

## No Group Quarters Left Behind: The New 2010 Census Group Quarters Validation<sup>1</sup>

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### Abstract

During the 2010 Census planning cycle, the Census Bureau developed and tested a new listing operation to improve the coverage of Group Quarters (GQs) addresses. The new Group Quarter Validation (GQV) operation was the successor to the Address Canvassing (AC) operation which identified addresses as housing units (HUs) or Other Living Quarters (OLQs). OLQs include addresses that were GQs, such as college dormitories, Transitory Locations (TLs), such as campgrounds, Assisted/Independent Living facilities, and any other living quarters not commonly recognized as a housing unit. During GQV, enumerators validated OLQ addresses as GQs, HUs or TLs. This paper will discuss the distribution of outcomes from the universe of addresses in the 2010 Census GQV operation and validation of AC classification of OLQ addresses, as well as analysis of primary sources to the universe of validated GQs.

**Keywords:** Group Quarters Validation, Other Living Quarters, Address Canvassing, Group Quarters

### 1. Introduction

The 2010 Census Group Quarters Validation (GQV) operation supported the Census Bureau's efforts to compile the most accurate address file using improved methodologies for data collection and coverage of Group Quarters (GQs) addresses. A GQs is a place where people live or stay, in a group living arrangement, that is owned or managed by an entity or organization providing housing and/or services for the residents. People who reside in GQs are usually not related to each other. Examples of GQs include but are not limited to college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, and workers' dormitories (Lamas, 2009).

The intent of this paper is to provide results on various aspects of the GQV universe for the 2010 GQV operation. This paper will discuss the distribution of outcomes from universe of addresses in the 2010 Census GQV operation and provide analysis of primary sources to the universe of validated GQs. A discussion on the final GQV outcomes by Address Canvassing (AC) status of those addresses thought to be potential GQs addresses in the AC operation will also be provided. In comparing the address statuses of Other

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<sup>1</sup> This report is released to inform interested parties of ongoing research and to encourage discussion of work in progress. Any views expressed on statistical, methodological, technical, or operational issues are those of the authors and not necessarily those of the U.S. Census Bureau.

Living Quarters (OLQs) identified during AC to the outcome found during the GQV operation, an assessment of how well AC did in identifying OLQs was determined.

## 2. Background

### 2.1 Lessons Learned from Census 2000

There were several lessons learned from Census 2000 that spawned the development of this new 2010 GQV operation.

- *The need to collect accurate location information for GQs addresses which was possible if the GQs inventory was managed at the GQs level.* In Census 2000, Special Places in the census were establishments that were administratively responsible for one or more GQs. In some cases, the address of the GQs was the Special Place. In other cases, the Special Place was the administrative entity that managed many GQs that were not always physically adjacent to one another. Because the point of contact was the Special Place, the location information collected for the Special Place was often used for the GQs even when the location of the GQs and Special Place differed. This resulted in some errors in the geographic allocation of the GQs population (Barrett, 2009).
- *The need to reduce duplicate records which was possible if the GQs and housing units (HUs) address lists were integrated.* Maintaining and developing a Special Place/Group Quarters (SP/GQs) inventory completely separate from the Master Address File (MAF)<sup>2</sup> resulted in duplication of addresses on both lists, once as a HU and once as a GQs (Barrett,2009).
- *The need to have a tracking system in place to track the updates made to GQs.* In Census 2000, it was impossible to track any updates made to GQs addresses on the SP/GQs inventory list. Updates replaced the previous information and did not retain information on the source or the address status of the GQs. In some cases GQs addresses were deleted than reinstated. When this happened there was no knowledge that the GQs existed previously (Barrett, 2009).

In an effort to address the lessons learned from Census 2000, improved methodologies for data collection and coverage were developed during the 2010 planning cycle. These methodologies included integrating the list of HUs and GQs on the MAF, developing a GQV operation where the definition for GQs was updated, and designing and revising the questionnaire accordingly. The modified AC and new GQV were tested in the 2004 and 2006 Census Tests and again in the 2008 Census Dress Rehearsal. It was determined from testing throughout the decade that the combined operations of AC and GQV worked well together and thus continued for the 2010 Census GQV operation.

