Population and Poverty Estimates of Los Angeles County

Tract-City Splits by Age, Race-Ethnicity and Sex

For July 1, 2018

***Prepared for:***

Los Angeles County

Internal Services Department

Information Technology Services

9150 Imperial Hwy

Downey, CA 90242

***Prepared by:***

John Hedderson, Ph.D.

and

Joyce Bixler

Hedderson Demographic Services

***1015 South Beach Drive***

***Sacramento, CA 95831***

***916.529.7465***

[***jhedderson@sbcglobal.net***](mailto:jhedderson@sbcglobal.net)

April 15, 2019

Table of Contents

1. **Estimation Methods**1

1.1 Input Datasets Source List2

1.2 Data Flow Narrative and Flowcharts3

1.3 Numeric Examples of Impact of Process Steps on Populations by Race-Ethnicity20

1. **Comments on Reliability and Use of the Final Population Estimates**35
2. **Variable Naming Conventions**36
3. **List of References**37

Population and Poverty Estimates of Los Angeles County

Tract-City Splits by Age, Race-Ethnicity and Sex

For July 1, 2018

We describe in the following documentation the data sets and the methods used to obtain the population and poverty estimates for July 1, 2018.[[1]](#footnote-1) Geographically, the estimates are for census tract split by city and Countywide Statistical Area (CSA) boundaries. The CSA boundaries create subareas for the unincorporated areas and subareas of Los Angeles City. The estimates are by age, race-ethnicity and sex. Our series of estimates adheres closely in total population to the State’s official city and county estimates from the California Department of Finance, Demographic Research Unit. We describe in the following documentation the data sets and the methods used to obtain the estimates for July 1, 2018.

We prepare estimates for two sets of race-ethnicity categories. Some County projects use 6 race-ethnicity categories: Hispanic, and Non-Hispanic White, Asian, African American, American Indian, and Pacific Islander. For other County projects we prepare estimates that add two additional categories: Non-Hispanic multiple race and Non-Hispanic other.

1. **Estimation Methods**

The Bureau of the Census does not include most institutionalized group quarter populations, such as persons in prisons, hospitals and nursing homes, in its poverty counts. The best approximation we have of the population for which poverty is calculated is the household population. Our base household population numbers came from the 2010 Census from which we extracted and aggregated data into the age, race-ethnicity, and sex categories required by the County. We updated these numbers to July 1, 2010, using city estimates from the California Department of Finance (DOF), Demographics Research Unit.

For each year since 2010, we obtained preliminary July 1 household population estimates by applying mortality and migration rates to the July 1, 2010 estimates. Then we add in estimates of the group quarters population. Finally, we then controlled the estimates to DOF January 2018 estimates for cities and July 2018 estimates for the County.

Tract level poverty rates were obtained by multiplying the County 2017 American Community Survey (ACS) 5-Year rates by the ratio of each tract’s total poverty rate divided the County total poverty rate. Therefore, if a tract has a total poverty rate higher than the County total poverty rate, the age, race-ethnic by sex poverty rates will be adjusted upward for that tract. Similarly, if a tract has a total poverty rate lower than County total poverty rate, the poverty rates will be adjusted downward for that tract.

The tract household populations poverty numbers were controlled to July 2018 County level poverty rates by race-ethnicity, which were based on the 2017 ACS 1-Year Public Use Microsample (PUMS) data file. The estimates of poverty for 2018 were smoothed so that changes from the estimates of poverty for 2017 were not too extreme for any tract. Extreme changes in tract data tend to be caused by sampling or measurement error; and smoothing between years reduces these errors.

The input datasets used in our estimates are listed in Section 1.1 below. In Section 1.2 we present flow charts and descriptions of the steps in preparing the 2010 Census data for our estimation model and moving the estimates forward to July 1, 2018.

**1.1 Input Datasets Source List**

The input datasets included Census Bureau decennial census enumerations and annual population estimates, DOF city and county estimates, and administrative records from the County of Los Angeles on registered voters, housing units, births and deaths. The citations for these data sources are in **Table 1 Input Datasets Source List**.

