

# 2017 National Household Travel Survey

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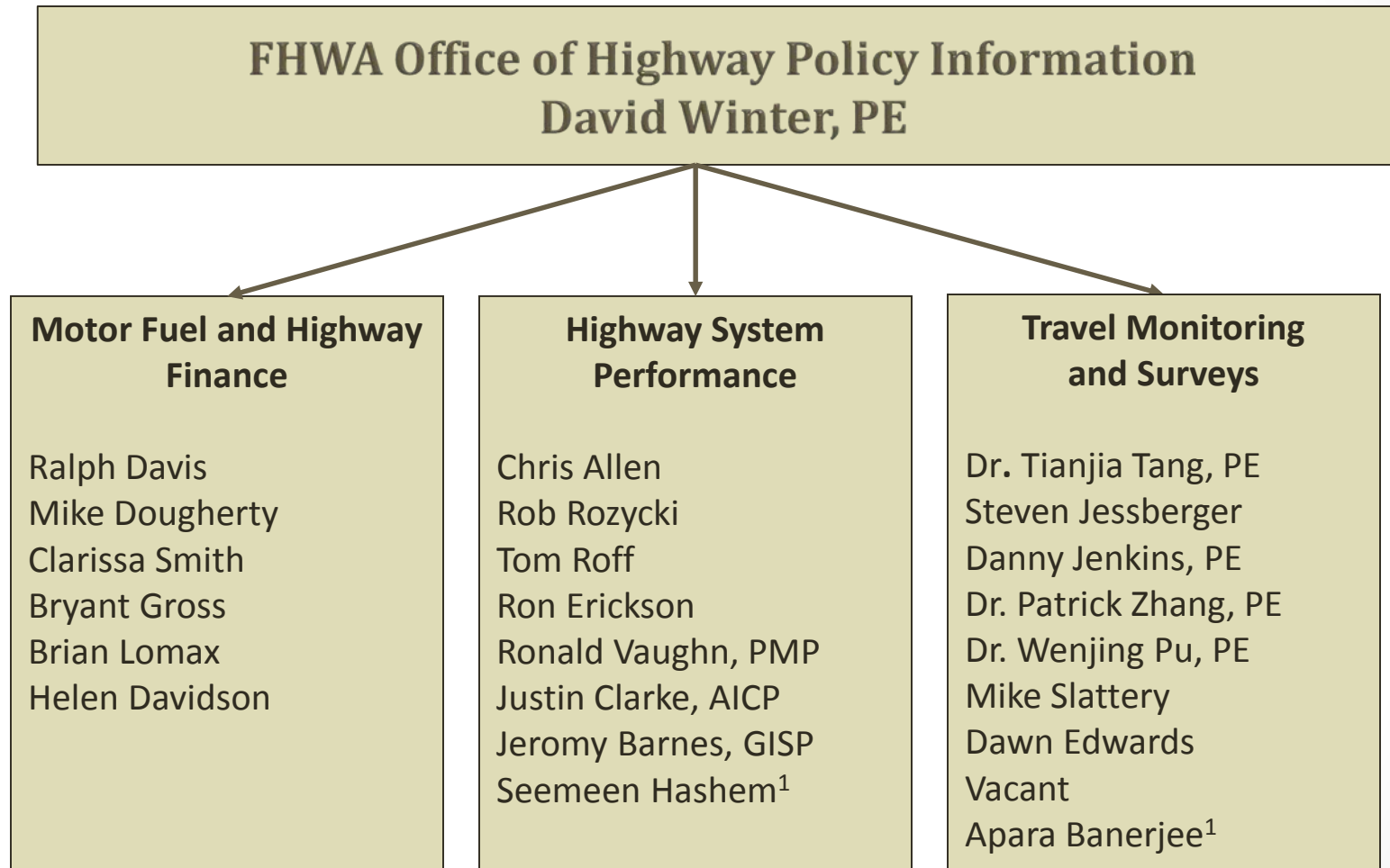


# Presentation Outline

- ✓ What It Is
- ✓ Methods
- ✓ Information Derived
- ✓ Usage
- ✓ Add-on Program
- ✓ Sample Questions from Add-ons
- ✓ Opportunities and Challenges
- ✓ How You Can Be Part of It
- ✓ 2017 NHTS Data Release Schedule



# Office Organizational Chart



1 – Indicates contractor



# What Is NHTS ?

The National Household Travel Survey is the **only national publicly available** travel behavior data providing information on:

- a) Why people travel (trip purpose)
- b) How we travel (modal usage)
- c) When we travel (time of day, day of week, and month of year)
- d) How often people travel ( # of trips and # of miles)

