



# Metro Transit Network Redesign

## Alternatives Report

JARRETT  
WALKER  
+ ASSOCIATES

Let's think about transit

Daniel Costantino  
Christopher Yuen

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# Why are we here today?

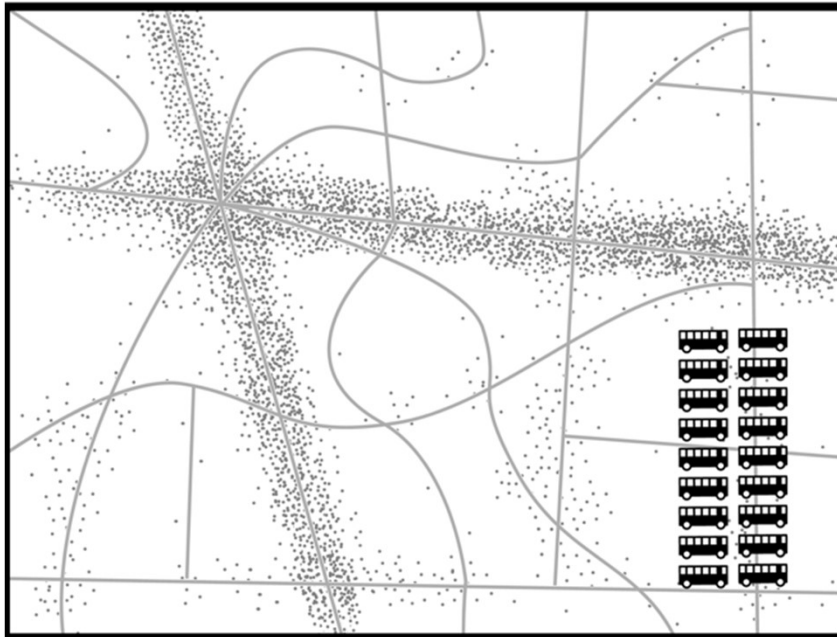
- We are re-envisioning where and how often the bus operates in Madison.
- This requires dealing with a trade-off between service that is:
  - **Frequent** and **direct** enough to be useful to many people => to get maximum **ridership**.
  - **Available within a short walk** of as many people and places as possible => to get maximum **coverage**.
- Metro and consultant staff have prepared contrasting alternatives to illustrate this trade-off to the public. **This presentation is a preview** of those alternatives.

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# Ridership vs. Coverage Trade-Off

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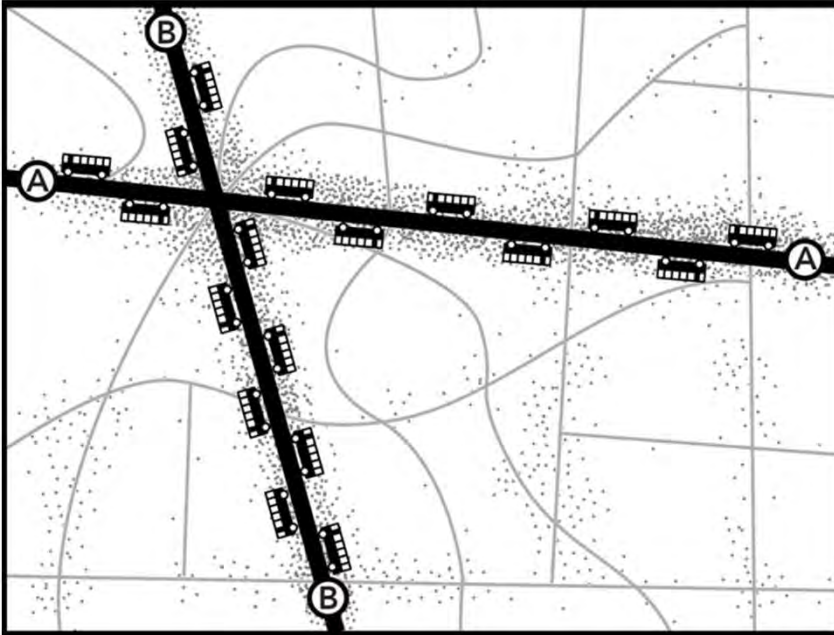
# Different Goals, Different Service



Imagine you had 18 buses to serve this fictional town.

Dots are the locations of residents and jobs.

# Ridership Goal



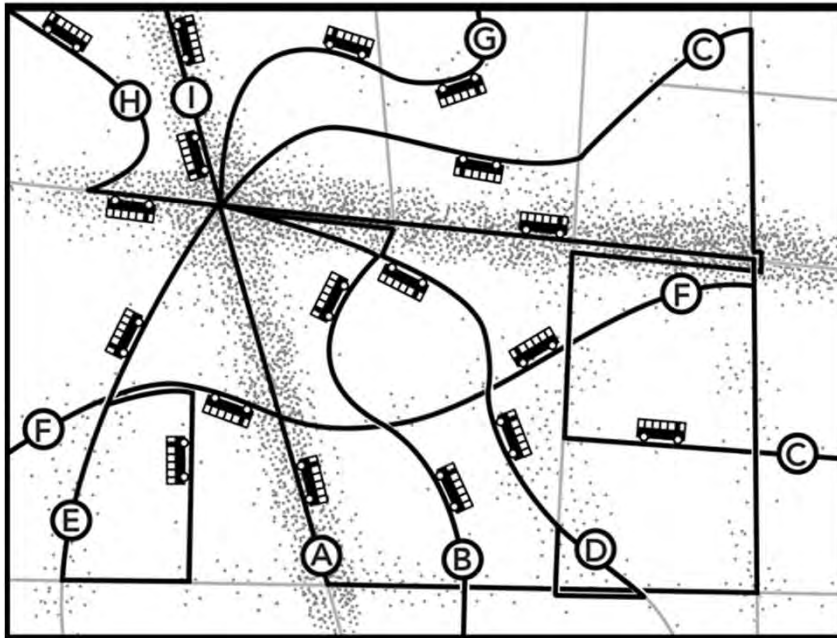
The Ridership Goal

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

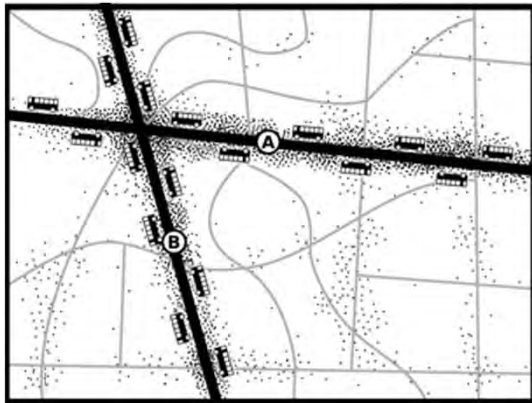


The Coverage Goal

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

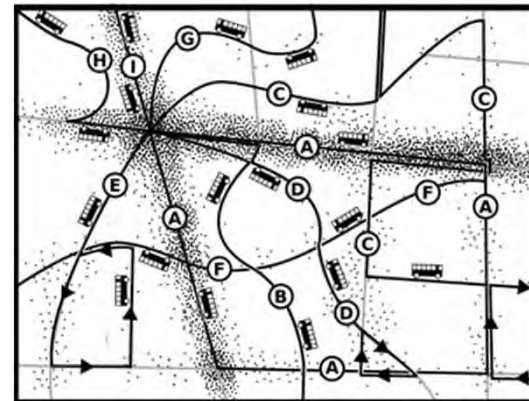
*But it's unlikely to be useful for many people and trips.*

# Both goals matter



**Ridership Goal**

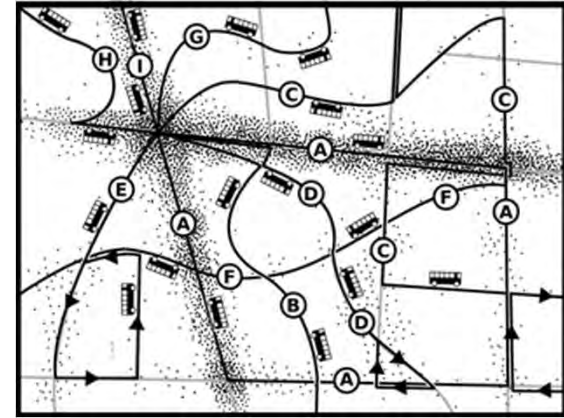
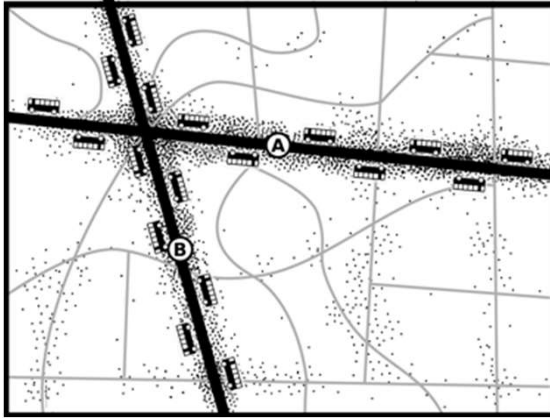
- Maximum total access to opportunity.
- Lowest subsidy per passenger.
- Support dense and walkable development.
- Emissions reduction.
- Reduction in vehicle miles traveled.



**Coverage Goal**

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

# This tradeoff is unavoidable.



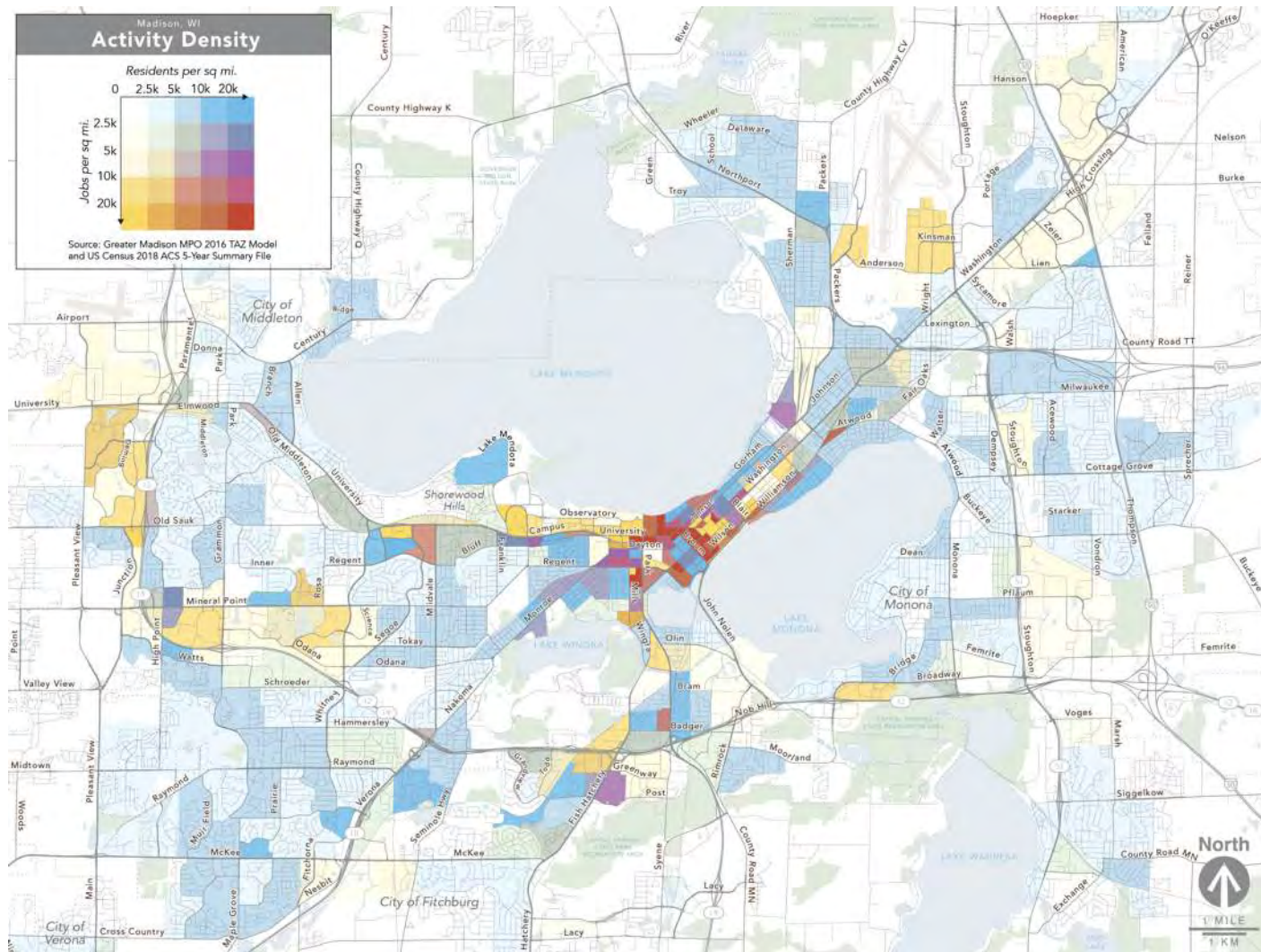
But you CAN choose a deliberate balance point on the spectrum between these goals. ("Devote \_\_\_% of our resources to the ridership goal and \_\_\_% to the coverage goal.")



