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2010 CENSUS PLANNING MEMORANDA SERIES

No. 227

MEMORANDUM FOR The Distribution List

From: Burton Reist *[signed]*
 Acting Chief, Decennial Management Division

Subject: 2010 Census Island Areas Assessment: Preparing for and Conducting
 the Field Operations

Attached is the 2010 Census Island Areas Assessment: Preparing for and Conducting the Field Operations. The Quality Process for the 2010 Census Test Evaluations, Experiments, and Assessments was applied to the methodology development and review process. The report is sound and appropriate for completeness and accuracy.

If you have any questions about this document, please contact John Wynn at (301) 763-3114.

Attachment

August 7, 2012

2010 Census Island Areas Assessment: Preparing for and Conducting the Field Operations

United States Census Bureau standards and quality process procedures were applied throughout the creation of this report.

John Wynn

Decennial Management Division

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Executive Summary

This assessment *2010 Census Island Areas Assessment: Preparing for and Conducting the Field Operations* looks at the management of data collection operations conducted in the Island Areas and the efforts leading up to the data collection.

The U.S. Census Bureau has conducted a census of each outlying area of the United States' for over a century. In previous censuses, a Memorandum of Agreement with the Census Bureau and each Island Areas' government was used to provide funding to conduct the census. For the 2010 Census, contracts were deemed the appropriate vehicle for negotiating agreements. The Census Bureau contracted with local government agencies to conduct the 2010 Census of the Island Areas. The Local Census Offices—two in the United States Virgin Islands, and one each in American Samoa, the Commonwealth of the Northern Mariana Islands, and Guam—were opened and operated under the auspices of separate sole-source contracts.

Field operations in the Island Areas consisted of a blanket mailing of questionnaires to residential postal patrons. This was followed by a List/Enumerate methodology designed to have an enumerator visit, list an address or location description, spot on a paper map each living quarters in the area, and collect a completed questionnaire or conduct an interview. The Island Areas were the only areas that used List/Enumerate for the 2010 Census.

Consistent and open communication facilitated the planning and execution of the field data collection phase. During this time, Census Bureau staff traveled to the Island Areas, met with Island Areas representatives at the annual State Data Center conferences, and used electronic communication and teleconferencing to gain feedback from the Island Area liaisons. Four Census Bureau employees were selected to stay in each of the Island Areas for the duration of the field work. During the conduct of the field work, the Census Advisors were primarily responsible for communicating issues, progress, and serving as facilitators for questions regarding procedures. Standardized cost and progress reports were also developed to relay financial information from the local government and field progress reports from the Decennial Budget Integration Tool – Island Areas Module to the Puerto Rico and Island Areas branch of the Decennial Management Division. Weekly teleconferences between headquarters staff and Island Areas officials were instituted to discuss cost and progress.

The Island Areas were the only areas that used a “long form” questionnaire, containing detailed person and housing items, to collect data for the 2010 Census. A long form questionnaire was used because the Island Areas get no other data during intercensal years.

Each Island Area developed its own promotional campaigns. The onsite Census Advisors helped ensure that the messages provided in these campaigns were accurate and appropriate. The Local Census Offices also participated in some of the stateside programs, and distributed Census Bureau-provided promotional items and Census in Schools materials. The biggest impediments to their publicity campaigns were the stateside advertisements and the 2010 Census website, both of which reached the Island Areas' residents. The stateside advertisements and the 2010 Census website informed residents on how to complete a 10-question short form and mail it back after they completed it. This information only confused and frustrated the Island Areas' residents as they had to complete a long form questionnaire, instead of a short form, and hold the

questionnaire for an enumerator visit. As the local advertising campaigns were quite successful, we recommend that they be expanded in the future. The stateside message must also be anticipated and proactively counteracted if major differences in methodology persist. Additionally, more guidance, suggestions, and materials should be provided by the Census Bureau to help with the campaign.

The quality control operations could have been better integrated into the overall field and office work and the importance of these tasks needed more emphasis in the training materials. Modernization of the 2020 Census office control system for the Local Census Offices could allow for more effective management of the Island Areas field, office, and quality control operations.

The amount of materials developed for the Island Areas' census field operations were vast. Better efforts need to be made to draft materials with adequate lead time so everything can be thoroughly reviewed for accuracy and consistency, and distributed to the Island Areas with enough time for Local Census Office staff to become familiar with the procedures prior to the start of operations. It would have been more efficient to print the materials on the islands as opposed to shipping everything from the National Processing Center in Jeffersonville, Indiana and Headquarters.

The process to design the Island Areas' census questionnaires was unnecessarily protracted. There were too many questionnaires, and the minor differences between them created complications when processing the data responses. The potential gains from having only two questionnaires (rather than the 19 used) for all Island Areas—one for housing units and one for group quarters—cannot be overstated.

Collection geography is the backbone of a census, and for the 2010 Census numerous issues were caused by misunderstanding of geography by Local Census Office staff, oversized assignment areas, and inaccurate and outdated maps. The Geography Division plans to improve in these areas, but improvements need to be actively pursued throughout the decade. Island Areas geographic features must be periodically updated. This will require site visits and consistent communication with the Island Areas officials.

The money budgeted for the Island Areas field data collection phase was sufficient. Since the agreement was a fixed-price contract for the 2010 Census, all the Island Areas kept any remaining funds following the closing of the Local Census Offices. For the 2020 Census, the contract amount could be negotiated with a contingency fund preserved by Census Bureau headquarters.

Finally, the data collection methodology for the Island Areas should be carefully examined and modernized. The challenges of a mixed-mode data collection process for the 2020 Census of Island Areas would be significant but not insurmountable. Formal planning with Island Areas officials should begin in fiscal year 2013, once the 2010 Census data products have been published.

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1 Introduction

1.1 Scope

The *2010 Census Island Areas Assessment: Preparing for and Conducting the Field Operations* will document results, major findings, and lessons learned from the 2010 Census. The Island Areas Assessment: Preparing for and Conducting Field Operations will address the first two phases of the Island Areas operations: planning, coordination, and development of materials; and field data collection operations. This assessment will inform the stakeholders and Census Bureau management of recommended changes or improvements for future census of the Island Areas. Specific information for each of the four Island Areas—American Samoa, the Commonwealth of the Northern Mariana Islands (CNMI), Guam, and the U.S. Virgin Islands—can be obtained from the Census Advisor Final Reports.

1.2 Intended Audience

The program managers and staff responsible for planning and executing the 2010 Census and 2020 Census of the Island Areas are the intended audience.

2 Background

2.1 Census 2000

The Island Areas' Local Census Offices carried out the field data collection phase of Census 2000 of the Island Areas.

The Census 2000 assessment of the Island Areas only addressed the field data collection phase of the Island Areas operations. Not having an assessment of the post data collection operations made it difficult to plan the final three phases of the 2010 Census of the Island Areas.

2.2 2010 Census

2.2.1 Planning

The 2010 Census of the Island Areas, consisted of American Samoa, CNMI, Guam, and the U.S. Virgin Islands, was conducted through contracts between the Census Bureau and local government agencies. Through these contracts, the Census Bureau agreed to develop and supply each government with procedures and printed materials, provide support and direction, process the collected data, and produce data products. The local government agencies were responsible for: recruiting, testing, and hiring census workers; promoting the 2010 Census locally; and conducting the field work in accordance with the procedures provided. There were three major differences between the field operations of the 2010 Census stateside and the Island Areas: 1) the Island Area questionnaires were “long form”, containing detailed person and housing items; 2) the Island Areas used List/Enumerate

methodology as opposed to a primarily mailout/mailback operation; and 3) the Island Areas' Local Census Office workers were contracted employees.

Planning for the 2010 Census of the Island Areas officially began in December of 2004, when the 2010 Census Decision Memo No. 8 documented "the Census Bureau's decision that the [American Community Survey] will not be conducted in the Island Areas during the 2010 Census cycle" and that "The 2010 Censuses of the Island Areas will continue to use a long-form questionnaire with unique content on a 100 percent basis."

In spring 2006, members of the Puerto Rico and Island Areas (PRIA) branch of the Decennial Management Division traveled to each of the Island Areas to discuss current plans to solicit feedback. Discussants agreed there was a need for each Island Area to form its own Interagency Group that would be responsible for speaking as a cohesive unit in expressing the Island Area governments' requests and concerns.

In fall 2006, the Island Area Operational Integration Team was created to support the planning for the development of materials for the 2010 Census of the Island Areas. The team began meeting twice a month and consisted of staff from: Decennial Management Division; Geography Division; Population Division; Social, Economic and Housing Statistics Division; Decennial Systems and Processing Office; Public Information Office; Director's Office; Customer Liaison Office; and National Processing Center. Staff members from Decennial Statistical Studies Division were later added to support the Quality Control operations.

In September 2006, the kickoff meeting for the contract was held with the consulting firm Booz Allen Hamilton. The firm was responsible for developing the Decennial Budget Integration Tool and as a part of the overall contract they were also tasked with developing an Island Areas Module for the Island Area Local Census Offices. The same project manager within Booz Allen Hamilton was responsible for producing an office control system for the Island Areas for Census 2000.

In January 2007, a subgroup of the Island Area Operational Integration Team was created to design the Island Area address listing pages that would allow for collecting parsed out address data for each of the Island Areas. Since each Island Area has slightly different address information available, the subgroup designed address fields that would capture these differences. The long-term goal of this redesign was to allow for research to be conducted on a searchable and consistent address list. This would conceivably open up the possibility of developing Island Areas Master Address Files and moving beyond List/Enumerate data collection methodology.

On May 21, 2008, the Information Policy, Census, and National Archives and Insular Affairs Subcommittees of Congress held a joint hearing to discuss "special issues related to the U.S. territories." Witnesses—including Dr. Frank Mills of the University of the Virgin Islands' Eastern Caribbean Center, Governor Felix Camacho of Guam, Director Nikalao Pula of the Department of Interior's Office of Insular Affairs, and Deputy Director Thomas Mesenbourg of the Census Bureau—testified to a major discrepancy between the number and frequency of programs to collect data in the Island Areas and the number and frequency of programs to

collect data in the states and Puerto Rico. The major discrepancy named was the Island Areas' lack of a community survey like the American Community Survey, which is conducted yearly in the states, the District of Columbia and Puerto Rico. The then-Acting Deputy Director, Thomas Mesenbourg, agreed that the Census Bureau should explore ways to expand the data collection efforts in the Island Areas. He specifically mentioned including the Island Areas in the County Business Patterns Survey and utilizing the address listings collected in 2010 to build a file to develop a sampling frame. As a result, the County Business Patterns Survey added the Island Areas to its scope in 2008.

2.2.2 Field Operations

Census workers in the Island Areas were hired on-site through local government agencies. There were approximately 2,000 temporary positions created at the five Local Census Offices in the Island Areas. The Census Bureau required local census workers to pass a written test of basic map reading and clerical skills, submit to a Federal Bureau of Investigation background check, and sign an oath of confidentiality. Local hiring guidelines also applied to these employees.

Publicity and Promotion

The Island Areas participated in the Census in Schools program developed at Census Bureau Headquarters to raise awareness about the purpose and history of the Decennial Census. All other promotional items and publicity campaigns developed were procured locally in the Island Areas, outside the 2010 Census Integrated Communications Program. The decision to locally develop the publicity and promotional materials was due to the differences between stateside and the Island Areas enumeration operations and questionnaire content. In addition, locally produced materials maximized the use of the local culture and heritage of the Island Areas.

Local Census Office Structure

There were three Local Census Offices in the Pacific Island Areas: American Samoa, the CNMI, and Guam. There were two Local Census Offices in the U.S. Virgin Islands: St. Croix and St. Thomas. Census Advisors were present in each of the Island Areas to offer technical guidance. The Census Advisors were the only Census Bureau employees working in the Local Census Offices. The PRIA branch of Decennial Management Division provided support for the Local Census Offices. The Local Census Offices opened in fall 2009 and all were closed by September 2010.