By a host of social, demographical and geographical data dimensions

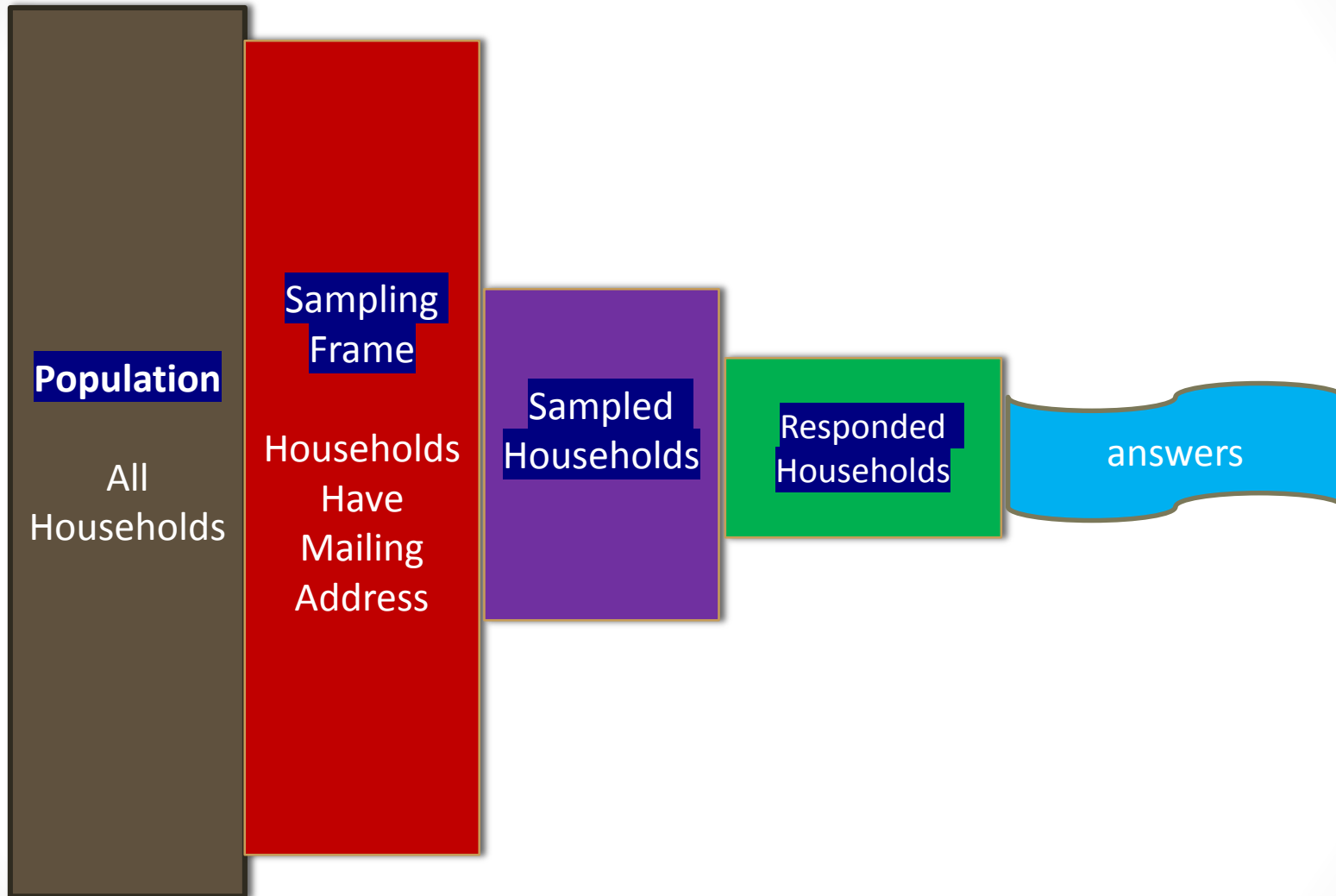


# 2017 NHTS Method

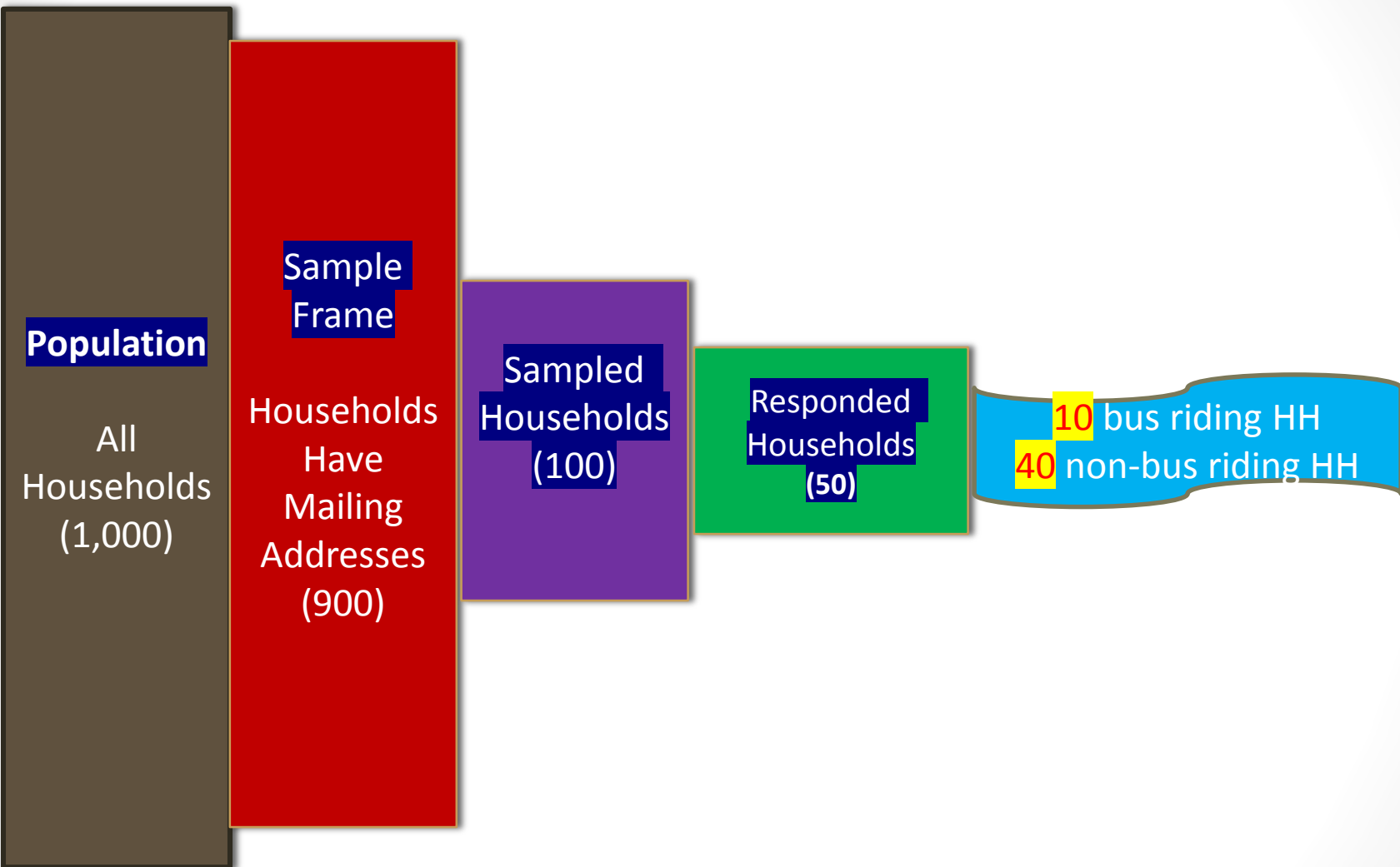
- ✓ Survey
- ✓ Address Based Sampling (ABS)
- ✓ Two Stages – recruitment and travel diary recording/retrieval
- ✓ Mail/Web/Phone
- ✓ Household – all members
- ✓ A complete 24 hour day