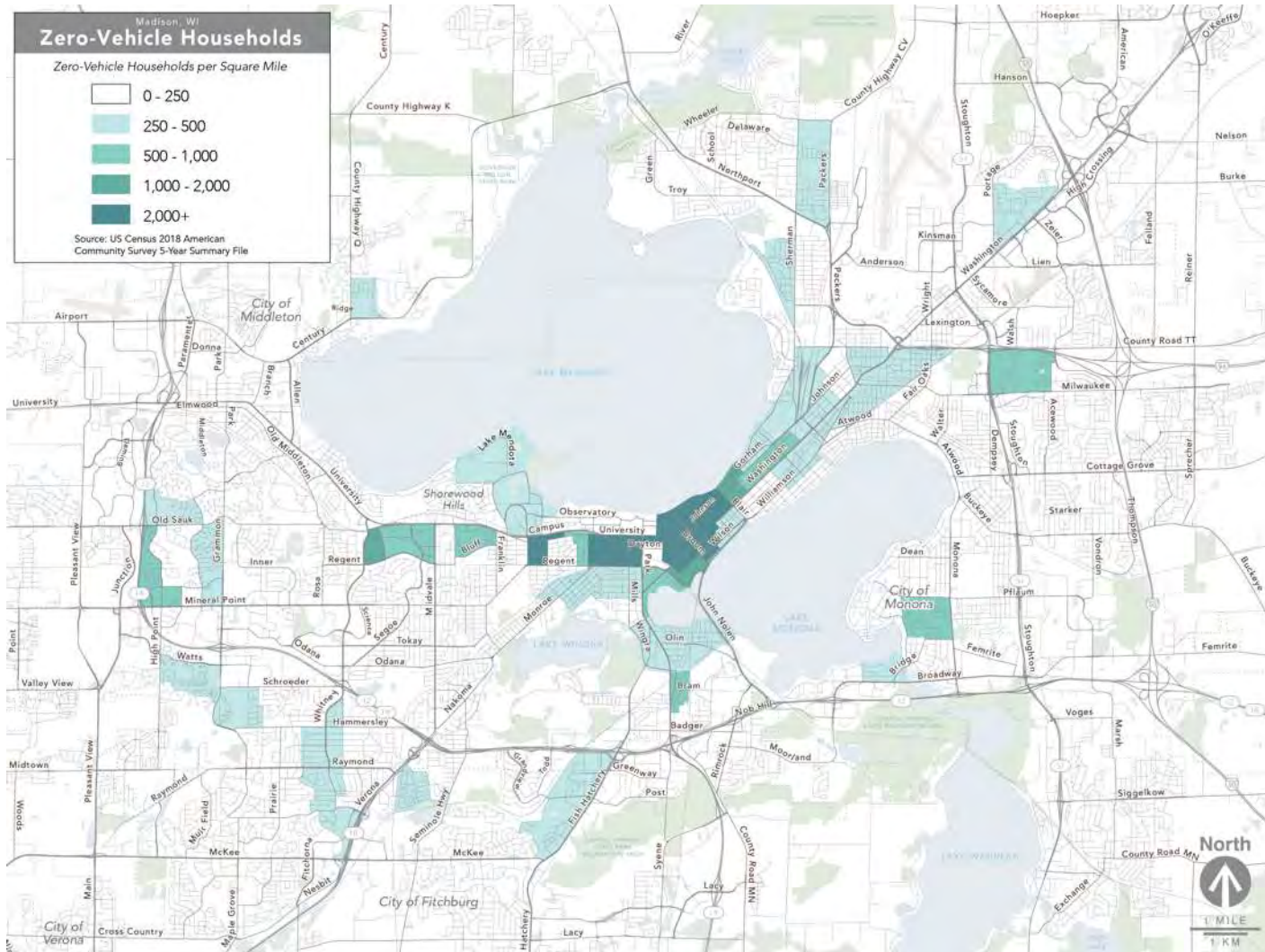
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# What this Means in Madison

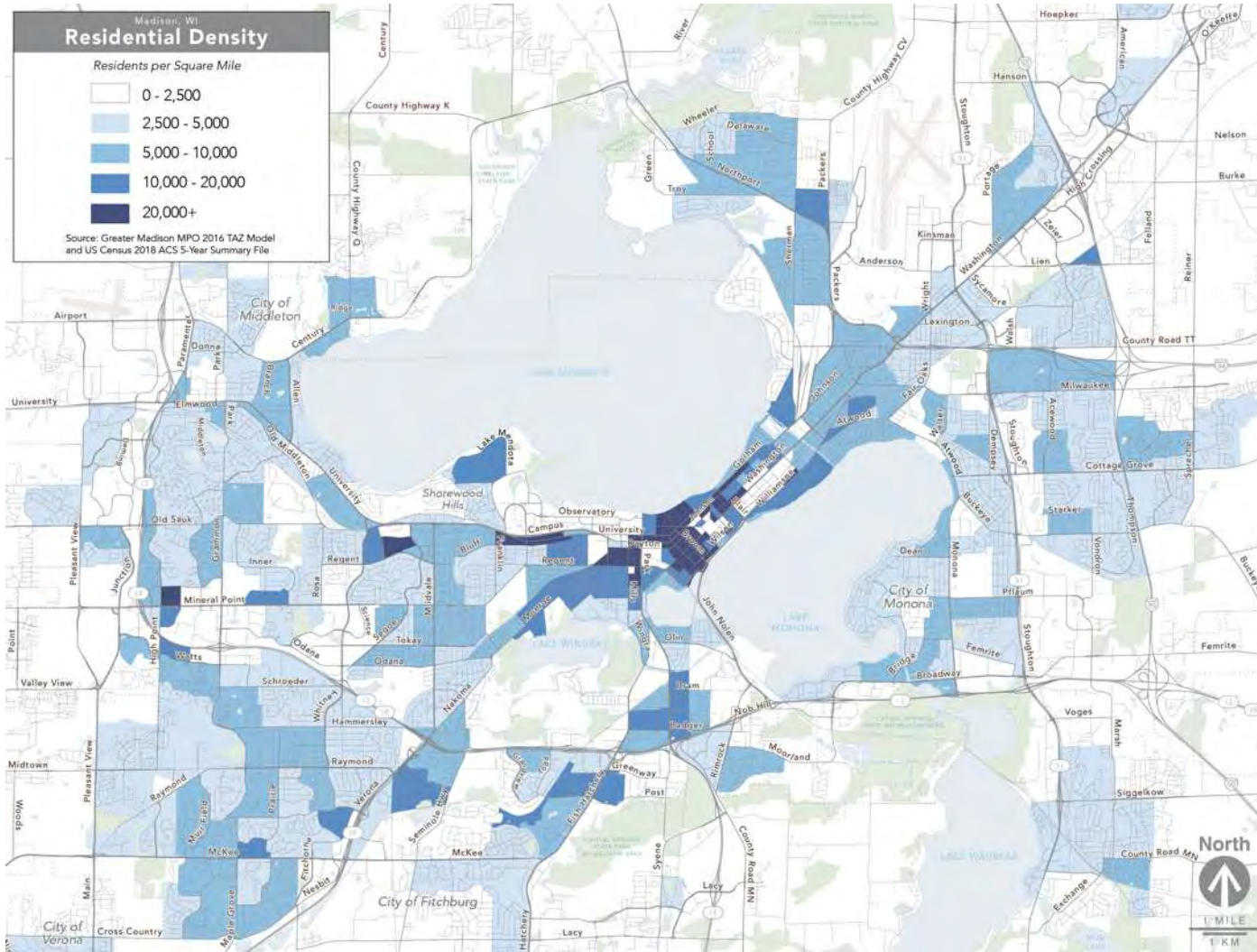
# Ridership. The highest densities of people and jobs are in Central Madison.



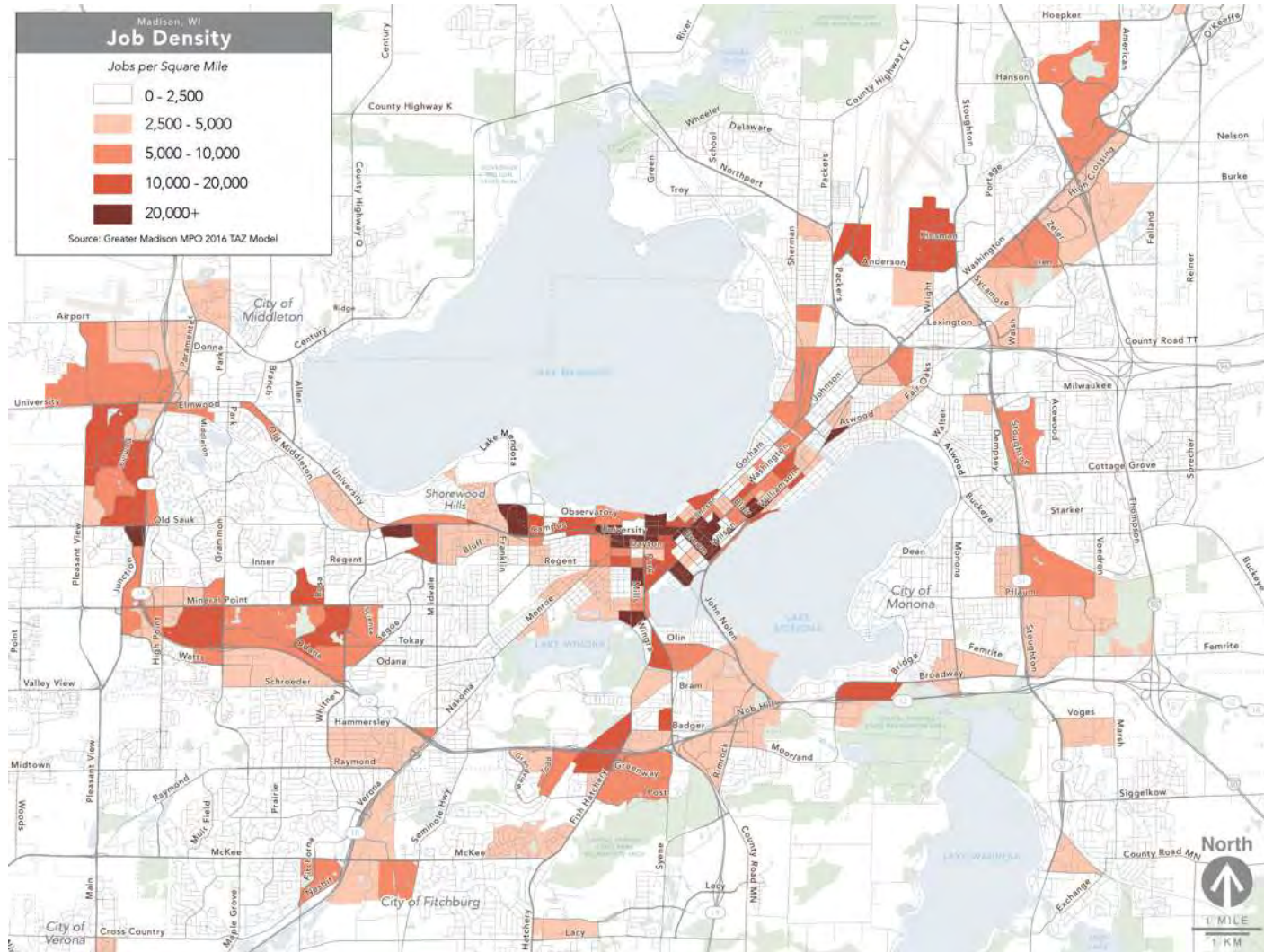
**Ridership.** This includes the largest concentration of people likely to use transit often.



