

National Household Travel Survey Overview and Potential Modeling Uses

presented to

North Carolina Model Users Group

presented by

Cambridge Systematics, Inc.

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Transportation leadership you can trust.

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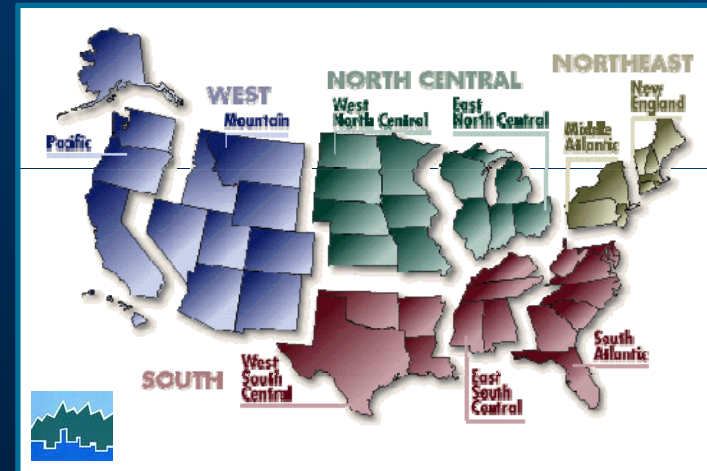
Presentation Outline

- *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)**

Census Regions and Divisions



Note: Colors designate regions.

