

# Social Exclusion: The Use of GIS to Develop Accessibility Models

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# Outline

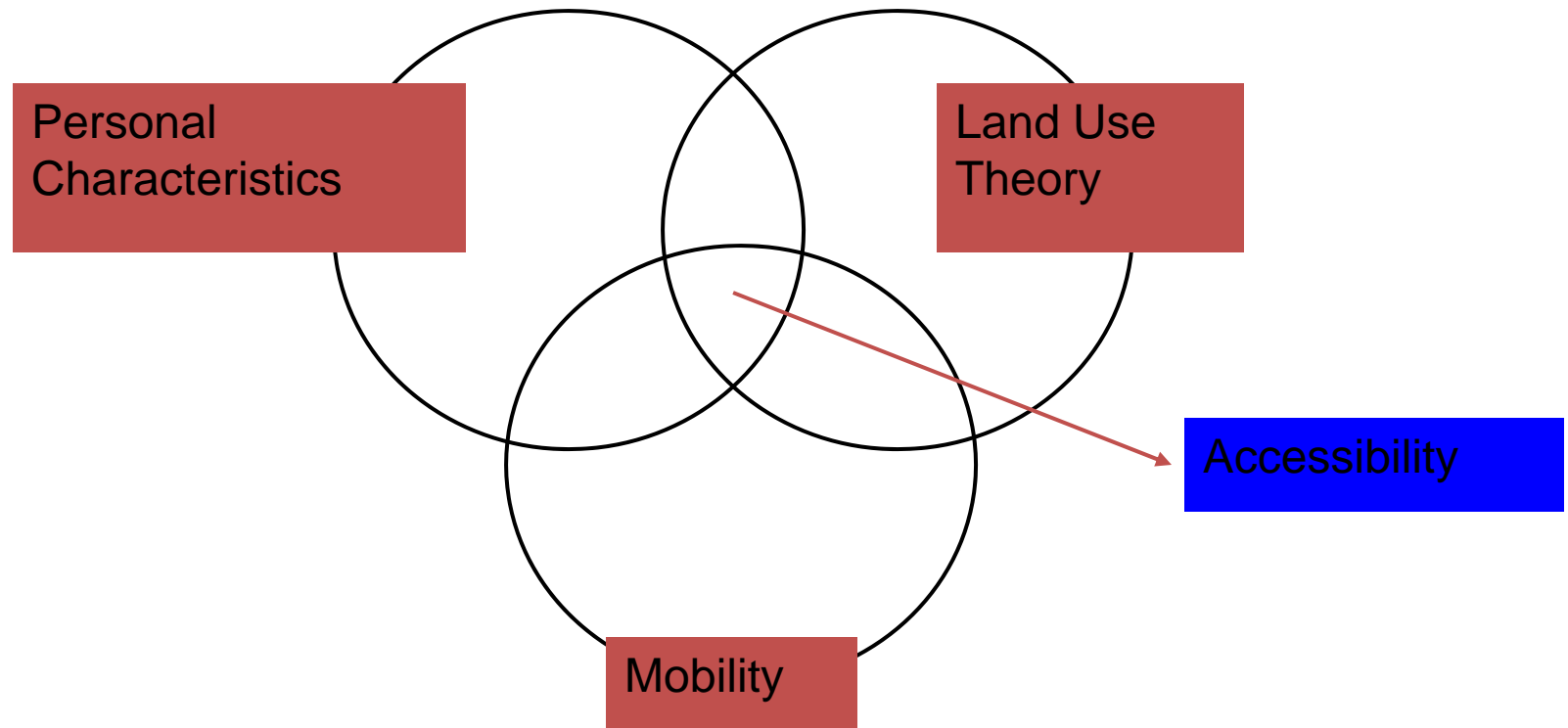
## Social Exclusion & Accessibility

- Accessibility as a Social Indicator
- Theories used in understanding Access
- The use of GIS to address
  - Healthcare Access
  - Access to Discount Shopping
  - Opportunities for low-income Teenagers
- Summary

The ability to access places and activities provides choices that are the essence of human freedom.

