metro transit | Network Redesign

Public Meeting

Choices Report

Virtual | March 3rd | 6:00 – 7:30 PM

City of Madison Planning | metro transit | Jarrett Walker + Associates – Let's think about transit | UrbanAssets

Agenda

1. Welcome from Mayor Rhodes-Conway
2. Zoom Meeting Protocols
3. Introductions
4. Choices Report Presentation – Daniel Costantino, Jarrett Walker + Associates
5. Discussion
6. Engaging the Community -- Marcus Pearson, Urban Assets

Zoom Meeting Protocols

- Turn your video off to save bandwidth.
- Remain on Mute during the presentation.
- To ask a questions during the presentation, use the Chat function.
- To ask a question after the presentation, click Participants and select Raise Hand.
- Please introduce yourself before speaking.
- Once your question is addressed, lower your hand.
- If you called into the meeting, use *9 to raise and lower your hand.

Questions during the meeting or technical difficulties, please email

quinn@urbanassetsconsulting.com

Introductions | City Staff

Tom Lynch, Director, Department of Transportation

Justin Stuehrenberg, General Manager, Metro Transit

Reuben Sanon, Deputy Mayor

Mike Cechvala, Department of Transportation

Tim Sobota, Metro Transit

Drew Beck, Metro Transit

Ben Lyman, Metropolitan Planning Organization

Introductions | Consultant Team

Daniel Costantino – Jarrett Walker + Associates

Chris Yuen – Jarrett Walker + Associates

Melissa Huggins – Urban Assets

Marcus Pearson – Urban Assets

Quinn Heneghan – Urban Assets

metro transit | Network Redesign

Metro Transit
Network Redesign

Choices Report

JARRETT WALKER + ASSOCIATES
Let's think about transit

Jarrett Walker
Daniel Costantino

Who Are We? Why Are We here?

JARRETT WALKER + ASSOCIATES

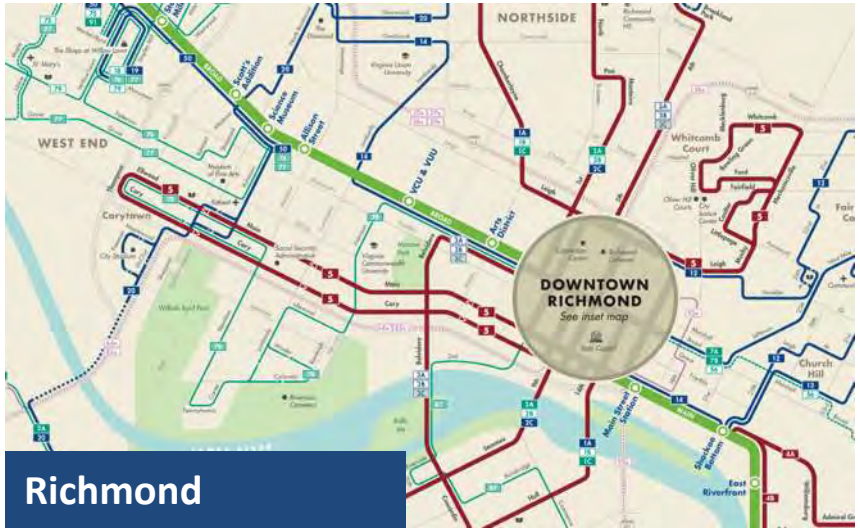
Let's think about transit

We foster clear conversations about transit, leading to confident decisions.

Completed redesigns that are better serving local goals

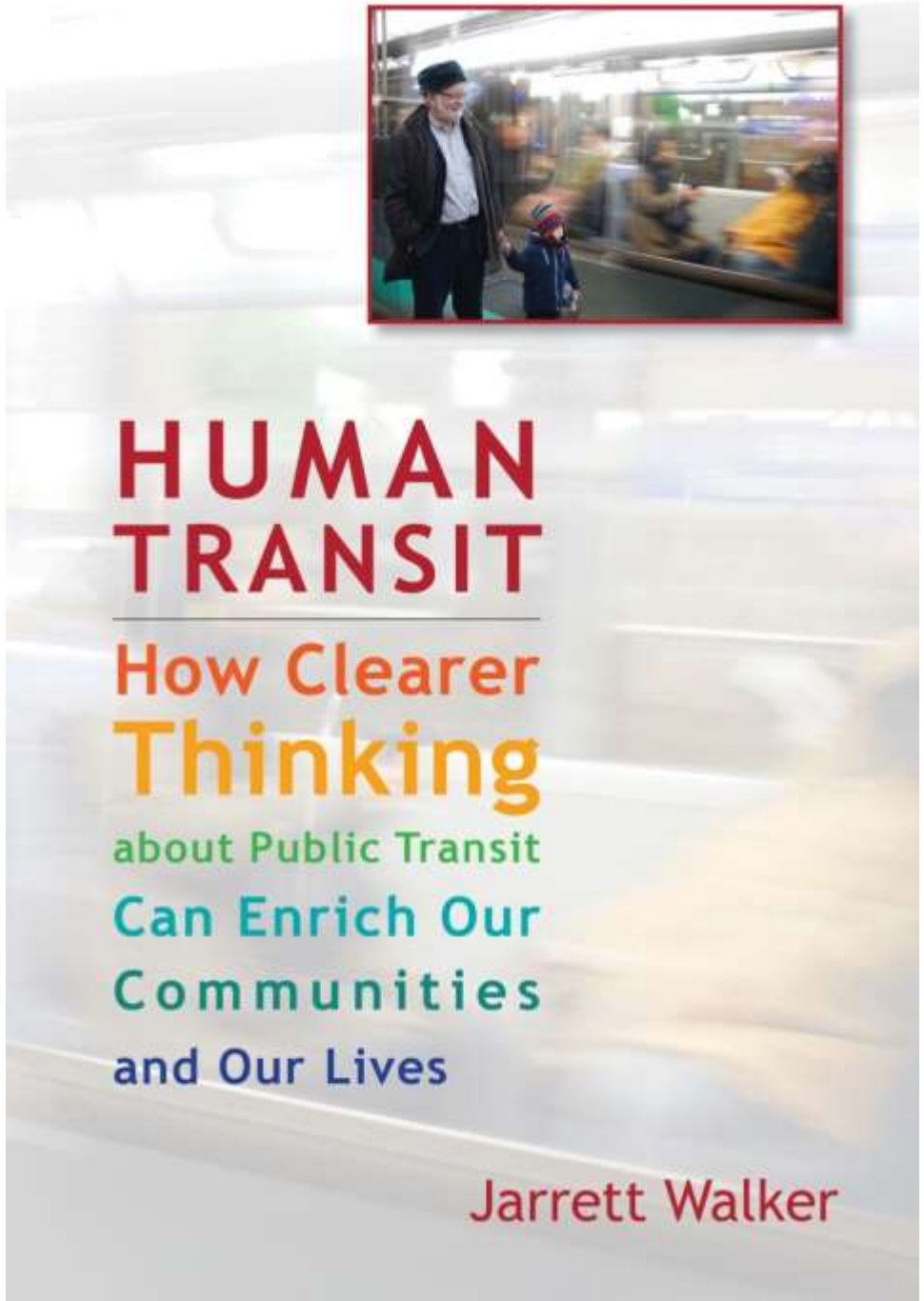
Houston

Indianapolis



Richmond

Auckland



You are the experts on your communities and their goals.

We're the experts on network redesign studies.

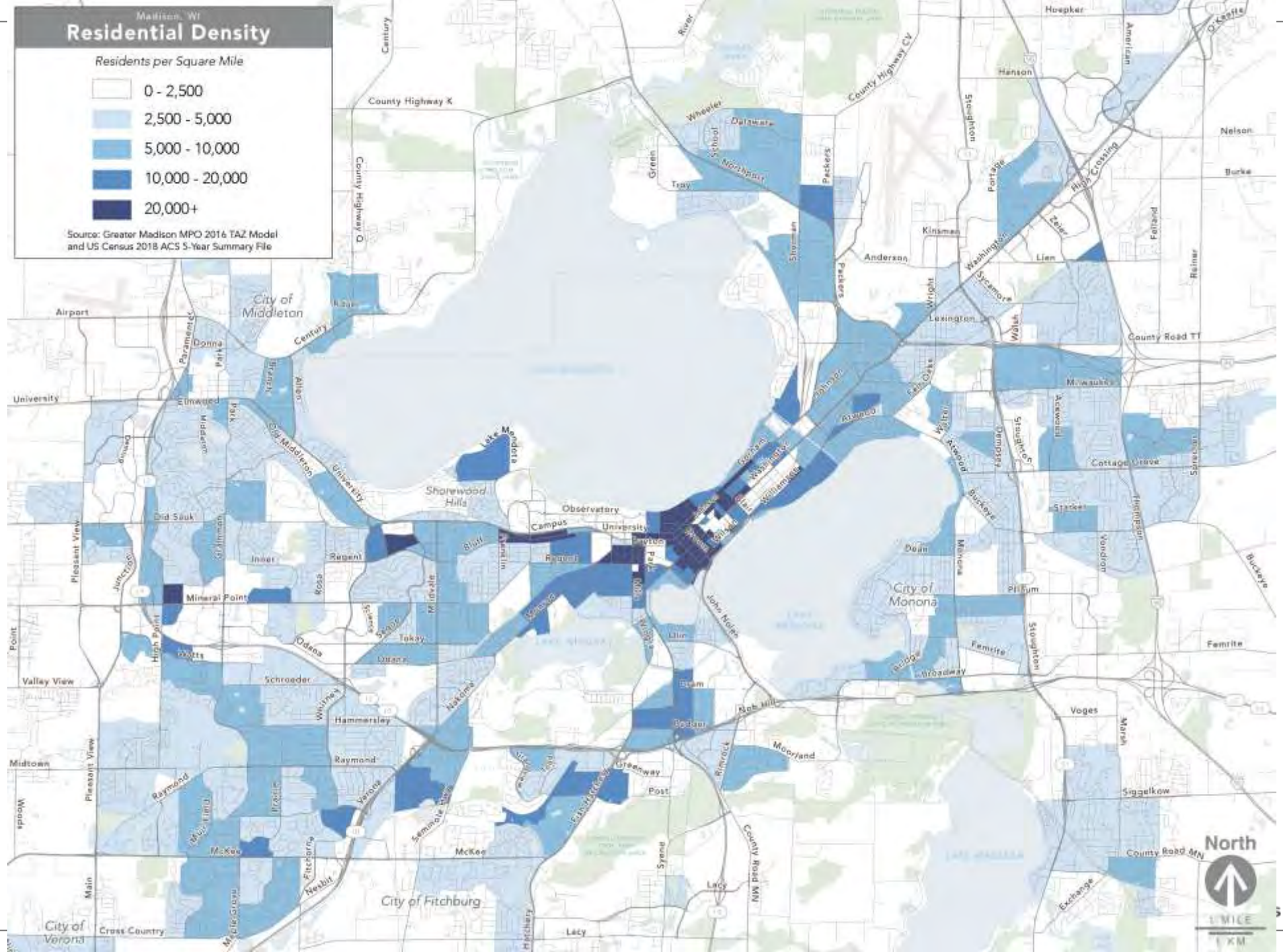
So let's fuse those two kinds of expertise!

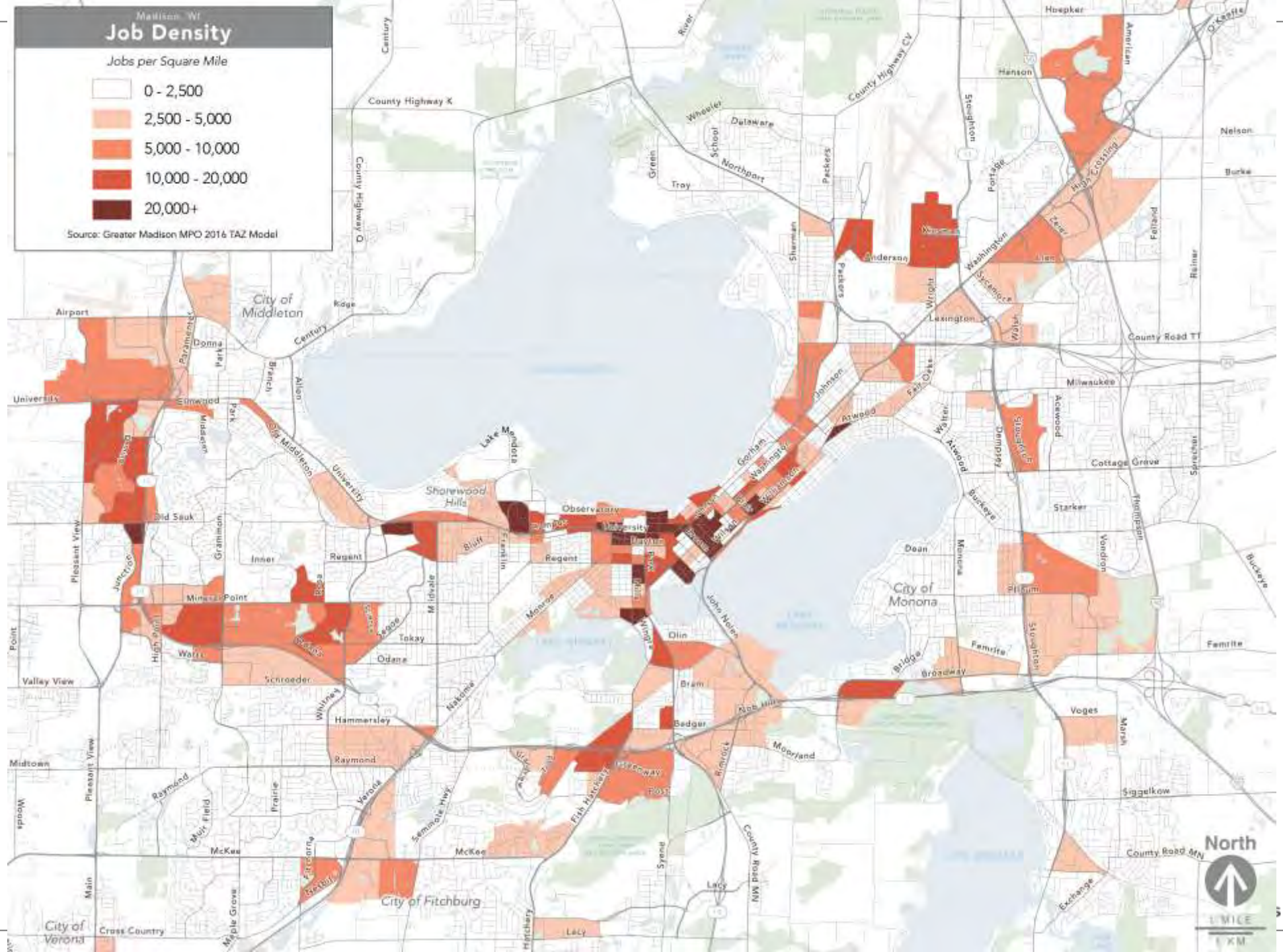
Flow

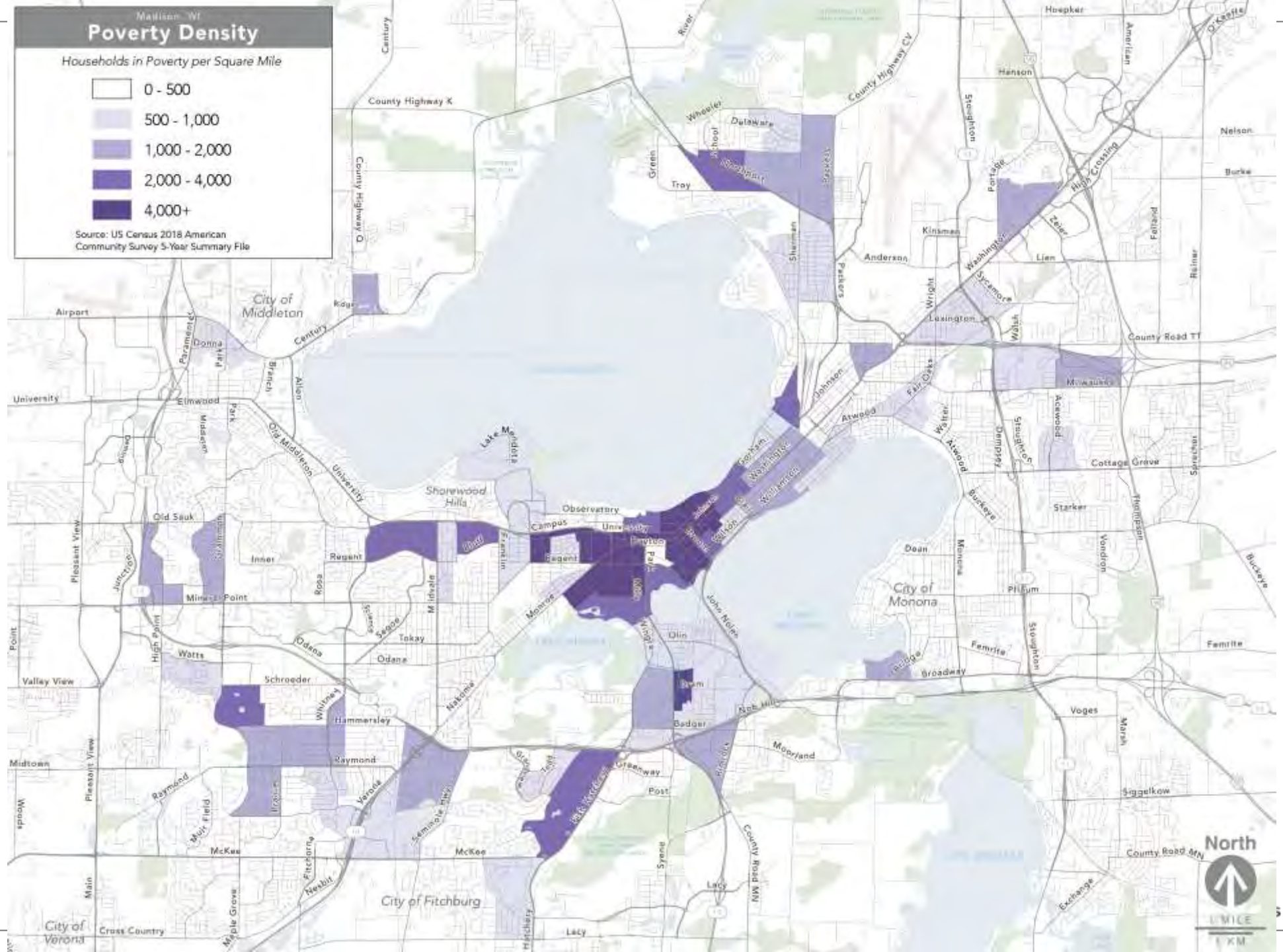
Phase I - Winter/Spring
Existing Conditions and Key Choices
• Choices Report (March 2021)
• Survey
• Public Meeting
• Focus Groups
• Interviews
• Stakeholder Workshop
Phase II - Summer/Fall
Develop Network Alternatives
• Alternatives Report (August 2021)
• Survey
• Public Meeting
• Focus Groups
• Tabling at Events
• Stakeholder Workshop
Phase III - Fall/Winter 2022
Develop Draft Network Plan
• Draft Network Plan (January 2022)
• Survey
• Public Meeting
• Focus Groups
• Tabling at Events
• Stakeholder Workshop

