



DERIVED VARIABLES DESCRIPTION

INTRODUCTION

Derived variables are variables that are listed in the NHTS 2009 codebook that do not exist in the 2009 NHTS Questionnaire. These variables were derived by:

- renaming variables in the 2009 questionnaire so that the names correspond to those used in earlier NPTS Surveys,
- combining one or more questionnaire variables into a single variable, or
- deriving the variable from external sources other than the survey questionnaire.

The Derived Variables Description is a supporting document for the 2009 National Household Travel Survey (NHTS) which contains descriptions of how each derived variable was calculated.

If the derived variable was derived from a variable in the questionnaire, the description provides the name of the variable that was used to derive the new variable followed in parenthesis by the question number in the questionnaire where the variable is located. If the variable is derived from a variable not in the questionnaire, the variable name is followed by the word "derived" in parenthesis.

The status of a variable as a derived variable is also indicated by the initials DV in the Question column of the NHTS Codebook, and the Question Number column in the NHTS Data Dictionary.

After the alphabetical listing of derived variables, two tables of additional information are included. Table 1 allows the user to cross reference between the NHTS Questionnaire and the dataset in cases where the variable in the questionnaire is different from the name in the dataset. Table 1 lists the cases where the name is different and provides the questionnaire name and the dataset variable name. Table 2 provides information on the sources used to code geographic variables in the NHTS dataset.

NHTS Conventions

For the reader's convenience, the following codes are used in the NHTS dataset. These codes describe how the derived variables were constructed.

- 1 = Appropriate Skip
- 7 = Refused
- 8 = Don't Know
- 9 = Not Ascertained.

And, for Yes/No responses:

- 01= Yes
- 02= No.

Derived Variables "Not" Included In This Document

Please note that the following derived variables are not included in this document and are described in separate documents. See Publications, 2009 Documentation on the NHTS webpage for a detailed description of each variable.

Tract and Block Group Variables (Claritas Variables) –A series of 8 variables that describe



2009 National Household Travel Survey

the Census Tract or Block Group where the household is located. These variables are: HBHTNRNT, HBHUR, HBPOPDN, HBRES DN, HTEEMP DN, HTH TN RNT, HTPPOPDN, HTRES DN.

BESTMILE – The best estimate of annual miles driven each vehicle, developed by Oak Ridge National Lab. Includes BESTMILE, BEST_EDT, BEST_FLG, and BEST_OUT.

GASPRICE – Weekly regional gasoline price during the week of the household’s travel day. Also developed by Oak Ridge National Lab.

MPG and Fuel Cost – A series of 6 variables created by the Energy Information Agency (EIA) and appended to the vehicle file record to describe fuel economy (miles per gallon or MPG) and fuel cost. Includes EPATMPG, EPATMPGF, FUELTYPE, GSCOST, GSTOTCST and GSYRGAL.

This document includes 2009 NHTS Derived Variables and Geography Related Variables which are discussed in subsequent sections of this report.



2009 NHTS DERIVED VARIABLES

ANNMILES – Annualized mile estimate for all vehicles as reported during the person interview. If VEHOWNED is 12 months or more, the annualized mileage is as reported. If VEHOWNED is less than 12 months, use the annualized estimate in ANNMLTYR. If VEHOWNED is -7, -8, or -9, ANNMILES should be -7, -8, or -9.

CDIVMSAR - This variable is derived from variables CENSUS_D and MSACAT. The values of CENSUS_D range from 0 to 9 and the values for MSACAT range from 01 to 04. Concatenating the value of CENSUS_D with MSACAT results in the value of CDIVMSAR.

CENSUS_D - The classification is derived from the household's home address. The 2000 Census Division source used was [HTTP://WWW.CENSUS.GOV/GEO/WWW/COB/DV2000.HTML](http://www.census.gov/gEO/www/COB/DV2000.html). The categories are:

- 01 = New England (ME, NH, VT, CT, MA, RI)
- 02 = Mid-Atlantic (NY, NJ, PA)
- 03 = East North Central (IL, IN, MI, OH, WI)
- 04 = West North Central (IA, KS, MO, MN, ND, NE, SD)
- 05 = South Atlantic (DE, FL, GA, MD, NC, SC, WV, VA)
- 06 = East South Central (AL, KY, MS, TN)
- 07 = West South Central (AR, LA, OK, TX)
- 08 = Mountain (AZ, CO, ID, MT, NM, NV, UT, WY)
- 09 = Pacific (AK, CA, HI, OR, WA)

CENSUS_R - The classification is derived from the household's home address. The 2000 Census Region source used was [HTTP://WWW.CENSUS.GOV/GEO/WWW/COB/RG2000.HTML](http://www.census.gov/gEO/www/COB/RG2000.html). The categories are:

- 01 = Northeast (Census Divisions 01 and 02)
- 02 = Midwest (Census Divisions 03 and 04)
- 03 = South (Census Divisions 05, 06 and 07)
- 04 = West (Census Divisions 08 and 09).

