Food Accessibility In Portland
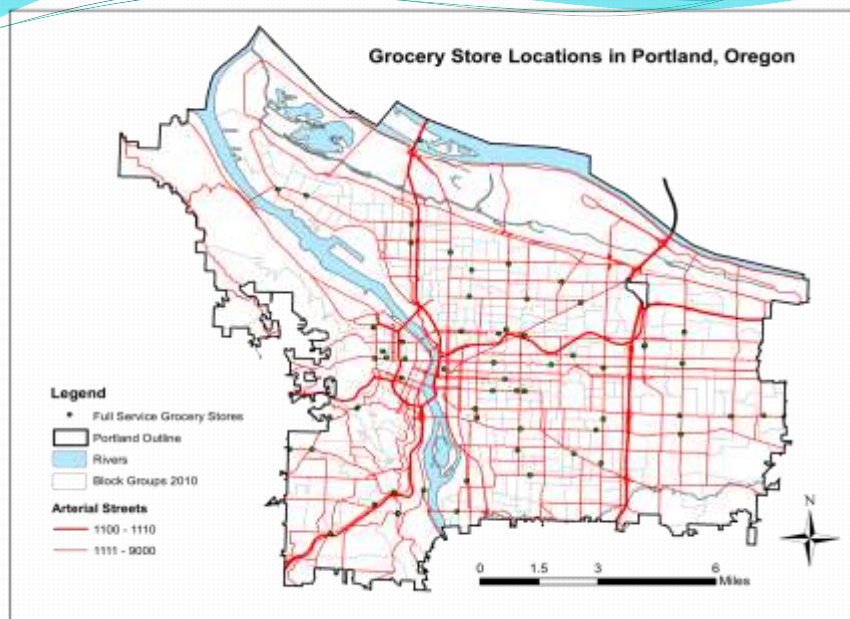
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GIS II
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Introduction

- Food Accessibility
  - In United States
  - In Portland, Oregon

Food Access Locations in Portland, Oregon

Grocery Store Locations in Portland, Oregon

Research Question

Based on identified factors of food accessibility, which areas of Portland have the best and worst access to quality food?

A Step Further: Given the attributes in the datasets, are there any spatial patterns or conclusions we can draw?
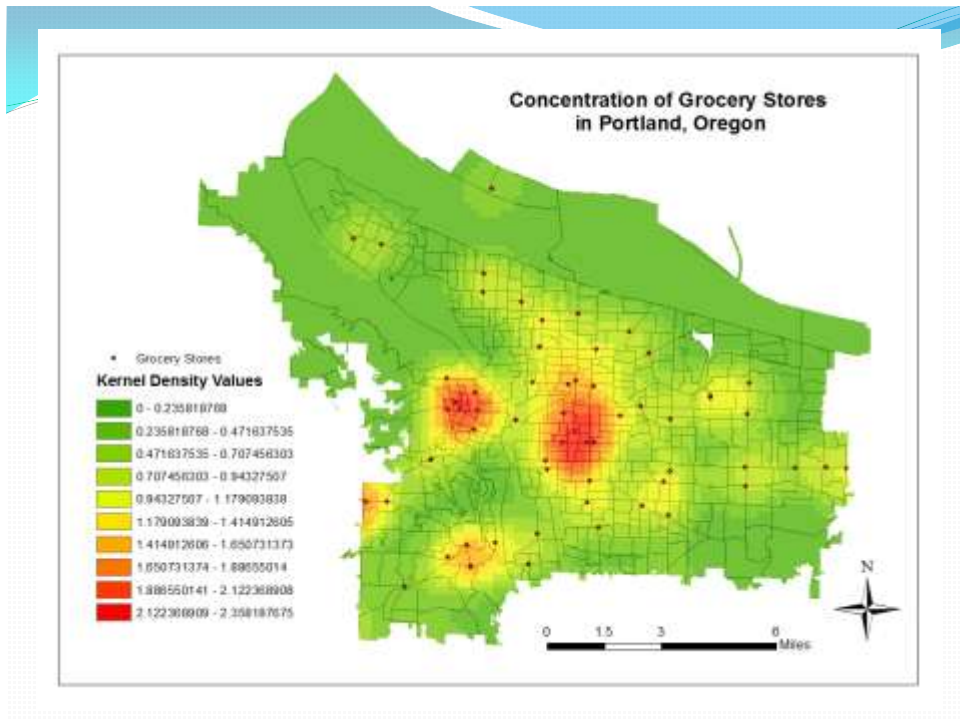
Methods

