

Housing Costs and the Transportation/ Land Use Connection

*A Joint Webinar of the Greater Madison MPO and
Capital Area Regional Planning Commission*

Speaker: Ben Lyman, Transportation Planner,
Greater Madison MPO

November 16, 2023



Welcome & Housekeeping

1. This webinar is being recorded.
2. Everyone is muted.
3. The webinar supports **automated closed captions**.
To start automated captions, select “Show Captions” from the menu bar at the bottom of your screen.
4. The presentation slides and recording will be sent out after the webinar.
5. Please put questions in the **Q&A**.
6. We love to see who’s joining us—feel free to introduce yourself in the **chat**.



Poll 1



Who is with us today?

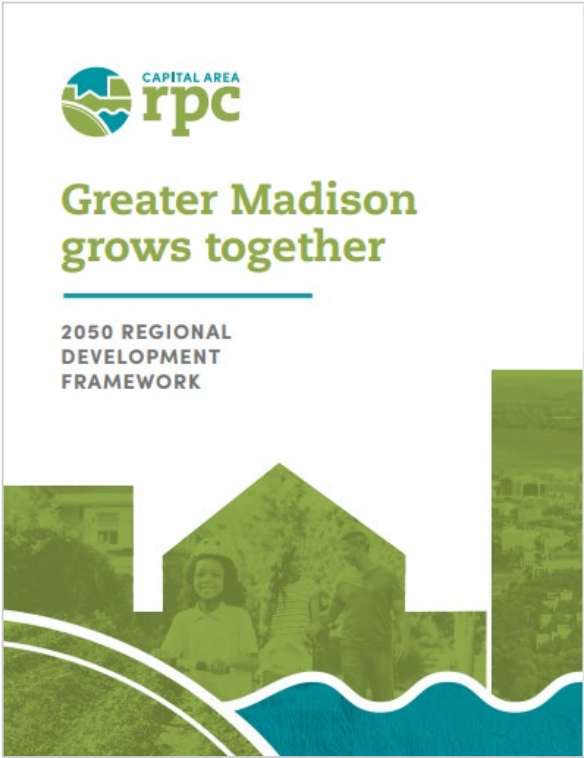




Greater Madison MPO



Capital Area Regional Planning Commission





Planning & Development

DESCRIPTION OF LOTS. Each lot in blocks 2, 3, 4, 5, 14, 15, 16 and lots 1, 2, 3, 4, 5, 6 in block 6, and lots 5, 6, 7, 8, 9, 10 in block 13 is 66 by 132 feet. Each lot in blocks 1 and 17 is 66 by 126 feet. Each lot in block 7 and 12 is 49½ by 55 feet. Each lot in blocks 8, 9, 10

Dane County Regional Housing Strategy (RHS)



Dane County Regional Housing Strategy: Taking the Next Step

Dane County, its municipalities, and private and non-profit housing stakeholders have been working to address the critical shortage of affordable and workforce housing for many years. The purpose of developing the Dane County Regional Housing Strategy (RHS) is to acknowledge, reinforce, and build on local efforts, assess the ongoing challenges, and work together to take the next steps to expedite the development and preservation of affordable/workforce housing!

JOIN US! Follow Dane County RHS on Social Media for project updates and to participate in an upcoming housing priorities survey.



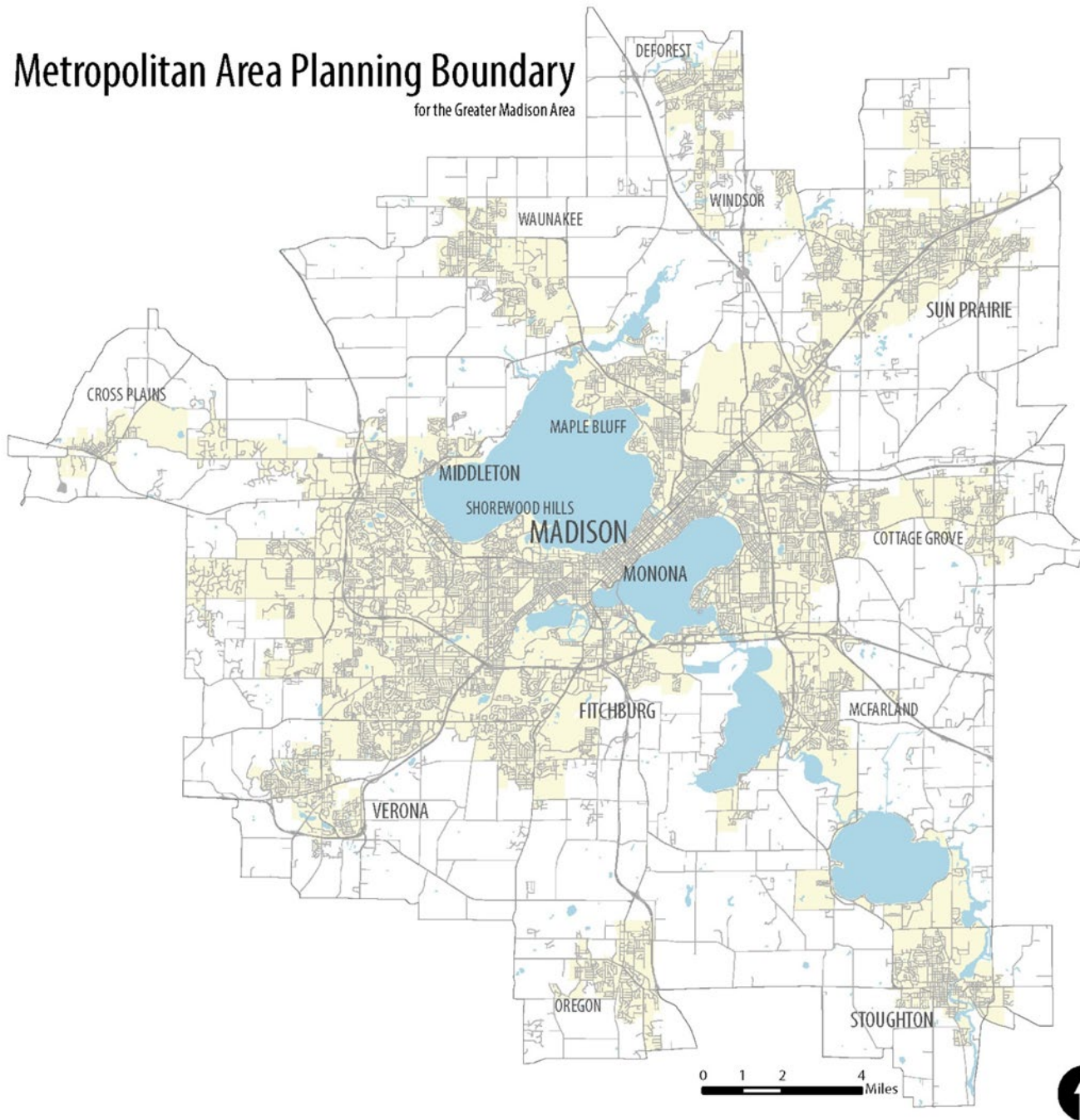
ABOUT THE MPO

MISSION

Lead the collaborative planning and funding of a sustainable, equitable transportation system for the greater Madison region.

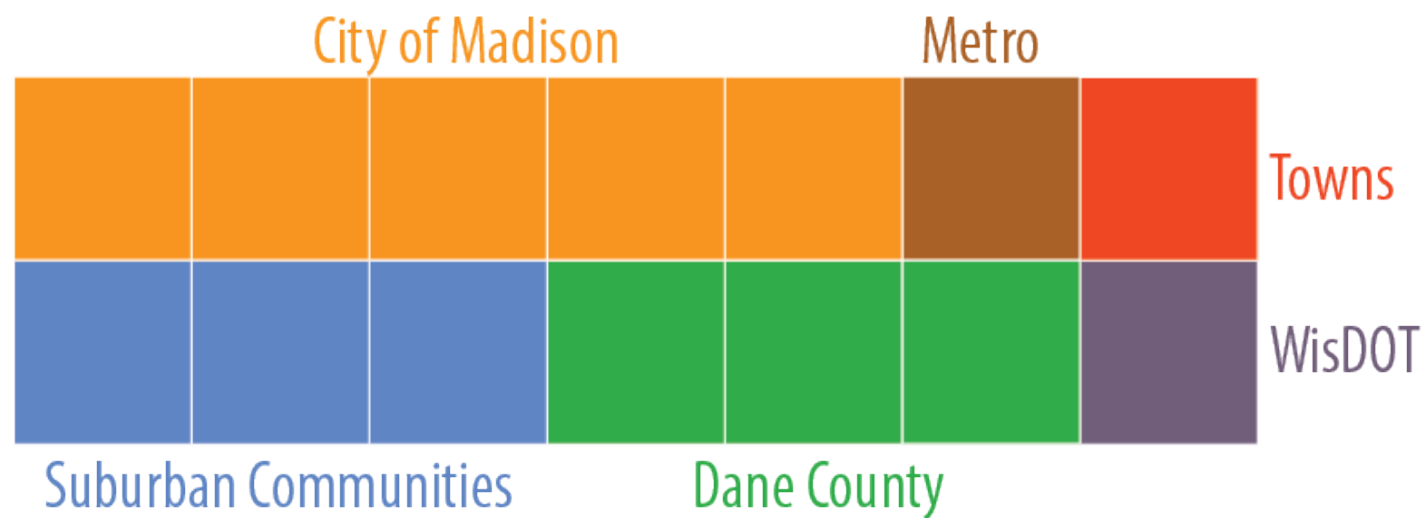
VISION

A sustainable, equitable regional transportation system that connects people, places, and opportunities to achieve an exceptional quality of life for all.





Governance Structure of the Greater Madison MPO



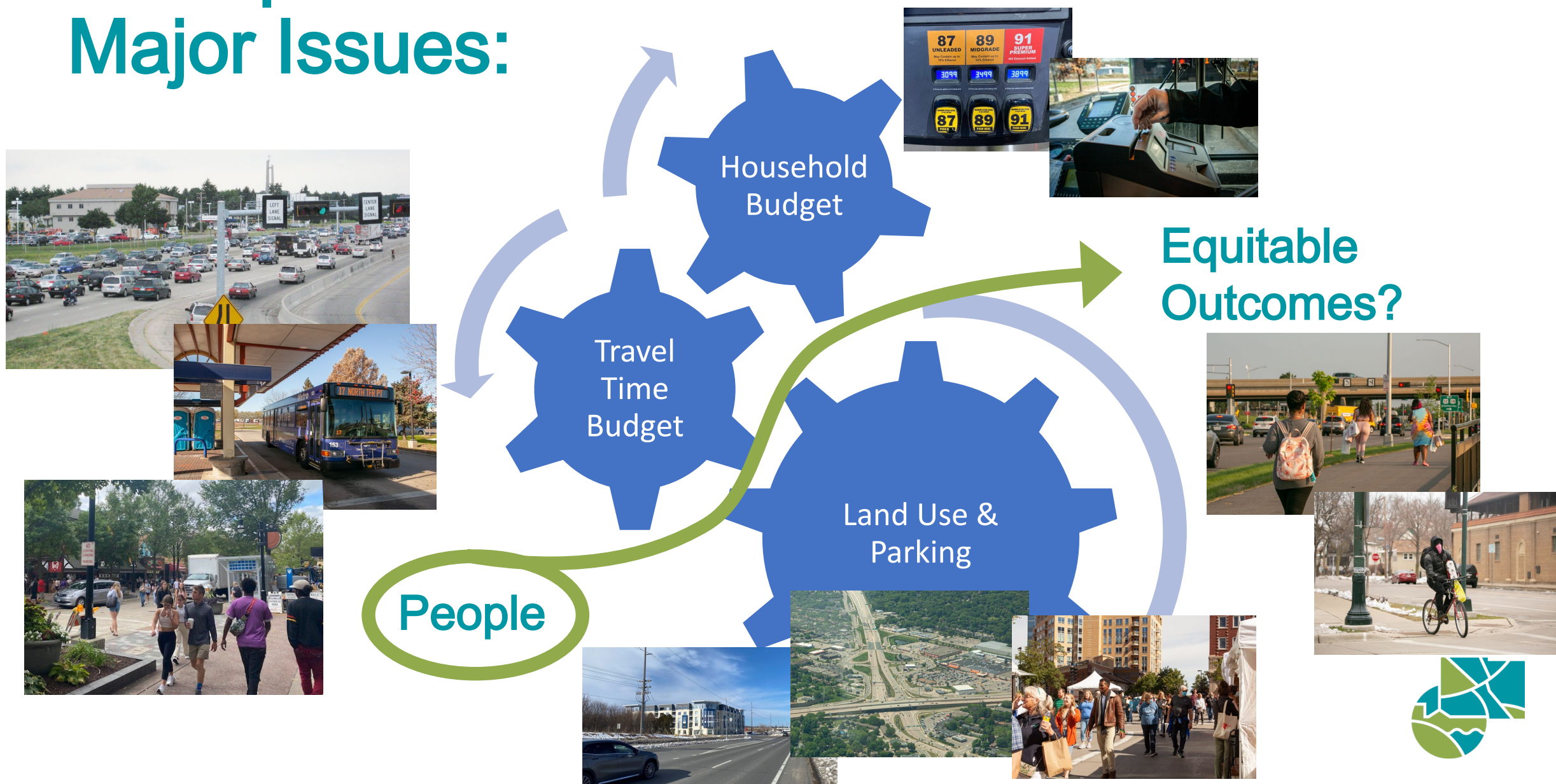
Today's Presentation:

