



# TCRP H-31

## Understanding How Individuals Make Travel and Location Decisions, Implications for Public Transportation

A Presentation for  
Railvolution 2005  
By Karla Karash



# Presentation Outline



- Background on the research
- Why people would move to a TOD
- Some findings related to work
- Findings related to TOD and the ways that people travel

# The Team

- Lead investigators: Karla H. Karash, Matthew Coogan and Thomas Adler
- TranSystems Corporation
- Mathew Coogan and Associates
- Resource Systems Group, Inc.
- Simon & Simon Research and Associates
- Susan A. Shaheen, Ph.D.
- Battelle Memorial Institute
- Dr. Icek Aizen

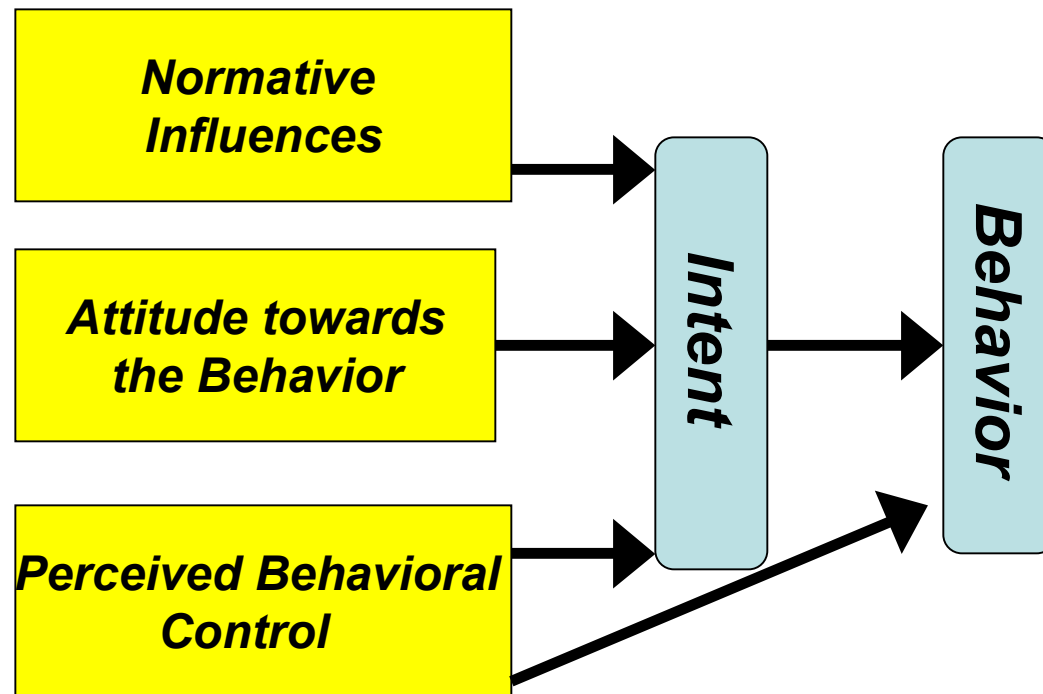


# Objectives of the Research



- Use a different approach to understanding decision-making
- Come up with some practical advice for transit agencies
- Determine why someone would choose a TOD or Compact Neighborhood, and then whether they would walk or take transit

# Theory of Planned Behavior



**Conditions/change  
in my personal life**

**Normative  
Influences**

**Attitude towards  
the Behavior**

**Perceived Behavioral  
Control**

**The environment  
affects ease of  
attaining a behavior**

**Intent**

**Behavior**



# Research Tasks & Progress



- Extensive literature review
- Interviews with experts in the field
- 2 Sets of focus groups
  - Younger set: Ages 20-30
  - Older set: Ages 55 and above
- 2 Larger surveys using an Internet Panel

