Reengineering the 2020 Census

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The Decennial Census

Purpose:

To conduct a census of population and housing and disseminate the results to the President, the States, and the American People

The Census is the largest peacetime activity undertaken by the federal government and it is our civic responsibility to complete the Census

Primary Uses of Decennial Census Data:

- Apportion representation among states as mandated by Article 1, Section 2 of the United States Constitution:
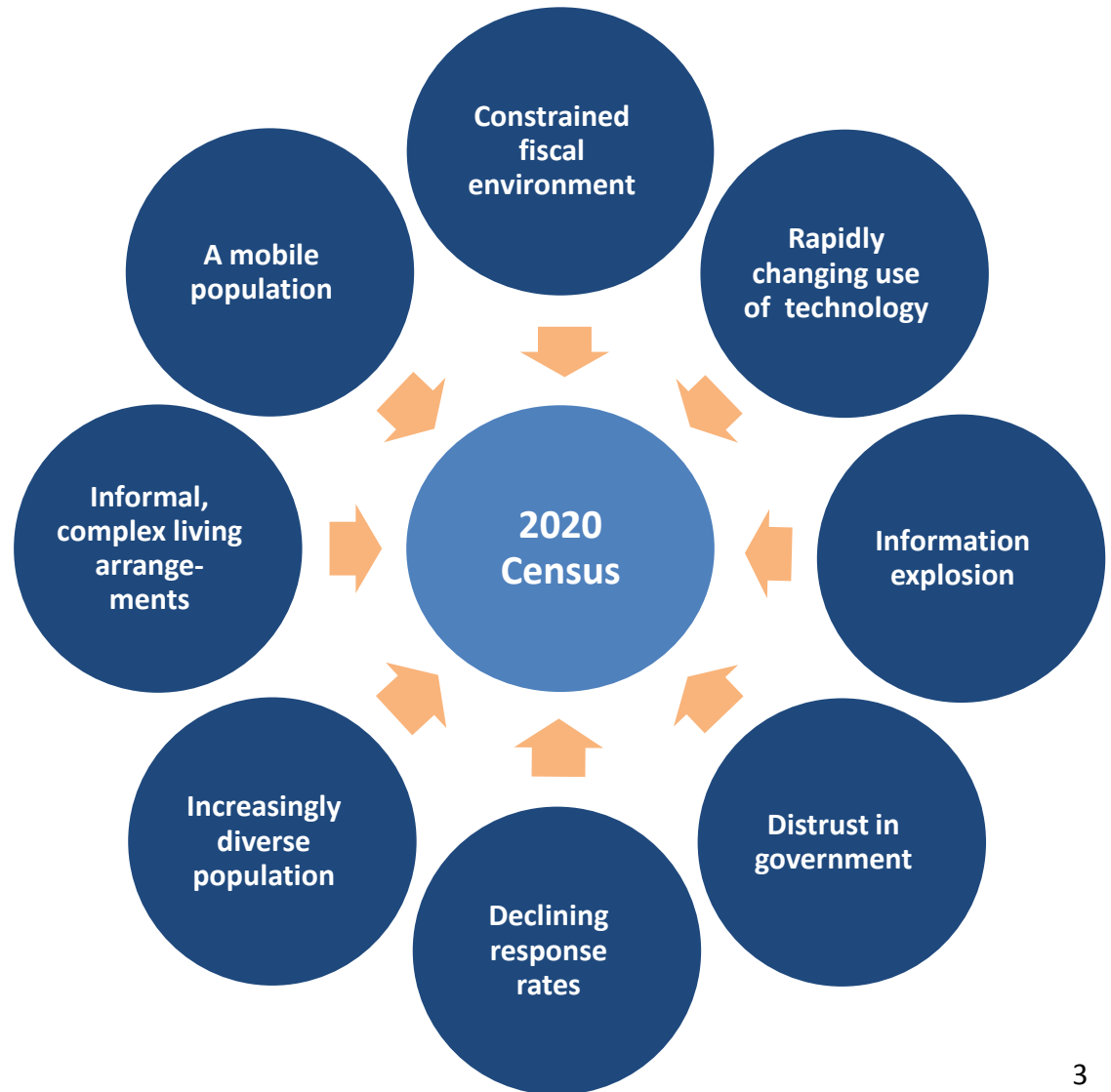
    Representatives and direct Taxes shall be apportioned among the several States which may be included within this union, according to their respective Numbers … The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten years, in such Manner as they shall by Law direct.