Martin Wachs

# Accessibility as a Social Indicator



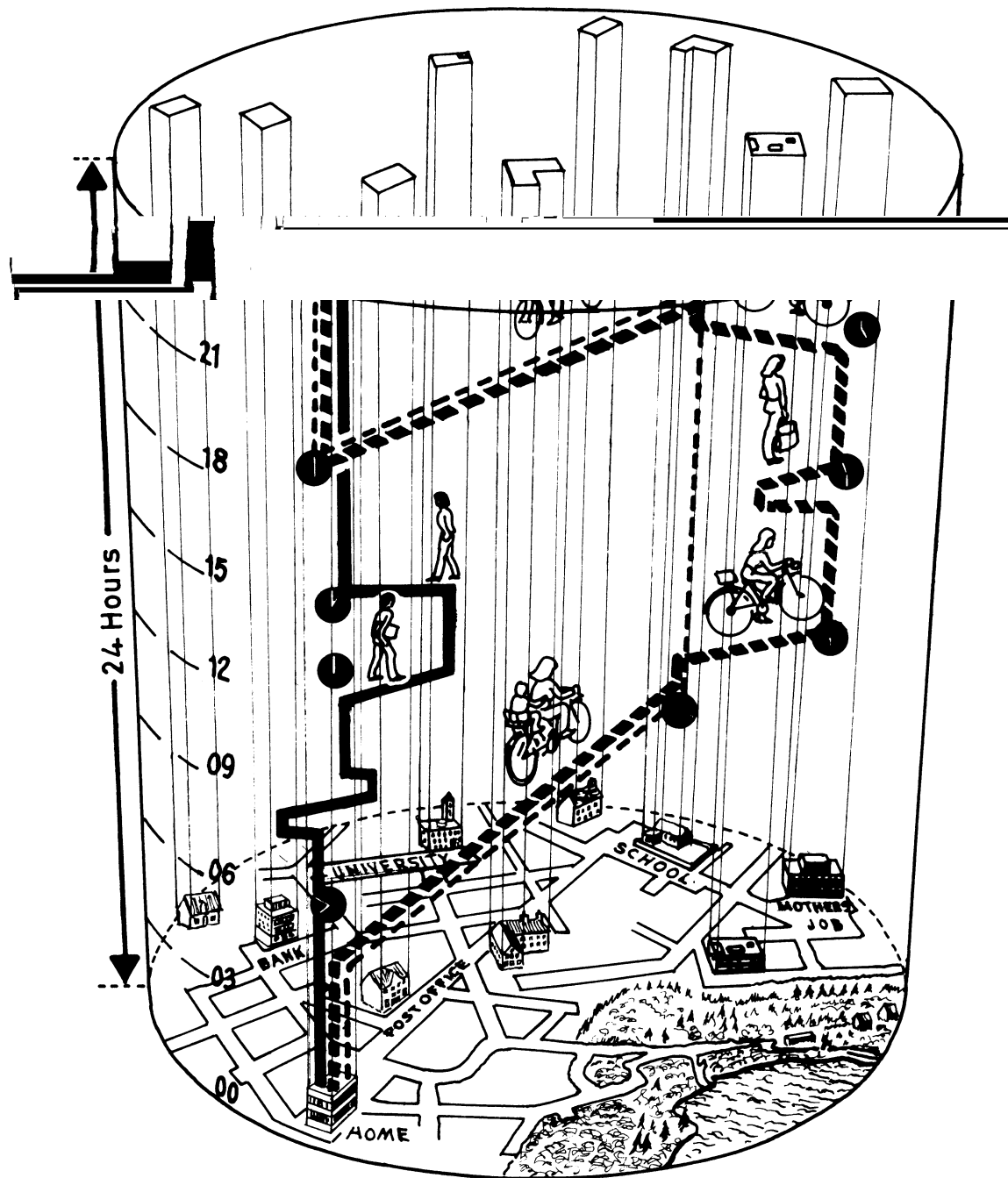
# Stuart Chapin's Theory of Access (1974)

Two components must be in place for an individual to engage in an activity.

