

## **Methodology for the Subcounty Total Resident Population Estimates (Vintage 2011): April 1, 2010 to July 1, 2011**

### **BACKGROUND**

The U.S. Census Bureau produces estimates of total resident population for all areas of general-purpose government on an annual basis. The subcounty areas consist of both incorporated places, such as cities, boroughs, and villages; and minor civil divisions such as towns and townships. We use updated housing unit estimates to distribute county population to subcounty areas based on housing unit change. We produce county population estimates with a component of change population method, which updates the latest census population using data on births, deaths, and domestic and international migration. A more detailed description of the county estimates methodology is available at:

[www.census.gov/popest/methodology/2011-nat-st-co-meth.pdf](http://www.census.gov/popest/methodology/2011-nat-st-co-meth.pdf).

A description of the housing unit methodology is available at:

[www.census.gov/popest/methodology/2011-hu-meth.pdf](http://www.census.gov/popest/methodology/2011-hu-meth.pdf).

### **METHOD**

The Census Bureau develops subcounty population estimates for the household and group quarters populations and adds them together. To estimate the household population, the Census Bureau applies the “Distributive Housing Unit Method,” to distribute the county population to subcounty areas within each county.<sup>1</sup> Base counts of 2010 Census housing units and associated population are annually updated to reflect legal changes to governments reported in the Boundary and Annexation Survey (BAS), other geographic program revisions, and census corrections.

#### **Step 1. Producing an Uncontrolled Subcounty Household Population Estimate**

The uncontrolled subcounty household population estimate begins with the July 1, 2011 housing unit estimate. We multiply this estimate by the 2010 Census rate of overall housing unit occupancy to produce the uncontrolled population estimate.

#### **Step 2. Producing a Controlled Subcounty Household Population Estimate**

The next step in producing a household population estimate is to control the uncontrolled subcounty estimates to the published county totals. To do this, we divide the 2011 county household population estimate by the sum of all of the uncontrolled subcounty household population estimates within the county. We multiply this quotient by the uncontrolled subcounty household population estimate calculated in Step 1. This calculation produces the controlled subcounty household population estimate.

#### **Step 3. Group Quarters Population Estimate**

The group quarters component of the total estimate is a combination of institutional facilities and noninstitutional facilities. The institutional facilities include 4 types:

- persons living in juvenile facilities
- persons living in nursing homes
- inmates of correctional facilities

- persons in other institutional group quarters.

The noninstitutional facilities include 3 types:

- military personnel living in barracks
- college students living in dormitories
- persons in other noninstitutional group quarters.

We use group-quarters population data from two sources to estimate subcounty populations:

- 2010 Census counts of group-quarters population by facility type for each subcounty area, and
- A time series of individual group-quarters records from the Group Quarters Report (GQR) that the Population Estimates Program prepares based upon annual updates from State representatives of the Federal-State Cooperative for Population Estimates (FSCPE).

We use these two sets of group-quarters population data to derive a time series of group-quarters population through the following process:

Part 1. We sum the facility-level group quarters populations from the GQR to the subcounty level by the seven facility types for each estimate date in the time series. Then, we calculate the year-to-year change indicated by the aggregated GQR time series of population.

Part 2. We aggregate the group quarters population from the 2010 census to the subcounty level by the seven facility types. Then, we apply the time series of numeric year-to-year change to the 2010 census data to create a census-based time series of group quarters population at the subcounty level for each of the seven facility types. Finally, we add the facility types together to create an estimate of the total population in group quarters.

#### **Step 4. Final Subcounty Population Estimate**

To produce the final subcounty population estimate, we add the controlled household population estimate and the group quarters population estimate together.

#### **USER NOTE**

The estimates base populations for the unincorporated part of Gadsden County, FL and Rockwell City city, IA (located in Calhoun County) include different group quarters population than enumerated in the 2010 Census. After comparison with other Census Bureau data collection efforts, the Census Bureau determined that the 2010 Census enumeration of the group quarters population in these areas was incomplete. Although not eligible to be incorporated into the Count Question Resolution program, the Census Bureau concluded that adding the additional group quarters population for these two areas to the population estimates base would provide more accurate estimates for each area in 2010 and subsequent years.

Note that summing the subcounty areas within Gadsden County, FL and Calhoun County, IA will not produce the corresponding county and state totals. The county and state totals in this subcounty release for April 1, 2010 through July 1, 2011 agree with those released earlier this year, prior to this modification.

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<sup>1</sup> Includes the following statistical equivalents: parishes (Louisiana), boroughs, municipalities, and census areas (Alaska), and the independent cities in Maryland, Missouri, Nevada, and Virginia.