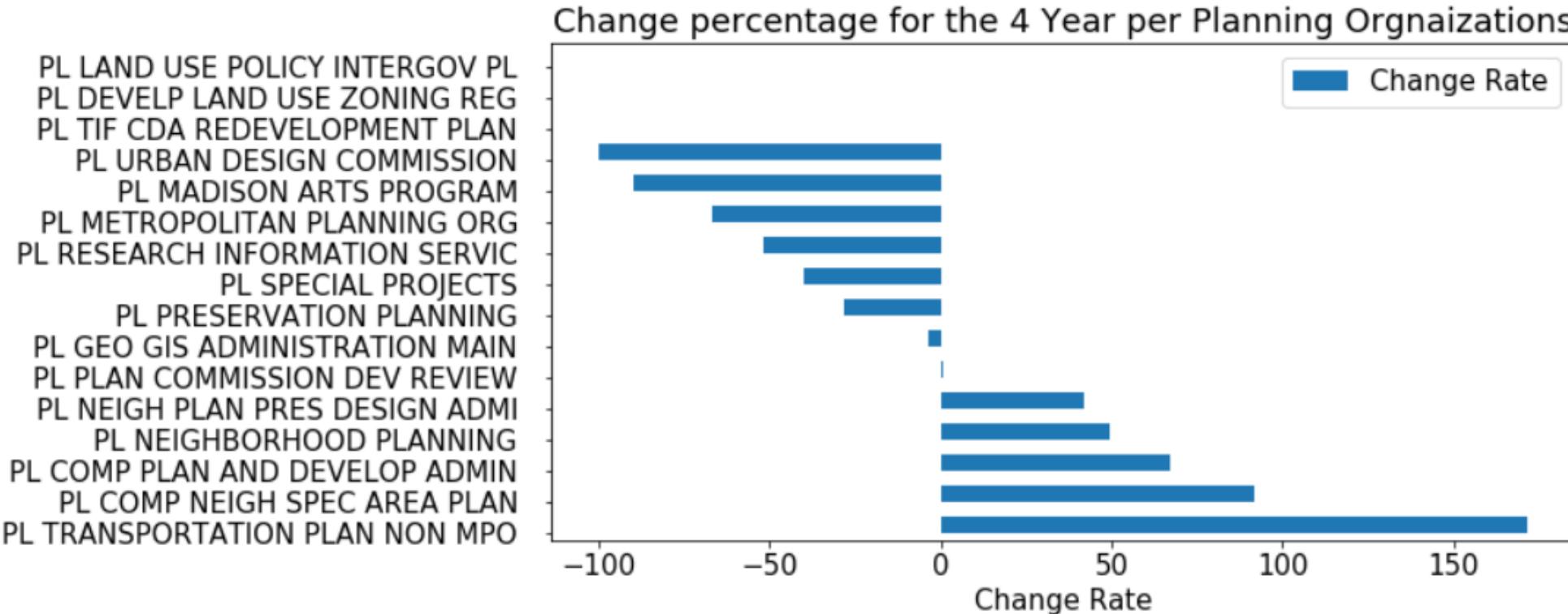


# GOING TO WORK

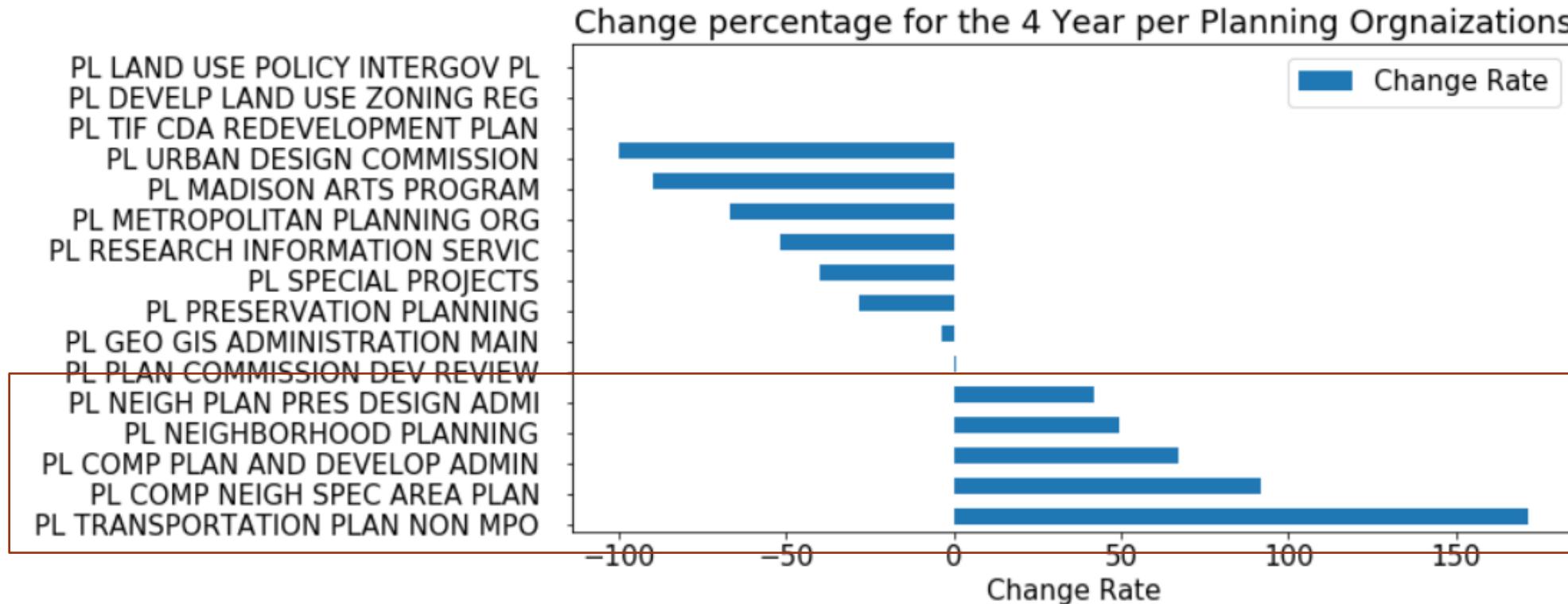


Jay Jin Woo Lee

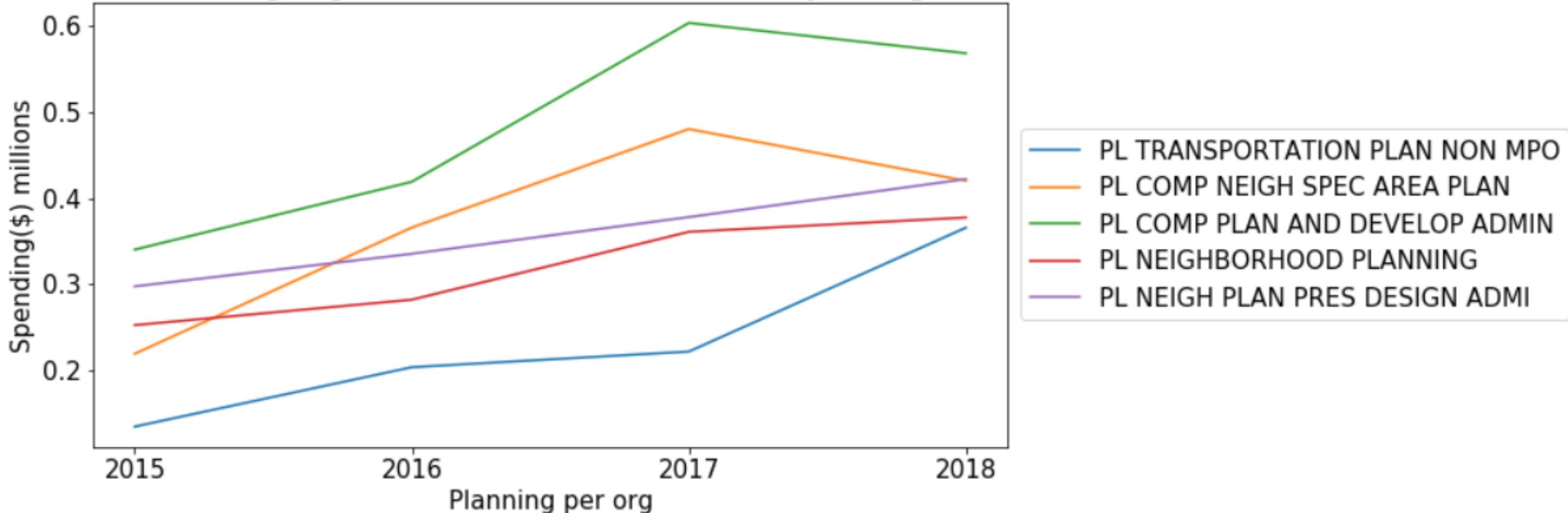
# Which organizations within the planning agency have the greatest changes between 2015 and 2018?



