

**PREPARED STATEMENT OF
CHARLES LOUIS KINCANNON
DIRECTOR
U.S. CENSUS BUREAU**

*“Two Plus Two Should Never Equal Three:
Getting Intercensal Population Estimates Right the First Time”*

**Before the Subcommittee on Federalism and the Census
U.S. House of Representatives**

6 September 2006

Good morning. On behalf of the U.S. Census Bureau, I want to thank Chairman Turner and the members of the Subcommittee for the opportunity to discuss our intercensal estimates of population.

These estimates are produced by the Population Estimates Program, which is part of the Demographic Directorate at the Census Bureau, in cooperation with representatives from each of the states. Each year, we produce more than 39,400 sub-national estimates of total population, including estimates for every state, county, and incorporated place or city, and estimates of the population by age, sex, race, and Hispanic origin for the nation, states, and counties, in accordance with Section 181 of Title 13 of the U.S. Code. According to this section, “during the intervals between each census of population

required under section 141 of this title, the Secretary, to the extent feasible, shall annually produce and publish for each state, county, and local unit of government...current data on total population and population characteristics....” The population estimates provide updates for the intervening years between censuses and are often used for the distribution of federal and state funding.

We produce these estimates by one of two methods. The first, an *administrative records component of population change* or *component method*, is used to produce estimates at the state and county levels. This method accounts for births, deaths, net domestic migration, net international migration, and net movement of the military to and from overseas. For sub-county estimates, we use a *distributive housing unit method*. This method takes into account factors such as residential construction, mobile home shipments, and demolition rates. Subcounty population estimates are then controlled to the county population totals.

History of Population Estimates

The population estimates program has a long history at the Census Bureau. The first population estimates were produced by the agency in the early part of the twentieth century, using simple linear projections based on the previous two censuses of population. By the 1920s, the Census Bureau had developed other methods based on national birth and death registrations and apportioning change since the last census to subnational areas. However, by 1934 the estimates produced using this approach became unreliable and were temporarily discontinued. In 1936, the Census Bureau produced the first series of state estimates that accounted separately for the components of population change, net migration and natural increase. Considerable research was directed to develop sub-national estimates. Several methods were considered, including the use of indicators such as school enrollment, voter registrations, utility

customer lists, and city directories. The foundation for each of these estimates methodologies was the decennial census of population.

With World War II, the nation experienced tremendous population change, and there was an urgent need to produce timely estimates of population to assist in national defense efforts. Also during that period, the United States government implemented a ration program administered by the Office of Price Administration and Civilian Supply. The rationing program provided timely information about the population independent from the census, and the Census Bureau was able to produce fairly reliable estimates for states, counties, and metropolitan areas. After the war, the ration program ended, and that source of information was no longer available. In 1946, the Census Bureau produced a comprehensive report exploring the use of two innovative component methods, demonstrating the potential of using a variety of information to produce estimates at sub-national levels. During the rest of the decade, the agency cooperated with other agencies and researchers, exploring the component method.

In 1953, Henry S. Shryock, Jr., Assistant Chief of the Population and Housing Division, proposed a formal cooperation between the Census Bureau and the states. This report, P-25, No. 81, suggested a greater role for the states in the production of population estimates. According to Shryock, an important purpose of consultation with the states “would be to discuss our present estimate series with the leading customers and get their criticisms.” In addition, he suggested the Census Bureau would also be able to obtain better information about local areas.

In 1967, with the creation of the Federal State Cooperative Program for Population Estimates (FSCPE), the Census Bureau established a partnership between the agency and the states. The creation of the FSCPE coincided with the establishment of the

statutory mandate to produce the annual estimates of population and characteristics. The FSCPE organization promotes cooperation and information sharing to produce a set of consistent population estimates for every state, county, and place in the United States.

Population Estimates in Contemporary Times

The population estimates released annually by the Census Bureau are the product of this long-standing, valued partnership with the states. This partnership is alive and thriving today, and every state, as well as the District of Columbia and Puerto Rico, is a participating member. We work together each year to produce a set of consistent, timely estimates for every state, county, and incorporated place—more than 39,000 estimates.

