




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

September 28, 2023

To: Jay Breidt
Chair
Census Scientific Advisory Committee

From: Robert L. Santos 
Director

Subject: Recommendations to the Census Bureau from the
Census Scientific Advisory Committee Spring 2023 Meeting

The U.S. Census Bureau thanks the Census Scientific Advisory Committee for its recommendations. We are responding to the committee recommendations submitted during its 2023 Spring Virtual Meeting on March 9 - 10, 2023.

Your feedback is welcomed to ensure that the Census Bureau continues to provide relevant and timely statistics used by federal, state, and local governments, as well as business and industry, in an increasingly technologically oriented society.

Attachment

**Recommendations and Comments to the Census Bureau
from the Census Scientific Advisory Committee
2023 Spring Virtual Meeting**

To: Robert L. Santos
Director, U.S. Census Bureau

From: Jay Breidt
Census Scientific Advisory Committee (CSAC) Chair

Subject: Recommendations and Comments to the Census Bureau from the Census
Scientific Advisory Committee 2023 Spring Virtual Meeting

March 9-10, 2023

The Census Scientific Advisory Committee (CSAC) thanks the US Census Bureau for all their work in preparing the Spring 2023 CSAC virtual meeting. CSAC thanks the presenters for their careful preparations and clear presentations, for providing CSAC with specific questions on each presentation, and for keeping to their allotted time and leaving room for discussion. CSAC appreciated the opening remarks by the Director and Deputy Director, including the updates on population estimates and BERT, 2020 decennial data products, ACS privacy protections, and work with BLS on the Current Population Survey. We look forward to hearing more at future meetings about ideas such as continuous counting and the modernization of Census Bureau processes, including updates on Data Ingest and Collection for the Enterprise (DICE), Enterprise Data Lake (EDL), and Frames.

I. 2030 Federal Register Notice (FRN) Comments/Feedback

CSAC was asked to review submissions received in response to the Bureau's Federal Register Notice (FRN) "Soliciting Input or Suggestions on 2030 Census Preliminary Research." The FRN solicited input on five broad research areas: A. Reaching and motivating everyone; B. Technology; C. New data sources; D. How we contact respondents; and E. Respondent support services.

CSAC commends the effort to collect public input and wishes to thank the thousands of people who submitted thoughtful and helpful public comments. CSAC is glad to see the Census Bureau engaging in such public two-way conversation and happy to know that the Census Bureau is taking public comment seriously.

As part of the process of putting together its 2030 Decennial research agenda, the Bureau sought input from its advisory committees (both CSAC and NAC) on the submissions they

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received in response to the FRN. The focus of CSAC’s review for the Spring 2023 meeting was approximately 1,200 submissions corresponding to areas B-E of the FRN solicitation plus two additional areas covering operations management, questionnaire content, and a miscellaneous “other” category.

CSAC’s approach to this review was to divide the submissions into five sets of roughly equal size and process them in parallel by five groups of four CSAC members each. CSAC groups determined common themes in the submissions and deliberated on potential research ideas tied to these themes.

One finding from this review is that many submissions came from enumerators and field supervisors and provided thoughtful approaches to addressing important operational issues, including many challenges encountered in 2020. The comments indicate a workforce that was highly engaged and committed to the success of the decennial census, and commenters appreciated the ability to submit their suggestions.

Some operational examples include:

- Start hiring back Census 2020 workers now for 2030
- Hire local enumerators, especially in hard to count areas
- Provide more timely updates of NRFU address lists to minimize sending enumerators to households that have already responded
- Purchase larger cell phones (or tablets) and address connectivity issues in some rural areas
- Directly address GQ (university) questions about FERPA & other privacy laws
- Expand the number of language options—including the Alaskan - Siberian Yupik and Athabascan
- Improve the functionality of the cell phone response option
- Make greater use of text messaging and communication apps favored by special populations, such as immigrants
- Make it easier to remove non-existent addresses identified by enumerators and other field staff
- Consult with community organizations to identify trusted messengers
- Allow partnership specialists to speak with local media, especially in small towns where local papers are important sources of information
- Explore ways to coordinate with mail carriers for timely updates on vacant addresses

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- Examine legal possibilities with sending something akin to an “amber alert” as a mobile phone notification alerting people to the need to respond to the decennial census, along with a link to do so
- Develop disaster plans for how to run census operations in the case of power outages, natural disasters, and other crisis situations. This is particularly important with increasing natural hazards.

Many of these suggestions seem worthy of serious consideration for implementation, though these operational issues are largely beyond our knowledge of Bureau operations and outside the scientific and technical scope of CSAC.

1. **CSAC recommends that Census Bureau staff carefully review public comments to evaluate the feasibility of implementing the many thoughtful ideas on improved Census operations. Determining such feasibility is beyond the scope or expertise of CSAC.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. Starting in March 2023, Census research Enhancement Area leads and subject matter expert points of contact received FRN comments that align to their scope of work. Each team will work together through early summer to assign one of the following disposition categories to each comment:*

1. ***New project:*** Not in scope of any existing 2030 research project or ongoing scope of work but would be beneficial to pursue, so a new 2030 research project should be scoped and proposed to pursue the idea.
2. ***Expanded project:*** Related to a 2030 research project or ongoing scope of work but is not covered in the current scope definition, so the scope of an existing project should be expanded to include the idea.
3. ***Covered by existing project(s):*** Included in current 2030 EA project plans in your area, or something we’re already doing outside of EA research.
4. ***2040 seedling:*** Would be worthwhile to pursue in the future but is not possible given current policies and/or resources. These ideas could be used to develop experimental studies to be conducted concurrently with the 2030 Census (i.e., CPEX experiments), or could be documented and carried forward as recommendations for the 2040 Census research and planning.
5. ***Considered, but not selected:*** May or may not be possible given current policies, resources available, and Census Bureau goals, but has been determined to not be

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worthwhile given past research and subject matter expertise. Suggestion may be missing necessary context to be actionable.

These disposition assignments require teams to assess the feasibility of each comment. This process and all results will be summarized in a report scheduled to be released in Fall 2023.

We now turn to a series of findings for the Bureau's consideration. These findings arose as important themes during CSAC's FRN review and are supported by many comments across many submissions.

- The Bureau should consider **safety improvements to field collection** with the following measures:

- Provide safe lodging for field enumerators in hostile areas.

***Census Bureau Response:** The Census Bureau accepts this recommendation. We will be developing a process to identify appropriate housing locations for the 2030 Census.*

- Allow enumerators to pair up with other enumerators or colleagues who are approved via background check when conducting enumerations.

***Census Bureau Response:** The Census Bureau accepts this recommendation. Paired interviewing is already allowed with management approval.*

- Coordinate with local police to help with more hostile areas to ensure the safety of enumerators.

***Census Bureau Response:** The Census Bureau accepts this recommendation. We implemented this practice in the previous censuses including the 2020 Census, and we plan to continue to implement this practice in 2030.*

- Provide field enumerators with high visibility vests and personal body cameras when in hostile areas.

***Census Bureau Response:** The Census Bureau partially accepts this recommendation. We will research the provision of high visibility vests; however,*

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we are unable to provide personal body cameras due to the confidentiality requirements of 13 U.S.C.

- Develop documentation or communication for field enumerators to leave notes about certain areas, such as certain rural areas where guns might be drawn on trespassers or dangerous dogs.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Employee Handbook provides guidance on safety habits while working in the field. Guidelines state to describe the situation encountered via an Info Comm so the address can be added to Dangerous Address Database. The Dangerous Address Database maintains historical information of dangerous encounters at an address. These cases are then filtered out of future in-person workloads to protect our enumerators.*

- Include a QR code on an enumerator's badge so that respondents can scan it and confirm that the person at the door is actually a census representative.