Enumeration Strategy

A few days before Census Day, April 1, 2010, the United States Postal Service attempted to deliver Advance Census Reports to all residential postal customers. Due to challenges with the address and mail systems in the Island Areas, a blanket mailing approach was used. Prior to the delivery of the Advance Census Reports, an advance letter was mailed to inform residents that a 2010 Census form would arrive within one week. Residents were instructed

to complete the Advance Census Report and keep it until an enumerator visited the housing unit. During the data collection phase, enumerators either collected a completed Advance Census Report, or conducted a personal interview using an Enumerator Questionnaire for each housing unit in the Island Area. Each housing unit was also map-spotted on a paper map and an address or physical description was listed on the address listing pages within an address register when the enumerator visited the housing unit.

Group Quarters Enumeration

A group quarters is a place where people live or stay, in a group living arrangement, which is owned or managed by an entity or organization providing housing and/or services for the residents. Examples include college residence halls, residential treatment centers, skilled nursing facilities, group homes, correctional facilities, and workers' dormitories. Persons living at group quarters were enumerated during the group quarters enumeration operation using an Individual Census Report. The Individual Census Report consists of the same person questions found on the Advance Census Report but excludes all housing questions. In Guam, military personnel living in group quarters situations on base were enumerated using Military Census Reports, while military personnel whose permanent residence was a military vessel were enumerated using Shipboard Census Reports.

Quality Control Operations

Four major Quality Control Operations took place during the field data collection phase of the Island Area Decennial Census: Enumerator Observation, Dependent Quality Check, Group Quarters Administrative Follow-up, and Housing Unit Reinterview. The Enumerator Observation served as a vehicle for supervisors to provide instruction so that enumerators could improve performance. During the Dependent Quality Check, crew leaders verified a sample of units in each Assignment Area to make certain the address registers were completed accurately. If the Assignment Area did not pass the Dependent Quality Check, it was re-canvassed. The Group Quarters Administrative Follow-up Operation helped to ensure that each facility was visited and verified the approximate population count collected at the time of enumeration. During Housing Unit Reinterview, clerks made phone calls or enumerators made personal visits to a selection of housing units to verify the accuracy of housing unit questionnaires and to correct any inconsistencies.

2.2.3 Major Improvements

The major improvements and changes for the 2010 Census are as follows:

- The Island Area censuses were executed utilizing a contract as opposed to a Memorandum of Agreement.
- Local Census Offices were opened earlier.
- A standardized cost and progress report was developed and weekly teleconferences were instituted to monitor each Local Census Office.
- The address listing pages were tailored for each of the Island Areas and parsed so they could eventually be ingested into a Master Address File.

- The advertising campaigns were produced locally.
- New job positions were created for the Local Census Offices, including a Security Officer and Access Controllers. In the U.S. Virgin Islands, a Census Manager position was created to oversee the management of its two Local Census Offices.
- Spanish versions of the enumerator questionnaire, supplemental questionnaire, and Individual Census Report were developed for the U.S. Virgin Islands.

3 Methodology

3.1 Questions to be Answered

The following questions were selected and presented in the 2010 Census Study Plan of the Island Areas:

3.1.1 What were the effects of switching from a Memorandum of Agreement to a procurement contract?

This is a new question that was not included in the approved Study Plan.

3.1.2 Were the roles and responsibilities of the Census Bureau, the Census Advisors, local government agencies, and Local Census Office employees clearly defined?

3.1.3 What were the communication strategies employed during the field data collection phase?

3.1.4 What was the public perception of the 2010 Census of the Island Areas?

The question of “How did the five Local Census Offices compare with regards to refusal rate?” was removed for this assessment. A brief discussion on the rate is included in the answer to this question.

3.1.5 Did the rate of completion of the Advance Census Report increase or decrease from Census 2000?

3.1.6 Was the Field Followup workload manageable?

3.1.7 What were the results of the Quality Control Operations?

3.1.8 Were the materials provided to the Island Areas for the conduct of the Census on time and in reasonable condition?

This is a new question that was not included in the approved Study Plan.

3.1.9 Were the Island Areas supported geographically?

This question was changed from “Was the goal of housing units per assignment area met with delineation of collection geography?” to allow for a broader discussion.

3.1.10 Did the Decennial Budget Integration Tool, Island Areas Module, serve its intended purposes in the Island Areas?

This is a new question that was not included in the approved Study Plan.

3.1.11 Were the funds provided via contract sufficient to complete the field operations in each of the Local Census Offices?

3.2 Methods

The content of this assessment was developed through a review of emails and correspondence, meeting notes, the final reports written by the Island Area Census Advisors and by Local Census Office staff, lessons learned sessions with various stakeholders, and the PRIA branch’s historical files. Data found in this assessment include the following sources: 1) the Decennial Budget Integration Tool, Island Areas Module, Access Database files; 2) quality control forms and questionnaires; and 3) the Local Census Office Cost and Progress reports.

4 Limitations

Many of the data sources for this assessment provide qualitative information, rather than quantitative results.

5 Results

5.1 What were the effects of switching from a Memorandum of Agreement to a procurement contract?

For the previous three censuses, a Memorandum of Agreement was used to define the roles and responsibilities of the Census Bureau, the local government agency tasked as the administrative entity, and the Census Advisor. The memorandum for each Island Area also served as the vehicle to transfer the monetary installments to the Island Area governments to cover the costs of conducting the census. However, it was determined that for the 2010 Census, the Census Bureau needed to enter into a sole source contract with each Island Area. The impetus for the change came from American Samoa’s request made in December 2008 to reallocate appropriated funds to upgrade an existing facility owned and operated by the American Samoa Department of Commerce. The PRIA branch questioned this request and forwarded it to the Census Bureau’s General Counsel Office in February 2009 for its appraisal. The General Council Office then passed it along to the U.S. Department of Commerce General Counsel Office. The U.S. Department of Commerce General Counsel Office found the issue of secondary importance to the practice of utilizing a Memorandum of

Agreement to transfer funds to the Island Areas. They opined in two ways. First, a Memorandum of Agreement could not be used to transfer appropriated funds to a non-federal party for services in lieu of a procurement contract absent specific statutory authority. Second, Privacy Act requirements could be imposed on a contractor via contract, but employees of the territorial governments could not be made subject to the Privacy Act by agreements outside of a contractual obligation. (The second opinion was never fully vetted and confirmed as accurate). These opinions meant that the Census Bureau needed either a procurement contract with the local governments or a specific statutory authority to allow for the transfer of funds. As there was not enough time to pursue a specific statutory remedy, it was decided in April 2009 that a contractual vehicle would be the way to move forward. This satisfied the Privacy Act concerns and there was not enough time to pursue a specific statutory remedy. The contracts were fixed-price with an economic price adjustment based on actual costs of labor and materials.

Following the decision to utilize a contractual vehicle, a number of hurdles still existed. First, the Census Bureau had to justify entering into a sole-source contract with the Island Areas' local governments. There were three factors that necessitated the contract being free from competition. The Island Area governments had performed the work for all of the previous Island Area censuses and would have strenuously objected if they lost this role. Support from the local government was crucial to gaining full participation from the community. Also, there was limited time before the start of the 2010 Census to complete a contract. The pursuit of a sole-source contract with the Island Areas was approved by the Senior Procurement Executive of the Department of Commerce.

Once the procurements were free from competition, Federal Acquisition Regulation deviations were sought. The two deviations sought, and subsequently obtained, removed the standard Termination for Convenience and Termination for Default clauses and added a new clause to allow for advance payments to the Island Areas to obtain and setup the offices. It is likely Federal Acquisition Regulation deviations will again be necessary for the 2020 Census contract.

Contractor Registration and Performance

The Island Area agencies had to be registered as federal contractors. This was a five step process. To be *bona fide* federal contractors, the Island Area governments needed to obtain a Data Universal Numbering System number, register with Central Contractor Registration, create an Online Representations and Certifications Application profile, complete a Special Bank Account form, and submit a Vendor Registration Form. It took roughly three months for all four Island Areas to complete the multiple levels of registration. Though the entire process was novel to nearly everyone involved, the five contracts (two contracts were used for the U.S. Virgin Islands) were all signed by July 2009.

Unfortunately, this effort to implement new agreements tied up resources at the Census Bureau and in the Island Areas during a critical point in the project cycle. The leases for the Local Census Offices could not be signed prior to the money being available to the Island Areas, and the money transfer was contingent on the signing of the contracts. A few of the

liaisons stressed that if the economy were in better shape we would have been far less likely to find buildings in the Island Areas that met the Census Bureau needs. Once the leases were signed, building alterations were necessary in order to meet Census Bureau standards, but landlords were not willing to alter their properties without a signed lease. In the 2020 Census, assuming the Local Census Office build-out cannot begin prior to the leases being signed, the contracts should be awarded by 2018.

The contracts provided few performance evaluations for the contractor. Although the census is a partnership between the Census Bureau and the local governments, a degree of accountability is necessary. Work on the Island Area contracts should begin no later than 2015 to ensure the appropriate type of contract is selected and the contract can be awarded in 2018. Stricter performance measures also need to be written into the contracts.

Local Census Office Budgets

The budgets created by the PRIA branch's staff were created under the auspices of Memoranda of Agreement, and not under the fixed-price contracts that were used. The hope was the Island Areas would not need to request additional funds. Once the switch was made to contracts, the budgets became the cost proposals for the Island Area governments.

The budgets also retained a 25 percent increase in staff costs to account for a Cost of Living Allowance. PRIA staff asked the Island Areas whether they would like to use this money as bonuses or as an addition to the hourly wages. The U.S. Virgin Islands opted to use the money for bonuses. Guam and CNMI used the money as an addition to the hourly wage. American Samoa reported that the Cost of Living Allowance was not allowed for local employees, so the 25 percent staff cost increase was removed. In the U.S. Virgin Islands, employees complained that their pay was lower than stateside, despite having the opportunity for bonuses. For the 2020 Census, a more equitable layout should be negotiated.

5.2 Were the roles and responsibilities of the PRIA branch, the Census Advisors, local government agencies, and Local Census Office employees clearly defined?

The contracts between the Census Bureau and the local government agencies laid out explicit responsibilities for the Census Bureau, the local government, and the Census Advisor. Any duties and responsibilities that arose during the course of census operations, which were not specifically delegated in the contract to either the local government or to the on-site Census Bureau Advisor, were adjudicated by the Chief of the PRIA branch at Census Bureau headquarters per the contract. The PRIA branch also provided organizational charts and position descriptions for the Local Census Office employees to clarify responsibilities.

The Statements of Work in the contracts between the Census Bureau and the Island Areas' local government agencies were largely based on the Census 2000 Memoranda of Agreement and were appended with the standard Federal Acquisition Regulation clauses. Advisors consistently sought guidance on where their responsibilities began and ended. The Advisors often found the instruction they received, and subsequently relayed to Local Census Office staff, lacked any weight with officials and Local Census Office staff in the Island Areas due

to a lack of codification within the language of the contracts outlining the role of the Census Advisors. This was a principal reason for the weekly teleconferences that included Local Census Office management, Advisors, and Census Bureau management. The Advisors were primarily responsible for three things: ensuring the field and office procedures were followed, ensuring the terms of the contract were followed, and ensuring the message publicized by the Local Census Office and local government were in line with Census Bureau standards and goals. Advisors who are generally self-motivated, driven by challenges, able to adapt quickly and in varying situations, excellent written and verbal communicators, and fairly even keel will likely perform well.

Contracting Officer's Technical Representatives

For future censuses, the Census Advisors should be named as the Contracting Officer's Technical Representatives for their respective Island Area contract, as this would have given them a more defined role. If Advisors are to be the Contracting Officer's Technical Representatives for the 2020 Census, ample lead time is needed so these positions can be competed, selections made, and Advisors brought on board so they can receive the necessary training certifications.

Role of Local Government

Because the contracts did not always clearly define roles and responsibilities, some local government officials assumed various levels of responsibility in the conduct of the 2010 Census. For example, American Samoa augmented the Local Census Office organizational chart to include the Director and Deputy Director of the American Samoa Department of Commerce.

In order to elicit local government support and establish a degree of autonomy for the Local Census Office to operate within the local government, the Census Advisors must act with diplomacy. Most of the Census Advisors were able to develop a strong professional relationship with a local government employee who could help them navigate the bureaucracies when the path was not so clear.