- Determine factors for accessibility map
  - Distance/Access to stores (fresh produce)
  - Transit Availability (buses/bus stops)
  - Household Income (high vs. low)
- Find data
  - RLIS
  - David Banis
  - Census
- Analyze data
- Present and Interpret Results
  - Final accessibility map
  - Given the attributes in the datasets here are some conclusions we can draw
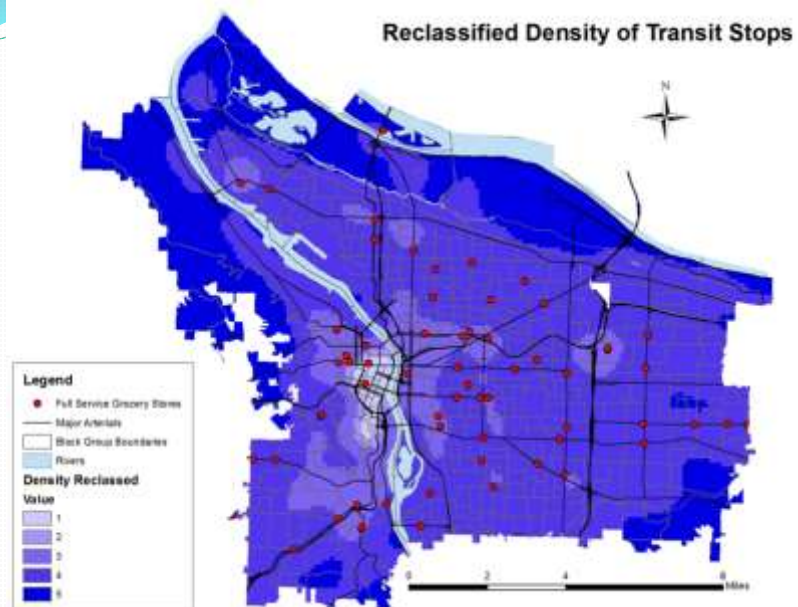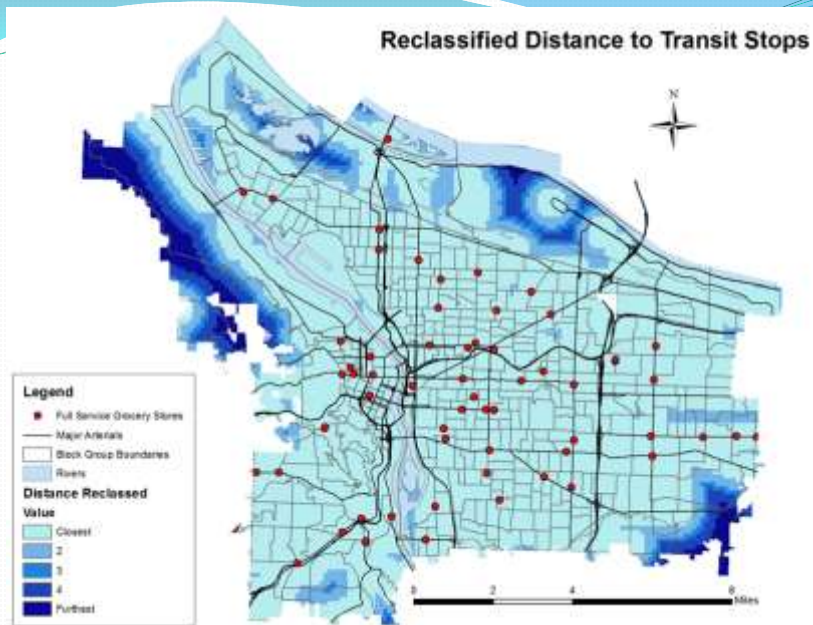
Access to Grocery Stores

