



Early Childhood Population Estimates

American Community Survey

Census Special Export User Guide

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Recommended Citation Format

2006-10 Five-Year Estimate:

Source: Title of Chart. U.S. Census Bureau, American Community Survey, 2006 thru 2010. Minnesota Early Childhood Longitudinal Data System. [Access Date]. eclds.mn.gov

2011-15 Five-Year Estimate:

Source: Title of Chart. U.S. Census Bureau, American Community Survey, 2011 thru 2015. Minnesota Early Childhood Longitudinal Data System. [Access Date]. eclds.mn.gov

Introduction

Early childhood administrators are responsible for federal, state, and local funding streams. Accountability for these funding streams typically includes a community assessment that involves identifying a service area's strengths and challenges. Part of this includes representing the number of children and households in different groups at the population level. As early childhood services are offered in many different venues, no one source holds the majority of this population information, unlike K-12 services. The U.S. Census Bureau's American Community Survey (ACS) provides a great deal of information that can improve what we know about families with young children.

The ACS is one of over 130 surveys conducted by the United States Census Bureau (USCB). In the Minnesota Early Childhood Data System (ECLDS), we used data from the ACS because it focuses on family households, communities, and poverty – key components in early childhood programming and policy.

To complete a community assessment, the counts provided in this resource may be aligned with information on early childhood providers in your area to better target outreach services. All data represented here has been reviewed by the USCB's Disclosure Review Board (DRB) to ensure privacy is protected. There are additional suppression rules in place explained later in this document.

This data resource uses five-year estimates from the ACS (2006-10 and 2011-15) with the exception of two questions related to home computer availability and internet access. These questions were added in 2013 so only single years rather than a full five-year estimate may be available. Because this resource uses data from five-year estimates, data will be updated approximately every five years.

The USCB opted to provide Minnesota with tables that contain data for the entire nation, as the effort to generate one state's tables could produce tables for all states, Washington D.C., and Puerto Rico. The query tool allows users to search by state and counties within each state. We hope that the topics selected for Minnesota will also be helpful to your state's early childhood work, and we welcome your feedback at eclds.support@state.mn.us.

Potential Uses

Early childhood administrators may use this information to inform strategic planning, collaborations, fund-raising, and reporting responsibilities for community needs assessments. Information can be used to compare geographic areas (county to county, county to state, state to state, state to nation) estimates on a specific element. It can also be used to inform a policy direction, as long as all estimates considered are within usable bounds for the margin of error. For example, where is the highest level of need in my multi-county service area?

Age Bands

One of the challenges to using USCB data for early childhood program planning is the overly broad 0-5 age group by which data are typically reported. In early childhood, many programs focus on specific ages within this 0-5 age span. Minnesota initially requested counts by single-year age bands (newborns, 1 year olds, 2 year olds, etc.) but this level of granularity was not permissible by the USCB DRB for a majority of the United States. Two-year age groupings were allowable in order to provide some delineation for infant/toddler and preschool services. Therefore, ECLDS available age bands are 0-1 year olds, 2-3 year olds, and 4-5 year olds.

Topic Areas Included for Estimates (listed alphabetically)

- Active Duty Status
- Counts of Children
- Child Relationship to Householder
- Education Attainment Level
- Employment Status
- Ethnicity
- Gross Rent
- Health Insurance Coverage
- Hearing Difficulties
- Home Attributes
- Home Languages - Selected
- Household Size
- Independent Living
- Industry of Employment
- Living in Tribal Areas
- Migration into Area
- Owner Costs
- Poverty
- Race
- Risk Levels – Income and Other Factors
- Sex
- Travel Time and Time Leaving Home
- Transportation
- Vehicles
- Vision Difficulties
- Weeks Worked

Geographic Areas Represented

The data in this resource are represented at multiple geographic levels. For most ACS questions, the geographic levels include the United States, state, and county. Puerto Rico and the District of Columbia are included in these estimates. The estimates for the United States, however, do not include those for Puerto Rico. Additionally, there is only one table that includes those living in tribal areas.