**Table 1**

**Input Datasets Source List** 

**1.2 Data Flow Narrative and Flowcharts**

In this section, we describe the steps used in making the July 1, 2018 estimates. This description is followed by flowcharts illustrating the modeling process.

2010 Census Data Preparation and July 1, 2010 Estimates:

1. The 2010 Split-Census tract population found in Summary File 1 needed adjustments to meet the project requirements. The race/ethnic categories requested differed from those enumerated in the Census. The Census counts included “other” and “two or more races” as categories, and these counts needed to be distributed among our project population categories: White Non-Hispanic, Black Non-Hispanic, American Indian Non-Hispanic, Asian Non-Hispanic, Pacific Islander Non-Hispanic, and Hispanic of any race.
2. Since Group Quarters population does not behave the same way as Household population, it is subtracted from the total population before changes from aging, births, deaths and migration are made. Then it is added back in afterwards.[[2]](#footnote-2)
3. The preliminary estimates were controlled at the city level to the California Department of Finance (DOF) City Estimates. The DOF estimates are for January of each year, and we used the mean of the January estimates to obtain city control numbers for July 1 of 2010 and 2011.

See Charts 1.1 and 1.2 below.

July 1, 2011 Population Estimates

1. July 1, 2010 household population was adjusted by California State Mortality Rates
2. The July 1, 2010 population was adjusted by PUMA level annual migration rates estimated from change between the 2000 and 2010 Censuses.
3. An estimate of the less than age 1 population was added based on the less than age 1 and age 1 populations in the 2010 Census.
4. The estimates were adjusted based on the PUMA level race-ethnicity distribution from the 2010 ACS.
5. The estimates were controlled to the city estimates published by the California Department of Finance.
6. The estimates were rounded to whole numbers.
7. The estimates were reviewed for validity using Los Angeles County administrative records on births, deaths, registered voters and housing units.
8. The Other Race and Two or More Races categories (both Non-Hispanic) were allocated by us to the above Non-Hispanic groups based on the race distribution in each Census tract split.

See Chart 1.3 below.

July 1, 2012 Population Estimates

1. July 1, 2011 household population was adjusted by California State Mortality Rates
2. The July 1, 2011 population was adjusted by PUMA level annual migration rates estimated from change between the 2000 and 2010 Censuses.
3. An estimate of the less than age 1 population was added based on the less than age 1 and age 1 populations in the 2010 Census.
4. The estimates were adjusted based on the PUMA level race-ethnicity distribution from the 2011 ACS.
5. The estimates were controlled to age, sex and race-ethnicity distributions from the Bureau of the Census county estimates for July 2011.
6. The estimates were controlled to projections from the January 2012 city estimates published by the California Department of Finance.
7. The estimates were rounded to whole numbers.
8. The estimates were reviewed for validity using Los Angeles County administrative records on births, deaths, registered voters and housing units.
9. The Other Race and Two or More Races categories (both Non-Hispanic) were allocated to the above Non-Hispanic groups based on the race distribution in each Census tract split.

See Chart 1.4 below.

July 1, 2013 Population Estimates

1. July 1, 2012 household population was adjusted by California State Mortality Rates
2. The July 1, 2012 population was adjusted by PUMA level annual migration rates estimated from change between the 2000 and 2010 Censuses.
3. An estimate of the less than age 1 population was added based on the less than age 1 and age 1 populations in the 2010 Census.
4. The group quarters population estimates were added to the household population.
5. The estimates were adjusted based on the PUMA level race-ethnicity distribution from the 2012 ACS.
6. The estimates were controlled to age, sex and race-ethnicity distributions from the Bureau of the Census county estimates for July 2012.
7. The estimates were controlled to the city and county estimates published by the California Department of Finance.
8. The estimates were rounded to whole numbers.
9. The estimates were reviewed for validity using Los Angeles County administrative records on births, deaths, registered voters and housing units.
10. The Other Race and Two or More Races categories (both Non-Hispanic) were allocated to the above Non-Hispanic groups based on the race distribution in each Census tract split.

See Chart 1.5 below.

