National Household Travel Survey
Add On Workshop

August 12, 2009

Start time: 2:30 to 4:00 ET

Teleconference number to Access Audio Portion

888-677-5635

Code: 89342
Thank you!

A few webinar protocols:
Please mute your phone and Type questions into ‘chat’ box

AND

We appreciate your feedback!
NHTS Team Members:

Team Leader: Heather Contrino
Heather.Contrino@dot.gov

Nancy McGuckin
Nancy.McGuckin@dot.gov

Adella Santos
Adella.Santos@dot.gov

Yuki Nakamoto
Yuki.Nakamoto@dot.gov

Susan Liss
Susan.Liss@dot.gov
Greetings from Tianjia Tang

The Federal Highway Administration congratulates all the agencies and organizations on your wise investments with the NHTS program.
Re-Authorization – Data Program

US. House of Representative:

- Transportation and Infrastructure Committee - James Oberstar (D-MN)
- Ways and Means Committee Charles B. Rangel (D-NY)
Re-Authorization – Data Program

US. Senate:
- Environment and Public Works Committee (Barbara Boxer, D-CA)
- Banking, Housing and Urban Affairs Committee (Christopher J. Dodd, D-CT)
- Commerce, Science and Transportation Committee (Jay Rockefeller, D-WV)
The Surface Transportation Authorization Act of 2009
"A Blueprint for Investment and Reform"

Silent on Data Program
On Behalf of

The Office of Highway Policy Information

THANK YOU!
2008 NHTS Add On Program Participants

125,000 Add-On Samples
Overview of the 2008 NHTS
NHTS Design

- List-assisted RDD sample
- Computer-Aided Telephone Interviews
- 13-month data collection period: April08 through May09
- Advance letter with $5 incentive
- Household recruitment
- Mail-out Dairy packets
- Reminder calls
- Person level retrieval
2008 NHTS Data Collection

- Collected interviews from HH people ages 5 & older within 7 days of Travel Date
- Collected Proxy interviews
  - 5 – 13 year olds (always)
  - 14 – 15 year olds (unless parent requests in-person)
  - 16+ years old (only after day 3)
- Recruit—10 minutes/Retrieval – 18 minutes per interview
- A complete HH interview required 50% of all adult household members: Non-responding HH members are accounted for in the weights
2008 NHTS  Data Coverage

• Weighted to represent one calendar year for annual estimates

• Every sampled HH was assigned a travel day:

  Ensured \textit{balance} across each day of the week and month of the year

  Compare Mondays to Fridays and weekdays to weekend
Scheduled Dates

- Data Processing Phase: May-September 2009
- August 17: Location files sent to Add-Ons
- Individual data sets: October 5, 2009
NHTS Website:  http://nhts.ornl.gov.

About the NHTS
The NHTS is the authoritative source of national data on the travel behavior of the American public. The dataset allows analysis of daily travel by all modes, including characteristics of the people traveling, their household, and their vehicles. The project is funded and managed by the Federal Highway Administration, Office of Policy and Information.

2008 Survey
- 155,000 US households will participate
- Survey conducted from April 2008 through May 2009
- Add On Program: 20 Add-on partners
- Public use dataset – planned for late Fall of 2009

2008 NHTS...

2008 Survey Participant
An FAQ for participants of the 2008 NHTS is available at FHWA.

2001 Survey
- Available to download or tabulate
- 70,000 households
- 9 Add-on partners and a national sample
- Reports, Briefs and Publications including the User’s Guide

Earlier Surveys
This site has data for the 2001 NHTS, 1995 NPTS, 1990 NPTS, and 1983 NPTS, publications from all surveys, and Online Analysis Tools for the 2001 NHTS and the 1995 NPTS.
Online Analysis Tools

**Table Designer**  Build customized data tabulations quickly and easily. Tabulations are in HTML and Excel spreadsheet formats.

**Transferability**  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. 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 dataset is an Excel spreadsheet in XML format (Excel 2003 and above).