Data for other Census Bureau geographies such as cities and school districts are not available in this data set. For more information about available district-level data, visit the [School District-Level Census Data section](#) of this user guide.

Note – The ACS collects data for the 50 states, the District of Columbia and Puerto Rico. In essence, Puerto Rico is treated as a state for tabulation purposes. The Virgin Islands, American Samoa, Northern Mariana Islands, and Guam are not part of the American Community Survey. The latest data available for these areas is the 2010 Census.

Margin of Error

It is also important to remember that all ACS data are estimates. Data is collected from a sample of the population in the U.S. and Puerto Rico rather than from the whole population. All estimates produced from sample surveys have uncertainty—or sampling error—associated with them as a result of being based on a portion of the population rather than the full population. To help interpret the reliability of the estimates, the Census Bureau calculates a margin of error (MOE) for every ACS estimate.

The USCB bases its estimates on a 90% confidence interval which means that 90% of the time the true count will occur within the bounds of the estimate in a series of samples. The bounds are defined by the + or – range of the error for a given estimate. Users should take this range into account when using estimates. This is particularly important in smaller communities or for small cell counts.

Some secondary providers of USCB data have summarized the interpretation of these error ranges in ways that label the reliability as high, medium, or low. These reliability labels can help users have a better understanding

of the estimates' use for their purposes. Details of how to calculate these reliability labels are included in Appendix A. The following information can help users gain a basic understanding of how to think about the margins of error included in the ECLDS. Each table contains the following layout. First, the information needed to calculate the range for the estimate is located in the "CEST" and "CME" columns.

1	CHILDREN UNDER 6 YEARS							
2	Universe: Children under 6 years in households							
3	tblid	SUMLEVEL	GEOID	geoname	title	ORDER	CEST	CME
4	S48400	40	04000US01	Alabama	Total:	1	354,385	+/-1,728
5	S48400	40	04000US01	Alabama	0 and 1 year	2	111,335	+/-2,158
5	S48400	40	04000US01	Alabama	2 and 3 years	3	120,485	+/-2,140
7	S48400	40	04000US01	Alabama	4 and 5 years	4	122,565	+/-2,495
3	S48400	40	04000US02	Alaska	Total:	1	65,805	+/-603
3	S48400	40	04000US02	Alaska	0 and 1 year	2	21,595	+/-726
0	S48400	40	04000US02	Alaska	2 and 3 years	3	22,540	+/-761

CME in the far right column is the character margin of error and CEST in the second to right column is the estimate for the population.

To understand the possible range of each estimate, a user can take the CEST, then add or subtract the CME value. For example, for the total of children under age 6 in Alabama the range would be 352,657 to 356,113.

	A	B	C	D	E	F	G	H	I	J	K	L
1	CHILDREN UNDER 6 YEARS											
2	Universe: Children under 6 years in households											
3	tblid	SUMLEVEL	GEOID	geoname	title	ORDER	CEST	CME	SOURCE	Lower	Upper	
4	S48400	40	04000US01	Alabama	Total:	1	354,385	+/-1,728		1728	352,657	356,113
5	S48400	40	04000US01	Alabama	0 and 1 year	2	111,335	+/-2,158		2158	109,177	113,493

This information may be sufficient to make a judgement about the reliability of the estimate.

Another way to make a judgement about the reliability of a USCB estimate is to calculate a coefficient of variation (see Appendix A) and make an assessment based on a reliability range. Visit the [U.S. Census Bureau website](https://www.census.gov) for more information about margin of error calculations.

Suppression Rules

In compliance with the USCB DRB, there must be at least 150 unweighted cases of children under 6 in households and at least 40 unweighted cases in each of the 3 age categories (0-1, 2-3, 4-5) per geographic area to provide a count that appears on this resource. The entire geographic area has been removed if it did not meet the minimum requirements for release.