CNTTDHH and **CNTTDTR** - These variables are the sum of Travel Day person trips, including zero, made by an interviewed household (CNTTDHH) or a household member with a completed interview (CNTTDTR). These counts include trips reported by a subject for which trip detail was obtained from another household member.

These 'count' variables were added to the dataset to make it easier for the user to categorize the number of trips per household and per person, for example creating a table that shows the distribution of households by household income and number of travel day trips (0, 1-2, 3-4, etc.).

These variables should NOT be used to create estimates of trip-making. The household weight applied to CNTTDHH, for instance, does not account for within-household non-response and will not create correct estimates of trips and travel. The only legitimate use of these 'count' variables is to generate distributions of households or persons by number-of-trip-category, such as zero travel day trips, 1-2, 3-4, 5-6, 7 or more.



To obtain **estimates of total trips or total miles** you must use the travel day trip file, where the weight corrects for non-response. To correctly estimate average travel day trips per person or average travel day trips per household, the sum of the trips should be divided by the sum of the persons or household, within classes if they are used. For instance, to estimate 'Person Trips per Household by Household Size' the analyst should obtain the frequency of the number of households in each cell (e.g. the number of 1-person households, 2-person households, etc.) and the number of trips made by all household members in the same class, and divide the trips by the number of households.

DIARY - Indicates whether the travel day diary was completed. Derived by combining categories 02 (was the diary completed?) and 03 (do you have the diary with you now?) in question (G2) into category 02.

DRIVER - Driver status of subject. If Age (C5) is less than 15 then DRIVER = -1. If DRVR (C8) is less than zero or missing and C13_DRVR is less than zero or missing and WHODROVE (G49) is less than zero or missing then DRIVER = -9. If DRVR = 01 or C13_DRVR = 01, or if the subject was reported as the driver on any travel day trip by any household member (WHODROVE (G49) on any household member travel day trip has the subject's person number) then the subject is a driver (DRIVER (derived) = 01). Otherwise DRIVER = 02.

DRVR_FLG - For each Travel Day trip in a POV, indicates whether the person self-reported as a driver or was a passenger in a personally owned vehicle. The CATI variable values of "-1" (appropriate skip) and "01" (self-reported as driver) are modified so that values of "-1" are changed to "02" if the person was a passenger in a personally owned vehicle (POV). For purposes of this derivation, a POV was used if TRPTRANS has a value in the range "01" through "08."

DRVRCNT - The number of drivers in the household. The variable is derived by counting the number of occurrences of DRIVER = 01.

DWELTIME – Calculated time at destination (in minutes), based on trip begin time (STRTTIME) and trip end time (ENDTIME).

ENDTIME -The end time of a travel day trip (ENDHOUR, ENDMINTE, ENDAMPM (G17)) reported in military time (0001 through 2400 hours). If ENDHOUR or ENDMIN or ENDAMPM = -1 then ENDTIME = -1. Otherwise ENDTIME = -9.

FLAG100 – Indicates that 100 percent of household members 18 and older completed the person interview.

FXDWKPL – Indicates that the worker has no fixed workplace.

GCDWORK - Great circle distance in miles between home and work. Calculated using the home address (D4/D5/D8/D9/M11/M12) and work address (E10/E11/E12/E13) provided by the household. A -9 indicates that no distance was calculated.

HH_CBSA - The CBSA code for the household's home address. The field is blank if the household does not fall in a CBSA. The source used was the 2007 TIGER/Line® Shapefiles (file: fe_2007_us_cbsa.shp) and Matchmaker SDK Professional v8.3 from TeleAtlas.



2009 National Household Travel Survey

HH_ONTD - Total number of household members on travel day trip including subject. Derived from TRPHHACC + 1.

