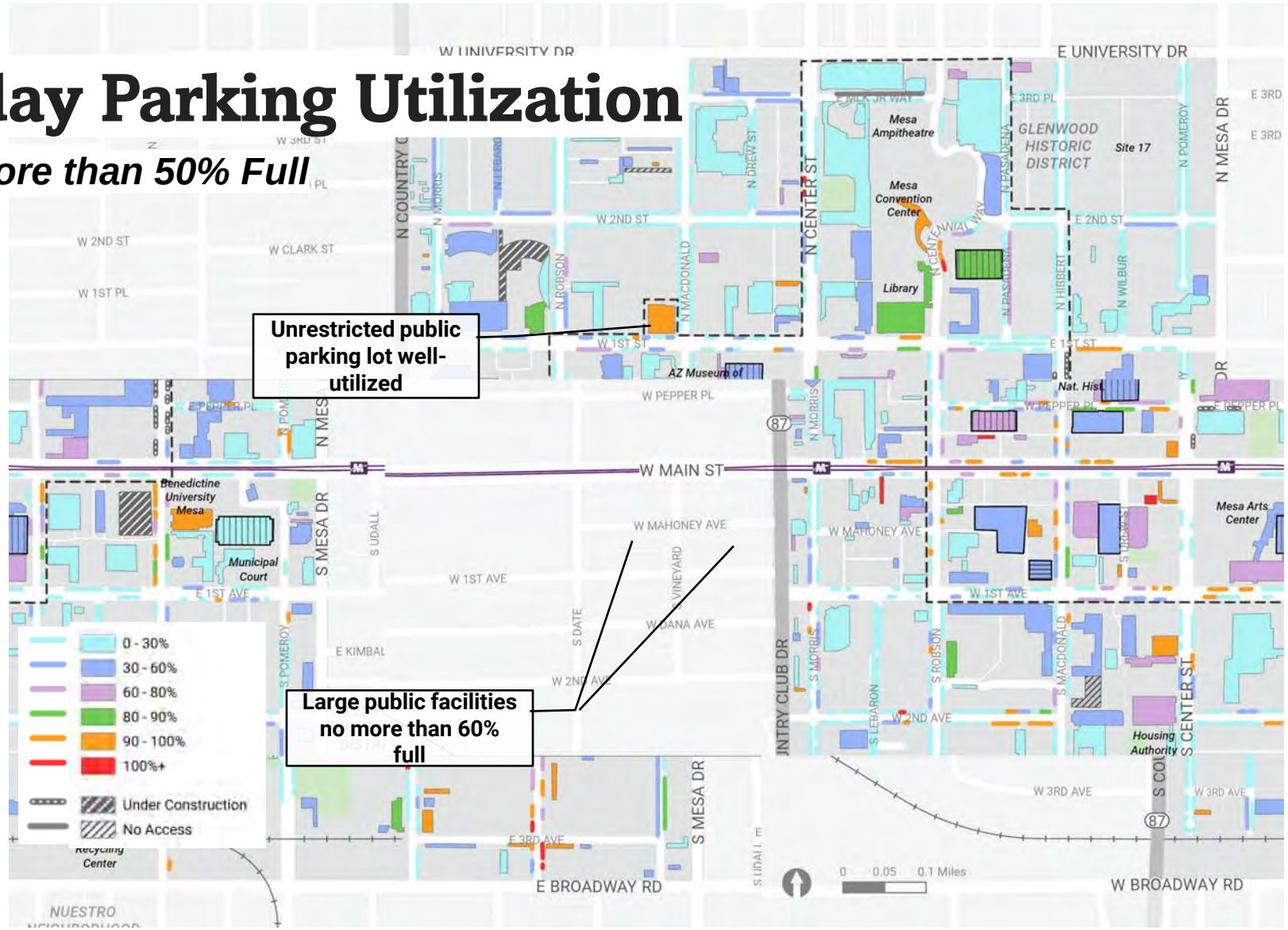
Barriers to Transforming Downtown

Perception of Lack of Parking	Unsafe Roadways – High Speeds	Few Ways to Access Downtown
Difficult to Navigate	Climate	Environment isn't Walk Friendly

Weekday Midday Parking Utilization

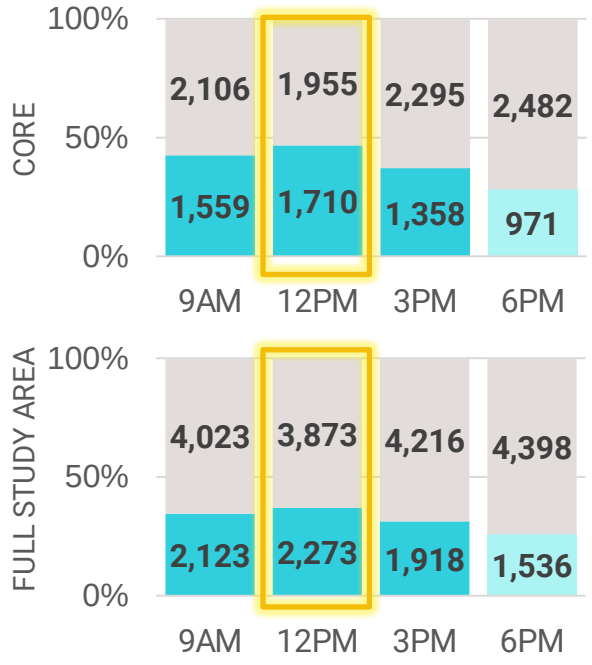
All Parking was never more than 50% Full on September 19, 2024

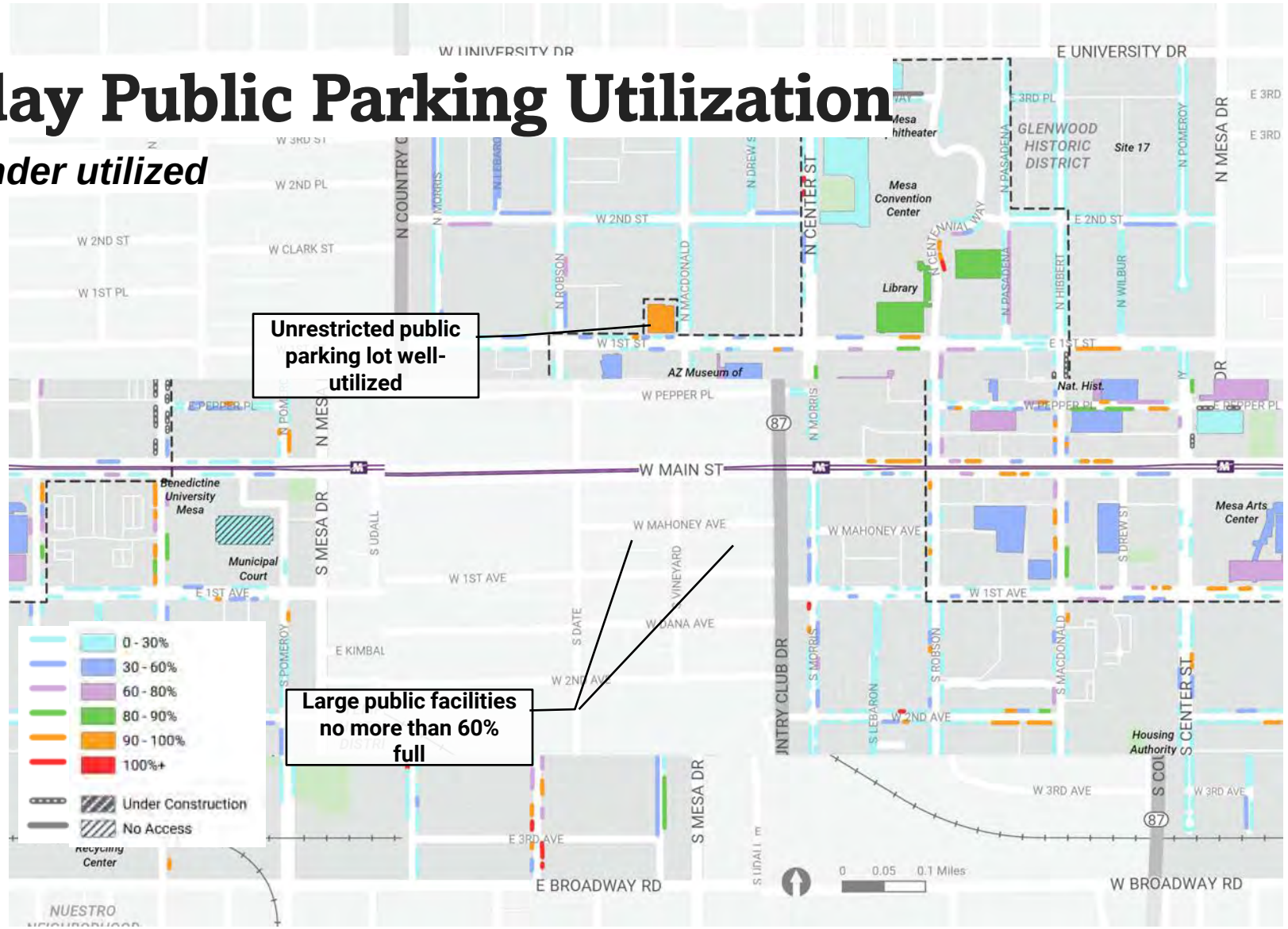




Weekday Midday Public Parking Utilization

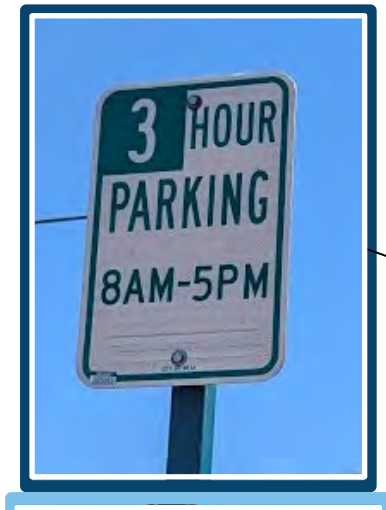
Public Parking is also under utilized

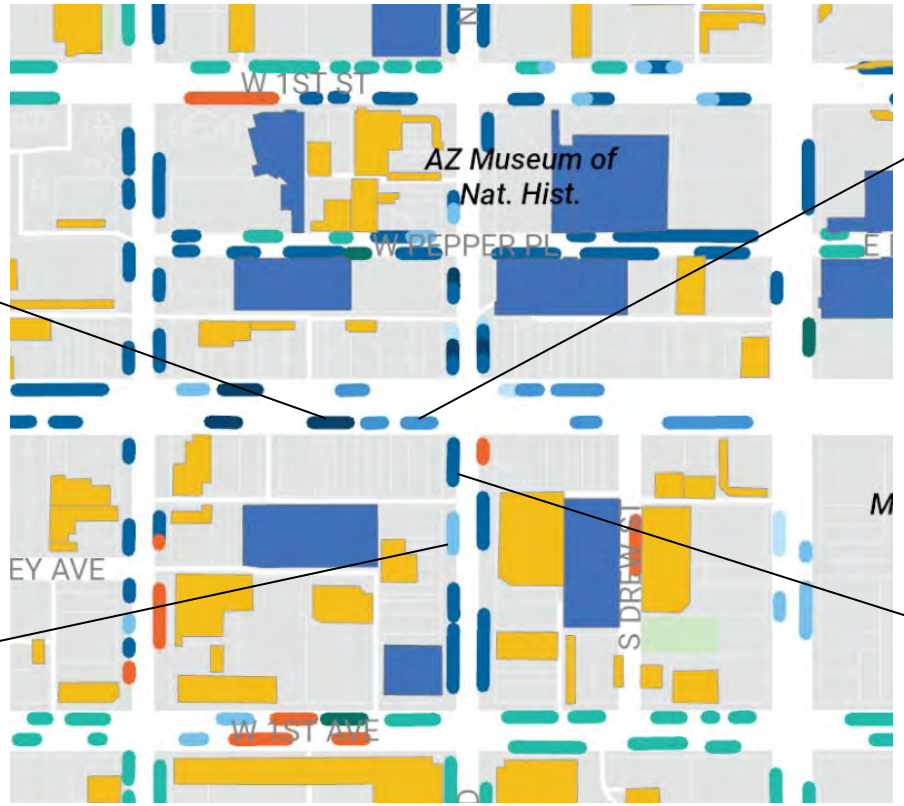




Options for Parking Downtown – On-Street

Regulations can vary significantly by block





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Challenging Walking Network

Wide Curb-to-Curb

Excess space can be used for wider sidewalks, angled parking, bus lanes and queue jumps, or bicycle facilities

Downtown has access for vehicles with high quality arterials (Mesa Drive, University Drive, Broadway, and Country Club)

