



September 2016

COMMUNITY DEVELOPMENT BLOCK GRANTS

Sources of Data on Community Income Are Limited

Accessible Version

Why GAO Did This Study

Administered by HUD, the CDBG program provides funding for housing, community, and economic development programs. After set asides, HUD must allocate 70 percent of funds to cities and urban counties, known as entitlement communities, and 30 percent to states for distribution to eligible nonentitlement communities. In fiscal year 2015, Congress appropriated \$3 billion for the CDBG program, of which HUD allocated \$900 million to states. Seventy percent of CDBG funds must principally benefit low- and moderate-income persons, and Census Bureau data are used for this determination. In 2014, HUD transitioned from using decennial census long form income data (which are no longer collected) to ACS income data, which HUD uses to update its income data every 5 years.

GAO was asked to review HUD's policies related to communities that disagree with their CDBG eligibility determination based on HUD's use of ACS data. This report examines (1) HUD's and states' eligibility policies and (2) potential alternative data sources. GAO interviewed CDBG administrators from 8 states and from nonentitlement communities in each of these states, all of which were selected based on available data and CDBG stakeholders' recommendations; spoke with other CDBG stakeholders; and reviewed CDBG guidance from 49 states and Puerto Rico. GAO also analyzed how use of ACS data can affect community eligibility.

GAO makes no recommendations in this report. HUD and the Department of Commerce provided technical comments.

View [GAO-16-734](#). For more information, contact William Shear at (202) 512-8678 or shearw@gao.gov.

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What GAO Found

The Department of Housing and Urban Development's (HUD) and states' primary method for communities to demonstrate eligibility when they disagree with HUD's eligibility determination is to allow communities to conduct their own local income surveys to show that they meet the Community Development Block Grant (CDBG) income threshold. HUD instructs small communities, known as nonentitlement communities, to use data based on the Census Bureau's American Community Survey (ACS) to determine whether at least 51 percent of residents in their proposed project service areas are low- and moderate-income persons and are therefore eligible for CDBG funds. However, communities may disagree with their eligibility determination based on ACS data, or they may be unable to use this method because the project's service area is larger or smaller than the census boundaries. In these cases, HUD and states allow communities to conduct their own local income surveys to demonstrate eligibility. State officials GAO interviewed said it is common for nonentitlement communities to use local income surveys as an alternative to HUD's ACS-based data, and HUD and states provide guidance on conducting these surveys. However, stakeholders cited costs and other challenges nonentitlement communities face in conducting local income surveys, including resource constraints, administrative burdens, and difficulty in obtaining a sufficient number of survey responses. Other than local income surveys, alternative methods for showing eligibility for CDBG funds are limited. For example, communities may qualify by funding activities that serve populations HUD presumes to be low- and moderate income, such as the elderly or homeless.

Stakeholders GAO interviewed cited challenges associated with measuring income and limitations associated with alternative data sources that might be used to demonstrate that communities meet the low- and moderate-income requirements. For example, stakeholders cited general challenges associated with measuring income and poverty, such as fluctuations in an individual's or community's income over a year. Some stakeholders cited alternative sources of income information that have not been used by communities that disagree with census data to determine CDBG eligibility. However, they noted that these sources would likely have one or more of the following limitations:

- does not fully measure a community's income;
- is not easily accessible by communities;
- is not available at small geographic levels; or
- is not more precise than ACS.

For example, some sources of income data, such as income tax data, may have limited public availability—limiting their accessibility by communities—and income tax data would not include low-income earners who are not required to file tax returns. Other sources, such as the Supplemental Nutrition Assistance Program and other income-based programs, would not provide data at a small enough geographic level to be useful for this purpose. The Census Bureau is in the process of exploring ways to use external data sources, such as Social Security Administration and Internal Revenue Service data, to supplement ACS to improve the data and expects to make recommendations by March 2017.

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Abbreviations

ACS	American Community Survey
CDBG	Community Development Block Grant
HUD	Department of Housing and Urban Development
LMI	low- and moderate-income
SNAP	Supplemental Nutrition Assistance Program

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September 6, 2016

The Honorable Mario Diaz-Balart
Chairman
Subcommittee on Transportation, Housing and Urban Development, and
Related Agencies
Committee on Appropriations
House of Representatives

The Honorable Jaime Herrera Beutler
House of Representatives

The Community Development Block Grant (CDBG) program is the federal government's principal community development program. The primary objective of the program is the development of viable urban communities by providing decent housing and a suitable living environment and expanding economic opportunities, principally for persons of low and moderate income. In fiscal year 2015, Congress provided approximately \$3 billion for the program to fund housing, economic development, neighborhood revitalization, and other community development activities. Administered by the Department of Housing and Urban Development (HUD), the CDBG program provides funding to metropolitan cities and urban counties—known as entitlement communities—and to states for distribution to other, generally smaller communities—known as nonentitlement communities. Activities undertaken with program funds, with the exception of funds allowed for administrative and planning activities, must (1) benefit low- and moderate-income (LMI) persons, (2) aid in the prevention or elimination of slums or blight, or (3) meet urgent community development needs.

By statute, 70 percent of CDBG funds must be used toward the objective of benefitting LMI persons. Communities demonstrate that their CDBG projects would meet this objective primarily by using HUD's Low- and Moderate-Income Summary Data (LMI summary data), which provide information on the percentage of the population that is considered LMI for different geographic areas. Historically, HUD has based its LMI summary data on the decennial census long form, which asked a sample of households detailed questions, including those related to income. After the 2000 decennial census, the U.S. Census Bureau discontinued the long form and replaced it with the American Community Survey (ACS), and in July 2014, HUD began using ACS as the basis for its LMI summary data.

You asked us to review options for nonentitlement communities that disagree with their ACS-based CDBG eligibility determination. This report examines (1) HUD's and states' policies for communities that disagree with their eligibility determination based on HUD's use of ACS data or that are not able to use HUD's LMI summary data and the challenges, if any, communities face in using available options, and (2) stakeholders' views on whether there are possible alternative data sources for determining eligibility under CDBG's LMI objective.

To determine the policies HUD and states have in place for communities that disagree with their CDBG eligibility determination based on ACS data, we reviewed HUD's CDBG regulations and guidance in addition to CDBG guidance from 49 states and Puerto Rico.¹ We interviewed HUD officials, as well as CDBG administrators from a nongeneralizable sample of eight states and from selected nonentitlement communities within each of these states. We chose states and communities based on whether they had available data on their use of surveys and a high number of rural communities, and on recommendations from other state officials. Findings from the interviews with states and communities cannot be generalized to those with which we did not speak. We also interviewed other CDBG stakeholders, such as representatives of community development associations and private companies that assist communities with CDBG applications.

To obtain stakeholders' views on whether there are possible alternative data sources for determining eligibility under CDBG's LMI objective, we interviewed the stakeholders identified above, as well as officials from the Census Bureau. Additional stakeholders we consulted included researchers from the Urban Institute, George Washington University, and the National Opinion Research Center at the University of Chicago. We selected a purposive subset of such researchers based on our knowledge of organizations active in conducting research on topics relevant to our inquiry, a review of relevant studies, and a recommendation we received

¹We did not include Hawaii because the state has permanently elected not to receive state CDBG program funding, and therefore does not issue state CDBG program guidance; instead, HUD awards funds by formula directly to the nonentitlement areas of Hawaii (three counties). We also did not include American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands, which are part of a separate CDBG Insular Areas program. The District of Columbia is considered an entitlement community for CDBG funds.

during an interview. We also reviewed prior GAO work to help identify potential alternative sources of income information. More information on our scope and methodology is contained in appendix I. In addition, appendix II presents analysis of how margins of error around LMI estimates based on ACS data show the degree to which there is uncertainty about CDBG eligibility determination for nonentitlement communities. Appendix III presents analysis of changes in the eligibility status of nonentitlement communities in eight states for CDBG funds between the 2000 LMI summary data and the LMI summary data used by HUD beginning in 2014 and based on 2006–2010 ACS data.

