Mapping Neighborhood Socioeconomic Distress by Census Track

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Background

- Map neighborhood conditions for a revitalization grant Housing Authority of Portland is writing
- Purpose of the grant is to improve the living environment of public housing residents in distressed developments and lower the concentration of very low-income families
- Application defines neighborhood as a 3 mile radius around the development

Site for Proposed Redevelopment: Iris Court

- Systems need upgrading
- Site design is problematic (isn't connected to neighborhood, no green space)
- Site/residents isolated from community
- Neighborhood is changing but Iris still considered a pocket of distress

HUD Required Documentation of Neighborhood Conditions

- Crime Statistics
- Photographs of site
- Socioeconomic data
- Trends in property values
- Other indicators of neighborhood distress

Question

- Is the Iris Court and the surrounding neighborhood in socio-economic distress?
  - Resident of Iris Court would be considered “distressed” by most standards
  - Need to make a composite map of socioeconomic statistics

Methods

- Find an industry-accepted definition of neighborhood distress…..

Definition of Distressed Census Tracks

"Distressed tracks simultaneously exhibit disproportionately high levels of poverty, joblessness, female headed families, and welfare receipt. Severely distressed tracks are those tracks that have all the characteristics of distress plus exceptionally high teen age dropout rates."

John Kasadra, *"Inner City Concentrated Poverty & Neighborhood Distress 1970-1990"* Housing Policy Debate; Volume 4 Issue 3; page 256

More Methods

- Made a base map of Multnomah County using RLIS data
- Adding in RLIS census track geographic boundaries
- From American FactFinder downloaded census tables by census track and imported into Excel
- Formatted and calculated 5 neighborhood indicators of distress
- Imported in Access

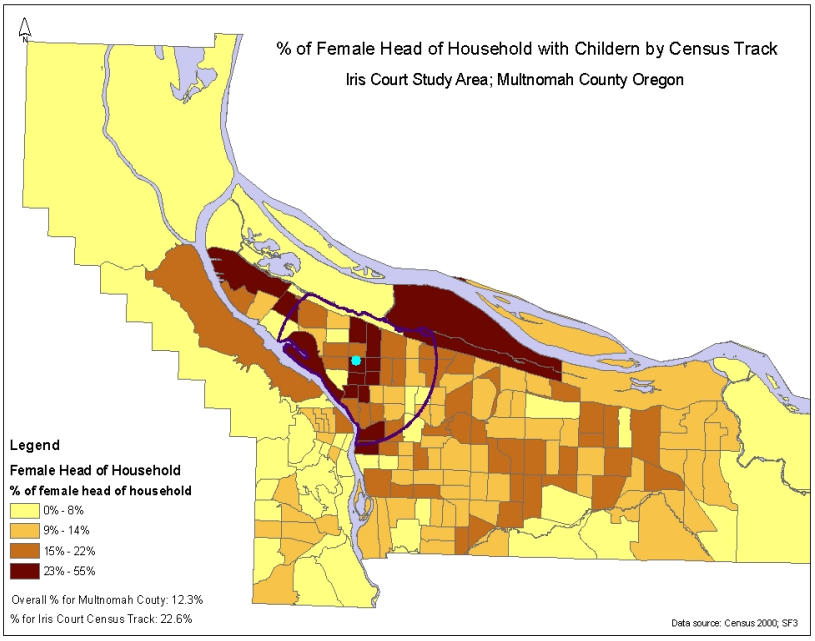
Census Indicators Used

- **% of population in poverty**: # of people below 1999 poverty line/ population
- **% of joblessness**: # of persons 16+ in labor force and unemployed/ # of persons 16+ and older in labor force
- **% of female head of household**: # female headed households with kids/ # of family households
- **% welfare receipt**: # of household on public asst./ # of households
- **% teenage high school dropout**: # of 16-19 not graduated from school and not in school/ # of 16-19 year olds

More Methods….

