



March 2020

2020 CENSUS

Bureau Generally Followed Its Plan for In-Field Address Canvassing

GAO Highlights

Highlights of [GAO-20-415](#), a report to congressional requesters

Why GAO Did This Study

The decennial census is a costly and complex undertaking and its success depends largely on the Bureau's ability to locate every person residing in the United States. To accomplish this monumental task, the Bureau must maintain accurate address and map information for every person's residence. If this information is inaccurate, people can be missed, counted more than once, or included in the wrong location. To help control costs and to improve accuracy, the Bureau used new procedures to build its address list for 2020.

GAO was asked to review how the in-field address canvassing operation performed. This report (1) determines the extent to which the Bureau followed its plans and schedule for in-field address canvassing, and (2) identifies the successes and challenges that occurred during 2020 Census In-Field Address Canvassing that have potential implications for future operations.

To address these objectives, GAO reviewed key documents including the 2020 Census operational plan that discussed the goals and objectives for the operation. GAO observed in-field address canvassing across the country at 18 area census offices, including a mix of rural and urban locations. GAO also interviewed field supervisors, listers, and office management to discuss the operation's successes and challenges.

GAO provided a draft of this report to the Bureau. The Bureau provided technical comments, which were incorporated as appropriate.

View [GAO-20-415](#). For more information, contact J. Christopher Mihm, 202-512-6806, or mihmj@gao.gov

March 2020

2020 CENSUS

Bureau Generally Followed Its Plan for In-Field Address Canvassing

What GAO Found

The Census Bureau (Bureau) completed in-field address canvassing as scheduled on October 11, 2019, despite nationwide hiring shortfalls. The Bureau credits this success to better-than-expected productivity—the actual hourly productivity rate for the operation was 19.8 addresses versus the anticipated rate of 15.8 addresses. The total workload included more than 50 million addresses.



Source: GAO summary of Census Bureau data. | GAO-20-415

GAO observations of in-field address canvassing found that a majority of field staff (listers) generally followed procedures, but there were a number of exceptions. For example, 14 of 59 listers we observed did not consistently knock on every door as required to confirm the address and ask about "hidden" housing units. Not knocking on doors or asking about hidden housing units represents missed opportunities to potentially add missing addresses to the Bureau's address file. GAO communicated to Bureau officials that listers were not following procedures and they sent out a nationwide reminder for listers to do so.

The Bureau credits efficiency gains to new systems for assigning work and a new reporting mechanism for collecting timecards, but experienced delays in hiring for address canvassing. Though address canvassing productivity was higher than expected, in some parts of the country the operation was at risk of falling behind because of a shortage of listers. The Bureau told GAO that it filled the gap with listers who lived well outside of the area in which they were supposed to work—in some cases from a different state. The Bureau is taking actions to address hiring problems for later operations, including nonresponse follow-up, when the Bureau intends to hire between 320,000 to 500,000 enumerators to follow up with households that did not initially respond to the census. Those actions include increasing wage rates in 73 percent of the counties nationwide.

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Abbreviations

Bureau	U.S. Census Bureau
GPS	Global Positioning Systems
QC	Quality Control

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March 12, 2020

Congressional Requesters

The federal government's constitutionally-mandated efforts to undertake a decennial census have begun. On August 4, 2019, the U.S. Census Bureau (Bureau) launched its in-field address canvassing operation to update and verify its master address file. The decennial census is a costly and complex undertaking and its success depends largely on the Bureau's ability to locate every person residing in the United States. To accomplish this monumental task, the Bureau must maintain accurate address and map information for every person's residence. If this information is inaccurate, people can be missed, counted more than once, or included in the wrong location.

To help control costs and to improve accuracy, the Bureau used new procedures to build its address list for 2020. Over the past few years, the Bureau tested the new procedures several times to help minimize risks and ensure the new approach would function as planned. In February 2017, we added the 2020 Census to our high-risk list because operational and other issues are threatening the Bureau's ability to deliver a cost-effective enumeration.

You asked us to review how the 2020 Census Address Canvassing operation performed. This report (1) determines the extent to which the Bureau followed its operational plans and schedule for 2020 In-Field Address Canvassing Operation, and (2) identifies the successes and challenges that occurred during 2020 Census In-Field Address Canvassing that have potential implications for future operations.

To accomplish these objectives, we reviewed key documents including the 2020 Census Operational Plan that discussed the goals and objectives for the operation, the address canvassing study plan, quality control plans, as well as training manuals and e-training modules and other related documents for address canvassing. To obtain a first-hand perspective of the conduct of in-field address canvassing we visited 18 of the 39 Area Census Offices (see appendix II). These sites were selected based on several factors, including rural-urban mix, participation in the 2018 End-to-End Test, and whether a site was scheduled to start the operation earlier than others.

