

# ***“When and Where I Enter”***

Assessing and Advocating Access for All



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University of Pennsylvania

This presentation introduces a new method for assessing access to healthful foods and physical activity for people with disabilities that combines (1) GIS mapping; (2) administrative data; (3) activity data; and (4) flash assessments. It utilizes the Health Environmental Integration (HEI) conceptual model which recognizes that the wellbeing of society depends on the ability of people in different states of health, illness or disability to obtain life sustenance within their environment.

*“When and where I enter, in the quiet, undisputed dignity of my womanhood, without violence and without suing or special patronage, then and there the whole Negro race enters with me.”*



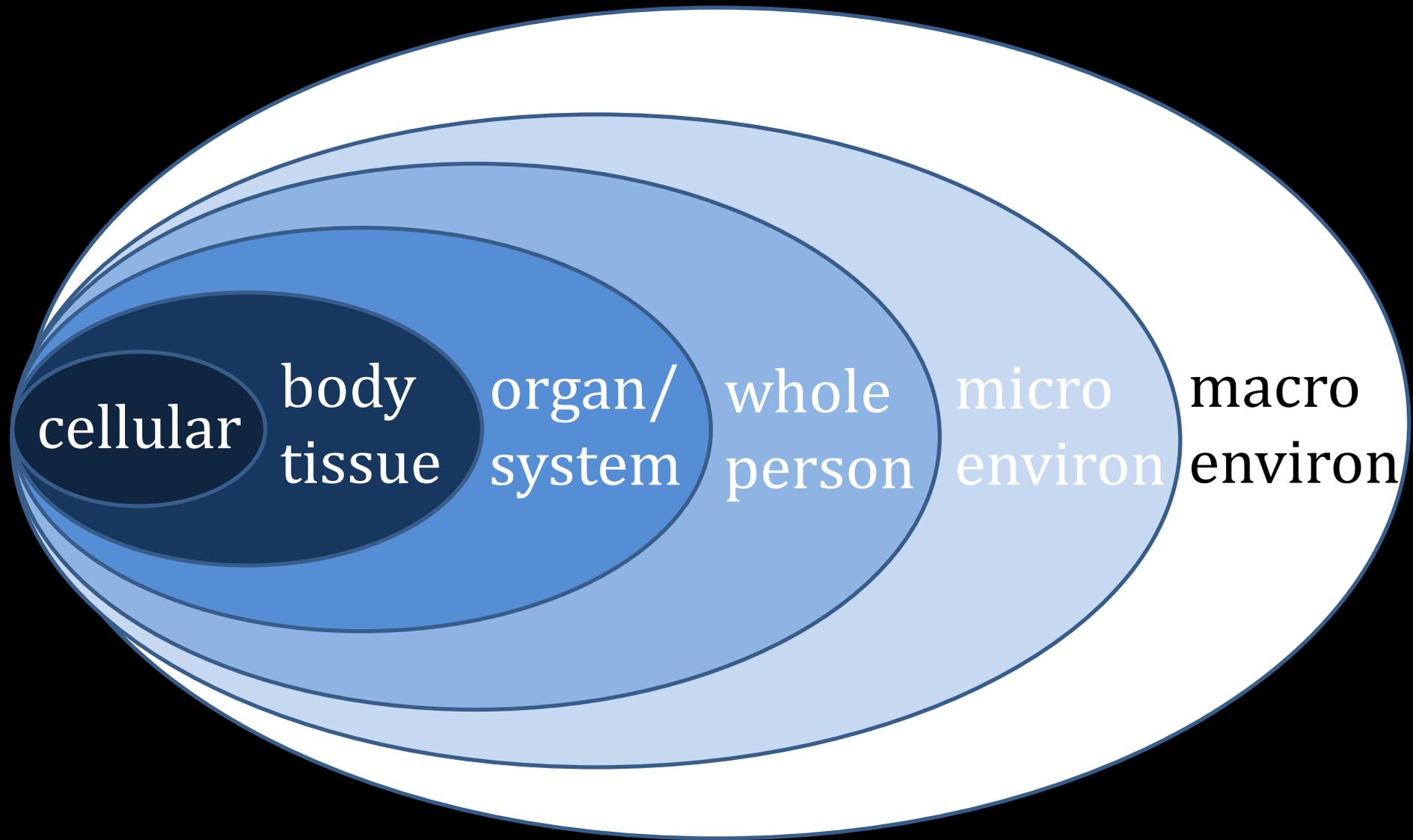
*Anna J. Cooper,  
Voice from the South (1892)*

# Health Environmental Integration (HEI)



Margaret G. Stineman, MD

“HEI recognizes complex interacting multilevel functional hierarchies beginning at the cellular level and ending at the individual’s experience of the environment.”



