

# Module 7

## Survey Methodology



## **Suggested Methodology for Conducting LMI Surveys for Area Benefits**

**Goal:** To provide an overview of survey methodologies that may be used to determine the percentage of LMI persons in the service area of a project assisted with State CDBG funds.

**Objectives:**

Upon completion of this session, participant will:

1. understand the importance of identifying the service area and how to do so
2. know when to use HUD's low- and moderate-income summary data (LMISD) or conduct surveys to determine the percent of LMI persons in the service area.
3. Know the three commonly used survey types, and the advantages and disadvantages of using each type
4. know the steps in conducting a methodologically sound survey and how to calculate the percent of LMI persons based on the nature of the survey (random sampling, or census—i.e., 100% survey)

**Time:**  
45 Minutes

**Participant Materials:**

- CPD Notice-05-06
- Nelson Bregón Memorandum on rounding up of numbers to make the 51% LMI persons

**Module 7— Outline**

**Topics Covered**

- Introduction
- Identify the Service Area
- Why Conduct a Survey?
- Select Type of Survey
- Determine Sample Size
- Steps in Conducting Surveys
- Conclusion
- Case Studies

### Introduction

Section 104(b)(3) of the HCDA of 1974 stipulates that all activities assisted with CDBG funds must meet one of the three national objectives one of which is the requirement that the activity benefit LMI persons. One way of meeting this requirement per 24 CFR 570.483(b)(1) is to ensure that at least 51 percent of the residents of the service area as LMI persons. The burden of meeting this statutory requirement rests with the grantee. Pursuant to CDBG regulations located at 24 CFR 570.483(b)(1)(i) state grantees and sub-grantees can fulfill this requirement by using HUD's LMISD or conduct a methodological sound survey to ascertain that at least 51 percent of the residents of the service area are low- and moderate-income persons. This Module summarizes the steps in conducting a methodologically sound survey.

### Identify the Service Area

Section 105(c)(2) of the HCDA of 1974 stipulates that an Area Benefit activity must qualify on the basis of the income levels of persons who reside in the area served by the activity therefore, identifying the area served by an activity is a critical step in meeting this statutory requirement. The service area is the entire area served by the activity—24 CFR 570.483(b)(1)(i). HUD will generally accept the determination of the service area by the state and its grant recipients unless the nature of the activity or its location raises serious doubt about the area claimed by the state and its grant recipients. The service area boundaries of State CDBG-funded activities may or may not coincide with census or other geographic boundaries, especially in smaller communities and rural areas where block groups or census tracts with low population densities cover large areas. A census tract may cover an entire city or there may be only two or three census tracts in an entire county. Scenarios which states and their grantees may encounter when identifying the service area include the following:

1. The service area comprises only a small portion of the unit of general local government, or of a census tract. In such situations, information on the unit of government or the census tract is not useful because residents of the service area make up only a small fraction of the total population, and their characteristics may not reflect those of the larger area. A survey of the service area residents may be the most appropriate way to determine whether the service area qualifies under the LMI criterion. Examples of such activities include: extending water lines to serve rural settlements in a county; construction of a neighborhood tot lot serving one subdivision in a city where the entire city is one census tract.
2. The service area may include all or part of several units of general local

government and may contain both incorporated and unincorporated areas. Data from HUD may be usable only for a portion of the service area; therefore, the State and its grant recipients may need supplementary survey data for the other portions of the service area.

### Why Conduct a Survey?

CDBG regulations located at 24 CFR 570.483(b)(1)(i) permit states to use either HUD's LMI Summary Data (LMISD) or methodologically sound surveys to determine the percentage of LMI persons in the service area. Reasons to use surveys include:

1. HUD's LMISD do not reflect current income levels in the service area due to:
  - (a) Economic changes such as plant openings, or closings (that may cause massive layoffs)
  - (b) Non-economic changes such as natural disasters or terrorist attacks
  - (c) Demographic changes (due to population migration patterns)
2. Boundaries of the service area are not coterminous with geographic boundaries of the census tract or block group
3. Census data are not available for the entire service area or portions thereof

It may be necessary to survey a large area to determine the percentage of service area residents who are LMI. Examples of such activities include: (1) construction of a rural water system which serves more than one incorporated city plus portions of the surrounding unincorporated area of two counties in which the cities are located; (2) construction of a new fire station in a city where the municipal fire department provides, through contract, fire protection service for two adjoining townships (one of which is in a different county).