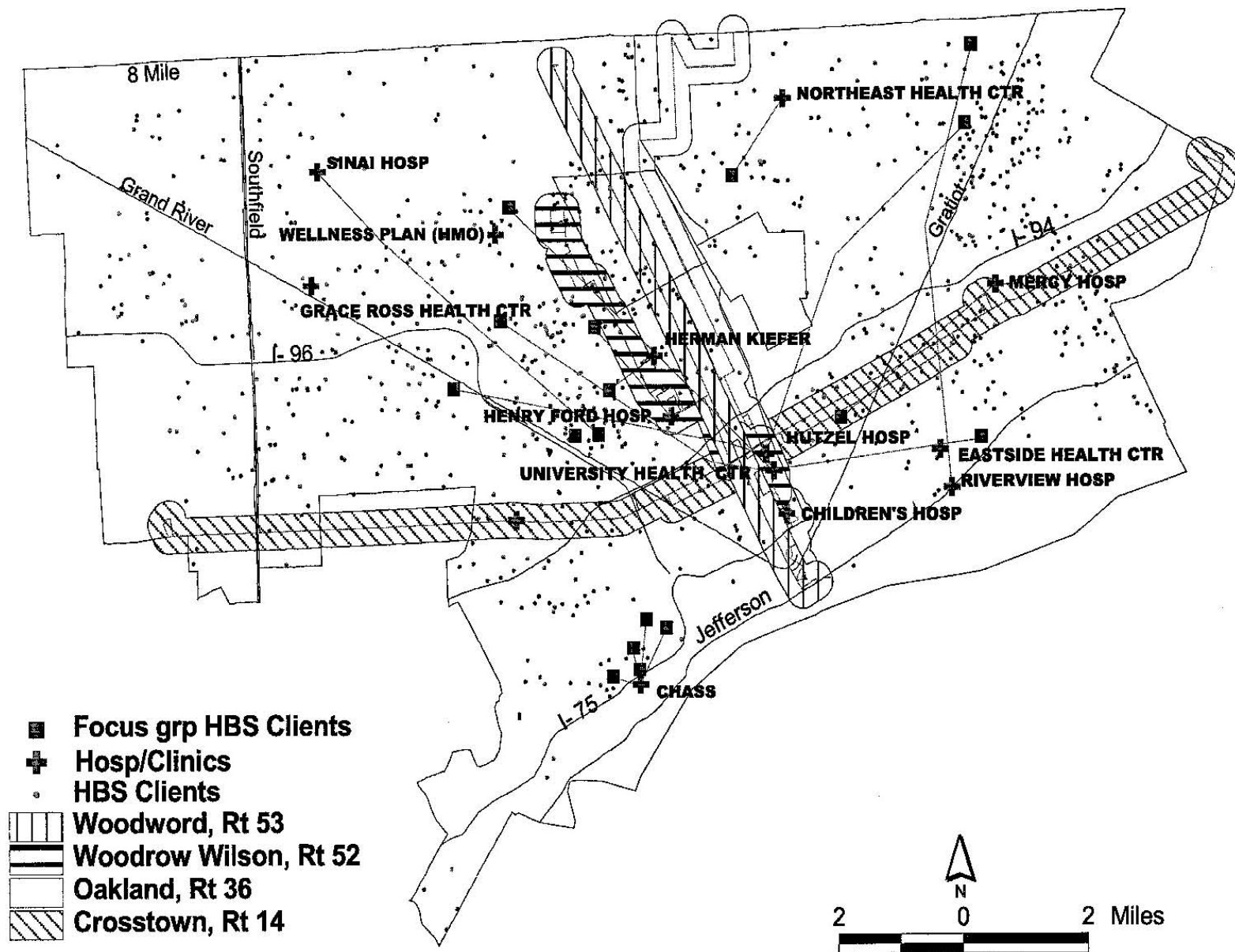
- 1st - Individual must **desire** to engage in the activity.
- 2nd - **Opportunity** or **means** to engage in the activity must exist.

