

# Consolidating Metro Bus Routes: Maximizing the Impact of the BRT while Minimizing Costs

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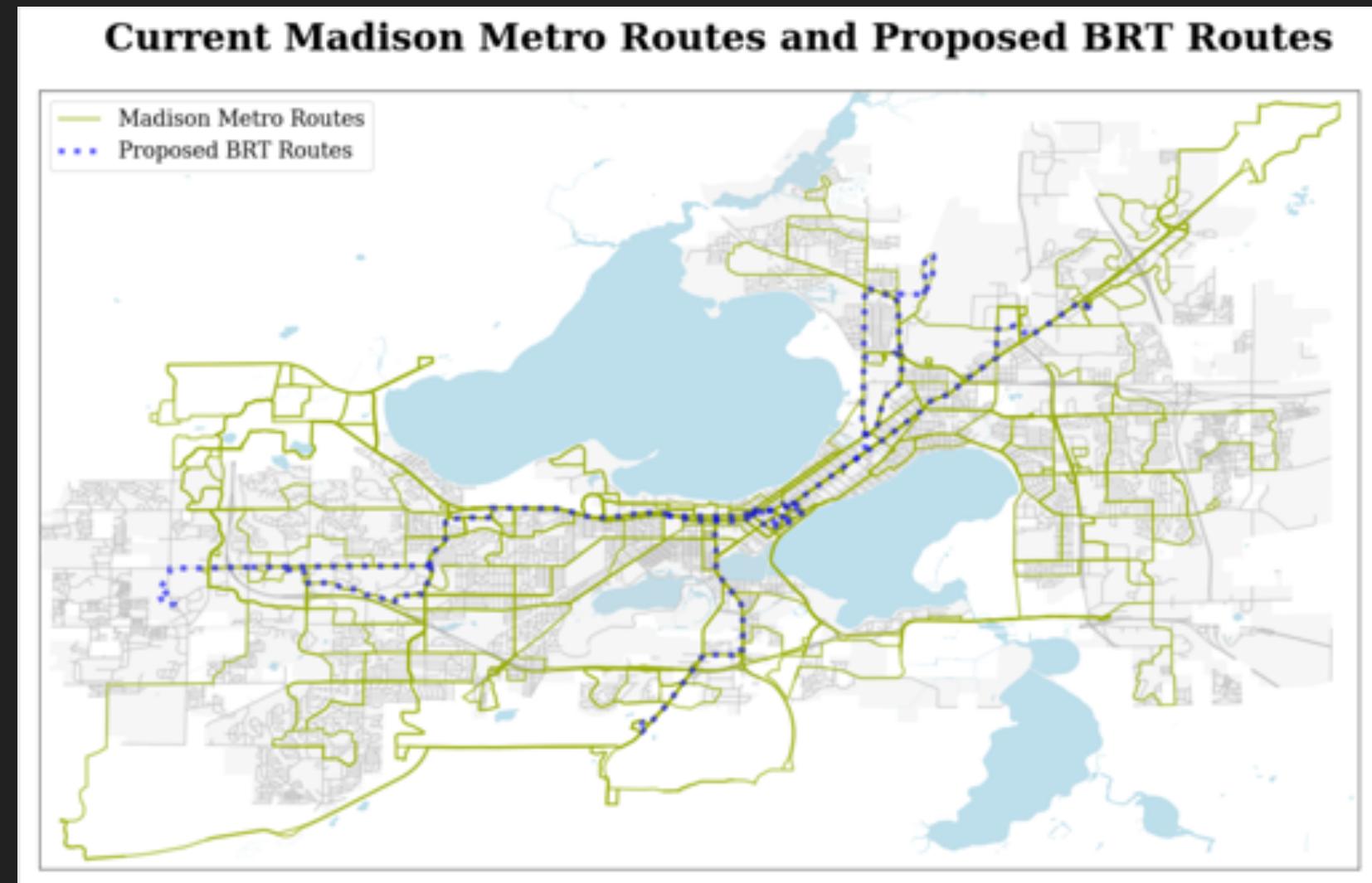
**What are the Goals of this  
project and what are the  
plans for the BRT?**