***Census Bureau Response:** The Census Bureau partially accepts this recommendation. We will evaluate additional ways to confirm employee status. The 2020 Census badge did have picture of the enumerator on it. Providing QR codes has several logistical issues, including the storage of codes, maintaining codes after change in job status, and printing codes.*

- The Bureau should consider **coordination and technology improvements** to improve Field Collection, such as:
 - Coordinate enumerators better to avoid more than one field enumerator going to the same address.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The 2020 Census was the first census that used an optimizer when making assignments. We are looking into ways to improve the optimizer so that the prioritized case assignment given to the enumerator is more efficient but also reduces the chances that enumerators go to the same address.*

- Prioritize hard-to-reach places over others when sending in field enumerators.

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***Census Bureau Response:** The Census Bureau accepts this recommendation. We are currently conducting research to find ways to better count the historically undercounted populations, including optimizing contact strategies for the different populations. This is a primary objective of the 2030 Census research program.*

- Provide management training for supervisors.

***Census Bureau Response:** The Census Bureau accepts this recommendation. We are always looking for ways to improve training for supervisors.*

- Update the functions on smartphones, such as providing a back button, options for when people don't want to answer, and better IT support (i.e., include real time support).

***Census Bureau Response:** The Census Bureau accepts this recommendation. We will use the Enterprise solution for surveys which is in the process of supporting much longer and more complex surveys than the decennial census. We will take advantage of the functionality that they provide for refusals and 'don't know' response selections. We are currently researching a redesign of our IT support to make it more real time than 2020.*

- Provide larger devices to field staff that have the ability to present larger text, take pictures, have a language translation application and can be voice activated.

***Census Bureau Response:** The Census Bureau partially accepts this recommendation. We are currently researching cost implications of various device options for enumerators, including possibly moving from a smartphone to a tablet. In 2020 enumerators had the ability to take pictures when needed and they will continue to have that functionality in 2030. In addition, in 2020 we created language glossaries that enumerators could use with key terminology from the questionnaire in 59 languages: [2020 Decennial Census: Language Glossaries](#)*

All translations are managed via the Decennial Translation Branch and in 2020 there was not an approved translation application. The DCMD Translation Branch uses professional translators to complete all translation work. We cannot

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accept the recommendation to use a translation application to replace human translators when creating public-facing materials. Machine translation and AI alone may not appropriately render context or nuance, changing the meaning of the text.

- Improve the app so that when an interview takes a long time it does not go back to start.

***Census Bureau Response:** The Census Bureau accepts this recommendation. We will use the Enterprise solution for surveys which is in the process of supporting much longer and more complex surveys than Decennial. We will take advantage of the functionality that they provide us to make it easier for users to review/correct their responses prior to final submission.*

Improve case routing to minimize repeat encounters.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The 2020 Census was the first census that used an optimizer when making assignments. We are looking into ways to improve the optimizer so that the prioritized case assignment given to the enumerator is more efficient but also reduces the chances that enumerators go to the same address.*

- The Bureau should consider **expanding and improving partnership activities**. This could include:
 - Engage states to assist in building partnerships and expand the number and use of Partnership Specialists earlier in the decade.
 - Educate local officials on what the census does for them, solicit their efforts to improve community outreach through tv and radio.
 - Negotiate with local advocates and civil aid associations to improve the homeless count.
 - Develop better and more focused advertising to vulnerable and non-English speaking communities rather than the general public.
 - Work with colleges to provide better information to students on whether they should fill out the form or whether their family should include them on their form.

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***Census Bureau Response:** The Census Bureau accepts the recommendation and will explore ways to expand and improve our partnership activities, particularly within communities for the historically undercounted populations. Expanding and improving our outreach and engagement, including enhancing the partnership program, is a major objective of our 2030 Census research program.*

- The Bureau should consider **improving its use of administrative records** with the following approaches:
 - Use federal (including BIA), state, and local records to improve the coverage of persons, housing (by vacancy status-second homes) and their characteristics. This approach will reduce the cost and time required for field operations.

***Census Bureau Response:** The Census Bureau accepts the recommendation. As part of our work to develop the Demographic Frame, we have already incorporated a variety of state, federal, and third-party sources, including IRS, USPS, Medicaid/CHIP, SSS Registration Data, VSGI Consumer Reference Data, HUD data, SSA Master Beneficiary Record, SSA Supplemental Security Record, State SNAP/TANF/WIC files. Additionally, we have studied the benefit of Department of Motor Vehicle data and are pursuing a 50-state strategy for acquiring these data. Additional datasets that we are working to acquire and/or use include voter registration data, utility data, and NCHS birth certificate data. Beginning in 2024, the ACS will implement an adaptive collection strategy that includes using property tax data for the question asking about property acreage. This will reduce respondent burden and improve the quality of the ACS data. Additionally, in spring 2023, the ACS Program began using a number of federal and state administrative data sources to optimize our nonresponse followup workload. These data will be used in propensity, cost, and quality models to focus the contact attempts during the nonresponse followup operation.*

- Use drones and satellites for structure locations (especially in Puerto-Rico and areas that have experienced natural disasters).

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Census Bureau has used satellite imagery, aerial imagery, and local GIS sources to determine and verify the location of structures in the MAF/TIGER System for more than a decade. We will continue these practices and explore the possibility of using other technologies such as drones to identify change on the landscape.*

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We will continue to incorporate the use of additional data sources into our methods, such as near real time imagery from the Federal Emergency Management Agency (FEMA), following natural disasters.

- Collect data from cell phones or utility providers. Work with Google, Amazon, and Twitter to get their lists.

Census Bureau Response: *The Census Bureau partially accepts this recommendation. The Census Bureau is researching whether utility data can be used to improve the resolution of housing unit occupancy status. Starting with a sample of utility data, the Census Bureau has been analyzing utility data from Nevada to determine whether customer-level utility account information predicts whether a housing unit was occupied, vacant, or non-existent. The results have been encouraging thus far, and the research team is expanding their work to include data from additional states in order to assess whether the initial findings will hold up in other parts of the country.*

When the potential use of cell phone information by the Census Bureau was discussed at the spring CSAC meeting, some participants felt that such information could aid the Bureau's work while others expressed concerns about the implications for respondent privacy.

- Remove duplicate records from the MAF (especially apartment identifiers) to improve field operations and reduce cost.

Census Bureau Response: *The Census Bureau accepts this recommendation. The Geography Division conducts automated exact and equivocated matching for all incoming addresses to the MAF to identify duplicate addresses. The Geography Division implemented a project to review and resolve address duplicates in blocks where the inventory of addresses increased 50% or more after 2020 Census operations and is continuously exploring new methods for identifying duplicates such as the use of parcel data to identify areas with address duplicates.*

- Cross-check address information with local records (e.g., housing permits to identify new construction).

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***Census Bureau Response:** The Census Bureau accepts this recommendation. The Census Bureau will continue to cross-check our address information with local sources including GIS files and parcel files to confirm address information and location. Additionally, the Census Bureau is using automated change detection methods to identify where housing unit change is occurring on the landscape and to identify whether our MAF/TIGER system is keeping pace with identified changes. Lastly, the Census Bureau will continue to offer tribal, state, and local governments the opportunity to review and comment on our address list prior to the 2030 Census through the Local Update of Census Addresses (LUCA) partnership program and the New Construction Program closer to the 2030 Census.*

- Provide better/segmented training on the use of cell phones based on an employee's familiarity with a specific platform (iphone vs android).

***Census Bureau Response:** The Census Bureau accepts this recommendation. We will review past best practices and integrate them into future training plans.*

- Update the HQ Master File with field activities in a more timely manner.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Census Bureau is developing the Centralized Decennial Address Control (CDAC) System to make updates from field operations and self-response to the master control file used during 2030 Census field activities in near real-time.*

- Identify additional sources of data on group quarters facilities and populations.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Census Bureau is identifying stakeholders who can provide data and populations for group quarter facilities. This is a key objective of the 2030 Census research program's Enhancement Area 2.*

- The Bureau should consider **improvements to recruitment and training** with the following:
 - Ensure that past enumerators are present for in-person training to assist with knowledge sharing.

