



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

JAN 26 2018

MEMORANDUM FOR: Barbara Anderson
Chair
Census Scientific Advisory Committee

From: Ron S. Jarmin 
Performing the Non-Exclusive Functions
and Duties of the Director
U.S. Census Bureau

Subject: U.S. Census Bureau Responses to Census Scientific Advisory
Committee Fall 2017 Recommendations

The U.S. Census Bureau thanks the Census Scientific Advisory Committee for its recommendations. We are responding to the Committee recommendations submitted during its September 14-15, 2017 meeting.

Your expertise is necessary 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.

The Census Bureau's responses to your recommendations are attached.

Attachment

To: Census Bureau
From: Census Scientific Advisory Committee (CSAC)
Topic: Comments and Recommendations from Fall 2017 CSAC Meeting
Date: September 15, 2017

I. GENERAL

- 1.) It would be helpful if the Census Bureau responses to CSAC recommendations were received by CSAC at least two weeks before the agenda for the next meeting is finalized. This would allow the agenda to be affected by those responses, since the Census bureau usually consults with the CSAC Chair before the agenda for the following meeting is finalized.

CENSUS RESPONSE:

The Census Bureau agrees with this request. We will work internally to ensure we send responses to CSAC recommendations to the CSAC Chair a few weeks before consulting on the topics for the upcoming meeting.

- 2.) Generally, the Census presenters gave extremely well-organized presentations and gave very helpful responses to CSAC questions.

CENSUS RESPONSE:

The Census Bureau appreciates your assessment. We strive to offer topics of interest and to focus on areas that would most benefit from the Committee's recommendations or advice.

II. RECOMMENDATIONS ABOUT THE 2020 CENSUS

- 1.) We remain concerned about the possibility that 2020 could be politicized. It would be useful to measure attitudes about Census privacy views of government in the context of completing the 2018 Census Test (these are attitudes that are not typically salient, so they are susceptible to contextual effects).

CENSUS BUREAU RESPONSE:

Although the Integrated Partnership and Communications (IPC) operation is no longer included in the 2018 Census Test, the IPC through the Integrated Communications Contract (ICC) will conduct the Census Barriers, Attitudes, and Motivators Survey (CBAMS). The survey will study, among other variables, attitudes toward privacy and confidentiality and respondents' opinions of the Census Bureau and other federal, state, and local government entities. CBAMS will include a random sample of 50,000 households and 42 focus groups featuring hard-to-count and hard-to-reach populations. The Census Bureau feels confident that this approach will provide a robust background on this issue.

Data from public opinion polling suggests that people's views of the government will affect how they think about the federal statistical system and the confidentiality of their data (Morales et al., 2017). If the 2020 Census is politicized, views of confidentiality of the census will likely be filtered through already held beliefs about the government in this case as well.

During the research and testing phase of the 2020 Census development cycle, the Census Bureau had a Privacy and Confidentiality Team, which had several research platforms that could address something like this. Since 2012, the Census Bureau has had questions on the Gallup Overnight Tracking Poll monitoring trust in the federal statistical system. We currently have a five-year time series on these items with the capacity to add questions periodically for shorter lengths of time to measure the public's sentiment towards such issues as using email, text messaging, etc. Due to budget constraints, this survey was funded for one week per month for Fiscal Year (FY) 2017. We are developing a plan for more timely and focused questions should additional funding become available.

Surrounding the 2014, 2015, and 2016 Census Tests, the Privacy and Confidentiality Team also conducted focus groups in the test sites, focusing on privacy and confidentiality concerns. Some of these groups were respondents to the Census, and some were non-responders, or Nonresponse Follow-up responders.

Separately, researchers in the Center for Survey Measurement (CSM) have noted that concerns have been expressed about confidentiality, and particularly data sharing with other agencies, by respondents in many of our qualitative pretesting studies conducted in 2017 (CSM, Sept 20 2017, Respondent Confidentiality Concerns, Memorandum for Associate Directorate for Research and Methodology (ADRM)). Findings from usability interviews, cognitive interviews, and focus groups with 381 respondents in seven languages (English, Spanish, Chinese, Korean, Vietnamese, Russian, and Arabic) conducted in different regions of the country point to an increase in respondent concerns about confidentiality, particularly relating to legal residency status as well as perceived negative attitudes toward immigrants from certain national origins. CSM researchers on these qualitative studies also observed an increase in unusual respondent behavior like break offs, item non-response, or falsification of household roster data.

These findings dovetail with reports from 39 field staff (field supervisors and field representatives) located around the country who reported during focus groups that respondents are expressing confidentiality concerns at a much higher rate than they have seen previously in our production surveys (CSM, Sept 20 2017, Respondent Confidentiality Concerns, Memorandum for ADRM). They characterized this as a new phenomenon requiring additional support including new messages, materials, and training to overcome these extreme confidentiality concerns.

- 2.) User experience needs more attention and research. We requested frequent updates at the last meeting, but we have not received any updates.

CENSUS BUREAU RESPONSE:

The Census Bureau will continue its focus on user experience.