# Which organizations within the planning agency have the greatest changes between 2015 and 2018?



## Planning Organizations with a Positive Yearly Change



- Transportation had the biggest difference between 2015 and 2018 expenditure...

But Why?

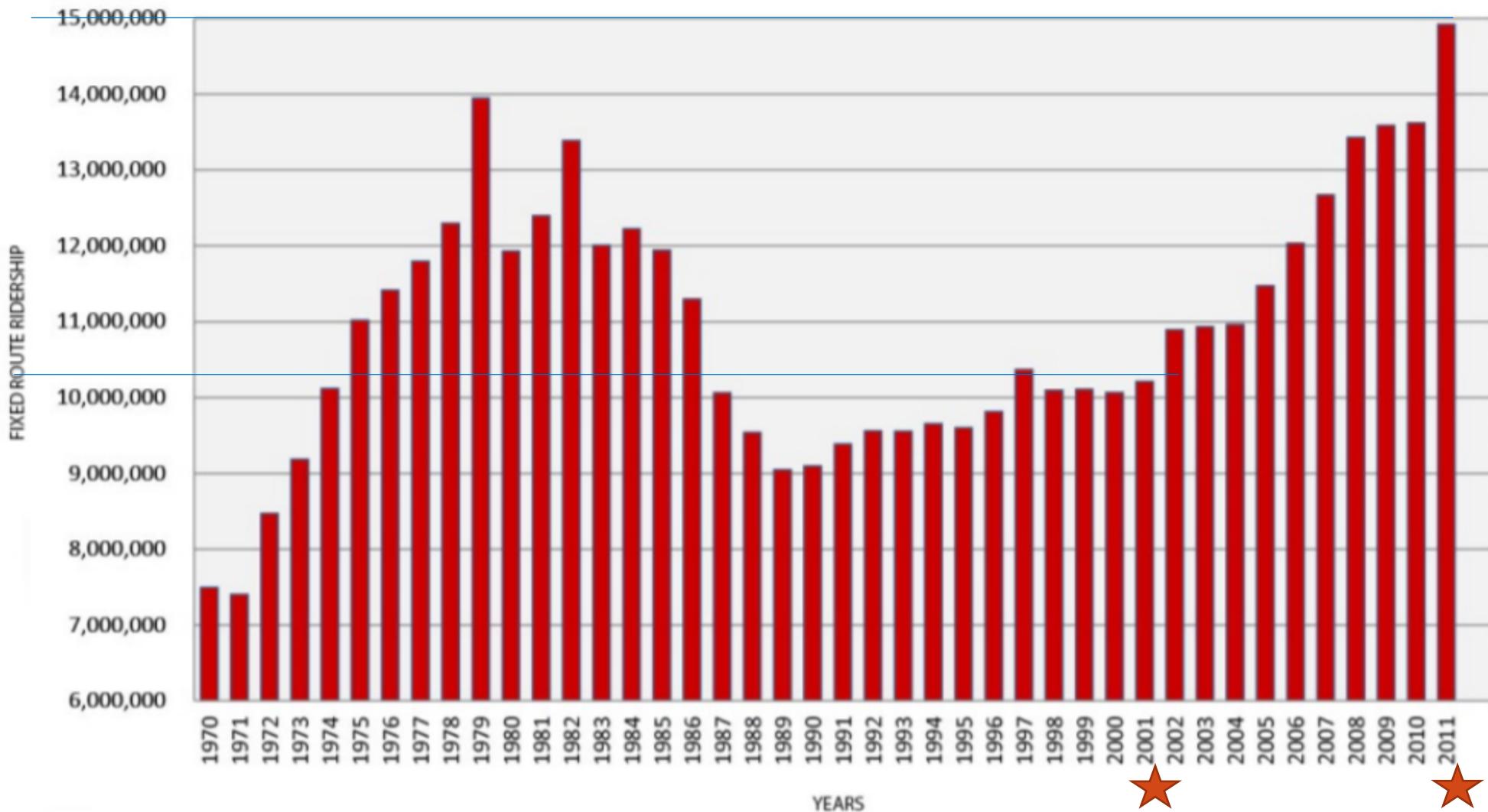


# Madison Transit Corridor Study

## Investigating Bus Rapid Transit in the Madison Area



## Figure 1: Metro Transit Annual Fixed Route Ridership 1970 – 2011



- From 2001 to 2011, ridership increased a little less than 5 million.

- Madison Transit Corridor Study investigating bus rapid transit in Madison Area proposed in May 2013