- Why is this a factor?
- Methods
  - Maps
    - Euclidean Distance (distance from stores)
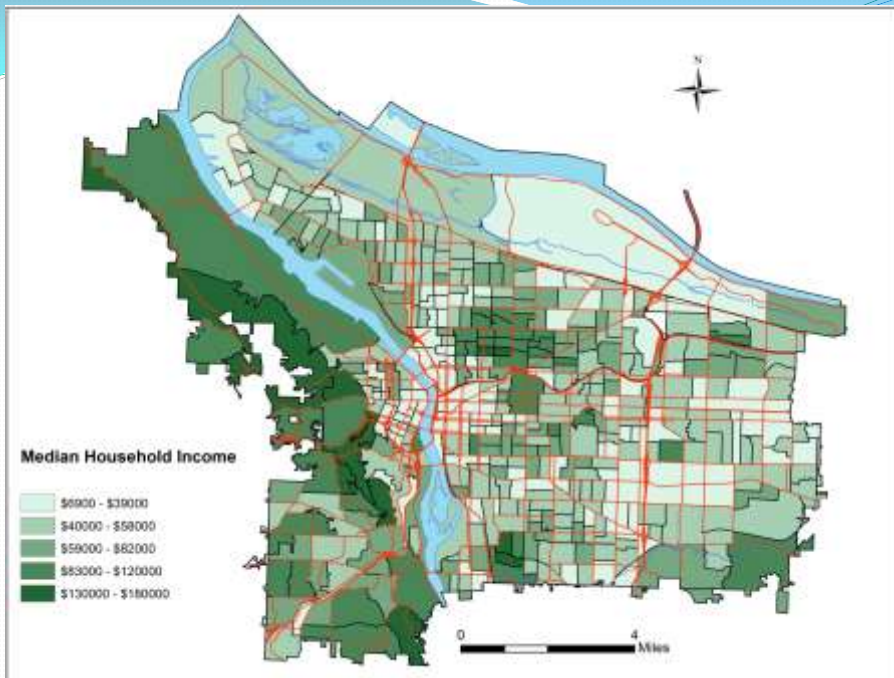   - Kernel Density (concentration of stores)

Concentration of Grocery Stores
in Portland, Oregon
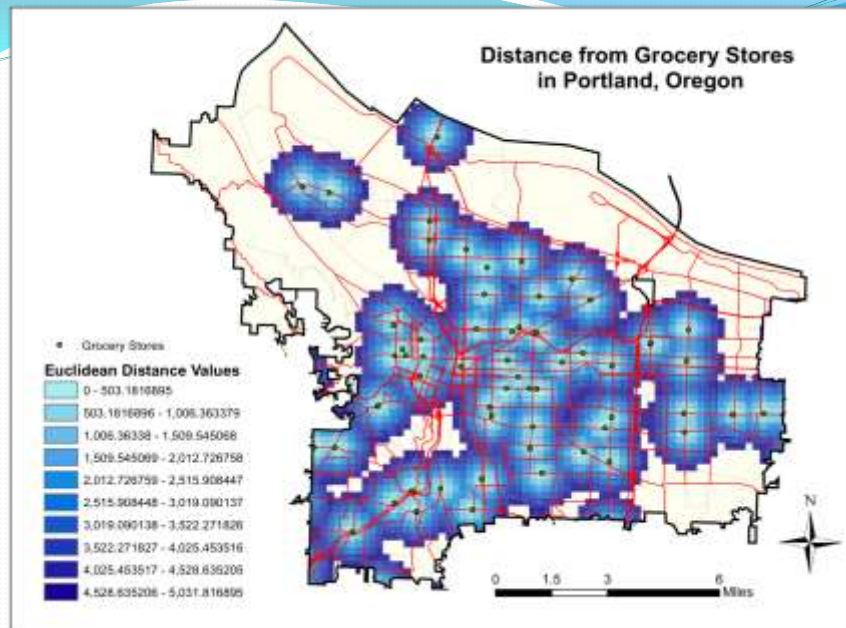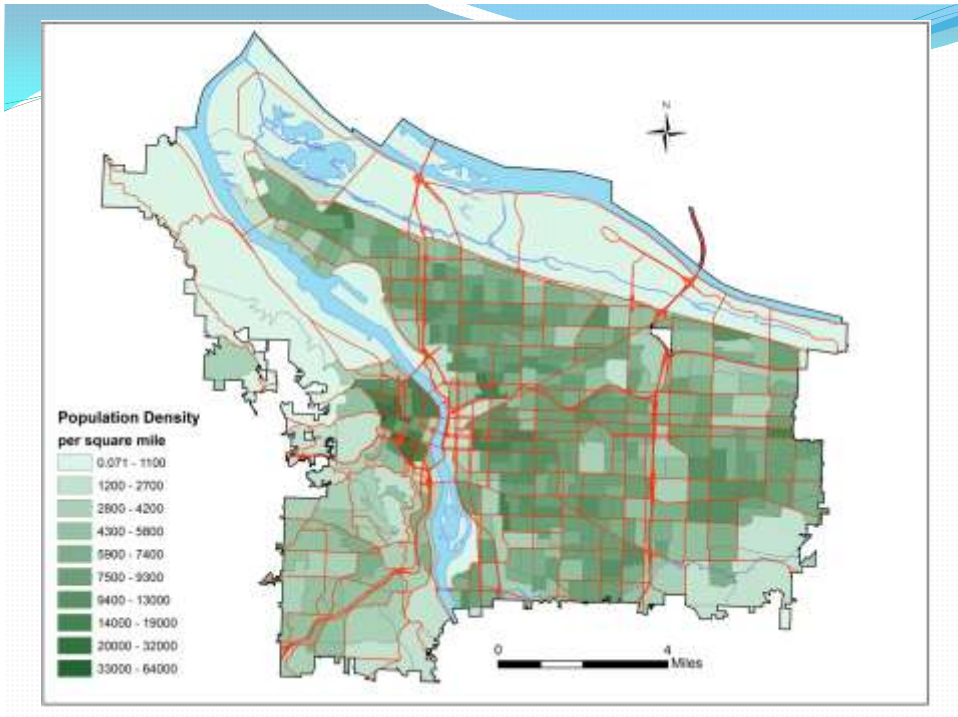
Access to Transit