The states supply information such as state and county vital statistics, and information about the location and population of group quarters, including college dormitories, prisons, and other facilities. This information is crucial to updating the population estimates. The Census Bureau obtains other administrative records information from federal agencies, including tax and Medicare records, as well as some vital statistics information. The Census Bureau and the states work together to analyze statistical models that combine the previous census information with the administrative records information to produce current population estimates. After these estimates are created, staff in the Population Estimates Program sends the numbers to the FSCPE representatives for their review.

Counties are a crucial element of the population estimates because they are the primary legal divisions of most states, even though their functions and powers vary from state to state. There are 3,141 counties, or county equivalents, across the United States.

Incorporated places and minor civil divisions are also important. There are more than 36,000 incorporated places and minor civil divisions within the United States.

Figure 1: Population Estimates by Geographies

Geography	Number of Estimates
National	1
States, the District of Columbia, and Puerto Rico	52
Counties and County-Equivalents ¹	3,141
Incorporated Places	19,418
Minor Civil Divisions	16,893
Consolidated Cities	7
Census Regions and Divisions	13

The Census Bureau uses the method known as the *administrative records components of population change* to produce county level estimates. State population estimates are formed by summing all county populations within the state. To obtain an estimate of the household population at the county level, we start with the base populations from the census. We add the estimated number of births, and subtract the estimated number of deaths that occurred in each county during that year. We then add an estimate of the net number of people moving into and out of each county, which includes both net international migration and net domestic migration. We also add an estimate of the net movement of the military to and from overseas. We incorporate changes to the non-household population by including the measurements of the net change in the population living in group quarters, which are supplied by the FSCPE state representatives. The next year’s estimate starts with the current estimate as its base, and the process is continued.

¹ County equivalents include legally organized boroughs (also known as census areas) in Alaska, parishes in Louisiana, municipios in Puerto Rico, and the independent cities in Maryland, Missouri, Nevada, and Virginia which are independent of any county organization. The Census Bureau refers to these cities as independent cities and treats them as the equivalent of counties for the purposes of producing estimates.

Figure 2: Administrative Records Components of Population Change

$$P_2 = P_1 + B - D + \text{InternatMig} + \text{DomesticMig} + \text{Net Military Movement} + \text{Change to GQ}$$

Where:

P_2 = Population estimate

P_1 = Population at most recent census

B = Births during the period since the most recent census

D = Deaths during the period since the most recent census

InternatMig = Net international migration during the period since the most recent census

DomesticMig = Net domestic migration (within U.S.) during the period since the most recent census

Net Military Movement = Net movement of the military to and from overseas

Change to GQ = Net change in the population living in group quarters

This is a straightforward and easily understood methodology that is used to produce a complex range of state and county level estimates, including age, sex, and race, as well as Hispanic origin.

The estimates for sub-county areas—incorporated places and minor civil divisions—rely on the *distributive housing unit method*. This method produces estimates using a two-step process. The first step is to create sub-county housing unit estimates. The second step is to produce sub-county population estimates based on the housing unit estimates. The housing unit estimates are created for sub-county geography by starting with the number of housing units from the previous census (i.e., Census 2000) adding estimates of new units, including new residential construction and mobile home shipments, and subtracting estimated housing unit loss (demolition). The initial sub-county household population estimates are formed by multiplying the housing unit estimates by the occupancy rate for the previous census and persons per household for each area. Then, for each county, the household population estimates are controlled to each county household population estimate from the component method approach used to produce the state and county estimates (as previously described). The estimated group quarters population in each area is added to the household population to obtain the total estimated population.

Figure 3: Distributive Housing Unit Method

$$HU_2 = HU_1 + NC - NM - HL$$

Where:

*HU*₂ = Number of housing units estimate

*HU*₁ = Number of housing units at most recent census

NC = Estimated new residential construction during the period since the most recent census

NM = Estimated new residential mobile home shipments during the period since the most recent census

HL = Estimated housing loss (demolition) during the period since the most recent census

Uses

Population estimates provide important information for decision makers at the national, state, and local levels and are essential to many federal programs and initiatives. They are used to determine program eligibility and to ensure equitable funding for a large number of federal programs, including the federal transit grants, the Crime Victim Assistance Program, the Medical Assistance Program, the Senior Community Service Employment Program, the Community Development Block Grant Program, and many others.

