

2017 NHTS Frequently Asked Questions

PURPOSE

This document provides answers to frequently asked questions (FAQs) regarding the 2017 National Household Travel Survey (NHTS) to assist data users in understanding the decisions made in collecting, editing, and documenting the 2017 NHTS. Understanding how and why certain approaches were used can help data analysts properly apply the data and interpret the data findings. This document will be regularly updated to reflect the most up-to-date issues and questions of NHTS users. Click on the links below to navigate to specific topics or scroll through the FAQs to view all of the questions. For any additional questions not covered or for more information, please contact Aparajita Banerjee, NHTS User Support at apara.banerjee@macrostrat.com.

FAQ TOPICS

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FAQS

1. How did data collection for the 2017 National Household Travel Survey (NHTS) differ from earlier surveys in the National Household Travel Survey (NHTS)/NHTS series?

The 2017 NHTS represents a significant change from previous surveys in the NHTS/NHTS series because it used address-based sampling (ABS) rather than a sample of potential residential telephone numbers (as was the case in the 1990, 1995, 2001, and 2009 surveys) to obtain survey respondents. The most important impact of this change is that the ABS sample frame allows for the inclusion of cellphone-only households, which was not possible in earlier iterations of the survey. Expanding the survey scope to include that group is significant, as over half of U.S. households were cellphone only by 2016–2017.

More detail on changes in the survey scope and procedures can be found in the 2017 NHTS Users Guide (<https://nhts.ornl.gov/assets/2017UsersGuide.pdf>), which should be reviewed in order to understand how the 2017 NHTS design changes may result in some variables not being directly comparable to findings from the 1990-2009 surveys.

Another difference between the 2017 NHTS and previous surveys is that data were collected both online and by phone instead of only by phone. The significant change in the method of reporting coincided with an extensive review of the respondent website to ensure the content was written and organized in such a way to ensure clarity and ease of use. Additional modifications were also made to aid users in navigating the site and to provide clarifying notes for questions that may be confusing.

It should be noted that the 2017 survey was designed to give respondents the option of completing it by phone, paper or web. The retrieval survey was designed to be completed by web and phone. Approximately one-third of households preferred the option of participating in a telephone interview with an interviewer to guide them. To maintain uniformity in survey procedures and content, the interviewer used the same website for recording the data as that used by respondents who replied directly to the survey online. [Return](#)

2. Were vehicle-miles of travel (VMT) and person-miles of travel (PMT) collected in a different manner in the 2017 National Household Travel Survey (NHTS) in comparison to previous years?

In the 2017 survey, the online survey included a mapping component that allowed for real-time geocoding of the trip destinations. The mapping component also derived the trip distances, using a shortest-path algorithm. Prior surveys asked the respondent to estimate a self-reported trip distance. A preliminary assessment of the difference between self-reported and derived trip lengths for vehicle trips determined that the derived trip lengths are about 10% shorter than the self-reported trip lengths collected in prior surveys. Research continues into this issue, and in the meantime, users are strongly cautioned against trending trip length for 2017 against prior survey data.

The shorter derived trip lengths impact Vehicle Miles Traveled (VMT) and Person Miles Traveled (PMT) metrics. This is illustrated particularly when overall VMT is estimated and compared to HPMS levels for 2016, as the NHTS appears to be much lower than HPMS levels and suggest a decline from the 2009 NHTS levels. It is important to note that statistically, the VMT levels were unchanged from 2009 to 2017, and resolution of the aforementioned trip length issue is expected to increase the 2017 VMT and PMT levels as well. [Return](#)

3. How was trip purpose collected and classified in the 2017 National Household Travel Survey (NHTS)?

Trip purpose coding is one of the most challenging aspects of collecting NHTS data. In surveys in the series where interviews were conducted by phone (1990-2009) or in-person (1969-1983), the interviewer was given extensive training in trip purpose definitions and knew how to

classify particular trips and how they fit into the respondent's movements throughout their travel day. In the 2017 NHTS, about two-thirds of the respondents used the online capability to map their trips and answer questions about each trip purpose options were listed with their definitions so the respondent could refer to their meanings and see examples to aid in clarification. For example, while some of the trip purposes are straightforward (e.g., going to work, shopping, and visiting friends and relatives), some may be confusing for respondents. For example, dropping off/picking up passenger also includes taking a passenger to a destination, such as a doctor's appointment, and waiting while that passenger completed the doctor's appointment (so the driver activity was "waiting" and coded as dropping off/picking up passenger). Some differences between trip purposes are not necessarily clear to respondents, such as a work trip (i.e., a trip between home and work) and a work-related trip (i.e., all other trips made for a work purpose, such as attending a meeting, going to a job site, etc.). Thus, there may be some shifts in the number and length of trips by purpose resulting from respondents directly coding their own trip purposes.

