## US Census Variables

The US Census 2000 data used are from the STF1 and STF3 surveys as appropriate for the variable in question. The 2005-2009 American Community Survey data (ACS) is also used to link to the data to give time varying measures. Both the US Census 2000 data and the 2005-2009 American Community Survey data are downloaded from “*American Fact Finder*” website.

Census level variables are linked to the JHS addresses based on the year of the address (either 2000 Census for years 2000-2004 or 2005-2009 ACS for years 2005-2012). The cutpoint of Jan 2005 was chosen to reflect the starting period of the ACS2005-2009 data sample. See Table 1 for the time breakdown of the census data.

### Table 1: Timing of Census data (Census 2000 and ACS2005-2009) linked to address data

|  |  |
| --- | --- |
| Time of address | Year of Census data used |
| Jul 2000-Dec 2004 | 2000 Census |
| Jan 2005-Feb 2012 | 2005-2009 ACS |

The population density variables are based on total population counts from SF1 from Census 2000 and Census 2010, not the ACS2005-2009 data because ACS is based on a sample. For the census 2000 boundaries for census tracts, the total population in the year 2000 can be directly derived from the block level population file that was downloaded. To create the census tract population, the blocks that fall in each tract were identified using the block ID. The populations for the blocks were then summed together by census tract ID using proc means in SAS 9.3. The same method was applied for block groups. To maintain consistent census tract boundary definitions, the census 2000 boundaries are used as the base. Since census tract boundaries in 2010 are not the same as in 2000, the total population in 2010 cannot be directly calculated from the downloaded census population data. To obtain the 2010 population counts within the census 2000 tract boundaries, we intersected the 2010 blocks (with population counts) with the 2000 census tracts. The total population is then calculated by creating a frequency table for the block populations in 2010 within each 2000 census tract. When a block was not fully contained within a boundary, its population was assumed to be uniform within each block and was assigned in direct proportion to the area of the block contained within the tract.

Population density was created for both 2000 and 2010 populations for the census 2000 boundaries by the formula:

Population density = (Total Population/Total Area in meters square)\*1000000

See Table 2 for the time breakdown of the population density measures. The cutpoint of Jan 2006 was chosen to reflect the approximate midpoint between Census 2000 and Census 2010. Note that the timeline for the census score variables based on the Census 2000 and ACS2005-2009 is slightly different from the timeline for the population density. This is because the density is derived from 2000 and 2010 data rather than 2000 and ACS data (and the timeframe for the collection of ACS and 2010 census data is different

### Table 2: Timing of Population Density Census data (Census 2000 and Census2010) linked to address data

|  |  |
| --- | --- |
| Time of address | Year of Census data used |
| Jul 2000-Dec 2005 | 2000 Census |
| Jan 2006-Feb 2012 | 2010 Census |

In addition to the Census 2000 and ACS 2005-2009, data is available for Census 2010 for race/ethnicity composition. For these measures, an additional set of variables is created that includes an additional time point. This was done in order to allow for more time varying data that could be of interest to investigators. . See Table 3 for the time breakdown of the race/ethnicity census measures.

### Table 3: Timing of Race/Ethnicity Census data (Census 2000, ACS2005-2009, and Census2010) linked to address data

|  |  |
| --- | --- |
| Time of address | Year of Census data used |
| Jul 2000-Dec 2004 | 2000 Census |
| Jan 2005-Dec 2009 | 2005-2009 ACS |
| Jan 2010-Feb 2012 | 2010 Census |

Reference

This document is created based on the “Census Data” section in the documentation of longitudinal neighborhood data of the MESA study. To find the original documentation, please go to <https://ctools.umich.edu> and select the document via “MESA Neighborhood Resources / Documentation Files / Longitudinal Data/ Documentation of longitudinal neighborhood data.docx”.