HHC_MSA - The Metropolitan Statistical Area (MSA) FIPS code or Consolidated Metropolitan Statistical Area (CMSA) FIPS code for the household's home address. This field includes codes for households located in one of the 18 CMSAs (excluding San Juan, PR) or one of the 31 MSAs that have a population of one million or more and are not part of a CMSA. A code is provided for all households in areas of one million or more. (Note that a CMSA, by definition, is an area of one million or more.) The field is set to “-1” if the household does not fall in area with a population of one million or more. The source used for MSAs and CMSAs was the 1999 Metropolitan Areas: Cartographic Boundary Files (file cm99_99.shp).

HHFAMINC - Total household family income for the last 12 months derived from HHFAMINC (M13) and HHINC (M14-M21). If HHINC is missing, the lower or upper range was randomly selected from HHFAMINC (M13).

HHSIZE - Count of eligible household members in the household including 0 – 4 year olds (result code J1) and those with final result code NG. Uses the number enumerated in C8, excluding persons with a final result code beginning with ND or O.

Note: NG refers to household members deployed overseas. ND refers to a household member who was enumerated but was deceased at the time that the extended interview was attempted. O codes are other out of scope, i.e., people originally enumerated as part of the household, but later found to not be a household member, such as someone visiting.

HHSTATE - This is the geocoded state for the household's home address (a two letter abbreviation). HHSTATE is derived from the household's latitude and longitude during geocoding. The source used was Matchmaker SDK Professional v8.3 from TeleAtlas.

HHSTFIPS - State FIPS code for the household's geocoded home address. The source used was Matchmaker SDK Professional v8.3 from TeleAtlas.

HHVEHCNT - The number of vehicles in the household on the date of the household recruitment interview plus any vehicles identified as household vehicles during the retrieval interviews. This is the number of vehicles enumerated in B2, added in G31 and verified in L7. Note any vehicle that is sold between the recruitment and retrieval interviews is included in the household vehicle count. Any vehicle added between the recruitment and retrieval interviews, but not used on the travel day is not included in the HH vehicle count.

Note: HHVEHCNT only includes vehicles for which a vehicle type is reported and the vehicle type is 01-07. Vehicles whose type is Refused, Don't Know, Not Ascertained, Golf Cart or Other (a total of 1207 sample vehicles) are not included in HHVEHCNT. The limitation to vehicle types 01-07 carries through to the calculation of Vehicle Miles of Travel (VMT.)

LIF_CYC - The life cycle code for the household. The variable is derived as follows:

- 01 = Household has one adult, no children and no retired persons.
- 02 = Household has 2 or more adults, no children and no retired persons.
- 03 = Household has one adult and the youngest child is 0 to 5 years old.



- 04 = Household has 2 or more adults and the youngest child is 0 to 5 years old.
- 05 = Household has one adult and the youngest child is 6 to 15 years old.
- 06 = Household has 2 or more adults and the youngest child is 6 to 15 years old.
- 07 = Household has one adult and the youngest child is 16 to 21 years old.
- 08 = Household has 2 or more adults and the youngest child is 16 to 21 years old.
- 09 = Household has one retired adult and no children.
- 10 = Household has 2 or more adults; at least one is retired and no children.

Classify each household member as adult or child and determine retirement status for adults. Then, use the adult, child and retired classification of each household member to classify the household into one of the 10 categories above.

An adult is defined as a household member that is 18 and over. A child is a household member 21 years or younger. A household member between the ages of 18 and 21 is classified as an adult or child depending on his/her relationship to the household respondent. If age is missing, use the imputed age. A household member is retired if PRMACT = 06 and is not retired if PRMACT > 0, but PRMACT is not equal to 06.

If retirement status (PRMACT) is missing, use age to determine retirement status. If age is 65 or more, consider the person retired. If less than 65, consider the person not retired. Assign these households to Life Cycle categories 01, 02, 09 or 10.