We conducted this performance audit from May 2015 to September 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

CDBG Program

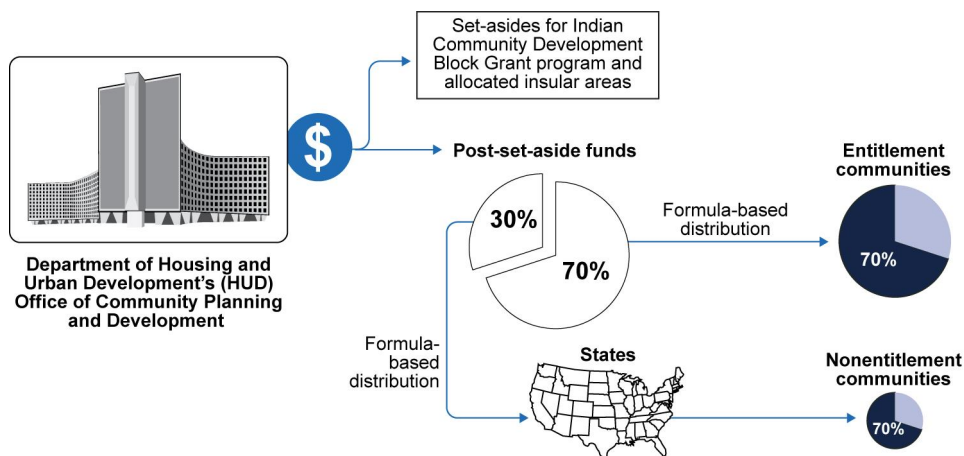
The Housing and Community Development Act of 1974 created the CDBG program to develop viable urban communities by providing decent housing and a suitable living environment and by expanding economic opportunities, principally for LMI persons.² Program funds can be used for housing, economic development, neighborhood revitalization, and other community development activities. After funds are set aside for special statutory purposes—the Indian Community Development Block Grant program and allocated insular areas—the annual CDBG appropriation is allocated to entitlement communities and states. Entitlement communities generally are principal cities of metropolitan statistical areas, other metropolitan cities with populations of at least 50,000, and qualified urban counties with populations of 200,000 or more (excluding the populations of entitlement cities). States distribute their allocated CDBG funds to nonentitlement communities. After the set-asides, 70 percent of CDBG

²Pub. L. No. 93-383, tit. I, § 101(c), 88 Stat. 633, 634 (codified as amended at 42 U.S.C. § 5301(c)).

funds are allocated to entitlement communities, and the remaining 30 percent are allocated to states to distribute to nonentitlement communities. In fiscal year 2015, Congress appropriated about \$3.1 billion for the Community Development Fund, \$66 million of which was set aside for Native American tribes. Of the remaining amount, roughly \$2.1 billion was allocated to entitlement communities, roughly \$900 million was allocated to states to distribute to nonentitlement communities, and roughly \$7 million was set aside for insular areas.

Both entitlement and nonentitlement communities must use CDBG funds toward one of three national objectives: (1) benefitting LMI persons, (2) aiding in the prevention or elimination of slums or blight, or (3) meeting urgent community development needs. At least 70 percent of all funds allocated to entitlement communities and states must be used toward the first objective over a period of 1, 2, or 3 years (as specified by the grantee). Figure 1 illustrates the distribution of CDBG funds.

Figure 1: Distribution of Community Development Block Grant Funds



Entitlement/nonentitlement communities use the funds for activities that meet the following objectives:

- Aid in prevention or elimination of slums or blight, or
- Benefit low- and moderate-income persons
- Meet urgent community development needs

Source: GAO analysis of 42 U.S.C. §§ 5304(b) and 5306. | GAO-16-734

Note: The 70 percent of funds toward the objective of benefitting low- and moderate-income persons is what the CDBG program minimally requires, not the actual proportion of CDBG funds entitlement and nonentitlement communities use toward this objective.

For the LMI national objective, HUD defines an activity to be principally benefitting LMI persons if at least 51 percent of the population of the community or 51 percent of project beneficiaries meet HUD's LMI definition, which we discuss in detail later. There are several ways a community can qualify for CDBG funds under the objective of principally benefitting LMI persons:

- If a project is designed to serve the entire community or a smaller area within a community—for example, a waste water project—the community or project area would need to qualify by showing that the entire community or project area is majority LMI persons. HUD refers to these projects as area-benefit activities.
- If a project is designed to serve a smaller area within a community—for example, a sidewalk for a neighborhood—the community may need to conduct a local income survey to demonstrate that the majority of residents to be served by that project are LMI persons. We refer to this type of survey as a local income survey since it is used to collect income data from a community or individuals that reside in a project service area.
- If a project is designed to serve a specific clientele—for example, a senior center or homeless shelter—the community may be able to qualify for funding under the LMI objective by showing that the beneficiaries of the project fall under one of the population categories that HUD presumes to be LMI, such as the elderly or homeless.
- If a project directly benefits LMI persons—for example, rehabilitation of single-family housing that will be occupied by a LMI household or a job creation activity that will create jobs the majority of which will be held by LMI persons—the community can qualify for funding under the LMI objective by showing that the direct beneficiaries are LMI.

For the portion of funds that are allocated to states to distribute to nonentitlement communities, HUD provides states with flexibility in determining specific requirements, including those related to program oversight and selecting activities to fund. Specifically, HUD's CDBG regulations state that HUD will give "maximum feasible deference" to the state's interpretation of the statutory and regulatory requirements, provided that these interpretations are not plainly inconsistent with the statute.³ States formulate community development objectives for their

³24 C.F.R. § 570.480(c).

state and determine how to distribute funds among nonentitlement communities, which submit applications for funding to their respective state. States can use a formula, competition, open application, or a combination of methods to distribute funds to nonentitlement communities.⁴

HUD's Low- and Moderate-Income Summary Data

For projects designed to serve either the entire community or a smaller area within a community, HUD produces the LMI summary data to help states and communities determine whether at least 51 percent of a proposed project's service area is comprised of LMI persons. The LMI summary data draw income data from ACS and provide estimates of the number and percentage of persons in a proposed project's service area who can be considered low or moderate income. Specifically, a person is considered to be of low income if he or she is a member of a family whose income is at or below 50 percent of area median income.⁵ Similarly, CDBG moderate income level is generally tied to 80 percent of area median income. Unrelated individuals in a household are considered one-person families for CDBG purposes.

Historically, HUD used data collected by the decennial census long form as the basis for the LMI summary data. However, after the 2000 decennial census, the Census Bureau discontinued the long form and began collecting detailed demographic and income information using ACS. As a result, the current LMI summary data, which were released in July 2014, are based on aggregated 2006–2010 ACS data.⁶ In contrast to the decennial census, which was conducted once every 10 years, ACS is an ongoing survey, and the Census Bureau updates its publicly available

⁴The formula distribution method uses population and other factors to distribute CDBG funds to all eligible nonentitlement communities through a noncompetitive process. Competitive methods allocate funds to numerous types of CDBG-eligible activities, with awards determined by a variety of application criteria and evaluation methods. With open applications, states either do not establish an application deadline, or the application submission period extends for several months. States' open application processes sometimes rate projects but do not necessarily rank them against each other.

⁵24 C.F.R. § 570.3. CDBG uses Income Limits for Metropolitan Areas and for Non-Metropolitan Counties prepared by HUD's Office of Policy Development and Research.

⁶HUD issued guidance to states on its transition policy for using the 2006–2010 ACS-based LMI summary data on June 10, 2014. (*Transition Policy for Low/Moderate Income Summary Data Updates during Fiscal Year 2014 for the State Community Development Block Grant Program*. CPD-14-10.)

data annually. In addition, ACS sample sizes (which changed in 2011) and the geographic level at which data are available differ from those of the decennial census long form. See table 1 for a comparison of selected features of the decennial census long form, ACS before 2011, and ACS after 2011.

Table 1: Selected Differences between 2000 Decennial Census Long Form and the American Community Survey before and after 2011

	2000 Decennial Census Long Form	American Community Survey (before 2011)	American Community Survey (starting in June 2011)
Sample sizes ^a	20.9 million housing unit addresses (roughly 17.1 percent of all addresses) ^b	2.9 million housing unit addresses annually, or 14.5 million for the 5-year estimates (5-year sample is 12.5 percent of housing unit addresses) ^b	3.54 million housing unit addresses annually, or 17.7 million addresses for the 5-year estimate (5-year sample is 13 percent of all addresses) ^b
Frequency of data collection	Once every 10 years – all surveys were completed within a few months of April 1 during the year of the survey.	Ongoing	Ongoing
Smallest geographic level of available data for low-and moderate-income summary data	Split-block group ^c	Block group ^c	Block group ^c

Source: U.S. Census Bureau, Department of Housing and Urban Development. | GAO-16-734

^aSample sizes do not include surveys conducted in Puerto Rico.