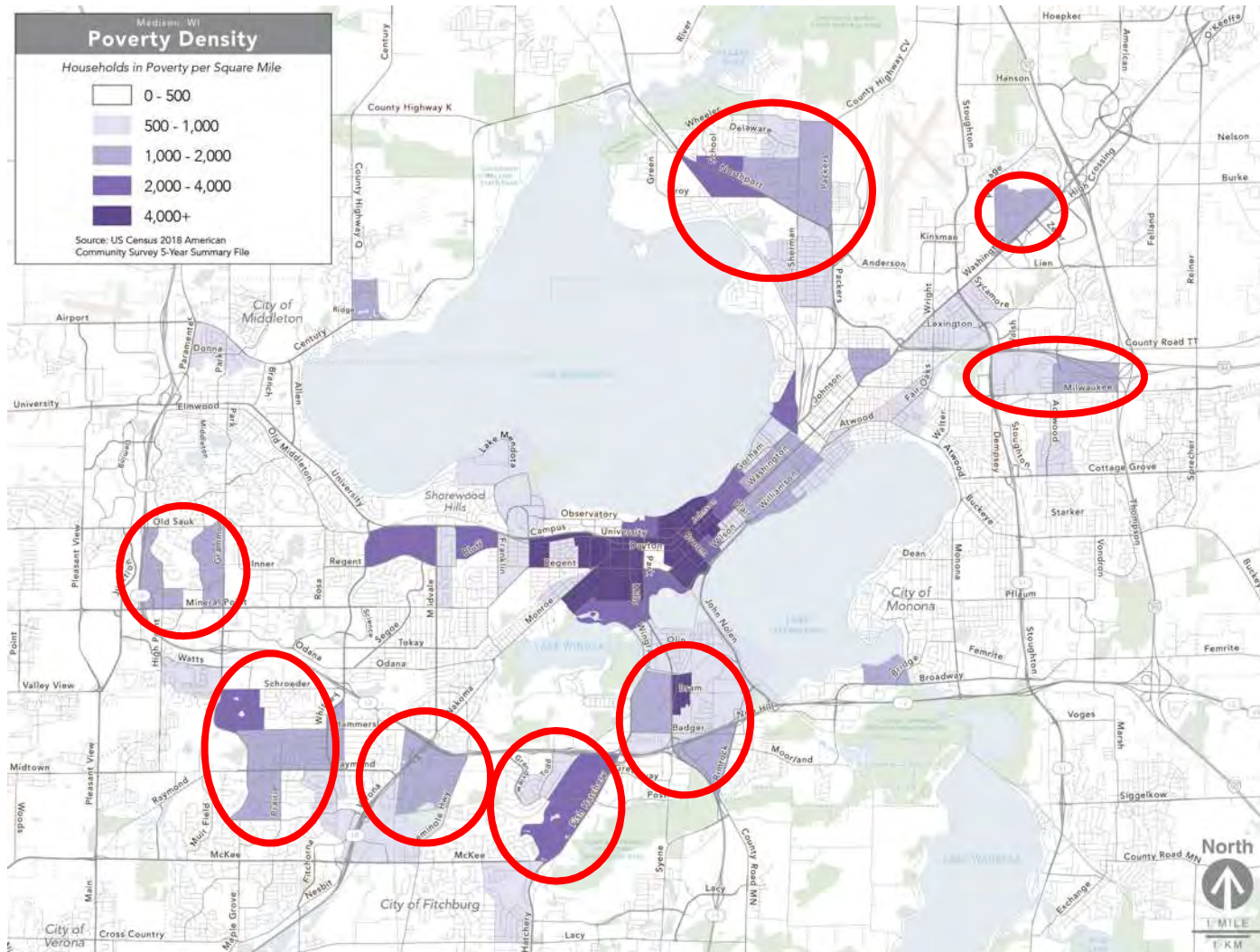
# Coverage. But people live all over the city.



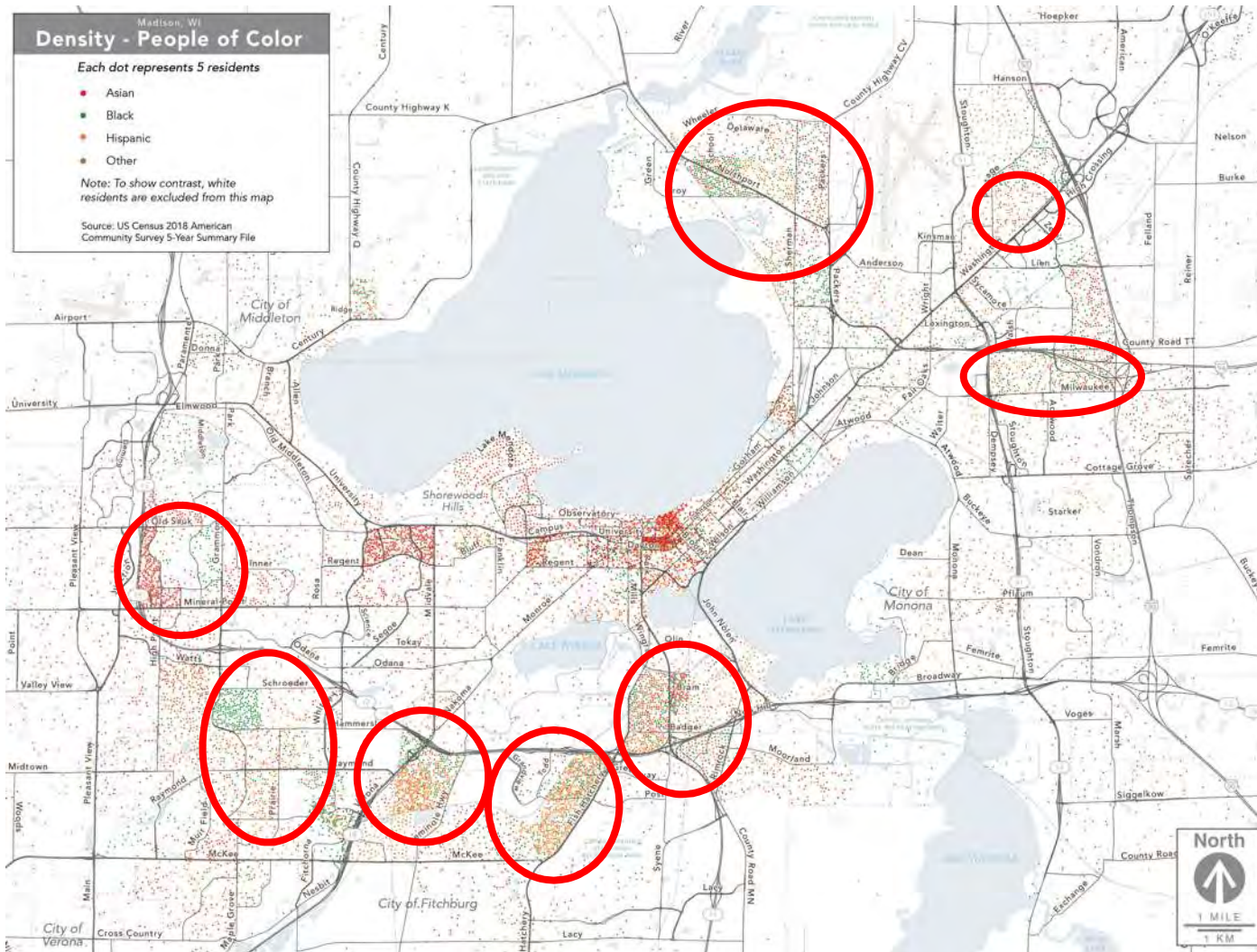
**Coverage.** And many jobs and other places people need to go are far from Downtown.



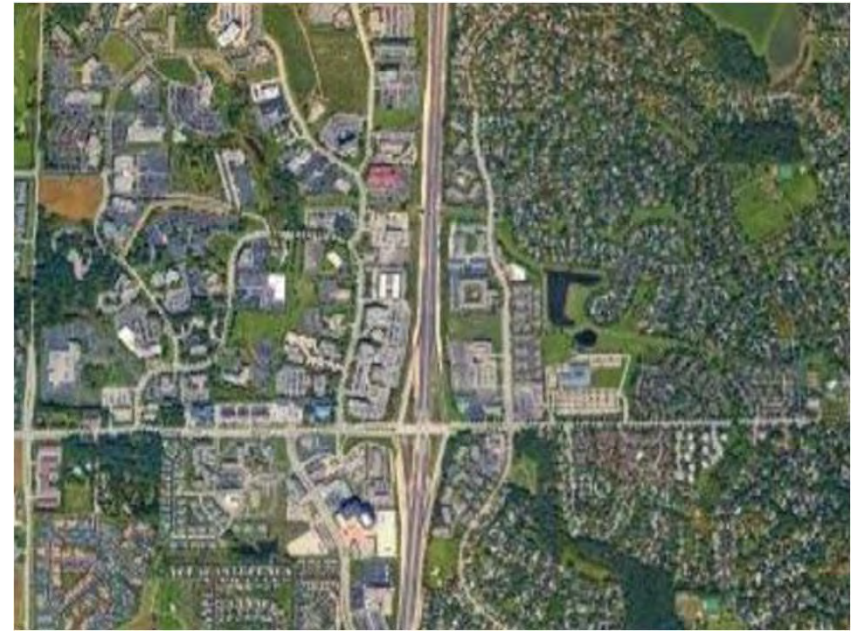
**Equity.** Many of the people who need transit most live in peripheral areas.



**Equity.** This includes most of Madison's disadvantaged communities of color.



Most peripheral areas of Madison weren't designed with transit front of mind.

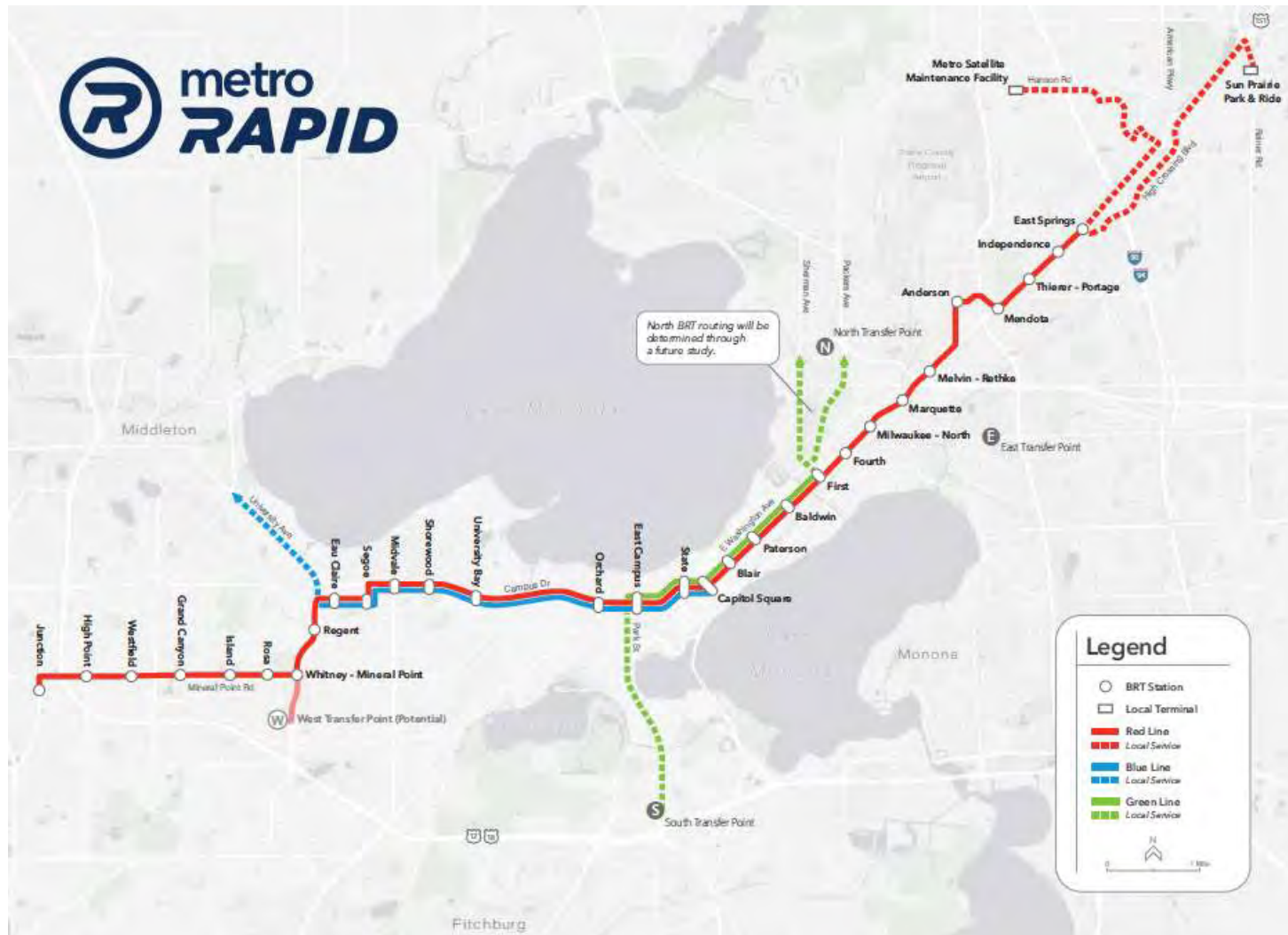




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# Network Alternatives

# The BRT is central to any network redesign concept.



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## There's only so much money to go around.

