

Accuracy of the Data (Multi-Year Estimates Study)

INTRODUCTION

The data contained in these data products are based on the American Community Survey (ACS) sample interviewed in 34 counties from January 1, 1999 through December 31, 2005. Data profiles were produced for six sets of one-year estimates, five sets based on three consecutive years, and three sets based on five consecutive years. In 2008, the Census Bureau will publish the first full-sample multi-year data products, based on data collected in 2005, 2006, and 2007. The first products based on five years worth of data will follow in 2010. Publication of these multi-year estimates for these 34 counties is intended to allow users an early look at data similar to what will be released in the coming years.

The purpose of this documentation is to provide users with a basic understanding of the ACS sample design, estimation methodology, and accuracy of the ACS data used in these multi-year estimates. The ACS is sponsored by the U.S. Census Bureau, and is an integral part of the plan for the 2010 Census.

DATA COLLECTION

Thirty-six counties were selected for inclusion in the 1999, 2000, and 2001 ACS Comparison Study. These counties would be sampled using the methods then planned for the full-sample ACS, and at a high enough rate to allow tract-level estimates to be made using just those three years' worth of data. For more information on the ACS Comparison Study, see http://www.census.gov/acs/www/AdvMeth/acs_census/index.htm. Due to budget constraints, the sampling rates for two of the counties, Ft. Bend and Harris, TX, were too small to support reliable estimates below the county level. Because of this, these two counties have been excluded from the Multi-Year Estimates Study data products. The remaining 34 counties had their sampling rates reduced in the ACS sample for 2002-2004 to levels similar to those planned for full implementation of the ACS. The 34 counties are listed below.

Table 1. List of the 34 Counties Used in the Study

FIPS	County	State	FIPS	County	State
04019	Pima County	Arizona	24009	Calvert County	Maryland
05069	Jefferson County	Arkansas	25013	Hampden County	Massachusetts
06075	San Francisco	California	28089	Madison County	Mississippi
06107	Tulare County	California	29093	Iron County	Missouri
12011	Broward County	Florida	29179	Reynolds County	Missouri
13293	Upson County	Georgia	29221	Washington County	Missouri
17097	Lake County	Illinois	30029	Flathead County	Montana
18103	Miami County	Indiana	30047	Lake County	Montana
19013	Black Hawk County	Iowa	31055	Douglas County	Nebraska
22031	De Soto Parish	Louisiana	35035	Otero County	New Mexico

FIPS	County	State	FIPS	County	State
36005	Bronx County	New York	48427	Starr County	Texas
36087	Rockland County	New York	48505	Zapata County	Texas
39049	Franklin County	Ohio	51730	Petersburg City	Virginia
41051	Multnomah County	Oregon	53077	Yakima County	Washington
42057	Fulton County	Pennsylvania	54069	Ohio County	West Virginia
42107	Schuylkill County	Pennsylvania	55085	Oneida County	Wisconsin
47155	Sevier County	Tennessee	55125	Vilas County	Wisconsin

The ACS employs three modes of data collection:

- Mailout/Mailback
- Computer Assisted Telephone Interview (CATI)
- Computer Assisted Personal Interview (CAPI)

The general timing of data collection is:

- Month 1: Addresses determined to be mailable are sent a questionnaire via the U.S. Postal Service.
- Month 2: All mail non-responding addresses with an available phone number are sent to CATI.
- Month 3: A sample of mail non-responses without a phone number, CATI non-responses, and unmailable addresses are selected and sent to CAPI.

SAMPLE DESIGN

Sampling rates are assigned independently at the census block level. A measure of size is calculated for each of the following governmental units (GUs):

- Counties
- Places (active, functioning governmental units)
- School Districts (elementary, secondary, and unified)
- American Indian Areas
- Minor Civil Divisions (MCDs) – in Massachusetts, New York, Pennsylvania, and Wisconsin (these are the states where MCDs are active, functioning governmental units)

Each block is then assigned the smallest measure of size from the set of all governmental units it is a part of (GUMOS).

From 1999 through 2002, MCDs were not treated as design areas for sampling purposes. MCDs have been treated as design areas since 2003.

From 1999 through 2004, the measure of size for all geographic entities was an estimate of the total number of housing units (HUs) in the area, but in 2005, the measure of size was redefined. For 2005, for all areas except American Indian Areas, the measure of size is an estimate of the number of occupied housing units in the area. This was calculated by multiplying the number of ACS addresses by the occupancy rate from Census 2000 at the block level. For American Indian Areas in 2005, the measure of size is the estimated number of occupied HUs multiplied by the proportion of people reporting American Indian (alone or in combination) in Census 2000. A measure of size for each census tract (TRACTMOS) was also calculated in the same manner.

Table 2. Sampling Rates 1999-2005

Sampling Rate Category	1999-2001		2002-2003	2004	2005
	San Francisco, Broward, Lake (IL), Bronx, Franklin	Other Counties	All Counties	All Counties	All Counties
Blocks in smallest GUs (GUMOS < 200)	9%	15%	7.5%	10%	10%
Blocks in smaller GUs (200 ≤ GUMOS < 800)				7.41%	6.9%
Blocks in small GUs (800 ≤ GUMOS ≤ 1200)	4.5%	7.5%	3.75%	3.705%	3.5%
Blocks in large tracts (GUMOS > 1200, TRACTMOS ≥ 2000) where mailable addresses ≥ 75% and predicted levels of completed mail and CATI interviews prior to CAPI subsampling > 60%	2.25%	3.75%	1.875%	1.81545%	1.6%
Other blocks in large tracts (GUMOS > 1200, TRACTMOS ≥ 2000)					1.7%

Sampling Rate Category	1999-2001		2002-2003	2004	2005
	San Francisco, Broward, Lake (IL), Bronx, Franklin	Other Counties	All Counties	All Counties	All Counties
All other blocks (GUMOS > 1200, TRACTMOS < 2000) where mailable addresses ≥ 75% and predicted levels of completed mail and CATI interviews prior to CAPI subsampling > 60%	3%	5%	2.5%	2.47%	2.1%
All other blocks (GUMOS > 1200, TRACTMOS < 2000)					2.3%

All addresses determined to be unmailable are subsampled for the CAPI phase of data collection at a rate of 2-in-3. Unmailable addresses do not go to the CATI phase of data collection. Subsequent to CATI, all addresses for which no response has been obtained prior to CAPI are subsampled. From 1999-2004, all mailable addresses sent to CAPI were subsampled at a fixed 1-in-3 rate. Beginning with the CAPI for the January 2005 panel (March 2005 data collection), the CAPI subsampling rate was based on the expected rate of completed mail and CATI interviews at the tract level.