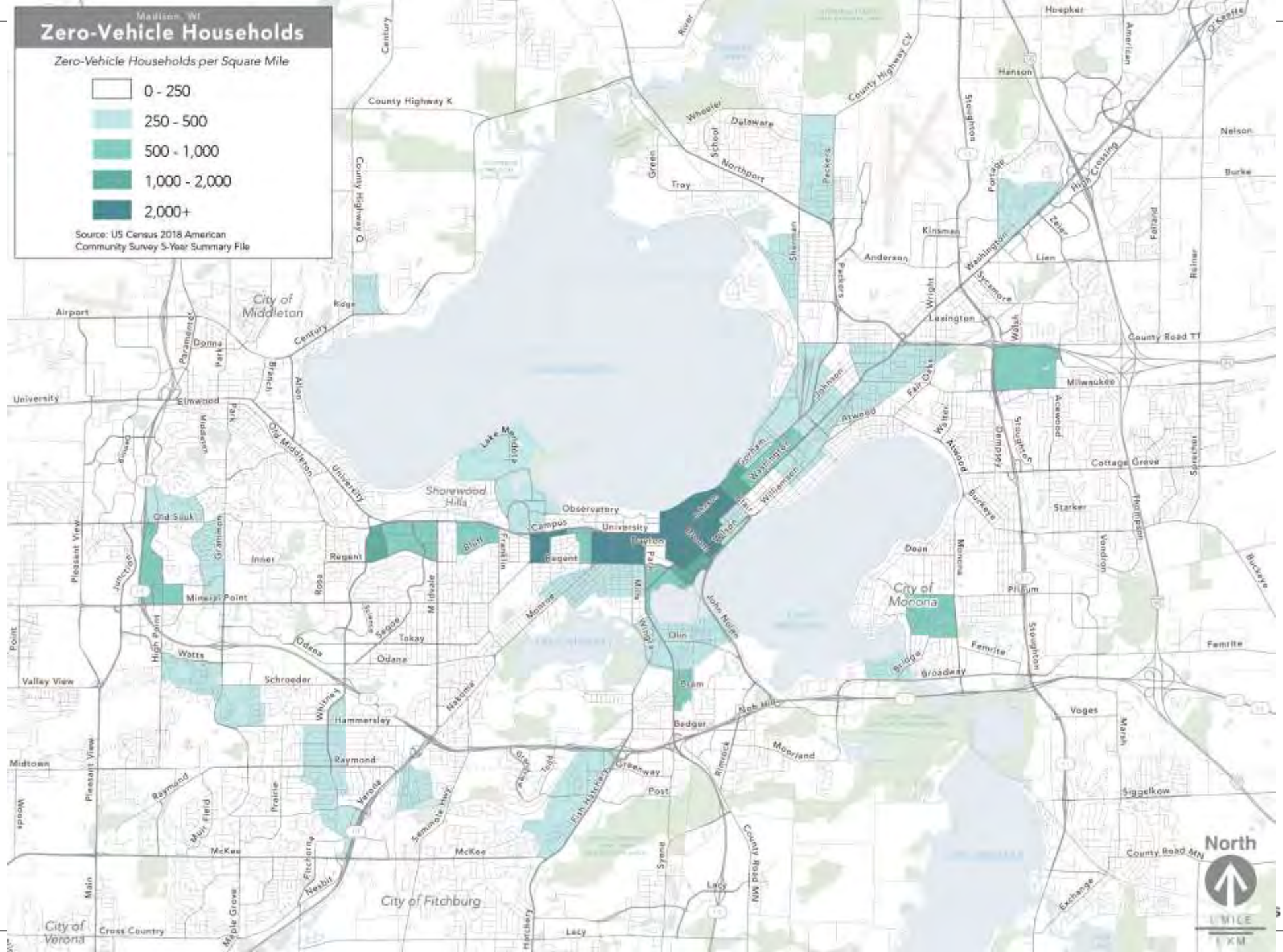
Demographics, Ridership, Covid Impact

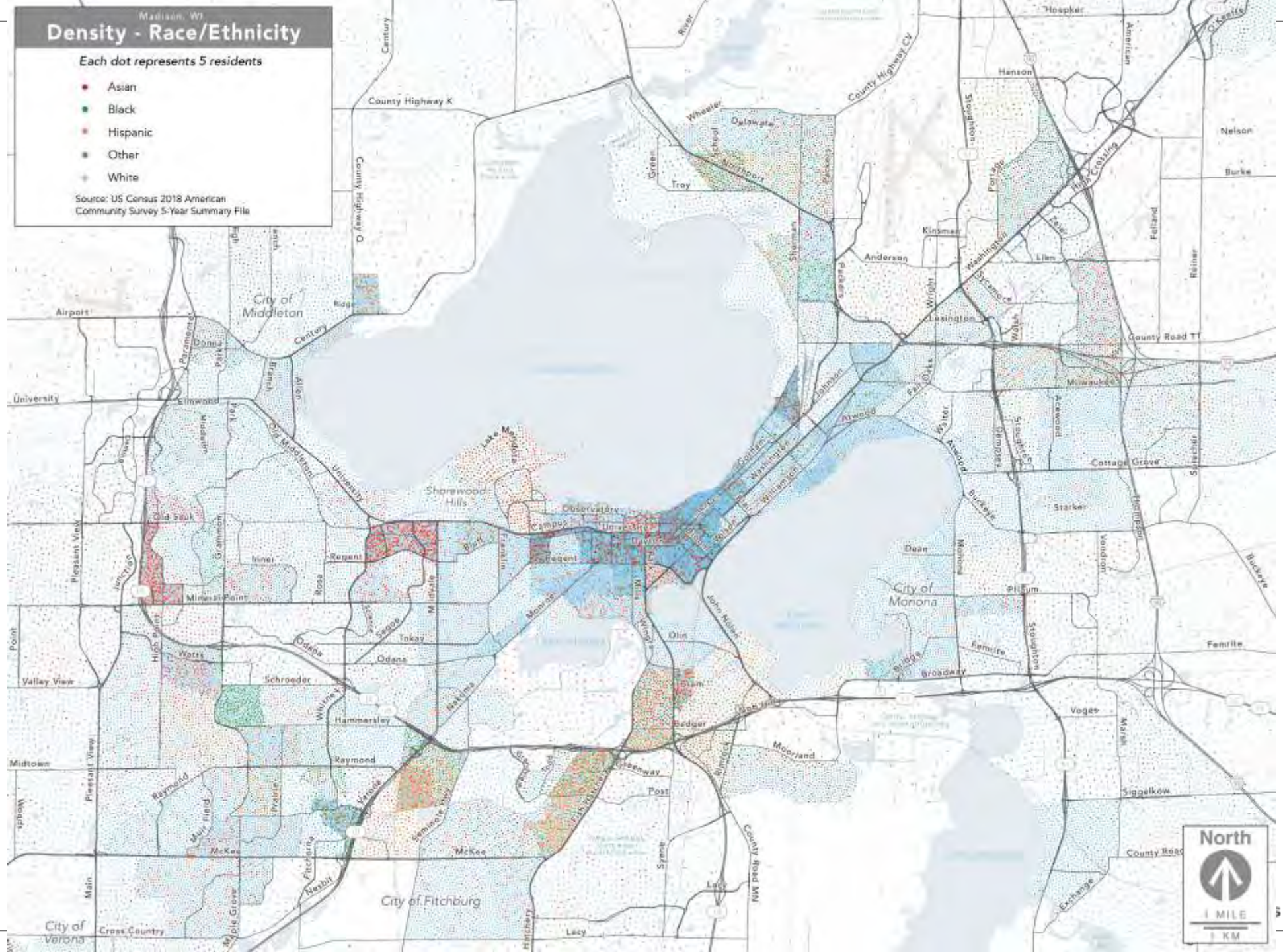
Some Key Things we Know

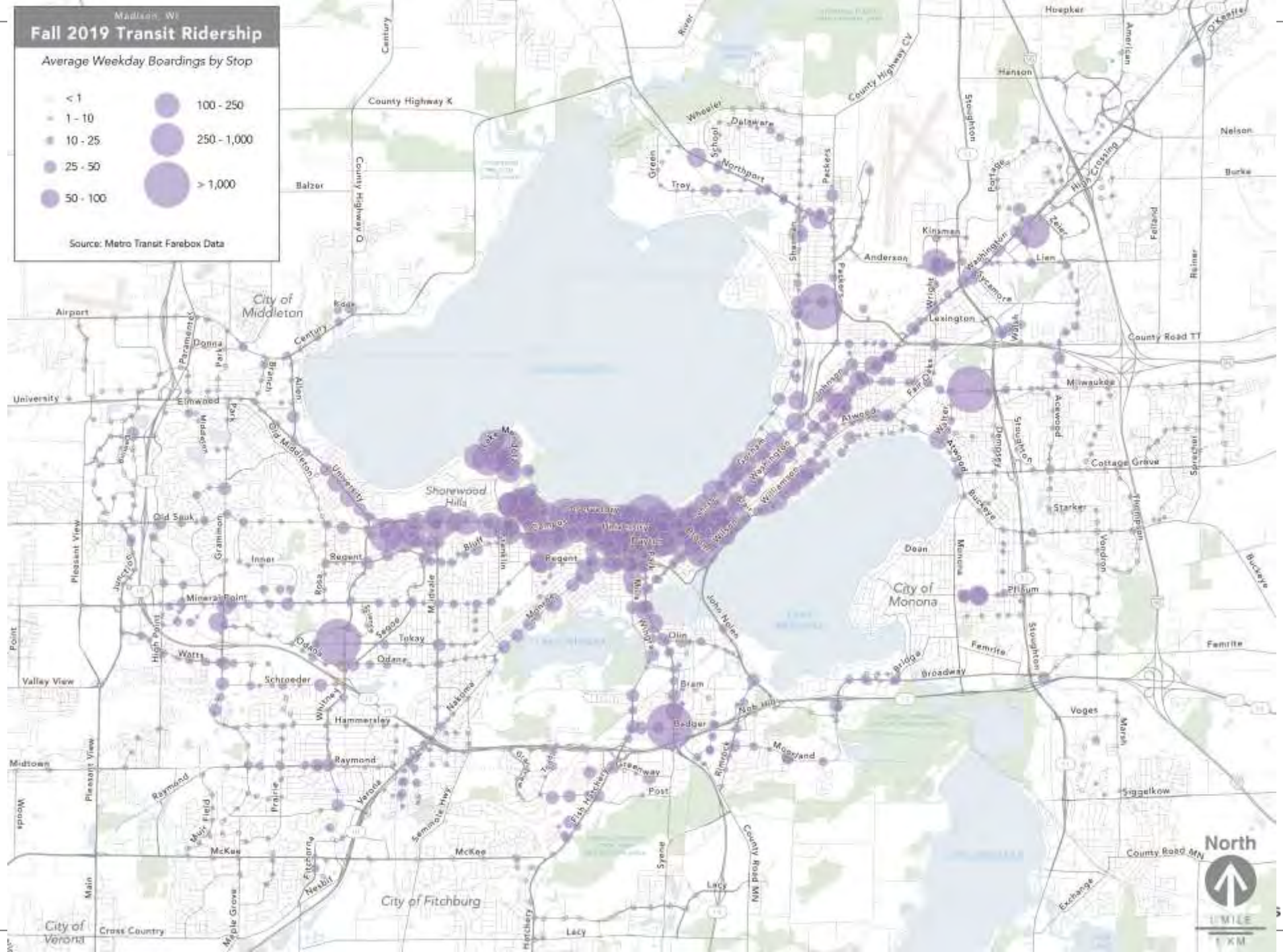

Madison, WI
Residential Density
Residents per Square Mile
0 - 2,500
2,500 - 5,000
5,000 - 10,000
10,000 - 20,000
20,000+
Source: Greater Madison MPO 2016 TAZ Model and US Census 2018 ACS 5-Year Summary File
City of Middleton
Shorewood Hills
City of Monona
City of Fitchburg
City of Verona
Lake Mendota
Lake Monona
North
1 MILE
1 KM

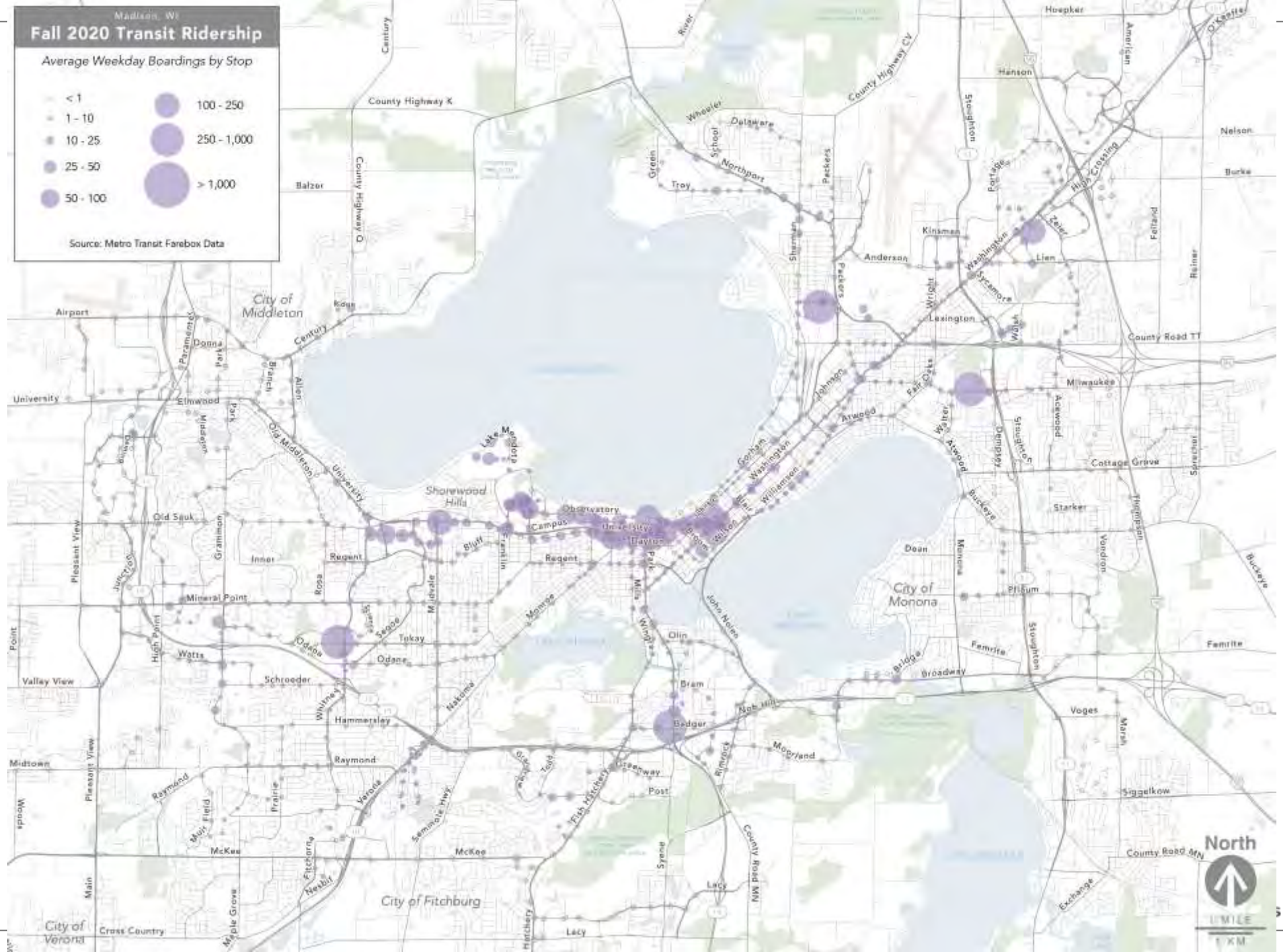

Madison, WI
Job Density
Jobs per Square Mile
0 - 2,500
2,500 - 5,000
5,000 - 10,000
10,000 - 20,000
20,000+
Source: Greater Madison MPO 2016 TAZ Model
City of Middleton
Shorewood Hills
City of Monona
City of Fitchburg
City of Verona
North
1 MILE
1 KM


Madison, WI
Poverty Density
Households in Poverty per Square Mile
0 - 500
500 - 1,000
1,000 - 2,000
2,000 - 4,000
4,000+
Source: US Census 2018 American Community Survey 5-Year Summary File
City of Middleton
Shorewood Hills
City of Monona
City of Fitchburg
City of Verona
North
1 MILE
1 KM