- Important consequences
  - To match available operating funds, service levels will return to what they were in 2019.
  - A substantial part of the network's existing resources will go to operating BRT.
  - Any decision to run more service in one location than in 2019, is a decision to run less service in some other location.

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# Both alternatives are realistic.




## Neither is a recommendation

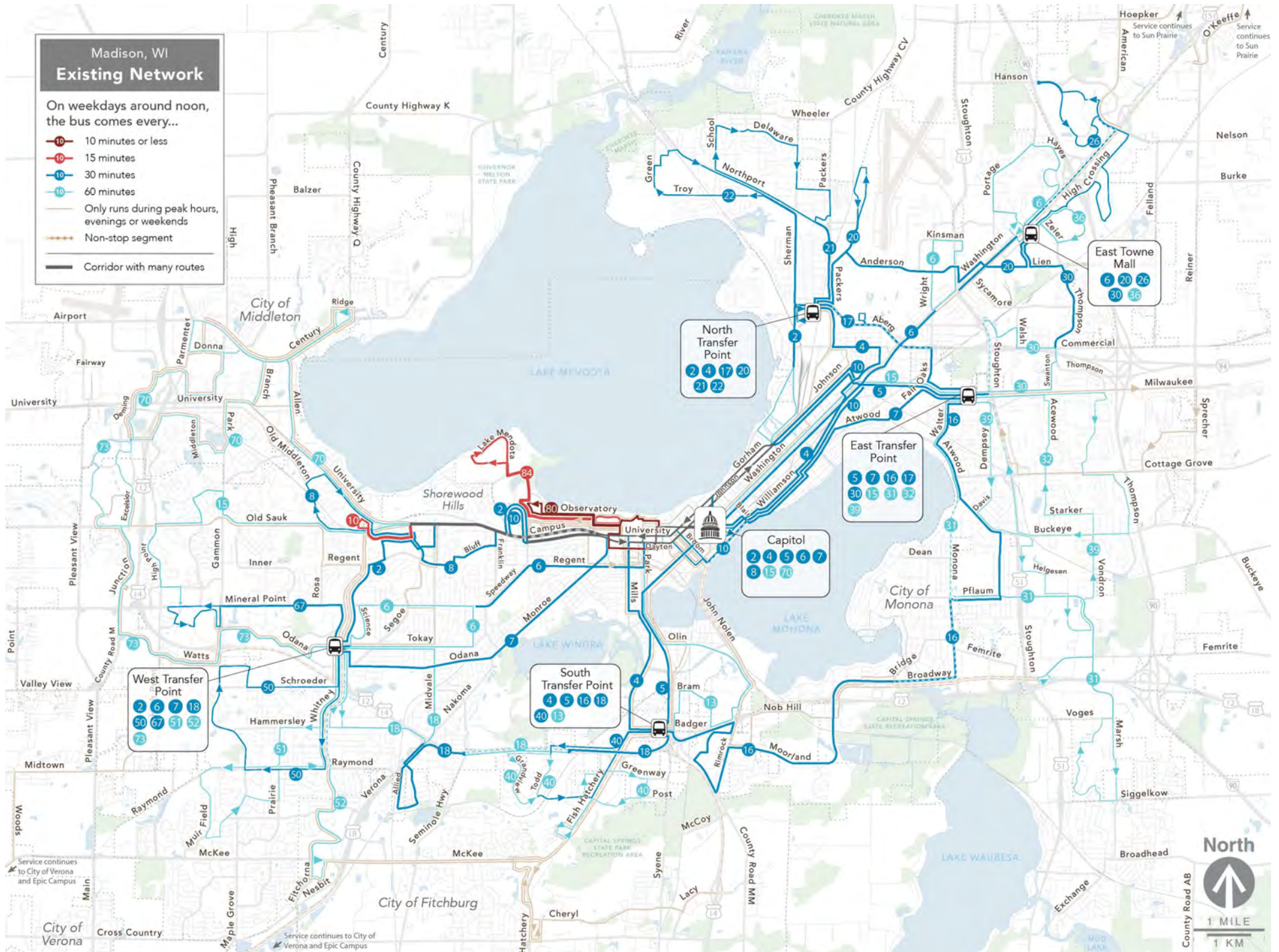
- These alternatives are intended to show the extremes of what might be possible in Madison.
- But both are likely to generate strong reactions in people who think differently.
- The point of the next phase of outreach is to find out which alternative is closest to what the public might accept, and the ways it will have to change to become a Draft Network Plan.

# Madison, WI Existing Network

On weekdays around noon, the bus comes every...

-  10 minutes or less
-  15 minutes
-  30 minutes
-  60 minutes

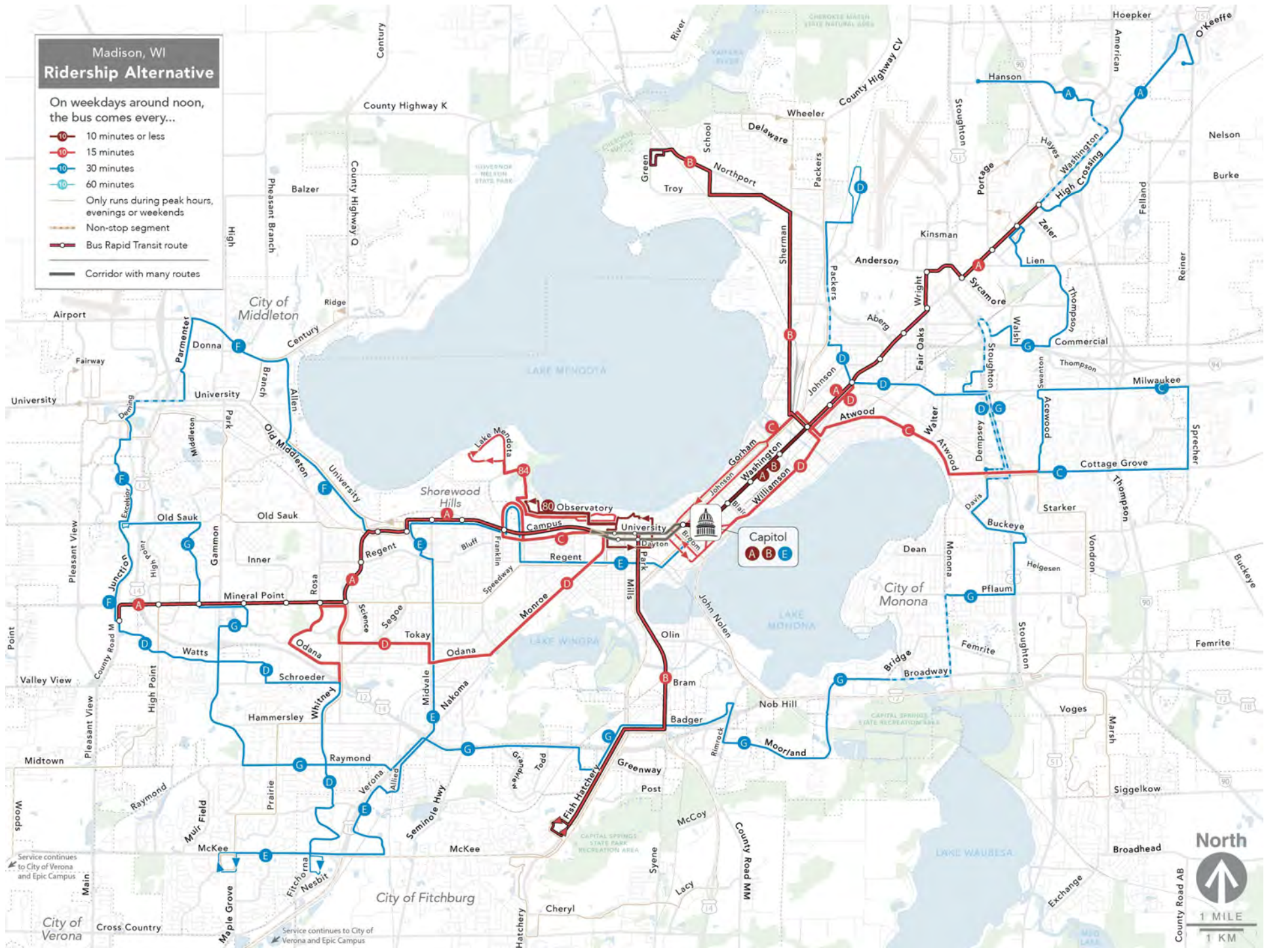
-  Only runs during peak hours, evenings or weekends
-  Non-stop segment
-  Corridor with many routes



### Madison, WI Ridership Alternative









On weekdays around noon,  
the bus comes every...

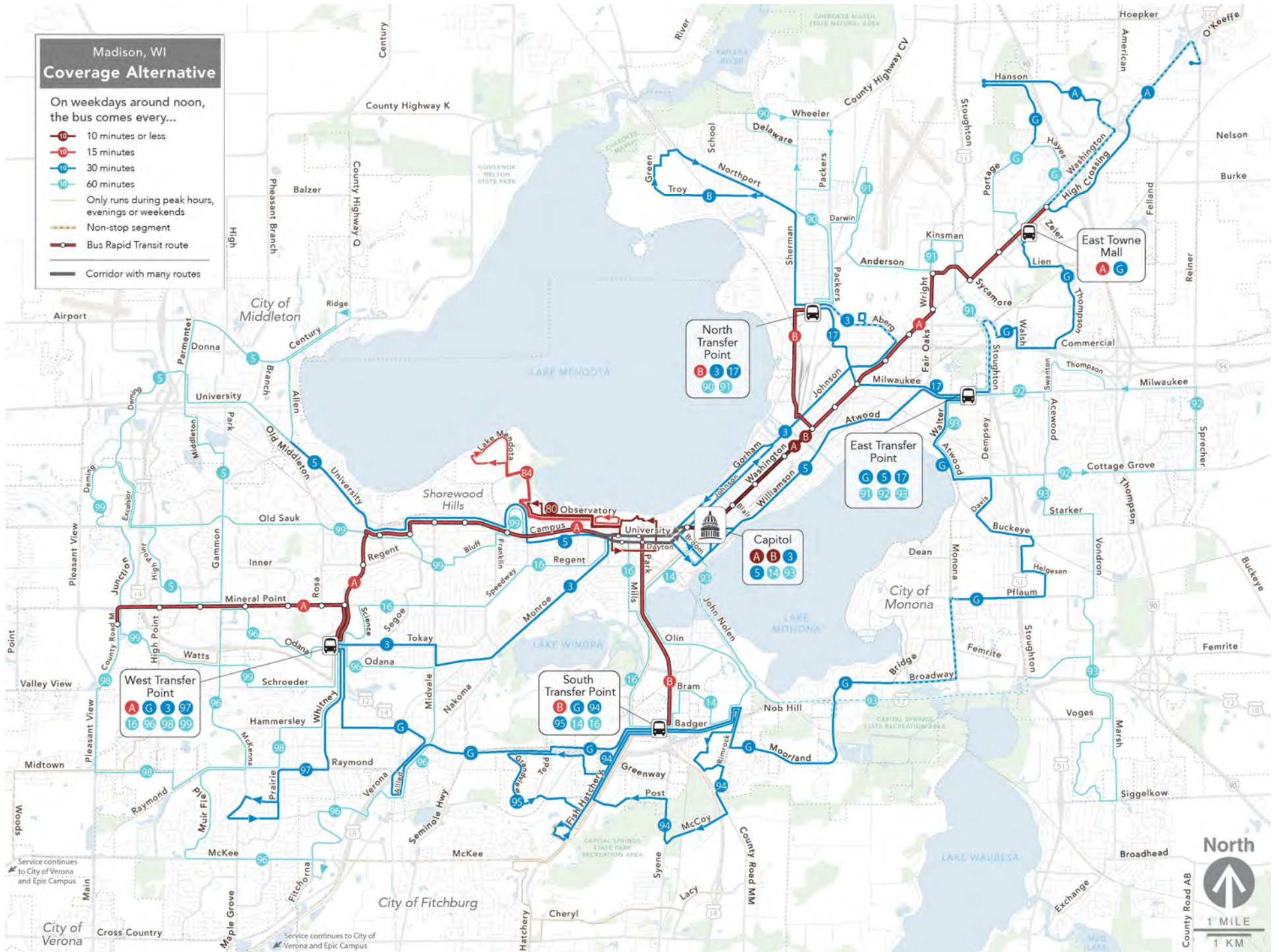
- 10 minutes or less
- 15 minutes
- 30 minutes
- 60 minutes
- Only runs during peak hours, evenings or weekends
- Non-stop segment
- Bus Rapid Transit route
- Corridor with many routes



# Madison, WI Coverage Alternative

On weekdays around noon,  
the bus comes every...