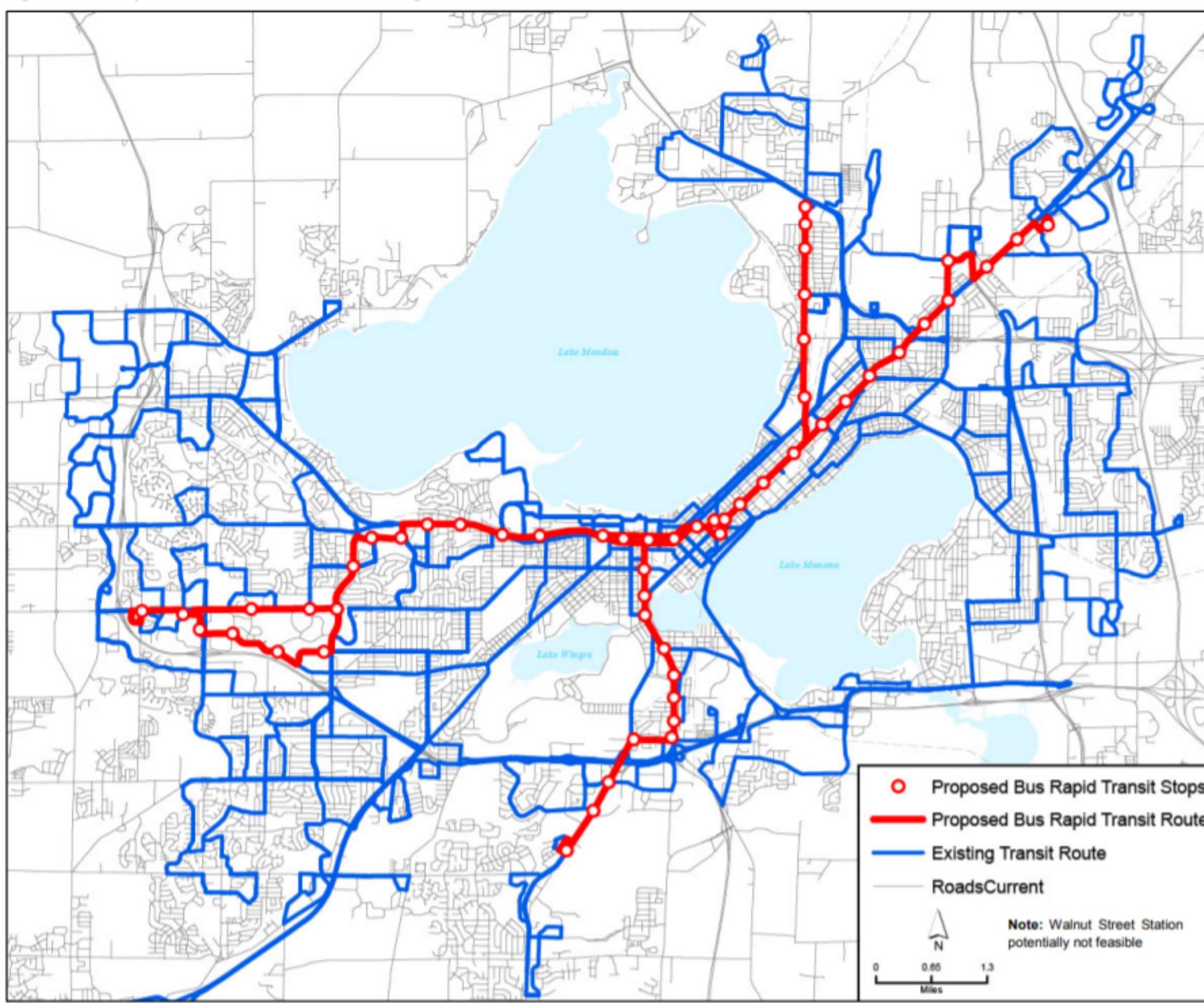


Table 52: Capital Costs

Corridor Type of Runningway	NORTH Corridor	SOUTH		EAST Corridor	WEST		
		Fixed Guideway	Corridor		Mineral Point - Fixed Guideway	Mineral Point - Corridor	Odana - Corridor
Side Running Lane Improvements	\$0.65 M	\$0.48 M	\$1.79 M	\$1.27 M	\$0.9 M	\$2.18 M	\$1.15 M
Median Running Lane Improvements	\$2.36 M	\$18.59 M	\$0	\$0	\$21.37 M	\$0	\$0
TSP	\$0.6 M	\$0.7 M	\$0.7 M	\$0.69 M	\$0.76 M	\$0.76 M	\$0.79 M
ROW Acquisition	\$1.09 M	\$1.1 M	\$1.1 M	\$0.11 M	\$2.23 M	\$1.11 M	\$0.1 M
Station Costs	\$6.12 M	\$5.23 M	\$7.14 M	\$8.09 M	\$8.23 M	\$9.56 M	\$12.13 M
Fleet Costs (includes 20% spare factor)	\$8.27 M	\$12.76 M	\$10.64 M	\$8.27 M	\$15.6 M	\$13.0 M	\$13.0 M
Transfer Point Reconstruction Costs	\$2.16 M	\$2.16 M	\$2.16 M	\$0	\$2.16 M	\$2.16 M	\$2.16 M
Soft Costs	\$4.02 M	\$8.64 M	\$4.14 M	\$3.36 M	\$10.75 M	\$5.09 M	\$5.38 M
Unallocated Contingency Costs	\$2.55 M	\$5.53 M	\$2.56 M	\$2.03 M	\$6.96 M	\$3.13 M	\$3.26 M
<b>Total Construction Costs (2016 \$)</b>	<b>\$27.87 M</b>	<b>\$55.19 M</b>	<b>\$30.23 M</b>	<b>\$23.82 M</b>	<b>\$68.96 M</b>	<b>\$36.99 M</b>	<b>\$37.97 M</b>

- Total Capital cost over \$276.03 Million

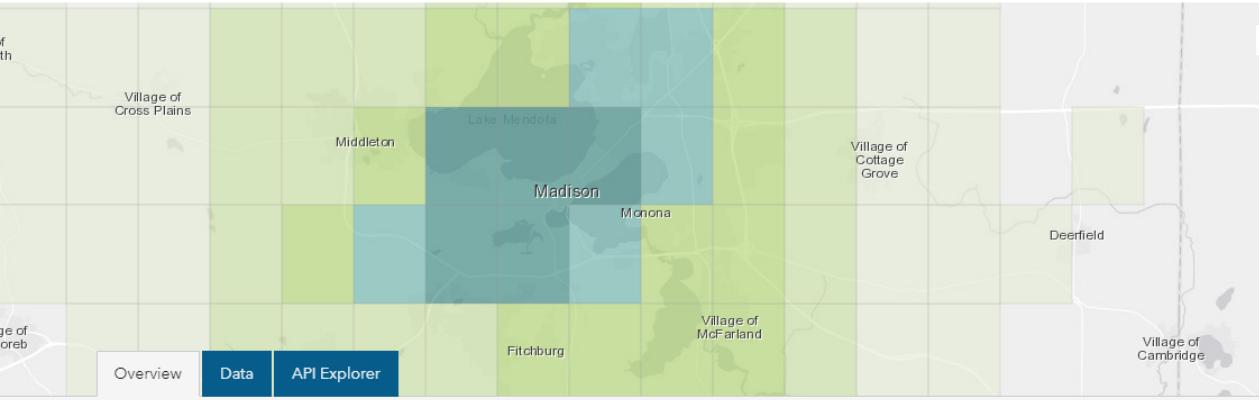
- Ridership has increased by 5 million during 2001-2011
- Transportation organization within planning agency expenditure has risen by 171% over the last 4 years
- Currently spending \$0.366 million
- Projected capital cost of rapid bus systems is over \$276.03 Million

## Questions

- Is the rapid bus system going to be effective investment?
  - How many people will use the rapid busses?



My Data



## Census Tract Spider Workplace Data

Custom License    9/7/2017    Spatial Dataset    11,342 Rows

Spider diagram with Journey to Work Origin / Destination data from CTPP/ACS 2006-2010. Each vector indicates the number of work commuters traveling from Origin (Residence) to Destination (Workplace).

### Attributes

CHART    MAP VISUALIZATION

Bicycle Number	Bus Number	Carpool2 Number	Carpool3 Number	Carpool4 Number	Carpool5 Number	Carpool7 Number	DES_ID Text	DES_ID Text
DES_LENGTH Number	DroveAlone Number	Ferry Number	Motorcycle Number	OBJECTID Number	Other Number	ORG_DES_ID Text	ORG_DES_ID Text	

Favorite     Download

### About

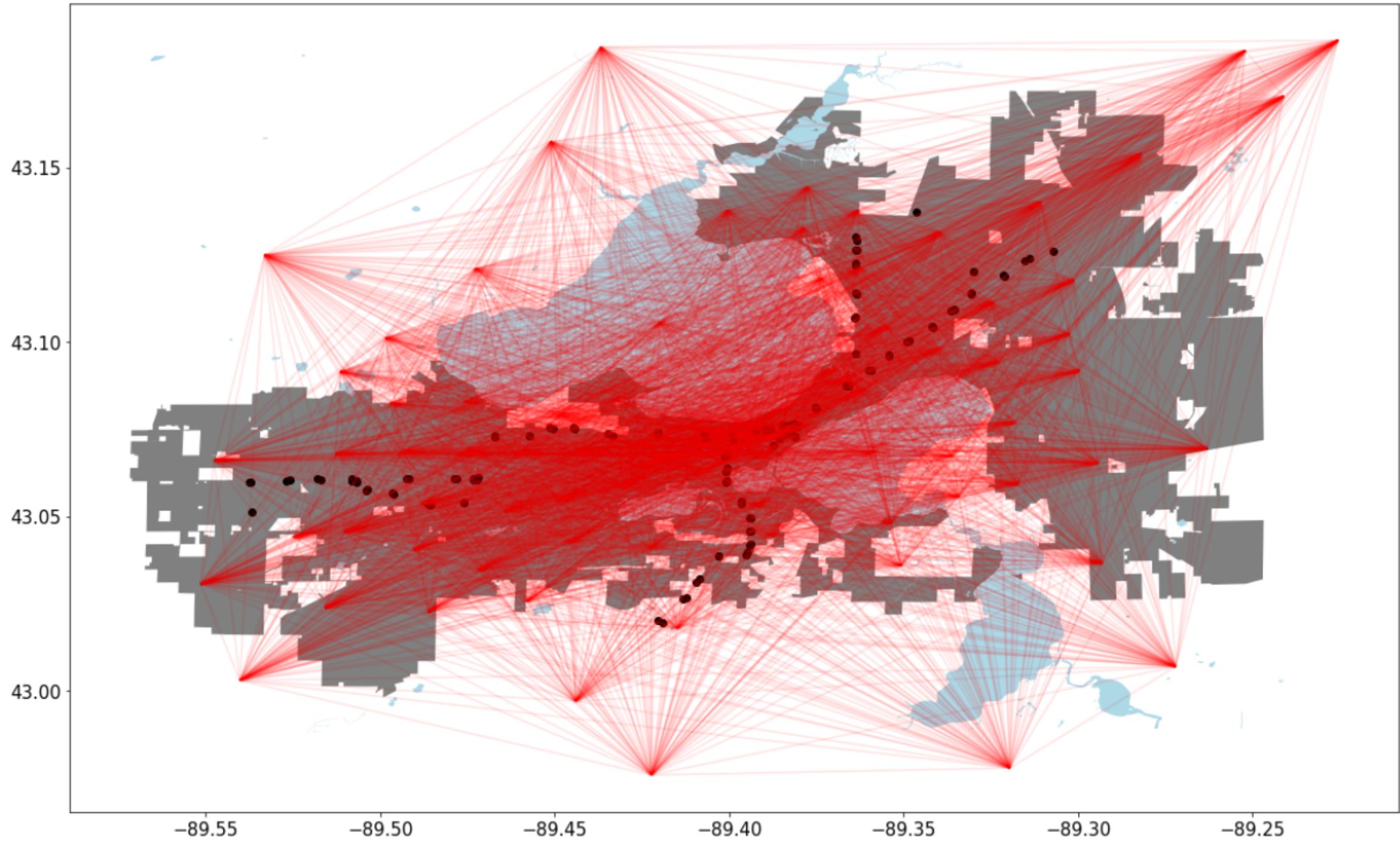
Shared By: CityOfMad  
Data Source: maps.cityofmadison.com