Consequently, approximately 1,550 counties were removed from the 2006-10 summary level tables that did not meet the above-stated-criteria, whereas approximately 1,440 counties were removed from the 2011-15. If county information you are seeking is not available, it is likely due to these suppression rules.

For this reason, counties represented in the 2011-15 tables are not necessarily represented in the 2006-10 tables, and vice versa.

Rounding and Tallying Rules

The USCB DRB requires all tally estimates in custom tabulations to be rounded using the following algorithm:

- 0 remains 0
- 1 to 7 rounds to 5
- 8 or greater rounds to the nearest multiple of 5 (e.g. 864 rounds to 865, 988 rounds to 990)
- Any tally estimate that already ends in a 5 or a 0 stays as is.

Tally estimates in all of the Total and Subtotal rows in the ACS tables available through ecls.mn.gov/census were tabulated and rounded separately. The tally estimates in the Total and Subtotal rows are not the sum of the rounded estimates in their component rows. In addition, the tally estimates for each of the geographic summary levels were tabulated and rounded separately. For example, the estimates for a state-level table were not the sum of the rounded estimates for the counties in that state.

ACS Questions Overview

ACS questions were selected based on their relevance to early childhood policies in the areas of education, health, and human services in 2018. Based on user feedback and Census questions, the list of elements may be revised as resources are available. Data from some desired ACS questions or combinations of questions could not be obtained because of potential disclosure issues (e.g. income by race and ethnicity, or income by type of transportation), especially at the county level. Users of this resource on Minnesota's ECLDS are encouraged to develop an understanding of the data they intend to use from the ACS, and can visit the [ACS website](#) for more information.

Differences between Available Tables for Five-Year Estimates

You can also compare non-overlapping datasets, such as the two five-year estimates available to you on the ECLDS. Use the Comparison option to determine if there is a statistically significant difference between the two five-year estimates. This test shows whether the observed difference between estimates likely represents a true difference that exists within the full population (is statistically significant) or instead has occurred by chance because of sampling (is not statistically significant).

Tables unavailable for 2006-10

Comparability issues with the 2011-15 tables made it implausible for the U.S. Census Bureau to share with us 2006-10 tables on:

- Hearing Difficulty
- Independent Living Difficulty
- Vision Difficulty

The ACS first collected data in 2013 on the following items, rendering a five-year 2006-10 estimate unavailable:

- Computer Availability
- Internet Access

The ACS began collecting Health Insurance data in 2008, and therefore no five-year 2006-10 estimate exists for:

- Health Insurance Coverage

Comparison Considerations between 2006-10 and 2011-15 Tables

Only the “Own Child” category was presented in the *Relationship to Householder* table. The different types of “Own Child,” i.e. Biological, Adopted, and Step, included in the 2011-2015 version of this table were not available on the 2006-2010 ACS five-year file.

Since the disability components needed to be removed from the definition of parent risk factors, *Child Risk Factors* estimates from the 2006-2010 ACS five-year table are not strictly comparable to those in the 2011-2015 ACS version of this table.

Data Elements from the ACS (listed alphabetically)

