

Profiling for HIA: Approaches, Challenges, and Resources

UCLA/California Endowment
Health Impact Assessment Methods Workshop
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Purpose

- ◆ To describe key aspects of the health status and demographics of the population that can act as a baseline against which possible health impacts can be assessed

Steps to Follow

1. Compile a summary of information of the areas and communities likely to be affected by the project
 - Use available socio-demographic and health data and information from key informants
2. Describe key aspects of the health status and general make-up of the population
 - Particularly in relation to factors that are susceptible to change or may act as indicators of anticipated health impact(s)
3. Assess the nature and characteristics of groups whose health could be enhanced or placed at risk by the project efforts
 - Vulnerable and disadvantaged groups require special consideration

Types of Information

- ◆ Population size, density, distribution, age, sex, employment rates, SES and other demographic information
- ◆ Health status of the population
 - Mortality, morbidity and disability
- ◆ Health risk behaviors
- ◆ Locations where at-risk groups may be concentrated
- ◆ Local environmental conditions

Determining the Affected Population

- ◆ Based on particular health issue and local environmental conditions, population selection can vary based on:
 - Concentration/Density
 - Proximity to project
 - Access to project
- ◆ Vulnerable subgroups should be identified and located
- ◆ Indirectly affected populations can be hard to define, may need to look beyond local project area