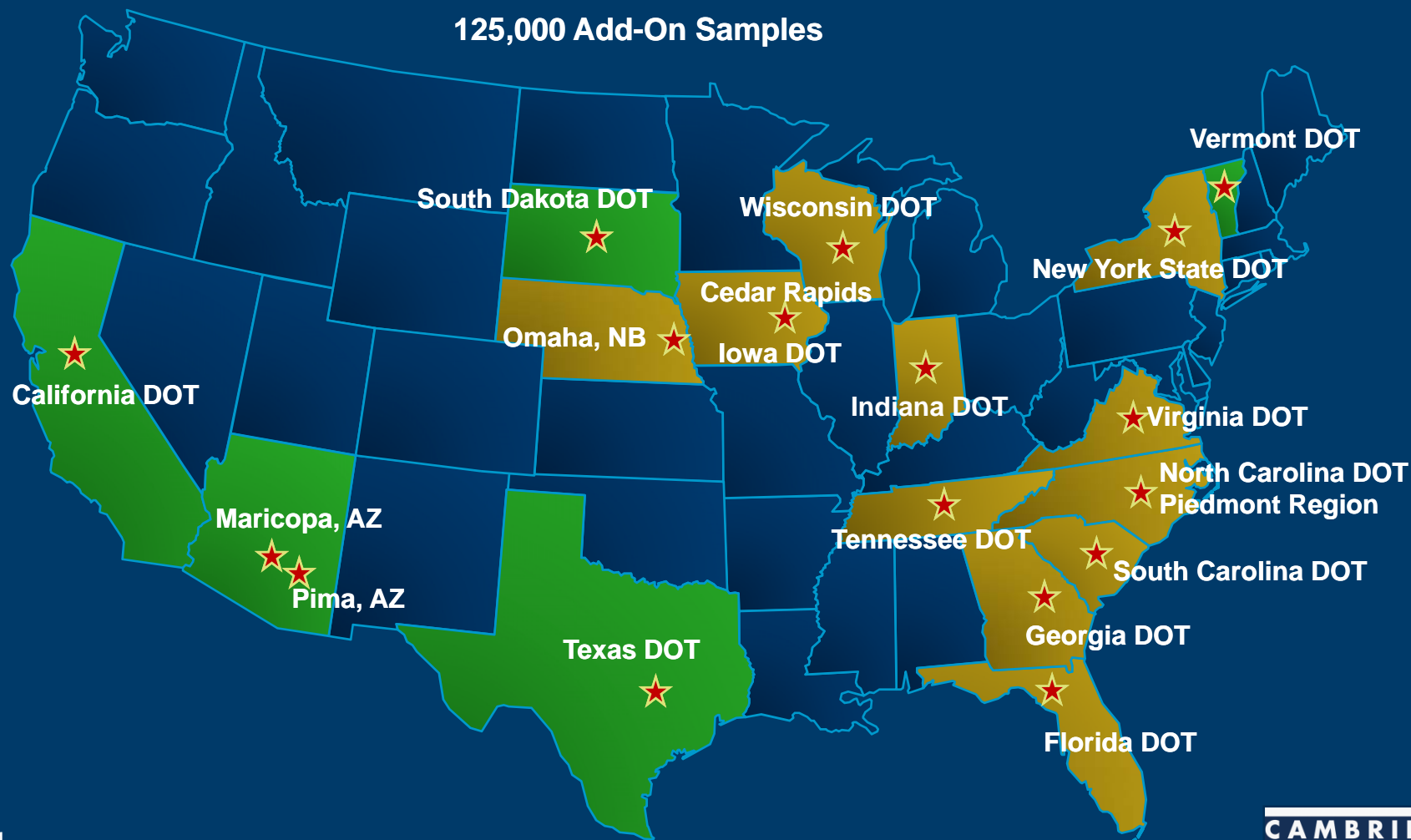
2009 NHTS Methods and Design

- **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



2009 NHTS Methods and Design (continued)

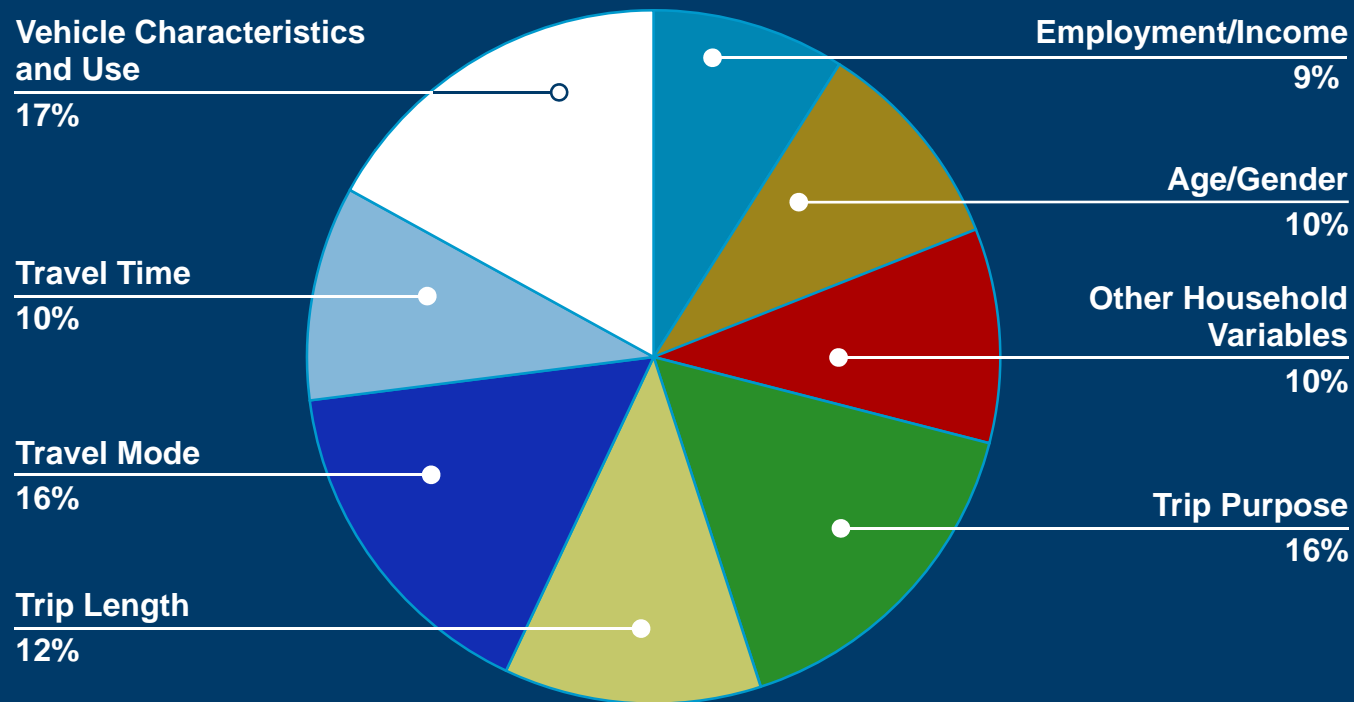
- Advance letter with incentive
- Household recruitment
- Diary packet
- Reminder calls
- Person level retrieval

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



Source: "National Household Travel Survey Data Use: An Overview" Prepared by:
MacroSys Research and Technology for the Bureau of Transportation Statistics, 2005.

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**

Source: Oak Ridge National Laboratory, "Introduction to the 2009 NHTS,"
web site <http://nhts/ornl.gov/introduction.shtml> accessed June 2010.