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***Census Bureau Response:** The Census Bureau accepts this recommendation. We will review past best practices and integrate them into future training plans.*

- Increase the time to train on new technology.

***Census Bureau Response:** The Census Bureau accepts this recommendation. Future training will incorporate best practices to maximize effectiveness on instructional time and familiarize with Census technology.*

- Increase pay and cover associated costs, such as travel, for field enumerators.

***Census Bureau Response:** The Census Bureau partially accepts this recommendation. The Census Bureau will review current pay wages though pay is commensurate with similar jobs in the local area and in some cases are higher. The field staff gets reimbursed for each mile they drive for the census. The amount per mileage is based on IRS/GSA guidelines. Field staff are also reimbursed for any expenses they incur on travel, such as tolls, local parking, etc.*

- Recruit multilingual and diverse enumerators, especially for certain regions.

***Census Bureau Response:** The Census Bureau accepts this recommendation. In previous censuses including the 2020 Census, we implemented a plan to recruit multilingual diverse enumerators, hired locally where appropriate and worked with local organizations to recruit enumerators. Based on lessons learned we will improve on the plan for the 2030 Census.*

- Hire locally whenever possible, especially in hard to count places.

***Census Bureau Response:** The Census Bureau accepts this recommendation. In previous censuses including the 2020 Census, we implemented a plan to recruit multilingual diverse enumerators, hired locally where appropriate and worked with local organizations to recruit enumerators. Based on lessons learned we will improve on the plan for the 2030 Census.*

- Work with partner organizations to do hiring.

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***Census Bureau Response:** The Census Bureau accepts this recommendation. For the 2020 Census, we implemented a plan to recruit multilingual diverse enumerators, hired locally where appropriate and worked with local organizations to recruit enumerators. Based on lessons learned we will improve on the plan for the 2030 Census.*

- Expand the application and hiring process to media other than the internet and expand recruitment efforts in vulnerable communities and hire more bilingual staff.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Census Bureau provided local ads on radio, TV and community postings. We plan on taking 2020 lessons learned and building from those.*

- Develop effective management and discrimination training for field staff to provide a safer environment for enumerators and encourage a workforce that will remain through the entire count.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The planned field data collection operational schedule may be extended and may have shorter operational downtime which will allow enumerators to transition from operation to operation. We will continue to provide management and EEO training to our employees.*

- The Bureau should consider **assessing the effectiveness of selected respondent support strategies** that were used in 2020 to determine: (1) if they should be used more broadly in 2030 and (2) how they can be targeted on populations that can benefit most. These include:
 - Mobile Questionnaire Assistance centers.
 - Trailers equipped with hot spots and laptops to support Internet response where access to the Internet is very limited, such as tribal areas.
 - Mechanisms, such as oral functionality, for assisting persons with low literacy or disabilities.

***Census Bureau Response:** The Census Bureau accepts this recommendation and will explore if selected respondent support strategies could be expanded or improved and if so, how they could be so expanded and improved, particularly*

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within populations, communities, and geographic areas, that might experience obstacles or challenges to responding. Expanding and improving our outreach and engagement is a major subject of consideration and focus of our 2030 Census research program.

Research recommendations

CSAC was asked to provide a prioritized list of research themes arising from the FRN submissions. CSAC's approach to prioritization was to try to rank research topics most likely to affect the quality of the count, including the differential undercount. CSAC has the following recommendations in response to this request.

2. CSAC recommends that the Census Bureau research ways to improve housing and address data collection, with the following approaches and addressing the following issues:

- Create a method to remove duplicate addresses (e.g., two or more to an apartment complex). This could improve efficiency of field operations and reduce hostility that can arise from multiple contacts.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Geography Division conducts automated exact and equivocated matching for all incoming addresses to the MAF to identify duplicate addresses. The Geography Division implemented a project to review and resolve address duplicates in blocks where the inventory of addresses increased 50% or more after 2020 Census operations and is continuously exploring new methods for identifying duplicates such as the use of parcel data to identify areas with address duplicates. Additionally, the Census Bureau is currently looking into ways to improve the incorporation of limited listing functionality into enumeration instruments and field procedures. Limited listing functionality will include the ability to mark duplicate addresses.*

- Develop a system that allows field enumerators to report non-existent addresses (e.g., abandoned or burned down residences) or homes that were recently built.

***Census Bureau Response:** The Census Bureau accepts this recommendation. This functionality existed in the 2020 Census field enumeration instrument. The*

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Census Bureau will continue to look into ways to improve the incorporation of limited listing functionality into enumeration instruments and field procedures.

- Update and verify homes or possible homes using Google Earth, geo mapping, drones, satellites, or local USPS before and during enumeration.

Census Bureau Response: *The Census Bureau accepts this recommendation. The Census Bureau used many of these resources such as aerial and satellite imagery, on-line GIS sources, and USPS data to verify homes leading up to and during the last census. We will continue these practices and explore the possibility of other technologies leading up to the 2030 Census.*

- Develop an alternative method to verify rural residences when there are few proxies and poor data connection.

Census Bureau Response: *The Census Bureau accepts this recommendation to the extent that the Census Bureau is exploring options for alternative methods. The Census Bureau is currently looking into potential improvements to proxy procedures used during in-field enumeration, including specific considerations for rural areas. Additional research is also being conducted to determine the best enumeration and field collection strategy for areas with non-standard street addresses.*

- Investigate areas where people access mail only from PO boxes and would need forms sent to PO boxes. This might improve rural under-enumeration, those in urban/suburban centers who do not have standard street addresses, and the mobile population.

Census Bureau Response: *The Census Bureau accepts this recommendation. There are fewer and fewer areas without a location address because of the United States Postal Service, broadband expansion, and E-911 address conversions. The Census Bureau continues to explore methods for linking PO boxes to physical addresses. We are working with the USPS to identify PO Box and location addresses for box holders in Group E PO Boxes (forced PO Box mail delivery) so that we can research these areas to get a better understanding of the issue. Future research on other types of PO Boxes is planned to determine the best enumeration strategy for these areas.*

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- Test questionnaire systems that provide the ability to enter information for multiple addresses (second/seasonal residence, etc.). This could improve efficiency of field operations by reducing the need to send multiple enumerators to vacant properties. It might also clarify residency rules for people and reduce the overcount of older adults.

***Census Bureau Response:** The Census Bureau accepts this recommendation. We will use the Enterprise solution for surveys which is in the process of supporting much longer and more complex surveys than Decennial. We will take advantage of the functionality that they provide us to make it easier for users to enter information for multiple addresses. Additional research is also being conducted to identify potential improvements to field procedures related to second/seasonal residences and vacant properties based on 2020 Census lessons learned.*

- Develop procedures for the counting of short-term rental units.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Census Bureau is also looking into identifying potential improvements to field procedures related to short-term rental units based on 2020 Census lessons learned.*

The failure to reduce the undercount of young children, a persistent problem, was one of the major shortcomings of the 2020 census.

- 3. CSAC recommends that the Bureau research ways to improve the reporting of all children, especially young children. This includes testing alternative questionnaire wording, messaging, and response options. Suggestions for using CBAMS to investigate why young children are disproportionately missed in the census are included in a CBAMS recommendation below.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. In 2022, the Census Bureau formed the Young Children Working Group (YCWG), which is a cross-directorate team focused on the undercount of young children and improving data on this population. The YCWG is focused on 1) researching why young children are undercounted, 2) improving data collection, 3) improving data products, and 4)*

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engaging with stakeholders. The YCWG has developed a research agenda that includes projects on rostering, questionnaire wording, and other aspects of reporting young children in the census and surveys. These projects employ a variety of data and methods including, but not limited to, machine learning, administrative data, cognitive testing, focus groups, and community-based participatory research. The YCWG is working closely with CBAMS and other 2030 Census Design Plan projects that include components related to young children. We look forward to sharing more information with CSAC about the YCWG and the efforts of the U.S. Census Bureau to improve data on young children.