Late in 2009, the Census Bureau was informed that new legislation was needed to provide the Government of Guam and the Local Census Office with the authority necessary to conduct any hiring. The Director of Guam's Bureau of Statistics and Plans was ultimately responsible for defending the salaries, position types, and lack of benefits for all employees in a late 2009 legislative session. This is a task that should have been completed much earlier in the project lifecycle by the local government agency. For the 2020 Census, it may help if PRIA staff developed a checklist that would include tasks such as classification of Local Census Office employees, legislative approval, and any other signoffs.

One place where the division of roles and responsibilities should be made clearer within the contract is between the Local Census Office and the local government. For the 2010 Census, the contract statement of work defines both in the same section. When operations began, the responsibilities for both the local government and the Local Census Office were at times

ambiguous and exclusive of one another. This was pointed out as a confusing matter by staff in Guam. The goal should be to be as explicit as possible for each agency involved so there is little need for interpretation. The PRIA branch will need to coordinate with the liaison agencies to bring the appropriate departments, agencies, and staff into the conversation early in the planning process and in order to document responsibilities.

Role of Advisors

During the operations, it became clear that managing two Local Census Offices in the U.S. Virgin Islands was entirely too much responsibility for a single Advisor. Were it not for the fact that the U.S. Virgin Islands Advisor had served as the Advisor in Census 2000, we would have had to quickly add staff support. For the 2020 Census, we recommend that an Advisor be deployed to each of the two Local Census Offices in the U.S. Virgin Islands.

5.3 What were the communication strategies employed during the field data collection phase?

The PRIA branch was responsible for managing the five Local Census Offices and serving as a liaison between the Island Area governments and the Census Bureau during the planning and execution phases of the 2010 Census. To facilitate this relationship, the Island Area governments all named a liaison agency and a staff member as a point of contact within the liaison agency. The PRIA branch developed strong working relationships with the liaisons and worked through them for all communications. As positive as these relationships were, expanding the Census Bureau's network to other agencies during the planning phases could have proved beneficial as the Advisors were left with the task of tracking down appropriate government contacts for different issues after arriving in their respective Island Areas.

Travel

DMD staff traveled to the Island Areas in 2008 to discuss the data collection instruments, in early 2009 to discuss the budgets and staffing, and in summer 2009 to walk through the newly drafted contracts and choose sites for the Local Census Offices. Additionally, DMD staff traveled to the Island Areas throughout the field data collection phase to: observe employee training; observe field operations; assist in the installation of the computer hardware; temporarily relieve Advisors' burden; discuss concerns and resolve problems; and provide clarification of roles, responsibilities, and procedures. DMD also conducted debriefings of the local government officials who worked on and supported the 2010 Census as well as the field and office staff right before the Local Census Offices closed. During these debriefings the Local Census Office employees and local government officials took this opportunity to candidly discuss their experiences and recommendations. The feedback that DMD received was integral to this assessment.

State Data Center Conferences

In October 2008, PRIA staff organized a day of meetings with Island Areas representatives who attended the State Data Center conferences. Topics discussed included: office

organization, field and office procedures, the office control system, and geographic updates. The Island Area representatives to the State Data Center conference also happened to be the Island Area liaisons. This venue provided another opportunity to build a strong working relationship and provide the Island Area liaisons with a briefing on the plans for enumeration and a chance to comment on or question strategies. During the 2010 State Data Center meetings we took another opportunity to speak directly to the Island Area representatives. Topics discussed included: geographic updates, data capture progress, data product plans and schedules, and the American Community Survey as it applies to the Island Areas. These briefings were very well received and should certainly be included in future Island Area plans.

Advisors' Role

From the Advisors' arrival on their respective islands and throughout the field data collection phase, the PRIA branch chief held weekly teleconferences with each of the Advisors and required a written weekly status report. In early March, the Advisors began submitting a weekly cost and progress report at the request of the PRIA branch chief. The cost and progress report was populated with cost data through varying processes and enumeration progress data from the Island Areas Module. Through these reports, the PRIA branch was given the ability to track progress remotely and Census Advisors recalled that it set a tone of accountability in the Local Census Offices. Considerations should be made in order to auto-populate enumeration progress counts in reports and allow the managing office to "look into" the Island Areas Module data to create ad hoc reports for the 2020 Census.

It was very common for the Advisors to seek clarification or guidance from headquarters staff. The time differences made it very difficult to promptly respond to Advisor inquiries, but the Advisors were generally pleased with the quality and speed with which DMD responded. To build on what has been previously done, every communication should include all Advisors and all technical support staff so consistent guidance is assured.

Teleconferences with Advisors and Island Area Officials

As field data collection operations were underway for the 2010 Census, DMD arranged weekly teleconferences with the Island Areas. These were used primarily to discuss cost and progress details. The meetings imparted a sense of urgency for the Island Areas to complete work on schedule and to control spending. The teleconferences allowed for a frank discussion of the Local Census Offices' status regarding the closeout of the field data collection operations.

Persistent Questions and Issues

Regardless of the forum, there were two non-operational questions consistently posed by the Island Areas: 1) why do we not have the American Community Survey and 2) why do we not get our products the same time as stateside? Additional questions typically regarded updates to the Island Areas' geography and funding. That being said, the PRIA branch and the Census Bureau as a whole should look into options that will provide the Island Areas

with mid-decade data collection and timelier data products. The key to moving forward will be consistent and effective communication techniques with Island Area officials and the Department of Interior Insular Affairs Office.

5.4 What was the public perception of the 2010 Census of the Island Areas?

In conducting the 2010 Census of the Island Areas, the cooperation of the public was of utmost importance. Between the length of the questionnaire, the misleading omnipresence of the 2010 Census stateside advertisement/message, and the labor intensive nature of the enumeration techniques utilized, the public formed strong opinions of the Census.

To facilitate a positive public image, each Island Area's communications campaign attempted to assure the communities their responses would be kept confidential and that all employees hired to work on the Census passed Federal Bureau of Investigation background checks. In the Pacific Islands, where immigration concerns are widespread, Local Census Offices emphasized the restriction on the Census Bureau to not share Title 13 information with any other government agency. The Census Bureau relied heavily on the Partnership/Media Specialists and Census Advisors to relay these messages to the public, as the Island Areas were not included in the 2010 Census Integrated Communications Campaign. The importance of the Census to the community and the commitment to confidentiality were messages the Local Census Offices successfully stressed.

Non-English Materials

Basic materials that highlighted critical 2010 Census information were provided to the Island Area Local Census Offices in English only. It was up to the Local Census Offices to translate the materials into local languages, which all Island Areas did to varying degrees. Language guides and/or promotional materials were locally translated into different languages reflecting the diversity of the Island Areas' population:

- **American Samoa:** Samoan, Chinese, Tongan, Korean, and Fijian
- **CNMI:** Chamorro, Carolinian, Korean, Japanese, Chinese, and Tagalog
- **Guam:** Chamorro, Chuukese, Chinese, Kosraean, Pohnpeian, Yapese, Marshallese, Palau, Japanese, Korean, and Tagalog
- **U.S. Virgin Islands:** Spanish

Census in Schools

The Island Areas also participated in the 2010 Census in Schools campaign produced by Scholastic Incorporated. By all accounts, the Census in Schools campaign in the Island Areas was very well received. PRIA staff reviewed the lessons and graphics and provided comments and recommendations to tailor the materials for each of the four Island Areas. The PRIA staff insisted the Census in Schools materials be printed and shipped to the Island Areas as resources in the local Department of Educations are limited. As printed materials carried a higher price tag, Census in Schools materials were not produced for the high school level for the Island Areas by Scholastic Incorporated and this was a shortcoming. Some in

the Island Areas believed that high school lessons could have proven more effective in the Census in Schools strategy of teaching the parents through their children. In the CNMI, the Local Census Office worked with the local Department of Education to develop high school materials on the islands, utilizing the Census Bureau website. Assuming the Census Bureau will once again pursue a Census in Schools project, working with the Departments of Education to locally produce Census in Schools materials should be considered. Every effort should be made to produce materials for high school students for the 2020 Census.

Census in Schools materials arrived on site at the Local Census Office later than planned. This allowed little time for teachers to appropriately assimilate the Census in Schools materials in their lesson plans. The delivery strategy for the Census in Schools materials was, however, successful. The PRIA branch worked with the local Departments of Education to determine the necessary quantities, shipped the materials to the Local Census Offices, and the Local Census Offices worked directly with the Departments of Education to distribute the materials among the private and public schools on-island. However, a lot of time and energy was spent trying to determine locations of the private and public schools located on each island. Ultimately, the Local Census Offices were given the responsibility of distributing the materials.

It should be noted that the Census in Schools maps were very popular (even though American Samoa pointed out two questionable aspects of the map boundaries) as evidenced by their presence on walls in the Local Census Office and local government offices. Perhaps for the 2020 Census, a multilateral contract could be developed with the local governments that would provide funding for additional supporting projects like Census in Schools to be produced locally. The Island Areas may not have the capabilities, but offering the local Departments of Education the opportunity to perform this function and further tailor the lessons to their local curriculums would prove beneficial. At a minimum, the Island Areas should be brought into the planning phase to frame the project as a partnership. The challenge of Census in Schools is the overall management of a project with such a large scope for small areas. Given the nature of educational organizations, we need to remain mindful of local considerations in the Island Areas.

Stateside Campaign

The Local Census Offices were also forced to combat the omnipresent, stateside “mail it back” television advertising campaign which heralded the “10 minutes, 10 questions” message. This message left the residents of the Island Areas rather perplexed when a more than 70 item questionnaire showed up in their post office boxes and in the hands of the enumerators on their doorsteps when questionnaires could not be mailed. In hindsight, we should have prepared the Local Census Offices ahead of time to combat this. Local Census Offices worked with local television stations to pair a locally produced census commercial to counter the stateside message. For the 2020 Census, the Island Areas will need to be provided the resources to publicize during the most coveted timeslots.

The public also complained about the lack of a mailback option. “Don’t forget to mailback your census form,” was a message that the Island Areas were inundated with through the

stateside campaign. Since there was no complete and consistent street address system in place that would allow us to identify in advance housing units to which we could mail out census forms, the mailout/mailback procedure was not used in the Island Areas. Their current address systems hinder our ability to geographically match the actual housing unit with a completed questionnaire that respondents would mail back to us. Regardless, many respondents expressed a desire to mailback their questionnaires. There were various reasons for this, but these typically hinged on trust issues with either the government or a particular census employee. Despite instructing respondents to retain their completed questionnaires for an enumerator, a few questionnaires were mailed to the Local Census Office, the National Processing Center in Jeffersonville, Indiana, and multiple persons at headquarters from respondents in the Island Areas. Initially, there was some confusion as to why respondents were sending their forms to the National Processing Center, until it was discovered that this was the return address on the envelopes. With that in mind, a local address needs to be applied to the mailing envelopes if a mailout (but not a mailback) procedure is again utilized. This could be a difficult plan to implement in the future as the envelopes were printed well before a Local Census Office was established, but the option should be researched due to the difficulties manifested when questionnaires leave the Island Areas (questionnaires that arrive anywhere other than the Local Census Office are nearly impossible to geocode, and subsequently tabulate).

Frequently Asked Questions

We should also prepare the Local Census Offices by providing them with a “Frequently Asked Questions” document to help navigate the numerous inquiries from the public, the local media, and local politicians. The Advisor to American Samoa noted that since information was lacking, Local Census Office employees took it upon themselves to find answers, and in many cases perpetuated erroneous information (i.e., espousing talking points from the Census Bureau website that did not apply to the Island Areas). Questionnaire Reference Books were produced by Population Division to address the particular items in the questionnaire, but a more streamlined guide could have proved far more useful, especially for enumerators who needed to quickly address a respondent’s concerns.

Student Art Contest

One of the most positively received partnership programs was the student art contests held on Guam and CNMI. The event called upon students of all ages to submit personal art work that displayed what their communities and the census meant to them. Student submissions were grouped by grade and the winners were selected by a panel of judges that included the Advisors and headquarters employees. For the 2020 Census, this activity should be actively supported by the Census Bureau and extended to the other two Island Areas.

