



NHTS Data Update



presented to

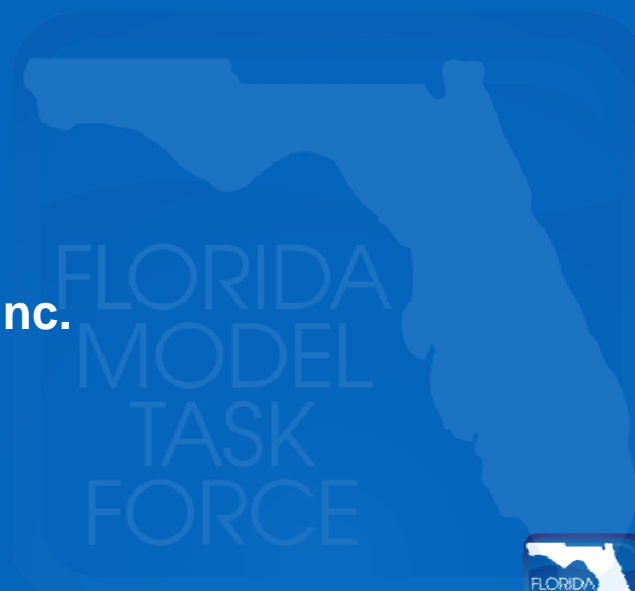
MTF Data Committee

presented by

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Krishnan Viswanathan, Cambridge Systematics, Inc.

May 25 2010





Presentation Outline

- **NHTS Background**
- **Sampling Plan**
- **Final Florida Sample**
- **Structure of Data Files**
- **Summary Statistics**
- **Data Distribution**



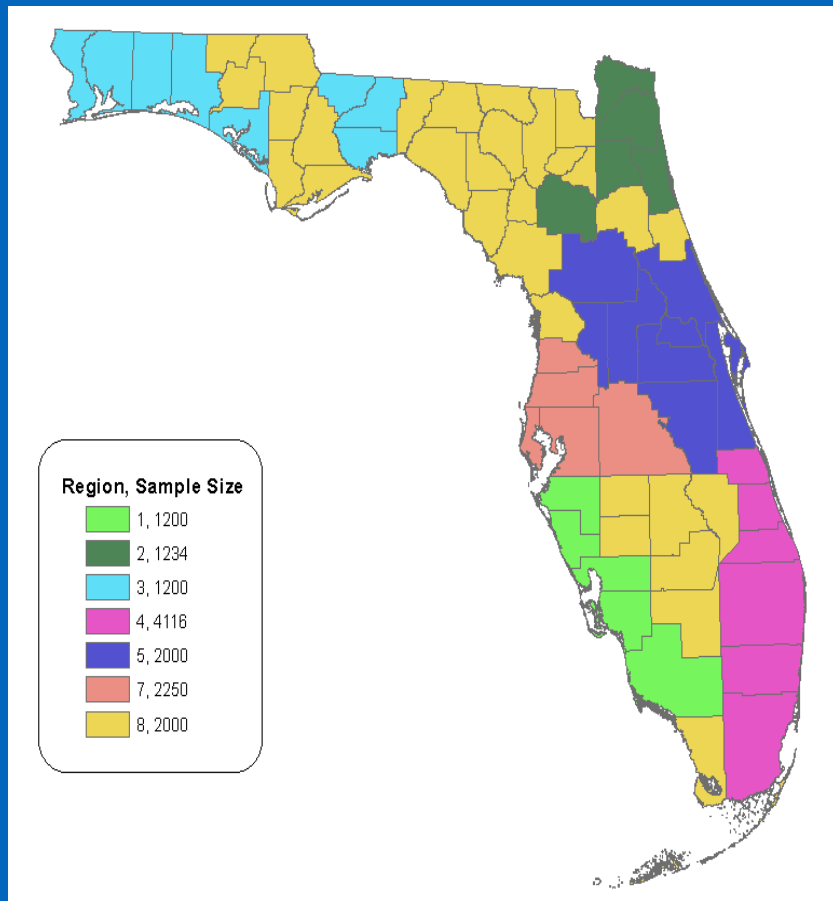


NHTS Background

- **Data used to:**
 - Quantify travel behavior
 - Analyze changes in travel characteristics over time
 - Relate travel behavior to the demographics of the traveler
 - Study the relationship of demographics and travel over time
- **Data items not included**
 - Travel costs
 - Information on specific routes
 - Longitudinal information
 - Reasons for specific mode



