

PREPARED STATEMENT OF

JOHN H. THOMPSON

DIRECTOR

U.S. CENSUS BUREAU

**Before the Appropriations Committee's Subcommittee on
Commerce, Justice, Science and Related Agencies**

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Good morning Chairman Culberson, Ranking Member Serrano, and Members of the Subcommittee. I welcome this opportunity to update you on the status of the 2020 Census. Secretary Ross remains committed to the 2020 Census as a Departmental priority, and I am pleased to report that we are on schedule and remain on the critical path to readiness in 2020.

The Census Bureau will conduct a high quality 2020 Census by implementing the most automated, modern, and dynamic decennial Census in history. The 2020 Census includes sweeping design improvements in four key areas, including:

- new methodologies to conduct address canvassing,
- innovative ways of optimizing self-response,
- the use of administrative records to reduce the Nonresponse Followup (NRFU) workload, and
- the use of technology to reduce the time spent on tasks traditionally conducted with people and paper.

New addresses will be added to the Census Bureau's address frame using geographic information systems and aerial imagery instead of sending Census employees to walk 11 million Census blocks; the population will be encouraged to respond to the 2020 Census using the Internet; the NRFU workload will be reduced by using data the public has already provided to the government; and sophisticated operational control systems will efficiently manage Census

employees who are following up with nonresponding housing units. We estimate that these innovations have the potential to save billions compared to repeating the 2010 design in the 2020 Census.

The adoption of these innovations to the 2020 Census constitutes an enormous undertaking. We recognize that we face challenges to get this right, but we are confident that everything is in place to implement, integrate, secure, and test our designs on an efficient schedule to successfully execute the 2020 Census. We appreciate the Committee acknowledging the importance of early investment in the 2020 Census and its continuing support that is allowing us to remain on the critical path. In order to concentrate our resources on systems readiness in this fiscal year, we had to make difficult decisions to descope some aspects of the program and pause others. These decisions, announced in January to ensure systems and operational readiness, will lead to:

- a greater percentage of address listing field work in 2019;
- a delay in opening the six Regional Census Centers;
- the elimination of advertising in the 2018 End-to-End Census Test; and
- program and test management operations far lower than has been recommended by the Government Accountability Office (GAO) to successfully manage a program of this complexity.

These changes were necessary to ensure that we remain on the critical path to systems and operational readiness for the 2020 Census. As we continue to ramp-up to 2020, maintaining adequate funding levels is paramount to remaining on this path to ensure the complete development and integration of the systems and operations required for a successful census.

GAO High Risk List

In recognition of the complexity, scale, and importance of conducting a fair and accurate count of the Nation each decade, GAO added the 2020 Census to its high risk list. The 2000 Census and the 2010 Census also were on the list. The heightened complexity of our new design for the Census increases the need to mitigate the risks that are inherent in carrying out this constitutionally-mandated task. We concur with GAO's recommendations and are working to implement their suggestions.

As we look to the final years of the decade, monitoring and mitigating risks at the program and project level are among the most important things we are doing to ensure we can execute our operational plan for the 2020 Census. An equally important component to success has been and will continue to be working with Congress and our colleagues at GAO as they review and assess our designs, plans, systems, and operations to identify areas of improvement. Specifically, we are concentrated on the following risk areas, along with the overarching risk of funding uncertainty:

- Systems Readiness Ahead of the 2020 Census;
- Refining Field Procedures through 2020 Census Testing;
- Lifecycle Cost Estimate Documentation and Validation;
- Cybersecurity, Fraud Detection, and Ensuring the Public's Trust and Confidence; and
- Utilizing Administrative Records and Third Party Data.

Systems Readiness Ahead of the 2020 Census

The Census Bureau learned many lessons in systems development and readiness from the 2010 Census. Foremost among these was to develop and field test proof of concept systems, which we did for the 2020 Census from 2012 through 2015.

We are far along in the process to develop and integrate approximately 50 different IT systems to handle the many preparatory, support, collection, processing, and tabulation operations for a Census.

These include the systems we use to:

- update and maintain our Master Address File and digital map to ensure Census results are assigned to the correct jurisdictions;
- enable people to respond via the Internet;
- identify the households that have not responded to the Census, and define and manage the in-person visits assigned to each interviewer on a daily basis;
- recruit and pay our large workforce of temporary employees; and
- capture, process, and tabulate the data we receive from people whether they respond online, over the telephone, by mailing back a paper questionnaire, or through an in-person interview via an enumerator's mobile device.

Some of these systems are being developed for the first time, but many others—like background checks, payroll, and questionnaire design—are legacy systems already in place.