Positive Media Attention

The Local Census Offices received generous positive publicity. In American Samoa, the grand opening of the Local Census Office garnered excellent press coverage and was attended by a wide range of politicians, community leaders, and local media. All of the

Island Area Local Census Offices were supported through local media outlets by allowing staff to appear on radio and television talk shows, running news and radio stories on Local Census Office activities pro bono, and running advertisements on public television and radio. For the 2020 Census, these avenues should again be pursued in order to properly inform the public on what the Census could mean to them. Additionally, the Partnership/Media Specialist position should continuously be instructed that the media campaign be targeted towards those populations that are least likely to respond: young people, ethnic minorities, recent immigrants, etc.

Negative Media Attention

The Local Census Offices also received varying degrees of negative press and sentiments concerning the hiring procedures and standards, specifically in American Samoa and Guam. The PRIA branch's standard position was to contact Local Census Offices to handle it locally as the Local Census Office employees were local government employees. This was not always an easy position for the Advisors to accept, since they were seen as the representatives of the Census Bureau in their respective communities. When drafting the contracts for the 2020 Census, specific language should be included for what role the Census Bureau, including the Advisors, does and does not take in the hiring and firing of employees.

Local Employment Issues

For the 2010 Census, the only time headquarters became involved in employment issues was when a person was identified by the Census Hiring and Employment Check staff as ineligible to work on the census. There were three instances of this in the Island Areas Local Census Offices and ultimately all three individuals were released from employment.

Participation Rates

The high overall participation rate in the Island Areas is likely indicative of a generally well publicized and well received census effort, evidenced by Table 1 below. There were still many challenges in soliciting a positive public response. In St. Croix, the Local Census Office with the highest rate of refusals, a number of Local Census Office staff expressed the belief that the Census Bureau should prosecute a few of the apparently vocal residents who publicly admonished the census and urged St. Crucians to close their doors to census workers. Alternative strategies were employed to ensure honest and accurate messages reached the public at large and tempered the messages of detractors.

Table 1: Participation Rate by Local Census

Office: 2010 Census

Local Census Office	Percent of Households Participating
American Samoa	99.99
CNMI	99.88
Guam	99.37
St. Croix	94.16
St. Thomas/St. John	98.71

Note: Vacant housing units are not considered households.

Note: Proxy interviews for occupied housing units are included as participation.

Source: Local Census Office Cost and Progress Reports and Island Areas Module Access Database Files

5.5 Did the rate of completion of the Advance Census Report increase or decrease from Census 2000?

Census 2000 was the first Island Area census that utilized an enumeration strategy that included a mailout component. Census 2000 also included Be Counted forms, but these were not used in the 2010 Census due to extremely low rates of usage for Census 2000. Self-reported data are generally preferred to solicited responses, and for the 2010 Census Island Areas residents were afforded a level of privacy in places where anonymity is uncommon through the use of Advance Census Reports, as opposed to providing somewhat sensitive information to an enumerator who may be known to the respondent.

Delivery Strategy

Since the Island Areas lack home postal delivery, advance letters and the Advance Census Reports were mailed to each post office box serviced by the United States Postal Service. However, it is very common for multiple households to share a single post office box and Guam, CNMI, and the U.S. Virgin Islands rely heavily on commercially serviced private mailboxes. To account for these factors, more advance letters and the Advance Census Reports were printed than there were post office boxes. Unfortunately, the contract for shipping stipulated that the United States Postal Service would deliver only one advance letter and one Advance Census Report per post office box or mailing address serviced by the United States Postal Service and would not ship to the commercially serviced private mailboxes. Once the Advisors were notified that fewer than expected advance letters arrived, the decision was made to ship the advance letters remaining at the National Processing Center as well as request the assembly of a bulk shipment for the Advance Census Reports that would have otherwise remained at the National Processing Center. The Local Census Offices then distributed the advance letters and Advance Census Reports among the high traffic areas and community centers on-island (post offices, mayors' offices, etc.). This means that not all of the returned Advance Census Reports were actually delivered to residents as intended.

Results

All three of the Pacific Island Areas exhibited higher Advance Census Report return rates than in Census 2000 (see Table 2). The most dramatic increase was in CNMI, and this high return rate certainly contributed to it being the first Local Census Office to complete operations. Both of the U.S. Virgin Islands Local Census Offices exhibited slight decreases in the Advance Census Report return rates. These numbers show that a large portion of the Island Areas' populations prefer to self-report data as opposed to enumerator-administered interviews via the Enumerator Questionnaire. Respondents also consistently expressed a desire to mail back their completed questionnaires, though this was not an option for the 2010 Census.

Table 2: Advance Census Report Return Rate by Local Census Office: Census 2000 and 2010 Census

Local Census Office	Percent of Households Returning Advance Census Reports	
	2000	2010
American Samoa	10.26	12.99
CNMI	17.25	31.32
Guam	41.16	50.61
St. Croix	40.34	39.72
St. Thomas/St. John	30.63	29.83

Note: Vacant Housing Units are not considered Households.

Source: Island Areas Module Access Database Files, Census 2000 Island Areas Assessment, and Census 2000 Summary Files.

5.6 Was the Field Followup workload manageable?

Field Followup is the second largest operation in the Island Areas field data collection phase. The goal is to resolve errors and omissions in the List/Enumerate operation. The workload for Field Followup must be small enough to allow for a smaller workforce to verify vacant housing units, missing questionnaires, and questionnaires that have failed edit.

Check-in and Edit

Following the completion of the List/Enumerate operation, the field staff transitioned into the Field Followup operation. All questionnaires and address registers received by the Local Census Office were checked into the Island Areas Module and edited by the clerical staff. It should be noted that of all the office operations, Local Census Office staff found the editing to be the most confusing. The edit guides were difficult to follow, particularly for lengthy questionnaires. Population Division provided partial interview rules to be used as the criteria for determining which questionnaires "passed" edit. A questionnaire failed edit if:

- Any one of the core questions (relationship to person one, sex, age/date of birth, Hispanic Origin for the U.S. Virgin Islands, and race/ethnicity) were not answered properly for any person listed;
- At least six additional questions were not answered properly for each person listed;

- The housing tenure question was not answered properly;
- Or, at least two additional housing questions were not answered properly.

Questionnaires that did not pass edit and included telephone numbers were sent to Telephone Followup for resolution. The Local Census Offices reported varying success rates for this operation. The failed questionnaires that could not be resolved through Telephone Followup became a part of the Field Followup workload. For the 2020 Census, Telephone Followup requires an automated tracking system that is integrated with Field Followup operations.

Clerks tasked with clerical edit work reported being confused by the editing of the questionnaires. Simplification of this process should be a goal for the next census. An automated system needs to be put in place to aid in this process for the next census (i.e. internet responses or handheld systems that can instantly verify internal validity).

Merging of Questionnaires and Address Registers

Upon check-in, the Island Areas Module was programmed to match the questionnaire records and address register records based on the 14-digit barcode, population, block, assignment area, and map spot. Those questionnaires and listings that did not match and could not be resolved through Telephone Followup were sent for Field Followup. Also included were listings that had no corresponding questionnaires. Alternatively, questionnaires that had no corresponding listing could typically be resolved within the office without a field visit.

Vacant Unit Verification

The third aspect of Field Followup was verifying that housing units listed as vacant were actually vacant as of April 1, 2010. The three types of cases were formed into workloads upon geographic boundaries and given to field workers to resolve. The Island Areas Module supported much of this process, but for the 2020 Census, an automated control system that can track cases and workloads moving through the process is crucial.

In American Samoa and Guam, the line between the List/Enumeration and Field Followup operations was blurred as the Local Census Offices continued to search for housing units to prevent perceived undercounts. This created difficulties in assessing progress from headquarters. Clearly defining these operations should be a goal in training and should, therefore, be highlighted consistently in the manuals.

Results

From the results in Table 3, it is clear that the larger overall workload of the U.S. Virgin Islands and Guam created significantly larger workloads for Field Followup. This was caused by more confusion over assignment areas boundaries due to more densely populated areas, a breakdown in the review process through the field staff chain of command, and/or simply a product of not enough staff to perform the functions asked of them for the amount of work in front of them. Overall, the field operations were completed on time and within budget.

Table 3: Percentage of Housing Units in Field Followup Workload by Local Census Office: 2010 Census

Local Census Office	Percent of Housing Units in Field Followup
American Samoa	17.60
CNMI	23.89
Guam	33.73
St. Croix	41.73
St. Thomas/St. John	39.90

Source: Island Areas Module Access Database Files, 2010 Advisor Reports, and Local Census Office Cost and Progress Reports

5.7 What were the results of the Quality Control Operations?

The goal of the Quality Control plan for the List/Enumerate operation in the Island Areas was to ensure enumerators understood the canvassing procedures and filled out the address registers, maps, and questionnaires completely and legibly. The Quality Control plan consisted of the following operations:

- Assembly check of the address registers and maps
- Initial Observation of enumerators
- Dependent Quality Check of address registers and maps
- Crew leader and Office Review of materials
- Reinterview of a sample of Enumerator Questionnaires
- Administrative Followup of the group quarters

The results of the four Quality Control operations that tracked outcomes—Initial Observation, Dependent Quality Check, Reinterview, and Administrative Followup—were largely positive implying an understanding of the operations, yet the completion rates for the Quality Control forms were low, implying a view that the Quality operations were secondary in nature to field and office work. The operations may also have been overlooked since these operations were not wholly incorporated into the written procedures and training. An overall recommendation is to consider a management structure with the Quality Control operations separate from the field and office management, similar to what is done in stateside Local Census Offices.

For information on the Quality Control operations conducted in the Island Areas, refer to Decennial Statistical Studies Division Draft Report: “2010 Census: Island Areas Quality Profile.”

5.8 Were the materials provided to the Island Areas for the conduct of the Census on time and in reasonable condition?

The materials produced for the 2010 Census of the Island Areas field data collection phase were vast. The PRIA branch was responsible for producing all questionnaires, forms, manuals, and training guides; determining printing specifications and quantities; managing

the shipping of the materials (from the National Processing Center and headquarters); assuring that the Local Census Offices received expected quantities; and providing instructions for returning or destroying any completed materials. A list of the questionnaires produced can be found in Appendix A. A list of the forms, manuals, and training guides can be found in Appendix B.

Tracking Production of Materials

A detailed tracking worksheet was developed to monitor the status of all field and office forms, manuals, and training guides. The tracking worksheet was helpful in making sure that everything that was needed was produced, but a more detailed and better thought out writing schedule could have curtailed the late shipments made to the Local Census Offices when operations began. Many manuals were developed and shipped piecemeal as was dictated by limited personnel resources. The order in which manuals and forms are developed is also important to create consistency, which the Local Census Office employees quickly pointed out was lacking. For example, supervisory manuals should be written after the operational manuals have been drafted.

Another task that proved very helpful was a check to see what materials were retained from Census 2000 and whether they were in paper or electronic format. A fifty-page chapter in one of the enumeration manuals from Census 2000 was missing and needed to be developed from scratch. Once the data collection methodology is chosen for the four Island Areas, an assessment of the availability and condition of all necessary materials should be the next step in planning. An early analysis of the materials could conceivably allow for a streamlining of forms and manuals, as well.

Shipment Schedule

Along with the tracking worksheet, a shipment schedule was developed to inform the National Processing Center of when materials needed to be shipped. The National Processing Center shipped the materials in five separate waves predicated on when the Local Census Offices needed the materials. The schedule was crucial to ensure the correct materials were shipped; however, it was developed entirely too late in the process. An additional issue regarding the shipping was that planned shipments rarely made it to the Local Census Offices in full. This was often due to late arrival of materials from Census Bureau headquarters. However, the specifics of the missing materials were not consistently communicated to PRIA staff. For the 2020 Census, it is likely that multiple, large shipments will be made to the Local Census Offices. A standard protocol should be developed well before any shipments are made to ensure all parties—the Local Census Offices, headquarters, and the National Processing Center—know when and what is coming and whether it arrived in full. This becomes a moot point if local printing is used for future Island Area censuses, as we recommend.