Adapted from Stineman & Smith *PM&R* (2010)

# GIS Mapping

**Vector GIS:** uses points, lines, and polygons to represent geographic features

**Raster GIS:** uses small cells to represent geographic surfaces

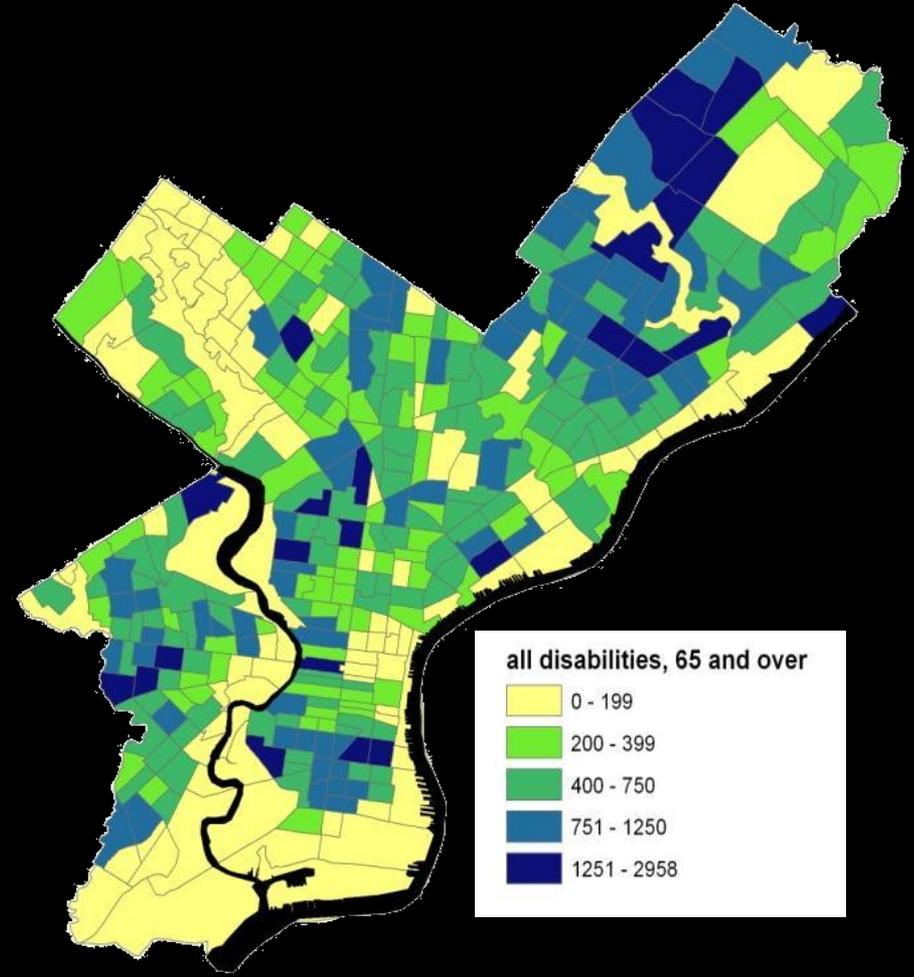
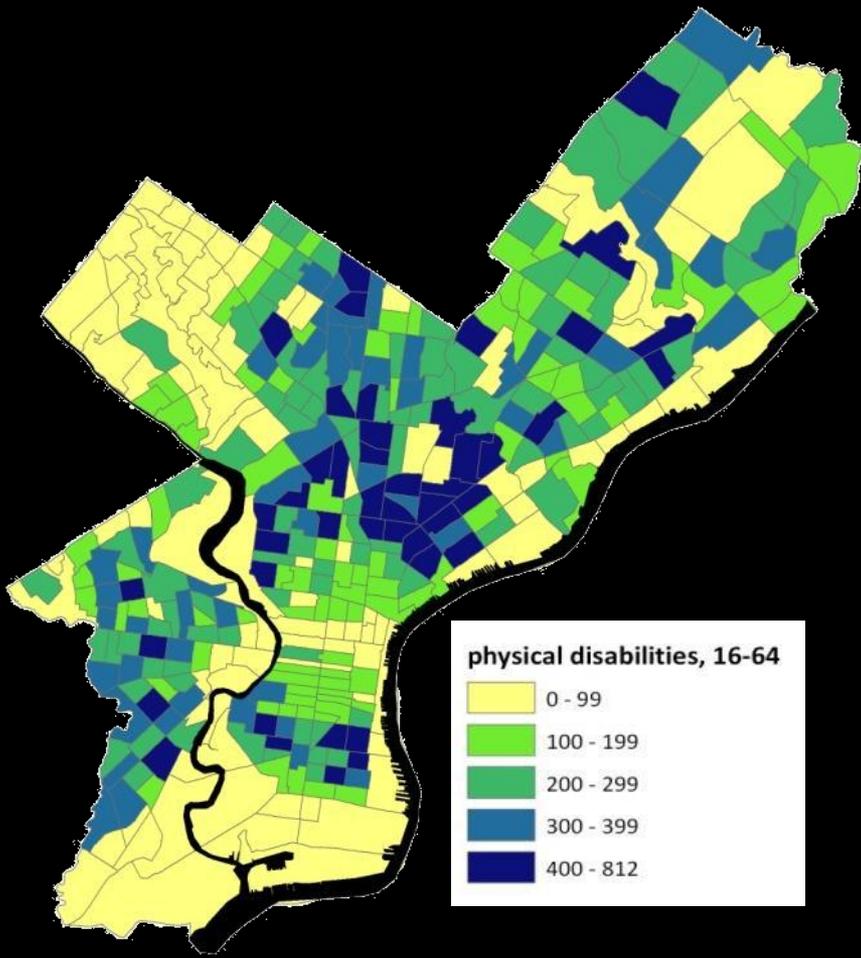
**Cartographic modeling:** combines raster GIS layers using map algebra to create new output map layers