- **Active Duty Military Service and Veteran Status:** This represents active military status for householders over the age of 17.
- **Computer Availability:** This question was not listed on the survey until 2013. Single-year data are available as provided. This includes laptops, smart phones, tablets, or desktops.
- **Employment Status:** Indicates whether the householder was employed, including active duty in the United States Armed Forces, or unemployed, or not in the Labor Force.
- **Gross Rent as a Percentage of Household Income:** Gross Rent includes contract rent plus estimated average monthly cost of utilities. See the Gross Rent section of the Subject Definitions in the [ACS Technical Documentation](#) for more detailed information.
- **Health Insurance:** If the primary householder has health insurance it is assumed that the child is also covered.
- **Household Income:** Sum of income types for all people included in the household, except non-cash benefits such as food stamps. Visit the [Census website](#) for more information.
- **Internet Accessibility:** This is the household’s access to the internet. This question was not listed on the survey until 2013. Single year data are available from the 2013, 2014, and 2015 ACS one-year files.
- **Language:** These charts focus on the top seven languages (other than English) with more than one million speakers in the U.S.
- **Living on Tribal Lands:** This includes Federal American Indian Reservations and Off-Reservations Trust Lands, Hawaiian Home Lands, Oklahoma Tribal Statistical Areas, Alaskan Native Village Statistical Areas, Tribal Designated Statistical Areas, State American Indian Reservations, and State Designated Tribal Statistical Areas.
- **Migration:** This question asks householders whether they were or were not in their current residence one year prior to the time of completing the ACS. This reflects the migration status of the householder, and does not indicate homeless status.
- **Mother’s Age:** This is reported if the householder is female. There may or may not be a biological relationship with the child under age six.
- **Owner Costs as a Percentage of Household Income:** This is inclusive of the mortgage payments, if applicable. It also includes deeds, contracts, taxes, insurance, utilities, condominium fees, mobile home costs, and/or registration fees.
- **Poverty:** This is described as the ratio of income to poverty as defined by the [U.S. Census](#). (There is no adjustment in the poverty threshold for Alaska or Hawaii in the Census definition.)

- **Race and Ethnicity:** This is the reported race and ethnicity of the household member.
- **Risk:** This chart represents the unduplicated number of children that may be at risk due to either income and/or other potential parent risk factor as well as the number of children with no risk factor. The Income Factor is defined as having a Census Poverty to Income Ratio less than or equal to 200% of poverty. The parent risk factors in Child Risk Factors were defined as: a) a householder with less than a High School diploma (or a GED) or b) a householder who did not speak English very well or a household that lacked complete plumbing or lacked complete kitchen facilities. See notes below.

Other parent risk factors including:

- Incomplete kitchen or plumbing
- Householder has less than a high school diploma or equivalent
- Householder is an English Learner who speaks English less than very well
- Householder/child with vision or hearing issues*
- Householder with difficulty dressing or bathing*
- Householder with difficulty running errands alone*
- Householder with cognitive or ambulatory challenges*
- Householder with a family member with a disability*

* Only risk factors in the 2011-15 table.

- **Transportation:** Private is defined as car, truck or van (alone or carpoled), bicycle, walked, motorcycle, worked at home, taxicab and other method. Public is defined as bus or trolley bus, streetcar or trolley car, subway or elevated train, railroad, and ferryboat. See notes below.

Notes:

1. For the number of children below 100% of the Census poverty definition, see the [Poverty table](#).
2. The Poverty to Income Ratio of the householder was used to determine whether children under 6 years of age in the household had an Income Risk Factor (a Poverty to Income Ratio of 200% or less).
3. We recognize transportation is a large budget item for many early childhood programs. We do report modes of transportation in the Transportation tables. There were many conversations trying to identify families with transportation challenges. No resolution was found at that time.
4. Typically populations with risk factors are undercounted by the Census for a number of reasons. The Census has implemented a number of public relations campaigns to encourage responses by families with young children. More efforts are always an option. Contact your state demographer's office for information about efforts in your state.
5. The characteristics presented in the following tables were based on those of the children under 6 years of age in households: a) Hispanic or Latino, b) Race, c) Relationship to Householder, and d) Sex. However, the characteristics presented in other tables—except Child Risk Factors—were based solely on a characteristic of the householder (e.g. Census Poverty Status, Veterans Status, Employment Status, Educational Attainment, Time Leaving for Work, etc.) or a household characteristic (e.g. Household Size, Status of Plumbing or Kitchen Facilities, Vehicle Availability and Number of Workers, Selected Monthly Owner Costs as a Percentage of Household Income, etc.)
6. The "Not Computed" row in *Gross Rent as a Percentage of Household Income* is defined as renter-occupied units with no payment of cash rent and/or with no household income or negative household income.
7. The "Not Computed" row in *Selected Monthly Owner Costs as a Percentage of Household Income* is defined as owner-occupied units with no household income or negative household income.

