

## Presentation Outline

1. Problem
2. Research question
3. Process
4. Analysis
5. Conclusions

## Problem:

- Usage of TriMet park and ride facilities varies widely, particularly along the newly opened Green Line
- Surveys have shown that users often don't use the facility nearest their home
- Facility placement often based on available land, not ideal location

## Research Question:

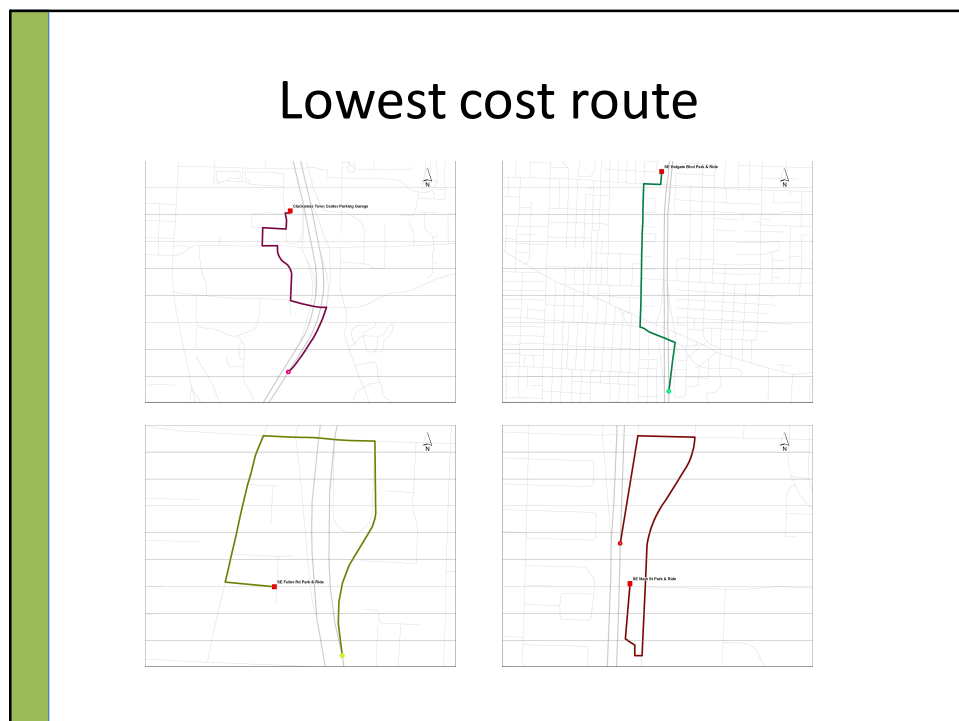
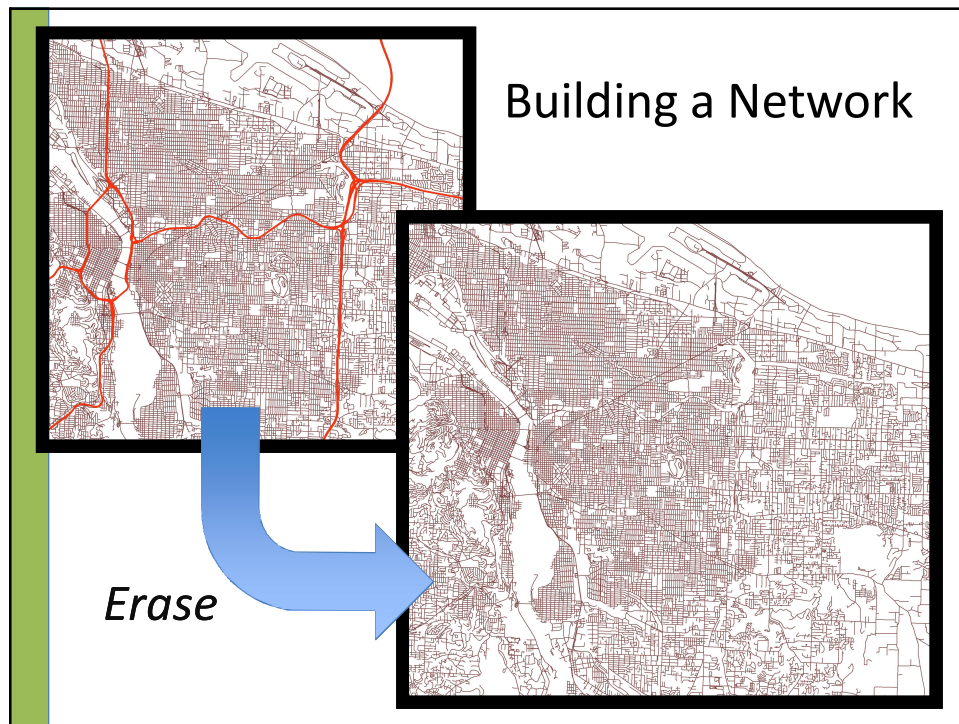
- Do spatial and demographic characteristics determine park and ride usage?
  - How might GIS help planners determine optimal locations for park and rides?