- Why is this a factor?
  - Carless households or unreliable transportation
  - Density = choices
- Methods
  - Euclidean Distance
  - Kernal Density
  - Reclassify
- Maps

Reclassified Distance to Transit Stops

Reclassified Density of Transit Stops

Household Income

- Why is this a factor?
- Methods (how map was made)
- Map

Median Household Income

- $6900 - $39000
- $40000 - $58000
- $59000 - $82000
- $83000 - $120000
- $130000 - $180000

Population Density per square mile

|	
	0.071 - 1100
	1200 - 2700
	2800 - 4200
	4300 - 5800
	5800 - 7400
	7500 - 9300
	9400 - 13000
	14000 - 19000
	20000 - 32000
	33000 - 64000

Weighted Overlay

- Weighted Factors
  - Income Levels (35%)
  - Distance to Stores (35%)
  - Access to Transit (20%)
  - Density of Transit (10%)

- Justifications for these weighted values
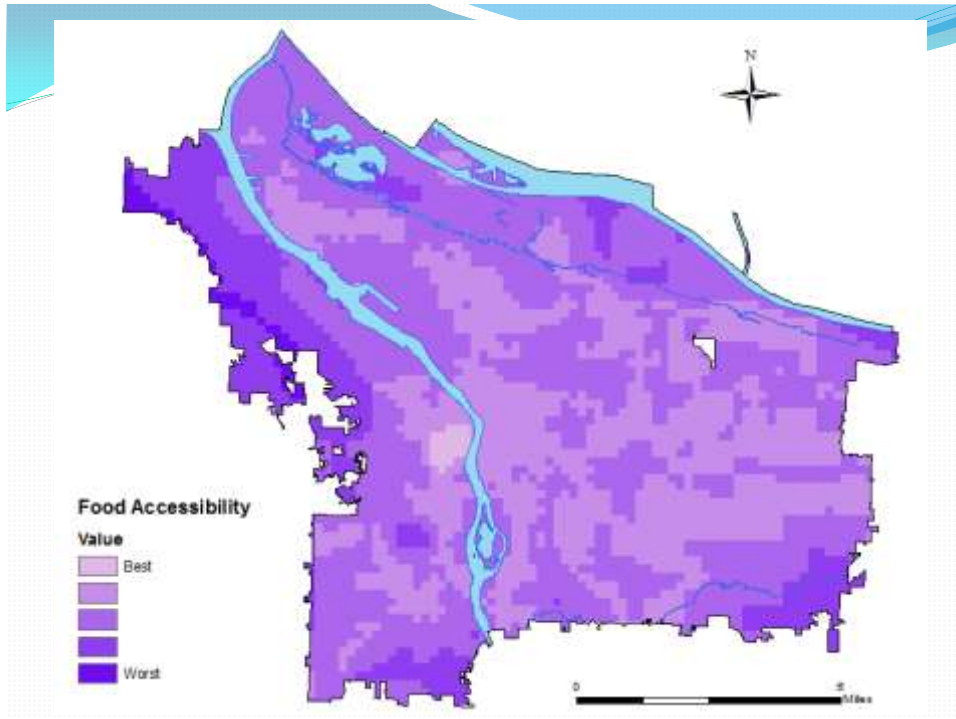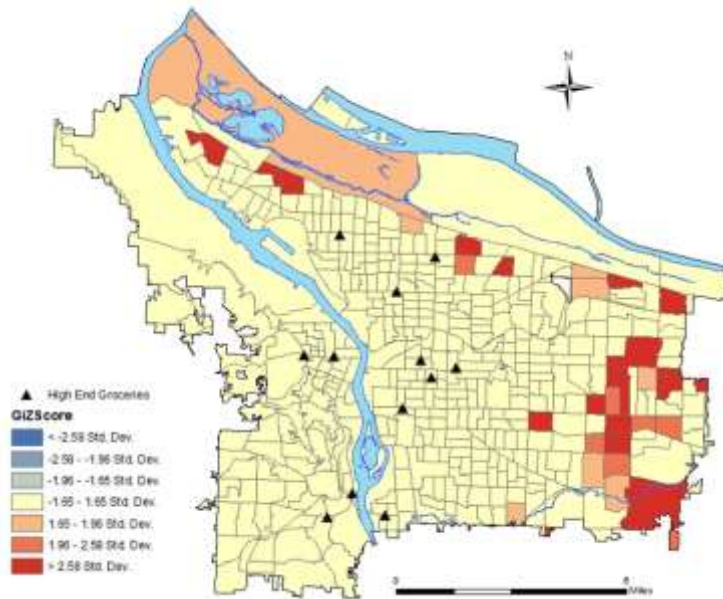
Final Food Access Map

- Methods
  - Raster Calculator
  - Reclassify
  - Result
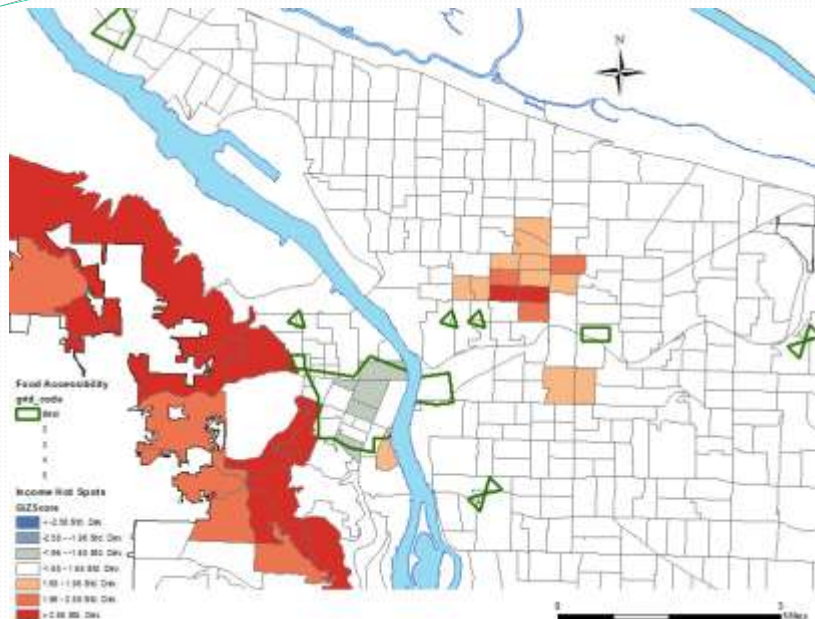 - Comparison to Population disbursement