- Draw congressional and state legislative districts, school districts and voting precincts
- Enforce voting rights and civil rights legislation
- Distribute federal dollars to states
- Inform federal, tribal, state, and local government planning decisions
- Inform business and nonprofit organization decisions (e.g., where to locate, size of the market)
- Provide population benchmark for nearly every other United States survey

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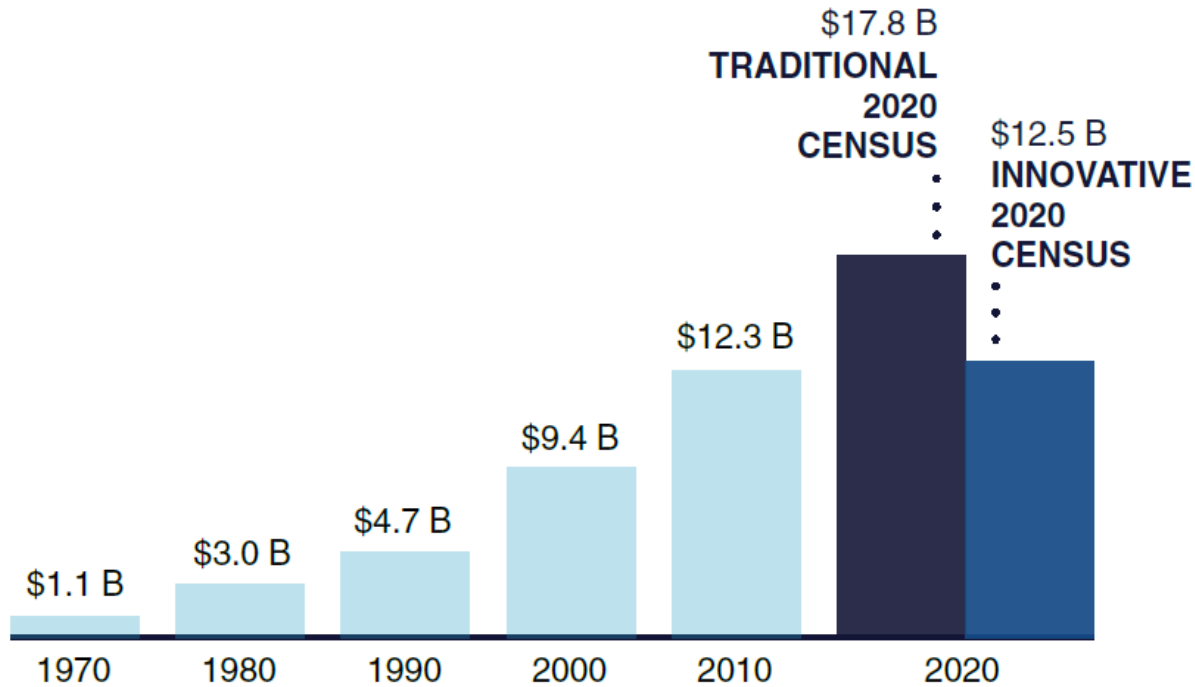
The Decennial Census
The 2020 Census Environment

The 2020 Census is being conducted in a rapidly changing environment, requiring a flexible design that takes advantages of new technologies and data sources while minimizing risk to ensure a high quality population count.

- Constrained fiscal environment
- Rapidly changing use of technology
- Information explosion
- Distrust in government
- Declining response rates
- Increasingly diverse population
- Informal, complex living arrangements
- A mobile population
- 2020 Census

The 2020 Census
Estimated Lifecycle Costs

$17.8 B
TRADITIONAL 2020 CENSUS

$12.5 B
INNOVATIVE 2020 CENSUS

$12.3 B

$9.4 B

$4.7 B

$3.0 B

$1.1 B

1970 1980 1990 2000 2010 2020

Fewer Staff
Fewer Offices
Less Burden

MORE THAN $5 BILLION IN SAVINGS

The 2020 Census
Goals and Key Innovation Areas

Overarching Goal: To count everyone once, only once, and in the right place

Challenge Goal: Conduct a 2020 Census at a lower cost per housing unit (adjusted for inflation) than the 2010 Census, while maintaining high quality results

Focus on Four Key Innovation Areas

Reengineering Address Canvassing	Optimizing Self-Response	Utilizing Administrative Records and Third-Party Data	Reengineering Field Operations

The 2020 Census: Establish Where to Count
Reengineering Address Canvassing

Reduce the nationwide In-Field Address Canvassing by developing innovative methodologies for updating and maintaining the Census Bureau's address list and spatial database throughout the decade.