Madison, WI
Zero-Vehicle Households
Zero-Vehicle Households per Square Mile
0 - 250
250 - 500
500 - 1,000
1,000 - 2,000
2,000+
Source: US Census 2018 American Community Survey 5-Year Summary File
City of Middleton
City of Monona
City of Fitchburg
City of Verona
Shorewood Hills
Lake Mendota
North
1 MILE
1 KM


Madison, WI
Density - Race/Ethnicity
Each dot represents 5 residents
Asian
Black
Hispanic
Other
White
Source: US Census 2018 American Community Survey 5-Year Summary File
City of Middleton
City of Monona
City of Fitchburg
City of Verona
Shorewood Hills
North
1 MILE
1 KM


Madison, WI
Fall 2019 Transit Ridership
Average Weekday Boardings by Stop
< 1
1 - 10
10 - 25
25 - 50
50 - 100
100 - 250
250 - 1,000
> 1,000
Source: Metro Transit Farebox Data
City of Middleton
Shorewood Hills
City of Monona
City of Fitchburg
City of Verona
North
1 MILE
1 KM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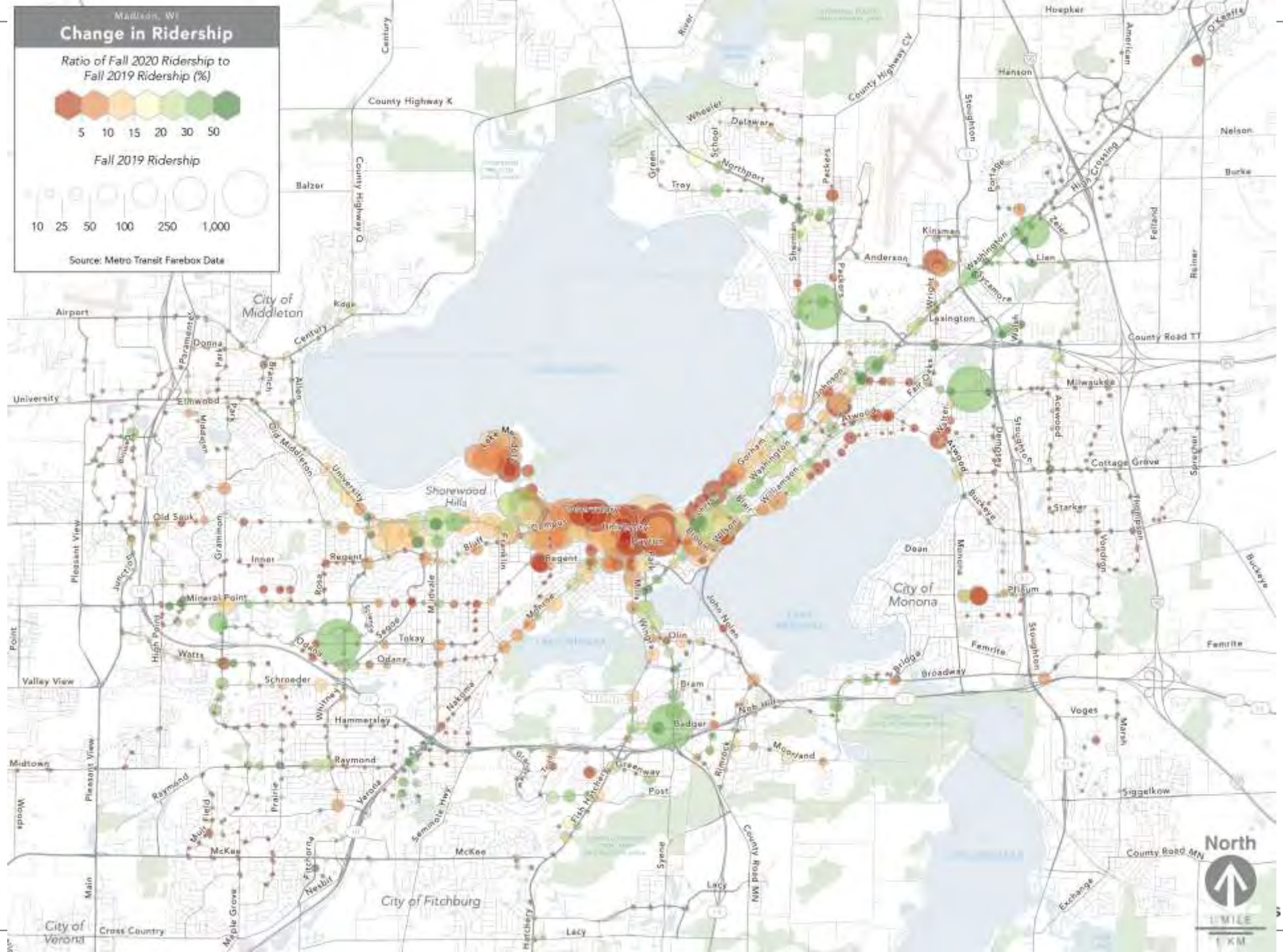
Madison, WI
Change in Ridership
Ratio of Fall 2020 Ridership to Fall 2019 Ridership (%)
5 10 15 20 30 50
Fall 2019 Ridership
10 25 50 100 250 1,000
Source: Metro Transit Farebox Data
City of Middleton
Shorewood Hills
City of Monona
City of Fitchburg
City of Verona
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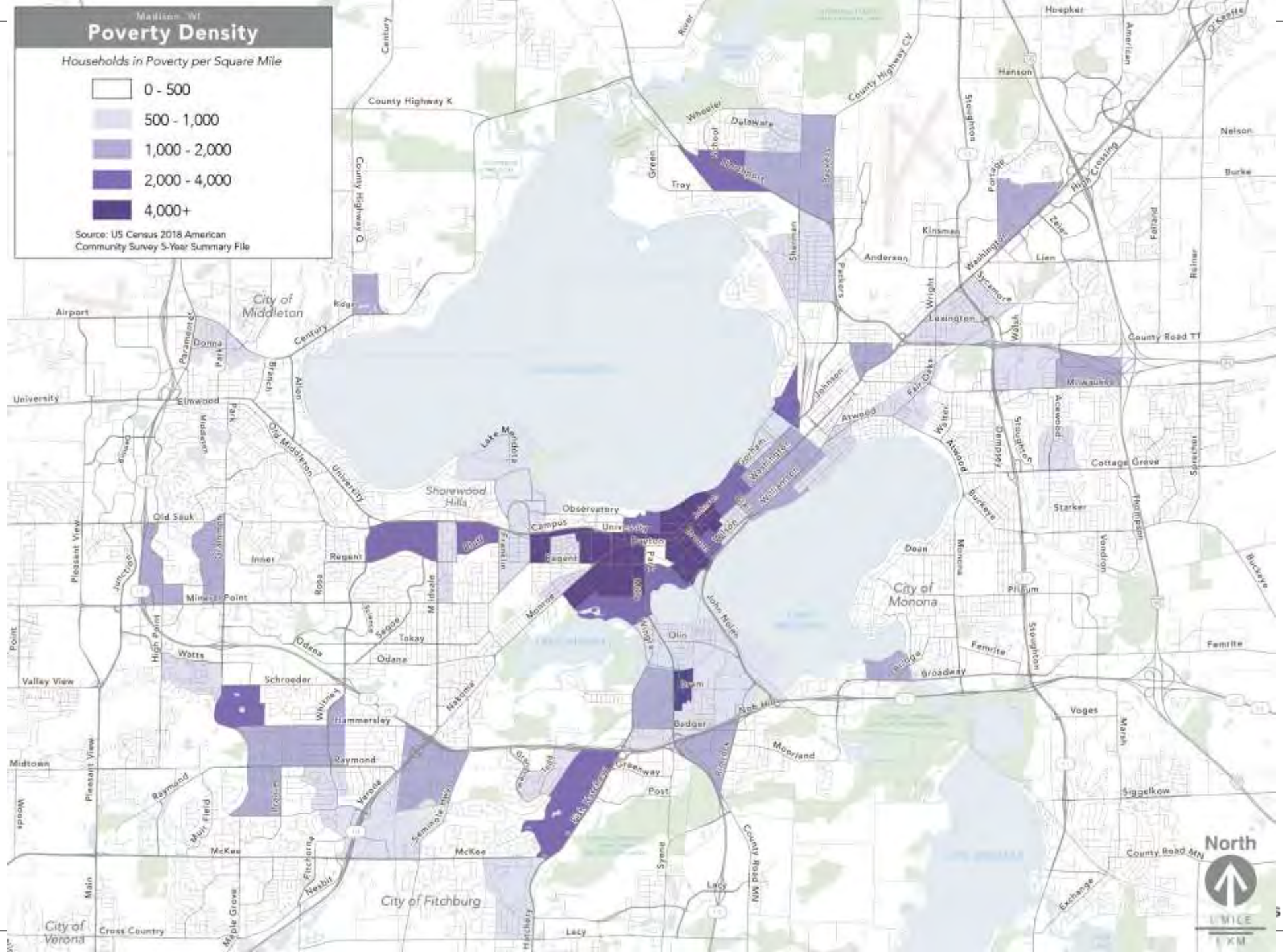
1 MILE
1 KM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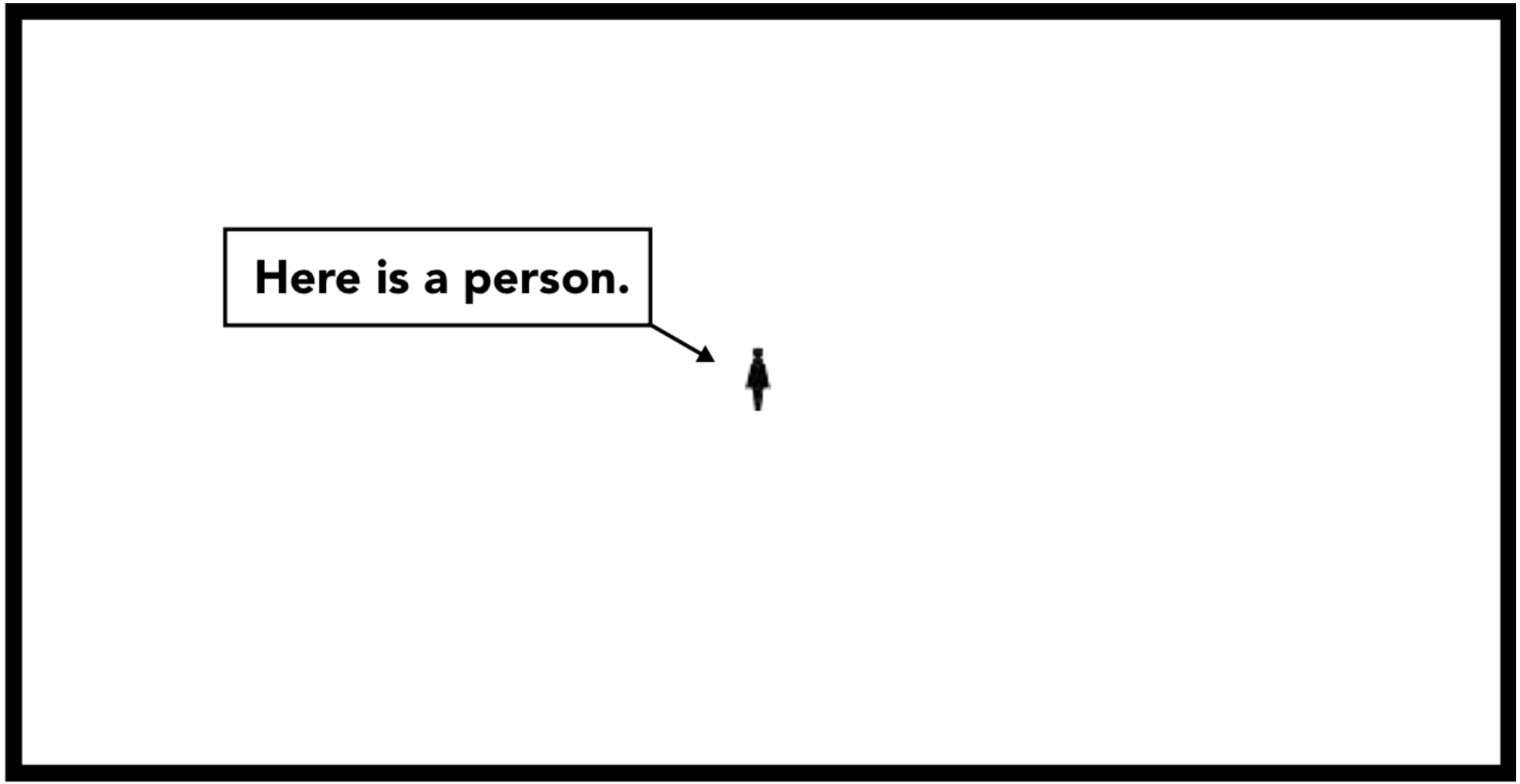
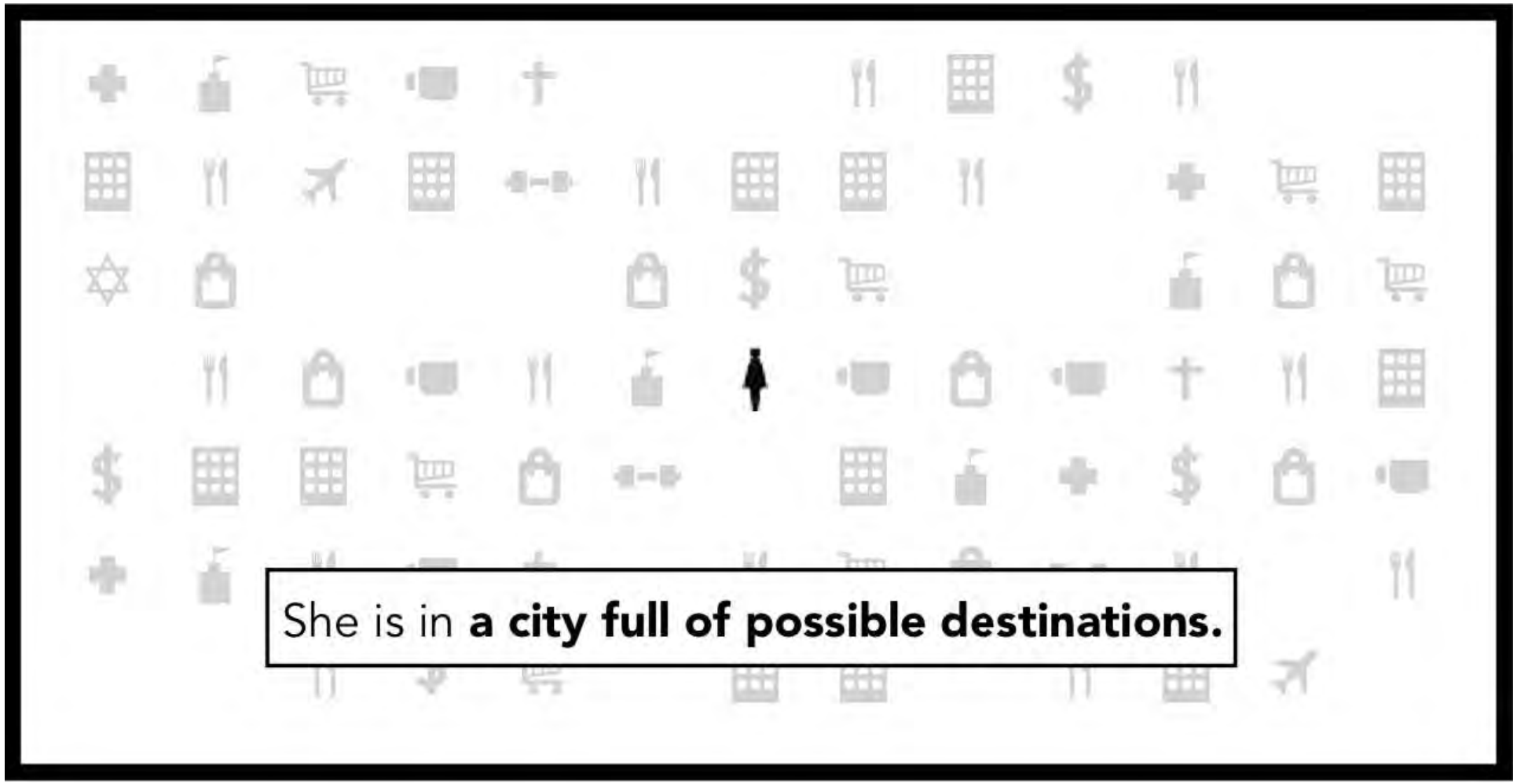
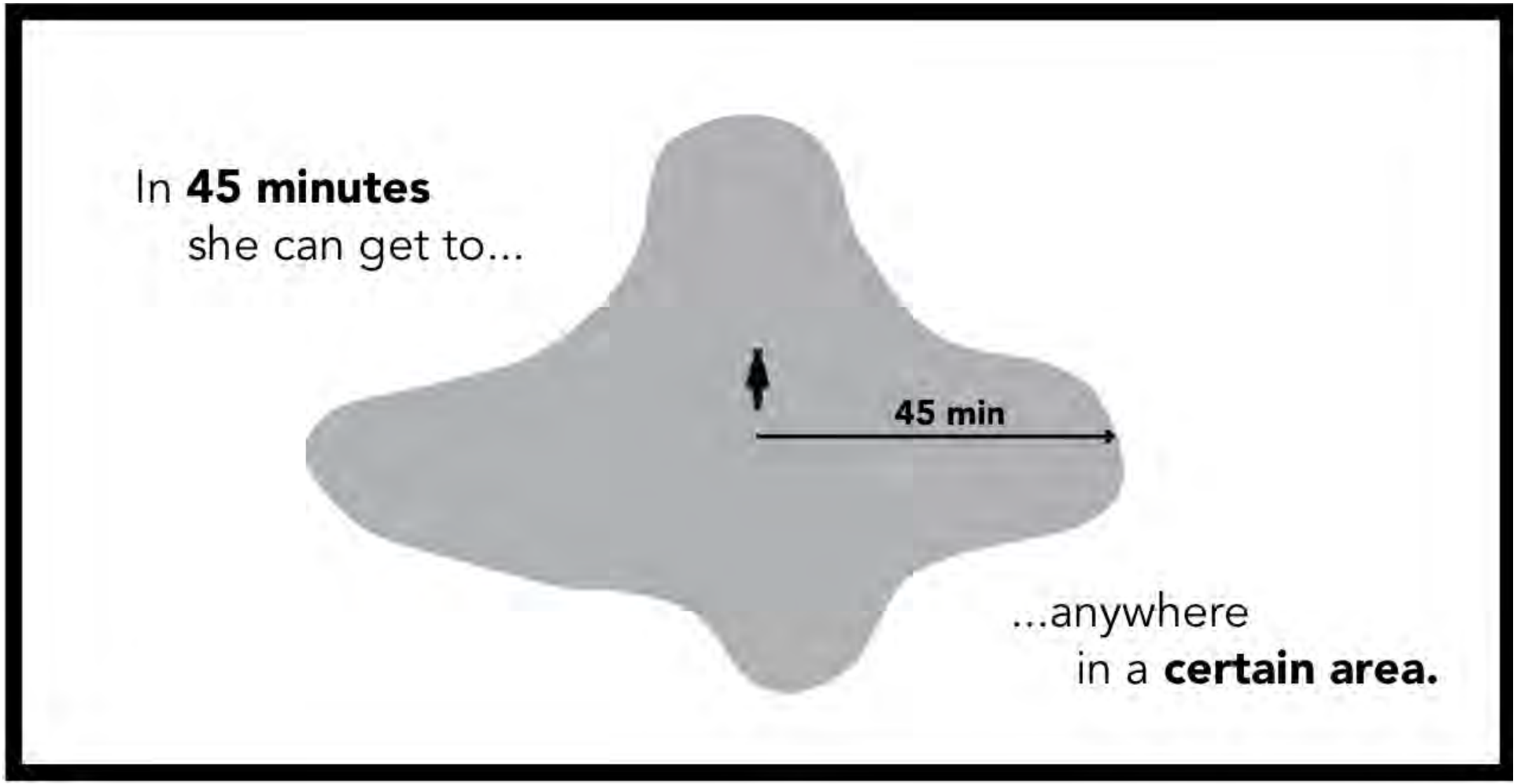
City of Middleton
Shorewood Hills
City of Monona
City of Fitchburg
City of Verona
Lake Mendota
Lake Monona
North
1 MILE
1 KM