Use the following rules to determine whether the household member is an adult or child:

- a.** If household member's age is less than 18 years, classify a household member as a CHILD regardless of value of R_RELAT (CATI variable HH_RELAT) (C8) and classify household member's CHILD AGE in the appropriate group 0-5, 6-15, or 16-21.
- b.** If household member's age is greater than 21 years, classify a household member as an ADULT regardless of value of R_RELAT.
- c.** If household member's age is 18-21 and R_RELAT = 03 (CHILD), classify household member as CHILD and classify household member's CHILD AGE in 16-21 group.
- d.** If household member's age is 18-21 and household member is the household respondent (R_RELAT = 01) and any other household member is coded as PARENT to the household respondent (R_RELAT = 04), classify subject household member as CHILD and classify subject's CHILD AGE in 16-21 group. If no other household member is PARENT, classify subject household member as ADULT.
- e.** If household member is BROTHER/SISTER to the household respondent (R_RELAT=5) and any other household member is coded as PARENT to the household respondent (R_RELAT = 04), classify subject household member as CHILD and classify subject's CHILD AGE in 16-21 group. If no other household member is PARENT, classify subject household member as ADULT.
- f.** If household member's age is 18-21 and household member is OTHER RELATIVE (R_RELAT = 06) and any other household member is coded as PARENT to the household respondent (R_RELAT = 04), classify subject household member as CHILD and classify



subject's CHILD AGE in 16-21 group. If no other household member is PARENT, classify subject household member as ADULT.

g. If household member's age is 18-21 and household member is a NON-RELATIVE (R_RELAT = 08) to the household respondent, and any other household member is over 21 and is a SPOUSE (R_RELAT = 02) or any other household member is over 21 and is an UNMARRIED PARTNER (R_RELAT = 07), then classify the household member as a CHILD in the 16-21 age group; otherwise classify the household member as an ADULT.

h. If the value of household member's R_RELAT is missing: If age is <18, classify adult status of household member as CHILD and classify CHILD AGE according to age. If age is >21 classify adult status as ADULT. If age is 18-21, and any other household member is coded as PARENT, then classify subject household member as CHILD and CHILD AGE in 16-21 age group. If no other household member is classified as PARENT classify adult status of subject household member as UNKNOWN.

i. Household members with HH_RELAT = 02 (SPOUSE) or 07 (UNMARRIED PARTNER) between the ages of 18 and 21 that are not otherwise classified are classified as ADULTS.

LSTTRDAY - Number of days since last trip before travel day. Derived from LASTRPUT (number) and LASTRPNU (unit) (G15):

If LASTRPNU = 01 (days) then LSTTRDAY = LASTRPUT
 If LASTRPNU = 02 (weeks) then LSTTRDAY = 7 x LASTRPUT
 If LASTRPNU = 03 (months) then LSTTRDAY = 30 x LASTRPUT
 If LASTRPNU = 04 (years) then LSTTRDAY = 365 x LASTRPUT

MAKECODE - National Accident Sampling System (NASS) vehicle make code. Derived from MAKECODE (B2) and L_MAKE (L7) setting the variable E_MAKE equal to MAKECODE. The National Accident Sampling System codes were developed by NHTSA (National Highway Traffic Safety Administration.)

MODLCODE - NASS vehicle model code. Derived from MODLCODE (B2) and L_MODL (L7) setting the variable E_MODL equal to MODLCODE.

MSACAT - Metropolitan Statistical Area (MSA) category for the household's home address. The source used for MSAs was the 1999 Metropolitan Areas: Cartographic Boundary Files. File ma99_99.shp from <http://www.census.gov/geo/www/cob/ma1999.html>. The MSACAT variable was derived using information on population and the presence of transit. The variable is derived as follows:

01 = MSA or CMSA of 1 million or more with heavy rail.
 02 = MSA or CMSA of 1 million or more and not in category 1.
 03 = MSA of less than 1 million.
 04 = Not in a MSA.

Note: The Federal Highway Administration (FHWA) provided the list of MSAs with heavy rail:

- Atlanta (Metro) 1979
- Baltimore (Metro) 1983



- Boston (Red, Blue, Orange Lines) 1901; also CR (MBTA)
- Chicago ("L") 1892, also CR (Metra)
- Cleveland (Red Line) 1955
- Los Angeles (Red line) 1990; also CR (MetroLink)
- Miami (MetroRail) 1984; also CR (TriRail)
- New York City - Newark (NYCTA IRT, IND-BMT, and SIRT Lines) 1867, (PATH Lines) 1908; also CR (LIRR, Metro North, NJT)
- Philadelphia (PATCO Lindenwold Line) 1969, (SEPTA Market-Frankford, Broad Street) 1908; also CR (NJT, SEPTA)
- San Francisco - Oakland (BART) 1972; also CR (CalTrain)
- Washington, DC (Metro) 1976; also CR (MARC, VRE)