Sampling Plan



| Region | Sample Size |
|----------|-------------|
| Region 1 | 1,200 |
| Region 2 | 1,224 |
| Region 3 | 1,200 |
| Region 4 | 4,116 |
| Region 5 | 2,000 |
| Region 7 | 2,250 |
| Region 8 | 2,000 |

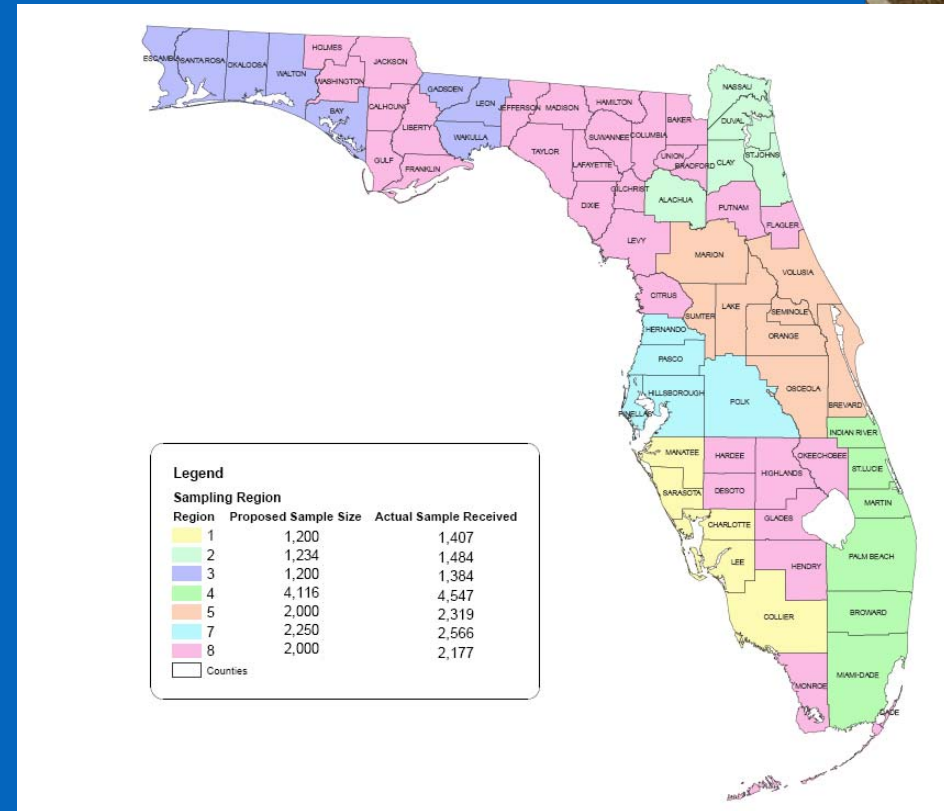
Sampling Plan

Rural Counties

| FDOT District | Total Households | Sample Size | Confidence Interval (95% CL) |
|---------------|------------------|-------------|------------------------------|
| 1 | 83,828 | 453 | ± 4.6% |
| 2 | 125,436 | 678 | ± 3.8% |
| 3 | 51,894 | 280 | ± 5.9% |
| 5 | 21,284 | 115 | ± 9.2% |
| 6 | 35,106 | 190 | ± 7.1% |
| 7 | 52,661 | 284 | ± 5.8% |
| Rural Total | 370,209 | 2,000 | ± 2.2% |

Final Florida Sample

- Data Collection done from April 2008 to March 2009
- Proposed Sample Size = 14,000
- Actual Sample Received = 15,884
 - Includes National Sample
 - Oversample





Typical NHTS Household



Amy and Keith live in a metropolitan area with their two children Lucy and Ben. When Keith picked up their mail in early March 2008, he noticed an envelope from the US Department of Transportation. On opening the envelope, he found that it contained a letter from the Department of Transportation with a five-dollar cash incentive, and a brochure describing the NHTS. The letter informed Keith that their home telephone number had been selected in the sample for the National Household Travel Survey, and that they would be receiving a telephone call from an interviewer. Several days later, the household was contacted by telephone by an NHTS interviewer and participated in the survey.