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<sup>2</sup> The Master Address File (MAF) is a Census Bureau file that contains an up to date inventory of all known living quarters in the United States, Puerto Rico and associated island areas. The MAF is used to support most of the census and surveys that the Census Bureau conducts including the decennial census, the American Community Survey and ongoing demographic surveys. The content of the MAF includes address information, Census geographic location codes, as well as source and history data.

## 2.2 Updating GQ Definitions

The GQs definition that was modified from Census 2000 was implemented in the 2004 Census Test. There were several GQs type classifications revised such as: nursing homes, college/university student housing, and group homes (Echols, 2004). The revised GQs definition for group homes was only applied to residential treatment centers providing group living arrangements. The redesign of the OLQs Validation Questionnaire administered during the 2006 Census Test improved content and flow and revised GQs definitions needed to provide more clarity to GQs classifications and types (Echols, 2006). The questionnaire was modified during the 2008 Census Dress Rehearsal, and the operation was renamed to be the Group Quarters Validation (GQV). For the 2008 Census Dress Rehearsal, the questionnaire was streamlined and the number of GQs definitions was simplified thus resulting in fewer GQs type codes.

## 3. Overview

### 3.1 2010 Census Address Canvassing

The 2010 Census AC was the primary address listing operation for the 2010 Census, which was conducted prior to GQV. The 2010 Census AC universe included HUs and GQs addresses from Census 2000 and additional addresses of potential GQs from specific sources including administrative records. In AC, residential addresses were identified as HUs or OLQs. OLQs include, but are not limited to, GQs such as college residence halls and correctional facilities, Transitory Locations (TLs) such as marinas and Recreational Vehicle (RV) parks, and Assisted/Independent Living Places which AC listed as OLQs although they contained HUs. The OLQs identified during AC were sent to GQV to be validated and contributed to architecting the GQ universe.

One significant methodological improvement that aligned with the 2010 Census strategic goals to improve the accuracy of census coverage was the creation of two interfaced address list development operations, AC and GQV. As mentioned earlier, the address lists for HUs and GQs addresses were maintained separately. As a result of earlier testing and part of improving the accuracy of census coverage, the 2010 Census AC universe was expanded to include HUs and GQs addresses on the MAF. The GQV operation was one of the subsequent Census operations that used the updates from the 2010 Census AC operation.

### 3.2 2010 Group Quarters Universe

The 2010 Group Quarters universe included OLQs identified during AC including Adds. It also included potential GQs addresses from specific sources whether or not they were identified as OLQs during AC. These sources were:

- GQs addresses from Census 2000 plus any mid-decade updates from census operations (includes GQs identified during American Community Survey Time of Interview (ACS TOI) operation<sup>3</sup>),
- Certain GQs addresses from government participants in the 2010 Local Update of Census Addresses (LUCA) operation,

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<sup>3</sup> During the Computer Assisted Personal Interviewing (CAPI) phase, Field Representatives coded GQs as non-interviews. Although GQs were invalid for the ACS TOI operation, additional information about the GQs such as the address, name and maximum population size of the GQs was collected at the time of interview. These GQs records were flagged as OLQs in the MAF and were included in the GQV universe.

- GQs addresses from administrative lists provided by the Federal-State Cooperative Program for Population Estimates (FSCPE) and GQs identified from the Census Bureau’s National Processing Center’s internet research for group homes and Service Based Enumeration (SBE) places (i.e.; shelters, soup kitchens, regularly scheduled mobile food vans, and targeted non-sheltered outdoor locations),
- AC and GQV Adds – AC listers added new OLQs and GQV listers added GQs, HUs and TLs during their respective operations.

### **3.3 2010 Census Group Quarters Validation Operation**

The 2010 Census GQV Operation was conducted from September 28 through October 23, 2009 in the 50 states, the District of Columbia, and Puerto Rico. During the GQV operation, listers:

- Located and verified that the addresses had the correct census geography,
- Classified OLQs as GQs, HUs, or TLs,
- Determined if the address of the Other Living Quarter (OLQ) was nonresidential, duplicate, or nonexistent if it was determined not to be GQs, HUs, or TLs and
- Identified addresses that were vacant.