Many of the administrative record sources used in the 2020 census were not timely—that is, not contemporaneous with the census, such as Vital Statistics records, Medicaid records and school enrollment data. The current availability of these records for 2020 provides a data source for evaluating the quality of the 2020 census data for young children. CSAC members would appreciate having a session at a future CSAC meeting sharing information on whether and how much these efforts improve reporting for children overall and particularly young children, for example in the Vintage data.

CSAC supports FRN comments that privacy protection methods should avoid procedures that separate children and parents who live in the same household. Estimation of poverty among children is based on having records for parents and children in the same household.

4. CSAC recommends that the Bureau make use of these contemporaneous 2020 data sources to research local variation in the undercount of young children.

***Census Bureau Response:** The Census Bureau accepts this recommendation. Demographic Analysis (DA) is one of two approaches that the Census Bureau uses to estimate net coverage error in the 2020 Census. The DA population estimates for young children are considered very accurate because they are produced primarily using birth records from the National Center for Health Statistics (NCHS). The DA program is producing a series of state and county estimates for young children aged 0 to 4. The DA program presented information on this and the other DA series to CSAC in 2019 (see slide #12: <https://www2.census.gov/cac/sac/meetings/2019-09/2020-demographic-analysis-program.pdf>). We had always planned to produce this series once the final birth records for 2020 were available from NCHS. There is usually a 2-year lag from the birth year until we receive the file from NCHS. In addition to the vital records, we also use IRS tax filing files to estimate domestic migration. The Population Division is currently producing the*

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- 6. CSAC recommends that the Census Bureau research the effectiveness of using various social media platforms to reach certain populations and establish a committee to reassess the effectiveness of these platforms over time and identify new platforms as they emerge.**

Census Bureau Response: The Census Bureau accepts this recommendation. The Bureau is exploring setting up a new research project to investigate these and other partnership and communications recommendations. Expanding and improving our outreach and engagement, including enhancing the partnership program, is a major objective of our 2030 Census research program.

- 7. CSAC recommends that the Bureau create a task force (including representation from property owners, managers, and other stakeholders) to study the most effective approaches for enumeration in secure apartment complexes, gated communities, and other settings where access may be restricted and only available through “gatekeepers.”**

Census Bureau Response: The Census Bureau partially accepts this recommendation. Manager visits (MVs) were descope from the 2020 Census after an early test of field systems where it was discovered that multiunit groupings were not executing properly after the timing of workload deliveries changed in the early weeks of the pandemic. The Census Bureau is currently researching potential improvements to field procedures related to multiunit manager visits as well as improved case assignment procedures for gated communities and other restricted access settings. We will continue to establish partnerships with umbrella organizations for major GQ types such as for student housing facilities, military barracks, etc. to facilitate our access.

II. Census Barriers, Attitudes, and Motivators Study: A Look Ahead

CSAC commends the Census Bureau for its development and implementation of CBAMS. This work is especially important given declining trust in government and falling survey response rates.

- 8. CSAC recommends that the Bureau clarify and develop a roadmap of how the CBAMS finding on attitudinal groups is modeled for developing and optimizing media campaigns. The committee believes that an explicitly stated methodology and analysis plan can align objectives and mitigate downstream risks.**

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Census Bureau Response: The Census Bureau accepts this recommendation. The CBAMS conducted for the 2020 Census communications campaign was one of several inputs used to develop, design, and optimize outreach. Currently, the project team is developing a detailed plan for CBAMS by outlining the goals and objectives for each intercensal iteration. More broadly, the Communications Directorate (ADCOM) has formed the Communications Research Council (CRC) that will incorporate CBAMS efforts into a larger roadmap to chart out mid-decade goals while paving the way for the suite of research that will support development, design, and optimization of the 2030 Census communications campaign.

- 9. CSAC recommends improving and expanding ongoing awareness and educational programs as most people were not familiar with the decennial census (46% “not too familiar”) and not aware of how the census information is used.**

Census Bureau Response: The Census Bureau accepts this recommendation. ADCOM is committed to increasing awareness of and trust in the Census Bureau and its products and services, including the decennial census, in an evergreen capacity. ADCOM recognizes the importance of improving and lifting the Census Bureau brand. ADCOM will work with various researchers to explore drivers of trust and to identify effective messaging by stakeholder type (i.e., data user, respondent). Concurrently, teams across ADCOM continue to expand engagement with the public through multiple avenues including social media and email marketing. For example, one of our most popular endeavors, the America Counts series, successfully makes Census Bureau data and its implications accessible to the general public. In addition, the Census Bureau’s Office of Strategic Alliances (OSA) started functions 18-months ago, with an evergreen national partnerships program serving all Census programs and products. OSA’s work will position the Census Bureau brand during intercensal years by working with national organizations to continuously promote Census during intercensal years. Conducting multiple iterations of CBAMS will enable us to track the level of awareness about the Census over time, which will help guide future initiatives and innovations while hopefully reflecting the success of our ongoing efforts.

- 10. CSAC recommends designing CBAMS with the goal of better understanding factors that contribute to undercounting of children and other historically undercounted populations. For children, the Bureau should ask specifically about children who fall into certain categories that may contribute to their not being counted. These include**

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infants, children in shared custody arrangements and the nature of those arrangements, children who are there at the time but do not usually live there (and their circumstances), and children who ordinarily do live there but are away temporarily (and why).

Census Bureau Response: The Census Bureau accepts this recommendation. For CBAMS and all related communications research efforts, historically undercounted populations (HUPS) are a priority. In particular, for the 2023 CBAMS, we added a battery of questions related to the undercount of young children. We developed the questions in coordination with the YCWG discussed earlier. We will revisit and finalize the questions after receipt of pretesting results. Simultaneously, there is a Bureau-wide HUPS working group with whom we've begun to collaborate. The CBAMS plan discussed above will incorporate our future plans regarding HUPS.

- 11. CSAC recommends that the Bureau study how, and why, many people believe that the Census Bureau can use government records to identify citizens, non-citizens, and, among the latter, undocumented aliens.**

Census Bureau Response: The Census Bureau accepts this recommendation. Previous research into beliefs, concerns, and opinions about the use of administrative records has shown that many respondents believe that government agencies share information and can access data from other agencies. Concerns about sharing information related to immigration status have been documented in this research as well (See for example [Fobia, Childs and Eggleston 2020](#); [Childs, Fobia, King and Morales 2019](#)). This recommendation can be incorporated into planned research that continues to explore attitudes and public opinion about the uses of administrative data.

- 12. CSAC recommends using multivariate models to understand the marginal effects of multiple variables simultaneously on dependent variables of interest such as trust, awareness and motivators. CSAC also recommends that the Bureau explore incorporating proximate variables (e.g. media consumption by geography and other socio-economic aggregates) to inform awareness and trust-building communication and media strategies.**

Census Bureau Response: The Census Bureau accepts this recommendation. The CBAMS team is developing an analysis plan that will include investigating relationships between variables of interest. The Census Bureau also accepts the recommendation to explore the

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use of proximate variables in planning communication strategies. The Census Bureau used geography-based media consumption data when planning the 2020 Census communications campaign and intends to continue researching how these data can be best used to inform future communication programs.