There was also a change in focus in 2017 from asking respondents to document their travel using a list of purposes that reflected trips to a new list that reflected activities undertaken at the destination. This change was made consistent with changes in other regional travel surveys, as it has been found that when communicating with respondents it is easier and more natural for respondents to discuss their activities throughout the day rather than the trips made to and from those activities. Examples of some changes include the following:

- "Regular Home Activities" replaced "Home."
- "Volunteer Activities" replaced "Attend Meeting/PTA/Homeowners Association/Local Government."
- "Attend Child Care" replaced "Day Care."
- "Buy Meals" (i.e., go out for a meal, snack, or carryout) replaced "Meals, Social Event, Get/Eat/Meal and Coffee/Ice Cream/Snack."

A full list of 2017 trip purposes for 2017 as compared to 2009 is found in the 2017 NHTS Users Guide under Section 3.4 Trip Purpose Coding

(<https://nhts.ornl.gov/assets/2017UsersGuide.pdf>).

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4. What changes were made to travel modes in the 2017 National Household Travel Survey (NHTS) in comparison to the 2009 NHTS?

Given that the 2017 NHTS was designed to be collected online, the number of modes of transportation was shortened from 35 options in the 2009 survey to 20 options in 2017. A list of means of transportation for the 2017 survey and how those categories relate to the 2009 and earlier surveys is found in the 2017 NHTS User Guide under Section 3.5 Means of Transportation Coding (<https://nhts.ornl.gov/assets/2017UsersGuide.pdf>).

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5. Was the collection of incidental stops and chained trips impacted by online data collection?

Incidental stops are quick stops that are made on the way to another destination. When incidental stops are made on a trip, this is referred to a “trip chaining” (e.g., a home to work trip may include incidental stops to drop children at school or get gas on the way to work). For the 2017 survey, about two-thirds of the respondents received only web prompts about such short trips or stops made along the way, while the remaining third received prompts from an interviewer. [Return](#)

6. How were loop trips defined and collected in the 2017 National Household Travel Survey (NHTS)?

A loop trip is defined as a trip that starts and ends in the same place, often with no specific destination. Classic examples include walking the dog or going out for a walk or run. In earlier surveys in the series, these were collected by an interviewer who helped the respondent artificially split the trip in half (so it would be consistent with other one-way NHTS trips.) Since the 2017 NHTS was designed to be completed online without an interviewer, the concept of a loop trip was used to collect these movements as one trip just as the respondent experiences it. These complete loop trips are flagged as such in the travel day trip file. [Return](#)

7. Was there survey design input from outside the National Household Travel Survey (NHTS) community?

Because of the significant changes in the proposed conduct of the 2017 NHTS, the Federal Highway Administration (FHWA) convened an expert panel of renowned survey methodology experts. The Panel provided advice and counsel in the survey design process and specific input on a wide range of survey issues, including the following:

- The decision to use an address-based sample rather than potential residential telephone numbers.
- The look, feel and the content of each of the survey materials, with emphasis on the travel log.
- The importance of a robust pretest of all survey methods and materials.
- How to most effectively communicate with respondents throughout all stages of the survey
- How to convey the definition of a trip to respondents.
- The challenges of meeting the criteria of having 100 percent of household members (5+) completing the questionnaire and reporting their travel.
- Strategies for involving hard-to-reach populations (e.g., larger households, low-income households, immigrant households).
- Issues with comparability of this survey in the NHTS series

See <https://nhts.ornl.gov/2016/pub/20151019Report.pdf> for more details regarding the panel and a list of panelists. [Return](#)

8. How do the weekday/weekend distribution of travel days differ in the 2017 National Household Travel Survey (NHTS) in comparison to previous surveys in the series?