Special Notes on the Income Risk Factor

- In the Child Risk Factors table, there are two rows that apply to the Income Risk Factor.
- The first row is for children under 6 who have Income Risk Factor (i.e. Family income up to 200% of poverty) and there is a parent risk factor also present.
- The second row in the table is for children under 6 who have either an Income Risk Factor or there is a Parent Risk Factor present, but not both.
- You cannot just look at the estimate in the second row of the Child Risk Factors table and compare it to the estimate of children under 6 in the "Family Income up to 200% of the Poverty Level" row in the Poverty table. You also need to account for the estimate in the first row (the Income and Parent Risk Factors).
- The state of Alabama, for example, has 83,205 children under 6 in the "With Income and Parent Risk Factors" row and 137,995 children under 6 in the "With Income or Parent Risk Factor, but not both" row.
- The sum of estimates in these two rows is 221,200. This sum is greater than the estimate of 193,570 children under 6 in the "Family Income up to 200% of the Poverty Level" row.

Note:

Most of the children in the second risk factor row have the Income Risk Factor, but not the Parent Risk Factor. *This is especially true for the 2006-2010 version of the Risk table since the "Disability" component was removed from the Parent Risk Factor definition.*

School District-Level Census Data

For limited school district-level demographic census information based on ACS five-year period estimates, visit the [EDGE ACS website](#). On this site, data is available in the broader 0-5 age band under two topics. Instructions for accessing this data on the EDGE ACS website is included below.

- Under Demographic Data/Children, Parents, School Districts – ACS-ED, choose your five-year estimate of interest.
 - Select School District under Geography Type, identify your state, and choose the school district of interest.
 - Select Total Children.
 - Birth-5 estimates can be found under:
 - ACS Demographic and Housing Estimates/Sex & Age
 - Selected Social Characteristics in the US/School Enrollment

The Education Demographic and Geographic Estimates (EDGE) program develops information resources to identify and understand the social and spatial context of education in the U.S. It uses data from the ACS to create custom indicators of social, economic, and housing conditions for school-age children and their parents. It also uses spatial data collected by NCES and the Census Bureau to create geographic locale indicators, school point locations, school district boundaries, and other types of educational geography to support spatial analysis.

For More Information

[American Community Survey](#)

[Education Demographic and Geographic Estimates \(EDGE\)](#)

[U.S. Census Bureau](#)

Appendix A – Reliability Calculation and Statistical Testing

The U.S. Census Bureau does not issue reliability guidance because “each individual user needs to understand their own reliability needs: what is a sufficiently small coefficient of variance for one user may not be small enough for another” (U.S. Census Bureau statistician, email communication 11/28/17).

ESRI Reliability Calculation Option¹

Each table contains the following layout. First, the information needed to calculate the range for the estimate is located in the “CEST” and “CME” columns.

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Universe: Children under 6 years in households							
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S48400	40	04000US02	Alaska	2 and 3 years	3	22,540	+/-761

CME is the character margin of error and CEST is the estimate for the population.

To understand the possible range of each estimate, take the CEST and add and subtract the CME value. For example, for the total of children under age 6 in Alabama the range would be 352,657 to 356,113.

A	B	C	D	E	F	G	H	I	J	K	L
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S48400	40	04000US01	Alabama	0 and 1 year	2	111,335	+/-2,158		2158	109,177	113,493

If the user would like to have a sense of the degree to which they might rely on the estimate, calculating the coefficient of variation is an option. This is calculated by the following formula:

$$CV = \frac{[CME]}{1.645 \times CEST} \times 100$$

ESRI has created a reliability range that can be used with the coefficient of variation.