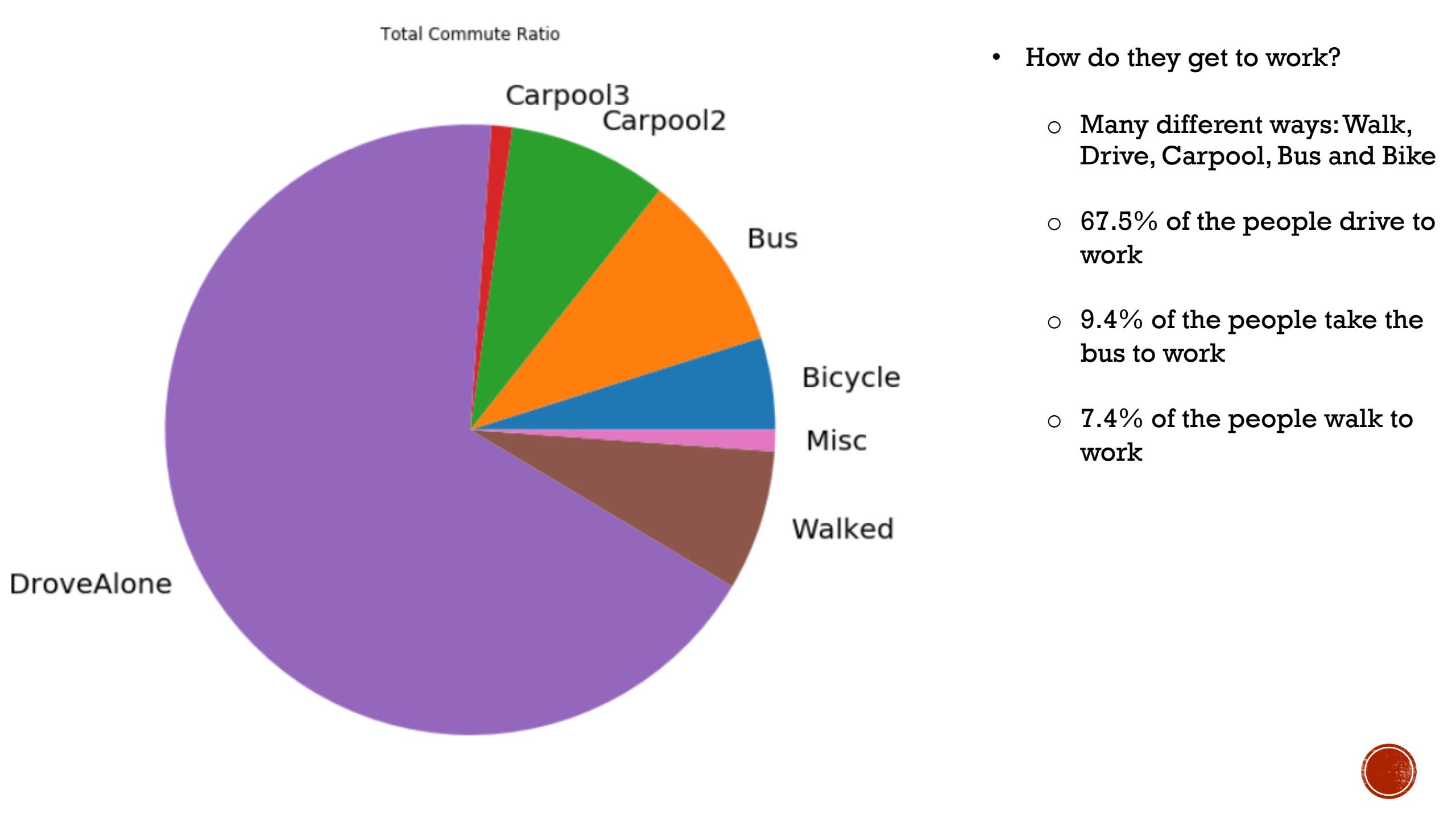
[View Metadata](#)  
[Create Webmap](#)  
[Create a Story Map](#)

- The **CTPP data product based on 2006 – 2010 5-year American Community Survey (ACS)** Data is designed to help transportation analysts and planners understand where people are commuting to and from, and how they get there. The information is organized by where workers live, where they work, and by the flow between those places.

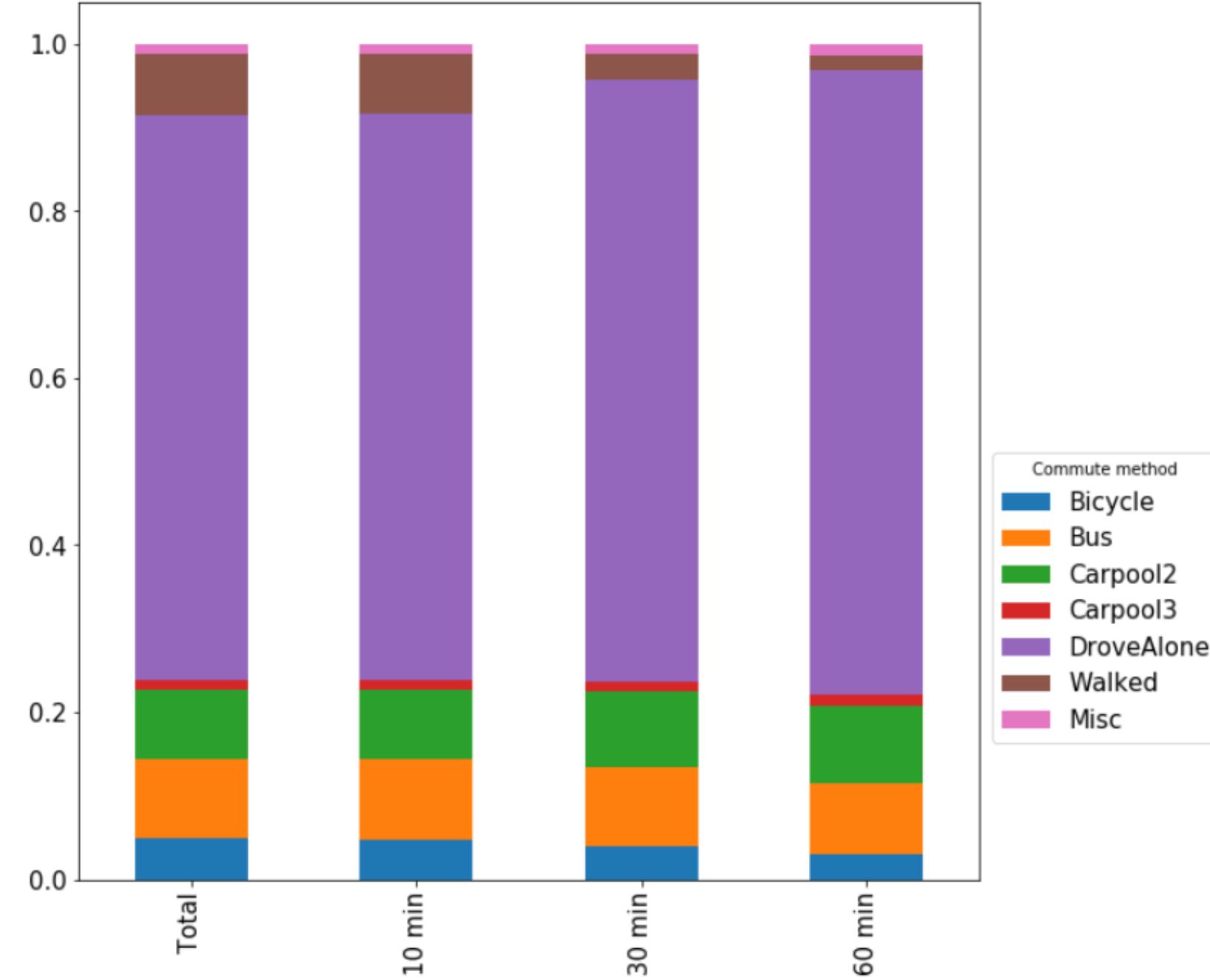
[HTTP://DATA-CITYOFMADISON.OPENDATA.ARCGIS.COM/DATASETS/2bfd47ada14542c5969a6eb7e6f274dd\\_31?GEOMETRY=-89.925%2C42.981%2C-88.621%2C43.157](http://data.cityofmadison.opendata.arcgis.com/datasets/2bfd47ada14542c5969a6eb7e6f274dd_31?geometry=-89.925%2C42.981%2C-88.621%2C43.157)  
[HTTPS://CTPP.TRANSPORTATION.ORG/CTPP-DATA-SET-INFORMATION/5-YEAR-DATA/](https://ctpp.transportation.org/ctpp-data-set-information/5-year-data/)