Case Example: Buford Highway HIA

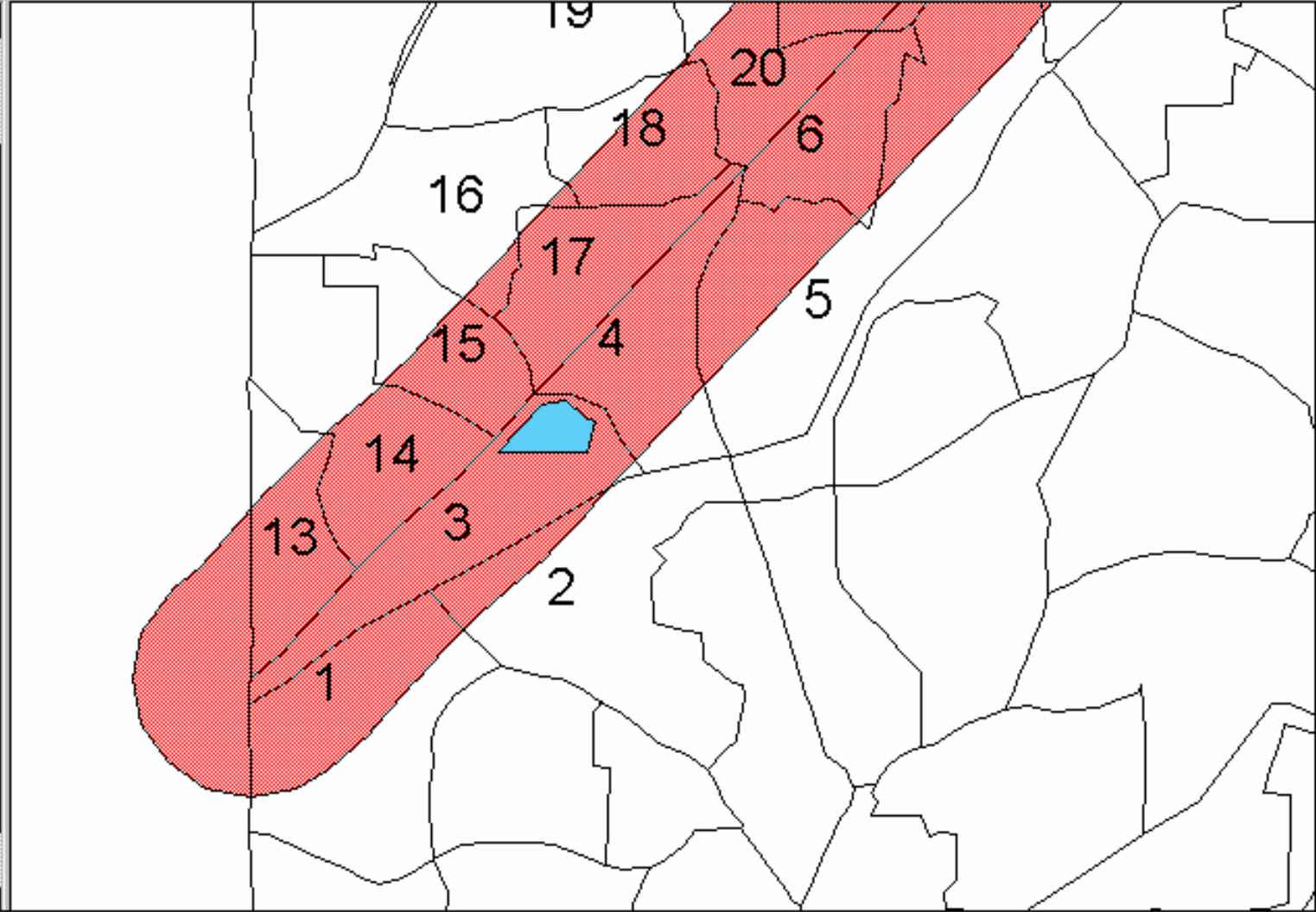
Determining the Affected Population

- ◆ The individuals who live in the study area
 - 5 census blocks
 - Counted those that lived ½ mile from highway
 - 14,000 people
- ◆ Individuals who drive through study area
 - Avg. Daily Traffic count (23,034) x people per car (1.63)
 - 37,545 people
 - No demographic data available



View1

- Visible.shp
- Serious.shp
- No injury.shp
- Fatality.shp
- Neplaza.shp
- Marta.shp
- Geocd30.shp
- block groups.shp
- streets.shp
- half mile buffer.shp
- mile buffer.shp



Case Example: Buford Highway HIA

Describing the Affected Population

	<u>Study Area</u>	<u>Atlanta</u>
% Male	60.0	49.4
Age		
0-17	18.9	26.6
18-29	28.3	18.1
30-39	23.3	18.4
40-49	10.9	15.7
50+	8.6	21.2

Case Example: Buford Highway HIA

Describing the Affected Population (cont.)

	<u>Study Area</u>	<u>Atlanta</u>
Race		
White	47.3	63.0
Black	20.8	28.8
Asian	4.8	3.3
Ethnicity		
Hispanic	49.8	6.5
Foreign-born	61.1	10.3
Non-resident 1995	26.6	4.1
Poverty	15.8	9.2
Avg. income	\$45,511	\$51,948

Case Example: Buford Highway HIA

Describing the Affected Population (cont.)

- ◆ Average family size is 3.4 people
- ◆ 70% have 2 or more workers
- ◆ 12% of households have no car
- ◆ 48% of households have 1 car
- ◆ 17% take transit and 3% walk to work

Where to Obtain Data?

- ◆ Demographics
 - Census 2000
- ◆ Health Data
 - Health Surveys
 - Published Literature
- ◆ Environmental Characteristics
 - Databases
 - Might require GIS software