^bThe number of housing unit addresses is the number of addresses initially selected for interviews. Some housing interview addresses are later determined to be nonexistent or commercial, and therefore do not have final interviews associated with them.

^cThe split-block group is a smaller geographic area than the block group, as it splits block groups by county subdivision, place, and urban/rural designation. The block group is generally the smallest geographic level of available data for the American Community Survey-based low-and moderate-income summary data. However, HUD officials noted that in some cases, such as in rural areas, Census-designated places can be smaller than the block group.

Differences between the two surveys have resulted in differences between the LMI summary data values that are based on each survey, including the following examples:

-
- **Smaller sample size and larger error rates:** ACS has a smaller sample size than the decennial census long form, so the LMI estimates are based on a sample of fewer households. The 2000 decennial census long form was mailed to approximately 20.9 million housing unit addresses, all completed within several months of April 2000. The 2006–2010 5-year ACS estimates included 2.9 million housing unit addresses per year, for a total of 14.5 million addresses over the 2006–2010 5-year period, and surveys were mailed to 250,000 addresses each month. Because the ACS sample size is smaller, HUD uses a 5-year ACS average for its LMI summary data, with the current LMI summary data based on 2006–2010 ACS estimates. Even using 5 years of data, the ACS sample currently used by HUD is still smaller, reaching about 12.5 percent of all addresses, compared with the roughly 17.1 percent of addresses that received the long form of the 2000 decennial census.

As a result of smaller sample sizes, ACS generally has higher sampling errors, and its estimates are less precise (see app. II for more details on ACS confidence intervals and their potential effects).⁷ HUD and Census Bureau officials noted that unlike the decennial census long form, ACS publishes margins of error with its public data for greater transparency.

In 2011, the Census Bureau increased ACS's overall sample sizes, as well as the sample sizes of small areas.⁸ These improvements will be reflected in HUD's next update of the LMI summary data, which will be

⁷According to Census Bureau officials, ACS includes several steps intended to reduce nonsampling error that are in addition to the methods used in the 2000 decennial census long form data collection. Potential sources of nonsampling error include coverage, nonresponse, and measurement errors, as well as errors that may arise during data capture and processing. Examples of steps ACS takes to reduce nonsampling error include only allowing data to be collected from household members (rather than nonhousehold members such as neighbors) and using permanent professional interviewers rather than short-term interviewers used for the decennial census long form.

⁸According to Census Bureau officials, in incorporated places with fewer than 200 occupied housing units, the sampling rate was increased from 10 percent to 15 percent per year. In places with 200–400 occupied housing units, sampling rates were increased from 6.6 percent per year to 10 percent per year. Larger areas have a decrease in sample size, making the difference in sample sizes between larger and smaller areas smaller. However, Census Bureau officials said that the decrease in sample sizes among larger areas will not be as significant as the increases in sample sizes among smaller areas. In addition, beginning in June 2011, the overall sample was increased from 2.9 million to 3.54 million housing unit addresses.

based on 2011–2015 data. According to Census Bureau analysis, for a poverty estimate of 10 percent in an average-sized tract and at the 90 percent confidence level, increasing the sample size from 2.9 million to 3.54 million would result in a 9.2 percent improvement in margins of error.⁹

- **More frequent LMI summary data updates:** Another difference between the decennial census long form and ACS is that the long-form survey was conducted every 10 years; therefore, HUD updated its LMI summary data every 10 years as well. In contrast, the Census Bureau updates ACS's 5-year estimates annually. Since switching to ACS data, HUD has chosen to update its LMI summary data once every 5 years. HUD officials said this approach allows communities to develop long-term plans and limit uncertainty related to gaining or losing LMI status from year to year, but still allows for more timely information than the decennial census long form did.¹⁰
- **Different geographic areas:** HUD was able to produce its LMI summary data at a smaller geographic area with the decennial census long form than with ACS. Specifically, the LMI summary data were available at the smaller split-block group-level with the decennial census long form and are only available at the block group-level with ACS.

⁹The margin of error at a particular confidence level is a measure of the possible difference between the sample estimate and the actual value. The confidence level (e.g., 90 percent or 95 percent) indicates the level of certainty that the actual value lies within the confidence interval.

¹⁰See appendix III for information on changes in nonentitlement communities' LMI status when HUD updated the LMI summary data from the 2000 decennial census long form to the 2006–2010 ACS.

HUD and State Policies Allow Local Income Surveys as an Alternative to Census Data

HUD's and states' primary policy for nonentitlement communities that disagree with their CDBG eligibility determination based on census data is to allow communities to conduct local income surveys. In addition, some state and local officials said that because the ACS-based LMI summary data are not available at as small a geographic level as the prior LMI summary data, projects' service areas more often do not align with HUD's data. As a result, more communities have had to conduct local income surveys to demonstrate eligibility. State and local officials we interviewed said that conducting a local income survey can be a challenge for small communities due to resource constraints and high costs. Other options include applying for funding under one of the other national objectives or for a project targeted to beneficiaries that are presumed to be low income. However, state and community officials said these options can be difficult to use because they may not allow for projects that meet the needs of their communities.

Communities Have the Option to Conduct a Local Income Survey When They Disagree with Census Data

For nonentitlement communities that disagree with their CDBG eligibility determination based on HUD's use of ACS data, HUD's and states' primary policy is to allow these communities to conduct local income surveys. HUD instructs communities submitting CDBG applications for area-benefit activities—that is, projects designed to serve an entire community or area within a community—to use the LMI summary data to the fullest extent feasible to show that the project area meets the 51 percent LMI threshold. However, if a community disagrees with its eligibility determination based on LMI data, it has the option to conduct a local income survey.¹¹ According to HUD guidance, in order to conduct a local income survey, a community must develop a set of questions to determine household size and household income, identify the survey population or a random sample of households that would benefit from the activity, then select the type of survey to use (e.g., in-person, telephone, mail). The survey results must then be tabulated, and if they show that the project's service area meets the 51 percent LMI threshold, the community may submit the survey results to the state with its CDBG application.

We interviewed officials from eight states and representatives of local governments within those states, and most expressed concerns with the

¹¹See 24 C.F.R. § 570.208(a)(1)(vi).

use of ACS data for making CDBG eligibility determinations. Several state officials said that nonentitlement communities have needed to conduct local income surveys due to ACS's small sample sizes and large margins of error. For example, officials from one state attributed 20 nonentitlement communities' loss of LMI status to a lack of precision in ACS estimates. Similarly, officials from several states and communities we interviewed noted instances where communities did not meet HUD's LMI threshold based on ACS estimates but were able to demonstrate LMI status with local income surveys. For example, according to officials from one state, nine nonentitlement communities successfully showed that their project service areas met the LMI threshold with local income surveys when the LMI summary data indicated that they did not meet the threshold. State officials may not learn of nonentitlement communities that conducted local income surveys but were unable to show their project service areas met the LMI threshold. Officials from two of the states we interviewed told us that they were not aware of nonentitlement communities that were unable to show that their project service areas met the LMI threshold using a local income survey because the state officials only received local income surveys from communities that successfully showed their project service areas met the LMI threshold. See appendix II for our analysis of the ACS confidence intervals and resulting uncertainty over nonentitlement communities' LMI status.

HUD and States Allow Local Income Surveys When Service Areas Do Not Align with Census Geographic Boundaries

HUD's CDBG regulations and local income survey guidance also discuss the use of local income surveys in place of the LMI summary data when the service area benefitting from an activity is larger or smaller than the census boundaries. Specifically, HUD's local income survey guidance states that a local income survey may be the most appropriate way to determine eligibility when (1) a service area comprises only a small portion of a block group, (2) a service area includes all or part of several nonentitlement communities and may also include both incorporated and unincorporated places, or (3) a service area is sparsely populated.¹²

¹²An incorporated place, under the Census Bureau's definition, is a type of governmental unit incorporated under state law as a city, town (except the New England states, New York, and Wisconsin), borough (except in Alaska and New York), or village and having legally prescribed limits, powers, and functions. Unincorporated places, or census designated places, are not legally incorporated under state laws and are located adjacent to incorporated places or other legal boundaries. These areas do not have legal status, nor do they have elected officials that serve traditional municipal functions.