July 1, 2014 Population Estimates

1. July 1, 2013 household population was adjusted by California State Mortality Rates
2. The July 1, 2013 population was adjusted by PUMA level annual migration rates estimated from change between the 2000 and 2010 Censuses.
3. An estimate of the less than age 1 population was added based on the less than age 1 and age 1 populations in the 2010 Census and Los Angeles County birth records for 2013.
4. The group quarters population estimates were added to the household populations.
5. The estimates were controlled to the city and county estimates published by the California Department of Finance.
6. The estimates were rounded to whole numbers.
7. The estimates were reviewed for validity using Los Angeles County administrative records on births, deaths, registered voters and housing units.
8. The Other Race and Two or More Races categories (both Non-Hispanic) were allocated to the above Non-Hispanic groups based on the race distribution in each Census tract split.

See Chart 1.6 below.

July 1, 2015 Estimates

1. July 1, 2014 household population was adjusted by California State Mortality Rates
2. The July 1, 2014 population was adjusted by PUMA level annual migration rates estimated from change between the 2000 and 2010 Censuses.
3. An estimate of the less than age 1 population was added based on the less than age 1 and age 1 populations in the 2010 Census and Los Angeles County birth records from 2009 to 2014.
4. The group quarters population estimates were added to the household populations.
5. The estimates were reviewed for validity using Los Angeles County administrative records on births, deaths, registered voters and housing units.
6. Adjustments were made to subgroups that have displayed untypical patterns of change, for example, college aged non-dorm populations residing near universities.
7. The estimates were controlled to the city and county estimates published by the California Department of Finance.
8. The estimates were rounded to whole numbers.
9. The Other Race and Two or More Races categories (both Non-Hispanic) were allocated to the above Non-Hispanic groups based on the race distribution in each Census tract split.

See Chart 1.7 below.

July 1, 2016 Estimates

1. The July 1, 2015 household population was aged one year and adjusted for deaths using California State Mortality Rates.
2. The July 1, 2015 population was adjusted by PUMA level annual migration rates estimated from change between the 2000 and 2010 Censuses. Analyses of tract level trends since 2010 in housing units and voter registration files were used to target tracts with outlier change totals, and these tract estimates are adjusted accordingly. Migration effects are also taken into account by step 7 controls to city and county level estimates from the California Department of Finance.
3. An estimate of the less than age 1 population by tract was added based on Los Angeles County Department of Public Health birth records from 2015. In tracts where the birth numbers by race were suppressed by DPH privacy protocol, the births by race were allocated based on the less than age 1 populations in the 2010 Census. The 2010 Census counts were also used to allocate the tract data to areas split by city and countywide statistical area boundaries.
4. The group quarters population estimates were added to the household populations.
5. The estimates were reviewed for validity using Los Angeles County administrative records on births, deaths, school enrollments, registered voters and housing units.
6. Adjustments were made to subgroups that have displayed untypical patterns of change, for example, college aged non-dorm populations residing near universities.
7. The estimates were controlled to the city and county estimates published by the California Department of Finance.
8. The estimates were rounded to whole numbers.
9. The Other Race and Two or More Races categories (both Non-Hispanic) were allocated to the major race categories based on the race distribution in each Census tract split.

See Chart 1.8 below.

July 1, 2017 Estimates

1. The July 1, 2016 household population was aged 1 year and adjusted for mortality using the most recent lifetables (2014) from the National Center for Health Statistics. These lifetables do not provide mortality rates for the population over age 100, we estimated these from the age 99 mortality rates.
2. An estimate of July 1, 2017 less than age 1 population by tract was added based on Los Angeles County Department of Public Health birth records from 2016. In tracts where the birth numbers by race were suppressed by DPH privacy protocol, the births by race were allocated based on the less than age 1 populations in the 2010 Census. The 2010 Census counts were also used to allocate the tract data to areas split by city and countywide statistical area boundaries.
3. The July 1, 2017 group quarters population estimates were added to the household populations.
4. The July 1, 2017 population was adjusted for migration by:
   1. Controlling to tract estimates of total population based on the American Community Survey 5 Year file for 2016, a 2017 housing unit file from the Los Angeles County Registrar Recorder, and the HDS 2016 estimates of total tract population
   2. Controlling the tract totals to the DOF estimates of the total County population for July 1, 2017. Tract totals were also controlled to DOF city estimates for January 2017 projected forwarded to July 1, 2017.
   3. Controlling the tract estimates by race/ethnicity to County level estimates of the population by race based on past trends and the ACS 1 Year file for 2016. The tract estimates were then adjusted to match the previously estimated city level population estimates for July 1, 2017.
   4. Adjusting for subgroups that displayed untypical patterns of change and for new geographies. For example, some college aged non-dorm populations residing near universities had a revolving population pattern rather than an aging pattern. The impacts of these adjustments by race/ethnicity on County totals were less than 1 percent. As part of these adjustments, the estimates were rounded to whole numbers.
5. The Other Race and Two or More Races categories (both Non-Hispanic) were allocated to the above Non-Hispanic groups based on the race distribution in each Census tract split.