- 13. CSAC recommends the Bureau disclose the methods of verifying identity of online respondents and explain how the non-Internet households in rural areas are accounted for in this online-only study.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. As mentioned during the presentation, intercensal CBAMS data collection will utilize the Census Household Panel. Respondents will be sampled and recruited via physical address, thus verifying their online identity through a questionnaire in the recruitment process. Non-internet households will be invited to participate via inbound or outbound telephone interviewing and may respond to surveys via phone.*

- 14. People who do not respond to the census are also unlikely to participate in CBAMS using typical recruitment strategies. CSAC recommends the Bureau work with interest groups and partner organizations to identify and engage respondents from varied subgroups, with a goal of including those who display some distrust.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. The research team conducted a set of focus groups in March 2023 and worked with partner organizations to recruit participants from historically undercounted populations. Using the strategy in this recommendation, we were able to successfully recruit groups that are usually unlikely to participate using typical recruitment strategies. We plan to continue using this strategy to recruit and engage respondents from varied subgroups.*

- 15. CSAC recommends collecting qualitative data from focus groups and open-ended responses in CBAMS in order to study persons with a low propensity to respond to augment understanding of the types and sources of misinformation about the purpose of the census, and how the data are used.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. The research team included a new section on misinformation for the 2023 CBAMS. This initial investigation explores how big a problem the respondent views misinformation, sources of misinformation, frequency of encountering and verifying misinformation, as well as*

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verification sources. Misinformation was also addressed in recently conducted focus groups. Results of these efforts will inform how we continue to investigate misinformation.

- 16. CSAC recommends that the Bureau use findings from CBAMS to design random assignment experiments to test the effectiveness of specific strategies to improve response rates—both overall and within specific subgroups, including persons of color, families with young children, and persons with low trust of government.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. The results of past and current iterations of CBAMS continue to provide actionable results for testing in other arenas, for example, in an upcoming small-scale test or even within the Mid-Decade Testing. For instance, the Tailored Contact Strategy team is using motivators by audience to create customized mailings containing messages shown to resonate with each respective group.*

III. Overview of Initial Proposals for Revising the 1997 OMB Race and Ethnicity Statistical Standards

The Census Scientific Advisory Committee (CSAC) thanks the US Census Bureau for all their work overseeing the presentation concerning the Initial Proposals For Updating Statistical Policy Directive No. 15 (SPD 15): Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity. CSAC appreciated the insightful presentation and look forward to hearing follow-up developments including updates at the Fall 2023 and Spring 2024 CSAC meetings.

The proposed changes represent a major shift in the way that the Census Bureau and the federal government collect information concerning race and ethnic groups.

The recommendations and comments are divided along the lines of a general overview of the proposed changes in the collection of data related to race and ethnicity along with the Current Federal Register Notice’s 5 Initial Proposals and the three Discussion Questions closing out the Census Bureau’s presentation.

Comments and Recommendations Concerning the Overall SPD 15

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Overall, there is considerable agreement concerning the recommendations of the Federal Interagency Technical Working Group on Race and Ethnicity Standards Working Group. The 2020 Census and the approaches used to measure race and ethnicity demonstrated the significant ways in which the nation's population has changed along the lines of race and ethnicity with greater degrees of diversity. In addition, it is clear that the existing OMB racial and ethnic classifications do not capture the reality of the nation's racial and ethnic configuration. The fact that the Some Other Race (SOR) category alone or in combination group (49.9 million) outnumbered the Black population (46.9 million) is amply instructive for the need to consider the OMB race and ethnic classifications.

We make the following recommendations to the Census Bureau as the Federal Register Notice's Public Comment Period comes to a close on April 12.

17. CSAC recommends that the Census Bureau carefully scrutinize and analyze the reactions and recommendations of the general public and the data user community concerning the proposed SPD15 changes and provide a summary of their conclusions.

Census Bureau Response: The Census Bureau thanks the Committee for this recommendation. The Federal Interagency Technical Working Group on Race and Ethnicity Standards (Working Group) is Chaired by the U.S. Office of Management and Budget (OMB) and Co-Chaired by the U.S. Census Bureau. Additionally, the Census Bureau is a member agency of the Working Group, along with over 20 departments/agencies.

The Working Group's initial proposals were published in the Federal Register as an OMB Notice. A summary of the public comments to the Notice is expected to be included with a revised SPD 15; OMB and the Working Group have set the goal of completing these revisions by the Summer of 2024.

The Working Group is undertaking a methodical review of public feedback and comments received through the Federal Register Notice, biweekly listening sessions, tribal consultation, and public town halls. The Working group plans to code, summarize, and analyze the 20,000+ comments. The Census Bureau's Working Group expert representatives are and will continue to be involved in this process.

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- 18. CSAC recommends that the Census Bureau conduct an analysis of race and ethnicity write-ins, and the method for editing those responses in the 2020 Census, for children overall and young children, compared with other age groups.**

Census Bureau Response: The Census Bureau accepts the recommendation to conduct an analysis of race and ethnicity write-ins for children overall and young children, compared with other age groups. Research on this topic is subject to the availability of funding and resources for this work.

However, the Census Bureau does not accept the recommendation to examine the way we edit responses for children and young children, as the method for coding and editing responses is the same, regardless of age.

Comments and Recommendations Concerning the Current Federal Register Notice – Initial Proposal 1: Question Format

There has been consistent confusion regarding the current two-question race/ethnic structure. Specifically, Latinos often express confusion over the two questions. One common question in the Latino community is “what is my race?” The puzzlement is particularly acute as Latinos have already completed the Latino/Hispanic question in the census questionnaire. The one-question format will likely clear up the confusion that many Latinos experience. Nonetheless, there is concern in certain segments of the Latino community that the count of Latinos will actually decline as they have been counted as Latino regardless of their racial identification. In addition, others worry that Afro-Latinos and Indigenous-Latinos may opt for a single race instead of choosing multiple racial categories. Some critics of the one-question approach fear that multiracial Latinos will opt out of the Latino category or Black/Indigenous category with their preference for one group over the other resulting in a diminution of the count of the latter group. Still, it is likely that the single-question format will result in large segments of the Latino population opting out of the Some Other Race (SOR) category.

We make the following recommendations to the Census Bureau concerning the one-question item.

- 19. CSAC recommends that the Census Bureau conduct tests and focus groups to assess how Latinos respond to the proposed shift from two questions to one question and provide a summary to CSAC of the conclusions and next steps to implement the change.**

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Census Bureau Response: The Census Bureau thanks the Committee for this recommendation.

The Census Bureau has conducted extensive research for the decennial census and the American Community Survey on how the Hispanic or Latino population identifies in response to separate questions and combined question formats; this research also examined the accuracy of these responses through reinterviews. What we know about Hispanic or Latino responses to separate questions and combined question formats is through extensive cognitive testing, focus groups, and additional qualitative research. This important research informed multiple content tests over the past several decades. The Census Bureau can provide links to published reports that document the results of this extensive research.

Within the current review of SPD 15, the Working Group is collaborating with multiple agencies on funding and conducting qualitative and quantitative testing. The scope of this testing includes, for example: A combined question without Some Other Race category; modifications to question stem and instructions; establishment and business surveys; and bridging factors. August 2023 is the target for research results to inform the Working Group's decisions.

20. CSAC recommends that the Census Bureau consult with indigenous communities originating from Latin America and the Caribbean countries to develop appropriate categories which are meaningful to them.

Census Bureau Response: The Census Bureau thanks the Committee for this recommendation. The Census Bureau will continue its long history of consulting and collaborating with communities, including those with indigenous origins in Central and South America and the Caribbean. Previous collaborations have, for example, resulted in successfully testing design formats with examples for the American Indian and Alaska Native population. This research found that including examples for American Indian, Alaska Native, and Central and South American indigenous groups make it clear to respondents that the category is inclusive of all indigenous groups in the Americas. The results of this research, which were conducted in decennial census and American Community Survey environments, have been shared with the Working Group to inform their discussions.