The 2020 Census Program is working closely with the Census Enterprise Data Collection and Processing (CEDCaP) program, a bureau-wide effort to create an integrated and standardized enterprise of systems that offers shared data collection and processing services. In May 2016, after rigorous evaluation and analysis of alternatives, we decided to implement a hybrid approach to the question of whether to build or buy CEDCaP software by choosing a commercial off-the-shelf platform integrated with select Census Bureau custom solutions to optimally address the goal of successfully deploying an automated 2020 Census. This decision was designed to help reduce risk for the 2020 Census and our other surveys and Censuses by adopting proven technology to help deliver secure systems and information.

Following this decision, new program estimates and independent cost estimates were produced by certified cost estimators for the full CEDCaP lifecycle, updating the original 2013 cost estimate. The latest lifecycle cost for CEDCaP is \$965 million, which is \$309 million higher than the original estimate from 2013. The primary reasons for this large disparity were:

- a lack of certified cost estimators creating the original estimate;
- greater workload to configure business rules into more detailed technical requirements than were originally anticipated in 2013 to deliver a secure and scalable Data Collection system; and
- a shorter timetable to readiness dates due to a schedule disconnect from not accurately baselining all milestones to the 2020 Census Integrated Master Schedule.

We regret the substantial underestimation of this program's costs, but remain committed to transparency with this Committee, all of Congress, and all of our stakeholders and will work to address your concerns as we continue to fully mature and evolve the CEDCaP program. This higher cost estimate reflects how much we have learned over the past four years about the solutions we need and technology available to effectively automate key operations in the 2020 Census. This further level of detail enables the Census to 1) be confident in the expected cost of the Data Collection solutions needed for the 2020 Census and 2) make key decisions and adjustments throughout the agile development process to deliver working systems that enable the Census to meet its goals. We are confident in the latest cost estimate because it employs best practices and includes all details of our

actual requirements. Additionally, it has been independently validated by our Office of Cost Estimation, Analysis, and Assessment. We are progressing well with implementing CEDCaP, successfully deploying solutions for the current 2017 Census Test and we are well on our way for the 2018 End-to-End Census Test.

Additionally, during this past year we have brought in expert help from a team of private sector IT experts to aid with the integration of our full system of systems. Having fully integrated systems ahead of the 2018 End-to-End Census Test is key to our 2020 Census readiness and risk mitigation. To support the management of all major IT Decennial contract solutions, each contract has a dedicated Government Program Management Office and those are consolidated in a single division of the 2020 Census program. We are rigorously tracking the status of our systems each with its own well-defined scope, requirement, schedule, and needed budget, and run by an experienced project manager who reports regularly on progress and any risk to timely delivery. We have a robust governance process with three groups—the 2020 Census IT Governance Board, the Census IT Directorate Project Review Governance Board, and the 2020 Census Systems and Operations Alignment Executive Steering Committee—that work together to ensure that all contracts meet business requirements on time.

The Census Bureau also maintains full schedule alignment between the 2020 Census Program and all of its corporate service providers at the agency, including CEDCaP through a single integrated master schedule. The 2020 Census Program Integrated Master Schedule (IMS) is the single schedule that all projects interact with in order to provide status on their work on a weekly basis. This allows us to ensure that all projects are working toward the same 2020 Census milestones and monitor their status relative to those.

Refining Field Procedures through 2020 Census Testing

Conducting a decennial Census is a major undertaking with many moving parts. As we implement the operational design for the 2020 Census, we are leveraging new procedures, systems, and solutions, which will make it easier for people to respond and make census operations more efficient. Census tests are critical to preparing for the 2020 Census. These tests help improve our testing methods and results. We have invited our oversight stakeholders to each of our Census field tests to see how the operations and systems are progressing throughout the decade, and also to have as many observers in

the field to help us identify lessons learned and document improvements to make to our operational design. This is the main reason we have tested our redesigned operations and innovative technical solutions throughout the decade and must continue to. We are rigorously adapting after each test to maximize efficiency and effectiveness in our operations.

2016 Census Test

In 2016, we conducted the 2016 Census Test in Harris County, Texas, and Los Angeles County, California, to study a variety of new methods and advanced technologies. The primary focus of this test was to refine the methodology for NRFU—the operation we conduct to visit nonresponding addresses in person. The Census Bureau also refined methods and related activities for maximizing self-response (particularly via the Internet) to the 2020 Census. We had many successes and learned many lessons that we will be implementing in our future tests, including improving closeout procedures, training for enumerators, procedures at multiunit structures, and enhancements to the proxy interview process. These improvements are the reason we test and can have growing confidence in the 2020 Census design.

Address Canvassing Test

In the fall of 2016, we conducted the Address Canvassing Test in Buncombe County, North Carolina, and part of the city of St. Louis, Missouri to measure the effectiveness and quality of in-office address canvassing and in-field address canvassing. Combined, the sites had over 220,000 housing units. The results of the 2016 Address Canvassing Test and additional research will help to validate our procedures around the in-field address canvassing operation and our assumptions for its workload. The results will inform key assumption contributing to the lifecycle cost estimates for the 2020 Census. We are analyzing the results of this test and assessing valuable lessons we learned in the field and how they can refine our operations.