- Separated v. Mixed Uses
- Accessibility and the Travel Time Budget
- Housing + Transportation Costs
- Street and Sidewalk Network
- Low-Cost Transportation Options
 - Active Transportation
 - Transit
- Parking Costs and Impacts
- Travel Modes for Madison and Dane County Populations
- Putting it all together
 - 15 Minute Cities
 - Transit-Oriented Development





Transportation & Land Use - A Few Major Issues:





Housing & Land Use Siting – Challenges posed by the Status Quo

Location often based on land prices, not on access to services

- Regional Transportation Plan Focus Group Comments:

“My car payment is my biggest expense. Having a car for regular use means that I have to sacrifice a lot of things in the rest of my life. The money we spend to have that car so that we can have flexibility means that we don't have money to spend on other things. For example we can't go on trips, spend money on meals, or do fun extra activities.” (LA)

“I would like to be a part of the community and go to farmers markets, make trips to Madison and go to other events, but I cannot due to limited bus service.” (SP)

“It is hard to be involved with kids' after school activities and things like parent-teacher conferences due to transportation limitations.” (BV)

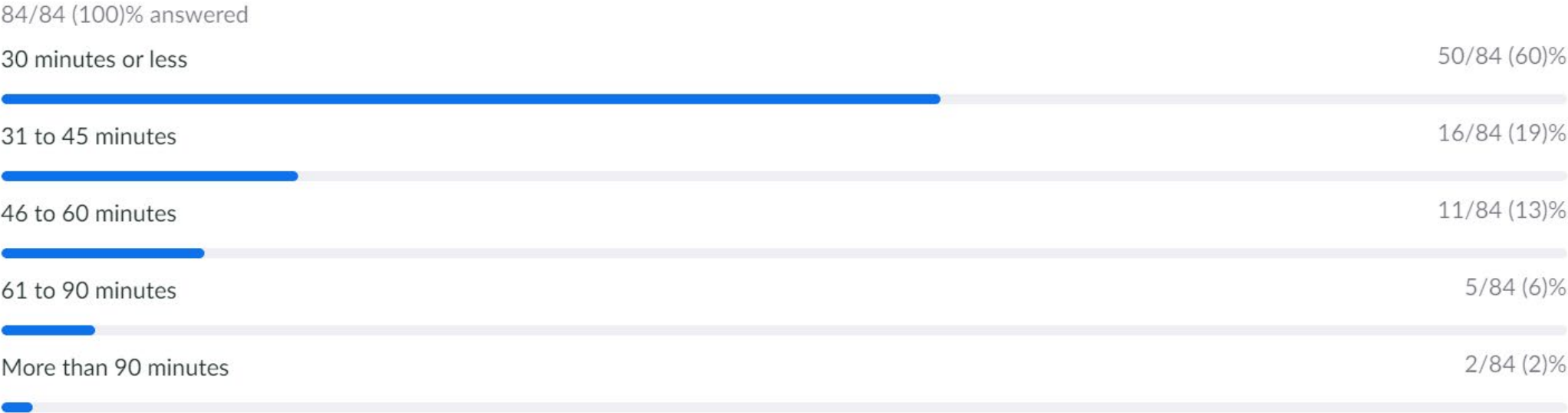
“The only reason I use my car is because public transportation is not available where I live.” (SP)

“I am forced to use my car. However, I do not like to drive because I do not want to get in trouble. I do not like to drive in places, towns I am not very familiar with.” (LA)

Poll 2

How much time do you typically spend commuting each day (both ways)?
Participant responses:

1. How much time do you typically spend commuting each day (both ways)? (Single Choice)





Land Use Patterns Dictate Transportation Options



Separated Uses

Longer travel distances

Combining trip purposes more difficult

Travel mode must be faster
(premium transit, automobile)



Mixed Uses

Shorter travel distances

Combining trip purposes simplified

Travel mode can be slower
(walking, biking, transit)





Accessibility

- Travel Time Budget drives decisions about home and work locations
- Most people are OK with 60- 90 minutes of total travel time/day

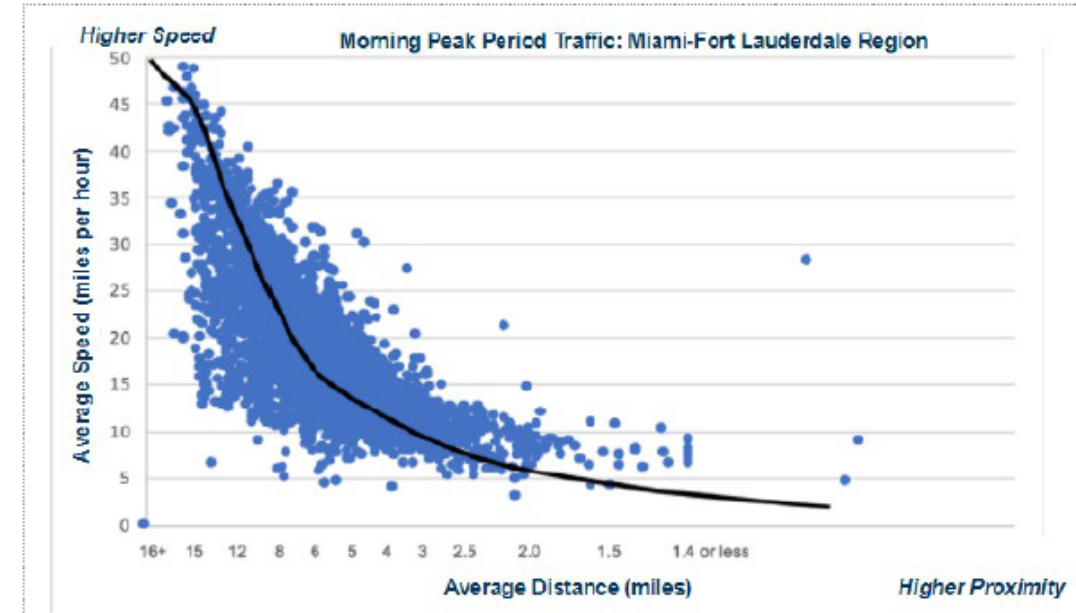


THE INVERSE RELATIONSHIP BETWEEN PROXIMITY AND TRAVEL SPEED:

People who live close to their destination make short trips at low speeds.

As the level of proximity decreases, people travel longer distances at higher speeds.

In most communities, the optimal morning commute time is about 20 minutes.

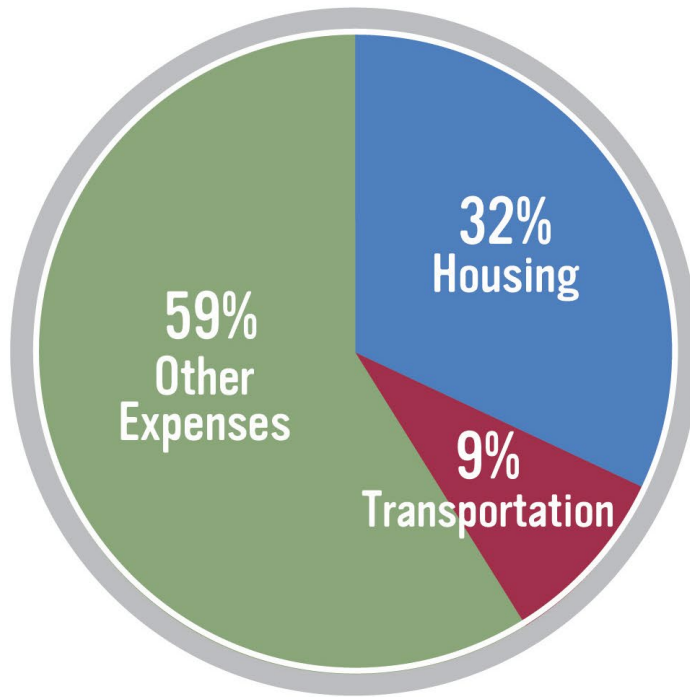


ACCESSIBILITY TRADE-OFFS:

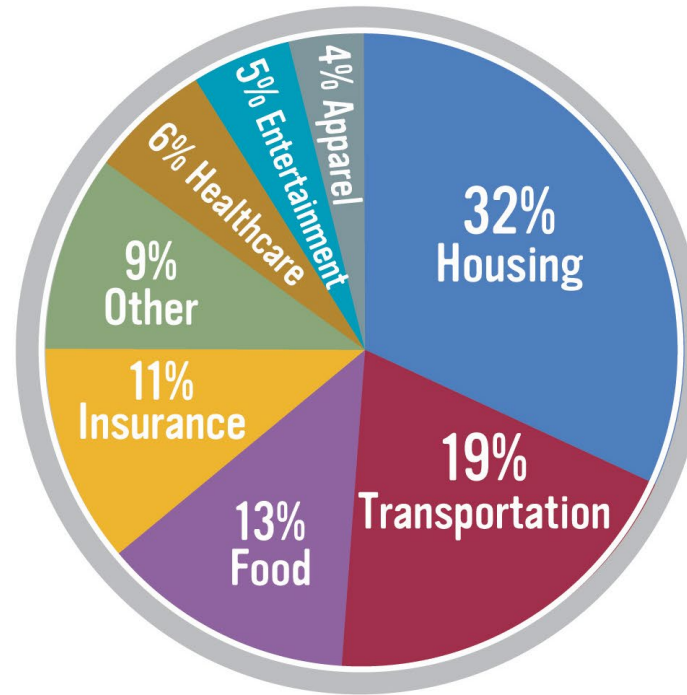




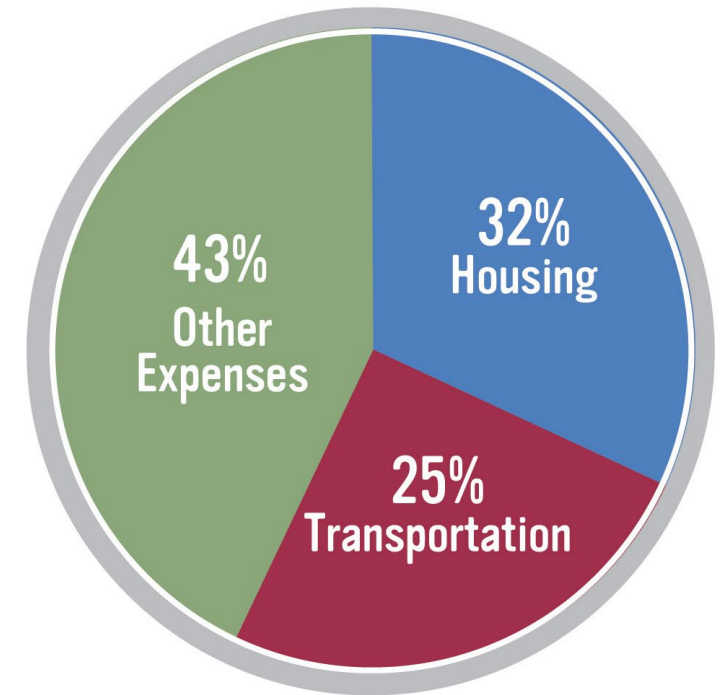
TRANSIT RICH NEIGHBORHOOD



AVERAGE AMERICAN FAMILY



AUTO DEPENDENT EXURBS



Source: Center for TOD + Transportation Affordability Index, 2004 Bureau of Labor Statistics

“Transportation costs consume an average of 9 percent of the household budget for high-income families, but **for very-low-income families transportation costs can consume 55 percent of the budget** or more.