Should also make good access for bikes and pedestrians

Long Blocks

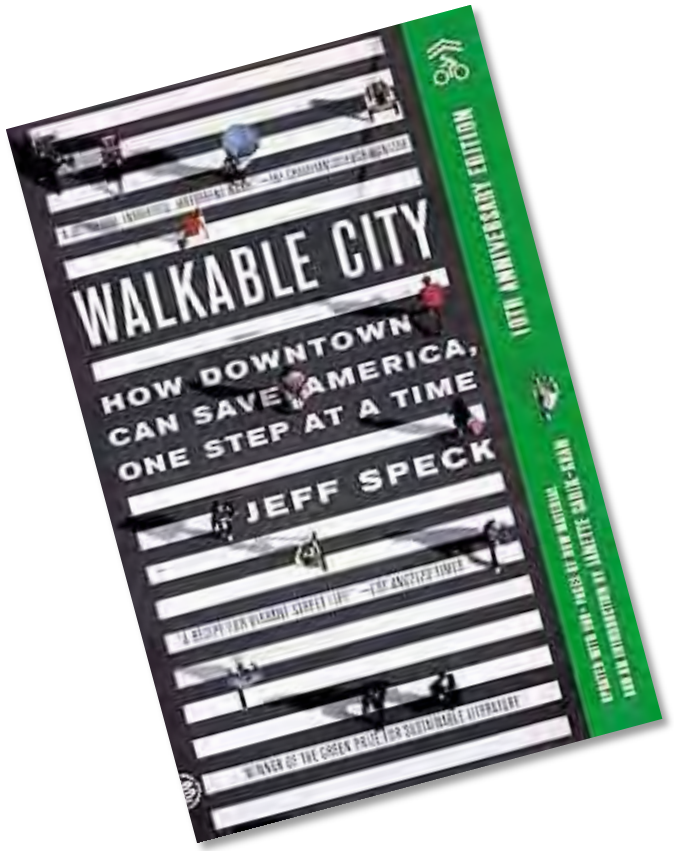
One-block away can be up to a 5-minute walk

Approaches for Transforming Downtown

- Review and Adjust Regulations
- Right Size Streets
- Increase Multimodal Options
- Simplify and Clarify Wayfinding
- Find Opportunities for Shade
- Increase Walkability

3 Right Size Streets to Increase Walkability

Jeff Speck Theory of Walkability



A Safe Walk

A Reason to Walk

A Comfortable Walk

An Interesting Walk

Downtown Recommendations

- Preserve Vehicle Throughput, and emergency access
- Increase Person Throughput
- Create new parking spaces by converting parallel to angled parking
- Introduce multimodal network (bike and scooter lanes)

Right Size Streets

- *The proper number of driving lanes*

Typically, 2 lanes can easily handle 10,000 cars per day

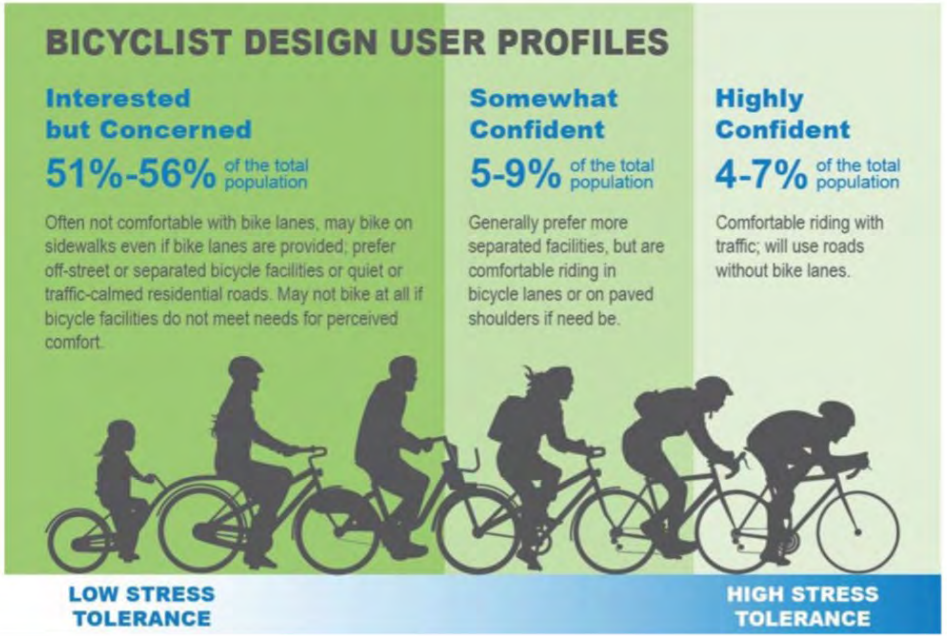
Right Size Streets

- *Lanes of the proper width*

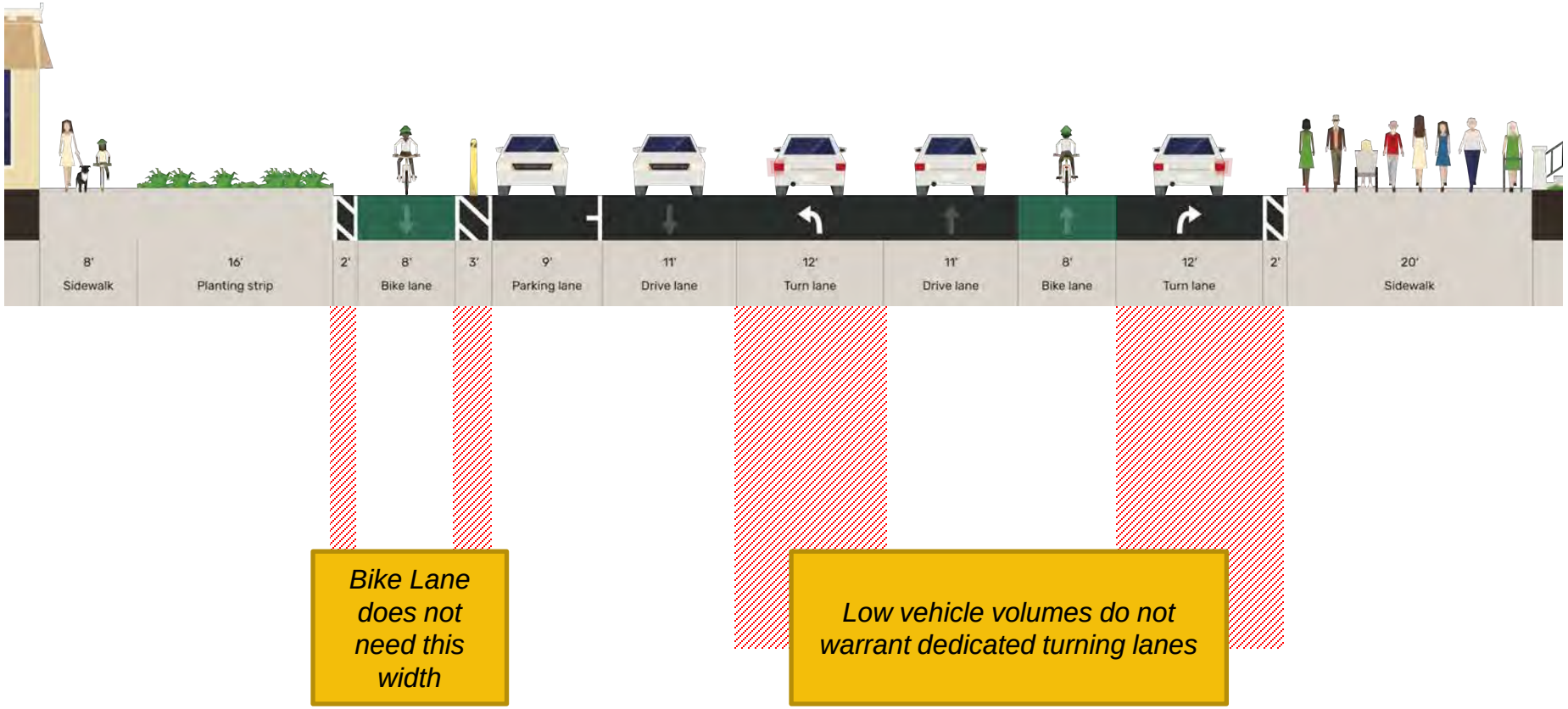
Standard lane width on University Drive is 10-feet – should maintain in Downtown

Increase Multimodal Options

Limited non-driving and walking options for getting around Downtown



Right Size Streets (West 1st Avenue)



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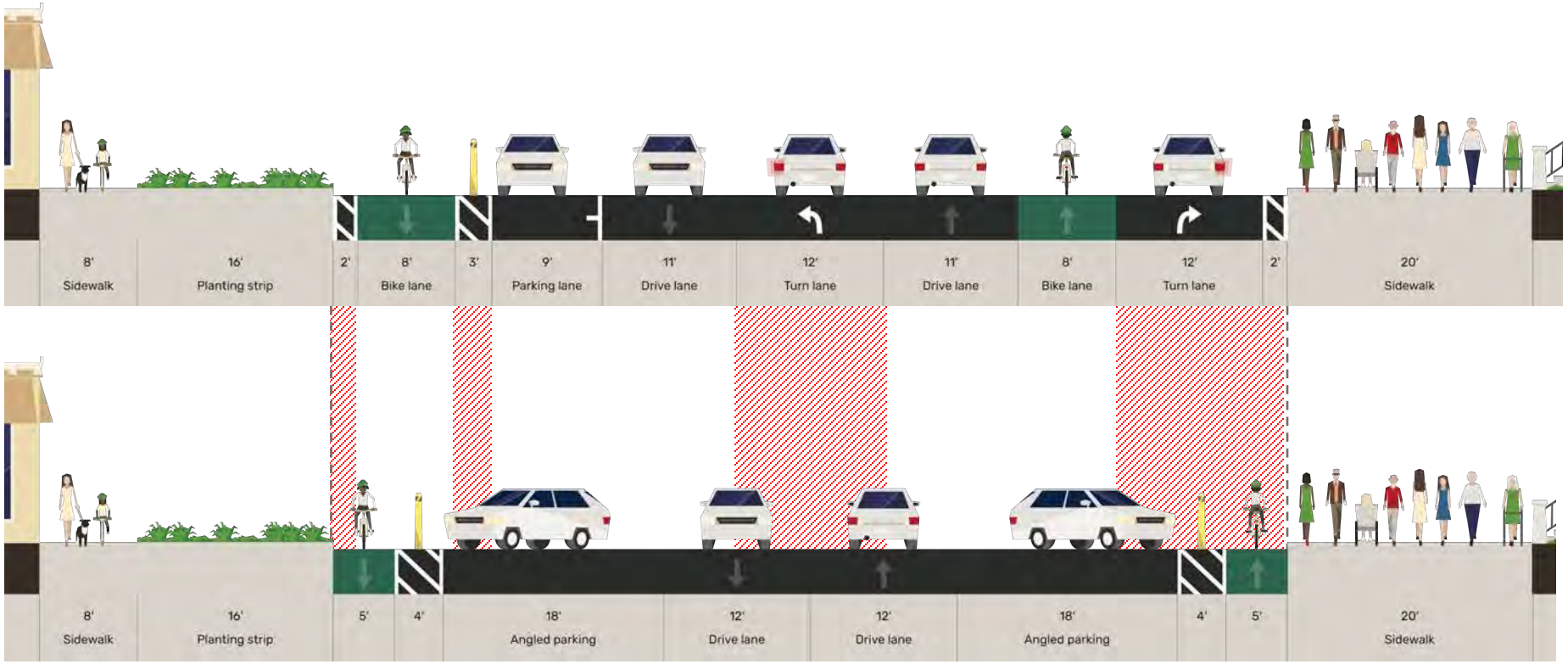