Note that the National datasets are available on the [download page](#).
Welcome to the Federal Highway Administration’s National Household Travel Survey “Community of Practice” (CoP). The purpose of CoP is exchange of information and knowledge of transportation issues can take place. Users are encouraged to share their "best practices"; infrastructure or transportation issues that face their communities on a national, state or local level. The NHTS team has dedicated this site to keep the 2008 NHTS. The site will post NHTS News Briefs and a host of other trend data news resulting from the 2008 NHTS data. Participation

ISSUES: Current status (as of 3/17/08):
The recent surface transportation authorizing legislation, SAFETEA-LU, drastically reduced the research funding available to Federal Highway funding has been the backbone source of support for the survey series. However, the 2008 NHTS has been funded along with 19 Add-On household travel survey. The 2008 NHTS commenced early March of 2008 and will continue to collect data until spring of 2009.

CHECK AT THIS SITE FOR UPDATES ON STATUS

The NHTS User Community

Please post a description on this CoP site of how you have used the NHTS data and the impact it contributes to your work. See the discussion for other users.
Add-on Deliverables

1. Questionnaire
2. Code Book
3. Data Dictionary
4. Copies of Field documents
5. User’s Guide (Spring 2010)
6. Examples of Data Uses
7. Location file (Geo-coded)
8. Structure and Use of the Main data files (4)
   1. Household
   2. Person
   3. Vehicle
   4. Daytrip
Questions Added in 2008

• Internet purchases and home deliveries in last month
• Commercial licenses and hybrid vehicles, motorcycles
• Self employment
• Flexible arrival time to work
• Interstate and toll use
• Section on Safe Routes to School
• Park or dropped off at public transportation
  • Originally VA add-on but added to core content: Thanks VA!
EVA1. Do you usually park your vehicle more than one block from your workplace?

(EVA1)

YES .............................................................  1
NO ...............................................................  2  GO TO Eb
REFUSED ................................................... -7  GO TO Eb
DON'T KNOW ................................................ -8  GO TO Eb

EVA2. How many minutes does it take you to walk from where you park to your workplace?

(EVA2)

NUMBER OF MINUTES .......... |___|___|  REFUSED ................................................... -7
DON'T KNOW ............................................. -8

E5. For public transit like a bus, the subway, or a train to be a good option for {your/FNAME/AGE/SEX's} commute, which of the following would be most important to you? Would you say that it's...

(FL5, AZ5)

a. Close to work and home, .................  1
b. Faster than driving, .................  2
c. Reasonable in cost, .................  3
d. Consistently on time, or .................  4
e. Fits your schedule. .................  5
REFUSED ............................................. -7
DON'T KNOW ............................................. -8
Questionnaire (cont.)

[N_F12]
Ec.  {Do you/Does SUBJECT} have the ability to set or change your own start work time?
(FLEXTIME)

| YES ............................................................. 1 |
| NO ............................................................. 2 |
| REFUSED ................................................... -7 |
| DON’T KNOW ............................................. -8 |

[N_F13]
Ed.  {Do you/Does SUBJECT} have the option of working at home instead of going into your primary workplace?
(WKRMHM)

| YES ............................................................. 1 |
| NO ............................................................. 2 |
| REFUSED ................................................... -7 |
| DON’T KNOW ............................................. -8 |

[N_F9]
E20. How many times in the last month did {you/SUBJECT} work only at home for an entire work day instead of traveling to your usual {primary} workplace?
(WKFMHMXX)

[DO NOT INCLUDE DAYS WORKED AT HOME IN ADDITION TO AT THE WORKPLACE.]

| TIMES .............................................. |___|___|
| REFUSED ............................................. -7 |
| DON’T KNOW ........................................ -8 |
# Code Book

Your key to everything: Var name, type, length, label, code and frequency

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Variable Type</th>
<th>Variable Length</th>
<th>Label</th>
<th>Value Range Code</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRKCOUNT</td>
<td>N</td>
<td>8</td>
<td>Number of workers in HH</td>
<td>108,572</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>141,903</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>126,399</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td>26,166</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>5,705</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>866</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td>83</td>
</tr>
<tr>
<td>WittRdfin</td>
<td>N</td>
<td>8</td>
<td>Final trip weight</td>
<td>*</td>
<td>409,694</td>
</tr>
</tbody>
</table>
### Data Dictionary