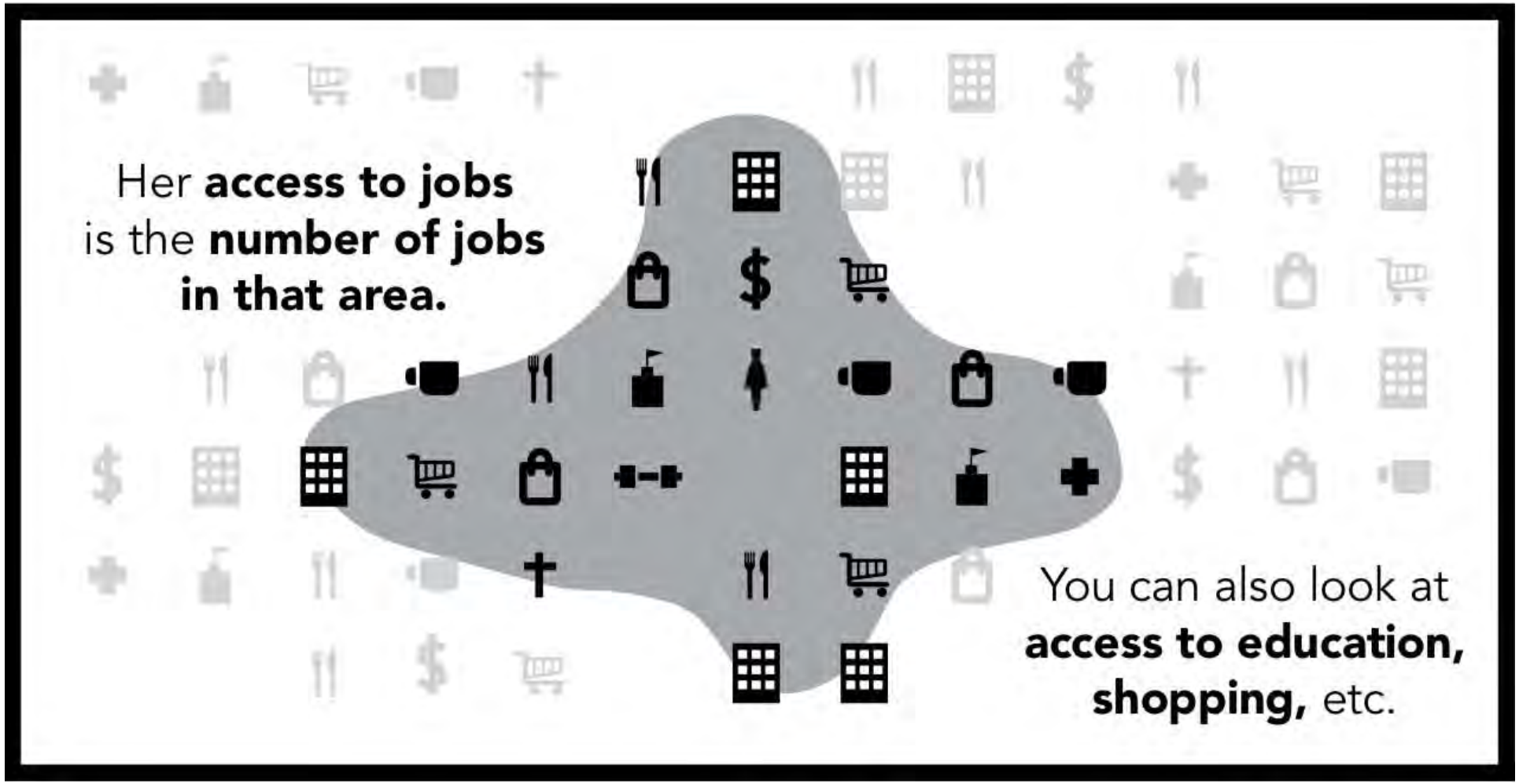
The wall around your life.

Who has access to what?

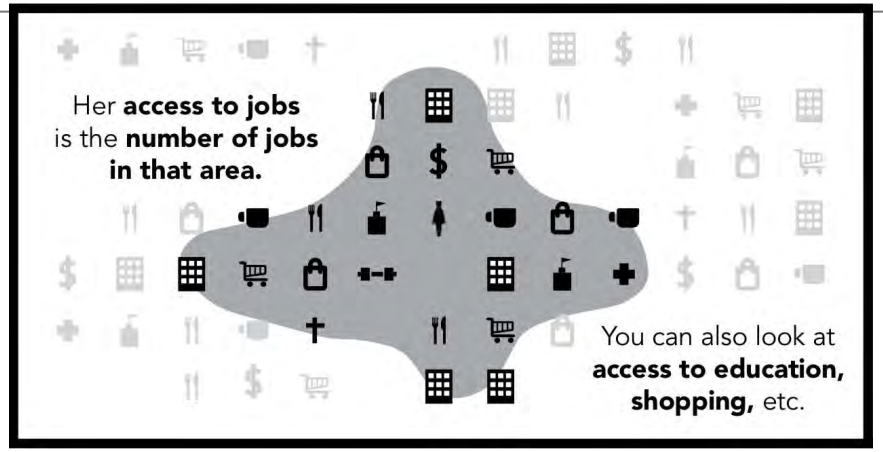

Here is a person.


She is in **a city full of possible destinations.**


In **45 minutes**
she can get to...
45 min
...anywhere
in a **certain area.**


Her **access to jobs** is the **number of jobs in that area.**
You can also look at **access to education, shopping,** etc.

When we measure access, we measure



- People's ability to go places so they can do things.
  - Economic benefit
  - Civil rights / racial justice imperative
  - Freedom!
- Describes how network design affects ridership.
  - Sustainability benefits.
  - Revenue

Where could I be in 45 min?

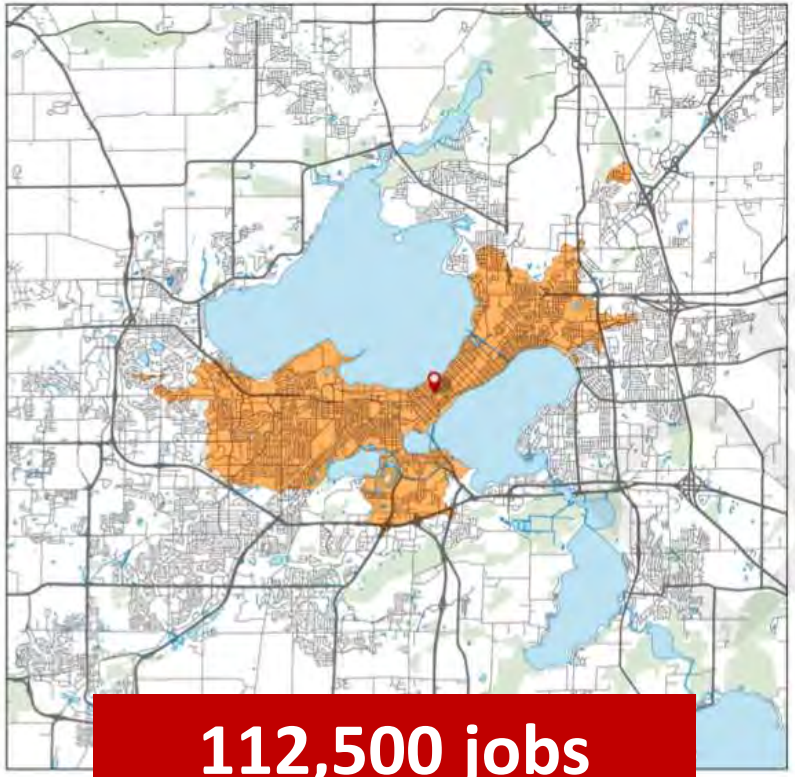
High Access – Downtown Madison

How far can I travel in **45 minutes** from
Capitol

This map shows the areas of Madison you could reach in 45 minutes on average if starting the trip between 12:00pm and 1:00pm using the October 2020 Madison Metro transit network.

Jobs reachable 112,500
Residents reachable 128,600

0 1 2 3 mi



112,500 jobs
reachable in 45 min.

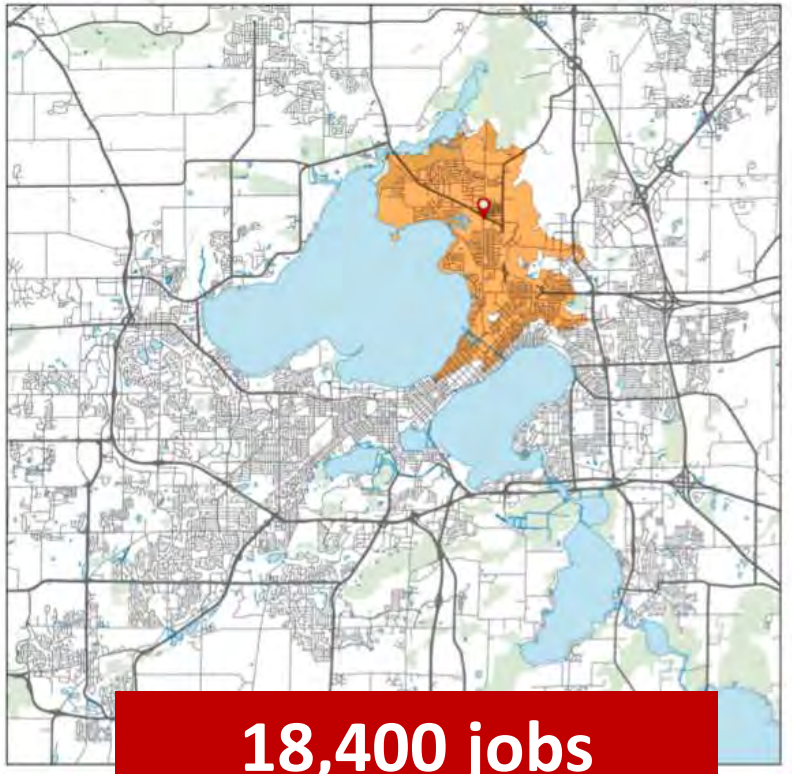
Low Access – North Side

How far can I travel in **45 minutes** from
Northside Town Center

This map shows the areas of Madison you could reach in 45 minutes on average if starting the trip between 12:00pm and 1:00pm using the October 2020 Madison Metro transit network.

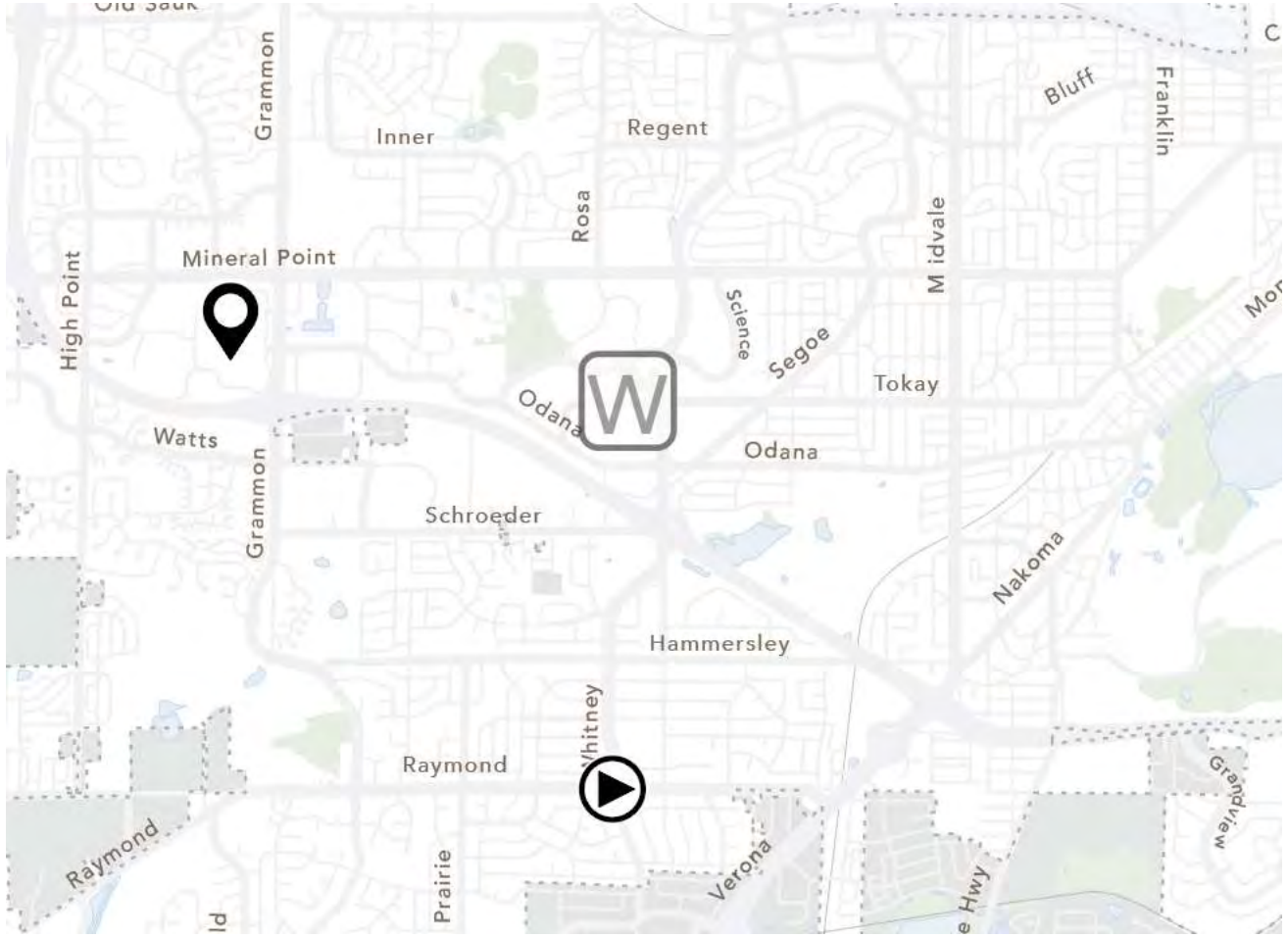
Jobs reachable 18,400
Residents reachable 41,100

0 1 2 3 mi



18,400 jobs
reachable in 45 min.

Trip Example: Retail Worker



From **Raymond Road & Whitney Way**
To **West Towne Mall**

Distance: about 3 miles

Drive Time: 10-15 minutes
Walk Time: 1 hour

Calculating Travel Times

- Walking to and from a stop

- Waiting for the next bus (3 minutes)

- Riding to your destination

- Waiting for the start of your activity

Example 1: Arrive by 10 AM on a Weekday

Option 1

Start trip at home near Raymond Rd. and Whitney Way at **9:31am**

Walk 2 minutes to a stop on Raymond Rd.

Wait 3 minutes for Route 50.

Ride Route 50 for 7 minutes to Gammon Rd. & Watts Rd.