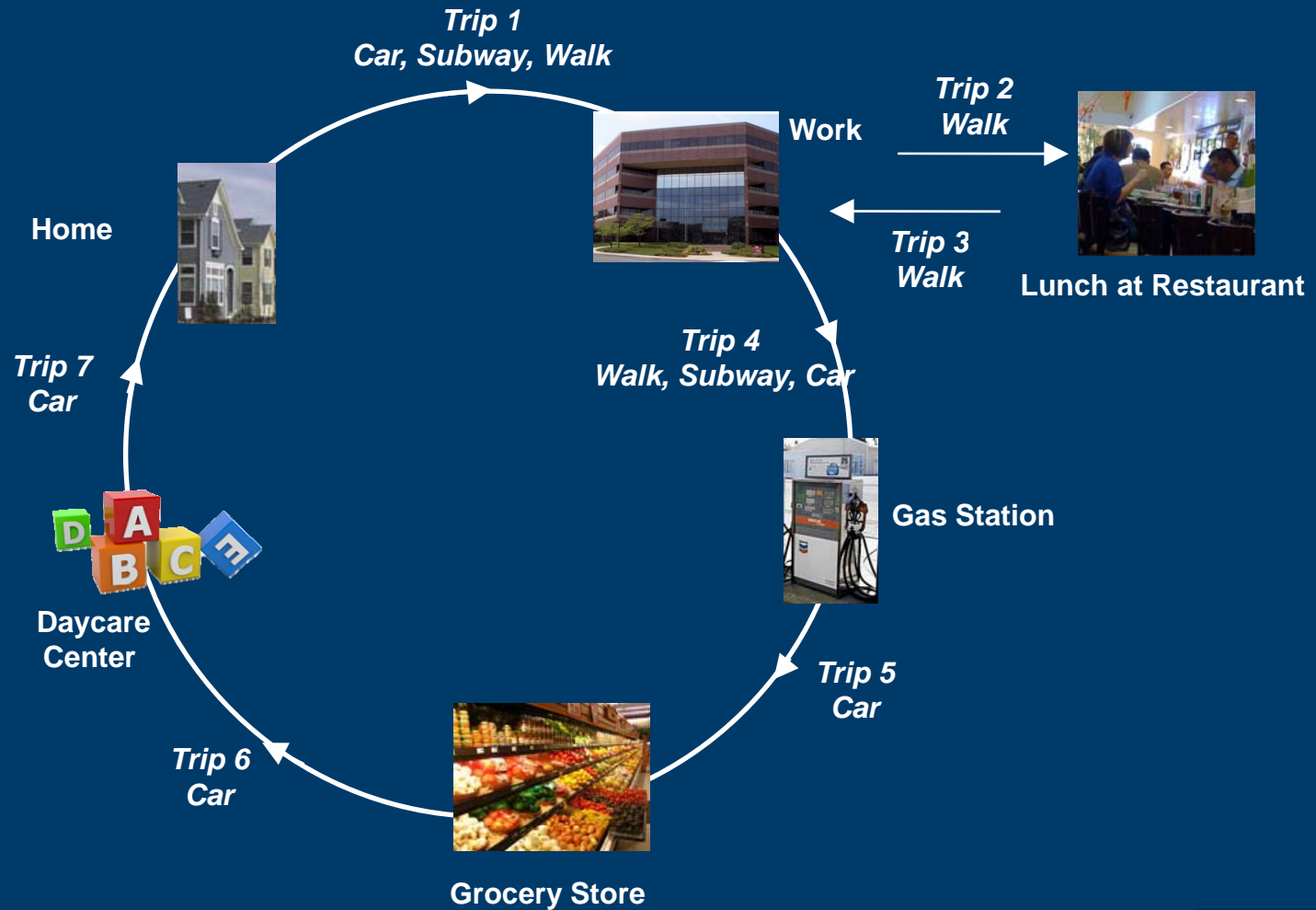
NHTS Data Have Many Uses

- **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**

Source: Oak Ridge National Laboratory, "Introduction to the 2009 NHTS,"
web site <http://nhts/ornl.gov/introduction.shtml> accessed June 2010.

