Independent Evaluation of the 2020 Decennial Census Evaluations and Experiments (EAE) Operation

FINAL REPORT

FEBRUARY 5, 2024

U.S. Department of Commerce
Office of Inspector General
Office of Audit and Evaluation

UNITED STATES DEPARTMENT OF COMMERCE
Office of Inspector General
Washington, D.C. 20230

February 5, 2024

MEMORANDUM FOR: Robert Santos
Director
U.S. Census Bureau

FROM: Arthur L. Scott, Jr.
Assistant Inspector General for Audit and Evaluation

SUBJECT: *Independent Evaluation of the 2020 Decennial Census Evaluations and Experiments (EAE) Operation*
Final Report No. OIG-24-011-I

Attached is our final report on the evaluation of the U.S. Census Bureau's EAE operation. The objective was to determine whether the Census Bureau prepared adequate and timely operational assessments (OAs) that included the appropriate metrics to support planning for the 2030 decennial's research and testing (R&T).

We contracted with the Institute for Defense Analyses (IDA), an independent firm, to perform this evaluation. Our office oversaw the evaluation's progress to ensure that IDA performed it in accordance with the Council of the Inspectors General on Integrity and Efficiency's *Quality Standards for Inspection and Evaluation* (December 2020) and contract terms. However, IDA is solely responsible for the attached report and the conclusions expressed in it.

IDA found the following:

I. 2020 OAs, evaluations, and experiments were not completed in time to formally inform the development of the Census Bureau's 2030 R&T agenda.

II. The 2020 census EAE research program failed to prioritize the evaluation of two of the four key 2020 innovation areas and the investigation of a potentially significant 2030 innovation.

III. The Census Bureau has put management processes and tools in place but does not always use them to their potential.

IV. The Census Bureau should standardize the reporting of cost data across EAE products.

V. The Census Bureau should examine delays with respect to the originally planned schedule and not just the latest re-baselined schedule.

VI. The Census Bureau should resource-load the activities in the decennial census integrated master schedule.

On December 22, 2023, we received the bureau's response to IDA's draft report. In its response, the bureau concurred with recommendations 1 through 6 and 8 through 10 while partially concurring with recommendation 7. The bureau's formal response is included in the final report as appendix D.

Pursuant to Department Administrative Order 213-5, please submit to us an action plan that addresses the recommendations in this report within 60 calendar days. This final report will be posted on the Office of Inspector General's website pursuant to the Inspector General Act of 1978, as amended (5 U.S.C. §§ 404 & 420).

We appreciate the cooperation and courtesies extended to us by your staff during this evaluation. If you have any questions or concerns about this report, please contact me at (202) 577-9547 or Terry Storms, Division Director, at (202) 570-6903.

Attachment

INSTITUTE FOR DEFENSE ANALYSES

Independent Evaluation of the 2020 Decennial Census Evaluations and Experiments (EAE) Operation

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January 2024

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About This Publication

This work was conducted by the IDA Systems and Analyses Center under contract HQ0034-19-D-0001, Project EC-7-5105, "Independent Operational Assessments of the 2020 Decennial Census," for the Department of Commerce. The views, opinions, and findings should not be construed as representing the official position of either the Department of Defense or the sponsoring organization.

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Report in Brief

Background

The mission of the decennial census is to "count everyone once, only once, and in the right place."[1] This mission is simple to grasp, but the execution of the decennial census is exceedingly complex. The 2020 Census consisted of 35 high-level operations in eight broad operational areas.[2] One of the 35 operations—the Evaluations and Experiments (EAE) operation—is the subject of this report. The EAE operation, which consists of operational assessments (OAs), evaluations, and experiments, is intended to inform the next decade's research and testing (R&T) phase, which is in turn intended to inform the design of the next decennial census. This performance improvement life cycle is designed to improve the decennial census from decade to decade through a well-orchestrated program of measuring, evaluating, experimenting, researching, and testing.

Objective

The Department of Commerce Office of Inspector General (OIG) contracted with the Institute for Defense Analyses (IDA) to perform an independent evaluation of the operational assessment component of the Census Bureau's 2020 Census EAE operation. The stated objective was to determine whether the Bureau prepared adequate and timely OAs that included the appropriate metrics to support planning for the 2030 decennial R&T. In the early months of the IDA evaluation, the scope of the objective was expanded beyond OAs to include the other major components of the EAE operation, namely, evaluations and experiments.

Findings and Recommendations

The IDA evaluation found that the 2020 EAE products—OAs, evaluations, and experiments—were not completed in time to formally support 2030 decennial R&T (Finding I). Furthermore, the EAE products inadequately addressed cost and schedule (Findings IV and V). The remaining three findings (II, III, and VI) point to management issues that inhibit the usefulness of EAE products.

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[1] U.S. Census Bureau, *2020 Census: our mission to count everyone*, https://www.census.gov/content/dam/Census/library/factsheets/2020/dec/mission-count-everyone/mission-count-everyone.pdf.

[2] The eight operational areas are program management, engineering, framing (i.e., identifying addresses), response data collection, data publication, U.S. island area censuses, test and evaluation (which includes the EAE operation), and infrastructure.

Finding I: 2020 OAs, evaluations, and experiments were not completed in time to formally inform the development of the Bureau's 2030 R&T agenda.

We recommend that the Director of the Census Bureau:

1. Ensure that the 2030 EAE reports are released in a timely manner.
2. Establish a formal process to share recommendations and lessons learned from the EAE operation prior to the internal release of EAE reports, with the intention of expediting the incorporation of feedback that is crucial to the next decennial's research and testing.

Finding II: The 2020 Census EAE research program failed to prioritize the evaluation of two of the four key 2020 innovation areas and the investigation of a potentially significant 2030 innovation.

We recommend that the Director of the Census Bureau:

3. Use strategic guidance and priorities to develop and prioritize EAE research.

Finding III: The Census Bureau has put management processes and tools in place but does not always use them to their potential.

We recommend that the Director of the Census Bureau:

4. Utilize existing processes and tools as intended in order to ensure rigorous and disciplined management of the decennial census.

Finding IV: The Census Bureau should standardize the reporting of cost data across EAE products.

We recommend that the Director of the Census Bureau:

5. Ensure that integrated project teams (IPTs) responsible for OAs provide the required report elements and document when required report elements are not available or transparency is not permissible.
6. Develop guidelines for the querying and reporting of cost data that permit comparisons between planned and actual costs.

Finding V: The Census Bureau should examine delays with respect to the originally planned schedule and not just the latest re-baselined schedule.

We recommend that the Director of the Census Bureau:

7. Extend the Bureau's analysis of scheduling delays to examine variances between originally planned baseline start and finish dates and actual start and finish dates.
8. Use what is learned from this analysis to improve its scheduling estimates for the next decennial census.

Finding VI: The Census Bureau should resource load the activities in the decennial census integrated master schedule (IMS).

We recommend that the Director of the Census Bureau:

9. Adopt the GAO best scheduling practice of resource loading the activities in its IMS, including those activities associated with OAs, evaluations, and experiments.
10. Develop mechanisms to better account for the required resources to complete EAE activities to aid in the planning and execution of future EAE operations.

Contents

Figures and Tables

Acronyms and Abbreviations

ARC	Archiving
CIG	Census Integration Group
CPEX	Census Program for Evaluations and Experiments
CQA	Census Questionnaire Assistance
DBO	Decennial Budget Office
DCCO	Decennial Communications Coordination Office
DCMD	Decennial Census Management Division
DOP	Detailed Operational Plan
DROM	Decennial Research Objectives and Methods
DSSD	Decennial Statistical Studies Division
EAE	Evaluations and Experiments
EXC	Evaluations and Experiments Coordination Branch
FLDI FOAP	Field Infrastructure – Field Office Administration and Payroll
FLDI ROT	Field Infrastructure – Recruiting, Onboarding, and Training
FY	Fiscal Year
GAO	Government Accountability Office
GQ	Group Quarters
IDA	Institute for Defense Analyses
IFAC	In-Field Address Canvassing
IMS	Integrated Master Schedule
IOAC	In-Office Address Canvassing
IPC	Integrated Partnership and Communications
IPT	Integrated Project Team
ISR	Internet Self-Response
IT	Information Technology
LUCA	Local Update of Census Addresses
NID	Non-ID Processing
NRFU	Nonresponse Followup
OA	Operational Assessment
OIG	Office of Inspector General
PBOCS	Paper-Based Operation Control System
PES	Post-Enumeration Survey
PES IL	Post-Enumeration Survey Independent Listing
POC	Point of Contact
R&T	Research and Testing
RT	Real-Time
WBS	Work Breakdown Structure

1. Background

The Census Bureau is charged with carrying out the decennial census, as mandated by the U.S. Constitution, which states that census results are to be used to apportion Congressional seats.[3] Census data is also used to allocate federal funding to eligible state, local, and tribal governments; organizations; households; and individuals. A recent study found that more than $2.8 trillion in federal funds were distributed in whole or in part using data from Decennial Census Programs, which include the decennial census and the American Community Survey.[4]

The 2020 Census represented a broader shift within the Bureau toward digital transformation; it was the first online census, and it leveraged new technologies to reduce costs and improve data quality. Innovations included changes to the way the Census Bureau compiled its address list and to the way it managed nonresponse follow-up visits. Some changes, including a change to the online response system, were necessitated by the COVID-19 pandemic. The total life-cycle cost for the 2020 Census, including the COVID-19 response, is projected to be $13.7 billion,[5] which is below the $17.8 billion that the Bureau had estimated it would cost to repeat the design and methods of the 2010 Census.[6] The Bureau credits investments in technology and innovation for the reductions in operational costs.

A. 2020 Census Operations

While the goal of the decennial census to "count everyone once, only once, and in the right place"[7] is simple to grasp, the execution of the decennial census is exceedingly

[3] U.S. Constitution, Article 1, Section 2.

[4] Ceci Villa Ross, *Uses of Decennial Census Programs Data in Federal Funds Distribution: Fiscal Year 2021*, U.S. Census Bureau, June 2023.

[5] U.S. Census Bureau, *Comparison of 2020 Census Lifecycle Cost Estimate (2019 Version) to Actual for FY 2012 to FY 2023*: "The estimated final obligations for the 2020 Census is $13.7 billion at the end of FY 2024."

[6] U.S. Census Bureau, *2020 Census Operational Plan: Executive Summary*, Version 1.0, December 2015. https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/2020-oper-plan-exe-sum.pdf.

[7] U.S. Census Bureau, *2020 Census: our mission to count everyone*, https://www.census.gov/content/dam/Census/library/factsheets/2020/dec/mission-count-everyone/mission-count-everyone.pdf.

complex. As illustrated in Figure 1, the 2020 Census consisted of 35 operations in eight operational areas.[8] The subject of the Institute for Defense Analyses (IDA) evaluation (highlighted in blue font) is Evaluations and Experiments (EAE). This operation documents and evaluates the previous decennial census, while also facilitating preparation for, and planning of, the upcoming decennial census.

Program Management	**Frame**	**Publish Data**
1. Program Management	6. Geographic Programs	21. Data Products and Dissemination
	7. Local Update of Census Addresses	22. Redistricting Data Program
	8. Address Canvassing	23. Count Review
Census/Survey Engineering		24. Count Question Resolution
2. Systems Engineering and Integration	**Response Data**	25. Archiving
3. Security, Privacy, and Confidentiality	9. Forms Printing and Distribution	
4. Content and Forms Design	10. Paper Data Capture	**Other Censuses**
5. Language Services	11. Integrated Partnership and Communications	26. Island Areas Censuses
	12. Internet Self-Response	
	13. Non-ID Processing	
	14. Update Enumerate	
	15. Group Quarter	**Test and Evaluation**
Infrastructure	16. Enumeration at Transitory Locations	27. Post Enumeration Survey (PES) Design and Estimation
31. Decennial Service Center	17. Census Questionnaire Assistance	28. PES Matching
32. Field Infrastructure	18. Nonresponse Followup	29. PES Field Operations
33. Decennial Logistics Management	19. Response Processing	30. Evaluations and Experiments (EAE)
34. IT Infrastructure	20. Federally Affiliated Count Overseas	
	35. Update Leave	

Source: Adapted from 2020 Census Operational Plan, Version 5.0, January 2022, p.14.

Figure 1. 2020 Census Operations[9]

B. Components of the 2020 Census EAE Operation

The 2020 EAE operation includes the following three components:[10]

- Operational Assessments (OAs). "These studies document final volumes, rates, and costs for individual operations or processes using data from production files and activities and information collected from debriefings and lessons learned.

[8] The operational areas are defined by the eight top-level elements of the 2020 Census work breakdown structure (WBS).

[9] The numbering of operations is taken from the source figure and corresponds to WBS numbering. The Infrastructure operational area is grouped with Program Management and Census/Survey Engineering in the left column, since those three operational areas represent what the source figure classifies as "support" operations.

[10] The 2020 EAE operation also includes three quality control reports and one "topic" report on quality impact of the COVID-19 pandemic. The quality control reports and the topic report fall outside the scope of the IDA team's evaluation of the EAE operation.

They do not include evaluative analyses. Operational assessments present planned versus actual variances as they relate to budget, schedule, and workloads…."[11]

The 2020 Census includes 47 OAs—some that have been completed and some that are in progress. Appendix B provides a crosswalk of the 35 operations to the 47 OAs. As shown there, five operations will have no OAs, while several other operations will have multiple OAs.

- Evaluations. "These studies aim to describe the effectiveness of census components and the impact that they have on topics such as data quality and coverage. These reports present analysis and interpretation of quantitative and qualitative data pertaining to decennial census operations, processes, systems, and auxiliary data collections."[12]

  The 2020 Census includes 13 evaluations, which are listed in Appendix C. Five evaluations focus on specific operational components of the 2020 Census, and eight evaluations focus on the communications campaign and tracking of public perception.

- Experiments. "These studies … are quantitative or qualitative studies that must occur during a decennial census to produce results that are meaningful for the planners of the next one. In general, decennial census experiments involve comparisons (usually of response rates) between a control group that reflects 2020 Census production methods or procedures and a treatment group(s) that tests modifications to them."[13]

  The 2020 Census includes three experiments: (1) *Real-Time 2020 Administrative Census Simulation*, (2) *Extending the Census Environment to the Mailing Materials*, (3) *Optimization of Self-Response in the 2020 Census*.

C. Role of the EAE Operation in the Decennial Census Performance Improvement Life Cycle

As shown in Figure 2, the EAE operation, which consists of evaluations, experiments, and OAs, is intended to inform the next decade's R&T phase, which is in turn intended to inform the design of that decade's decennial census. The notional performance improvement life cycle shown in the figure is designed to improve the decennial census from decade to decade through a well-orchestrated program of measuring, evaluating, experimenting, researching, and testing. To facilitate this process, the Census Knowledge

[11] Census Evaluations and Experiments (EAE), https://www.census.gov/programs-surveys/decennial-census/decade/2020/planning-management/evaluate/eae.html, 2020 | Operational Assessments.

[12] Ibid, 2020 | Evaluations.

[13] Ibid, 2020 | Experiments.

Management Database (sometimes referred to as the Recommendations Management Portal) was established following the 2010 Census to capture and manage recommendations resulting from the EAE operation and other sources.