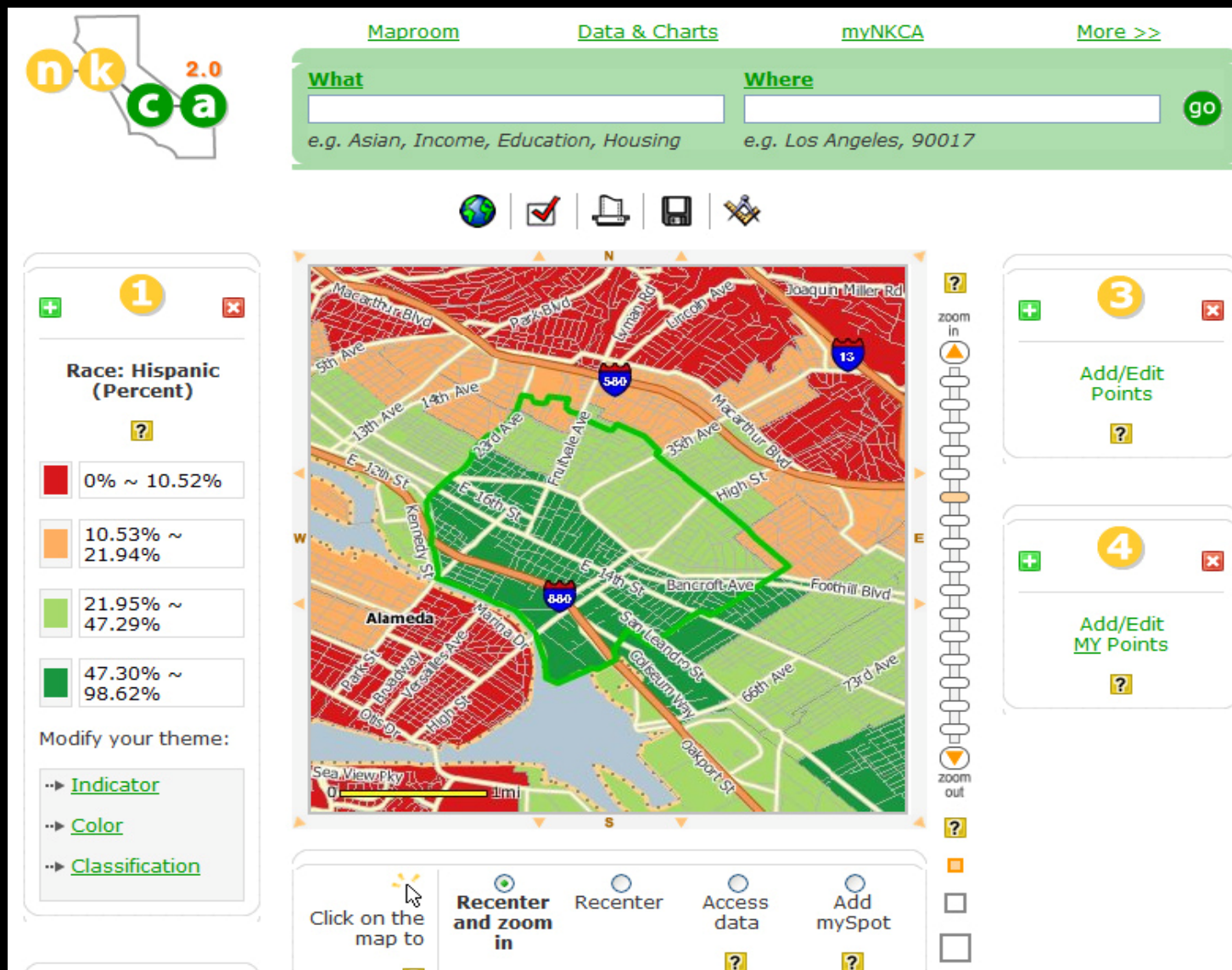
Data Sources

- ◆ Various databases (refer to HIA Training Manual)
 - Census
 - California Health Interview Survey
 - National Center for Education Statistics
 - U.S. EPA Enviromapper
- ◆ Information portals: offer access to various data sources of demographic data, health data, community resources, and GIS mapping technology on the web
 - Neighborhood Knowledge California