NHTS Collects Data for All Trips

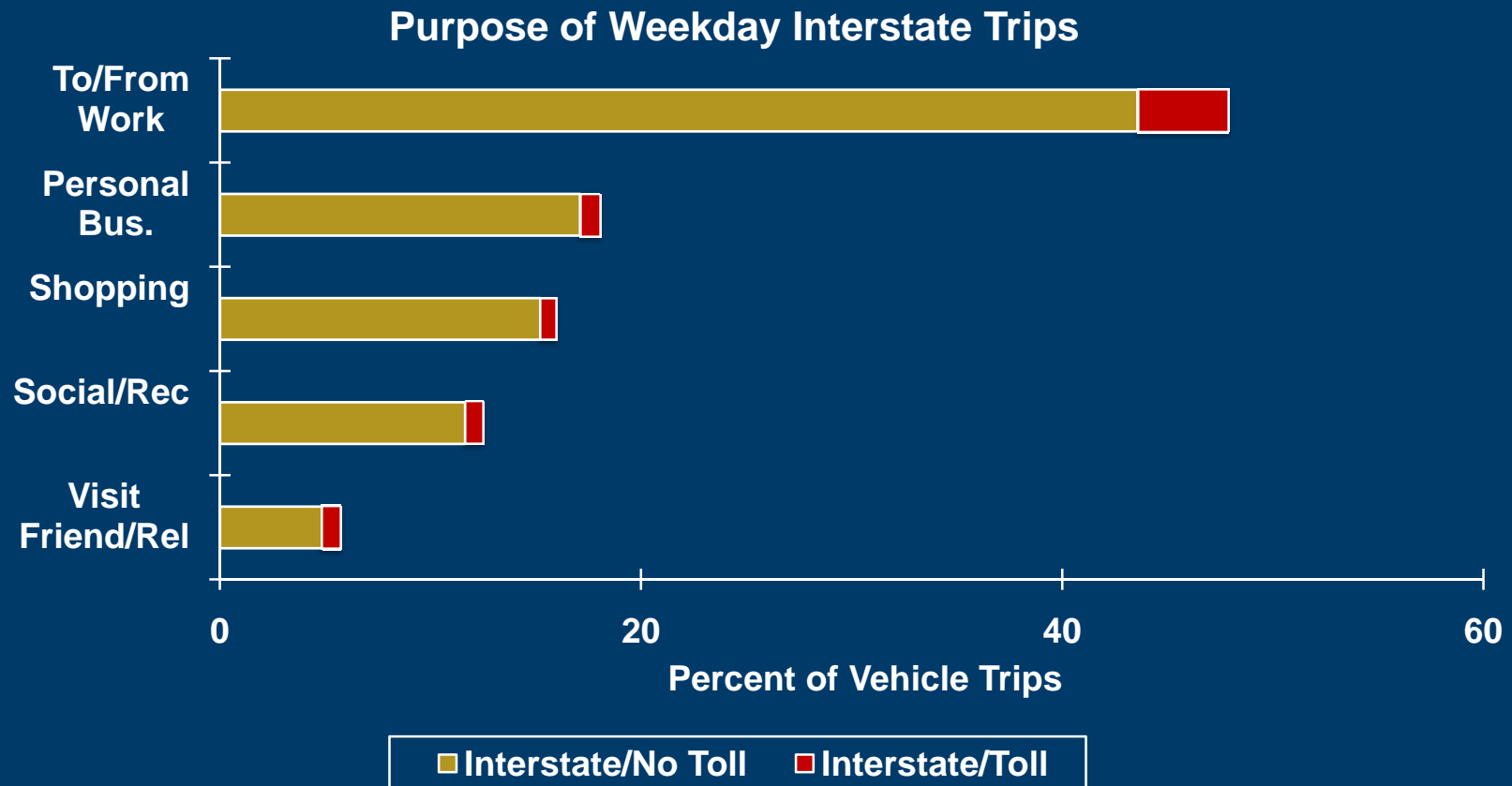
Trip Segments Can be Coded into Tours



Example NHTS Data Analysis

Toll Versus Nontoll Facts

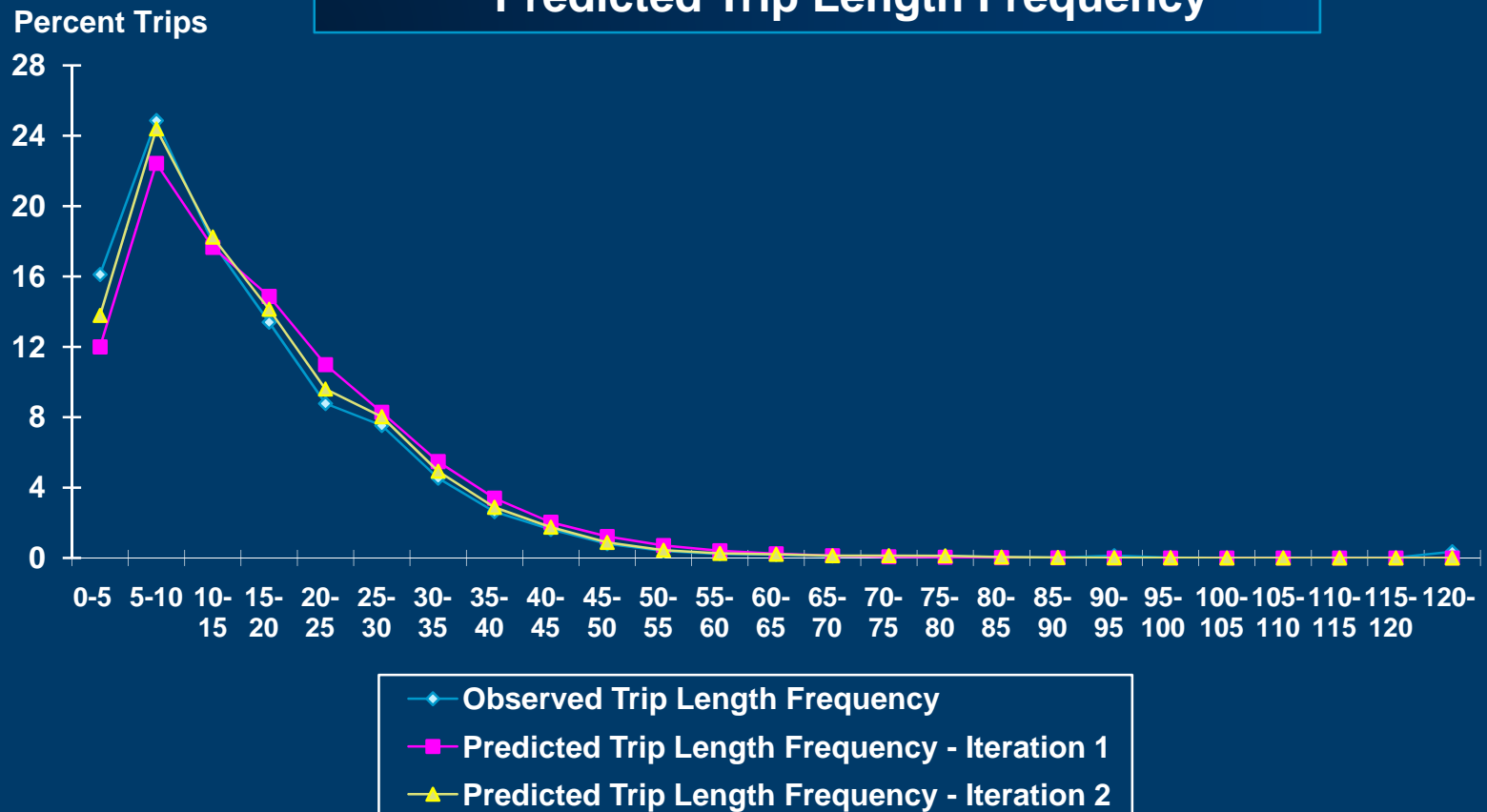
On average weekdays, 6.2 percent of vehicle trips on highways pay a toll – not all on work purpose trips