At each location, we interviewed Bureau staff, including census field supervisors, address listers, and office management, to discuss what went well and what challenges they faced during in-field address canvassing. At each location, we interviewed and observed staff working on the days of our visits. We observed production listers conduct address canvassing and at several locations we observed quality control listers perform quality control of addresses that had been canvassed. In addition, we used the training manuals to determine whether listers collected address information as prescribed by the Bureau. In total we conducted 86 interviews with Bureau staff.

We conducted 64 in-field observations (59 listers, and five quality control listers) using a data collection instrument to document our observations. We also interviewed 22 field supervisors about what went well and what challenges they faced during address canvassing. These observations are not generalizable. We also interviewed Bureau headquarters officials to discuss the use of management reports for monitoring and overseeing the operation.

We reviewed workload estimates, address lister productivity rates, and hiring information for the operation, including how many addresses the Bureau expected to canvass per hour and how many people the Bureau needed to hire. To assess the reliability of these data, we reviewed available documentation and interviewed Bureau officials. We found the data to be sufficiently reliable for the purposes of our reporting objectives. We also met periodically with Bureau headquarters staff to discuss progress of the operation.

We conducted this performance audit from July 2019 to February 2020 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The Bureau's address canvassing operation updates its address list and maps, which are the foundation of the decennial census. An accurate address list both identifies all living quarters that are to receive a notice by mail to respond to the census, and serves as the control mechanism for following up with households that fail to respond to the initial request. Precise maps are critical for counting the population in the proper locations—the basis of congressional apportionment and redistricting.

Our prior work has shown that developing an accurate address list is challenging—in part because people can reside in unconventional dwellings, such as converted garages, basements, and other forms of “hidden” housing.¹ For example, as shown in figure 1, what appears to be a single-family house could contain an apartment, as suggested by its two doorbells.

Figure 1: Determining an Accurate Address List Includes Identifying Whether a Dwelling Is Single or Multi-unit Housing



Source: GAO. | GAO-20-415

During address canvassing, the Bureau verifies that its master address file and maps are accurate to ensure the tabulation for all housing units and group quarters is correct.² For the 2010 Census, the address canvassing operation mobilized almost 150,000 field workers to canvass almost every street in the United States and Puerto Rico to update the

¹GAO, *2020 Census: Actions Needed to Improve In-Field Address Canvassing Operation*, [GAO-18-414](#) (Washington, D.C.: June 14, 2018).

²A group quarters is a place where people live in a group living arrangement that is owned or managed by an entity or organization providing housing or services for the residents (e.g., college residence halls, residential treatment centers, nursing/skilled nursing facilities, group homes, correctional facilities, workers’ dormitories, and domestic violence shelters).

Bureau's address list and map data—and in 2012 reported the cost at nearly \$450 million. The cost of going door to door in 2010, along with the emerging availability of imagery data, led the Bureau to explore an approach for 2020 address canvassing that would allow for fewer boots on the ground.

To reduce costs for the 2020 Census, the Bureau took a new approach and some address canvassing work was completed in-office.³ The Bureau compared current satellite imagery to the contents of its master address file to determine if areas had housing changes, such as new residential developments or repurposed structures. If the satellite imagery and the master address file matched, then the Bureau considered those areas to be resolved or stable and did not canvass them in-field.

These areas that were unresolved by the in-office review were sent to in-field address canvassing. Field staff called listers used laptop computers to compare what they saw on the ground to the address list and maps. Listers confirmed, added, and deleted addresses or moved addresses to their correct map positions. The listers were trained to speak with a knowledgeable resident at each housing unit to confirm or update address data, ask about additional units, confirm the housing unit location on the map (known as the map spot), and collect a map spot either using global positioning systems (GPS) or manually. If no one was available, listers were to use house numbers and street signs to verify the address data. The data were then transmitted electronically to the Bureau.

³GAO, *2020 Census: Bureau Needs to Better Leverage Information to Achieve Goals of Reengineered Address Canvassing*, [GAO-17-622](#) (Washington, D.C.: July 20, 2017).

The Bureau Completed In-Field Address Canvassing on Schedule and under Budget, but Listers Did Not Always Follow Procedures

Productivity Was Higher Than Expected

The Bureau completed in-field address canvassing on time despite nationwide hiring shortfalls. The Bureau credits this success to better-than-expected productivity. The Bureau conducted “in-field” address canvassing for approximately 35 percent of the housing units (approximately 50 million housing units) across the country (see fig. 2). The Bureau had already determined “in-office” that the other 65 percent of addresses (approximately 93 million housing units) were part of stable blocks.