# The Internet Panel

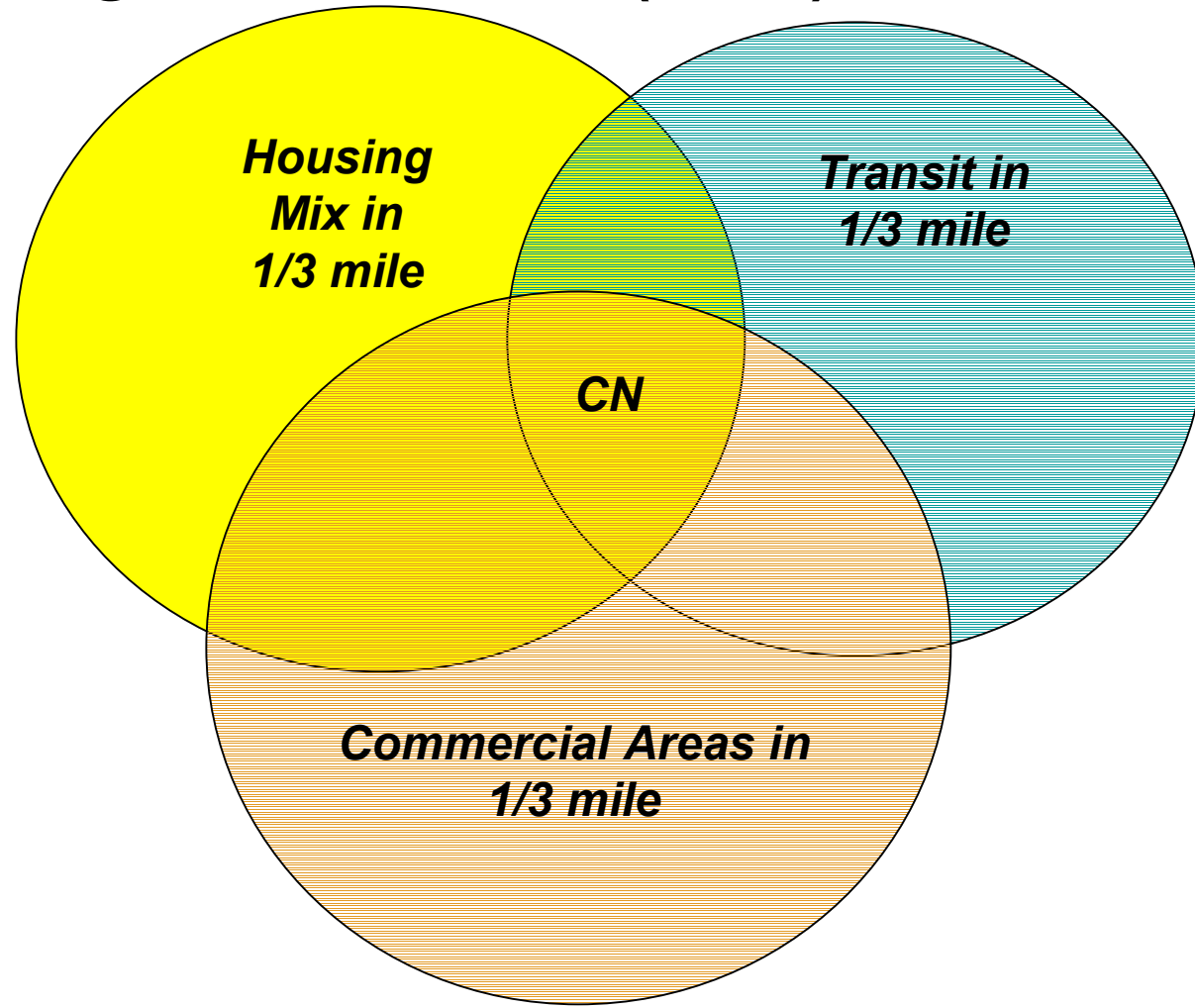
- 865 Participants
  - Compensated with Vermont Maple Syrup or Ben and Jerry's Ice cream
  - All are considering moving or have moved in the last 2 years
  - All are in a metropolitan area with good transit (rail)
  - A good many are members of the New Jersey Transit e-panel