HUD's guidance explains that when a service area for an activity only comprises a small portion of a block group, the LMI summary data may not reflect the characteristics of the households being served. In addition, when a service area covers multiple nonentitlement communities, a local income survey may be necessary to supplement the LMI summary data.

HUD does not specify when a service area would be considered too small or too large to use the LMI summary data. In their role as administrators of the state CDBG program, states may specify when a service area should be considered too small or too large and, therefore, when a nonentitlement community would be required to conduct a local income survey. One state official we interviewed had specific guidelines on when a service area is considered too small to use the LMI summary data. Specifically, in this state, the LMI summary data may be used only when at least 60 percent of the census geographic area is benefitting from the proposed activity. Other state officials we interviewed said they did not have specific requirements and determined whether project service areas were too large or too small to use the LMI summary data on a case-by-case basis. Based on our review of CDBG guidance from 49 states and Puerto Rico, 1 state does not allow nonentitlement communities to use the LMI summary data to show they meet the LMI threshold; instead, this state requires all communities applying for funding using the area-benefit criteria to conduct local income surveys.¹³ Officials from this state explained that they require surveys because project service areas in their state rarely align with the block groups. In addition, they said that the state has a geographically dispersed population and that it is more efficient to interview a small number of households than it is to determine the proper census area to use.

Since HUD's issuance of state CDBG regulations in 1988, communities have been allowed to conduct local income surveys when project service areas do not align with census areas. However some state and community officials we interviewed said that the loss of the smaller split-

¹³We did not include Hawaii because the state has permanently elected not to receive state CDBG program funding, and therefore does not issue state CDBG program guidance; instead, HUD awards funds by formula directly to the nonentitlement areas of Hawaii (three counties). We also did not include American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands, which are part of a separate CDBG Insular Areas program. The District of Columbia is considered an entitlement community for CDBG funds.

block group-level data with the transition from the decennial census long form to ACS has resulted in challenges. For example, officials from one state told us that the larger geographic areas reported in the ACS-based LMI summary data have made it difficult for communities to show income data for more targeted service areas. According to Census Bureau officials, concerns about confidentiality and the lack of precision around the data at these small geographic levels led the Census Bureau to discontinue publishing the data at the split-block group level. Census Bureau officials noted that margins of error at these small geographic levels would be very high, as they were with the decennial census long form. However, they said that the high margins of error with the decennial census long form would not have been evident to grantees because margins of error were not published. In addition, a few state and local officials attributed the need to conduct local income surveys to changes in the available geographic level of the data. For example, officials from one state and one nonentitlement community explained that the LMI summary data being reported at the larger geographic level has resulted in two cases where wealthier neighborhoods were included in the area. They said that this resulted in two nonentitlement communities not being able to use the LMI summary data to demonstrate eligibility.

HUD does not collect data on the extent to which nonentitlement communities have conducted local income surveys instead of using the LMI summary data either because they disagreed with eligibility determinations based on ACS data or because a project service area did not align with census boundaries. However, officials from most of the eight states we interviewed told us that it is common for local income surveys to be used by nonentitlement communities to show that their project service areas meet the LMI threshold. For example, one state noted that out of 567 applications the state received during its last funding cycle, around 200 of those applications based eligibility on local income surveys. An official from another state said that out of 184 projects that the state funded in 2014, 75 of the eligible projects were supported by local income surveys. Several of the state officials we interviewed discussed nonentitlement communities' reasons for conducting surveys. For example, one state official said that out of 36 income surveys conducted, 26 were conducted because the activities' service areas did not align with census geographic areas; the remaining 10 were conducted because the communities' did not agree with their LMI percentages based on ACS data. Similarly, officials from another state said that most local income surveys conducted in their state were due to project areas not aligning with census areas. In addition, another state official said that about half of all surveys conducted in her state were related to geographic areas not aligning and the other half were related to

disagreement with ACS-based eligibility determinations. Officials from one state said that they could not determine why nonentitlement communities conducted surveys in their state.

States and Communities Cited Costs and Challenges in Conducting Local Income Surveys, but Some Assistance Is Available

All of the state and local stakeholders we interviewed described a number of challenges nonentitlement communities face when conducting local income surveys. For example, officials from three states we interviewed stated that the administrative burdens associated with conducting local income surveys can be difficult for nonentitlement communities with small staffs and small budgets. Local stakeholders also told us that conducting a local income survey can be time-consuming, with one survey generally taking a few months to complete depending on the resources available to the community. Some stakeholders also noted that conducting a methodologically sound local income survey can be demanding to these small communities. For example, officials from four states said it is challenging for communities to obtain a sufficient number of survey responses to be considered representative of the nonentitlement community's income. Also, two of these states and two local stakeholders told us that survey respondents are generally unwilling to share information on their income.

State and local stakeholders cited cost as a challenge associated with conducting a local income survey. Several of these stakeholders estimated the cost of a survey to be from \$5,000 to \$10,000. However, one community official said his community only paid the price of postage and the time of two employees for its survey. Officials from five states and four nonentitlement communities told us that in some cases, communities can obtain free assistance from volunteers, grant preparation firms, and regional development organizations. In addition, according to HUD officials, states could choose to allow the cost of conducting surveys to be considered an administrative or program delivery cost, and reimburse communities for it, but they noted that states have limited funds for administrative expenses. Officials from most of the states we interviewed did not provide financial assistance to nonentitlement communities conducting surveys; however, officials from one state told us that they allowed application preparation as an eligible administrative expense and that some communities in the state may have used some of these funds for conducting surveys.

HUD and most states provide guidance that nonentitlement communities can use to develop and conduct their local income surveys. HUD's guidance states that if a community follows HUD's recommended survey methodologies, the survey will yield acceptable levels of accuracy. The

guidance covers how to select the type of survey to use (e.g., in-person interviews versus interviews conducted by phone), how to develop a questionnaire, how to select a sample, and how to handle nonresponses. In general, state officials we interviewed felt HUD's guidance was sufficient and did not have any suggestions for additional guidance that might be needed. In addition, almost all states have CDBG guidance that includes discussions of conducting local income surveys. The guidance often includes methodological requirements, such as sampling requirements, and how long nonentitlement communities may use local income survey results. In addition, in some cases, the guidance also includes minimum response rates and sample survey questionnaires. Further, state and local stakeholders told us that some nonentitlement communities can receive technical assistance for conducting local income surveys from nonprofit organizations and consultants that offer grant administration services.

Other Options for Communities That Disagree with ACS Are Limited

If a community disagrees with its LMI percentage based on ACS data or if the LMI summary data do not align with a project service area for the purpose of meeting the LMI threshold, options for qualifying for CDBG funds for area benefit projects other than local income surveys are limited.¹⁴ HUD officials noted that communities can still qualify for CDBG funds under one of the other national objectives—reducing or eliminating slums/blight and meeting an urgent need within the community. However, state and local stakeholders we interviewed told us that because the CDBG authorizing statute requires that 70 percent of CDBG funding be used for LMI activities, shifting activities to one of the other national objectives is a challenge. In addition, as noted previously, communities have the option to qualify for the national objective of benefitting LMI persons in other ways that do not require using the LMI summary data or conducting a local income survey, such as funding activities that serve populations presumed to be LMI or activities that directly benefit LMI

¹⁴States may request a waiver from HUD that would allow them to continue using the prior LMI summary data for activities that were awarded prior to the transition to new census data. However, this policy is not specifically for states that disagree with eligibility determinations based on ACS data. Rather, a state could request to continue using the prior LMI summary data if a nonentitlement community's activity had already been awarded a specific amount of funding prior to July 1, 2014. HUD officials told us that the applicability of waivers is generally limited to when LMI summary data transitions to a new dataset.

persons. However, some state and local stakeholders told us that nonentitlement communities' greatest needs are for area-benefit activities such as infrastructure projects, and that they therefore must rely on the LMI summary data or local income surveys for eligibility determination.