# Planned BRT Routes, Current Metro Routes and Goals:



## Goals:

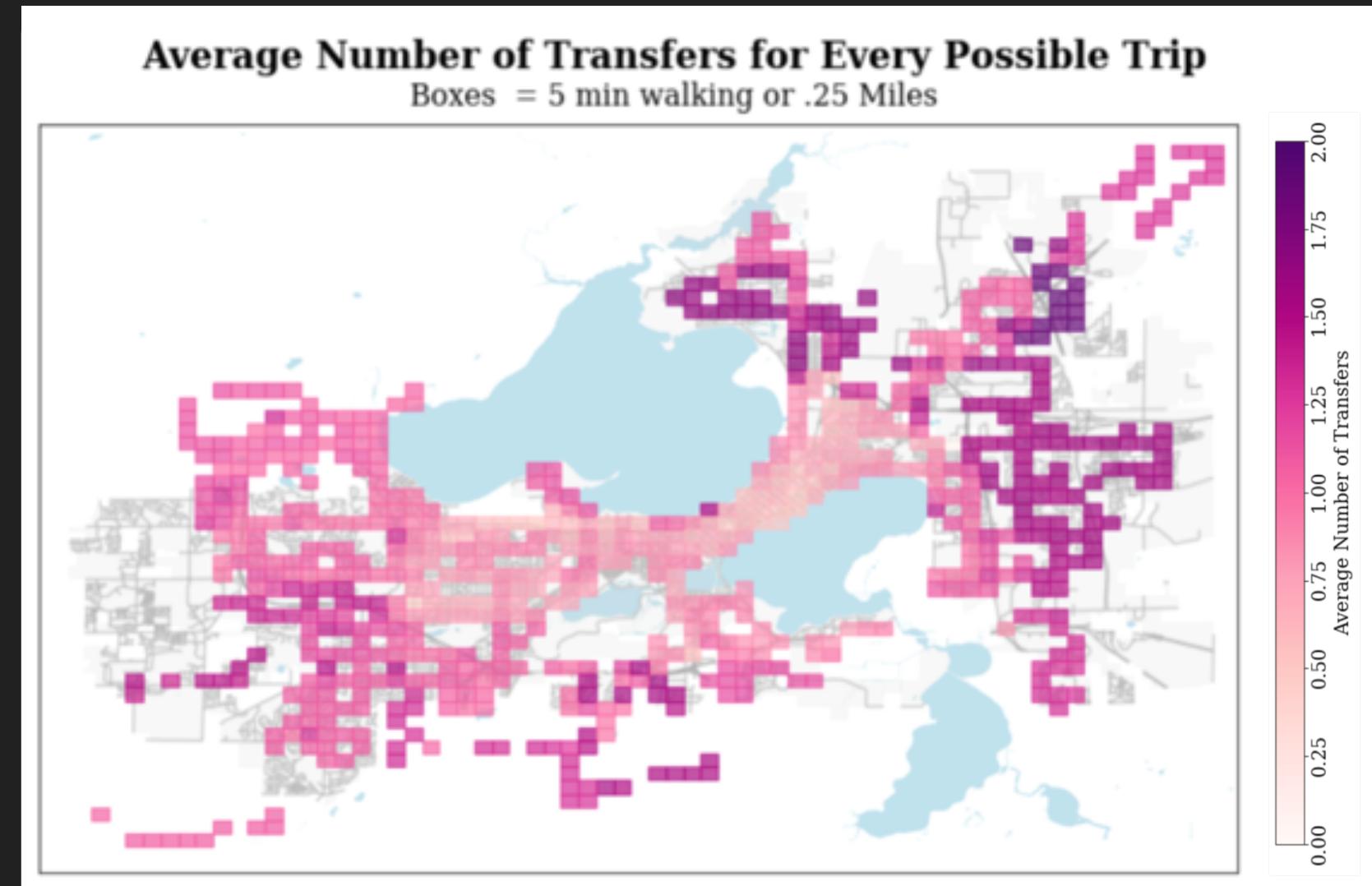
- Reduce route redundancy
- Reduce Madison Metro operating costs
- Provide the same or better service



**What is the current  
accessibility of Madison via  
bus and how will the BRT  
change this?**

# Average Number of Transfers to Get Around via Bus:

- Investigate current accessibility with various parameters
- Need to ensure that the new routes are the same or better
- **Reduce Route redundancy by eliminating sections that overlap with BRT, create new routes that intersect the BRT**
- Places with one or more transfers already are best candidates



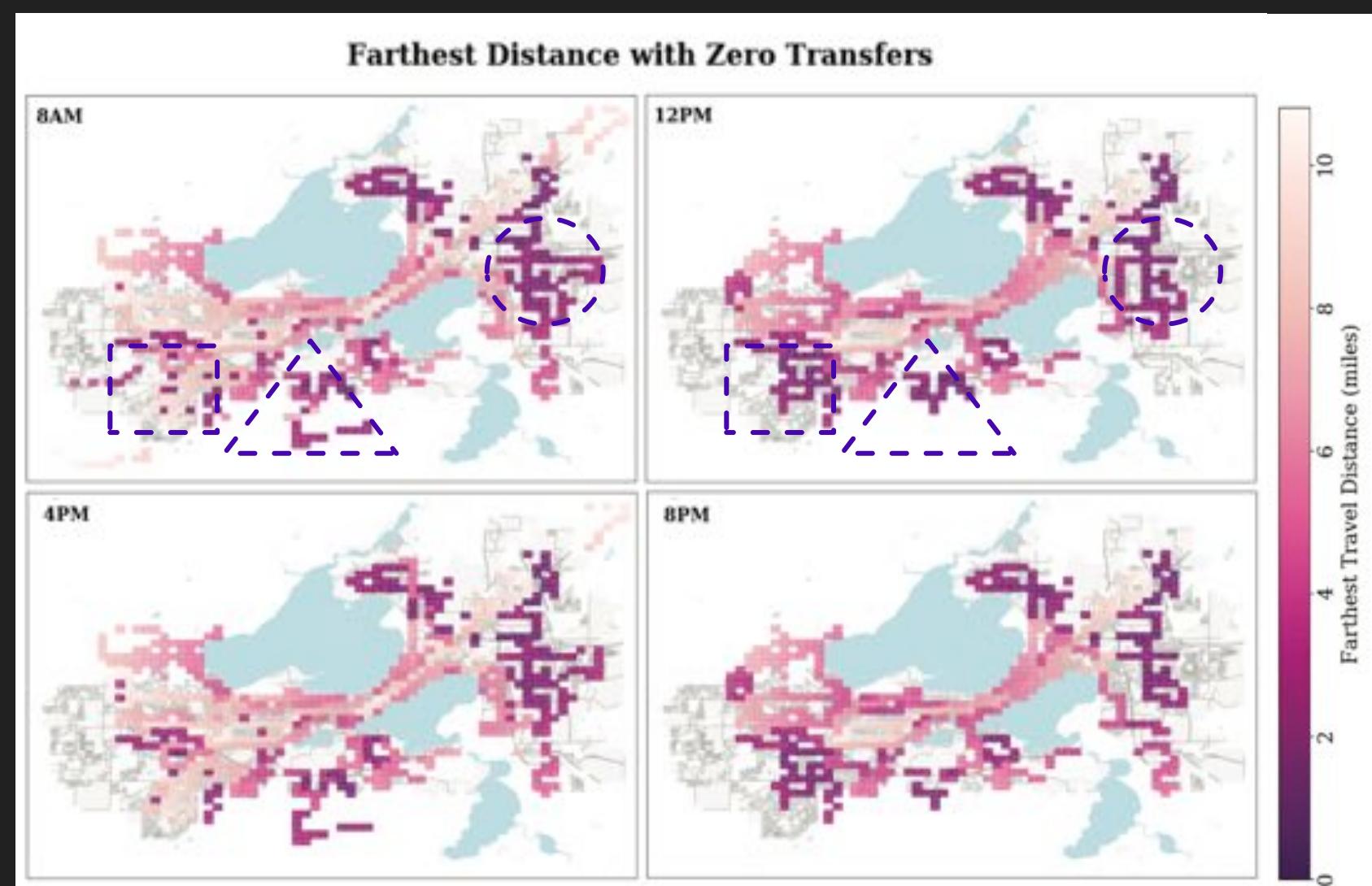
# Farthest Distance Available on a Single Bus:

Right: Farthest distance you can get on a single bus starting in a given square

- While still reducing costs can we improve the system for these areas?
- Increase BRT connection service to these areas

Proposed System Frequency of BRT:

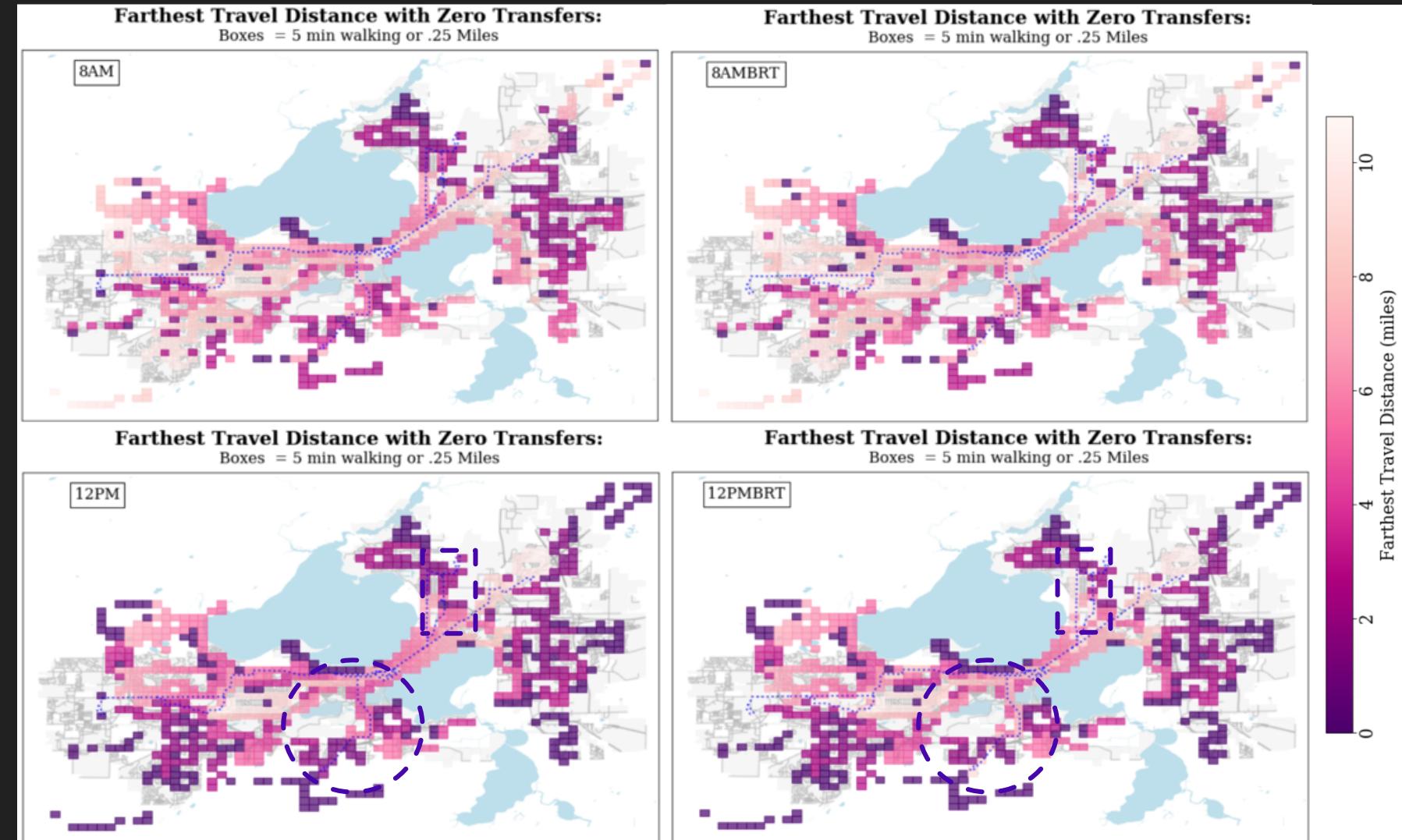
Day of Week	Time Period	Hours	Service Frequency
Weekday	Early AM	5:00-6:00am	30 min
	AM Peak	6:00-9:00am	10 min
	Midday	9:00am-3:00pm	15 min
	PM Peak	3:00-6:00pm	10 min
	Evening	6:00pm - Midnight	30 min
Saturday	Morning	7:00-9:00am	30 min
	Midday	9:00-6:00pm	15 min
	Evening	6:00-11:00pm	30 min
Sunday	All-day	7:00am - 11:00pm	30 min