Table 3. CAPI Subsampling Rates for 1999-2005

Address and Tract Characteristics	CAPI Subsampling Rates	
	1999-2004	2005
Unmailable addresses	2-in-3	2-in-3
Mailable addresses in tracts with predicted levels of completed mail and CATI interviews prior to CAPI subsampling between 0% and 35%	1-in-3	1-in-2
Mailable addresses in tracts with predicted levels of completed mail and CATI interviews prior to CAPI subsampling greater than 35% and less than 51%		2-in-5
Mailable addresses in other tracts		1-in-3

Due to budget constraints in 2002 and 2004, data for some sampled addresses were not collected. Addresses selected for the June 2002 panel were mailed forms, but no CATI or CAPI follow-up was done for that panel. In addition, the July 2002 panel were not mailed forms, and no follow-

up was done for that panel. No follow-up was done for the January 2004 panel (i.e. no CATI in February 2004 and no CAPI in March 2004).

For a more detailed description of the ACS sampling methodology, see the 2005 Accuracy of the Data document (<http://www.census.gov/acs/www/Downloads/ACS/accuracy2005.pdf>). For more information relating to sampling in a specific year, please refer to the individual year's Accuracy of the Data document (<http://www.census.gov/acs/www/UseData/Accuracy/Accuracy1.htm>).

ESTIMATION PROCEDURE

The multi-year estimates should be interpreted as period estimates for a given time period rather than representing a specific reference year. For example, a three-year estimate for poverty rate for a given area would be describing the total set of people who have lived in that area over those three years much the same way as a one-year estimate for the same characteristic describes the set of people who have lived in that area over one year. The only fundamental difference between the estimates is the number of months of collected data which are considered in forming the estimate. For this reason, the estimation procedure used for the Multi-Year Estimates is an extension of the 2005 one-year estimation procedure. In this document only the procedures that are unique to the multi-year estimates are given.

To weight the multi-year estimates data, 36 months or 60 months of collected data are pooled together for the three-year or five-year estimates respectively. The data is then reweighted using the procedures developed for the 2005 one-year estimates with a few adjustments. The areas of main concern are: geography, month-specific weighting steps, population and housing unit controls, and inflation factors. In addition, one new step has been added to the process.

For the one-year estimation, the tabulation geography for the data is based on the boundaries defined on January 1 of the tabulation year which is consistent with the geography used to produce the population estimates. All sample addresses are updated with this geography prior to weighting. For the multi-year estimation, the tabulation geography for the data is referenced to the final year in the multi-year period. For example, the 2003–2005 period will use the 2005 reference geography, as will the 2001–2005 period. Thus in our example, all data collected over the period of 2003–2005 in the blocks that are contained in the 2005 boundaries for a given place will be tabulated as though they were a part of that place for the entire period.

Some of the weighting steps use the month of tabulation in forming the weighting cells within which the weighting adjustments are made. One example is the non-interview adjustment. In these cases, the month of tabulation will be used independent of year. Thus weighting cells that are based on the month of tabulation would combine May 2003 and May 2004 cases together.

Since the multi-year estimates represent estimates for the period, the controls used are not a single year's housing or population estimates from the Population Estimates Program but are an average of these estimates over the period. For the housing unit controls, a simple average of the one-year housing unit estimates over the period is calculated for each county. The version or vintage of estimates used is always the last year of the period since these are considered to be the

most up-to-date and are created using a consistent methodology. For example, the housing unit control used for a given county in the 2003–2005 weighting would be equal to the simple average of the 2003, 2004, and 2005 estimates that were produced using the 2005 methodology (the 2005 vintage). Likewise, the population controls by race, ethnicity, age, and sex are obtained by taking a simple average of the one-year population estimates at the county by race, ethnicity, age, and sex. For example, the 2003–2005 control total used for Hispanic males age 20–24 in a given county would be obtained by averaging the one-year estimates for that demographic group for 2003, 2004, and 2005.

All monetary estimates are inflation-adjusted to the final month of the period which is consistent with the methodology used for the CPS 3-year poverty estimates. Thus the 2001–2005 period estimates, for example, would be tabulated using 2005-adjusted dollars. This is also consistent with the methodology used for the one-year estimates where all monetary figures are inflation-adjusted to December of the tabulation year. These adjustments use the national CPI since regional CPI are not available for the entire country.

The new, multi-year specific step is a model-assisted (generalized regression or GREG application) weighting step. The objective of this additional step is to reduce the variances of base demographics at the place and MCD level in the three-year estimates and base demographics at the census tract level in the five-year estimates. While reducing the variances, the estimates themselves are relatively unchanged. This process involves linking administrative record data with ACS data.

For a more detailed description of the ACS estimation methodology, see the 2005 Accuracy of the Data document (<http://www.census.gov/acs/www/Downloads/ACS/accuracy2005.pdf>). For more information relating to estimation in a specific year, please refer to the individual year's Accuracy of the Data document (<http://www.census.gov/acs/www/UseData/Accuracy/Accuracy1.htm>).

CONFIDENTIALITY OF THE DATA

The Census Bureau has modified or suppressed some data on this site to protect confidentiality. Title 13 United States Code, Section 9, prohibits the Census Bureau from publishing results in which an individual's data can be identified.

The Census Bureau's internal Disclosure Review Board sets the confidentiality rules for all data releases. A checklist approach is used to ensure that all potential risks to the confidentiality of the data are considered and addressed.

- Title 13, United States Code: Title 13 of the United States Code authorizes the Census Bureau to conduct censuses and surveys. Section 9 of the same Title requires that any information collected from the public under the authority of Title 13 be maintained as confidential. Section 214 of Title 13 and Sections 3559 and 3571 of Title 18 of the United States Code provide for the imposition of penalties of up to five years in prison and up to \$250,000 in fines for wrongful disclosure of confidential census information.

- **Disclosure Limitation:** Disclosure limitation is the process for protecting the confidentiality of data. A disclosure of data occurs when someone can use published statistical information to identify an individual that has provided information under a pledge of confidentiality. For data tabulations the Census Bureau uses disclosure limitation procedures to modify or remove the characteristics that put confidential information at risk for disclosure. Although it may appear that a table shows 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.
- **Data Swapping:** Data swapping is a method of disclosure limitation designed to protect confidentiality in tables of frequency data (the number or percent of the population with certain characteristics). Data swapping is done by editing the source data or exchanging records for a sample of cases when creating a table. A sample of households is selected and matched on a set of selected key variables with households in neighboring geographic areas that have similar characteristics (such as the same number of adults and same number of children). Because the swap often occurs within a neighboring area, there is no effect on the marginal totals for the area or for totals that include data from multiple areas. Because of data swapping, users should not assume that tables with cells having a value of one or two reveal information about specific individuals. Data swapping procedures were first used in the 1990 Census, and were used again in Census 2000.