In addition, a provision in the Consolidated Appropriations Act, 2016, states that a limited number of nonentitlement communities, tribal areas, and counties may continue using the 2000 decennial census long form-based LMI summary data to demonstrate their LMI eligibility if they are designated as a Promise Zone or a Distressed County as defined by the Appalachian Regional Commission.¹⁵ HUD officials said that this provision was included because these areas expressed concern to Congress about losing LMI status with the transition to ACS. This provision would only be applicable from fiscal years 2017 through 2020. The number of nonentitlement communities eligible under this provision to continue using the 2000 decennial census long form to demonstrate their LMI eligibility is relatively small. Since 2014, 22 communities across the country were designated as Promise Zones. These locations are generally larger cities and, in some cases, Indian reservations, and therefore generally do not participate in the nonentitlement CDBG program. The Distressed Counties are all located in the Appalachia region, covering 93 counties in 9 states. According to HUD officials, many of these Distressed Counties would qualify as LMI communities using the ACS-based LMI summary data.

¹⁵Pub. L. No. 114-113, § 244, 129 Stat. 2242, 2900 (2015). Promise Zones are designated high-poverty urban, rural, and tribal communities, where the federal government partners with and invests in communities to create jobs, leverage private investment, increase economic activity, expand educational opportunities, and reduce violent crime. For distressed counties, the Appalachian Regional Commission developed a program that is intended to build capacity and strengthen communities and promote the development of telecommunications in Appalachia. The commission classifies counties in the region in one of five economic status designations: distressed, at-risk, transitional, competitive, or attainment. Distressed counties are those that rank in the worst 10 percent of the nation's counties.

Stakeholders Noted That Potential Alternative Data Sources Have Limitations and That Collecting Accurate Income Information Is Generally Challenging

Stakeholders we interviewed noted that alternative data sources that might be used to demonstrate that communities meet the LMI requirements of the CDBG program have limitations, and they cited challenges associated with measuring income generally. With respect to measuring income in general, some stakeholders noted that collecting accurate household income information can be challenging. They noted that income may be measured at a point in time, but household members might move from one household to another during the year. These stakeholders also noted that income information may also be inaccurately reported because survey respondents may have difficulty recalling their income over the past year, particularly if they had fluctuations in income levels. One stakeholder also said that a community's income level may be difficult to determine if the community has many seasonal workers. In these cases, the community's income level may vary depending on the time of year.

In considering challenges associated with using income as a measure of economic well-being—such as whether members of a household are classified as living in poverty—some stakeholders we interviewed said that determining the appropriate threshold for defining and measuring poverty can be difficult. A few stakeholders noted that a more complete assessment of a household's income level would include its expenses and benefits, and that the Supplemental Poverty Measure produced by the Census Bureau considers these aspects of a household's financial circumstances. However, according to the Census Bureau, this measure was designed as an experimental poverty measure and is not used to determine eligibility for government programs.¹⁶

¹⁶The Supplemental Poverty Measure is produced by the Census Bureau, in cooperation with the Bureau of Labor Statistics. In conducting research on the Supplemental Poverty Measure, the U.S. Census Bureau publishes statistical estimates of the number and percentage of people in poverty using the official and supplemental poverty measures. See U.S. Census Bureau, "The Supplemental Poverty Measure: 2014," *Current Population Reports* (Washington, D.C.: September 2015). Data sources used for these estimates include the Consumer Expenditure Survey and the Current Population Survey in addition to ACS. The Census Bureau states that the Supplemental Poverty Measure "is designed to provide information on aggregate levels of economic need at a national level or within large subpopulations or areas." In its poverty-level data releases, the Census Bureau publishes statistical estimates for the nation and the 12 largest metropolitan areas. The releases do not contain information for counties or smaller geographic areas.

Stakeholders we interviewed cited several types of alternative sources of income information that have not been used by communities that disagree with census data to determine CDBG eligibility:

- **Other large-scale Census Bureau surveys that include information on income.** For example, the Survey of Income and Program Participation and the Current Population Survey both include questions on income.
- **Administrative data that can also provide information on income.** These could include federal and state tax data or data on enrollment in income-based programs, such as the National School Lunch Program for free and reduced-price meals, Medicaid, or the Supplemental Nutrition Assistance Program (SNAP).
- **Sources of information that use a combination of survey and administrative data.** For example, the Census Bureau's Small Area Income and Poverty Estimates (SAIPE) supplements ACS income data with administrative data such as federal income tax return data. Sources such as the Department of Health and Human Service's Social Vulnerability Index and Medically Underserved Areas designations can use survey information, administrative data, or a combination of survey and administrative data to compile indices that may provide an indication of a community's income level.

However, while these potential sources could provide information on income at the individual or community level, stakeholders also noted that they would likely have one or more of the following limitations:

- **Does not fully allow communities to determine if they are LMI.** Some sources of income data may not fully measure a community's income level and therefore may not be a more accurate measure of whether a community should be considered LMI than the LMI summary data. For example, the Internal Revenue Service publishes some information from federal tax returns, but while this is a direct measure of income levels, it may exclude those low-income households that do not file taxes.¹⁷ In addition, data on participation in income-based programs such as the National School Lunch Program, Medicaid, and SNAP may provide indications of a community's

¹⁷Whether an individual must file a federal income tax return depends on the individual's income, age, and filing status.

income level, but they also have limitations. For example, not everyone who is eligible for the programs participates in them. Therefore, participation rates may undercount the extent to which a community's population is low income.

Proxies for income, such as measures of medically underserved areas, the Department of Health and Human Service's Social Vulnerability Index, and the U.S. Department of Agriculture's Food Access Research Atlas, also have limitations.¹⁸ Specifically, the extent to which these indices correlate with income and the level of income with which they correlate is unclear. Finally, some sources of income information may use a different measure of income, which may not correspond to HUD's LMI measure. For example, SAIPE estimates median household income, which would not allow communities to determine the percentage of their population that meets HUD's LMI threshold.

- **Is not easily accessible by communities.** To be used broadly, an alternative data source may need to be easily accessible by nonentitlement communities. Some data, such as tax data, may have some public availability but would likely require states or other agencies to either provide data to nonentitlement communities that are not typically made available, or calculate LMI percentages for the communities. However, sharing this information may raise confidentiality concerns. It may also raise concerns about whether communities would be able to access the information from states or other agencies that may feel burdened by having to provide the data or LMI calculations based on the data.
- **Is not available at small geographic levels.** Because nonentitlement communities are small communities, an alternative data source would need to be available at a sufficiently small geographic level. Specifically, the current LMI summary data are available for census block groups and places.¹⁹ However, many other sources of income data or related proxies do not have data available

¹⁸The Social Vulnerability Index uses census data on 14 factors, including poverty, vehicle access, and crowded housing, to determine the social vulnerability of every Census tract. The Food Access Research Atlas uses different measures and indicators of supermarket accessibility to provide data on food access at the Census tract level.

¹⁹The Census "place" level is defined by areas such as a municipality, town, village, or neighborhood.

at these levels. For example, Census Bureau officials said this would be the case for Census surveys other than ACS. They noted that SAIPE income data, for example, are available at the county level, which would likely be too large for many nonentitlement CDBG projects. Other data sources, including SNAP participation rates and Bureau of Economic Analysis per capita income data, are also only available at the county level.

Census Bureau officials noted that it may be possible to use survey and administrative data to create estimates of income levels for small areas using statistical models. They noted that SAIPE is based on such models, which can estimate income levels for a specific geographic level based on other characteristics, even if there is no specific income data point for that area. However, they said that such models do not currently exist for geographic areas small enough to be used by nonentitlement communities in the CDBG program.

- **Is not more precise than ACS.** To address the concern that ACS data do not provide sufficiently precise estimates of LMI for many nonentitlement communities, an alternative data source would need to be considered reliable for small geographic areas. However, Census Bureau officials said that ACS is the nation's largest household survey that includes income information, and other Census Bureau surveys that include income information (e.g., Survey of Income and Program Participation, Current Population Survey) have smaller sample sizes than ACS, which would be associated with less certainty about the reliability of the data. Administrative data, such as those on program participation, would not have limitations related to sample size that would affect their preciseness, but they would face at least one of the other previously noted challenges, such as not allowing the community to fully determine if it is LMI.

HUD officials said that in circumstances where a nonentitlement community disagreed with what ACS showed for their LMI percentage, HUD would consider allowing states to use an alternative data source beyond an income survey. However, they noted that such a provision would need to be fairly and consistently applied within the state. HUD officials said that they have not received inquiries from states about using alternative data sources to demonstrate LMI status. As a result, HUD has not developed formal guidance on accepting alternative data sources and is still determining how any such requests should be evaluated. In addition, in July 2015, the Census Bureau announced a plan to evaluate the availability and sustainability of using external data sources, such as Social Security Administration and Internal Revenue Service data, to supplement income information collected by ACS, which they said could

improve the data. According to the research plan, the Census Bureau expects to make specific recommendations before March 2017.