Walk 12 minutes and arrive at West Towne Mall at 9:55am

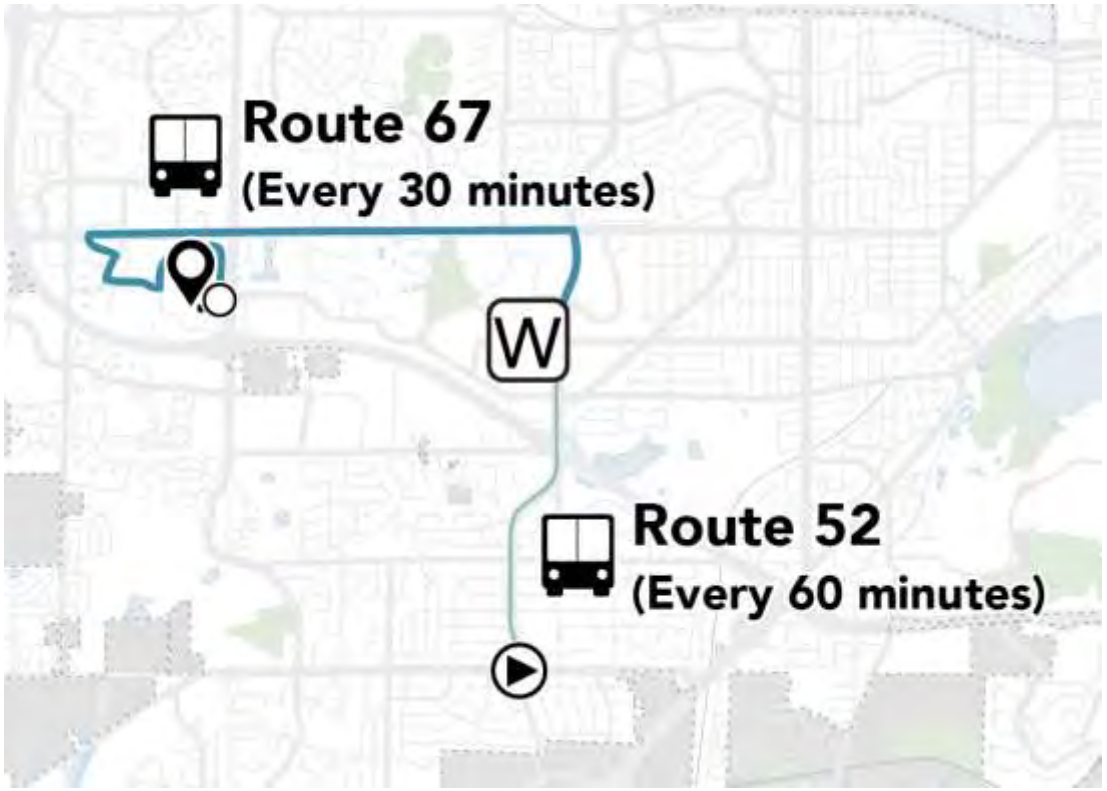
Wait 5 minutes for start of work at **10:00am.**

Total Time: 29 Minutes

13 minutes walking
8 minutes waiting
7 minutes riding

Example 1: Arrive by 10 AM on a Weekday

Option 2



Start trip at home near Raymond and Whitney at **9:13am**

Walk 2 minutes to a stop on Raymond Rd.

Wait 3 minutes for Route 52.

Ride Route 52 for 8 minutes to West Transfer Point.

Wait 4 minutes for Route 67.

Ride Route 67 for 15 minutes to West Towne Mall.

Walk 1 minute to get to the front entrance at 9:45am.

Wait 15 minutes for the start of work at **10:00am.**

Total Time: 47 Minutes

3 minutes walking
22 minutes waiting
22 minutes riding

Example 2: Arrive by 10 AM on a Saturday

Option 1

Start trip at home near Raymond Rd. and Whitney Way at **9:01am**

Walk 2 minutes to a stop on Raymond Rd.

Wait 3 minutes for Route 50.

Ride Route 50 for 7 minutes to Gammon Rd. & Watts Rd.

Walk 12 minutes and arrive at West Towne Mall at 9:25am

Wait 35 minutes for start of work at **10:00am.**

Total Time: 59 Minutes

14 minutes walking
38 minutes waiting
7 minutes riding

Example 2: Arrive by 10 AM on a Saturday

Option 2

Start trip at home near Raymond and Whitney at **9:13am**

Walk 2 minutes to a stop on Raymond Rd.

Wait 3 minutes for Route 59.

Ride Route 59 for 7 minutes to West Transfer Point.

Wait 6 minutes for Route 63.

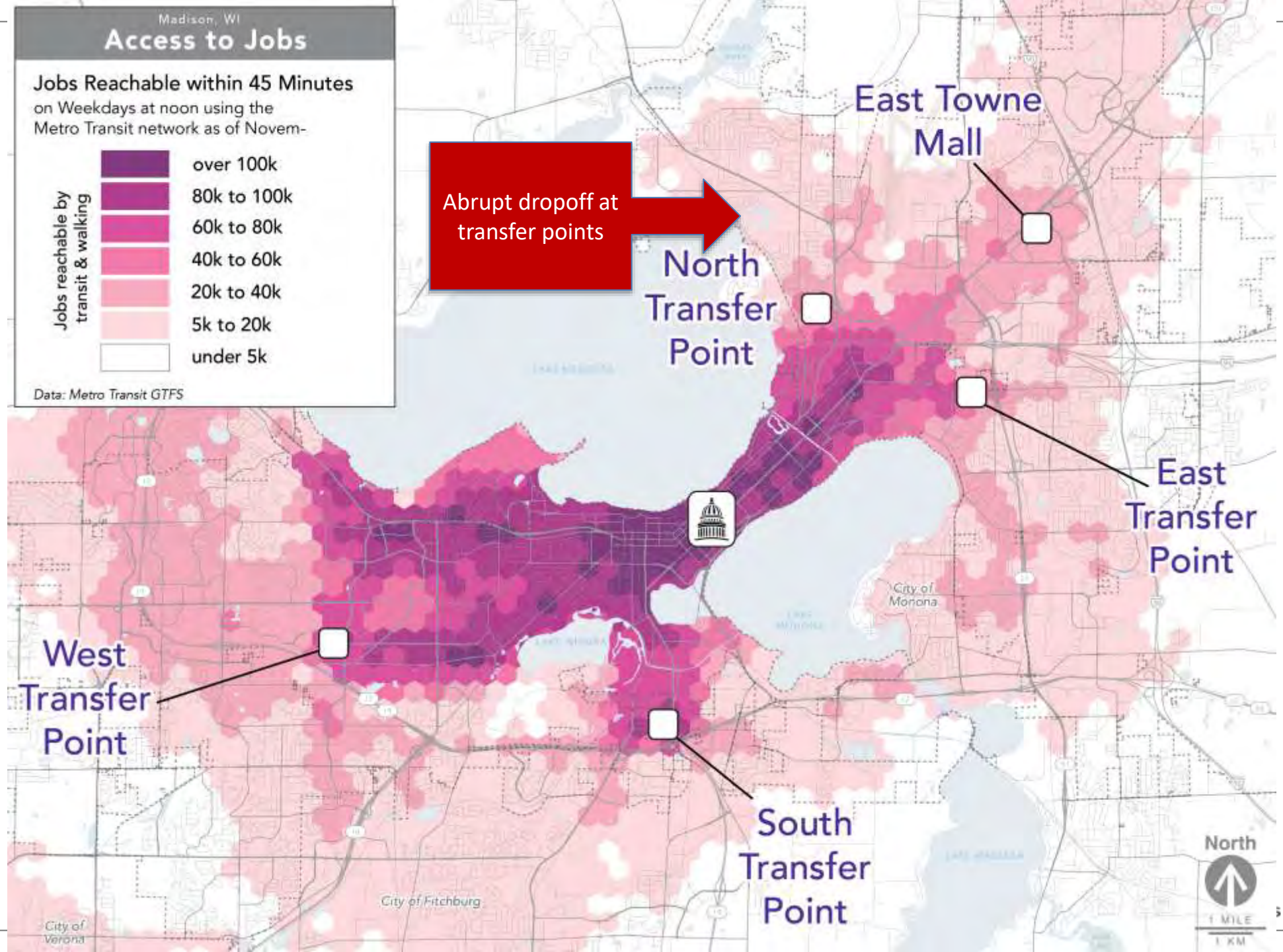
Ride Route 63 for 7 minutes to West Towne Mall.

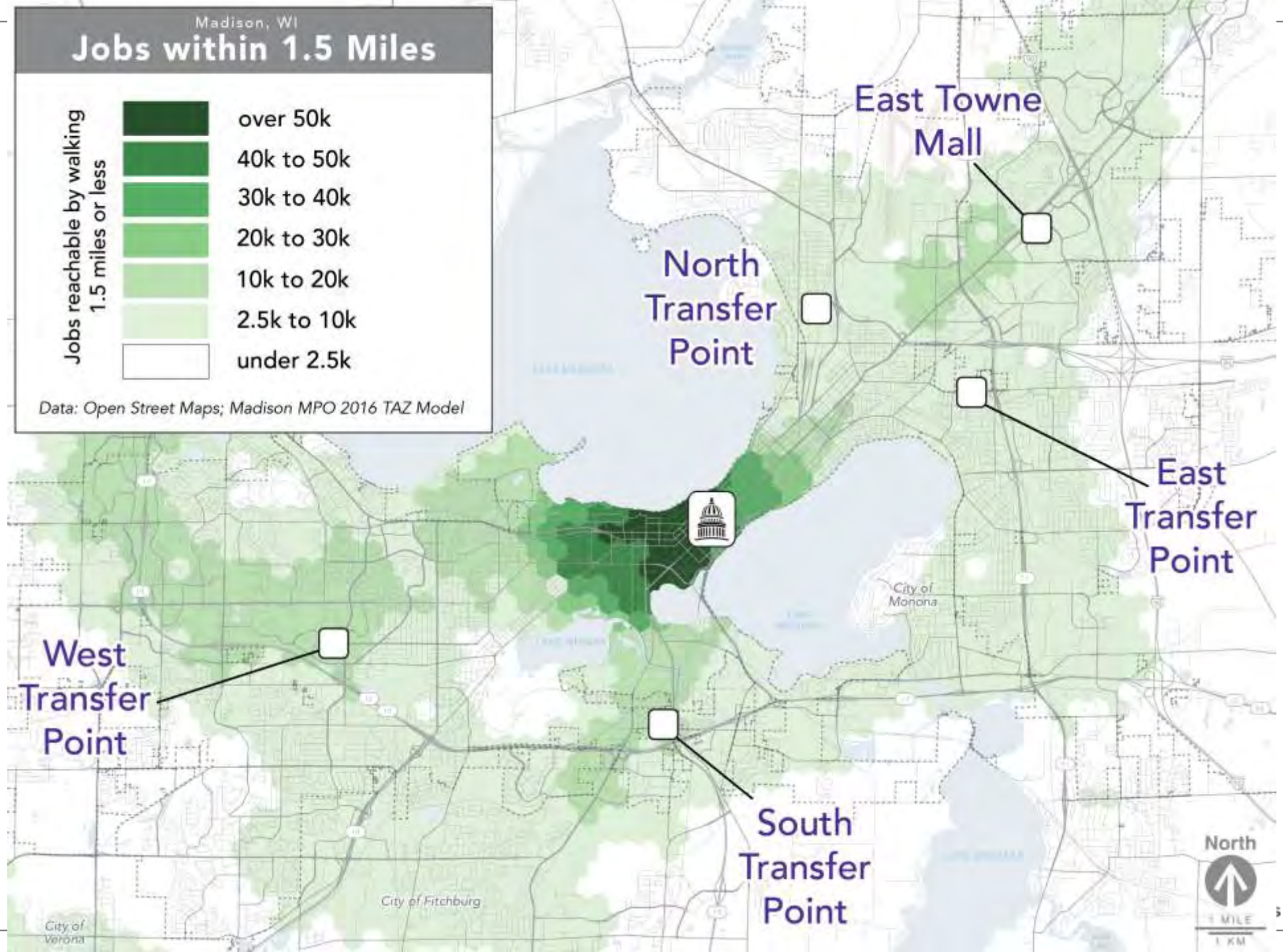
Walk 1 minute to get to the front entrance at 9:39am.

Wait 21 minutes for the start of work at **10:00am.**

Total Time: 47 Minutes

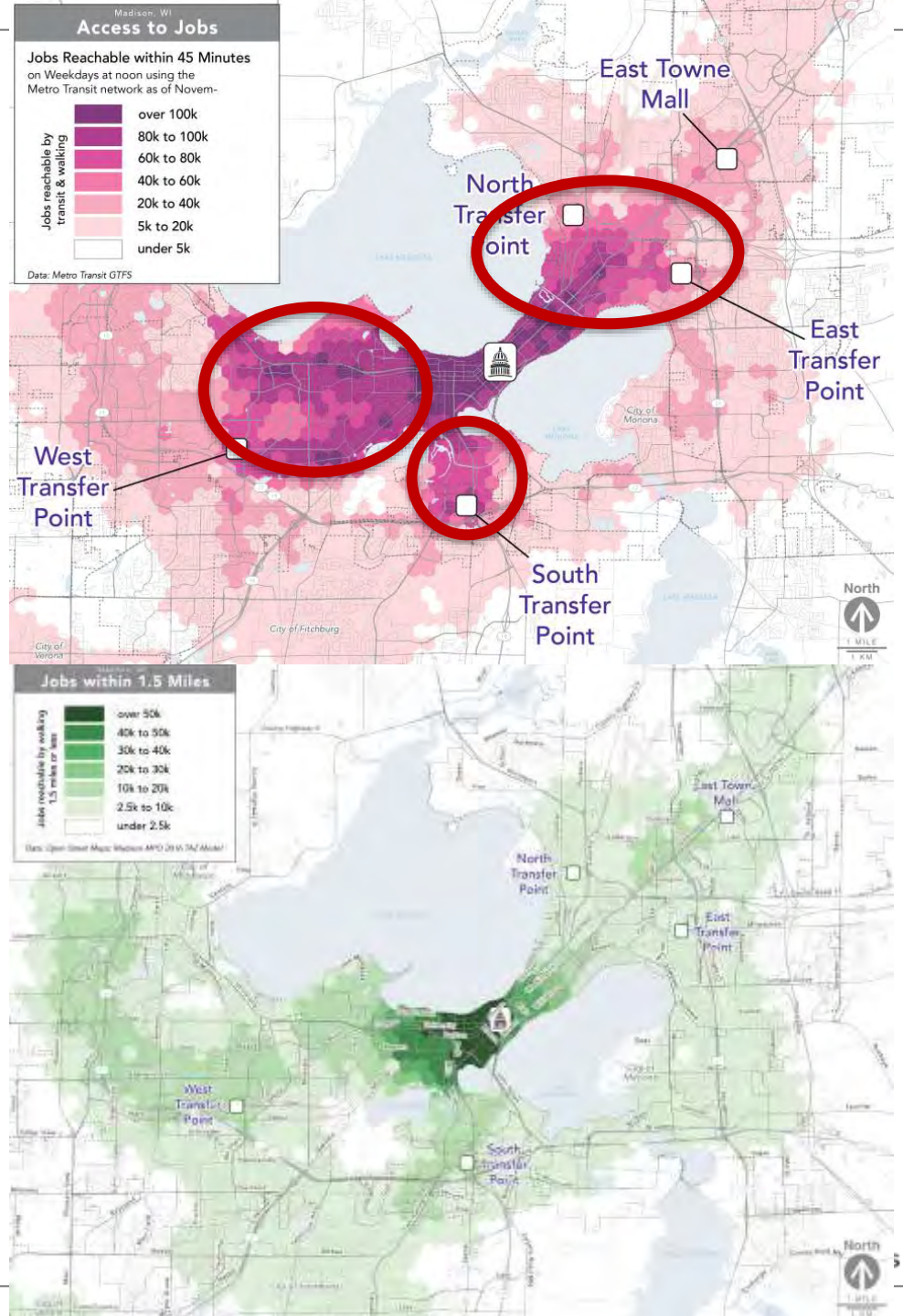
3 minutes walking
30 minutes waiting
14 minutes riding


Madison, WI
Access to Jobs
Jobs Reachable within 45 Minutes
on Weekdays at noon using the
Metro Transit network as of Novem-
Jobs reachable by transit & walking
over 100k
80k to 100k
60k to 80k
40k to 60k
20k to 40k
5k to 20k
under 5k
Data: Metro Transit GTFS
Abrupt dropoff at transfer points
East Towne Mall
North Transfer Point
East Transfer Point
West Transfer Point
South Transfer Point
City of Monona
City of Fitchburg
City of Verona
North
1 MILE
1 KM


Madison, WI
Jobs within 1.5 Miles
Jobs reachable by walking 1.5 miles or less
over 50k
40k to 50k
30k to 40k
20k to 30k
10k to 20k
2.5k to 10k
under 2.5k
Data: Open Street Maps; Madison MPO 2016 TAZ Model
East Towne Mall
North Transfer Point
East Transfer Point
West Transfer Point
South Transfer Point
City of Monona
City of Fitchburg
City of Verona
North
1 MILE
1 KM

Where is transit adding to access …

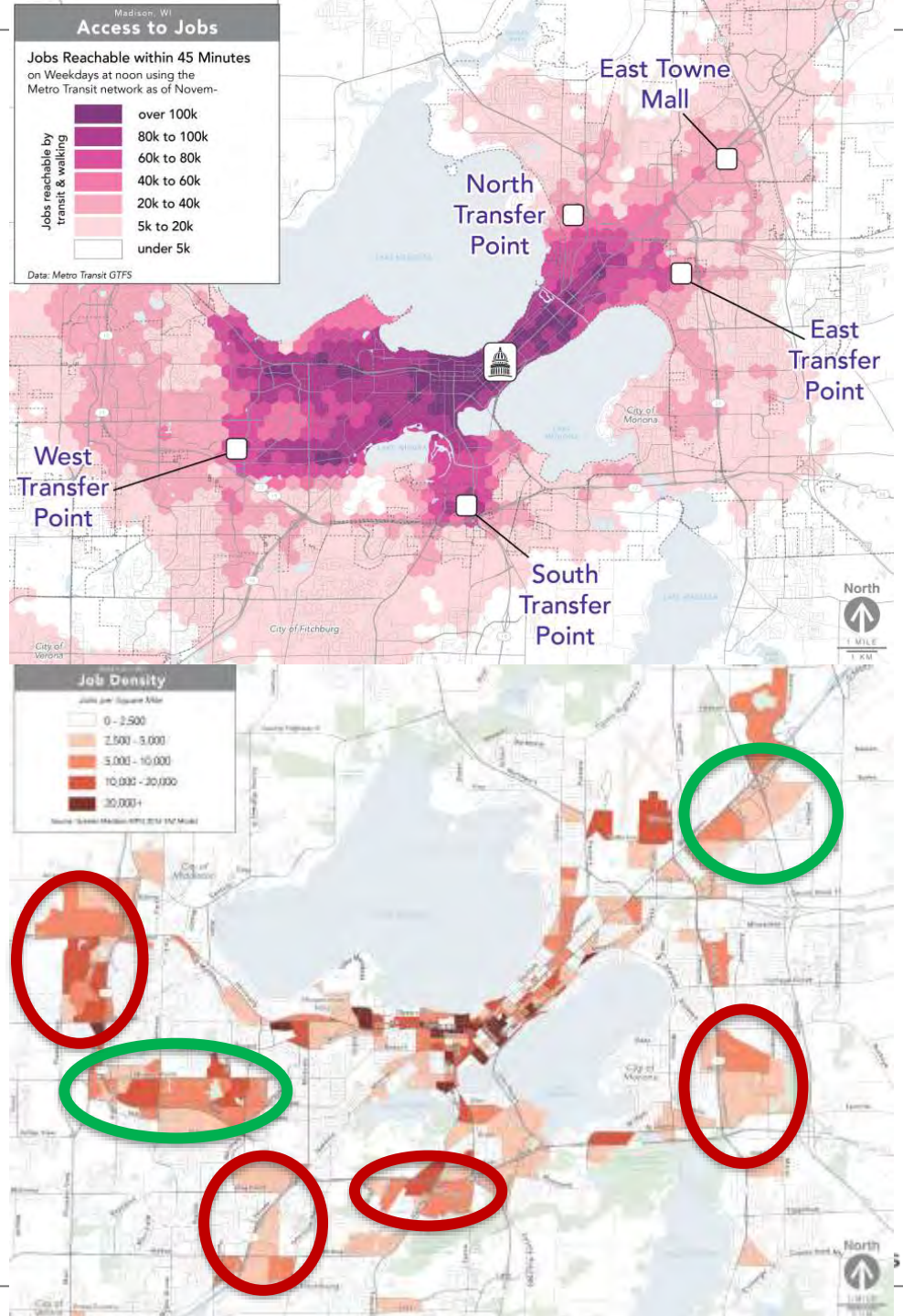
… beyond where people could just walk?