The following cities have commuter rail (regional rail, suburban rail), but not heavy rail; and, therefore, are *not* coded as having heavy rail: 2001:

- New Haven (Shore Line East)
- San Diego (Coaster) 1995
- Syracuse 1994

MSASIZE - Population size category of the Metropolitan Statistical Area (MSA) for the household's home address. The source used was the Total Population by MSA from Census 2000 STF1. The variable is derived as follows:

- 01 = MSA of less than 250,000.
- 02 = MSA of 250,000 to 499,999.
- 03 = MSA of 500,000 to 999,999.
- 04 = MSA or CMSA of 1,000,000 to 2,999,999.
- 05 = MSA or CMSA of 3 million or more.
- 06 = Not in a MSA.

NONHHCNT - Number of non household members on travel day trip. Derived by subtracting TRPHHACC (G44) (household members accompanying respondent on trip) from TRPACOMP (G43) (total number of people accompanying respondent on trip). If G43 = 0, then set NONHHCNT to 0.

Note: The number of non-household member on the trip (NONHHCNT) was asked directly in the 2001 NHTS, but this question was dropped in 2009, so this number is now derived from the difference between the total people on the trip and the household members.

NUMADLT - Count of adults, household members 18 and older in household. Derived by using the age reported in AGE (C8) and AGERANGE (C10) (a value of 01 indicates the age is 18 or older). If both C8 and C10 are missing, use the imputed age. Include persons with final result code NG. Exclude persons with a final result code beginning with ND or O.

Note: NG refers to household members deployed overseas. ND refers to a household member who was enumerated but was deceased at the time that the extended interview was attempted. O codes are other out of scope, i.e., people originally enumerated as part of the household, but later found to not be a household member, such as someone visiting.



NUMONTRP - Total count of people on travel day trip, including subject. Derived from TRPACCOMP (G43) (total number of people accompanying respondent on trip) using the rules:

- If TRPACCOMP < 0 then NUMONTRP = 1
- Otherwise, NUMONTRP = TRPACCOMP + 1.

ONTD_P1 through ONTD_P15 – Specifies which household members were on a particular Travel Day trip. Derived from the person number of household members present on the trip.

PSGR_FLG - Indicates that this respondent was a passenger on a Travel Day trip. If TRPTRANS (G34) has a value of 1-8 and WHODROVE does NOT equal PERSONID then PSGR_FLG = 01. If TRPTRANS (G34) has a value of 1-8 and WHODROVE does equal PERSONID then PSGR_FLG = 02. Otherwise PSGR_FLG = -1.

PUBTRANS – Identifies Transit Trips ‘01’=‘Yes’ (some part of this trip was on transit) or ‘02’ = ‘No’. For NHTS publications, public transit is defined as including modes 09- Local public bus, 10- Commuter bus, 16-Commuter train, 17-Subway/elevated train, or 18- Streetcar/trolley. Other users may use different definitions.

R_SEX - Gender of subject. Derived from SEX (C8). If SEX = M then R_SEX = 01, if SEX = F then R_SEX = 02.

RAIL - Indicates whether the household is located in a MSA with heavy rail (see MSACAT). Derived from MSACAT (derived). If MSACAT is 01, RAIL is 01 (MSA has heavy rail). Else, RAIL is 02.

RESP_CNT - Count of total responding persons in the household, all ages. A responding person is one who completed a person-level interview (either by self or proxy). Derived by counting the number of persons with a final result code beginning with a "C" (MAINRSLT = C1 or C2) meaning Completed Self or Completed Proxy.

SFWGT – Weight for Safe Routes to School data. For households with members from 5 to 15, one household member is randomly selected to have data collected on their travel to and from school.

STRTIME – Trip begin time in military format. Derived from STRTHR, STRTMIN, and STRTAMPM.

TDAYDATE – The year and month of the household’s Travel Day, listed in YYYYMM format. TDAYDATE ranges from March 2008 to April 2009.

TDTRPNUM – The Travel Day Trip Number. Trips for each respondent are numbered consecutively by start time.

TDWKND – Indicates whether the travel day trip was made on a weekend. For NHTS the weekend designation includes trips with a start time of 6pm or later on Friday through trips with a start time up to midnight on Sunday night.