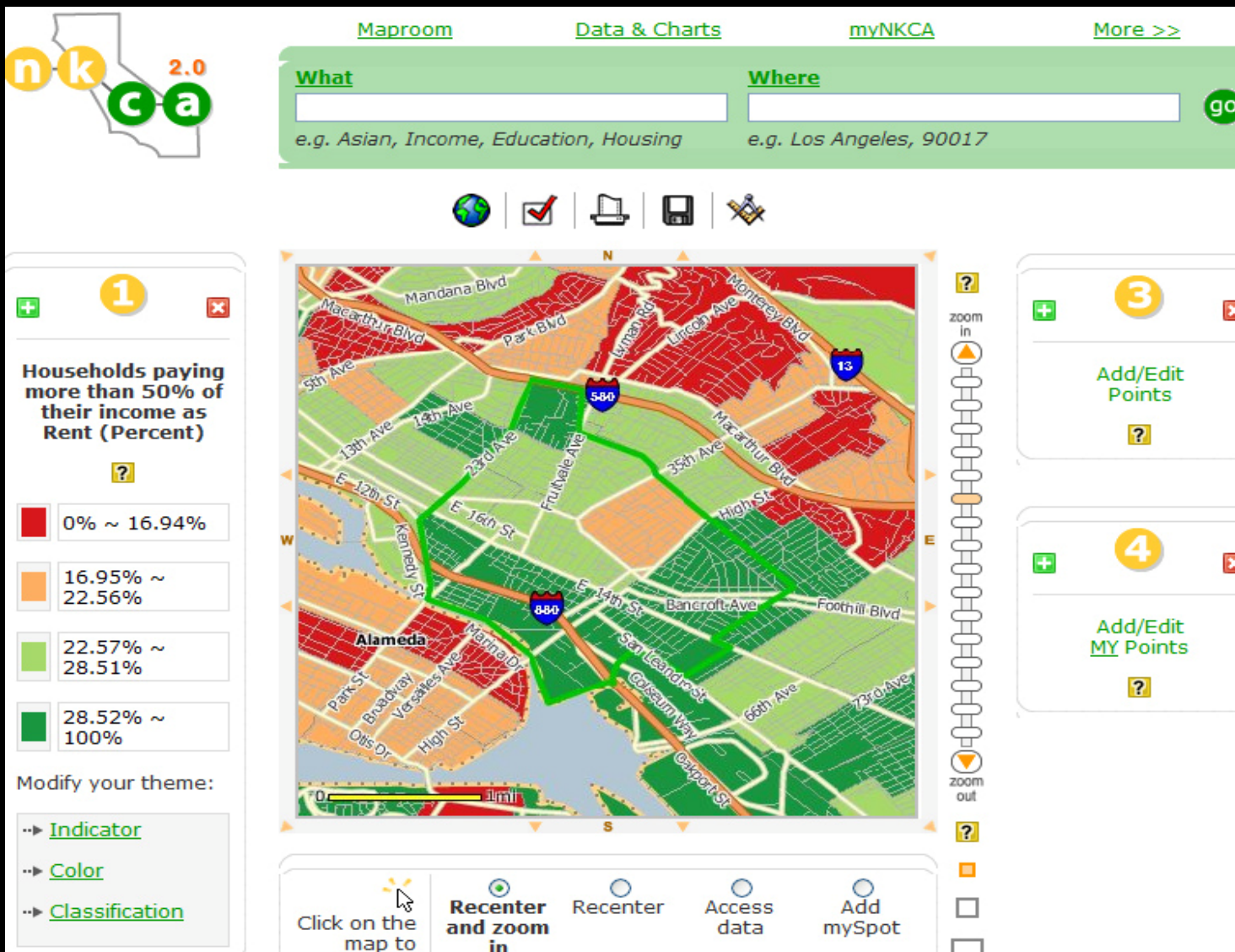
*Example 1: Characterizing the Population Residing
in Population Residing in Fruitvale (94601)*