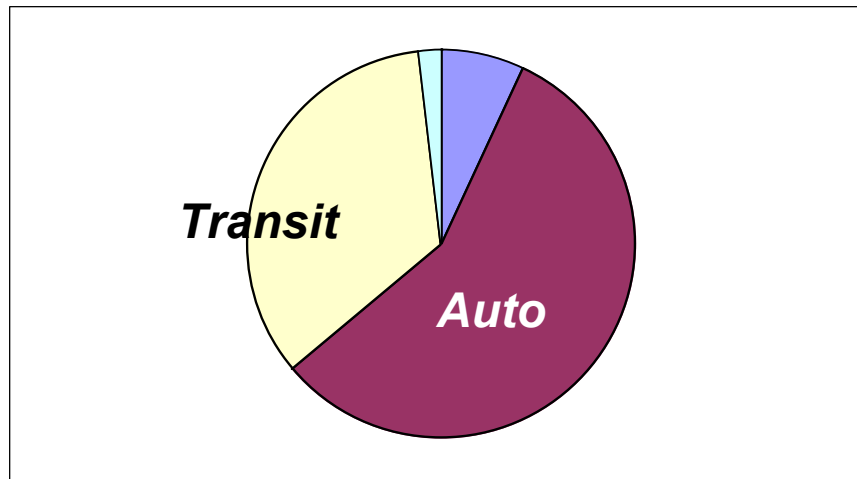
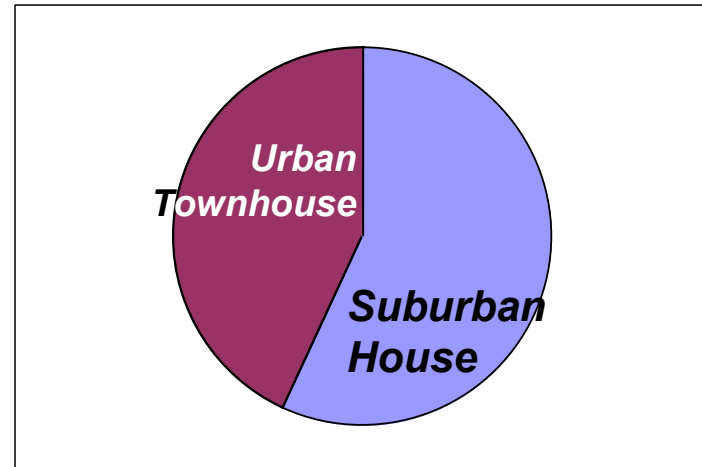
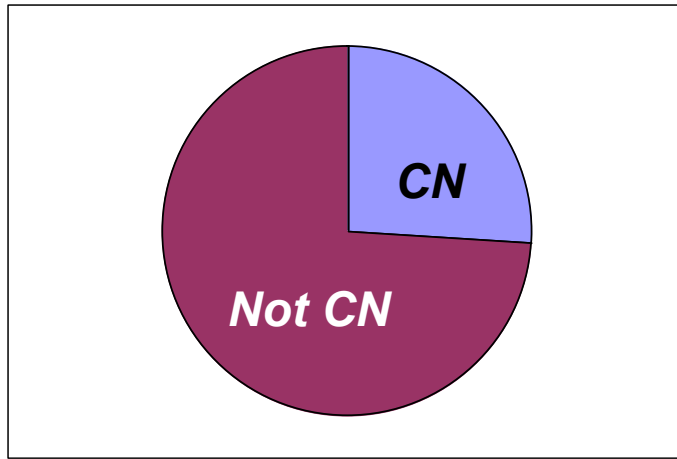
# Questions Asked

- What factors were important in their last move
- What their childhood neighborhood was like
- Modes used including walking and transit
- Attitudes towards the environment and exercise
- Attitudes towards and intent to move to a Compact Neighborhood
- Tradeoff questions examining choice of neighborhood

# Definition of Compact Neighborhood (CN) or TOD



# Some Results



# How the Model Worked

- Subjective norm and attitude were about equally ranked.
- Perceived behavioral control was significant, but less influential than subjective norm and attitude



# Highest Correlations

- Others important to me thought it was OK
- Being in walking distance of shops
- Being able to afford a place