TRACCTM – Time taken to get to a public transportation mode on a travel day trip, converted to minutes. Derived by converting LONGTOHR, LONGTOMN (G36) to minutes. If



LONGTOHR or LONGTOMN = -1 then TRACCTM = - 1, otherwise TRACCTM = -9.

TRAVDAY – Day of the week of the household’s assigned travel day.

TREGRTM - Time take to get from public transportation to the trip destination on a travel day trip, converted to minutes. Derived from LONGFRHR and LONGFRMN (G39). If LONGFRHR or LONGFRMN = -1 then TREGRTM = - 1, otherwise TREGRTM = -9.

TRIPPURP – generalized purpose of the trip, home-based and non-home based. Includes:

- HBW = Home-based Work
- HBSHop = Home-based Shop
- HBSocRec = Home-based Social/Recreational
- HBO = Home-based Other
- NHB = Non Home-based

This variable is created using information from WHYFROM and WHYTO (G26).

TRPHHACC - Number of household members with respondent on trip. Derived by counting the number of variables WHOACC1 through WHOACC15 (see question G45) that have values greater than or equal to “01”.

TRPMILES - Travel day trip distance in miles, whether originally reported in miles or blocks. Derived from TRIPDIST and TRIPUNIT (G40). If TRIPDIST = 0 then TRPMILES = 0.5. If TRIPDIST and TRIPUNIT are greater than zero then if TRIPUNIT is in blocks, convert 9 blocks to 1 mile else set TRPMILES equal to TRIPDIST in miles. Otherwise, set TRPMILES equal to TRIPDIST. If the trip is reported by more than one household member and there is a discrepancy on the distance, use the data reported by the driver.

TRVLCMIN - The calculated travel time in minutes. Derived from TRVL_HR and TRVL_MIN and is used to compute the start and end time of a trip. (G34)

TRVL_MIN - Time to complete entire travel day trip in minutes. Derived from TRVL_HR and TRVL_MN (G42):

- If TRVL_HR and TRVL_MN equal -1 then TRVL_MIN is set to -1.
- If TRVL_HR equals -1 and TRVL_MN is greater than or equal to 0 then TRVL_MIN = TRVL_MN.
- If TRVL_HR is greater than or equal to 0 and TRVL_MN equals -1 then TRVL_MIN = TRVL_HR * 60 rounded to 1 significant figure.
- If TRVL_HR and TRVL_MN are both greater than or equal to 0 then TRVL_MIN = (TRVL_HR * 60) + TRVLMIN (rounded to 1 significant figure)
- Otherwise, TRVL_MIN = -9.

If the trip is reported by more than one household member and there is a discrepancy, use the data reported by the driver. TRVL_HR and TRVL_MN need to be copied to the trip record for each household member with a completed interview.

TRWAITTM - Time spent waiting for public transportation on travel day trip in minutes. Derived from WAIT_MIN (G37) and WAIT_HR (G37). If WAIT_MIN and WAIT_HR are greater than -1

2009 National Household Travel Survey



then $TRWAITTM = WAIT_HR * 60 + WAIT_MIN$. If $WAIT_MIN$ is greater than -1 and $WAIT_HR$ is less than -1 then $TRWAITTM = WAIT_MIN$. If $WAIT_HR$ is greater than -1 and $WAIT_MIN$ is less than -1 then $TRWAITTM = WAIT_HR * 60$. If $WAIT_HR$ and $WAIT_MIN$ both equal -1 then $TRWAITTM = -1$. Otherwise $TRWAITTM = -9$.

URBAN - The household's home address is in an urbanized area. The source used is Urban Areas: 2000 Urbanized Areas: Cartographic Boundary Files. File ua00_d00.shp from <http://www.census.gov/geo/www/cob/ua2000.html>. The categories are:

- 01 = Urban Area, in Urbanized Area
- 02 = Urban Area, in Urban Cluster
- 03 = Urban Area, surrounded by Urban Areas
- 04 = Not in an Urban Area

URBANSIZE - Indication of size of urbanized area in which household is located.

Code	Population of Urbanized Area
01	50,000 – 199,999
02	200,000 – 499,999
03	500,000 – 999,999
04	1 million or more without heavy rail
05	1 million or more with heavy rail
06	Not in an urbanized area

Note: The population information is based on data from the 2000 Census.