### Select Type of Survey

Three common types of surveys may be used to determine the percentage of LMI persons in a service area. Each type of survey has advantages and disadvantages (See CPD Notice-05-06). States and their grantees may use any one of the following methods:

- Mail survey (or self-administered questionnaire)
- Face-to-face (or door-to-door) interviews, and
- Telephone interviews.

One issue often raised by states and their grantees is the lifespan of a Survey. First and foremost, even if a survey is current, it cannot be used for a different activity in a different service area; however, a survey may be usable for another activity in the same service area. Second, there is no firm answer as to how long an income survey for the purpose of determining the percentage of LMI persons in the service area is good for. There might be instances in which an income survey could continue to be used until the next decennial census, but the grantee would have to be sure that there have been no significant demographic, economic and non-economic changes in the area during that time. Such changes may include factory openings or closings, layoffs by a major employer in the service area, or the occurrence of major disasters (such as tornados hurricanes, earthquakes, etc.). Grantees may also want to conduct income surveys for defined service areas when they develop new Consolidated Plans.

### **Determine Sample Size**

Determine the sample size needed to achieve an acceptable level of accuracy. A sample is representative of the population from which it is selected if its aggregate characteristics closely approximate those same aggregate characteristics in the population. The larger the sample, the more likely it is that its aggregate characteristics truly reflect those of the population. However, sample size is not dependent on the size of the population, for large populations. Sample Size Calculator (SSC) is a website (<http://surveysystem.com/sscalc.htm>) developed by Creative Research Systems to enable survey researchers to calculate sample sizes from various population sizes. (See CPD Notice-05-06) After the sample size is determined, use an acceptable random process to select the participants and their replacements. Ascertain that the selection of participants and the replacement procedures are structured to avoid bias; for example, daytime or weekday attempts may skew response rates in favor of unemployed, retired, or single income families.

### **Steps in Conducting Surveys**

- Select survey type – decide which survey method to use (telephone, door-to-door, or mail questionnaire) and base your decision on available staff, size of the sample you need, and the means you have available for identifying samples for the survey. A methodologically sound survey entails the following: (i) the grantee must clearly state the survey method used: mail questionnaire, face-to-face interviews, or telephone interviews, etc. (Each method has advantages and disadvantages.); (ii) participants and their and replacements must be selected through a random sampling process; and (iii) where the universe is small (for example, sparsely populated rural areas), a census (i.e., 100% survey) of the entire population may be undertaken; however, the percentage of LMI persons

must be calculated based on the entire population and not on the number of respondents. (See 'Case Studies' at the end of this Module)

- Develop the questionnaire: (i) the questions should be short, simple, and efficient. Keep the language as simple as possible, avoid bias, and do not encourage particular answers; (ii) use the correct income limits (correct amount, correct year, and correct service area) for the survey instrument; and (iii) avoid loaded questions—i.e., questions with no correct answers. There are basically four areas involved in constructing a questionnaire: (a) determine the question content, scope, and purpose; (b) choose the response format to be used in collecting information from the respondent; (c) word the questions so as to get at the issue of interest; (d) determine how best (i.e., the order) to place the question(s) of interest among other questions in the questionnaire. It is important that all respondents be asked the same questions, in the same order, and their responses recorded exactly, without additions or deletions. To ensure this, the questions must be written properly and the exact response of each respondent recorded as presented.
- Conduct the survey: if you choose to conduct an interview survey, select and train your interviewers. One of the most important aspects of any interview survey is the training of the interviewers. The quality of the results of the survey depends on how well the survey is conducted. Even in small studies involving a single researcher-interviewer, it is important to organize in detail the interviewing process before beginning the formal process. Make sure the interviewers are very comfortable with the questions
- Analyze the results: for surveys where the respondents are selected through an acceptable random process, use the number of participants who responded to the survey is used to calculate the percentage of LMI persons. If a census is conducted (for example in sparsely populated areas), use the size of the entire population to determine the percentage of LMI persons.
- Document and save the results—records that must be kept to demonstrate compliance include the following:
  - i. Boundaries of the service area and the basis for determining those boundaries;
  - ii. Percentage of LMI persons in the service area and the data used for determining that percentage; and
  - iii. Documentation of the survey results and methodology. If the percentage of LMI persons in the service area was determined by survey rather than by HUD's LMISD, document the rationale for doing

the survey.