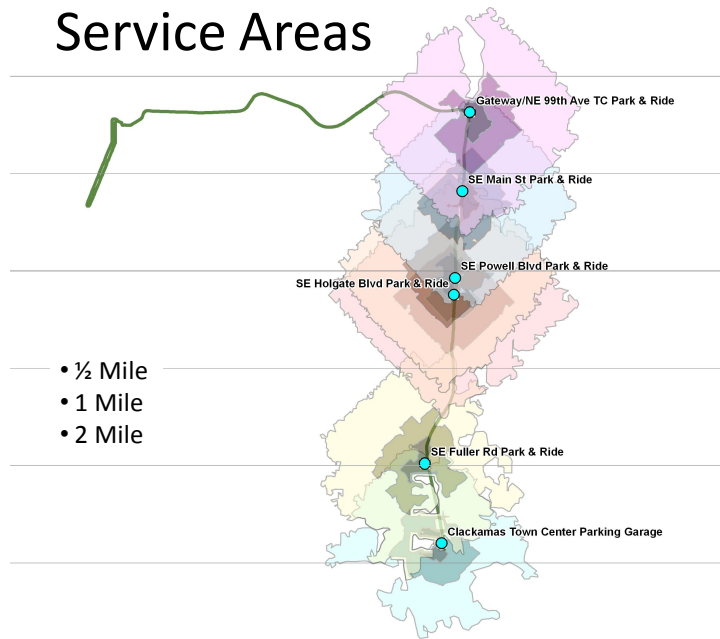
## Analysis:

Variables Used		
Peak parking counts (DV)	Distance from freeway to P&R	% commuting by transit
Density of major arterials	Walk distance from spaces to MAX (mix, mid, min)	% unemployed
Trains in peak hour	Distance to CBD driving	% blue collar employment
Median age	Time to CBD on MAX	Bike parking spaces
Median income	Visibility from freeway	% households with no car
% households with income > \$200,000	P&R signage on nearby streets	Bus connections
Racial/ethnic background	Population density	Education level
Area within 2 mile network buffer	Land zoned residential	