# Other Factors Were Important



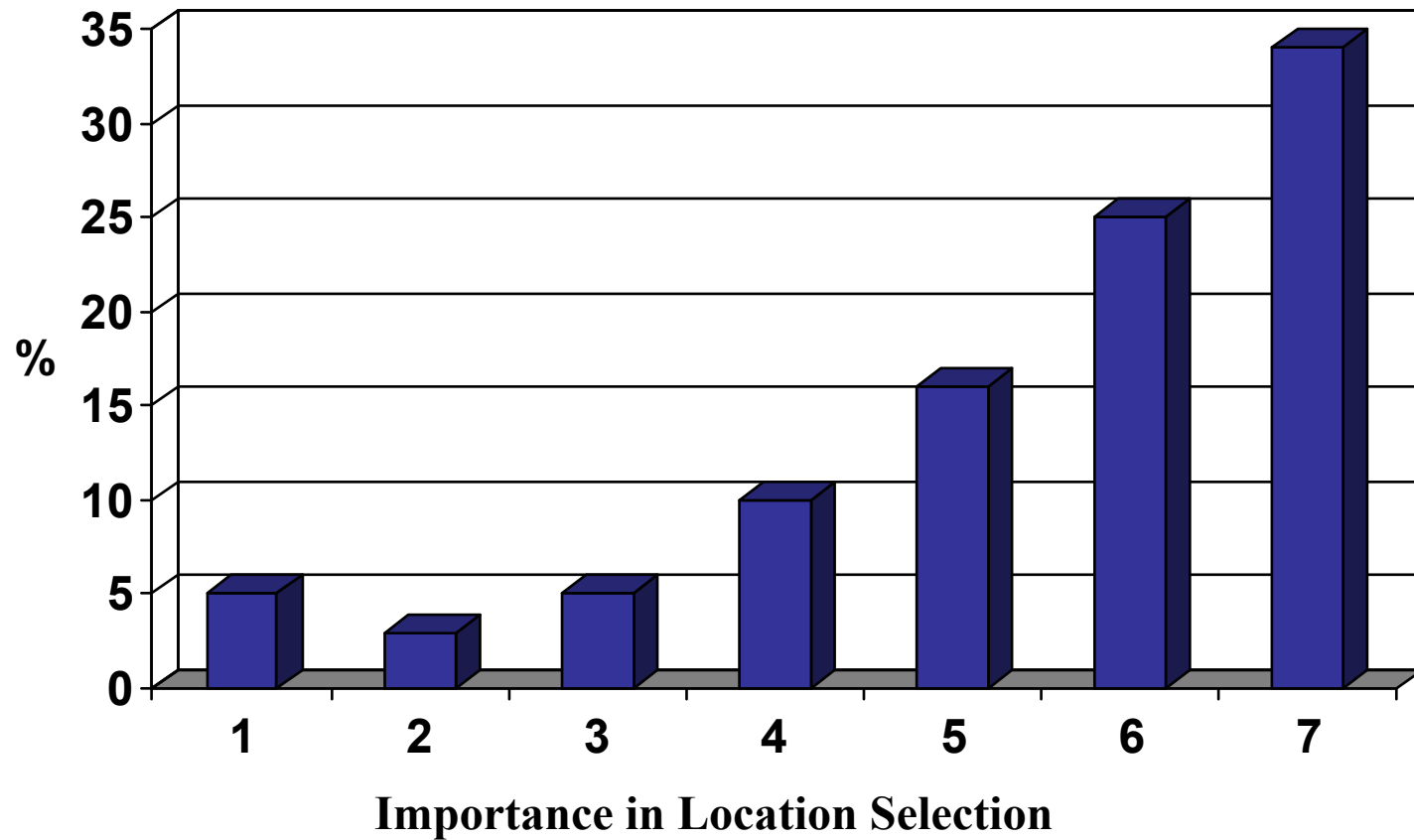
- What my family thinks
- Being able to do with fewer cars
- Having transit
- Making friends with neighbors



## What Did We Learn about Work?

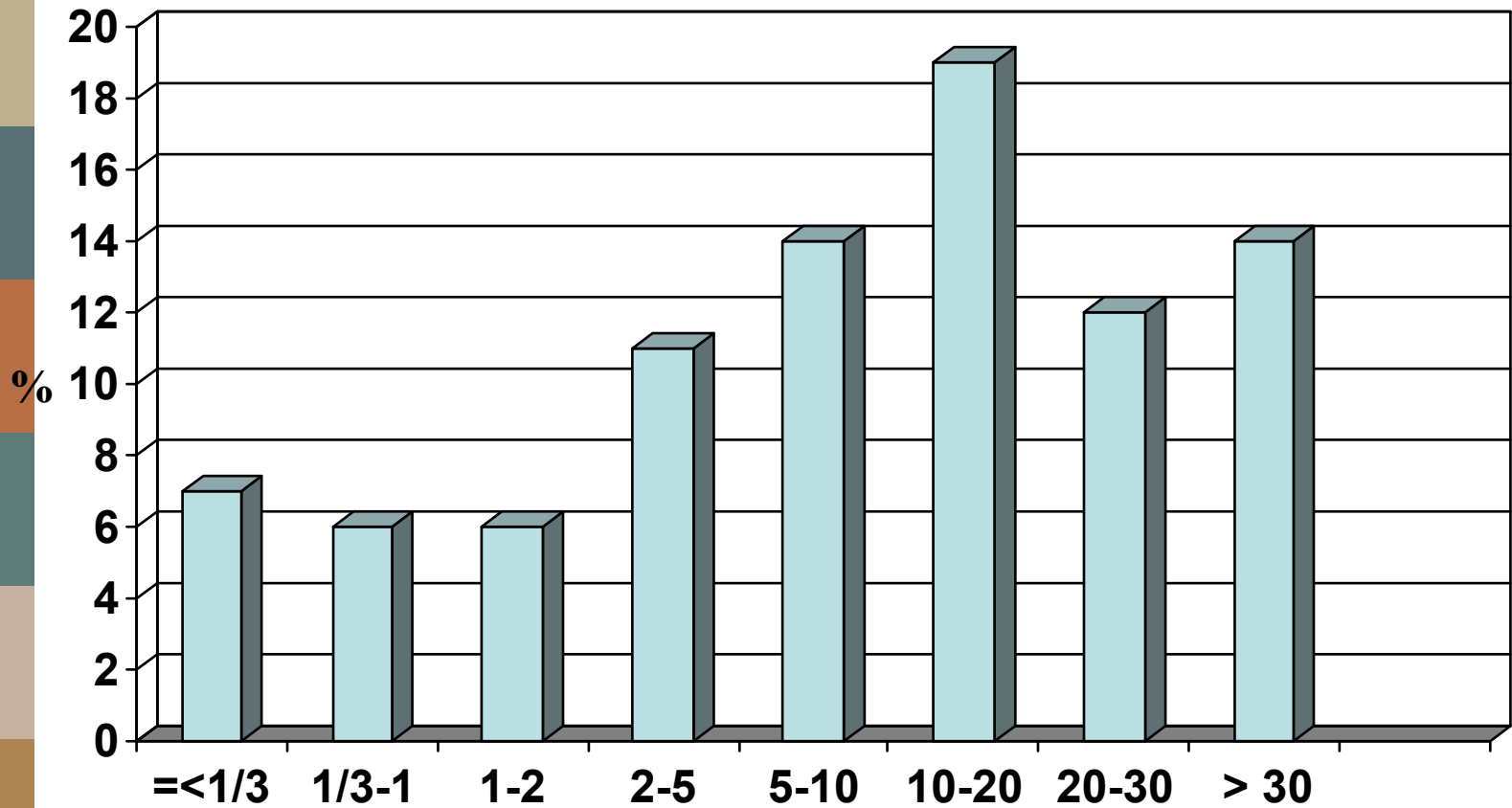
- 32%-- change in job or school location was primary or at least a significant reason for moving.
  - 53% -- commute distance was primary or at least a significant reason for selecting their home over others available.
- 