-  10 minutes or less
-  15 minutes
-  30 minutes
-  60 minutes
-  Only runs during peak hours, evenings or weekends
-  Non-stop segment
-  Bus Rapid Transit route
-  Corridor with many routes



**North**



1 MILE  
1 KM

Service continues to City of Verona and Epic Campus

Service continues to City of Verona and Epic Campus

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# Comparing Key Outcomes Proximity to Service



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# Proximity

How many people are near transit service in Madison?

- The charts in the following slides estimate **how many people in the City of Madison would live within a ¼-mile walk of a bus stop**, and how often the bus comes by.
- This is a measure of **coverage**.
  - It tells us whether people have some level of insurance against isolation in their neighborhood.
  - It does not tell us whether anybody would find the service useful on a regular basis.

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# Proximity

How many people are near transit service in Madison?

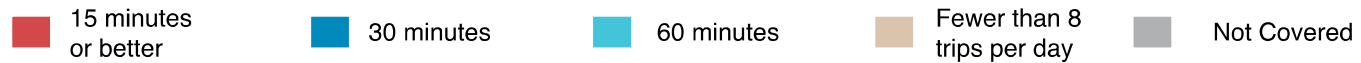
- Please note:
  - All of the measures shown in this presentation are for weekdays, during the middle of the day.
  - Service levels are likely to be higher at peak times, and lower on weekends and evenings.

# Proximity

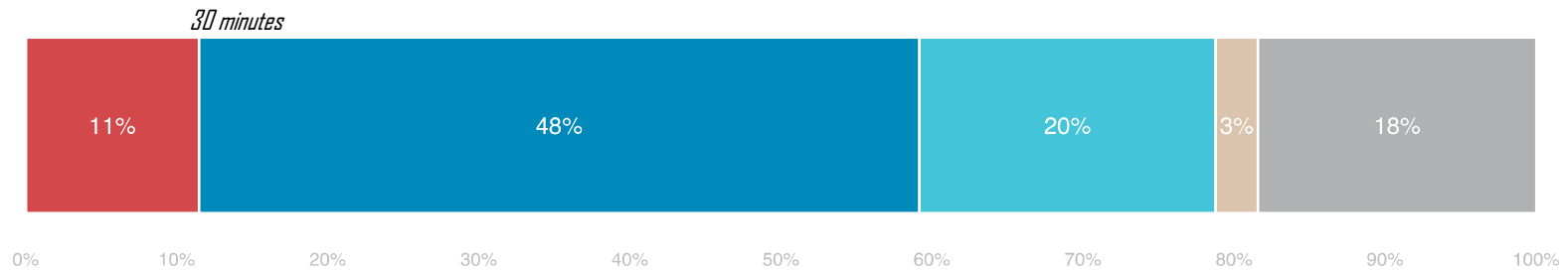
How many people are near transit service in Madison?

## Existing Network

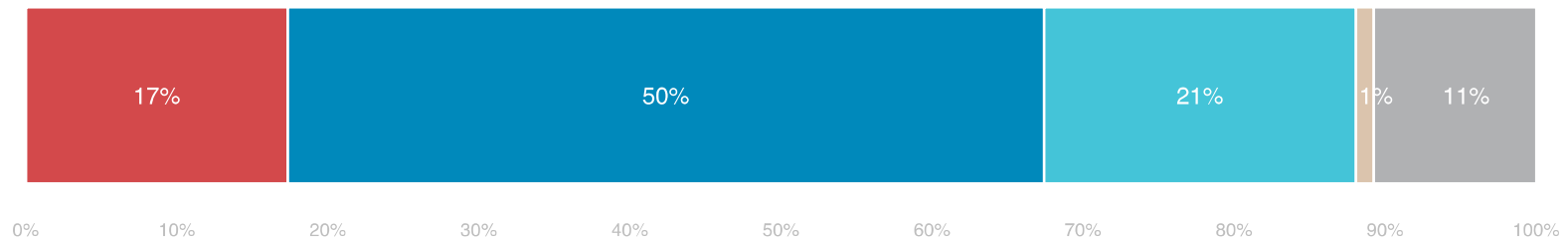
*On weekdays in the daytime, the bus comes every:*



Residents



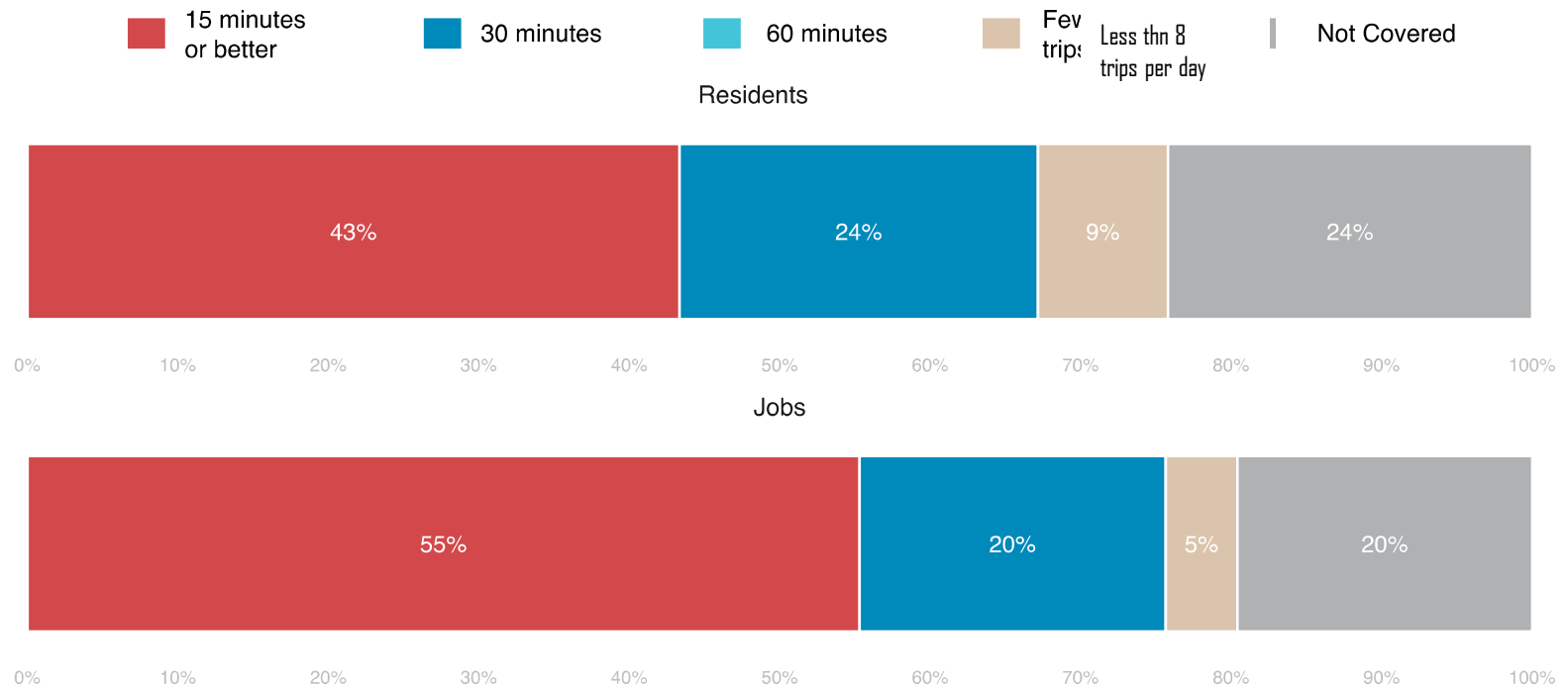
Jobs



# Proximity

How many people would be near transit service in Madison?

## Ridership Alternative

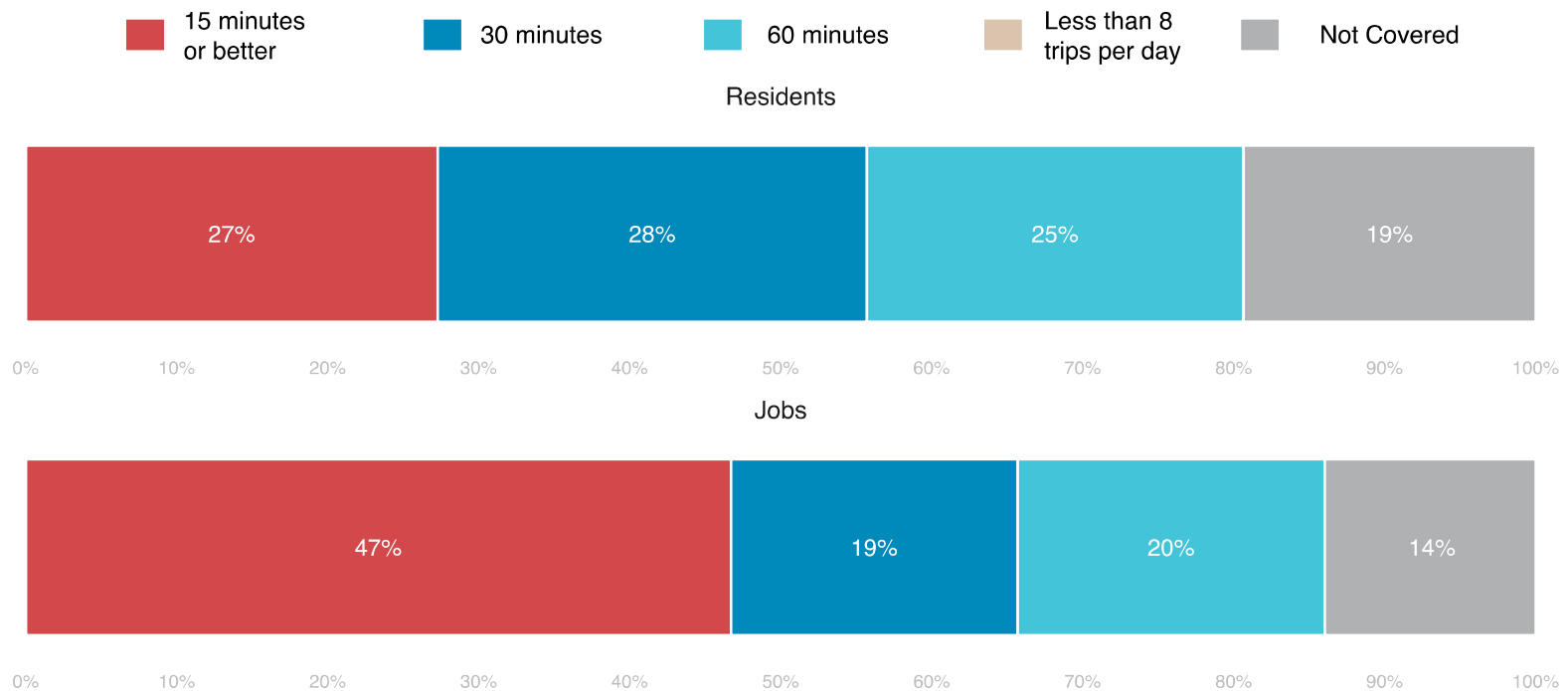


Note: Proximity is measured as being located within 1/4 mile of a bus stop.