2017 Census Test

The 2017 Census Test is underway. This is a nation-wide self-response test consisting of 80,000 housing units, with an April 1, 2017 Census day. It is allowing us to test key new systems as well as the feasibility of collecting information on tribal enrollment.

This test is critical for us because we are testing all of the public facing components of our 2020 Census. This includes the new version of Internet Self-response in the Cloud, which was completed within six months. This is a big step for us. The use of the Cloud is the only way that we will be able to absorb the massive number of expected Internet responses that we will be receiving in the weeks before and after the 2020 Census's Census Day on April 1, 2020. In addition, we also are deploying our telephone-based operation, what we call "Census Questionnaire Assistance," and which will allow people to respond via the telephone.

In the 2017 Census Test we already are learning about the strengths and weaknesses of the control systems we have in place for these public facing systems and operations, and it is helping us ensure that they are fully integrated and tested ahead of the 2018 End-to-End Census Test.

2018 End-to-End Census Test

The 2018 End-to-End Census Test is the final major field test prior to the beginning of the 2020 Census and is scheduled for a Census Day of April 1, 2018. Field operations will begin in August 2017 with the address canvassing operation. The 2018 End-to-End Census Test will allow the Census Bureau to prove-in our design and validate our readiness for the 2020 Census.

We will test and validate 24 of the 34 2020 Census operations, procedures, systems, and field infrastructure together to ensure proper integration and conformance with functional and non-functional requirements, and will test:

- Address Canvassing,
- Content and Forms Design,
- Language Services, Forms Printing and Distribution,
- Integrated Communications and Partnerships, Internet Self-Response,
- Census Questionnaire Assistance, Group Quarters,
- Nonresponse Followup, Response Processing, and
- Data Products and Dissemination.

We will release a prototype of the P.L. 94-171 Redistricting Data and geographic support products at the conclusion of the 2018 End-to-End Census Test. The flow of operations and systems throughout the test will mirror what is planned for the 2020 Census and will give the

Census Bureau an opportunity to reaffirm that the reengineered 2020 Census will function according to the design.

Using our experiences in the 2018 End-to-End Census Test, we will finalize plans for all operations and make any necessary adjustments to ensure readiness for the 2020 Census.

Lifecycle Cost Estimate Documentation and Validation

One of the key ways we can measure if we are on track and on schedule to meet our goals for the 2020 Census is through the 2020 Census lifecycle cost estimate. This is why we have employed rigorous cost estimation techniques and validated many of our key assumptions through actual data we have gathered through our testing. In their 2016 audit, GAO recognized that the Census Bureau has taken significant steps to improve our cost estimation approach. We also agreed with GAO findings there are still improvements we can make to our cost estimation to improve the process and documentation around the modeling in line with best practices, and we are well on our way to implementing their recommendations.

One significant improvement the Census Bureau has made in this area in recent years is to establish the independent Office of Cost Estimation, Analysis, and Assessment. This office has produced independent estimates for the 2020 Census, using different methodologies than the program office, but resulting in a similar total. This is a major reason we are confident in the estimate of lifecycle costs.

Cybersecurity, Fraud Detection, and Ensuring the Public's Trust and Confidence

Ensuring the trust of the public in protecting all data at all times is at the bedrock of the Census Bureau's mission. The main cybersecurity areas we are focusing on are cybersecurity threats associated with:

- data breaches,
- compromising user devices, and
- disrupting the Internet Self-response Website, which are within our direct control; and then
- compromising external network access,
- impersonating the Census, and
- users inputting invalid response data, which are outside of our direct control.

This is particularly critical as the 2020 Census must count everyone in the country once, only once, and in the right place.

To combat potential cyberattacks, the Census Bureau employs sophisticated security protocols, is protected by the Department of Homeland Security (DHS)-managed Einstein program, and adheres to National Institute of Standards and Technology mandates and guidance as required by the Federal Information Security Management Act. We also are engaging with other federal agencies, most prominently DHS, as well as GAO, to provide assistance to us in reviewing our design and security architecture for the 2020 Decennial Census. In addition, we are working with the Department of Commerce Office of Security on threat analysis and related counter-terrorism issues. We also have brought in private-sector expertise to further ensure state-of-the-art defense against cyber-attacks.

Utilizing Administrative Records and Third Party Data

We remain committed to using administrative records and third party data for operational efficiency in the 2020 Census by reducing the NRFU workload in cases where we have high quality administrative data. Their use is a significant contribution to the expected cost savings relative to the cost of repeating the design of the 2010 Census. We are working with your colleagues in the appropriate authorizing committees to gain access to the National Directory of New Hires data set, which will be particularly valuable in corroborating the data we already plan to use.