As requested by the CSAC, Census Bureau user experience subject matter experts will provide an update to CSAC members prior to the Spring 2018 public meeting. During the one-way briefing, the Census Bureau will provide an informational briefing and material for members to review and provide comment during the Spring 2018 public meeting.

- 3.) We would request that CSAC have access to the 2018 End-to-End Census test internet self-response form. We also would like to hear more about the research being planned regarding user experience.

CENSUS BUREAU RESPONSE:

The Census Bureau cannot provide non-employees access to Census Bureau applications, either during or after development. However, CSAC will be briefed on research being planned regarding user experience as updates become available.

- 4.) We suggest there be formed a working group on user experience.

CENSUS BUREAU RESPONSE:

In lieu of a working group, the Census Bureau will provide CSAC a briefing on both overall user experience and user experience related to Internet Self-Response. As stated above, during the one-way briefing, the Census Bureau will provide an informational briefing and material for members to review and provide comment during the Spring 2018 meeting.

- 5.) We also would like an update from the Internet Self-Response Integrated Project Team and the Center for Survey Measurement Usability Lab.

CENSUS BUREAU RESPONSE:

The Census Bureau accepts this recommendation.

The Internet Self-Response Integrated Project Team can provide Internet Self-Response updates at the next CSAC meeting. In addition, some updated information is provided here:

From 2012 to 2017, the CSM staff and a contractor, RTI International, conducted usability testing on each of the six census test online questionnaires, resulting in over 220 usability test sessions. After each round of testing, CSM delivered findings in writing or

in a multimedia presentation to the Self-Response Integrated Project Team and other stakeholders. Below are the highlights of usability improvements and remaining issues.

Usability improvements:

- Perhaps the most notable decision to positively affect the user experience was combining the Hispanic origin and race questions into one question. The single question was tested in the 2015 National Content Test, and was implemented in the 2016 Census Test.
- The current sequence of questions to build the list of people who live at the residence is also less repetitious than in earlier rounds of testing on the online census questionnaires.
- The mapping task for those residents without a User ID (and with an address that the Census Bureau does not recognize) was eliminated from the online questionnaire. During usability sessions, we observed the difficulty users had finding their address on the map and once in the map, the inability to navigate to the next page if they accessed the survey on a smartphone.
- We did not observe any user experience issues with the person-based design in testing either the 2016 or 2017 Census Test online census questionnaires. In fact, that design appeared to give users a better sense of the tasks to complete in the census. CSM proposed para-data analysis assessing break-offs on the dashboard screen compared to the former topic-based design. This analysis is yet to be completed.
- Although more work needs to be done on the mobile version of the Pega platform, a mobile-friendly design was tested and refined for Centurion and Primus frameworks in 2015 and 2016.

Remaining usability issues:

- The online census questionnaire has no dedicated path for people to report for other residences. A proxy reporter might be needed for residents who are not able to complete their online form without assistance, such as the elderly or disabled. We estimate that this may affect between 0.03 and 2 percent of households (Nichols, E., Meyers, M. "Recommendation for a proxy path for the online 2020 Census questionnaire and in-bound telephone questionnaire mode" Memo for Decennial Census Management Division (DCMD). July 2017).
- The completely automated public test to tell computers and humans apart (CAPTCHA) task required for all logins might hinder completion of the online census.
- In 2017, a decision was made to eliminate the save and logout/resume feature. This means that respondents who partially complete their online census, but exit before finishing the census questionnaire, will have to re-enter all their information if they resume the questionnaire. We estimate that this might affect between 5 and 7 percent of households (Nichols, E. email May 17, 2017; Bentley, M., email to Nichols, E. May 23, 2017). CSM tested the save and logout feature in nearly each round of testing.

- Although we plan to offer the online questionnaire in English, Spanish, and other languages, we have found that monolingual speakers of non-English languages tend to use the machine translation offered automatically by their device when it detects that the text on the screen is in English. Because respondents may have no expectation that we will offer a translated instrument and they do not immediately see the toggle to their own language in the upper-right corner of the online census form, they get the automatic translation. These machine translations are often nonsensical and represent a potential threat to data quality. One possibility to alleviate this issue is to have the mailing materials in targeted non-English languages direct the respondent to an online questionnaire that is in the target language.
 - To date, we have been unable to test the instrument on mobile devices in the Pega platform. CSM has recommended usability testing of the instrument on mobile devices prior to the decennial census.
 - We have reviewed the screen design for the 2018 Census Test (CT), Internet Self Response (ISR) instrument and identified numerous design issues with relatively straightforward solutions (CSM, Nov 22, 2017, Expert Review of 2018 CT ISR). These should be addressed before devoting resources to conduct usability testing. Recommendations include redesigns to the login page that we believe will improve the likelihood of online response. Additional straightforward fixes should reduce cognitive burden, simplify selection of certain responses, and make it more likely for Spanish speakers to see how to respond in their preferred language.
- 6.) We think that there are many opportunities for user experience research within the 2018 test that would not require significant resources. We consider this important not only for improving the self-complete interface, but also for providing insight on the operation (e.g. feedback on connectivity problems). We would also note that attitudes about the interface can spillover on perceptions about the security and trustworthiness (BJ Fogg et al. 2001 Fogg et al. 2003; Sbaffi et al. 2017).
- Include a text box to ask for feedback about experience (a basic survey best practice)
 - Randomly select a subset of self-completes to ask about user experience in an online survey
 - Add questions to asked by enumerators: did you attempt to complete the form online? If so, what were the issues involved?
 - Plan to analyze metrics like break-offs, item nonresponse, etc.