Access and job density

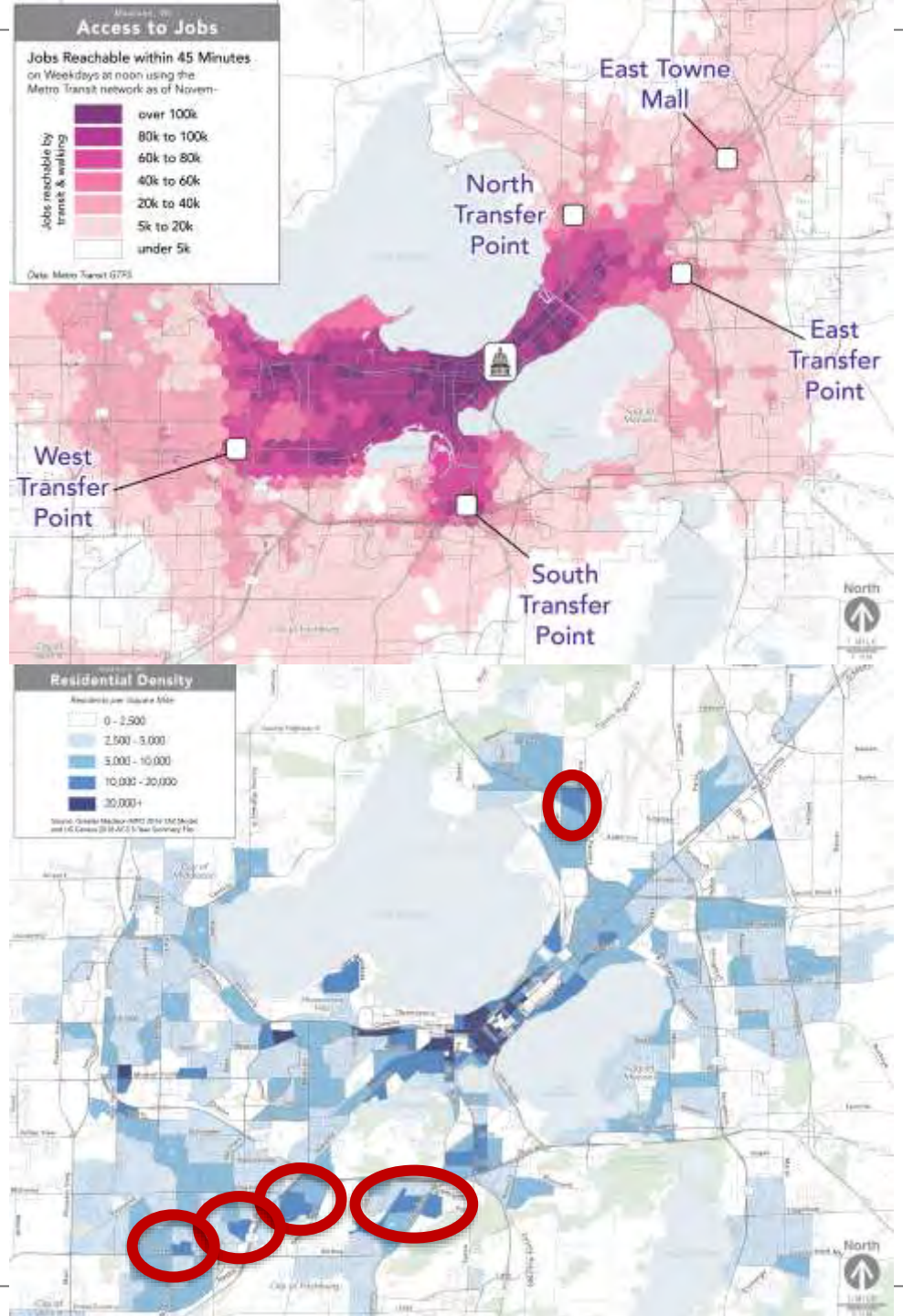
Employment areas with poor access.

BRT Phase 1 will help with the ones circled in green.



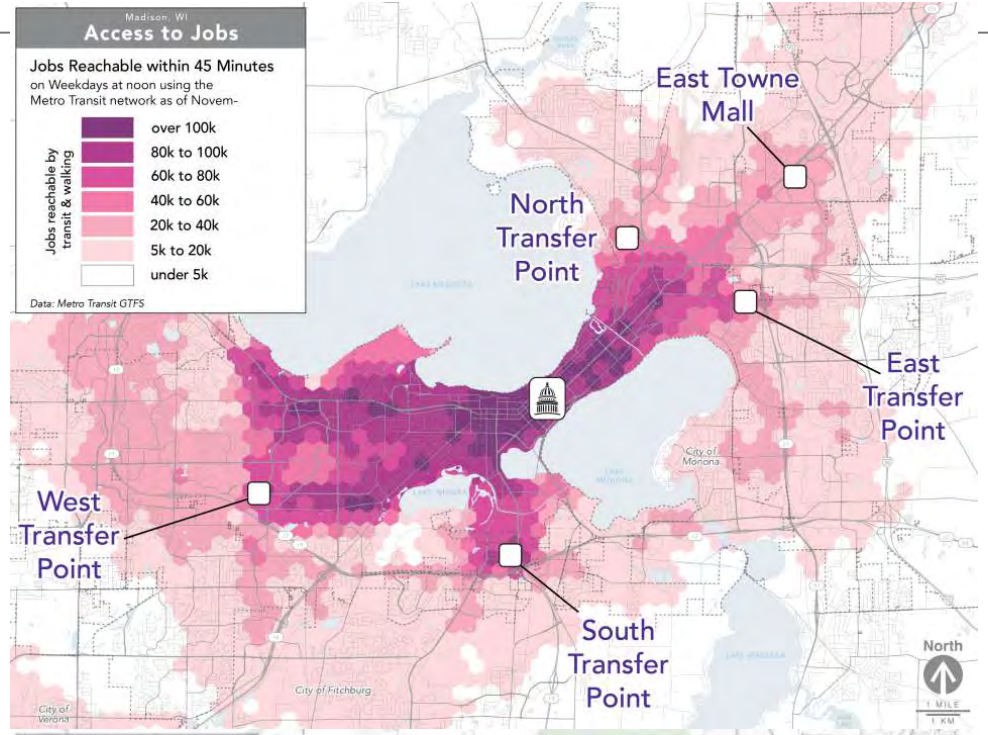
Access and where people live.

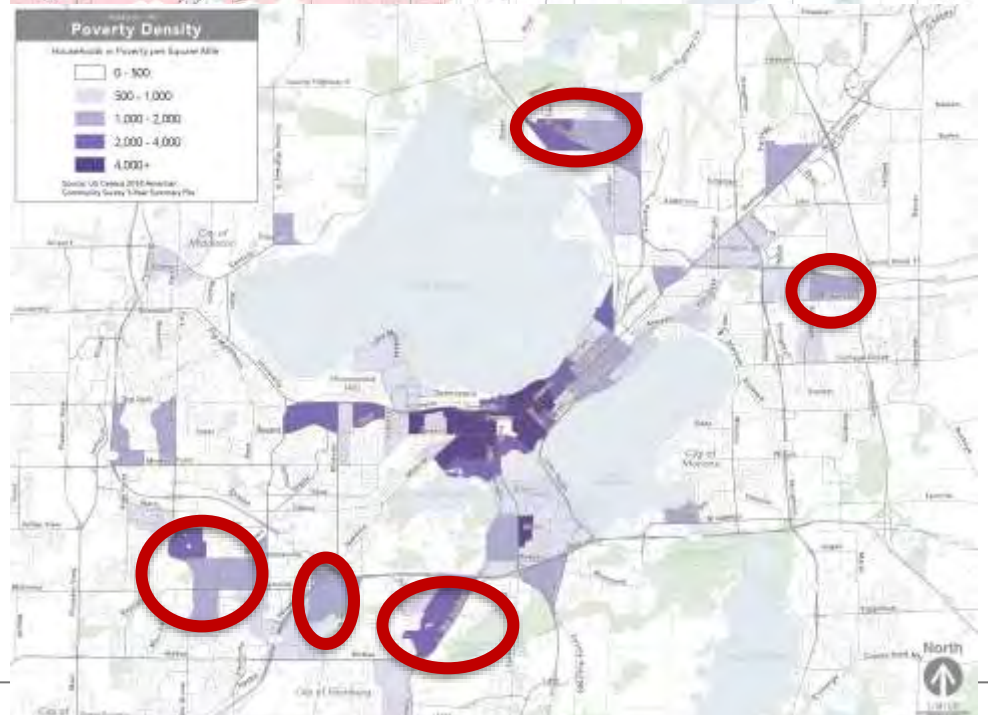
- Not a bad fit.
- Isolated patches of freeway-oriented density are expensive to serve.



Access and low income.

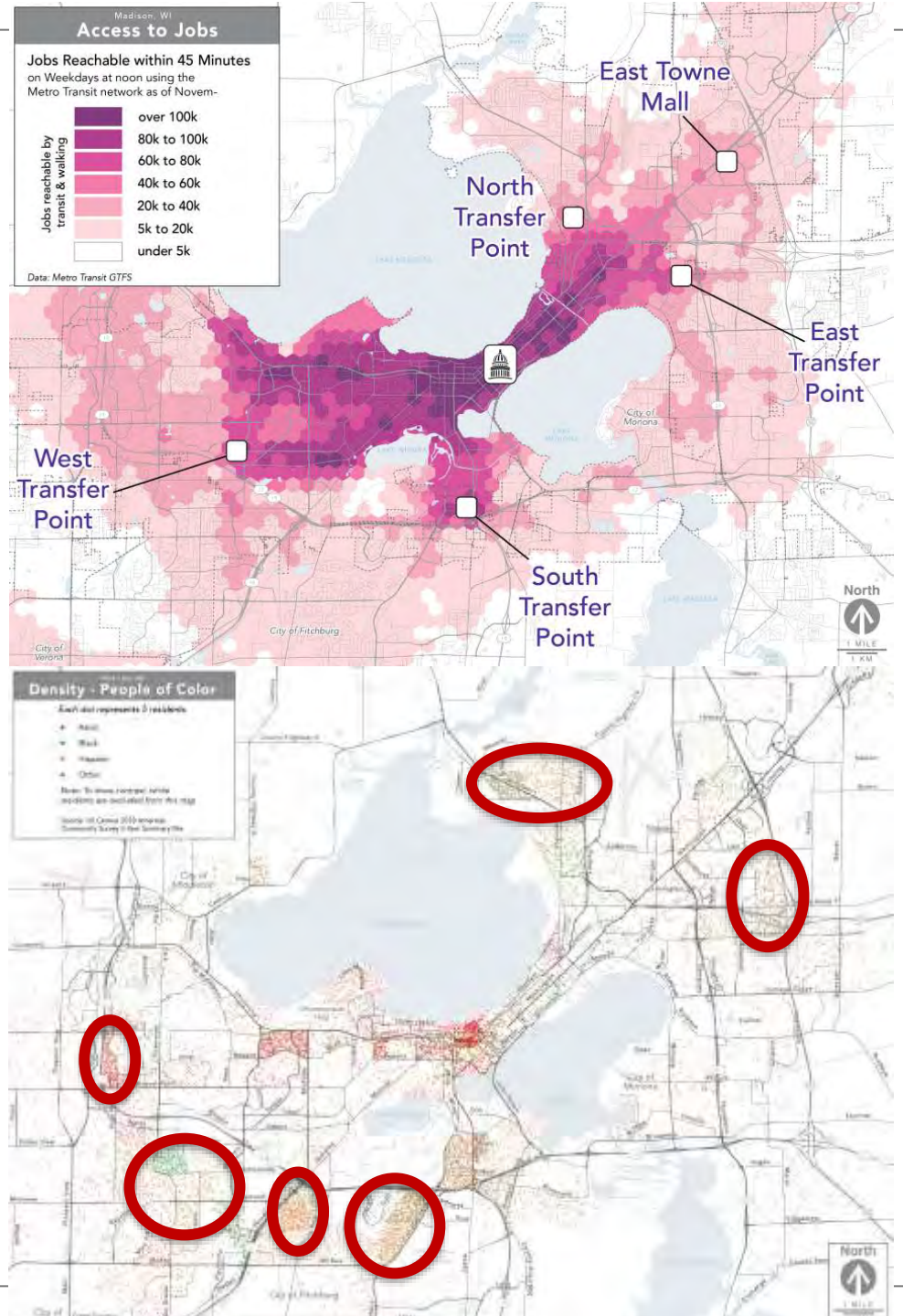
- Isolated low income density is very hard to serve.
- But this also tends to be where the need for public services (including transit) is highest.





Access and race.

- Isolated dense low-income areas are disproportionately areas where people of color live.



How transit expands access.

The most efficient access-expanding service is

- **Frequent**
- Reasonably fast and reliable.
- Available when you need it (span of service)

… focused where there are many people and activities that can benefit.

Why Frequency Matters

Speed and reliability matter, but frequency is often the most neglected element.

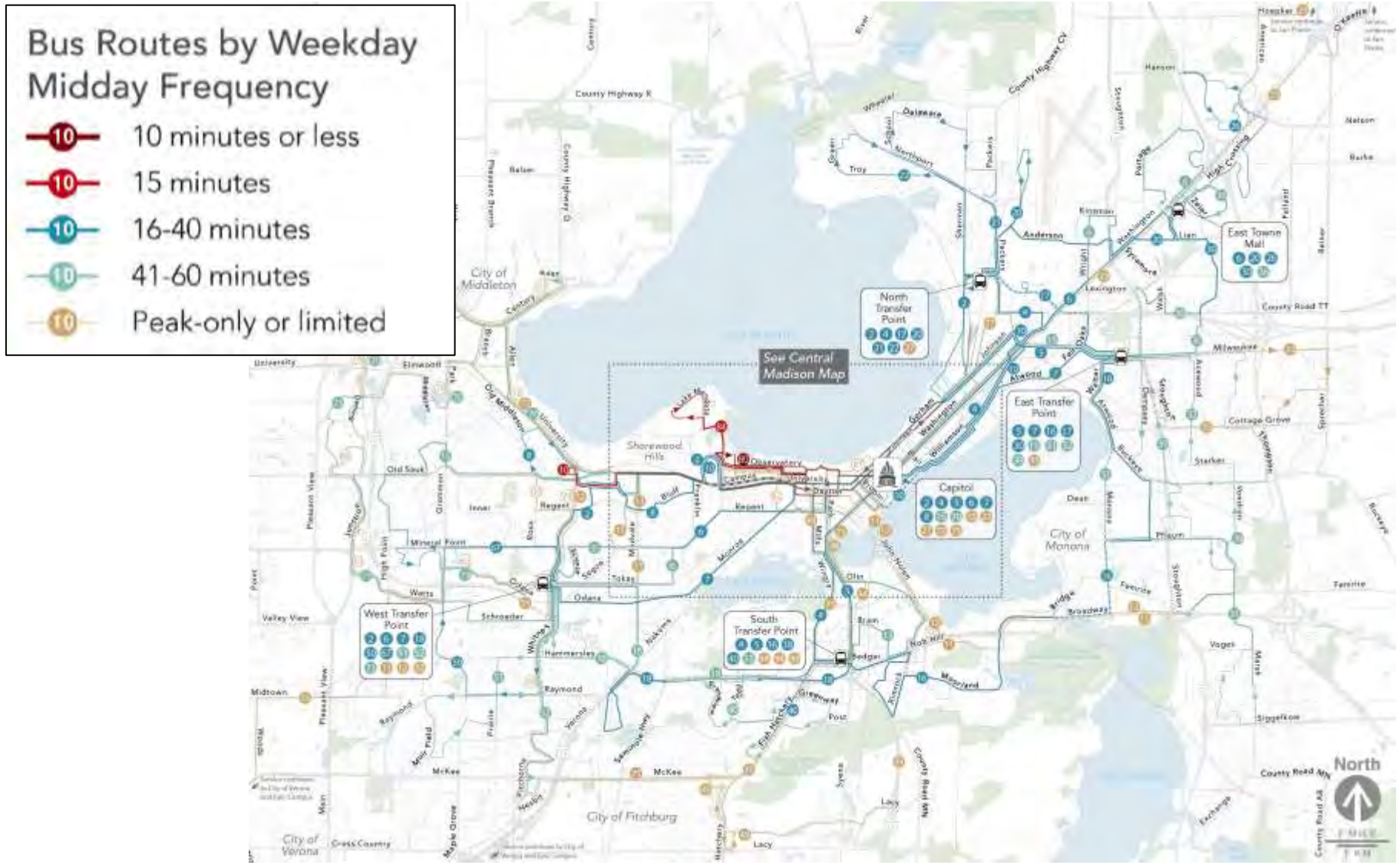
Frequency is a “cubed” benefit:

- Go when you want to go.
- Make connections easily, to get to more places.
- Less risk of being stranded by a disruption.