Continual Research and Updating
Ongoing Process for In-Office Canvassing

Where Should We Start?

In-Office Address Canvassing

Is my address list consistent with other sources?

Has there been any growth or decline?

Satellite Imagery

Postal Files

Tribal and State and Local Government Files

2010 Data

Third-Party Data

In-Field Address Canvassing

Address List and Spatial Database
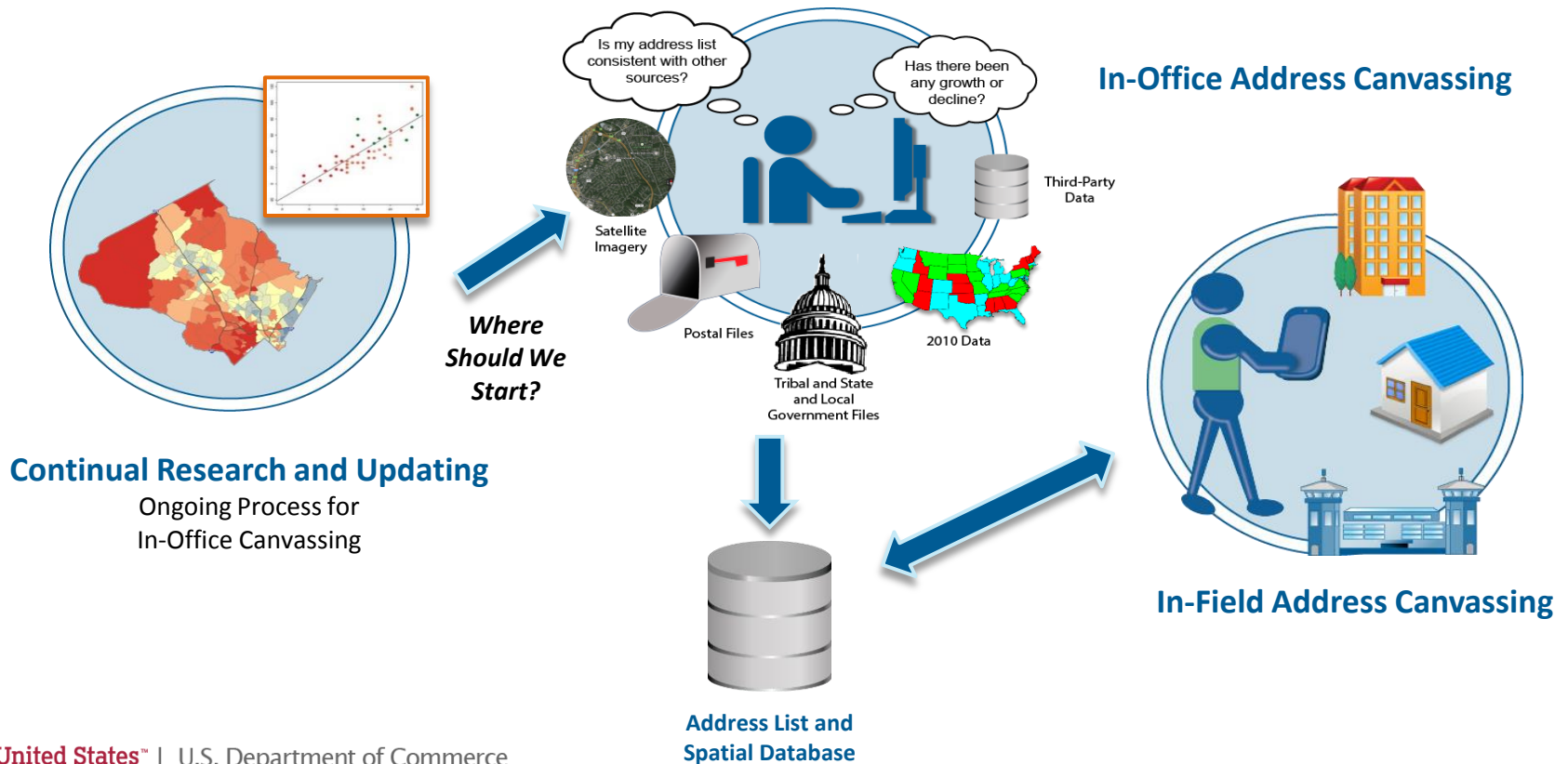
The 2020 Census: Establish Where to Count
Reengineering Address Canvassing Research Completed to Date