Exploring the data –

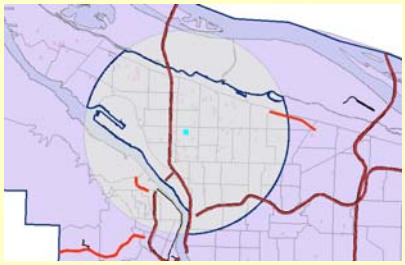
- made choropleth maps of each census indicator by joining the access file to the census track boundary file



Defined Study Area

- 3 mile radius from development- minus "hard boundaries" (rivers, railroad tracks and major highways)
- Used 3 mile buffer around Iris Court
- Approach was to use "study area" to compare neighborhood to Multnomah County

Defining Study Area (cont)

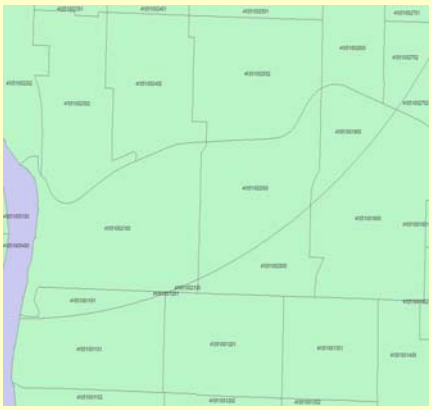


- Used rivers to define north and west/southwest border through a series of unions and erase (erasing census tracks in the rivers)
- Didn't use highways as border--left out areas some consider geographically linked (North & Inner NE) and left in more affluent neighborhoods

Boundary Problems

- Columbia Slough didn't form a continuous line on northern edge--had to edit the feature
- Numerous slivers because of differences between track boundaries and the county line

More methods…

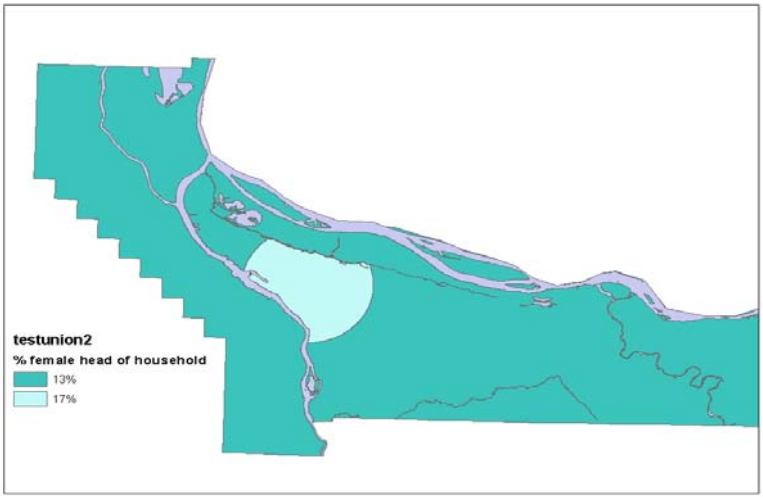


- Calculated the area of census track within the study area
- Recalculated each indicator based on portion that was inside or outside of the study area

Even more methods…

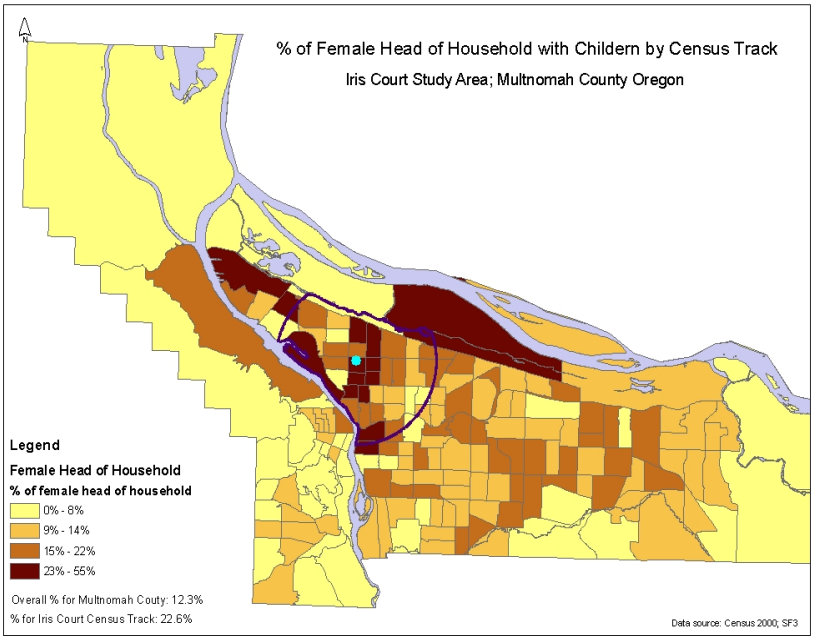
- Exported the attribute table to Excel and summarized the indicators for two polygons--study area and non-study area
- Dissolved the census tracks in both layers and used union to put the polygons into one layer
- Joined the Access data into that layer