Alphabetic listing of all variables

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Variable Name</th>
<th>Type</th>
<th>Length</th>
<th>Variable Format Length</th>
<th>Label</th>
<th>HHOLD</th>
<th>PER</th>
<th>VEH</th>
<th>DTRIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>AGE5PLUS</td>
<td>C</td>
<td>2</td>
<td>2</td>
<td>Age is 5 - 16 yrs old</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C10</td>
<td>AGERANGE</td>
<td>C</td>
<td>2</td>
<td>2</td>
<td>Over/Under 10 for HHMs missing age</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>ANNUAL2D</td>
<td>N</td>
<td>8</td>
<td></td>
<td>Odometer-based annual miles estimate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>ANN_FLG</td>
<td>C</td>
<td>2</td>
<td></td>
<td>Reasons for missing ANNUAL2D value</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>ANUL2DSE</td>
<td>N</td>
<td>8</td>
<td></td>
<td>Standard error of ANNUAL2D estimate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>ASKSECTF</td>
<td>C</td>
<td>2</td>
<td></td>
<td>Asked Section F</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>AWAYHMSP</td>
<td>C</td>
<td>30</td>
<td></td>
<td>Travel day reason S was away from home - specified</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G25</td>
<td>AWAYHOME</td>
<td>C</td>
<td>2</td>
<td></td>
<td>Travel day reason S was away from home</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>A21</td>
<td>N</td>
<td>3</td>
<td></td>
<td>Number of months S lives in A2</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>A22_MD</td>
<td>N</td>
<td>3</td>
<td></td>
<td>How long ago moved here - months</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>A22_YR</td>
<td>N</td>
<td>3</td>
<td></td>
<td>How long ago moved here - years</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>A23A</td>
<td>C</td>
<td>2</td>
<td></td>
<td>Most important reason chose home location</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>A23A_D</td>
<td>C</td>
<td>30</td>
<td></td>
<td>Most important reason chose home location - other specified</td>
<td>H</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
At the beginning of my travel day (4:00 a.m.) I was:

- [ ] Home  - [ ] Some other place

<table>
<thead>
<tr>
<th>WHERE did you go? (Name of place)</th>
<th>What TIME did you start and end each trip?</th>
<th>WHY did you go there?</th>
<th>HOW did you travel?</th>
<th>How FAR was it? (blocks or miles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMPLE: West Park Theater</td>
<td>Started at: 2:00 p.m.  Arrived at: 2:55 p.m.</td>
<td>To see a movie</td>
<td>walk, bus, walk</td>
<td>6 miles</td>
</tr>
</tbody>
</table>

1. 

2. 

3. 

4. 

5. 

6.
User’s Guide
The documentation for the entire data collection, weighting, and coding conventions

Brief list of the Table of Contents Include:

- Purpose and Scope of the Survey
- Interview Process
- Procedures and Methods Used
- Survey Response Rates
- Weight Calculations
- Description of Data Files
- Use of the Data (Travel Concepts)
- Standard Tables
- Appendices (Q, Code Book, Dictionary, Glossary etc…)
Add-on Deliverables

1. Questionnaire
2. Code Book
3. List of variable names
4. Copies of Field documents
5. User Guide (Spring 2010)
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8. Structure and Use of the Main data files (4)
   1. Household
   2. Person
   3. Vehicle
   4. Daytrip
Most Commonly Used Variables

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

Source: "National Household Travel Survey Data Use: An Overview Prepared by: MacroSys Research and Technology for the Bureau of Transportation Statistics, 2005"
Example of Add-on Uses: Wisconsin Statewide Model

Location of WI-NHTS Sampled Households

WI State DOT Example Courtesy: Kimon Proussaloglou, Cambridge Systematics Inc.
Wisconsin Statewide and individual MPO Models
Integration of Statewide and MPO Models

- Consistency in
  - Travel data sources: NHTS add-on
  - Zonal structure and socioeconomic inputs
  - Network detail and input assumptions
  - Software platform and overall model approach

- MPO model results within the MPO boundaries
- Best practical approach to model integration
- External station trip data from statewide model
Example Data Use: Des Moines IA
Mode Choice Modeling and Travel Time Survey

Findings from the 2001 add-on:

- Transit usage accounted for less than 1 percent of total trips and approximately 1 percent of work trips
- Mode Choice Modeling not warranted by transit use percentage
- In terms of person trips, the afternoon/evening commute is the most heavily traveled time of day
- Lunchtime also is more heavily traveled than the morning commute hours