Figure 2: In-Field Address Canvassing Lister

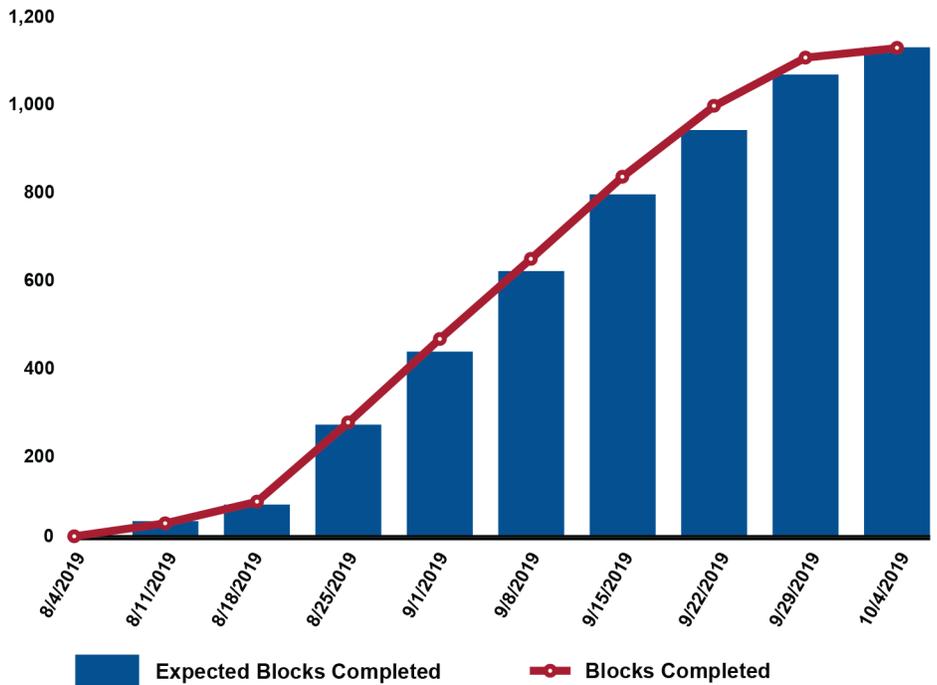


Source: Census.gov. | GAO-20-415

The Bureau began the in-field address canvassing operation at seven of its 39 Area Census Offices on August 4, 2019, and then rolled out the operation to the remaining 32 offices on August 18, 2019. It conducted this phased approach to ensure all operations and systems worked together before commencing the operation nationwide. The total in-field address listing workload was more than 50 million addresses from the Bureau's address file. Bureau officials reported that listers were generally more productive than expected, thus allowing the Bureau to complete the operation as scheduled on October 11, 2019 (see fig. 3).

Figure 3: In-Field Address Canvassing Weekly Productivity Generally Exceeded Expectations

Address Canvassing Productivity Blocks (in thousands)



Source: GAO analysis of data from the Census Bureau's Unified Tracking System. | GAO-20-415

The actual hourly productivity rate for the operation was 19.8 addresses versus the anticipated rate of 15.8 addresses. According to Bureau officials, listers were more productive due to efficiency gains from the Bureau's new approach, including an automated time and attendance system, the use of computer laptops to collect census data, and a new operational control system that was used to electronically optimize assignments and transmit work to listers. Bureau officials stated that the high productivity also helped the operation come in under budget. The operation's cost was \$118.6 million—while the anticipated cost was \$185 million—a reduction of 36 percent.

The Bureau Missed Potential Opportunities to Improve the Address List When Listers Did Not Follow Procedures

For in-field address canvassing, listers received online training, which detailed the procedures they were to follow, such as:

- comparing the housing units they see on the ground to the housing units on the address list,
- knocking on all doors so they could speak with a resident to confirm the address (even if the address is visible on the mailbox or house) and to confirm that there are no other living quarters such as a basement apartment,
- looking for hidden housing units, and
- confirming the location of the housing unit on a map with GPS coordinates collected on the doorstep.

In our observations of in-field address canvassing, the majority of listers generally followed these procedures. However, some listers we observed did not always follow procedures. For example,

- Ten out of 59 listers did not work ground to book (i.e., compare what they saw on the ground to what was on their list).
- Nine out of 59 listers did not walk up to the doorstep to collect the GPS coordinate. Specifically, we observed listers use mailboxes to confirm address information and collect the GPS coordinates from the mailbox. Following proper procedures is important because getting a GPS reading from the doorstep of every address contributes to the accuracy of the address file.
- Fourteen of 59 listers did not consistently knock on every door as required to confirm the address and ask about “hidden” housing units.
- Seventeen of 59 listers did not always look for or ask about “hidden” housing units. Not knocking on doors or asking about hidden housing units represents missed opportunities to potentially add missing addresses to the Bureau’s master address file.