September 2014: Released the *Address Canvassing Recommendation Report*

Findings:

- A recommendation was made to not walk every block and implement the reengineered Address Canvassing (In-Field and In-Office)

February 2015: Completed the 2015 Address Validation Test, which consists of the MAF Model Validation Test, and the Partial Block Canvassing (PBC) Test

Findings:

- The statistical models were not effective at identifying specific blocks with many adds or deletes
- The statistical models were not effective at predicting national totals of MAF coverage errors
- PBC was successfully implemented as an alternative field data collection methodology; future work will determine how the PBC method impacts cost and quality
- Imagery Review successfully identified areas requiring updates; future research is needed to refine the process and determine impacts on quality

The 2020 Census: Establish Where to Count
Reengineering Address Canvassing Aerial Imagery

The 2020 Census: Motivate People to Respond
Optimizing Self-Response

Generate the largest possible self-response, reducing the number of households requiring follow-up.
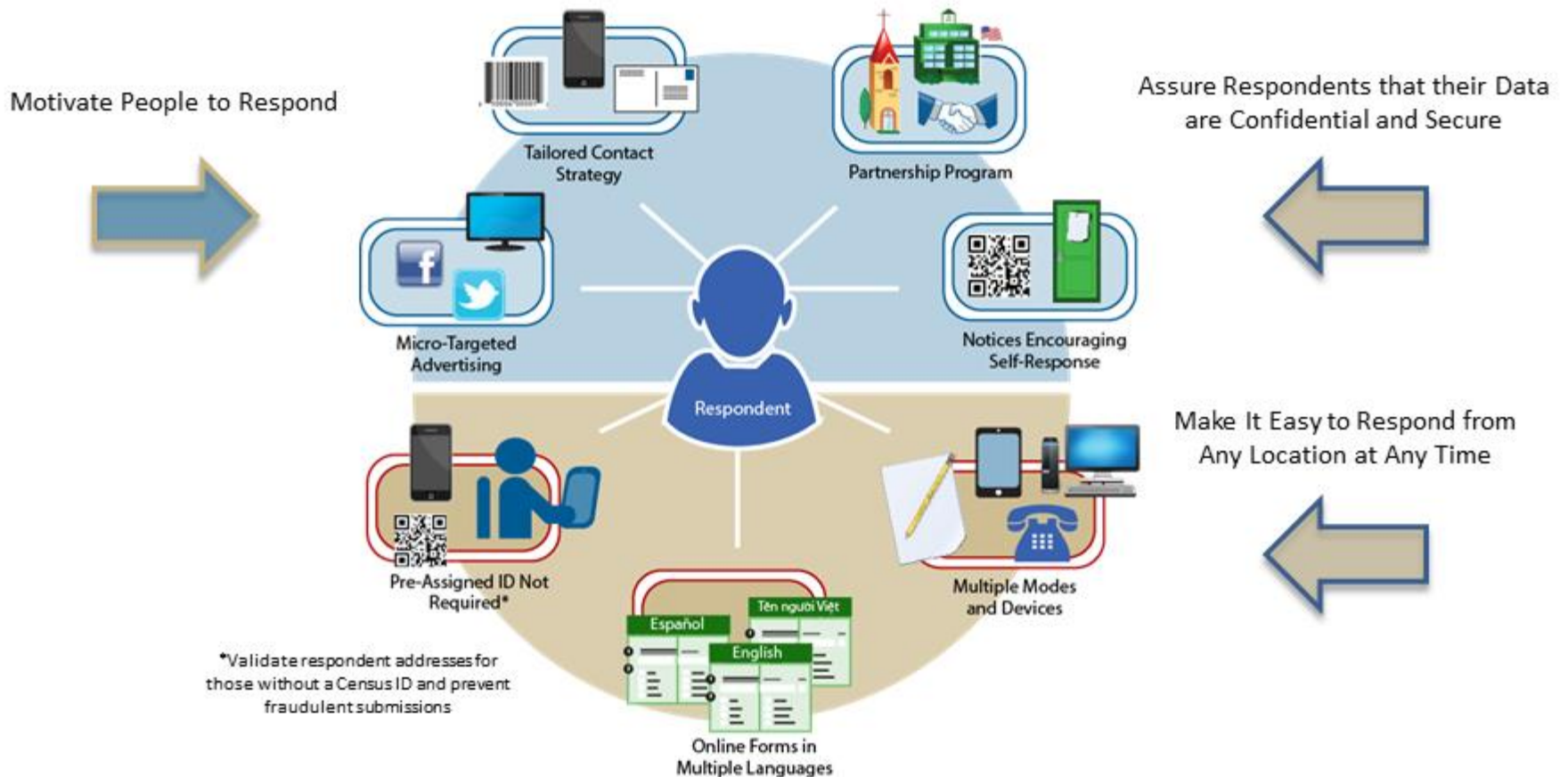
The 2020 Census: Motivate People to Respond
Optimizing Self-Response Research to Date