# 2017 NHTS Survey Method



# Data Collection Illustration



# Weighting- Illustration

## Population

All Households (1,000)

## Sample Frame

Households Have Mailing Addresses (900)

## Sampled Households (100)

## Responded Households (50):

10 bus riding HH  
40 non-bus riding HH

## # of Households Do Use Bus:

$$10 \times \frac{100}{50} \times \frac{900}{100} \times \frac{1,000}{900} = 200$$

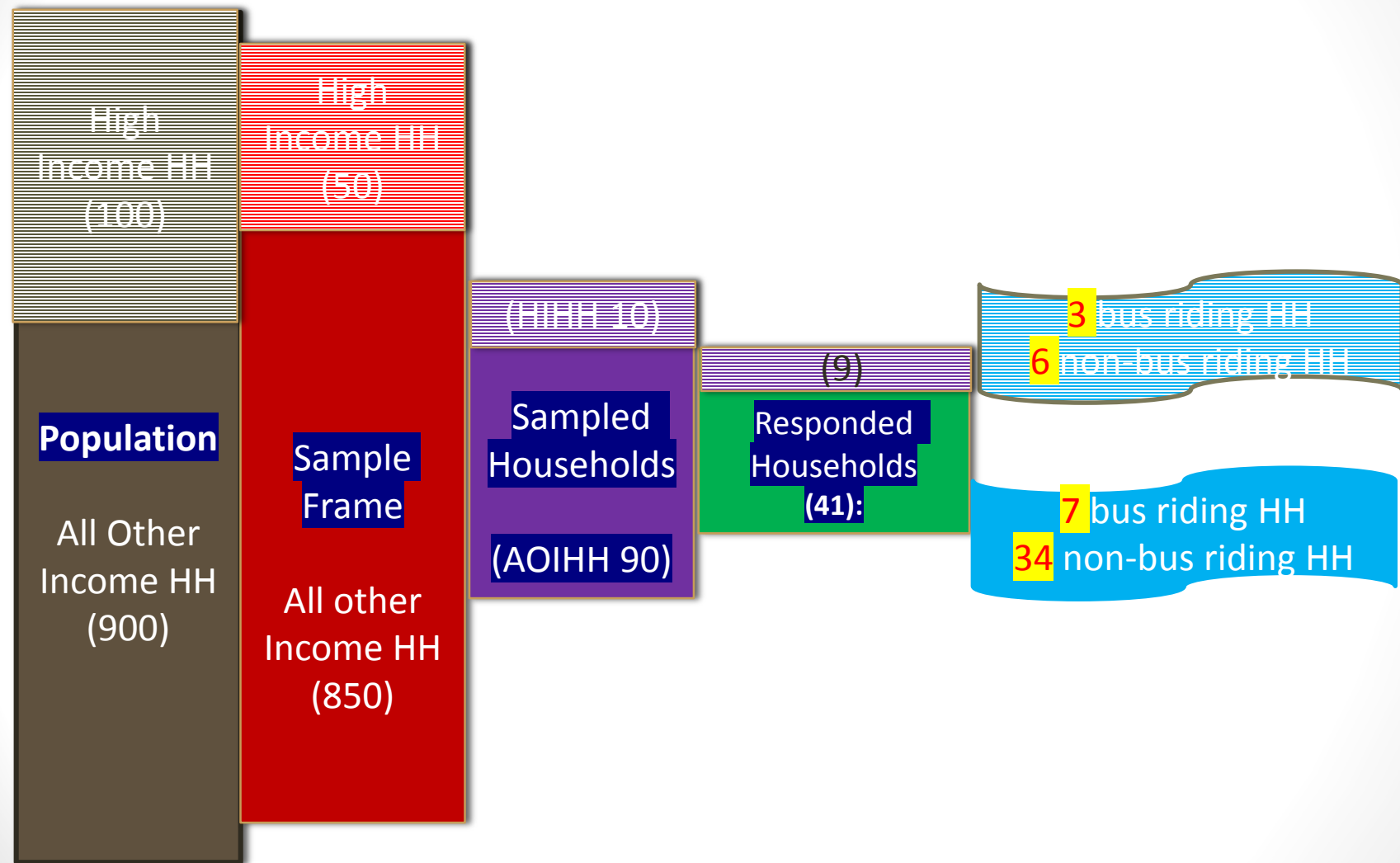
## # of Households Don't Use Bus:

$$40 \times \frac{100}{50} \times \frac{900}{100} \times \frac{1,000}{900} = 800$$

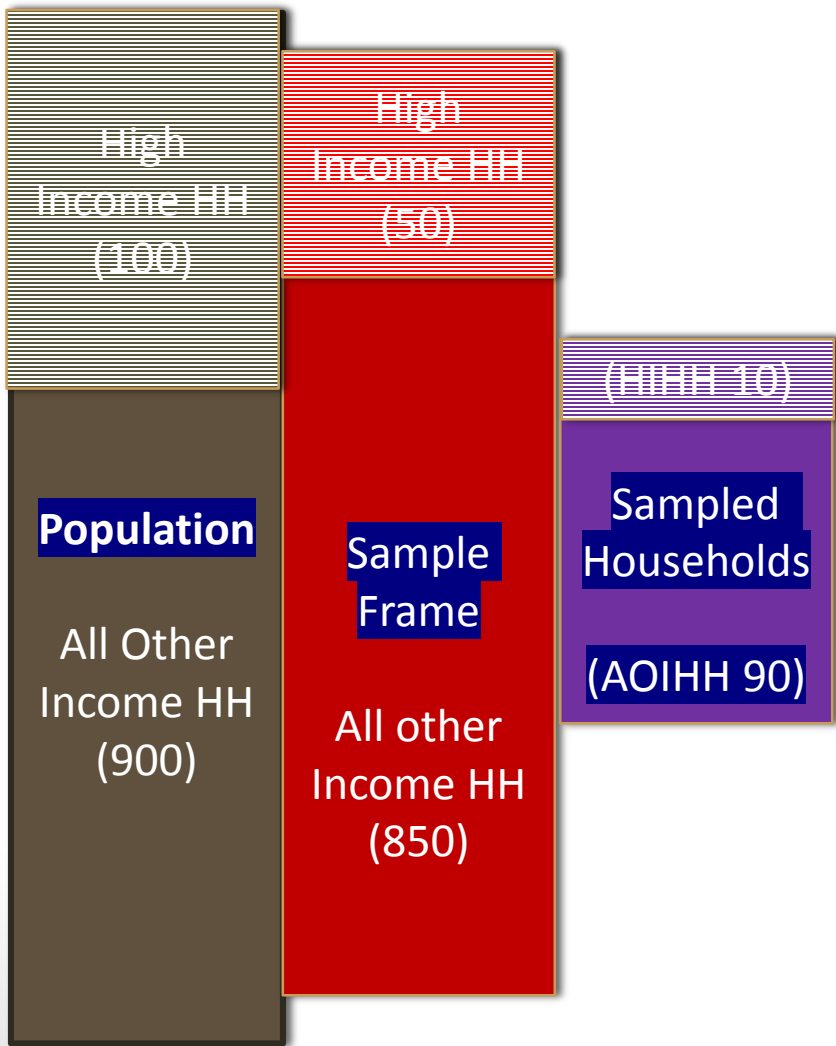




# Data Collection: Illustration with Added Data Dimension



# Weighting – Illustration with Added Dimension



**# of Households Do Use Bus:**

$$3 \times \frac{10}{9} \times \frac{50}{10} \times \frac{100}{50} = 33.3$$

$$7 \times \frac{90}{41} \times \frac{850}{90} \times \frac{900}{850} = 153.7$$

3 bus riding HH  
6 non-bus riding HH

7 bus riding HH  
34 non-bus riding HH

**# of Households Do Use Bus:**

Total bus use hold = 33.3

+153.7 = **187 vs "200"**

# 2017 NHTS Method - Weighting

## Data Dimensions

- ✓ Income
- ✓ Education
- ✓ Race
- ✓ Ethnicity
- ✓ Heavy Rail
- ✓ Age
- ✓ Gender
- ✓ POV Ownership
- ✓ Employment Status
- ✓ Others