Further, not all listers we observed provided the required confidentiality notices to occupants. Seven listers we observed did not provide confidentiality notices. Occupants may be more willing to provide their information if they know their responses will not be shared. We communicated the information regarding our observations to the Bureau, and on August 26, 2019, the Bureau instructed its field offices to remind listers of the appropriate procedures.

According to Bureau officials, some amount of temporary staff deviates from following procedures with every decennial census. As such, to control for this, the Bureau implemented a Quality Control (QC) component for in-field address canvassing that is designed to detect and correct deficient production listers' work. QC started on August 11, 2019, and included a total workload of around 3.4 million addresses. For this operation, an automated system selected the sample of addresses to review; these addresses were assigned to QC listers. QC listers received instructions to begin canvassing at a specified location, usually an intersection, and to continue canvassing addresses until the system identified the work unit as "complete" for QC purposes.

An address worked by a production lister was considered to have "failed" QC if the QC lister recorded changes, or if the lister missed the address and the QC lister found it. Depending on the size of the block, after a predetermined number of addresses fail within a block, the system fails the entire block. Once a block fails, the QC lister must recanvass all the addresses in that block. Based on preliminary results, Bureau officials estimate that 4.3 percent, or about 2.2 million addresses, failed. According to Bureau officials, while they did not have a predetermined target for what was an acceptable range for the total number of addresses that failed QC, they nevertheless are reasonably confident that this was in an acceptable range for QC errors encountered during the operation. They further stated that they could not compare 2020 QC results to 2010 because the 2010 Address Canvassing Operation canvassed 100 percent of the addresses in-field, while the 2020 In-field Address Canvassing Operation only covered approximately 35 percent of the addresses across the country.

Lister productivity for QC was also higher than expected. The Bureau anticipated the QC productivity at 8.03 addresses per hour compared to the actual rate of 14.05 addresses per hour. Higher-than-expected productivity rates contributed to a reduction in costs and the actual cost of QC production was \$10.3 million versus the anticipated cost of \$25.6 million, a savings of \$15.3 million. Additionally, Bureau officials stated that QC came in so far under budget because the use of laptops increased efficiency and the actual QC workload was lower than the budget estimate.

Planned Evaluations Will Ultimately Determine the Quality of the Operation

While the Bureau conducted real-time quality control follow-up of selected blocks during address canvassing, it also has two studies underway that will evaluate the re-engineered address canvassing approach, as well as the in-field address canvassing operation.⁴ Similar studies conducted by the Bureau in 2010 found that 95.7 percent of addresses were correctly deleted and 83.6 percent of addresses were correctly added. Both studies underway have a set of research questions designed to evaluate the accuracy and effectiveness of address canvassing. For example the Bureau seeks to answer questions such as:

- What percentage of the housing units added during in-field address canvassing were correctly added (and added-in-error)?
- What percentage of the housing units identified as deleted or duplicated by the listers during in-field address canvassing were correctly deleted or duplicated (and deleted-in-error)?

Answering these and other questions contained in both studies will be critical to determining the quality of the operation, as not all listers followed procedures, which may have led to errors in the address file. It is anticipated that the final report for the 2020 Census In-Field Address Canvassing Operational Assessment study will be available September 2020, and the 2020 Census Evaluation: Reengineered Address Canvassing study will be available March 2023.⁵

⁴2020 Census Evaluation: Reengineered Address Canvassing Study Plan and 2020 Census In-Field Address Canvassing Operational Assessment Study Plan.

⁵The results for the reengineered address canvassing study will not be available until 2023 because, according to Bureau officials, it has a complex methodology and the analysis will use Post-Enumeration Survey data, which will not be available until September 2021.

The Bureau Had Successes and Challenges during In-Field Canvassing, Which Have Potential Implications for Future Operations

The Bureau Cited Successes with the Operation

In addition to completing in-field address canvassing on schedule and under budget Bureau officials highlighted other successes from the operation including:

- Automated solutions for training staff. Bureau-developed training materials that used a blended training approach including instructor-led, computer-based, and hands-on training. This is a change from the 2010 paper-based and classroom-only training approach.
- Efficiency gains from conducting reengineered field operations using:
 - New operational control systems, which were used to electronically assign and transmit work to the listers.
 - New automated time and expense reporting (timecards) for employees. In 2010, timecards were paper-based and the listers had to meet with their supervisors to submit them.
 - Enhanced software application for validating and updating addresses.
 - Implementation of rapid response to Hurricane Dorian, which affected areas of the Southeastern United States, resulted in minimal disruptions to the operation.