# Exploring the linkages between Activities

- Constraints (Hägerstrand):
  - Capability: individual limitations
  - Coupling: joint activity limitations
  - Authority: space and time limitations
- Activities as *Projects* (Jones, Axhausen, Miller): A logically inter-related set of activities that are tied together by a common goal or outcome. (ex: a dinner party)

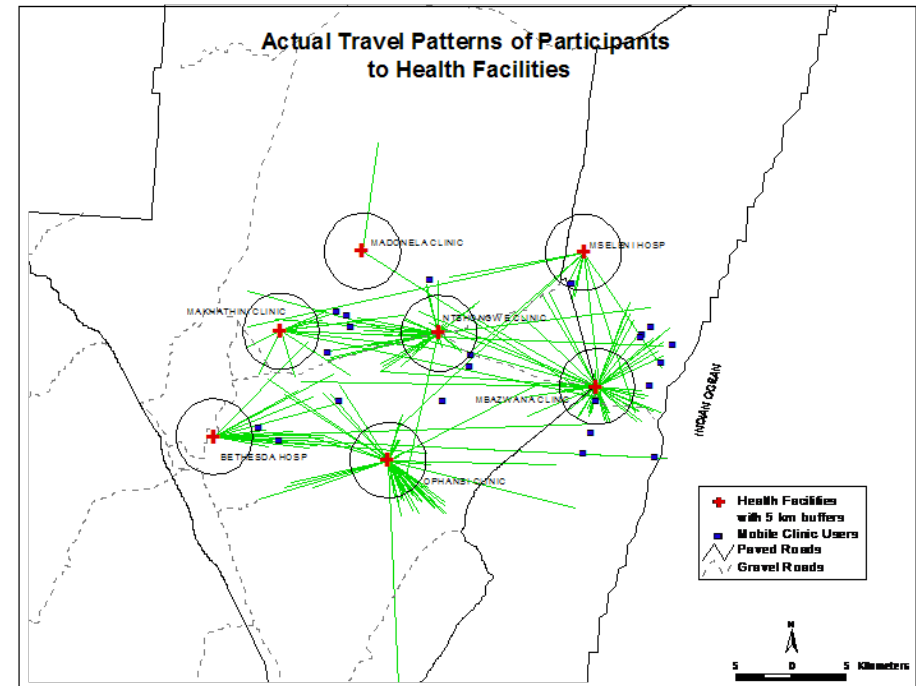
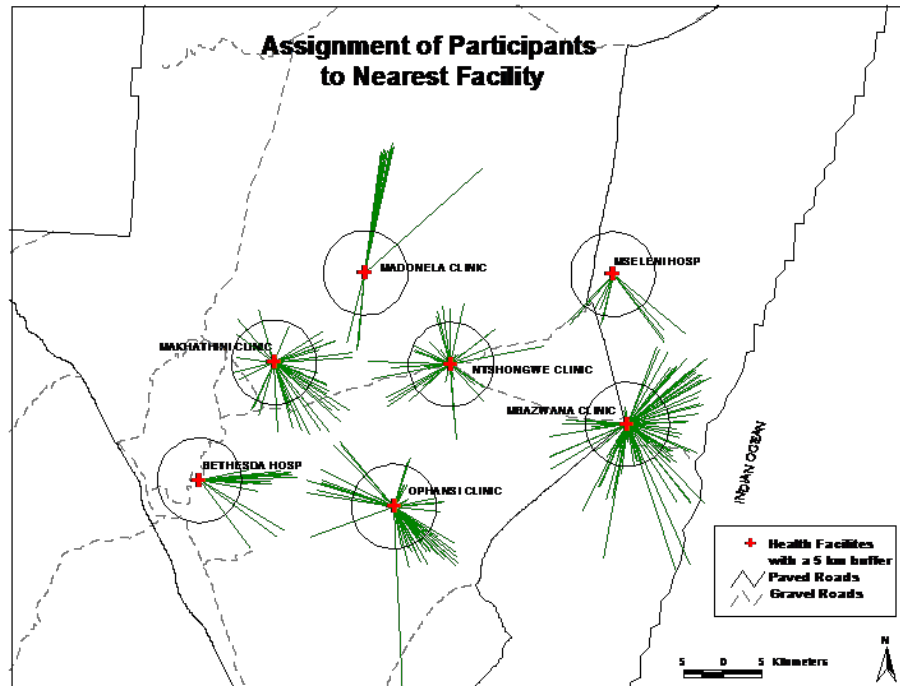


