Deep Dive: The Census
2020 Census Redistricting Data Program
2018 End to End Census Test Update
2020 Census Update

NCSL Redistricting Seminar
Providence, RI
June 21, 2019

James Whitehorne
Chief - Census Redistricting & Voting Rights Data Office
Topics Covered

- The 2020 Redistricting Data Program
  - Public Law 94-171
  - Phases of the program
  - Redistricting data products
    - Timing
    - Contents
    - Group Quarters/Residence Criteria
  - Voting Rights Tabulations
  - Where to get the data
- Update on the 2018 End-to-End Census Test
- The 2020 Census Update
  - Milestones
  - Contact Strategies/ Types of Enumeration Areas
  - Language Support
2020 Census Redistricting Data Program
Public Law 94-171

**Mission:** Provide the officers or public bodies having initial responsibility for the legislative apportionment or districting of each State an opportunity to identify the geographic areas for which specific tabulations of population are desired and to deliver those tabulations in a timely manner.

Identified “geographic areas desired”:  
- Census Tabulation Blocks  
- Voting Districts (e.g. precincts, wards, etc.)  
- Legislative and Congressional Districts

Requirements:  
- Establish program criteria  
- Identify required tabulations  
- Conduct the program in a non-partisan manner  
- Deliver the tabulations to the governor and the officers or public bodies having initial responsibility for the legislative apportionment or districting of each State no later than 1 year from Census Day (April 1, 2021)
2020 Redistricting Data Program

- Phase 1 – The Block Boundary Suggestion Project (BBSP)
- Phase 2 – The Voting District Project (VTDP)
- Phase 3 – Data Delivery
- Phase 4 – Collection of the new plans
  - 118th Congressional Plans
  - New State Legislative District Plans
- Phase 5 – The View From the States
  - The evaluation of the 2020 Redistricting Data Program (RDP), the recommendations from the states, and the plan for the 2030 RDP
## Timing

### Phase 3 – Prototype Data

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prototype geographic support products</td>
<td>January 2019 – February 2019</td>
</tr>
<tr>
<td>Prototype P.L. 94-171 Redistricting Data</td>
<td>March 2019</td>
</tr>
</tbody>
</table>

### Phase 3 – Official Data

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geographic support products</td>
<td>November 2020 – February 2021</td>
</tr>
<tr>
<td>P.L. 94-171 Redistricting Data</td>
<td>February 2021 – March 31, 2021</td>
</tr>
</tbody>
</table>
### Products

**Phase 3 – Geographic Products**

<table>
<thead>
<tr>
<th>2018 Prototype</th>
<th>2020 Official</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shapefiles</td>
<td>Shapefiles</td>
</tr>
<tr>
<td>Maps</td>
<td>Maps</td>
</tr>
<tr>
<td>Block Assignment Files</td>
<td>Block Assignment Files</td>
</tr>
<tr>
<td></td>
<td>Block to Block Relationship Files</td>
</tr>
</tbody>
</table>

- Shapefiles – geographic information system geometry files
- Maps (PDF only) – County Block; Voting District/State Legislative District; Tract; School District
- Block Assignment Files – tables identifying the blocks used to build different geographic entities
- Block to Block Relationship Files – Crosswalk of 2010 blocks to 2020 blocks
# Products

## Phase 3 – Tabulations

**Prototype P.L. 94-171 Redistricting Data File**

<table>
<thead>
<tr>
<th>Table P1 – Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table P2 – Race for the Population 18 Years and Over</td>
</tr>
<tr>
<td>Table P3 – Hispanic or Latino, and not Hispanic or Latino by Race</td>
</tr>
<tr>
<td>Table P4 – Hispanic or Latino, and not Hispanic or Latino by Race for the Population 18 and Over</td>
</tr>
<tr>
<td>Table H1 – Occupancy Status (Housing)</td>
</tr>
</tbody>
</table>

**New Table**

| Table P5 – Group Quarters Population by Group Quarters Type |

- Multiple geographies including census block
- Group quarters is total population only, no demographic breakdown
- Final 2020 P.L. 94-171 Redistricting Data File design expected summer of 2019
Group Quarters Assistance

• On February 8, 2018, the Census Bureau published a Federal Register Notice on the Final 2020 Census Residence Criteria and Residence Situations. In that Notice, the Census Bureau stated our intention to continue counting prisoners at the correctional facility as we determined that is most consistent with the concept of usual residence, as established by the Census Act of 1790. However, the notice also stated:

  • Therefore, following the 2020 Census, the Census Bureau plans to offer a product that states can request, in order to assist them in their goals of reallocating their own prisoner population counts.
Group Quarters Assistance

• The solution for the “product/service” listed in the Residence Criteria and Situations FRN has been identified as the Census External Geocoder.