Additionally, the Bureau was able to resolve some unforeseen challenges at the seven Area Census Offices that opened early. For example, the Bureau identified issues with training login and new hires not being on the training roster and rectified those issues before the operation expanded to the rest of the country.

The Bureau Is Taking Steps to Address Challenges with Hiring and Onboarding Staff

The Bureau experienced delays in hiring for its early operations, raising concerns about hiring for peak operations. The Bureau's target was to hire 40,300 listers by September 7, 2019, but as of September 9, 2019, the Bureau had hired 31,151 listers.⁶ Though address canvassing productivity was higher than expected, in some parts of the country the operation was at risk of falling behind because of a shortage of listers. The Bureau told us it filled the gap with listers who lived well outside of the area in which they were supposed to work—in some cases from a different state. This strategy allowed the Bureau to complete the operation on schedule; however, though the operation as a whole was under budget, the Bureau incurred unplanned costs for travel (airfare, personal mileage rates, rental cars, hotel stays, and per diem).

As we previously reported, these hiring problems are an early warning for what may occur later in the census during nonresponse follow-up, when the Bureau intends to hire between 320,000 to 500,000 enumerators to follow up with households that did not initially respond to the census.⁷ The Bureau said the hiring issues were caused by delays in processing background checks and greater-than-expected attrition. According to the Bureau, these delays arose, in part, due to early shortages of staff to review background checks and because a significant number of applicants did not completely or accurately fill out related forms. In February 2019, the Bureau began to bring on about 130 temporary staff to review forms for accuracy and completeness prior to submission for investigation and to help investigators conduct the pre-employment background checks.

Those delays in turn contributed to subsequent challenges in onboarding listers for address canvassing. For example, according to Bureau officials, the delays in early hiring for Area Census Office staff meant some offices did not have enough clerks in place to process paperwork for listers or make reminder phone calls to hire and onboard listers.

Regarding attrition, more listers quit than expected at two points in the hiring process:

- **Fingerprinting:** The Bureau expected about 15 percent of applicants would leave the hiring process after being selected and before

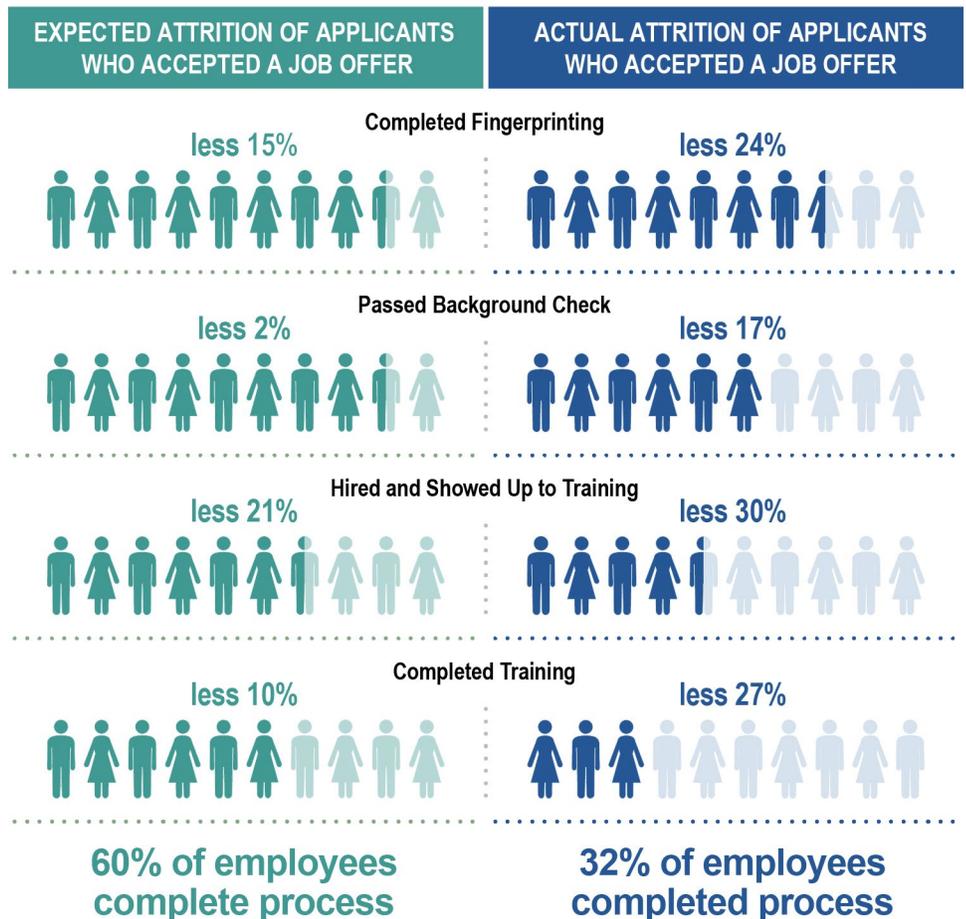
⁶As of November 2019, the Bureau reported hiring and deploying 32,000 listers.