Example NHTS Data Analysis

Trip Length Frequency

Statewide Wisconsin HBW Observed versus Predicted Trip Length Frequency



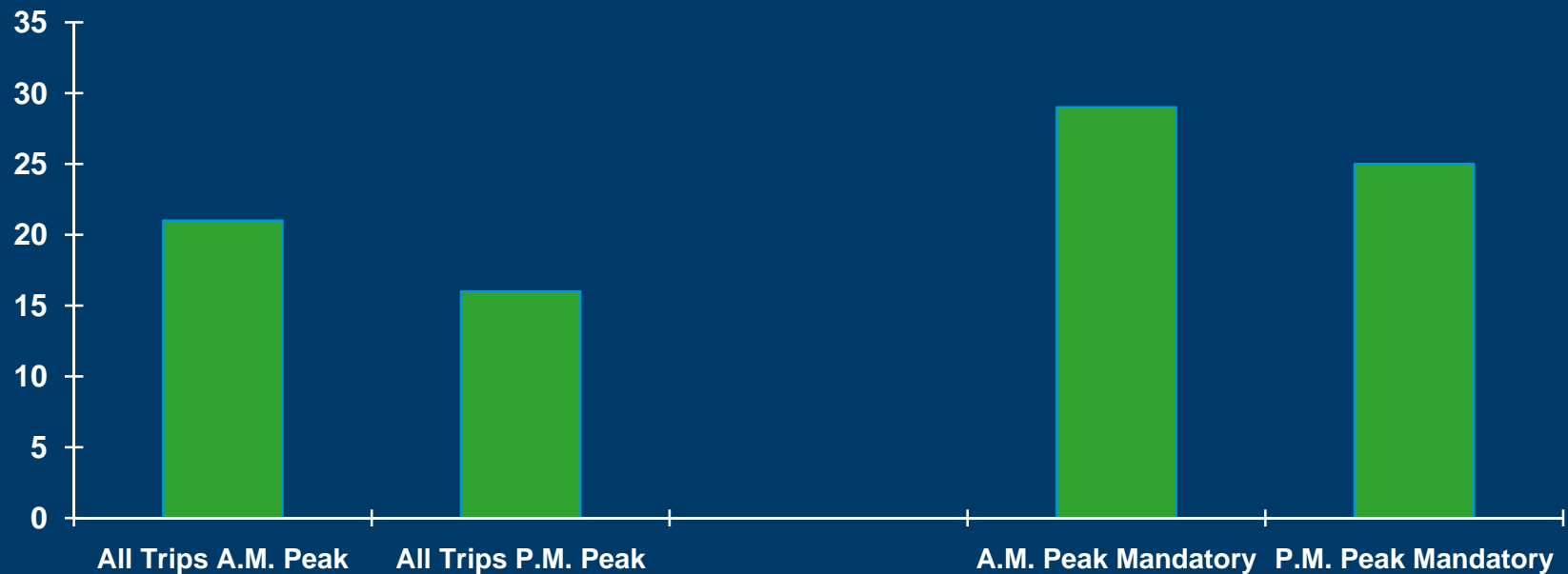
Source: 2001 NHTS Bruce Aunet, WI DOT & Cambridge Systematics Inc.