<table>
<thead>
<tr>
<th>Rank</th>
<th>Hour</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3:00 p.m. to 4:00 p.m.</td>
<td>9.1</td>
</tr>
<tr>
<td>2</td>
<td>4:00 p.m. to 5:00 p.m.</td>
<td>9.0</td>
</tr>
<tr>
<td>3</td>
<td>5:00 p.m. to 6:00 p.m.</td>
<td>8.9</td>
</tr>
<tr>
<td>4</td>
<td>11:00 a.m. to 12:00 p.m.</td>
<td>8.1</td>
</tr>
<tr>
<td>5</td>
<td>12:00 p.m. to 1:00 p.m.</td>
<td>7.3</td>
</tr>
<tr>
<td>6</td>
<td>7:00 a.m. to 8:00 a.m.</td>
<td>7.3</td>
</tr>
<tr>
<td>11</td>
<td>8:00 a.m. to 9:00 a.m.</td>
<td>5.0</td>
</tr>
</tbody>
</table>

Time of Day Analysis

Courtesy: Adam Noelting, Des Moines Area MPO
Example Analysis: Baltimore, MD Add-on
Motorized Person Trips by Purpose

Inside Baltimore City

Outside Baltimore City

Courtesy: Charles Baber, Baltimore MPO
Example Analysis: Comparison to Census Data

Comparison of Census Departure Time and NHTS Departure Time

<table>
<thead>
<tr>
<th>Time</th>
<th>Census %</th>
<th>2001 NHTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5:00 – 6:59am</td>
<td>26.2%</td>
<td>25.0%</td>
</tr>
<tr>
<td>7:00 – 7:59am</td>
<td>29.9%</td>
<td>28.4%</td>
</tr>
<tr>
<td>8:00 – 8:59am</td>
<td>15.5%</td>
<td>16.0%</td>
</tr>
<tr>
<td>9:00 – 9:59am</td>
<td>5.3%</td>
<td>5.6%</td>
</tr>
<tr>
<td>All Other Departure Times</td>
<td>19.8%</td>
<td>25.1%</td>
</tr>
</tbody>
</table>
### Example Analysis: Understanding Journey-to-Work

<table>
<thead>
<tr>
<th>Usual Mode is:</th>
<th>Single Occupant Vehicle</th>
<th>Drove with Others</th>
<th>Transit</th>
<th>Walked</th>
<th>Biked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drove Alone</td>
<td>90.0%</td>
<td>9.3%</td>
<td>0.2%</td>
<td>0.3%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Carpool</td>
<td>22.2%</td>
<td>74.8%</td>
<td>1.0%</td>
<td>1.4%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Transit</td>
<td>7.8%</td>
<td>9.7%</td>
<td>69.4%</td>
<td>10.1%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Walk</td>
<td>8.1%</td>
<td>9.2%</td>
<td>2.6%</td>
<td>79.5%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Bike</td>
<td>6.7%</td>
<td>8.4%</td>
<td>1.7%</td>
<td>6.1%</td>
<td>77.1%</td>
</tr>
</tbody>
</table>

Add-on Deliverables

1. Questionnaire
2. Code Book
3. List of variable names
4. Copies of Field documents
5. User Guide (Spring 2010)
6. Examples of Data Uses
7. Location file (lat/long of trip ends)
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   1. Household
   2. Person
   3. Vehicle
   4. Daytrip
Location File:

Each **Trip End** latitude and longitude based on:
- street address / place name
- cross streets (if needed)
- landmarks (if needed)

Linked by **HOUSEID PERSONID TRIPID**

Results to address or nearest intersection
- Household = 94.9%
- Workplace = 91.4%
- Trip ends = 90.8%
### Location File Variables