Total Commute with different walking distance to work



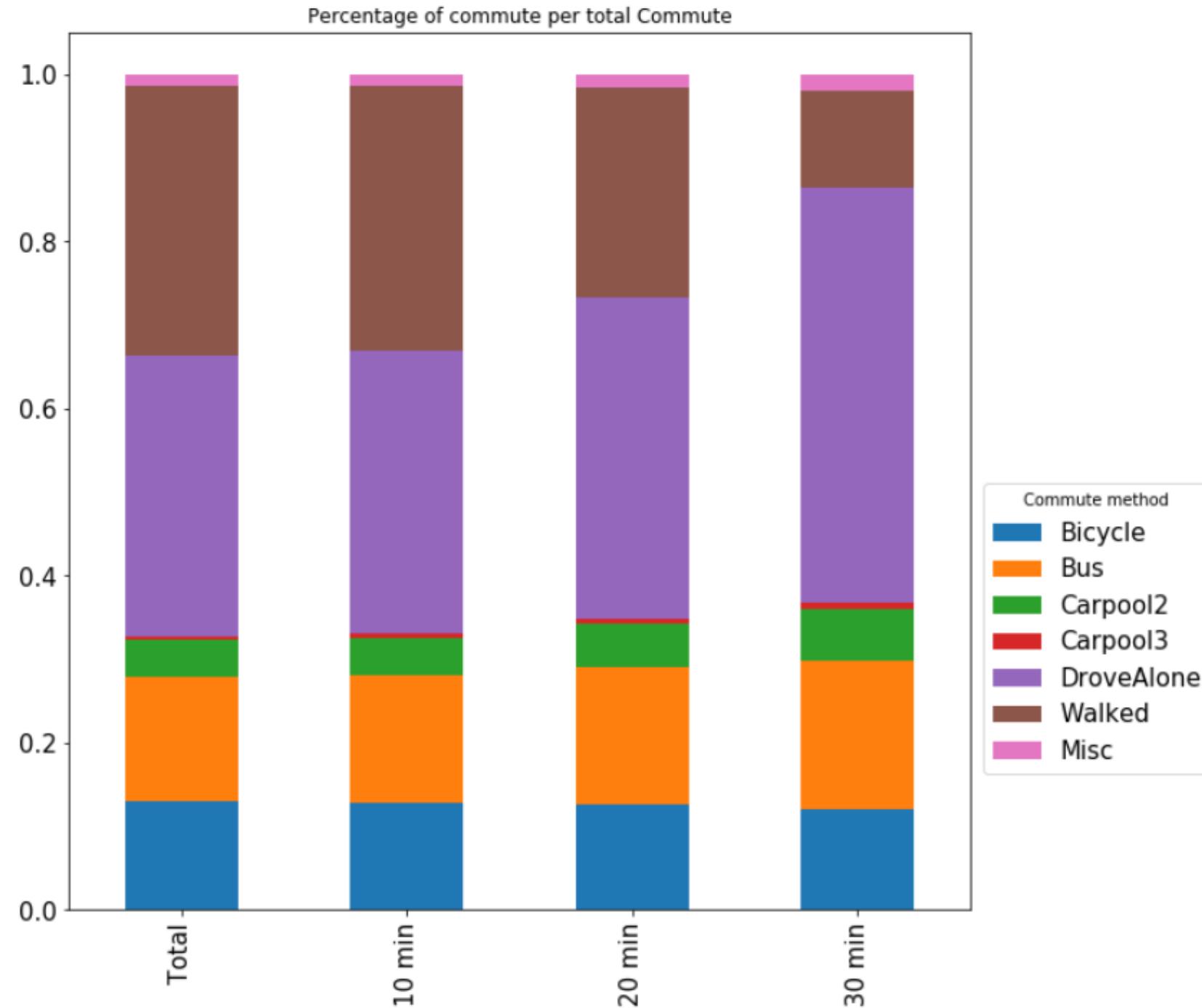
How does distance from their residence to work effect the commute?

- When people are further away from work, they ...
  - Walk to work noticeably less
  - Ride the bus but only slightly more
  - Drive to work noticeably more rather than taking the bus



How does the distance from the residence to bus stops effect the ridership?

- Bus Ridership percentage increased slightly
- Walking to work percentage decreased drastically
- Driving alone percentage increased drastically
- The data becomes inaccurate because in campus, many people live close to bus stops but walk to work since they live close to work anyway



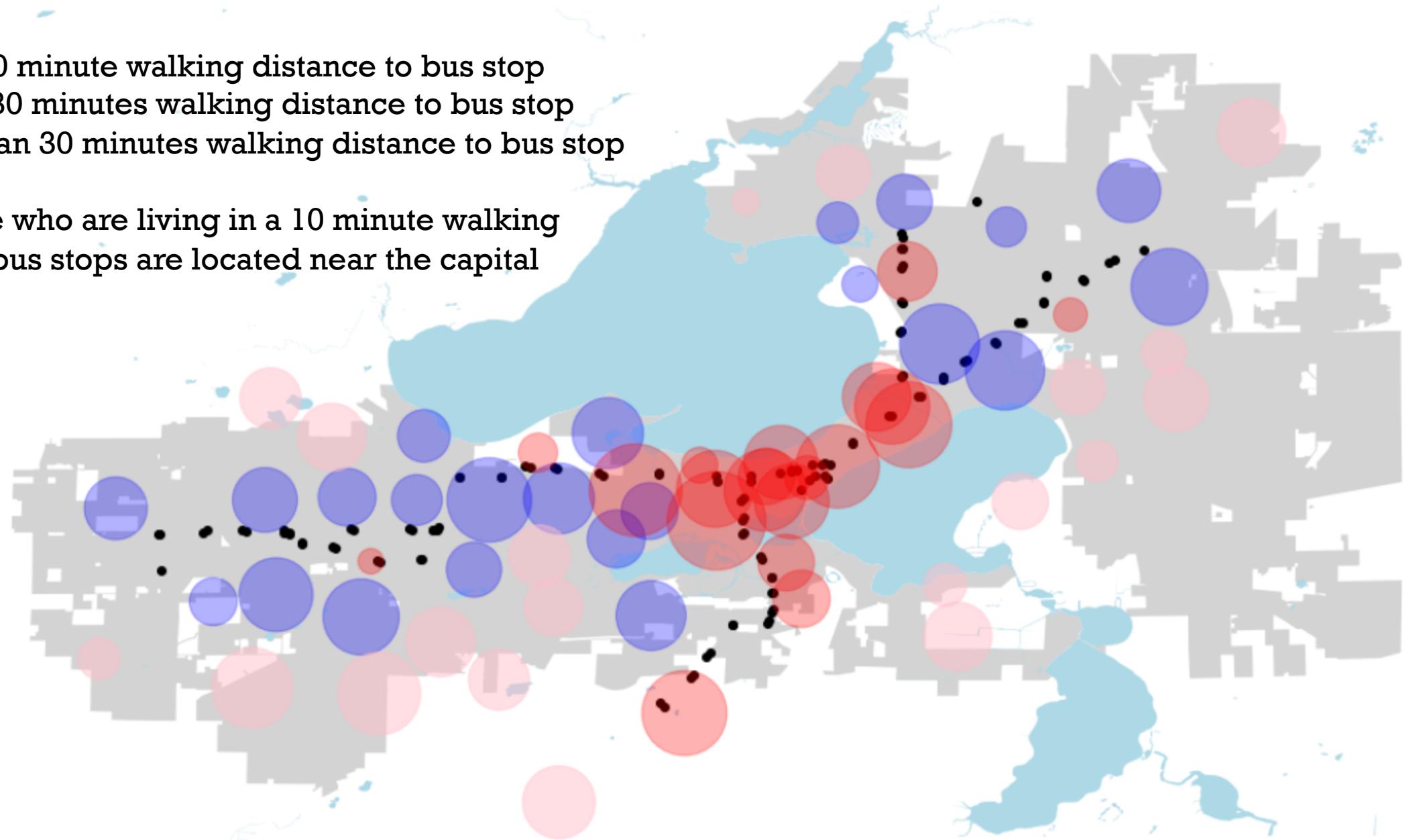
## Where are they located?