Agency Comments

We provided a draft of this report to HUD and the Department of Commerce for their review and comment. They provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the Secretary of the Department of Housing and Urban Development, the Secretary of the Department of Commerce, and other interested parties. In addition, the report will be available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-8678 or shearw@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.



William B. Shear
Director, Financial Markets and Community Investment

Appendix I: Objectives, Scope, and Methodology

You asked us to review options for nonentitlement communities that disagree with their Community Development Block Grant (CDBG) eligibility determination based on the Department of Housing and Urban Development's (HUD) use of American Community Survey (ACS) data. This report examines (1) HUD's and states' policies for communities that disagree with their eligibility determination based on HUD's use of ACS data or are not able to use HUD's Low- and Moderate-Income (LMI) summary data and the challenges, if any, communities face in using available options, and (2) stakeholders' views on whether there are possible alternative data sources for determining eligibility under CDBG's LMI objective. In addition, appendix II presents analysis of how margins of error around ACS's LMI estimates can affect whether nonentitlement communities meet HUD's LMI threshold. Appendix III presents analysis of changes in the LMI status of nonentitlement communities between the 2000 and 2006–2010 LMI summary data.

HUD's Policies

To identify HUD's and states' policies for nonentitlement communities that disagree with their CDBG eligibility based on ACS data, we reviewed relevant portions of the Housing and Community Development Act of 1974 and relevant HUD regulations, policies, and local income survey guidance. We also reviewed state CDBG guidance for 49 states and Puerto Rico.¹ In addition, we interviewed officials from HUD and the U.S. Census Bureau, as well as CDBG administrators from eight states: California, Kansas, Nebraska, Ohio, Texas, Utah, Washington, and Wisconsin.

We used multiple methodologies to select the nongeneralizable sample of eight states. Specifically, we selected some of the states based on HUD-reported data that identified states with nonentitlement communities that conducted local income surveys. However, these data could not be used to definitively determine the total number of local income surveys conducted in individual states. Therefore, we selected an additional two states with high numbers of rural communities. We selected these

¹We did not include Hawaii because the state has permanently elected not to receive state CDBG program funding, and therefore does not issue state CDBG program guidance; instead, HUD awards funds by formula directly to the nonentitlement areas of Hawaii (three counties). American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands are part of the CDBG Insular Areas program. The District of Columbia is considered an entitlement community for CDBG funds.

additional states based on the U.S. Department of Agriculture's Rural Continuum codes because rural communities were more likely to have smaller sample sizes and therefore more likely to be affected by larger margins of error around their LMI estimates.² As such, communities in these states may have been more likely to have conducted local income surveys due to disagreements with their eligibility determinations based on ACS data. Finally, we identified two additional states based on recommendations from state officials we interviewed. We also interviewed a range of state and local CDBG administrators. For example, we asked officials from each of the states we selected for interviews to identify a few nonentitlement communities in their state that had conducted or attempted to conduct a local income survey or that disagreed with their LMI percentage based on ACS data. Based on those recommendations, we interviewed representatives from one or two of these communities in each of six states. Findings from the interviews with states and nonentitlement communities cannot be generalized to those with which we did not speak. In addition, in two states, we interviewed representatives of organizations that provide services to nonentitlement communities. We also interviewed representatives of a CDBG advisory council from California. Furthermore, we interviewed representatives from community development groups, including the Council of State Community Development Agencies, the Housing Assistance Council, and the National Association of Housing and Redevelopment Officials.

Alternative Data Sources

To obtain information on stakeholders' views on alternative data sources that HUD could consider in addition to ACS for determining a nonentitlement community's LMI eligibility, we consulted knowledgeable stakeholders, including researchers from the Urban Institute, George Washington University, and the National Opinion Research Center at the University of Chicago. We selected a purposive subset of such researchers based on our knowledge of organizations active in conducting research on topics relevant to our inquiry, a review of relevant studies, and a recommendation we received during an interview. We also interviewed HUD and Census Bureau officials, state and local

²The U.S. Department of Agriculture's Economic Research Service uses Rural-Urban Continuum Codes to classify metropolitan counties by the population size of their metropolitan area and nonmetropolitan counties by degree of urbanization and adjacency to metropolitan areas.

government officials, as well as representatives of the community development associations listed previously, and asked whether they could identify alternative sources of income information that could be used for these purposes. We also reviewed past GAO reports to identify any potential alternative sources of income information.³

Analysis of ACS Data

To illustrate how margins of error around LMI estimates based on ACS data can result in uncertainty about CDBG eligibility determination for nonentitlement communities, we analyzed 2008–2012 ACS special tabulations that the Census Bureau produced for HUD. Although HUD’s most recent LMI summary data were based on 2006–2010 ACS data, HUD officials said they no longer maintained margin of error information for these data, and they instead provided us with the margins of error for the 2008–2012 data. We also received a list of nonentitlement communities from HUD and used this list to identify nonentitlement communities in the 2008–2012 special tabulation dataset. We used the information on margins of error to create confidence intervals around the LMI estimates for these communities. We then selected a random, representative sample of 100 nonentitlement communities and graphed their LMI point estimates and the confidence intervals around the estimates.

To describe changes in the number of nonentitlement communities eligible for CDBG funds between the 2000 and 2006–2010 LMI summary data in eight states, we used HUD’s list of nonentitlement communities to identify these communities in the 2000 and 2006–2010 LMI summary datasets. We limited our analysis to nonentitlement communities at the place level and we determined the extent to which communities lost or gained LMI status between these two LMI summary datasets. Based on discussions with HUD and Census officials, review of HUD

³For example, see GAO, *Economic Development Administration: Documentation of Award Selection Decisions Could be Improved*, GAO-14-131 (Washington, D.C.: Feb. 6, 2014); *School Meals Program: Implications of Adjusting Income Eligibility Thresholds and Reimbursement Rates by Geographic Differences*, GAO-14-557 (Washington, D.C.: July 8, 2014); *Federal Low-Income Programs: Multiple Programs Target Diverse Populations and Needs*, GAO-15-516, (Washington, D.C.: July 30, 2015); and *National Flood Insurance Program: Options for Providing Affordability Assistance*, GAO-16-190 (Washington, D.C.: Feb. 10, 2016).

documentation, and electronic testing of the data, we determined the data to be sufficiently reliable for these purposes.

We conducted this performance audit from May 2015 to September 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Effects of ACS Confidence Intervals on Nonentitlement Communities' LMI Status