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

Percent of Vehicle Trips



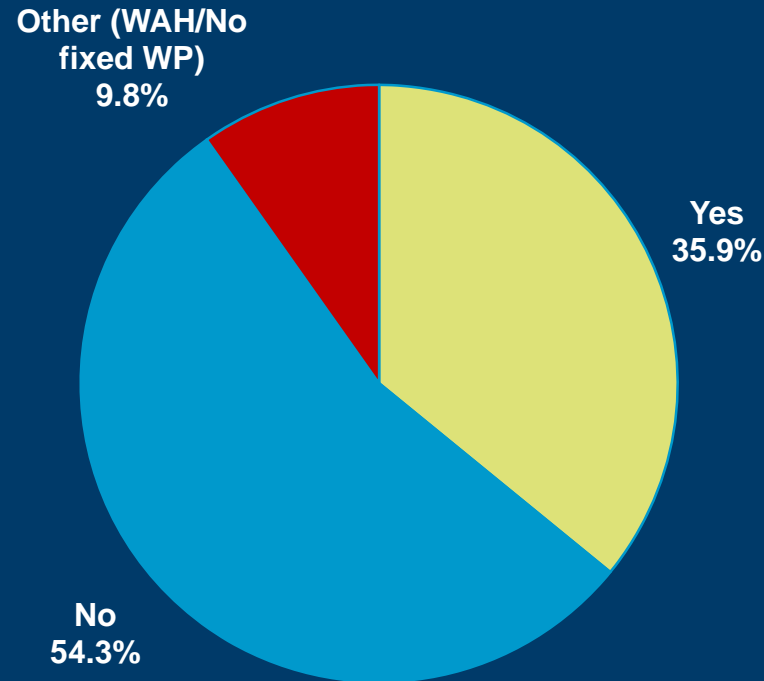
Data Source: 2009 NHTS

Example NHTS Data Analysis

Characteristics of Travel and Travelers

Many workers have the ability
to change their arrival time to work

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

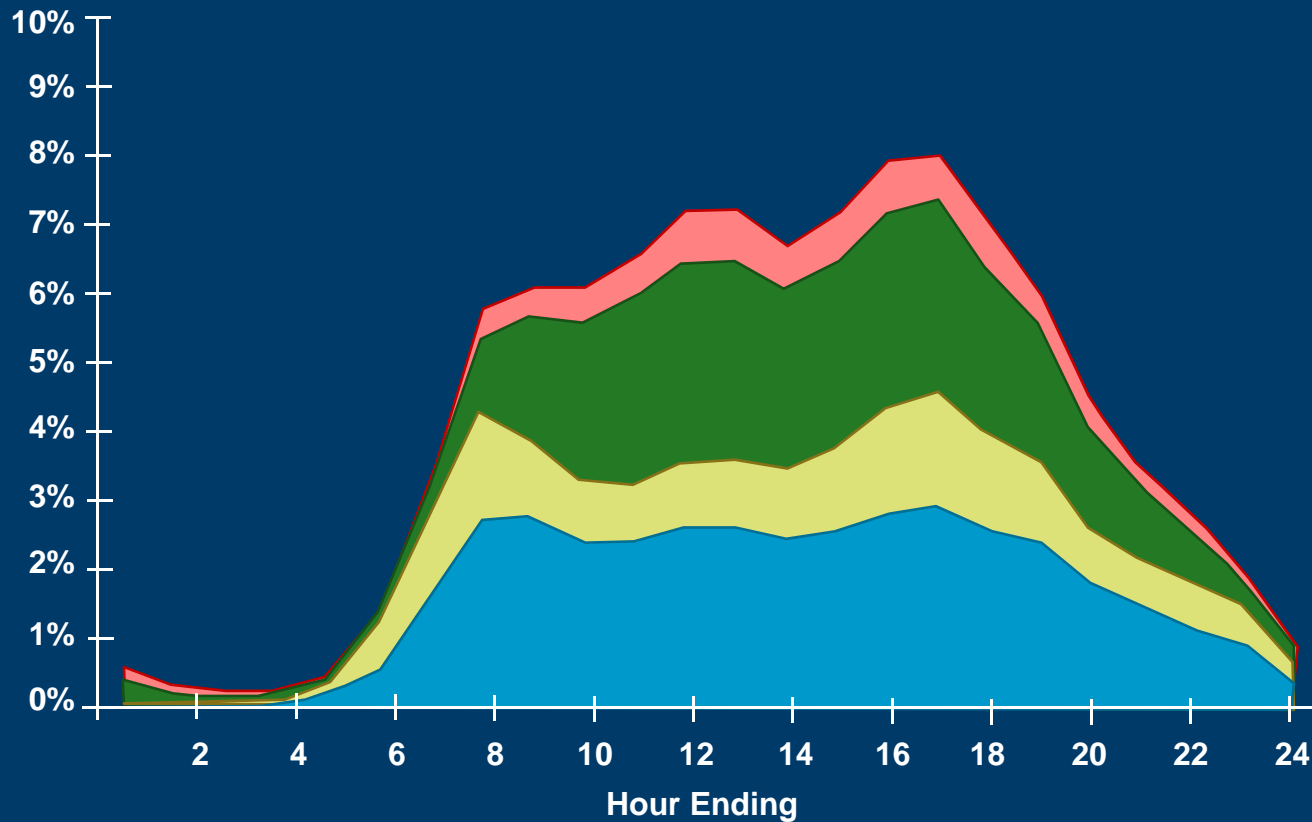


Note: WAH = Work at home; WP = Work place.
Data Source: 2009 NHTS.

