MODELING SPATIAL INCOME INEQUALITY in PHILADELPHIA

developing metrics for measuring spatial segregation

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Dasymetric Mapping Process

Using a method of areal interpolation, we can generate finer resolution population estimates...

population by census tracts

Source Layer: Aggregate Values

residential density classes

Ancillary Layer: Land Use Classes

dasymetric distribution

Dasymetric Interpolation: Distributed Values

population density surface

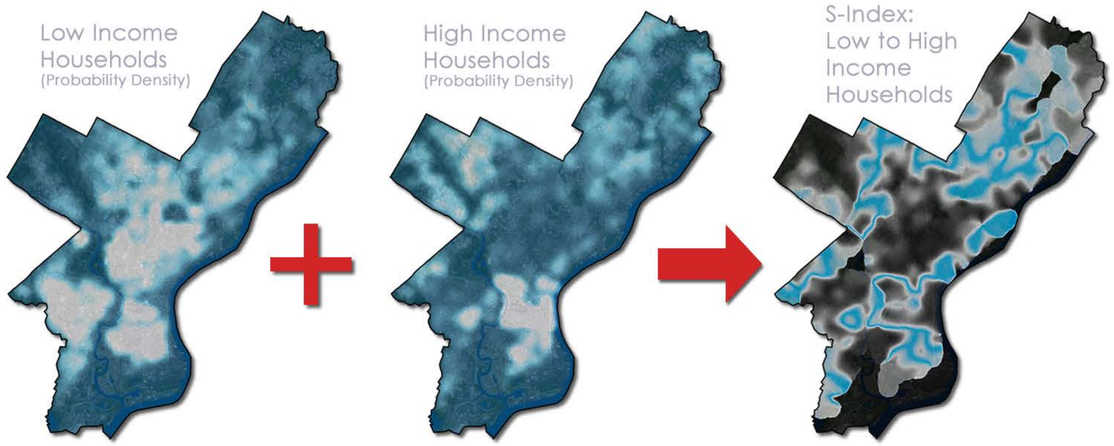
Kernel Density Function: Surface Estimates

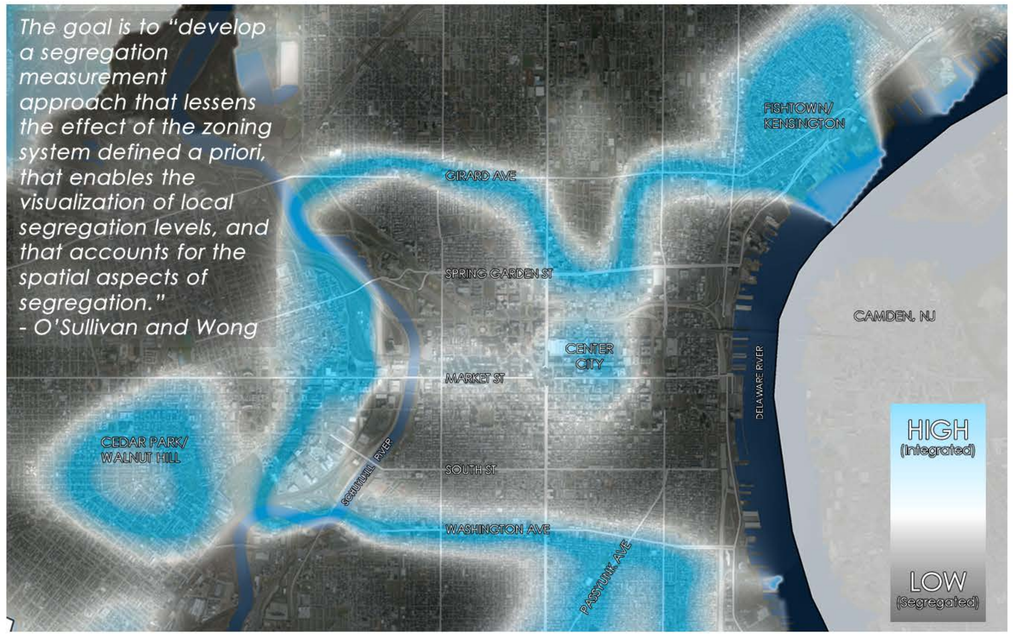
Could we better understand the distribution of wealth and access to opportunity through a spatial analysis of *segregation patterns*?

How can we develop more *spatially aware* criteria for targeting public resources, prioritizing investments, and penetrating areas of hyper-concentrated poverty?

Constructing an S-Index

Compaing two populations, we can produce a measure of evenness and exposure by comparing the probability of intersection between each regional sub-population...

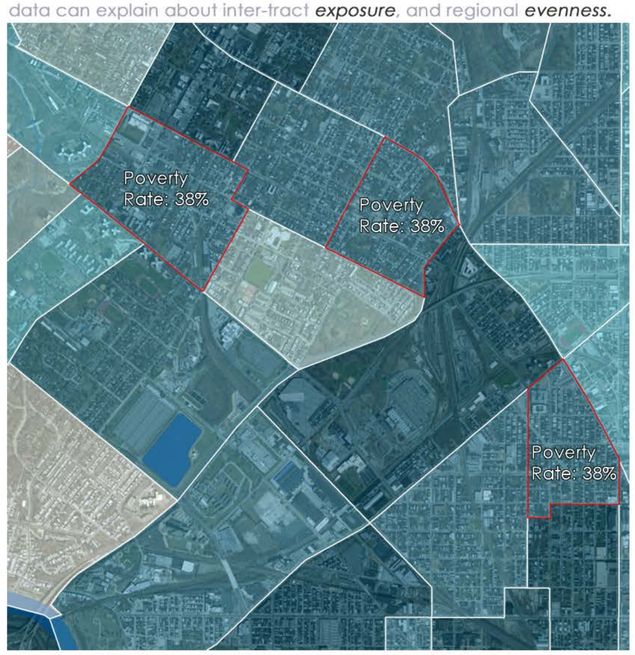




S-Index Analysis

We can begin to intrepret patterns of spatial segregation by comparing surface-based versus areal data analysis...

The constraints of arbitrary census boundaries tend to limit what the data can explain about inter-tract ***exposure***, and regional ***evenness***.



An S-Index can reveal patterns in the various dimensions of segregation, providing a spatial component to traditionally aspatial methods.