# Farthest Distance Available on a Single Bus Including BRT:

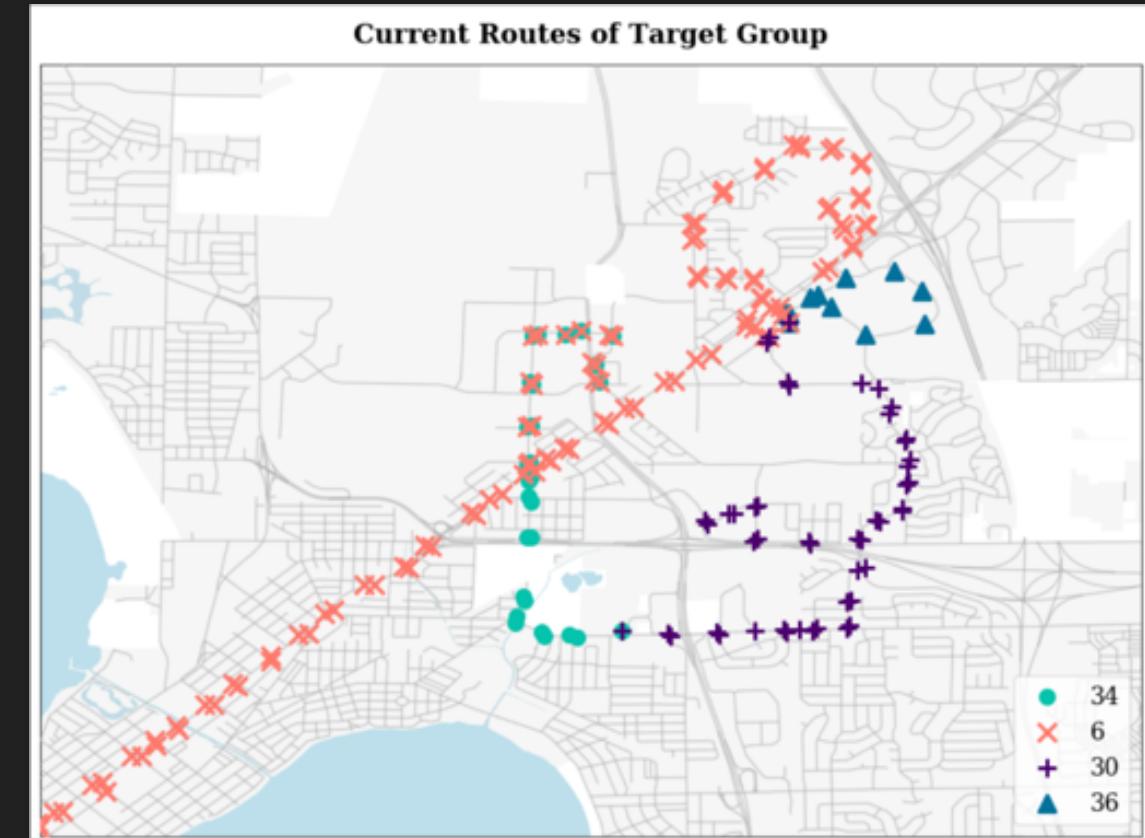
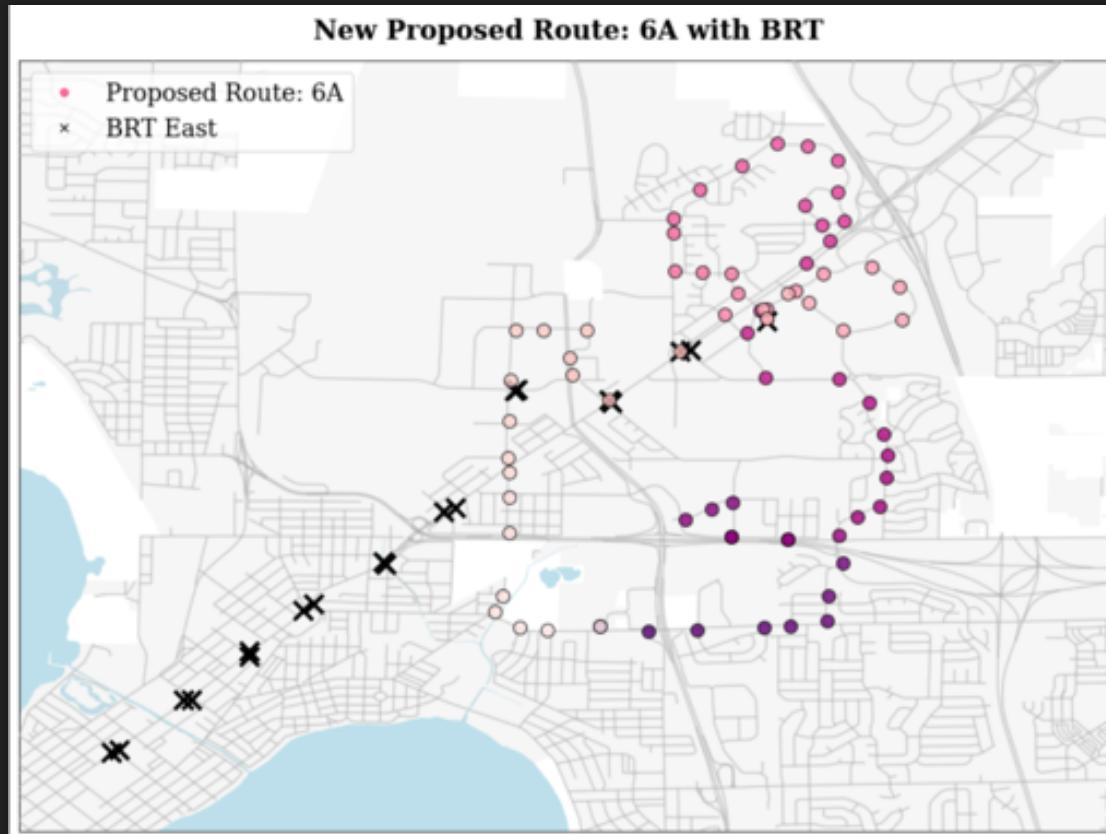
**Right: Farthest distance you can get on a single bus starting in a given square with BRT running**

- Along BRT, more uniform service across the day
- Able to get farther in general on BRT with no transfers
- **Want to take advantage of this more uniform service offering**