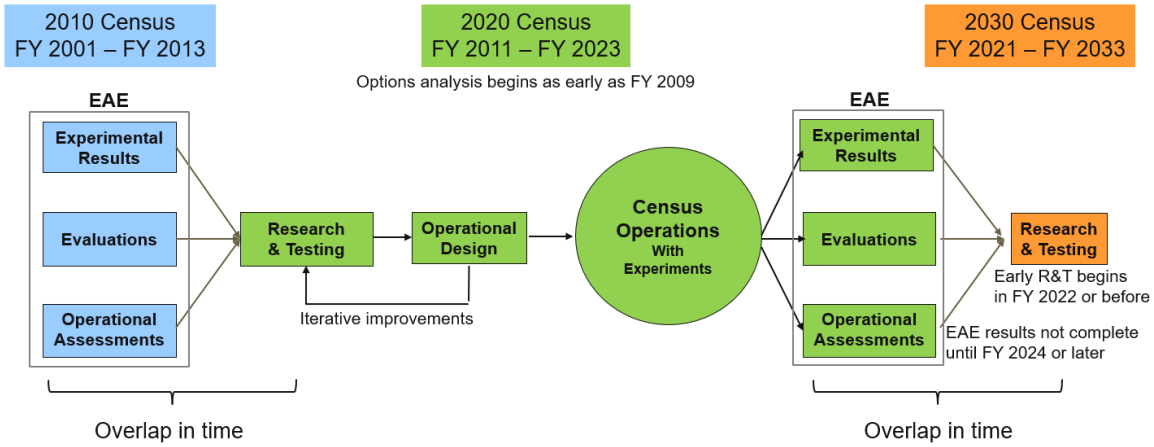

Figure 2. Decennial Census Performance Improvement Life Cycle (notional)

D. Independent Evaluation of the 2020 Census EAE Operation

On August 23, 2022, the Department of Commerce Office of Inspector General (OIG) announced that it had contracted with IDA to perform an independent evaluation of the operational assessment component of the Census Bureau's 2020 Census EAE operation. The stated objective was "to determine whether the Bureau prepared adequate and timely operational assessments that included the appropriate metrics to support planning for the 2030 decennial research and testing."[14] In the early months of the IDA team's evaluation, the scope of the objective was expanded beyond operational assessments to include the other major components of the 2020 Census EAE operation, namely, evaluations and experiments.

Appendix A summarizes the IDA team's plan and methodology for conducting the evaluation.

[14] Arthur L. Scott, Jr., Assistant Inspector General for Audit and Evaluation, "Evaluation of 2020 Census Experiments and Evaluations Operation," August 23, 2022.

2. Objective, Findings, and Recommendations

A. Objective

The stated objective of this evaluation was to determine whether the Bureau prepared adequate and timely OAs that included the appropriate metrics to support planning for the 2030 decennial R&T. In the early months of the IDA evaluation, the scope of the objective was expanded beyond OAs to include the other major components of the EAE operation, namely, evaluations and experiments.

B. Findings and Recommendations

Our evaluation yielded six findings. The findings and associated recommendations are presented in the following subsections.

1. Finding I: 2020 OAs, evaluations, and experiments were not completed in time to formally inform the development of the Bureau's 2030 R&T agenda

According to the 2020 Census EAE Detailed Operational Plan (DOP), the EAE operation encompasses OAs, evaluations, and experiments.[15] The EAE DOP states that the EAE operation performs several functions, one of which is to contribute "to the formulation of the 2030 Census Research and Testing phase objectives."[16]

Later on, the EAE DOP adds, "The results and lessons learned from the 2020 Experiments, Evaluations, and Operational Assessments will inform the planning process for 2030. Recommendations and lessons learned will be captured in the Census Knowledge Management Database. The 2020 [EAE] results provide recommendations for both new, innovative methods and enhancements to existing methods. Those recommendations serve as critical inputs into mid-decade research and testing."[17]

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[15] *2020 Census Detailed Operation Plan for: 30. Evaluations and Experiments Operation (EAE)* (2020 Census EAE DOP), Version 1.0, September 23, 2019, p. 2.

[16] Ibid, p. 2.

[17] Ibid, p. 47.

In other words, the Census Knowledge Management Database is the Bureau's formal mechanism for "capturing and managing final report recommendations"[18] and is intended to be used by the EAE operation to formally inform the 2030 Census R&T phase.

a. The Census Bureau continues to struggle with the timely release of EAE reports on operational assessments, evaluations, and experiments

2010 CPEX delays. With respect to the 2010 Census Program for Evaluations and Experiments (CPEX),[19] the Department of Commerce OIG reported that the 2020 R&T teams did not receive the CPEX results early enough to take advantage of the CPEX findings in designing their R&T projects.[20] Details were reported in an earlier OIG Report:[21]

> By February 2012, the Bureau had released 14 reports—however, according to its revised schedule, 38 reports should have been released by December 31, 2011. Delays in completing the 109 studies from the 2010 CPEX create a risk that results may not be available as inputs for the thirty-five 2020 Census research projects slated to begin during FY 2012.

2020 OA delays. As of December 2, 2020, the Census Bureau had laid out a schedule showing that 38 of the 53 2020 OAs (72%) that were planned at the time would be completed by the end of FY 2022.[22] However, only 14 of the currently planned 47 OAs (30%) had been internally released by the end of FY 2022. Thus, the Census Bureau again fell behind schedule in terms of the release of OAs.

Census staff informed the IDA team that they cannot identify specific reasons for delays in the internal releases of individual OAs but that the most common reasons are: "(1) Staff assigned to conduct an operational assessment were responsible for other 2020 Census production activities deemed to be a higher priority than the operational assessment; (2) Delays in the availability of data needed to answer assessment questions; (3) Loss of key staff from an Integrated Project Team; and (4) Comments from internal reviews resulted in additional analysis/content for the operational assessment report." The

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[18] *2020 Census EAE DOP*, September 23, 2019, p. 13.

[19] During the 2010 Census, what is now known as the EAE operation was referred to as the CPEX program.

[20] OIG-14-003-A, p. 10.

[21] OIG-12-023-1*, 2020 Census Planning: Delays with 2010 Census Research Studies May Adversely Impact the 2020 Decennial Census*, April 5, 2012, https://www.oig.doc.gov/OIGPublications/OIG-12-023-I.pdf, p. 1.

[22] Randall Neugebauer and Julia Coombs, *Report to CIG [Census Integration Group] on the 2020 Census Evaluations, Experiments, and Operational Assessments*, December 2, 2020, slide 4.

Bureau also noted that the COVID-19 pandemic introduced operational challenges that contributed to the magnitude of delays.

Projected dates of OA internal releases. The IDA team reviewed study plans to gain insight into early projections of when OAs would be released and then compared the study-plan-projected dates to the actual dates of the releases. As shown in Figure 3,[23] many of the study plans projected that OAs would be internally released in FY 2021 or early FY 2022. However, the internal releases have slipped by up to 20 months.

Again, as with the dates reported to the Census Integration Group (CIG) in December 2020, study plans showed OA release dates that turned out to be significantly earlier than actual release dates. In other words, despite early planning that aimed to support the timely release of OAs, the Bureau did not meet the target dates.

Projected dates of internal releases of evaluation and experiment reports. The IDA team also looked at the delays in the internal releases of evaluation and experiment reports. The pattern was similar. As shown in Figure 4, study plans aimed for nearly a dozen reports to be internally released in FY 2021 and FY 2022, but only two reports had been released by the end of FY 2022. One report is expected to be delayed by two years, and another report is expected to be delayed by almost three years.

[23] The figure excludes an OA if (1) one of the two dates was missing, (2) the delay was minimal (e.g., two days), or (3) the actual release date preceded the projected release date.

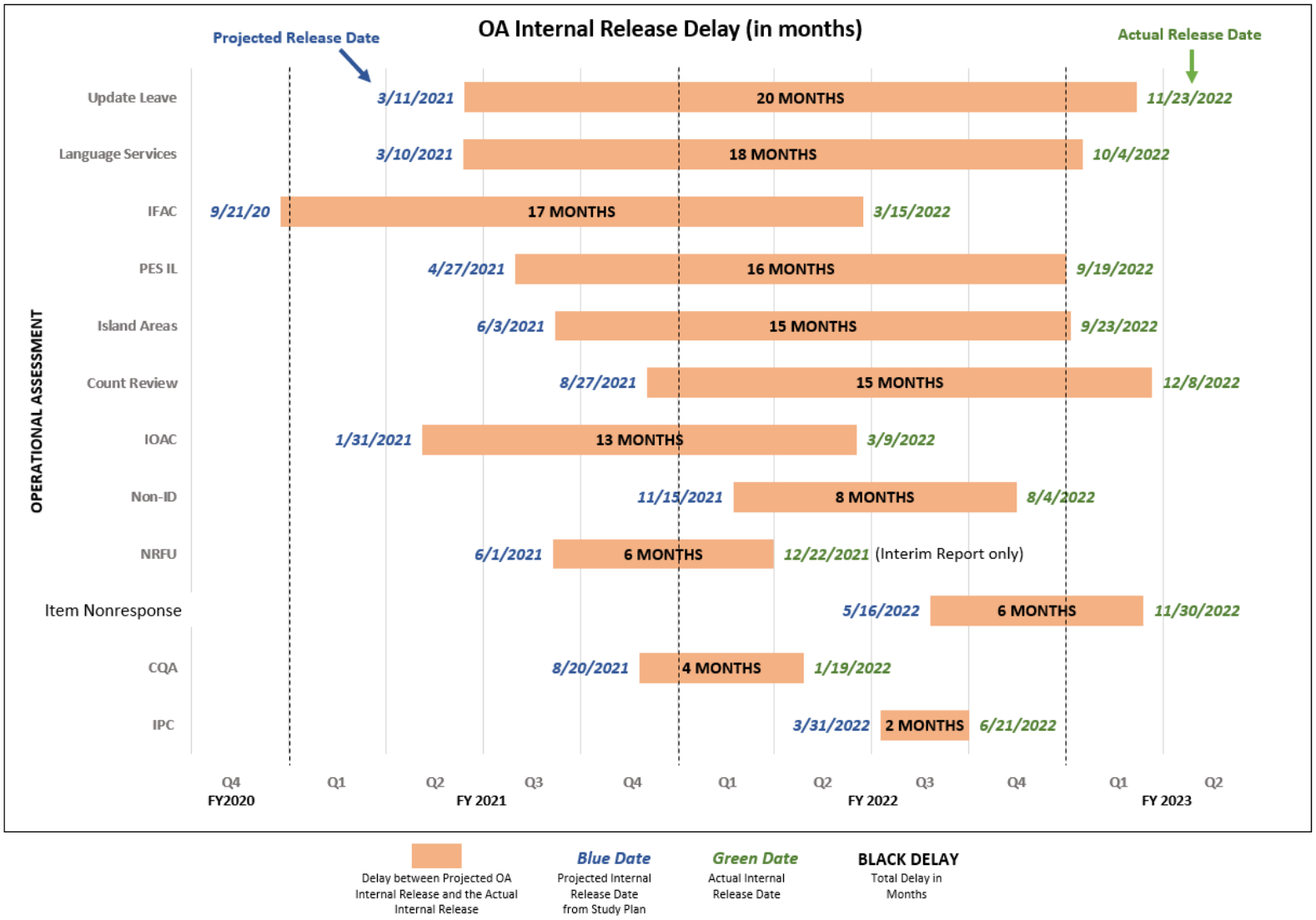

Figure 3. Internal Release Delays for Selected Operational Assessments

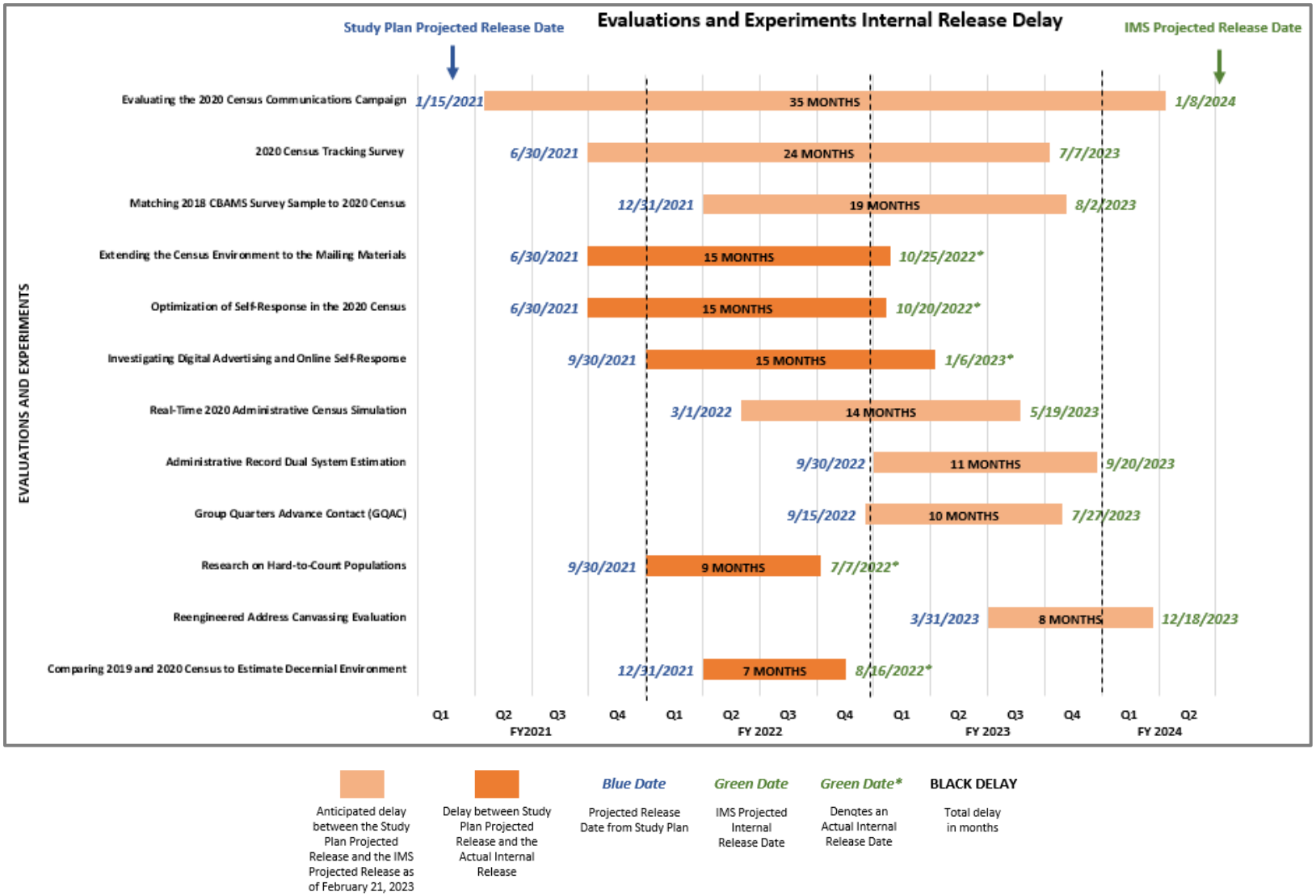

Figure 4. Internal Release Delays for Selected Evaluation and Experiment Reports

b. The 2020 EAE delays meant that EAE recommendations were not brought under formal management in the Census Knowledge Management Database in a timely manner, thus hindering downstream work for the 2030 Census

In an effort to add discipline and rigor to the tracking of recommendations, the Census Bureau established a Census Knowledge Management Database in the years following the 2010 Census.[24] The recommendations made in OA, evaluation, and experiment reports are entered into the Census Knowledge Management Database[25] when the reports are internally released.[26,27] This means that the recommendations of only 13 of the expected 47 OAs were in the Census Knowledge Management Database as of the end of FY 2022.[28] Once the recommendations are in the Census Knowledge Management Database, they are "assigned to program managers, who derive action plans on how the recommendations will be addressed in early 2030 R&T efforts."[29]

According to the 2020 Census EAE DOP, it is possible for preliminary results to be reported to the Executive Steering Committee (ESC). The EAE DOP states:[30]

> If final results from evaluations, experiments, and operational assessments are unavailable in time for early [mid-decade] planning, preliminary results will be provided to ESC for 2030 planning purposes or on an as-requested basis. Preliminary results reflect completion of analysis, but not the subsequent report development and vetting by the DROM WG.