CENSUS BUREAU RESPONSE:

The Census Bureau appreciates the CSAC's feedback on user experience research on the internet self-response instrument. Extensive qualitative testing has been conducted with diverse groups of participants as the internet self-response instrument has been developed and refined over the past few years. Valuable feedback has been obtained to improve on the design of the instrument, the questions and response options, the help text and other features, and on the overall user experience. The Census Bureau will consider these suggestions, such as adding a text box for feedback and randomly selecting a sample of respondents for follow-up on the experience, pending time and resources. In addition, the

Census Bureau will continue to collect detailed para-data about all aspects of user interactions during internet self-response. These para-data include device types, time to complete, multiple log-ins, breakoffs, help text, and Frequently Asked Questions usage, etc.

Changes to the 2018 Census Test are very difficult to implement in the current budgetary environment. In a few small, probability-based, mail-out tests using a modification to the 2015 National Content Test online survey, we have included a text box to collect user comments. In one such study, 11 percent of the respondents provided comments; in another, 14 percent. Most comments did not pertain to the user experience with the interface, other than commenting on the question content. We can investigate further whether this type of feedback would be useful: specifically, how best to ask for the information, and how best to analyze the data.

Beginning in early February 2018, CSM will pretest for the American Community Survey (ACS) by providing respondents an open-ended question that allows for feedback about their experience. This will be included in all modes, not just internet. The testing will look at the wording of the question (“Is there anything else you would like to tell us?”). The Census Bureau could implement something similar for the 2018 Census Test.

- 7.) We would like to hear more about the analysis being planned using the 2017 Census Test. Did you see informative patterns in item nonresponse, break-offs, completion time, etc.?

CENSUS BUREAU RESPONSE:

Because of resource limitations, the Internet Self-Response Integrated Project Team was not able to complete a study plan or operational assessment for the 2017 Census Test. Research is currently being conducted and an analysis report may be completed, pending resources.

III. CENSUS BUREAU PARTNERSHIP WITH THE UNITED STATES POSTAL SERVICE

- 1.) The committee commends the Census Bureau for investigating how to collaborate with the USPS.

CENSUS BUREAU RESPONSE:

The Census Bureau appreciates the Committee’s encouragement.

- 2.) We are interested in hearing what is discovered in the upcoming test of USPS employees as enumerators and recommendations which come from it.

CENSUS BUREAU RESPONSE:

The Census Bureau will be happy to brief the Committee at a future Census Scientific Advisory Committee meeting on the results and recommendations from any United States Postal Service (USPS) Enumeration Pilot that we may undertake.

- 3.) We recommend checking if there is any impact to the optimizer since the business rules may be different than the current rules for enumerators.

CENSUS BUREAU RESPONSE:

The team developing the USPS Enumeration Pilot is engaged in discussions with 2018 Census Test IT System owners to identify potential impacts to this system that might occur in a pilot. So far, no impact has been identified for the Non-response Follow-up Optimizer; postal carrier participants would use the local post office address as their starting point for assignments. Impacts may exist for the Decennial Application, Personnel, and Payroll System and the Field Operational Control System, pending additional discussion.

- 4.) We would like you to clarify the status of the temporary workers. Will they be Postal employees working for the Census or hired as enumerators? How would this compare to USPS hiring for other seasonal fluctuations?

CENSUS BUREAU RESPONSE:

The status of these workers is currently under consideration.

- 5.) We would also like to hear more about the post office kiosks that are being contemplated. This seems very conducive to rural areas where USPS doesn't deliver to the consignee.

CENSUS BUREAU RESPONSE:

The Census Bureau is working closely with the USPS to explore this option for the 2018 Census Test. The 2018 Internet Self-Response Website via kiosks would be available in post office retail locations within the Providence County, Rhode Island, test site and pilot sites. These kiosks would allow internet access only to the Census.gov URL site and would be available only when the retail areas are staffed (i.e., not in the lobby after hours). Based on our experience in the test, the Census Bureau will continue to look at the cost and benefits of kiosks in the 2020 Census.

IV. MAPPING IN POST DISASTER ASSESSMENT AND ADDRESS CANVASSING

- 1.) This relates to the session on the post disaster assessment this morning, and also the address canvassing session after lunch. There is some private sector news related to imagery coverage and potential availability of additional source materials that might be helpful in address canvassing.

CENSUS BUREAU RESPONSE:

The Census Bureau agrees that third-party data is a valuable source of information for maintaining a high-quality frame. The Census Bureau will continue to evaluate the inventory of third-party address data and imagery data to enhance in-office address canvassing capabilities.