⁷GAO, *2020 Census: Status Update on Early Operations*, [GAO-20-111R](#) (Washington, D.C.: Oct. 31, 2019).

submitting fingerprints. However, the attrition rate was closer to 25 percent. Bureau officials told us they attributed this to selected applicants, in some cases, having to travel long distances to be fingerprinted.

- Training:** The Bureau found that fewer selected and cleared applicants attended training than anticipated. Bureau officials attributed this to fewer clerks being available to call trainees with reminders to attend training due to delays in clerks receiving their own background checks.

Figure 4: Address Lister Attrition Was Higher Than Expected



Source: GAO analysis of Census Bureau data. | GAO-20-415

Note: The population for these calculations includes individuals who already accepted a job offer from the Bureau. Attrition rates for each phase represent the percentage of individuals lost between completing the prior phase and the current phase. The final percentage of employees completing the

process is the cumulative attrition throughout the process. All numbers are rounded to the nearest percent. Icons are approximate representations.

Bureau officials also attributed some of this attrition to the 60-day period between the selection of applicants and their training. This new time frame was put in place for the 2020 Census to provide adequate time for adjudication of background checks.⁸

The Bureau has begun to address these challenges by adapting its hiring and onboarding processes for peak operations, such as nonresponse follow-up, which is to begin May 2020. For example, the Bureau:

- Increased the number of fingerprinting locations and machines. According to Bureau officials, it added 133 additional sites and 300 additional machines, bringing the total number of vendor sites for fingerprinting to 829.
- Staffed Area Census Offices to help newly-selected applicants for positions complete their forms and initiate the background check process.
- Hired additional staff to help clear background checks. The Bureau hired 200 staff at the National Processing Center and an additional 150 at the Regional Census Centers.
- Changed the recruiting goals due to the attrition experienced during address canvassing. The recruiting goal has increased from 2.3 million to 2.7 million to ensure it has a large enough applicant pool. This increases the ratio of recruited applicants to positions from 5:1 to 6:1.
- Completed a wage rate study and increased wages in 73 percent of counties by an average of \$1.50 per hour for enumerators.
- Developed an email campaign to maintain contact with individuals in the recruiting pool.
- Decreased the types, and therefore the number, of positions that required a full background check.

⁸This new procedure was instituted in response to concerns raised after the 2010 Census about bias in hiring. The Bureau settled a court case and as part of that settlement the Bureau agreed to institute new hiring procedures for the 2020 Census. Order Granting Plaintiffs' Motion for Preliminary Approval of Class Action Settlement, *Gonzalez v. Pritzker*, No. 10-3105 (S.D.N.Y. settlement approved April 22, 2016).

-
- Included additional training for replacement hires in the training schedules. A make-up session was added to the nonresponse follow-up training schedule, May 14-19, 2020.

If effectively implemented, these steps hold promise for helping to address the hiring issues.

The Bureau Experienced Challenges with Management's Use of Information

To effectively manage address canvassing, the Bureau provides data-driven tools for the census field supervisors to manage listers, including system alerts that identify issues that require the supervisor to follow up with a lister. Operational issues such as listers not working assigned hours or falling behind schedule need to be resolved quickly because of the tight time frames of the address canvassing and subsequent operations. For the address canvassing operation, the system generated codes that covered a variety of operational issues such as unusually high or low productivity (which may be a sign of fraud or failure to follow procedures) and administrative issues such as compliance with overtime and completion of expense reports and time cards.

During the operation, more than 621,000 alerts were sent to census field supervisors. Each alert requires the supervisor to take action and then record how the alert was resolved. To assist supervisors, these alerts need to be reliable and properly used. However, nine out of 22 census field supervisors we spoke to indicated the alerts were not always useful. For example, almost 40 percent of those alerts were related to no progress being made on a block. This was due in part to listers opening all of the blocks they were assigned on their laptops in order to manage their workload, triggering the system that work had begun on all assigned blocks when in fact the lister was only working one block. We first heard about this issue from field supervisors in late August. Census field supervisors we spoke to indicated that these alerts took an inordinate amount of time to resolve, in part because almost every lister would open every block to plan his or her day.