See Chart 1.9 below.

July 1, 2018 Estimates

1. The July 1, 2017 household population was aged 1 year and adjusted for mortality using the most recent lifetables (2015) from the National Center for Health Statistics. These lifetables do not provide mortality rates for the population over age 100, we estimated these from the age 99 mortality rates.
2. An estimate of July 1, 2018 less than age 1 population by tract was added based on Los Angeles County Department of Public Health birth records from 2017. In tracts where the birth numbers by race were suppressed by DPH privacy protocol, the births by race were allocated based on the less than age 1 populations in the 2010 Census. The 2010 Census counts were also used to allocate the tract data to areas split by city and countywide statistical area boundaries.
3. The July 1, 2018 group quarters population estimates were added to the household populations.
4. The July 1, 2018 population was adjusted for migration by:
   1. Controlling to tract estimates of total population based on the American Community Survey 5 Year file for 2017, a 2018 housing unit file from the Los Angeles County Registrar Recorder, and the HDS 2017 estimates of total tract population
   2. Controlling the tract totals to the DOF estimates of the total County population for July 1, 2018. Tract totals were also controlled to DOF city estimates for January 2018 projected forwarded to July 1, 2018.
   3. Controlling the tract estimates by race/ethnicity to County level estimates of the population by race based on past trends and the ACS 1 Year file for 2016. The tract estimates were then adjusted to match the previously estimated city level population estimates for July 1, 2018.
   4. Adjusting for subgroups that displayed untypical patterns of change and for new geographies. For example, some college aged non-dorm populations residing near universities had a revolving population pattern rather than an aging pattern. The impacts of these adjustments by race/ethnicity on County totals were less than 1 percent. As part of these adjustments, the estimates were rounded to whole numbers.
5. The Other Race and Two or More Races categories (both Non-Hispanic) were allocated to the above Non-Hispanic groups based on the race distribution in each Census tract split.

See Chart 1.10 below.

**July 1, 2018 Poverty Estimates**

1. Tract poverty rates were obtained by multiplying the County 2016 ACS 5-Year rates by the ratio of each tract’s total poverty rate divided the County total poverty rate. Therefore, if a tract has a total poverty rate higher than the County total poverty rate, the age, race-ethnic by sex poverty rates will be adjusted upward for that tract. Similarly, if a tract has a total poverty rate lower than County total poverty rate, the poverty rates will be adjusted downward for that tract.
2. The rates were multiplied by our single year age household population estimates for July 1, 2018 for each tract.
3. The preliminary estimates of poverty for 2018 were smoothed with estimates from 2016 so that changes from the estimates of poverty for 2016 were not too extreme for any tract. Smoothing is done because the greatest poverty change outliers are likely to be caused in part by sampling fluctuation.
4. The poverty numbers were controlled to the projected July 2018 County poverty rates by race-ethnicity. Our projection was for the rates from the 2016 ACS 1-Year PUMS data file to continue for 2018.
5. The poverty numbers were aggregated to the deliverable age groups and then rounded.
6. To obtain a six group race-ethnicity data file, the rounded numbers for Non-Hispanic Other and Multiracial were distributed into the White, African American, Asian, Pacific Islander and American Indian categories.