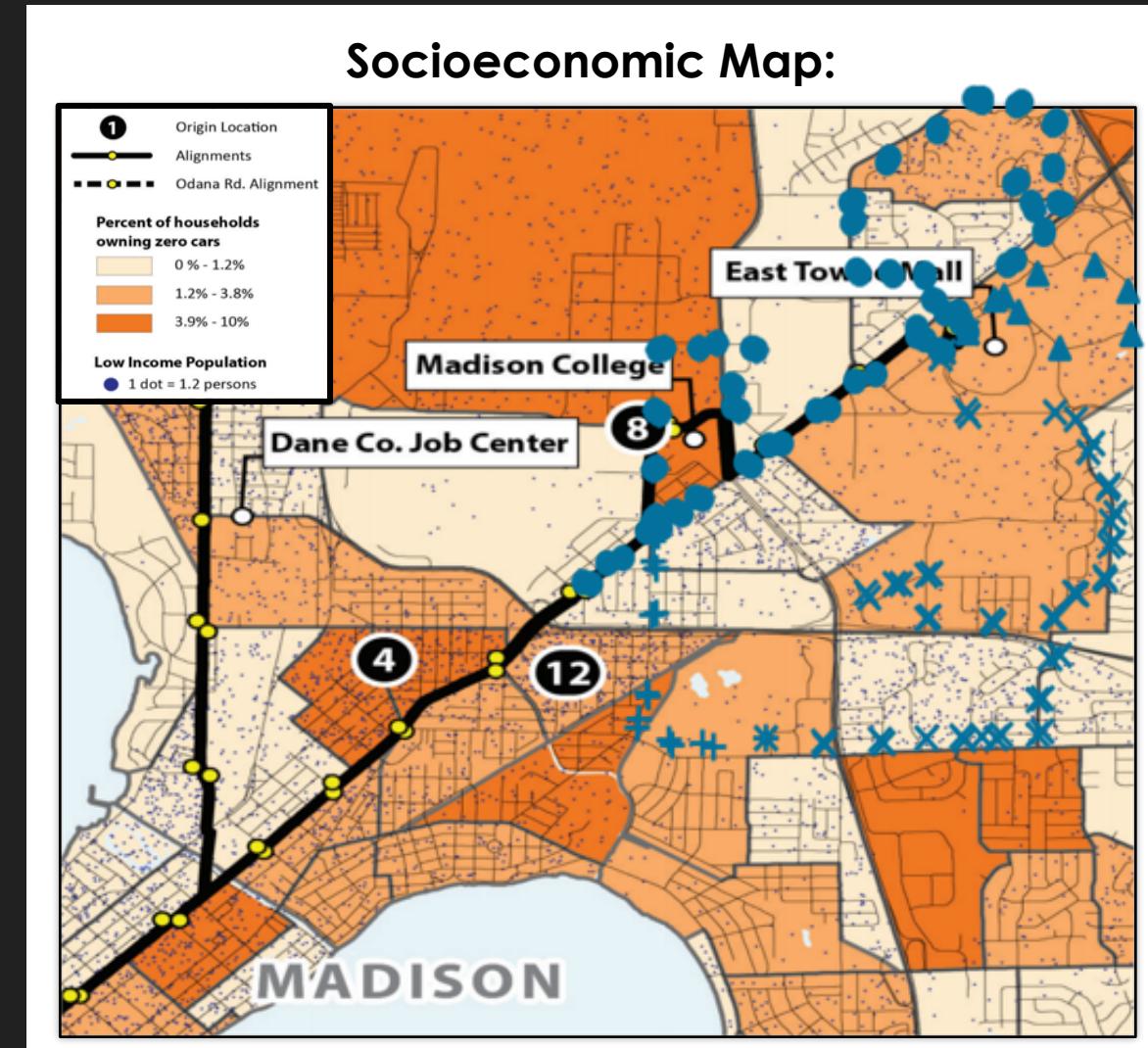
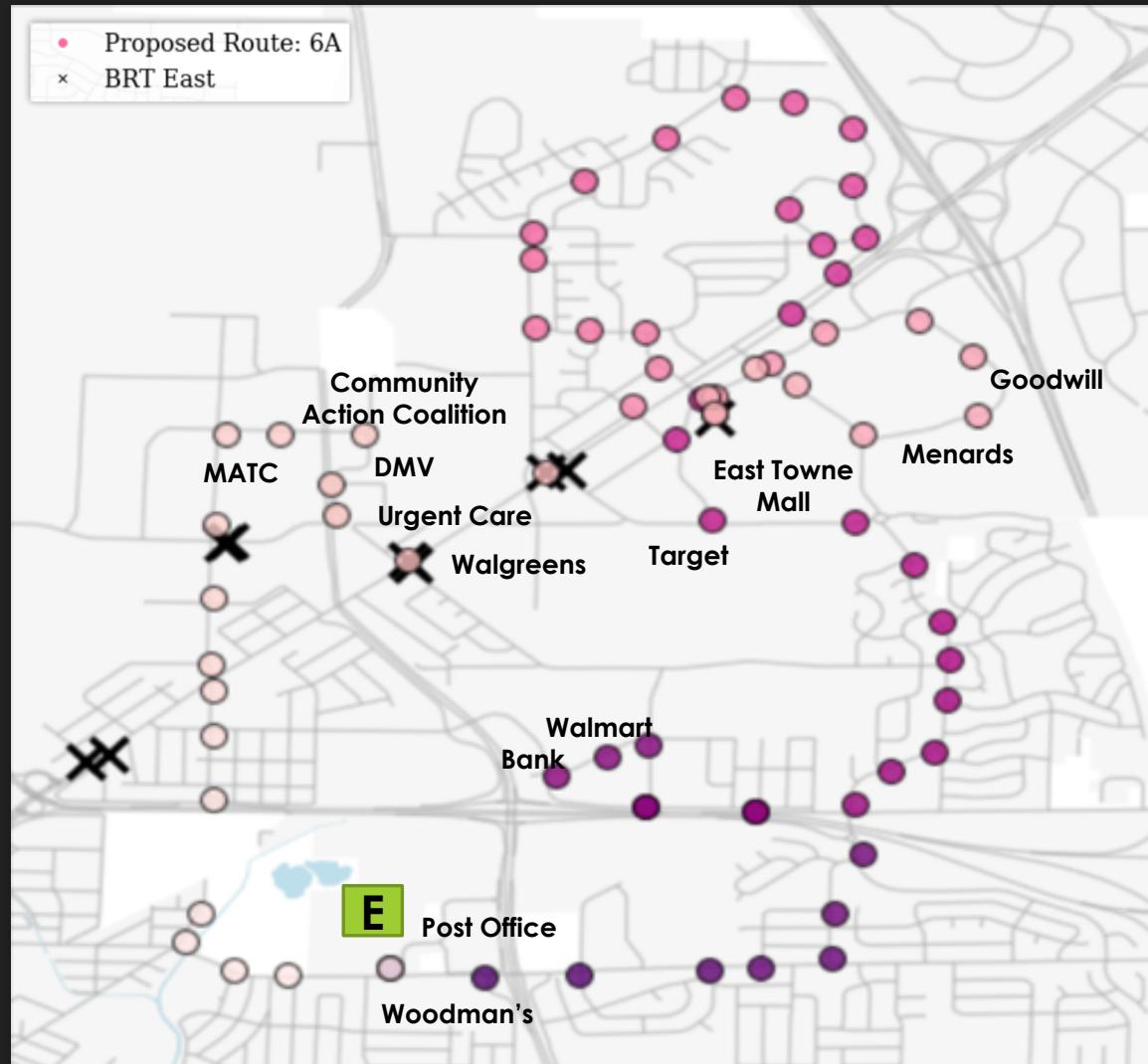
Is there a new route we can propose to address some of these issues and goals?