# Prenatal Care Access in Detroit, MI

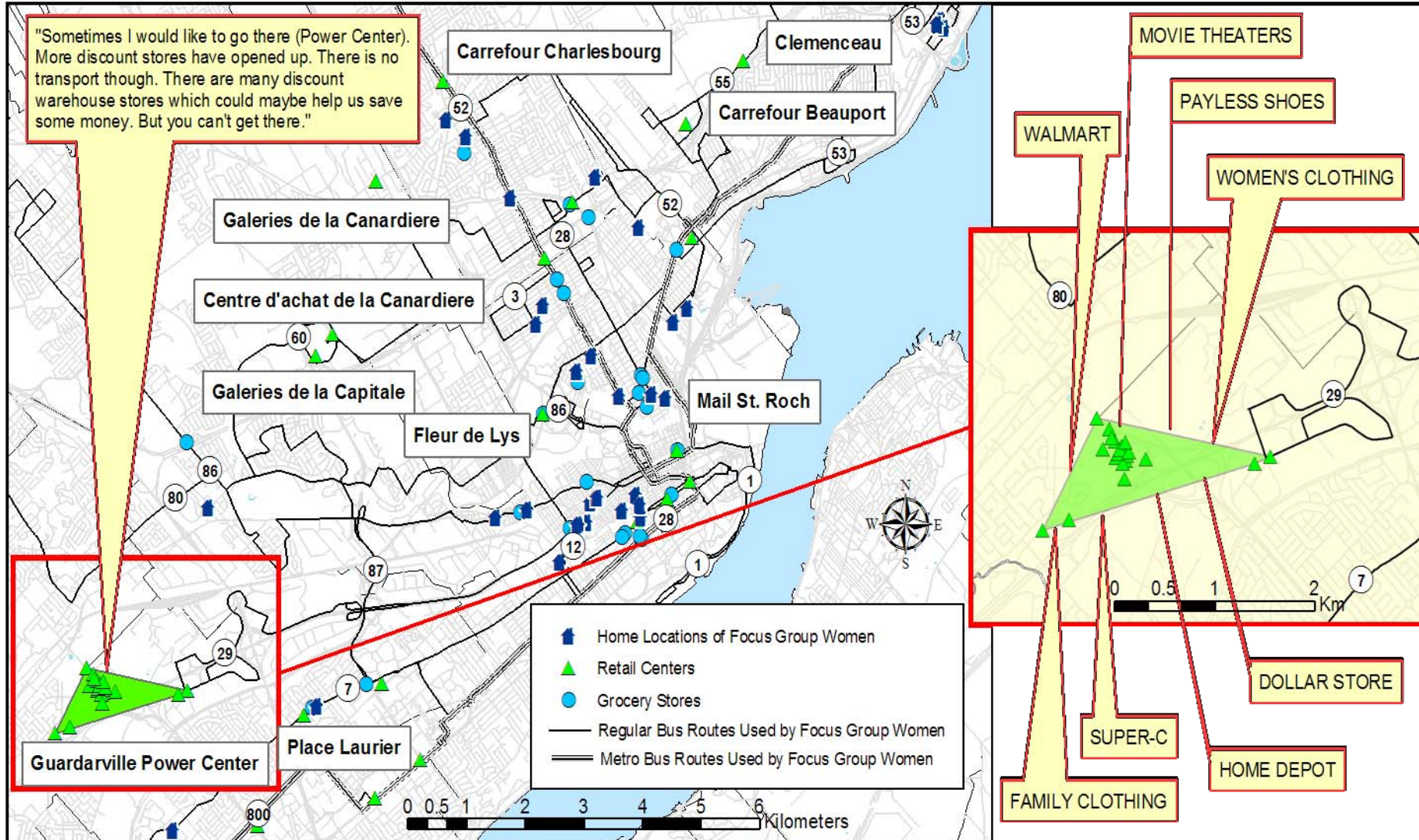