Feels safer for people getting out of parked cars

Improved Bicycle Facility – more person capacity

Multimodal, Right Sized Streets

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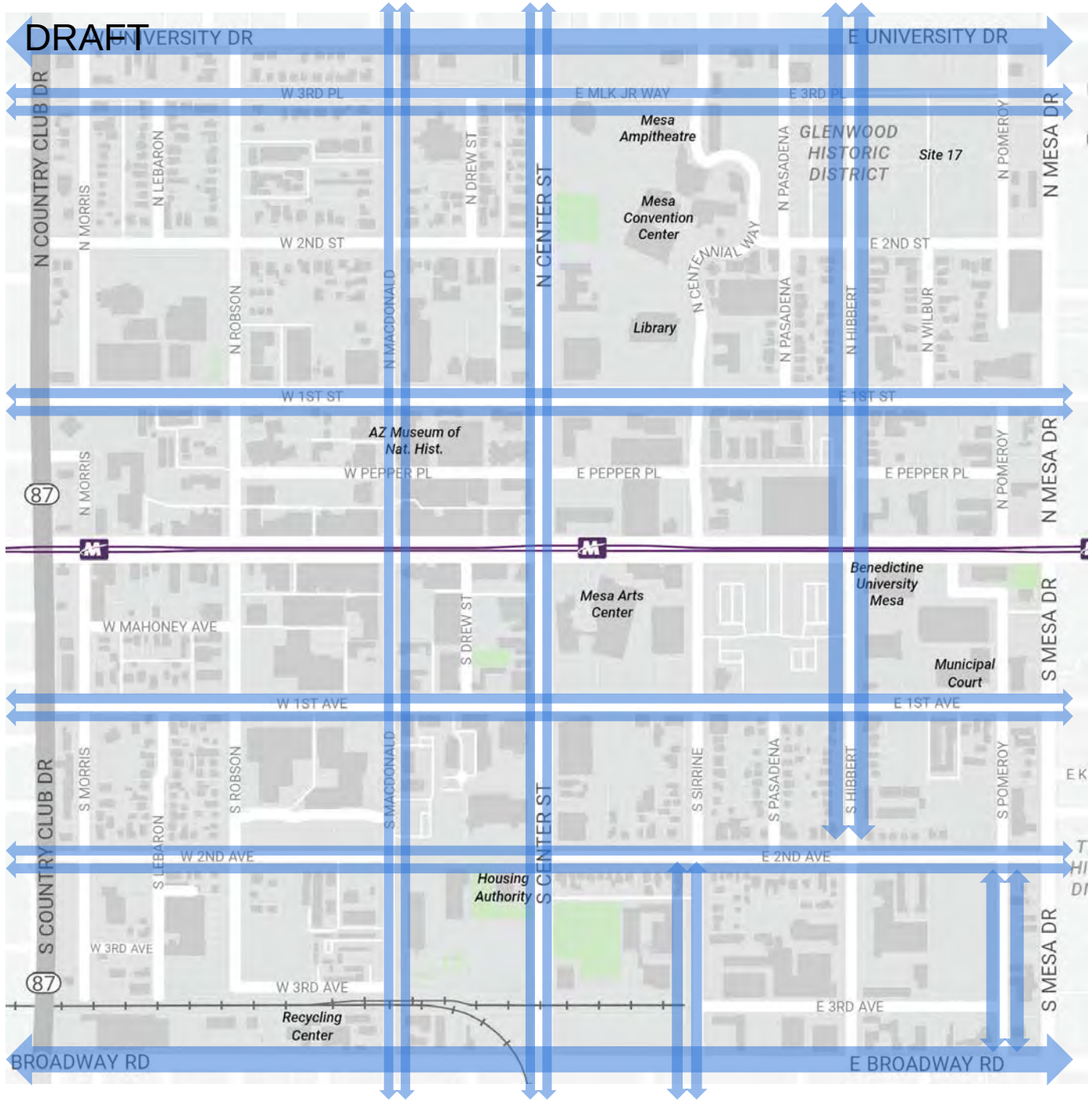
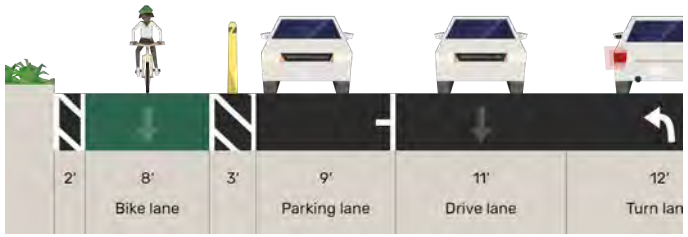
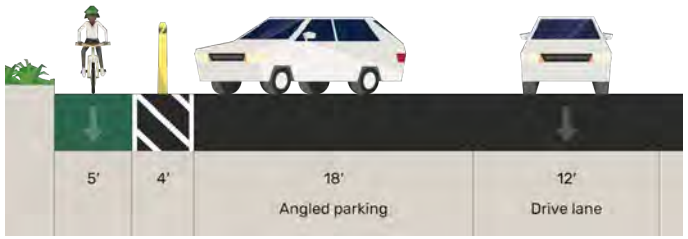


Creating Parking

Converting parallel parking to angled parking to create more spaces (and better use the street width)





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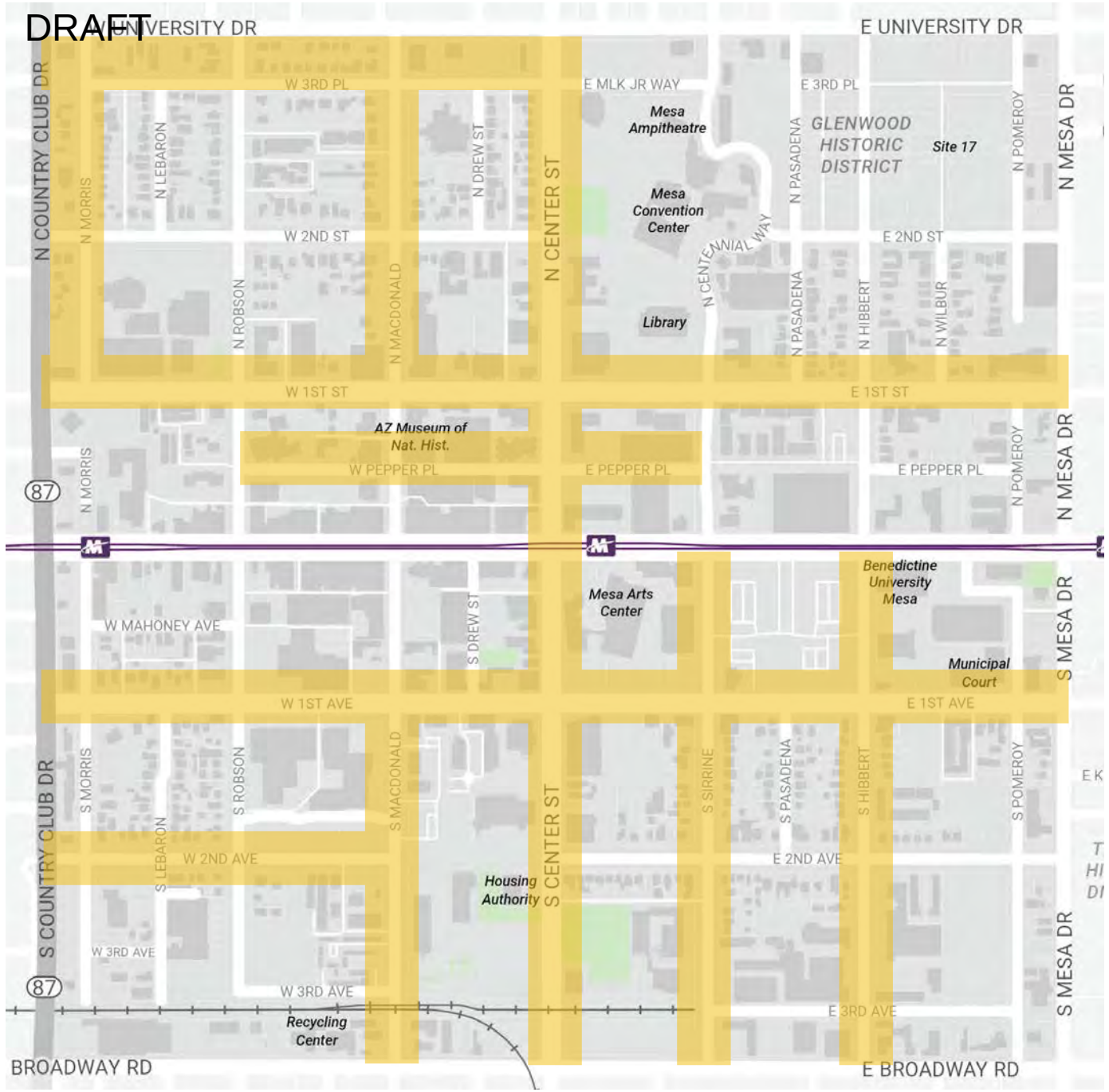
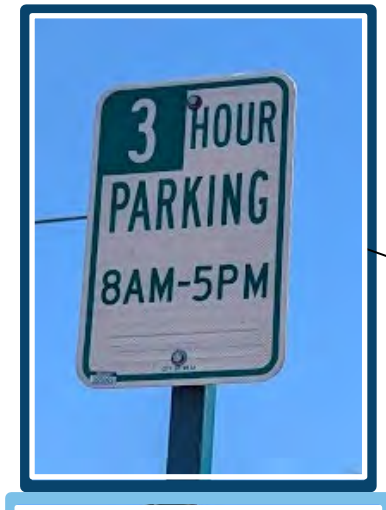
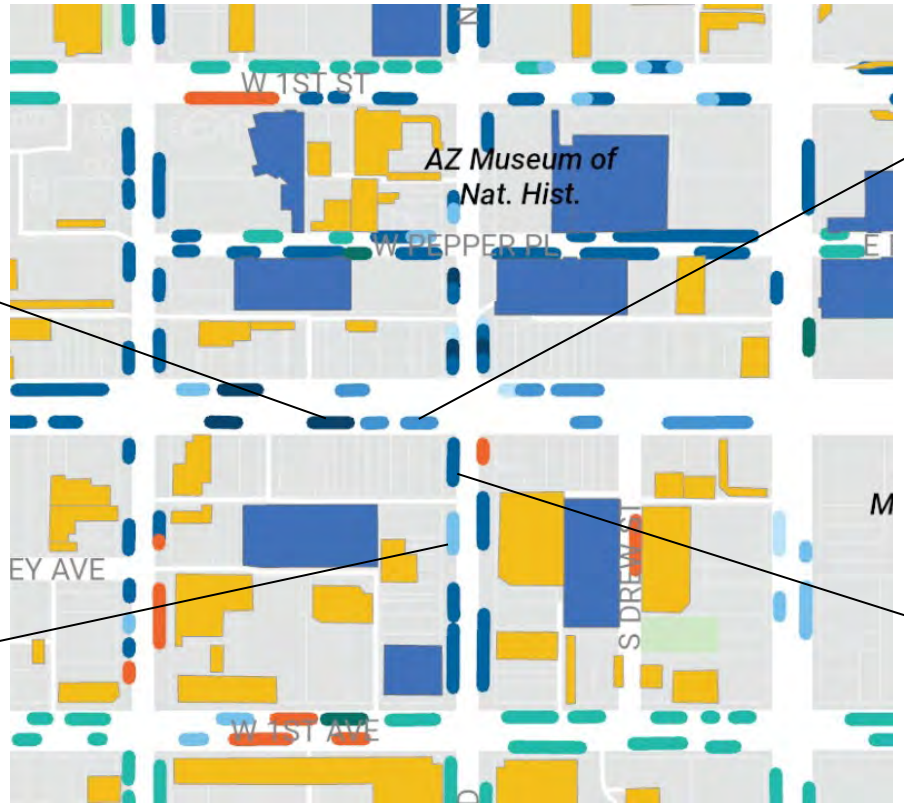


4 Increase Parking + Reform Regulations

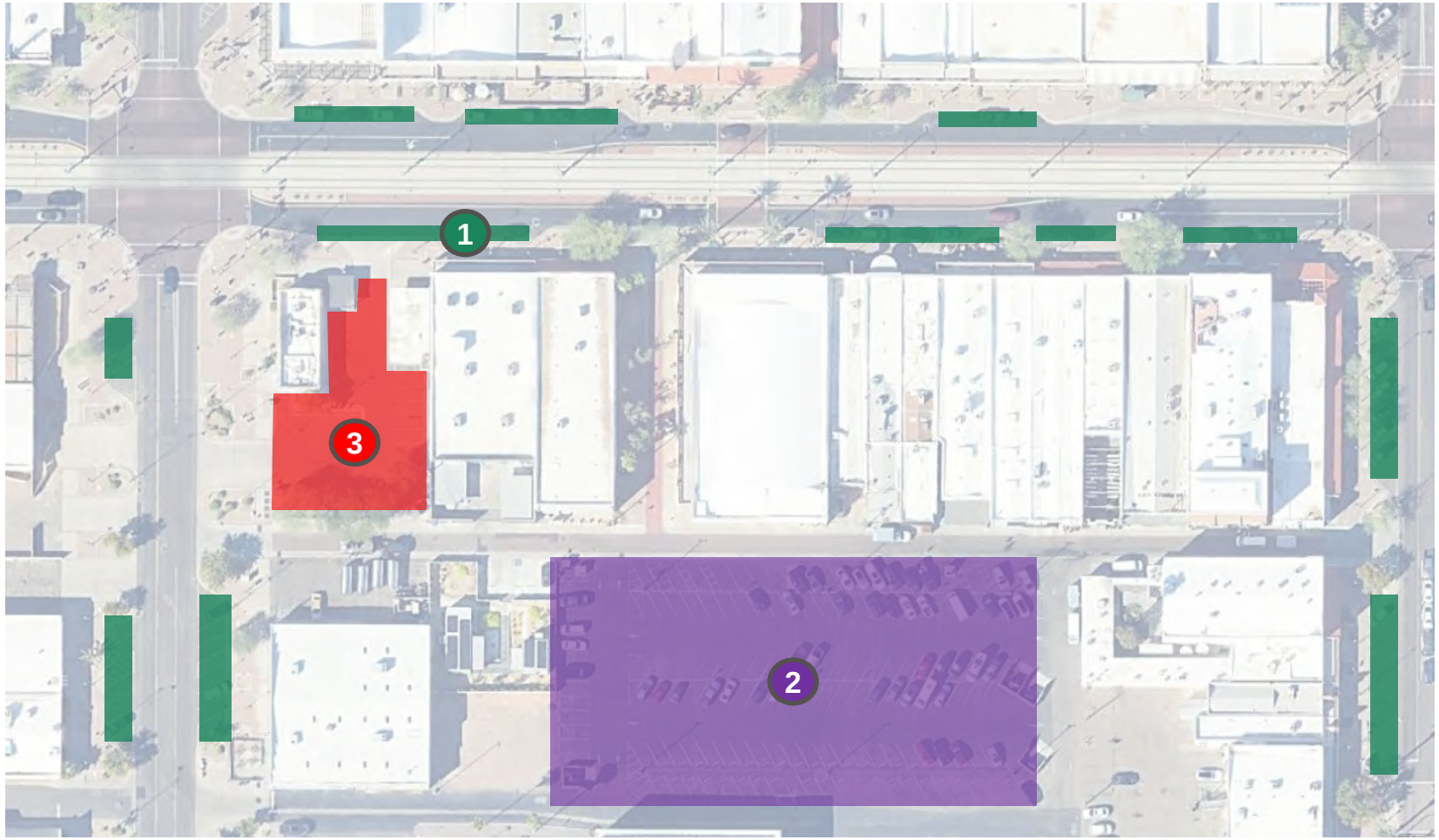
Options for Parking Downtown – On-Street