Multiple tests have been and are being conducted related to contact strategies and Internet self-response

ACS Internet Self-Response Research

Findings:

- People living in areas with lower Internet usage and accessibility require paper and or telephone questionnaire assistance; and
- Certain messaging strategies are more effective in motivating self-response

2012 National Census Test tested contact strategy and Internet option

Findings:

- Initial contact to invite participation, followed by two reminder prompts as needed and subsequent mailing of a paper questionnaire was a promising strategy (Internet push)
- Advance letter was not shown to improve response rates
- Telephone assistance needed for respondents without Internet access

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The 2020 Census: Motivate People to Respond
Optimizing Self-Response Research to Date (Continued)

2014 Census Test tested "Notify Me" mailed invitation, contact strategies and Internet option

Findings:

- Neither email nor automated voice messages showed a significant impact on response rates
- Low participation rate for "Notify Me" component, but high questionnaire completion rate among those who pre-registered

2015 Optimizing Self-Response Test offered an Internet response option, including real-time non-ID processing, and again tested the "Notify Me" option, along with advertising and partnerships support

Findings:

- An additional 35,249 Internet responses from housing units not selected in mail panels as a result of advertising and promotional efforts
- "Notify Me" again had low participation
- A new postcard panel, designed to test how housing units not originally included in the sample would respond to an invitation after being exposed to advertising, generated response of approximately 8 percent
- Successful implementation of real-time non-ID processing, and matched 98.5 percent of cases

The 2020 Census: Motivate People to Respond
Optimizing Self-Response Outreach, Advertising, and Promotion
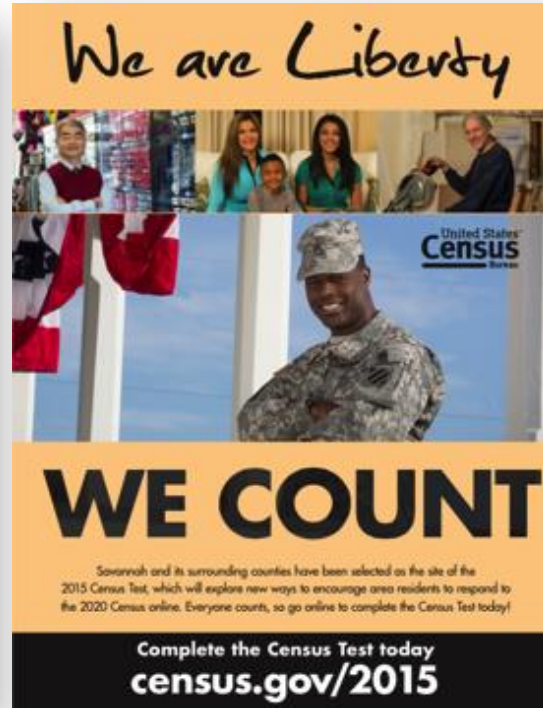
The 2020 Census: Count the Population
Optimizing Self-Response Screen Shots

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The 2020 Census: Count the Population
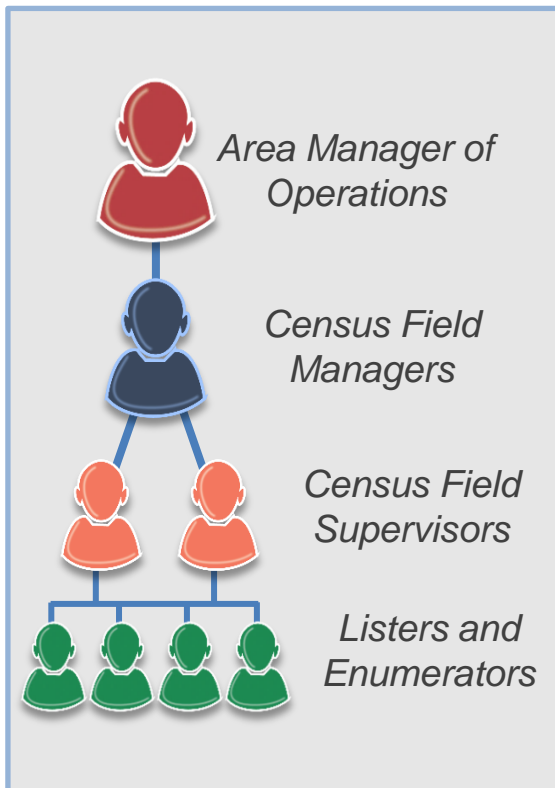## Non-ID Screen Shots