See Chart 1.11 below:























**1.3 Numeric Examples of Impact of Process Steps on Populations by Race-Ethnicity**

**Table 2**

**Impact of Steps to Create Eight Category Race-Ethnicity Estimates for July 1, 2011**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Input 1**  **Household population July 1,**  **2010** | | **Step 1**  **Mortality from**  **2010 to 2011** | **Step 2 Migration from**  **2010 to 2011** | **Step 3 Age less than one birth-death-migration** | **Step 4**  **Add 2011 group quarters**  **population** | **Step 5 Control to CA Dept. Finance city estimates** | **Step 6 Round to whole numbers with city controls** |
| **Population Totals** | |  |  |  |  |  |  |  |
| **Hispanic** | | 4,647,559 | 4,636,253 | 4,633,772 | 4,714,774 | 4,759,525 | 4,736,756 | 4,731,275 |
| **Non-Hispanic** | | 5,010,536 | 4,975,994 | 4,970,756 | 5,017,922 | 5,142,148 | 5,129,427 | 5,134,919 |
| **White** | | 2,664,095 | 2,641,112 | 2,636,245 | 2,657,413 | 2,724,182 | 2,719,100 | 2,723,700 |
| **Asian** | | 1,306,351 | 1,301,644 | 1,307,955 | 1,319,020 | 1,339,337 | 1,335,583 | 1,329,452 |
| **Afr. Amer.** | | 783,029 | 776,809 | 772,568 | 781,822 | 814,313 | 811,176 | 815,401 |
| **Multiracial** | | 191,332 | 190,931 | 188,904 | 193,647 | 197,306 | 196,819 | 198,815 |
| **Other** | | 25,108 | 25,047 | 25,128 | 25,608 | 25,867 | 25,785 | 25,756 |
| **Pac. Is.** | | 22,076 | 21,980 | 21,850 | 22,149 | 22,539 | 22,432 | 22,753 |
| **Amer. Ind.** | | 18,545 | 18,471 | 18,106 | 18,263 | 18,604 | 18,533 | 19,042 |
| **Total** | | 9,658,095 | 9,612,247 | 9,604,528 | 9,732,695 | 9,901,672 | 9,866,183 | 9,866,194 |
|  | |  |  |  |  |  |  |  |
| **Population Change** | |  |  |  |  |  |  |  |
| **Hispanic** | |  | (11,306) | (2,482) | 81,002 | 44,751 | (22,769) | (5,481) |
| **Non-Hispanic** | |  | (34,542) | (5,238) | 47,165 | 124,226 | (12,721) | 5,492 |
| **White** | |  | (22,983) | (4,867) | 21,167 | 66,769 | (5,081) | 4,600 |
| **Asian** | |  | (4,707) | 6,311 | 11,065 | 20,317 | (3,754) | (6,131) |
| **Afr. Amer.** | |  | (6,220) | (4,241) | 9,254 | 32,491 | (3,138) | 4,225 |
| **Multiracial** | |  | (401) | (2,027) | 4,743 | 3,659 | (488) | 1,996 |
| **Other** | |  | (61) | 81 | 480 | 259 | (81) | (29) |
| **Pac. Is.** | |  | (96) | (130) | 299 | 390 | (107) | 321 |
| **Amer. Ind.** | |  | (74) | (365) | 157 | 341 | (71) | 509 |
| **Total** | |  | (45,848) | (7,719) | 128,167 | 168,977 | (35,489) | 11 |