# Combining Routes 6, 30, 34 & 36 Into A New Route:



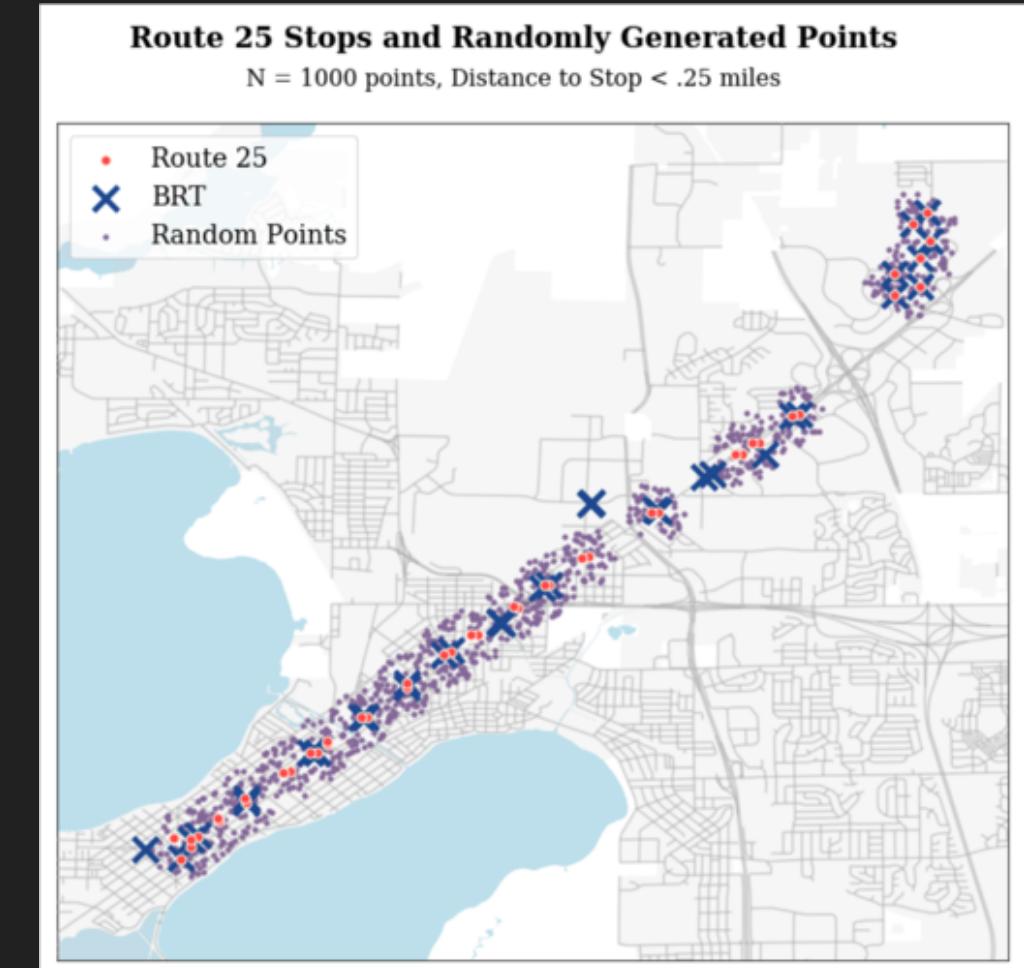
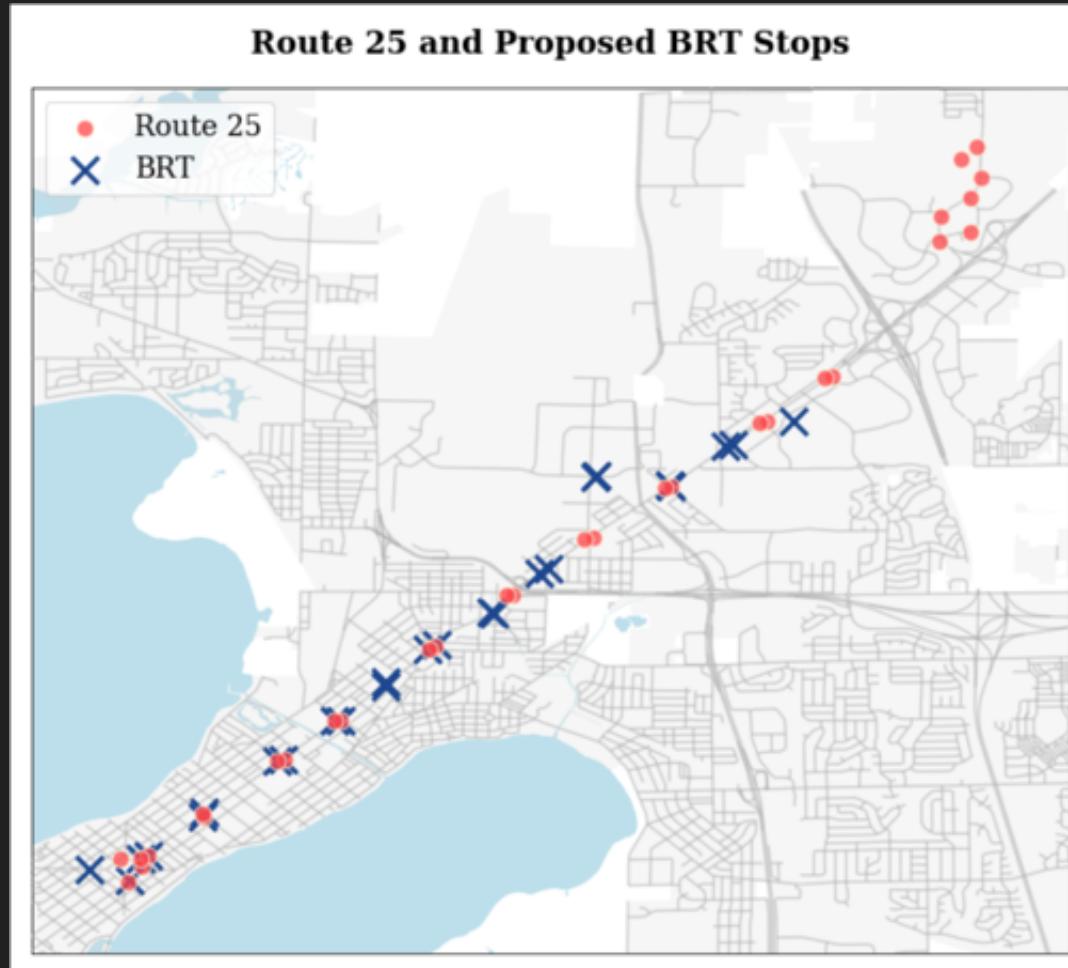
Eliminate the portion of Route 6 that overlaps the BRT, and combine 30, 34 and 36 into a new route "6A"