- 2.) The attached briefing is from a consortium of insurance companies, related to mapping plans. This is a big group, and a recent trend for this type of group is to become content producers vs. consumers. Large insurance companies (such as those included in this briefing) are making plans now to map the continental US with nationwide aerial imagery, and also street view imagery for the top 100 metropolitan areas. They show some examples of where they have done this (such as the Gatlinburg fires) before and after events. Their purpose is similar to the Census' goal of reducing field personnel needed in a response to an event. In the Gatlinburg example, they reduced the field insurance adjustors because they could see in the imagery that certain homes and areas were complete losses. Another goal is an accurate assessment of damage and materials for insurance claims, and use of this data to defend against abuse or fraud in claims.

CENSUS BUREAU RESPONSE:

The Census Bureau agrees that third-party data is a valuable source of information for maintaining a high-quality frame. The Census Bureau will continue to evaluate the inventory of third-party address data and imagery data to enhance in-office address canvassing capabilities.

- 3.) It is important for the Census Geography group to be aware of private sector efforts like this as potential sources of data.

CENSUS BUREAU RESPONSE:

The Census Bureau agrees that third-party data is a valuable source of information for maintaining a high-quality frame. The Census Bureau will continue to evaluate the inventory of third-party address data and imagery data to enhance in-office address canvassing capabilities.

- 4.) From this group's briefing, here are their plans for annual mapping. This trend is also supported by a recent consolidation of smaller mapping firms being acquired by larger insurance type companies.

CENSUS BUREAU RESPONSE:

Thank you for sharing this information.

V. 2017 CENSUS OF BUSINESS

- 1.) The acting director reported that several aspects of the 2017 Census of Business would be delayed, with possible loss of sample size, due to budget constraints. CSAC members urged the Bureau to work with stakeholders to identify ways to minimize the degradation of the business censuses.

CENSUS BUREAU RESPONSE:

The Census Bureau agrees with this recommendation. We have met with key stakeholders of the Economic Census (including the Bureau of Economic Analysis, the Bureau of Labor Statistics, the Federal Reserve Board, the Centers for Medicare and Medicaid Services, and the Census Bureau's Center for Economic Studies) to discuss the re-planning effort and the stakeholders' data and timeline needs. This information served as input in the determination of the reduction of the sample size, the development of the data analysis plan, and the revision of the 2017 publication plan. The objective of the re-plan is to minimize the impact on key stakeholders while staying within funding levels.

- 2.) Members commend the Bureau for the initiatives it has taken to develop user-friendly ways to retrieve and create customized data products useful to all types of stakeholders before, during and after disasters and other emergencies.

CENSUS BUREAU RESPONSE:

The Census Bureau thanks you for your commendation.

During times of weather-related events and natural disasters, those responsible for recovery, as well as the public at large, may use the OnTheMap for Emergency Management platform hosted by the Center for Economic Studies (CES) in the Research and Methodology Directorate. This platform provides information, in almost real-time, on the potentially impacted population and workforce, as well as key demographic and socioeconomic characteristics. After a natural disaster occurs, such as a hurricane or wild fire, and a disaster declaration is made, these same users may employ the same platform to obtain the same information on the area.

In addition, in response to the latest hurricanes (Harvey, Irma, Maria, and Nate), CES leadership reached out to its state partners in impacted Gulf States (Texas, Louisiana, Mississippi, Alabama, and Florida) as well as the U.S. Virgin Islands, and extended assistance with data needs as the states continued to understand the impact of these events. Specifically, CES staff provided data based on our Quarterly Workforce Indicators data as well as from the OnTheMap and OnTheMap for Emergency Management applications for over 100 impacted counties.

Both the effort and the data were well-received: as one Labor Market Information Director stated, the data we “provided was great. It’s hard to know what to ask for in these situations...the information you all provided hit the sweet spot.”

Since its initial development, the tool has had several major updates to better meet the needs of its user community. For example, the latest version includes not only data on the potentially impacted labor force, enabled by longitudinal employer-household dynamics (LEHD), it also includes additional detailed social, economic and housing data from the ACS; greater reporting flexibility for regional, local, community specific, and comparative analyses; and linkable maps and reports for easier sharing.

To understand the dynamics of the potentially impacted labor force, OnTheMap for Emergency Managed uses LEHD Origin-Destination Employment Statistics (LODES) data set. Protecting privacy is of paramount concern. One of the key methods used in the disclosure avoidance procedures implemented by LODES is differential privacy, an advanced mathematical/statistical technique that provides specific guarantees on the level of protection applied to the dataset. This enables publication of data at very detailed geography, which in turn allows tools like OnTheMap for Emergency Management to aggregate information to disaster/event boundaries which do not conform to large scale political/statistical boundaries.

VI. 2018 END-TO-END TEST

- 1.) CSAC thanks the Census and the presenters and subject matter experts for enlightening presentations on the 2018 End-to-End Test on both Address Canvassing and Non Response Follow Up.

CENSUS BUREAU RESPONSE:

The Census Bureau appreciates the observation and continued support of the Census Scientific Advisory Committee.