**Table 3**

**Impact of Steps to Create Eight Category Race-Ethnicity Estimates for July 1, 2012**



**Table 4**

**Impact of Steps to Create Eight Category Race-Ethnicity Estimates for July 1, 2013**



**Table 5**

**Impact of Steps to Distribute Eight Category Race-Ethnicity Estimates**

**into Six Categories for July 1, 2013**



**Table 6**

**Impact of Steps to Create Eight Category Race-Ethnicity Estimates for July 1, 2014**



**Table 7**

**Impact of Steps to Distribute Eight Category Race-Ethnicity Estimates**

**into Six Categories for July 1, 2014**



**Table 8**

**Impact of Steps to Create Eight Category Race-Ethnicity Estimates for July 1, 2015**



**Table 9**

**Impact of Steps to Distribute Eight Category Race-Ethnicity Estimates**

**into Six Categories for July 1, 2015**



**Table 10**

**Impact of Steps to Create Eight Category Race-Ethnicity Estimates for July 1, 2016**



**Table 11**

**Impact of Steps to Distribute Eight Category Race-Ethnicity Estimates**

**into Six Categories for July 1, 2016**



**Table 12**

**Impact of Steps to Create Eight Category Race-Ethnicity Estimates for July 1, 2017**



**Table 13**

**Impact of Steps to Distribute Eight Category Race-Ethnicity Estimates**

**into Six Categories for July 1, 2017**



**Table 14**

**Impact of Steps to Create Eight Category Race-Ethnicity Estimates for July 1, 2018**



**Table 15**

**Impact of Steps to Distribute Eight Category Race-Ethnicity Estimates**

**into Six Categories for July 1, 2018**



**Table 16**

**Impact of Steps to Create Poverty Estimates for July 1, 2018**



1. **Comments on the Reliability and Use of the Final Population and Poverty Estimates**

Our population estimates for July 1, 2018 are over eight years from the last decennial census. We are confident that they are very useable for planning and evaluation purposes. However, no population estimates are perfect because the source data files, even the baseline counts from the 2010 Census, contain errors.

In addition, reasonable modeling assumptions about fertility, mortality and migration trends since the last census will not work perfectly for every age, sex, and race-ethnicity group in every tract-city split. In updating the 2010 counts, we look for evidence of unusual population trends in city population estimates from the California Department of Finance, county population estimates from the Bureau of the Census, and Public Use Microdata Area (PUMA) level data from the Bureau’s annual American Community Survey (ACS). We also use Los Angeles County administrative records files that include aggregate data on births, deaths, registered voters, housing unit files and school enrollments. We make adjustments to our tract-city level estimates to reflect unusual trends, but information on unusual trends is typically not precise and not complete.

We recommend that data users perform analyses with populations greater than 25,000 by merging tract-city splits or by combining age, sex, race/ethnicity categories. Our data file contains estimates for single year age cohorts and six race-ethnicity groups, which provide substantial detail for analysts. These detailed data categories are there to provide the users with flexibility in doing analyses, however, the users need to be prudent and not work with cell numbers that are too small. There are no simple, precise ways to measure the error in estimates. Groups and areas that have high migration, are usually more difficult to model. Being 75 months from the 2010 Census, we expect from past experience that most aggregates of our data above 25,000 persons will be within 5 percent of the number that would be obtained if another census had been conducted for July 1, 2015. Aggregates of our data under 500 persons could easily differ by 10% or more from what another census would show.

In addition, the user should keep in mind that the 2010 Census, as all censuses, had undercount and overcount errors. Minorities, mobile, rural, elderly and other populations that are more difficult to count with standard mail questionnaires are less likely to be counted. These errors affect all estimates that use the decennial census as a base estimate.

Since the “long” form decennial census questionnaire, which collected sample data on poverty and other detailed characteristics of the population, was discontinued beginning in 2010. The July 1, 2018 poverty estimates rely heavily on the American Community Survey which annually collects detailed population characteristics from a sample of the population. The ACS sample is approximately 1 percent, while the size of the past decennial census samples were approximately 16 percent. Even when we accumulated 5 years of ACS data to make tract level estimates, the sampling error is greater than that obtained from the 2000 Census. Another concern is that the non-response rate for the ACS is about one-third of households, and there could be biases in which houses respond. Nevertheless, the trends in the ACS poverty data are a good indication of the trends in the actual poverty population of Los Angeles County. The ACS will indicate which geographic areas and population groups of the County are the poorest. The ACS will also indicate when poverty is increasing or decreasing, although there is a lag time, because households are being asked about their previous 12 months income. A recent change in poverty rates, therefore, will not be fully reflected in the data.