# Geographic Points of Interest and Socioeconomic Considerations for Route:



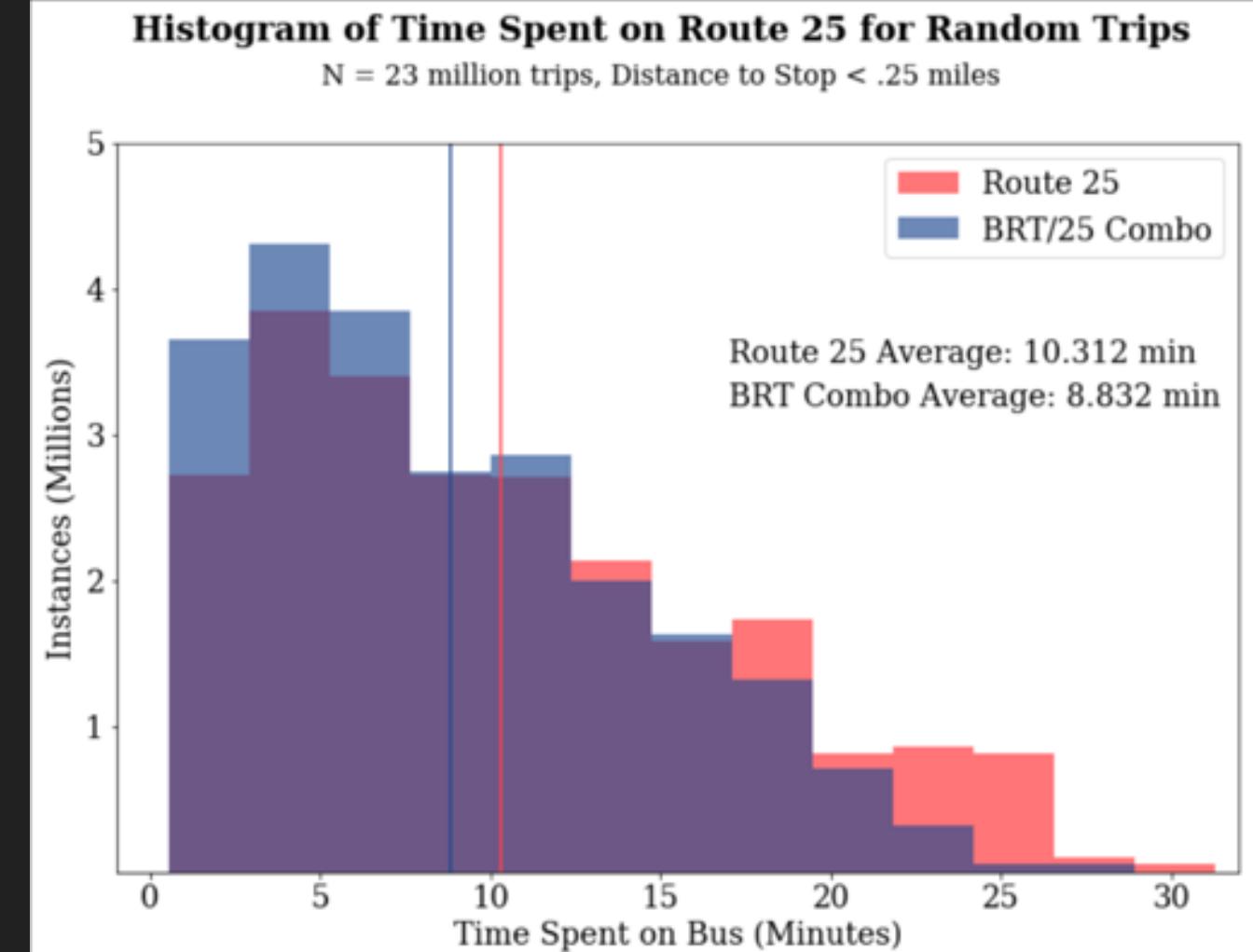
Can we evaluate the effect of combining a route with the BRT in a more simple situation first?