The addresses that GQV listers identified as vacant, that is, vacant at the time of the GQV lister’s visit and therefore no one there to determine the status of the address, were considered vacant GQs since they may have been a GQs in the past and may have been a GQs by census day.

### **3.4 2010 Group Quarters Validation Questionnaire**

The 2010 Census GQV Questionnaire was administered to all OLQs addresses in the GQV universe by the GQV listers. The 2010 GQV questionnaire was designed to collect information on one or more GQs and/or HUs. GQV listers were able to collect information for multiple GQs, multiple HUs and/or a mix of HUs and GQs at one OLQs address on one questionnaire. This meant going to places as diverse as prisons, colleges, assisted/independent living places, and TLs such as campgrounds, hotels, and motels. If there were multiple GQs and/or HUs at the OLQs address then each GQs or HUs record was counted as units. During the GQV operation, using the GQV questionnaire, the contact person (usually the administrator for the place visited) was guided through the steps needed to determine whether or not there were any living quarters at the OLQ address. If it was determined that living units were present at the OLQs address, then the types of living units at the OLQs address were identified. For example, if a GQs was present then the type of GQs and maximum population size was collected.

## **4. Results**

### **4.1 Distribution of Outcomes from the GQV Operation for All Addresses**

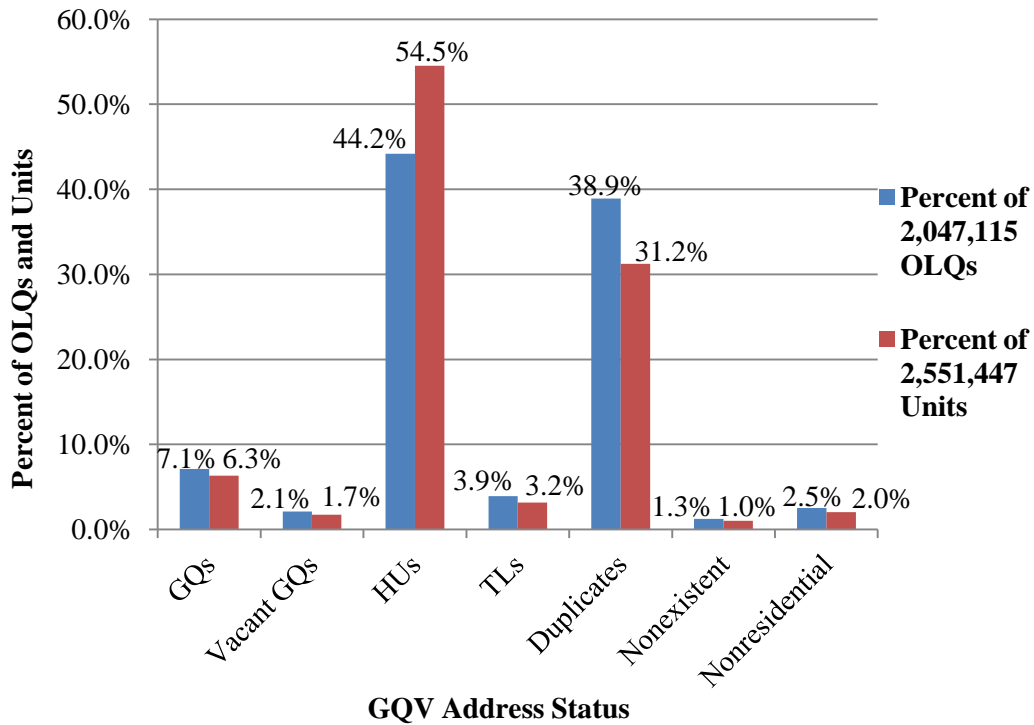
GQV listers were able to validate the status of addresses as GQs, vacant GQs, HUs, TLs, duplicates, nonexistent (deletes), or nonresidential by administering the 2010 Census GQV questionnaire. Addresses classified as “duplicates” were those that already existed on the address lists while those classified as “nonexistent” were those that GQV listers were unable to locate or the structure for the address no longer existed. The outcome of “nonresidential” was for those addresses that were businesses, storefronts, and so on.