### Conclusion

- Define the service area
- Determine sample size
- Conduct a methodologically sound survey
- Analyze results from survey
- Document and save results from the survey

### Case Studies

**(i) A small town in Midwest America has a population of 720. The Mayor's Office has applied for State CDBG funds to finance the installation of a new water treatment plant. If a census of the population is conducted and there is an 80 percent response rate, show how the 51 percent LMI is calculated?**

Even though the response rate is 80 percent, the 51 percent LMI is calculated from the entire population and not from 80 percent of the respondents.

- 51 percent of 720 = 367, this is the percentage of LMI persons in the service area.
- Contrarily, 80 percent of 720 is 576, and 51 percent of 576 is 293. The false assumption here is that the non-respondents have the same percentage of LMI persons as the respondents which may not be true. It is possible that (a majority of the) respondents may reside predominantly in one part of the town (due to residential segregation) therefore the income characteristics of the 293 respondents may not reflect the actual income level of the entire population. Furthermore, since the 293 respondents were not selected randomly and represent less than half of 720 (i.e., 360), their aggregate characteristics are most likely not to be representative of the aggregate characteristics of the entire population. Therefore, to meet the 51 percent LMI Area Benefit national objective criterion, 367 (and not 293) of the 576 respondents must be LMI persons.

It is possible that some families in the service area may vehemently refuse to participate in the census or survey, or cannot be reached (after several attempts) for several reasons (for example, families on lengthy vacations). In such cases, it is suggested that the total number of persons in the families that participated in the census be used in calculating the percentage of LMI persons. However, the number of refusals or absentees must be relatively small so as to have a negligible effect on the validity of the results of the census or survey. If the non-response rate

is too high, there is the risk of not having enough LMI respondents to make the required percent of the total population of the service area. Note that HUD does not allow rounding up to make the 51 percent LMI rate—see CPD Memorandum of August 25, 2003.

**(ii) Can a prison population be counted when conducting income surveys to determine the percent of low- and moderate-income (LMI) persons in the service area of a Community Development Block Grant (CDBG)-funded activity?**

Whether or not a prison population (prisoners) should be counted when conducting income surveys to determine the percent of LMI persons in the service area of a CDBG-funded activity depends on the nature of the activity. Prisoners should be counted as LMI persons if they benefit from an activity to be assisted with CDBG funds and/or if the lack of such activity adversely affects the functioning of the prison facility. For example, prisoners should be counted as LMI persons if the prison facility is hooked up to a water and/or sewer line whose installation or replacement is to be undertaken using CDBG funds. This also applies to the construction and/or maintenance of water and/or sewage treatment plants. On the contrary, prisoners should not be counted if they do not benefit from an activity and/or if the lack of such activity has no impact on the functioning of the prison facility. For example, prisoners should not be counted when seeking CDBG assistance for the construction and/or maintenance of public facilities such as community centers, libraries, playgrounds, neighborhood swimming pools, etc. These facilities are not used by prisoners and have nothing to do with the functioning of a prison facility.

**(iii) A neighborhood within the service area of an activity for which CDBG assistance has been requested, consists of manufactured homes inhabited by seasonal (migrant) workers. Can the workers be counted when conducting income surveys to determine the percent of LMI persons in the service area? (Assume that the migrant workers reside in the services area for less than 182 days per year.)**

This also depends on whether the benefit accrued from the activity by the workers is inevitable or incidental. The workers should be counted if the benefit they accrue from the activity is inevitable; for example, the workers should be counted if the manufactured homes are connected to the water and/or sewer lines that are to be replaced or installed. Conversely, they should not be counted if they do not benefit from the activity at all or do so only incidentally. For example, the workers should not be counted when seeking CDBG assistance to construct a library, community center, or senior center.