As of the November 7, 2022, extract of the Census Knowledge Management Database, no preliminary recommendations from OAs, evaluations, or experiments had been entered into the Census Knowledge Management Database.

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[24] OIG 14-003-1, 2020 *Census Planning: Research Delays and Program Management Challenges Threaten Design Innovation*, U.S. Department of Commerce, Office of Inspector General, Office of Audit and Evaluation, December 3, 2013, p. 10.

[25] The recommendations in the database are accessed via the Recommendations Management portal.

[26] *2020 Census EAE DOP*, September 23, 2019, p. 49.

[27] The IDA team reviewed the Recommendations Management Portal Extract and confirmed that the "Created Date" field matched the date of the internal release version of the OA (or, in some cases, the data of the internal release memo attached to the OA).

[28] One of the 14 internally released OAs mentioned above in section 1.a is not being publicly released; no recommendations from it were entered into the November 7, 2022, Recommendations Management Portal extract that was provided to the IDA team.

[29] *2020 Census EAE DOP*, September 23, 2019, p. 49.

[30] *2020 Census EAE DOP*, September 23, 2019, pp. 47–48.

Case study: Impact of operational assessment delay on the Nonresponse Followup (NRFU) operation. The objective of the NRFU operation was to enumerate housing units, and the residents thereof, whose addresses were not covered by Internet, mail, or telephone self-responses to the 2020 Census. According to an interim report, the NRFU operation "has historically been the largest and most expensive field operation of the decennial census."[31]

In meetings with the IDA team, the decennial census integrated project teams (IPTs), detailed their efforts to capture lessons learned during the course of their operations and during the early stages of assessment of the operations. As shown in Figure 5, the NRFU operation has 169 lessons learned in a spreadsheet that serves as a lessons learned log or repository. This is a significant amount of raw data, which the IPT responsible for preparing the NRFU OA uses as a source of ideas for identifying formal recommendations. The formal recommendations are documented in the OA and later uploaded to the Census Knowledge Management Database upon internal release of the OA.

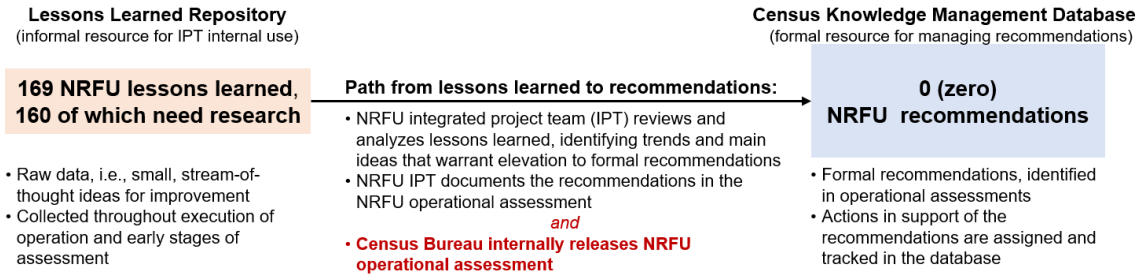

Figure 5. NRFU Lessons Learned vs. Recommendations

However, as of the end of IDA field work, the NRFU OA had not yet been internally released.[32] This is in spite of the fact that both the *2020 Census Operational Plan* and the *NRFU Operational Assessment Study Plan* had indicated that the NRFU OA would be internally released in the summer of 2021.[33,34] Therefore, the NRFU operation has, to date, contributed *no* recommendations to the Census Knowledge Management Database, the

[31] Sarah Gibb, et al., *2020 Census Internal Memorandum: Nonresponse Followup Integrated Project Team*, Version 0.7, December 9, 2021, p. 3.

[32] The IMS (February 22, 2023) projects that the NRFU Operational Assessment will be internally released on August 31, 2023. The EAE website projects that it will be publicly released in March 2024 (https://www.census.gov/programs-surveys/decennial-census/decade/2020/planning-management/evaluate/eae.html, accessed May 29, 2023).

[33] *2020 Census Operational Plan*, Version 5.0, February 4, 2022 (unchanged since Version 4.0 of February 1, 2019), p. 136; *2020 Census NRFU OA Study Plan*, Version 0.5, May 28, 2021 (unchanged since Version 0.4 of September 10, 2019), p. 61.

[34] However, on December 22, 2021, an internal memorandum providing an initial analysis of the NRFU operation was released. This did not include recommendations.

Bureau's mechanism for formally managing recommendations, which entails assigning the recommendations to program managers, "who derive action plans on how the recommendations will be addressed in early 2030 R&T efforts." [35]

In other words, raw data, in the form of 169 lessons learned, is residing in an informal spreadsheet available for IPT internal use. However, the key ideas stemming from these lessons learned have not been elevated to the level of formal recommendations in the Census Knowledge Management Database. This means that no NRFU recommendations have been brought under formal management.

c. The Census Bureau relies on informal sharing of EAE results

In response to a question from the IDA team on the linkages between the EAE operation and the R&T phase, the Census stated:

> There are strong linkages between the assessments and research projects. The results of the experiments conducted during 2020 fed into 2030 research. Just because we have not published the report, it does not mean we are not using the information internally. The connection is more organic.

The IDA team followed up by asking whether there is enough lead time for the EAE program to impact the R&T phase. The Census responded:

> Yes. The teams can take recommendations into the research project phase. It happens naturally internally. Just because the assessment is not done, it does not mean that ideas are not being shared.

These sentiments attest to the same informal processes described by the Census Bureau's response to Finding IIA of OIG Report OIG-14-003-A, "… the R&T teams working on the 2020 research are staffed mostly with the people who conducted the 2010 CPEX research. Therefore, they bring the knowledge of the CPEX findings and recommendations to the R&T teams."[36]

According to a recent document, the Census Bureau recognizes the importance of defining a formal process for managing recommendations:

> Effective RM [recommendation management] ensures not only that information is captured, but also that a process is in place to ensure that the information is shared and used. The 2030 Census Recommendation

[35] *EAE DOP*, p. 49.

[36] OIG-14-003-A, *2020 Census Planning: Research Delays and Program Management Challenges Threaten Design Innovation*, U.S. Department of Commerce, Office of Inspector General, Office of Audit and Evaluation, December 3, 2013, p. 31.

> Management [RM] Plan documents the process for ensuring that the right information gets to the right people at the right time.[37]

The RM Plan builds on the capability provided by the Census Knowledge Management Database.[38] The RM Plan centers on the use of an RM Portal that serves as an interface to the underlying database.[39] It defines a detailed process flow diagram that "provides the steps, decisions, and workflow associated with the RM process."[40]

Recommendations[41]

We recommend that the Director of the Census Bureau:

1. Ensure that the 2030 EAE reports are released in a timely manner.
2. Establish a formal process to share recommendations and lessons learned from the EAE operation prior to the internal release of EAE reports, with the intention of expediting the incorporation of feedback that is crucial to the next decennial's research and testing.

2. Finding II: The 2020 Census EAE research program failed to prioritize the evaluation of two of the four key 2020 innovation areas and the investigation of a potentially significant 2030 innovation

During the course of IDA's interviews of Census Bureau personnel, researchers from evaluation and experiment projects acknowledged that the Decennial Research Objectives and Methods Working Group (DROM WG or simply DROM) provides strategic guidance, but they seemed to consider the guidance broad and generic. Researchers said they looked to their own past experience, previous research, and expertise for project ideas and were, in general, able to align their ideas to the broad DROM priorities. Some researchers explicitly said they preferred this "bottom up" approach to the development of a research agenda, in which researchers rather than leadership decide what research to pursue. One key advantage of EAE relative to other Bureau research programs is that EAE offers the opportunity to conduct research in the unique environment of the decennial as it unfolds. While EAE is not the sole source of decennial research, it is an important program that can accelerate innovation, particularly with respect to the evaluations and experiments.

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[37] *2030 Recommendation Management Plan*, Version 2.0, July 6, 2022, p. 1.

[38] Ibid, p. 1.

[39] Ibid, p. 14.

[40] Ibid, p. 5.

[41] The recommendations in this report are numbered consecutively from 1 to 10.

As it turned out, the 2020 Census EAE research agenda had some strategic shortfalls:

- Evaluation of 2020 innovation areas. The *2020 Census Operational Plan*, Version 5, discusses four key innovation areas: (1) reengineering address canvassing, (2) optimizing self-response, (3) utilizing administrative records and third-party data, and (4) reengineering field operations.[42] As stated in the EAE Detailed Operational Plan (DOP), "The 2020 CPEX includes studies [evaluations and experiments] on two of the four 2020 Census innovation areas: *reengineering address canvassing* and *optimizing self-response*."[43]

  The EAE DOP noted that the other two innovation areas—*utilizing administrative records and third-party data records* and *reengineerimg field operations*—would be examined via OAs.[44] However, as pointed out in the EAE DOP, OAs do not include "evaluative analyses."[45] This indicates that the latter two of the four innovation areas were not prioritized in terms of evaluation within the scope of the EAE program.

- Investigation of a potentially significant 2030 innovation.[46] Three experiments and evaluations that would have been particularly relevant to an administrative-records-based census were dropped between July 2018 and September 2019: (1) Contact Strategies Tailored to Populations Missed in an Administrative-Records-Only Census, (2) Research on Coverage of Underrepresented Populations in Anticipation of a Records-Based Census, and (3) Preparing for a Records-Based Census: Measuring Race, Ethnicity, Language, and Other Difficult Concepts.[47]

  This is in spite of the fact that the main recommendation of the JASON advisory group[48] in its 2016 *Alternative Futures for the Conduct of the 2030 Census* was that "the Census Bureau consider starting the 2030 Census with an 'in-office'

[42] *2020 Census Operational Plan*, Version 5.0, January 2022, Chapter 3, "The Four Key Innovation Areas," pp. 15–30.

[43] *2020 Census EAE DOP*, Version 1.0, September 23, 2019, p. 10.

[44] Ibid.

[45] Ibid, p. 10.

[46] See Figure C-1 for a summary of changes to EAE program.

[47] Memorandum 2018.16*, Scope of the 2020 Census Program for Evaluations and Experiments (CPEX)*, July 6, 2018, https://www2.census.gov/programs-surveys/decennial/2020/program-management/memo-series/2020-memo-2018_16.pdf (Memorandum),https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/2020-CPEX-Scope-Short-Descriptions.pdf (Attachment to Memorandum: List of 2020 Census Evaluations & Experiments). Also see Appendix C.

[48] JASON is an independent scientific advisory group that dates back to the 1960s. It is administratively run through the MITRE Corporation via a contract with the Department of Defense.

enumeration of the population using existing government administrative records."[49]

Thus, the 2020 Census EAE Program failed to incorporate projects addressing strategically significant innovations related to the 2020 and 2030 Census operational designs.

Recommendations

We recommend that the Director of the Census Bureau:

3. Use strategic guidance and priorities to develop and prioritize EAE research.

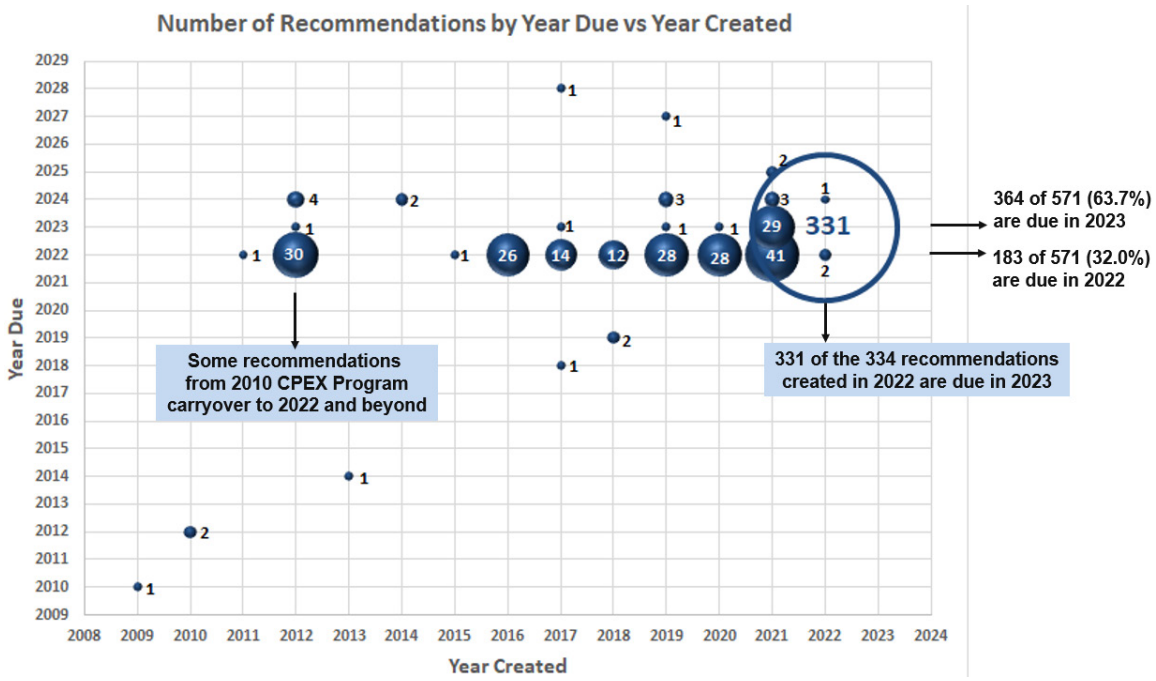
3. Finding III. The Census Bureau has put management processes and tools in place but does not always use them to their potential

The IDA team identified cases in which the Bureau failed to utilize the processes and tools that have been put in place to facilitate management of decennial census research programs. For example, the due dates for the recommendations in the Census Knowledge Management Database lack credibility. The IDA team analyzed a November 7, 2022, extract of the Census Knowledge Management Database to better understand how the database is used. There were 571 recommendations in the database, some dating back to the 2010 CPEX program. Of the 571 recommendations, 274 were attributed to the 2020 Census EAE program. The remaining 297 recommendations came from other sources, including the 2010 CPEX program, the 2020 R&T program, the Government Accountability Office (GAO), the Department of Commerce OIG, and the Census Scientific Advisory Committee.