- [Realizing the Potential: Expanding Housing Opportunities Near Transit](#)



Household Budgets: Housing + Transportation Costs

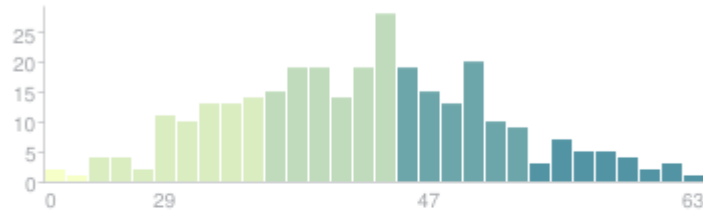
County: Dane, WI

H+T Costs % Income: 44%

Housing: 26% Transportation: 19%

Fact Sheet

Housing + Transportation Costs % Income

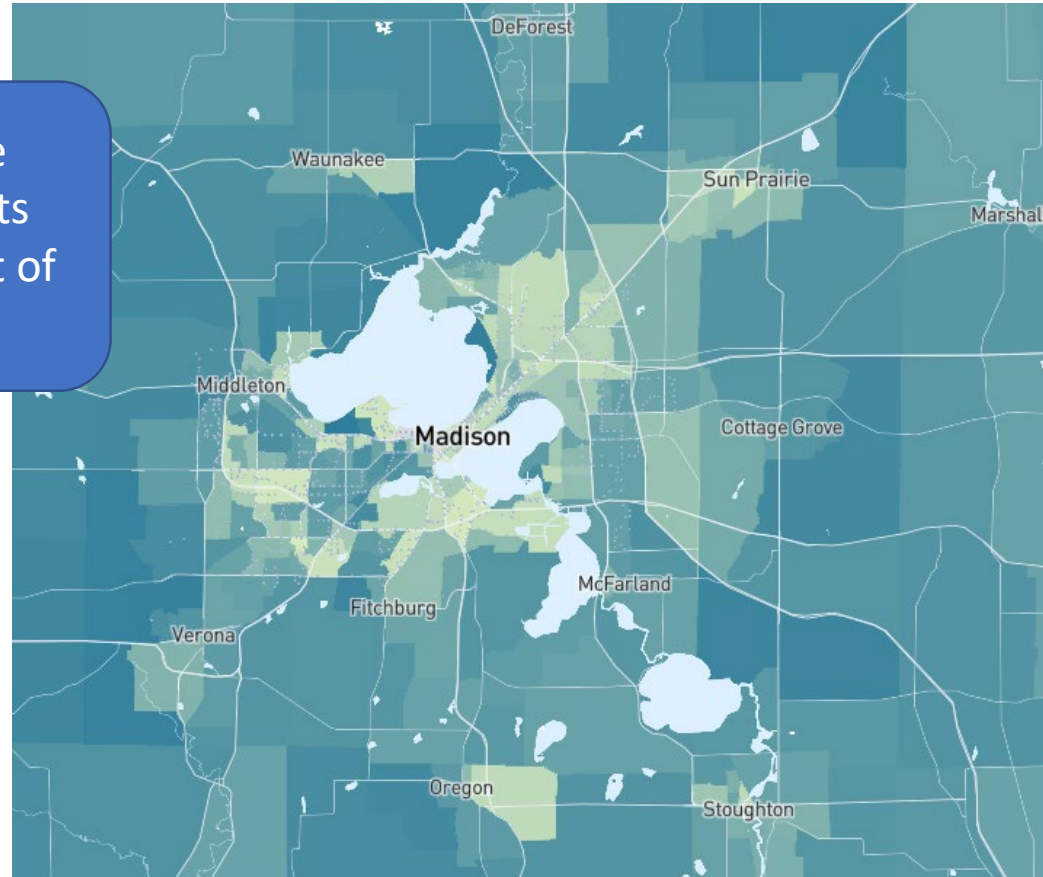


Housing + Transportation Costs % Income ?
Average: 44% Range: 24 - 69

49.5% of Dane
County residents
have an H+T cost of
45% or less

Population	Household	Neighborhood
Households		
% of Households		
< 24%	395	0.2%
24 - 36%	43,549	19.5%
36 - 45%	66,475	29.8%
45 - 54%	83,778	37.6%
54 - 66%	27,402	12.3%
66 - 78%	1,330	0.6%
78 - 87%	0	0%
87% +	0	0%
Total	222,929	100%

Household: ☒ Regional Typical ☐ Regional Moderate ☐ National Typical
Income: \$72,374 Commuters: 1.25 workers Household Size: 2.35 people



Housing + Transportation Costs % Income

< 24% 24-36% 36-45% 45-54% 54-66% 66-78% 78-87% 87%+

<https://htaindex.cnt.org/map/>



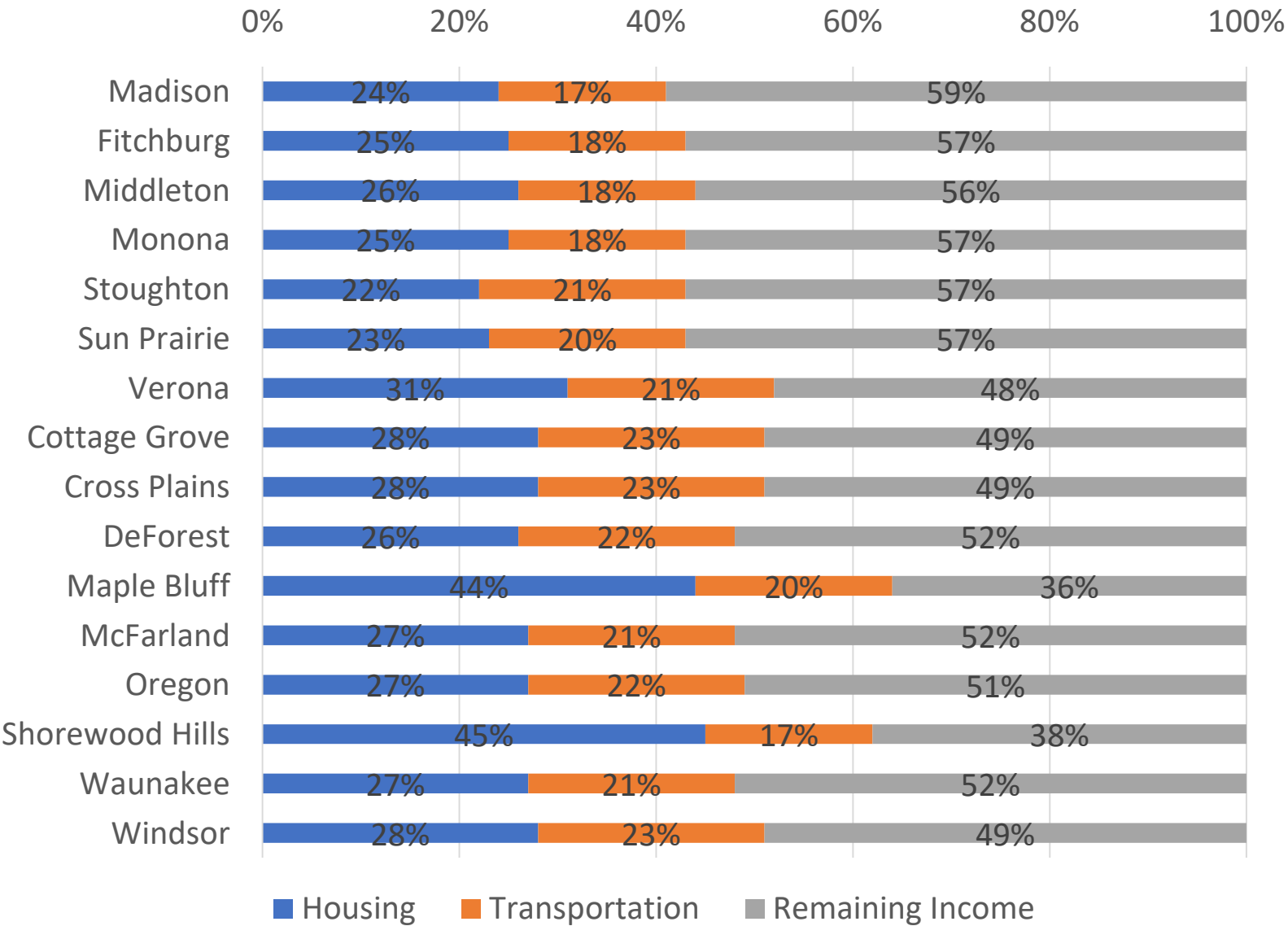


Household Budgets: Housing + Transportation Costs



Housing + Transportation Index for Madison Area Cities and Villages

Modeled for the Regional Typical Household:
Income: \$72,374 Commuters: 1.25 Household Size: 2.35



Barriers & Intersection Density



Pedestrian Barriers and Intersection Density

Madison Metropolitan Planning Area

Pedestrian barriers are railroad tracks and major roadways that significantly inhibit pedestrian travel. Barrier crossings are paths, crosswalks, or roads that enable pedestrian access. Deficient crossings lack adequate safety features or pedestrian facilities, or do not provide sufficient connectivity.