Using Neighborhood Knowledge California:
<http://www.nkca.ucla.edu>

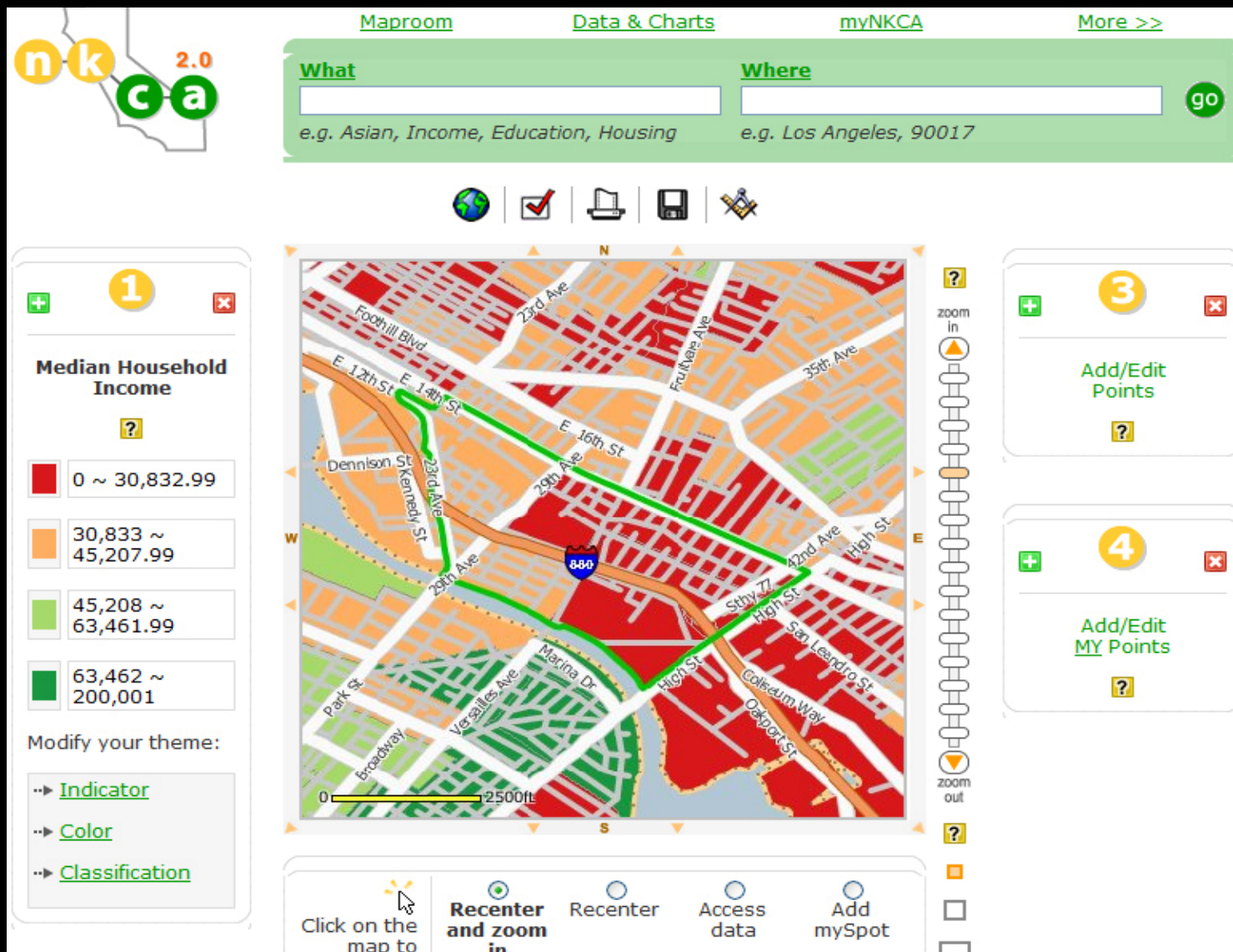
Ethnicity (% Latino) by Census Tract



% of Households Paying More than 50% of their Income on Rent by Census Tract



Median Household Income for Area Near Fruitvale BART Station

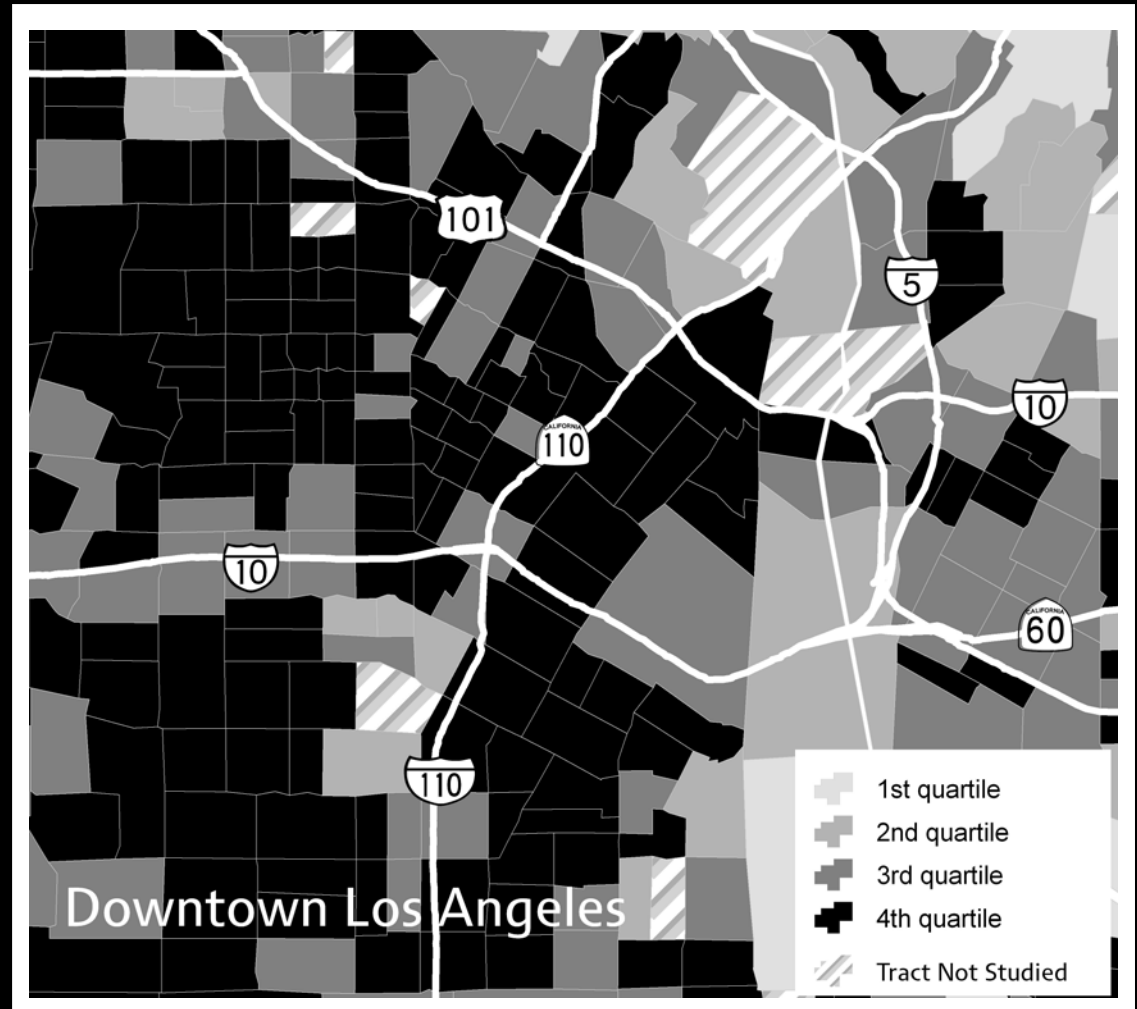


Example 2:

Using ArcGIS to Calculate Environmental Conditions

Intersection Density by Census Tract in Downtown LA Area

- TIGER/Line Files for street data
- ArcGIS to make calculations and map out range of values



Challenges

- ◆ Defining Population
- ◆ Obtaining Data
 - Hard to obtain for population subgroups
 - In particular, health and environmental data often unavailable for small areas
- ◆ Aggregated Data
 - Must assume homogeneity
- ◆ Is Census 2000 Data Outdated?
 - Applicability to 2006 and on
- ◆ Using multiple data sources from different years

Small Area Estimation

- ◆ Policy requires local- or community-level health assessment
 - Small areas are counties and subcounty areas like cities, census tracts, ZIP code areas, and even individual blocks
 - But, there is often a dearth of data at this level
- ◆ Small area estimates can be made when direct estimates are not possible
 - Modeling: use association between variable of interest and directly measured variables in large area (typically national level) to predict variable of interest in another area (small area) where it is not directly measured
 - Example: Predicting county-level obesity for a county where obesity is not measured (or poorly estimated do to small sample (e.g. rural area)
 - » State level data available - direct measures of demographics and obesity
 - » County level demographics available through Census database
 - » Construct a model that would predict what obesity prevalence would be if the State had same demographics as the County