The IDA team found that the due dates assigned to the recommendations lacked credibility.[50] As shown in Figure 6, 32.0% of the recommendations were due in 2022, and 63.7% of the recommendations are due in 2023. Furthermore, almost all of the recommendations created in 2022—331 of 334 recommendations—are due in 2023. This is not only an unrealistically optimistic schedule, but it also potentially indicates a lack of consideration as to when the recommendations actually need to be resolved to mitigate operational effects or realize the targeted improvement.

[49] JASON (The MITRE Corporation), *Alternative Futures for the Conduct of the 2030 Census*, November 2016, https://www2.census.gov/programs-surveys/decennial/2020/program-management/final-analysis-reports/alternative-futures-2030-census.pdf, p. 2.

[50] The due date for a recommendation is the date by which action should be taken on the recommendation.



Source: Derived by the IDA team from a November 7, 2022, extract of Census Knowledge Management Database

Figure 6. Recommendation Due Dates

Recommendations

We recommend that the Director of the Census Bureau:

4. Utilize existing processes and tools as intended to ensure rigorous and disciplined management of the decennial census.

4. Finding IV: The Census Bureau should standardize the reporting of cost data across EAE products

Per the Census Bureau, OAs are designed to:

> … document final volumes, rates, and costs for individual operations or processes using data from production files and activities and information collected from debriefings and lessons learned. They do not include evaluative analyses. Operational assessments present planned versus actual variances as they relate to budget, schedule, and workloads (production and training).[51]

As stated, OAs are a definitive source of historical data pertaining to cost, schedule, and workload. They should transparently document the costs of the individual operations

[51] "Census Evaluations and Experiments," Accessed: May 2023, https://www.census.gov/programs-surveys/decennial-census/decade/2020/planning-management/evaluate/eae.html.

they assess. GAO's cost guide states that cost estimates should include all costs. The guide further allows for flexibility to exclude costs where information is limited or incomplete so long as steps are taken to clearly define and document the scope of what is included or excluded.[52]

a. The Census Bureau offers little guidance on how OAs should report the costs of assessed operations

The EAE operation provides IPTs with little guidance pertaining to the reporting of cost data. That is, there is a basic template with boilerplate language on cost used by all the OA reports but little guidance to and oversight of the IPT study teams' engagement with Decennial Budget Office (DBO). Cost analysis falls outside of the core competencies of the DROM, which has a research and methods focus. Therefore, subject matter experts from DBO review and provide input to research projects that involve cost analyses during DROM review. Nevertheless, the DROM is responsible for oversight and approval of EAE products. Furthermore, the process by which DBO engages with the OA study teams is ad hoc and encourages neither the comprehensive reporting of financial data nor the standardization of reporting.

b. As a result, the OAs fail to comprehensively and uniformly report the costs of assessed operations

The Census Bureau does not universally report, nor standardize the reporting of, cost data across its EAE research products. As of the completion of IDA field work, 7 out of the 21 OAs lacked reporting of cost or budget data.[53] Furthermore, for those that did report financial data, the EAE operation does not provide guidance on how costs should be calculated and presented. DBO stated that, in most cases, OAs report only field-related costs, which underreport or exclude many other costs that support field operations and other production activities. Underreported costs include contract costs and headquarter resources.[54] Lastly, EAE lacks a rigorous process for engaging with the DBO to extract relevant cost elements. Under the 2020 EAE, DBO reviewed study plans for inclusion of cost or budget reporting and assigned analysts to engage with OA study team leads to better understand their financial analyses. According to the DBO, the data extracts it provided to

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[52] GAO-20-195G, *Cost Estimating and Assessment Guide*, March 2020, "The Four Characteristics of a Reliable Cost Estimate and their Best Practices," p. 39.

[53] Based upon the IDA team's review of OA reports and associated study plans.

[54] For example, Field Infrastructure Operation notes in its report that "The costs that are shown below represent cumulative actuals (without overheads) obtained from the Decennial Budget Office." It further notes that headquarters costs for salaries of those who prepare and support recruiting projects are not included, nor are the costs of developing training by individual field operational areas included in the assessment. *2020 Census Operational Assessment Report Field Infrastructure Operation (FLDI) Recruiting, Onboarding, and Training*, version 1.2, September 9, 2022.

OA study teams were customized to the requirements of each of the study teams and do not permit longitudinal comparisons or comparisons between OAs.

c. The lack of comprehensive and uniform cost reporting hinders cost analysis

The paucity of financial data reported through the OAs hinders the transparency and accountability of decennial census management and operations. While the OAs are intended to be a snapshot of operational performance, the Bureau reports using the reports to "understand drivers of costs." Therefore, failing to comprehensively report costs leads to inaccurate or potentially misleading calculation of operational metrics. OA reports do not make the DBO's scoping decisions explicit in their reporting (e.g., exclusively including field costs, excluding HQ support costs, excluding contract support, etc.). The lack of transparency leads to an increased risk of false conclusions about the cost and performance of some operations or the reasons for the lack of cost data in the reports. Furthermore, it is unclear what costs were included, which data systems were used, and which assumptions or adjustments (such as inflating to constant-year dollars) were applied prior to publication. Collectively, these factors limit the effectiveness of OAs for understanding which operational factors drove costs or savings in the 2020 decennial census.

Recommendations

We recommend that the Director of the Census Bureau:

5. Ensure that integrated project teams (IPTs) responsible for OAs provide the required report elements and document when required report elements are not available or transparency is not permissible.
6. Develop guidelines for the querying and reporting of cost data that permit comparisons between planned and actual costs.

5. Finding V: The Census Bureau should examine delays with respect to the originally planned schedule and not just the latest re-baselined schedule

In its *Schedule Assessment Guide,* GAO focuses on schedule baselining in one of its 10 best practices:

> Maintaining a Baseline Schedule: A baseline schedule is the basis for managing the program scope, the time period for accomplishing it, and the required resources. The baseline schedule is designated the target schedule and is subjected to a configuration management control process. Program performance is measured, monitored, and reported against the baseline schedule. The schedule should be continually monitored so as to reveal

when forecasted completion dates differ from baseline dates and whether schedule variances affect downstream work….[55]

With regard to changing the baseline schedule (i.e., "re-baselining" the schedule), the GAO makes the following points:

- Purpose. "[At times] management may conclude … the current baseline is no longer valid for realistic performance measurement. The purpose of schedule rebaselining is to restore management's control of the remaining effort by providing a meaningful basis for performance management."[56]
- Frequency. "A rebaselined schedule should be rare. If a program is rebaselined often, it may be that the scope is not well understood or simply that program management lacks effective discipline and is unable to develop realistic estimates."[57]
- Change control. "Without a documented, consistently applied schedule change control process, program staff might continually revise the schedule to match performance, hindering management's insight into the true performance of the project."[58]
- Original baseline. "The final version of the current schedule—the "as-built" schedule—represents the plan as executed to completion. [The as-built schedule] can be compared to the original plan for an assessment of lessons learned, and the data [can] become a valuable basis of estimate input for schedule estimates of analogous projects."[59]

Thus, re-baselining the schedule—altering baseline start and finish dates to better align with current expectations—is sometimes warranted to put realistic target dates in place for management purposes. However, the original baseline schedule should be retained so program performance can be "measured, monitored, and reported."[60]

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[55] GAO-16-89G, *Schedule Assessment Guide: Best Practices for Project Schedules*, December 2015, p. 135.

[56] Ibid, p. 140.

[57] Ibid, p. 140.

[58] Ibid, p. 138.

[59] Ibid, p. 136.

[60] GAO-16-89G, *Schedule Assessment Guide: Best Practices for Project Schedules*, December 2015. See Criteria section below for specifics.

a. The Bureau has a practice of focusing on its latest re-baselined schedule when examining variances between planned and actual schedules

With respect to best scheduling practices for re-baselining, the Bureau is in good shape in two important ways:

- First, the Bureau has a change control process in place to manage changes to its baseline schedule.
- Second, the Bureau maintains its integrated master schedule (IMS) in Primavera P6, a leading enterprise project management software system. Primavera P6 has the capability to preserve multiple snapshots of schedules—for example, the original baseline schedule and subsequent re-baselined schedules. According to a recent GAO report, the Bureau exercises the Primavera P6 capability to archive monthly snapshots of its IMS.[61]

However, the Bureau falls short in terms of leveraging its archived schedules to (1) compare actual start and finish dates of activities to originally planned start and finish dates and (2) understand the causes for any schedule delays.

For example, OAs are supposed to compare planned schedules to actual schedules. However, in most cases, the OAs explicitly say that they are comparing the actual schedule to "the final baselined version of 2020 Census Integrated Master Schedule." [62]

b. The Bureau's lack of attention to the originally planned schedule has consequences

When actual schedules are compared to the latest re-baselined schedule rather than to the originally planned schedule, three things happen:

- Schedule delays are masked. As stated in OIG-14-003-A, "the bureau's practice of altering baselines in schedules—called re-baselining—obfuscates delays to project activities."[63]

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[61] GAO-23-105819, *2020 Census: A More Complete Lessons Learned Process for Cost and Schedule Would Help the Next Decennial*," March 2023, p. 26. https://www.gao.gov/products/gao-23-105819.

[62] This is true for the following OA reports: Local Update of Census Addresses (LUCA), p. 2; Non-ID Processing (NID), p. 5; Census Questionnaire Assistance (CQA), p. 24; Federally Affiliated Count Overseas (FACO), p. 2; Count Review (CRO), p. 3; Archiving (ARC), p. 1; Island Areas Censuses (IAC), p. 10; Post-Enumeration Survey Initial Housing Unit Matching (PES-IHU), p. 5; PES Independent Listing (PES-IL), p. 5; Field Infrastructure Recruiting, Onboarding, and Training (FLDI-ROT), p. 38; Decennial Logistics Management Logistics Management Support (DLM-LMS), p. 8; DLM Space Acquisition and Lease Management (DLM-SLM), p. 13; Update Leave (UL), p. 6.

[63] OIG-14-003-A, *2020 Census Planning: Research Delays and Program Management Challenges Threaten Design Innovation*, U.S. Department of Commerce Office of Inspector General, December 3, 2013, p. 5. https://www.oig.doc.gov/OIGPublications/OIG-14-003-A.pdf.

- Variances between originally planned schedules and actual schedules go unexamined.
- Lessons that could be used to improve scheduling estimates for the next decennial census are not learned.

The importance of comparing actual schedules to originally planned schedules can be demonstrated by examining the schedules of the OAs themselves.[64] Figure 7 illustrates the timeline for the In-Field Address Canvassing (IFAC) OA with three delineated dates: (1) the study-plan-projected date of the OA's internal release, (2) the IMS-projected date of the OA's internal release (based on the latest re-baselined IMS), and (3) the actual date of the OA's internal release.

As shown in the figure, comparing IMS-projected release dates to actual release dates only tells a part of the story. Early plans, as set forth in the IFAC study plan, aimed for the IFAC OA to be internally released by September 2020.[65] However, the latest version of the IMS baseline schedule shows a December 2021 due date for the OA, and it was actually internally released in March 2022. The gap between the study-plan-projected date of release and the actual date of release (over 17 months) needs to be examined, so that delays can be understood and mitigations put in place, if necessary, to meet proposed target dates for 2030 OAs.[66]

[64] The IDA team was given OA study plans, as well as IMS excerpts related to OA activities. Therefore, we were able to explore variances between study-plan-projected dates of OA completions and actual dates of completion. We did not have access to the full IMS and thus could not explore variances in original baseline schedules and actual schedules for the operations on which the OA were reporting.

[65] The IDA team did not have access to the original baseline schedule and decided to use study-plan-projected dates as a proxy for the dates in that schedule.

[66] Looking back, study plans for 2020 Census OAs were optimistic about when they would become available, even though 2010 OAs had been similarly delayed. See Section 2.A.1 for details.

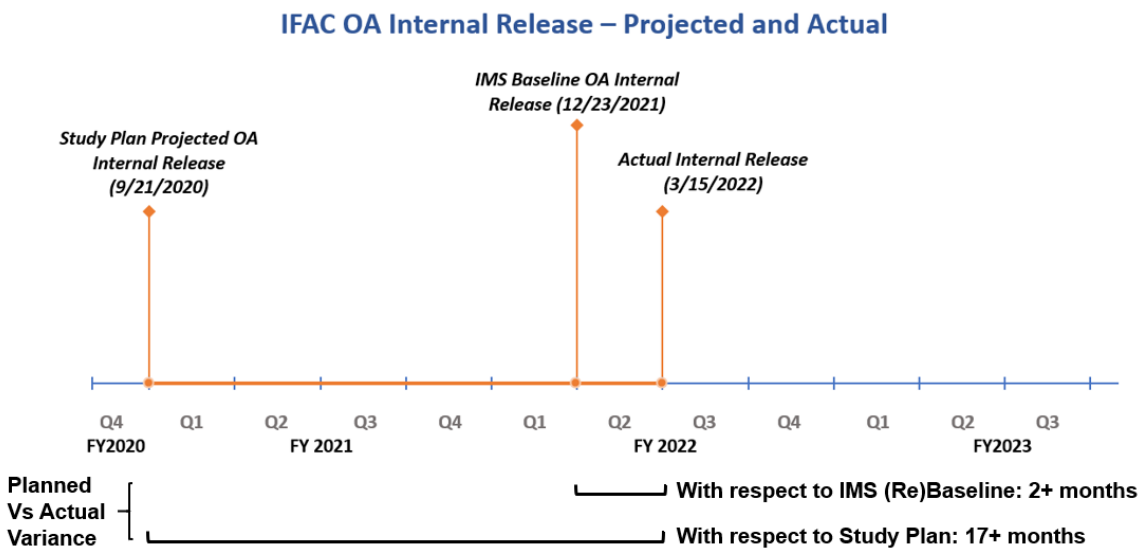

Figure 7. Early Planned, Latest Planned, and Actual Dates of OA Report Releases

Recommendations

We recommend that the Director of the Census Bureau:

7. Extend the Bureau's analysis of scheduling delays to examine variances between originally planned baseline start and finish dates and actual start and finish dates.
8. Use what is learned from this analysis to improve its scheduling estimates for the next decennial census.

6. Finding VI: The Census Bureau should resource load the activities in the decennial census integrated master schedule (IMS)[67]

In its *Schedule Assessment Guide*,[68] the GAO calls out resource loading as one of 10 best scheduling practices:

> Best Practice 3, Assigning Resources to All Activities: The schedule should reflect the resources (labor, materials, travel, facilities, equipment, and the like) needed to do the work, whether they will be available when needed, and any funding or time constraints.[69]

The GAO follows up with some important points about resource loading:

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[67] As defined in GAO-16-89G, p. 49, a "resource-loaded" schedule is one in which all required labor and significant materials, equipment, and other resources are assigned to appropriate activities. The process of assigning resources to activities is known as "resource loading" the schedule.

[68] GAO-16-89G, *Schedule Assessment Guide: Best Practices for Project Schedules*, December 2015.

[69] Ibid, p. 49.