1. **Variable Naming Conventions**

*Geographic Variables*

CT10 = 2010 census tract identification number

FIPS17 = 2018 census city identification code

CITYNAME = 2018 city name

CSA = 2018 countywide statistical area name

CSA\_ID = 2018 countywide statistical area code

*Population and Poverty Variables*

The codes for the poverty estimate variable names are as follows. The first character indicates race:

W = White Non-Hispanics

B = Black or African American Non-Hispanics

I = American Indian or Alaskan Native Non-Hispanics

A = Asian Non-Hispanics

P = Pacific Islander or Hawaiian Native Non-Hispanics

H = Hispanic

Second character indicates sex:

F = Female

M = Male

The third and fourth characters indicate year. For example,

18 = 2018

If the fifth character is an underscore, the variable is a population estimate. If the fifth character is a letter, it indicates a federal poverty level estimate. For example,

“\_” = population estimate

“a” = estimate of persons below the 100% poverty level

“b” = estimate of persons below the 130% poverty level

“c” = estimate of persons below the 133% poverty level

“d” = estimate of persons below the 200% poverty level

The final characters indicate the beginning of the age interval; the end of the age interval is one less than the beginning age of the next variable. For example, there are single age categories for ages 1 to 5

hf18a0 = Hispanic females age less than 1, below 100% of poverty

hf18a1 = Hispanic females age 1 below 100% of poverty

hf18a2 = Hispanic females age 2 below 100% of poverty

hf18a3 = Hispanic females ages 10 to 14, below 100% of poverty

hf18a4 = Hispanic females ages 15 to 17, below 100% of poverty

hf18a5 = Hispanic females ages 18 to 19, below 100% of poverty

However, above age 5 the ages are grouped:

hf18a6 = Hispanic females ages 6 to 9, below 100% of poverty

hf18a10 = Hispanic females ages 10 to12, below 100% of poverty

hf18a13 = Hispanic females ages 13 to14, below 100% of poverty

And so on until

hf18a100+= Hispanic females ages 100 and older, below 100% of poverty

1. **List of References**

**Background References**

California Department of Finance, Demographic Research Unit. *E-2* California County Population Estimates and Components of Change by Year, July 1, 2010-2018. Sacramento, California, December 2018.

\_\_\_\_\_\_\_. E-1 Population Estimates for Cities, Counties and the State with Annual Percent Change — January 1, 2017 and 2018. Sacramento, California, May 2018.

\_\_\_\_\_\_\_. Race/Hispanics Population with Age and Gender Detail, 2000–2010.Sacramento, California, September 2012.

California Department of Public Health, *Birth Statistical Data Tables.* *Table 2-2. General Fertility Rates, Total Fertility Rates, And Birth Rates By Age And Race/Ethnic Group of Mother, California, 2010 - 2014.*

County of Los Angeles, Department of Public Health, *Strategic Plan 2018-2023*. Los Angeles, California, 2018.

\_\_\_\_\_\_\_. Health Agency, Center for Health Equity, *Action Plan, 2018-2023*. Los Angeles, California, 2018.

\_\_\_\_\_\_\_. Chief Sustainability Office, Our County, *Public Health and Wellbeing Briefing.* Los Angeles, California October 2018

\_\_\_\_\_\_\_. Community Health Improvement Plan 2015-2020 for Los Angeles County. Los Angeles California 2015.

Grad, Shelby. *Asian 'anchor babies'\_ Wealthy Chinese Come to Southern California to Give Birth.* Los Angeles Times, August 26, 2015.

Hamilton Brady E., et al. Births: Preliminary Data for 2013. National Vital Statistics Reports: Vol. 63, No 2. Hyattsville, MD: National Center for Health Statistics. 2013.

Lucile Packard Foundation for Children's Health. KidsData.Org. *Births by Race Ethnicity, United States, California, Los Angeles County, 1995 to 2013*. Palo Alto, CA. Downloaded January 26, 2016

Mathews, T.J, M.S., and Brady E. Hamilton, Ph.D., *Total Fertility Rates by State and Race and Hispanic Origin: United States, 2017*, National Vital Statistics Reports, Volume 68, Number 1, January 10, 2019.

\_\_\_\_\_\_\_\_. *Mean Age of Mothers Is on the Rise: United States, 2000–2014*. National Center for Health Statistics, Data Brief, No 232. Hyattsville, MD: National Center for Health Statistics. 2016.

Murphy, Sherry L, B.S., Jiaquan Xu, M.D., Kenneth D. Kochanek, M.A., and Elizabeth Arias, Ph.D. *Mortality in the United States, 2017*, Data Brief No. 328, National Center for Health Statistics, November 2018

Myers, Dowell. Analysis with Local Census Data: Portraits of Change, Academic Press, Inc., San Diego CA, 1991.