# 2017 NHTS Sample Sizes

- ✓ 26,000 households
- ✓ 103,112 households



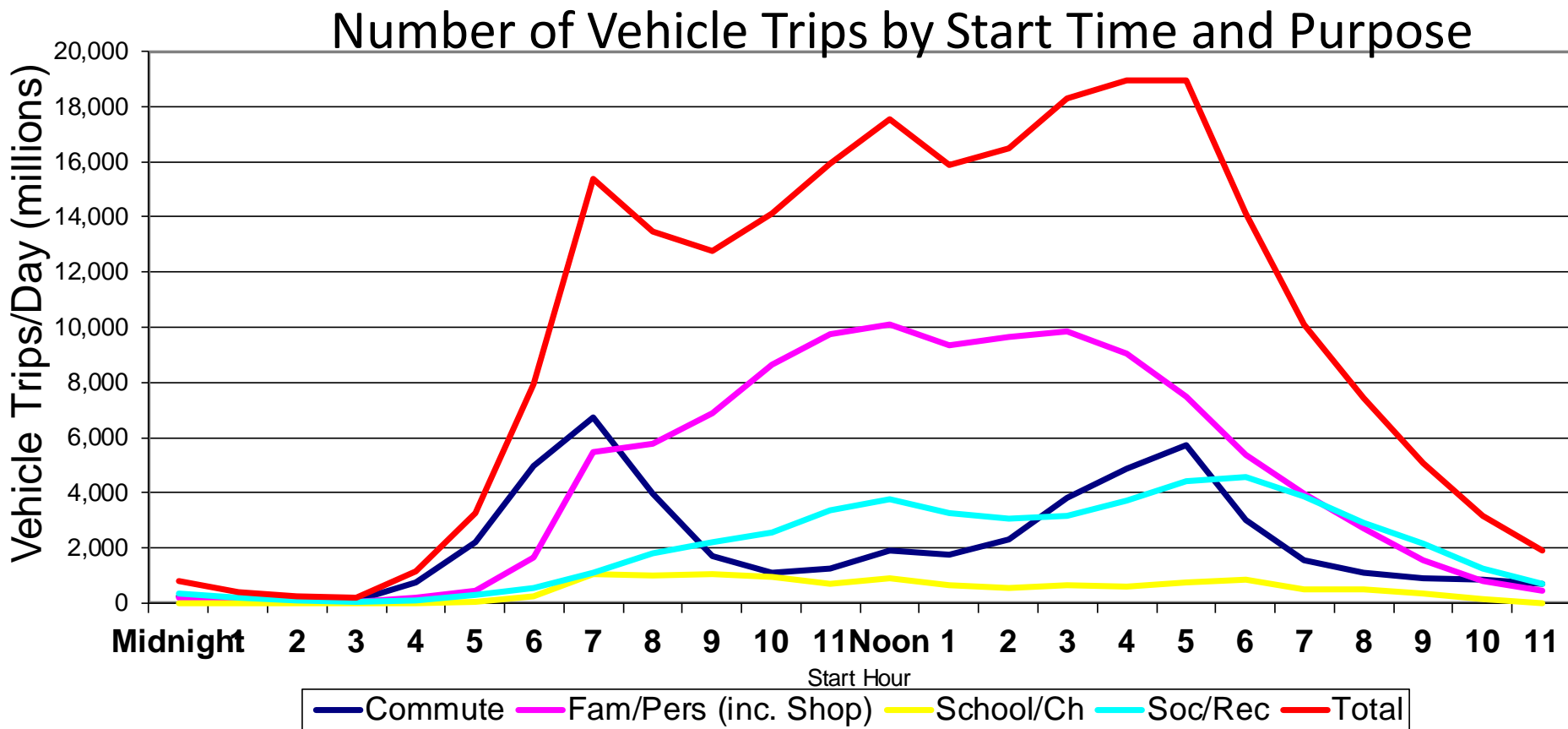
# Weighting Control

American Community Survey (ACS)  
conducted by the U.S. Census



# Key Information Derived-

## # of Trips by Start Time & Purpose



# Key Information Derived – Trip Rates

	1969	1977	1983	1990	1995	2001	2009
<b>Per Person</b>							
Daily Person Trips	2.02	2.92	2.89	3.76	4.30	3.74	3.79
Daily PMT	19.51	25.95	25.05	34.91	38.67	36.89	36.13
<b>Per Driver</b>							
Daily Vehicle Trips	2.32	2.34	2.36	3.26	3.57	3.35	3.02
Daily VMT	20.64	19.49	18.68	28.49	32.14	32.73	28.97



# Key Information Derived – Trip Rates

	1969	1977	1983	1990	1995	2001	2009
	<b>Per Household</b>						
Daily Person Trips	6.36	7.69	7.20	8.94	10.49	9.66	9.50
Daily PMT	61.55	68.27	62.47	83.06	94.41	95.24	90.42
Daily Vehicle Trips	3.83	3.95	4.07	5.69	6.36	5.95	5.66
Daily VMT	34.01	32.97	32.16	49.76	57.25	58.05	54.38





# Key Information Derived – Trip Lengths

	1969	1977	1983	1990	1995	2001	2009
	<b>Per Trip</b>						
Average person trip length (miles)	9.67	8.87	8.68	9.47	9.13	10.04	9.75
Average vehicle trip length (miles)	8.89	8.34	7.90	8.85	9.06	9.87	9.72