**Online mapping:** provides public access to interactive mapping without proprietary GIS software

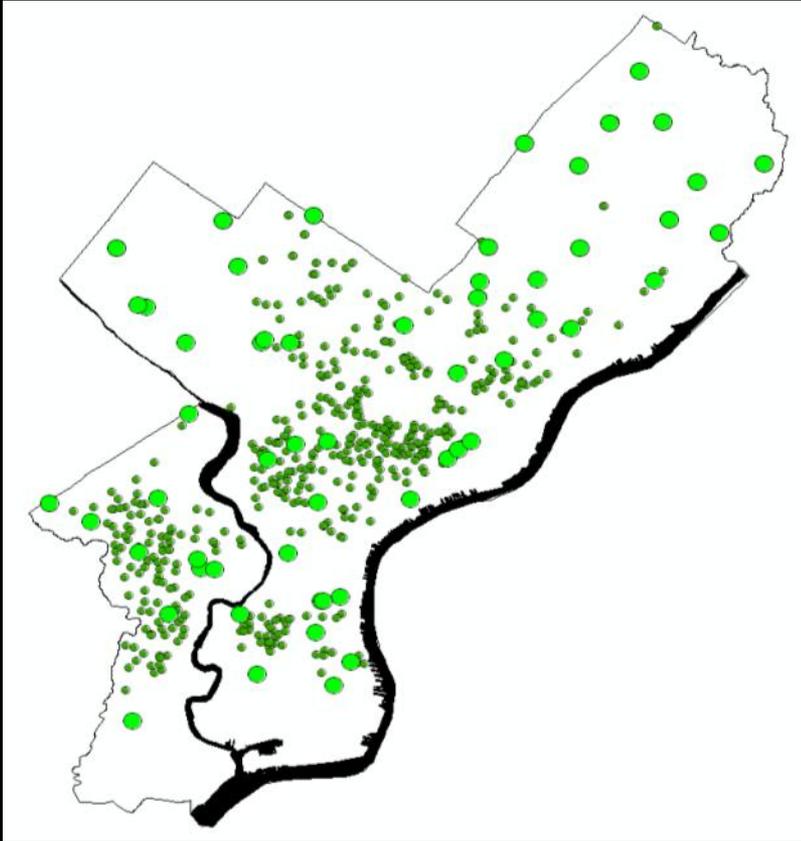
**Mobile technology:** cell phones, table PCs, global positioning systems (GPS), devices, accelerometers, heart rate monitors