Regulations can vary significantly by block





Options for Parking for Downtown – Ideal



1 Street Parking

- Universally accessible
- Most popular for visitors
- Front door access for merchants

Regulations should ENCOURAGE availability for those spending money at Downtown businesses

2 Public Off-Street Parking

Regulations should MANAGE longer-term parking for employees, residents, and long-term visitors

3 Private Off-Street Parking

- Accessible to tenants only

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Parking Recommendations

REGULATORY

- Implement a 3-4-hour time limit for all on-street parking (W. 1st St. to W. 1st Avenue)
- Consider expanding access to off-street lot/garage supply for visitor parking

Shown on map

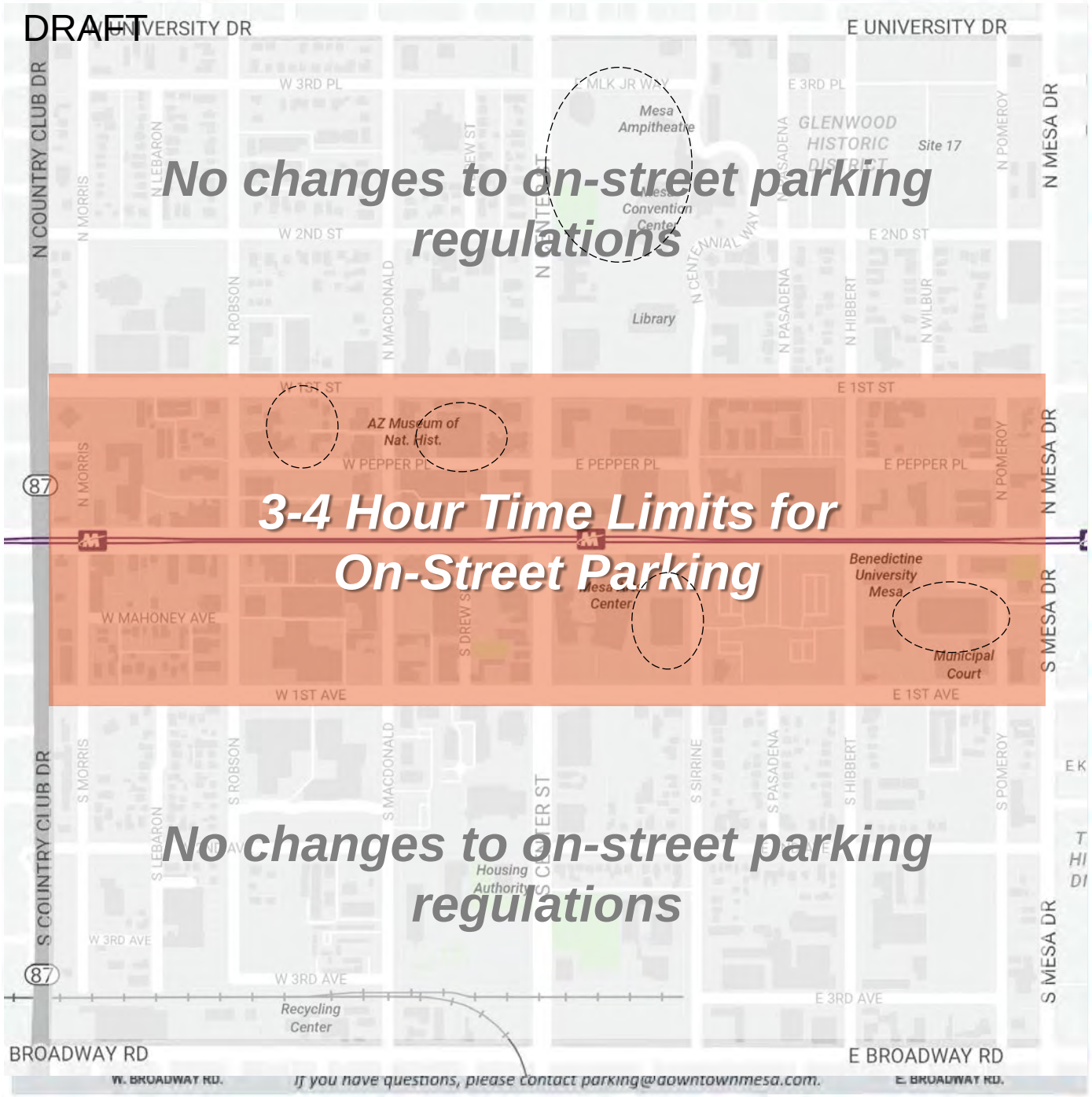
PERMIT

- Sell daily permits for lots/garages where capacity is present using an app/pay by plate system
- Entertain premium permit allowing for greater use of parking facilities and/or public street parking

OTHER

- Improve wayfinding and provide clear guidance for where visitors can leave vehicles for longer time periods.

Not shown on map



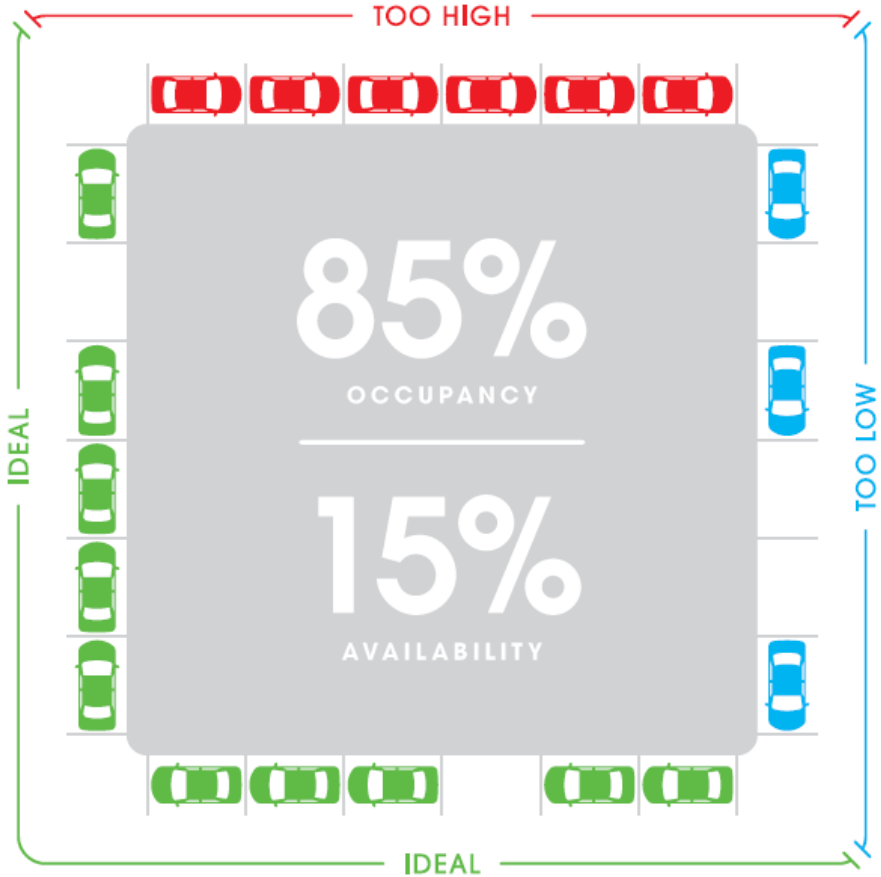
Long-Term – Pricing Parking to Manage Demand

Pricing parking that is already widely available for free is likely to:

a) Push users elsewhere in the system
b) Discourage trips to Downtown

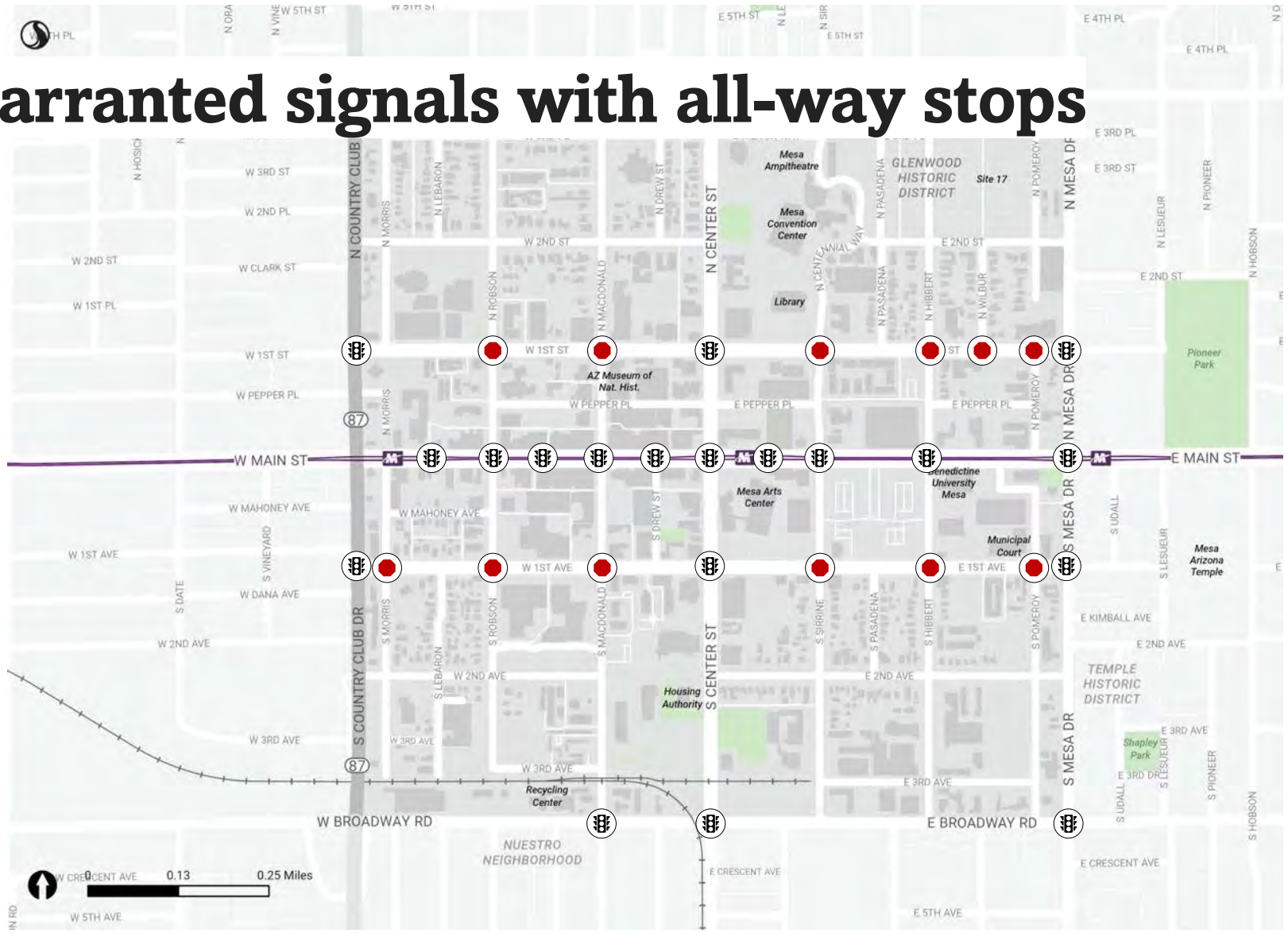
Planning around an 85% occupancy target can ensure many users are able to park at once while leaving some amount of parking as available.