The Census Bureau also produces special monthly estimates of the population by demographic characteristics for four different populations: the resident population; the resident population plus Armed Forces overseas; the civilian population; and the civilian non-institutional population. The Bureau of Labor Statistics uses the estimates of the civilian non-institutional population as controls for the Current Population Survey. The Current Population Survey is the monthly survey of households that provides comprehensive information about the labor force, including the official rates of employment and unemployment. Other federal statistical agencies, such as the National Center for Health Statistics and the Bureau of Economic Analysis, use population estimates to create important indicators, such as birth rates, age-specific death rates, and per capita personal income.

The estimates are also used by the Census Bureau to provide the population controls for the American Community Survey, which was fully implemented last year with the support of this Congress. The American Community Survey replaces the long form of the decennial census with annual, relevant information for local communities. The American Community Survey provides vital information that describes how the population is actually changing, not just population decline or growth. It also provides valuable information on occupancy rate, persons per household, net international migration and net domestic migration, all of which will help improve the Population Estimates Program.

The Challenge Process

The challenge process affords an opportunity to local areas to develop and prepare an alternate population estimate using one of several established approaches that may require additional data and take into account local information. We provide information to help any local community through the process. Normally, a community contacts us by phone, email, or letter to express their concern and request a Challenge Package. This package includes the Review Guide, which describes the procedures and available alternative estimate methods; the derivation sheet that describes the data sources used to derive the Census Bureau estimate for their community; and worksheets for the local communities to use in preparing an alternative estimate. The local government is invited to provide other source material, such as building permit data, consistent with established methodologies to support its request for an alternative estimate. Staff in the Census Bureau's Population Estimates Program reviews these data and consults with the local community to address large discrepancies and other issues. If the data support an alternative estimate, we send an acceptance letter to the

local government, notify relevant agencies, and post the new estimate on the Census Bureau's website (<http://www.census.gov/popest/archives/challenges.html>). This new estimate becomes the official estimate.

Over the past years, we have received challenges from local governments throughout the United States. There were 38 challenges to the 2004 estimates out of the 39,400 official population estimates released that year, including Arlington County and Alexandria City in Virginia; several of the counties which comprise New York City (Kings, New York and Queens); Utah County, Utah; and St. Louis, Missouri. Many of the challenges we ultimately accepted were described in the media as Census Bureau "mistakes." It is not that simple. The population estimates are the result of a cooperative effort; we rely on information from other federal agencies, as well as the states to produce the one set of consistent official intercensal estimates of population intended to serve all customers. If documentation is provided that supports an alternative estimate, the original is revised – not because we didn't "get it right the first time," but because, working with the states and taking into account their additional documentation, we can arrive at a more accurate estimate.

Towards the Future

As we look to the future, we are reexamining our assumptions, methodologies, and source data, and discussing these efforts with our partners in the FSCPE, especially the states, which rely on the estimates for funding allocation. Alaska, California, and North Dakota are particularly interested in working with the Census Bureau, and have been especially active with the FSCPE and in the Census Bureau's research efforts. During the past six months, we have sponsored two research conferences, with participants from federal agencies, FSCPE members, and academia. The first examined the issue of immigration, and how the Census Bureau could better improve its estimates of

international immigration. The second conference examined the Census Bureau's current assumptions and methodologies, as well as the different user needs for population estimates.

We are reviewing our assumptions. The earlier consensus that the primary goal was to provide a consistent set of estimates for all users is changing. Many users are expressing the view that we should examine new approaches and perhaps embrace alternative or multiple methods. It is important, as we proceed, to consult with our state partners and data users. As members of Congress, you are also an important partner because your decisions affect every community in America. As we work to study alternatives, I hope that we will have the opportunity to brief you in the future.

Thank you, Mr. Chairman, and I would be happy to answer any questions.