Food Accessibility in Portland
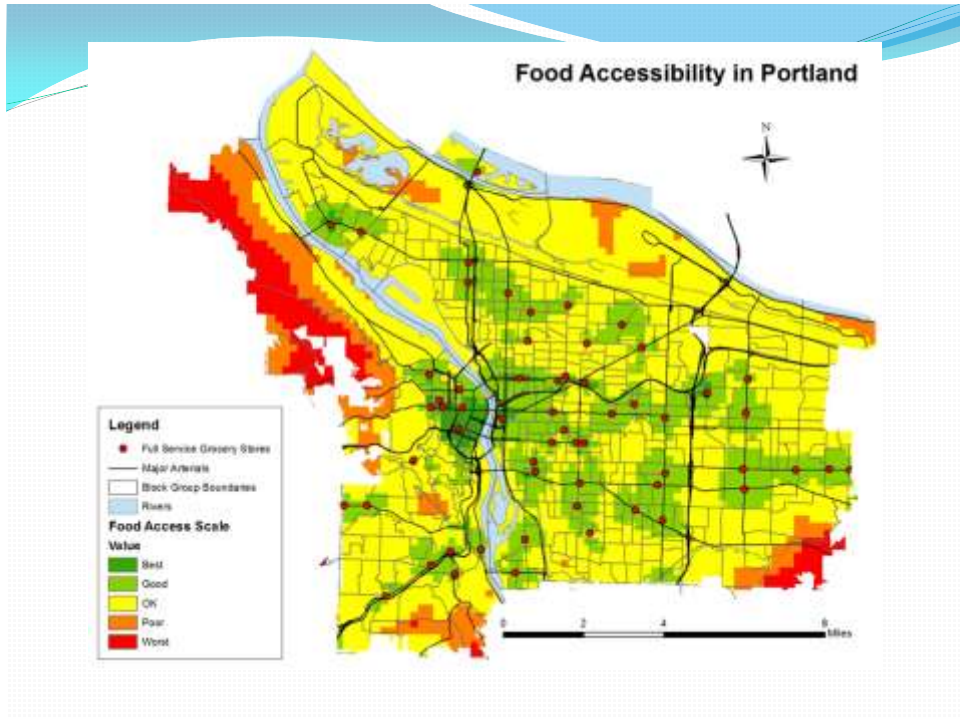
Finding Relationships/Patterns

Given the attributes in the datasets here are some conclusions we can draw.
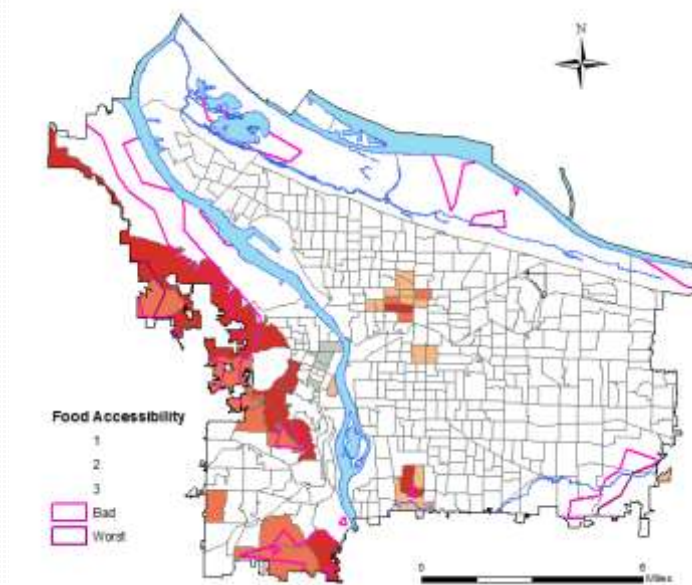
Hot Spot Analysis of Non-White Population Density

Income Hot Spots with High Food Accessibility

Income Hot Spots and Poor Food Accessibility

Results and Implications

- Food access has more to do with affluent areas, not poor.
- Portland has relatively good food access
- High end groceries andnon-white populations

Limitations/Considerations

- Vehicle ownership
- Store quality and size and general pricing
- Only full-service grocery stores were considered (convenience stores with produce etc)
- Poor access places can be affluent areas, least populated or rural communities
- More data
- Assumptions: closest grocery, take bus/walk

Data Sources:

- **US Census Bureau**
- Block Group Boundaries
- 2010 census income statistics
- 2010 census population statistics
- **RLIS**
- Streets, Highways, City Fill, Rivers, Block Groups, Transit: Bus stops, Bus routes
- **David Banis/PSU Geography Department**
- Grocery Stores
- Convenience Stores
- **All maps created by Jon Ferguson and Jesse Guiterrez, Larissa Butler**

Questions?