In a future Downtown Mesa where this is happening, parking revenues could be used as a Parking Benefit District to be re-directed back into Downtown improvements



5 Complementary Recommendations

Replacing unwarranted signals with all-way stops



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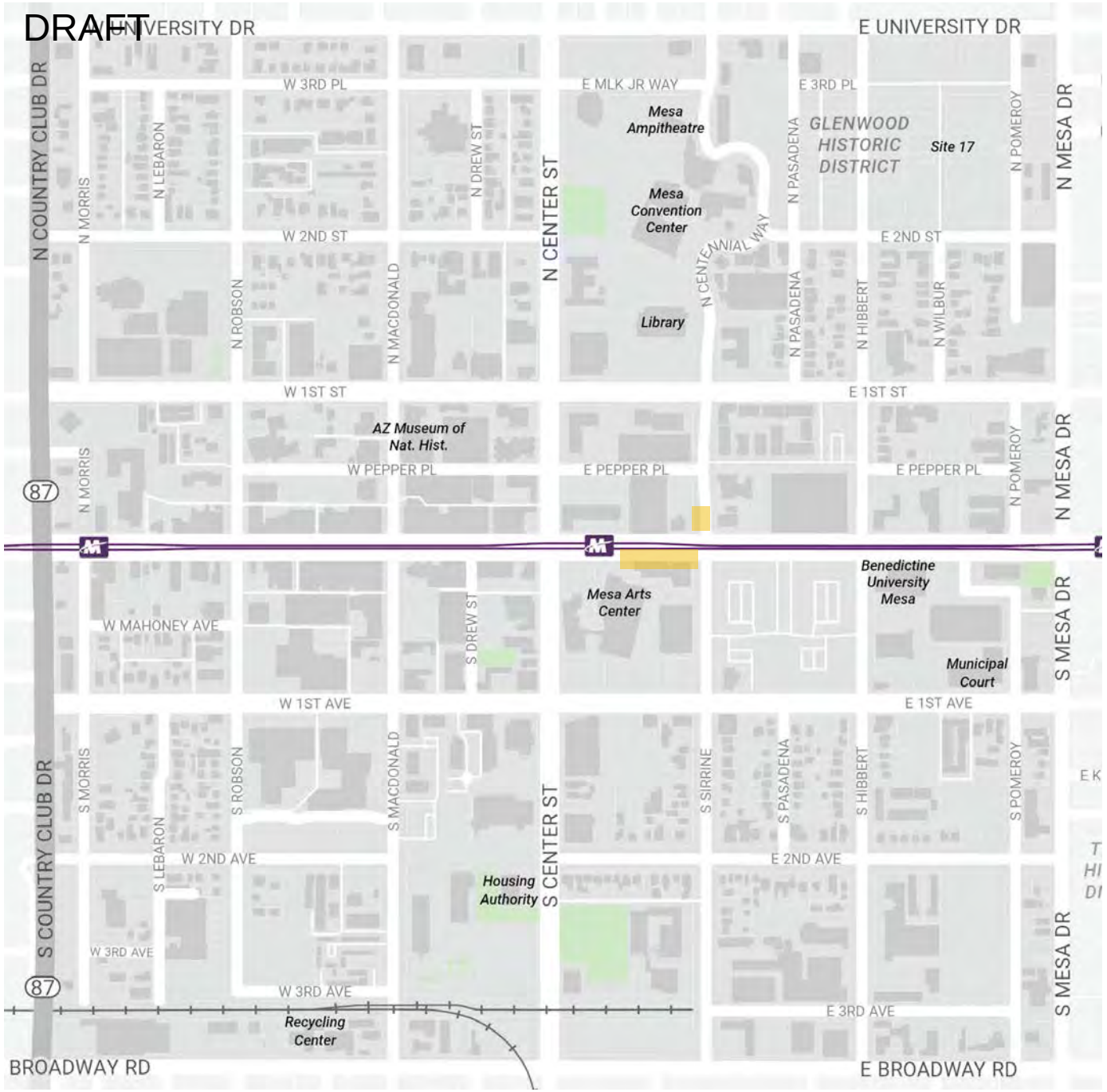
On-Street PU/DO

Designate curb space for pick-up/drop-off for ride share and personal vehicles



Additional Recommendations: Enhanced Bus Stops

Bike/Scooter Parking

Bike/Scooter Parking

Find Opportunities for Shade

City ordinances need to require deciduous street trees 30’ o. c. for any street built or rebuilt within downtown

6 Next Steps

Upcoming Meetings

Advisory Committee
February 3, 2025

City Manager
February 13, 2025

Public Meeting
March 12, 2025

City Council
March 13, 2025

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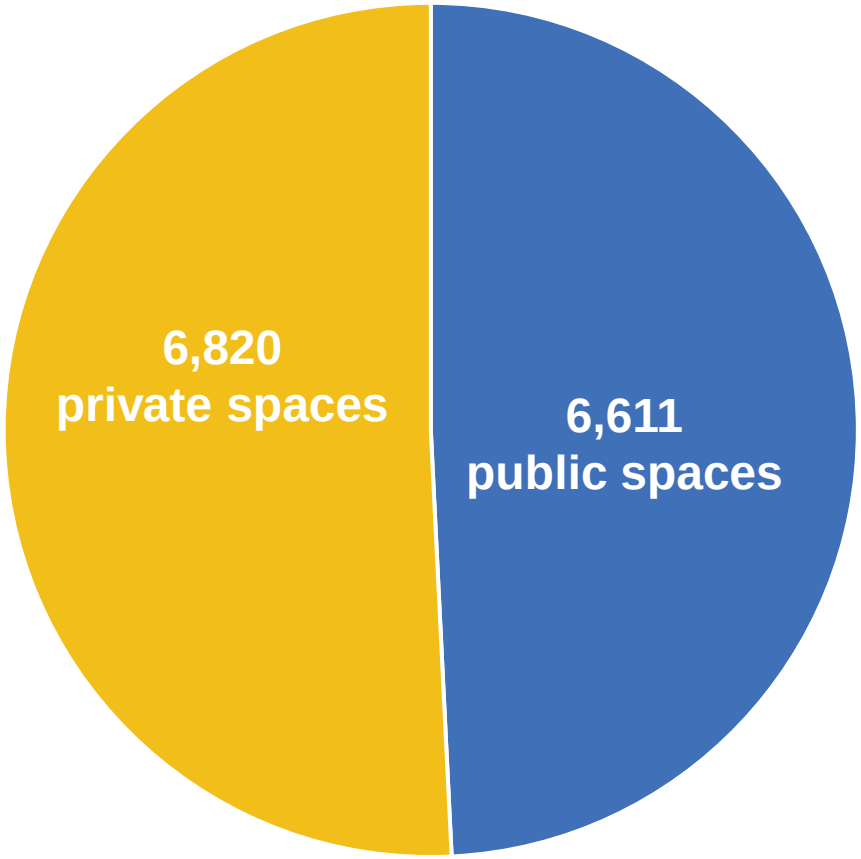
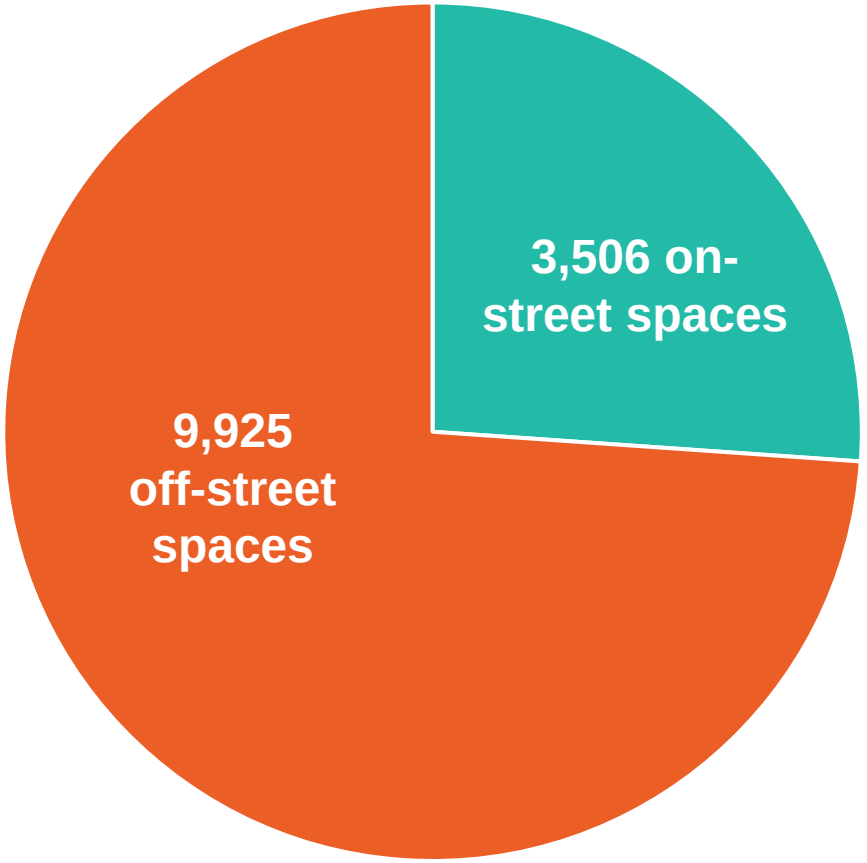
Appendix
Parking Utilization Summary Maps

Downtown Mesa Micromobility & Parking Study

Parking Inventory - 13,431 total spaces





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Weekday Parking Utilization

	DOWNTOWN CORE UTILIZATION			FULL STUDY AREA UTILIZATION		
Time Period	**Total** ~5,300 spaces	**On-Street** ~900 spaces	**Off-Street** ~4,400 spaces	**Total** ~12,300 spaces	**On-Street** ~3,500 spaces	**Off-Street** ~8,800 spaces
Weekday Morning	40%	30%	41%	32%	24%	35%
Weekday Midday	43%	38%	44%	35%	27%	37%
Weekday Afternoon	36%	31%	37%	31%	25%	34%
Weekday Evening	27%	39%	25%	23%	27%	22%

Parking Utilization

	DOWNTOWN CORE UTILIZATION			FULL STUDY AREA UTILIZATION		
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Weekday Midday	43%	38%	44%	35%	27%	37%
Weekday Afternoon	36%	31%	37%	31%	25%	34%
Weekday Evening	27%	39%	25%	23%	27%	22%
Saturday Midday	34% of ~1,500 spaces*	56% of 120 spaces*	32% of ~1,400 spaces*			

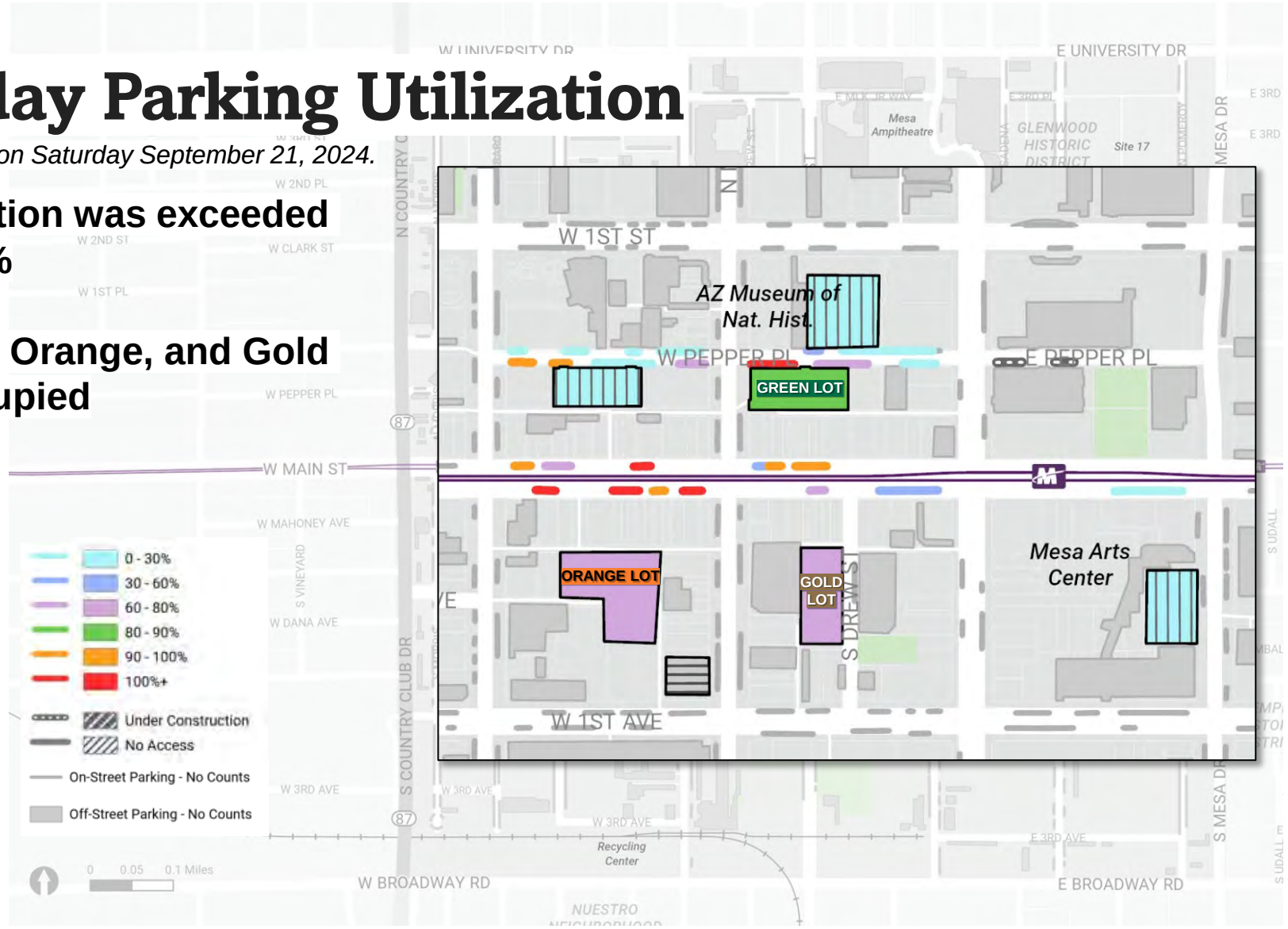
**Saturday counts limited to selected facilities*

Weekend Midday Parking Utilization

Select facilities were counted at 12 PM on Saturday September 21, 2024.