Structure of Data Files

| Data File | Information Included | Record Level | ID Variable | Weight Variable |
|------------------|---|---------------------------------------|-----------------------------|---|
| Households | Data unique to a household, or questions asked once for each sample household. | One record per household | HOUSEID | WTHHFIN |
| Persons | Data determined once for each completed person interview. | One record per person | HOUSEID, PERSONID | WTPERFIN SFWGT (for school children between 6 to 12) |
| Travel Day Trips | Data about each trip the person made on the household's randomly-assigned travel day. | One record per travel day person trip | HOUSEID, PERSONID, TDTRPNUM | WTTRDFIN |
| Vehicle | Data relating to each of the household's vehicles. | One record per vehicle | HOUSEID, VEHID | WTHHFIN |



Data Weighting

- **Weights are needed to produce valid population-level estimates**
- **The weights include a correction for the probability of selection based on your sample plan in addition to a non-response adjustment to reduce sampling error and bias**
- **To weight a variable, simply multiply the record by its weight.**
- **For school children aged 6-12 in the Person File use SFWGT**



Control Totals

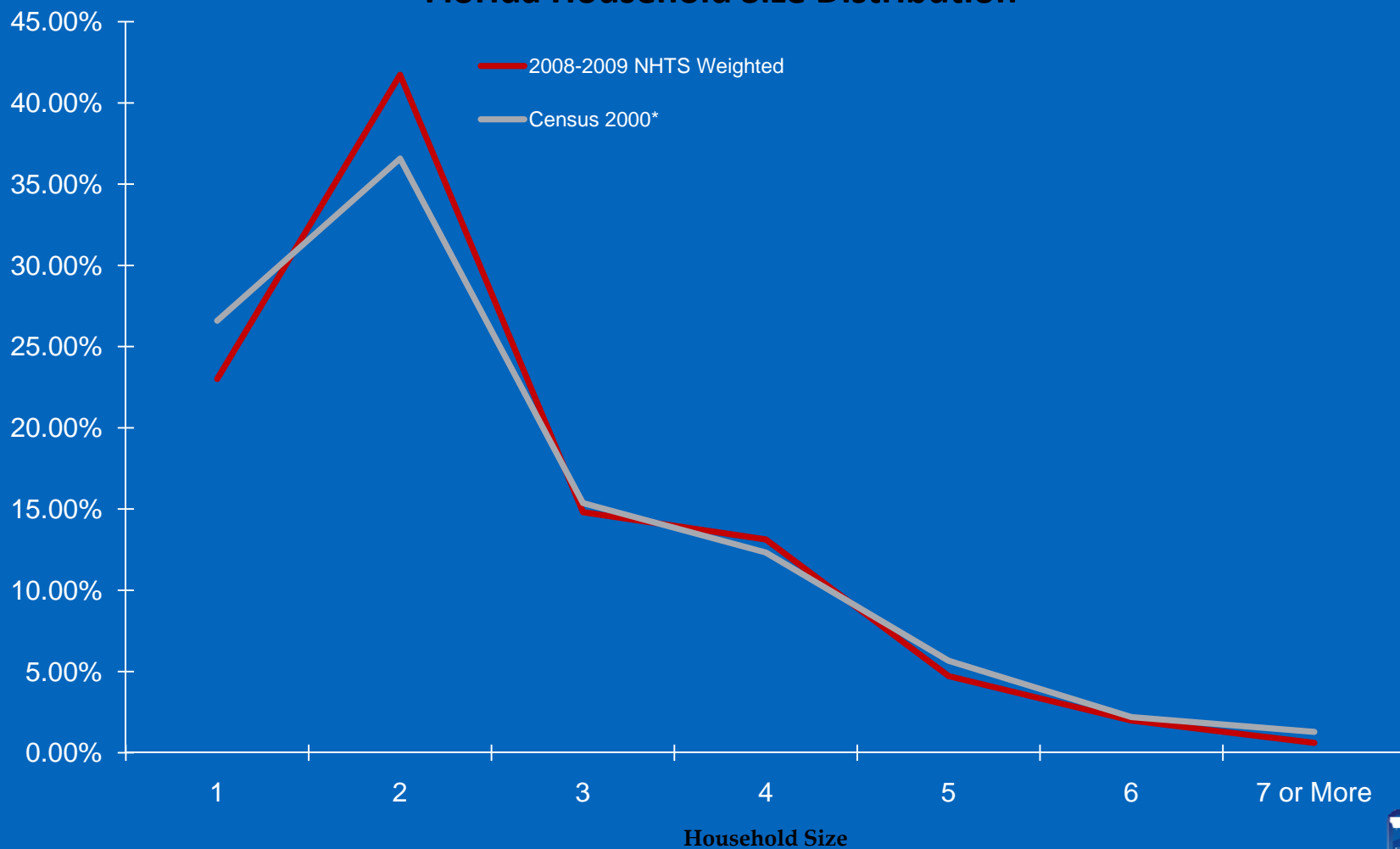
| | Unweighted (Sample) | Weighted (Population) |
|-----------------------------|------------------------|---------------------------------|
| Household Count | 15,884 | 7,088,960 |
| Count of Household vehicles | 29,290 | 13,071,128 |
| Person Count | 30,952 | 17,107,577 |
| Retired | 11,217 | 3,140,866 |
| Workers | 12,191 | 8,293,260 |
| Drivers | 25,758 | 13,064,424 |
| Adults | 27,486 | 14,188,908 |
| Person Miles Traveled | 1,090,572.52 | 208,828,167,053.99 [‡] |
| Vehicle Miles Traveled | 661,765.98 | 127,614,445,243.54 [‡] |
| Vehicle Trips | 73,830 | 13,926,854,274 [‡] |
| Person Trips | 114,910 | 22,810,650,886 [‡] |
| Person Per Household | 1.95 | 2.41 |
| Workers Per Household | 0.77 | 1.17 |
| Driver Per Household | 1.62 | 1.84 |
| Workers Per Adult | 0.44 | 0.58 |
| Drivers Per Adult | 0.94 | 0.92 |
| Vehicles Per Household | 1.84 | 1.84 |
| Vehicles Per Driver | 1.14 | 1 |
| Vehicles Per Worker | 2.4 | 1.58 |

[‡] Annualized (not appropriate for analysis of typical weekday conditions)