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Comments and Recommendations Concerning the Current Federal Register Notice – Initial Proposal 2: Middle Eastern or North Africa (MENA) Racial Designation

There has been general acknowledgment of the major need for the development of a MENA racial category in the U.S. Census Bureau. The absence of data for the MENA population has been detrimental to the availability of data that can be used to assess the level of racial inequalities impacting MENA people. In addition, there are significant limitations with existing data to understand the demographic and socioeconomic patterns of MENA people and the diversity existing within the group. Moreover, the presence of a MENA racial category will likely provide a sense of belonging to people who now would be able to identify themselves within the racial configuration of the United States, resulting in the likelihood of more accurate information on the MENA population and its subgroups and declining percentages identifying as SOR. Nonetheless, given governmental distrust associated with fears of profiling the MENA population, measures will likely be needed to reassure Middle Eastern and Islamic communities that census data will not be used to profile or target them.

We make the following recommendations to the Census Bureau regarding the construction of the MENA racial classification.

- 21. CSAC recommends that the Census Bureau consult with and collaborate with MENA communities and community organizations to overview any changes that come about from the proposed changes and assure people about the confidentiality of the data that they provide.**

Census Bureau Response: The Census Bureau thanks the Committee for this recommendation. The Census Bureau will follow OMB's determination on whether or not MENA is a new minimum category. Should MENA become a minimum category in a revised SPD 15, the Census Bureau will certainly engage with MENA communities and organization leaders on the plans for collecting, tabulating, and protecting the confidentiality of MENA data in the 2030 Census and current surveys.

Comments and Recommendations Concerning the Current Federal Register Notice – Initial Proposal 3: Collecting Detailed Race and Ethnicity Data

One of the favorable features of the proposed changes is that there is potentially greater accuracy in identifying the racial identifications of the U.S. population, but also the increasingly large set of categories that capture unique combinations of racial categories. The permutation

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of the races that form the racial configuration of multiracial individuals can be quite extensive. The selection of specific combinations of racial classifications holds significant power as categories and counts represent potential political power.

- 22. CSAC recommends that the Census Bureau carefully considers all combinations of multiracial categories to assure that the most populous combinations of racial groups are available to assess social, economic, and political patterns across and within racial classifications.**

Census Bureau Response: The Census Bureau accepts this recommendation. The Census Bureau will carefully consider all combinations of multi-racial and -ethnic categories to assure that the most populous combinations of racial and ethnic groups are available to assess social, economic, and political patterns across and within racial and ethnic classifications.

Additionally, the Working Group continues its deliberations on implementation, including guidance (e.g., tabulation) and bridging documentation. Implementation guidance will be provided once a revised SPD 15 is released; OMB and the Working Group have set the goal of completing these revisions by the Summer of 2024. Census Bureau representatives are assisting the Working Group with this guidance and is committed to assisting other federal agencies when implementing a revised SPD 15.

Ultimately, the Census Bureau will follow the implementation guidance set forth by OMB and a revised SPD 15.

- 23. CSAC recommends that the Census Bureau undertake a qualitative analysis of how these new categories may misclassify or alienate certain populations leading to potential non-response.**

Census Bureau Response: The Census Bureau thanks the Committee for this recommendation. The Census Bureau has conducted extensive qualitative and quantitative research to understand how detailed categories, examples, and write-in response areas help respondents to fully report their racial and ethnic identities. This research has informed the initial design of the Working Group's proposal.

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The Working Group continues its deliberations on the potential design of future race and ethnicity data collections. Ultimately, the Census Bureau will follow the guidance set forth by OMB and a revised SPD 15.

Comments and Recommendations Concerning the Current Federal Register Notice – Initial Proposal 4: Terminology

As societal changes take place, there is always a need to reexamine definitions and terminology that are updated or in opposition to the times. The Working Group suggests that certain terms be eliminated from the decennial census due to changing norms and expectations. The Working Group suggests the removal of the following terms: “Negro,” “Far East,” “East Asian,” “Other,” and “Native Hawaiian and Other Pacific Islanders.

***Census Bureau Note On the Above Paragraph:** The Federal Interagency Technical Working Group’s initial proposals on terminology did not suggest removing the term “East Asian.” Instead, the Working Group proposed removing “Far East” from the Asian definition in SPD 15 and replacing the term with “East Asian.”*

- 24. CSAC recommends that the Census Bureau develop racial groups on the basis of alphabetical order as opposed to alternative approaches. The proposed list has the “White” category listed first.**

***Census Bureau Response:** The Census Bureau thanks the Committee for this recommendation. SPD 15 currently does not dictate the order in which the race and ethnicity minimum categories should be displayed on Federal information collections. Agencies generally order alphabetically or by population size.*

Previous Census Bureau testing using the separate two-questions format for race and ethnicity revealed that it was problematic to list the groups in alphabetical order, as many respondents (upon seeing the first alphabetical category, “American Indian or Alaska Native”) checked the box upon seeing the word “American.”

- 25. In a similar fashion, CSAC recommends that the Census Bureau consider listing “female” before “male” in the listing of sex categories.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. We will add this as a topic of interest for research leading up to the 2030 Census and investigate*

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other potential vehicles for testing. Research and implementation of this topic is subject to the availability of funding and resources for this work.

Comments and Recommendations Concerning the Current Federal Register Notice – Initial Proposal 5: Implementation Guidance

- 26. CSAC recommends that the Census Bureau develop bridging and crosswalk methodologies to allow for comparisons to be made across time based on changing racial and ethnic categories including the 2010-2020 period. Further, CSAC recommends that the Census Bureau produce clear and accessible documentation to guide users on how analysis of change over time by race and ethnicity classifications can or cannot be conducted and recognizing loss in comparisons over time in part arise out of a need to reflect current practices. CSAC recommends that the Census Bureau share these materials with CSAC for their review.**

Census Bureau Response: *The Census Bureau thanks the Committee for this recommendation. OMB’s Working Group continues its deliberations on implementation, including guidance and bridging documentation. Such guidance and bridging documentation will be provided once a revised SPD 15 is released; OMB and its Working Group have set the goal of completing these revisions by the Summer of 2024. Census Bureau expert representatives are assisting the Working Group with this guidance and bridging documentation and is committed to assisting other federal agencies when implementing a revised SPD 15.*

Because new categories were not added to the race or ethnicity question for the 2020 Census, bridging and crosswalks were not developed when making comparisons between 2010 to 2020 race and ethnicity data. The Census Bureau has provided for data users to understand differences in the race data when making comparisons between the 2010 Census results with 2020 Census results. This guidance was provided with each data release and through additional educational webinars, blogs, and technical documentation.

- 27. Given the current and projected growing racial and ethnic diversity of the nation’s population, CSAC recommends that the Census Bureau consult with the National Academies of Science, Engineering and Medicine’s Committee on National Statistics and Committee on Population, perhaps with input from CSAC and NAC, on a regular**

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basis to consider ongoing changes and assess whether there is a need to reconsider racial and ethnic categories.

Census Bureau Response: The Census Bureau thanks the Committee for this recommendation. The Census Bureau will continue our long history of consulting with our myriad stakeholders, including CSAC and NAC, Congress, state and local governments, community members, academics and researchers, the National Academies, and our data users.

We will continue close consultation with fellow Federal Government agencies and OMB. Ultimately the Census Bureau will follow OMB's guidance on future reviews of SPD 15.

IV. New Formal Privacy Methods

CSAC commends the Bureau's continuing efforts to improve the disclosure avoidance systems being used in more data products. The County Business Patterns data product seems like an appropriate next step which can help develop a stronger toolbox of techniques for disclosure limitation as it raises some new challenges but at the same there is a high likelihood that the state-of-the-art techniques can allow a reasonable trade-off between the utility of the data and the privacy protection. The heavy-tailed nature of the data here makes it harder to apply traditional differential privacy protection techniques and the proposed hybrid approach seems appropriate at a high level.