Across the entire 2018 End-to-End Test, CSAC recommends:

- 2.) There should be more granular milestones by subsystem, with test plans and results. It's currently not clear what's being tested. In addition, the risk of each sub system and their importance would be useful. If they could give us more information specifically on CEDSCI, DRPS, PEARSIS, UTS, ECaSE, SOA, and CAES it would be useful.

CENSUS BUREAU RESPONSE:

The Decennial Information Technology Division (DITD) maintains a 2020 Integration and Implementation Plan that contains granular milestones for each system or subsystem for the 2018 Census Test and 2020 Census. We manage each system as a project. As is typical of a project, there is a risk register and a project schedule containing milestones that include the initiation and completion of System Development Life Cycle documents,

system development, testing, security, and integration with the 2020 program integrated master schedule. The information requested for the following systems is based on the Systems Engineering and Integration operational milestones. These milestones are specific to each system and the Test Readiness Review dates mark the beginning of program-level testing.

System Name	Releases	Test Readiness Review	Production Readiness Review	Conduct Operation
CAES	D – Field Enumeration	12/6/2017 (1) 4/17/2018 (2)	2/12/2018 6/11/2017	3/14/2018 7/16/2018
CEDSCI	E – Tabulation and Dissemination	2/26/2018 (1) 7/11/2018 (2) 10/31/2018 (3)	4/4/2018 9/4/2018 12/3/2018	5/1/2018 10/1/2018 1/7/2019
DRPS	C – Self-Response	11/17/2017 (2) 3/27/2018 (3)	1/26/2018 5/21/2018	2/12/2018 6/11/2018
	E – Tabulation and Dissemination	2/26/2018 (1) 7/11/2018 (2) 10/31/2018 (3)	4/4/2018 9/4/2018 12/3/2018	5/1/2018 10/1/2018 1/7/2019
ECaSE	Training Release 1 – Address Canvassing	3/8/2017	6/22/2017	7/31/2017
	A – Address Canvassing	3/8/2017 (1) 5/10/2017 (2)	7/26/2017	8/28/2017
	Recruiting Release 2 – Field Enumeration	6/15/2017	7/31/2017	9/5/2017
	Training Release 2 – Field Enumeration	10/11/2017	1/12/2018	2/12/2018
	C – Self-Response	11/17/2017 (2) 3/27/2018 (3)	1/26/2018 5/21/2018	2/12/2018 6/11/2018
	D – Field Enumeration	12/6/2017 (1) 4/17/2018 (2)	2/12/2018 6/11/2017	3/14/2018 7/16/2018

PEARSIS	C – Self-Response	11/17/2017 (2) 3/27/2018 (3)	1/26/2018 5/21/2018	2/12/2018 6/11/2018
	D – Field Enumeration	12/6/2017 (1) 4/17/2018 (2)	2/12/2018 6/11/2017	3/14/2018 7/16/2018
	E – Tabulation and Dissemination	2/26/2018 (1) 7/11/2018 (2) 10/31/2018 (3)	4/4/2018 9/4/2018 12/3/2018	5/1/2018 10/1/2018 1/7/2019
SOA	Training Release 1 – Address Canvassing	3/8/2017	6/22/2017	7/31/2017
	A – Address Canvassing	3/8/2017 (1) 5/10/2017 (2)	7/26/2017	8/28/2017
	Recruiting Release 2 – Field Enumeration	6/15/2017	7/31/2017	9/5/2017
	Training Release 2 – Field Enumeration	10/11/2017	1/12/2018	2/12/2018
	C – Self-Response	11/17/2017 (2) 3/27/2018 (3)	1/26/2018 5/21/2018	2/12/2018 6/11/2018
	D – Field Enumeration	12/6/2017 (1) 4/17/2018 (2)	2/12/2018 6/11/2017	3/14/2018 7/16/2018
UTS	All 2018 End-to-End Census Test Releases	Releases I, RR1, TR1, A, RR2, TR2, C, D, E		

- 3.) There should be a real emphasis on research-based feedback from respondents and enumerators for the 2018 test on user experience and in particular for people’s data captured through non response follow up.

CENSUS BUREAU RESPONSE:

The Census Bureau thanks you for the recommendation. As part of the 2014, 2015, and 2016 Census Tests, the Census Bureau conducted focus groups with respondents using the internet, as well as respondents in the Nonresponse Followup operation. In addition, enumerator debriefings were conducted to measure and document improvements between iterations of the instruments used in the various tests. The baseline scope for the 2018

Census Test did not include the plans or funding for conducting focus groups to collect data on the user experience and reactions to the data captured through Non-response Follow-up. However, based on this recommendation, if funding is secured then we believe we have the authorization to include focus groups in the test. The Census Bureau will pursue options for incorporating focus groups into the scope of the 2018 Census Test.

- 4.) There should be consideration of incorporating a test of the reasonableness of completes into the response validation process.