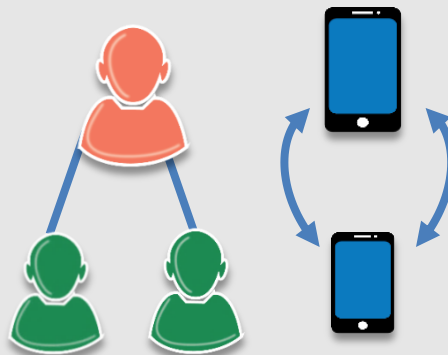# The 2020 Census: Count the Population
Reengineering Field Operations

Use technology to more efficiently and effectively manage the 2020 Census fieldwork.

Streamlined Office and Staffing Structure

Area Manager of Operations

Census Field Managers

Census Field Supervisors

*Listers and Enumerators*

Increased use of Technology

- Automated and optimized work assignments
- Automated recruiting, training, payroll and expense reporting
- Ability to conduct address updates and enumeration on same device
- Reduced paper and manual processing

Increased Management and Staff Productivity

- Increased visibility into case status for improved workforce management
- Redesigned quality assurance operations
- Improved communications
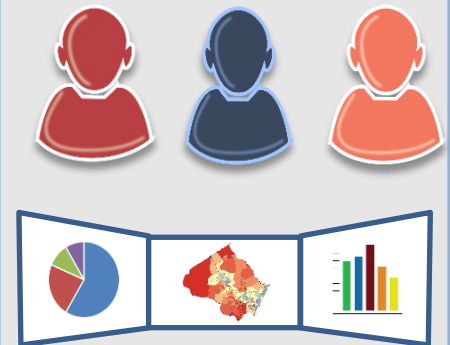
The 2020 Census: Count the Population
Reengineering Field Operations Research Completed to Date

Review of other countries census field infrastructure

Findings:

- Best practices include consolidation of support functions in the field, specifically payroll, recruiting, and other administrative functions

Develop a new concept of operations for field infrastructure and test in the 2015 Census Test

Findings:

Field Staff Training:

- Combination of on-line and classroom training provided standardization of the information, provided tracking capabilities, and offered various learning methods
- Reduced training hours compared with the 2010 Census Nonresponse Followup enumerator training from 32 to 18 hours
- Deployment of You Tube videos to quickly and efficiently provide targeted training to enumerators
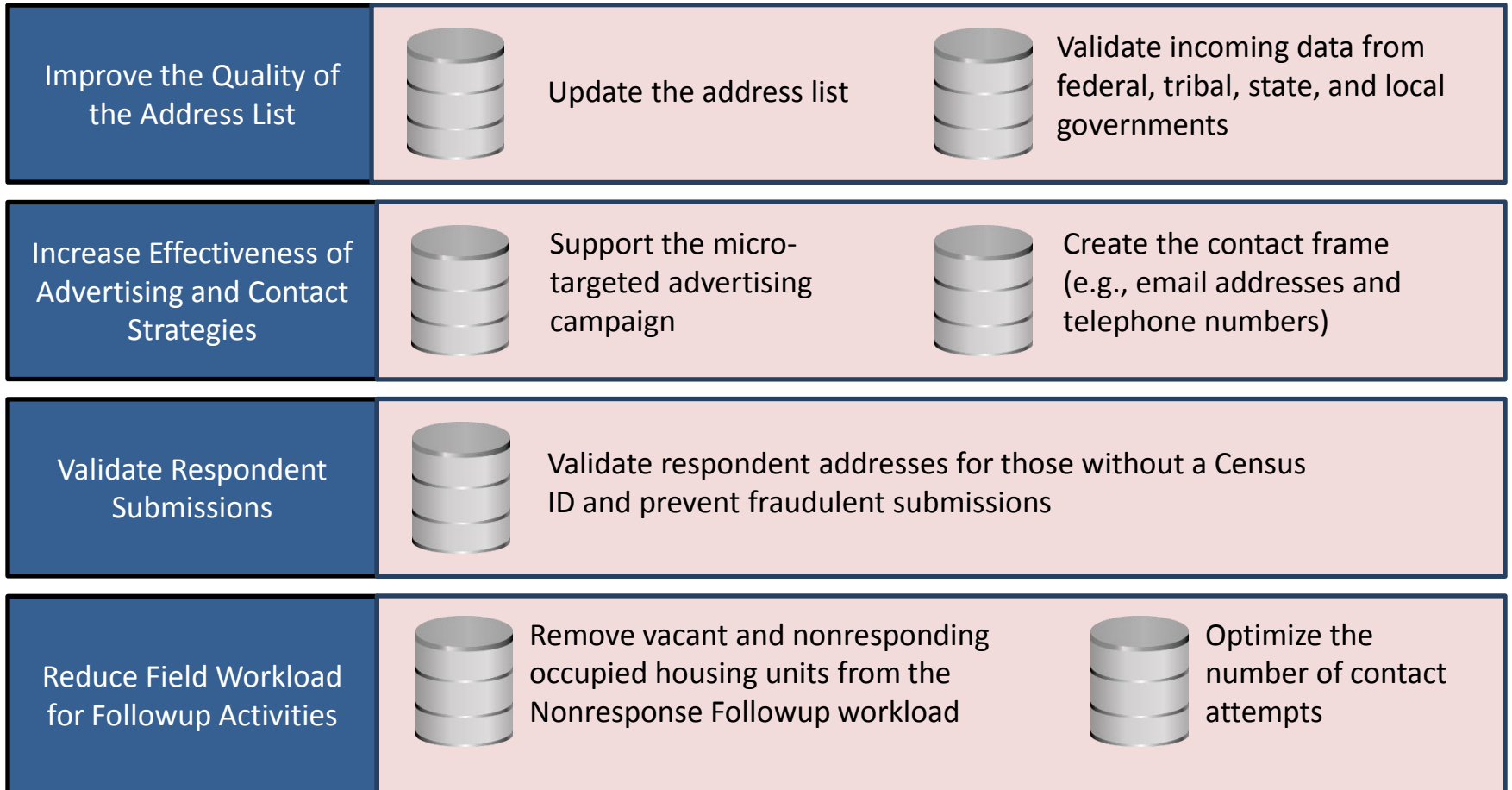- Identified topics requiring additional training in future tests

Field Reengineering

- Area Census Office (ACO) and staffing of the ACO successful
- Electronic payroll successful

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The 2020 Census: Count the Population
Utilizing Administrative Records and Third-Party Data

Use information people have already provided to reduce expensive in-person follow-up.

| Improve the Quality of the Address List | Update the address list | Validate incoming data from federal, tribal, state, and local governments |

| Increase Effectiveness of Advertising and Contact Strategies | Support the micro-targeted advertising campaign | Create the contact frame (e.g., email addresses and telephone numbers) |

| Validate Respondent Submissions | Validate respondent addresses for those without a Census ID and prevent fraudulent submissions |

| Reduce Field Workload for Followup Activities | Remove vacant and nonresponding occupied housing units from the Nonresponse Followup workload | Optimize the number of contact attempts |

The 2020 Census: Count the Population

Utilizing Administrative Records and Third-Party Data
Research Completed to Date

2013 Census Test (Philadelphia, PA) explored methods for using administrative records and third-party data to reduce the NRFU workload

Findings:

- The Census Bureau was able to remove approximately 8 percent of vacant units and 31 percent of occupied units prior to NRFU using administrative records and third-party data

- The use of administrative records and third-party data and the implementation of an adaptive design case management approach have the potential to reduce costs

2014 Human-in-the-Loop Simulation (SIMEX) explored roles, responsibilities, and staff-to-supervisor ratios for positions under a new field management structure and assessed the necessity and sufficiency of the automated operational control system

Findings:

- The field management structure can be streamlined and ratios increased

- Messaging and alerts within the operational control system provide real-time and consistent communication

- The enhanced operational control system or MOJO is intuitive – users were able to use the system with a small amount of up front training

- Smart phones were usable by all people – even those with little technology experience were able to adjust and adapt

