

# How Affordable is Transportation?

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# The affordable car idea



Image source: National Public Radio, People's Car Series.  
<http://www.npr.org/templates/story/story.php?storyId=92357271&ps=rs>



# The affordable public transportation idea

- The Urban Mass Transportation Act of 1964
- Early UMTA projects focused on the “ghetto transportation” and “poverty transportation” problems



On July 9, 1964, President Lyndon B. Johnson signed the Urban Mass Transportation Act of 1964, which launched federal aid for urban mass transit in the U.S. (Photo courtesy of Federal Transit Administration (FTA) on FB)

City	Early UMTA project
St. Louis, MO	Bus service to industrial complex 20 miles NW of inner city
Long Island, NY	Multiple bus routes from low-income communities to job concentrations
Washington, DC	Bus routes to shopping center employment and adjacent counties
Boston, MA	Bus routes to industrial complexes, day shifts only
Cleveland, OH	Bus service from low-income neighborhoods to steel plant
Gary, IN	Bus routes from low-income neighborhoods to major steel plants
Kansas City, MO	Bus service to large employer locations, serving three shifts
Detroit, MI	Two bus routes from inner-city neighborhoods to suburban job locations

# Existing Definitions of Transportation Affordability

- **People's financial ability to pay for transportation-related services and goods.**
- **Two types of measurement:**
  - % of household disposable income spent on transportation
  - % of household total expenditures spent on transportation
- **Inconsistent use of benchmarks**
  - 20%; 10%
  - Average % in the lowest three income deciles



A recent innovation is the “H+T” index.

H+T has limited ability to improve the measurement of transportation affordability

Its purpose is mainly to

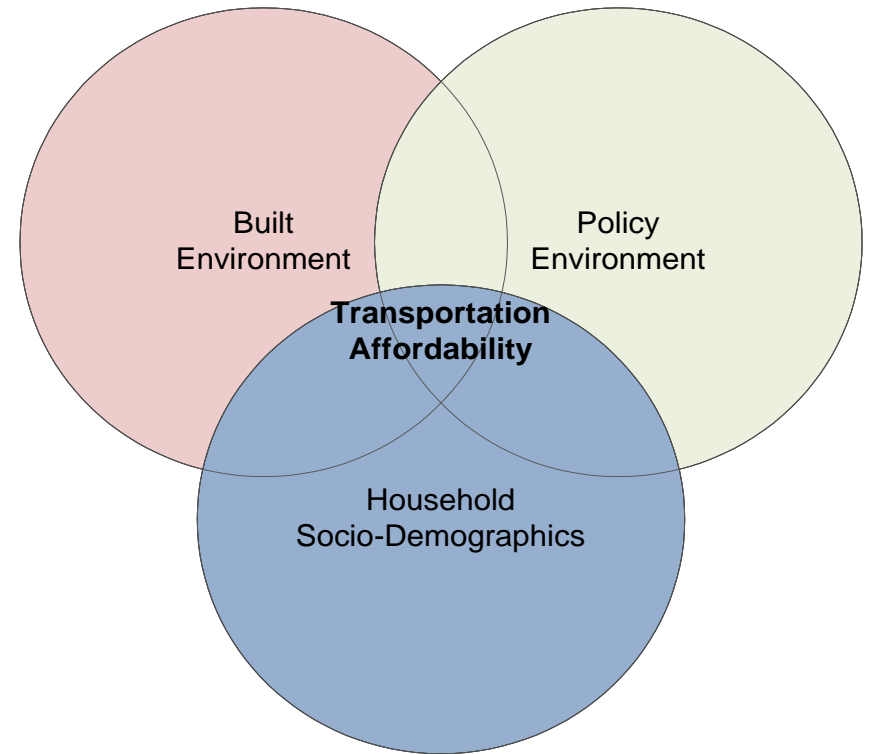
- illustrate the interconnectivity between the cost of housing and the cost of transportation (both costs are location-sensitive)
- educate policy makers and the public on the benefits of smart growth and transit-supportive land uses.