CENSUS BUREAU RESPONSE:

The Census Bureau thanks you for your recommendation. Earlier in the decade, there were plans to perform response validation specifically for Non-ID cases. However, after further investigation, a decision was made to perform checks on all decennial self-responses. This effort will involve a multifaceted approach that is aimed at discovering, analyzing, and adjudicating potentially fraudulent responses. The full self-response Fraud Detection System (FDS) will include automated checks, as well as analyst and/or field follow-up for cases identified as higher risk for potential fraud/falsification. The FDS will be tested as a part of post-processing for the 2018 Census Test and will be conducted throughout the period of self-response during the 2020 Census.

- 5.) There should be continuing active coordination with DHS and other agencies on cybersecurity, considering a wide range of threats, not just to the systems, but to the reputation of the Census Bureau, which may affect response rates, and to people's information in the form of phishing and similar threats – with the goal of testing these systems as part of the full system in 2018 – given the Census' characterization as 2018 from a systems perspective as 'deploying to production'.

CENSUS BUREAU RESPONSE:

The Census Bureau has been working closely with the Department of Commerce's (DOC) National Institute of Standards and Technology (NIST) and Department of Homeland Security (DHS). The Census Bureau has been collaborating with NIST on the following topics: IT security risk management framework, and Derived Credential initiative allowing the Census Bureau to use Homeland Security Presidential Directive (HSPD)-12 required authentication for our general field force. The Census Bureau has been working with DHS on the following initiatives: 2020 Census System Architecture review, Strengthening Incident Management Capabilities: Federal Incident Response Evaluation (FIRE) assessment (Completed 11/2017); 2020 Census System Penetration testing (planned first quarter of calendar year (CY) 2018); and obtaining classified threat information (first report planned for first quarter of CY 2018).

- 6.) If possible a non-public cyber innovation work group between intel agencies and DHS would be appropriate for 2020 census.

CENSUS BUREAU RESPONSE:

The Census Bureau will continue to work through DHS and OMB to determine what additional federal cybersecurity assistance the Census Bureau can receive including from the federal intelligence community.

On Address Canvassing, specifically CSAC recommends:

- 7.) An examination of data out of the 2018 End-to-End test on the accuracy of the in office block assignment to active, passive or hold - with particular attention to the passive category due to the nature of excluding them from field review.

CENSUS BUREAU RESPONSE:

The Census Bureau has a detailed evaluation plan (Study Plan for the Evaluation of Address Canvassing 2018 End-to-End Census Test) to evaluate the process of determining which blocks are designated for in-field address canvassing in the Providence County, Rhode Island, test site. This report will be published in 2018.

- 8.) At a later date we would appreciate documentation on the success, failures and additional scope of work required for the active block resolution (ABR) process once it comes out of suspension.

CENSUS BUREAU RESPONSE:

At this time, all resources allocated to the Active Block Resolution (ABR) process have been suspended. The Census Bureau is eager to evaluate ways to augment and improve In-Office Address Canvassing, including ABR functionality, in support of the 2030 Census, once appropriations are designated for such work. The Census Bureau can provide any relevant data that was created before the decision to suspend ABR in January 2017.

On NRFU, specifically CSAC recommends:

- 9.) It will be important to pay careful attention to the NRFU rates across demographic groups, housing characteristics, and other factors to validate the degree to which results from Providence can and cannot inform potential national rates for NRFU.

CENSUS BUREAU RESPONSE:

The Census Bureau agrees that an understanding of the 2018 Census Test NRFU rates across demographic groups, housing characteristics, and other factors is important. An operational assessment study plan has been developed for the 2018 Census Test that includes plans for looking at the NRFU responses by various characteristics in Providence, Rhode Island.

- 10.) A discussion of risk mitigation strategies for various scenarios both for NRFU and for the census as a whole, across a number of high level risks (National Economic Conditions, Use of Administrative Data, NRFU Rates differing from expectation, etc.) would be helpful.

CENSUS BUREAU RESPONSE:

Contingency plans associated with program risks related to economic conditions, use of administrative data, etc., are at various stages of maturity. As plans are developed, the Census Bureau welcomes a discussion with CSAC.

- 11.) The cooperation of Census Bureau experts with the Working Group on Administrative Records and the 2020 Census is much appreciated. CSAC would appreciate a presentation about Census Bureau thinking about use of administrative records and the ACS.

CENSUS BUREAU RESPONSE:

The Census Bureau thanks you for your recommendation and the opportunity to share plans for utilizing administrative records in the ACS. The Census Bureau will work with the appropriate CSAC members to schedule a presentation.

VII. MODERNIZING DISCLOSURE AVOIDANCE RECOMMENDATIONS

- 1.) CSAC members are supportive of the Bureau's efforts to expand disclosure avoidance methods to include differential privacy in the 2020 Census and to incorporate differential privacy into the processing of the 2018 End-to-End test. CSAC members would welcome the opportunity to learn more about the results of these methods applied to the 2018 End-to-End test at the Fall 2018 meeting.

CENSUS BUREAU RESPONSE:

The Census Bureau accepts the recommendation. We will prepare a presentation for the Fall 2018 meeting detailing the intended use of differential privacy for the 2018 Census Test. However, as the Disclosure Avoidance System is scheduled to run in late October 2018 on the 2018 Census Test Edited File, it is likely that we will be unable to present the results of processing the 2018 Census Test, as the processing will not yet have taken place.