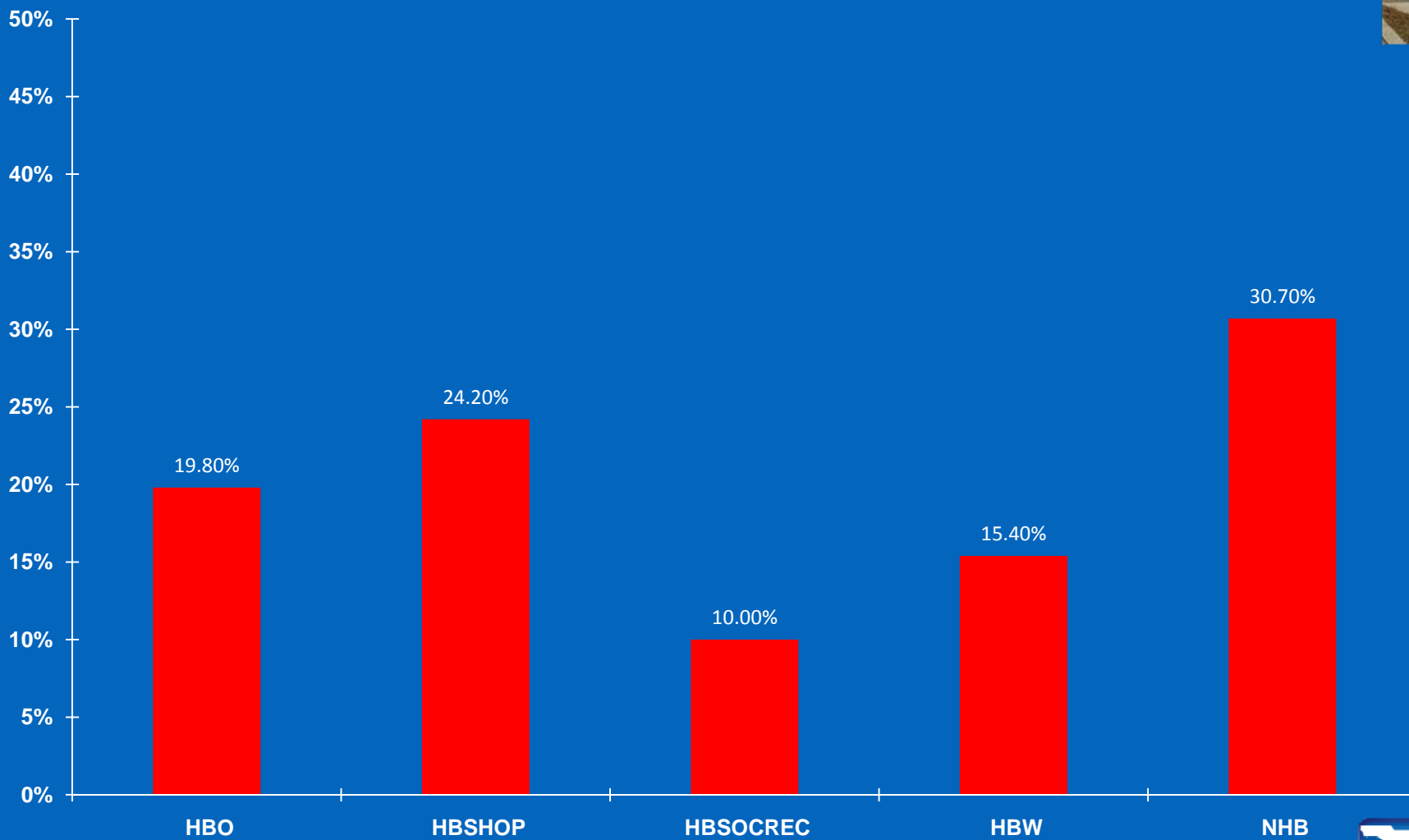


Household Size Distribution

2009 NHTS (Weighted) and Census 2000
Florida Household Size Distribution



Trip Purpose Distribution



Household Size by Vehicles Distribution

| Household Size | Count of Household Vehicles | | | |
|----------------|-----------------------------|-------|-------|------|
| | 0 | 1 | 2 | 3+ |
| 1 | 4.2% | 16.1% | 2.1% | 0.6% |
| 2 | 1.8% | 11.1% | 21.7% | 7.1% |
| 3 | 0.3% | 2.4% | 6.3% | 5.9% |
| 4+ | 0.5% | 2.4% | 10.1% | 7.5% |

Average Trip Distribution

| Trip Purpose | Average Trip Length (miles) |
|------------------------------|------------------------------------|
| Home Based Work | 12.3 |
| Home Based Shop | 6.3 |
| Home Based Social/Recreation | 9.7 |
| Home Based Other | 9.1 |
| Non-Home Based | 12.5 |