If

- CV ≤ 12 = high reliability
- 12 < CV ≤ 40 = medium reliability
- CV > 40 = low reliability

¹ http://downloads.esri.com/esri_content_doc/dbl/us/J10020_American_Community_Survey_2018.pdf.

Note that this is only one possible range of reliability. A user may choose to set their CV thresholds higher or lower. In the ECLDS tool, these CV results are color-coded to help guide users:

- CV \leq 12 = high reliability (green; use with some confidence)
- 12 < CV \leq 40 = medium reliability (yellow; use with some caution)
- CV > 40 = low reliability (red; may want to use with great care)

Statistical Testing Tool

According to the [U.S. Census Bureau website](#), “comparing ACS estimates involves more than determining which statistic is higher or lower. Users should also conduct statistical testing to make sure differences are statistically significant and are unlikely to have occurred by chance. This testing takes into account the margin of error (MOE) associated with survey estimates, which are based on responses from only a sample of the full population.”

When comparing the 2006-10 and 2011-15 ACS estimates, you may find the USCB’s [Statistical Testing Tool](#) helpful. The tool will download as an Excel spreadsheet into which you can copy or download ACS estimates and their MOEs in order to get speedy statistical test results. Additionally, there is a Comparison option in the Years drop-down menu on the ECLDS Census page. There, you will be able to quickly determine whether or not there is a statistically significant difference between the available five-year estimates. The ECLDS Comparison tool uses the calculation from the USCB’s Statistical Testing Tool.

Appendix B – Disclosure Avoidance Review of Statistical Products

Title 13, Section 9 of the United States Code (U.S.C.) requires the Census Bureau to keep confidential the information collected from the public under the authority of Title 13. Section 214 of Title 13, U.S.C., and Sections 3551, 3559 and 3571 of Title 18, U.S.C., provide for the imposition of penalties of up to five years in prison and/or up to \$250,000.00 in fines for wrongful disclosure of confidential census information.

Disclosure avoidance is the process for protecting the confidentiality of data, as required under Title 13 U.S.C. A disclosure of data occurs when someone can use published statistical information to identify an individual who has provided confidential information. For data tabulations, the Census Bureau uses disclosure avoidance procedures to modify or remove the characteristics that put confidential information at risk for disclosure. Although a published table may appear to show information about a specific individual, the Census Bureau has taken steps to disguise or suppress the original data, while making sure the results are still useful. The techniques used by the Census Bureau to protect confidentiality in tabulations vary, depending on the type of data.

Noise injection is the Census Bureau's preferred disclosure avoidance technique. By policy, noise injection is to be applied to all data products that are reported with geographies smaller than a state. In cases when it is not feasible to fully implement noise injection within the period of the contract, a transition plan for implementing noise injection or other provable privacy methods must be developed in coordination with the Census Bureau. Noise injection may be required for microdata releases, depending on the characteristics of the microdata and the specific variables that are to be released. Data that cannot be publicly released may still be analyzed within the Federal Statistical Research Data Centers (FSRDCs) by individuals who have Special Sworn Status; the results of such analyses must still go through a disclosure avoidance process prior to being publicly released.

The parties understand that Title 13 confidentiality protection and disclosure avoidance techniques apply to all work described in this agreement. The disclosure avoidance methods are defined by the Census Bureau who has the responsibility of carrying out that work. Accordingly, upon completion of the tabulation, the data produced must be reviewed by the Census Bureau to ensure that no identifiable Title 13 data are or may be disclosed. Should the USCB DRB determine that the requested statistical product does or reasonably could result in such disclosure, then the data product will be modified prior to approval for release to the party(ies) of this agreement. The DRB must approve before a research product can be released to an individual who does not have Special Sworn Status (SSS) and a need to know, or moved to a computer not approved for controlled data according to Census' existing policies and procedures.

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