The importance of providing the Island Area Local Census Offices with final, accurate, and consistent materials at one time was apparent to all involved. However, the volume of work to be done dictates that we should begin the writing of materials as early as possible. Also,

earlier hiring of Advisors could have provided much needed additional resources to help with the preparation of all training materials and office manuals.

Hiring Advisors Early

Two of the Advisors were hired early enough to assist in the writing and adaptation of materials and this proved to be beneficial to the Advisor and to the PRIA. For future censuses, all of the Advisors should be brought in early enough to assist in material preparation. This exercise provides numerous benefits to the Advisors, who would gain valuable insight and expertise into the field and office operations while developing a working relationship with PRIA staff.

Training Manuals

Local Census Office employees and Advisors alike noted the antiquated state of many of the training materials. Not unlike the errors found in the training materials, the use of overheads and poorly designed materials drew trainees' attention away from the lessons. When you consider the trainers are typically only vaguely familiar with the procedures, this inattention can be disastrous. With this in mind, when scheduling the updating process for the manuals, forms, and training guides, time should be included to modernize the materials. It was also suggested by the U.S. Virgin Islands Advisor that video training be used for the Island Areas Local Census Offices. The inclusion of this recommendation would mean even more time would be added to the materials update process.

The materials lacked cohesiveness since they were written by different staff at different times. Local Census Office employees noted that the flow of work between the field and office was especially short on detail. Priority should be placed on making sure the flow of materials between the multiple operations is addressed for the 2020 Census. A way to accomplish this would be to facilitate training dry runs at headquarters as part of the review process. This will also increase the likelihood that materials will not require updates.

The Quality Control materials were not well integrated into the other field and office manuals. A single section was placed in the training manual for the responsible position for each of the Quality Control operations. There was no mention in the manuals of those who were tasked to supervise these operations. For the next census, more effort should be put into including the Quality Control operations in the necessary manuals.

One area that was certainly lacking was the Geographic Specialist manual. Advisors communicated that this manual rarely resolved Island Area issues and those requiring instruction needed to review the many field manuals to find answers to their questions. For the 2020 Census, more effort should be devoted to supplying the Local Census Offices with a single manual for geographic issues.

Another issue with the training materials was intermingled sections that would apply only to the U.S. Virgin Islands or Pacific Islands. Local Census Office employees often found the use of a map that contained a geographical area from another Island Area distracting. For the

2020 Census, an attempt should be made to produce manuals customized for each Island Area.

The management training was generally viewed as adequate to prepare the high-level staff for the responsibilities of the jobs, except in the case of the Assistant Manager for Administration. As the roles for this position encompass recruitment and payroll, standardizing across the Island Areas is nearly impossible since the individual hired will need to work within the rules and regulations of the local governments. Effort should be made for the 2020 Census to discuss the payroll and hiring guidelines with each local government in time to include some language in the training guides.

Local Printing

A major recommendation for the 2020 Census is to print as many materials on-island as possible. All paper materials, excluding questionnaires, should be within scope for printing locally. Exorbitant shipping costs, poorly calculated quantities, lengthy and uncertain delivery timetables, and lost materials were all logistical issues encountered in the 2010 Census. In order to determine local printing capabilities, the local governments should be contacted early and any performance expectations should be clearly laid out in the contract with the specific party responsible. Local printing could conceivably save time and money in the next census if the process is properly planned and managed.

Address Listing Pages

For the 2010 Census, the address listing pages were customized for each Island Area to collect appropriate address information. The customization was made in an attempt to capture the Island Areas address data in a complete manner that would eventually allow the addresses to be used to build Master Address Files. This is not a simple task since many addresses in the Island Areas would not be considered standard, city-style addresses, that is, they are usually descriptions of housing units such as “white house with red roof.” After reviewing the address data, Geography Division has recommended that the Zip Code be collected with each address as opposed to one Zip Code per address register to aid in the creation of Zip Code Tabulation Areas.

Questionnaire Development

There are a few things that should be kept in mind prior to beginning the questionnaire development process. First, assuming the Geography Division has added the Island Areas addresses to the Master Address File/Topologically Integrated Geographic Encoding and Referencing database prior to the 2020 Census, the questionnaire (as well as address listing pages) will require the use of the new standardized Master Address File/Topologically Integrated Geographic Encoding and Referencing database address formats. Second, any new questions for the 2020 Census should either be tested for use in another survey or tested prior to acceptance. Third, the process for adding and deleting questions from the questionnaires (with input from the Island Areas) must be rigid, not only in terms of how new questions are submitted but the deadlines they must meet and the testing they must go

through. When the process is allowed to proceed with little regulation, this activity has the potential to put questionnaire development behind schedule. And finally, the design of the continuation forms with pre-printed person numbers caused duplicate person numbering to occur when an Advance Census Report was completed along with a continuation form(s) for a household. Either the person number fields should be left blank or the two questionnaires should be aligned to resolve this for the 2020 Census.

The questionnaire development process was difficult. It is generally agreed upon that there were too many questionnaires used in the Island Areas. Nineteen unique questionnaires were produced for the Island Areas. This includes the use of an Advance Census Report and Enumerator Questionnaire, especially given the differences between the two (e.g. five persons could be enumerated using Enumerator Questionnaires, while six could be included on the Advance Census Report); using multiple group quarters questionnaires (less than 200 Shipboard Census Reports were completed); and using distinct questionnaires for each Island Area. The assumed increase in data quality gained by using multiple forms was countered by the increase in cost and processing complexity. Questionnaire design and review went through too many drafts (one questionnaire may have gone through more than 20 drafts). Questionnaire content should be finalized prior to approaching the design stage of questionnaire development. The process should begin early enough to allow for the necessary content and wording revisions. Finally, due to resource limitations and competition with stateside decennial census work, the Administrative and Customer Services Division prioritized questionnaire design work with the Island Areas invariably being placed last in the queue.

The Island Areas were removed from the Decennial Response Integration System contract late in the process, since the data were not going to arrive coded. Consequently, questionnaire design and layout was not developed in conjunction with meeting data capture, coding, and processing requirements.

Having fewer questionnaires is a major recommendation for the 2020 Census.

Spanish Questionnaire

For the 2010 Census, a Spanish-version Enumerator Questionnaire, Individual Census Report, and continuation form were all planned and developed for the U.S. Virgin Islands. The Spanish-version Enumerator Questionnaire was not used as a data collection instrument due to a variety of errors, that primarily involved the ordering of pages. It was, however, used as a job aid for verbatim interviewing in Spanish. The comment and review processes were inadequate and led to the issues with layout, wording, and pagination. If it is again pursued for the 2020 Census, staff should use all of the available resources with adequate lead time to ensure the translation and layouts are accurate.

Office Supplies and Equipment

Prior to the start of operations, but after the Local Census Offices had been established, bulk supply kits were shipped to each Island Area from the National Processing Center. Advisors

expressed the overwhelming need for these materials, but some noted that the amounts were inappropriate. All five Local Census Offices received the same quantities. However, the CNMI Advisor reported an “adequate” amount of supplies, while the Guam Advisor reported supplies “short in numbers.” For the 2020 Census, the bulk supply kit quantities should be more carefully planned. This could include limiting the quantities of items that are readily available on-island and considering the relative workload differences between the Island Areas.

All information technology equipment was purchased through the Decennial Budget Integration Tool contract with Booz Allen Hamilton, including the copy machines and printers. Headquarters coordinated the procurement of this equipment since for Census 2000 the Island Areas were not always able to perform this. For the 2020 Census, PRIA staff should discuss with the liaison agencies the on-island availability of copiers, printers, and other peripheral items and fulfill this function locally whenever possible.

5.9 Were the Island Areas supported geographically?

The collection geography, along with the data collection instrument, forms the framework for the census. Without properly defined boundaries encompassing relatively evenly distributed housing unit totals, field workers and subsequently the entire Local Census Office will certainly struggle. Enumerators that cross collection geography boundaries introduce the opportunity for duplicate households. The challenges for the Geography Division are tremendous when it comes to the Island Areas: there is not a consistent addressing system, most of the roads are unnamed, the Island Areas are not part of the Boundary and Annexation Survey or the Participant Statistical Areas Program, the Pacific Islands are remote, there is no consistent Census Bureau presence (we are in the field every 10 years), the terrain is mountainous, water features are complex and often change, and historically the work must wait until after stateside efforts are complete.

Nevertheless, process improvement could be implemented. First of all, the Census Bureau now has the most complete listing of housing units for each of the Island Areas. The listings from the 2010 Census must be utilized in the planning for and conduct of the next census. Since the Island Areas are not a part of the Boundary and Annexation Survey or the Participant Statistical Areas Program, another mechanism must be put in place to update census geography keeping in mind the limited resources available in the Island Areas. For the 2010 Census, we worked with the local government agencies in the Island Areas to update both the legal and statistical geographies during site visits and through subsequent telecommunication. Still, the Local Census Offices complained that some of the collection maps contained information not updated since the Census 1990. These tasks are within scope for the Geographic Support Systems initiative which aims to improve address coverage, update spatial features continually, and enhance quality assessment and measurement.

Collection Maps

The collection maps were a challenge for field staff. Understanding the boundaries for assignment areas and blocks was something that was often unclear for even the Geographic Specialists. Attention should be paid to continuing to improve the accuracy of Island Area field maps features and boundaries. Improving the collection maps would necessarily improve data quality as the map-spotting would become more accurate, since enumerators could better orientate themselves on the ground. Additionally, map-specific training should be given to the Local Census Office employees.

Enumerators also complained about the scale of the block maps. In the more densely populated areas, map-spotting became exceedingly difficult since there was not enough space to accommodate the numerous housing units. For the 2020 Census, the digitized map spots from the 2010 Census should be used to determine the necessary scale for block maps.

Water Blocks

Enumerators occasionally map-spotted within water blocks, despite instructions prohibiting this practice. If a housing unit is legitimately found within a water block, either on the ground or according to the block map, the instructions dictated that the housing unit be map-spotted to the nearest land. Moving forward it may prove easier to have enumerators map spot housing units to water blocks, if appropriate, and then move the map spot to the closest landmass in the post-processing phase if Population Division continues to insist that data cannot be tabulated to water blocks. Since the hydrography in the Island Areas is not always completely accurate, this would be the safest solution. The stateside protocol for future censuses should be used for the Island Areas. The key to resolving this issue is aligning the instructions for data collection with data tabulation.

Geographic Component of Island Areas Module

During the development of the Island Areas Module, the Island Areas collection geography codes were included as a means to automatically validate the codes that were collected on the questionnaires and address listing pages and entered into the system. This particular process proved to be incredibly useful as the collection geography codes that were validated multiple times were used in lieu of a standard street address for multiple tasks in the post-processing phase.

Management of Geographic Processes

For the 2010 Census, some of the updates for political geography were either communicated to Geography Division late in the process or took longer than expected to receive approval. For the 2020 Census, we should strive to communicate regularly with the Island Areas to try and anticipate necessary changes.

For the 2010 Census, all geographic support was provided by staff at headquarters. Geography Division worked with Decennial Management Division and the Island Area

liaisons directly. This allowed for faster and efficient updates and processing of data, higher levels of data quality, and more satisfied partners. The building up of more long-term subject matter expertise on the Island Areas in Geography Division should be continued throughout the next decade and into the 2020 Census. The Island Areas have numerous specific and unique challenges that needed to be addressed for the 2010 Census by headquarters staff.

Assignment Areas

In order to facilitate an efficient enumeration, Geography Division attempts to delineate collection geography in the Island Areas that allow for bounding on all sides by visible features while limiting the number of housing units in each assignment area. Additionally, since we do not maintain a Master Address File in any of the Island Areas, the Geography Division relied on the Island Areas' liaison agencies for updates. For the 2010 Census, this information was requested and relayed too late in the process to aid in the delineation of assignment areas. For Guam and CNMI, it is imperative that growth patterns are followed due to the military buildup in Guam slated to occur throughout the next decade. Communication with Island Area partners to identify areas of growth is the key to address this concern.