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Utilizing Administrative Records and Third-Party Data
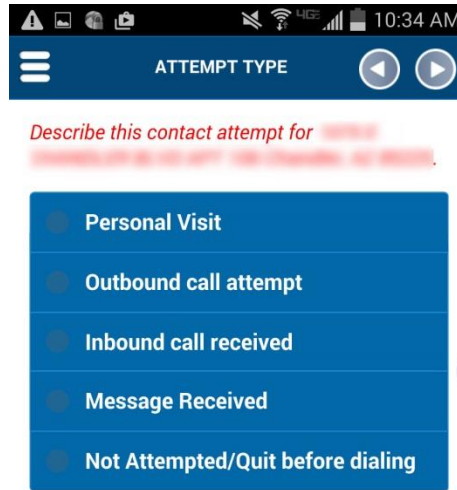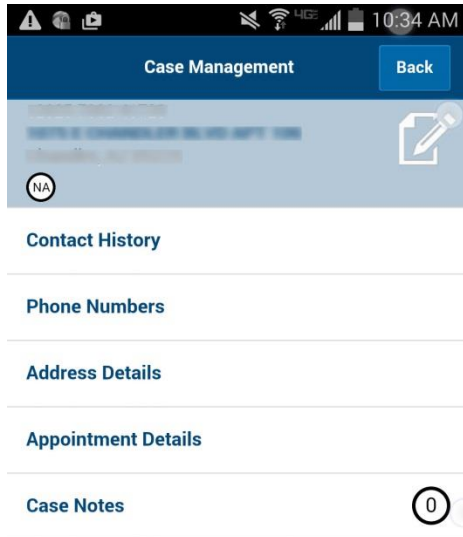## Research Completed to Date

2014 Census Test (Montgomery County, MD and Northwest Washington, DC) built upon the results of the 2013 Census Test specific to administrative records and third-party data usage to reduce the NRFU workload

Findings:

- A high self-response rate of 65.7 percent resulted in a NRFU universe of 46,247 housing units. The Census Bureau was able to identify approximately 4 percent of the NRFU cases as vacant housing units and 55 percent of occupied housing unit NRFU cases based on administrative records and third-party data

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The 2020 Census: Count the Population

Utilizing Administrative Records and Third-Party Data
Research Completed to Date

2015 Census Test (Maricopa County, AZ) explored the reengineering of the roles, responsibilities, and infrastructure for conducting field data collection, tested the feasibility of fully utilizing the advantages of planned automation and available real-time data to transform the efficiency and effectiveness of data collection operations, continued the exploration of the use of administrative record and third-party data to reduce the Nonresponse Followup workload, and tested the technical implementation of a Bring Your Own Device option

Findings:

- A high self-response rate of 54.9 percent resulted in a NRFU universe of 72,072 housing units. The Census Bureau was able to identify approximately 12 percent of the NRFU cases as vacant and 20 percent of NRFU cases as occupied based on administrative records and third-party data

- Successfully removed vacant housing units and enumerated occupied housing units using administrative records and third-party data

- A combination of automated on-line training and classroom training enabled a reduction in the overall number of training hours, compared with the 2010 Census NRFU operation, from 32 to 18 hours

- Management of the field data collection utilizing new roles, responsibilities, and staffing ratios were successfully implemented

- Entry of enumerator work availability, workload optimization, and electronic payroll were effective and efficient

- Use of a Bring Your Own Device option did not generate any observable concerns from respondents

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The 2020 Census: Count the Population
Reengineering Field Operations COMPASS Mobile Application

The 2020 Census: Count the Population
Reengineering Field Operations Operational Control System

Note: Screenshot contains test data.

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The 2020 Census
A New Design for the 21st Century

The 2020 Census

The 2020 Census Key Upcoming Activities*

2016

2016 Census Test

2016 Address Canvassing Test

Boundary and Annexation Survey – Governmental entities receive their annual invitation to update their legal boundaries

Award Contract for the 2020 Census Questionnaire Assistance (CQA)

Award Integrated Communications Contract

2017

2017 Census Test

Topics to Congress – by March 31, 2017

Local Update of Census Addresses – Invitations sent to governmental entities to participate in review of our Master Address File and is complete in 2018

2018

2018 End-to-End Test

Question Wording to Congress – by March 31, 2018.

2019

Partnership Program – Launch of the partnership program

Complete Count Committees – Formation of committee's should be complete

2020

Advertising – Begins in early 2020

Census Day – April 1, 2020

Nonresponse Followup – Begins in late April and continues until late June/early July

Apportionment Counts to the President – by December 31, 2020

2021

Redistricting Counts to the States – by March 31, 2021

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