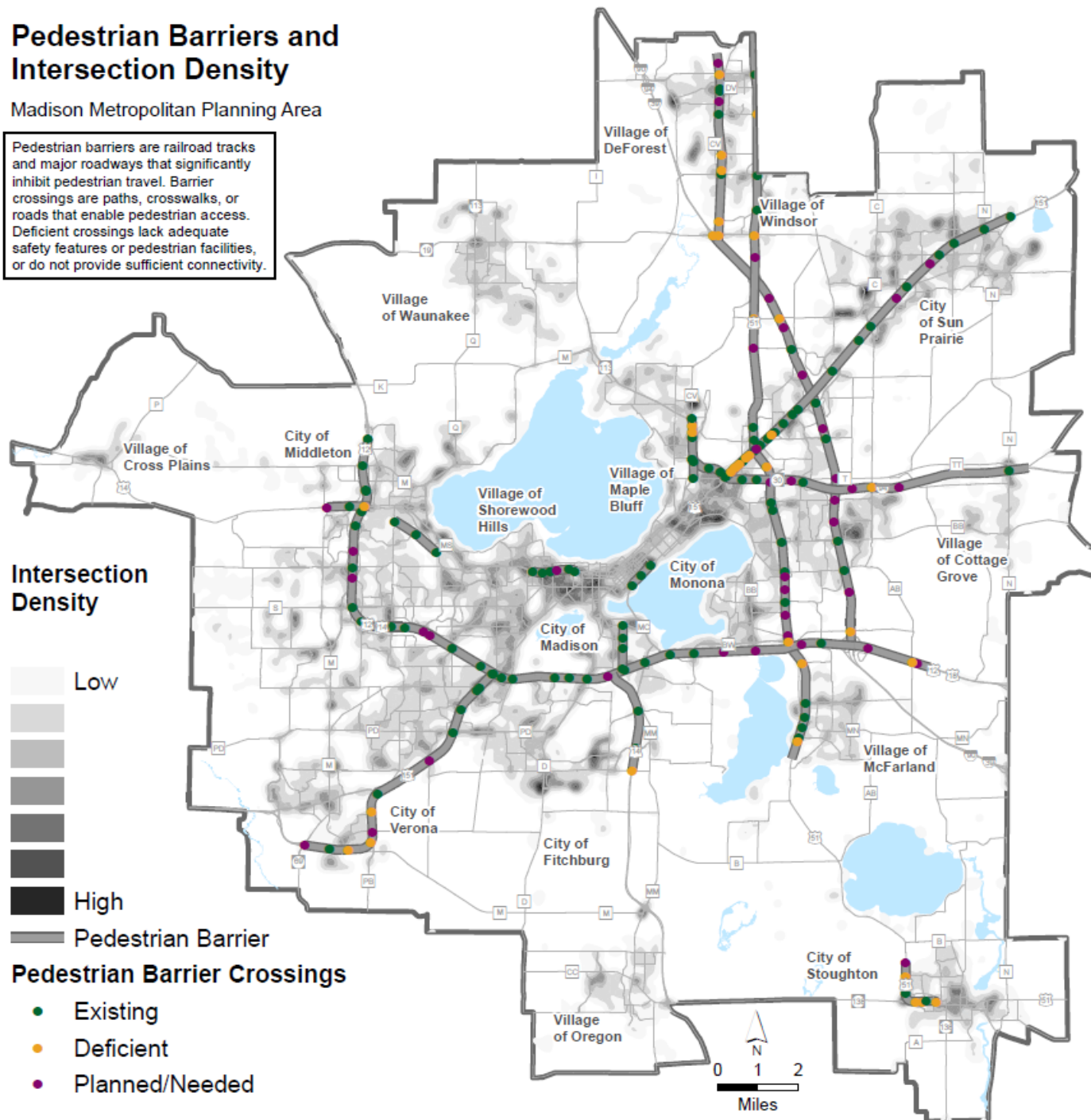
Intersection Density



— Pedestrian Barrier

Pedestrian Barrier Crossings

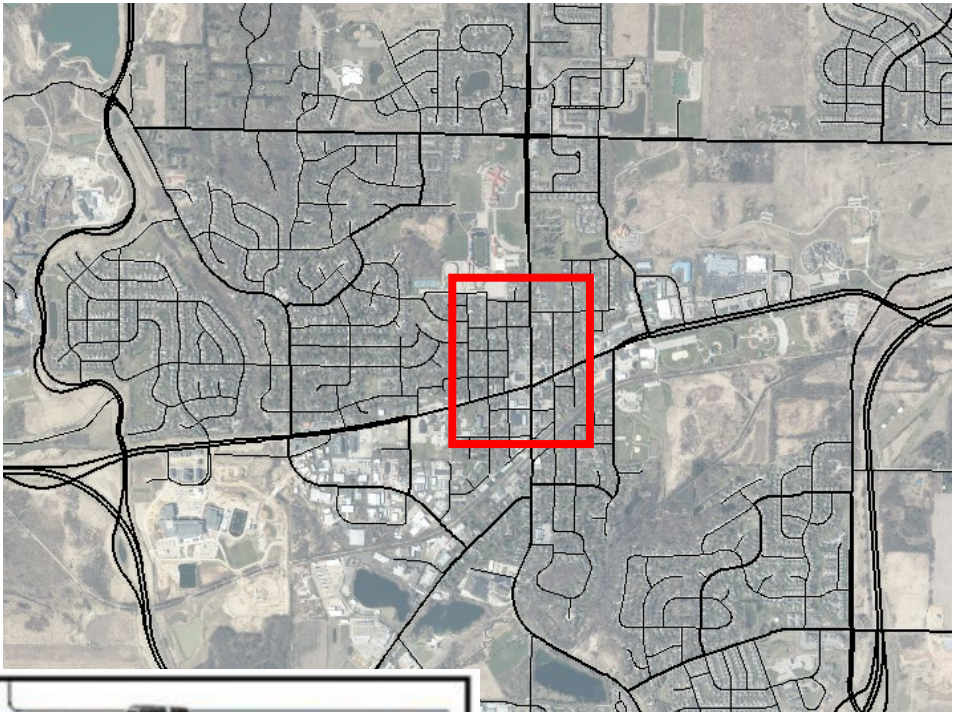
- Existing
- Deficient
- Planned/Needed





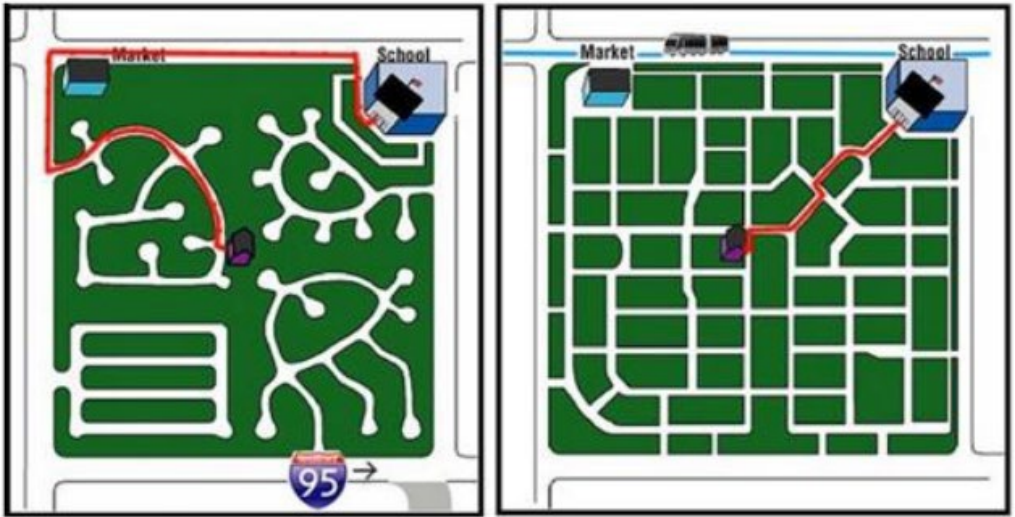
Block Length and Street Connectivity

Community	Block Length and Connectivity Standards
City of Fitchburg	Residential blocks should be 500-1,000 feet; use of cul-de-sacs limited, with a maximum length of 600 feet.
City of Madison	250-foot minimum between center lines of streets intersecting with local streets; cul-de-sacs generally prohibited.
City of Middleton	Blocks should be a minimum of 600 feet.
City of Monona	None specified.
City of Stoughton	Residential blocks, outside of traditional neighborhood development (TND) areas, should be 400-1,000 feet, cul-de-sacs limited to 600 feet.
City of Sun Prairie	Blocks should be 500-1,200 feet; cul-de-sacs limited to 750 feet.
City of Verona	Blocks should be 500-1,200 feet; cul-de-sacs limited to 1,000 feet.



Mid-block crossings should be considered on any block longer than 400 feet; less in more intensive urban areas. - ITE

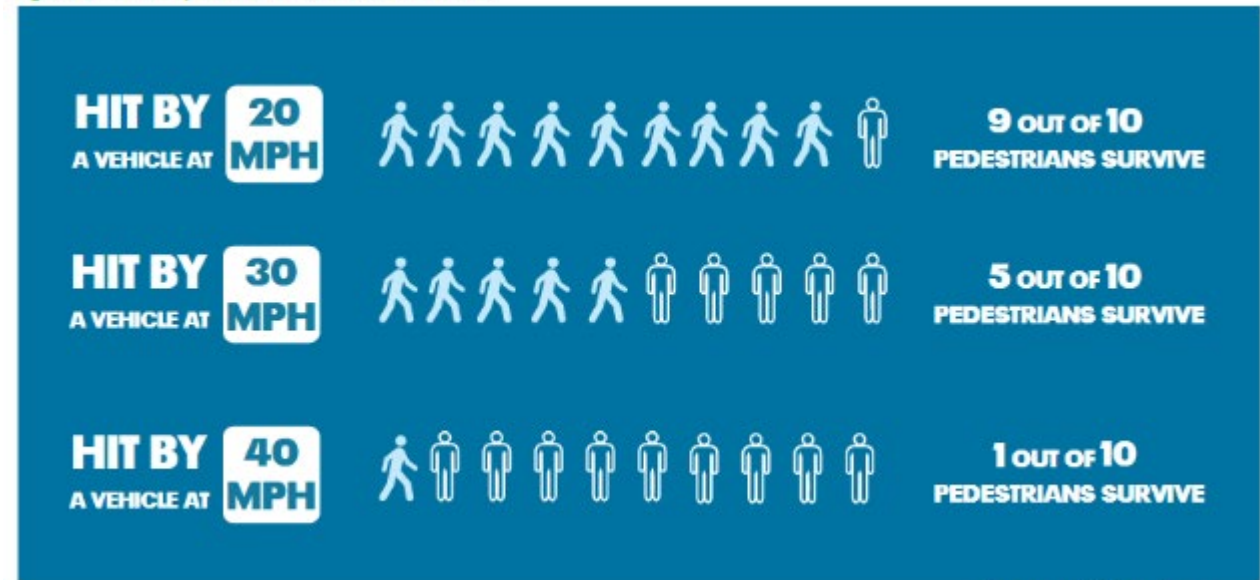
https://www.greatermadisonmpo.org/planning/documents/PedestrianFacilityRequirementsandPoliciesandStreetStandards_FINAL_5_25_21.pdf



Relationship between Street Width and Vehicle Speeds

Community	Street Width (ft)
City of Fitchburg	32-36
City of Madison	28-36
City of Middleton	32
City of Monona	33
City of Stoughton	28-34
City of Sun Prairie	33
City of Verona	36

Figure 2 Vehicle Speeds and Pedestrian Fatalities



Source: [Vision Zero](#)

Road Segment	Number of Lanes	Bike Lane	Pct. of Vehicles at Least 5 mph Over Limit
East Washington Ave - (Wright St/Fair Oaks Ave to STH 30)	3	Yes	3.1%
South Whitney Way - (Science Dr to Mineral Point Rd)	3	No	2.2%
University Ave - (Allen Blvd to Capital Ave)	2	Yes	1.9%





And now for something completely different:

Active Transportation

Walking & Bicycling

Every trip begins and ends as a pedestrian

- Free or relatively inexpensive
- Best for shorter trips (1-3 miles)
- Available 24/7
- Accessible facilities required (ADA)
- Promotes mental and physical health
- Builds community
- “Vulnerable Road Users” in need of accommodation
- Dedicated federal and county funding sources for construction



Bicycle Network & Traffic Stress

Level of Traffic Stress (LTS)

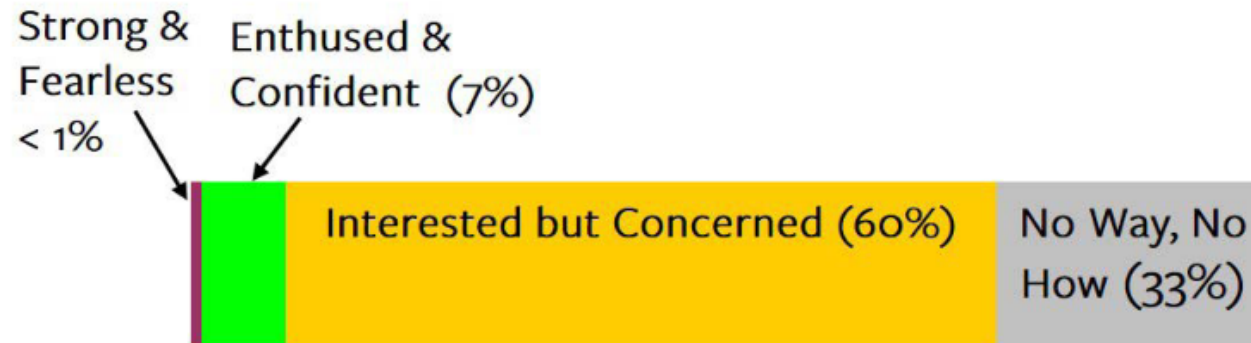
LTS 1– Strong separation from all except low speed, low volume traffic. Simple -to-use crossings. Suitable for children.

LTS 2– Except in low speed / low volume traffic situations, cyclists have their own place to ride. Limits traffic stress to what the mainstream adult population can tolerate.

LTS 3– Involves interaction with moderate speed or multilane traffic, or close proximity to higher speed traffic. Acceptable to the “enthused and confident.”

LTS 4– Involves being forced to mix with moderate speed traffic or close proximity to high-speed traffic. Acceptable only to the “strong and fearless.”