# Key Information Derived- Trip Rates by Purposes

<b>Trip Purpose</b>	<b>1983</b>	<b>1990</b>	<b>1995</b>	<b>2001</b>	<b>2009</b>
<b>Average Annual Person Trips per Household</b>					
All Purposes	2,628	3,262	3,828	3,581	3,466
To/From Work	537	539	676	565	541
Work Related Business	62	38	100	109	106
Shopping	474	630	775	707	725
Other Family/Personal	456	854	981	863	748
School/Church	310	304	337	351	333
Social and Recreational	728	874	953	952	952
Other	61	22	6	30	61

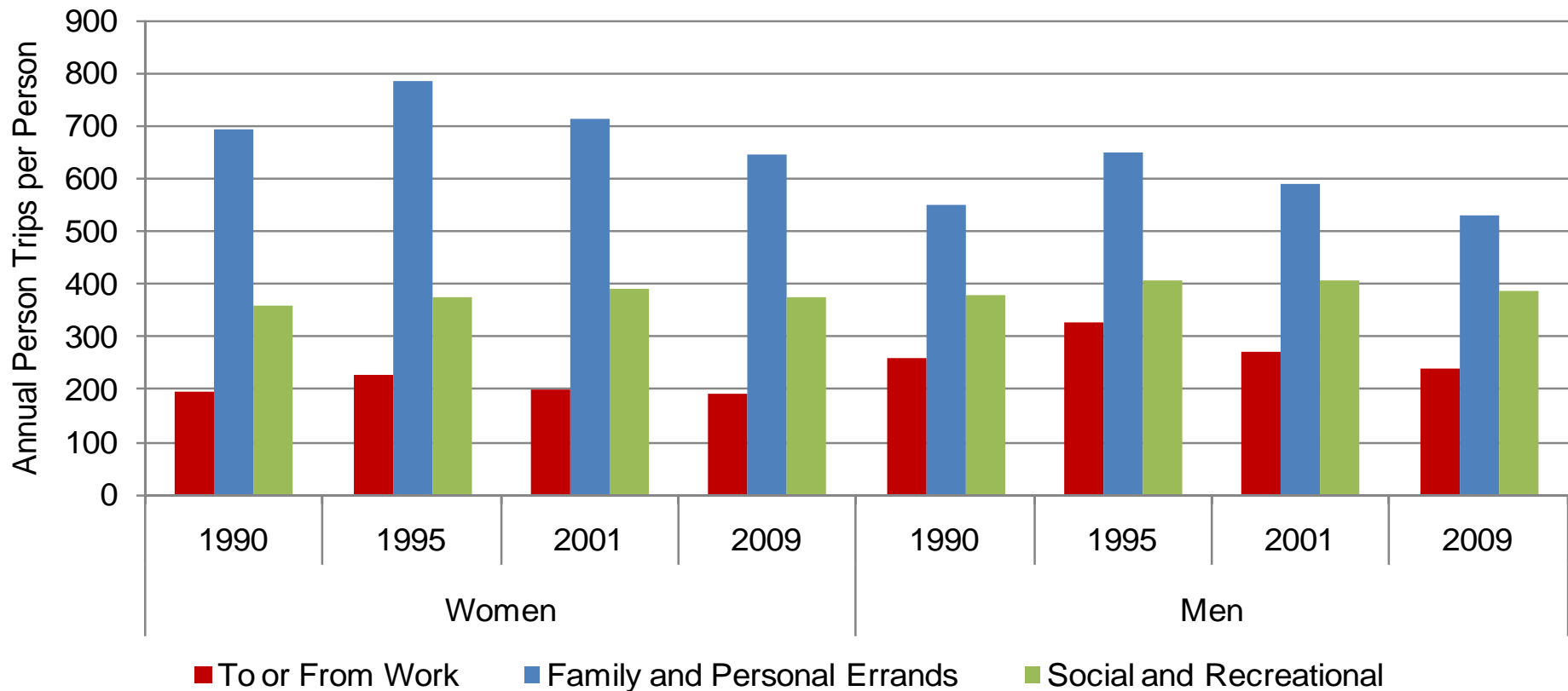


# Key Information Derived- Trip Rates by Purposes

	1977	1983	1990	1995	2001	2009
<b>Person Trips per Day</b>						
<b>Total</b>	<b>2.92</b>	<b>2.89</b>	<b>3.76</b>	<b>4.30</b>	<b>4.09</b>	<b>3.79</b>
To or From Work	0.57	0.59	0.62	0.76	0.65	0.59
Family/Personal Errands	0.91	1.02	1.71	1.97	1.79	1.61
School/Church	0.35	0.34	0.35	0.38	0.4	0.36
Social and Recreational	0.71	0.8	1.01	1.07	1.09	1.04
Other	0.38	0.14	0.06	0.12	0.16	0.18