#### LOCATION FILE VARIABLES

**2008 NHTS**

<table>
<thead>
<tr>
<th>#</th>
<th>Variable</th>
<th>Type</th>
<th>Len</th>
<th>Format</th>
<th>Informat</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>HOUSEID</td>
<td>Char 8</td>
<td>14.</td>
<td>14.</td>
<td></td>
<td>Household ID</td>
</tr>
<tr>
<td>4</td>
<td>PERSONID</td>
<td>Char 2</td>
<td></td>
<td></td>
<td></td>
<td>Person identification number</td>
</tr>
<tr>
<td>27</td>
<td>PLBG</td>
<td>Char 2</td>
<td></td>
<td></td>
<td></td>
<td>Trip Destination, Block Group</td>
</tr>
<tr>
<td>12</td>
<td>PLCITY</td>
<td>Char 20</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end - city or town</td>
</tr>
<tr>
<td>25</td>
<td>PLCNTYFP</td>
<td>Char 3</td>
<td></td>
<td></td>
<td></td>
<td>County of Trip Destination (FIPS code)</td>
</tr>
<tr>
<td>26</td>
<td>PLCP</td>
<td>Char 6</td>
<td></td>
<td></td>
<td></td>
<td>Trip Destination, Census Place</td>
</tr>
<tr>
<td>28</td>
<td>PLCT</td>
<td>Char 6</td>
<td></td>
<td></td>
<td></td>
<td>Trip Destination, Census Tract</td>
</tr>
<tr>
<td>17</td>
<td>PLLNMRK1</td>
<td>Char 25</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end landmark1</td>
</tr>
<tr>
<td>18</td>
<td>PLLNMRK2</td>
<td>Char 25</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end landmark2</td>
</tr>
<tr>
<td>19</td>
<td>PLLNMRK3</td>
<td>Char 25</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end landmark3</td>
</tr>
<tr>
<td>15</td>
<td>PLROAD1</td>
<td>Char 45</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end intersection, road1</td>
</tr>
<tr>
<td>16</td>
<td>PLROAD2</td>
<td>Char 45</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end intersection, road2</td>
</tr>
<tr>
<td>13</td>
<td>PLSTATE</td>
<td>Char 2</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end - state</td>
</tr>
<tr>
<td>24</td>
<td>PLSTATFP</td>
<td>Char 2</td>
<td></td>
<td></td>
<td></td>
<td>State of trip destination (FIPS code)</td>
</tr>
<tr>
<td>11</td>
<td>PLSTNAME</td>
<td>Char 45</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end - street name</td>
</tr>
<tr>
<td>10</td>
<td>PLSTNUM</td>
<td>Char 10</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end - street number</td>
</tr>
<tr>
<td>14</td>
<td>PLZIP</td>
<td>Char 5</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip end - ZIP code</td>
</tr>
<tr>
<td>2</td>
<td>TDCASEID</td>
<td>Char 12</td>
<td></td>
<td></td>
<td></td>
<td>Composite travel day trip ID number</td>
</tr>
<tr>
<td>3</td>
<td>TDTRPNUM</td>
<td>Char 2</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip number for respondent</td>
</tr>
<tr>
<td>23</td>
<td>TRPEDGEO</td>
<td>Char 2</td>
<td></td>
<td></td>
<td></td>
<td>Level of geocoding trip end location</td>
</tr>
<tr>
<td>32</td>
<td>TPENDLA</td>
<td>Num 8</td>
<td>16.</td>
<td>16.8</td>
<td></td>
<td>Trip end latitude</td>
</tr>
<tr>
<td>31</td>
<td>TPENDLO</td>
<td>Num 8</td>
<td>16.</td>
<td>16.8</td>
<td></td>
<td>Trip end longitude</td>
</tr>
<tr>
<td>1</td>
<td>WHERE</td>
<td>Char 2</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip destination</td>
</tr>
<tr>
<td>6</td>
<td>WHEREOS</td>
<td>Char 30</td>
<td></td>
<td></td>
<td></td>
<td>Travel day trip destination - other</td>
</tr>
</tbody>
</table>

Plus: FRSTHM, HOMELAT, HOMELONG, WORKLAT, WORKLONG
Location File
Geo-Coded Trip Ends

Trip 1: To Work
Trip 2: Work to Child's Day Camp
Trip 3: Day Camp to Store
Trip 4: Store to Work
Trip 5: Store to Store
Trip 6: Store to Home
Trip 7: Home to Day Camp

HOME

WORK
NHTS Data File Overview

**Vehicle File:**
- Make/Model/Year
- Hybrid/Alternate Fuel
- How long owned
- Annual mileage
- Accrued mileage
- Main driver
- Fuel efficiency

**Household File:**
- Number of people
- Number of drivers
- Number of workers
- Number of vehicles
- Income
- Housing Type/Tenure
- Lifecycle
- Expenditure and Use of Transportation Fuel

**Person File:**
- Age
- Sex
- Driver status
- Worker Status
- Usual Commute
- Flexibility/Work at home
- Race/Ethnicity
- Born in US