# Major Limitations

- Blunt and ambiguous benchmarks—unsuitable for an increasingly diversified society
- Focus on ability to travel but little emphasis on ability to fulfill daily needs
- Focus on financial ability, yet overlooks potential substitution between time and money

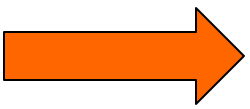
# An alternative direction

- Recognize heterogeneity in transportation needs, time availabilities, and resource availabilities.
- Not only population-sensitive but also location sensitive.

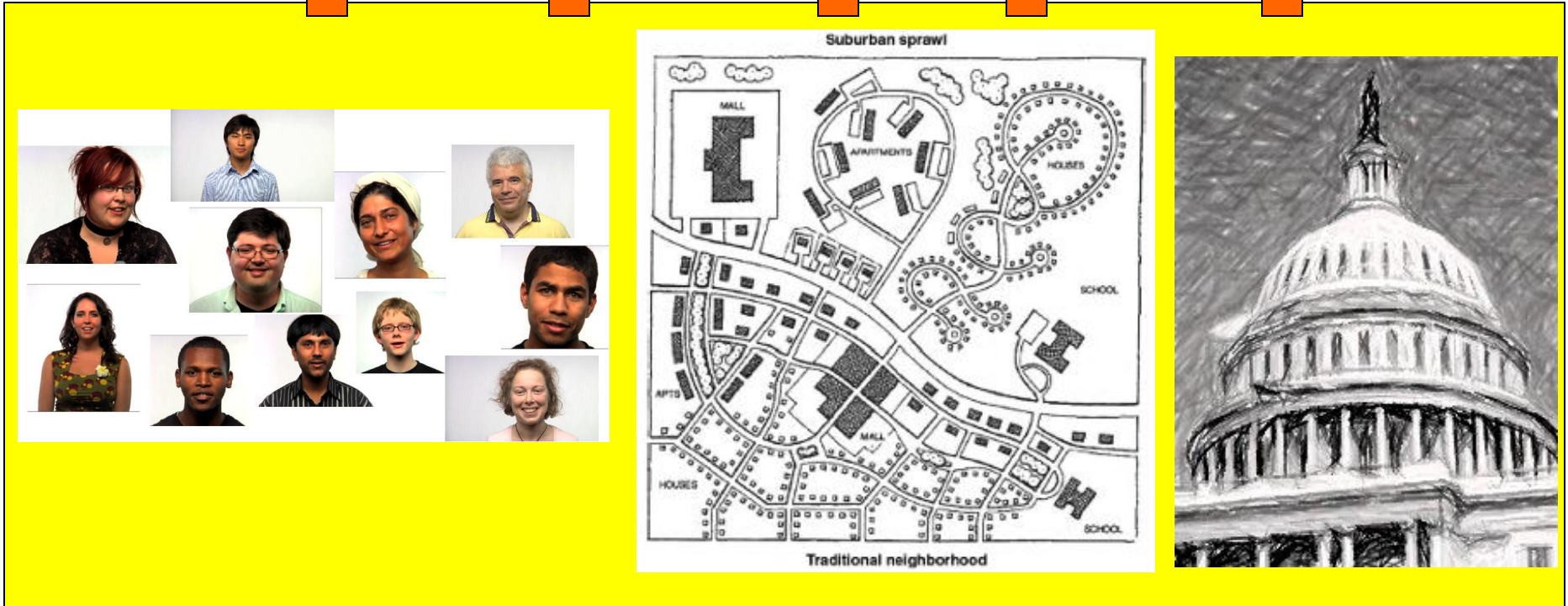
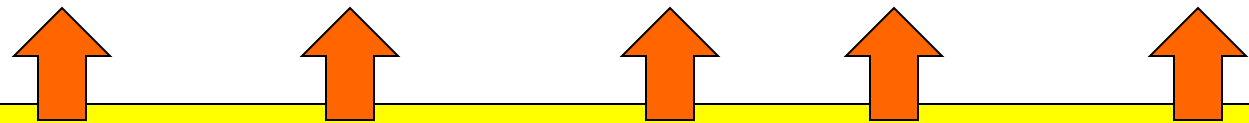