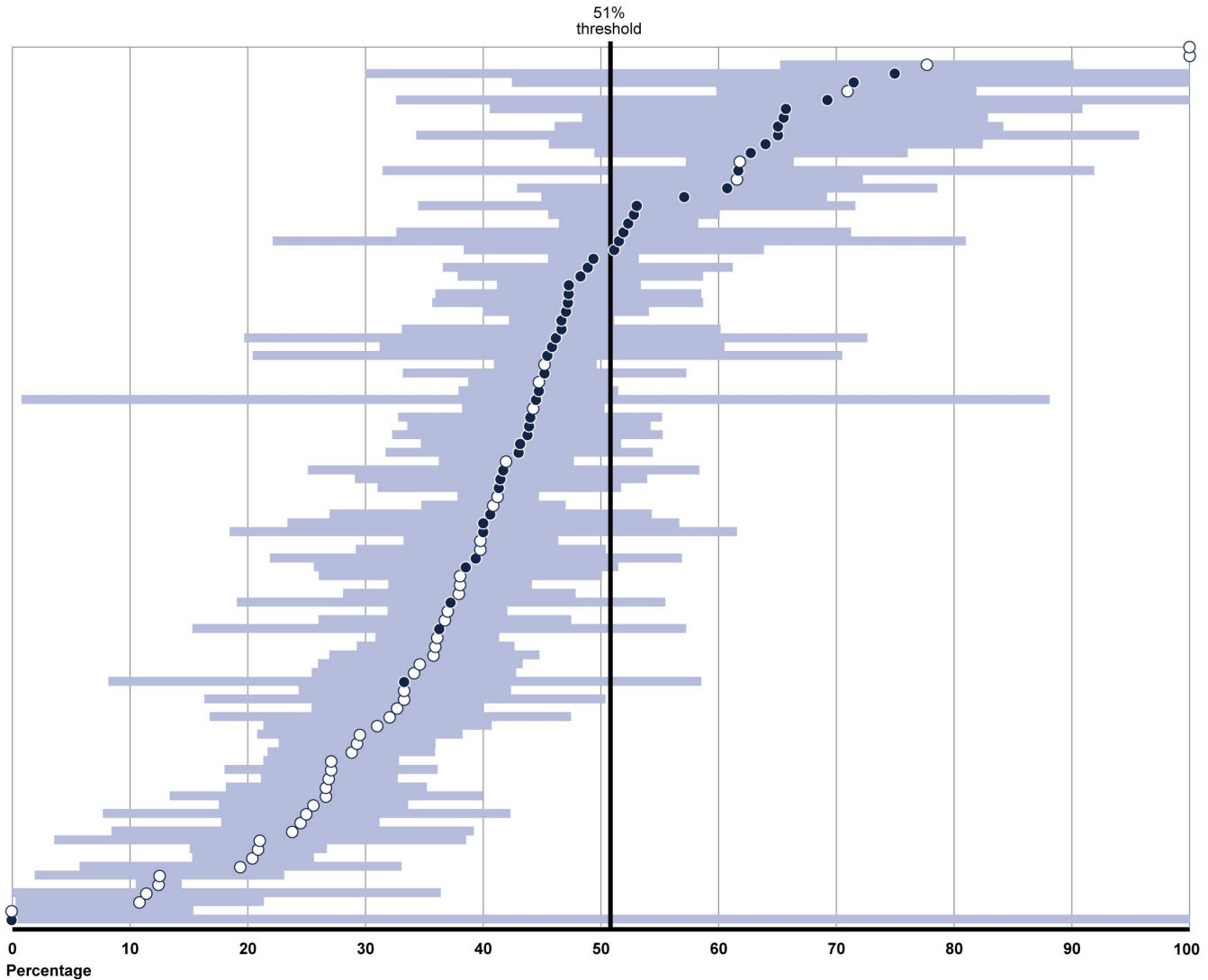
Both the decennial census long form and the American Community Survey (ACS) are based on samples and therefore subject to sampling error.¹ While margins of error are available for ACS, the decennial census long form did not publish margins of error, so a direct comparison of the two surveys' sampling error is difficult. Nonetheless, ACS sample sizes are smaller than the decennial census long form and, all other things equal, smaller sample sizes have larger sampling error. Larger sampling error results in larger margins of error and wider confidence intervals. The confidence level (e.g., 90 percent or 95 percent) indicates the level of certainty that the actual value lies within the confidence interval. For example, if a random sample survey estimated, with a confidence level of 90 percent, that 45 percent of a community's population were low- and moderate-income (LMI) with a 10 percent margin of error, then one could say with 90 percent confidence that the community's actual LMI percentage is somewhere between 35 percent and 55 percent. If the margin of error were instead 5 percent, with the same confidence level, then one could say with 90 percent certainty that the community's actual LMI population lies between 40 percent and 50 percent.

Figure 2 shows the ACS LMI estimates and confidence intervals around the estimates, at a 90 percent confidence level, for a random sample of 100 nonentitlement communities. The circles in the figure show the LMI point estimates for each of the 100 randomly selected nonentitlement communities. The horizontal bars on either side of the point estimates indicate the confidence intervals. The vertical line at the 0.51 mark indicates the 51 percent LMI threshold. The circle is shaded if a community's confidence interval includes this threshold and therefore there is uncertainty about whether the community's actual LMI value lies above or below the threshold.

¹Sampling error is a measure of variability around an estimate due to selecting one of a number of possible random samples.

Appendix II: Effects of ACS Confidence Intervals on Nonentitlement Communities' LMI Status

Figure 2: American Community Survey Low- and Moderate-Income Estimates and Confidence Intervals for 100 Randomly Selected Nonentitlement Communities, 2008–2012



Low- to moderate-income point estimate for nonentitlement community (Total: 100)

- Nonentitlement community *without* confidence interval spanning the 51 percent threshold (50 out of 100)
- Nonentitlement community *with* confidence interval spanning the 51 percent threshold (50 out of 100)

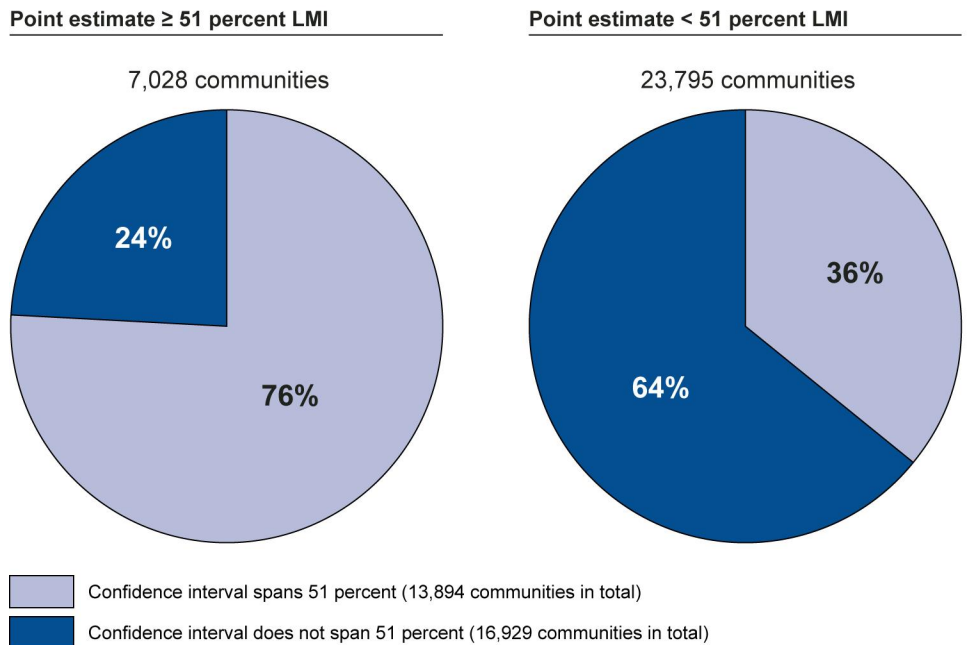
■ Confidence interval

Source: GAO analysis of 2008–2012 ACS data. | GAO-16-734

Notes: We used 2008–2012 instead of 2006–2010 ACS data because the Department of Housing and Urban Development no longer had the margins of error for the 2006–2010 data available. The complete set of 30,823 nonentitlement communities from which the 100 communities were randomly selected includes counties, county subdivisions, and Census-designated places. In 2,679 of the 30,823 nonentitlement communities, the confidence interval extended below 0 and above 100 percent. In these cases, we truncated the confidence intervals at 0 and 1.

Confidence intervals that span the 51 percent threshold result in uncertainty over whether a community actually should be considered LMI. Across all 30,823 nonentitlement communities, roughly 45 percent had confidence intervals that spanned the 51 percent threshold. As shown in figure 3, a higher proportion of communities above the 51 percent threshold had confidence intervals that spanned the 51 percent threshold than those below the 51 percent threshold (76 percent versus 36 percent, respectively). Therefore, there were more nonentitlement communities that were deemed eligible when they may not be than nonentitlement communities that were deemed ineligible when they may be eligible.

Figure 3: American Community Survey Confidence Intervals and Low- and Moderate-Income Status for All Nonentitlement Communities



Source: GAO analysis of 2008-2012 American Community Survey data. | GAO-16-734

Notes: We used 2008–2012 instead of 2006–2010 ACS data because the Department of Housing and Urban Development no longer had the margins of error for the 2006–2010 data available. We dropped 7 records because it was difficult to determine which nonentitlement communities these records aligned with. According to HUD officials, this would not affect a large number of nonentitlement communities, and therefore we did not expect it to significantly affect the outcome of our analysis. In addition, we dropped 472 of the remaining 31,295 observations due to missing information on margins of error.