**Daily Trip File:**
- Origin and Destination address (for add-ons)
- Time trip started and ended
- Dwell Time (at location)
- Travel time and Distance
- Means of transportation:
  1. vehicle type
  2. if household vehicle, which one
  3. if transit, access and egress mode
- Detailed purpose
- Travel party size
- Whether trip included Interstate/Toll
Household File
Example of Key Variables

WEIGHT: WTHHFIN

HHSTATE: ‘AL’ through ‘WI’

SAMPLAREA: ‘US’ plus ‘CA’ through ‘WI’ for each add-on

Includes ALL samples (National plus Add-on)

HHSIZE: Number of HH members from 1-14

HHVEHCNT: Number of HH vehicles from 0-19

HHFAMINC: ’01’ (<$5,000) to ’18’ ($100,000 +)

Note: You’ll want to group these into combined categories, e.g.

'01' - '07' = '< $35K      
'08' - '12' = '35K-$60K ' 
'13' - '16' = '60K-$80k+' 
'17' - '18' = '80k+'

CNTTDTR: Count of Travel Day Trips for the HH from 0-119
**Example analysis: Mean Person Trips per HH by HH size and Number of Vehicles**

VAR: Person Trips (CNTTDHH)
By HHSIZE and HHVEHCNT where SMPLAREA=‘VA’
Weight: WTHHFIN

<table>
<thead>
<tr>
<th>Household Size:</th>
<th>Zero</th>
<th>One</th>
<th>Two+</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Person</td>
<td>1.9</td>
<td>3.5</td>
<td>3.9</td>
</tr>
<tr>
<td>Two People</td>
<td>5.8</td>
<td>7.9</td>
<td>8.9</td>
</tr>
<tr>
<td>Three People</td>
<td>9</td>
<td>11.4</td>
<td>13.8</td>
</tr>
<tr>
<td>Four People</td>
<td>10.3</td>
<td>15.1</td>
<td>18</td>
</tr>
<tr>
<td>5 or More</td>
<td>15.4</td>
<td>17.2</td>
<td>22.9</td>
</tr>
</tbody>
</table>
Vehicle File: Example of Key Variables

Weight: WTHHFIN

SMPLAREA  -  ‘CA’ through ‘WI’ for Add-Ons
VEHTYPE  -  Car, Van, SUV, Pickup, etc.
HYBRID  –  Whether Hybrid/Alt fuel is used
VEHCOMM  –  Whether vehicle has commercial license plate
ANNMILE  -  Estimate of annual miles for each vehicle
OD_READ  –  Odometer reading (accrued miles)
WHOMAIN  -  Primary Vehicle Driver (PERSONID)
### Vehicle File Only

**Example Analysis: Annual Miles per Vehicle by Vehicle Type**

**VAR:** `VEHTYPE` and `ANNMILE`  
Where `SMPLAREA='NC'` and `HYBRID='01'` (Yes) or '02' (No)  
`WEIGHT=WTHHFIN`

### Miles per Vehicle by Vehicle Type (Hybrid separate)

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Percent of Fleet</th>
<th>Annual Miles per Vehicle</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAR</td>
<td>50.35</td>
<td>9,749</td>
</tr>
<tr>
<td>Pick-Up</td>
<td>18.94</td>
<td>9,536</td>
</tr>
<tr>
<td>SUV</td>
<td>17.19</td>
<td>11,458</td>
</tr>
<tr>
<td>Van</td>
<td>8.86</td>
<td>11,179</td>
</tr>
<tr>
<td>All Hybrid/Alt Fuel</td>
<td>5.03</td>
<td>13,224</td>
</tr>
</tbody>
</table>
Person File:
Example of Key Variables

Weight: WTPERFIN

MAINRSLT: ‘C1’ and ‘C2’ are completed persons, ‘J1’ ages 0-4, ‘NG’ is military deployed
SMPLAREA: ‘CA’ through ‘WI’ for add-ons
R_AGE/R_SEX - Age and Gender
WORKER/DRIVER - ’01’-Yes, ’02’=‘No’
WKFTPT – Employed full-time or part-time
WRKTRANS - Usual mode used to work last week
WRKTIME – Usual arrival time to work
FLEXTIME – Option of setting own arrival time
**Example analysis: Worker Characteristics**

**VAR:** WKFTPT, FLEXTIME, WKRMHM, SELF_EMP, OCCAT

Where WORKER='01' and SMPLAREA='CA' and MAINRSLT='C1' or 'C2' and R_AGE between 16-64 and 65+