Figure 1 Four Stages of Bicycling Comfort



Source: Roger Geller, City of Portland

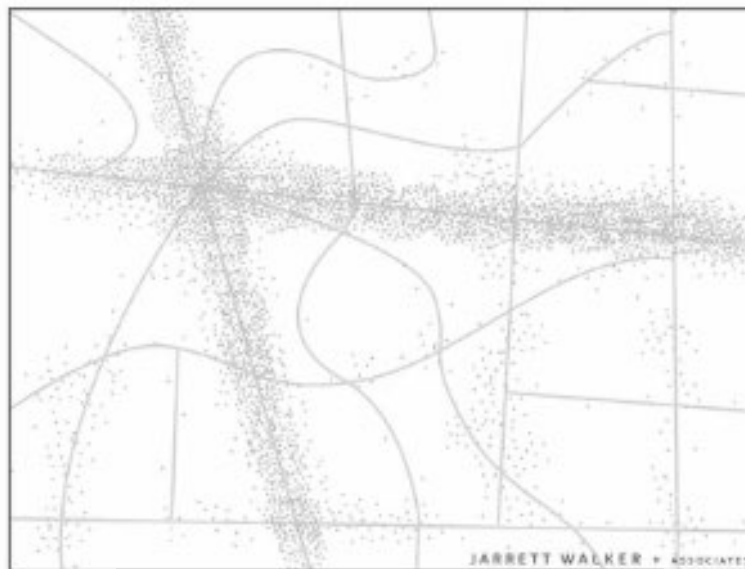


Transit: Coverage v. Ridership

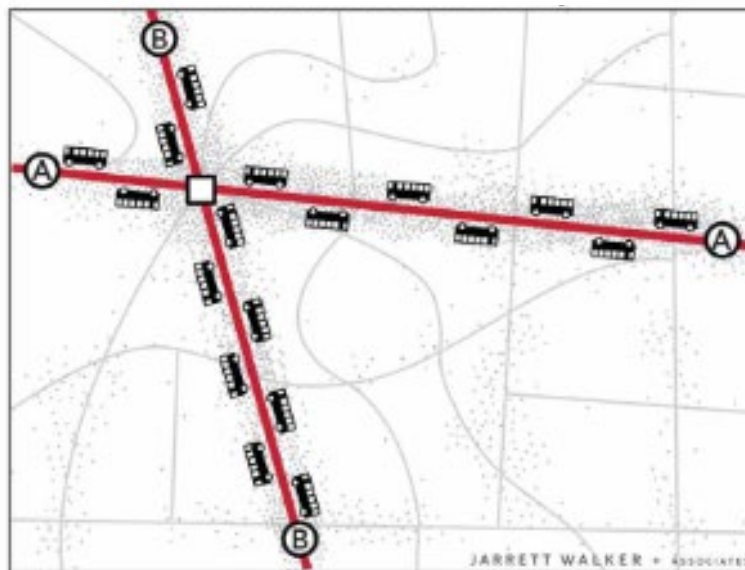
Imagine you are the transit planner working in this fictional neighborhood.

The dots scattered around the map are people and jobs.

The 18 buses are the resources that the town has to run transit.

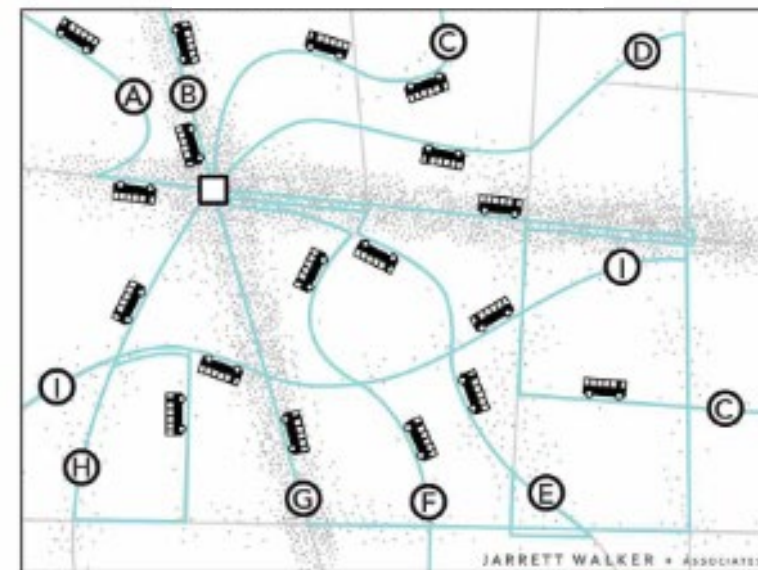


Maximum Ridership



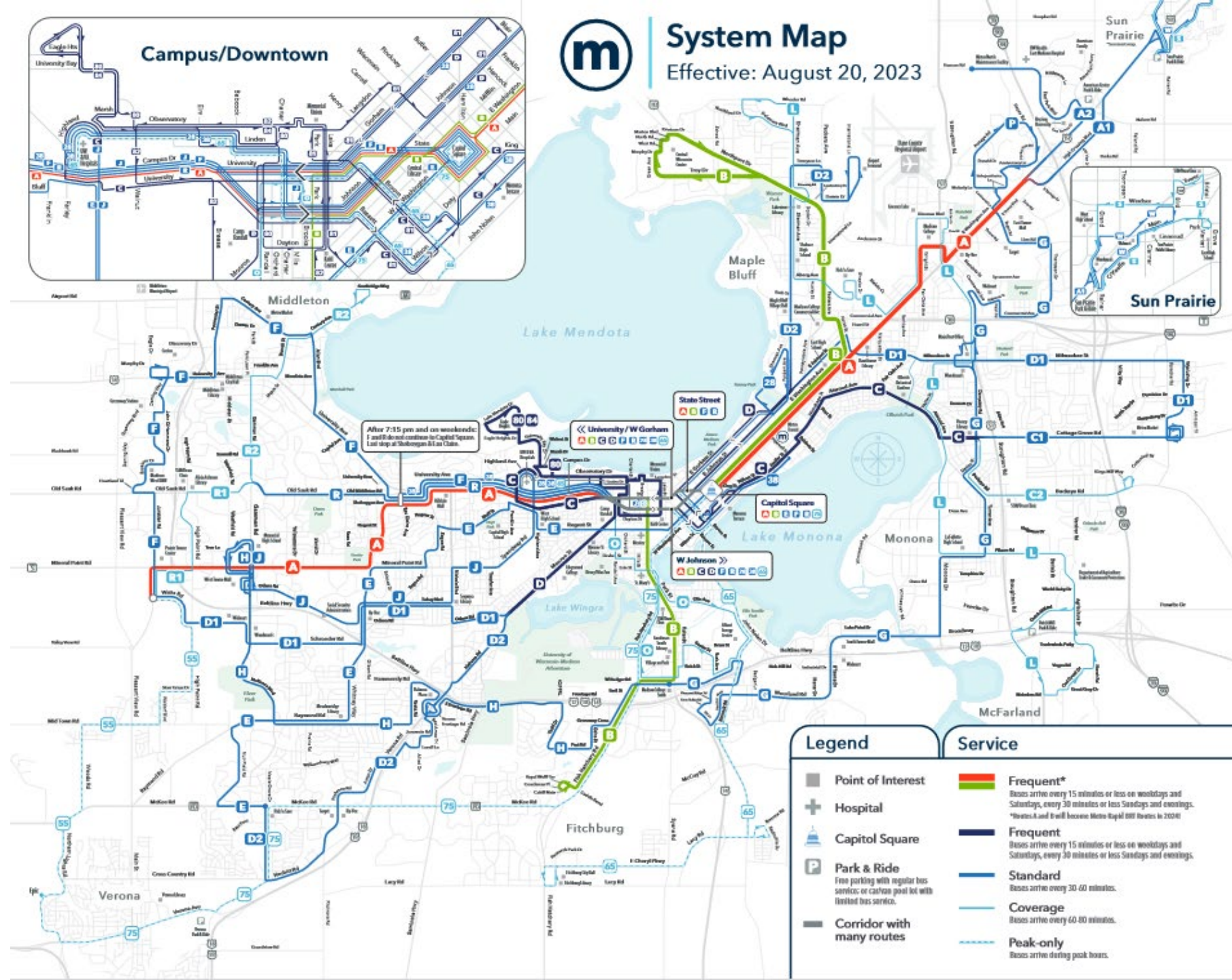
Dots = people and jobs
Lines = roads

Maximum Coverage



Metro Transit Network

- New stops on new routes
 - Multi-modal connections
- Dedicated bus lanes
- Increased service frequency
- Transit Signal Priority (TSP)
- New local Sun Prairie service
- Potential for future Monona and Cottage Grove routes



Successful Transit - Ridership Depends on Providing Access

Current Metro Service Planning guidelines call for at least:

- 15 boardings per hour
- 5,000 jobs served (within ¼ mile of stops) per bus in service
- 5,000 population served (within ¼ mile of stops) per bus in service

Communities should plan for density and diversity of land uses along future and existing transit routes





Parking: Both Transportation and Land Use

Office, financial institutions, business, governmental and professional	1 space/300 sq. ft. per gross floor area
Residential:	
Elderly or efficiency	1 space/dwelling unit
One bedroom	2 spaces/dwelling unit
Two or more bedrooms	2 spaces/dwelling unit
Three bedrooms	2½ spaces/dwelling unit
Four bedrooms	3 spaces/dwelling unit

Typically mandated by local governments with every new development or change in use

The only transportation facility generally required of developments (no required subsidy of airline tickets, or providing bus passes) – bike parking is a recent exception in some communities

“One policy is right at the transportation/land use connection: relax or remove minimum parking requirements”

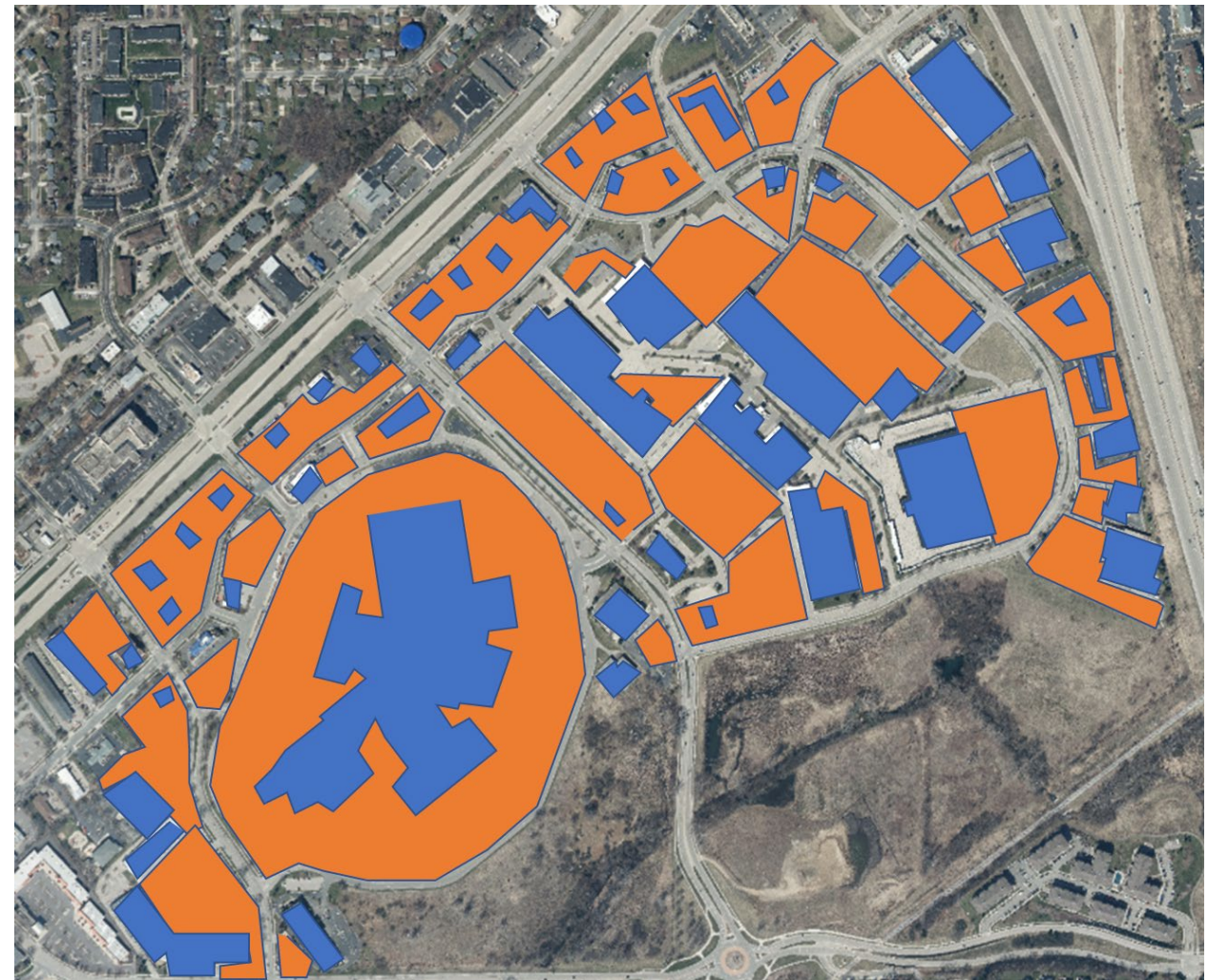
- The Transportation/Land Use Connection. Moore, Thorsnes, Appleyard, 2007 APA
PAS Report 546/547, P. 145