• The CRVRDO will put up a web landing page with language about redistricting, the geocoding service, and instructions on its use

• The CRVRDO will be the first line contact office for users of the service for purposes of redistricting

• Use the existing public geocoding service as currently scaled
  • 10,000 address limit for external users (open to the public)
  • Option for state redistricting officials, and only state officials, to submit a larger list for batch geocoding through SWIM (CENTURION)
  • The service is GQ/Address agnostic so it can be used for students, military, and prisons as needed by different states
Group Quarters Assistance

- The submitted addresses must be in the formats specified by GEO for submission to the geocoding tool
  - This format requires a user defined unique identifier
- The geocoder will add the x/y coordinates and the associated geographic (county/tract/block) identifiers to the address record
- For the large batch option:
  - We will not modify the incoming file, it must be in the same GEO prescribed format as if submitted to the external service
  - We will not modify the outgoing file beyond what the geocoder does when it adds the x/y coordinates and geographic identifiers
  - The CRVRDO will provide the external support to the states
  - The CRVRDO will work internally to submit the batch files to the geocoder
  - The CRVRDO will return the batch files to the sender through our secure email system, Accellion
Group Quarters Assistance

What the solution won’t do

- The solution will not provide new tabulations
- The solution will not change the P.L. 94-171 Redistricting Data Tabulations
- The solution will not link to census person records
- The solution will not utilize geocoding systems not available to the public
How this helps the states

• The states can verify/identify the locations of their GQs by using the geocoder to assign geographic identifiers to their GQ address list.

• The states can use the GQ address list, the user-defined unique identifiers and the returned geographic identifiers to create their own tabulation adjustment tables.

• The states can incorporate their race, ethnicity, and age data associated with each record and their tabulation adjustment table by linking it through the user defined unique identifier.
Voting Rights Tabulations

Citizen Voting Age Population by Race and Ethnicity
• Annual Tabulation
• Calculated using the American Community Survey 5-year estimates
• Added Congressional and State Legislative Districts for 2018 and future releases
• Typically released in the 1st week of February each year

Section 203 Language Determinations
• New determinations conducted every 5 years
• Identifies counties or townships where language assistance is needed for voting
• Calculated using the American Community Survey 5-year estimates
• Last published in the Federal Register –12/5/2016, next publication estimated 12/2021
Where to get the data?

Decennial Census of Population and Housing

Redistricting Data Program

Redistricting & Voting Rights Data Office (RD@CENSUS.GOV or 301-763-4039)

May 05, 2017

Redistricting Data Program Congressional Districts
Guidance and access to information about congressional districts and congressional district products.

May 08, 2017

Redistricting Data Program State Legislative Districts
Guidance and access to information about state legislative districts and state legislative district products.

Prototype Data (Phase 3) in March 2019

Official Data in 2021
Update on the 2018 End-to-End Census Test
Preliminary Self-Response Rates

**Housing Unit**

52.3%

**Housing Population**

56%
2018 End-to-End Census Test

Proportion of Self-Response for each Race

Total Household Population: 571,000

- White: 66%
- Black: 39%
- American Indian and Alaskan Native: 44%
- Asian: 50%
- Native Hawaiian and Other Pacific Islander: 37%
- Two or More Races: 61%
- Some Other Race: 38%

Self Response
Proportion Self Response (All Races)
2018 End-to-End Census Test
Proportion of Self-Response Modes for each Race – Internet

Total Household Population: 571,000

- White: 65%
- Black: 50%
- American Indian and Alaskan Native: 45%
- Asian: 73%
- Native Hawaiian and Other Pacific Islander: 65%
- Two or More Races: 70%
- Some Other Race: 75%

Internet: Orange
Proportion Internet (All Races): Green
2018 End-to-End Census Test

Proportion of Self-Response Modes for each Race – Internet and Paper

Total Household Population: 571,000

- White: 68% Internet, 26% Paper
- Black: 58% Internet, 30% Paper
- American Indian and Alaskan Native: 44% Internet, 48% Paper
- Asian: 73% Internet, 22% Paper
- Native Hawaiian and Other Pacific Islander: 65% Internet, 28% Paper
- Two or More Races: 70% Internet, 23% Paper
- Some Other Race: 78% Internet, 21% Paper