# Proximity

How many people would be near transit service in Madison?

## Coverage Alternative

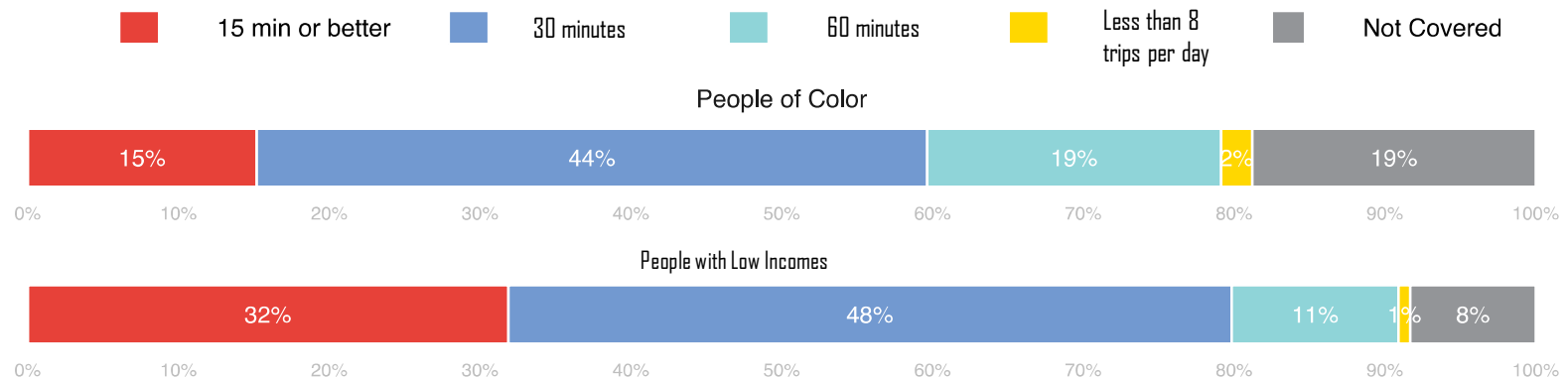


Note: Proximity is measured as being located within 1/4 mile of a bus or rail stop.

# Proximity + Equity

How many people would be near transit service in Madison?

## Existing Network

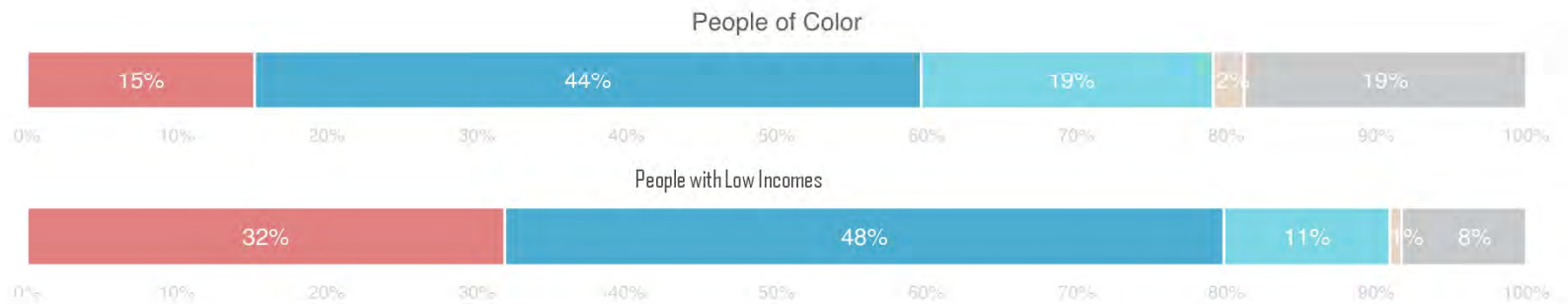


Note: on these charts, People with Low Incomes = People living in households with incomes below 100% of the federal poverty line.

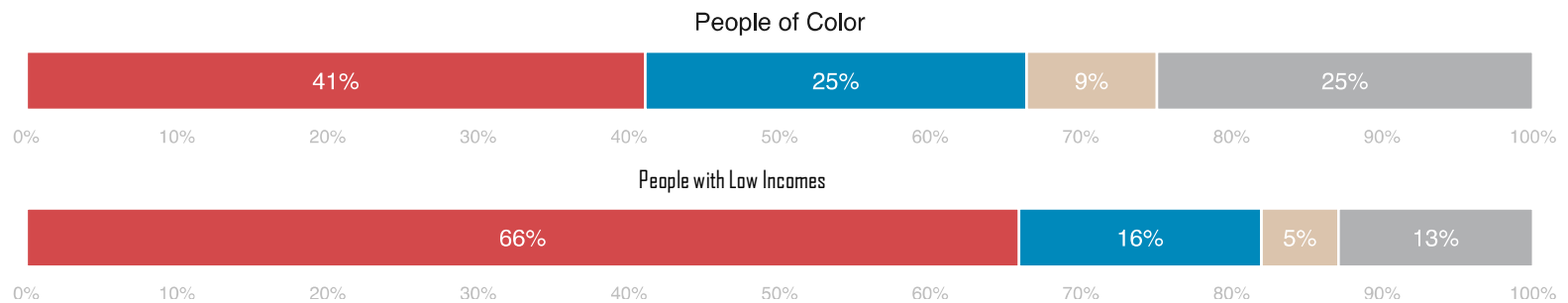
# Proximity + Equity

How many people would be near transit service in Madison?

## Existing Network



## Ridership Alternative

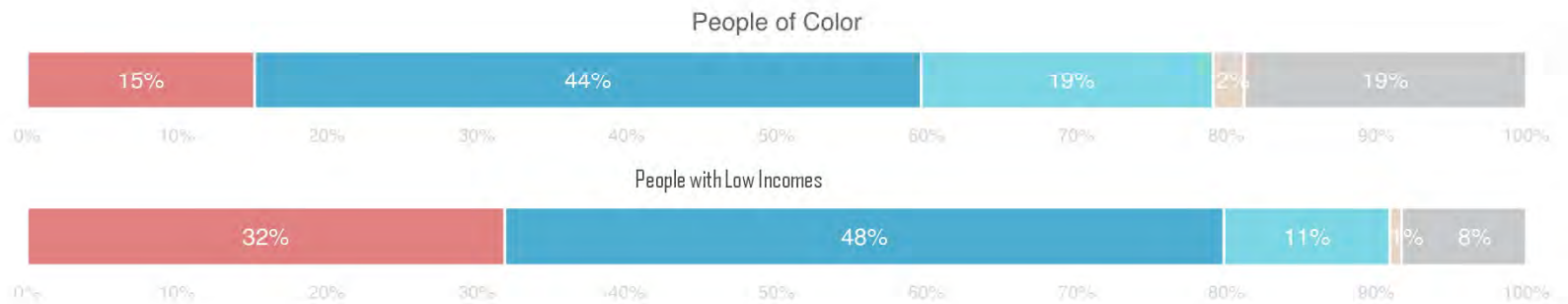


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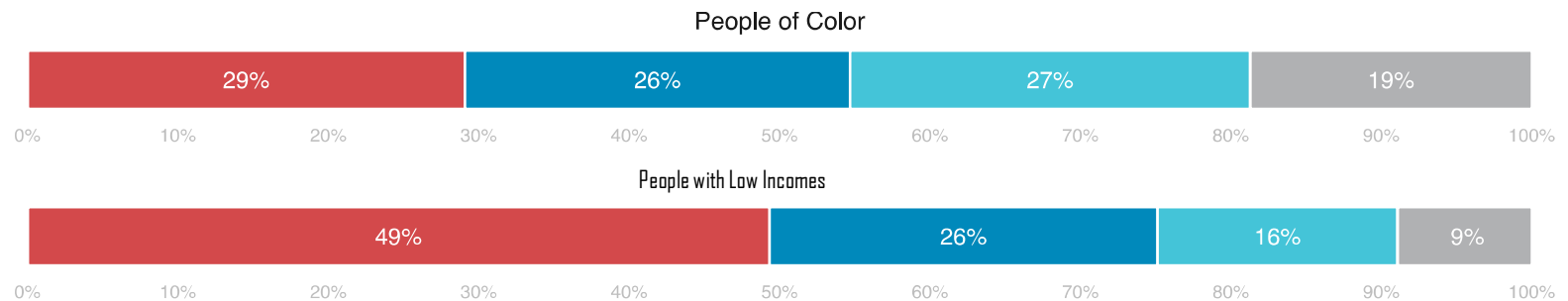
# Proximity + Equity

How many people would be near transit service in Madison?

## Existing Network



## Coverage Alternative



Note: on these charts, People with Low Incomes = People living in households with incomes below 100% of the federal poverty line.



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# Comparing Key Outcomes

## Access to jobs within 45 minutes

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# Access

How many places can you reach within 45 minutes?

- The maps on the following slides estimate **how many more jobs someone could reach within 45 minutes by transit** and walking, for each alternative, compared to today.
- This is a measure of the service's usefulness; **transit needs to be useful to generate ridership.**
  - We measure access to jobs because we have good data on jobs, not because transit's main purpose is commuting.
  - Access to jobs matters for many trips, because most of the places people need to go are places of employment.
  - This measure is not a prediction of ridership change.

# Access




How many places can you reach within 45 minutes?





- When we say you can get somewhere in 45 minutes, that includes the time it takes to:
  - **Walk** to the nearest bus stop.
  - **Wait** for the next bus to come.
  - **Ride** the bus.
  - **Walk** to your destination.
  - Make any **transfers**.
- We're interested in how many places you can get to in 45 minutes, because that's about the amount of time it takes to drive from one end of Madison to the other.

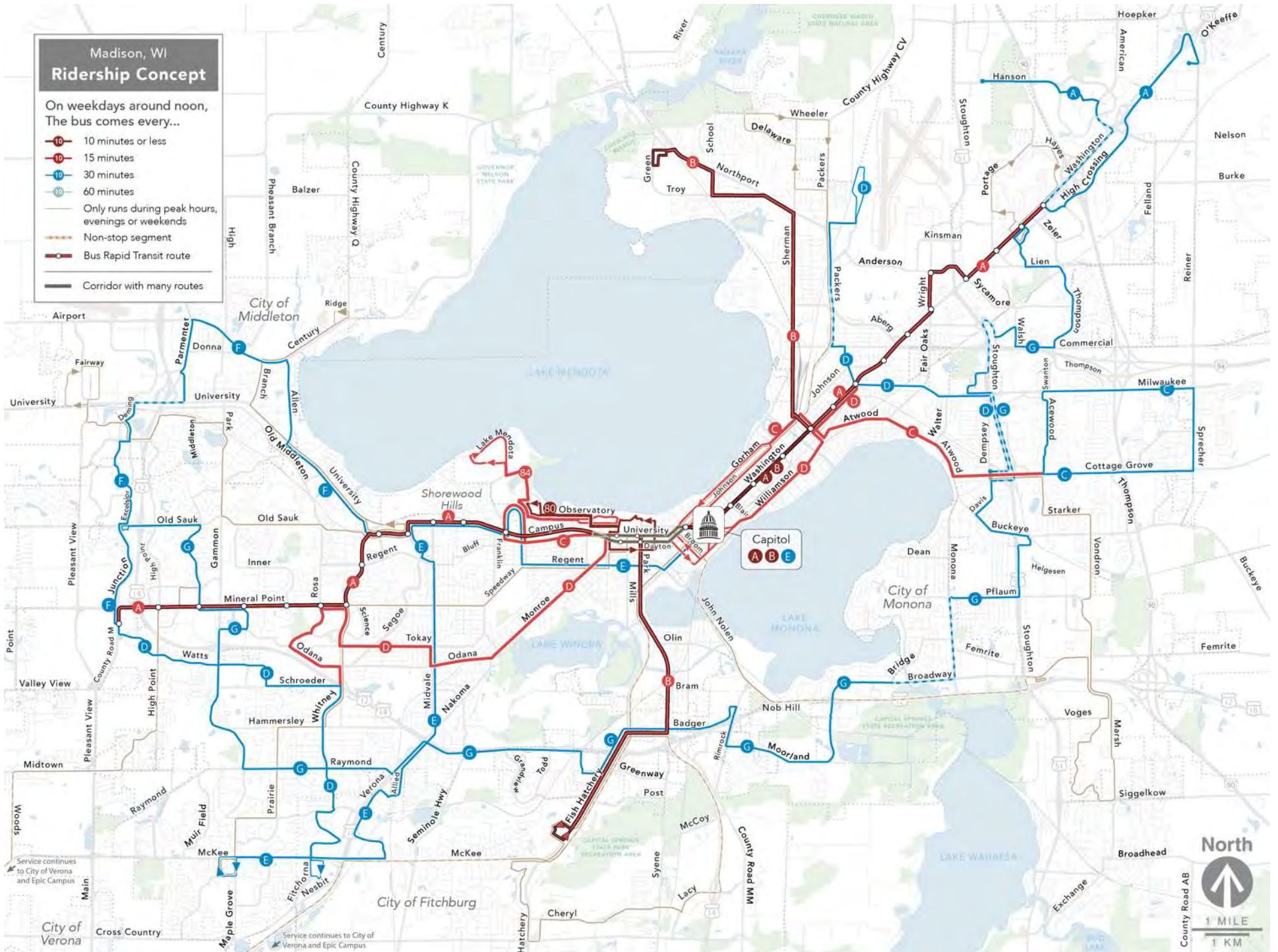


# Madison, WI Ridership Concept

On weekdays around noon,  
The bus comes every...