Example requirements: Village of McFarland, [Sec. 62-172\(j\)](#)



Parking

- Apx. \$43,000 - \$72,000 per space* for structured parking
- Apx. 300 square feet per parking space & aisle
- Estimated (nationwide) to be as many as eight parking spaces for each car/light truck
- Space used for parking pushes other land uses farther apart, making them less walkable and harder to serve with transit
- Free parking encourages driving alone
- Private parking costs are passed on to tenants and consumers (not really free)



East Towne Mall Area

Surface Parking



Building Footprint



*2022 Estimates for the State Street Campus Garage Mixed Use Project; City of Madison Staff indicate higher end is reasonable

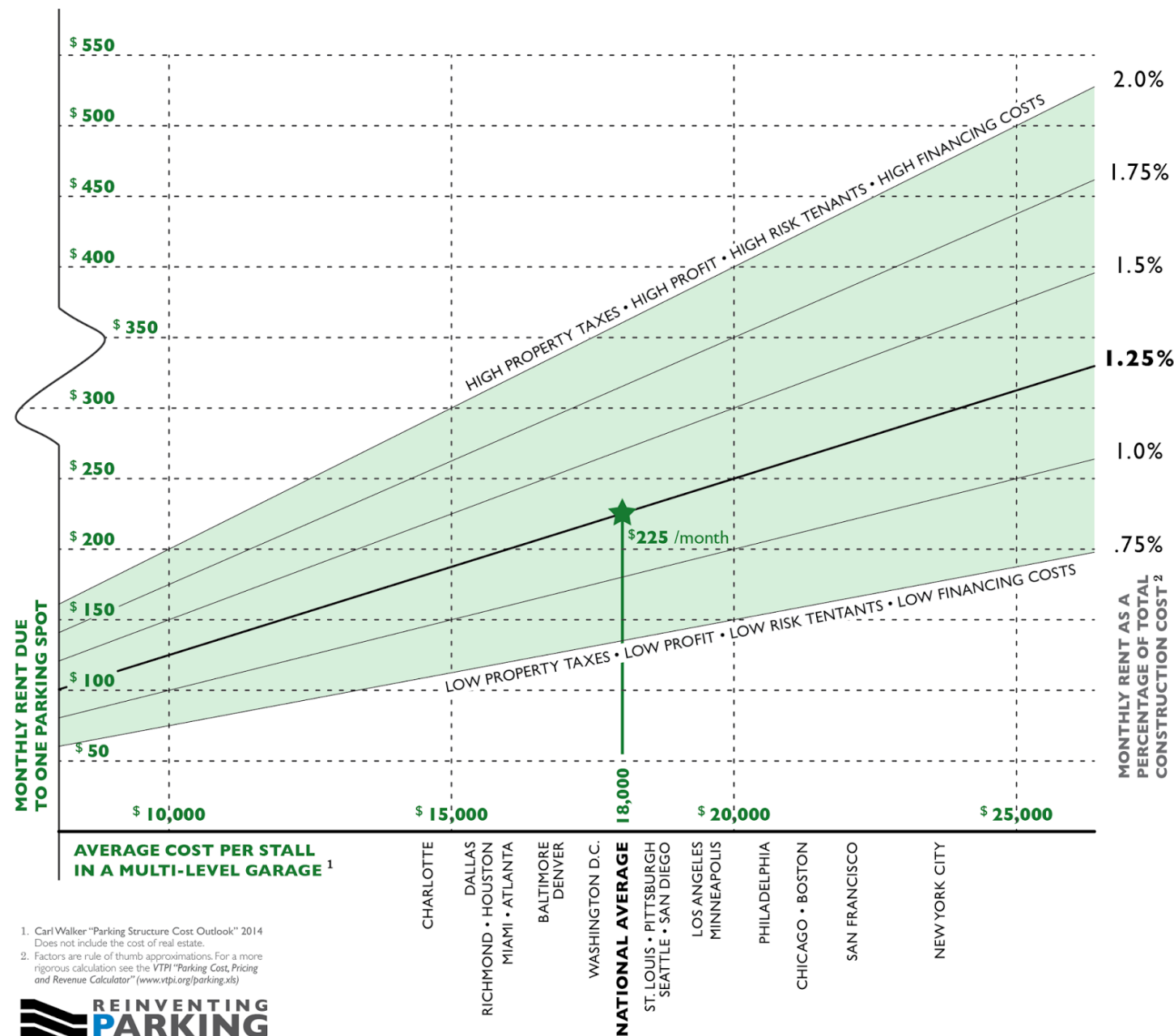


The Cost of “Free” Parking is Passed On: In hamburgers, clothes, haircuts, and housing



HOW MUCH PARKING INCREASES RENT

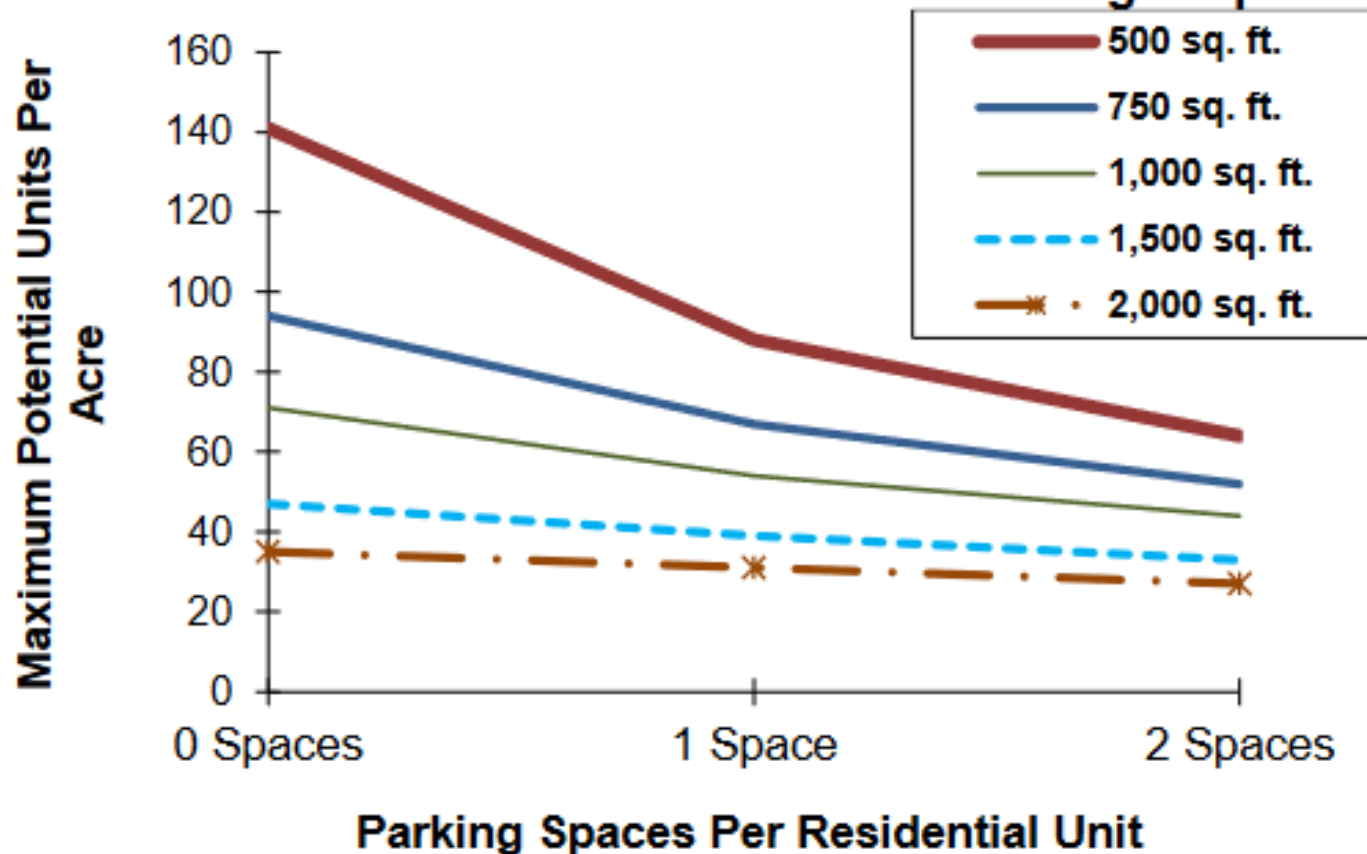
Supplement to
Part I: Building Costs



Parking Reduces Maximum Dwelling Density

See [Parking Requirement Impacts on Housing Affordability](https://www.vtpi.org/park-hou.pdf) by the Victoria Transport Policy Institute for more on this topic

Maximum Units Per Acre With Different Parking Requirements



“In urban areas where land costs are high, the best way to increase affordability is to minimize land requirements per unit by increasing density and reducing parking facility requirements.”



Poll 3

How do you typically commute to work? Participant responses:

1. How do you *typically* commute to work? Choose all that apply: (Multiple Choice)

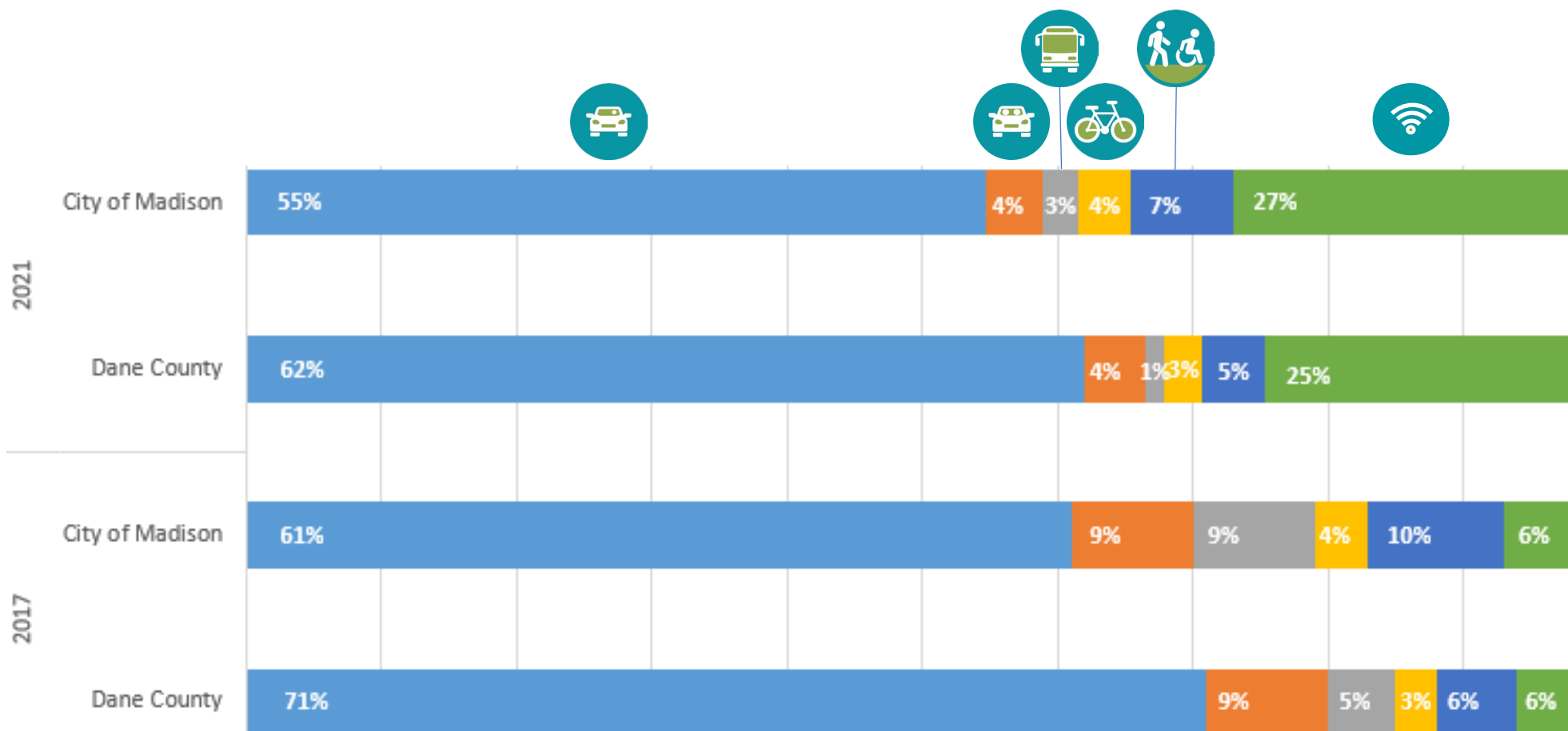
84/84 (100)% answered





Dane County and City of Madison Commute Modes, 2017 and 2021

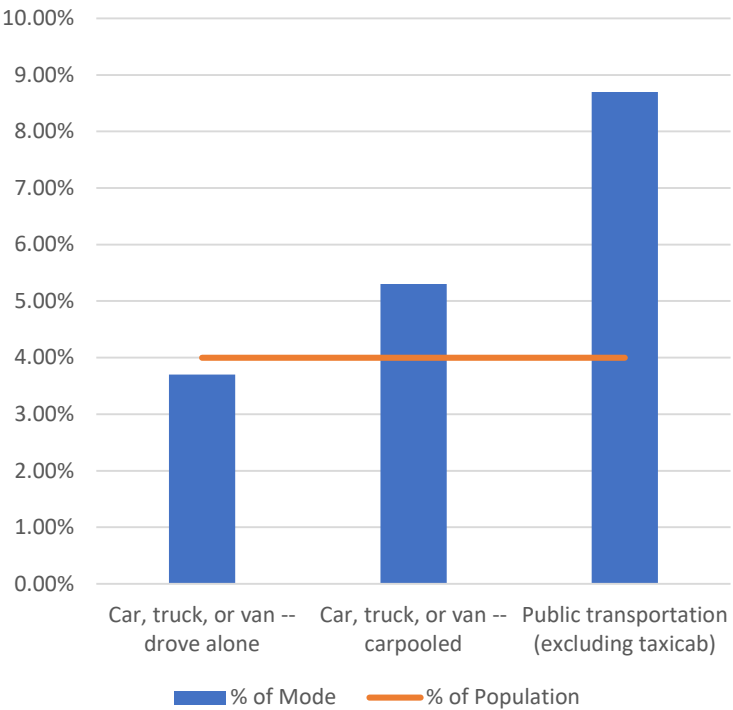
Journey to Work (ACS 1 -year)



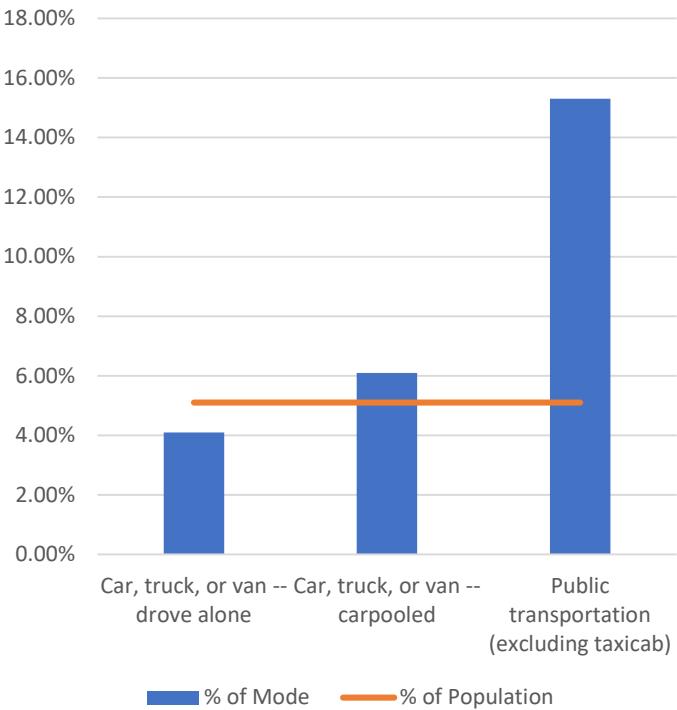


Equity and Journey -to -Work Mode

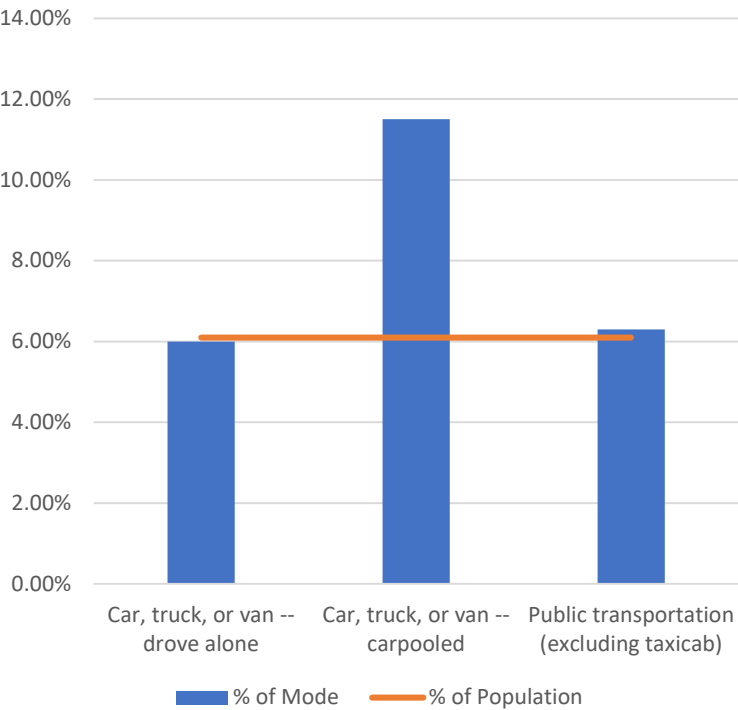
Black or African American



Asian



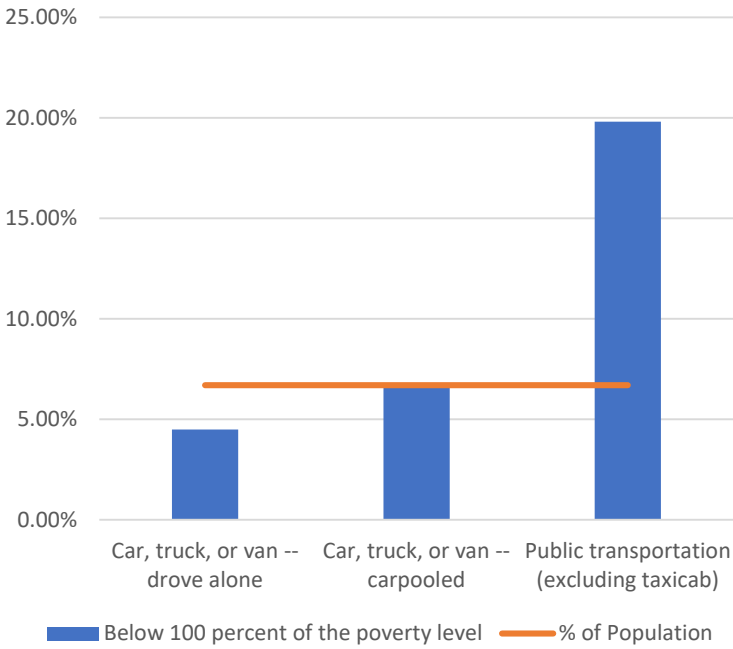
Hispanic or Latino origin (of any race)