2020 Status Update

Topics and Questions for the 2020 Census

In March we fulfilled a major milestone, on time, when we delivered the planned subjects for the 2020 Census and the American Community Survey to Congress before the statutory deadline. The Census Bureau followed a rigorous, multi-year process collaborating with the Office of Management and Budget (OMB) and other federal agencies to complete this process. Federal agencies provided support to demonstrate a clear need for all data we plan to collect. The submission to the Congress describes that the planned subjects remain unchanged from the 2010 Census and will cover gender, age, race/ethnicity, relationship and homeownership status.

Our next milestone is the preparation of the specific questions, which we are mandated to provide to the Congress by March 31, 2018, two years before Census Day. With input and collaboration from the public, stakeholders, and other Federal agencies, we have continued our ongoing research on the race and ethnicity questions that will be included in the 2020 Census and the ACS. The Census Bureau has a long history of conducting research to improve the questions we ask, and since the 1970s we have implemented content tests designed to help us improve relevance and accuracy of the data we collect. Our latest content test was completed in 2015 and reported on this spring¹, and our engagement and collaboration with the public, stakeholders, and other federal agencies continues as we finalize questions for 2020.

Local Update of Census Addresses

Our ongoing Local Update of Census Addresses (LUCA) operation provides 39,000 federal, state, local, and tribal governments with an opportunity to check our address lists and maps used to conduct the 2020 Census. In late January, we mailed 83,000 Local Update of Census Addresses (LUCA) Advance Notice packages to our local, state, and tribal contacts. We have received overwhelming interest thus far, reflecting the significant level of inter-governmental engagement in the 2020 Census. We will be working to update our Master Address File and geographic database with the information, and provide feedback to the governmental entities, which can appeal the outcomes.

Recent Major 2020 Census Contracts

The Census Bureau has a long history of working closely with the private sector to tackle some of the biggest challenges that face us as we conduct the decennial census. The 2020 Census is of course no different. We are pleased to report on the status of our major contracts as described below.

Our recent major contract awards include:

- *Enterprise Census and Survey Enabling Platform* – This contract provides the expertise and infrastructure needed to design, develop, test, deliver, and maintain an integrated data collection and operational control platform for the 2020 Census. To do this, we are

¹ 2015 National Content Test: Race and Ethnicity Analysis Report available at: <https://www.census.gov/programs-surveys/decennial-census/2020-census/planning-management/final-analysis/2015nct-race-ethnicity-analysis.html>

deploying a commercial off the shelf (COTS) platform solution as part of the Census CEDCaP program. This COTS product, called Pega 7, will provide, among other things, the functionality needed for operational control, data collection, and Internet Self-response.

- *2020 Census Questionnaire Assistance (CQA)* – This contract was awarded to General Dynamics Information Technology to provide the full service capability for answering general questions related to the Census and a new option allowing respondents to complete a Census interview over the phone.
- *2020 Census Integrated Communications* – We will use an integrated communications program to increase awareness of and participation in the 2020 Census. Effective and strategic communications with many diverse audiences will be crucial to the success of the 2020 Census. Promoting and generating self-response through a motivational campaign in combination with a robust nationwide partnership program can both increase the quality of the 2020 Census and control its cost. The Census Bureau selected the vendor Young & Rubicam.
- *2020 Census Technical Integrator* – This contract supports design and architecture engineering and integration activities for the 2020 Census Program, including the infrastructure planning and design for the data center capability (both physical and Cloud), the Regional Census Centers and Area Census Offices, and any other designated locations. The Technical Integrator contract provides resources for specialized expertise in areas such as fraud detection and security. The contract was awarded to T-Rex, which is partnered with several other companies including Leidos (formerly Lockheed Martin’s IT Business) and Accenture².

There are additional major contracts yet to be awarded that will provide mobile devices for enumeration, fingerprinting and badging services, and Field IT equipment and service.

Decennial Device as a Service, to be awarded in May of 2017, will allow the Census Bureau to lease mobile devices (e.g., smartphones, tablets, and laptops) as the predominant means for

² Other T-Rex subcontractors include: Z, Inc, General Dynamics Information Technology, SES, Whirlwind Technologies, LLC, Vidoori, and Octo.

enumeration and address canvassing and ensure the telecommunication carrier with best local coverage when available.

Conclusion

We are in the midst of implementing an innovative and modern design for the 2020 Census, one that will bring the decennial Census into the 21st century. This design reflects a flexible approach that takes advantage of new technologies, methodologies, and data sources while minimizing risk. I look forward to further discussion of the challenges we face and what we are doing to mitigate them, and I look forward to continuing our long and productive relationship with the Congress and GAO in the years ahead.