Figure 1 below shows the distribution of outcomes for all addresses in the GQV operation. These include addresses that were in the initial GQV universe and those added during the GQV operation. Figure 1 includes distributions of outcomes at the OLQ level and the unit level. There were a total of 2,047,115 OLQs in the final GQV universe which accounted for 2,551,447 total units found during GQV.

The GQs accounted for 7.1 percent while TLs accounted for 3.9 percent of the OLQs in GQV. Among the GQV outcomes, the largest number and percent of OLQs and units were identified as HUs with 44.2 percent of the OLQs identified as HUs which accounted for over half (54.5 percent) of the units found during GQV. Most of these HUs were associated with assisted/independent living places which isn't unusual because procedures encouraged the Address Canvassers to classify these types of addresses as an OLQ. Further analysis found that the majority of multi-unit structures listed as OLQs in AC were typical apartment buildings containing only HUs.

Among the nonvalid living quarters, that is, duplicates, nonexistent, and nonresidential, most were classified as duplicates during GQV. Approximately 39 percent (796,400) of the OLQs in the GQV universe were identified as duplicates which yielded 31.2 percent of a total of over 2.5 million units. Additional analysis revealed that most of the duplicates were duplicates of TLs. One reason for the large number of TL duplicates may be that each individual unit at a TL was often listed as unique OLQs during AC. GQV listers classified all but one of the OLQ addresses as duplicates to one of the OLQ addresses used to represent the "parent" TL. For example, if AC listed each of the 20 trailers at RV Park as a unique OLQs then GQV would classify 19 of the OLQs as duplicates to the same OLQs address that was used to represent the RV Park. HU duplicates and vacant GQ duplicates accounted for approximately three percent and two percent, respectively, of all of the duplicates found during GQV.

**Figure 1: Distribution of GQV Outcomes for all Addresses in the GQV Operation**



**4.2 Final GQV Outcomes by Address Canvassing OLQ Address Status**

The comparison of address statuses of OLQs confirmed during the AC operation to the outcome found during GQV was useful in evaluating how well AC did in identifying OLQs. The AC OLQs address statuses for those addresses included in AC and in GQV were:

- Valid OLQs – addresses existed and the AC lister was able to locate
- Added OLQs – AC listers were allowed to add new OLQs that were not already on the MAF
- Nonresidential OLQs – address provided by specific sources  
 Only those addresses provided as potential GQs or OLQs from specific sources was included in the GQV universe. It was found from testing throughout the decade that it wasn't unusual for AC listers to call something nonresidential that was actually a GQ. For example, if a government participant provided an address that they said was a GQ and AC called it a nonresidential then it got sent to GQV to clarify its status.

AC identified 2,028,851 OLQs addresses that were sent to GQV. Of these OLQs the AC outcomes were:

- 77.8 percent (1,578,495) of the OLQs were classified as valid addresses,
- 20.6 percent (418,779) of the OLQs were classified as Adds, and
- 1.6 percent (31,577) of the OLQs were classified as nonresidential.

Figure 2 below shows the OLQs in AC classified as valid addresses by final GQV outcome, which we call AC valid OLQs. GQV found that slightly over half (50.5 percent) of the 1,578,495 OLQs listed as valid addresses were HUs while 9.4 percent were GQs and 2.7 percent were TLs. However, GQV found that 37.4 percent of the OLQs listed as valid addresses were either nonresidential, duplicates, or nonexistent.