**PPGIS (public participation GIS):** honors research subjects as participants and local knowledge as “expert”

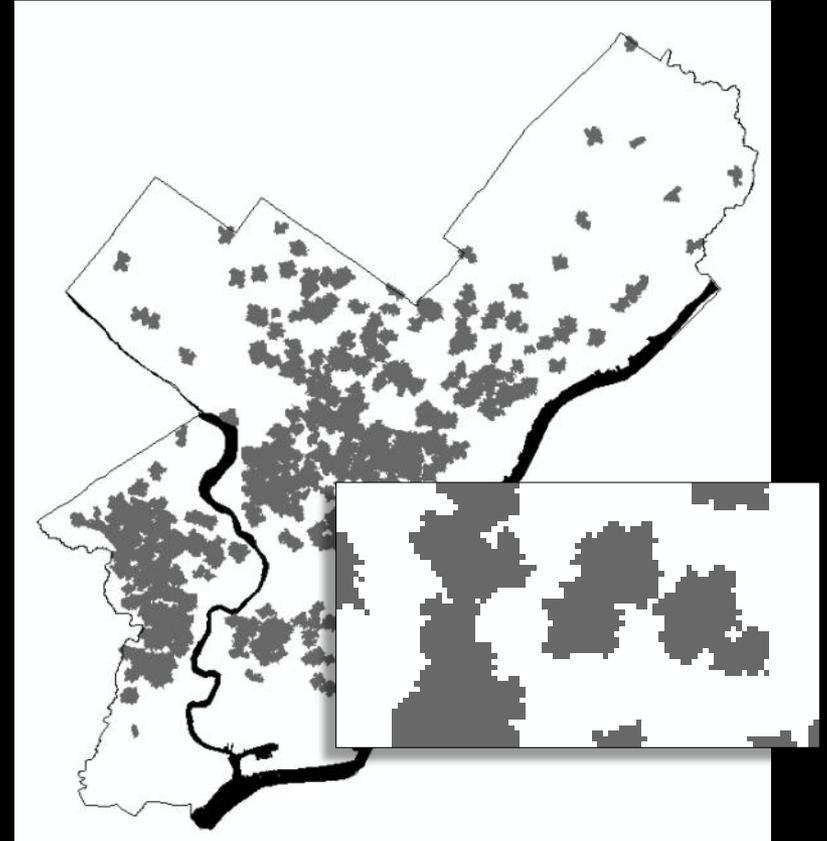
# US Census Data on Disabilities



# Food Stores

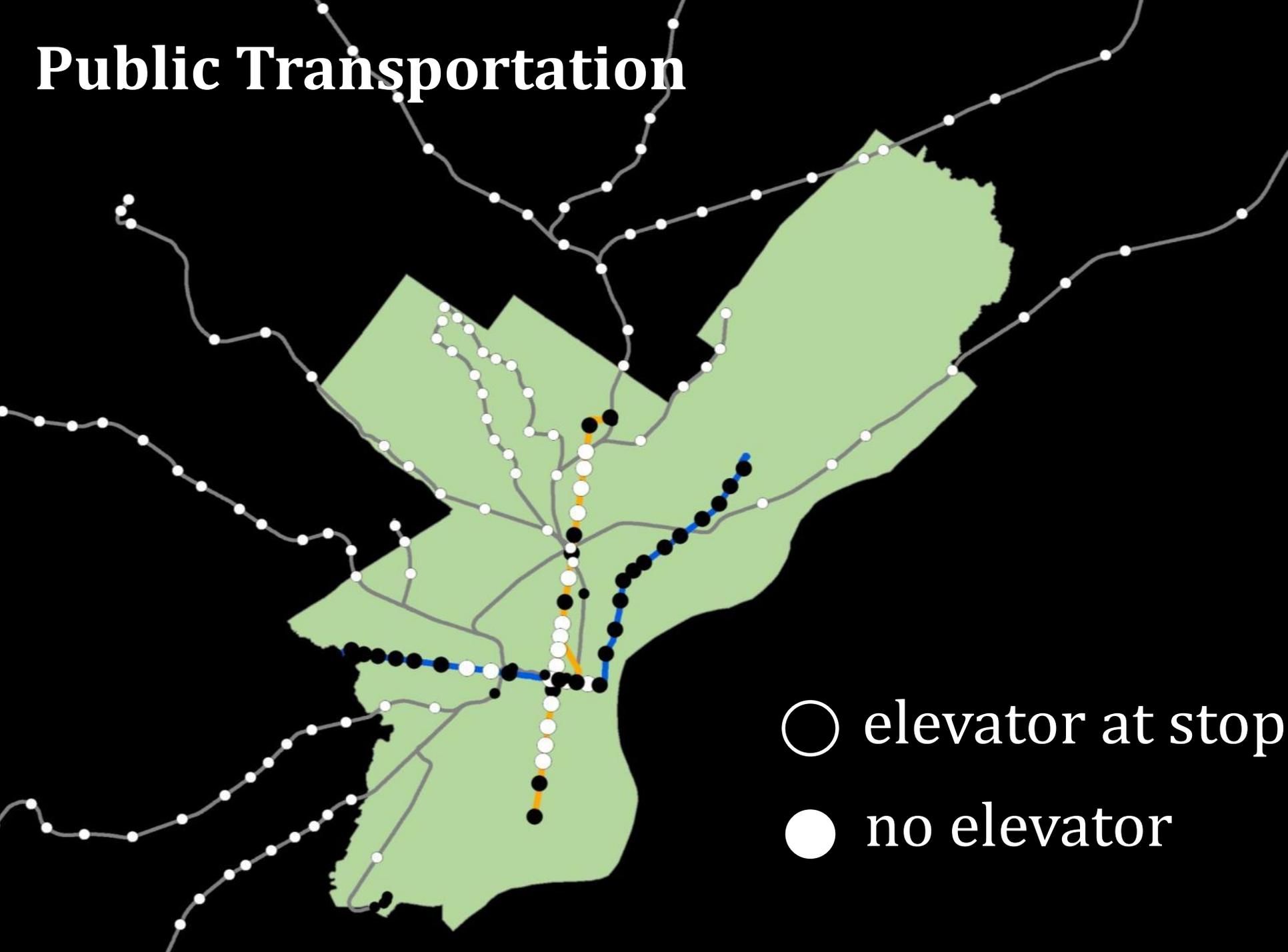