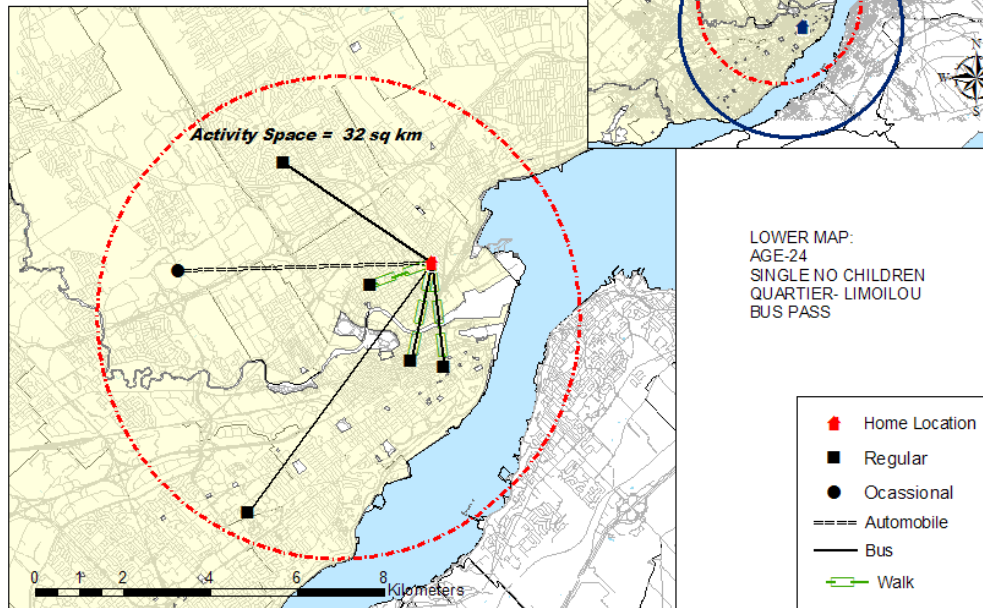
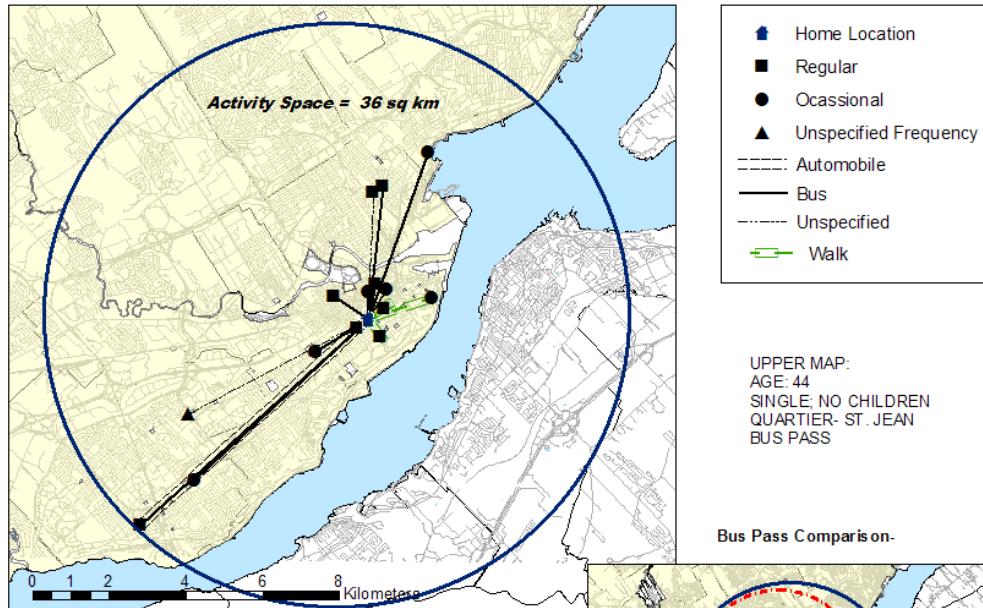