The proposal for the data product suggests not using any survey data but relying entirely on administrative records as the source of the data. The presentation did not entirely make clear what the legal standard for disclosure prevention is for this data release.

28. CSAC recommends that the Bureau provide additional clarifications on the legal requirements for the disclosure avoidance process, and report back to CSAC about how the Bureau intends to measure this risk of such disclosure.

Census Bureau Response: The Census Bureau accepts this recommendation: the privacy framework (used to protect 13 U.S.C. and 26 U.S.C. confidential information) our work builds upon includes: (1) protection for "fact-of-filing", (2) protection against exact inference of magnitude values, (3) protection for firms (i.e., collections of establishments), and (4) "sliding" establishment protection (i.e., privacy guarantees can degrade as the influence of an establishment grows). Per-Record Differential Privacy

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allows measurement of privacy loss in this framework. Furthermore, the Economic Directorate has been in communication with the Internal Revenue Service (IRS) to ensure disclosure avoidance methods meet IRS legal and regulatory requirements.

The relative privacy protection metric proposed assigns an easy-to-interpret numerical score to the privacy protection provided to a business from the release of a single noisy statistic. It is a priori unclear what value of this “ p ” is acceptable to businesses. Further, interpretation of p as a measure of privacy protection can be misleading. While for one statistic, the value of p conveys something interpretable, when multiple correlated statistics are released, the interpretation of p becomes much less clear, and the more traditional privacy loss budget may be much more appropriate. The range of privacy budgets proposed by the Bureau is significantly larger than that used for the Decennial, and disclosure risk must be properly evaluated. The stated goal of “Protection against “fact-of-filing”” places a high bar, which has been evaluated in recent research work under the name of membership inference attacks.

The noise added in the second stage of the proposed approach is calibrated to the partly sanitized statistic. The noise scale itself can then be disclosive, albeit using a different class of attacks than the ones traditionally used in reconstruction attacks. There is also a concern that information about the noise scale is inferable via uncertainty estimates, or release of correlated statistics, e.g. the same fields across multiple levels of aggregation, or correlated fields at the same level.

29. CSAC recommends that the Bureau carefully evaluate the full set of released data to prevent disclosure via more sophisticated reconstruction and membership inference attacks.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Census Bureau will conduct privacy analyses to ensure final disclosure avoidance methodology provides protection against sophisticated reconstruction and membership inference attacks, though formal fact-of-filing protection for large establishments and firms is likely to be quite weak under any methodology. The first stage of the CBP DAS methodology uses Per-Record Differential Privacy and a traditional privacy loss budget. Per-Record Differential Privacy provides provable protection against reconstruction and membership inference attacks. Formal protection offered by the proposed second-stage noise is not yet known, and research will continue in this area. Note that the relative*

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protection statistic, p , will be used in addition to traditional privacy loss parameters to describe protections afforded by the complete CBP DAS methodology.

- 30. CSAC recommends that the Bureau explore the use of public sources of data to calibrate the second stage noise rather than sensitive current data.**

***Census Bureau Response:** The Census Bureau cannot accept this recommendation, as it is not applicable to the current CBP DAS methodology. The current CBP DAS methodology uses second-stage noise that is calibrated to differentially private output; no sensitive data are used for calibration. The second-stage noise is strictly post-processing. Over the upcoming year, the Census Bureau plans to research formally private alternatives to the proposed second-stage noise.*

Some of the outstanding research questions relate to topics that have been studied recently in the research community. Sampling-based schemes can ordinarily benefit from the inherent noise due to sampling, but recent research has shown that the specifics of the sampling method matter a great deal. Statistics other than sums, such as medians and quantiles, have been well studied in recent literature and there is a range of methods to privately release such statistics.

- 31. CSAC recommends the Bureau investigate recent research works on implications of sampling on privacy, evaluate how that can influence the design of sampling methods, and determine how sampling could inform disclosure avoidance methodologies.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. Development of disclosure avoidance methodologies for Economic Directorate surveys with complex sample designs has not yet begun, but a thorough review of available research will be part of the initial phase of any development project.*

- 32. CSAC recommends that the Bureau evaluate recent work on median and quantile estimations to select the methods that work best for providing full inference on the kind of data distributions of interest. This will help ensure that the release preserves accuracy while protecting privacy.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. While the research team acknowledges the inherently high sensitivity of summations based on skewed data, summations form the critical core of data published by the Economic*

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Directorate. For many statistics other than sums, methods and software are currently available. The CBP DAS Prototype is built on Tumult Analytics, a platform which supports private estimation of quantiles, means, and several other statistics. However, additional research and development may be necessary to support private estimation of statistics such as the Herfindahl–Hirschman index published as part of the Economic Census.

- 33. CSAC recommends that the Bureau submit the white paper on these methodologies to a reputable peer-reviewed journal.**

Census Bureau Response: The Census Bureau accepts this recommendation. A white paper is being developed at this time.

- 34. CSAC strongly recommends that the Bureau continue to engage in two-way conversation with the stakeholders and data users as they develop disclosure avoidance methodologies on all Census Bureau data products. This engagement should be ongoing and come in advance of any data releases, so that users understand and are prepared to appropriately use and interpret data.**

Census Bureau Response: The Census Bureau accepts this recommendation and is committed to development of formally private disclosure avoidance methodologies. Stakeholder engagement and education is a key part of our planned work.

V. International Use of Cell Phone Location Data in Official Statistics and Social, Demographic and Health Studies

CSAC commends the Census Bureau for its forward looking stance. Considering all of the resources available is essential to having an efficient, accurate, and timely national statistical system. CSAC believes that there is potential for these forms of data to improve operations and data products for example commodity flow and daytime population.

- 35. CSAC recommends that the Bureau engage with an independent entity (such as via workshops or panels convened under the auspices of CNSTAT) to articulate costs and benefits of these types of data to the operations and products created by national statistical programs.**

Census Bureau Response: The Census Bureau partially accepts this recommendation. We will pursue the possibility of reaching out to an independent entity on this topic.

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- 36. CSAC recommends that the Bureau report back to CSAC on the potential uses of mobile phone and transponder data, how fitness for use will be established, and explain how the Bureau will mitigate privacy risks associated with such data.**

Census Bureau Response: The Census Bureau thanks the committee for this recommendation. If an independent entity collaboration occurs, we will report back to CSAC. We agree that topics such as fitness for use and privacy risks are important as well as the legal landscape surrounding cell phone location use.

- 37. CSAC recommends that the Bureau collaborate with other agencies to establish legal clarity and ethical guardrails around the use of commercial individual location data in official statistics. Policies around use of such data should be conditional on source and use. The bar for incorporating such data into official estimates should be higher than using it for ad hoc research, field procedures, or coverage assessments.**

Census Bureau Response: The Census Bureau accepts this recommendation.

- 38. CSAC recommends that the Bureau establish a standing committee to review emerging developments in technology, standards, and legislation to stay current with emerging forms of digital identity and privacy such as the WC3 Consortium's Decentralized Identifiers (<https://www.w3.org/TR/did-core/>).**

Census Bureau Response: The Census Bureau accepts this recommendation. Currently within the Census Bureau, we already cover this recommendation through the Policy Office, Research and Methodology, our xD program in the Deputy Director's office, and our senior technical staff.

VI. Future Update and Uses of the MAF/TIGER System

CSAC thanks the Bureau for its future update to the Master Address File (MAF)/ Topologically Integrated Geographic Encoding and Referencing (TIGER) System. CSAC was impressed by the integration of satellite and parcel data to improve the MAF/TIGER system. The technological advances in data and methods that have made nearly a full-shift from 100% in-field canvassing through address listings and block canvassing operations to 100% in-office blended approaches of digital data and machine learning methods for upcoming

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census operations is impressive. Concomitant with these developments, there has been even greater engagement with communities and a wide range of data users, which may provide new opportunities for feedback on the accuracy of TIGER data. We applaud the improvements these advances have made particularly in rural and remote areas.