URBRUR - Whether the household is in an urban or rural area. URBRUR is based on the value of URBAN: If URBAN = 01, 02, or 03, then URBRUR = 01 (Urban)
If URBAN = 04, then URBRUR = 02 (Rural)

VARSTRAT – The linearization variance stratum used to calculate standard errors.

VEHAGE – The derived age of the vehicle, based on model year (VEHYEAR). Current model year vehicles are considered one (1) year old.

VEHOWNMO - How long the vehicle has been owned, converted to months. Derived from VEHOWNED and OWNUNIT (L8). VEHOWNED is the number variable and OWNUNIT represents days, weeks, months, or years.

VMT_MILE – The miles for trips where a vehicle was driven. Derived from TRPMILES and TRPTRANS= 01-07. VMT_MILE excludes trips in vehicles where Vehicle Type is Refused, Don't Know, Golf Cart, and Other. Value is missing when not a vehicle trip.

WHYFROM - Location from which the trip started. If this is the first trip of the travel day, and the person started from home, then the value of WHYFROM = "01" ("Home"). If this is the first trip of the travel day and the person did not start from home, then the value of WHYFROM is the value of AWAYHOME (G25). If this is the second or subsequent trip of the day, then the value of WHYFROM is the value of WHYTO (G26) for previous trip.



2009 National Household Travel Survey

WHYTRP1S - Travel day trip purpose summary. The variable is derived from AWAYHOME or WHYTO as appropriate by “rounding down” to the major category ending in zero, as described in the following list. The code for “Home,” however, remains “01”:

- 01 = HOME
- 10 = WORK
- 20 = SCHOOL/DAYCARE/RELIGIOUS ACTIVITY
- 30 = MEDICAL/DENTAL SERVICES
- 40 = SHOPPING/ERRANDS
- 50 = SOCIAL/RECREATIONAL
- 60 = FAMILY PERSONAL BUSINESS/OBLIGATIONS
- 70 = TRANSPORT SOMEONE
- 80 = MEALS
- 90 = MISC REASONS

WHYTRP90 -Travel day trip purpose consistent with NHTS/NPTS trend data (originally in the 1990 NPTS). The variable is derived from WHYFROM and WHYTO and assigns the trip and miles to the outbound destination. There is no code for trips to or from “Home” because these trips have been re-coded to the purpose of the outgoing trip(s). The codes are as follows:

- 01 = To and From Work
- 02 = To and From Work Related
- 03 = To and From Shopping
- 04 = To and From Family and Personal Errands
- 05 = To and From School and Church
- 06 = To and From Medical or Dentist
- 07 = To and From Vacation
- 08 = To and From Visiting Friends and Family
- 10 = To and From Other Social and Recreational
- 11 = To and From Other
- 98 = Not Ascertained
- 99= Refused

WKSTFIPS - State FIPS Code for the subject's work address. The source used was the United States Census Bureau State and County: 2000 County and County Equivalent Areas: Cartographic Boundary Files. File co99_d00.shp from <http://www.census.gov/geo/www/cob/co2000.htm>. A -9 indicates that we were unable to geocode the state where the workplace is located.

Note: Used the most current files for the 2008/2009 calendar year.

WORKER - Indicates whether the subject is a worker. If AGE is less than 16 then WORKER = -1. If PRMACT is less than zero or missing and PAYPROF is less than zero or missing then WORKER = -9. The subject is a worker (WORKER = 01) if either PRMACT (E3) = 01 or 02, or PAYPROF (E4) = 01. Otherwise WORKER = 02.

WORKLOC - The variable indicates whether the subject worked from home, a fixed work place or had some other work arrangement. The variable is derived as follows:

- If WKSTNUM (E10) = -1, -7, -8, or -9 then WORKLOC = WKSTNUM.
- If WKSTNUM = HOME then WORKLOC = 02

2009 National Household Travel Survey



If WKSTNUM = NONE then WORKLOC = 03

If WKSTNUM does not equal missing and WKFMHMXX (E20) > 0 then WORKLOC = 04
else WORKLOC = 01

Otherwise WORKLOC = -9.

The meaning of each positive value is:

01 = Workplace

02 = Works Only at Home

03 = No Fixed Workplace

04 = Home and Work

WRKCOUNT - The number of household members that are workers. Derived by summing all occurrences of derived variable WORKER = 01 within each household. .

WTHHFIN - Final household weight for households where at least 50 percent of household members 18 and over completed a person interview.