Weight=WTPERFIN

<table>
<thead>
<tr>
<th></th>
<th>All Workers</th>
<th>Workers 65 and Older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-Time</td>
<td>76.9</td>
<td>43.4</td>
</tr>
<tr>
<td>Part-Time</td>
<td>23.1</td>
<td>56.6</td>
</tr>
<tr>
<td>Have Flex-Time</td>
<td>35.8</td>
<td>45.9</td>
</tr>
<tr>
<td>Option to Work from Home</td>
<td>9.5</td>
<td>12.2</td>
</tr>
<tr>
<td>Self-Employed</td>
<td>15.0</td>
<td>38.9</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales or Service</td>
<td>27.5</td>
<td>30.8</td>
</tr>
<tr>
<td>Clerical/Admin. Support</td>
<td>10.6</td>
<td>15.8</td>
</tr>
<tr>
<td>Manuf/Construction</td>
<td>20.2</td>
<td>16.8</td>
</tr>
<tr>
<td>Professional/Managerial</td>
<td>39.0</td>
<td>32.0</td>
</tr>
</tbody>
</table>
Trip File
Example of Key Variables

Weight: WTTRDFIN

SMPLAREA: ‘CA’ through ‘WI’

STRTTIME: Trip Start Time, Military

WHYTO and WHYFROM: Detailed Trip Purpose

TRPTRANS: ’01’-’07’ (Personal Vehicles)

‘09’-’14’ (Bus, e.g. Transit, School, Greyhound)

‘15’-’18’ (Train, e.g. AMTRAK, Subway, Trolley)

‘19’-’24’ (Other, e.g. Bike, Walk, Ferry, Airplane)

Note: You’ll want to group these into different categories to combine transit, separate walk and/or bike, etc.
VAR: Walk Trips (TRPTRANS='23')

STRTTIME by R_AGE where SMPLAREA='CA'

Weight= WTTRDFIN

Nighttime (6 PM to 6 AM) Walk Trips by Age

65+
25-64
16-24
5-15

Percent

0 5 10 15 20 25 30 35
Trip File Only: Mode of Travel for Work and Non-Work

Var: **TRPTRANS** by **WHYTO** (Work and Non-Work)
where **WORKER='01'** and **SMPLAREA='GA'**
Weight: **WTTRDFIN**

<table>
<thead>
<tr>
<th>Percent of Workers</th>
<th>To Work</th>
<th>All Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drove Alone</td>
<td>73.8</td>
<td>38.4</td>
</tr>
<tr>
<td>Drove with others</td>
<td>18.1</td>
<td>43.9</td>
</tr>
<tr>
<td>Transit</td>
<td>4.7</td>
<td>2.3</td>
</tr>
<tr>
<td>Walk</td>
<td>2.5</td>
<td>12.4</td>
</tr>
<tr>
<td>Other</td>
<td>0.9</td>
<td>2.9</td>
</tr>
</tbody>
</table>

To Work:
- Drove Alone
- Drove with others
- Transit
- Walk
- Other

All Trips:
- Drove Alone
- Drove with others
- Transit
- Walk
- Other
Trip File combined with Household File
Example Analysis: Person Trips per HH by Income and Purpose

VAR: Average Person Trips (Summed from Trip File)

**HHFAMINC** by **WHYFROM** and **WHYTO**
where **SMPLAREA**=‘FL’
**WEIGHT**=**WTTRDFIN**

<table>
<thead>
<tr>
<th>HHFAMINC</th>
<th>HBW per HH per Day</th>
<th>HBO per HH per Day</th>
<th>NHB per HH per Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $35K</td>
<td>0.78</td>
<td>4.8</td>
<td>2.4</td>
</tr>
<tr>
<td>35K-$60K</td>
<td>1.3</td>
<td>6.58</td>
<td>3.81</td>
</tr>
<tr>
<td>60K-$80k+</td>
<td>1.61</td>
<td>7.79</td>
<td>4.53</td>
</tr>
<tr>
<td>80k+</td>
<td>1.54</td>
<td>8.27</td>
<td>5.04</td>
</tr>
</tbody>
</table>
Have Questions?

Ask us through the Community EXchange:

http://knowledge.fhwa.dot.gov
How did we do?
Thank You Add-ons!

From all of us...