Average Trip Distribution

| Trip Distance | Home Based Work | Home Based Shop | Home Based Social / Recreation | Home Based Other | Non-Home Based |
|---------------------|-----------------|-----------------|--------------------------------|------------------|----------------|
| Less than 10 miles | 76.3% | 84.1% | 76.8% | 53.7% | 77.3% |
| 10 and 20 miles | 14.9% | 10.6% | 12.1% | 27.1% | 12.7% |
| 20 and 30 miles | 4.7% | 2.7% | 5.1% | 11.0% | 4.4% |
| 30 and 40 miles | 1.7% | 1.0% | 2.5% | 4.6% | 1.9% |
| 40 and 50 miles | 0.8% | 0.7% | 1.0% | 1.8% | 0.8% |
| SUBTOTAL | 98.5% | 99.1% | 97.6% | 98.2% | 97.2% |
| 50 and 60 miles | 0.5% | 0.2% | 0.4% | 0.8% | 0.6% |
| 60 and 70 miles | 0.2% | 0.2% | 0.5% | 0.4% | 0.3% |
| 70 and 80 miles | 0.1% | 0.1% | 0.2% | 0.3% | 0.2% |
| 80 and 90 miles | 0.1% | 0.1% | 0.2% | 0.1% | 0.3% |
| 90 and 100 miles | 0.1% | 0.1% | 0.2% | 0.1% | 0.1% |
| 100 and 110 miles | 0.1% | 0.1% | 0.1% | | 0.1% |
| 110 and 120 miles | 0.0% | 0.0% | 0.1% | 0.0% | 0.1% |
| 120 and 130 miles | 0.0% | 0.0% | 0.1% | | 0.1% |
| 130 and 140 miles | 0.0% | 0.0% | 0.1% | 0.0% | 0.1% |
| 140 and 150 miles | 0.0% | 0.0% | 0.1% | | 0.1% |
| 150 and 160 miles | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 160 and 170 miles | 0.0% | 0.0% | 0.0% | | 0.0% |
| 170 and 180 miles | 0.0% | 0.0% | 0.1% | | 0.0% |
| 180 and 190 miles | 0.0% | 0.0% | 0.0% | | 0.0% |
| 190 and 200 miles | 0.0% | 0.0% | 0.0% | | 0.0% |
| More than 200 Miles | 0.1% | 0.1% | 0.3% | 0.0% | 0.6% |
| Total | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Average Vehicle Occupancy

| Trip Purpose | Average Vehicle Occupancy |
|------------------------------|----------------------------------|
| Home Based Work | 1.07 |
| Home Based Shop | 1.48 |
| Home Based Social/Recreation | 1.59 |
| Home Based Other | 1.60 |
| Non-Home Based | 1.57 |
| Not Ascertained | 1.80 |



Mode Shares

| Mode | Person | Worker |
|----------------|--------|--------|
| Drive Alone | 39.5% | 51.1% |
| Shared Ride 2 | 24.2% | 20.6% |
| Shared Ride 3+ | 20.8% | 16.4% |
| Transit | 1.3% | 1.0% |
| Walk and Bike | 1.5% | 0.9% |
| Other Means | 12.7% | 10.1% |

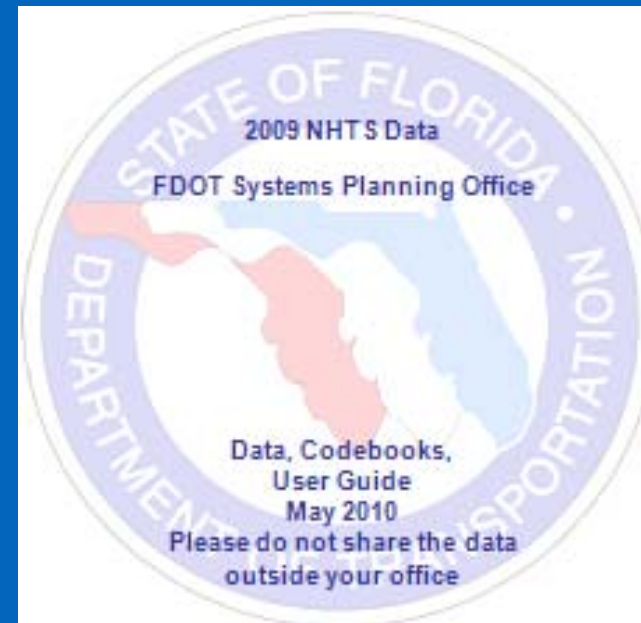


Data Distribution

- **License Agreement needs to signed**
 - **Promise of privacy to participants**
- **Frank Tabatabaee – Point of Contact for Data related issues**
- **Once signed agreement is received, Data CD shipped out**
- **00_README_FIRST.txt**
 - **Layouts CD structure**