Red = within 10 minute walking distance to bus stop

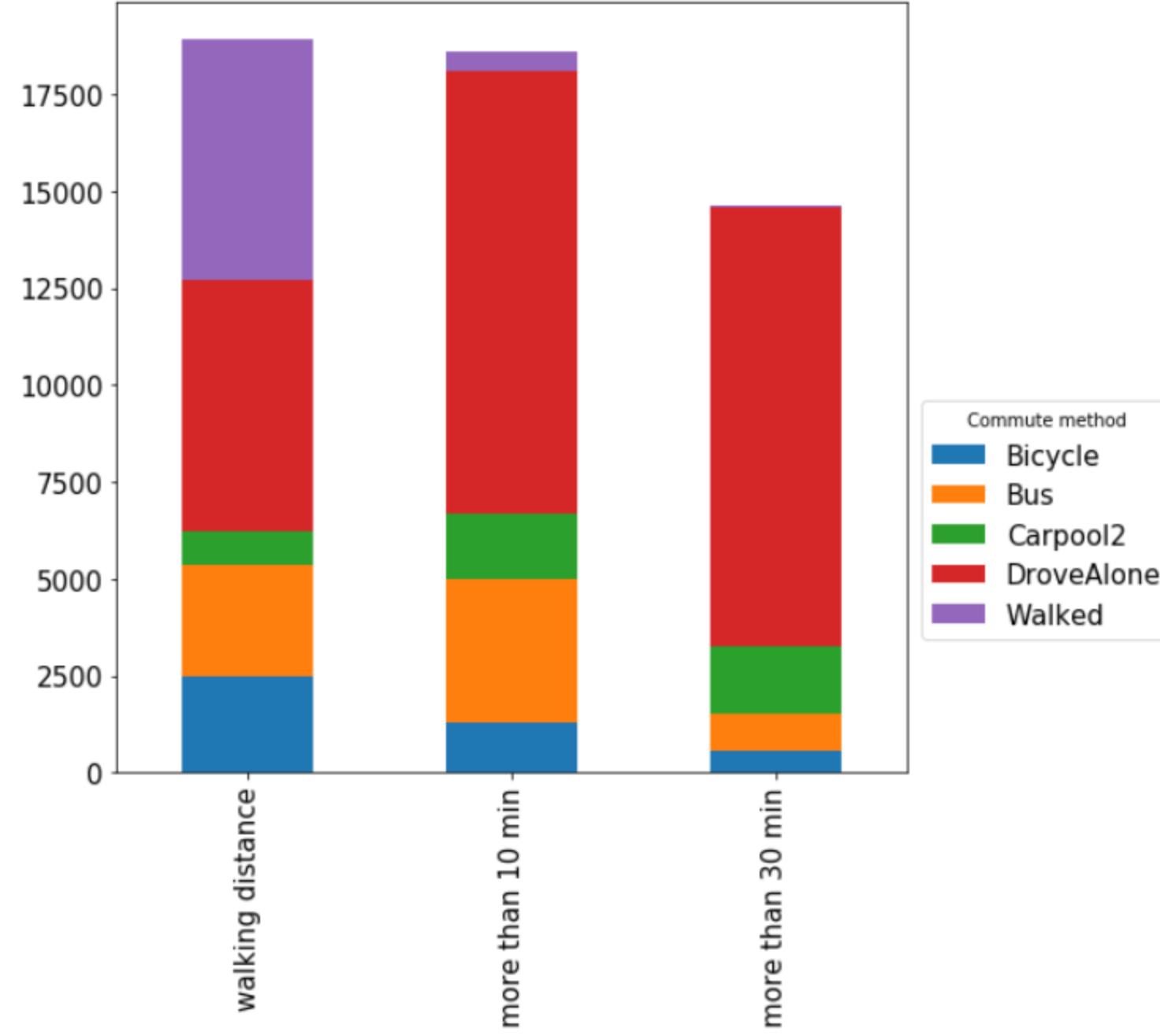
Blue = within 30 minutes walking distance to bus stop

Pink = more than 30 minutes walking distance to bus stop

- Most people who are living in a 10 minute walking distance to bus stops are located near the capital



number of commuters with different distance to bus stops

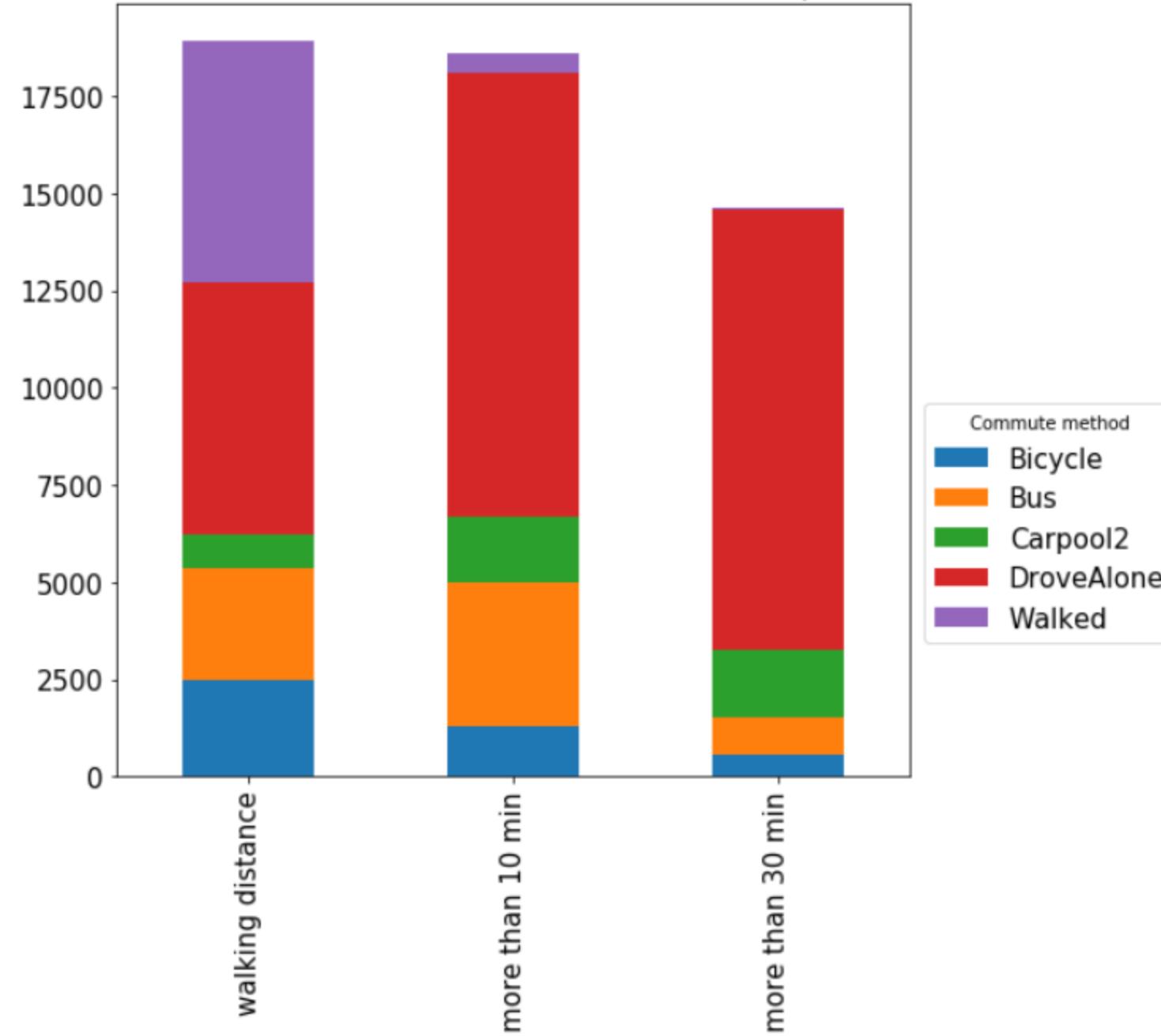


How does the different zones differ in ridership?