For the 2010 Census, many assignment areas in the Island Areas were too heavily populated for a single enumerator. The U.S. Virgin Islands contained the largest assignment areas, with two having roughly 1,300 housing units. This forced the Local Census Offices to split assignment areas administratively without the aid of formal procedures detailing when and how assignment areas should be split. For the 2020 Census, every effort should be made to limit the size of assignment areas and delineate an appropriate number.

The number of assignment areas has far reaching effects as field staff sizes are derived directly from ratios built on the total. The number of employees dictates the quantities of field materials produced. As Table 4 displays, the average assignment area size exceeded the stated goal of 70 housing units per assignment area for American Samoa and CNMI and 100 housing units per assignment area for Guam and the U.S. Virgin Islands in every Local Census Office. The only Local Census Office that met Geography Division's average assignment area goal was American Samoa. Table 5 shows the drastic fluctuation in assignment area sizes through a standard deviation of housing units for assignment areas in Guam, St. Croix and St. Thomas. For the 2020 Census, every effort should be made to delineate the right number of assignment areas with an adequate number of housing units in each.

Table 4: Average Number of Housing Units per Assignment Area by Local Census Office: Census 2000 and 2010 Census

Local Census Office	Housing Units per Assignment Area	
	2000	2010
American Samoa	55.23	60.10
CNMI	131.09	117.16
Guam	95.55	140.09
St. Croix	135.90	133.03
St. Thomas/St. John	132.76	166.62

Source: PRIA branch historical files and Island Areas Module Access Database Files

Note: Geography Division had a goal of 70 housing units per assignment area in American Samoa and CNMI and 100 housing units for Guam and U.S. Virgin Islands

Table 5: Standard Deviation of Housing Units per Assignment Area by Local Census Office: 2010 Census

Local Census Office	Standard Deviation of Housing Units per Assignment Area
American Samoa	46.73
CNMI	87.53
Guam	106.69
St. Croix	141.71
St. Thomas/St. John	210.05

Source: Island Areas Module Access Database Files

Geographic Improvements for 2010 Census

The Geography Division made numerous improvements for the 2010 Census. During and after field visits to the Island Areas, the hydrographic and physical features were updated and named, roads were added and named, political boundaries were updated, and census statistical geography was brought in line with political boundaries where possible. Though these updates were necessary and valuable, they were not made in time for the delineation of collection geography. When planning for future censuses in the Island Areas, these field visits must also occur early enough in the process to allow for the updates to be reflected in the collection geography.

As for improvements to tabulation geography, estates were added for the U.S. Virgin Islands geographic hierarchy as sub-Minor Civil Divisions. The update reflects a long standing desire for the addition of this locally meaningful feature. Prior to this update, only Puerto Rico geography utilized the sub-Minor Civil Division layer. For CNMI, all of the villages are now designated as incorporated places and they are 100 percent contiguous. This is a major update and the number of places increased more than eightfold. The election districts (County Subdivision level) were updated for the 2010 Census since CNMI redistricted their election districts mid-decade. In Guam and American Samoa, additional census designated places were added.

An additional improvement was the differentiation of the address listing pages for the Island Areas. For the 2010 Census, a team designed separate address listing pages for each Island

Area to collect the most pertinent geographic entries, in the absence of city-style addresses. The idea behind this was to collect parsed address data that could eventually be transformed into Master Address Files.

Future Geographic Improvements

Putting a system in place to conduct feature updates is the obvious first step in improving Island Area geography. Once feature updates are made through partnerships, trips to the Island Areas to verify on-the-ground features should follow. The feature updates could then be used to inform the assignment area delineations. It should be kept in mind that feature updates would need to occur prior to any Master Address File development.

The Geography Division recommends the following plan for geographic updates, including field visits, to support the 2020 Census during the specified calendar years:

- 2011: Develop/begin implementing the 2020 Census of the Island Areas geography plan. Begin work on landmark and feature updates.
- 2012: Solicit feedback from the Island Area liaisons on 2010 Census geographies when the 2010 Census data products are released. Continue work done in 2011.
- 2013: Begin working on significant legal geography and new geographic entities. Continue work begun in 2011/2012.
- 2014-2016: Continue work begun in 2011-2013.
- 2016/2017: Feature update field work/verification visit (pre-collection geography), specifically: point and area landmarks; the Master Address File/Topologically Integrated Geographic Encoding and Referencing Feature Classification Code consistency (for block and assignment area boundaries); add new roads/features; delete nonexistent roads and features; positional accuracy and spatial alignment of features; block boundary flagging. Ensure all updates are within the Master Address File/Topologically Integrated Geographic Encoding and Referencing database prior to collection geography delineation.
- 2018 (early): Update draft of collection geography boundaries visit. Update assignment areas, update any outstanding feature updates and update feature names. Ensure all updates are within the Master Address File/Topologically Integrated Geographic Encoding and Referencing database prior to finalization of collection geography.
- 2018 (late): Legal and statistical area boundary update visit. Update the counties, county subdivisions, places, tracts, block groups, estates, and other geographies (e.g., legislative districts, if implemented) as necessary. Assure all boundary updates are in the Master Address File/Topologically Integrated Geographic Encoding and Referencing database prior to creation of verification materials
- 2019: Legal and statistical area boundary update verification visit (if necessary to finish any outstanding work). For the 2010 Census, since the three major work items were within one visit (feature update, collection geography update, and tabulation geography update) there was not enough time to complete the necessary work on any of the topics. Ensure all boundary updates and corrections are in the Master Address

File/Topologically Integrated Geographic Encoding and Referencing database prior to delineation of the tabulation blocks.

- 2020: Digitize all features and map spots adds/deletes from Island Area field maps into the Master Address File/Topologically Integrated Geographic Encoding and Referencing database. Review all feature changes for suitability as block boundaries and flag as must hold/do not hold as required. Run test delineation of 2020 Census tabulation blocks and review before final delineation.

Improvements for the 2020 Census suggested for American Samoa include updating the Western/Eastern District boundary on Tutuila to fall along village and county lines. For Guam and the U.S. Virgin Islands, a goal is updating the roads in the more densely populated areas where imagery does not readily allow for an accurate representation.

Geography Division also developed a sub-team within the Geographic Support Systems initiative to explore the possibility of creating Master Address Files for the Island Areas. The challenges here are immense, but the Census Bureau has without question the most complete listing of living quarters currently available along with digitized map spots within the Master Address File/Topologically Integrated Geographic Encoding and Referencing database. The development of Master Address Files would aid in fixing the block map scales, delineation of appropriately sized assignment areas, and allow for a move away from List/Enumerate in the Island Areas. The addition of an address update type operation should be pursued for the 2020 Census, following the development of Island Areas Master Address Files. In the event that Master Address Files are created, extending the Local Update of Census Addresses program to the Island Areas should also be discussed.

For 2020 Census, the Census Bureau should also explore the feasibility of Global Positioning Systems in the Island Areas. Global Positioning would provide the Island Areas living quarters with coordinates, in lieu of city-style addresses. This would certainly remove our dependence on a List/Enumerate methodology in the Island Areas.

5.10 Did the Decennial Budget Integration Tool Island Areas Module serve its intended purposes in the Island Areas?

The Island Areas Module, on the whole, was extremely useful to the Advisors and headquarters staff alike. However, there is always room for improvement. The Island Areas Module, officially the Decennial Budget Integration Tool Island Areas Module, was developed by Booz Allen Hamilton via a modification to the Decennial Budget Integration Tool contract. Booz Allen Hamilton also produced the Island Areas Module's predecessor for Census 2000. Fortunately for the PRIA branch, the project manager from Census 2000 was once again leading the development for the 2010 Census. Having an experienced contractor in this position proved to be invaluable throughout the development and production cycle, especially considering the many unforeseen challenges encountered.

Contract Scope

Initially, the contract with Booz Allen Hamilton was to produce a software package that would have three purposes: to inventory and control the questionnaires and address registers;

to serve as a personnel and Local Census Office expenditure tracking and reporting system; and to ensure there was a matching questionnaire for each address listing on the address registers, utilizing a dual barcode method. Following discussions between PRIA staff, Booz Allen Hamilton, and the Decennial Architecture Team, it was determined that the Island Areas Module could not connect to the Census network, and would need to be a standalone network. This was contrary to expectations since PRIA staff and the Booz Allen Hamilton project manager had previously been told that a connection to the Census network via a Demilitarized Zone setup “was [used] all the time”. Booz Allen Hamilton would be overseeing all aspects of procurement, configuration, deployment, and maintenance of the network, in addition to the Island Areas Module software package. Fortunately for the overall project, Booz Allen Hamilton performed brilliantly despite a massive scope change.

We recommend that when we procure a specialized Island Areas Module for the 2020 Census, it be a stand alone contract with the PRIA branch. This type of contract would require that a Contracting Officer’s Technical Representative be in the branch as early as 2016.

Certification and Accreditation

The actual Certification and Accreditation process took substantially longer than expected as the system was given an overall risk rating of “Moderate” due primarily to the storing of map spot numbers in the system (specifically “Statistical and Records Management”). It had already been determined that the employee tracking component portion of the system should be removed since personally identifiable information would have been stored. The classification of the system as moderate lengthened the Certification and Accreditation process and also allowed for little time for User Acceptance Testing by PRIA staff (though based on user feedback, it can be assumed that Booz Allen Hamilton conducted extensive system testing). For the 2020 Census, all testing, including Certification and Accreditation, must be planned for and conducted earlier in the cycle. This hurdle certainly caught everyone by surprise and could have seriously compromised the entire field operation if it were pushed back any later.

Hardware Install in Local Census Offices

Configured personal computers and the supporting servers were delivered and networked in all five Local Census Offices well after the offices had opened, but prior to the start of field operations. This resulted in a surprisingly arduous Certification and Accreditation process for the Island Area architecture and Booz Allen Hamilton-developed software package. Census headquarters required that all Local Census Offices pass a ‘Security Checklist’ before computers could be installed. The checklist required that the Local Census Offices have a back-up generator in place. Guam and CNMI were able to procure generators in a timely fashion, while the U.S. Virgin Islands and American Samoa experienced difficulties in finding adequate equipment as major earthquakes triggered a run on alternate power sources in the respective regions. American Samoa never acquired a generator despite a substantial increase to the rent to provide one and consistent pressure to follow through with the agreement.

System Utility

The removal of the employee tracking component limited the value of collecting and subsequently inputting the D-351 IA, Daily Progress and Work Record, since offices could no longer tie an employee to the work performed and consequently the pay that he or she should receive. In fact, all of the local governments utilized their own payroll forms and systems and Local Census Office employees were left with the responsibility to complete and manage a form with little practical utility. PRIA staff should discuss with the Island Area governments early in the process how best to handle the payroll process and to ensure timely payment of employees. Options would include establishing a connection with the government payroll systems from a separate workstation in the Local Census Office or producing an appropriate output from the Island Area control system. Privacy concerns with capturing employees' personally identifiable information must be addressed along the way.

The Island Areas Module served multiple integral purposes: 1) tracked in-progress totals and analysis of questionnaires that had been checked in; 2) electronically merged address records from completed address registers and questionnaires to find discrepancies; 3) produced a list of vacant housing units for Field Followup; 4) produced population and housing counts by collection block to facilitate the conduct of the Local Count Review; 5) linked parent questionnaires to continuation forms and D-351s to group quarters questionnaires; 6) provided an estimated workload for the National Processing Center; 7) provided a universe file for the National Processing Center; and 8) gave the PRIA staff a database to run preliminary assessments on the questionnaire data.

System Problems and Solutions

Booz Allen Hamilton was responsible for maintenance of the Island Areas Module and utilized a remote access data center to assess and subsequently resolve application and system problems. It would have been beneficial to have a Local Census Office employee equipped with the technical skills to resolve general network or administrative problems locally. Expanding the position of the Office Operations Supervisor for Automation or hiring technically-savvy Advisors would help.