- "Representing all resources in an IMS may be difficult for complex programs… [T]he more complex a program is, the more complex the IMS may become."[70]
- "Including resources in a schedule helps management compute total labor and equipment hours, calculate total project and per-period cost, resolve resource conflicts, and establish the reasonableness of the plan."[71]
- "A schedule without resources implies an unlimited number and availability of resources."[72]
- "Resource information can be stored within the schedule files or it can be stored externally in separate software, but a best practice is to store resources in the schedule itself."[73]

a. Previous GAO findings

In this section, our focus is on the decennial census IMS activities related to OAs, evaluations, and experiments. However, the Bureau's failure to undertake resource loading is a long-standing issue that applies to all activities in the IMS.

For example, in 2009, the GAO found that the Bureau's scheduling fell short of meeting GAO-identified best practices. One issue was that the Bureau "does not identify the resources needed to complete activities, making it difficult for the Bureau to evaluate [either] the costs of schedule changes or the resource constraints that may occur at peak levels of activity."[74]

In 2017, the GAO added the 2020 Decennial Census to its High-Risk List.[75] As part of its rationale for doing so, the GAO called attention to the Bureau's failure to resource load its schedules:

> We have recommended that the Bureau also ensure that its scheduling adheres to leading practices and be able to support a quantitative schedule risk assessment, such as by having all activities associated with the levels of resources and effort needed to complete them. The Bureau has stated that

[70] Ibid, p. 49.

[71] Ibid, p. 52, "Loading Activities with Resources."

[72] Ibid, p. 52, "Loading Activities with Resources."

[73] Ibid, p. 52, "Loading Activities with Resources."

[74] GAO-10-59, *Census Bureau Has Made Progress on Schedule and Operational Control Tools, but Needs to Prioritize Remaining System Requirements*, November 2009, "What GAO Found."

[75] GAO-17-317, *High-Risk Series: Progress on Many High-Risk Areas, While Substantial Efforts Needed on Others*, February 2017, Highlights, "What GAO Found." GAO's High-Risk List, updated at the start of each new Congress, is a list of "programs and operations that are vulnerable to waste, fraud, abuse, or mismanagement, or in need of transformation." See https://www.gao.gov/high-risk-list.

> it has begun maturing project schedules to ensure that the logical relationships are in place and plans to conduct a quantitative risk assessment. We will continue to monitor the Bureau's efforts.[76]

In 2018, GAO reviewed the schedules for three projects related to two large Census field operations: address canvassing and nonresponse followup. The GAO found that "none of the selected schedules contain information on resource needs and availability."[77] The GAO went on to say that the Bureau had previously stated its intention to begin resource loading its schedules, but that the Bureau had not made progress toward this goal as of May 2018. The GAO further reported that "Bureau officials have now stated that it would require additional staffing in order to plan for and implement this recommendation."[78]

b. The implementation of resource loading requires (1) identification of needed resources, (2) suitable scheduling tool(s), and (3) skilled personnel

Three requirements must be met to effectively resource load a schedule:

- Identification of needed resources. The resources needed to do the work outlined in the schedule must be identified and assigned to the activities in the schedule. As stated in GAO-16-89G, "The schedule should realistically reflect the resources that are needed to do the work…."[79]
- Scheduling tool(s). As stated in a recently published guide on integrated master plans and integrated master schedules, "The IMS should be created using a commercial-off-the-shelf (COTS) scheduling software application…."[80] The resources can be stored in the scheduling files maintained by the IMS application itself, or they can be stored in separate software.[81]
- Skilled personnel (i.e., schedulers). GAO-16-89G refers to the personnel who do the scheduling and resource loading as "schedulers."[82] A Defense Acquisition University publication on integrated master schedules describes several technical skills (e.g., scheduling art mastery, software tool skills), knowledge sets (e.g.,

[76] Ibid, p. 43, "What Needs to Be Done."

[77] GAO-18-589, *Bureau Has Made Progress with Its Scheduling, but Further Improvement Will Help Inform Management Decisions*, July 2018, "What GAO Found."

[78] Ibid, "What GAO Found."

[79] GAO-16-89G, p. 49.

[80] Office of the Executive Director for Systems Engineering and Architecture in the Office of the Under Secretary of Defense for Research and Engineering, *Integrated Master Plan and Integrated Master Schedule Preparation and Use Guide*, May 2023.

[81] GAO-16-89G, p. 52.

[82] GAO-1F6-89G, p. 7.

knowledge of the specific program to which the schedule applies, general program management knowledge), as well as behavioral traits (e.g., strong communication skills, strong team building skills, leadership) that a scheduler should have. The publication also summarizes the demands placed on schedulers by each of the ten GAO best scheduling practices. With respect to Best Practice 3, the publication states that "[t]he scheduler must 'pull' resource information from IPT leads and other project elements."[83]

c. The Census Bureau falls short of meeting requirements and best practices for resource loading

Identification of needed resources: Study plans should be an initial source of information on resources—in particular, census staff resources—needed to complete OAs, evaluations, and experiments. However, upon examining the study plans for the OAs, evaluations, and experiments selected for detailed analysis, the IDA team found that the study plans did not identify the census staff resources needed to conduct analyses and to document results.[84] On the other hand, the study plans often contained sections devoted to the following topics: data requirements, assumptions, risks, limitations, and issues that need to be resolved. Thus, the IDA team inferred that the study plan templates called for each of these topics to be addressed but that they did not specifically call for census staff resources to be identified.

Importantly, the IDA team found that several of the study plans recognized availability of sufficient census staff resources as a risk. See, for example, the excerpts in Table 1. However, since the study plans did not specify what they meant by "sufficient" staff in terms of numbers and skillsets, risks related to schedule could not be assessed and mitigated.

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[83] Pat Barker, *Practical Advice for Integrated Master Schedules*, Defense Systems Management College, Defense Acquisition University, https://www.dau.edu/sites/default/files/Migrated/ToolAttachments/Practical%20Advice%20for%20Integrated%20Master%20Schedules.pdf.

[84] Two of the experiment study plans (*Extending the Census Environment to the Mailing Materials* and *Optimization of Self-Response in the 2020 Census*) called out resources (e.g., National Processing Center resources) needed to actually perform the experiment, as opposed to conducting analyses and documenting results. In addition, two of the evaluation study plans (*Research on Hard-to-Count Populations* and *Evaluating Privacy and Confidentiality Concerns*) called out the need for contractor support in designing and implementing the evaluation.

Table 1. Selected Study Plan Excerpts on Staff Resources

OA/Experiment/ Evaluation	Study Plan Excerpts on Staff Resources
IFAC	**Risks**: "Many of the census personnel assigned to research, develop, and author the operational assessment report are also resources for other critical census operations. If staff are unable to work on this operational assessment report due to conflicting responsibilities, then these analyses and the delivery of the final report may be delayed."
IOAC	**Risks**: "Many of the census personnel assigned to research, to develop, and to author the assessment report are also resources for other critical census operations. If staff are unable to work on the assessment report because of conflicting responsibilities, then these analyses may be delayed."
ISR	**Risks**: "If Census Bureau staff is not available to conduct our analysis, then we will be unable to conduct our stated research plans."
NRFU	**Assumptions**: "Sufficient resources in the form of staff, technology, and time will be available to perform the NRFU operational assessment and document the results."
PES-IL	**Risks**: "Many of the census staff assigned to research, develop, and author the assessment reports also support 2020 PES production activities and other critical census operations. These other operations or assessments will be implemented during the same time period as the assessment work for IL. If staff are unable to work on the assessment because of overwhelming production responsibilities, then these assessment development activities will need to be delayed until a more acceptable time."
RT Admin Record Census Sim	**Risks**: "If the Census Bureau does not provide full funding for staff or provide staff with the needed skills, then the project scope will have to be narrowed."
Admin Record Dual Sys Est	**Risks**: "If the staff need to put more time into these production activities, this evaluation may be delayed. The staff for this evaluation will be involved in production activities for the 2020 Census and 2020 PES."

Scheduling tool(s): Census Bureau's approach to resource loading. When the IDA team asked about resource loading, the Census Bureau described its approach as follows: "The Bureau's solution for resource loading is Project Server. We use Project Server to resource load, not [Primavera] P6. We resource load at the budget code project level (typically Program WBS L3/L4) and we use Power BI to comingle data from [Project] Server, WebTA, and the IMS [P6]."[85]

The IDA team agrees that this is a step in the right direction but observes the following:

- As noted above, a best scheduling practice is to store resources in the IMS itself.[86] Doing so would allow the full power of the underlying system, Primavera P6, to be brought to bear on schedule management.
- The Census Bureau's approach relies on census staff bringing together the capabilities of four separate software tools from three different companies: Primavera P6, Project Server, WebTA, and Power BI. Effectively integrating such tools can be challenging.

[85] WebTA is a web-based time and attendance service.

[86] GAO-16-89G, p. 52, "Loading Activities with Resources."

- Work breakdown structure (WBS) levels 3 and 4 may not capture individual OAs, evaluations, and experiments, meaning the resources needed to complete them are not distinguished from the resources needed to complete higher level work activities. For example, OAs are performed as part of their underlying assessed operations, and evaluations and experiments are performed as part of the EAE operation. The lack of granularity may not provide sufficient detail to proactively identify and mitigate schedule risk.

Availability of Census Bureau staff with requisite scheduling skills. In its response to the GAO in 2018, the Census Bureau indicated that it would require additional staff to resource load its schedules.[87]

d. Failure to resource load schedules contributes to schedule delays

The failure to resource load schedules hinders the ability of the Bureau to effectively manage schedules and perform risk assessment and mitigation. This can lead to schedule delays.

Increased likelihood of schedule delays. GAO asserts that the failure to resource load a schedule contributes to schedule delays: "If the schedule does not allow insight into current or projected allocation of resources, then the likelihood is significantly increased that the program may slip or need additional resources to complete on time."[88]

Actual schedule delays. The IDA team asked the Census Bureau to identify reasons for delays in the internal releases of selected OAs. The Census Bureau responded as follows:

> [T]he most common reasons for delays to the internal release dates of operational assessment reports are as follows: (1) Staff assigned to conduct an operational assessment were responsible for other 2020 Census production activities deemed to be a higher priority than the operational assessment; (2) Delays in the availability of data needed to answer assessment questions; (3) Loss of key staff from an Integrated Project Team; and (4) Comments from internal reviews resulted in additional analysis/content for the operational assessment report.

Notably, reasons 1 and 3 deal with census staff resources. It is possible that the staff resource risks could have been identified and mitigated if the required staff resources had been identified in advance and subsequently tracked.

[87] GAO-18-589, "What GAO Found."

[88] GAO-18-589, "What GAO Found."

Recommendations

We recommend that the Director of the Census Bureau:

9. Adopt the GAO best scheduling practice of resource loading the activities in its IMS, including those activities associated with OAs, evaluations, and experiments.

   This may involve taking the following steps:

   a. Revising the study plan templates to address resources—including census staff resources in terms of numbers, skill sets, and levels of effort—required to complete all OAs, evaluations, and experiments.

   b. Leveraging the resource loading capabilities of its project management software capability, Primavera P6, on behalf of the activities associated with OAs, evaluations, and experiments. Using Primavera P6 for resource loading would align with the GAO best practice of storing resources in the IMS itself.

   c. Acquiring additional contractor support if current in-house and contractor staff do not have the time and skillsets necessary to resource load schedules and leverage the resulting resource-loaded schedules in performing quantitative schedule risk assessments.

10. Develop mechanisms to better account for the required resources to complete EAE activities to aid in the planning and execution of future EAE operations.

3. Other Matters

A. The Census Bureau should strengthen the process of reviewing operational assessments

The IDA team observed issues with the review of OAs. The assessment of each decennial census operation is performed largely by the same IPT that executed the operation, making the assessments vulnerable to breaches of objectivity regarding the operation's performance and opportunities for future improvement. While the Census Bureau was able to draw upon subject matter expertise from the DROM, this fundamental element of self-assessment may pose risks with respect to the objectivity and usefulness of OAs. The Bureau provided evidence of EAE products receiving extensive review through multiple research governance bodies. However, IDA noted that key report elements, notably cost in OA reports, remained missing.

4. Summary of Agency Response

In its December 22, 2023, response to IDA's draft report, the Bureau concurred with recommendations 1-6 and 8-10 and partially agreed with recommendation 7. After issuance of the draft report, IDA met with the Bureau to clarify the intent and context of some of the findings and recommendations. Based upon this discussion and additional documentation provided by the Bureau, IDA refined the wording of some recommendations and findings to better align with IDA's intent. IDA also moved one draft finding to Other Matters. This was based upon additional documentation provided by the Bureau that was unavailable during IDA's fieldwork. Lastly, IDA removed an example in support of Finding 3 that was out of scope of the EAE operation. The Bureau also provided technical comments on the report. IDA considered these comments and made changes in the final report where appropriate. The Bureau's formal comments are included in Appendix D.

In its response to recommendation 7, the Bureau acknowledges that timeliness and schedule are important, but does not see the utility of analyzing schedule variances between baseline schedule dates and actual schedule dates. The Bureau cites the dramatic schedule changes due to the COVID-19 pandemic. IDA notes that analysis of the original baseline schedule would serve to improve and refine scheduling estimates during typical decennial years and to document the magnitude of unanticipated delays attributable to atypical operating conditions, such as during a global pandemic.

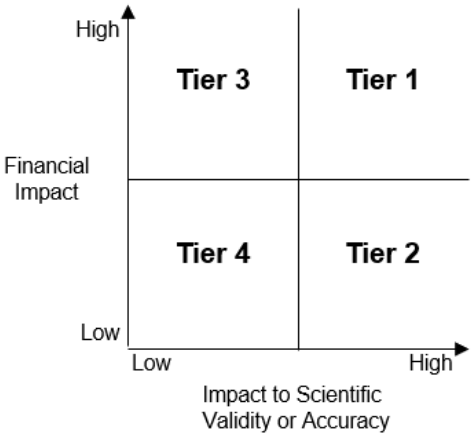
IDA is pleased that the Bureau concurs with nine of its recommendations and partially agrees with the remaining one, and IDA looks forward to reviewing the Bureau's proposed action plan.

Appendix A. Objective, Scope, and Methodology[89]

The stated objective of this evaluation was to determine whether the Bureau prepared adequate and timely OAs that included the appropriate metrics to support planning for the 2030 decennial R&T. In the early months of the IDA evaluation, the scope of the objective was expanded beyond OAs to include the other major components of the EAE operation, namely, evaluations and experiments. This analysis considered 47 OAs, 13 evaluations, and three experiments.[90]

The IDA team conducted this evaluation in four phases:

1. Program baselining. During this phase, the IDA team reviewed the current process for developing EAE products. This phase focused on the process, budgeting, and governance of OAs, evaluations, and experiments.
2. Risk characterization and selection of EAE products for detailed analysis. During this phase, the IDA team categorized and evaluated the OAs using the risk framework illustrated in Figure A-1.



Tier 1 (high priority): The operations assessed by these OAs have both high cost and a high impact on the accuracy of the decennial census enumeration.

Tier 2 (medium-high priority): The assessed operations are important to accuracy but present a limited risk of cost overrun.

Tier 3 (medium-low priority): The assessed operations are less important to accuracy but present potentially significant financial impacts to the Bureau.

Tier 4 (low priority): The assessed operations have limited scientific and financial impact.

Figure A-1. OA Risk Framework

[89] The material in this appendix is drawn from the IDA team's *Evaluation Plan*.