**Contextual Factors  
Determining  
Transportation Affordability**

# Time & Income resources



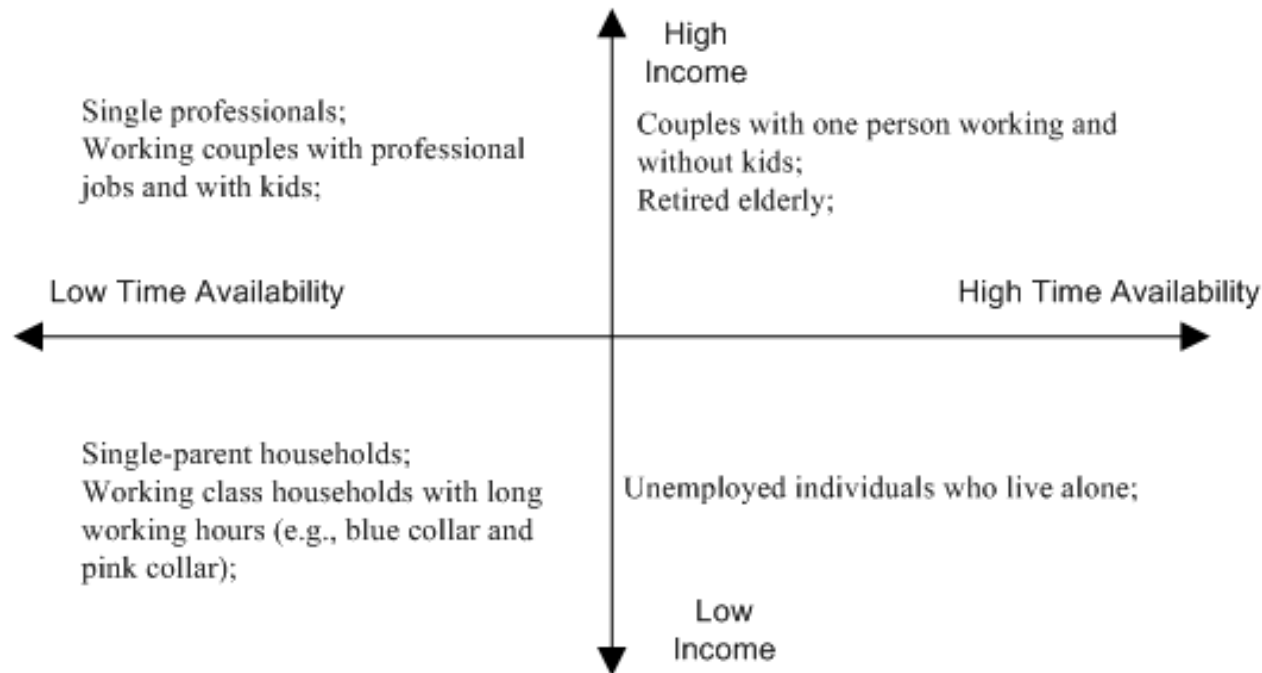
# Total Costs of Transportation





# Household Socio-Demographics

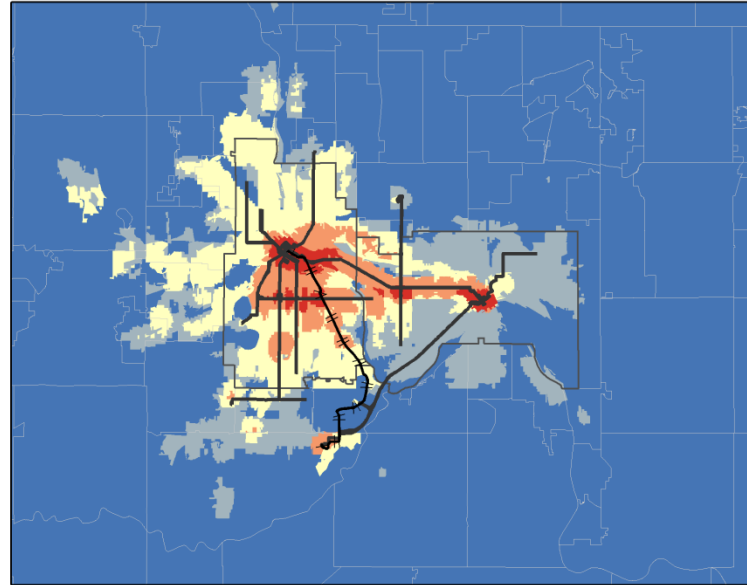
- Time & income resources



- Quantity of transportation needs
  - Complicated travel needs associated with low-income minorities
- Price of transportation
  - Forced car ownership

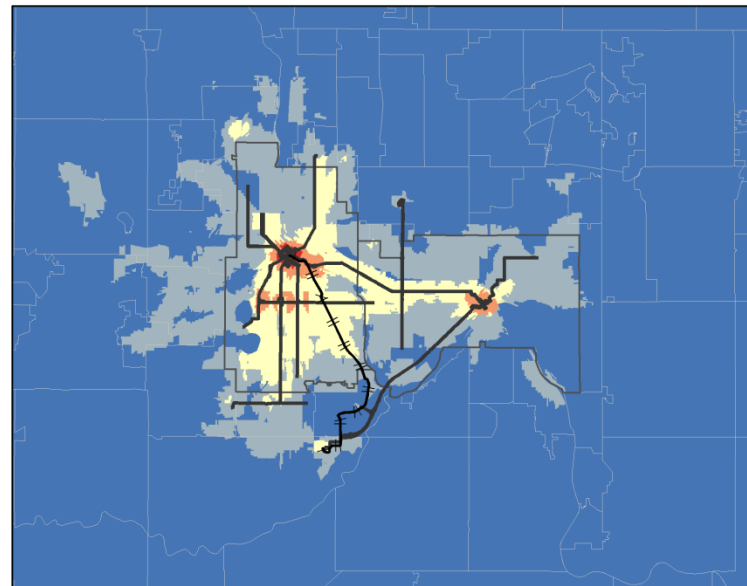
# The Built Environment

- Price of transportation
  - More expensive transportation services needed?
- Quantity of transportation needs
  - Urban sprawl means longer trips to access destinations



Top Map: Job Accessibility

Bottom Map: Food Shopping Accessibility



## Legend

- High-frequency Bus Rte.
- + + Hiawatha LRT
- City boundary

### Accessibility by bus

#### Jobs accessed in 30 min

- 0 - 47357
- 47358 - 134273
- 134274 - 231402
- 231403 - 355019
- 355020 - 592523

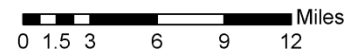
### Accessibility by bus

#### Food store employment in 30 min

- 0 - 81
- 82 - 240
- 241 - 434
- 435 - 699
- 700 - 1256



Method: natural breaks



# The Policy Environment

- Price of transportation
  - Transit fare policy
  - Parking
  - Carpool programs
- Quantity of transportation needs
  - Auto-oriented development vs. transit oriented development
- Time and income resources
  - Car ownership programs

# Two Dilemmas

- **The socio-economically disadvantaged has the fewest resources.**
  - Yet, their transportation needs are better served by the more expensive mode of transportation, i.e., automobiles.
  - And yet, public policy has focused on transit solutions in addressing their transportation needs.
- **Automobiles can reduce transportation hardship.**
  - Yet, the existing auto-oriented urban landscape in the US requires more travel to access destinations, which leads to higher transportation costs.

## ***Multi-modal transportation solutions are a MUST.***

*Reducing societal auto dependence and subsidizing car access among disadvantaged populations are equally important to enhance transportation affordability.*

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