The data use the same disclosure limitation methodology as the original 1-year data. The confidentiality edit was previously applied to the raw data files when they were created to produce the 1-year estimates and these same data files with the original confidentiality edit were used to produce the 3-year and 5-year estimates.

In addition, 5-year data profiles for tabulation areas that contained only a small number of households are not being released. In order to prevent the disclosure of the data for these areas through subtracting estimates from nested geographic areas, some additional tabulation areas are also not being released. We are researching alternative options to address disclosure risks for these types of areas for the production of our first 5-year data product in 2010.

A table of geographic areas not published by summary level and period is below. A full list of geographic areas not published is in Appendix 1.

Table 4. Count of Geographic Areas Not Published by Summary Level and Five-Year Period

Summary Level (Code)	Period		
	99-03	00-04	01-05
Minor Civil Division (060)	6	6	2
Census Tract (140)	21	18	14
Block Group (150)	82	69	67
County-Place Part (155)	6	9	7
PUMA (795)	7	6	3
Zip Code Tabulation Area (871)	7	5	7
Unified School District (970)	1	0	0

ERRORS IN THE DATA

- **Sampling Error** — The data in the ACS products are estimates of the actual figures that would have been obtained by interviewing the entire population using the same methodology. The estimates from the chosen sample also differ from other samples of housing units and persons within those housing units. Sampling error in data arises due to the use of probability sampling, which is necessary to ensure the integrity and representativeness of sample survey results. The implementation of statistical sampling procedures provides the basis for the statistical analysis of sample data.
- **Nonsampling Error** — In addition to sampling error, data users should realize that other types of errors may be introduced during any of the various complex operations used to collect and process survey data. For example, operations such as data entry from questionnaires and editing may introduce error into the estimates. These and other sources of error contribute to the nonsampling error component of the total error of survey estimates. Nonsampling errors may affect the data in two ways. Errors that are introduced randomly increase the variability of the data. Systematic errors which are consistent in one direction introduce bias into the results of a sample survey. The Census Bureau protects against the effect of systematic errors on survey estimates by conducting extensive research and evaluation programs on sampling techniques, questionnaire design, and data collection and processing procedures. In addition, an important goal of the ACS is to minimize the amount of nonsampling error introduced through nonresponse for sample housing units. One way of accomplishing this is by following up on mail nonrespondents during the CATI and CAPI phases.

MEASURES OF SAMPLING ERROR

Sampling error is the difference between an estimate based on a sample and the corresponding value that would be obtained if the estimate were based on the entire population (as from a census). Note that sample-based estimates will vary depending on the particular sample selected from the population. Measures of the magnitude of sampling error reflect the variation in the estimates over all possible samples that could have been selected from the population using the same sampling methodology.

Estimates of the magnitude of sampling errors – in the form of margins of error – are provided with all published ACS data. The Census Bureau recommends that data users incorporate this information into their analyses, as sampling error in survey estimates could impact the conclusions drawn from the results.

Confidence Intervals and Margins of Error

Confidence Intervals – A sample estimate and its estimated standard error may be used to construct confidence intervals about the estimate. These intervals are ranges that will contain the average value of the estimated characteristic that results over all possible samples, with a known probability.

For example, if all possible samples that could result under the ACS sample design were independently selected and surveyed under the same conditions, and if the estimate and its estimated standard error were calculated for each of these samples, then:

1. Approximately 68 percent of the intervals from one estimated standard error below the estimate to one estimated standard error above the estimate would contain the average result from all possible samples;
2. Approximately 90 percent of the intervals from 1.65 times the estimated standard error below the estimate to 1.65 times the estimated standard error above the estimate would contain the average result from all possible samples.
3. Approximately 95 percent of the intervals from two estimated standard errors below the estimate to two estimated standard errors above the estimate would contain the average result from all possible samples.

The intervals are referred to as 68 percent, 90 percent, and 95 percent confidence intervals, respectively.

Margin of Error – Instead of providing the upper and lower confidence bounds in published ACS tables, the margin of error is provided instead. The margin of error is the difference between an estimate and its upper or lower confidence bound. Both the confidence bounds and the standard error can easily be computed from the margin of error. All ACS published margins of error are based on a 90 percent confidence level.

Standard Error = Margin of Error / 1.65

Lower Confidence Bound = Estimate - Margin of Error

Upper Confidence Bound = Estimate + Margin of Error

When constructing confidence bounds from the margin of error, the user should be aware of any “natural” limits on the bounds. For example, if a population estimate is near zero, the calculated value of the lower confidence bound may be negative. However, a negative number of people does not make sense, so the lower confidence bound should be reported as zero instead. However, for other estimates such as income, negative values do make sense. The context and meaning of the estimate must be kept in mind when creating these bounds. Another of these natural limits would be 100% for the upper bound of a percent estimate.

If the margin of error is displayed as ‘*****’ (five asterisks), the estimate has been controlled to be equal to a fixed value and so has no sampling error. When using any of the formulas in the following section, use a standard error of zero for these controlled estimates.

Limitations –The user should be careful when computing and interpreting confidence intervals.

- The estimated standard errors included in these data products do not include portions of the variability due to nonsampling error that may be present in the data. In particular, the standard errors do not reflect the effect of correlated errors introduced by interviewers, coders, or other field or processing personnel. Nor do they reflect the error from imputed values due to missing responses. Thus, the standard errors calculated represent a lower bound of the total error. As a result, confidence intervals formed using these estimated standard errors may not meet the stated levels of confidence (i.e., 68, 90, or 95 percent). Thus, some care must be exercised in the interpretation of the data in this data product based on the estimated standard errors.
- Zero or small estimates; very large estimates — The value of almost all ACS characteristics is greater than or equal to zero by definition. For zero or small estimates, use of the method given previously for calculating confidence intervals relies on large sample theory, and may result in negative values which for most characteristics are not admissible. In this case the lower limit of the confidence interval is set to zero by default. A similar caution holds for estimates of totals close to a control total or estimated proportions near one, where the upper limit of the confidence interval is set to its largest admissible value. In these situations the level of confidence of the adjusted range of values is less than the prescribed confidence level.