[90] See Appendix B for a crosswalk from the 35 Census operations to the 47 OAs included in the EAE operation. See Appendix C for a list of the 13 evaluations and three experiments included in the EAE operation.

The IDA team selected nine OAs for detailed analysis. These OAs were selected to be representative of the four tiers of risk and to provide balance across operational areas.[91]

For the EAE operation's evaluations and experiments, the IDA team took a slightly different approach to sampling. The 2020 EAE operation had only three experiments, so the team reviewed all three. Of the 13 evaluations, there are two categories of evaluations according to the Bureau: (1) five evaluations that focus on specific operational components of the 2020 Census, and (2) eight evaluations that focus on communication strategies. After considering the significance and roles of the 13 evaluations, the IDA team selected six evaluations, representing a cross-sampling of all the evaluations, for detailed analysis.[92]

3. Detailed analysis. For this phase, the IDA team conducted detailed analysis of the selected OAs, evaluations, and experiments. The analysis included interviews of IPT stakeholders and other subject matter experts, as well as reviews of EAE study plans, EAE reports, and other Census artifacts. The goal was to generate generalizable recommendations for the EAE operation by analyzing individual research projects.
4. Report generation. For the fourth and last phase of this evaluation, the IDA team documented its findings and recommendations in this report. Study results will be briefed to Bureau leadership and census stakeholders.

CIGIE Blue Book Standard Compliance Statement

IDA conducted this evaluation in accordance with Quality Standards for Inspection and Evaluation (December 2020) issued by the Council of the Inspectors General on Integrity and Efficiency (CIGIE).[93] IDA believes that the evidence obtained provides a reasonable basis for its findings, conclusions, and recommendations based on its review objectives. The table below shows the alignment between CIGIE Blue Book Quality Standards and IDA independent evaluation standards and practices.

[91] See Table B-1for a list of the selected OAs.

[92] See Table C-1 for a list of the selected evaluations and experiments.

[93] Council of the Inspectors General on Integrity and Efficiency (CIGIE), *Quality Standards for Inspection and Evaluation* (informally, "Blue Book"), December 2020. On page 1, the Blue Book notes that it does not delineate between inspections and evaluations, meaning that the terms "inspection," "inspector," and "inspection organization" apply to both inspections and evaluations.

Table A-1. Alignment of CIGIE Blue Book and IDA Standards and Practices

CIGIE Blue Book Standard	IDA Independent Evaluation Standards and Practices
Independence	
1.1 Inspectors and inspection organizations must be independent, both in fact and appearance, in matters relating to inspection work.	IDA's work is characterized by unquestioned integrity and objectivity. This level of independence requires that IDA remain free from organizational conflicts of interest, and that its staff be free of personal conflicts of interest. In order to avoid these types of relationships, IDA obtains sponsor approval for all non-sponsor task work, does not accept work from commercial entities, does not compete with non-FFRDC entities for Government contracts.
1.2 Inspectors must document all known threats to independence or document that there are no known threats to their independence for each inspection they are assigned to conduct.	IDA requires employees to disclose any potential conflicts of interest and institutes a conflict of interest screening process. Assigned IDA staff also signed independence declarations prior to beginning work.
Competence	
2.1 Inspectors assigned to perform an inspection must collectively possess the professional competency to address the inspection objectives and perform the inspection.	IDA researchers – 90 percent of whom have earned advanced degrees – solve challenging scientific and technical problems. For each project, research teams with the appropriate experience and technical backgrounds are assembled from across the Institute's divisions. IDA's flat organization and culture of internal collaboration allow researchers to come together to staff project teams.
2.2 Inspectors must complete a minimum of 40 hours of training every 2 years. If an inspection organization has special circumstances, such as but not limited to, part-time employees or employees on extended leave, it may authorize an exemption to this requirement.	IDA has a generous annual professional development program that ensures staff remain at the forefront of their disciplines.
2.3 The inspection organization must track each inspector's completed training.	IDA tracks completion of staff training.

Planning	
3.1 Inspection organizations must have a basis or rationale for the selection of inspection topics.	The Dept. of Commerce OIG chose the topic of the evaluation. In an August 23, 2022, memo to the Director of the Census Bureau, the OIG announced that they were initiating the evaluation and that it would be performed by IDA as an independent evaluation.
3.2 Inspectors must coordinate proposed inspections with appropriate organizations as determined by the inspection organization.	The OIG and IDA participated in an entrance conference with the Census Bureau conducted on September 2, 2022.
3.3 Inspectors must research the operation, program, policy, or entity to be inspected.	IDA staff fully researched all relevant operations, programs, policies, and entities to inform their evaluation work.
3.4 Inspectors must identify the criteria where applicable to the operation, program, policy, or entity being inspected, as appropriate, to meet the inspection objectives.	IDA staff fully researched all criteria relevant to this evaluation work.
3.5 Inspectors must prepare a written inspection plan for each inspection that includes the objective(s), scope, and methodology.	IDA developed a written evaluation plan as a deliverable to the DOC OIG in support of this evaluation that outlined the objectives, scope, and methodology. IDA also briefed the plan to the DOC OIG.
Evidence Collection and Analysis	
4.1 Inspectors must collect and analyze evidence consistent with inspection objectives and related to the operation, program, policy, or entity being inspected.	IDA findings and conclusions arise directly from the results of evidence-based and data-driven analyses.
4.2 Inspectors must include relevant evidence collected and analysis performed in inspection documentation.	IDA saved documentation generated during the evaluation used to support findings, conclusions, and recommendations.
4.3 Evidence must sufficiently and appropriately support inspection findings and provide a reasonable basis for conclusions.	IDA findings and conclusions arise directly from the results of evidence-based and data-driven analyses. IDA work ensures that sufficient evidence is provided so that any reasonably informed person will concur with the findings, conclusions, and recommendations provided.

4.4 Inspection organizations must protect controlled unclassified information and classified information.	A general “need-to-know” is established in connection with IDA performance of projects. Access to classified or controlled unclassified information (CUI) documents and publications and the security clearances necessary to complete the project are obtained through the IDA Contracting Officer’s Representative, unless otherwise instructed. IDA also ensured that study team members completed all requisite DOC and Census Bureau trainings.
4.5 If inspectors suspect fraud or other illegal acts, they must promptly present such information to their supervisors for review and possible referral to the appropriate investigative office.	IDA promptly reports any findings that may indicate the possibility of fraud or other illegal acts and abuse to the relevant investigative office.
Reporting	
5.1 Inspectors must state the following in all inspection reports: the objective(s), scope, and methodology of the inspection; the inspection results, including findings, conclusions, and recommendations, as appropriate; and the inspection was conducted in accordance with the Council of the Inspectors General on Integrity and Efficiency’s Quality Standards for Inspection and Evaluation.	IDA made sure that final reports included all required elements to fulfill CIGIE Blue Book standards.
5.2 Inspectors must base report findings, conclusions, and recommendations on the evidence collected and the analysis conducted during the inspection.	IDA's findings, conclusions, and recommendations were based upon the evidence and analysis conducted during the inspection.
5.3 Reports must include enough information to allow a reasonable person to sustain findings, conclusions, and recommendations.	IDA's final report included sufficient details such that a reasonably informed person would sustain the findings, conclusions, and recommendations.
5.4 Any recommendations made in a report must be addressed to the appropriate officials who have the authority to act on them.	Final recommendations were addressed to the Director of the Census Bureau.
5.5 Draft inspection reports that receive formal comments from management officials of the inspected entity on report findings, conclusions, and/or recommendations must	The report will follow OIG approval protocols and provide the Census Bureau the opportunity to comment.

include those comments, or a summary, in the final report.	
5.6 Inspection reports must be distributed to the appropriate officials responsible for acting on the findings and recommendations.	The final report will be distributed appropriately by the DOC OIG.
Follow-Up	
6.1 For each recommendation, inspection organizations must solicit agreement or disagreement and planned corrective actions to the report recommendations from management officials in writing.	The DOC OIG will send the report to the Census Bureau for review. They will also coordinate written responses from the Bureau. The Census Bureau's response will be included as an appendix of the report.
6.2 An inspection organization must monitor inspected entities' progress toward implementation of recommendations.	The DOC OIG is responsible for monitoring the Census Bureau's progress toward implementation of recommendations.
Quality Control	
7.1 Inspection organizations must implement a system of quality control that provides the inspection organization with reasonable assurance that the organization and its personnel follow the Blue Book when conducting inspections.	IDA undergoes a stringent and rigorous peer-review process of all deliverables. This ensures that its research products are of the highest quality.
7.2 Inspection organizations must provide supervision over the inspection work performed.	DOC OIG staff exercised oversight authority over the contents of the report by reviewing indexing and report wording. Their oversight ensured that CIGIE and DOC OIG standards were fully met.
7.3 Inspection organizations that are members of CIGIE must undergo an external peer review in accordance with CIGIE requirements.	DOC OIG undergoes periodic peer review in accordance with CIGIE requirements.
7.4 Inspection organizations must take action to ensure report users do not continue to rely on a distributed report that is later found to contain findings and conclusions that are not supported by sufficient and appropriate evidence or significant errors.	DOC OIG and IDA would take action if a distributed report was found to contain significant errors.

Appendix B. Crosswalk from 35 Decennial Census Operations to 47 Operational Assessments

As shown in Figure B-1, there are 35 2020 Decennial Census operations. The figure arranges them according to the WBS, which has eight top-level elements: Program Management, Census/Survey Engineering, Infrastructure, Frame, Response Data, Publish Data, Other Censuses, and Test and Evaluation. These top-level WBS elements essentially divide the 2020 Census into eight operational areas.

Program Management
1. Program Management

Census/Survey Engineering
2. Systems Engineering and Integration
3. Security, Privacy, and Confidentiality
4. Content and Forms Design
5. Language Services

Infrastructure
31. Decennial Service Center
32. Field Infrastructure
33. Decennial Logistics Management
34. IT Infrastructure

Frame
6. Geographic Programs
7. Local Update of Census Addresses
8. Address Canvassing

Response Data
9. Forms Printing and Distribution
10. Paper Data Capture
11. Integrated Partnership and Communications
12. Internet Self-Response
13. Non-ID Processing
14. Update Enumerate
15. Group Quarter
16. Enumeration at Transitory Locations
17. Census Questionnaire Assistance
18. Nonresponse Followup
19. Response Processing
20. Federally Affiliated Count Overseas
35. Update Leave

Publish Data
21. Data Products and Dissemination
22. Redistricting Data Program
23. Count Review
24. Count Question Resolution
25. Archiving

Other Censuses
26. Island Areas Censuses

Test and Evaluation
27. Post Enumeration Survey (PES) Design and Estimation
28. PES Matching
29. PES Field Operations
30. Evaluations and Experiments (EAE)

Source: Adapted from 2020 Census Operational Plan, Version 5.0, January 2022, p.14.

Figure B-1. Operations by Top-Level WBS Elements[94]

Table B-1 maps the 35 Decennial Census operations to the 47 OAs currently planned. As shown in the table, five operations—Program Management; Systems Engineering and Integration; Security, Privacy, and Confidentiality; Data Products and Dissemination; and IT Infrastructure—will have no OAs, as noted in the second column. Several other

[94] The numbering of operations is taken from the source figure and corresponds to WBS numbering. The Infrastructure operational area is grouped with Program Management and Census/Survey Engineering in the left column, since those three operational areas represent what the source figure classifies as "support" operations.

operations will have multiple OAs. One operation—Integrated Partnership and Communication (Operation 11)—will have a single multi-part OA.

Table B-1. Crosswalk from Operations to OAs[95]

Operation Number	OA as listed on EAE website[1]	Date of OA (if published)[1]	Expected Date of OA (if not published)[1]	Title and Date of OA (Publicly Released and Internally Released)	Date of Internally Released OA
1. Program Management[2]	***None***				
2. Systems Engineering and Integration[3]	***None***				
3. Security, Privacy, and Confidentiality[4]	***None***				
4. Content and Forms Design	Content and Forms Design		Sep 2023	**Internal**: 2020 Census OA Report - Content and Forms Design, Version 1.2, Oct 17, 2022	10/17/2022
5. Language Services	Language Services		Sep 2023	**Internal**: 2020 Census OA Report - Language Program, Version 1.2, Oct 4, 2022	10/4/2022
6. Geographic Programs	Geographic Programs		Mar 2024		
7. Local Update of Census Addresses[5]	Local Update of Census Addresses (LUCA) Report	11/28/2022		**Internal**: 2020 Census OA Report - Local Update of Census Addresses (LUCA), Version 1.0, Jun 27, 2022 2020 Local Update of Census Addresses (LUCA) Operational Assessment Report, Version 1.0, Nov 28, 2022	6/27/2022
	New Construction		Mar 2024		
8. Address Canvassing	In-Field Address Canvassing Assessment Report	8/18/2022		**Public**: 2020 Census In-Field Address Canvassing OA Report, Version 1.1, Aug 18, 2022	3/15/2022
	In-Office Address Canvassing Assessment Report	8/18/2022		**Public**: 2020 Census In-Office Address Canvassing Operational Assessment Report, Version 1.1, Aug 18, 2022	3/9/2022
9. Forms Printing and Distribution	Forms Printing and Distribution		Mar 2024		
10. Paper Data Capture	Paper Data Capture		Dec 2023		

[95] The OAs shaded in blue are the ones the IDA team selected for detailed analysis.

