APPENDIX Q

TRACT AND BLOCK GROUP VARIABLES

WHY ADD THESE VARIABLES

These variables were added to describe the characteristics of the areas where the NHTS survey respondents live. This allows the data analyst to look for patterns in travel behavior, not only by individual characteristics, but by neighborhood characteristics. The data user can examine how characteristics such as population density, housing density, renter occupancy rate, and urbanicity of the household location may affect individual travel behavior.

TYPICAL NHTS HOUSEHOLD

For example, the respondents from our typical NHTS household, Amy and Keith, live in a townhouse in the suburbs of a metropolitan area. The neighborhood that they live in (at the block group level) is a mix of detached homes and townhouses and apartments. There are approximately 2,500 housing units per square mile in their neighborhood. Is their travel more like people who live in medium-density mixed housing in other neighborhoods, or is their travel more like other people who live in lower-density single family detached houses in their neighborhood or other neighborhoods like it? The tract and block group variables allow an examination of these similarities and differences.

SOURCE OF TRACT AND BLOCK GROUP DATA

The data contained in these variables was derived from 2000 Census data and estimated forward to 2001 by Claritas, Inc. An annual demographic update is developed by this company to serve as a source of estimates of population, household, and housing unit characteristics. These estimates are made at relatively small units of geography, such as census tracts and block groups, which make this update effective for use in supplementing the NHTS data. The update is a comprehensive process that relies on a number of data sources, including regional and city planning agencies, federal agencies (e.g., Bureau of Labor Statistics, Bureau of Census, Bureau of Economic Analysis) U.S. Postal Service, the direct mail industry, the real estate industry, and experts in the fields of geographic information systems and mapmaking.

VARIABLE NAMING SCHEME

The variable names were designed so that:

- many of these variables would fall together in an alphabetic listing, and
- the variable name would help in describing the contents.

The naming scheme is:

First letter -	H for household descriptor
Second letter -	B for block group level data T for tract level data
Third letter of Household variables -	H for housing characteristic P for population characteristic.

For example, HTHRESDN is a household descriptor, at the tract level, describing a housing characteristic, specifically, residential density (RESDN).

The last 5 letters of the variable describe the data in the variable, e.g. POPDN = population density.

The set of tract and block group variables derived by Claritas are:

HOUSEHOLD DESCRIPTOR, BLOCK GROUP LEVEL

HBHRESDN - housing units per square mile
HBHTNRNT - percent renter-occupied housing
HBHUR - urban/rural code (see below)
HBPPOPDN - population density (persons per square mile)

HOUSEHOLD DESCRIPTOR, TRACT LEVEL

These are the same as the Block Group variables, but a “T” (tract) replaces the “B” (block group) in the second letter of the variable name. There is one additional household descriptor variable at the tract level that is related to the amount of employment in the residence census tract:

HTEEMPDN - jobs per square mile

This was added to give a picture of the degree of business activity at the residence end.

URBAN- RURAL CONTINUUM

The remainder of the Appendix describes the urban/rural continuum developed by Claritas, Inc. These variables:

HTHUR: Urban/rural code, census tract
HBHUR: Urban/rural code, block group

should not be confused with the variable URBAN, which is the urbanized area status of the sample household.

The categories of the Urban/Rural Continuum, and the distribution of NHTS households within these categories, are presented in the following two tables. The first table shows the distribution of the weighted sample, which estimates the national distribution of households across the urban/rural continuum. The second table presents the distribution of the unweighted (raw) NHTS sample, which represents only the distribution of the respondent households.

Urban/Rural Continuum - Distribution of Weighted NHTS Sample

	Households in NHTS **block group level**	Percent of households **block**	Households in NHTS **tract level**	Percent of households **tract level**
Urban	17,570,985	16.37	17,707,284	16.49
Second City	20,965,824	19.53	20,147,106	18.76
Suburb	25,206,250	23.48	25,796,958	24.03
Town	22,554,918	21.01	22,463,661	20.92
Rural	21,022,205	19.58	21,205,173	19.75
Subtotal	107,320,182	99.96	107,320,182	99.96
Not Ascertained	45,163	0.04	45,163	0.04
Total	107,365,345	100.0%	107,365,345	100.0%

Urban/Rural Continuum - Distribution of Unweighted NHTS Sample

	Households in NHTS **block group level**	Percent of households **block**	Households in NHTS **tract level**	Percent of households **tract level**
Urban	7,809	11.18	7,861	11.26
Second City	14,836	21.25	14,416	20.65
Suburb	14,260	20.42	14,632	20.96
Town	17,258	24.72	17,307	24.79
Rural	15,630	22.39	15,577	22.31
Subtotal	69,793	99.97	69,793	99.97
Not Ascertained	24	0.03	24	0.03
Total	69,817	100.0%	69,817	100.0%

BACKGROUND OF URBAN-RURAL

Claritas, Inc. developed an urban-rural dimension to incorporate into their lifestyle cluster system, which is used primarily for research and marketing applications. The goal was to establish objective classifications that were less boundary-dependent than previous topologies.

URBAN- RURAL VARIABLE

The classification that is reflected in the Urban/Rural variable is based on population density, but not just the density of a specific geography, but the density in context of its surrounding area, or “contextual density”. To establish this classification, the United States was divided into a grid to reduce the impact of variation in size (land area) of census tracts and block groups. Density was converted into centiles, that is, the raw numbers (persons per square mile) were translated into a scale from 0 to 99.

“Rural” (centiles 19 and less) and “small town” (centiles 20 to 39) definitions are based solely on the density. Population centers were defined if a route through the 8 neighboring cells could be constructed in which the density of successive cells was decreasing or equal. Population centers with centiles greater than 79 were designated “urban.” Other centers were classified as “second cities.” Finally, “suburban” areas of the population centers were defined, using both the cell density and the cell’s density relative to the population center’s density.

Reference: David R. Miller and Ken Hodges, “A Population Density Approach to Incorporating an Urban-Rural Dimension into Small Area Lifestyle Clusters.” Paper presented at the Annual Meeting of the Population Association of America, Miami, Florida, May 1994.