A confidence interval could span the 51 percent threshold because of a wide confidence interval, because the point estimate is close to the 51 percent line, or both. As can be seen in figure 2 above, all three cases

**Appendix II: Effects of ACS Confidence
Intervals on Nonentitlement Communities' LMI
Status**

were present among nonentitlement communities. The median ACS confidence intervals for all 30,823 nonentitlement communities' LMI estimates was roughly +/- 10 percent, meaning half of nonentitlement communities had confidence intervals around their LMI estimates that spanned more than 20 percentage points from the lower to the upper bound.²

²This median calculation includes the 2,679 cases where we truncated the confidence intervals at 0 and 1.

Appendix III: Changes in the LMI Status of Nonentitlement Communities between 2000 and 2006–2010 Low- and Moderate-Income Summary Data

Officials from the Department of Housing and Urban Development (HUD) and some states we interviewed noted that each time HUD updates its Low- and Moderate-Income (LMI) summary data, whether from one decennial census to another as in the past, or the more recent 2014 transition from the 2000 decennial census to the 2006–2010 American Community Survey (ACS) data, some nonentitlement communities see changes in their LMI status. We analyzed the extent to which nonentitlement communities that are Census-designated places in the eight states we interviewed saw changes in their LMI status during the most recent update to HUD’s LMI summary data.¹ We found the following:

- 2,842 out of 3,803 communities (75 percent) did not see a change in their LMI status. Specifically, 568 (15 percent) had LMI status with both the 2000 LMI summary data and the 2006–2010 LMI summary data, and 2,274 communities (60 percent) did not have LMI status under either LMI summary data.
- 498 communities (13 percent) lost LMI status.
- 463 communities (12 percent) gained LMI status.

Communities that did see a change when HUD updated its LMI summary data could have lost or gained LMI status for a number of reasons, including

- economic or demographic changes from one survey period to the other;
- the nature of random surveys—different samples taken from the same geographic area may produce different outcomes;
- differences in the features of ACS and decennial long form; and
- differences in methodologies used for calculating LMI.²

¹The eight states included in the analysis are California, Kansas, Nebraska, Ohio, Texas, Utah, Washington, and Wisconsin.

²For the 2000 LMI summary data, HUD used standard tabulation data from the Census Bureau, which required imputations of specific income levels based on average family sizes and income categories. The 2006–2010 LMI summary data used a special tabulation from the Census Bureau, which contained specific income information and did not require imputations.

**Appendix III: Changes in the LMI Status of
Nonentitlement Communities between 2000
and 2006–2010 Low- and Moderate-Income
Summary Data**

We could not determine the extent to which losses and gains in LMI status between the 2000 LMI summary data and the 2006–2010 LMI summary data could be attributed to any of these individual factors.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

William B. Shear (202) 512-8678 or shearw@gao.gov

Staff Acknowledgments

In addition to the contact named above, Andrew Pauline (Assistant Director), Winnie Tsen (Analyst-in-Charge), Rachel Batkins, Bethany Benitez, Justin Fisher, Cindy Gilbert, Ty Mitchell, Marc Molino, and Jennifer Schwartz made key contributions to this report.

Appendix V: Accessible Data

Data Tables

Data Table for Figure 2: American Community Survey Low- and Moderate-Income Estimates and Confidence Intervals for 100 Randomly Selected Nonentitlement Communities, 2008–2012

lowmod_pct= low- to moderate-income point estimates	lmi_lb= lower bound of confidence interval	lmi_ub= upper bound of confidence interval
1	1	1
1	1	1
0.77672956	0.652137482	0.901321637
0.75	0.299696283	1
0.714285714	0.42429584	1
0.708333333	0.597938507	0.81872816
0.692307692	0.325955692	1
0.657142857	0.405453409	0.908832306
0.65625	0.483921497	0.828578503
0.651162791	0.460649842	0.841675739
0.65	0.342982492	0.957017508
0.64	0.455750847	0.824249153
0.62745098	0.494386863	0.760515098
0.617828201	0.572059227	0.663597175
0.616666667	0.314439931	0.918893403
0.615694165	0.508995271	0.722393059
0.607142857	0.428755926	0.785529788
0.570642202	0.449314389	0.691970015
0.53030303	0.344606852	0.715999208
0.528018942	0.4552232	0.600814685
0.523405287	0.464201921	0.582608653
0.519230769	0.326211617	0.712249921
0.51552795	0.221221317	0.809834584
0.510869565	0.383384947	0.638354184
0.493506494	0.454998394	0.532014593
0.488721805	0.365673316	0.611770293
0.482470785	0.378327525	0.586614044
0.472684086	0.411599674	0.533768497
0.472222222	0.35930724	0.585137205
0.471698113	0.356728061	0.586668166
0.470149254	0.399665594	0.540632914
0.466527197	0.421878727	0.511175667
0.466165414	0.330819766	0.601511061

Appendix V: Accessible Data

lowmod_pct= low- to moderate-income point estimates	lmi_lb= lower bound of confidence interval	lmi_ub= upper bound of confidence interval
0.461538462	0.196927292	0.726149631
0.458333333	0.311893504	0.604773163
0.454545455	0.204186788	0.704904121
0.452647278	0.409045394	0.496249162
0.452054795	0.331657498	0.572452091
0.446788111	0.387174665	0.506401557
0.446749654	0.3789482	0.514551108
0.444444444	0.00777549	0.881113397
0.442477876	0.38202289	0.502932863
0.439790576	0.327787677	0.551793475
0.438794727	0.33548664	0.542102814
0.4375	0.322627294	0.552372706
0.432	0.346985232	0.517014768
0.430434783	0.316973381	0.543896184
0.41958042	0.362225783	0.476935057
0.417266187	0.251065687	0.583466687
0.41509434	0.291074327	0.539114352
0.413612565	0.310174507	0.517050624
0.412647171	0.378065842	0.4472285
0.408608491	0.347319568	0.469897413
0.40625	0.269454387	0.543045613
0.4	0.233659987	0.566340013
0.4	0.184593408	0.615406592
0.397905759	0.332238926	0.463572592
0.397849462	0.291759261	0.503939664
0.39375	0.218758957	0.568741043
0.385321101	0.256096757	0.514545445
0.380530973	0.260282814	0.500779132
0.38028169	0.319355425	0.441207956
0.379699248	0.281001198	0.478397298
0.372670807	0.190774239	0.554567376
0.369594595	0.31877805	0.420411139
0.367346939	0.260017116	0.474676761
0.362637363	0.152963886	0.572310839
0.360906516	0.308359963	0.413453068
0.359550562	0.29258722	0.426513903

Appendix V: Accessible Data

lowmod_pct= low- to moderate-income point estimates	lmi_lb= lower bound of confidence interval	lmi_ub= upper bound of confidence interval
0.358455882	0.269236797	0.447674968
0.346487007	0.259529774	0.433444239
0.341085271	0.254331634	0.427838908
0.333333333	0.081590438	0.585076229
0.333333333	0.243185001	0.423481665
0.333333333	0.16298873	0.503677937
0.327047731	0.254139971	0.399955491
0.320987654	0.167543878	0.47443143
0.310185185	0.213236233	0.407134137
0.295154185	0.208016283	0.382292087
0.292740047	0.226124656	0.359355438
0.287895311	0.216807314	0.358983308
0.27076223	0.213217422	0.328307038
0.270676692	0.180219243	0.36113414
0.269230769	0.21115512	0.327306419
0.266666667	0.181333333	0.352
0.266666667	0.13362996	0.399703374
0.255707763	0.17536241	0.336053115
0.25	0.076936276	0.423063724
0.244604317	0.177382624	0.311826009
0.238095238	0.084233386	0.39195709
0.210526316	0.0356246	0.385428055
0.208860759	0.150619467	0.267102052
0.204394481	0.152704553	0.25608441
0.193877551	0.057162	0.330593125
0.125	0.0190476	0.230952365
0.124304664	0.10493064	0.143678688
0.114285714	0	0.363832075
0.108108108	0.00263613	0.213580084
0	0	0.153846154
0	0	1

Data Table for Figure 3: American Community Survey Confidence Intervals and Low- and Moderate-Income Status for All Nonentitlement Communities

Confidence interval spans 51 percent?	Point estimate of LMI at or above 51 percent (7,028 communities)	Point estimate of LMI below 51 percent (23,795 communities)
Yes (13,894 communities)	76 percent ^a	36 percent ^b
No (16,929 communities)	24 percent ^a	64 percent ^b

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