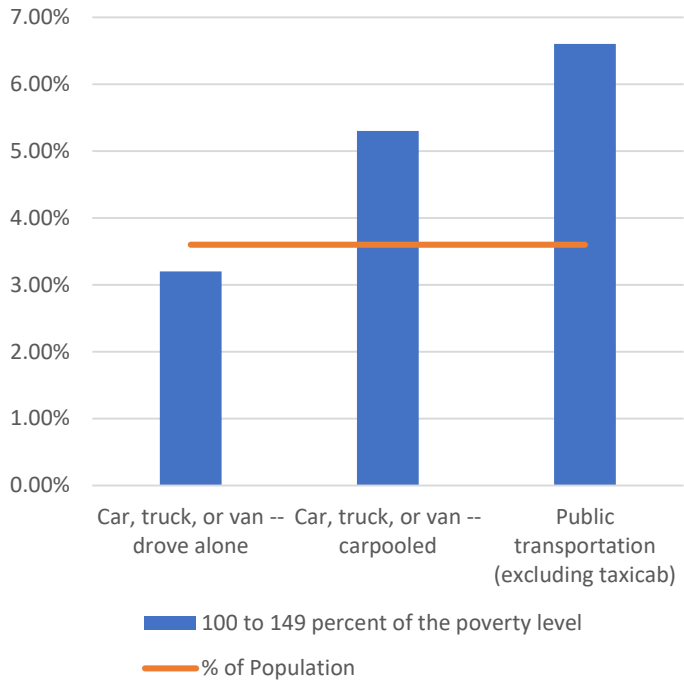


Equity and Journey -to -Work Mode

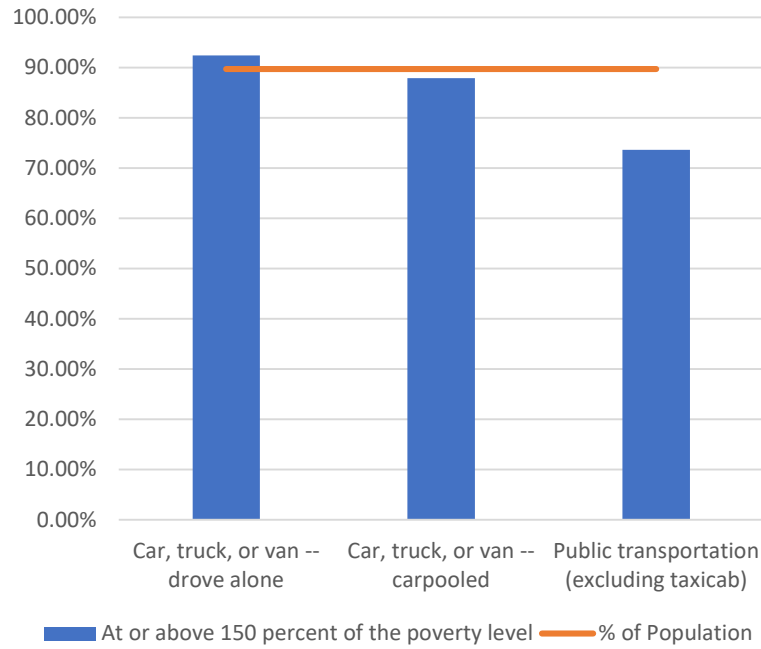
Below 100% Poverty Level



100 to 149% Poverty Level



At or Above 150% Poverty Level



A Way Forward

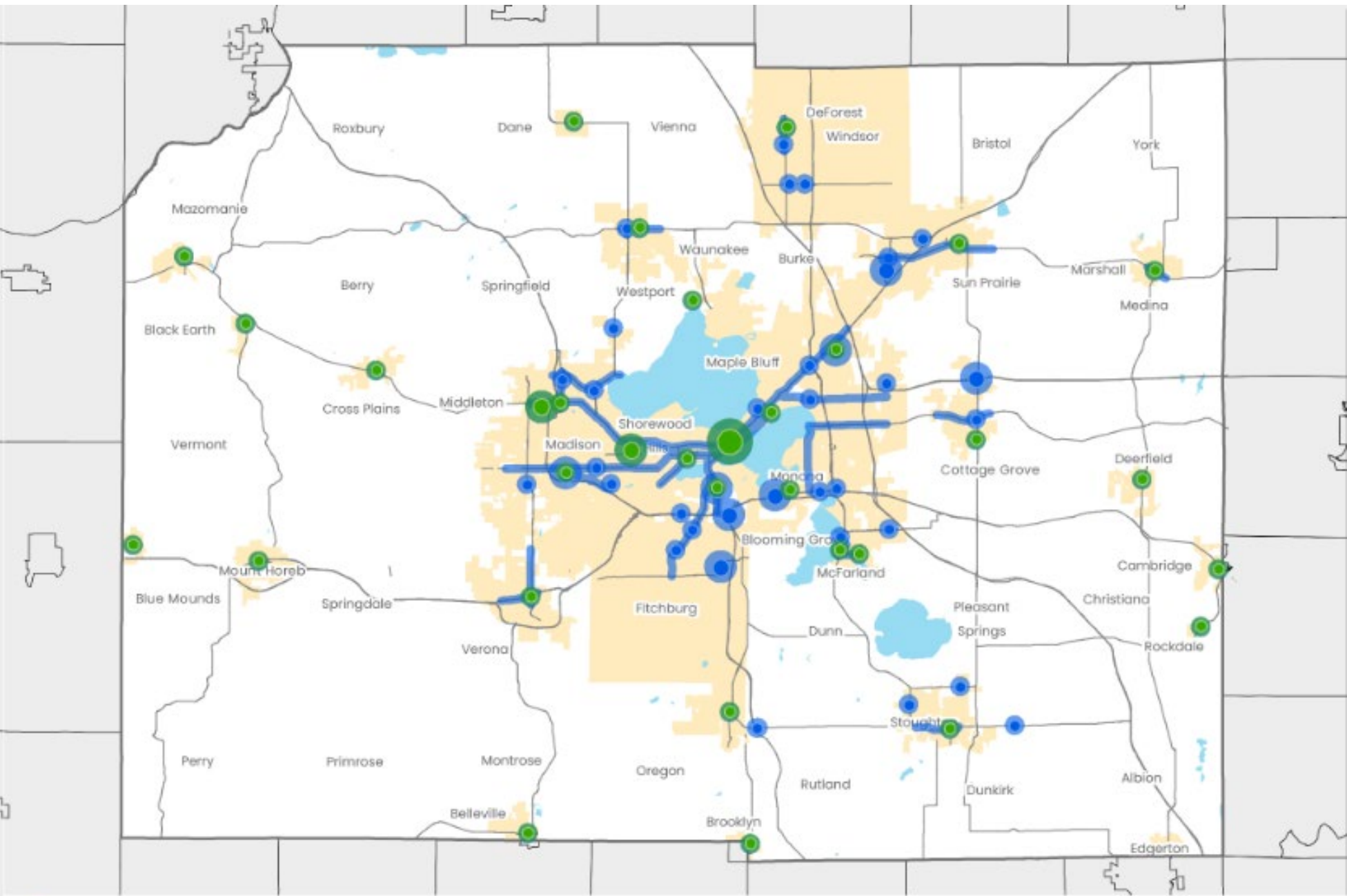
- Site land uses based on proximity to other uses and services
- Reduce or eliminate minimum parking requirements
- Establish maximum parking limits
- Ensure street, sidewalk, and bike network connectivity
- Context-sensitive roadway design
- Encourage mixed use development
- Focus development in Centers and Corridors (next slide)





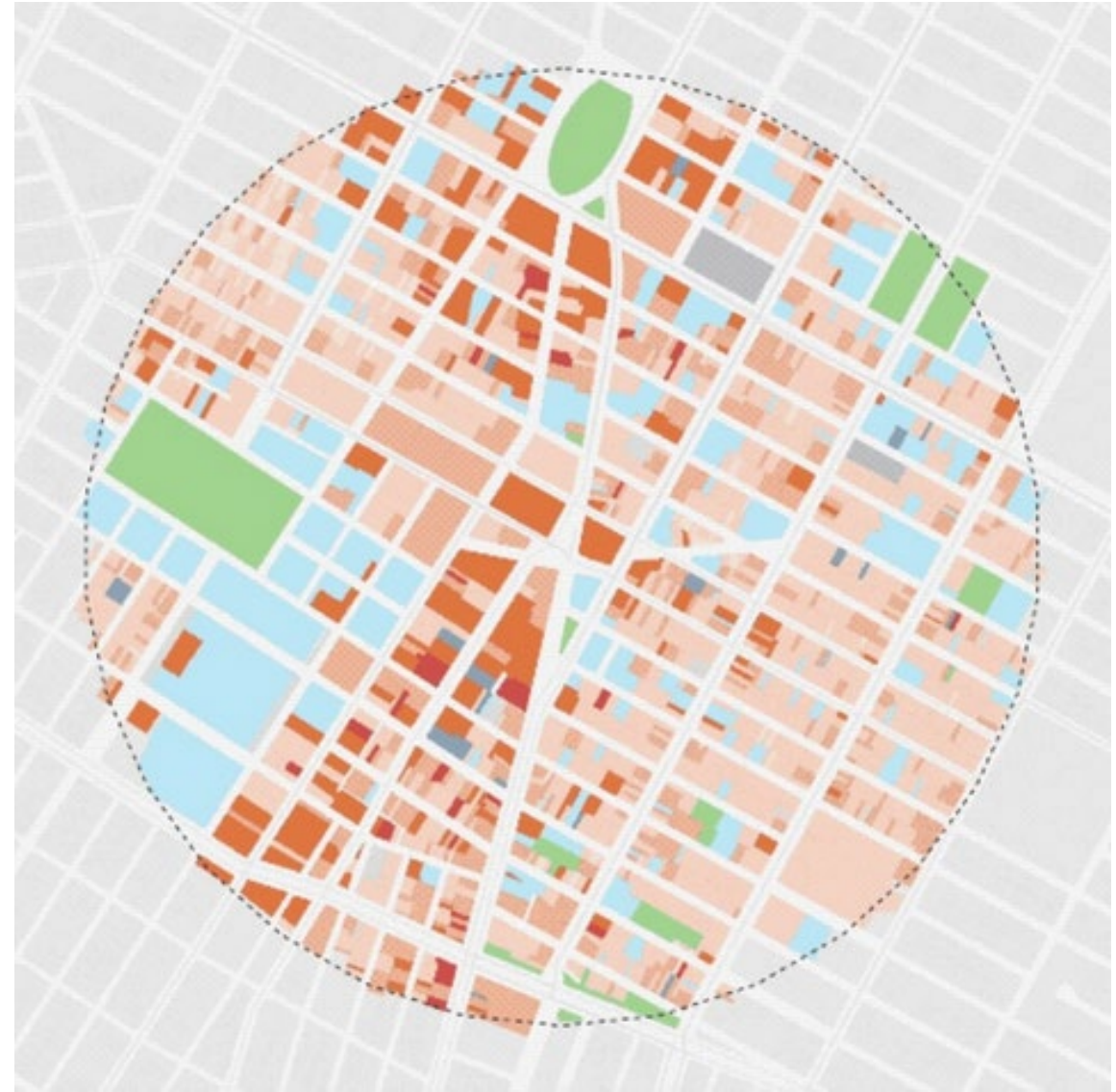
CARPC 2050 Regional Development Framework

Future Growth
targeted in
Centers and
Corridors



15-Minute Cities

“Everyone living in a city should have access to essential urban services within a 15 minute walk or bike. The 15 Minute City Project is designed to help access-focused urban transformations be what we need them to be: ambitious, inclusive, measurable and effectively implemented .”



Quote and graphic from www.15minutecity.com/about



Transit -Oriented Development

- Density
 - Jobs & Services
 - Residences
 - >10 d.u./acre* (median suburban)
 - >30 d.u./acre* (median urban)
- Diversity
 - Land Uses
 - Resident Demographics**
- Design
 - Human - Scale
 - Amenities
 - Context- Sensitive



Banff, Alberta



The Ella, Madison, WI

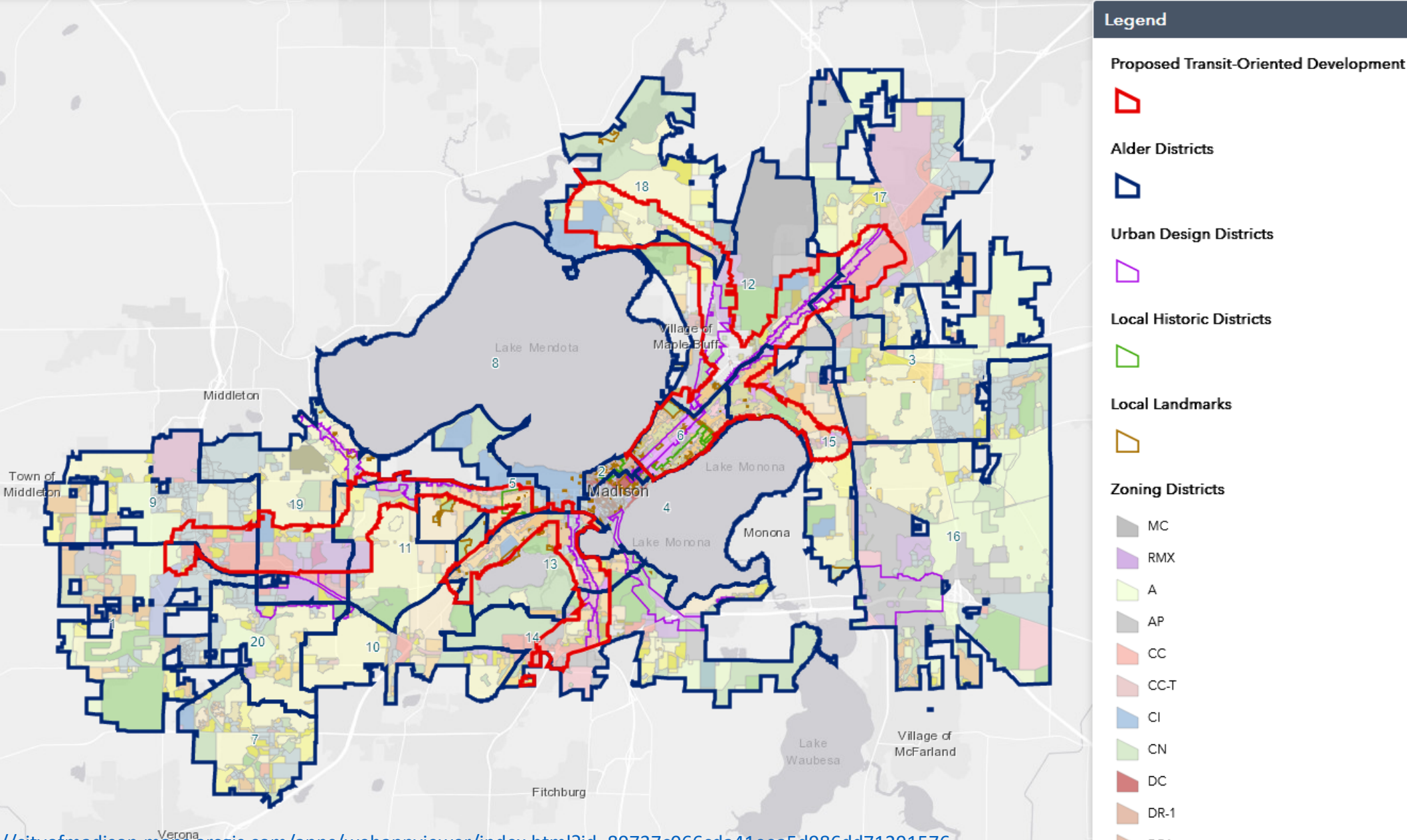
*www.transit.dot.gov/sites/fta.dot.gov/files/FTA_Report_No._0057.pdf page 5-10

**Not one of the original “3 D’s”, but clearly important





City of Madison Transit -Oriented Development Overlay Zone





Want to build Transit Oriented Development?

“Don’t Wait”

“You can just literally come in if you have a transit-oriented development project...[USDOT]are authorized as part of the bipartisan infrastructure law to provide you direct loans for your mixed-income or affordable housing projects near those transit stations as well as passenger rail stations.”

- Christopher Coes, Assistant Secretary for Transportation Policy, U.S. Department of Transportation at the U.S. Conference of Mayors, Jan. 2023

USDOT Build America Bureau: <https://www.transportation.gov/buildamerica/>

<https://www.route-fifty.com/infrastructure/2023/01/tips-winning-federal-transportation-grants/382134/>





Questions?





Thank You!

Ben Lyman, Transportation Planner

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