CALCULATION OF STANDARD ERRORS

Direct estimates of the standard errors were calculated for all estimates reported in this product. The standard errors, in most cases, are calculated using a replicate-based methodology that takes into account the sample design and estimation procedures. Exceptions include:

1. The estimate of the number or proportion of people, households, families, or housing units in a geographic area with a specific characteristic is zero. A special procedure is used to estimate the standard error.
2. There are no sample observations available to compute an estimate of a median, a proportion, or some other ratio, or an estimate of its standard error. The estimate is represented in the tables by “-” and the margin of error by “**” (two asterisks).
3. Only a small number of identical values are reported and used to calculate a median, aggregate, mean, or per capita amount. In this case, there are too few sample observations to compute a stable estimate of the standard error. The margin of error is represented in the tables by “*” (one asterisk).
4. The estimate of a median falls in the lower open-ended interval or upper open-ended interval of a distribution. If the median occurs in the lowest interval, then a “-” follows the estimate, and if the median occurs in the upper interval, then a “+” follows the estimate. In both cases the margin of error is represented in the tables by “***” (three asterisks).

Sums and Differences of Individual Estimates — The standard errors estimated from these tables are for individual estimates. Additional calculations are required to estimate the standard errors for sums of and differences between two sample estimates. The estimate of the standard error of a sum or difference is approximately the square root of the sum of the two individual standard errors squared; that is, for standard errors $SE(\hat{X})$ and $SE(\hat{Y})$ of estimates \hat{X} and \hat{Y} :

$$SE(\hat{X} + \hat{Y}) = SE(\hat{X} - \hat{Y}) = \sqrt{[SE(\hat{X})]^2 + [SE(\hat{Y})]^2}$$

This method, however, will underestimate (overestimate) the standard error if the two items in a sum are highly positively (negatively) correlated or if the two items in a difference are highly negatively (positively) correlated.

Differences of Estimates for Overlapping Periods of Identical Length — The comparison of two individual estimates for different but overlapping three- or five-year periods is a special case of the preceding one. For example, \hat{X} may represent an estimate of a characteristic for the period 1999-2003 and \hat{Y} the estimate of the same characteristic for 2001-2005. In this case, data for 2001-2003 are included in both estimates, and their contribution is largely subtracted out when

differences are calculated. In this case, it is possible to approximate the sampling correlation between the two estimates to improve upon the previous expression, namely:

$$SE(\hat{X} - \hat{Y}) = \sqrt{(1 - C) \sqrt{[SE(\hat{X})]^2 + [SE(\hat{Y})]^2}}$$

where C is the fraction of overlapping years. For example, the periods 1999-2003 and 2001-2005 overlap by three out of five years, so $C = 3 / 5 = 0.6$. If the periods do not overlap, such as 2000-2002 and 2003-2005, then no factor is needed.

Differences of Estimates for Overlapping Periods Not of Identical Length — Similar formulas are available when the periods are not the same length, but there is complete overlap between one period and part of the second.

- For a 3-year period completely overlapping a 5-year period:

$$SE(\hat{X}_{3\text{-year}} - \hat{Y}_{5\text{-year}}) = SE(\hat{Y}_{5\text{-year}} - \hat{X}_{3\text{-year}}) = \sqrt{[SE(\hat{Y}_{5\text{-year}})]^2 - \frac{1}{5}[SE(\hat{X}_{3\text{-year}})]^2}$$

- For a 1-year period completely overlapping a 5-year period:

$$SE(\hat{X}_{1\text{-year}} - \hat{Y}_{5\text{-year}}) = SE(\hat{Y}_{5\text{-year}} - \hat{X}_{1\text{-year}}) = \sqrt{\frac{3}{5}[SE(\hat{X}_{1\text{-year}})]^2 + [SE(\hat{Y}_{5\text{-year}})]^2}$$

- For a 1-year period completely overlapping a 3-year period:

$$SE(\hat{X}_{1\text{-year}} - \hat{Y}_{3\text{-year}}) = SE(\hat{Y}_{3\text{-year}} - \hat{X}_{1\text{-year}}) = \sqrt{\frac{1}{3}[SE(\hat{X}_{1\text{-year}})]^2 + [SE(\hat{Y}_{3\text{-year}})]^2}$$

Ratios — The statistic of interest may be the ratio of two estimates. First is the case where the numerator *is not* a subset of the denominator. The standard error of this ratio between two sample estimates is approximated as:

$$SE\left(\frac{\hat{X}}{\hat{Y}}\right) = \frac{1}{\hat{Y}} \sqrt{[SE(\hat{X})]^2 + \frac{\hat{X}^2}{\hat{Y}^2} [SE(\hat{Y})]^2}$$

Proportions/percents – For a proportion (or percent), a ratio where the numerator *is* a subset of the denominator, a slightly different estimator is used. Note the difference between the formulas for the standard error for proportions (below) and ratios (above) - the plus sign in the previous formula has been replaced with a minus sign. If the value under the square root sign is negative, use the ratio standard error formula above, instead. If $\hat{P} = \hat{X} / \hat{Y}$, then

$$SE(\hat{P}) = \frac{1}{\hat{Y}} \sqrt{[SE(\hat{X})]^2 - \frac{\hat{X}^2}{\hat{Y}^2} [SE(\hat{Y})]^2}$$

If $\hat{Q} = 100\% \times \hat{P}$ (P is the proportion and Q is its corresponding percent), then
 $SE(\hat{Q}) = 100\% \times SE(\hat{P})$.

Products – For a product of two estimates - for example if you want to estimate a proportion’s numerator by multiplying the proportion by its denominator - the standard error can be approximated as

$$SE(\hat{X} \times \hat{Y}) = \sqrt{\hat{X}^2 \times [SE(\hat{Y})]^2 + \hat{Y}^2 \times [SE(\hat{X})]^2}$$

Significant differences – Users may conduct a statistical test to see if the difference between an ACS estimate and any other chosen estimates is statistically significant at a given confidence level. “Statistically significant” means that the difference is not likely due to random chance alone. With the two estimates (Est_1 and Est_2) and their respective standard errors (SE_1 and SE_2), calculate

$$Z = \frac{Est_1 - Est_2}{\sqrt{(SE_1)^2 + (SE_2)^2}}$$

If $Z > 1.65$ or $Z < -1.65$, then the difference can be said to be statistically significant at the 90% confidence level. Any estimate can be compared to an ACS estimate using this method, including other ACS estimates from the current year, the ACS estimate for the same characteristic and geographic area but from a previous year, Census 2000 100% counts and long form estimates, estimates from other Census Bureau surveys, and estimates from other sources. Not all estimates have sampling error — Census 2000 100% counts do not, for example, although Census 2000 long form estimates do — but they should be used if they exist to give the most accurate result of the test.