Example NHTS Data Analysis

New York Air Quality Analysis

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



Source: 2001 NHTS.



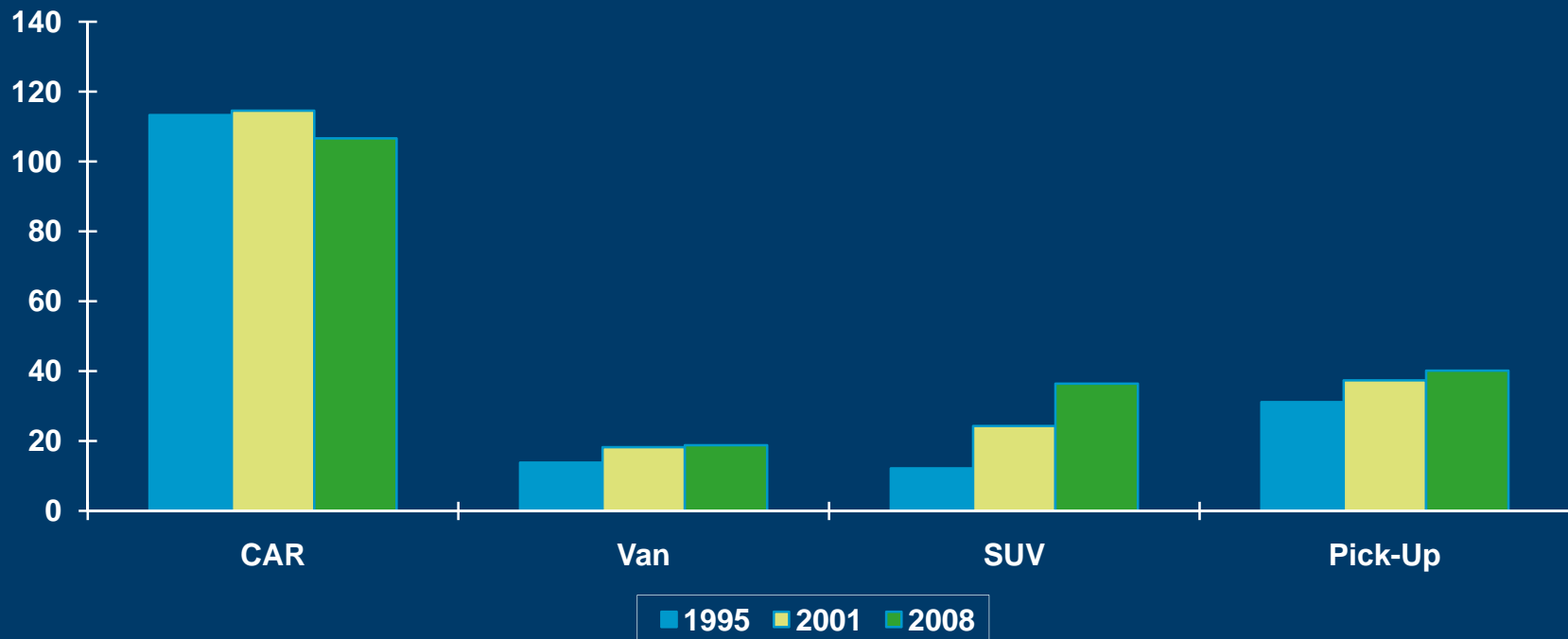
Example NHTS Data Analysis

Fleet Characteristics

SUVs Increased Market Share Between 2001 and 2009

Trends in U.S. Fleet Mix

Number of Vehicles (in Millions)



Base: NHTS Data Series (1995-2009).

Presentation Outline

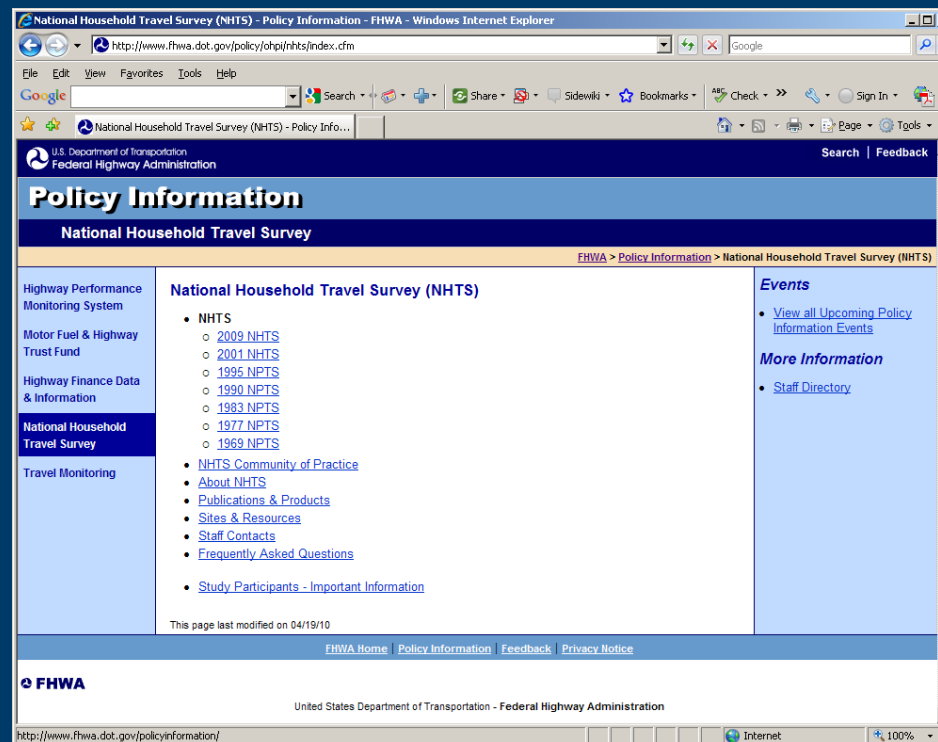
- About the NHTS
- Users and Uses
- *Availability*