Operation Number (from Figure B-1) and Name	OA as listed on EAE website[1]	Date of OA (if published)[1]	Expected Date of OA (if not published)[1]	Title and Date of OA (Publicly Released and Internally Released)	Date of Internally Released OA
11. Integrated Partnership and Communications	Integrated Partnership and Communications		Dec 2023	**Internal**: IPC OA: History and Background Report, Version 1.0, Nov 4, 2022	11/4/2022
				Internal: 2020 Census Integrated Partnership and Communications OA Report, Version 6.0, Jun 21, 2022	6/21/2022
				[From IPC History and Background Report] … the aim of the *IPC Metrics report* is to address questions related to workload, workflow, schedule, and budget.	
				[From IPC History and Background Report] The *IPC Summary Report* is the last portion of the IPC Operational Assessment to be released. Acting as the executive summary of the Operational Assessment….	
12. Internet Self-Response	Internet Self-Response		Jun 2024		
	Mobile Questionnaire Assistance Centers[6]		Dec 2023		
13. Non-ID Processing	Non-ID Processing		Sep 2023	**Internal**: 2020 Census OA Report - Non-ID Processing, Version 1.0, Jul 20, 2022	7/20/2022
14. Update Enumerate	Update Enumerate		Dec 2023		
15. Group Quarters	Group Quarters		Sep 2024		
	Maritime and Military Vessels Enumeration		Mar 2024		
16. Enumeration at Transitory Locations	Enumeration at Transitory Locations		Mar 2024		
17. CQA	Census Questionnaire Assistance Report	2/6/2023		**Internal**: 2020 Census OA Report - Census Questionnaire Assistance (CQA), Version 1.0, January 13, 2022 **Public**: 2020 Census Operational Assessment Report – Census Questionnaire Assistance, Version 1.0, Feb 6, 2023	1/13/2022

Operation Number (from Figure B-1) and Name	OA as listed on EAE website[1]	Date of OA (if published)[1]	Expected Date of OA (if not published)[1]	Title and Date of OA (Publicly Released and Internally Released)	Date of Internally Released OA
18. Nonresponse Followup	Nonresponse Followup		Mar 2024	**Interim**: 2020 Census Internal Memorandum on NRFU, Version 0.7, Final, December 9, 2021	
	Coverage Improvement[7]		Mar 2024		
19. Response Processing	Response Processing		Dec 2023		
	Self-Response Quality Assurance[8]				
20. Federally Affiliated Count Overseas	Federally Affiliated Count Overseas		Dec 2023	**Interim**: 2020 Census Federally Affiliated Count Overseas (FACO) OA Report, Version 1.0, Jan 4, 2022	1/4/2022
21. Data Products and Dissemination[3]	***None***				
22. Redistricting Data Program	Redistricting Data Program		Dec 2024		
23. Count Review	Count Review		Sep 2023	**Internal**: 2020 Census OA Report - Count Review Operation, Final Version, Dec 8, 2022	12/8/2022
24. Count Question Resolution	Count Question Resolution		Dec 2024		
25. Archiving	Archiving Assessment Report	11/9/2022		**Internal**: 2020 Census OA Report - Archiving Operation, Version 1.0, Jul 7, 2022 **Public**: 2020 Census Archiving Operational Assessment Report, Version 1.0, Nov 9, 2022	7/7/2022
26. Island Area Censuses	Island Area Censuses		Sep 2023	**Internal**: 2020 Census OA Report - Island Areas Censuses, Version 1.2, Sep 23, 2022	9/23/2022
27. [PES] Coverage Measurement Design and Estimation[9]	Post-Enumeration Survey Estimation		Mar 2024		
28. [PES] Coverage Measurement Matching[9]	Post-Enumeration Survey Person Matching		Mar 2024		

Operation Number (from Figure B-1) and Name	OA as listed on EAE website[1]	Date of OA (if published)[1]	Expected Date of OA (if not published)[1]	Title and Date of OA (Publicly Released and Internally Released)	Date of Internally Released OA
	Post-Enumeration Survey Initial Housing Unit Matching		Dec 2023	**Internal**: 2020 Census OA Report - 2020 PES Initial Housing Unit Matching OA, Version 1.1, Dec 2, 2022	12/2/2022
	Post-Enumeration Survey Final Housing Unit Matching		Mar 2024		
29. [PES] Coverage Measurement Field Operations[9]	Post-Enumeration Survey Independent Listing Report	1/24/2023		**Internal**: 2020 Census OA Report - 2020 PES Independent Listing OA, Version 1.3, Sep 19, 2022 **Public**: 2020 Post-Enumeration Survey Independent Listing Operational Assessment, Version 1.0, Jan 20, 2023	9/19/2022
	Post-Enumeration Survey Initial Housing Unit Followup		Dec 2023		
	Post-Enumeration Survey Final Housing Unit Followup		Dec 2023		
	Post-Enumeration Survey Person Interview		Mar 2024		
	Post-Enumeration Survey Person Followup		Mar 2024		
30. Evaluations and Experiments	Evaluations and Experiments		Jun 2025		
	Demographic Analysis		Jun 2025		
31. Decennial Service Center	Decennial Service Center		Sep 2023	**Internal**: 2020 Census OA Report - Decennial Service Center, Version 1.3, Dec 14, 2022	12/14/2022
32. Field Infrastructure	Recruiting, Onboarding, and Training		Sep 2023	**Internal**: 2020 Census OA Report - FLDI Recruiting, Onboarding, and Training, Final Version 1.2, Sep 9, 2022	9/9/2022

Operation Number (from Figure B-1) and Name	OA as listed on EAE website[1]	Date of OA (if published)[1]	Expected Date of OA (if not published)[1]	Title and Date of OA (Publicly Released and Internally Released)	Date of Internally Released OA
	Field Office Administration and Payroll		Sep 2023	**Internal**: 2020 Census OA Report - FLDI Field Office Administration and Payroll, Final Version 1.2, Aug 19. 2022	8/19/2022
33. Decennial Logistics Management	Space Acquisition and Lease Management		Sep 2023	**Internal**: 2020 Census Decennial Logistics Management (DLM) OA Report - Space Acquisition and Lease Management, Final Version 1.1, Aug 25, 2022	8/25/2022
	Logistics Management Support		Sep 2023	**Internal**: 2020 Census Decennial Logistics Management (DLM) OA Report - Logistics Management Support, Final Version 1.1, Oct 25, 2022	10/25/2022
34. IT Infrastructure[3]	***None***				
35. Update Leave	Update Leave		Sep 2023	**Internal**: 2020 Census OA Report - Update Leave Operation, Version 1.0, Nov 23, 2022	11/23/2022
Listed as a 2020 Census EAE Experiment Report in Integrated Master Schedule (IMS)	Item Nonresponse and Imputation Assessment Study	2/7/2023		**Internal**: 2020 Census Assessment Report - Item Nonresponse and Imputation, Version 1.3, Nov 30, 2022 (Decennial Statistical Studies Division) **Public**: 2020 Census Item Nonresponse and Imputation Assessment Report, Version 1.0, Feb 7, 2023	11/30/2022
Listed as a 2020 Census EAE Experiment Report in IMS	Self-Response and Return Rates		Sep 2023		

Table Notes

[1] EAE Website: https://www.census.gov/programs-surveys/decennial-census/decade/2020/planning-management/evaluate/eae.html, accessed May 24, 2023.

[2] [From *EAE DOP*, pp. 10-11]: "… for the [Operation 1] Program Management operation a 'quality assessment' will be produced for each business process in lieu of an operational assessment." [https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/EAE-detailed-operational-plan.pdf]

[3] [From *EAE DOP*, p.10]: "All 2020 Census operations, except for [Operation 21] Data Products and Dissemination, [Operation 2] Systems Engineering and Integration, and [Operation 34] IT Infrastructure, have at least one operational assessment planned." [https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/EAE-detailed-operational-plan.pdf]

[4] As the Census Bureau informed the IDA team, "Considering the sensitivity surrounding IT security protocols, the Security, Privacy, and Confidentiality operation will not have a formal operational assessment, but rather an internal, administratively-restricted lessons-learned document."

[5] According to the title of the LUCA DOP (*2020 Census Detailed Operational Plan for: 7. Local Update of Census Addresses Operation (LUCA) – including New Construction Program*), the LUCA operation includes New Construction. [https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/LUCA-detailed-operational-plan-v2.pdf]

[6] [From *2020 Census: Mobile Questionnaire Assistance Program – Project Plan*, Version 2.0, October 26, 2020, p.1]: "The MQA program is not one of the 35 operations required to execute the 2020 Census, but instead is a suboperation of the Internet Self-Response (ISR) operation." [https://www2.census.gov/programs-surveys/decennial/2020/program-management/2020-census-mobile-questionnaire-assistance-operation.pdf]

[7] [From *2020 Census NRFU DOP,* pp. 77-78]: "CI is a followup activity and is therefore considered a component of NRFU; however, the CI telephone interviews are performed by CQA." [https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/NRFU-detailed-operational-plan.pdf]

[8] [From Periodic Report to CIG, December 2, 2020, slide 3]: "Also, the report for Self-Response Quality Assurance will not be released." [https://www2.census.gov/about/policies/foia/records/Census-Integration-Group-Presentations/Evaluations-and-Experiments/CIG-EAE-Periodic-Update-12-02-2020.pdf]

[9] The Coverage Measurement operations are often referred to as the Post-Enumeration Survey (PES) operations.

Appendix C. 2020 Evaluations and Experiments

As shown in Figure C-1, 13 evaluation and experiment projects were listed in *Memorandum 2018.16: Scope of the 2020 Census Program for Evaluations and Experiments (CPEX)*,[96] which was published on July 6, 2018. These projects are listed on the left side of the figure.

The *2020 Census Detailed Operational Plan (DOP) for: 30. Evaluations and Experiments Operation (EAE), Version 1.0*, issued on September 23, 2019,[97] listed only 10 projects, namely, three experiments and seven evaluations.[98] These are shown as the first 10 entries on the right side of Figure C-1. Changes from 2018 to 2019 were as follows:

- The three experiments (numbered 1-3 on the right side of the figure) and three of the evaluations (numbered 4, 5, and 6) carried over directly from 2018 to 2019.
- Two of the 2018 projects evolved into three 2019 evaluations (numbered 7, 8, and 9). These are shown in red font.
- One new evaluation (numbered 10) was added in 2019.
- The last five 2018 projects were dropped in 2019.

The 2020 Census DOP for EAE was updated on September 28, 2021.[99] The following changes were made:

- Seven evaluations—all focused on the communications campaign and tracking of public perception—were added to the EAE program in 2021. These in-house evaluations were initiated to make up for the fact that, due to budget uncertainty, the Bureau was not able to follow through on its plans to line up an independent

[96] https://www.census.gov/programs-surveys/decennial-census/decade/2020/planning-management/plan/memo-series/2020-memo-2018_16.html.

[97] https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/EAE-detailed-operational-plan.pdf, attached document.

[98] The CPEX program is now commonly referred to as the EAE program.

[99] https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/EAE-detailed-operational-plan.pdf, cover memo.

evaluation contractor to conduct a comprehensive evaluation of the 2020 Census communications campaign.[100]

As described by the Census Bureau, these seven evaluations and the Evaluating Privacy and Confidentiality Concerns evaluation are considered to be the eight evaluations that are "primarily focused on understanding respondents and evaluating the effectiveness of communication and outreach for future planning." The remaining evaluations focus on specific operational components of the 2020 Census.

At this time, 16 projects—three experiments and 13 evaluations—constitute the 2020 EAE program. According to the Census EAE website, "The Undercount of Young Children project could not be completed within the necessary timeframe for a 2020 Census evaluation."[101]

Table C-1 provides the following information for each of the EAE projects:

- Study plan release date
- Study-plan-projected date of internal release of the evaluation or experiment report
- Actual date of internal release of the report
- Date of public release of the report, if it has been publicly released
- Projected date of public release of the report, if it has not been publicly released

[100] The Bureau's plan to engage an independent evaluation contractor was described on page 78 of Version 1.0 of its *2020 Census Integrated Communications Plan*, published on June 2017. https://www2.census.gov/programs-surveys/decennial/2020/program-management/planning-docs/2020_integrated_COM_plan.pdf.

[101] "Census Evaluations and Experiments|2020|Evaluations," webpage, https://www.census.gov/programs-surveys/decennial-census/decade/2020/planning-management/evaluate/eae.html.

2020 Experiments and Evaluations: How Plans Changed From 2018 to 2021

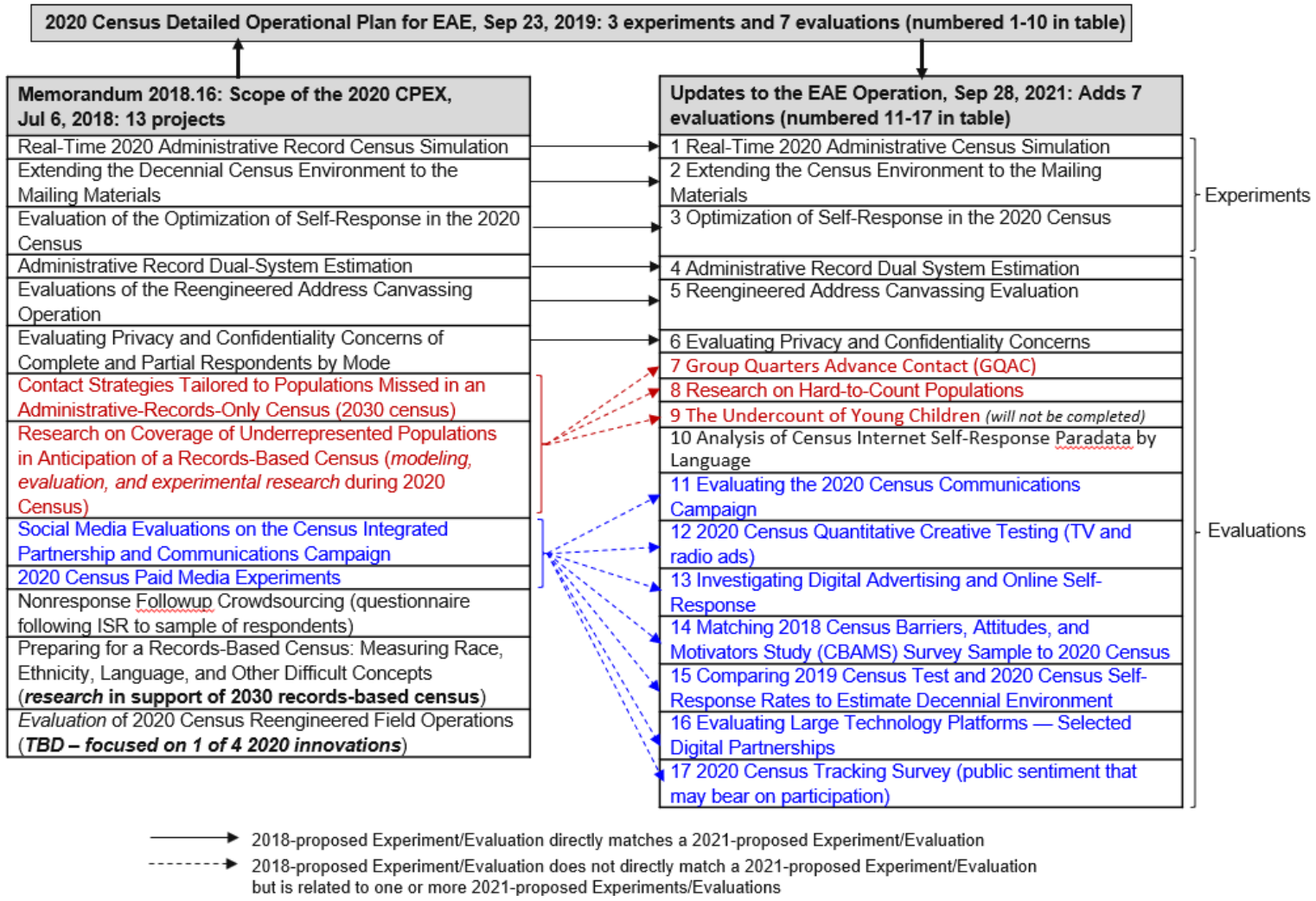


Figure C-1. 2020 Experiments and Evaluations: Evolution from 2018 to 2021

Table C-1. Evaluation and Export Study Plans and Reports[102]

Title of Evaluation/Experiment	Study Plan Release Date	Study Plan Projected Date of Internal Release of Report	Actual Date of Internal Release of Report	Date of Public Release (if released)	Projected Date of Public Release*
1 *Real-Time 2020 Administrative Census Simulation*	5/14/2021, (orig. 4/8/2019)	3/1/2022	Mid-March 2023	5/5/2023	
2 *Extending the Census Environment to the Mailing Materials*	8/7/2019	6/30/2021	10/25/2022	4/10/2023	
3 *Optimization of Self-Response in the 2020 Census*	8/7/2019	6/30/2021	10/20/2022		Sep 2023
4 *Administrative Record Dual System Estimation*	4/12/2019	9/30/2022			Mar 2024
5 *Reengineered Address Canvassing Evaluation*	4/25/2019	3/31/2023			Sep 2024
6 *Group Quarters Advance Contact (GQAC)*	6/11/2019	9/15/2022			Dec 2023
7 *Evaluating Privacy and Confidentiality Concerns*	5/31/2019	not provided			Jun 2024
8 *Research on Hard-to-Count Populations*	5/1/2019	9/30/2021	7/7/2022		Sep 2024
9 *Analysis of Census ISR Paradata by Language*	4/23/2019	not provided			Jun 2024
10 *The Undercount of Young Children*	project could not be completed due to COVID				
11 *Evaluating the 2020 Census Communications Campaign*	11/25/2019	1/15/2021			Jun 2024
12 *2020 Census Quantitative Creative*	1/21/2020	not provided	12/3/2020	11/16/2022	
13 *Investigating Digital Advertising and Online Self-Response*	3/24/2020	9/30/2021	1/6/2023		Sep 2023
14 *Matching 2018 Census Barriers, Attitudes, and Motivators Study (CBAMS) Survey Sample to 2020 Census*	1/31/2020	12/31/2021			Dec 2023
15 *Comparing 2019 Census Test and 2020 Census Self-Response Rates to Estimate Decennial Environment*	12/3/2019	12/31/2021	8/16/2022	1/20/2023	
16 *Evaluating Large Technology Platforms — Selected Digital Partnerships*	restricted distribution due to proprietary data				
17 *2020 Census Tracking Survey*	5/20/2020	6/30/2021			Dec 2023

* https://www.census.gov/programs-surveys/decennial-census/decade/2020/planning-management/evaluate/eae.html, accessed May 24, 2023.