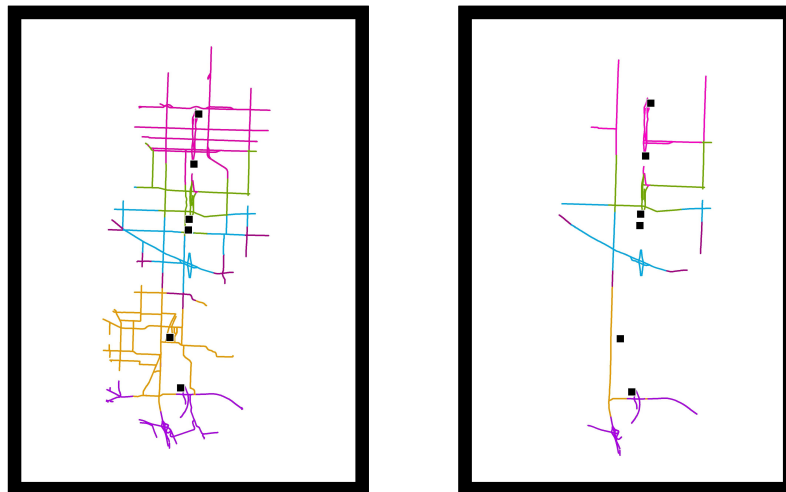




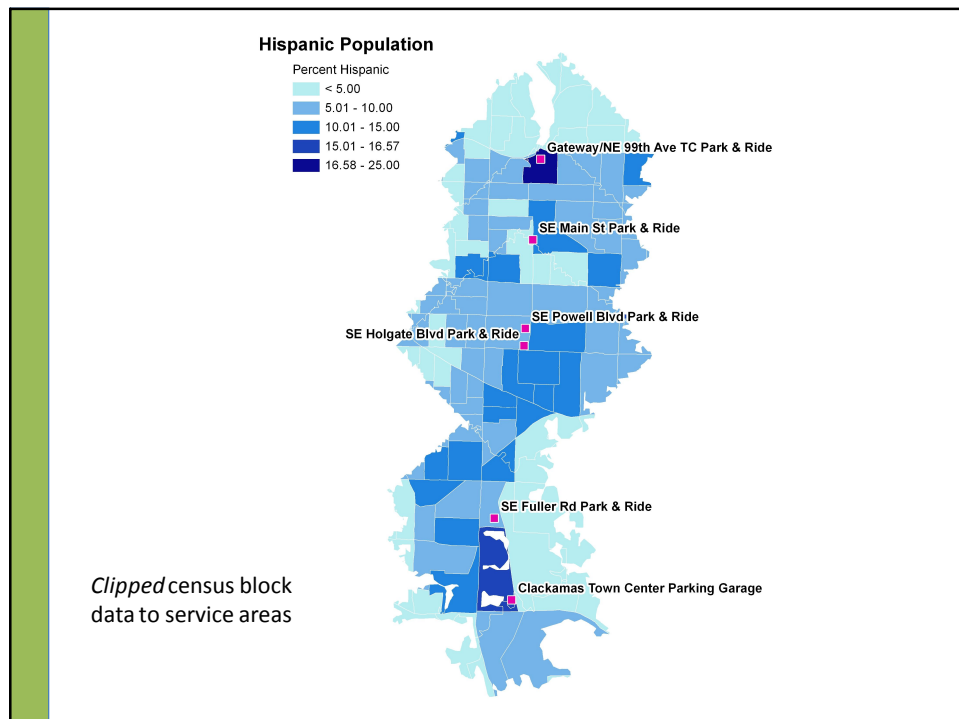
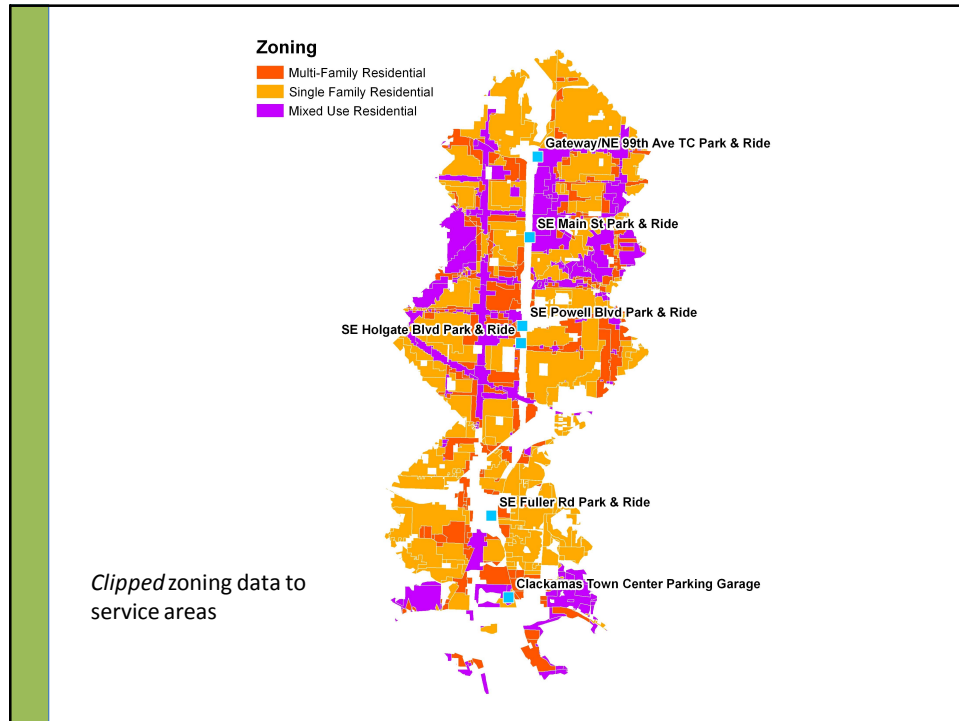
## Service Areas

