Active Transport: Data for Decision-Making

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Active Transportation Expert Panel
Goals for Active Transport Expert Panel:

- Members include experts in the measurement of active transportation from academia, private industry, and from federal government agencies such as the Department of Transportation, Department of Labor, Census Bureau, National Institutes of Health, and Centers for Diseases Control.

- First, to document the current state of active transportation measurement, particularly at the national level, in each field.

- Ultimate Goal: to provide recommendations for key action items for near-term and longer-term collaboration between public health, labor, and transportation.

- Steering committee: David Berrigan (NIH), Dianna Carroll (CDC), Janet Fulton (CDC), Kevin Krizek (Univ of Colorado), Gabe Rousseau (DOT/FHWA), and Tom Schmid (CDC).
Data Needs:

Ground-Level
- Volume
- Location
- Time or speed (exposure)

Behavior
- Demographics
- Special populations
- Unique behaviors

Built Environment
- Density/Sprawl
- Design factors (e.g. complete streets or barriers)
- Opportunities and accessibility
Three Challenges:

**Defining ‘Active’ Transport**
- Usual walk to work (Census)
- Walk to the store/Walk the dog
- Walk for exercise (mall or streets?)

**Obtaining Enough Samples**
- Walk for utilitarian more variable than discretionary walks
- Do we want to compare cities? Time periods? Long term trends at small geography?

**Understanding the Context**
- The built environment is key
- Different barriers affect different folks
- Equity means understanding the traveler
National Household Travel Survey

- A snapshot of travel by people in the U.S. (all ages)
- Conducted by FHWA periodically since 1969
- Only national source of trends in daily travel

**Survey Method:**
- Samples from all state and regions, inc. rural and urban areas
- Conducted in English and Spanish
- Telephone recruit--travel-diary mail out
- Telephone retrieval using Computer Assisted Telephone Interviews (CATI)
- Single-day travel-diary for each person’s travel, covering 365 days
- Weighted to represent annual and daily person travel in the U.S.
- All trips, all purposes, all modes on an assigned day for all people
NHTS Content Overview

- Descriptive statistics
  - Households
  - People (workers/drivers)
  - Vehicles
  - Trips
- Travel Behavior
  - Mode share distribution
  - Travel time, speed, distance,
  - Work and Non-Work Travel
  - Travel to school
- Special Populations
  - Older Drivers and non-Drivers
  - Bike and Pedestrian
  - People with Disabilities
  - New Immigrants

For Each Vehicle:
- Make
- Model
- Age (year)
- How long owned*
- Odometer readings

For Each Household:
- Number of people
- Number of drivers
- Number of workers
- Number of vehicles
- Income

For Each Person:
- Age
- Sex
- Driver status
- Worker Status
- Annual Miles

Daily Travel Data:
- Origin and Destination address (for add-ons)
- Time trip started and ended
- Distance
- Means of transportation:
  1. vehicle type
  2. if household vehicle, which one
  3. if transit, wait time
  4. if transit, access and egress mode*
- Detailed purpose*
- Number of passengers on trip:
- Most recent trip for non-travelers (date)*
Trends in walking by purpose

Source: NHTS Data series, McGuckin’s analysis
Mean number of walks increased between 2001 and 2009, fueled by increases in 5 or more walks per week…

Source: NHTS Data series, McGuckin’s analysis
NHTS includes prompts during interview:

Prompts to remind respondents to include walk and bike trips are read by the interviewer at various places in the questionnaire:

- In the past week, how many times did you take a walk or a jog outside including walk the dog and walks for exercise? (This includes walks from home, work, or some other place)

- Please tell me about all the trips you took on {TRIPDATE}. A "trip" is any time you went from one address to another. Be sure to include stops made for any reason, such as buying gas or taking someone somewhere. And please include any trips made by walking, biking or transit.