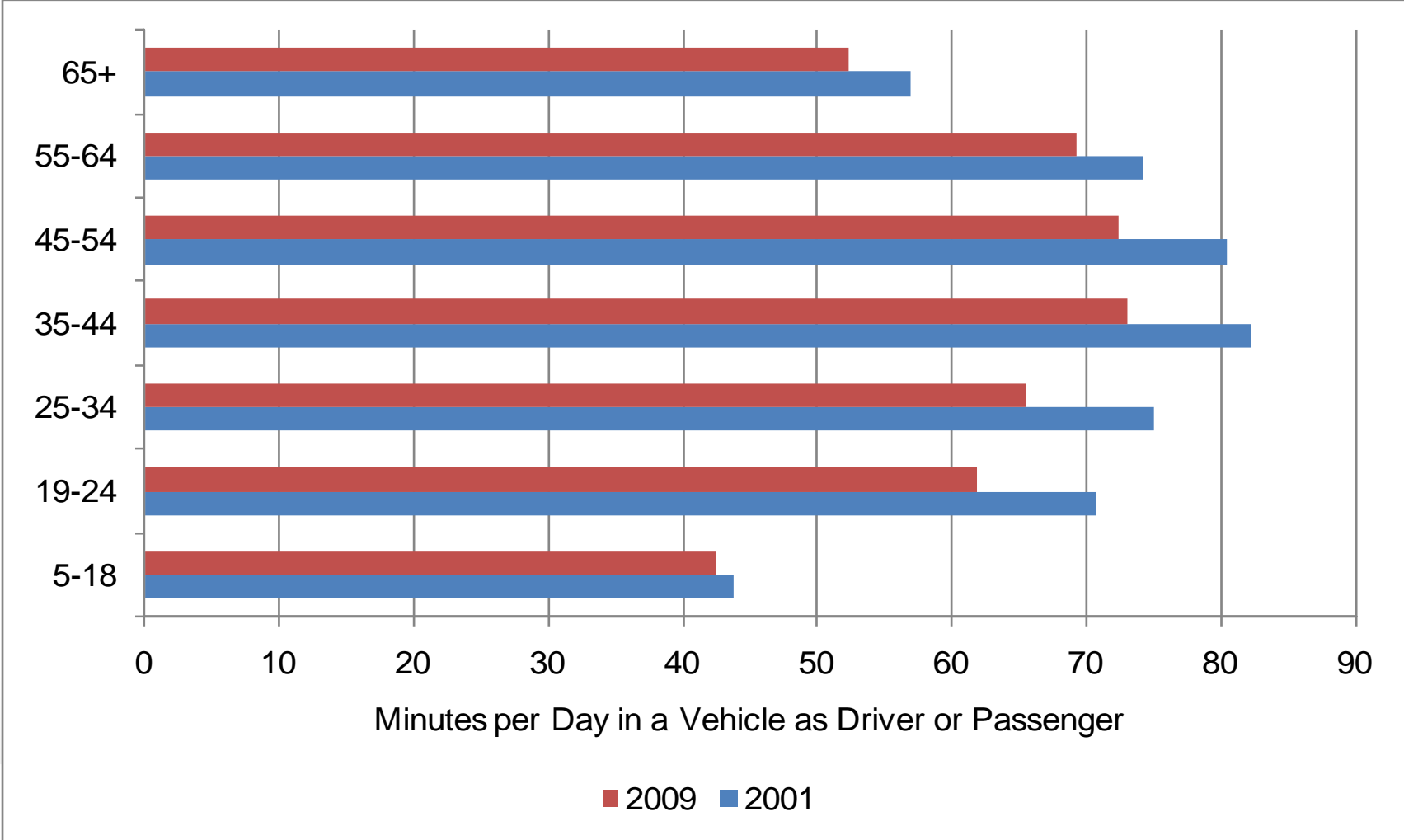


# Key Information Derived – Trips by Gender



# Key Information Derived

## Average Time Spent in a Vehicle by Age, 2001 and 2009



# Additional Key Information

visit

[www.fhw.adot.gov/policyinformation](http://www.fhw.adot.gov/policyinformation)



# How NHTS Are Used

- ✓ Used for travel demand analysis including State DOTs and MPOs travel demand modeling work
- ✓ Used for a wider range of policy issue and scenario based analysis
- ✓ Used to support legislative initiatives
- ✓ Used in AADT and other traffic data monitoring and estimation processes
- ✓ Others



# Add-on Program

- ✓ The NHTS add-on program is a partnership effort between the FHWA and other agencies.
- ✓ State DOTs and local MPOs can join the FHWA national program to collect local data by contributing financially to the program.





# Benefits of the Add-on Program

## **For State and local agencies:**

- ✓ Get more data with less money
- ✓ Without the need of survey subject matter expertise
- ✓ Learn from each other

## **For FHWA:**

- ✓ More data points for add-on areas improving the overall data resolution and quality.
- ✓ Helps the FHWA to stay on top of local issues