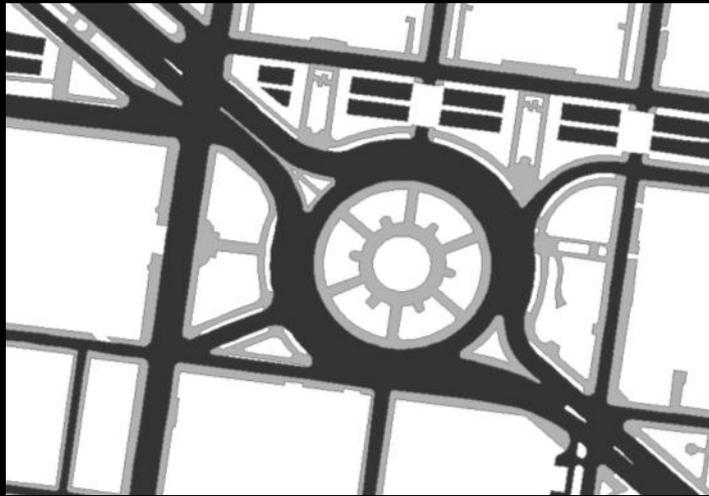
Supermarkets and  
corner stores



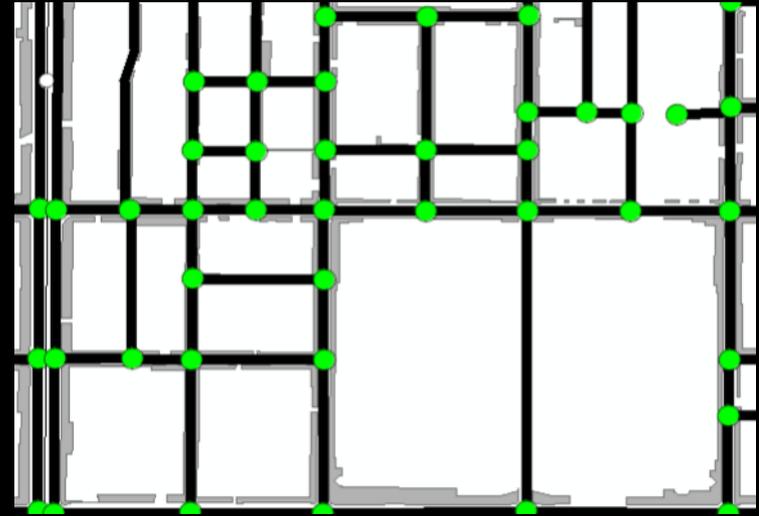
$\frac{1}{4}$  mile from WIC  
store

# Public Transportation





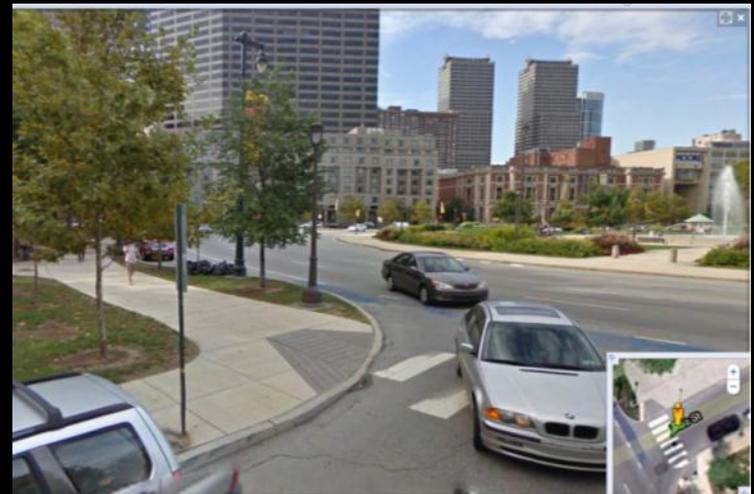