- 2.) Differential privacy methods should be viewed as a complement to other methods of disclosure avoidance, including traditional Statistical Disclosure Limitation methods and physical restrictions (like RDCs) on access to the most sensitive data. CSAC members would appreciate learning more about these alternatives and efforts to improve them, on the Census 2020 and other widely used data like the American Community Survey, at the

Spring 2018 meeting. This presentation should include specific comparisons of differential privacy and SDL methods applied to the same data.

CENSUS BUREAU RESPONSE:

The Census Bureau acknowledges this recommendation. Resource demands may prevent us from fully executing it. The Census Bureau views differential privacy as a modern technique for Statistical Disclosure Limitation. Other techniques that the Bureau is researching include Secure Multiparty Computing, the improved use of physical data enclaves such as the Federal Statistical Research Data Centers, the use of virtual data enclaves such as those that might be supported by Intel Software Guard Extensions, and the use of verification and validation servers, which would allow for researchers to submit statistical programs to the Census Bureau for execution in a secure enclave. The Bureau is currently working with other federal agencies, academics, and corporations in its researching of these options.

With respect to legacy Statistical Disclosure Limitation methods such as coarsening (generalization), top-coding, bottom-coding, swapping, and de-identification, research has shown that there are cases in which these techniques do not provide the expected protection. This is because the techniques do not take into account the incremental privacy loss resulting from each statistical release computed from the underlying confidential data. The techniques also offer no defense against linkage attacks with external data that were unknown to the disclosure limitation professional at the time of the data release. Although these techniques offer some protection against an adversary with limited skill and means, they should not be regarded as a substitute for modern disclosure limitation techniques based on formal privacy.

- 3.) Empirical Risk Disclosure efforts are also important, particularly as a means of demonstrating the need for more modern disclosure avoidance methods. The Census Bureau should provide appropriate resources to internal efforts to reconstruct databases to understand the disclosure risks. Consistent with the confidentiality of such efforts, CSAC members would appreciate learning about the results of these efforts at the Spring 2018 meeting.

CENSUS BUREAU RESPONSE:

The Census Bureau accepts this recommendation. Within the limits of Title 13, Section 9 confidentiality guarantees, the Census Bureau will provide a presentation regarding its research into database reconstruction methods and efforts at the Spring 2018 meeting.

- 4.) Not all Census products present equal disclosure risks or equal harm in the event of disclosure. CSAC members called attention to the American Community Survey, both published tabulations and public use microdata, as an area of concern. Acknowledging both that there is no timeline for implementing differential privacy in the ACS and that

research is ongoing, CSAC members would appreciate the opportunity to begin a formal discussion of differential privacy methods applied to the ACS at the Fall 2018 meeting.

CENSUS BUREAU RESPONSE:

The Census Bureau accepts this recommendation. The Census Bureau will provide a presentation regarding its efforts to modernize the disclosure limitation system used by the ACS at the Fall 2018 meeting.

- 5.) CSAC thinks that as decisions about disclosure avoidance are developed there be extensive discussion and consultation with the user community, including CSAC, AAPOR PAA, AAPAM, APDU, AEA, American Statistical Association.

CENSUS BUREAU RESPONSE:

The Census Bureau accepts this recommendation. The Census Bureau is working to involve the user community in its research regarding the modernization of the disclosure limitation system.

On September 20-22, 2017, the Census Bureau participated in the Work Session on Statistical Data Confidentiality 2017 at the United Nations Economic Commission for Europe (UNECE) meeting, presenting a paper, “The Modernization of Statistical Disclosure Limitation at the U.S. Census Bureau.” The paper and presentation are available online at

<https://statswiki.unece.org/display/SDC2017/Work+Session+on+Statistical+Data+Confidentiality+2017>

On September 27, 2017, the Census Bureau organized a workshop on New Advances in Disclosure Limitation that was advertised, open to the public, and well attended. Slides from the presentations are available at <https://fcsm.sites.usa.gov/committees/cdac/2017-workshop/>.

Looking forward, the Census Bureau will be making presentations at conferences, holding public meetings, and preparing a variety of resources to continue this discussion and consultation with the user community. Sessions have already been proposed at the 2018 Joint Statistical Meetings, 2018 American Association for Public Opinion Research, and the 2019 Allied Social Science Associations meetings. Sessions will be proposed for upcoming meetings of the Population Association of America, the American Association for Policy Analysis and Management, and the Association of Public Data Users.

VIII. INTEGRATED COMMUNICATIONS PLAN

- 1.) CSAC would appreciate a discussion by video or conference call after the release of the communications plan. We would like to work with Census staff to identify the best time for this and the particular areas of interest to discuss.

CENSUS BUREAU RESPONSE:

Absolutely. The Integrated Partnership and Communications team, the Integrated Communications Contract Program Management Office, and the Customer Liaison and Marketing Services Office scheduled a virtual briefing to discuss the first version of the 2020 Census Communications Plan with committee members on Thursday, December 7, 2017. Subject matter experts also provided responses to CSAC members' questions asked in advance of the briefing.