Resulting in a map like this



Problems

- Concerned about the quality of the data when it's been diced and sliced so much
- The story of the immediate neighborhood got lost
- Conflicting definition of neighborhood in the HUD NOFA



New and Improved Methods

Methods

- Kept census tracks intact and kept study area as a layer
- Got the mean and STD for each indicator in the summary statistics of the attribute table
- Exported to Excel and calculated STD for each census track

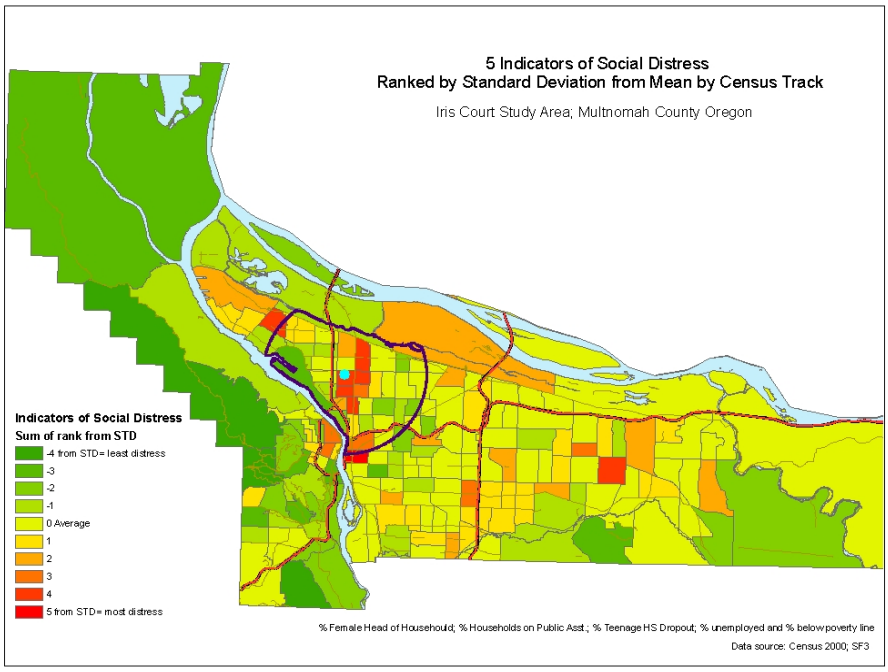
More Methods

Assigned each census track the following values:

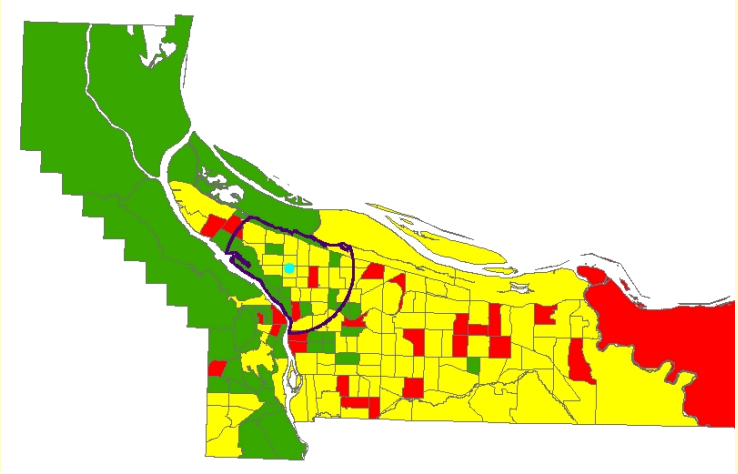
- 1 if equaled at least one STD higher then the mean
- -1 if equaled at least one STD below then the mean
- 0 if score fell between 1 STD above or below

And Some More Methods

- Summed all indicators STD score
- Result was each track had a score from -5 to 5
  - -5 equals least distress
  - 5 most distress
- Imported Excel file into access and join access file with census map
  - could have classified the data using STD in ArcMap but couldn't make a composite map



Teenage Dropout



Conclusions

- Iris Court census track is distressed socio-economically based on 2000 census data
  - Inner Northeast demographics are changing fast. Current trends will need to be addressed in the grant narrative
- Small dataset allowed use of Excel; SPSS would have been more efficient