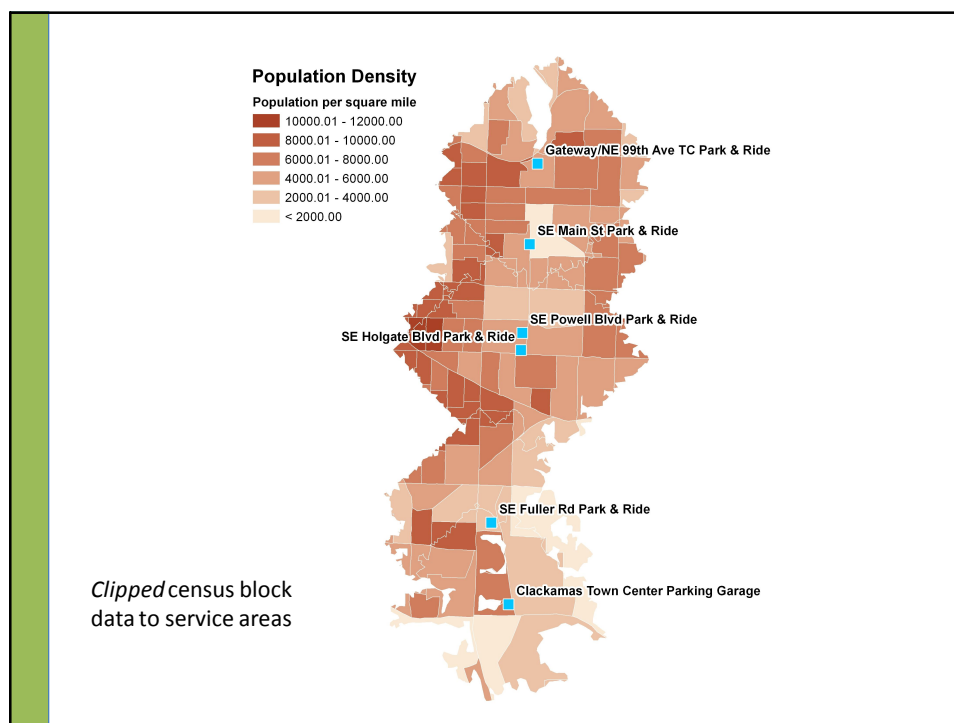


## Road Density



*Clipped arterials, major arterials to service areas; Calculated length*





## Analysis: select variables

Variable	Pearson Correlation	Sig.
Shortest walking distance to station	-.958	.010
Percent Hispanic in service area	-.954	.012
Bus connectivity	.948	.014
Median age	-.904	.035
Population density in service area	-.865	.058

## Conclusions:

- Some correlation with demographics, built environment and transit service
- Many variables we thought would be significant were not
- Far from a conclusive model
- Other nuances of behavior and preference not captured

## Conclusions: Limitations

- Correlation  $\neq$  causation
- Limited by small number of cases
- 10 year old census data
- Lack of traffic data by time of day
- Facilities in use less than 9 months



## Conclusions: Next steps

- TriMet wide evaluation
  - More cases would allow for more robust statistical analysis
- License plate survey
  - Where are people actually coming from?
  - Route estimation (shortest vs. actual route)

Thank you!

Any questions?