We alerted Bureau officials in headquarters, and they notified area census offices to remind supervisors to instruct listers not to open all of their blocks at once. After the notification was sent out, Bureau officials reported that the number of alerts due to blocks not being worked declined. Bureau officials further stated that this issue would not impact nonresponse follow-up because enumerators do not receive multiple

assignments, but instead receive, work, and transmit only one assignment of housing units for follow-up a day.⁹

Another challenge faced by census field supervisors was providing feedback to listers on why addresses failed quality control. Four of 22 census field supervisors we spoke with were not aware that they had access to the reasons why addresses on a block failed quality control. Knowing where to find this information would have allowed census field supervisors to communicate this information to listers, thus improving lister performance as well as the accuracy of the data collected. We shared this information on some census field supervisor's lack of awareness with the Bureau and on August 26, 2019, the Bureau notified its field offices to remind supervisors that detailed information on why addresses failed quality control was available on their laptops.

For nonresponse follow-up, Bureau officials told us QC information about any enumerator with a specified number of failed cases will be sent directly to the Regional Census Center rather than the census field supervisor.¹⁰ The Regional Census Center will decide whether the enumerator should continue working and, if so, what corrective action to take, such as retraining. However, if it is determined that an enumerator falsified data, then the enumerator would not be given new assignments and all of his or her work would then be reinterviewed.

Agency Comments

We provided a draft of this report to the Secretary of Commerce. In its written comments, reproduced in appendix I, the Bureau noted that our report made no formal recommendations and that we highlighted several successes of the in-field address canvassing operation. The Bureau also described several claims of cost savings and efficiency gains which it attributed to various address list-building activities. While we have previously reported on the Bureau's 2020 address list-building efforts, we have not audited claims made in the Bureau's response or elsewhere regarding potential cost savings from innovations for the 2020 Census. The Bureau also provided us with technical comments, which we incorporated as appropriate.

⁹The number of housing units assigned to a lister was dependent on a number of factors including hours of availability and travel time between housing units.

¹⁰Regional Census Centers are responsible for managing all decennial field operations within their designated census region. There are six Regional Census Centers which are located in Atlanta, Chicago, Dallas, Los Angeles, New York, and Philadelphia.

We are sending copies of this report to the Secretary of Commerce, the Under Secretary of Economic Affairs, the Director of the U.S. Census Bureau, and interested congressional committees. The report also will be available at no charge on GAO's website at <http://www.gao.gov>.

If you or your staff have any questions about this report please contact me at (202) 512-3236 or mihmj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff that made major contributions to this report are listed in appendix III.

A handwritten signature in black ink that reads "J. Christopher Mihm". The signature is written in a cursive style with a large, stylized "J" and "M".

J. Christopher Mihm
Managing Director
Strategic Issues

List of Requesters

The Honorable Ron Johnson
Chairman
The Honorable Gary C. Peters
Ranking Member
Committee on Homeland Security and Governmental Affairs
United States Senate

The Honorable Carolyn B. Maloney
Chairwoman
The Honorable Jim Jordan
Ranking Member
Committee on Oversight and Reform
House of Representatives

The Honorable Jamie Raskin
Chairman
The Honorable Chip Roy
Ranking Member
Subcommittee on Civil Rights and Civil Liberties
Committee on Oversight and Reform
House of Representatives

The Honorable Gerald E. Connolly
Chairman
The Honorable Mark Meadows
Ranking Member
Subcommittee on Government Operations
Committee on Oversight and Reform
House of Representatives

The Honorable Karen Bass
House of Representatives

The Honorable Joaquin Castro
House of Representatives

The Honorable Judy Chu
House of Representatives

The Honorable Steven Horsford
House of Representatives

Appendix I: Comments from the Department of Commerce



UNITED STATES DEPARTMENT OF COMMERCE
U.S. Census Bureau
Office of the Director
Washington, DC 20233-0001

MAR 04 2020

Mr. J. Christopher Mihm
Managing Director, Strategic Issues
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Mihm:

The U.S. Census Bureau appreciates the opportunity to comment on the U.S. Government Accountability Office (GAO) draft report titled "2020 Census: Bureau Generally Followed Its Plan for In-Field Address Canvassing" (GAO-20-415).

The GAO was asked to review how the in-field address canvassing operation performed. The draft report (1) determines the extent to which the Census Bureau followed its plans and schedule for in-field address canvassing, and (2) identifies the successes and challenges that occurred during 2020 Census In-Field Address Canvassing that have potential implications for future operations.