Once the computers were installed, the application and system architecture held up well. Issues were typically minor and often hinged on power outages (due to a lack of a backup power source) and limited computer skills in the Local Census Offices. An "issue" with entering duplicate map spots (they were not allowed) into the system was discovered and required a software patch to fix. For the 2020 Census, collecting map spots in the field and inputting map spots and other collection geocodes into the control system should be an area of focus. Making sure technical requirements align with field procedures should be a point of focus for the 2020 Census.

Additionally, the continuation forms and group quarters questionnaires could not be bar-scanned into the Island Areas Module initially. Staff determined that the barcode readers procured for the system would not recognize the barcodes used on these forms. For the 2020 Census, the PRIA branch should work with the Census staff responsible for form production

and ensure that the barcodes for all forms are known and communicated to the party responsible for scanner procurement early enough in the project life cycle to ensure complete testing.

The power failures and suspect connectivity were the greatest hindrances to the success of the application and network. Any attempts at improving the design of the system architecture should keep the available connectivity and unreliable power sources in mind.

5.11 Were the funds provided via contract sufficient to complete the field operations in each of the Local Census Offices?

The budgets for the Island Areas were produced by analyzing the Census 2000 budgets, adjusting for inflation, and discussing the documents with the Island Areas. Staff added contingency funds to ensure that the Island Areas would not require additional payments in an effort to keep operations on track. All four Island Areas ended operations with a surplus of funds. For the 2010 Census, under the terms of the contract the Island Areas were entitled to keep remaining funds on-island.

Disbursement of Funds

A staged disbursement strategy was used for the 2010 Census. This called for 10 percent of the total to be allotted as an advance payment once the contracts were signed. The advance payment necessitated a Federal Acquisition Regulation deviation since no work had been conducted at that point. Thirty percent of the remaining funds were planned for distribution in January 2010, 50 percent in April 2010, and 20 percent in June 2010. Payments were not always made in a timely manner. Reasons for this included late submittals of appropriate forms and confusion in the overall process by the Island Areas, and unexpectedly funds being offset by the Department of Treasury. The funds being offset by the Department of Treasury stemmed from an outstanding debt Guam incurred with the Department of Justice's Bureau of Prisons in the 1990s. The Government of Guam had withheld payment of 10 million dollars for housing Guamanian inmates. During the course of the contract, the Department of Justice filed with the Treasury Offset Program to recover the outstanding balance. Fortunately, the Government of Guam and the Department of Justice worked out a payment plan and the funds were returned. However, the Guam Local Census Office nearly ran out of money prior to this resolution.

Each Island Area required different levels of approval in order to make procurements and payments. In St. Croix, managers complained that they needed authorization from St. Thomas for overtime approval. In CNMI, management was wary of purchasing anything that was not specifically identified in the budget (e.g. a microwave for the Local Census Office break room). In American Samoa, the Director of the American Samoa Department of Commerce required every purchase and decision to be signed off by him and his Deputy Director. In Guam, the procurement process was slowed by the larger bureaucracy in place.

Reducing Costs

The Local Census Office staffing costs accounted for approximately half of the total costs. The temporary nature of the positions was not relayed effectively enough and workers often remained on board when there was little work to be done. Some enumerators held onto completed work in order to retain their positions, knowing that their services would no longer be necessary once their assignment areas were complete.

Shipping services to and from the Island Areas proved to be exceedingly slow and expensive. Future planning should include options to print and procure as many materials locally as possible.

Cost per housing unit and cost per capita, as seen in Figure 1 and Figure 2 show the increases that have occurred in field costs for the Island Area censuses. The caveat here is that the printing and shipping of materials, Island Areas Module development and support from Booz Allen Hamilton, and Advisor travel and salaries were not included. Table 6 below shows the inflation-adjusted field costs for the Island Areas from 1970-2010. The largest increase between decades occurred between 1990 and 2000 when costs increased by a factor of five due largely to placing of the questionnaire coding operation in the Local Census Offices.

Table 6: Inflation-Adjusted Net Field Cost by Island Area: 1970 – 2010

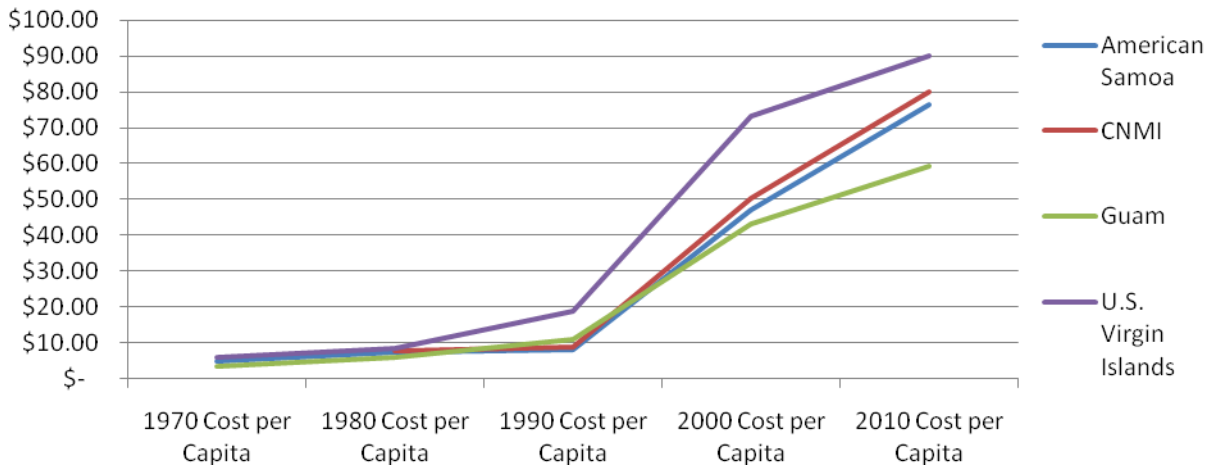
Island Area	Inflation-Adjusted Net Field Cost (Thousands of Dollars)				
	1970	1980	1990	2000	2010
American Samoa	126	236	370	2,699	4,244
CNMI	N/A	128	386	3,488	4,311
Guam	289	608	1,430	6,685	9,412
U.S. Virgin Islands	365	802	1,928	7,973	9,538
Total	780	1,774	4,114	20,856	27,505

Note: Financial data for the 1970 census of CNMI is “Not Available” as the information was summed to include other minor outlying territories of the United States.

Note: Years reported are Decennial Census years.

Source: PRIA branch historical files, 2010 Local Census Office Final Cost Reports. The Bureau of Labor and Statistics Consumer Price Index Inflation Calculator (http://www.bls.gov/data/inflation_calculator.htm) was used to convert all dollar figures into 2010 dollars.

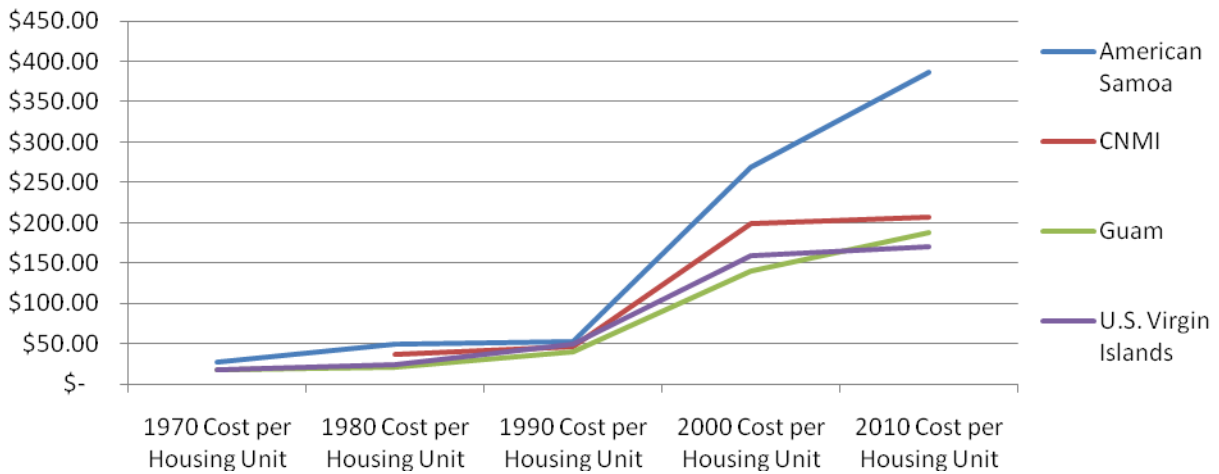
Figure 1: Adjusted Net Field Costs per Capita by Island Area: 1970 - 2010



Note: Years reported are Decennial Census years.

Data Source: PRIA branch historical files, 2010 Local Census Office Final Cost Reports, and Island Areas Module Access Database Files

Figure 2: Adjusted Net Field Costs per Housing Unit by Island Area: 1970 – 2010



Note: Years reported are Decennial Census years.

Data Source: PRIA branch historical files, 2010 Local Census Office Final Cost Reports, and Island Areas Module Access Database Files

6 Related Evaluations, Experiments, and/or Assessments

Decennial Statistical Studies Division 2010 Census Draft Report, “2010 Census: Island Areas Quality Profile.”

7 Key Lessons Learned, Conclusions, and Recommendations

The discussion for improving the Island Areas Census comes back to a singular idea: should we improve around the edges or should we make wholesale programmatic changes? This is the same question that has been asked for the past four or five censuses of the Island Areas. There are but a few reasons for not making wholesale changes: 1) the work that needs to be done in preparation for the census far exceeds the available resources, 2) the Island Areas always has a secondary priority to stateside operations, and 3) there is no end-to-end testing for the Island Area enumeration techniques.

One thing that is clear is that the multiple directorates within the Census Bureau that work with the Island Areas until recently lacked a solid understanding of each other due to poor communication and compartmentalization. These multiple areas need to be in contact to continuously address the data, geographic, administrative, and operational needs of the Island Areas. This has already begun as members of the PRIA branch in the Decennial Management Division and staff in the Economic Directorate responsible for the County Business Pattern Survey and Economic Census of the Island Areas meet regularly starting in early 2011. Meetings and discussions between these parties is a good start and efforts should be made to better coordinate Island Area issues within the Census Bureau.

As mentioned previously, the Island Areas generally ask two questions: why don't we have an American Community Survey and why don't we get our products at the same time as stateside? The Census Bureau should have two goals: cutting costs through operational efficiency while increasing the frequency of data collections and maintaining data quality. With these goals in mind, the following recommendations are made for the 2020 Census:

- Improve the contracts through a more detailed listing of responsibilities of the Local Census Office, Census headquarters, Census Advisors, and the local governments; by naming the Advisors as Contracting Officer's Technical Representatives; and employing more performance measures and milestones for the contractors.
- Execute contracts by the end of 2018.
- Develop a production, review, and delivery schedule for all materials as soon as an enumeration methodology is chosen.
- Finalize the field and office procedures prior to the start of all Local Census Office operations.
- Print non-questionnaire materials locally on-island to cut down shipping time and costs.
- Simplify and streamline the field and office procedures.
- Produce fewer questionnaire types.
- Continually update the collection geography.
- Diversify, strengthen, and support partnership activities.
- Produce Census in Schools materials for the high school grade students.
- Explore alternatives to the List/Enumerate methodology.
- Explore alternatives to solicit self-report data from respondents, such as an internet response option or leaving questionnaires after listing.

- Deliver information technology equipment to coincide with Local Census Office openings by developing and testing sooner in the project cycle.
- Develop, or adapt for use in the Island Areas, a modern listing device utilizing Global Positioning System technology.
- Communicate with the Island Areas throughout the decade.

In summary, there are four major areas that should be points of focus for improving the Island Areas Census: the contracts, the collection geography, the office control/computer system, and the materials. The contracts need to better lay out constituent responsibilities and tasks, contain performance measures, and reward the Island Areas for superior management of the project. Geography in the Island Areas can only be improved through effectively partnering with the Island Areas and committing to a schedule of tasks and milestones for updates and accomplishing these. This will certainly require travel for headquarters staff. Additionally, an address list, preferably a Master Address File, is desperately needed in order to move away from List/Enumeration and possibly allow for alternative modes of data collection and more frequent surveys. The office control system will need to be a point of focus if the Island Areas Census continues to develop technologically. In which direction it goes will depend largely on the methodology and response options employed. Finally, the materials need to be simplified across the board. There are currently too many forms, training guides, and questionnaires. As soon as a methodological decision is made, attention should immediately turn to this matter.