Myers, Dowell and John Pitkin. *The Generational Future of Los Angeles: Projections to 2030 and 2060 Comparisons to Recent Decades*. Produced by the Population Dynamics research Group, Sol Price School of Public Policy, University of Southern California, 2013

Rollin Alamillo Louise. Recent Birth Trends in Los Angeles County. Los Angeles: Los Angeles County Department of Public Health, April 2015.

\_\_\_\_\_\_\_. Birth Trends in Los Angeles County and Potential Public Health Impacts. Southern California Association of Governments, June 11, 2014

Smith, Stanley K., Jeff Tayman, and David A. Swanson. State and Local Population Projections: Methodology and Analysis, Kluwer Academic/Plenum Publishers, New York, 2001.

Schmeiser, Maximilian, Robert Weathers, and Richard V. Burkhauser. *Why Child Poverty Estimates Differ Using the Amer. Community Survey and the Current Population Survey.* Presented at the Annual ACS/OPRE Welfare Research & Evaluation Conference, Administration for Children & Families: Office of Planning, Research, & Evaluation, 2006.

Turek, Joan, Gabrielle Denmead, and Brian Sinclair-James. *Poverty Estimates in the ACS and Other Income Surveys: What is the Impact of Methodology*? U.S. Department of Health and Human Services, September 2005.

U.S. Census Bureau*,* Center for Statistical Research and Methodology*, Small Area Estimation.* [*https://www.census.gov/srd/csrm/SmallArea.html*](https://www.census.gov/srd/csrm/SmallArea.html)downloaded March 13*, 2019.*

U.S. Census Bureau. *Methodology for the United States Population Estimates: Vintage 2016 Nation, States, Counties, and Puerto Rico – April 1, 2010 to July 1, 2016*.

\_\_\_\_\_\_\_. “Small Area Income and Poverty Estimates: 2017 County-Level Estimation Details,” Current Population Reports, P30-04, December, 2018..

\_\_\_\_\_\_\_. *Description of Income and Poverty Data Sources*. <http://www.census.gov/hhes/www/poverty/about/datasources/description.html>, downloaded 2/21/2015.

\_\_\_\_\_\_\_. *Current Population Survey Methodology*, <http://www.census.gov/cps/methodology>, downloaded 3/1/2015.

\_\_\_\_\_\_\_. *American Community Survey Design and Methodology, Version 2.0 January 30, 2014.*

\_\_\_\_\_\_\_. *Income, Poverty and Health Insurance Coverage in the United States: 2013*, CB14-169 9/16/2014.

\_\_\_\_\_\_\_. Modified Race Summary File Methodology, updated July 5, 2012.

1. Suggested Citation: County of Los Angeles, Internal Services Department, Information Technology Service, Urban Research-GIS Section*, Population and Poverty Estimates of Los Angeles County* *Tract-City Splits by Age, Sex and Race-Ethnicity for July 1, 2018,* Los Angeles, CA, April 2019. [↑](#footnote-ref-1)
2. The 2010 Group Quarters populations were estimated by subtracting the household populations from the total populations using the following method:

   1. Extract the household population by race-ethnicity from the 2010 Census SF1 tables. SF1 Table PCT13 has household population counts for all races. Tables PCT13b through PCT13i have household population counts by race. These categories include persons of Hispanic or Latino Origin.
   2. Extract the total population by race-ethnicity from the 2010 Census SF1 tables PCT12h through PCT12o. Tables PCT12h through PCT12o have single year total populations for race-ethnicity groups matching those used in our population estimates (Hispanic, White, Black, American Indian, Asian, Pacific Islander, Other Race, and Two or More Races.)
   3. Aggregate the single year total population data to match age categories used in the household data.
   4. Subtract household population from total population to get estimates of the group quarter’s population.
   5. Extract SF1 table PCT21. Table PCT21 has the total population in group quarter’s.
   6. Compare our total group quarter’s estimates with total group quarter’s counts from SF1, and adjust if necessary.
   7. Divide the group quarter’s age category estimates into single years based on the single-year population distribution in each tract, sex, race-ethnicity group.

   [↑](#footnote-ref-2)