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
 - » <http://www.fhwa.dot.gov/policy/ohpi/nhts/index.cfm>

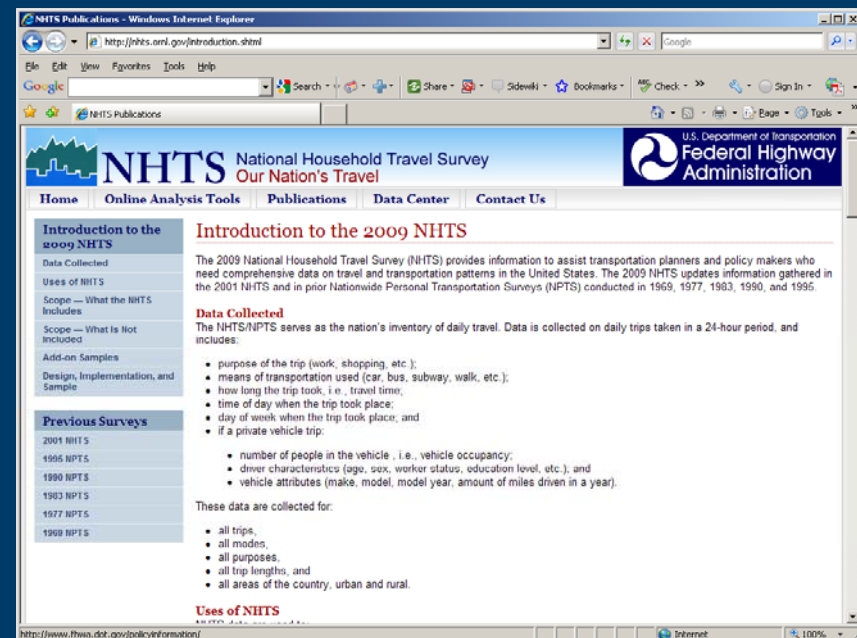


Availability (continued)

- 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

NHTS Data Center

2009 NHTS
2001 NHTS
2001 NHTS Transferability
1995 NPTS
1990 NPTS
1983 NPTS

NHTS Data Center

2009 NHTS

Also see [2009 Publications](#) for documentaion.

Datasets

File Format	Download Size (MB)	Installed Size (MB)
SAS Windows Binary (.sas7bdat)	83	544
SAS Transport	78	486
DBase .dbf	85	895
ASCII .csv	74	477

Source Code

Title	Description
Formats.sas	SAS PROC FORMAT library

2001 NHTS - Version 4.0, July 2005

[User's Guide](#)
[Release Notes](#)

Availability (continued)

“Online Analysis Tools” simplifies access to tabulations

The screenshot shows the NHTS Online Analysis Tools website. The page has a blue header with the NHTS logo and the text 'National Household Travel Survey Our Nation's Travel'. To the right of the header is the U.S. Department of Transportation Federal Highway Administration logo. Below the header is a navigation menu with the following items: Home, Online Analysis Tools, Publications, Data Center, and Contact Us. The main content area is titled 'Online Analysis Tools' and contains a table with the following rows:

Frequently-Asked For Tables	NEW 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.
Table Designer	NEW Updated for the 2009 NHTS. Build customized data tabulations quickly and easily. Tabulations are in HTML and Excel spreadsheet formats.
Codebook Browser	NEW Online version of the NHTS Codebook document provides quick access to dataset and variable characteristics including methods to sort, filter, and search.
2001 NHTS 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. 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 dataset is an Excel spreadsheet in XML format (Excel 2003 and above). Note that the National datasets are available on the download page .
1995 NPTS Transferability	1995 NPTS Transferability includes a methodology and a spreadsheet to enable users to get results for cities, counties, and metropolitan statistical areas (MSAs).

At the bottom of the page, there are links for 'Security Notice' and 'Plug-Ins', and a footer that reads 'Developed by the CTA, ORNL under funding from the FHWA'.

End Notes

- Thank you to Adella Santos at Cambridge Systematics for providing a major portion of the slide content
- Contact information
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