

## Part B: Collection of Information Employing Statistical Methods

### 1. Description of Universe and Sample Selection

The Department of Housing and Urban Development (HUD) has requested that the Census Bureau produce estimates of selected characteristics of existing multi-unit rental structures in the United States.

These estimates will be based on data collected from a representative sample of existing multi-unit rental structures in the United States in 2012.

The sample universe consists of all of the existing multi-unit rental structures identified during Census 2010 as well as any newly constructed multi-unit structures identified since that time. The results from Census 2010 included the structure type (i.e., single family home, manufactured home, group quarters, etc.) and the tenure type for each unit. A multi-unit structure was created by combining unit level addresses into a single basic street address based on either geographic coordinates or house number and street name. The number of owner-occupied units, renter-occupied units, and unknown tenure-type units were also calculated at this time. Next, the out-of-scope properties such as manufactured homes, group quarters, partially owner-occupied small multifamily properties, and larger multifamily properties with less than 80% rental occupancy units were excluded from the universe. The newly constructed buildings were identified in much the same way except they do not have any associated tenure or structure type information. These were all treated as unknown tenure structures in the sampling procedures. A sample of these structures will be selected in several steps. First, the multi-unit rental structures will be identified and then assigned to one of eight strata based on the existence of the building during the Census 2010, and the number of units in the structure. The preliminary strata are: identification status (identified in Census 2010 versus identified after Census 2010), and, within the identification status, structure size (2-4 units, 5-24 units, 25-49 units, and 50 or more units). The structures within each stratum will be sorted by geographic variables, including state, urban/rural status, and county. A representative sample of these ordered structures will then be selected within each stratum. The within-stratum sampling rates will be determined to result in an expected coefficient of variation of 6% at the national level. The sample sizes for each strata are as follows:

<b>Strata</b>	<b>Universe Size</b>	<b>Total Sample Size</b>	<b>Oversample Size</b>
Post-2010 Construction, 2-4 units	38,335	12	1
Post-2010 Construction, 5-24 units	14,506	15	1
Post-2010 Construction, 25-49 units	1,210	44	5
Post-2010 Construction, 50+ units	1,273	11	2
Pre-2010 Construction, 2-4 units	2,672,827	565	31

Pre-2010 Construction, 5-24 units	858,506	728	69
Pre-2010 Construction, 25-49 units	77,830	2,135	218
Pre-2010 Construction, 50+ units	73,084	520	76
Total	3,737,571	4,030	403

We created our total sample size with 4 strata, and allocated 2% of the sample size to the post-2010 construction strata, which was based on the projected growth of multi-unit buildings after the 2010 Census and before our sample selection. The oversample rates varied by strata and are based on the percentage of condominiums found in each strata in the American Housing Survey (AHS) sample. These rates are below:

2-4 units	5.9%
5-24 units	10.4%
25-49 units	11.4%
50+ units	17.0%

While the exact sampling rates are unknown at this time, we expect to select a sample of approximately 4,400 multi-unit rental structures, which includes an oversample of 800 structures. This oversample is needed in order to screen out structures deemed ineligible due to the manner in which they were financed. The owners and or property managers of the building will be contacted and asked about specific financing and structure-related characteristics.

In addition, a reinterview sample will be selected from owner or property managers completing the questionnaire. Approximately ten percent of the units from the original survey will be randomly selected to participate in reinterview. Supervisory staff will use an electronic form to conduct reinterview. Data collected from reinterview will be used to detect discrepancies and intentional breaches of data quality.

## **2. Procedures for Collection of Information and Estimation Procedures**

Census Field Representatives (FRs) will collect data via personal or telephone interviews every two years beginning January 2012. Basic street addresses of approximately 4,400 in-sample structures will be available to FRs. The FRs will first attempt to locate and interview the owner of a property. If they are unable to do so, they will locate and interview the property manager.

Data will be collected in two rounds. During round one, FRs may be contacting either property owners or managers, based on the available contact information. In some instances, the manager will refer the FR to the owner (or the owner will refer the FR to the manager) due to one party not having sufficient knowledge to answer certain questions.

At the end of round one, respondents provide contact information for an additional respondent (i.e., property manager, owner, or accountant). This person will be contacted during round two if the results of round one do not qualify as a sufficient partial interview. In addition, an effort will be made after round one to determine if different questionnaires are being referred to the same owner (which can occur if one individual owns multiple properties). In these situations, questionnaires will be consolidated and administered during a single round/two FR visit.

The survey estimates will be based on weighted data. The weights for producing these estimates will be calculated using a two-step procedure. First, the base weight (BW), which is the inverse of the probability of selecting a multi-unit structure, will be calculated and assigned to each sample structure in the stratum. Next, a nonresponse adjustment factor (NRF), which is the ratio of the sample structures divided by the interviewed sample structures, will be calculated and assigned to the interviewed sample structures. Separate NRFs will be computed for each stratum. The weight for each interviewed structure will be the product of these factors as expressed by the following formula:

$$\text{Weight} = \text{BW} * \text{NRF}$$

### 3. **Methods to Maximize Response**

We will maintain high levels of data accuracy and response rates through interviewer instruction, professional training, and close monitoring of the data. FRs will be educated on proper interviewing techniques as well as methods for dealing with reluctant respondents.

In addition, respondents who refuse to participate will receive a Refusal Letter. These letters will be generated at the Regional Office level and sent in order to educate individuals about the importance of our survey and the Census Bureau's commitment to confidentiality. If a refusal occurs during round one, the respondent will receive the Refusal Letter and have until the end of round one to change their mind and participate. FRs will not be returning to respondents in round two if the round one refusal stands. These respondents will, however, be eligible for interview during the next survey cycle.

In addition, Unable to Contact Letters will be sent to respondents whom the FRs are having trouble reaching. This letter will inform respondents that a Census Bureau representative has been attempting to locate them and will ask them to call a Census Regional Office for further instruction.

### 4. **Testing Procedures**

Two rounds of cognitive testing were performed on the questionnaire. Current owners and managers of rental properties were selected as participants. The participants were chosen so as to ensure representatives from 2-4 unit, 5-24 unit, 25-49 unit and 50 or more unit structures were all included.

During round one of cognitive testing, two primary issues were identified. First, respondents were unfamiliar with some of the terminology used. Second, some of the questions were too long and complex to be fully understood in an interview format. To address these problems a number of definitions were added and 'show cards' were created to visually assist respondents with certain questions.

During round two of cognitive testing, it was discovered that the questionnaire was not applicable to respondents whose rental units were financed individually. Therefore, an initial screening question was added that stipulates respondents who own an assortment of rental units are only to be interviewed if the units were collectively financed. A number of minor semantic and formatting changes were also made over the course of testing to improve respondents' understanding of certain questions.

## 5. **Contacts for Statistical Aspects and Data Collection**

The Census Bureau will collect and process these data. Within the Census Bureau, the following individuals should be consulted for further information on their area of expertise.

### Statistical Methods:

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Attachments