

Abstract of Methods for the Colorado State, County, Municipal and Special District Population Estimates

Colorado Department of Local Affairs
State Demography Office
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State and County Population Estimates Method

The Colorado State Demography Office (SDO) applies a basic Components of Change Method to create annual (July 1) State and County Population Estimates. The method varies slightly for our July 1st 2010 estimates in that it starts with the April 2010 Census counts and then applies components of change (births, deaths, net migration) from April 1st through June 30th 2010. The rest of the decade the estimates will be based July 1st to July 1st.

For example:

April 1 2010 Census Count
+ April 1 2010 to June 30 2010 Births
– April 1 2010 to June 30 2010 Deaths
+ April 1 2010 to June 30 2010 Net Migration and Change in Group Quarters
July 1 2010 Population

July 1 2011 Population
+ July 1 2010 to June 30 2011 Births
– July 1 2010 to June 30 2011 Deaths
+ July 1 2010 to June 30 2011 Net Migration and Change in Group Quarters
July 1 2011 Population

Birth and Death data are provided by the Colorado Department of Public Health and Environment. Net Migration data are from the U.S. Census Bureau (IRS, Medicare and Immigration Statistics). Changes in Group Quarters facilities (such as dormitories and barracks) are provided by local governments and other agencies through an annual survey that the SDO conducts.

Municipal and Unincorporated Area Population Estimates Method

The SDO applies a Housing Unit Method along with the County Population Estimates to create annual Municipality and Unincorporated Area Population Estimates.

For example:

Step 1: Split the Municipality into its parts that overlap different Counties

Step 2: $HouseholdPopulation_{10C_c} = Population_{10C_c} - GroupQuartersPopulation_{10C_c}$

Step 3: $InitialEstimate_{10J_m} = TotalHousingUnits_{10J_m} \times OccupancyRate_{10C_m} \times PersonsPerHousehold_{10C_m}$

Step 4: $Proportion_{10J_m} = InitialEstimate_{10J_m} / Sum(InitialEstimate_{10J_m})$

Step 5: $FinalEstimate_{10J_m} = (Proportion_{10J_m} \times HouseholdPopulation_{10J_c}) + GroupQuartersPopulation_{10J_m}$

Where “c” represents a County and “m” represents a Municipality or the Unincorporated Area in that County and 10C is Census 2010 (April) and 10J is July 2010

Again, for the 2010 estimates we begin with a new base from Census 2010 of housing unit, occupancy rates, persons per household, household population, and group quarter population.

Housing Unit data are provided by local governments whenever possible and the U.S. Census Bureau if there is no direct local source. Group Quarters facilities (such as dormitories and barracks) are provided by local governments and other agencies through an annual survey that the SDO conducts.

Special District Population Estimates

The SDO created a new Census 2010 base for Special District housing unit and population by aggregating census block data for Special District boundaries. These counts could be very different from previous years because a majority of our Special District estimates are produced using proportional adjustments rather than housing unit method since we do not regularly receive housing unit data from Special Districts.

Method 1

When reliable Housing Unit data is available, the SDO applies a Housing Unit Method along with the Municipality and Unincorporated Area Population Estimates to create annual Special District Population Estimates.

For example:

Step 1: Split the Special District into its parts that overlap different Municipalities and/or Unincorporated Areas

Step 2: $HouseholdPopulation10C_c = Population10C_c - GroupQuartersPopulation10C_c$

Step 3: $InitialEstimate10J_m = TotalHousingUnits10J_m \times OccupancyRate10C_m \times PersonsPerHousehold10C_m$

Step 4: $Proportion10J_m = InitialEstimate10J_m / Sum(InitialEstimate10J_m)$

Step 5: $FinalEstimate10J_m = (Proportion10J_m \times HouseholdPopulation10J_c) + GroupQuartersPopulation10J_m$

Where “m” represents a Municipality or Unincorporated Area, and “d” represents a Special District in that Municipality or Unincorporated Area, 10C = Census 2010 counts, 10J = July 2010 estimates.

Housing Unit data are provided by local governments whenever possible and the U.S. Census Bureau if there is no direct local source. Group Quarters facilities (such as dormitories and barracks) are provided by local governments and other agencies through an annual survey that the SDO conducts.

Special District Population Estimates Method 2

In the absence of reliable Housing Unit and/or Group Quarters data (as is the case for most Special Districts), simple proportional adjustments to each of the Municipalities and/or Unincorporated Areas that the Special District overlaps are made to update the Special District Population and Household Estimates.

For example:

Step 1: Split the Special District into its parts that overlap different Municipalities and/or Unincorporated Areas

Step 2: $TotalPopulation10J_d = TotalPopulation10C_d / TotalPopulation10C_m \times TotalPopulation10J_m$

Where “m” represents a Municipality or Unincorporated Area, and “d” represents a Special District in that Municipality or Unincorporated Area. 10C = Census 2010 counts, 10J = July 2010 estimates.

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