# GIS to analyze Healthcare Utilization in Rural SA



# GIS to analyze Discount Shopping in Quebec City, Canada





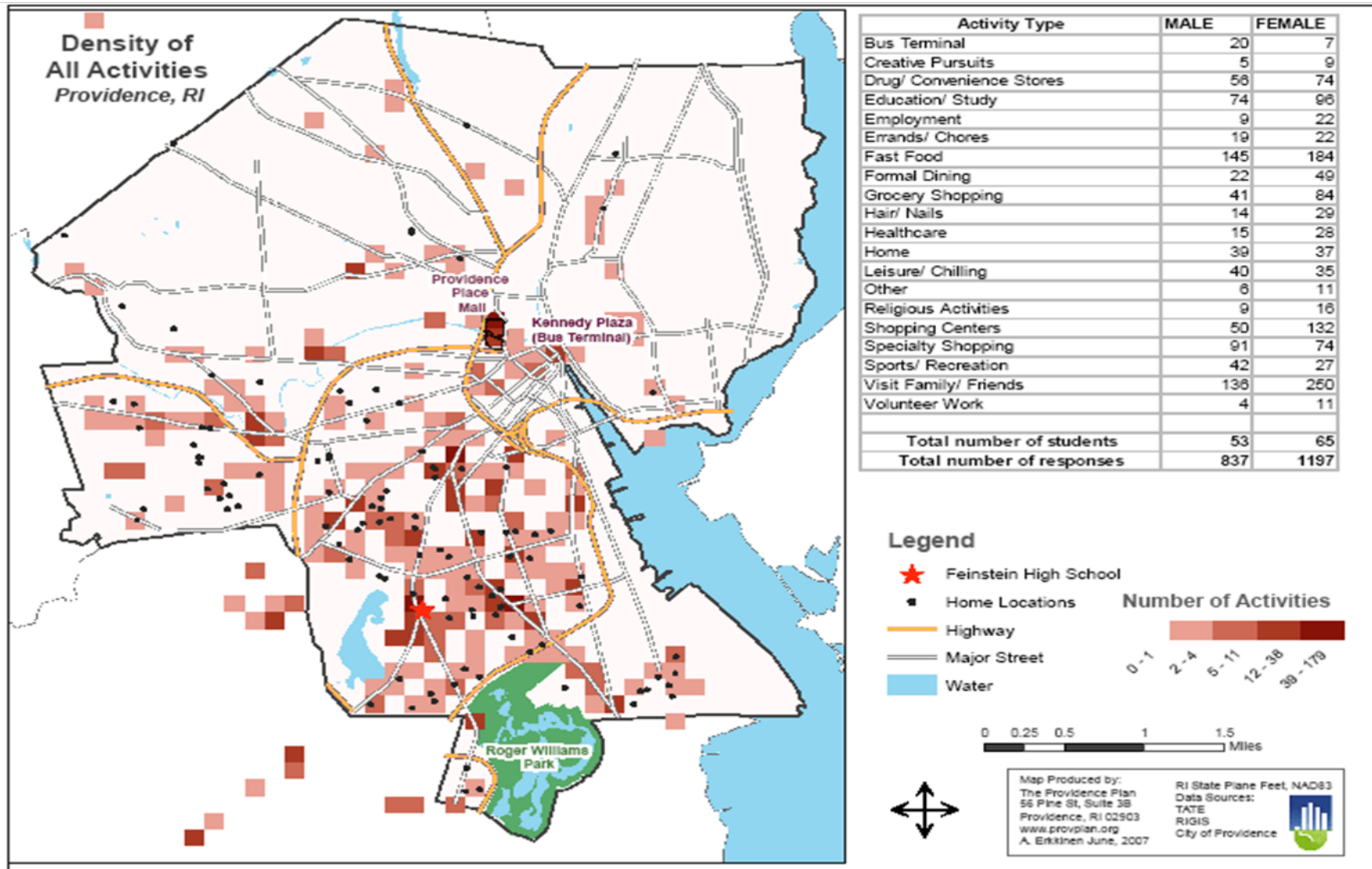
# The Use of GIS to Measure Individual Activity Space in Quebec City, Canada

- Understanding how
  - mode,
  - possession of a bus pass
  - proximity to an express bus route line
  - proximity to a business district,
  - and the presence of children affect access



# GIS to analyze Low-Income Teenagers

## Travel Patterns in Providence, RI



# Summary

- Accessibility models come in different forms.
  - Aggregate models (place accessibility)
  - Disaggregate models (individual accessibility)
- Accessibility must address not only distance, but other key factors: quality of the destination, individual characteristics, household constraints, the interrelatedness of activities, and time (24 hr.) constraints.
- GIS is a valuable tool for policy makers.