-  10 minutes or less
-  15 minutes
-  30 minutes
-  60 minutes

-  Only runs during peak hours, evenings or weekends
-  Non-stop segment
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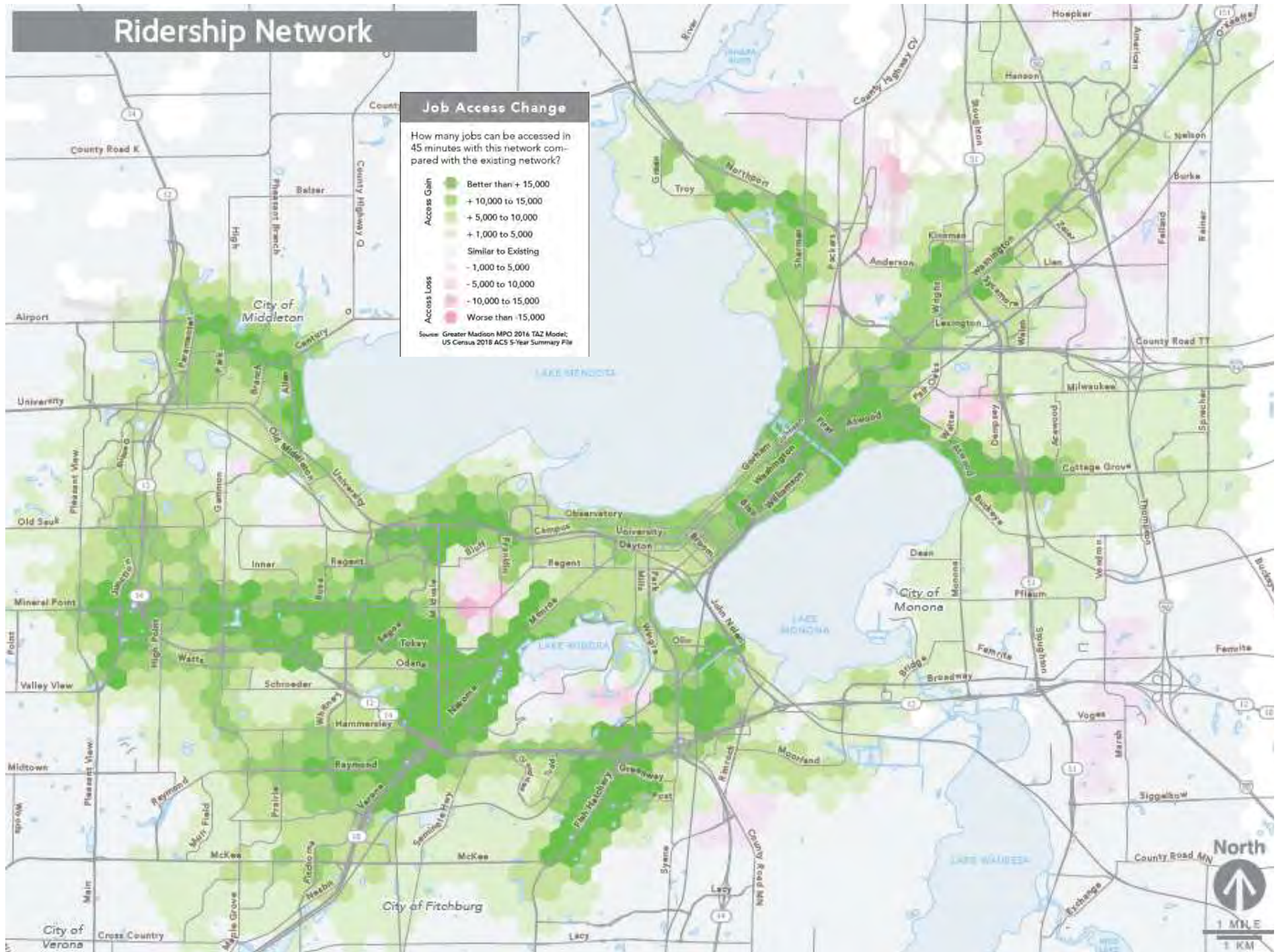
# Ridership Network

## Job Access Change

How many jobs can be accessed in 45 minutes with this network compared with the existing network?

- |             |                     |
|-------------|---------------------|
| Access Gain | Better than +15,000 |
|             | +10,000 to 15,000   |
|             | +5,000 to 10,000    |
|             | +1,000 to 5,000     |
|             | Similar to Existing |
| Access Loss | -1,000 to 5,000     |
|             | -5,000 to 10,000    |
|             | -10,000 to 15,000   |
|             | Worse than -15,000  |

Source: Greater Madison MPO 2016 TAZ Model; US Census 2010 ACS 5-Year Summary File



# Ridership Network Population Dot Density (4pts)

**Job Access Change**

How many jobs can be accessed in 45 minutes with this network compared with the existing network?

**Access Gain**

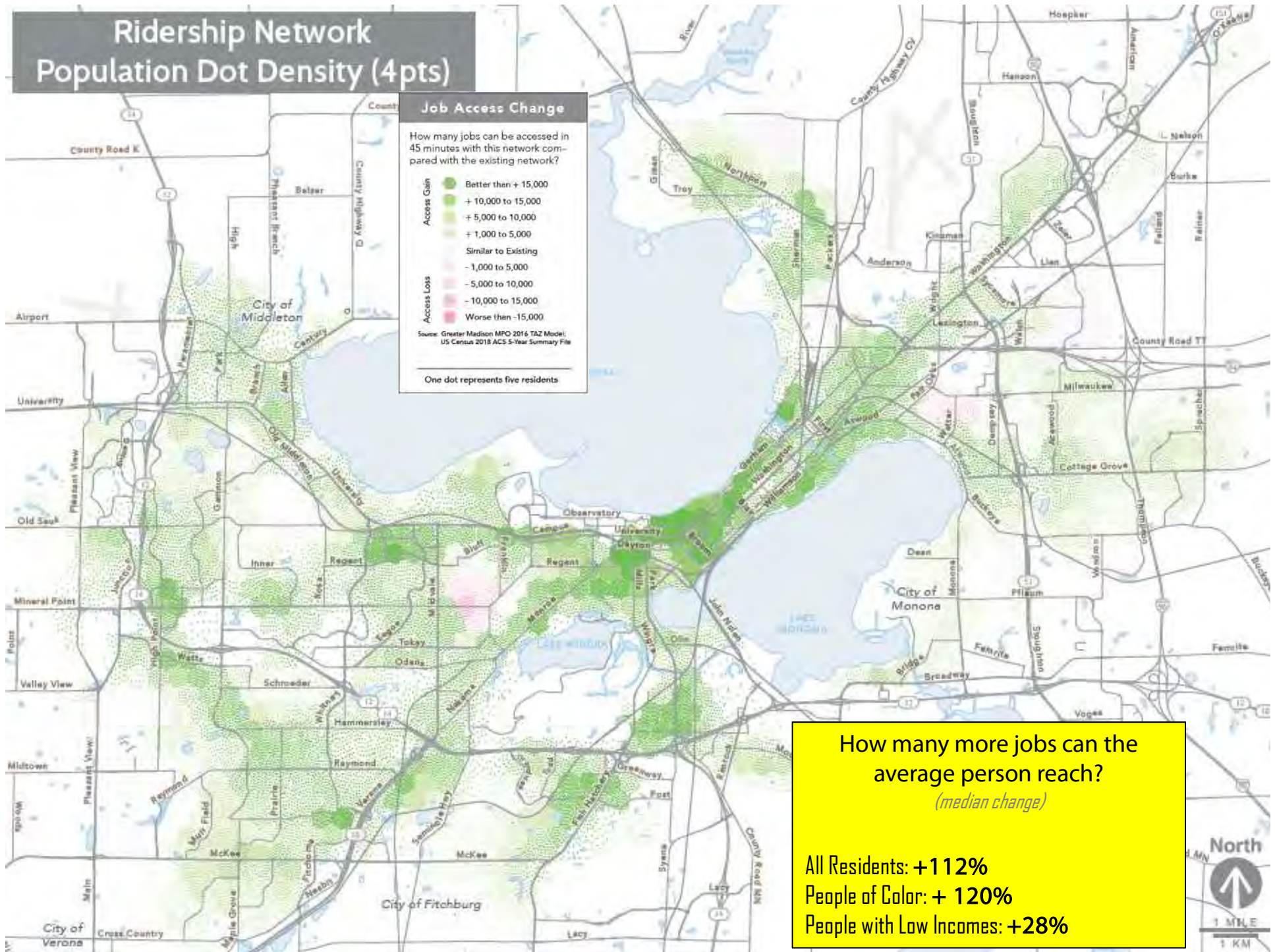
- Better than +15,000
- +10,000 to 15,000
- +5,000 to 10,000
- +1,000 to 5,000
- Similar to Existing

**Access Loss**

- 1,000 to 5,000
- 5,000 to 10,000
- 10,000 to 15,000
- Worse than -15,000

Source: Greater Madison MPO 2016 TAZ Model; US Census 2018 ACS 5-Year Summary File

One dot represents five residents











How many more jobs can the average person reach?  
*(median change)*

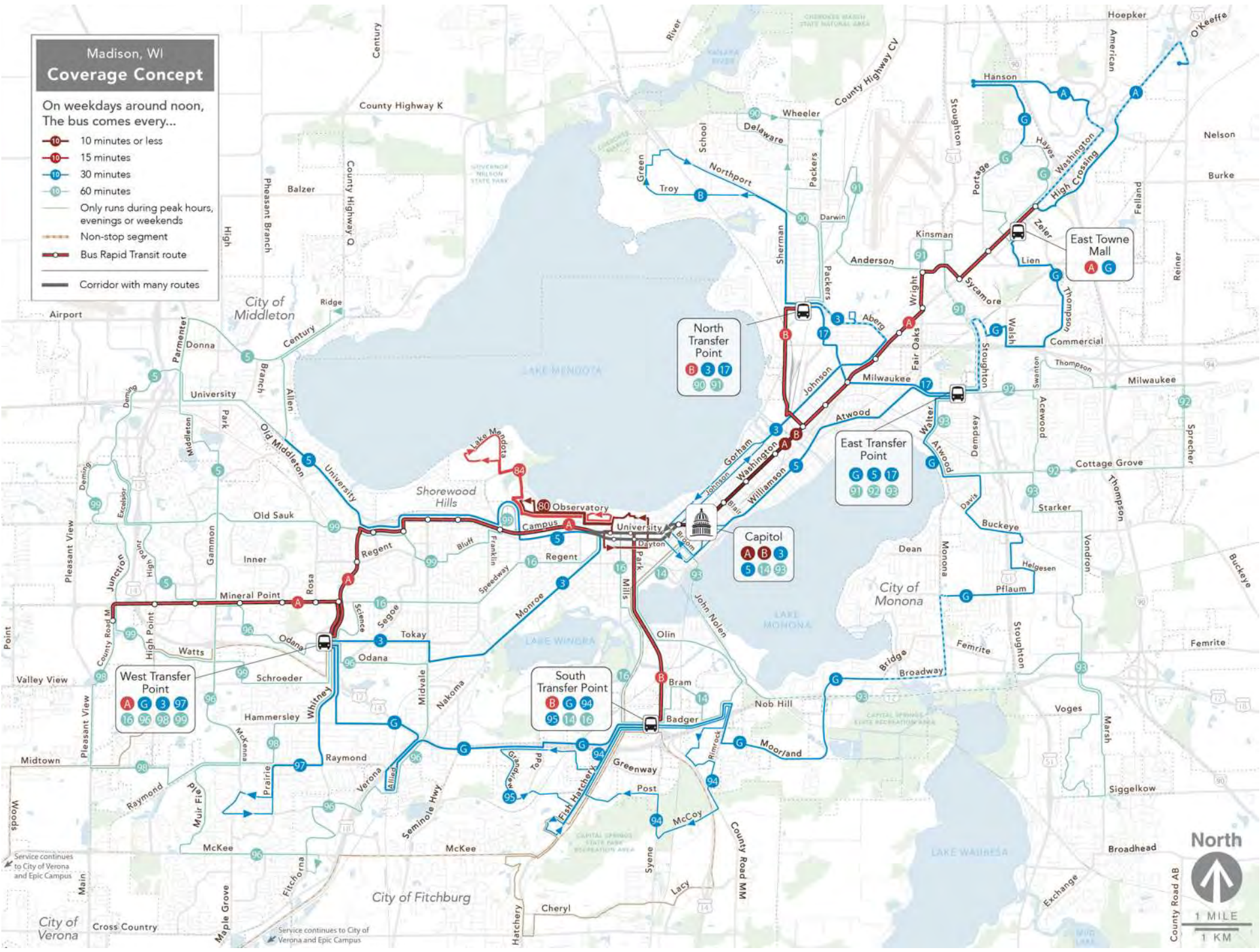
All Residents: +112%  
People of Color: +120%  
People with Low Incomes: +28%