**Figure 2: AC Valid OLQs (1,578,495) by GQV Outcomes**

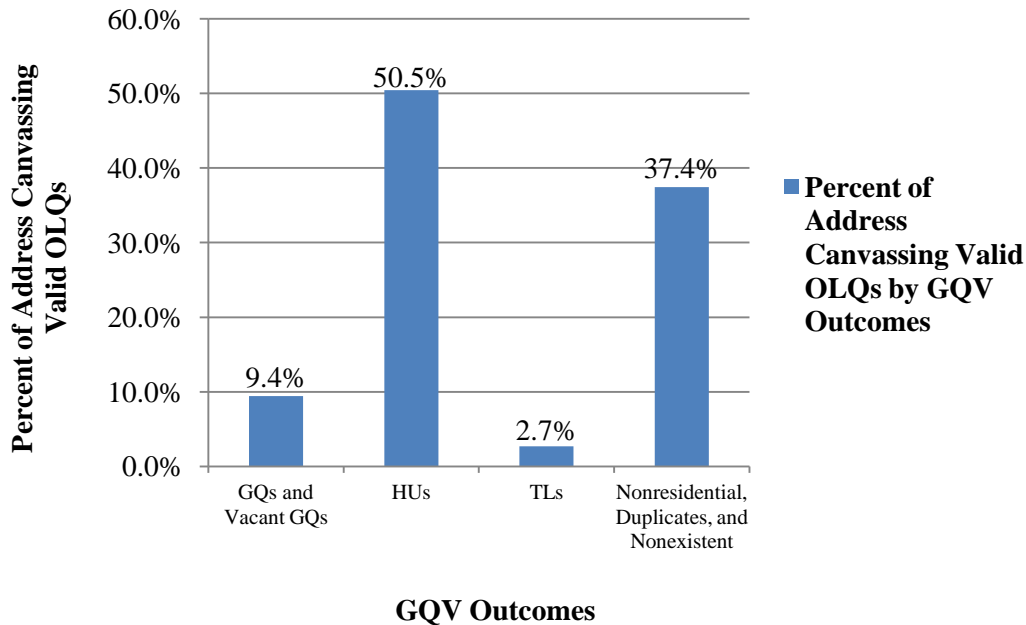


Figure 3 below shows the OLQs in AC that were adds by final GQV outcome. GQV found that most (61.5 percent) of the 418,779 AC adds were either nonresidential, duplicates, or nonexistent which were referred to as nonvalid living quarters. When looking at the valid living quarters, that is, GQs and vacant GQs, HUs, and TLs, Figure 3 shows that AC added a relatively small percentage (6.9 percent) of OLQs were GQs (includes vacants) in GQV. GQV found that 23.5 percent of the AC OLQ adds were HUs and 8.1 percent were TLs.