[102] The evaluations and experiments shaded in blue are the ones the IDA team selected for detailed analysis.

Appendix D. Agency Response

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

December 22, 2023

MEMORANDUM FOR: Arthur L. Scott Jr.
Assistant Inspector General
For Audit and Evaluation
Office of Inspector General

From: Robert L. Santos
Director
U.S. Census Bureau

Subject: U.S. Census Bureau's Response to the Office of the Inspector General's Draft Report: "*Independent Evaluation of the 2020 Decennial Census Evaluations and Experiments (EAE) Operation*"

Thank you for the opportunity to provide comments to the Office of Inspector General's draft report titled, *"Independent Evaluation of the 2020 Decennial Census Evaluations and Experiments (EAE) Operation"* dated October 4, 2023. The U.S. Census Bureau respectfully submits the attached comments.

Attachment

Census Bureau Comments on Office of Inspector General Draft Report:

"Independent Evaluation of the 2020 Decennial Census Evaluations and Experiments (EAE) Operation"

December 2023

The U.S. Census Bureau appreciates the opportunity to comment on this draft report.

We wanted to provide some additional context about the role of the 2020 Census Evaluations and Experiments (EAE) operation for documenting the past decennial census and planning the next one. In total, the 2020 Census EAE program includes more than 65 studies, consisting primarily of operational assessments, but also including evaluations, experiments, quality control results, and a topic report. These reports are intended to inform the public about how the 2020 Census operations were conducted and the results of experiments and evaluations. They are meant to provide transparency about the processes that took place and include high-level summaries of the timelines, schedules, budgets, and workloads we experienced.

The EAE reports were not intended to be the sole source of information used for planning the research and testing agenda for the next decennial census. Census Bureau planners have access to the detailed raw data about staffing, transactions, costs, schedules, and lessons learned long before the final reports are made public. In addition to the operational findings, Census Bureau planners also rely on other sources of information to identify broad enhancement areas for further research and formulate specific recommendations to consider for the future. These other sources include the Post-Enumeration Survey, operational quality metrics, census test results, other Census Bureau research, as well as findings by experts from the scientific and statistical community, recommendations by advisory committees and oversight groups, and public input via a Federal Register Notice.

With this understanding, we believe that the 2020 Census EAE Program was planned and implemented well to serve its intended purpose. However, we also realize that there is always room for improvement, and we welcome suggestions to strengthen the program for the future. It is within this context that we comment on each of the six findings and ten recommendations described in the draft report.

Regarding Finding I – 2020 OAs, evaluations, and experiments were not completed in time to formally inform the development of the Bureau's 2030 R&T agenda.

As we stated above, while we acknowledge that there were delays with the release of several EAE reports, we do not believe these delays negatively impacted the transfer of knowledge needed to inform the 2030 Census research and testing agenda. The OAs, evaluations, and experiments do not need to be publicly released in order to inform 2030 Census planning. Rather, the drafting of the operational assessments occurred in parallel to the evaluation of debriefing materials and lessons learned, the analysis of operational metrics, and early planning sessions. These actions are iterative in nature with the activities in each cycle impacting both the historical documentation found in the operational assessments as well as the evolving outline of the 2030 Census plans. We believe that this concurrent overlapping process of evaluating the past decennial census while also planning for the next one is both efficient and effective.

- **Recommendation 1: Ensure that the 2030 EAE reports are released in a timely manner.**

  The Census Bureau agrees with this recommendation. While we do not believe that the delays in the formal release of the EAE reports negatively impacted planning for the 2030 Census, we do agree that releasing the 2030 Census EAE reports according to the target dates is in the public interest.

- **Recommendation 2: Establish a formal process to share recommendations and lessons learned from the EAE operation prior to the internal release of EAE reports, with the intention of expediting the incorporation of feedback that is crucial to the next decennial's research and testing.**

  The Census Bureau agrees with this recommendation. The Census Bureau follows a formal process for capturing and analyzing lessons learned from the past decennial census and uses this information to generate and evaluate recommendations for the next one. In GAO's examination of the Census Bureau's lessons learned process following the 2020 Census, GAO found that we effectively followed seven of the eight steps in their best practice lessons-learned process.[1] According to GAO, the only step found lacking in our process was the eighth step of evaluating the effectiveness of the overall lessons learned process, and the Census Bureau is currently taking actions to improve this step. As another improvement to this process, based on this recommendation, we will use a centralized repository and documented process to store curated lessons learned and recommendations to ensure the lessons and recommendations are shared across staff for future decision making.

Regarding Finding II – The 2020 Census EAE research program failed to prioritize the evaluation of two of the four key 2020 innovation areas and the investigation of a potentially significant 2030 innovation.

The 2020 Census EAE research program was fully committed to all four of the 2020 Census innovation areas: (1) reengineering address canvassing, (2) optimizing self-response, (3) utilizing administrative records and third-party data, and (4) reengineering field operations. The lack of evaluative studies or experiments in the EAE program for innovation areas (3) and (4), utilizing administrative records and third-party data and reengineering field operations does not correlate to a failure to evaluate these innovation areas as part of the 2030 Census operations. As one example, the Census Bureau recently conducted an analysis comparing the most recently available administrative record rosters to the roster information obtained through self-response and NRFU during the 2020 Census.[2] Analyses and evaluations such as these can and often do happen outside of the scope of the EAE program and occur as the need arises.

Furthermore, the rescoping of the three studies mentioned in the draft report does not diminish the Census Bureau's commitment to researching administrative records, one of the potentially significant

[1] U.S. Government Accountability Office, "2020 Census: A More Complete Lessons Learned Process for Cost and Schedule Would Help the Next Decennial," March 2, 2023, https://www.gao.gov/products/gao-23-105819.
[2] U.S. Census Bureau, Working Paper DEC-WP-2023-01, "Full Report: Comparisons of Administrative Record Rosters to Census Self-Responses and NRFU Household Member Responses," February 27, 2023, https://www.census.gov/library/working-papers/2023/dec/dec-wp-2023-01.html.

2030 Census innovations. The contact strategies study was descoped based on the executive decision not to pursue the use of gift card incentives and text messages, and the second two studies were descoped due to the overarching design decision to follow a household-based census in the 2030 Census rather than a records-based one. The 2030 Census research and testing program includes a research area dedicated to exploring additional innovations for using administrative records to further streamline census data collection and minimize respondent burden.

- **Recommendation 3: Use strategic guidance and priorities to develop and prioritize EAE research.**

  The Census Bureau agrees with this recommendation. We use strategic guidance and priorities to develop and prioritize the 2030 Census research and testing agenda and plan to use strategic guidance following the 2030 Census to develop and prioritize the 2040 Census research and testing agenda. For these reasons, we consider this recommendation implemented as part of our current practices and procedures.

Regarding Finding III – The Census Bureau has put management processes and tools in place but does not always use them to their potential.

While there are robust processes and tools in place to facilitate planning the next decennial census, we are committed to continuously improving our use of these tools.

- **Recommendation 4: Utilize existing processes and tools as intended in order to ensure rigorous and disciplined management of the decennial census.**

  The Census Bureau agrees with this recommendation in the context of the example described in the draft report involving improving the credibility of due dates in the Census Knowledge Management Database. While this centralized database has proven to be a valuable repository for capturing and monitoring recommendations, its use could be further improved by setting more realistic due dates and managing to them, and the Census Bureau is committed to doing so.

Regarding Finding IV – The Census Bureau should standardize the reporting of cost data across EAE products.

While there were guidelines for reporting cost data in the operational assessments following the 2020 Census and a robust process for securing accurate data from the Decennial Budget Office, we are committed to strengthening those guidelines for the 2030 Census operational assessments to ensure greater consistency across reports.

- **Recommendation 5: Ensure that integrated project teams (IPTs) responsible for OAs provide the required report elements and document when required report elements are not available or transparency is not permissible.**

  The Census Bureau agrees with this recommendation. The Census Bureau uses a formal process for ensuring that required OA report elements are present and complete. The process relies on three components: 1) OA templates showing required elements, 2) written guidelines instructing authors on the level of detail, structure, and format for fulfilling these required elements, and 3) a Quality Process Reviewer (QPR) Checklist for an independent staff member

to review draft OAs and document missing or incomplete elements. When new report elements are added to OAs, such as a new COVID-19 section added following the 2020 Census, these guidance documents are updated to ensure adherence to the new standards.

When the Census Bureau adds new cost guidelines for the 2030 Census OAs, we will also update the OA templates, guidelines, and checklists to help with communicating, monitoring, and documenting these new required report elements. In instances where cost data are not available or transparency is not permissible, the guidelines document will provide instructions for how the OA Cost and Budget section should be documented.

- **Recommendation 6: Develop guidelines for the querying and reporting of cost data that permit comparisons between planned and actual costs.**

  The Census Bureau agrees with this recommendation. For the 2030 Census EAE program, we will develop guidance that more clearly specifies a minimum set of baseline requirements for reporting planned and actual cost data within the OAs, as well as the involvement of the Decennial Budget Office in that process. These guidelines will seek to ensure comprehensive and consistent costs within the Cost and Budget sections for each assessment.

Regarding Finding V -- The Census Bureau should examine delays with respect to the originally planned schedule and not just the latest re-baselined schedule.

While we agree that there is a benefit from analyzing variances between planned and actual schedules for gaining understanding about reasons for delays and for projecting the timing required for future operations, we disagree on the value of analyzing variances all the way back to the original planned schedule. Because planning a decennial census is such a large and complex undertaking over a 14-year lifecycle, we follow scheduling best practices using a rolling wave approach to schedule development. As changes in the scope of an operation occur, we document them through formal change requests and update the schedules across other related operations, as needed.

Above all, during the 2020 Census, it is important to note that the schedule changed dramatically because of the COVID-19 pandemic. Operations were replanned to account for new timing constraints, large changes in scope, the addition of new operational elements, the removal of other operational elements, and the need to reestablish relationships between activities. Due to the magnitude of these changes, comparing actual start and finish dates to the originally planned, pre-pandemic schedule would be meaningless. The latest re-baselined schedule most closely matches the planned operational activities; so, we believe it provides the best source for comparing variances between planned and actual schedule dates.

- **Recommendation 7: Extend the Bureau's analysis of scheduling delays to examine variances between originally planned baseline start and finish dates and actual start and finish dates.**

  The Census Bureau partially agrees with this recommendation. We agree that the EAE report schedule analysis section should include the history of changes from the originally planned baseline schedule to the current baselined schedule, with reasons for the changes documented through approved change requests. To ensure the 2030 Census OAs include these details in the final reports, we will update the OA template, guidelines, and checklist to describe the requirement to include the history of changes in the Schedule section of the OAs.

However, we disagree with the recommendation to analyze schedule performance variances comparing the actual start and finish dates to the originally planned baseline schedule, as this would not reflect true schedule performance. To be both effective and align to best practices, schedule performance should be measured against the approved, valid baseline schedule at the end of the program, which may differ from the originally planned baseline schedule.

- **Recommendation 8: Use what it learns from this analysis to improve scheduling estimates for the next decennial census.**

  The Census Bureau agrees with this recommendation. We regularly analyze differences between planned and actual start and finish dates and use this analysis to inform scheduling for the next decennial census. We will update our Schedule Management Plan to explicitly state that we will "use the 2020 Census EAE report schedule analysis as one input to the schedule development kickoff sessions for planning the 2030 Census."

  We note, however, that operations are redesigned between decades, so the underlying activities and dependencies change. As a result, the value we can extract by analyzing variances between planned and actual schedules from the previous decennial census is limited.

Regarding Finding VI – The Census Bureau should resource load the activities in the decennial census integrated master schedule (IMS).

For the activities in the EAE operation, like those across other 2020 Census operations, we resource loaded the integrated master schedule (IMS) at the intermediate level to align with the decennial program work breakdown structure (WBS). We feel that this is the appropriate level to resource load. Resource loading at any level beneath this level would require too much time and too many resources when compared to the value provided, especially when considering the size and complexity of the full decennial program IMS. For the 2020 Census, the IMS consisted of 102 projects, 29,732 unique activities, and 60,683 relationships. Additionally, 18,954 or 64% of the activities were short in duration (less than 10 days). Therefore, we believe that resource loading the detailed activities in the EAE operation would be resource-intensive and not yield the corresponding benefit.

- **Recommendation 9: Adopt the GAO best scheduling practice of resource loading the activities in its IMS, including those activities associated with OAs, evaluations, and experiments.**

  The Census Bureau agrees with this recommendation to adopt the best scheduling practice of resource loading the activities in the IMS, including for activities associated with operational assessments, evaluations, and experiments. We currently load the IMS at the intermediate level to align with the WBS and provide the basis for cost and schedule performance analysis as noted in Best Practice 3 of the GAO Schedule Assessment Guide. We consider this recommendation implemented as part of our current practices and procedures.

- **Recommendation 10: Develop mechanisms to better account for the required resources to complete EAE activities to aid in the planning and execution of future EAE operations.**

  The Census Bureau agrees with this recommendation. Following a decennial census, staff in each operational area must balance their responsibilities for documenting the past census while at the same time planning for the next one. To some extent, the activities involved in

completing these two tasks are one and the same – reviewing what happened, recognizing what went well, and diagnosing what could be improved. However, the analysis and documentation aspects of the two efforts are markedly different. Writing the OAs involves capturing detailed and fact-based metrics, whereas planning for the future involves forming big-picture ideas that can be further explored and tested. Since both efforts must be completed in a timely manner, allocating the appropriate amount of staff time and resources to each of the two areas is essential. We are committed to ensuring our project schedules better reflect the staffing reductions that historically take place in the post-census years, so we have a more realistic projection of the resources required to complete both of these EAE activities at the same time.

REPORT

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