CD Contents

- Data
- 00_README_FIRST.txt
- 01_Questionnaire_Interview.zip
- 02A_README_Confidential_Agreement.docx
- 02B_Why_Have_Agreement_Note_From_FHWA.docx
- 02C_NHTS_Confidential_Agreement.pdf
- 03_FL_SAMPLING_PLAN.zip
- 04_FL_Final_Sample_Report.pdf
- 05_USER_GUIDE.docx
- 06_Data_Variables.zip
- 07_Code_Books.zip
- 08_Protocol_for_NHTS_Data_distribution.docx
- 09_APPENDIX_G_Derived_Variables.doc
- 10_CD_Label.pptx



License Agreement



National Household Travel Survey

Florida Department of Transportation
Systems Planning Office

CONFIDENTIALITY AGREEMENT 2009 NHTS (National Household Travel Survey) FDOT FILE

I accept a copy of the 2009 National Household Travel Survey ("NHTS") Florida Department of Transportation ("FDOT") file for the purpose of conducting research that could not be accomplished without this dataset. A brief description of this project topic under investigation is attached as Exhibit "A" to my signed copy of this agreement. I will return the signed copy and the Exhibit "A" to the Florida Department of Transportation, Systems Planning Office.

I agree to the following terms and limitations on these files and the use of confidential data that includes, but is not limited to, draft and final tabulations, financial or personal information of the survey respondents, and any other information that I may have gained access to in connection with the research contained in this dataset (i.e., data that are not on the Public Use dataset) (collectively, the "Confidential Data") by myself and others in my organization who will have access to or be working with this data:

1. I will not share the Confidential Data with anyone outside of my immediate organization and will give access only to those who have a role in tabulating and analyzing the Confidential Data for the tasks specified in the research/investigation description provided. A signed copy of this agreement will be given to each person who has access to the Confidential Data.
2. I recognize that a specific pledge of confidentiality was made to survey respondents on behalf of FDOT. I will use these files for FDOT and Metropolitan Planning Organization ("MPO") project purposes only and will maintain the confidentiality of all survey respondents, and will do so in full compliance with appropriate procedures for maintaining confidentiality of survey data.



3. I understand that the unauthorized release of the Confidential Data or specific identification of households or individuals in a confidentiality-protected dataset as the NHTS is a felony offense and could result in criminal prosecution and that I am subject to, and the terms and conditions of this agreement shall be construed under, the laws of the State of Florida.
4. I agree to consult with the NHTS Project Team of FDOT and/or Federal Highway Administration ("FHWA"), on any questions regarding the appropriate use of the Confidential Data and on how it would be described in any research work that is published. I will share the results of the analysis and research, published or unpublished, with FDOT & FHWA through:

Vidya.mysore@DOT.state.fl.us

Tianja.tang@dot.gov

I signify my assent to this agreement:

Signed: _____

Date: _____

Print the following:

Name _____

Title _____

Organization _____

Address: _____

City and State: _____

A phone number is needed when a delivery signature option is required.

Phone Number: _____

E-Mail _____

Return this signed form to:

Frank Tabatabaee

605 Suwannee Street, MS 19

Tallahassee, FL 32399-0450

Phone: (850) 414-4931

Fax: (850) 414-4876

Frank.Tabatabaee@DOT.State.FL.US



Next Steps...

- **Develop guidelines for data analysis**
- **How to generate FSUTMS parameters**
- **Potential web-based training**
- **Training and user guide from FHWA forthcoming**



Contact Information

- **Frank Tabatabaee**
 - **Frank.Tabatabaee@dot.state.fl.us**
 - **850-414-4931**