But frequency is hard to visualize.

Imagine a gate at the end of your driveway that only opens once an hour!

A mostly 30 min network …



Overlap through isthmus

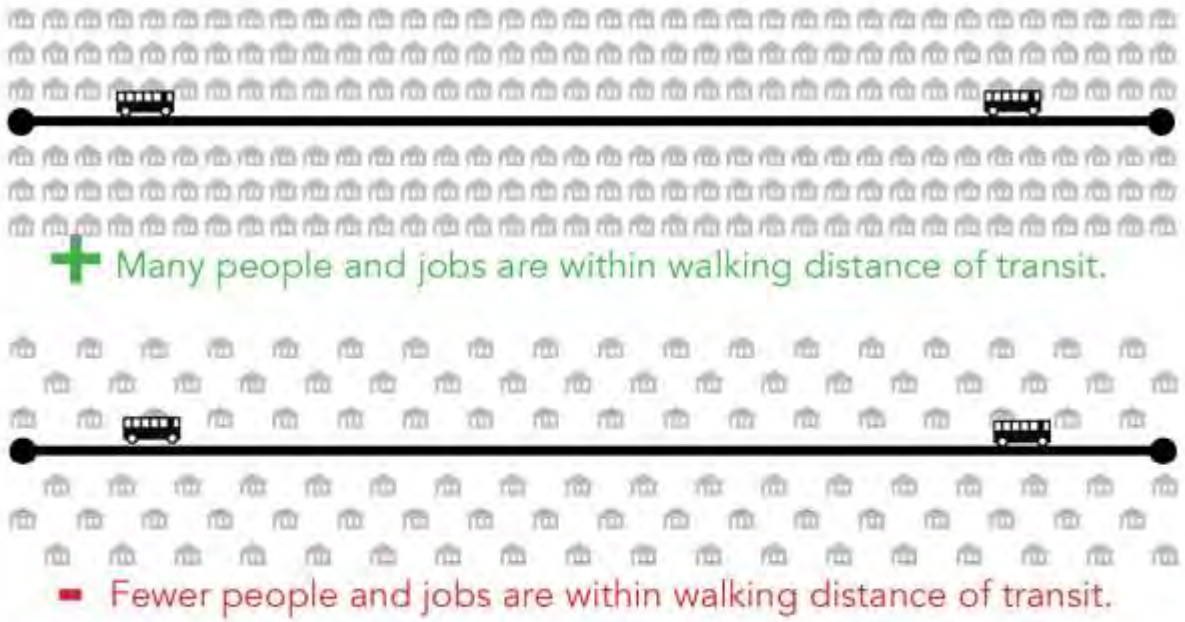
- Routes inevitably overlap as forced to converge.
- Can this service be organized to offer higher frequency?
- Also depends on timing of transfer points.

But …

- To get the best average access and aim for the highest possible ridership, you focus frequent service where the highest possible number of people can use it.

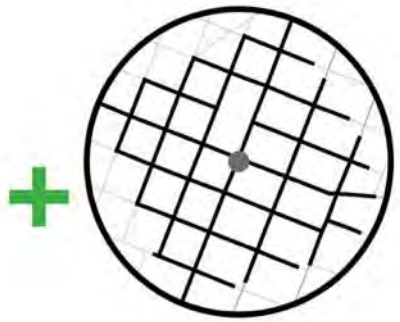
Density

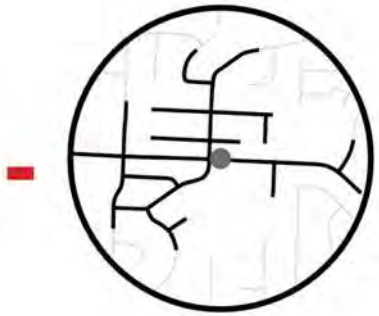
DENSITY *How many people, jobs, and activities are near each potential transit stop?*



Walkability

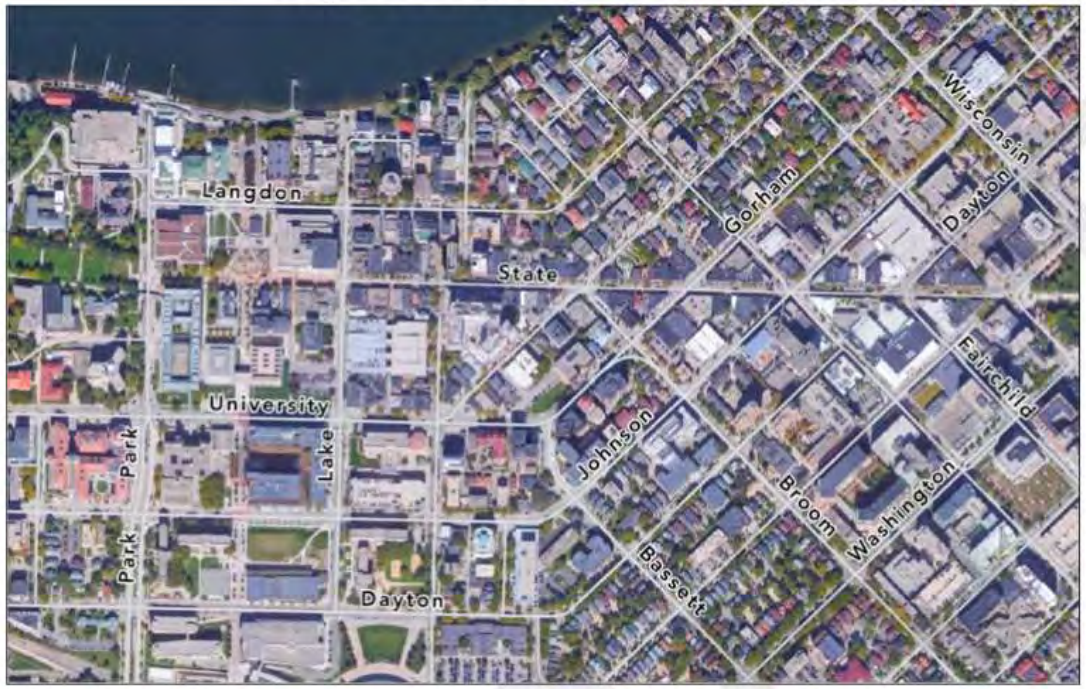
WALKABILITY *Is it possible to walk between the stop and the activities around it?*





\+ It must also be safe to cross the street at a stop. You usually need the stops on both sides for two-way travel!

Downtown Madison, West of Capitol Square
High Density; High Walkability



Watts Road at High Point Road, West Madison
High Density; Low Walkability

Linearity

LINEARITY *Can transit run in reasonably straight lines?*

\+ A logical transit line is a direct path between any two destinations on it.

\- Destinations located off the straight path force transit to deviate, discouraging those who want to ride through and increasing cost.

Madison Isthmus - Very Linear

Imagery ©2021 Google, Imagery ©2021 , Maxar Technologies, USDA Farm Service Agency

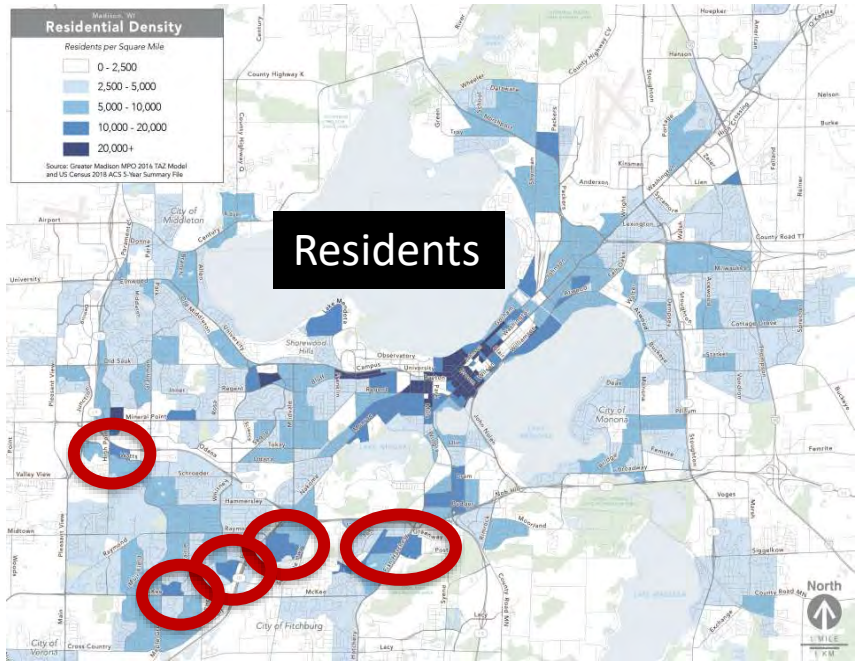
UW Health East Campus - Not Linear

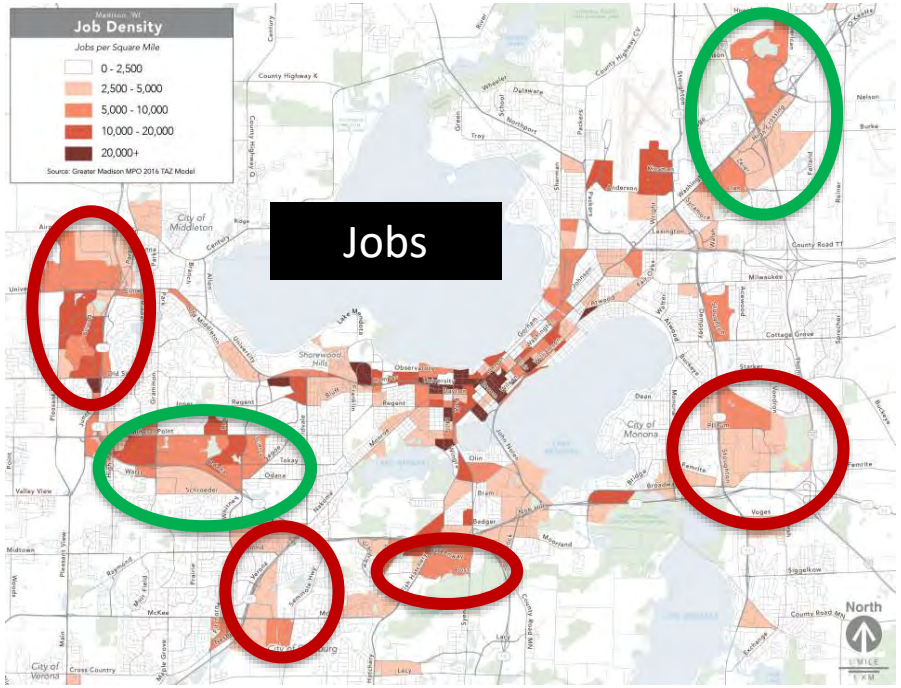
Imagery ©2021 Google, Imagery ©2021 , Maxar Technologies, USDA Farm Service Agency

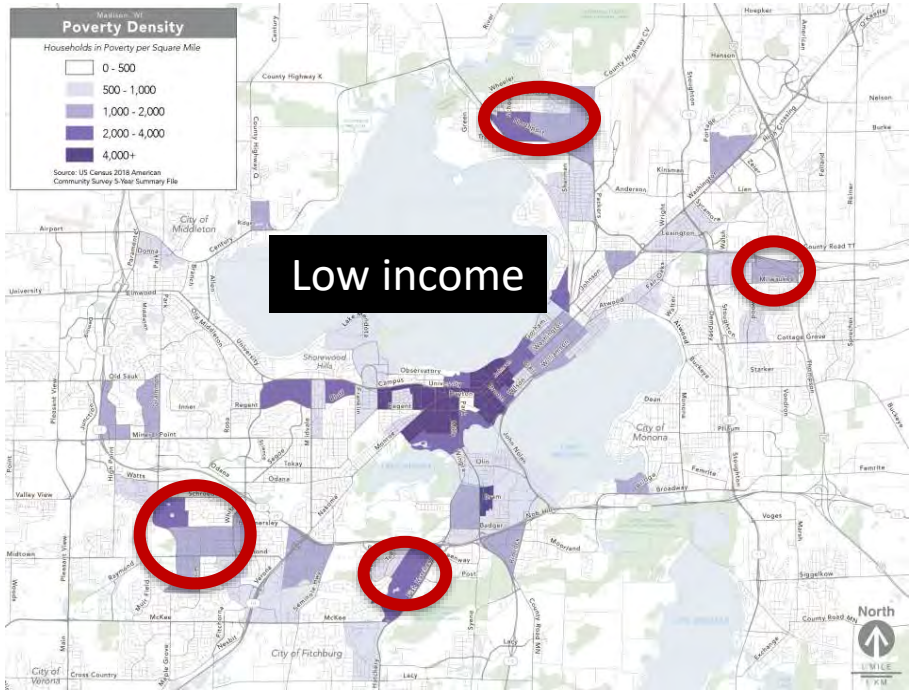
Figure 20: Examples of Linearity in Madison.

Most of the dense places outside central Madison are not walkable or linear.

That makes them expensive to serve in a way that provides decent levels of access.







To review

- **High-ridership service** would run high **frequency**, offering good access, in places that are **dense, walkable, and linear.**

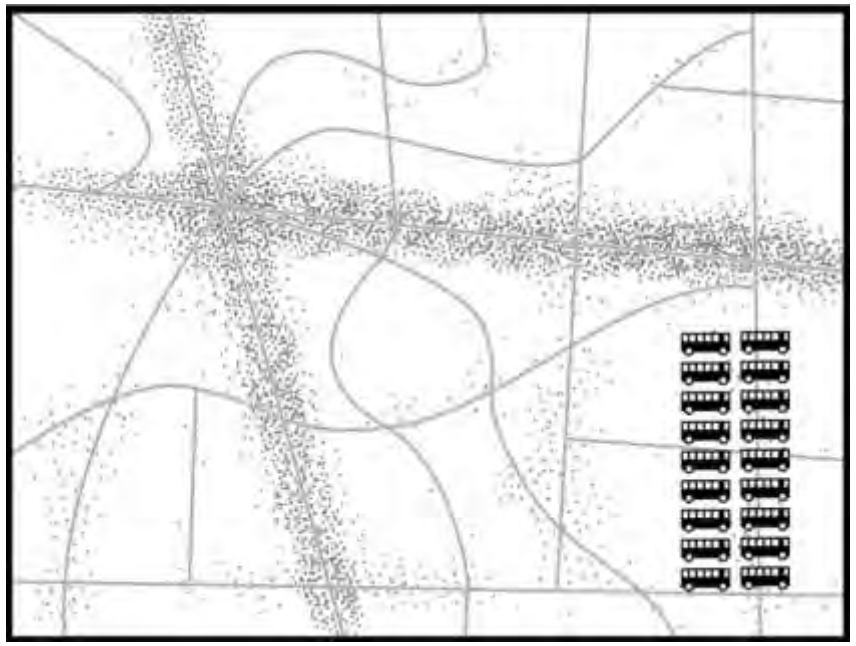
- That will include **most but not all** of the
  - Population
  - Jobs
  - People in poverty
  - People of color.

- If you want service to places that are not dense, walkable, and linear, that wouldn't be high-ridership service. It would be **coverage service**.

The ridership-coverage tradeoff

What is transit trying to do?

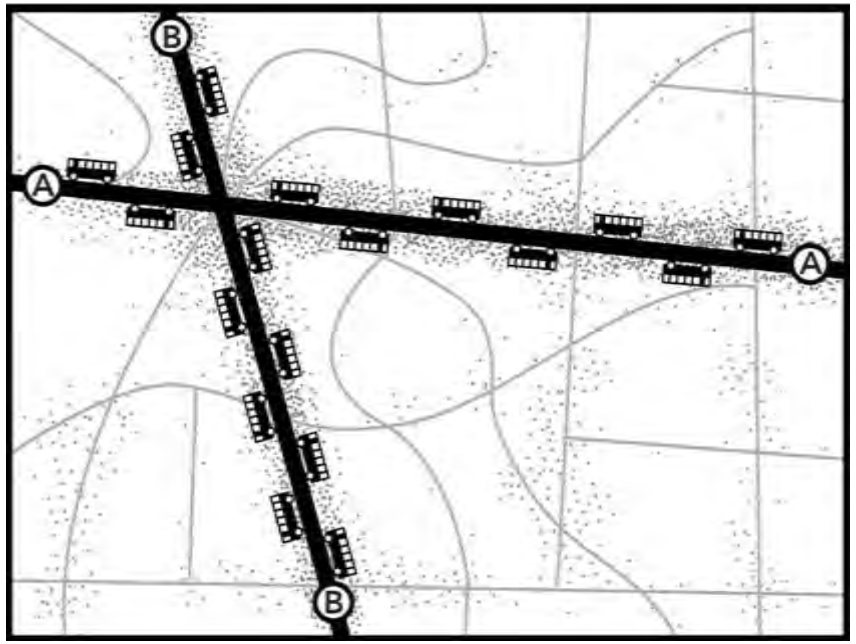
Different Goals, Different Service



Imagine you had 18 buses to serve this fictional town.

Dots are the locations of residents and jobs.