**Figure 3: AC OLQ Adds (418,779) by GQV Outcomes**

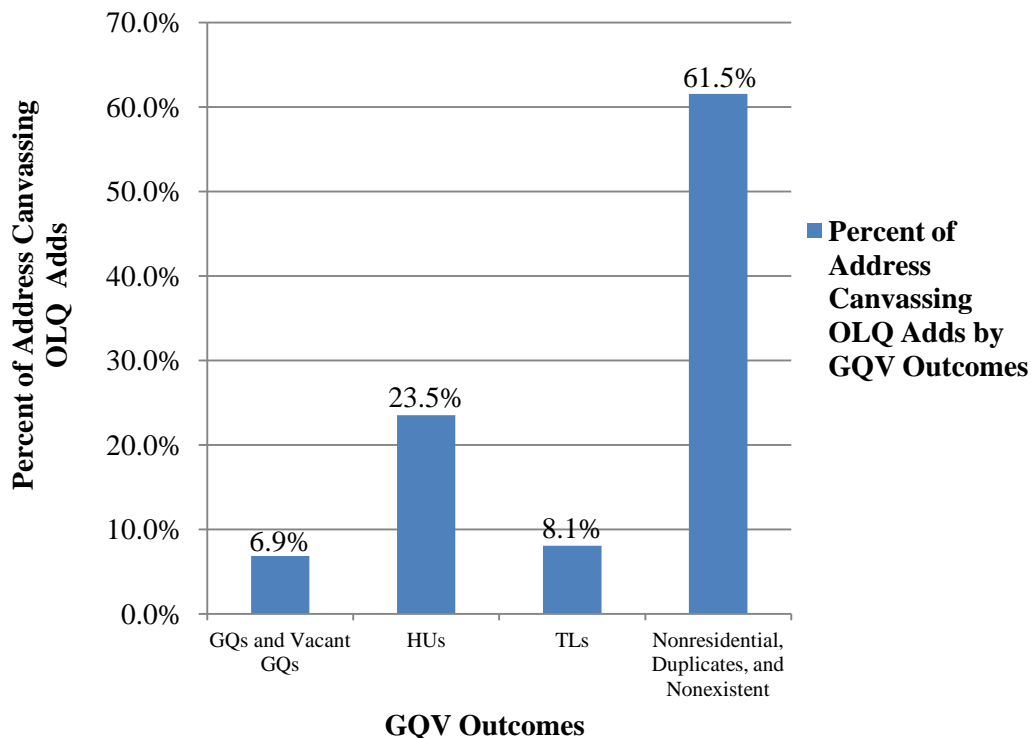
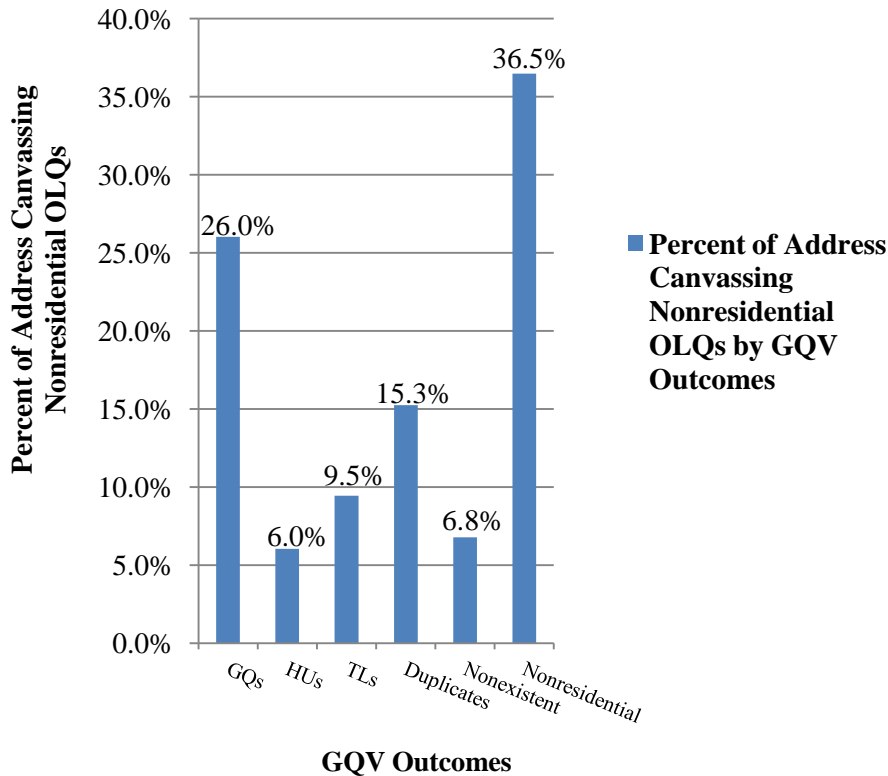


Figure 4 below shows the OLQs classified as nonresidential in AC by final GQV outcome. Including OLQs from various sources that were identified as nonresidential by AC in the GQV universe improved coverage of GQs in the 2010 Census. The addresses provided as potential GQs or OLQs from the specific sources that AC identified as nonresidential were included in the GQV universe. GQV found that 26.0 percent of the 31,577 OLQs identified as nonresidential by AC were GQs (includes vacant GQs). Of those addresses listed as nonresidential OLQs by AC, 36.5 percent were also classified as nonresidential by GQV.