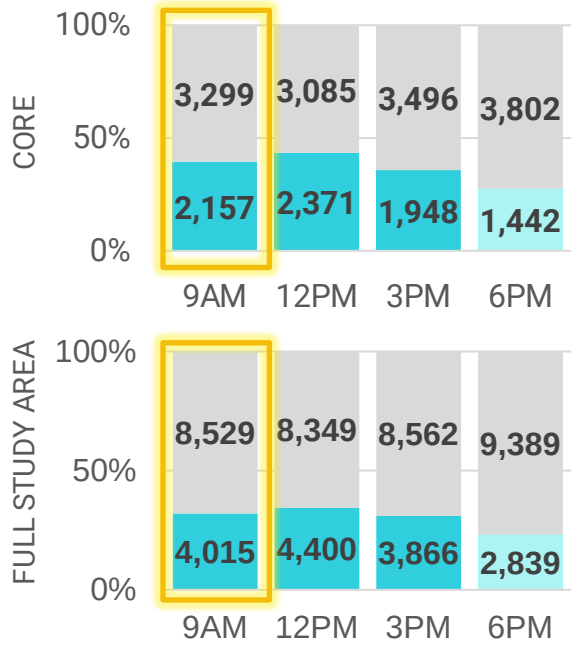
On-street parking utilization was exceeded the weekday peak at 56%

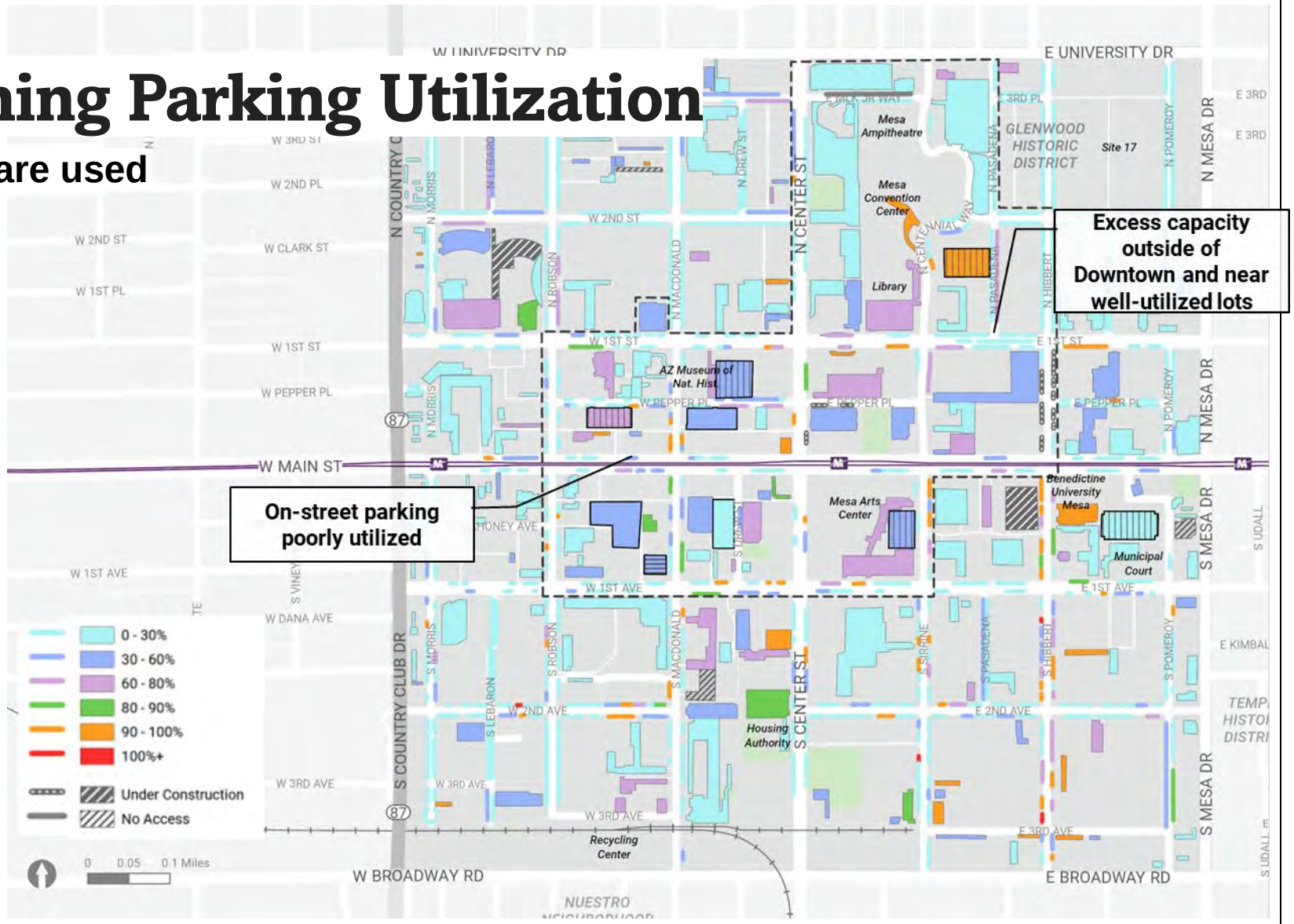
Visitor parking in Green, Orange, and Gold Lots were over 60% occupied



Weekday Morning Parking Utilization

At 9 am, 40% all spaces are used

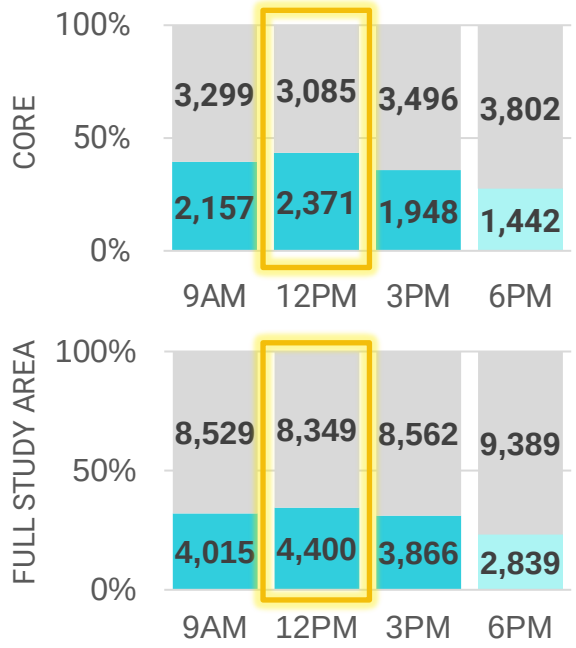


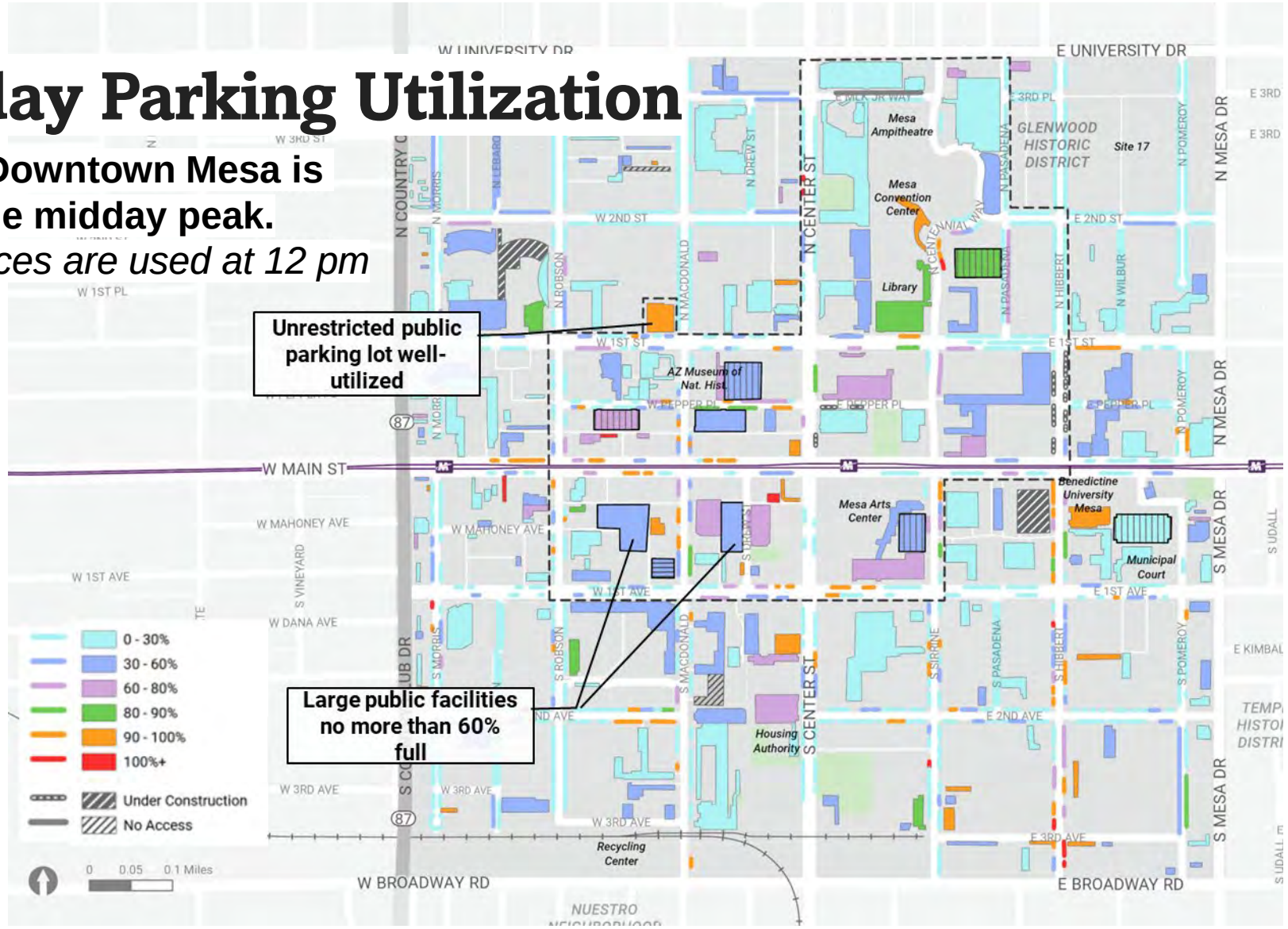


Weekday Midday Parking Utilization

Like many downtowns, Downtown Mesa is most highly utilized at the midday peak.