DRB Approval Number: CBDRB-FY19-RAGLIN-80001
2018 End-to-End Census Test
Proportion of Self-Response Modes for each Race – Internet, Paper, and Phone

Total Household Population: 571,000
2018 End-to-End Census Test

Proportion of Self-Response for Hispanic Origin

Total Household Population: 571,000

- Non-Hispanic: 61%
- Hispanic: 43%

Dr. B. Approval Number: CBDRB-FY19-RAGLIN-80001
2018 End-to-End Census Test
Proportion of Self-Response Modes for Hispanic Origin – Internet

Total Household Population: 571,000

Non-Hispanic: 65%
Hispanic: 55%

United States Census Bureau
U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov
2018 End-to-End Census Test
Proportion of Self-Response Modes for Hispanic Origin – Internet and Paper

Total Household Population: 571,000

Non-Hispanic
- Internet: 68%
- Paper: 27%
- Proportion Internet (All Races): 65%
- Proportion Paper (All Races): 29%

Hispanic
- Internet: 59%
- Paper: 34%
Proportion of Self-Response Modes for Hispanic Origin – Internet, Paper, and Phone

Total Household Population: 571,000

United States Census Bureau
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov
2018 End-to-End Census Test

Proportion of Self-Response for Tenure

Total Household Population: 571,000

- **Owned**: 70%
- **Rented**: 48%

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov

DRB Approval Number: CBDRB-FY19-RAGLIN-80001
2018 End-to-End Census Test

Proportion of Self-Response Modes for Tenure – Internet

Total Household Population: 571,000

- Owned: 66%
- Rented: 58%

U.S. Department of Commerce
Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov

DRB Approval Number: CBDRB-FY19-RAGLIN-80001
2018 End-to-End Census Test
Proportion of Self-Response Modes for Tenure – Internet and Paper

Total Household Population: 571,000
2018 End-to-End Census Test

Proportion of Self-Response Modes for Tenure – Internet, Paper, and Phone

Total Household Population: 571,000
The **2018 Census Test** is the culmination of more than a decade of research and the last major milestone before the **2020 Census**. All systems deployed and integrated effectively ✔

**Response Rate**

52.3% More than half of all households responded to the test on their own (surpassing our goal for the test).

- Reinforced beliefs that certain demographics are less prone respond via the internet.
- Helps inform our targeted media presence and partnership activates with those communities to encourage self-response.
- Provides data to use when making decisions on targeted partnership

**Languages Tested**

(These languages were tested for phone response. Additional languages totaling 12 non-English languages will be available for internet and phone response in the 2020 Census.)

*Percentages do not add to 100 due to rounding.
Note: This graphic excluded households who received hand-delivered questionnaires rather than mailed material (less than 1 percent of households).
2020 Census Update
## 2020 Census

### Key Milestones

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin 2020 Census Program</td>
<td>November 18, 2011</td>
</tr>
<tr>
<td>Begin Local Update of Census Addresses (LUCA) Program</td>
<td>January 2017</td>
</tr>
<tr>
<td>Deliver 2020 Census Topics to Congress</td>
<td>March 28, 2017</td>
</tr>
<tr>
<td>Deliver 2020 Census Questions to Congress</td>
<td>By March 31, 2018</td>
</tr>
<tr>
<td>Open Regional Census Centers</td>
<td>April 2018</td>
</tr>
<tr>
<td>Conduct 2018 End-to-End Census Test</td>
<td>August 28, 2017 – August 31, 2018*</td>
</tr>
<tr>
<td>Begin Opening Area Census Offices</td>
<td>January 7, 2019</td>
</tr>
<tr>
<td>Begin In-Field Address Canvassing</td>
<td>August 18, 2019</td>
</tr>
<tr>
<td>Launch Advertising Campaign</td>
<td>January 2020</td>
</tr>
<tr>
<td>Begin Remote Alaska</td>
<td>January 21, 2020</td>
</tr>
<tr>
<td>Begin Group Quarters – Advance Contact</td>
<td>February 3, 2020</td>
</tr>
<tr>
<td>Begin Self-Response</td>
<td>March 12, 2020</td>
</tr>
<tr>
<td>Begin Update Leave</td>
<td>March 16, 2020</td>
</tr>
<tr>
<td>Begin Update Enumerate</td>
<td>March 16, 2020</td>
</tr>
<tr>
<td>Begin Group Quarters – Service Based Enumeration</td>
<td>March 30, 2020</td>
</tr>
<tr>
<td>2020 Census Day</td>
<td>April 1, 2020</td>
</tr>
<tr>
<td>Begin Group Quarters Enumeration</td>
<td>April 2, 2020</td>
</tr>
<tr>
<td>Begin Coverage Improvement</td>
<td>April 7, 2020</td>
</tr>
<tr>
<td>Begin Early Nonresponse Followup</td>
<td>April 9, 2020</td>
</tr>
<tr>
<td>Begin Nonresponse Followup</td>
<td>May 13, 2020</td>
</tr>
<tr>
<td>Deliver Apportionment Counts to the President</td>
<td>By December 31, 2020</td>
</tr>
<tr>
<td>Complete Delivery of Redistricting Counts to the States</td>
<td>By March 31, 2021</td>
</tr>
<tr>
<td>Complete 2020 Census Program</td>
<td>September 29, 2023</td>
</tr>
</tbody>
</table>