Between 1969 and 2007, all surveys in the series were based on an even distribution of assigned travel days over the 7 days of the week, with each day representing 1/7 of the sample. In the 2017 survey, the national sample itself continued this tradition.

In the 2017 NHTS, based on feedback from previous add-on agency partners, the add-on agency sponsors had the option of their sample being distributed equally across all days of the week in the traditional 1/7 design, or a “reduced weekend” distribution. In the reduced weekend approach, 6/7 of the sample was distributed across the 5 weekdays, and the remaining 1/7 of the sample was distributed across Saturday and Sunday. [Return](#)

9. How is a completed household defined in the 2017 National Household Travel Survey (NHTS) in comparison to previous surveys?

In the NHTS, the designation of “useable household” represents households that are considered to be complete and may be included in the final dataset. In previous surveys starting with the 1995 Nationwide Personal Transportation Survey (NPTS), a household could be considered complete if at least half of the eligible household members completed the person section and the travel day section of the questionnaire. In the 1995, 2001 and 2009 surveys, approximately 85 percent of all households had every eligible household member completing the full survey. This was the case despite the fact that a household could be included if only half the adults (age 16+) had completed the survey. The 50 percent threshold was used in the past to avoid skewing the sample to favor smaller household and to obtain a decent representation of those low-income and minority households that tended to be larger.

In the 2017 survey, the definition of a completed household required that all household members ages 5 and older complete the person-level interview and the travel day interview. (Note that those ages 16 and younger used an adult household member as a proxy to report this information for them.) This change was made based on input from previous add-on agencies and the travel demand modeling community, to reflect changes in data needs for modeling requiring 100 percent of eligible household members (ages 5+) to travel. [Return](#)

10. How was the 2017 National Household Travel Survey (NHTS) edited (for quality control purposes)?

The 2017 NHTS dataset represents the most thoroughly edited dataset in the series. Quarterly data were produced and edited thoroughly, and additional editing was performed on the final file. The full editing specifications are found in the 2017 NHTS User Guide under Section 2.9 Data Editing (<https://nhts.ornl.gov/assets/2017UsersGuide.pdf>).

The 2017 NHTS data was edited for conformance to the survey questions (i.e., the values for each variable conform to the questionnaire options) and skip patterns within the survey. Trip logic was checked but illogical cases were not edited, as is the practice for many regional household travel surveys. As a result, the trip file reflects the respondents' reporting even if the flow of travel is not necessarily logical.

Over the entire Nationwide Personal Transportation Survey/NHTS series from 1969 through 2017, an editing approach has been adopted that balances the response received to a question with that which is possible. As long as respondents' answers could have occurred, they were given deference. If it was obvious that the responses could not have happened, or the respondents misinterpreted a question, then those responses were edited to that which, given all available information, was presumed to have happened.

Collecting data from the general public is a difficult task in these times when we are all burdened with too many emails, too much mail, unsolicited calls and all other manner of communication and solicitation. The editing approach described above provides deference to the respondent's input, while allowing for changing a response that could not have occurred or where a question was obviously misinterpreted. [Return](#)

11. Why do some of the variables in the 2107 National Household Travel Survey (NHTS) have the suffix "17"?

As in earlier NHTS surveys, the variable name for an item is kept the same if the question was asked the same as in previous iterations of the survey, such as 2001 or 2009. For example, TRPTRANS (travel day trip mode) was asked the same way in 2017 as it was in 2009 and earlier surveys. However, if a question was changed in the 2017 survey from previous years, the variable name ends in 17. For example, FRSTHM17, which is about whether the respondent was at home at the start of travel day, includes a 17 because it was asked in a slightly different manner than in the past.

If the information collected changes sufficiently, a new variable name is developed to so indicate. Examples of variables that have a 17 suffix include the following:

- **WEBUSE17:** Frequency of Internet use.
- **LSTTRDAY17:** Approximate number of days since last trip (asked only if no travel on travel day was reported).
- **FRSTHM17:** Did respondent start his or her travel day at home?
- **DISTTOWK17:** One-way distance to workplace.
- **DISTTOSCH17:** Distance between home and school.

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