- 2.) CSAC requests a presentation at the Spring 2018 meeting that would provide updates on the national and community partners plans and the formal or informal outreach activities that the Census staff are pursuing in 2018.

CENSUS BUREAU RESPONSE:

Agree. As mentioned during the September presentation, the Integrated Partnership and Communications team expects to have final plans on both the National Partnerships and the Community Partnerships and Education programs and will share them as soon as they become available. The Census Bureau looks forward to presenting both during the spring meeting and looks forward to updating the committee on any activities conducted in 2018, particularly around the 2018 Census Test.

- 3.) As you consider metrics and methods to evaluate the communication campaign, we would like to be provided written information and then an opportunity to have a focused discussion where we could ask questions during a conference call about the measures selected.

CENSUS BUREAU RESPONSE:

Although plans for a formal evaluation or experiment related to the Integrated Partnership and Communications (IPC) operation are not finalized, the Census Bureau looks forward to presenting the committee with any potential evaluation or experiment when this information becomes available.

- 4.) CSAC recommends that the staff working on communications be involved in the user experience – for instance, making sure that individuals can get information on the questionnaire on why each piece of information is collected. Ensuring people have a good experience in completing the census increases the chances of having people share their positive experience with friends and family.

CENSUS BUREAU RESPONSE:

Thank you for your suggestion. The IPC team has been working closely with other operations to better understand and facilitate Team Young and Rubicam's (Y&R), the communications contractor, understanding of how the decennial census will be conducted. Improving user experience and offering strong background information to respondents is a priority. The Census Bureau will definitely take your suggestion into account while developing products, particularly digital ones, for the campaign.

- 5.) CSAC recommends that you communicate with large search engine companies - Google, Yahoo, Microsoft- to ensure that the Census Bureau comes up on top and that no phishing sites are shown in the ads when people do searches on "census" or related terms.

CENSUS BUREAU RESPONSE:

Together with Team Y&R, the Census Bureau is in the final stages of developing a priority list of corporate communication partners. Search-engine companies are a fundamental component of this list for all of the reasons highlighted in CSAC's recommendation.

- 6.) CSAC recommends outreach now to the civic engagement contacts at the large web companies (including Facebook, Twitter and Google) to discuss potential ways to partner. Most immediately, you should explore the feasibility of participating in some exposure or message testing for 2018 test. Longer term, you could consider promotional activities such as having a Google doodle on Census Day or hosting competitions for advertising designs.

CENSUS BUREAU RESPONSE:

The IPC is currently working with Team Y&R to develop a priority list of corporate partners that the National Partnerships team will be contacting over the next three months. The Census Bureau recognizes the popularity of large digital corporations and has made them a priority for the reasons you explain. However, there will be no IPC-related testing during FY 2018.

- 7.) CSAC recommends that you consider discussions with mobile providers as outreach partners, which may be the primary way that low-income groups access the internet.

CENSUS BUREAU RESPONSE:

As mentioned in the previous response, IPC is working with Team Y&R to develop a keystone list of corporate partners that the National Partnerships team will be contacting over the next three months. Several mobile providers are on the preliminary version of this list, particularly their sections that serve low-income groups through prepaid or less-expensive products. Low-income communities are clearly hard-to-reach and hard-to-

count audiences, and the Census Bureau is confident that it can take critical steps to reach them by partnering with mobile carriers.

- 8.) Partnership specialists should be demographically diverse in regards to age, with emphasis on including younger adults.

CENSUS BUREAU RESPONSE:

The Census Bureau is dedicated to the recruitment, hiring, and retention of a diverse workforce. The Census Bureau values each person's contribution toward the completion of the mission and adheres to all policies, statues, and laws that eliminate barriers to employment opportunities. The end result will be a workforce that reflects the Nation and its communities.

- 9.) CSAC recommends including information to the public to prevent phishing attacks (for example, only enter data in this URL) in the general communications strategy.

CENSUS BUREAU RESPONSE:

Thanks for your recommendation. Messages related to privacy, confidentiality, and digital security will be among those tested through communications research.

- 10.) CSAC recommends that you consider in your communications strategy the role of younger people in families helping older relatives with the technology.

CENSUS BUREAU RESPONSE:

The Census Bureau absolutely recognizes this role, and that is why the Statistics in Schools program is now an evergreen program and a fundamental tool of Census Bureau communications activities. During the decennial census, additional funding will be assigned to the Statistics in Schools program to expand its activities to the entire Nation, including students in preschool and homeschoolers. However, Statistics in Schools is just one way to do this. Talking points will be included in messaging in partners' tool kits. Also, the partnership specialists will make these suggestions as they speak with local trusted voices in the communities.

- 11.) The communications staff should include in their purview the use of administrative records in Census 2020 enumeration, in particular that administrative records will improve the accuracy of the data collection overall.

CENSUS BUREAU RESPONSE:

Thank you for your suggestion. Messaging about 2020 Census innovations, including the use of administrative records, is and will continue to be used widely in all Census Bureau communications.