Users are also cautioned to *not* rely on looking at whether confidence intervals for two estimates overlap to determine statistical significance, because there are circumstances where that method will not give the correct test result. The Z calculation above is recommended in all cases.

EXAMPLES OF STANDARD ERROR CALCULATIONS

We will present some examples based on the real data to demonstrate the use of the formulas.

Example 1 - Calculating the Standard Error from the Confidence Interval

The estimated number of males, never married is 34,171,130 from summary table B12001 for the United States for 2005. The margin of error is 81,645.

$$\text{Standard Error} = \text{Margin of Error} / 1.65$$

Calculating the standard error using the margin of error, we have:

$$\text{SE}(34,171,130) = 81,645 / 1.65 = 49,482.$$

Example 2 - Calculating the Standard Error of a Sum

We are interested in the number of people who have never been married. From Example 1, we know the number of males, never married is 34,171,130. From summary table B12001 we have the number of females, never married is 29,943,646 with a margin of error of 74,944. So, the estimated number of people who have never been married is $34,171,130 + 29,943,646 = 64,114,776$. To calculate the standard error of this sum, we need the standard errors of the two estimates in the sum. We have the standard error for the number of males never married from example 1 as 49,482. The standard error for the number of females never married is calculated using the margin of error:

$$\text{SE}(29,943,646) = 74,944 / 1.65 = 45,421.$$

So using the formula for the standard error of a sum or difference we have:

$$\text{SE}(64,114,776) = \sqrt{49,482^2 + 45,421^2} = 67,168$$

Caution: This method, however, will underestimate (overestimate) the standard error if the two items in a sum are highly positively (negatively) correlated or if the two items in a difference are highly negatively (positively) correlated.

To calculate the lower and upper bounds of the 90 percent confidence interval around 64,114,776 using the standard error, simply multiply 67,168 by 1.65, then add and subtract the product from 64,114,776. Thus the 90 percent confidence interval for this estimate is $[64,114,776 - 1.65(67,168)]$ to $[64,114,776 + 1.65(67,168)]$ or 64,003,949 to 64,225,603.

Example 3 - Calculating the Standard Error of a Percent

We are interested in the percentage of females who have never been married to the number of people who have never been married. The number of females, never married is 29,943,646 and the number of people who have never been married is 64,114,776 To calculate the standard error of this sum, we need the standard errors of the two estimates in the sum. We have the standard error for the number of females never married from

example 2 as 45,421 and the standard error for the number of people never married calculated from example 2 as 67,168.

The estimate is $(29,943,646 / 64,114,776) * 100\% = 46.7\%$

So, using the formula for the standard error of a proportion or percent, we have:

$$SE(46.7\%) = 100\% * \left(\frac{1}{64,114,776} \sqrt{45,521^2 - 0.467^2 * 67,168^2} \right) = 0.05\%$$

To calculate the lower and upper bounds of the 90 percent confidence interval around 46.7 using the standard error, simply multiply 0.05 by 1.65, then add and subtract the product from 46.7. Thus the 90 percent confidence interval for this estimate is $[46.7 - 1.65(0.05)]$ to $[46.7 + 1.65(0.05)]$, or 46.6% to 46.8%.

Example 4 - Calculating the Standard Error of the Difference of Two Period Estimates

We are interested in whether there has been an increase in school enrollment for age 3 and over in Zapata County, Texas. Because the county is small, the only available data are for five-year periods. The estimated enrollment was 3,770 with a margin of error of 238 for the period 1999-2003. For 2001-2005, the comparable estimate is 3,958 with a margin of error of 229, giving an estimated increase in school enrollment of 188.

To compute the standard error for the estimated increase, we first compute the standard errors for the 1999-2003 and 2001-2005 estimates by dividing the margins of error by 1.65, obtaining 144 and 139, respectively. Because three of the five years overlap for the estimates, $C = 3 / 5 = 0.6$. Applying the formula for overlapping periods,

$$SE(\hat{X} - \hat{Y}) = SE(188) = \sqrt{1 - 0.6} \times \sqrt{144^2 + 139^2} = 127,$$

we get an estimated standard error for the difference of 127. To obtain a 90 percent confidence interval for the increase, we multiply 127 by 1.65 to get 210, then add and subtract this result from the estimated difference of 188 to get a 90 percent confidence interval of (-22, 398). Because an estimate of the number of persons can't be negative, we would state that the lower bound is zero, and give the confidence interval as 0 to 398. Note that if we had ignored the use of the factor C, the confidence interval would have been even wider.

CONTROL OF NONSAMPLING ERROR

As mentioned earlier, sample data are subject to nonsampling error. This component of error could introduce serious bias into the data, and the total error could increase dramatically over that which would result purely from sampling. While it is impossible to completely eliminate

nonsampling error from a survey operation, the Census Bureau attempts to control the sources of such error during the collection and processing operations. Described below are the primary sources of nonsampling error and the programs instituted for control of this error. The success of these programs, however, is contingent upon how well the instructions were carried out during the survey.

- Undercoverage — It is possible for some sample housing units or persons to be missed entirely by the survey. The undercoverage of persons and housing units can introduce biases into the data. A major way to avoid undercoverage in a survey is to ensure that its sampling frame, for ACS an address list in each state, is as complete and accurate as possible.

The source of addresses was the MAF. The MAF is created by combining the Delivery Sequence File of the United States Postal Service, and the address list for Census 2000. An attempt is made to assign all appropriate geographic codes to each MAF address via an automated procedure using the Census Bureau TIGER files. A manual coding operation based in the appropriate regional offices is attempted for addresses which could not be automatically coded. The MAF was used as the source of addresses for selecting sample housing units and mailing questionnaires. TIGER produced the location maps for CAPI assignments.

In the CATI and CAPI nonresponse follow-up phases, efforts were made to minimize the chances that housing units that were not part of the sample were interviewed in place of units in sample by mistake. If a CATI interviewer called a mail nonresponse case and was not able to reach the exact address, no interview was conducted and the case was eligible for CAPI. During CAPI follow-up, the interviewer had to locate the exact address for each sample housing unit. If the interviewer could not locate the exact sample unit in a multi-unit structure, or found a different number of units than expected, the interviewers were instructed to list the units in the building and follow a specific procedure to select a replacement sample unit.

