

Walkability and Socio-Economic Status

Introduction

Is there a relationship between the walkability of a town and the socio-economic status? GIS can be used to help understand, see and compare relationships between physical attributes and social attributes of different areas. Walkability scores are based on the physical infrastructure of an area and the resources or destinations accessible within the area. High scores indicate an environment conducive to walking as a means of transportation to meet different needs. Socio-economic status combines economic and demographic statistics of an area to create a picture of the vulnerability of an area. High scores indicate less vulnerable areas with balanced economies and demographic diversity.

St. Louis County includes municipalities of a range of sizes and demographics. The development patterns of the county followed the "suburban flight" pattern of the 1950s and 1960s with people moving west out of St. Louis City. I decided to map the city by scoring the area in terms of walkability and socio-economic status to see if there is any correlation or pattern across St. Louis County.

Of St. Louis County, MO

Socio-Economic Status

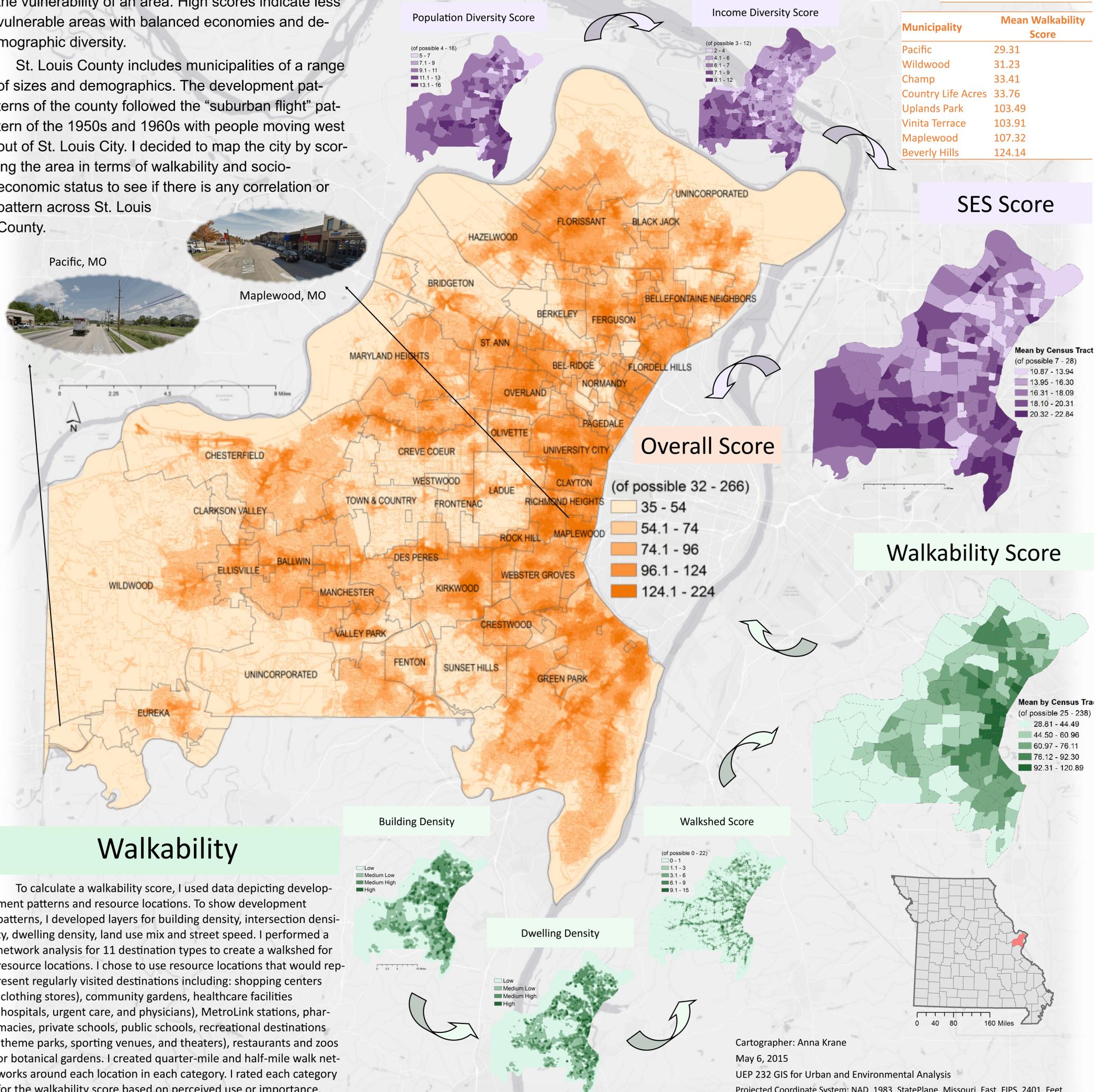
Socio-economic status scores were calculated using two parts: economic diversity and population diversity. The gini coefficient from Census data was used for income diversity. A gini coefficient of zero represents perfect equality, while a coefficient of 1 indicates one person has all the wealth. Appraised property value for parcels in St. Louis County and the percentage of renters in a census tract were used to calculate property diversity. Population diversity was calculated using an age dependency ratio, race percentage, a sex ratio and population of census tracts.

Results

The tables show the four lowest and highest scoring municipalities for Mean SES Scores and Mean Walkability Scores. The tables do not indicate a high correlation between the lowest and highest scoring municipalities. Looking beyond the bottom and top of the list, there is some correlation. Municipalities that score in the top half of one category, tend to score in the top half of the other as well. The overall score raster map shows the connectivity and pattern of the higher scoring areas.

Municipality	Mean SES
Kinlock	11.85
Wellston	12.17
Bel-Nor	12.83
Glen Echo Park	12.84
Fenton	20.94
Winchester	21.69
MacKenzie	22.65
Wilbur Park	22.67

Municipality	Mean Walkability Score
Pacific	29.31
Wildwood	31.23
Champ	33.41
Country Life Acres	33.76
Uplands Park	103.49
Vinita Terrace	103.91
Maplewood	107.32
Beverly Hills	124.14



Walkability

To calculate a walkability score, I used data depicting development patterns and resource locations. To show development patterns, I developed layers for building density, intersection density, dwelling density, land use mix and street speed. I performed a network analysis for 11 destination types to create a walkshed for resource locations. I chose to use resource locations that would represent regularly visited destinations including: shopping centers (clothing stores), community gardens, healthcare facilities (hospitals, urgent care, and physicians), MetroLink stations, pharmacies, private schools, public schools, recreational destinations (theme parks, sporting venues, and theaters), restaurants and zoos or botanical gardens. I created quarter-mile and half-mile walk networks around each location in each category. I rated each category for the walkability score based on perceived use or importance.