

ESTIMATES AND PROJECTIONS AREA DOCUMENTATION STATE AND COUNTY HOUSING UNIT ESTIMATES

BACKGROUND

The U.S. Census Bureau produces estimates of housing units for states and counties on an annual basis. These estimates are released to the public and are used as controls for many of the Census Bureau's surveys. We produce subcounty population estimates by a housing unit method that uses housing unit change to distribute county population to subcounty areas. The state and county housing unit estimates are aggregations of these housing unit estimates.

HOUSING UNIT ESTIMATES METHODOLOGY

Housing unit estimates are developed by using building permits, mobile home shipments, and estimates of housing unit loss to measure housing unit change since the last census. Census counts of housing units are updated each year. Census counts of housing units are geographically updated each year to reflect legal changes reported in the Boundary and Annexation Survey (BAS), Census corrections and other administrative revisions.

We produce housing unit estimates for each area by the component model described below. The July 1, 2004 estimates are used here as an example.

$$HU_{04} = HU_{00} + (NC_{04} + NM_{04}) - HL_{04}$$

Where:

HU_{04} = Estimated 2004 housing units

HU_{00} = Geographically updated Census 2000 housing units

NC_{04} = Estimated residential construction, April 1, 2000 to July 1, 2004

NM_{04} = Estimated new residential mobile home placements, April 1, 2000 to July 1, 2004

HL_{04} = Estimated residential housing loss, April 1, 2000 to July 1, 2004

Note: For the 3 month period from April 1, 2000 to July 1, 2000, a factor of 0.25 is applied to the year 2000 input data.

- A. Census 2000 Housing Units (HU₀₀) -- Census 2000 counts of housing units at the subcounty level reflect BAS updates that are legally effective as of January 1, 2004. The housing unit counts also include Count Question Resolution (CQR) actions, and administrative revisions benchmarked in the TIGER System and the Master Address File (MAF) through May of 2004.
- B. Estimated Residential Construction (NC₀₄) --New residential construction was calculated using the following formula:

$$NC_{04} = (BP_{04} * 0.98) + NPC_{04}$$

Where:

NC₀₄ = Estimate of new residential construction for the period: April 1, 2000 to July 1, 2004

BP₀₄ = The residential building permits that result in the construction of new units for the period April 1, 2000 to July 1, 2004 include permits issued in calendar years 2000 through 2003 (accounting for a six-month lag time between permit issuance and completed construction).

NPC₀₄ = Estimate of new residential construction in non-permit issuing areas for the period: April 1, 2000 to July 1, 2004

Note: For the 3 month period from April 1, 2000 to July 1, 2000, a factor of 0.25 is applied to the year 2000 input data.

Building permit data are compiled from internal data files developed by Manufacturing and Construction Division (MCD). These files include imputed permits where a jurisdiction did not report permit issuance for the entire year. Housing growth calculated from building permits employs a six-month lag time between the issuance of permits and completion of construction.

Two percent of all building permits never result in the actual construction of a housing unit (as derived from U.S. Census Bureau Current Construction Reports, Series C-20 and Series C-22). Therefore, a factor of 0.98 is used to estimate completed new units.

The annual Survey of Construction (SOC) produces regional estimates of housing units constructed in non-permit issuing jurisdictions. The regional SOC estimates are then distributed to all subcounty areas that have no record of issuing permits for the estimates period. This distribution is based on the subcounty area's share of the regional total of units in nonpermit-issuing jurisdictions as of Census 2000.

- C. Estimated New Mobile Home Placements (NM₀₄) --The Census Bureau does not collect updated data at the subcounty level on mobile home placements. We derive estimates for mobile homes by allocating state mobile home shipment data to subcounty areas based on the subcounty area's share of state of mobile homes in Census 2000.

We receive monthly reports on mobile home shipments from MCD. These monthly reports are then summed to calculate the annual total of state mobile home shipments.

To allocate the state mobile home shipment data to subcounty areas, we apply the subcounty area's share of state mobile homes as of Census 2000 to the updated number of mobile home shipments. Because type of structure (the item indicating that a housing unit is a mobile home) was not a 100 percent item in Census 2000, sample data were used to produce the 2004 estimates of mobile homes at the subcounty level. The following steps describe the process of producing sample data that were consistent with the 100 percent housing unit data in current estimates geography.

1. Match each unit in the Sample Edited Detail File (SEDF) to the geographically updated 100% Detail File (HDF) extract, by unit identification number.
2. Apply the updated geographic codes from the HDF (higher level, census tract, and block) to the SEDF records.
3. Re-tabulate the sample data with the sample weights for the primitive geographic areas into which they now are aggregated after the geographic update.
4. Multiply the sample data tallies in each primitive geographic area by the ratio of housing units in the tabulation Census 2000 HDF to the housing units in the tabulation Census 2000 SEDF.
5. Aggregate the results to all estimates universe summary levels.

- D. Estimated Housing Loss (HL₀₄) -- The method for estimating housing unit loss has been revised for the 2004 estimates. The 2004 estimates of housing unit loss are based on data derived from the 1997–2003 American Housing Survey (AHS) national sample. The following three types of AHS noninterviews were considered to represent permanent loss of a housing unit.

Type B, 16 -- Interior exposed to the elements
Type C, 30 -- Demolished or disaster loss
Type C, 31 -- House or Mobile Home moved

Housing unit loss rates based on these non-interview types were then developed for housing units based on structure type and age of structure. The rates are as follows:

Mobile Homes:	1.58 percent
House, Apartment, or Flat built in:	
1990–2000:	0.031 percent
1980–1990:	0.054 percent
1970–1980:	0.103 percent
1960–1970:	0.172 percent
1950–1960:	0.249 percent
1940–1950:	0.324 percent
1930–1940:	0.364 percent
Overall loss rate:	0.295 percent

The type and age of housing units in Census 2000 for each governmental unit is used to estimate its housing unit loss.

- E. Final State and County Housing Unit Estimates -- The housing unit estimates at the subcounty level are summed to obtain county level housing unit estimates, which are then summed to produce state level housing unit estimates.