- Respondent and Interviewer Error — The person completing the questionnaire or responding to the questions posed by an interviewer could serve as a source of error, although the questions were cognitively tested for phrasing, and detailed instructions for completing the questionnaire were provided to each household.
 - Interviewer monitoring — The interviewer may misinterpret or otherwise incorrectly enter information given by a respondent; may fail to collect some of the information for a person or household; or may collect data for households that were not designated as part of the sample. To control these problems, the work of interviewers was monitored carefully. Field staff were prepared for their tasks by using specially developed training packages that included hands-on experience in using survey

materials. A sample of the households interviewed by CAPI interviewers was reinterviewed to control for the possibility that interviewers may have fabricated data.

- Item Nonresponse — Nonresponse to particular questions on the survey questionnaire and instrument allows for the introduction of bias into the data, since the characteristics of the nonrespondents have not been observed and may differ from those reported by respondents. As a result, any imputation procedure using respondent data may not completely reflect this difference either at the elemental level (individual person or housing unit) or on average.

Some protection against the introduction of large biases is afforded by minimizing nonresponse. In the ACS, item nonresponse for the CATI and CAPI operations was minimized by the requirement that the automated instrument receive a response to each question before the next one could be asked. Questionnaires returned by mail were edited for completeness and acceptability. They were reviewed by computer for content omissions and population coverage. If necessary, a telephone follow-up was made to obtain missing information. Potential coverage errors were included in this follow-up.

- Processing Error — The many phases involved in processing the survey data represent potential sources for the introduction of nonsampling error. The processing of the survey questionnaires includes the keying of data from completed questionnaires, automated clerical review, and follow-up by telephone, the manual coding of write-in responses, and the electronic data processing. The various field, coding and computer operations undergo a number of quality control checks to insure their accurate application.
- Content Editing — After data collection was completed, any remaining incomplete or inconsistent information was imputed during the final content edit of the collected data. Imputations, or computer assignments of acceptable codes in place of unacceptable entries or blanks, were needed most often when an entry for a given item was missing or when the information reported for a person or housing unit on that item was inconsistent with other information for that same person or housing unit. As in other surveys and previous censuses, the general procedure for changing unacceptable entries was to allocate an entry for a person or housing unit that was consistent with entries for persons or housing units with similar characteristics. Imputing acceptable values in place of blanks or unacceptable entries enhances the usefulness of the data.

Note that no further nonsampling error reduction processes (such as content editing) were applied to the data in this product beyond those already applied to the one-year data.

Appendix 1: Full List of Geographic Areas Not Published by County, Summary Level, and Five-Year Period

A “1” in the “Period” column indicates that geographic area is not being published for that period for reasons discussed in the “Confidentiality of the Data” section of this document. A “0” indicates it is being published, or is not being published but for a different reason.

County	Summary Level	Level Code	Geography Name	99-03 Period	00-04 Period	01-05 Period
Pima, AZ	ZCTA	871	Arizona ZIP Code 85622	1	1	1
Pima, AZ	Unified School District	970	Redington Elementary District	1	0	0
Jefferson, AR	MCD	060	Bogy township	1	1	0
Jefferson, AR	MCD	060	Old River township	1	1	0
Jefferson, AR	Census Tract	140	Census Tract 000102 Jefferson County	1	0	0
Jefferson, AR	Census Tract	140	Census Tract 000400 Jefferson County	1	0	0
Jefferson, AR	Block Group	150	Census Tract 000102 Jefferson County Block Group 1	1	0	0
Jefferson, AR	Block Group	150	Census Tract 000400 Jefferson County Block Group 1	1	0	0
Jefferson, AR	Block Group	150	Census Tract 000600 Jefferson County Block Group 2	1	1	1
Jefferson, AR	Block Group	150	Census Tract 000600 Jefferson County Block Group 3	1	1	1
San Francisco, CA	Census Tract	140	Census Tract 060200 San Francisco County	1	1	1
San Francisco, CA	Census Tract	140	Census Tract 060300 San Francisco County	1	1	1
San Francisco, CA	Block Group	150	Census Tract 017601 San Francisco County Block Group 1	1	1	1
San Francisco, CA	Block Group	150	Census Tract 017601 San Francisco County Block Group 4	1	1	1
San Francisco, CA	Block Group	150	Census Tract 060200 San Francisco County Block Group 1	1	1	1
San Francisco, CA	Block Group	150	Census Tract 060300 San Francisco County Block Group 1	1	1	1
San Francisco, CA	Block Group	150	Census Tract 060700 San Francisco County Block Group 2	0	1	1
San Francisco, CA	Block Group	150	Census Tract 060700 San Francisco County Block Group 3	0	1	1
Tulare, CA	Census Tract	140	Census Tract 004000 Tulare County	1	1	1
Tulare, CA	Census Tract	140	Census Tract 004102 Tulare County	1	1	1
Tulare, CA	Block Group	150	Census Tract 004000 Tulare County Block Group 1	1	1	1
Tulare, CA	Block Group	150	Census Tract 004102 Tulare County Block Group 1	1	1	1
Tulare, CA	ZCTA	871	California ZIP Code 93208	1	1	0
Tulare, CA	ZCTA	871	California ZIP Code 93262	0	0	1
Tulare, CA	ZCTA	871	California ZIP Code 93633	0	0	1
Broward, FL	Block Group	150	Census Tract 030600 Broward County Block Group 1	0	0	1
Broward, FL	Block Group	150	Census Tract 030600 Broward County Block Group 3	0	0	1
Lake, IL	Census Tract	140	Census Tract 863002 Lake County	1	1	0
Lake, IL	Census Tract	140	Census Tract 863100 Lake County	1	1	0
Lake, IL	Block Group	150	Census Tract 863002 Lake County Block Group 1	1	1	0
Lake, IL	Block Group	150	Census Tract 863100 Lake County Block Group 1	1	1	0
Lake, IL	Block Group	150	Census Tract 863100 Lake County Block Group 2	1	1	0
Lake, IL	Block Group	150	Census Tract 863100 Lake County Block Group 3	1	1	0
Miami, IN	Block Group	150	Census Tract 952900 Miami County Block Group 1	1	0	0
Miami, IN	Block Group	150	Census Tract 952900 Miami County Block Group 3	1	0	0
Miami, IN	ZCTA	871	Indiana ZIP Code 46921	0	0	1
Black Hawk, IA	Place Part	155	Jesup city, Black Hawk County pt.	1	1	0

Appendix 1 (Continued)