8 Acknowledgements

I would like to thank Al Giglitto, Doug Lee, Justin McLaughlin, and Rebecca Diaz-Cartagena for writing thorough and detailed Advisor reports. I also want to thank the Island Areas Operational Integration Team for their efforts in planning, executing, and analyzing the 2010 Census of the Island Areas.

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Appendix A: List of Questionnaires

Form Number	Form Name
D-2(E) AS	Enumerator Questionnaire – American Samoa
D-2(E) CNMI	Enumerator Questionnaire – CNMI
D-2(E) G	Enumerator Questionnaire – Guam
D-2(E) USVI	Enumerator Questionnaire – Virgin Islands
D-2(E) USVI(S)	Cuestionario del Enumerador – Islas Vírgenes de los EE.UU.
D-2(E)SUPP AS	Continuation Form – American Samoa
D-2(E)SUPP CNMI	Continuation Form – CNMI
D-2(E)SUPP G	Continuation Form – Guam
D-2(E)SUPP USVI	Continuation Form – Virgin Islands
D-2(E)SUPP USVI(S)	Formulario de Continuación – Islas Vírgenes de los EE.UU.
D-13 AS	Advance Census Report – American Samoa
D-13 CNMI	Advance Census Report – CNMI
D-13 G	Advance Census Report – Guam
D-13 USVI	Advance Census Report – USVI
D-20 PI	Individual Census Report – Pacific Islands
D-20 VI	Individual Census Report – Virgin Islands
D-20 VI(S)	Informe Individual de Censo – Islas Vírgenes de los EE.UU.
D-21 PI	Military Census Report – Pacific Islands
D-23 PI	Shipboard Census Report – Pacific Islands

Appendix B: List of Manuals, Training Guides, and Forms

Form Number	Form Name
BC-555	Census Crew Leader Official Credential
BC-555B	Official Census Field Operations Supervisor Credential
BC-1199	Official Business Sign
D-1(F) PI	Enumerator Job Aid – Pacific Islands
D-1(F) VI	Enumerator Job Aid – Virgin Islands
D-1(F) VI(S)	Guia Auxiliar para el Enumerador – Islas Virgenes de los EE.UU.
D-5(L) AS	Advance Letter – American Samoa
D-5(L) CNMI	Advance Letter – CNMI
D-5(L) G	Advance Letter – Guam
D-5(L) VI	Advance Letter – Virgin Islands
D-5 AS	Advance Letter Envelope – American Samoa
D-5 CNMI	Advance Letter Envelope – CNMI
D-5 G	Advance Letter Envelope – Guam
D-5 VI	Advance Letter Envelope – Virgin Islands
D-7 AS	Advance Census Report Envelope – American Samoa
D-7 CNMI	Advance Census Report Envelope – CNMI
D-7 G	Advance Census Report Envelope – Guam
D-7 VI	Advance Census Report Envelope – Virgin Islands
D-13(L) AS	Advance Census Report Letter – American Samoa
D-13(L) CNMI	Advance Census Report Letter – CNMI
D-13(L) G	Advance Census Report Letter – Guam
D-13(L) VI	Advance Census Report Letter – Virgin Islands
D-26 PI	Notice of Visit – Pacific Islands
D-26 VI	Notice of Visit – Virgin Islands
D-31 PI	Privacy Act Statement – Pacific Islands
D-31 VI	Privacy Act Statement – Virgin Islands
D-40 PI	Individual Census Report Letter/Envelope – Pacific Islands
D-40 VI	Individual Census Report Letter/Envelope – Virgin Islands
D-40 VI(S)	Individual Census Report Letter/Envelope – Virgin Islands (Spanish)
D-100A IA	Address Register: Special Notice Page
D-104 IA	Address Register: Quality Assurance Review
D-104A AS	Address Register: Address Listing Page – American Samoa
D-104A CNMI	Address Register: Address Listing Page – CNMI
D-104A G	Address Register: Address Listing Page – Guam
D-104A USVI	Address Register: Address Listing Page – Virgin Islands
D-104B IA	Address Register: Group Quarters Address Listing Page
D-104C IA	Address Register: List of Housing Units at Group Quarters
D-104D IA	Callback Record
D-116 IA	Group Quarters Register Cover Sheet and Final Page
D-116A IA	Group Quarters Register Pages
D-128 IA	Confidentiality Agreement – Local Government

D-151 IA	Crew Leader Assignment List
D-152 IA	Crew Leader Record of Assignment
D-153 IA	Crew Leader Record of Progress and Production
D-160 IA	Vacant Followup Status Report
D-191 IA	Reinterview Control Record
D-192 IA	Reinterview Selection Worksheet
D-193 IA	Dependent Quality Control Tracking Worksheet
D-200	Census Office Employee Badge
D-200B	Census Crew Leader Assistant Official Credential
D-267 IA	Instructions for Employee Selection Aid
D-267A IA	Field Employee Selection Aid Version A
D-267A1 IA	Field Employee Selection Aid Answer Sheet Version A
D-267B IA	Field Employee Selection Aid Version B
D-267B1 IA	Field Employee Selection Aid Answer Sheet Version B
D-268 IA	Application Review Guide/Answer Key for Field Employee Selection Aid
D-269A IA	Selection Guide for Enumerator
D-269B IA	Selection Guide for Crew Leader
D-269C IA	Selection Guide for Office Clerk/Recruiting Assistant
D-269D IA	Selection Guide for Supervisors
D-270A IA	Field Employee Selection Aid for Supervisors
D-270A1 IA	Field Employee Selection Aid for Supervisors Answer Sheet
D-270.1 IA	Supervisory Applicant Reference Sheet
D-271 IA	Answer Keys/Guidelines for Evaluating Supervisory Candidates
D-275 IA	Record of Training
D-288 IA	Notice of Suspension of Work
D-308 IA	Daily Progress and Work Record
D-315 IA	Testing Summary and Transmittal
D-320 IA	Field Followup Error List
D-351 IA	Group Quarters Record
D-375 IA	Work Transmittal
D-376 IA	Refusal Record
D-403 IA	Work Transmittal Clerical Edit
D-449 IA	Emergency Contact Information Card
D-506 IA	LCO Management Diary
D-508 IA	LCO Managers Manual
D-513 IA	Office Operations Clerical Manual
D-519 IA	Geographic Handbook
D-532 PI (ACR)	Clerical Edit Job Aid – Pacific Islands Advance Census Report
D-532 PI (2E)	Clerical Edit Job Aid – Pacific Islands Enumerator Questionnaire
D-532 VI (ACR)	Clerical Edit Job Aid – Virgin Islands Advance Census Report
D-532 VI (2E)	Clerical Edit Job Aid – Virgin Islands Enumerator Questionnaire
D-540 IA	Partnership/Media Specialist Reference Manual
D-543 IA	Address Listing Review Field Verification: Lister’s Instructions
D-549 AS	Address Register: Enumerator Instructions – American Samoa
D-549 CNMI	Address Register: Enumerator Instructions – CNMI

D-549 G	Address Register: Enumerator Instructions – Guam
D-549 USVI	Address Register: Enumerator Instructions – Virgin Islands
D-551 IA	Enumerator Instructions for Conducting Field Followup
D-552 IA	Field Followup Crew Leaders Manual
D-555 IA	List/Enumerate Crew Leaders Manual
D-556.1 IA	Telephone Reinterview Job Aid
D-556.2 IA	Personal Visit Reinterview Job Aid
D-556.3 IA	Reinterview Office/Transcripator Job Aid
D-564 IA	Recanvass Manual
D-568 IA	Group Quarters Update Manual For Crew Leader
D-569 IA	Group Quarters Enumeration Manual for Crew Leader
D-569.13 IA	Group Quarters Crew Leader Assistants' Checklist
D-569.30 IA	Enumeration of Transitory Location Job Aid
D-569.32 IA	Enumeration of Transitory Location Enumerator Checklist
D-570 IA	Group Quarters Update Crew Leaders' Manual
D-571.43 IA	Targeted Nonsheltered Outdoor Locations Enumeration Job Aid
D-571.44 IA	Service Based Enumeration Crew Leader Assistant Checklist
D-571.45 IA	Service Based Enumeration Crew Leader Checklist
D-572.20 IA	Group Quarters Enumeration Crew Leaders' Manual
D-575 PI	Military Installations Census Representatives Manual
D-576 PI	Military Installations Self-Enumeration Manual
D-606 IA	LCO Management Overview Training Guide
D-606.1 IA	LCO Management Overview for Training
D-649 IA	List/Enumerate Training Guide for Enumerators
D-649.1 IA	List/Enumerate Enumerator Training Workbook
D-649.2 AS	Training Address Register – American Samoa
D-649.2 CNMI	Training Address Register – CNMI
D-649.2 G	Training Address Register – Guam
D-649.2 VI	Training Address Register – Virgin Islands
D-651 IA	Field Followup Enumerator Training Guide
D-651.1 IA	Field Followup Training Workbook
D-652 IA	Field Followup Crew Leader Training Guide
D-655 IA	List/Enumerate Crew Leader Training Guide
D-655.1 IA	List/Enumerate Crew Leaders Workbook
D-668 IA	Guide for Training Group Quarters Crew Leaders Assistants
D-668.1 IA	Group Quarters Update Crew Leader Assistants' Workbook
D-669 IA	Guide for Training Group Quarters Crew Leader Assistants
D-669.13 IA	Workbook for Training Group Quarters Crew Leader Assistants
D-670 IA	Group Quarters Update Guide for Training Crew Leaders
D-670.1 IA	Group Quarters Crew Leaders Workbook
D-672.20 IA	Group Quarters Enumeration Guide for Training Crew Leaders
D-800 IA	Work Transmittal
D-806 IA	Reinterview Questionnaire
D-806.1 IA	Reinterview Reconciliation form
D-927 IA	Reinterview Routing Record
D-937	Visitors Sign-in/Register Here 2010 Census Sign

D-941 IA	Group Quarters Administrative Followup form
D-945 IA	Telephone Reinterview Quick Reference Guide
D-972 IA	Address Register Assembly QC Checklist
D-1182	Island Areas Security Officer Job Aid
D-1182.1 IA	Access Controller Checklist
D-1182.2 IA	Security Incident Reporting Form
D-1182.3 IA	LCO Emergency Telephone Number
D-1182.4 IA	Employee Attendance Log
D-1182.5 IA	Visitors' Sign-in Sheet
D-1182.6 IA	Rules for LCO Visitors
D-1190 IA	Dependent Quality Control
D-1207 PI	Military Installations Training Guide
D-1208 PI	Military Installations Training Workbook
D-1210 PI	Questionnaire Reference Book – Pacific Islands
D-1210 VI	Questionnaire Reference Book – Virgin Islands
D-1222 IA	Observation Checklist form
D-1520 IA	Address List Review Technical Guide
D-1701 IA	Record of Merge
D-1703 IA	Address Register Check-out/Check-in Control Form
D-1704 IA	Questionnaire Packing Summary
D-1705 IA	Oath of Temporary Staff Member
D-1707 IA	Batch Control Record (Office Operations)
D-1750 IA	Field Operations Supervisors Manual
D-1751 IA	Office Operations Supervisors Manual
D-1791 IA	Packing Quality Assurance Report
D-3200 AS	What You Need to Know About the 2010 Census – American Samoa
D-3200 CNMI	What You Need to Know About the 2010 Census – CNMI
D-3200 G	What You Need to Know About the 2010 Census – Guam
D-3200 VI	What You Need to Know About the 2010 Census – Virgin Islands
D-3207 AS	Become a 2010 Census Partner – American Samoa
D-3207 CNMI	Become a 2010 Census Partner – CNMI
D-3207 G	Become a 2010 Census Partner – Guam
D-3207 VI	Become a 2010 Census Partner – Virgin Islands