# Madison, WI Coverage Concept

On weekdays around noon,  
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North



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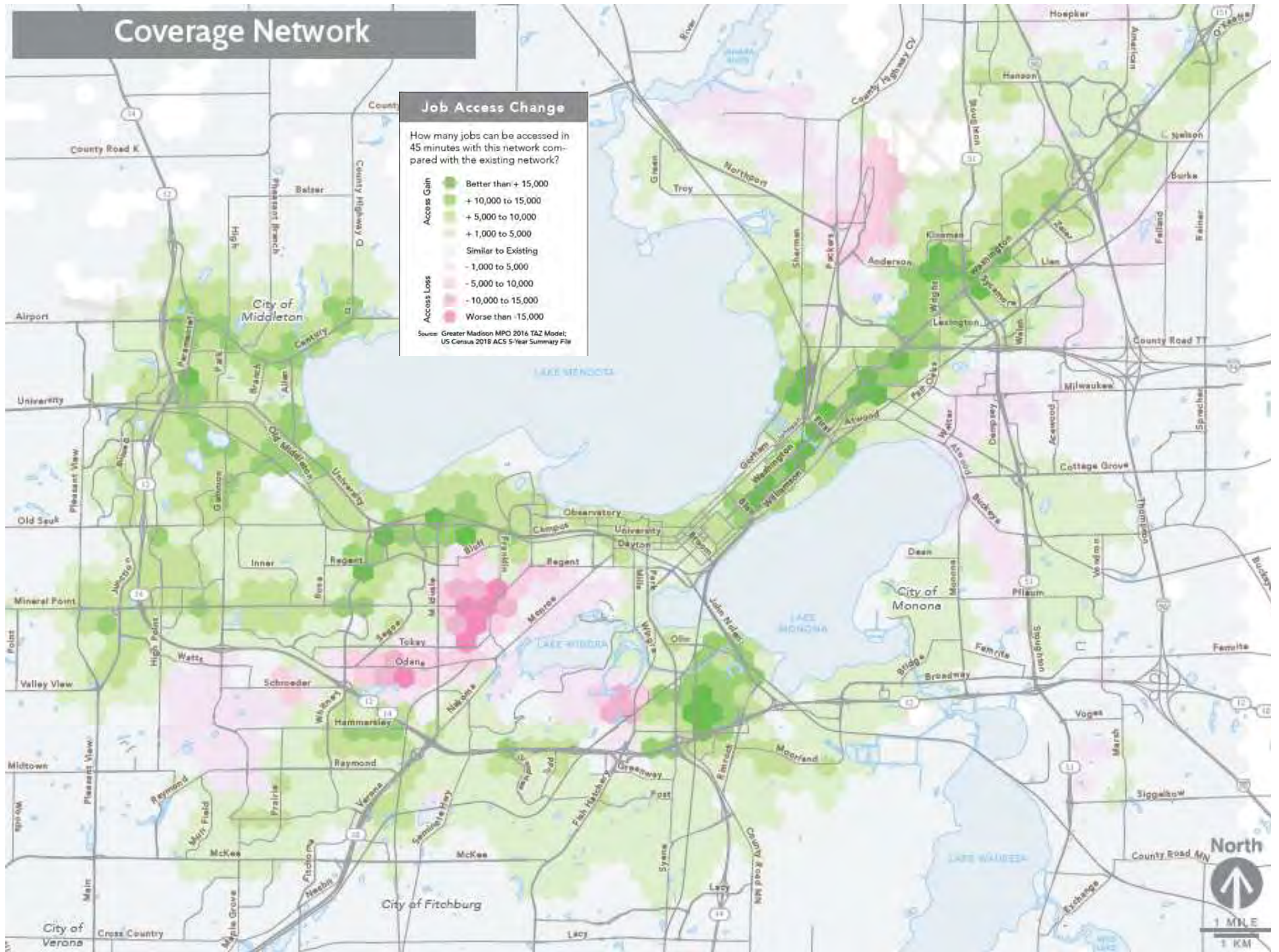
# Coverage Network

## Job Access Change

How many jobs can be accessed in 45 minutes with this network compared with the existing network?

- |             |  |
|-------------|--|
| Access Gain | <span style="color: green;">■</span> Better than + 15,000      |
|             | <span style="color: lightgreen;">■</span> + 10,000 to 15,000   |
|             | <span style="color: yellow;">■</span> + 5,000 to 10,000        |
|             | <span style="color: orange;">■</span> + 1,000 to 5,000         |
|             | <span style="color: lightyellow;">■</span> Similar to Existing |
| Access Loss | <span style="color: pink;">■</span> - 1,000 to 5,000           |
|             | <span style="color: lightpink;">■</span> - 5,000 to 10,000     |
|             | <span style="color: red;">■</span> - 10,000 to 15,000          |
|             | <span style="color: darkred;">■</span> Worse than - 15,000     |

Source: Greater Madison MPO 2016 TAZ Model; US Census 2010 ACS 5-Year Summary File



North

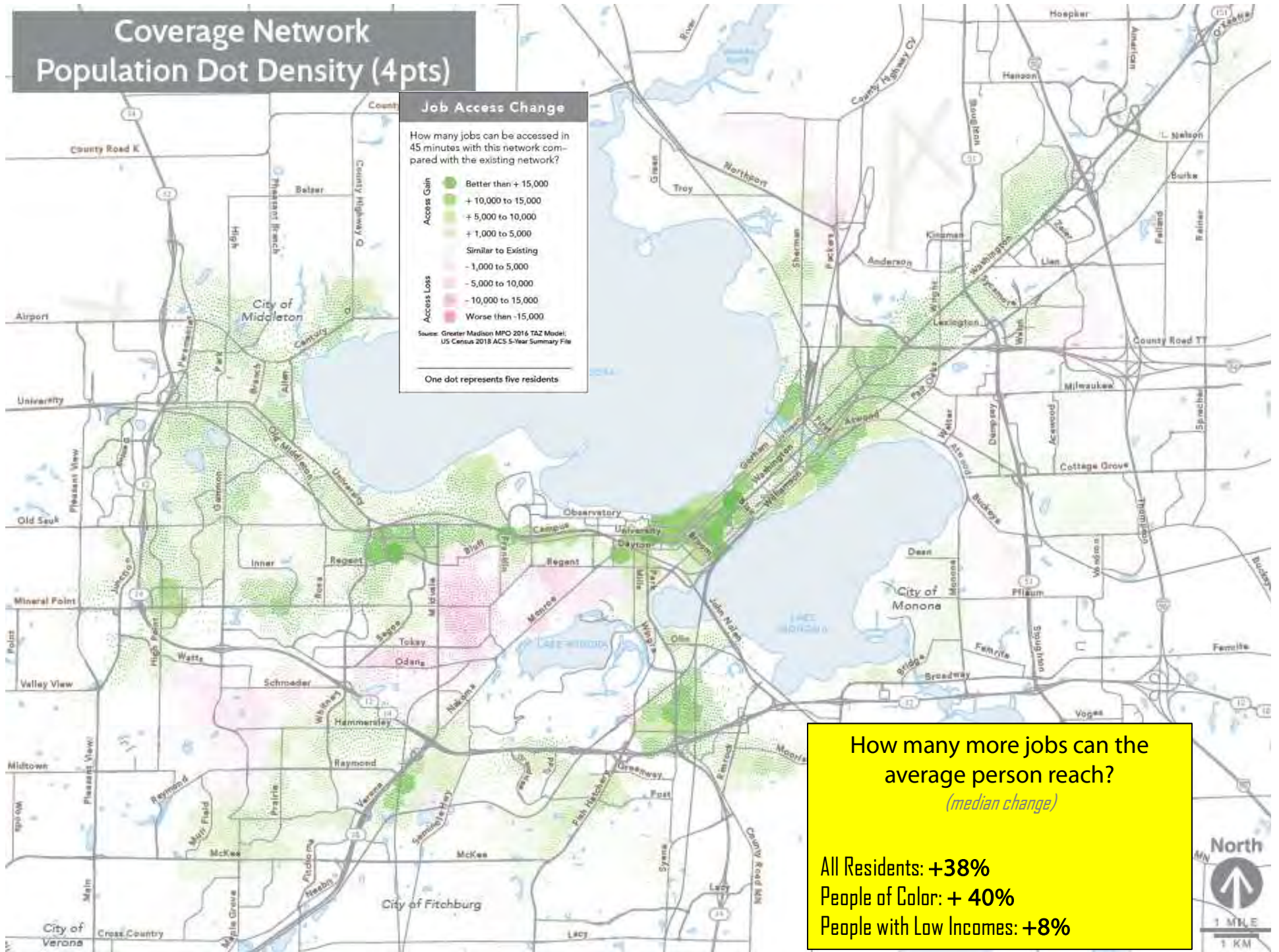


1 MILE

1 KM



# Coverage Network Population Dot Density (4pts)



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In summary...

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# Summary

- In the **Ridership** Alternative:
  - **67%** of Madison residents would live **within ¼-mile walk** of a bus stop with all-day service.
  - The average Madison resident could access **+112% more jobs within 45 minutes by transit** compared to today.
  
- In the **Coverage** Alternative:
  - **81%** of Madison residents would live **within ¼-mile walk** of a bus stop with all-day service.
  - The average Madison resident could access **+38% more jobs within 45 minutes by transit** compared to today.

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# Summary

- **Equity.** In both alternatives, people of color and people with low incomes benefit at similar rates to the population in general.
  - In % terms, people with low incomes benefit relatively less in the access measure because many are students with low income in central areas of Madison, where access is already highest.
  - the **Ridership** Alternative would more than double the jobs that People of Color can reach (+120%)
  - the **Coverage** Alternative would only modestly increase the number of jobs People of Color can reach (+28%)

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# Summary

- **Known unresolved needs.** Because service would remain at 2019 levels:
  - Neither alternative significantly expands where the bus goes.
  - Evening and weekend service would remain about 40% less than in the midday on weekdays.

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# Key Questions for the Public

- Which alternative is closer to what the community wants?
- What's missing or wrong about each alternative?
- Should the Draft Plan shift resources to the evenings and weekends, even if that means less service and lower frequencies on weekdays?

# What happens next?

## Phase 1 (Fall 2020 – Winter 2021)

Nov – Feb 2020  
Analyze Service, Demand, and Needs

March 2021  
Choices Report

Mar-Apr 2021  
What should our priorities be?

## Phase 2 (Spring – Summer 2021)

Apr – Jul 2021  
Alternatives to Illustrate Trade-offs

August 2021  
Alternatives Report

Aug – Sep 2021  
Which alternative is closer to what we want?

## Phase 3 (Fall 2021)

Oct – Dec 2021  
Draft Plan

January 2022  
Draft Plan Report

Jan-Feb 2022  
Did we get the plan right?

Mar-Apr 2022  
Recommended Plan

Spring 2022  
Final Plan Report

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We appreciate your time and participation  
today and going forward.

**Thank you!**