County	Summary Level	Level Code	Geography Name	99-03 Period	00-04 Period	01-05 Period
Hampden, MA	Block Group	150	Census Tract 810404 Hampden County Block Group 1	0	1	0
Hampden, MA	Block Group	150	Census Tract 810404 Hampden County Block Group 3	0	1	0
Hampden, MA	Block Group	150	Census Tract 811600 Hampden County Block Group 6	0	1	1
Hampden, MA	Block Group	150	Census Tract 811600 Hampden County Block Group 7	0	1	1
Washington, MO	ZCTA	871	Missouri ZIP Code 63674	1	0	0
Flathead, MT	MCD	060	Flathead CCD	1	1	1
Flathead, MT	MCD	060	Glacier National Park CCD	1	1	1
Flathead, MT	Census Tract	140	Census Tract 001000 Flathead County	1	1	1
Flathead, MT	Census Tract	140	Census Tract 940100 Flathead County	1	1	1
Flathead, MT	Block Group	150	Census Tract 001000 Flathead County Block Group 1	1	1	1
Flathead, MT	Block Group	150	Census Tract 001000 Flathead County Block Group 2	1	1	1
Flathead, MT	Block Group	150	Census Tract 940100 Flathead County Block Group 1	1	1	1
Flathead, MT	Place Part	155	Niarada CDP, Flathead County pt.	1	1	1
Lake, MT	Block Group	150	Census Tract 940100 Lake County Block Group 1	1	1	1
Lake, MT	Block Group	150	Census Tract 940100 Lake County Block Group 2	1	1	1
Lake, MT	Block Group	150	Census Tract 940300 Lake County Block Group 6	1	1	0
Lake, MT	Block Group	150	Census Tract 940300 Lake County Block Group 8	1	1	0
Lake, MT	Place Part	155	Big Arm CDP, Lake County pt.	0	0	1
Lake, MT	Place Part	155	Elmo CDP, Lake County pt.	0	1	0
Douglas, NE	Block Group	150	Census Tract 001600 Douglas County Block Group 1	1	1	1
Douglas, NE	Block Group	150	Census Tract 001600 Douglas County Block Group 3	1	1	1
Otero, NM	Block Group	150	Census Tract 000601 Otero County Block Group 1	0	1	1
Otero, NM	Block Group	150	Census Tract 000601 Otero County Block Group 9	0	1	1
Otero, NM	Block Group	150	Census Tract 000602 Otero County Block Group 1	1	0	0
Otero, NM	Block Group	150	Census Tract 000602 Otero County Block Group 2	1	0	0
Otero, NM	Place Part	155	Holloman AFB CDP, Otero County pt.	0	1	1
Otero, NM	ZCTA	871	New Mexico ZIP Code 88342	1	1	1
Bronx, NY	Census Tract	140	Census Tract 001500 Bronx County	0	0	1
Bronx, NY	Census Tract	140	Census Tract 009100 Bronx County	1	1	1
Bronx, NY	Census Tract	140	Census Tract 009700 Bronx County	1	1	1
Bronx, NY	Census Tract	140	Census Tract 010200 Bronx County	1	1	0
Bronx, NY	Census Tract	140	Census Tract 024200 Bronx County	1	1	0
Bronx, NY	Census Tract	140	Census Tract 024900 Bronx County	0	1	1
Bronx, NY	Census Tract	140	Census Tract 031900 Bronx County	1	1	1
Bronx, NY	Census Tract	140	Census Tract 033400 Bronx County	1	1	1
Bronx, NY	Census Tract	140	Census Tract 043500 Bronx County	1	1	0
Bronx, NY	Block Group	150	Census Tract 001500 Bronx County Block Group 1	0	0	1
Bronx, NY	Block Group	150	Census Tract 001700 Bronx County Block Group 1	1	1	1
Bronx, NY	Block Group	150	Census Tract 001700 Bronx County Block Group 2	1	1	1
Bronx, NY	Block Group	150	Census Tract 004300 Bronx County Block Group 5	1	1	1
Bronx, NY	Block Group	150	Census Tract 004300 Bronx County Block Group 6	1	1	1
Bronx, NY	Block Group	150	Census Tract 004400 Bronx County Block Group 1	1	0	0
Bronx, NY	Block Group	150	Census Tract 004400 Bronx County Block Group 5	1	0	0

Appendix 1 (Continued)