- Red Zones
  - Most of the people walk due to them living on campus



number of commuters with different distance to bus stops

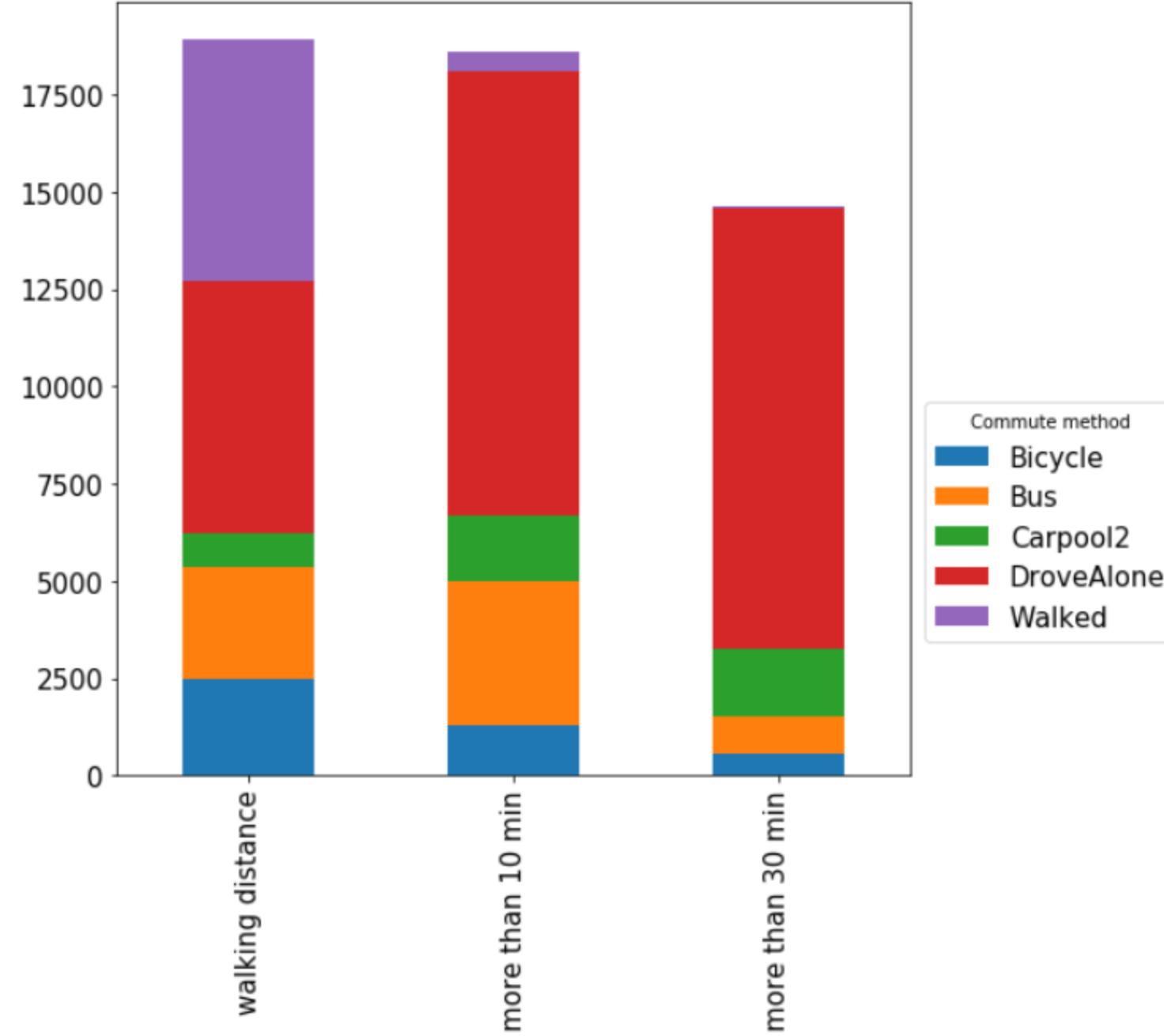


How does the different zones differ in ridership?

- The blue zones
  - Not many people walk to work anymore
  - More people are taking the bus to work
  - Most people choose to drive rather than taking the bus or walk



number of commuters with different distance to bus stops



- How does the different zones differ in ridership?

### The Pink zones

- People do not walk to work
- Most people drive to work rather than talk the bus

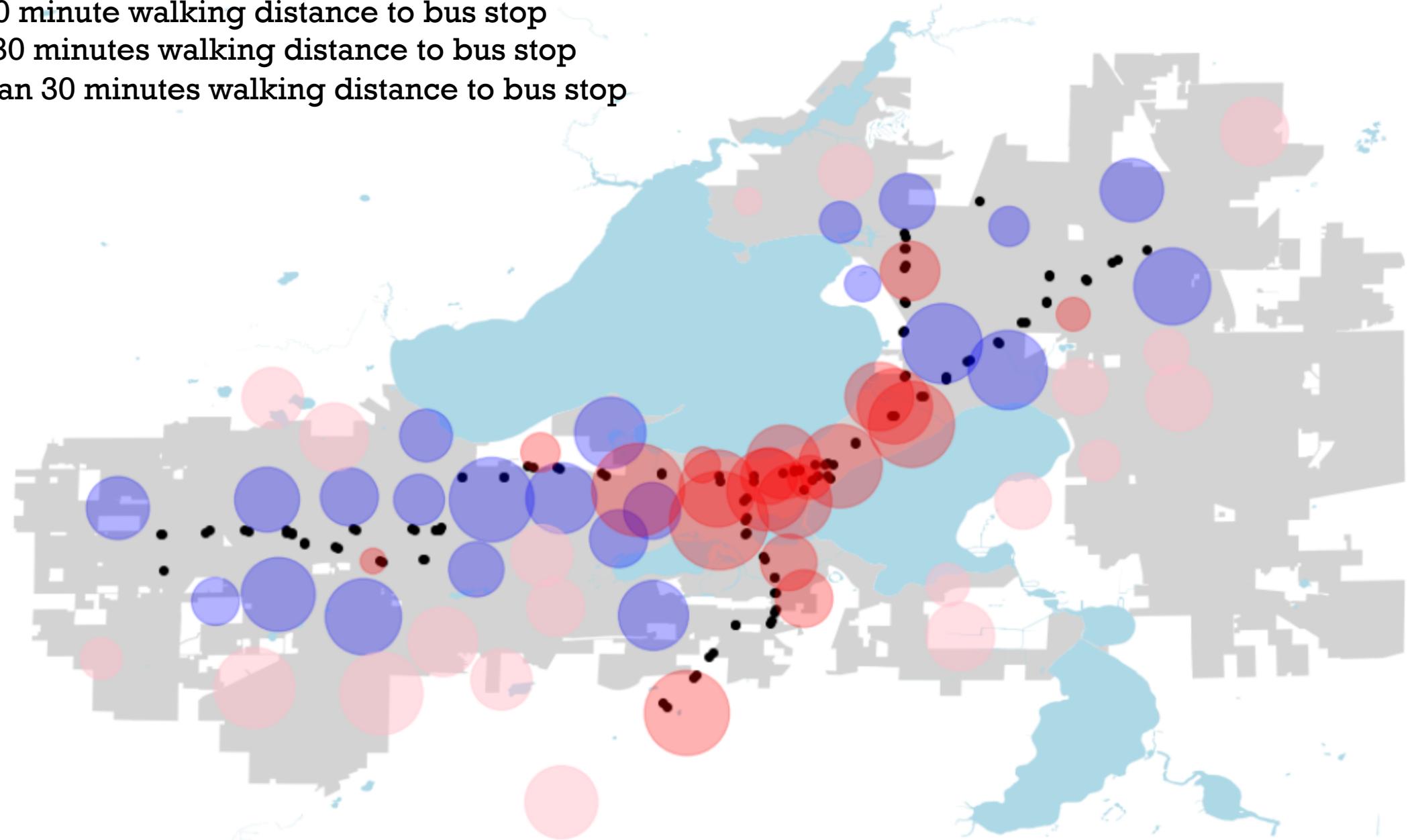


Where are they located?

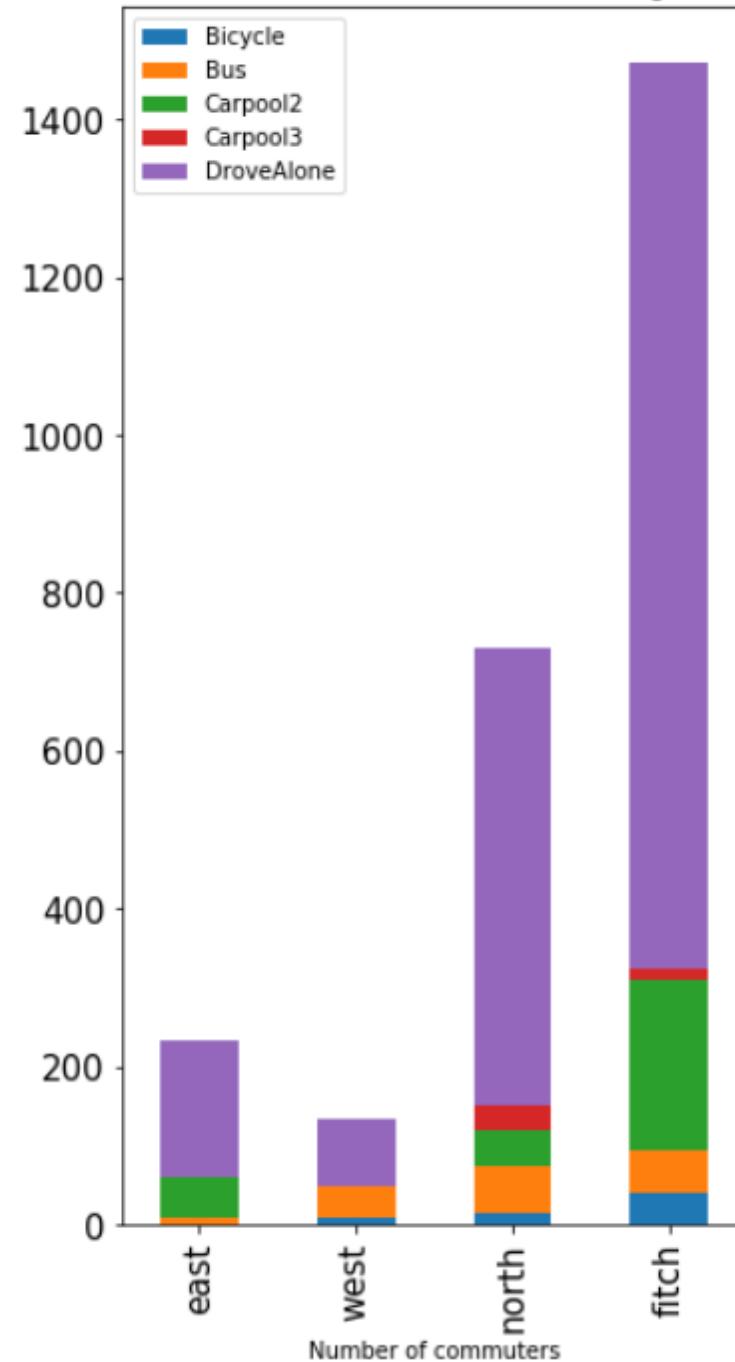
Red = within 10 minute walking distance to bus stop

