National Household Travel Survey
Overview and Potential Modeling Uses

presented to
North Carolina Model Users Group

presented by
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Transportation leadership you can trust.
Presentation Outline

- About the National Household Travel Survey
- Users and Uses
- Resources
Overview

- National Household Travel Survey (NHTS) is a study of travel by the American public

- Provides national and state estimates of travel demand and characteristics by all modes (only source)

- Conducted by FHWA since 1969 (40 years of trend data)

- New 2009 data with 20 state and local partners (released January 2010)
2009 NHTS Methods and Design

- Listed-assisted random digit dialing (RDD) computer assisted telephone interview (CATI) survey of American households (HH)

Sample
  - National sample – 25,000 HHs with a minimum of 250 HHs in each state
  - Add-on sample – 125,000 HHs
  - Cell phone only sample – 1,250 HHs

- 13-month data collection – April 2008-May 2009
2009 NHTS Methods and Design (continued)

Add-On Program

125,000 Add-On Samples
Advance letter with incentive
Household recruitment
Diary packet
Reminder calls
Person level retrieval
Presentation Outline

- About the NHTS
- Users and Uses
- Availability
NHTS Serves Vehicle, Person, and Trip Details Linked with Household and Work Characteristics

The Most Commonly Used Variables in NHTS

- Vehicle Characteristics and Use: 17%
- Employment/Income: 9%
- Travel Time: 10%
- Age/Gender: 10%
- Travel Mode: 16%
- Other Household Variables: 10%
- Trip Purpose: 16%
- Trip Length: 12%

NHTS Does Not Include

- Costs of travel
- Specific travel routes or types of roads used
- How travel of a sampled household changes over time
- Disclosure of the exact location of trip ends
- Reasons for selecting a specific mode of travel

NHTS Data Have Many Uses

- Quantify travel behavior
- Analyze changes in travel characteristics over time
- Relate travel behavior to the demographics of the traveler
- Study relationship of demographics and travel over time

NHTS Collects Data for All Trips
Trip Segments Can be Coded into Tours

Trip 1
Car, Subway, Walk

Trip 2
Walk

Trip 3
Walk

Trip 4
Walk, Subway, Car

Trip 5
Car

Trip 6
Car

Trip 7
Car

Home

Daycare Center

Gas Station

Lunch at Restaurant

Grocery Store
Example NHTS Data Analysis

Toll Versus Nontoll Facts

On average weekdays, 6.2 percent of vehicle trips on highways pay a toll – not all on work purpose trips.
Statewide Wisconsin HBW Observed versus Predicted Trip Length Frequency

Source: 2001 NHTS Bruce Aunet, WI DOT & Cambridge Systematics Inc.
Example NHTS Data Analysis
Mandatory versus Discretionary Trip Making

Approximately 30% of Morning Peak Mandatory Trips and 25% of Evening Mandatory Trips Use an Interstate

Data Source: 2009 NHTS
Many workers have the ability to change their arrival time to work.

Do You Have the Ability to Change Your Arrival Time to Work?

- **Yes**: 35.9%
- **No**: 54.3%
- **Other (WAH/No fixed WP)**: 9.8%

Note: WAH = Work at home; WP = Work place.

Data Source: 2009 NHTS.
Example NHTS Data Analysis
New York Air Quality Analysis

Vehicle Starts, Trip Lengths by Time of Day and Vehicle Utilization

Source: 2001 NHTS.
Example NHTS Data Analysis
Fleet Characteristics

SUVs Increased Market Share Between 2001 and 2009

Trends in U.S. Fleet Mix

Number of Vehicles (in Millions)

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Availability

- Version 1.0 was released in January 2010
- Subsequently noted that the nationwide transit trips reported by the NHTS are higher than those made using FTA National Transit Database data
- Decision was made to revise the weighting using more precise geographic dimensions and the newly released 2008 American Community Survey (ACS)
- In May 2010 it was announced that data review and enhancement through revised weighting are expected to take several months
Availability (continued)

- Federal Highway Administration NHTS page links to datasets for all years
Availability (continued)

- NHTS website hosted by Oak Ridge National Laboratory (ORNL) links to datasets from 1983 through 2009
  » http://nhts.ornl.gov/

- NHTS web site also provides online table designer for 1995, 2001, and 2009 Version 1.0 NHTS datasets
Availability (continued)

“Data Center” provides access to the datasets

The image shows a screenshot of the NHTS Data Center website. The page displays a table listing datasets available for downloading. The table includes columns for File Format, Download Size (MB), and Installed Size (MB). The datasets include various file formats such as SAS Windows Binary, SAS Transport, and DBase dbf. The page also mentions a source code section titled "Formats 2001" with a description of SAS PROC FORMAT library. Additionally, there is a note for the 2001 NHTS - Version 4.0, July 2005, with links to the User's Guide and Release Notes.
Availability (continued)

“Online Analysis Tools” simplifies access to tabulations

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Online Analysis Tools

<table>
<thead>
<tr>
<th><strong>Frequently-Asked For Tables</strong></th>
<th><strong>Table Designer</strong></th>
<th><strong>Codebook Browser</strong></th>
<th><strong>2001 NHTS Transferability</strong></th>
<th><strong>1995 NPTS Transferability</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Browse the catalog for popular, ready-made tables. You can view tabulations in HTML format, export them to Excel, or load the table specifications into Table Designer to modify your customized table.</td>
<td>Updated for the 2009 NHTS. Build customized data tabulations quickly and easily. Tabulations are in HTML and Excel spreadsheet formats.</td>
<td>Online version of the NHTS Codebook document provides quick access to dataset and variable characteristics including methods to sort, filter, and search.</td>
<td>Transferability refers to “transferring” the 2001 Nationwide Household Travel Survey (NHTS) results to small geographic areas (e.g. Census Tracts). The Transferability methodology provides estimates of regional or local travel, including vehicle trips (VT), vehicle miles of travel (VMT), person trips (PT), and person miles of travel (PMT) by trip purpose. 2001 NHTS Transferability is a GIS-based tool that enables users to download trip statistics for selected Census Tracts and Transportation Analysis Zones (TAZ). The output is a Microsoft Excel spreadsheet in XML format (Excel 2003 and above). Note that the National datasets are available on the download page.</td>
<td>1995 NPTS Transferability includes a methodology and a spreadsheet to enable users to get results for cities, counties, and metropolitan statistical areas (MSAs).</td>
</tr>
</tbody>
</table>
End Notes

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