County	Summary Level	Level Code	Geography Name	99-03 Period	00-04 Period	01-05 Period
Bronx, NY	Block Group	150	Census Tract 004700 Bronx County Block Group 1	1	0	0
Bronx, NY	Block Group	150	Census Tract 004700 Bronx County Block Group 2	1	0	0
Bronx, NY	Block Group	150	Census Tract 007100 Bronx County Block Group 2	1	1	0
Bronx, NY	Block Group	150	Census Tract 007100 Bronx County Block Group 4	1	1	0
Bronx, NY	Block Group	150	Census Tract 009100 Bronx County Block Group 1	1	1	1
Bronx, NY	Block Group	150	Census Tract 009700 Bronx County Block Group 3	1	1	1
Bronx, NY	Block Group	150	Census Tract 010200 Bronx County Block Group 1	1	1	0
Bronx, NY	Block Group	150	Census Tract 012500 Bronx County Block Group 1	0	0	1
Bronx, NY	Block Group	150	Census Tract 012500 Bronx County Block Group 4	0	0	1
Bronx, NY	Block Group	150	Census Tract 013900 Bronx County Block Group 2	1	1	1
Bronx, NY	Block Group	150	Census Tract 013900 Bronx County Block Group 3	1	0	0
Bronx, NY	Block Group	150	Census Tract 013900 Bronx County Block Group 4	1	1	1
Bronx, NY	Block Group	150	Census Tract 015500 Bronx County Block Group 2	1	1	1
Bronx, NY	Block Group	150	Census Tract 015500 Bronx County Block Group 3	1	1	1
Bronx, NY	Block Group	150	Census Tract 016500 Bronx County Block Group 3	0	1	1
Bronx, NY	Block Group	150	Census Tract 016500 Bronx County Block Group 4	0	1	1
Bronx, NY	Block Group	150	Census Tract 016700 Bronx County Block Group 2	1	1	1
Bronx, NY	Block Group	150	Census Tract 016700 Bronx County Block Group 4	1	1	1
Bronx, NY	Block Group	150	Census Tract 023100 Bronx County Block Group 1	0	0	1
Bronx, NY	Block Group	150	Census Tract 023100 Bronx County Block Group 2	0	0	1
Bronx, NY	Block Group	150	Census Tract 024200 Bronx County Block Group 1	1	1	0
Bronx, NY	Block Group	150	Census Tract 024900 Bronx County Block Group 1	0	1	1
Bronx, NY	Block Group	150	Census Tract 028900 Bronx County Block Group 3	1	1	1
Bronx, NY	Block Group	150	Census Tract 028900 Bronx County Block Group 4	1	1	1
Bronx, NY	Block Group	150	Census Tract 031900 Bronx County Block Group 9	1	1	1
Bronx, NY	Block Group	150	Census Tract 033300 Bronx County Block Group 1	1	1	1
Bronx, NY	Block Group	150	Census Tract 033300 Bronx County Block Group 2	1	1	1
Bronx, NY	Block Group	150	Census Tract 033400 Bronx County Block Group 9	1	1	1
Bronx, NY	Block Group	150	Census Tract 036100 Bronx County Block Group 2	1	1	1
Bronx, NY	Block Group	150	Census Tract 036100 Bronx County Block Group 4	1	1	1
Bronx, NY	Block Group	150	Census Tract 036600 Bronx County Block Group 1	1	0	1
Bronx, NY	Block Group	150	Census Tract 036600 Bronx County Block Group 2	1	0	1
Bronx, NY	Block Group	150	Census Tract 037100 Bronx County Block Group 1	0	0	1
Bronx, NY	Block Group	150	Census Tract 037100 Bronx County Block Group 2	0	0	1
Bronx, NY	Block Group	150	Census Tract 037501 Bronx County Block Group 1	1	1	0
Bronx, NY	Block Group	150	Census Tract 037501 Bronx County Block Group 2	1	1	0
Bronx, NY	Block Group	150	Census Tract 043500 Bronx County Block Group 9	1	1	0
Bronx, NY	Block Group	150	Census Tract 046201 Bronx County Block Group 1	1	0	1
Bronx, NY	Block Group	150	Census Tract 046201 Bronx County Block Group 2	1	0	1
Bronx, NY	Block Group	150	Census Tract 050200 Bronx County Block Group 1	1	1	1
Bronx, NY	Block Group	150	Census Tract 050200 Bronx County Block Group 2	1	1	1
Bronx, NY	PUMA	795	Puma 03701, New York	1	1	1
Bronx, NY	PUMA	795	Puma 03702, New York	1	1	0
Bronx, NY	PUMA	795	Puma 03704, New York	1	1	0
Bronx, NY	PUMA	795	Puma 03705, New York	1	1	1
Bronx, NY	PUMA	795	Puma 03707, New York	0	1	1
Bronx, NY	PUMA	795	Puma 03709, New York	1	1	0

Appendix 1 (Continued)

County	Summary Level	Level Code	Geography Name	99-03 Period	00-04 Period	01-05 Period
Rockland, NY	Census Tract	140	Census Tract 010902 Rockland County	1	0	0
Rockland, NY	Census Tract	140	Census Tract 012300 Rockland County	1	0	0
Rockland, NY	Block Group	150	Census Tract 010902 Rockland County Block Group 1	1	0	0
Rockland, NY	Block Group	150	Census Tract 010902 Rockland County Block Group 2	1	0	0
Rockland, NY	Block Group	150	Census Tract 010902 Rockland County Block Group 3	1	0	0
Rockland, NY	Block Group	150	Census Tract 012300 Rockland County Block Group 1	1	0	0
Rockland, NY	Block Group	150	Census Tract 012300 Rockland County Block Group 2	1	0	0
Rockland, NY	Block Group	150	Census Tract 012300 Rockland County Block Group 3	1	0	0
Rockland, NY	Block Group	150	Census Tract 012300 Rockland County Block Group 4	1	0	0
Rockland, NY	PUMA	795	Puma 03601, New York	1	0	0
Rockland, NY	PUMA	795	Puma 03602, New York	1	0	0
Franklin, OH	Census Tract	140	Census Tract 006830 Franklin County	1	1	1
Franklin, OH	Census Tract	140	Census Tract 006942 Franklin County	1	1	1
Franklin, OH	Block Group	150	Census Tract 001120 Franklin County Block Group 2	1	1	1
Franklin, OH	Block Group	150	Census Tract 001120 Franklin County Block Group 4	1	1	1
Franklin, OH	Block Group	150	Census Tract 006830 Franklin County Block Group 9	1	1	1
Franklin, OH	Block Group	150	Census Tract 006942 Franklin County Block Group 1	1	1	1
Franklin, OH	Block Group	150	Census Tract 007942 Franklin County Block Group 3	1	0	0
Franklin, OH	Block Group	150	Census Tract 007942 Franklin County Block Group 4	1	0	0
Franklin, OH	Block Group	150	Census Tract 008825 Franklin County Block Group 2	1	1	1
Franklin, OH	Block Group	150	Census Tract 008825 Franklin County Block Group 4	1	1	1
Franklin, OH	Place Part	155	Lithopolis village, Franklin County pt.	0	1	1
Franklin, OH	Place Part	155	Pickerington city, Franklin County pt.	1	1	1
Multnomah, OR	Place Part	155	Happy Valley city, Multnomah County pt.	0	1	0
Fulton, PA	MCD	060	Valley-Hi borough	1	1	0
Fulton, PA	MCD	060	Wells township	1	1	0
Fulton, PA	Place Part	155	Valley-Hi borough, Fulton County pt.	1	1	0
Schuylkill, PA	ZCTA	871	Pennsylvania ZIP Code 17933	0	0	1
Schuylkill, PA	ZCTA	871	Pennsylvania ZIP Code 17943	0	1	0
Starr, TX	Place Part	155	Falcon Village CDP, Starr County pt.	1	0	0
Starr, TX	ZCTA	871	Texas ZIP Code 78545	1	0	0
Starr, TX	ZCTA	871	Texas ZIP Code 78591	1	0	0
Zapata, TX	Place Part	155	Lopeno CDP, Zapata County pt.	1	1	1
Zapata, TX	Place Part	155	Morales-Sanchez CDP, Zapata County pt.	0	0	1
Petersburg, VA	Block Group	150	Census Tract 810300 Petersburg city Block Group 2	0	1	1
Petersburg, VA	Block Group	150	Census Tract 810300 Petersburg city Block Group 3	0	1	1
Petersburg, VA	Block Group	150	Census Tract 810400 Petersburg city Block Group 1	1	0	0
Petersburg, VA	Block Group	150	Census Tract 810400 Petersburg city Block Group 2	1	0	0
Yakima, WA	ZCTA	871	Washington ZIP Code 98939	1	1	1