Blue = within 30 minutes walking distance to bus stop

Pink = more than 30 minutes walking distance to bus stop



Commute from 4 most corners that are 10 min walking distance to bus stop



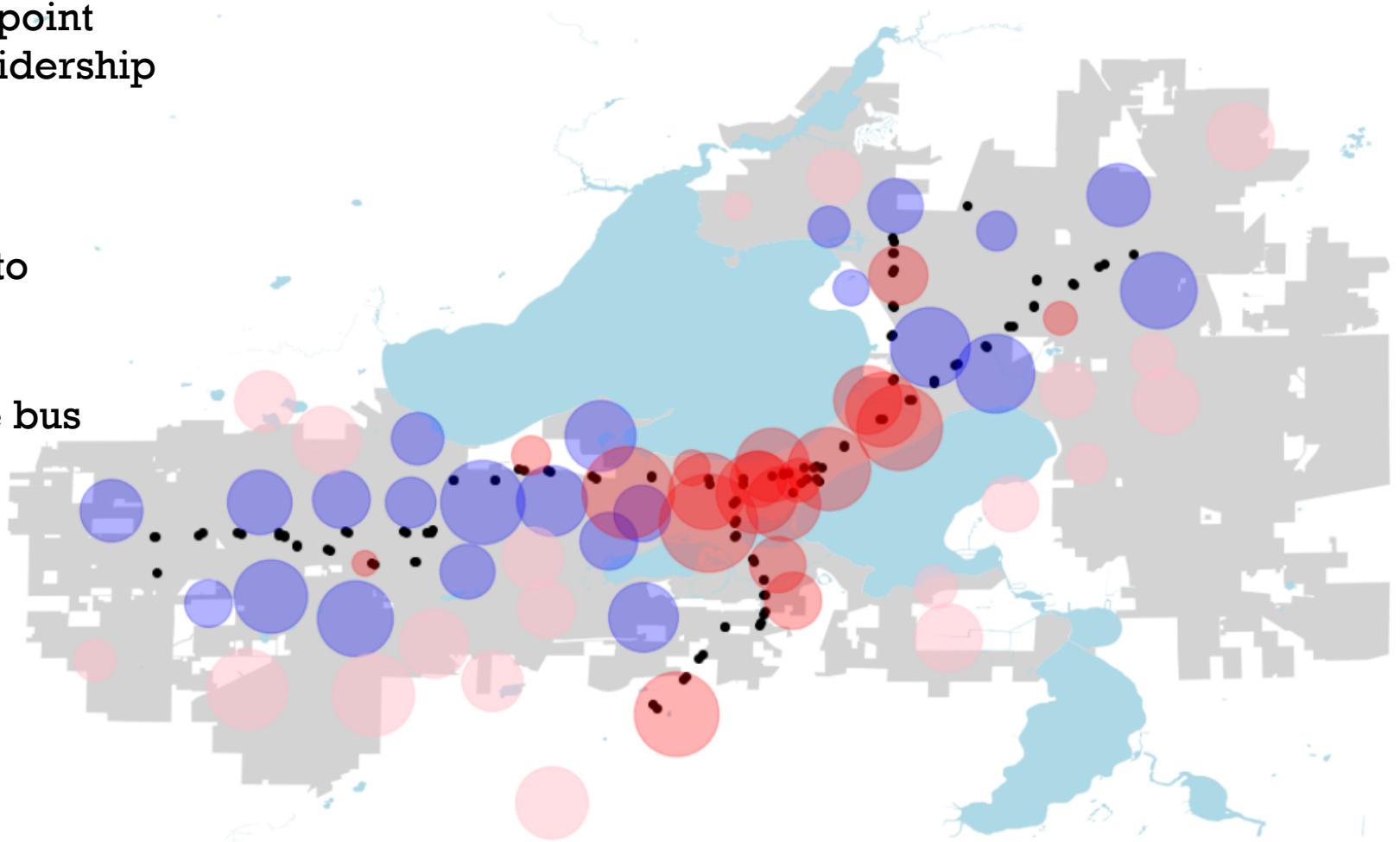
Which rapid bus stops are getting most ridership?

- Focus only on the four most corners of the commute areas near the bus stops
  - North and Fitchburg has most ridership
  - North has most number of the ridership compared to others



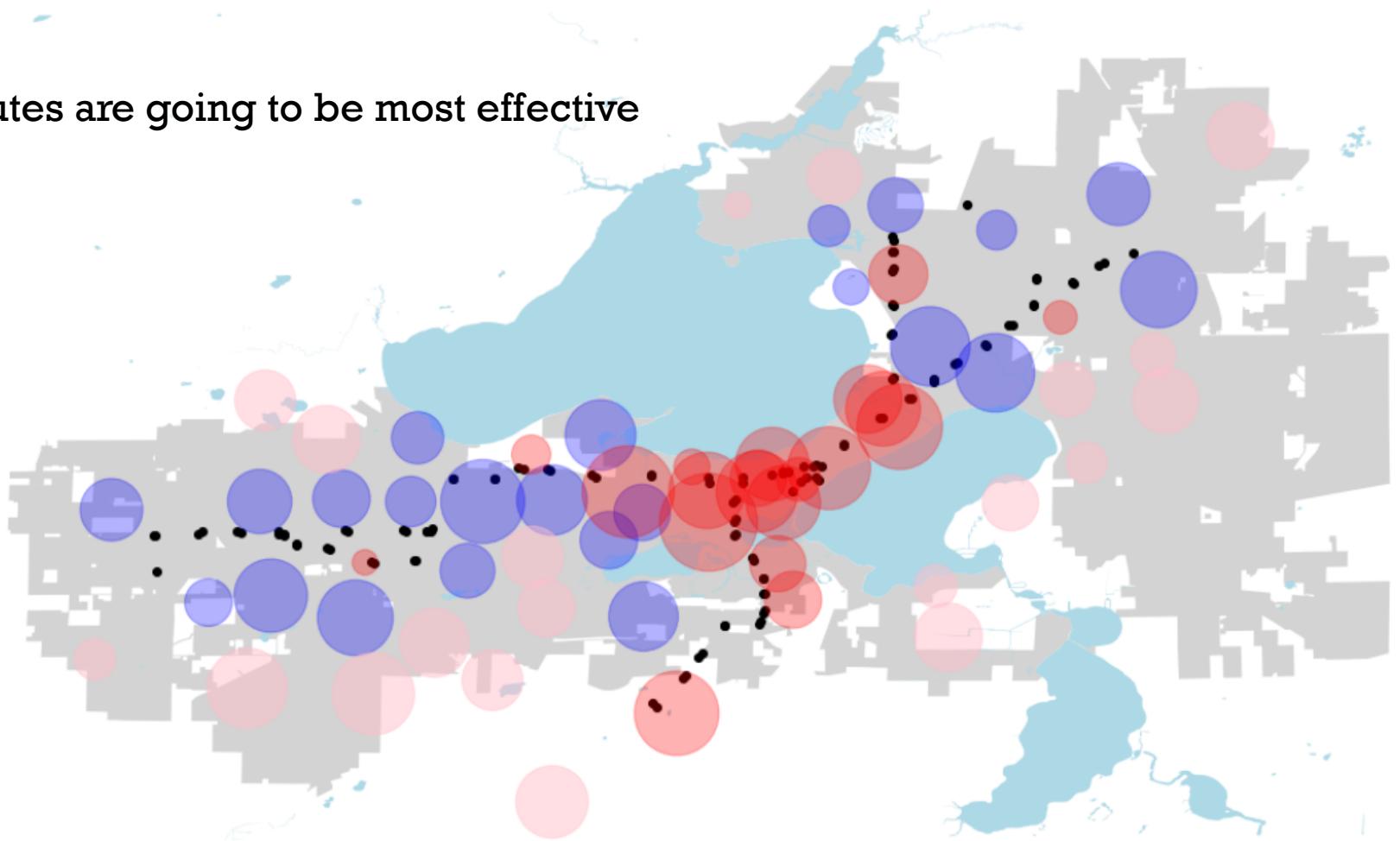
## In Conclusion...

- Most effective
  - Fitchburg and North transfer point area are reaching the target ridership
- Location
  - Bus stops needs to be closer to resident population
  - West side
  - Encourage people to take the bus rather than driving



## How to go forward...

- Future work
  - Look in to which routes are going to be most effective
- Issues encountered
  - Scope limitation
- Reference
  - City of Madison



# THANK YOU

Jay Jin Woo Lee