39. CSAC recommends that the Bureau conduct an analysis of the errors that may arise from these new methods and an evaluation of how well these methods improve the ability to identify hard-to-capture features, and that the Bureau report the results to CSAC.

Census Bureau Response: The Census Bureau accepts this recommendation. We are exploring two methods of automated change detection, Convolutional Neural Network modeling using Python and Pytorch and Random Forest classification and regression algorithm. We will evaluate each to determine the best method for detecting change on the landscape. We have staff developing training chips to train the change detection model and plan an interactive review of automated change detection results for validation. An evaluation of the methodology is planned and the Census Bureau will share the results with CSAC.

It is important to note we are not relying completely on automated change detection. We will continue the partnerships and operations of the past that resulted in successful maintenance and update of the MAF/TIGER System. A few examples include receipt of address and spatial updates through our ongoing partnerships with the U.S. Postal Service and tribal, state, and local governments. We partner with the National Geospatial Intelligence Agency and Department of Agriculture to receive regular updates to our satellite and aerial imagery repositories. We are using parcel data from the Department of Homeland Security's Homeland Infrastructure Foundation-Level Data (HIFLD) Open Data Platform. Combined, these sources provide nationwide coverage of geospatial information.

40. CSAC recommends that the Census Bureau engage with TIGER file users to make improvements to the TIGER files and to learn about errors and improve its automated detection mechanism.

Census Bureau Response: The Census Bureau accepts this recommendation. Our connection with our partners, and regular exchange of geospatial data, is a key component to managing data in the MAF/TIGER System, including the identification and

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resolution of issues following the application of automated methods. We plan to engage with partners in areas where we detect change, but need assistance or sources, to help ensure the attributes associated with this change are accurately captured in the MAF/TIGER System.

The Census Bureau is developing a Partner Portal as part of the Geography Division's Geographic Support Program. This cloud-based application will allow partners to review TIGER data and to make corrections and additions to the TIGER data online. This application will also allow partners to provide address updates to the MAF.

Additionally, we are presently working with Emerging Technology Fellows from the Census Bureau's xD program to identify bias in our models and ensure that our models are equitable for all types of areas. As we learn more from these efforts we will develop strategies to address these biases.

- 41. CSAC recommends that the Bureau consider the implications of lesser engagement with the USPS in the unlikely situation that the USPS is no longer able to provide the same level of service.**

Census Bureau Response: *The Census Bureau accepts this recommendation. The Census Bureau pays close attention to legislation and news related to and impacting the US Postal Service (USPS). Additionally, the Census Bureau and USPS have formal liaisons to exchange information and knowledge. They meet regularly to discuss topics of interest to both agencies. Since the 2020 Census, the USPS has started to provide additional and more sophisticated products to assist us in making updates to the MAF/TIGER System. Examples include use of the USPS enhanced Line Of Travel (eLOT) file to resolve ungeocoded addresses and reveal sequence inconsistencies and other issues with current geocoding results. Through the use of the eLot attribute, we are able to successfully sort addresses by the sequence in which they are delivered by the USPS, often revealing patterns that are otherwise unseen.*

In working with our colleagues at the USPS, there is no indication they will no longer be able to provide the same level of service in the next seven years before the 2030 Census. Thinking long-term, the Census Bureau is using multiple parcel datasets (e.g., from HIFLD and Regrid) to update and maintain the MAF/TIGER System and is developing the Partner Portal to acquire address data directly from partners. Relying on parcel data and

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direct input from partners will help alleviate any reduction in service from the US Postal Service.

42. CSAC requests an update on MAF/TIGER improvements in Puerto Rico, which is both disaster prone and which appears as “update leave” on the current map of “census type of enumeration area” status.

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Census Bureau is actively engaged in activities to strengthen address list development and maintenance activities in Puerto Rico. First, the Geography Division is working hand in hand with the Department of Commerce on the Puerto Rico Economic Dialogue. Staff are engaging with Government of Puerto Rico representatives and other stakeholders to share data, resources, best practices, and technology related to address, boundary, and road data.*

Second, the Geography Division participated in the 2022 – 2023 Puerto Rico focused sprint of The Opportunity Project (TOP) to help improve local addressing systems. TOP offers a framework for agencies to collaborate with technologists and community advocates in order to rapidly design digital solutions for the public good. There were several outcomes from the sprint:

- Social Solutions developed the MiCasa (Catalog of Actionable Structures for Addressing) application that captures actionable geolocation and address data from residents to support future address verification for nonprofit organizations (NPO’s).*
- Esri designed a story map to increase awareness of the challenges with Puerto Rico addressing. The application integrates several data resources including the Census Predominant Address Type Viewer, the National Address Database schema, and Esri addressing solutions.*
- Nueva Vida PR developed a strategy called CASU (County, Area, Street, Unit) to create a simple and unique address for structures that don’t have addresses and in many cases are located on an unnamed road or street.*
- The Initiative for Civic Address Systems Assessment in Puerto Rico (iCasaPR) produced the Puerto Rico Geospatial Civic Address Standards Action Strategy (PR Geo Casas) for address data collection. It is a centralized resource to assist communities, municipalities, and other stakeholders to improve address point data.*

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Third, the Geographic Support Program includes a working group dedicated to improving the MAF/TIGER System in Puerto Rico and the Island Areas. The working group is identifying sources of geographic data for Puerto Rico and the Island areas – including addresses, roads, boundaries, and parcels. They are also standardizing urbanización names and reviewing unnamed roads in the MAF/TIGER System and enhancing internal and external geocoding services to improve geocoding of Puerto Rico addresses. In addition, they have evaluated USPS Undeliverable as Addressed (UAA) cases for the 2020 Census in Puerto Rico.

- 43. CSAC recommends that the Census Bureau explore the use of satellite imaging to better identify new structures on existing parcels (such as “granny flats” or auxiliary dwelling units) and to explore the use of new data sources to capture new multi-unit structures based on their height (for example, the “Z” coordinate), particularly in urban and suburban areas or new technologies (such as drones) for rural and remote detection.**

***Census Bureau Response:** The Census Bureau accepts this recommendation. The Census Bureau is developing an automated change detection model as part of the Geographic Support Program, mentioned in response to CSAC question #39, that will detect change on the landscape, including new structures within a parcel. The change detection is the beginning of the process as imagery alone cannot tell us about the use type of the structure.*

The Geographic Support Program is acquiring multiple parcel datasets, using on-line GIS websites, and reaching out to tribal, state, and local governments for GIS data that the Census Bureau can use to continually maintain the MAF/TIGER System. Additionally, a new building that replaces a demolished one will show up on the USPS Delivery Sequence File (DSF) with the new within structure units identified. The old units that no longer exist in the demolished building will receive a flag in the DSF as no longer receiving mail (exclude from delivery).

The introduction of the ‘Z’ coordinate is relatively new and coverage is limited across the nation. We will continue to attend geospatial conferences and speak with our colleagues in the industry about how the use of the ‘Z’ coordinate may be useful to our work.

- 44. CSAC recommends that the Census Bureau explore methods to identify embedded units within residential areas that receive mail at the same mailing address.**

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Census Bureau Response: The Census Bureau accepts this recommendation. We acknowledge these situations are challenging, in all aspects of data collection. If the embedded unit receives mail, it will eventually be on the USPS DSF. We will continue to work with partners in tribal, state, and local government to obtain this type of information through the Geographic Support Program and operations like the Local Update of Census Addresses and New Construction. We will also continue research into embedded or hidden units to look for common characteristics that can be used to help identify them through automated methods.