*Duration represents the time frame for data collection.

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**Economics and Statistics Administration**

**U.S. CENSUS BUREAU**

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2020 Census
Upcoming Milestones

In-Field Address Canvassing begins in **57** days

- **August 18, 2019**

First enumeration in Toksook Bay, Alaska begins in **213** days

- **January 21, 2020**

Census Day 2020 is in **284** days

- **April 1, 2020**

Apportionment counts are given to the President in **558** days

- **December 31, 2020**

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census.gov
2020 Census
A Complete and Accurate Count of the Population and Housing

Count everyone once, only once, and in the right place.
2020 Census
Establish Where to Count

SELF-RESPONSE
Identify all addresses where people could live
- Conduct a 100-percent review and update of the nation’s address list
- Use tablets and laptops to verify addresses in the field, building on the use of handheld devices for address listing in the last census
- Delineate types of enumeration areas, including those designated as Update Leave, where Census hand delivers questionnaires to areas where the majority of housing units either do not have mail delivered to the physical location of the housing unit, or the mail delivery information for the housing unit cannot be verified
- Use multiple data sources to identify areas with address changes
- Get local government input through the Local Update of Census Addresses

GROUP QUARTERS

MOTIVATE PEOPLE TO RESPOND

ESTABLISH WHERE TO COUNT

NONRESPONSE FOLLOWUP

TABULATE DATA AND RELEASE CENSUS RESULTS

Reengineering Address Canvassing for the 2020 Census
- Minimize in-field work with in-office updating
- Use aerial and street-view imagery to review addresses from the office and updating most Master Address File/Topologically Integrated Geographic Encoding and Referencing system (MAF/TIGER) data remotely, substantially cutting in-person workload
- Leverage workload models and technology to efficiently manage and route on-the-ground staff assignments for Address Canvassing
Know Where to Count: Geographic Programs

2020 Census

Address list and spatial database determines the address list for the 2020 Census

- **The goal**: Count everyone once, only once, and in the right place.
- Geographic Support System Partnership Programs.
- In-Office Address Canvassing.
- Local Update of Census Addresses.
- Boundary and Annexation Survey.
- Participant Statistical Areas Program.
- Geographic Products.
Residence Criteria and Residence Situations

• 2020 Residence Criteria and Residence Situations
  • Juveniles in non-correctional treatment centers
    • At their usual home address (previously counted at facility)
    • At the facility if no usual home address
  • Religious Group Quarters
    • At the facility (previously counted at home address)
    • At the facility if no usual home address
  • College Students
    • Where they live and sleep most of the time, as before
Residence Criteria and Residence Situations

• 2020 Residence Criteria and Residence Situations
  • Federally Affiliated Count Overseas
    • Military Deployed/Stationed
  • U.S. flagged maritime or merchant vessels between U.S. and foreign ports
    • At usual home address (previously not counted)
    • At port if no usual home address (previously not counted)
  • Prisoners at Correctional Facilities
    • Counted at facility (as before)
    • Geocoding Tool
    • Addition of Group Quarters to P.L. 94-171 Data
2020 Census
Motivate People to Respond

Conduct a nationwide communications and partnership campaign
- Build on the success of using paid advertising and audience segmentation in recent decades