WTPERFIN- Final person weight for households where at least 50 percent of household members 18 and over completed a person interview.

WTTRDFIN - Final travel day trip weight for persons in households where at least 50 percent of household members 18 and over completed a person interview. WTTRDFIN = 365 x WTPERFIN.

YRMLCAP - Flag indicates that the variable YEARMILE (L5) was capped at 200,000 miles. If YEARMILE is less than zero then YRMLCAP = -1. If YEARMILE is greater than or equal to 200,000 then YRMLCAP = 01. Otherwise YRMLCAP = 02.



Renamed Variables and Geography-Related Variables

Table 1 lists CATI variable names and the names of the same variables in the delivery files when they have been renamed for delivery purposes.

Table 2 lists variables associated with geography. Most of these variables are determined by looking up a location collected during the interview in a standard reference source. The table lists the variable name; its descriptive label; the reference source, if any; and the derivation number in this document, if applicable.

Table 1. CATI Variables Renamed For Delivery

CATI Variable Name	Delivery Name
AGE	R_AGE
BASEID	HOUSEID
BIKETRIP	NBIKETRP
DTRIPID	TDCASEID
HH_RELAT	R_RELAT
HHFAMINC	HHFAMINC_C
HOWFRP1-5	TREGRI-5
HOWPUB1-5	TRACC1-5
PERSNUM	PERSONID
REFRSPX	HHRESP
RESPROXY	PROXY
WHENTOUS (M10)	YRTOUS



The following table lists variables associated with geography. Most of these variables are determined by looking up a location collected during the interview in a standard reference source. The table lists the variable name, the descriptive label, and the reference source, if any.

Table 2. Geography-Related Variables

Variable	Question Number	Description	Source
CDIVMSAR	DV_1*	Concatenation of variables CENSUS_D and MSACAT	
CENSUS_D	DV_2*	Census division classification for home address	b
CENSUS_R	DV_3*	Census region classification for home address	c
GCDWORK	DV_12*	Great circle distance between home and work	
HH_CBSA	DV_64*	CBSA FIPS code for household address	a
HHC_MSA	DV_17*	The CMSA or MSA code for the household's home address	e
HHMETDIV	DV_66*	Metro Division FIPS code for household address	f
HHSTATE	DV_19*	State household location	e
HHSTFIPS	DV_20*	State FIPS for household address	e
MSACAT	DV_28*	MSA category for the household home address	
MSASIZE	DV_29*	Population size category of the MSA for the household home address	g
RAIL	DV_38*	MSA heavy rail status for household location	h
URBAN	DV_47*	Home address in urbanized area	i

See Source Values of -1 are instances where no valid value is defined; for example, HHC_MSA = -1 for a household that is not located in a CMSA or MSA of a million or more. Values of -9 indicate that insufficient information was ascertained to code the variable.

Key to Source Codes:

- a. 2007 Metropolitan/Micropolitan Statistical Area: 2007 TIGER/LINES. File fe_2007_us_cbsa.shp from <http://www.census.gov/cgi-bin/geo/shapefiles/national-files>
- b. Census Division: 2000 Census Division: Cartographic Boundary Files. File dv99_d00.shp from <http://www.census.gov/geo/www/cob/dv2000.html>
- c. rg99_d00.shp from <http://www.census.gov/geo/www/cob/rg2000.html>
- d. 2007 Combined Statistical Area: 2007 TIGER/LINES. File fe_2007_us_csa.shp from <http://www.census.gov/cgi-bin/geo/shapefiles/national-files>
- e. TeleAtlas' Matchmaker SDK Professional v8.3
- f. 2007 Metropolitan Division: 2007 TIGER/LINES. File fe_2007_us_metdiv.shp from <http://www.census.gov/cgi-bin/geo/shapefiles/national-files>
- g. MSA: 1999 Metropolitan Statistical Area: Cartographic Boundary Files. File ma99_99.shp from <http://www.census.gov/geo/www/cob/ma1999.html>
- h. Federal Highway Administration



2009 National Household Travel Survey

- i. "Urban Areas: 2000 Urbanized Areas: Cartographic Boundary Files. File ua00_d00.shp from <http://www.census.gov/geo/www/cob/ua2000.html>
- j. United States Census Bureau State and County: 2000 County and County Equivalent Areas: Cartographic Boundary Files. File co99_d00.shp from <http://www.census.gov/geo/www/cob/co2000.htm>