# Being Convenient to Work

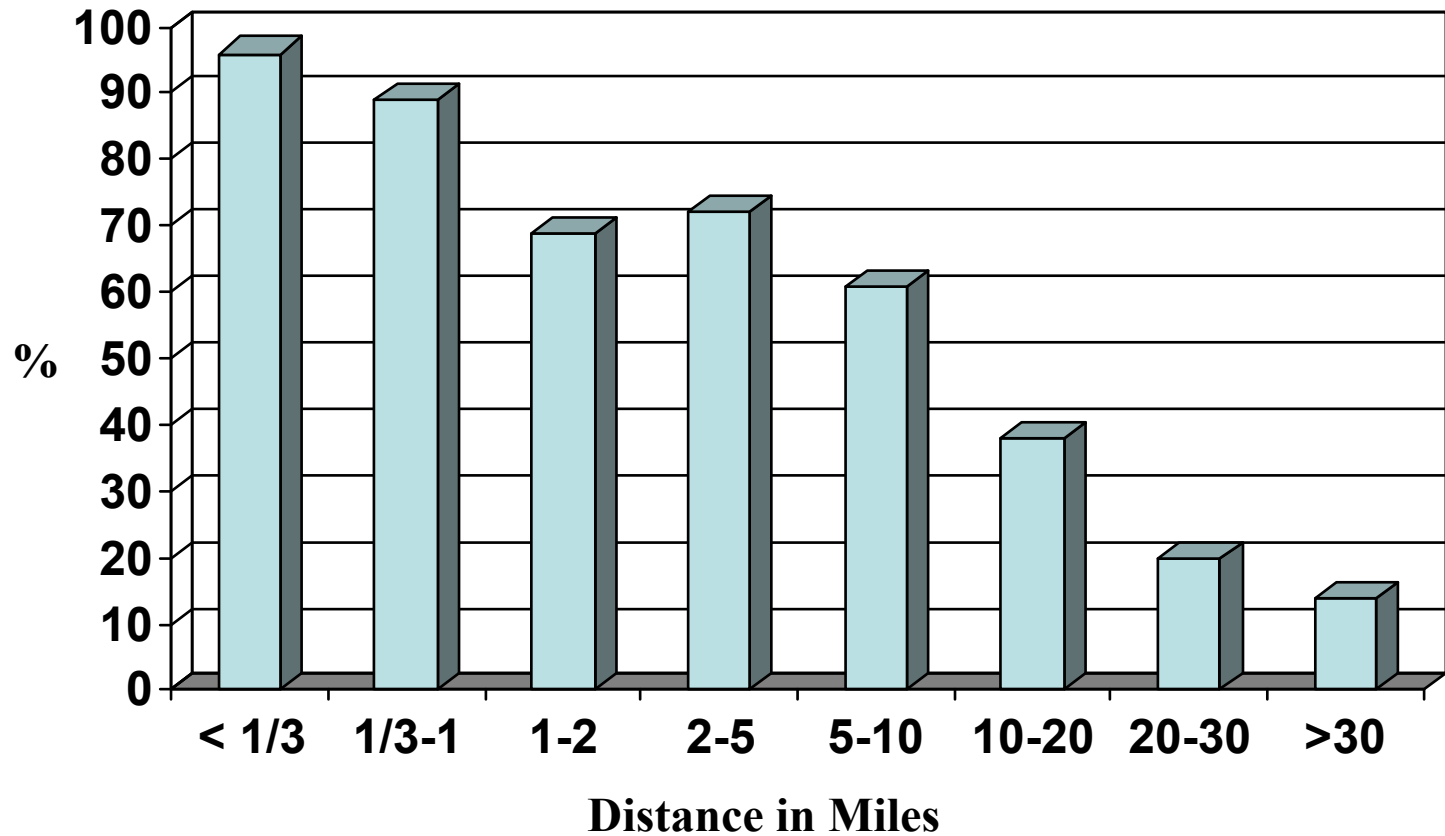




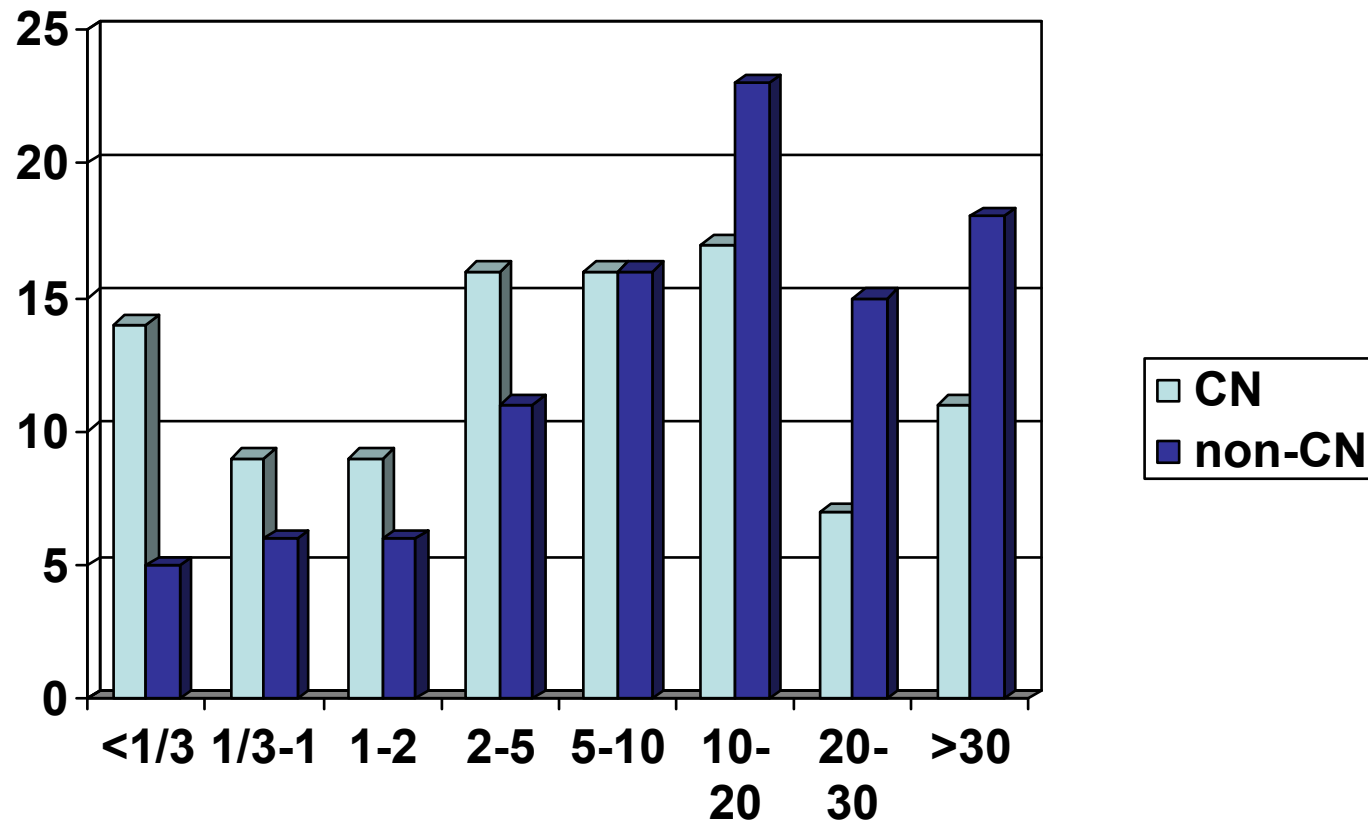
# Distance from Work or School



# High Convenience vs. Commute



# CN by Commute Distance



# What Did We Learn About how People Travel and TOD?

- Created a “urban values/green values” attitude factor by combining 17 statements that were highly correlated
  - Positive statements towards moving to a Compact Neighborhood
  - Pro-environment statements
  - Pro staying active statements
- Divided sample down the middle based on answers to the 17 statements.