GIS base files



DOT GIS files



Google Maps



Google Street View

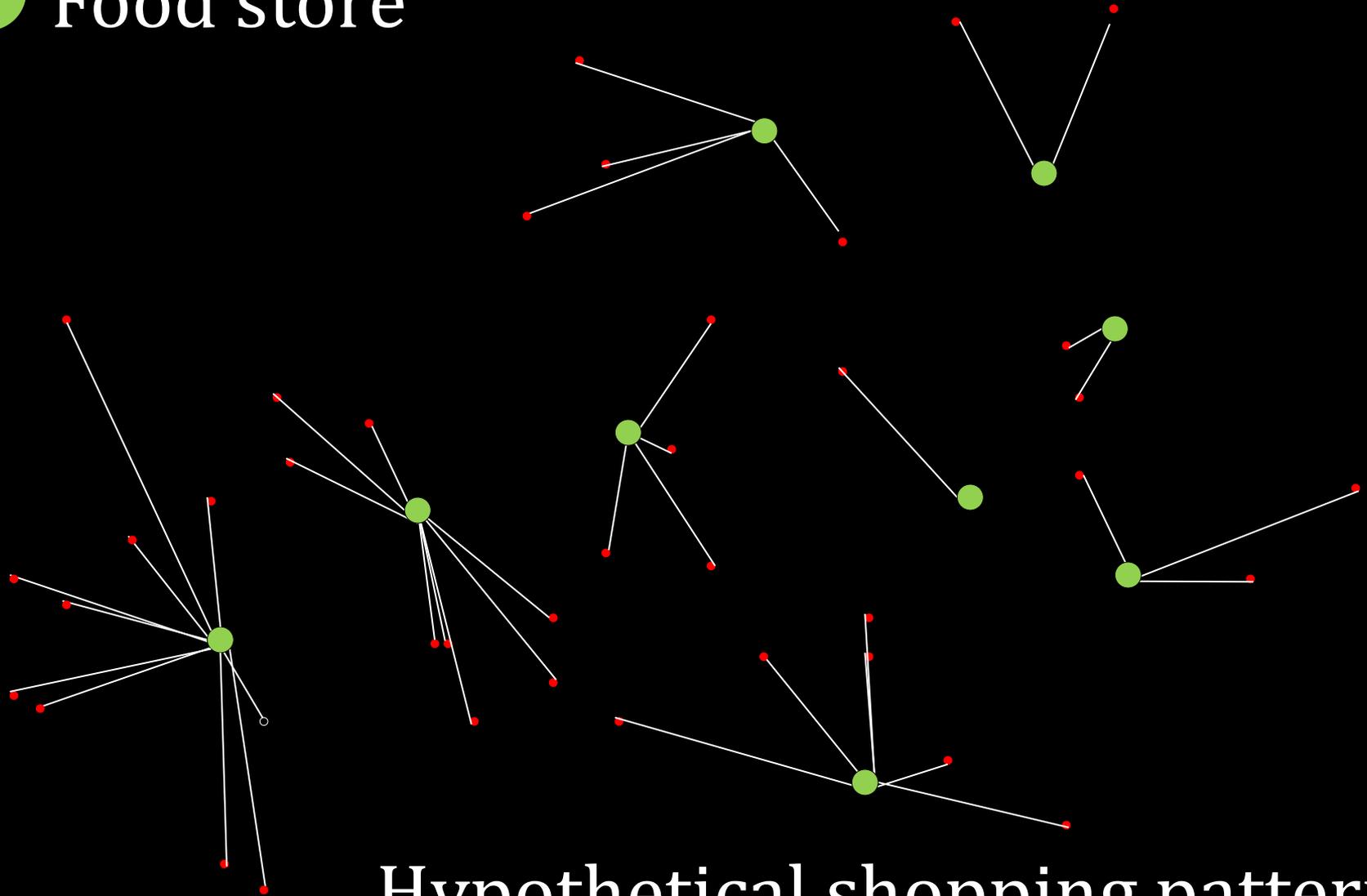
# Activity Data

Understand “access” based on what people with disabilities actually access rather than based only on what is nearby.