While this report contains no formal findings or recommendations, throughout the course of their observations and interviews, GAO provided useful feedback to the Census Bureau. The Census Bureau used this information to correct minor inconsistencies and issues during the field operation.

The Census Bureau appreciates that GAO highlighted several successes of the operation, including:

- The Census Bureau completed In-Field Address Canvassing on time and under budget;
- Reengineered field operations, such as new operational control systems and enhanced address listing software, resulted in efficiency gains;
- Productivity was higher than expected during both address listing and quality control operations; and
- The Census Bureau notified field supervisors when problems were identified and quickly corrected course.



[census.gov](https://www.census.gov)

Mr. J. Christopher Mihm

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The Census Bureau offers several substantive comments to place In-Field Address Canvassing in the context of all of the Census Bureau programs to ensure an accurate address list for the 2020 Census. We are hopeful the GAO will reflect our comments in the final report.

The report's focus on In-Field Address Canvassing is best understood in context of the Census Bureau's approach to building a complete and accurate address list. The approach has consisted of a series of operations that were conducted throughout the decade, including the following:

- Incorporating design changes based on evaluations that the Census Bureau conducted of previous address list development operations following the 2000 Census and 2010 Census;
- Adding 5.9 million new addresses to the Master Address File since 2010 by using the United States Postal Service's Delivery Sequence File as a primary source of address updates; and
- Successfully implementing In-Office Address Canvassing to use satellite imagery and existing geospatial data to validate 65 percent of the nation's addresses in office and achieve unprecedented savings of approximately \$185 million.

In-Office Address Canvassing allowed the Census Bureau to open only 39 offices and hire approximately 32,000 people to conduct in-field canvassing of the 35 percent addresses that were sent to the field for validation. This operation is a fraction of the 151 offices and hiring approximately 150,000 people needed to validate the address list in preparation for the 2010 Census. The projected total cost of In-Field Address Canvassing for the 2020 Census is currently less than \$120 million, avoiding approximately \$240 million in costs had all addresses been sent for in-field validation. When factoring the cost of In-Office Address Canvassing of approximately \$55 million, net cost avoidance for Address Canvassing amounts to approximately \$185 million. The report should fully reflect this accomplishment.

Finally, the report should note that address and spatial data from tribal, state, and local governments provided a critical validation and enhancement of the Master Address File/Topologically Integrated Geographic Encoding and Reference (MAF/TIGER) System. Between 2013 and 2018, partner governments submitted nearly 107 million address records. Over 99.5 percent of those records matched to the MAF. In addition, partner governments submitted over 75 million address points that were either new or that enhanced existing point locations in TIGER. Over 196,000 miles of roads were added to TIGER using data submitted in partner files.

The aforementioned address list development efforts have resulted in the most comprehensive and accurate address list and maps in the Census Bureau's history. Not only has this work created a strong foundation for the 2020 Census, but has placed the Census Bureau in a powerful position for the future. Looking forward, the Census Bureau plans to enhance the

**Appendix I: Comments from the Department of
Commerce**

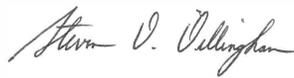
Mr. J. Christopher Mihm

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existing frame of addresses to support current surveys and the 2030 Census - during survey and census design, sample selection, data collection, processing and tabulation, and data dissemination. Additionally, the Census Bureau will explore new ways of linking data from the MAF to other frames of information stored at the Census Bureau, with an eye on reducing duplication, streamlining existing data management processes, and creating new statistical and geographic data products.

Thank you for your consideration of these comments.

Sincerely,



Steven D. Dillingham
Director

Appendix II: Area Census Offices Responsible for Locations Visited in This Review

Trenton, New Jersey
Bronx, New York
Brooklyn, New York
Providence, Rhode Island
Columbus, Ohio
Harrisburg, Pennsylvania
Fairfax, Virginia
Beckley, West Virginia
Detroit, Michigan
Milwaukee, Wisconsin
Atlanta, Georgia
Raleigh, North Carolina
Denver, Colorado
Houston, Texas
San Antonio, Texas
Oakland, California
Woodland Hills, California
Seattle, Washington

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

J. Christopher Mihm, (202) 512-3236 or mihmj@gao.gov

Staff Acknowledgments

In addition to the contact named above, Lisa Pearson, Assistant Director; Timothy Wexler, Analyst-in-Charge; Margaret Fisher; Robert Gebhart; Richard Hung; Cynthia Saunders; Anna Sorrentino; Kate Sharkey; Dylan Stagner; Jon Ticehurst; Peter Verchinski; and Alicia White made key contributions to this report.

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