This only 43% of core spaces are used at 12 pm (35% of full study area)

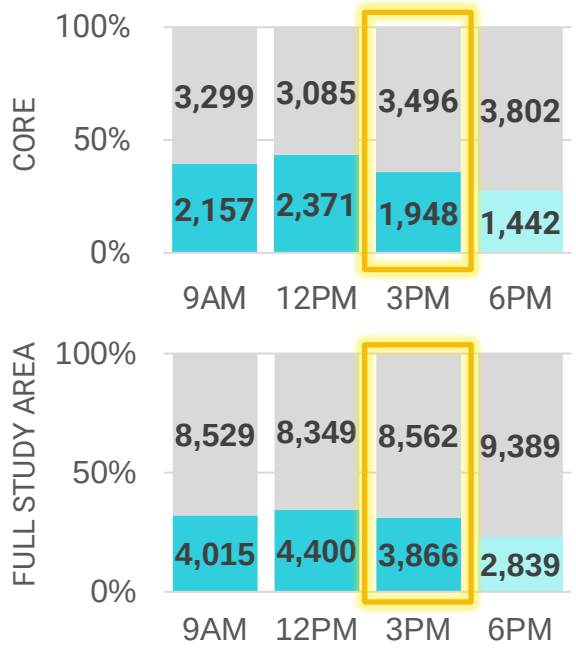


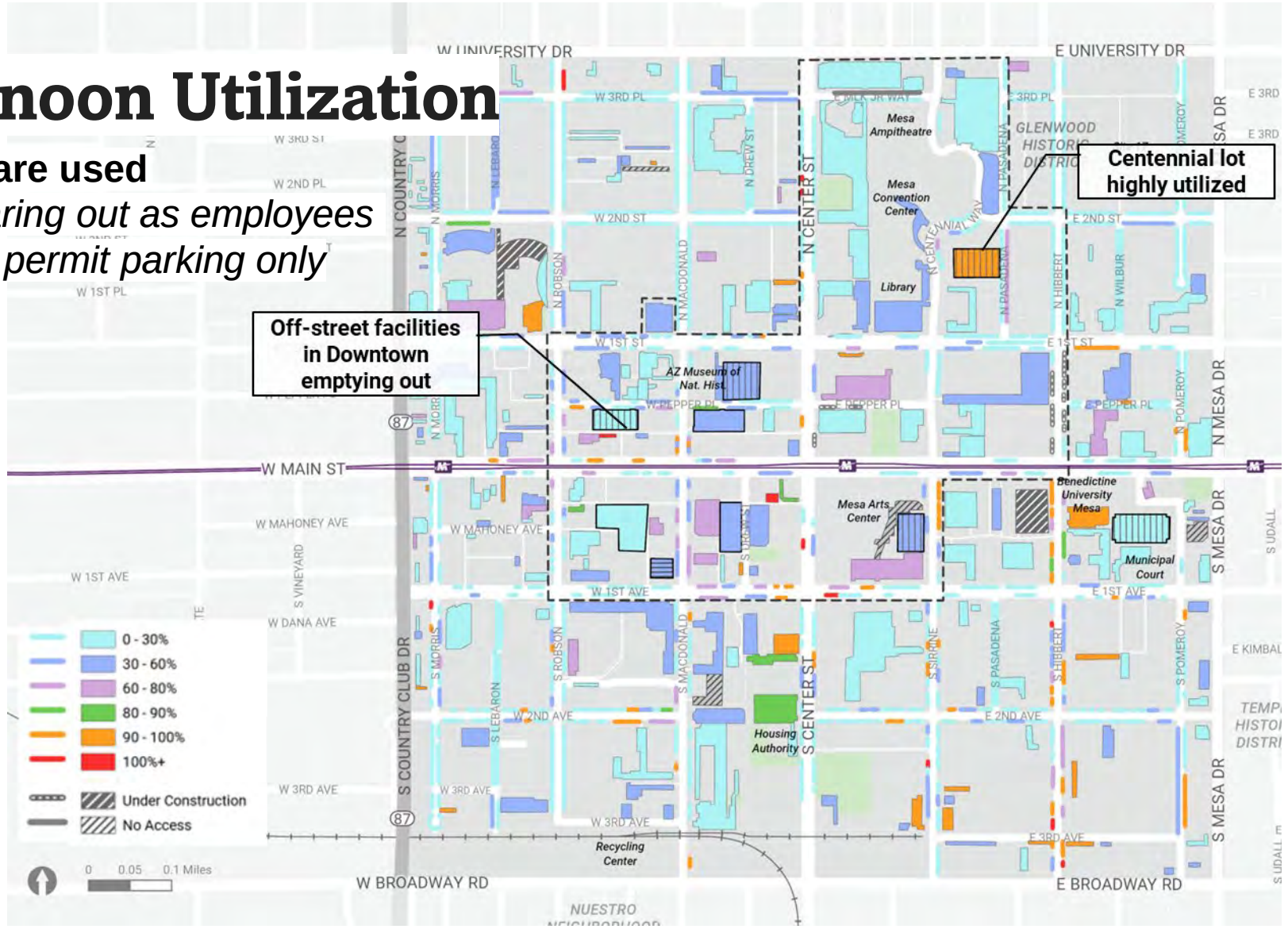


Weekday Afternoon Utilization

At 3 pm, 36% all spaces are used

Off-street facilities are clearing out as employees leave work, but are still for permit parking only

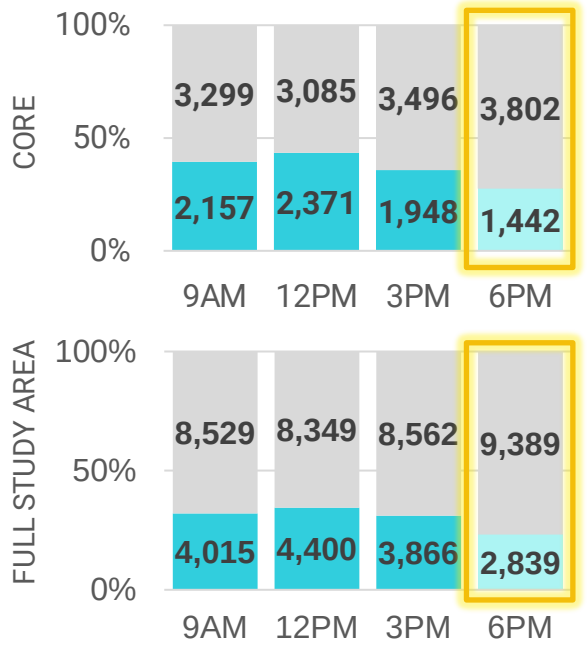


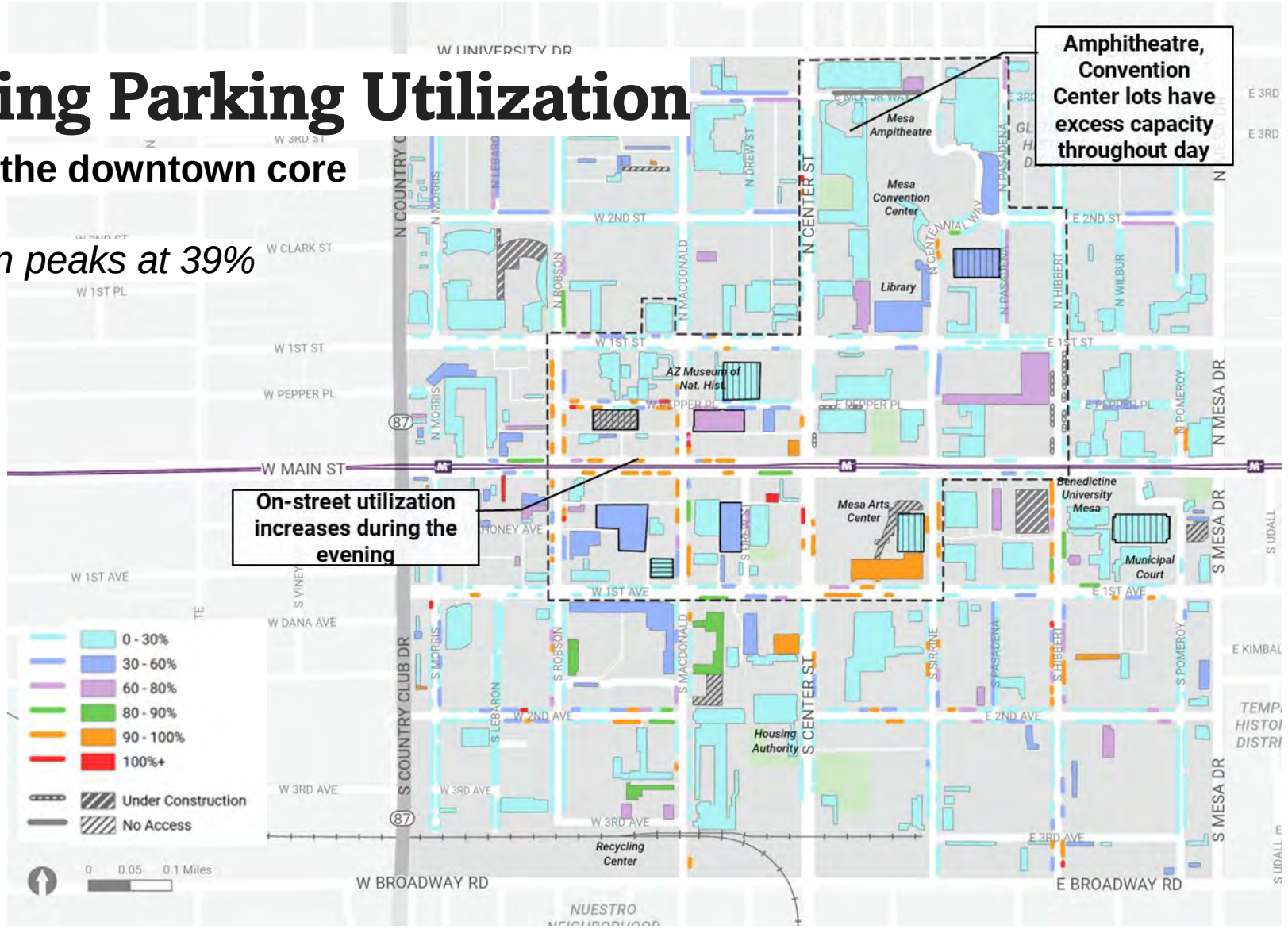


Weekday Evening Parking Utilization

At 6 pm, less than **30% of the downtown core spaces are occupied**

On-street parking utilization peaks at 39%



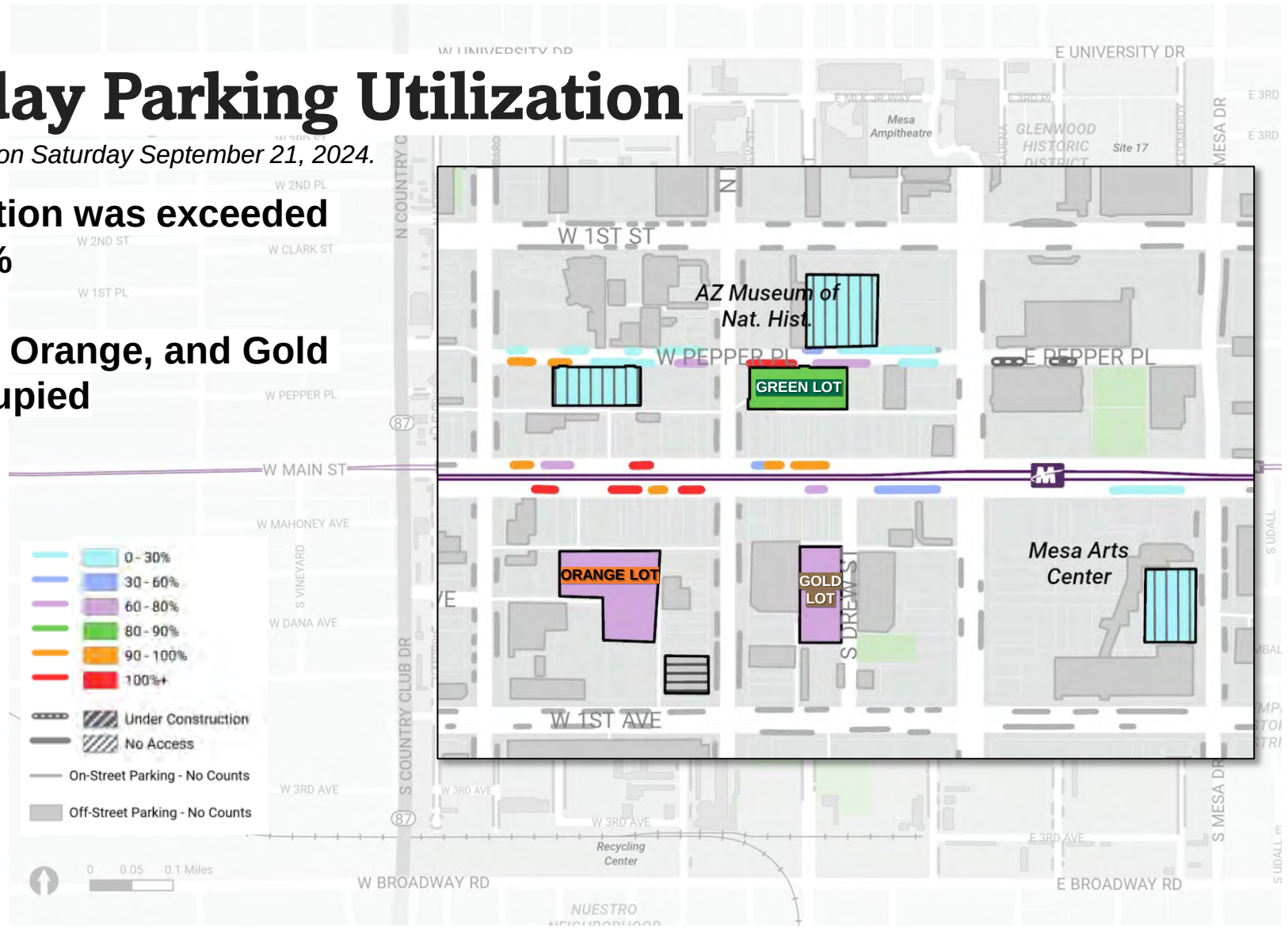


Weekend Midday Parking Utilization

Select facilities were counted at 12 PM on Saturday September 21, 2024.