- Where do they live?
- Where do they shop for food?
- Where are they physically active?

● WIC participant home address

● Food store



Hypothetical shopping patterns

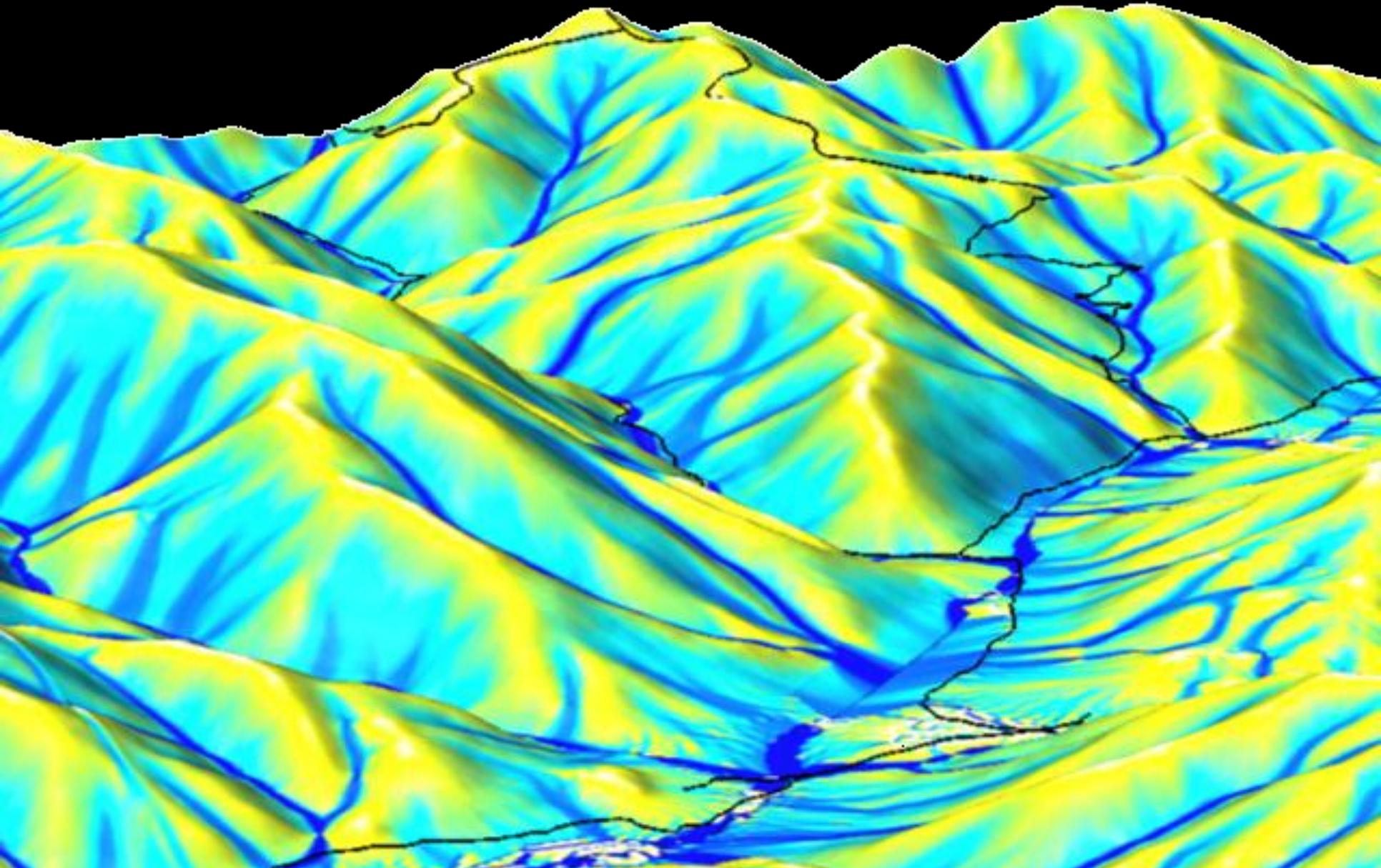
● WIC participant home address

● Food store



Real shopping patterns

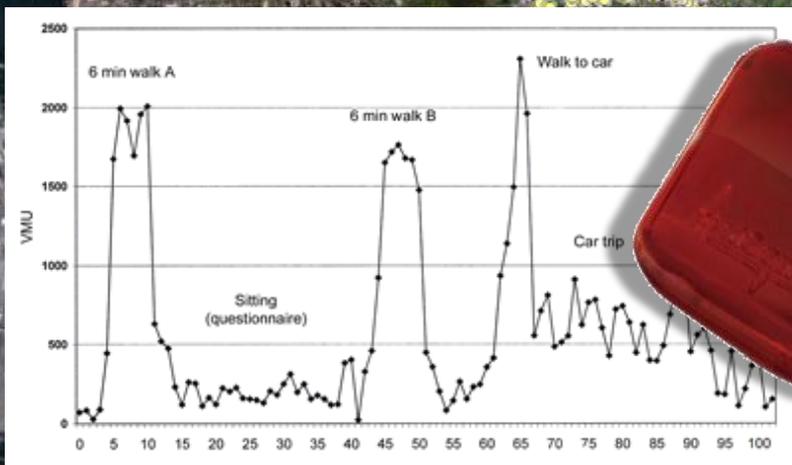
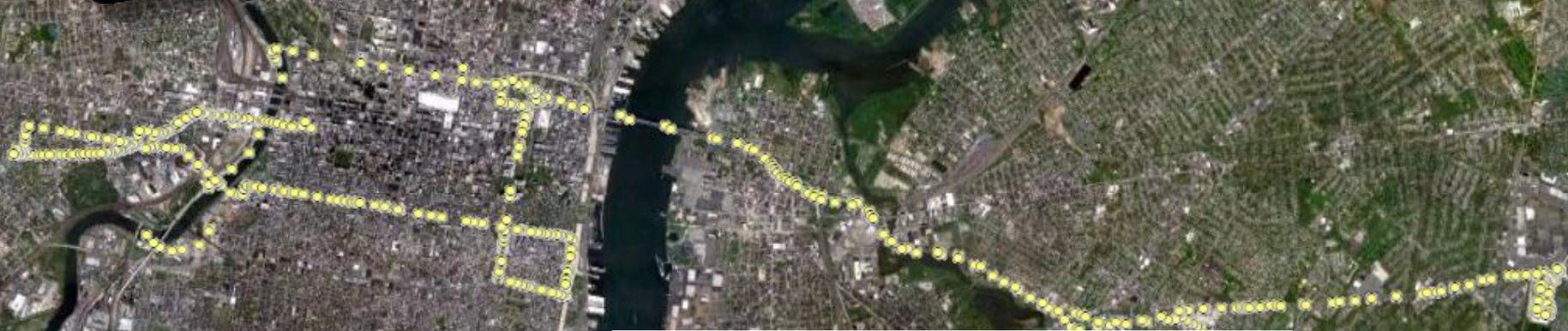
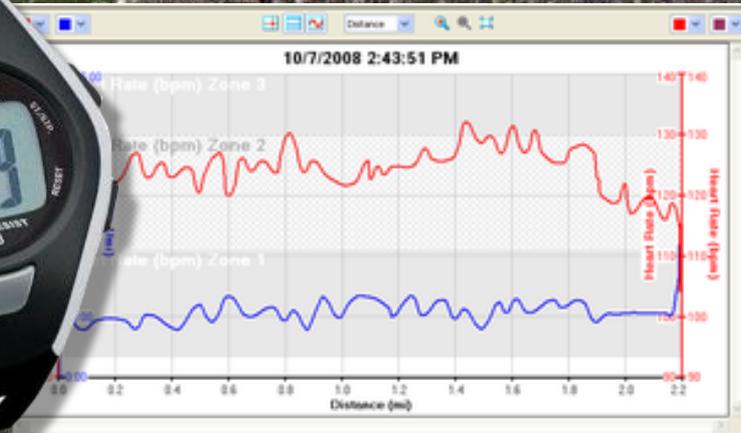
# Flow Accumulation Models



[casoilresource.lawr.ucdavis.edu/drupal/node/111](http://casoilresource.lawr.ucdavis.edu/drupal/node/111)

