

## **Supporting Statement B, Attachment B: Household Pulse Survey: Weighting Approach**

The Household Pulse Survey is designed to produce estimates at three different geographical levels. The first level, the lowest geographical area, is for the 15 largest MSAs. The second level of geography is for state-level estimates for each of the 50 states, and the final level geography are national-level estimates.

Sampling rates within each county are determined at the state level. If a county is part of an MSA and requires more sample at the county level based on the MSA sampling size requirements, then more sample will be included in the MSA counties to satisfy the MSA level sample size requirements. An example is the Washington-Arlington-Alexandria, DC-VA-MD-WV MSA. In this MSA the required sampling interval is smaller than the Maryland sampling interval; thus, requiring more sample in the MSA counties of Maryland compared to the balance of the state. These sampling rates are the basis for the base weights of the sample.

The weighting procedure will iteratively control the sample data to 2018 American Community Survey (ACS) educational attainment estimates and independent estimates of population living in housing units on July 2020 for several demographic groups at the county level. Educational attainment (four groups – no high-school diploma, high-school diploma, some college, bachelor's degree or higher), age (five groups – 18-24, 25-34, 35-44, 45-64, 65 and older) and sex groups will be formed within each state for controlling to ACS estimates. Race/ethnicity (four groups – Hispanic, non-Hispanic white, non-Hispanic black, and non-Hispanic residual), age (nine groups – 18-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-64, 65 and older) and sex groups will be formed within each state for controlling to independent population estimates.

The weighting procedure will be applied within each state and consist of four adjustments that will be applied to the base weights to account for nonresponse and coverage of the demographics of the interviewed persons. These adjustments are:

- the household nonresponse adjustment to account for households that do not respond to the survey,
- an adjustment to control the weights to the occupied housing unit counts using the ACS occupied housing unit estimates based on the 2018 estimates, and
- an adjustment to account for the number of adults within the housing unit
- a two-step iterative raking procedure raking the demographics of the interviewed persons to educational attainment/age/sex population distributions and race/ethnicity/age/sex population distributions – note that the educational attainment adjustments will be applied

as the first step In the raking procedure and the race/ethnicity adjustments will be the second step.

Within the states, we will assess the number of interviewed cases by the demographic groups to determine if collapsing will be necessary before we apply the raking procedure.