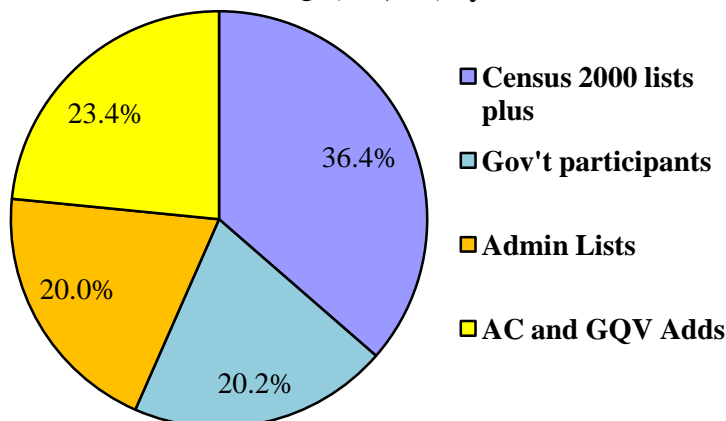
**Figure 4: AC Nonresidential OLQs (31,577) by GQV Outcomes**



**4.3 Contributions of each source to the universe of validated GQs**

As mentioned in Section 3.2, the sources that provided potential GQs, that is, OLQs were those from Census 2000 lists and any mid-decade updates from census operations, government participants, administrative lists, and AC and GQV Adds. Figure 5 below provides the contribution of each source that provided GQ addresses to the GQV universe (includes vacant GQs).

Among the different sources, Census 2000 lists and any mid-decade updates from census operations and GQs from ACS Time of Interview made the greatest contribution to the universe of GQs in that they accounted for 36.4 percent of the 205,406 GQs found during GQV. The government participants and administrative lists provided about the same percentage of GQs to the universe at about 20 percent respectively. The GQs provided as Adds during AC and GQV were slightly higher than those provided by government participants and administrative lists with about 23 percent.

**Figure 5: Distribution of GQs (205,406) by Source**

## 5. Conclusions and Recommendations

The integrated operations of AC and GQV worked well together in distinguishing HUs and GQs in the 2010 Census as was tested in the 2004 and 2006 Census Tests and 2008 Census Dress Rehearsal.

As was found during the 2004 and 2006 Census Tests and the 2008 Census Dress Rehearsal, including the OLQs addresses provided by specific GQs sources that were classified as nonresidential during AC in the 2010 GQV universe improved coverage of GQs. GQV found that about 21 percent (just over 6,600) of the 31,577 AC nonresidential addresses were non-vacant GQs which would have been missed if AC nonresidential addresses had not been included in the GQV universe. Given this, AC nonresidential addresses provided by various GQs sources will continue to be included in the GQV universe.

The GQV found that there were a significant number of HUs present in the GQV universe although the addresses provided by the various sources were provided as potential GQs. Further analysis showed that a majority of these HUs were at multi-unit structures that were at Assisted/Independent living places that were multi-unit structures that were typical apartment buildings that did not have an associated nursing or skilled nursing facility. A recommendation to handle this is to allow the Address Canvassing lister to classify housing units at Assisted/Independent living places as HUs instead of OLQs during AC. Had the AC procedures allowed for these units to have been classified as HUs rather than OLQs, the GQV workload would have been significantly reduced.

GQV found that of the 205,406 GQs in the universe, that 20 percent were provided by administrative records. Further analysis showed that the majority of addresses provided by administrative records were validated as GQs during the GQV operation. With these findings, it is recommended that the use of administrative records received from tribal and local governments as well as state advocacy organizations be expanded to update the GQs frame.

It is suggested that research be conducted to address the recommendations about improving the Address Canvassing process related to GQs status determination and expanding the use of administrative records to the extent they would be helpful to improve quality and coverage of the GQs frame.

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### **References**

- Barrett, Diane F. (2009). "2008 Dress Rehearsal Group Quarters Validation Operational Assessment Report-FINAL," 2008 Census Dress Rehearsal Memoranda Series No. 68 U.S. Census Bureau, September 24, 2009.
- Echols, Carrae (2004), "Final Report: 2004 Census Test Group Quarters Validation/Advance Visit Operational Assessment, Evaluation 10," DSSD 2004 Census Test Memoranda Series, #H-08, U.S. Census Bureau, September 28, 2005.
- Echols, Carrae (2006), "Final Report: 2006 Census Test Group Quarters Validation/Advance Visit Operational Assessment," DSSD 2006 Census Test Memoranda Series, #H-04, U.S. Census Bureau, December 18, 2006.
- Lamas, E. J. (2009), "2010 Census Group Quarters Definitions and Code List," Population Division Memorandum, September 17, 2009.