# System for Observing Play and Recreation in the Community

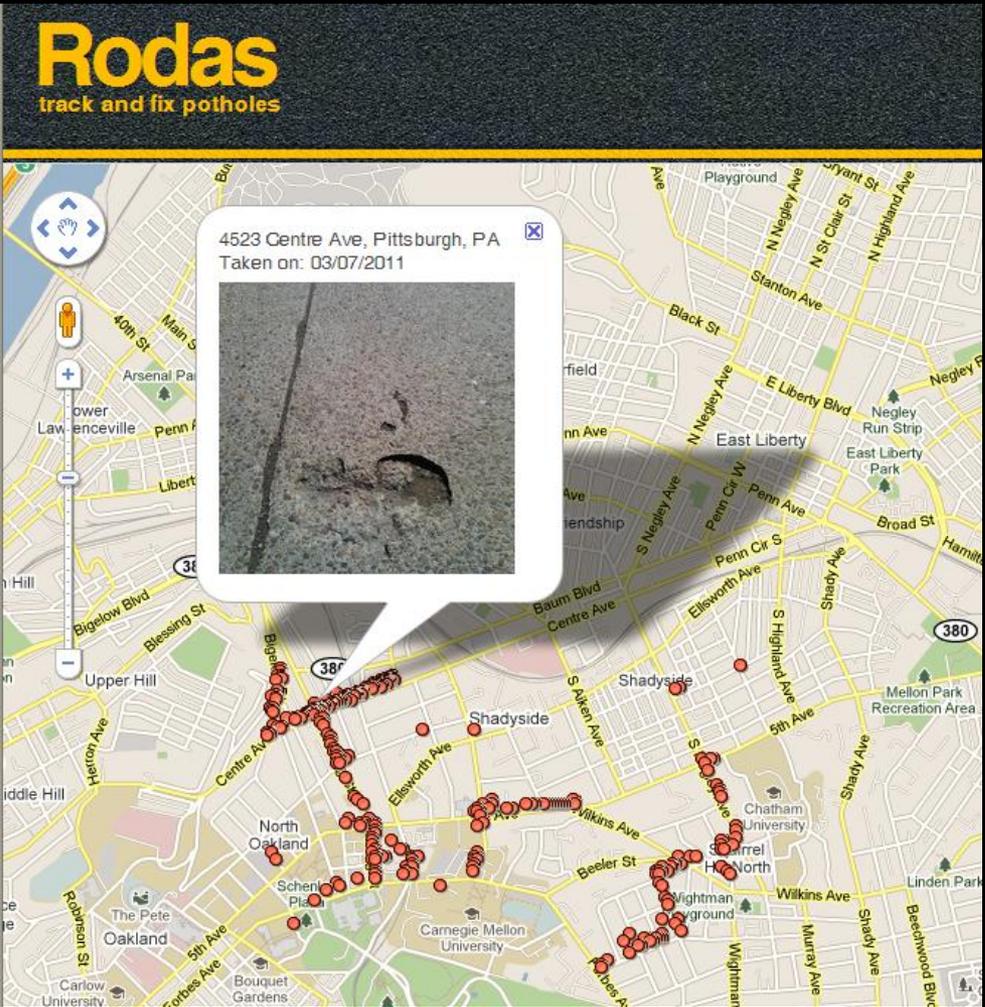
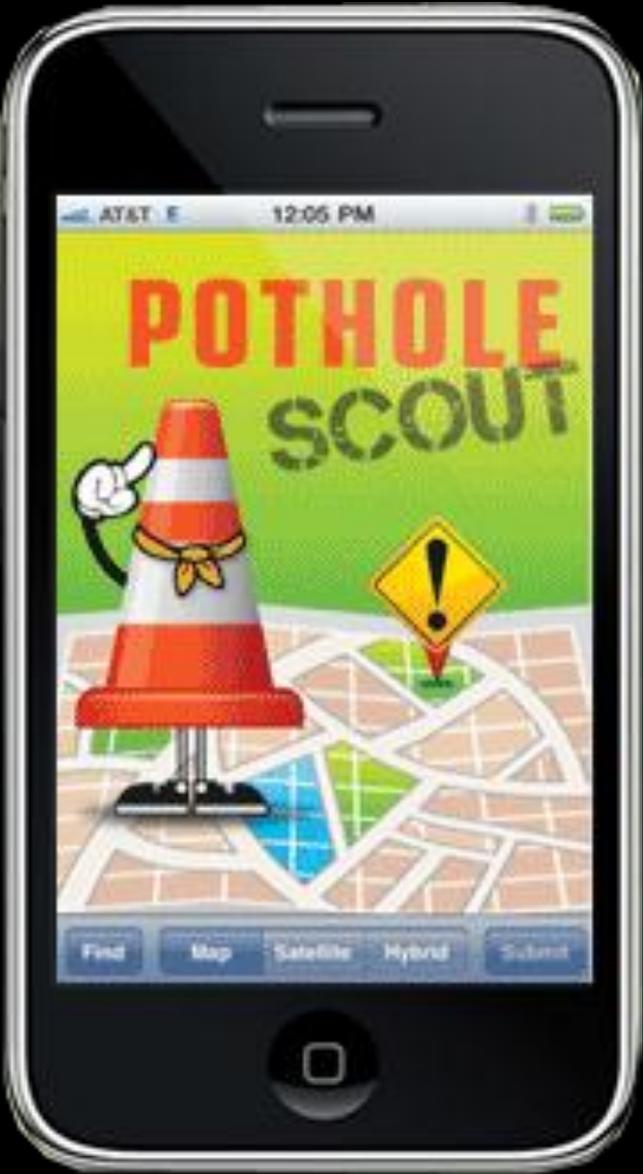




# “B A Hero” Flash Mob



# Mobile Technology



# Nutrition Environment Measure Survey



Store Measures - Shelf Space Practice 15 of 76

COURSE PROGRESS 25% 50% 75% 100% PAGE PROGRESS

### Shelf Space Practice

- Count the number of pints, quarts, half-gallons and gallons for skim milk.
- Type the answers in the fields provided, then click Submit.
- Use the key to identify the milk sizes.



2. Shelf space: (measure only if low fat milk is available)

Type	Quart	Half gallon	Gallon
a. Skim	<input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="4"/>	<input type="text" value="0"/> <input type="text" value="4"/>

Submit



Karen Glanz PhD, MPH



# Flash Assessments

Use social networking to enlist volunteers who use mobile technology to record information about the built environment.

- Sidewalk conditions
- Curb cuts
- Healthful food availability
- Park and food store accessibility

# Health Impact Assessments (HIA)

- Process whereby the health impacts of proposed plans, projects, or policies are systematically evaluated in order to inform decision-making.
- Triggered when communities undertake comprehensive planning or redevelopment.
- Involves significant community participation.



## Philadelphia2035: Planning And Zoning for a Healthier City

The City's new Comprehensive Plan and its role in improving public health

December 2010



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