**(iv) A sparsely populated service area in rural Midwest America covers an entire census tract where census data are available and a small fragment**

**which is part of another census tract where census data are not available. How should the percent of LMI persons in the entire service area be determined?**

When the service area overlaps two census tracts, three issues may arise when determining the percent of LMI persons: (a) the service area is not coterminous with census geographic boundaries, (b) income data are not available for the small fragment that extends into another census tract, and (c) the entire service area is sparsely populated so the total number of persons in the entire service area must be used when calculating the percent of LMI persons. Assume that there are 156 persons in the census tract where HUD’s low- and moderate-income summary data (LMISD) and that 90 of them are LMI persons.

**Step 1 – Conduct Census (i.e., 100% Survey)**

Conduct a census in the small fragment where data are not available to determine the number of LMI persons. (A census is being performed because the fragment contains less than 60 families. More than 60 families are needed to do a random survey per Table 3 on Page 23 of CPD Notice 05-06.)

**Step II – Perform Calculations**

Suppose there are 44 persons in the small fragment and that 50% of them are LMI persons, the calculations are done as follows:

Total number of persons in the entire service area:  $156 + 44 = 200$

Total number of LMI persons in the entire service area:  $90 + 22 = 112$

Percent of LMI persons in the entire service area:  $\frac{112}{200} \times 100 = 56\%$

For this example, the 51% requirement is met. It is important to note that just because the percent of LMI persons in one of the fragments is below 51% does not necessarily mean that the percent of LMI persons in the entire service area will be below 51%. The following tips may help and save time when doing the calculations.

- (a) If the percent of LMI persons in each of the fragments is 51% or more, the percent of LMI persons in the entire service area will be 51% or more.
- (b) If the percent of LMI persons in one fragment is 51% or more and the percent of LMI persons in the other fragment is less than 51%, proceed with the calculations as shown in Step II.

(c) If the percent of LMI persons in each of the fragments is less than 51%, the percent of LMI persons in the entire service area will be less than 51%.

If a random survey is used in one of the fragments to collect income information, the number of LMI persons is determined from those who responded to the survey and not from the entire population. In this case, it is okay to use a random survey in the larger fragment and a census (100% survey) in the small fragment to collect income information. It is also okay to do a survey of the entire service area. Guidance on this matter is found on Page 9 of CPD Notice-05-06.

**Smalltown in a Midwestern state has a population of 720. The town's Director of the Office of Economic Development and Human Services wants to conduct a census of the entire population to determine the percentage of LMI persons in the town. If 80 percent of the population responded to the census how many respondents should be LMI persons in order for the town to meet the 51 percent LMI Area Benefit national objective requirement? What may be one reason for your answer?**

### Answer

80 percent of 720 = 576

51 percent of 576 = 293 (this is not the appropriate percentage of LMI persons)

51 percent of 720 = 367 (this is the correct percentage of LMI persons)

- It is possible that (a majority of the) respondents to the census may reside predominantly in one part of the town (due to residential segregation by class) therefore, the income status of 51 percent of the respondents (293) may not reflect the actual income level of the entire population. To meet the 51 percent LMI Area Benefit national objective criterion, 367 (and not 293) of the 576 respondents must be LMI persons. Also, since the 293 respondents were not selected randomly and represent less than half of 720, their aggregate characteristics are most likely not to be representative of the aggregate characteristics of the entire population
- It is possible that some families in the service area may vehemently refuse to participate in the census or survey, or cannot be reached (after several attempts) for several reasons (for example, families on lengthy vacations). In such cases, it is suggested that the total number of persons in the families that participated in the census be used in calculating the percentage of LMI persons.

such cases, it is suggested that the total number of persons in the families that participated in the census be used in calculating the percentage of LMI persons. However, the number of refusals or absentees must be relatively small (for example, two or three families out of, say, 50) so as to have a negligible effect on the validity of the results of the census or survey. Regardless of the type of method used, compare the percentage of LMI persons obtained from the census or survey with the percentage of LMI persons provided in the most recent LMISD and give an explanation if the two percentages differ widely.

N/B: HUD does not allow the rounding up of numbers to make the 51%. (See CPD Memorandum of August 25, 2003 from Nelson Bregón.