# Green Mode Definition

- Public Transportation
- Walk
- Bike

# Mode Share by Neighborhood

**Ease of Attaining Behavior**



***Compact  
Neighborhood***

**60%** Green Mode  
Share for work trip

***Other Location***

**36%** Green Mode  
Share for work trip

# Mode Share by Attitude

## *Non-green Values*

**29%** Green Mode  
Share for work trips

## *Green Values*

**49%** Green Mode  
Share for work trips



***Attitude Towards the Behavior***

**Ease of Attaining Behavior**

<p><b>Non-green Values</b></p> <p><b>Compact Neighborhood</b></p> <p>44% Green Mode Share for work trips</p>	<p><b>Green Values</b></p> <p><b>Compact Neighborhood</b></p> <p>66% Green Mode Share for work trips</p>
<p><b>Non-green Values</b></p> <p><b>Other Location</b></p> <p>30% Green Mode Share for work trips</p>	<p><b>Green Values</b></p> <p><b>Other Location</b></p> <p>44% Green Mode Share for work trips</p>

**Attitude Towards the Behavior**



**Ease of Attaining Behavior**

<p><b>Non-green Values</b> <b>Compact Neighborhood</b> 29% Green Mode Share for non-work trips</p>	<p><b>Green Values</b> <b>Compact Neighborhood</b> 54% Green Mode Share for non-work trips</p>
<p><b>Non-green Values</b> <b>Other Location</b> 10% Green Mode Share for non-work trips</p>	<p><b>Green Values</b> <b>Other Location</b> 20% Green Mode Share for non-work trips</p>

**Attitude Towards the Behavior**

**Ease of Attaining Behavior**

<p><b>Non-green Values</b></p> <p><b>Compact Neighborhood</b></p> <p>27% Transit Share for work trips</p>	<p><b>Green Values</b></p> <p><b>Compact Neighborhood</b></p> <p>43% Transit Share for work trips</p>
<p><b>Non-green Values</b></p> <p><b>Other Location</b></p> <p>21% Transit Share for work trips</p>	<p><b>Green Values</b></p> <p><b>Other Location</b></p> <p>32% Transit Share for work trips</p>

**Attitude Towards the Behavior**

**Ease of Attaining Behavior**

<p><b>Non-green Values</b></p> <p><b>Compact Neighborhood</b></p> <p>14% Transit Share for non-work trips</p>	<p><b>Green Values</b></p> <p><b>Compact Neighborhood</b></p> <p>26% Transit Share for non-work trips</p>
<p><b>Non-green Values</b></p> <p><b>Other Location</b></p> <p>2% Transit Share for non-work trips</p>	<p><b>Green Values</b></p> <p><b>Other Location</b></p> <p>5% Transit Share for non-work trips</p>