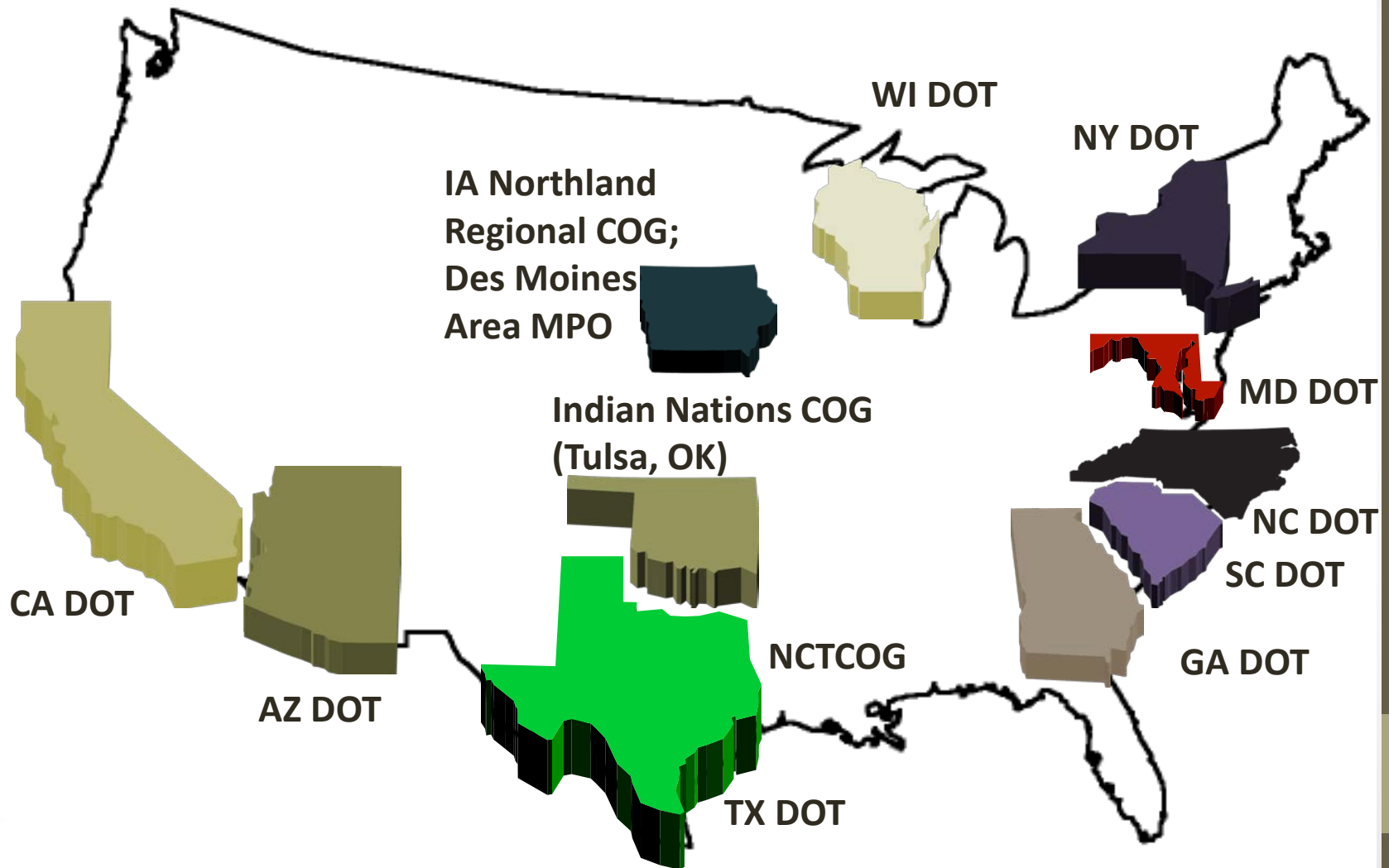


# Sample Add-on Questions

An add-on participant can put six additional local unique questions to the national questionnaire which will be asked only within the add-on geographical boundary.



# 2017 Add-on Partners



# Sample Add-on Questions

- AZQ5      What type of transportation investments should the **state** focus on? Please indicate your top **THREE** choices.
  - a. New roadways
  - b. Existing roadway maintenance/reconstruction
  - c. Public transportation
  - d. Sidewalks
  - e. High-occupancy vehicle lanes
  - f. Bike lanes and paths
  - g. Recreational trails
  - h. Transportation system management/signal coordination



# Sample Add-on Questions

CAQ4. [Ask if age 16+] What keeps you from biking (or biking more often) to your destination(s)? Please indicate the top THREE reasons:

- Health issues
- No one to bike with
- No nearby paths or trails
- Not enough bike lanes or wide curb lanes
- No sidewalks/Sidewalks are narrow or in poor condition
- Utility poles in the middle of the sidewalk
- Too far to travel by bike
- Safety concerns
- Too much traffic
- Air quality
- No shops or other conveniences nearby
- Prefer to drive



# Challenges

- ✓ Low respond rate
- ✓ Costly



# Opportunities

- ✓ Take advantage of new data sources
- ✓ Switch to a annual survey to be enhanced with other administrative data
- ✓ Pool the resource together and take advantage on the scale of economy phenomena
- ✓ Collect both rate and origin destination data



# How You Can Be Part of It

- ✓ Know what NHTS is
- ✓ Be a NHTS ambassador to your agency
- ✓ Focus on what NHTS can do for transportation decision making (why, how, when and how much and how many travel by social and demographical data dimensions)
- ✓ Check out our website at [www.fhwa.dot.gov/policinformation](http://www.fhwa.dot.gov/policinformation) or [www.nhts.ornl.gov](http://www.nhts.ornl.gov)
- ✓ Talk to the NHTS program manager: Danny Jenkins at 202-366-1067, [Daniel.Jenkins@dot.gov](mailto:Daniel.Jenkins@dot.gov)

Let's make the collection!





# 2017 NHTS Deliverables

- ✓ Original Quality Controlled and Non-weighted data - December 1 2018
- ✓ National Weighted Quality Controlled Data – planned to release by 1/7/2018
- ✓ National Travel Trend Summary - March 2018
- ✓ National NHTS User Workshop (Washington DC) - August 2018



# Summary

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# FHWA Travel Behavior Data Program Manager

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# Questions?