On-street parking utilization was exceeded the weekday peak at 56%

Visitor parking in Green, Orange, and Gold Lots were over 60% occupied



Stantec SPECK DEMPSEY

Appendix
Bicycle Level of Traffic Stress
Methodology

Downtown Mesa Micromobility & Parking Study

Stantec **Technical Memo**

Bicycle Level of Traffic Stress Analysis Methodology

1 Bicycle Level of Traffic Stress (BLTS) Analysis

A “bicycle level of traffic stress” (BLTS) analysis provides an objective assessment of how stressful it can be to bike or scoot on Mesa’s streets. BLTS analysis was originally developed by Peter G. Furth, and it assesses streets based on factors such as vehicle speed, number of vehicle travel lanes, and type of bicycle facility to create a scoring system. The final scoring categorizes roads into four levels with BLTS 1 being the lowest stress for biking and BLTS 4 being the highest stress for biking. Figure 1 further explains the four levels of BLTS. These results of the BLTS levels provide a basis for developing improvements to the system in the future.

The BLTS analysis was simplified and adopted for the context of Mesa. This BLTS analysis methodology draws on and synthesizes examples of City of Fort Worth[1], Maryland DOT[2], Montgomery County[3], City of Madison[4], and City of Boston[5]’s BLTS methodology and uses a few less factors in determining the BLTS scores. Overall, this BLTS analysis follows through three steps: data cleaning, scoring road segments, and scoring intersections. The following sections will explain these steps in further detail.

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[1] Appendix 4: Level of Traffic Stress (LTS) Analysis Methodology Memorandum; https://www.fortworthtexas.gov/files/assets/public/v/1/tpw/documents/atp/appendix-4-level-traffic.pdf

[2] Maryland Department of Transportation; https://www.mdot.maryland.gov/OPCP/MDOT_LTS_Metadata_Methodology_Full.pdf

[3] Appendix D: Level of Traffic Stress Methodology; https://montgomeryplanning.org/wp-content/uploads/2017/11/Appendix-D.pdf

[4] Defining the Madison Area Low-Stress Bicycle Network and Using it to Build a Better Regional Network; https://www.cityofmadison.com/mpo/documents/transportation-planning/biking--walking/LTSRReportFinal.pdf

[5] Bicycle Level of Traffic Stress Report & Guide for Large Developments; https://www.boston.gov/sites/default/files/file/2020/12/Bicycle%20Level%20of%20Traffic%20Stress%20Report%20%26%20Guide%20for%20Large%20Developments.pdf

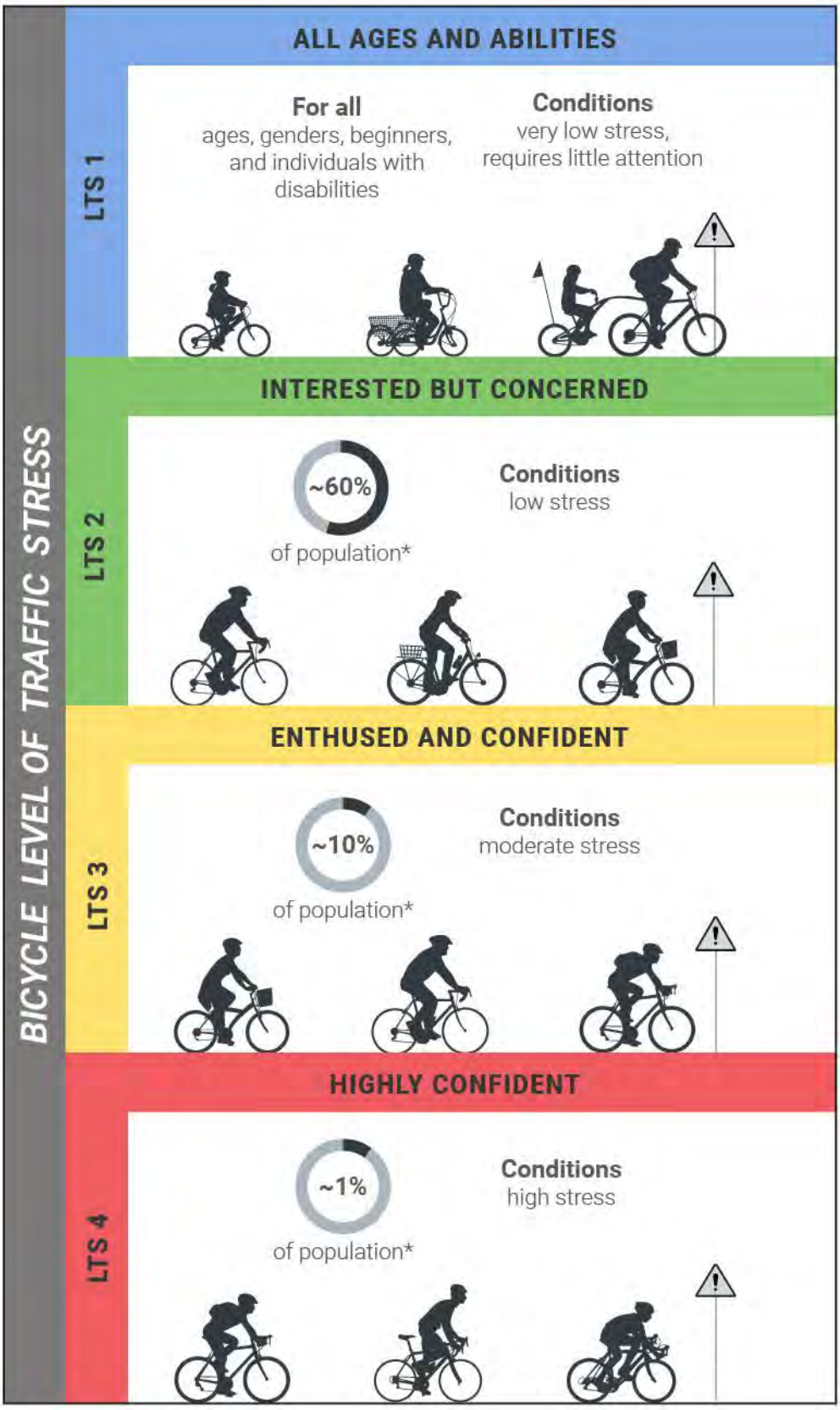
BICYCLE LEVEL OF TRAFFIC STRESS
LTS 1
ALL AGES AND ABILITIES
For all
ages, genders, beginners, and individuals with disabilities
Conditions
very low stress, requires little attention
LTS 2
INTERESTED BUT CONCERNED
~60%
of population*
Conditions
low stress
LTS 3
ENTHUSED AND CONFIDENT
~10%
of population*
Conditions
moderate stress
LTS 4
HIGHLY CONFIDENT
~1%
of population*
Conditions
high stress

Figure 1 Description of the four levels of Bicycle Level of Traffic Stress (Source: Mineta Transportation Institute)

2 Data Cleaning

Data collection and cleaning is the first step in the BLTS analysis. Roadway characteristic data including bike facility type, posted speed limit, travel lanes, vehicle volume, presence of on-street parking, and traffic control system at intersections, were collected, cleaned, and added for each road segment. Roadway lines were kept as one line and not split into two lines for both sides of the road. Then, these road segments were split at intersections to capture the variation in road characteristics and represent the different levels of BLTS even on the same corridor. On roadways that were closed for access were removed from analysis.

Bicycle facilities were organized into three categories: mixed traffic, standard bike lanes, and separated bike lanes. For roadways with different levels of bike protection on either side of the street, they were categorized based on the bike lane with the least protection. Road segments without bike lanes and sharrows were designated as mixed traffic. Road segments with traditional bike lanes were designated as standard bike lanes. Finally, roadways with flex-post buffered, parking buffered, and sidewalk level bike lanes were designated as separated bike lanes.

Actual and assumed daily traffic volume were used to collect and clean vehicle volume data. Where actual daily traffic was available, it was assigned to the corresponding road segment and applied throughout the corridor if the characteristics were the same. Where vehicle volume was not available, daily traffic volume was assumed based on road classification. Table 1 shows daily vehicle volume for the different road classification in Mesa.

Mesa road functional classification	Volume (Vehicles per day)
Alley	Under 1,500 Vehicles a day
Local	1,500 - 2,999 Vehicles a day
Collector	3,000 - 5,999 Vehicles a day
Arterial 1 lane each direction	3,000 - 5,999 Vehicles a day
Arterial 2+ lanes in each direction	Over 6,000 Vehicles per day
	Over 6,000 Vehicles per day

Table 1 Daily vehicle volume assumptions based on road classification

3 Scoring Corridors

The scoring system varies based on the type of bike facilities available on the roadway. Based on the type of bike facility available on the roadway, each road segments were scored based on its corresponding bike facility designation. The tables below detail the factors used for scoring road segments for each bike facility type.

The ultimate score aligns with the lowest score. This results in neighborhood streets with centerlines scoring lower than First Avenue with a protected bike lane.

Mixed Traffic								
Travel Lanes	**ADT**	**Posted Speed Limit**						
		<= 20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
Unmarked 2-way street (No centerline)	0 - 750	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 3
	Under 1500	LTS 1	LTS 1	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	1500 - 2999	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4	LTS 4
	3000+	LTS 2	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
1 travel lane per direction (1-way, 1-lane street or 2-way with centerline)	0 - 750	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 3
	750 - 1500	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 3	LTS 4
	1500 - 2999	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4
	3000+	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4
2 travel lanes per direction	0 - 6,000	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	6,000+	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4
3+ travel lanes per direction	Any	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4

Table 2 BLTS scoring system for mixed traffic roads

Standard Bicycle Lane							
Travel Lanes	**Presence of Parking**	**Posted Speed Limit**					
		<= 25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
1 travel lane per direction (1-way, 1-lane street or 2-way with centerline)	No	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
	Yes	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4	LTS 4
2 travel lanes per direction	No	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
	Yes	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
3+ travel lanes per direction	No	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	Yes	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4

Table 3 BLTS scoring system for roads with standard bike lanes

Separated Bicycle Lane						
Travel Lanes	**Posted Speed Limit**					
	<= 25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
1 travel lane per direction	LTS 1	LTS 1	LTS 1	LTS 1	LTS 2	LTS 3
2 travel lanes per direction	LTS 1	LTS 1	LTS 1	LTS 2	LTS 3	LTS 3
3 travel lanes per direction	LTS 1	LTS 1	LTS 2	LTS 3	LTS 3	LTS 4
4 travel lanes per direction	LTS 1	LTS 1	LTS 2	LTS 3	LTS 3	LTS 4
5+ travel lanes per direction	LTS 1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4

Table 4 BLTS scoring system for roads with separated bike lanes

4 Scoring Intersections

Intersections are scored separately from the corridors and consider intersection control, number of lanes of streets that are being crossed, and posted speed limit. After running the BLTS analysis for all road segments, key intersections are selected for analysis. Road segments are split at these key intersections and the intersection specific BLTS score is applied on the approaching leg. For example, for an east-west street, the BLTS score is symbolized for crossing the north-south street on the east-west leg. As for the rest of the intersections, the initial BLTS levels are carried through the intersection. If the intersection BLTS score was lower than the segment BLTS score, the intersection BLTS was adjusted to match the segment BLTS score.

Intersections					
Intersection Control	**# of lanes of street being crossed**	**Posted Speed**			
		<= 25 mph	30 mph	35 mph	40 mph
Uncontrolled (Without a median refuge)	1-3 lanes	LTS 1	LTS 1	LTS 2	LTS 3
	4-5 Lanes	LTS 2	LTS 2	LTS 3	LTS 4
	6 + Lanes	LTS 4	LTS 4	LTS 4	LTS 4
Signal	1-3 lanes	LTS 1	LTS 1	LTS 1	LTS 1
	4-5 Lanes	LTS 2	LTS 2	LTS 2	LTS 2
	6 + Lanes	LTS 3	LTS 3	LTS 3	LTS 3

Table 5 BLTS scoring system for intersections