**Attitude Towards the Behavior**

**Ease of Attaining Behavior**

***Non-green Values  
Compact  
Neighborhood***

**12** Utilitarian Walk Trips  
Per Month

***Non-green Values  
Other Location***

**5** Utilitarian Walk Trips Per  
Month

***Green Values  
Compact  
Neighborhood***

**23** Utilitarian Walk Trips  
Per Month

***Green Values  
Other Location***

**11** Utilitarian Walk Trips  
Per Month

***Attitude Towards the Behavior***

**Ease of Attaining Behavior**

**Non-green Values**  
**Compact Neighborhood**  
126 Minutes walking per week for fun

**Non-green Values**  
**Other Location**  
155 Minutes walking per week for fun

**Green Values**  
**Compact Neighborhood**  
211 Minutes walking per week for fun

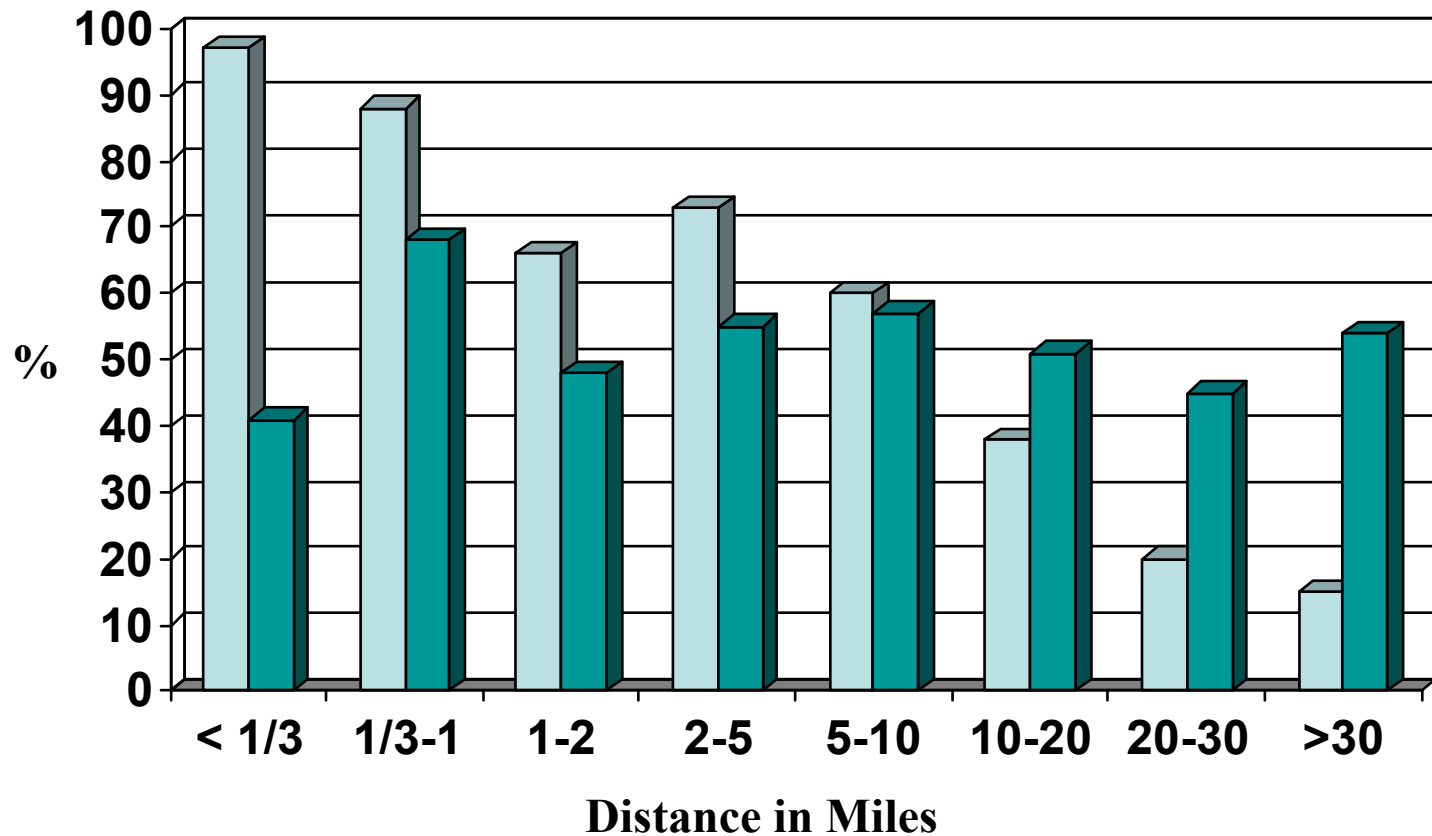
**Green Values**  
**Other Location**  
183 Minutes walking per week for fun

**Attitude Towards the Behavior**

# Partial Conclusions

- There is a large group of people that has positive attitudes towards some aspects of urban living and also might be called pro-environment.
- Travel behavior is dependent both on these attitudes and on the constraints of life cycle and location.

# Top Ratings of Location & Overall



# Types of Statements Contributing

- Living in a neighborhood where I could exercise by walking or bicycling would be (extremely desirable/extremely undesirable)
- Having neighbors close by and making friends with neighbors would be...
- To live within walking distance to stores, restaurants, a public library and a school would be...
- to be able to take public transportation to work or for other trips would be...
- For my household to need to own fewer cars would be...
- Having frequent bus or other transit (train or trolley) services (not important at all/extremely important)
- I am concerned about global warming and or climate change (strongly agree/strongly disagree)
- I think I should spend more time walking, just to be healthier.
- Protecting the environment should be given top priority, even if it means an increase in taxes.



# Distribution of our Sample

<b><i>Non-green Values Compact Neighborhood</i></b>  64 Participants	<b><i>Green Values Compact Neighborhood</i></b>  115 Participants
<b><i>Non-green Values Other Location</i></b>  382 Participants	<b><i>Green Values Other Location</i></b>  261 Participants