Ridership Goal



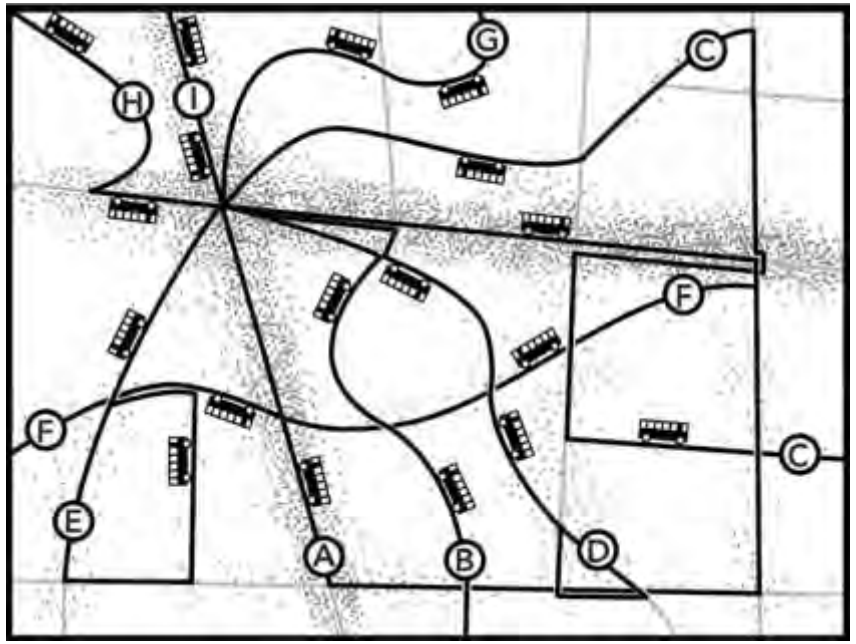
The Ridership Goal

Maximum access for the greatest possible number of people

But:

- *not available for everyone*
- *not necessarily available to all the people who need it most.*

Coverage Goal

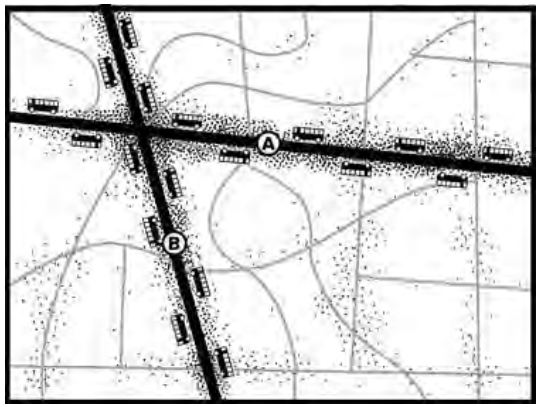


The Coverage Goal

Some service near everyone, a baseline level of access everywhere.

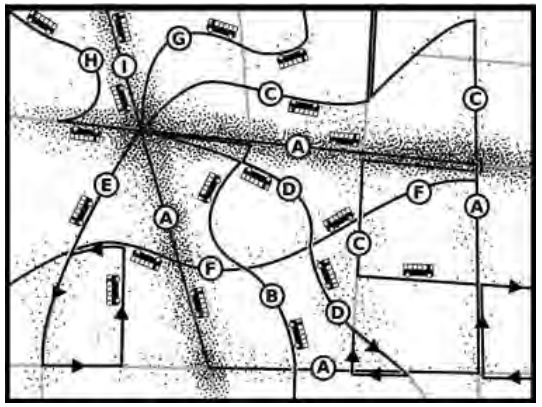
But it's unlikely to be useful for many people and trips.

Why both goals matter



Ridership Goal

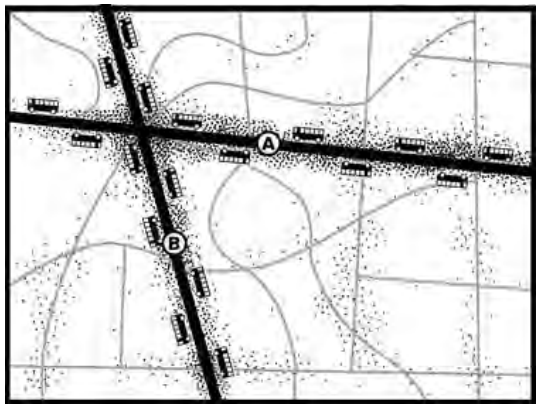
- Maximum <u>average</u> access to opportunity.
- Lowest subsidy per passenger.
- Support dense and walkable development.
- Emissions reduction.
- Reduction in vehicle miles traveled.



Coverage Goal

- Some service near <u>every</u> home and job.
- Baseline level of access available everywhere.
- Service to every member city or electoral district.

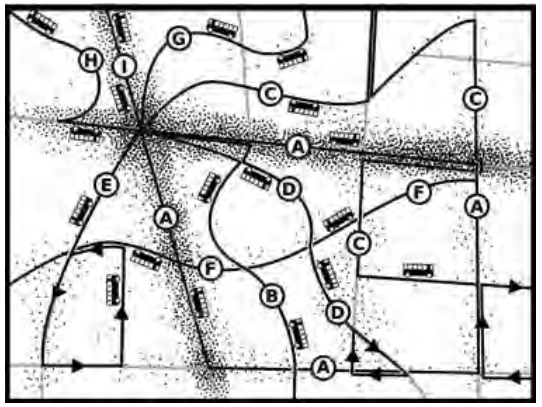
Where is equity or justice?



Ridership Goal

- Good access for most people.
- BUT no service for some.

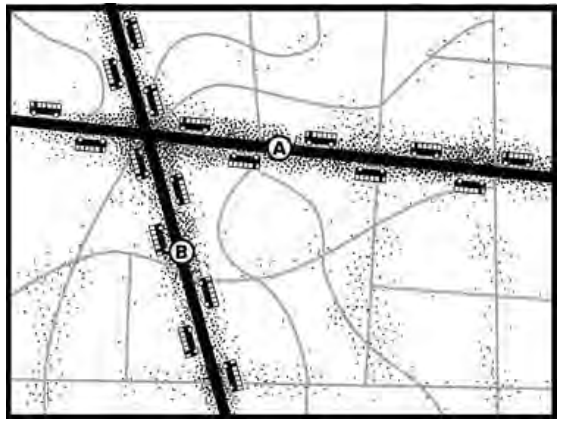
- No service to areas that are not dense, walkable, linear.

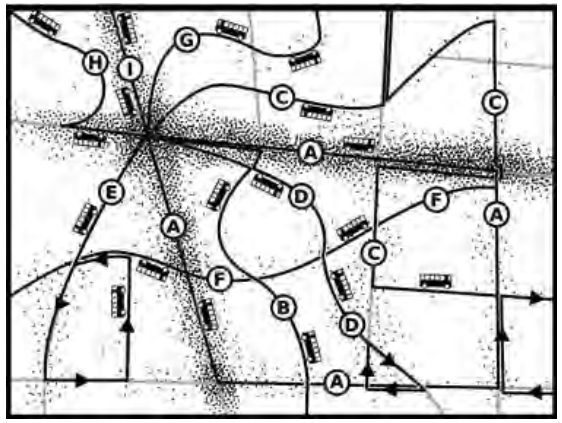


Coverage Goal

- Minimal, poor access for everyone.

This tradeoff is unavoidable.

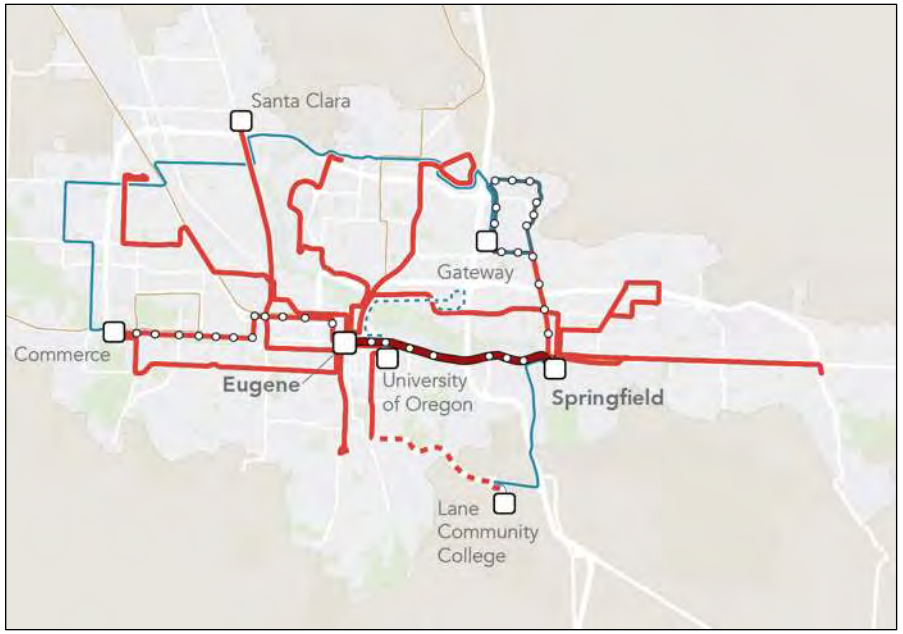




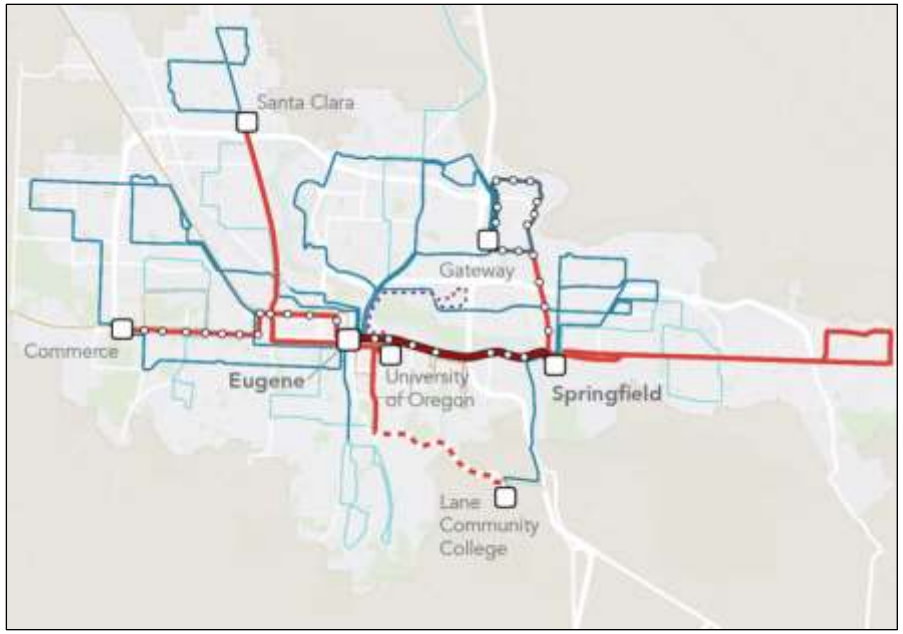
But you CAN choose a deliberate balance point on the spectrum between these goals. ("Devote ___% of our resources to the ridership goal and ___% to the coverage goal.")

Contrasting network concepts: example

Higher Ridership



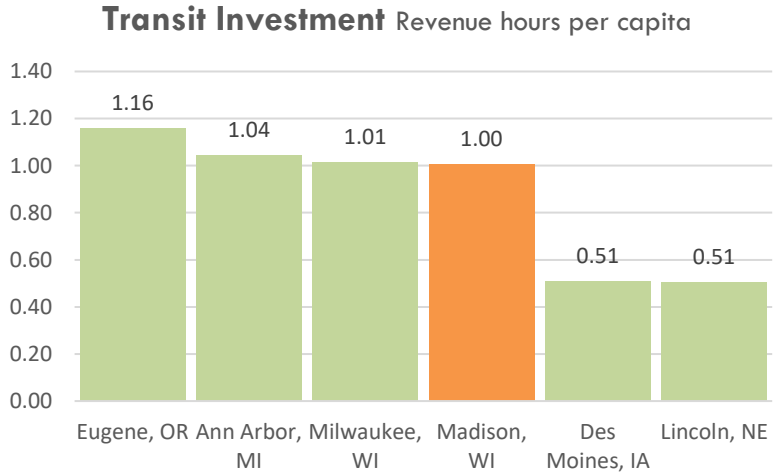
Higher Coverage

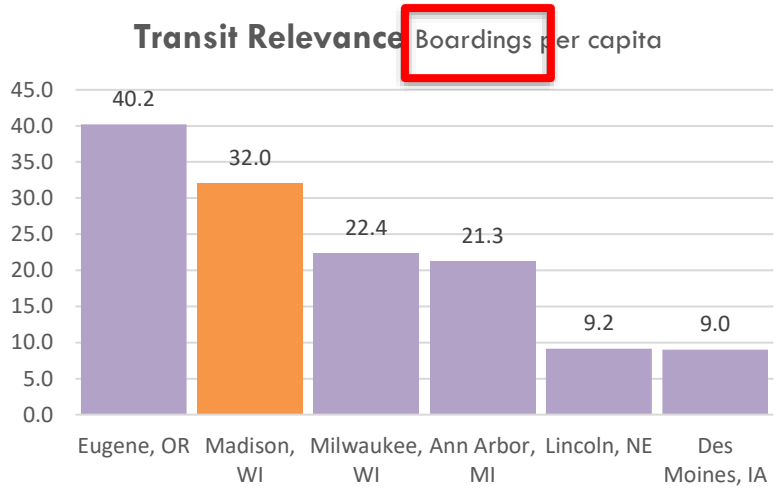


Example from Eugene, Oregon

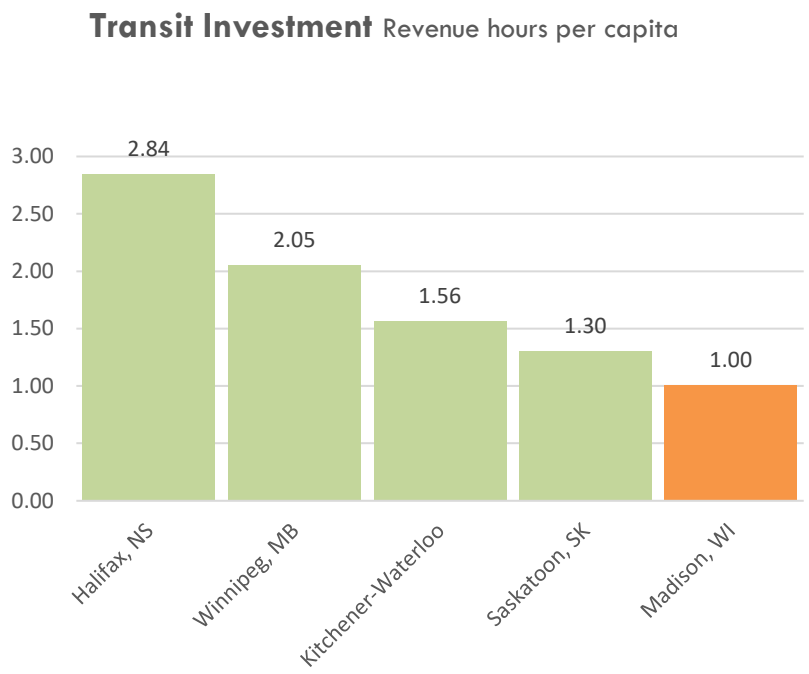
How much service is enough?

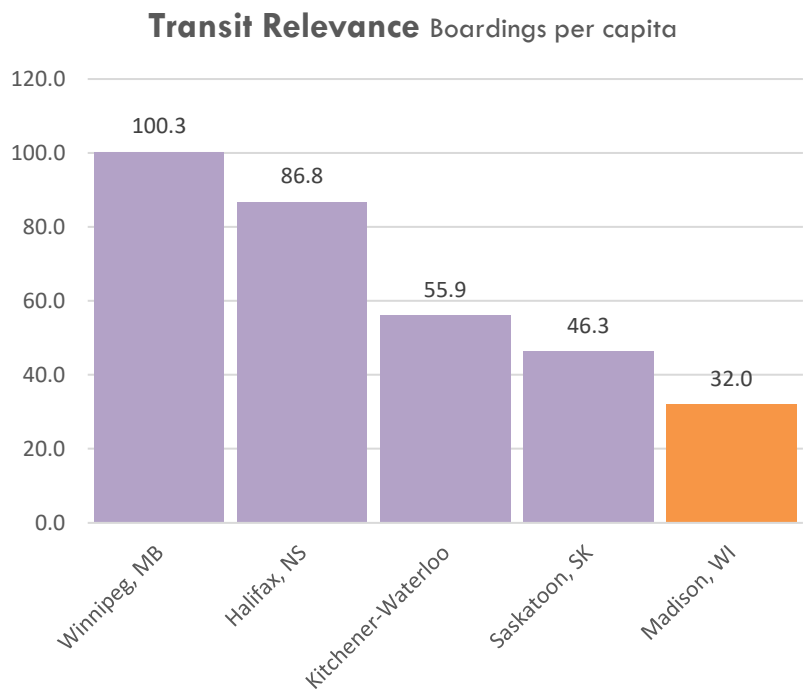
Service Quantity: US Peers





Service Quantity: Canada Peers





Engaging the Community

Next Steps

Community Engagement Timeline

Community Survey

- Released This Week
- English and Spanish
- Open Through May
- Dissemination Through Business, Community, and Neighborhood Organizations

Focus Groups and Interviews

- Middle & High School Students
- College Students
- Seniors
- Businesses
- Service Industry Employees
- BIPOC
- People Living with Disabilities
- Transportation Organizations and Advocates

Keep in Touch

1. Project Website & Email
   - www.mymetrobus.com/redesign
   - metroredesign@cityofmadison.com
2. Social Media
   - City of Madison
   - Metro
   - Urban Assets Community Engagement Ambassadors

metro transit | Network Redesign

Thank You!

- www.mymetrobus.com/redesign
- @cityofmadison
- @mymetrobus

- Project Contacts:
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  - Melissa Huggins, Melissa@urbanassetsconsulting.com
  - metroredesign@cityofmadison.com