# Combining the Current Route 25 with the BRT to create a new route with 1 Transfer



# Combined Route 25 Simulation Results:

- Run 23 million random trips for locations within .25 miles walking distance (5 min) from current route 25 stops
- Assume no transfer time onto the BRT at the East Towne switching point
- Assume that the BRT East is 19% faster than riding the metro along the same route
- Combined route is 1.48 minutes faster on average than route 25**
- 14.4% faster than a typical route 25 trip**



**How will the accessibility of  
Madison change for route 6A?**

# Farthest Distances Reachable with Variable Transfer Numbers for Route 6A:

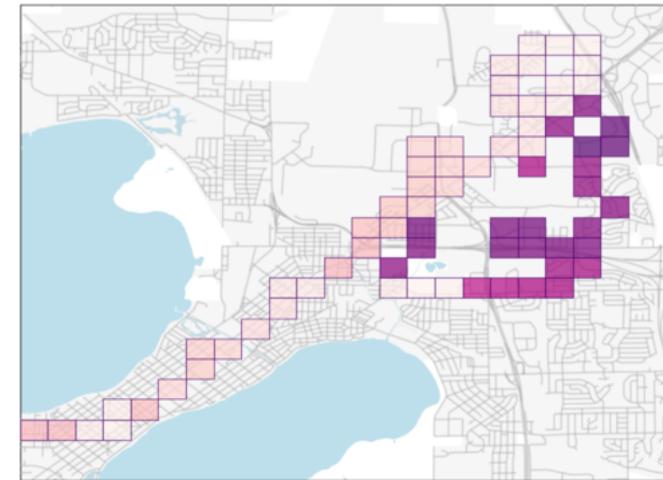
- Number of transfers stays approximately the same
- By transferring to BRT instead of #6, get a boost of 19% faster route for that portion

Percent of Travel Time Saved Using BRT:

Corridor:	Percent
West	17-23%
South	21%
East	19%
North	42%

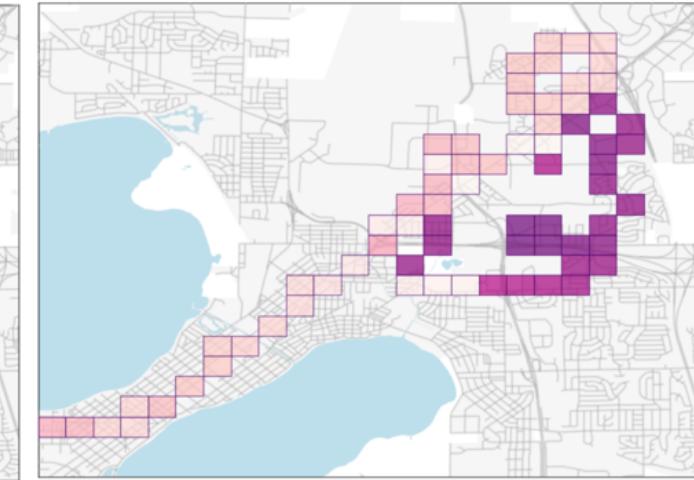
Farthest Distance with Zero Transfers

Boxes = 5 min walking or .25 Miles



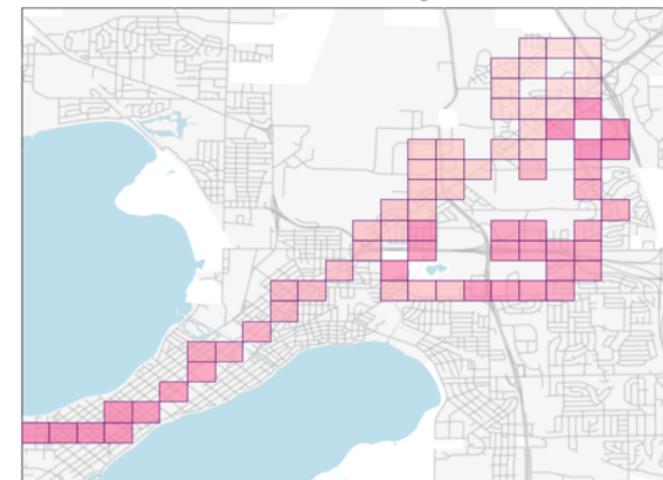
Farthest Distance with Zero Transfers New Route w/BRT

Boxes = 5 min walking or .25 Miles



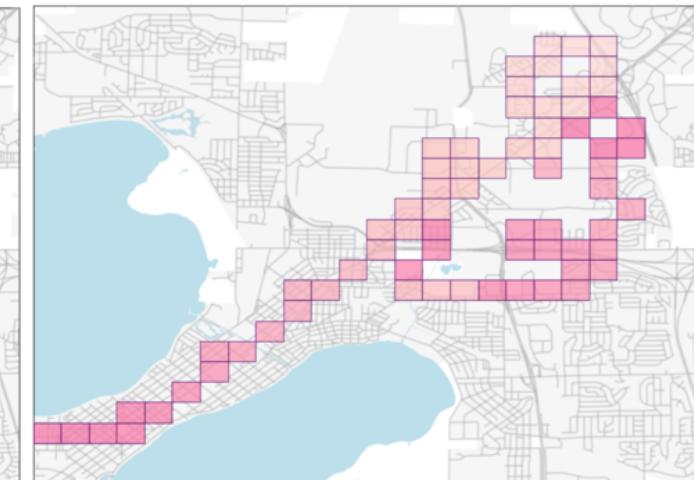
Farthest Distance with One Transfer

Boxes = 5 min walking or .25 Miles



Farthest Distance with One Transfer New Route w/BRT

Boxes = 5 min walking or .25 Miles



0.0 2.5 5.0 7.5 10.0 12.5 15.0 17.5 20.0  
Farthest Travel Distance (miles)

# Summary of the Benefits of the 6A Route:

## Speed Up Benefits:

- Same number of transfers as before on average
- Zero transfers for East Side loop
- Able to get to West, South and North sides on BRT, and more quickly
- Route #6 comes much more frequently than the 30, 34, 36, so get availability boost

## Socioeconomic Benefits:

- Taking 3 routes that currently service lower income and lower car availability households
- Routes stop at fundamentally necessary places:
  - Urgent Care, pharmacy, bank, grocery, DMV, etc.

## Operating Cost Benefits:

- Current route 6 has 78 stops, this proposed route has 75, essentially the same
- Would be same cost to run 6A with the same schedule as current #6
- Eliminate three routes: 30, 34, 36

## Future Prospects of the Project:

- Continue this plan of combining existing routes to eliminate BRT overlap on all bus routes
- Create new routes such that you increase the accessibility of Madison via bus while still reducing operating costs
- Run simulations and analyze the effects on the accessibility of Madison as well as the commute times on more complicated routes

# Questions?