- Before we continue, did you take any other walks, bike rides, or drives on {TRIPDATE}? Please include any other trips where you started and ended in the same place.
Changes in methods and protocol:

Trends in Estimated Walk Trips and Changes in Survey Protocols

- Recall of travel ‘yesterday’
- Implemented Two-Stage Travel Diary
- Added introductory prompts to include exercise
- Kept prompts and moved general question before specific travel reports

Source: McGuckin’s analysis of NHTS data series
‘Safe Routes to School’ module includes detail on travel to school, including attitudes of parents:

- How many people does your child walk/bike to school with? [If walk/bike is mode]

- At what grade would you allow your child to walk or bike without an adult to/from school? [If walk/bike is not mode]

- Please tell me how much the following issues affect your decision to allow or not to allow your child to walk or bike to or from school:
  - Distance
  - Amount or Speed of Traffic
  - Poor Weather
  - Crime

- Are there any other issues that affect your decision to allow or not allow your child to walk or bike to or from school? (open-ended response)
Challenge: Defining a ‘walk trip’
In 2001, NHTS added a purpose of ‘walk the dog’

2009 NHTS Percent of Daily Walk Trips to “Walk the Dog”

<table>
<thead>
<tr>
<th>State</th>
<th>2009 NHTS Percent of Daily Walk Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>8.0</td>
</tr>
<tr>
<td>Georgia</td>
<td>18.0</td>
</tr>
<tr>
<td>Florida</td>
<td>13.9</td>
</tr>
<tr>
<td>South Carolina</td>
<td>13.4</td>
</tr>
<tr>
<td>Virginia</td>
<td>10.9</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>10.7</td>
</tr>
<tr>
<td>North Carolina</td>
<td>10.2</td>
</tr>
<tr>
<td>All Other States</td>
<td>8.2</td>
</tr>
<tr>
<td>Indiana</td>
<td>7.6</td>
</tr>
<tr>
<td>Arizona</td>
<td>7.2</td>
</tr>
<tr>
<td>Texas</td>
<td>7.1</td>
</tr>
<tr>
<td>Iowa</td>
<td>7.1</td>
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<tr>
<td>California</td>
<td>6.1</td>
</tr>
<tr>
<td>New York</td>
<td>4.1</td>
</tr>
</tbody>
</table>

Source: 2009 NHTS Day Trip File, McGuckin’s analysis
Challenge: measuring real activity e.g. how intense if the activity?

"In the past week about how many minutes did you spend walking outside, including walking the dog and walks for exercise?"

Source: 2009 NHTS California Add-on, McGuckin’s analysis
Challenge: Defining a legitimate walk trip
Utilitarian vs. discretionary walks

Utilitarian Purposes

Walk the Dog/Exercise

Source: NHTS Data series, McGuckin’s analysis
Challenge: Determining Sample Size

"In the past week how many times did you take a walk outside, including walking the dog and walks for exercise?"

- To compare states or metro areas in walk activity (trips)?
- To estimate mean miles or minutes for walk by demographic groups
- To estimate the percent/number of non-walkers by demographic
- To estimate miles walked at smaller geography for safety

Number of Walks 'Last Week' in California

<table>
<thead>
<tr>
<th>Year</th>
<th>Zero Walks</th>
<th>1-4 Walks</th>
<th>5 or more Walks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>1,249</td>
<td>1,864</td>
<td>1,552</td>
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<tr>
<td>2009</td>
<td>96,506</td>
<td>82,660</td>
<td>89,018</td>
</tr>
</tbody>
</table>

Source: 2009 NHTS California Add-on, McGuckin’s analysis
Challenge: Determining Sample Size to compare States

Estimate of Walk Trips by State:
Percent Std Deviation

Source: 2009 NHTS, McGuckin’s analysis
Understanding the barriers:

- Too busy
- Small children along
- Streets too wide
- Unsafe street crossings
- No one to walk with
- Not enough people walking around
- Dogs
- Too many cars
- No nearby paths or trails
- No sidewalks or sidewalks in poor condition
- Things to carry
- Fear of street crime
- No nearby parks
- Poor Health
- No shops or other interesting places to go
- Fast traffic
- Air pollution

Source: 2009 NHTS, California Add-on McGuckin’s analysis
Transportation planning and policy can:

• Remove barriers to walking and biking through healthy community design (livability)

• Promote safe and convenient opportunities for physical activity through complete streets and active transportation infrastructure

• Reduce the carbon footprint of daily travel while also improving air quality

• Ensure that all people have access to safe, healthy, convenient, and affordable transportation
A vision:

Can we assemble and sustain a

*Volunteer Mobility Measurement Population*

Using sensing data, social media, and panel upkeep

To obtain information on activity?
Nancy McGuckin
www.travelbehavior.us

Thank you!