Optimizing Self-Response for the 2020 Census
- Communicate about the census based on advanced modeling techniques to increase awareness and self-response
- Add digital advertising to target and tailor messages to various audiences

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2020 Census
Integrated Partnership and Communications Operation

The Integrated Partnership and Communications operation communicates the importance of participating in the 2020 Census to the entire population of the 50 states, the District of Columbia, Puerto Rico, and the Island Areas to:

• Engage and motivate people to self-respond, preferably via the internet
• Raise and keep awareness high throughout the entire 2020 Census to encourage response
2020 Census: State Complete Count Commissions

Data current as of:
June 19, 2019

Notes:
Those states in the “Yes” category indicate that the Census Bureau has received a firm commitment at the highest state-level to form a complete count commission (CCC). However, this designation does not mean that the State CCC is fully formed yet or that legislation will be passed; only that a commitment has received by the Census Bureau.
Get To Know Your Community Mapping Tools

Interactive data tools to better understand the demographic composition and characteristics of the communities you work with and represent.
2020 Census
Self-Response, Group Quarters, Non-Response Follow-Up

- Self-Response
- Group Quarters
- Nonresponse Followup
- Establish Where to Count
- Motivate People to Respond
- Tabulate Data and Release Census Results
2020 Census

Type of Enumeration Areas (TEAs)

- Completed determination of Type of Enumeration Areas (TEAs) for the 2020 Census
- A national map is now available, displaying the TEAs for the Fifty States and Puerto Rico, and is available at www.Census.gov/2020census
- This information will also be available with an interactive map that includes other geographic boundary information, such as counties or even census tracts.
How the 2020 Census Will Invite Everyone to Respond

Every household will have the option of responding online, by mail, or by phone.

Nearly every household will receive an invitation to participate in the 2020 Census from either a postal worker or a census worker.

- **95%** of households will receive their census invitation in the mail.

- **Almost 5%** of households will receive their census invitation when a census taker drops it off. In these areas, the majority of households may not receive mail at their home’s physical location (like households that use PO boxes or areas recently affected by natural disasters).

- **Less than 1%** of households will be counted in person by a census taker, instead of being invited to respond on their own. We do this in very remote areas like parts of northern Maine, remote Alaska, and in select American Indian areas that ask to be counted in person.
2020 Census
Responding is easier than ever – internet, paper, telephone

• Maximize self-response through a robust contact strategy and multiple response options
• Using the internet as the primary mode of response is a major milestone for counting the population, however, by design, the 2020 Census will be easier to respond to than any previous decennial census in our nation’s history.
• You will be able to respond anytime, from anywhere. Regardless of how households receive their invitation to respond they will be able to do so online, by mail, or over the phone.
# 2020 Census

## Self-Response Mail Strategy

### Self-Response

- Two-panel design: Internet First (invitation letter on first contact) and Internet Choice (questionnaire on first contact)
- Internet First panel is divided into four cohorts to best distribute calls to Census Questionnaire Assistance
- Internet Choice panel is in a single cohort, mailed on the same schedule as Internet First, Cohort 2

<table>
<thead>
<tr>
<th>Panel</th>
<th>Cohort</th>
<th>Mailing 1</th>
<th>Mailing 2</th>
<th>Mailing 3*</th>
<th>Mailing 4*</th>
<th>Mailing 5*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet First</td>
<td>1</td>
<td>March 12, 2020</td>
<td>March 16, 2020</td>
<td>March 26, 2020</td>
<td>April 8, 2020</td>
<td>April 20, 2020</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>March 13, 2020</td>
<td>March 17, 2020</td>
<td>March 27, 2020</td>
<td>April 9, 2020</td>
<td>April 20, 2020</td>
</tr>
<tr>
<td>Internet Choice</td>
<td>N/A</td>
<td>March 13, 2020</td>
<td>March 17, 2020</td>
<td>March 27, 2020</td>
<td>April 9, 2020</td>
<td>April 20, 2020</td>
</tr>
</tbody>
</table>

(*) Targeted only to nonresponding households
2020 Census

Different approaches for different parts of the county

We go to extraordinary lengths to count everyone once, only once, and in the right place

- **Update Leave**
  - Update the address frame and deliver questionnaires in geographic areas where the majority of housing units do not have mail delivered to the physical location of the address
  - Areas that have experienced recent and significant changes to the housing stock – for example natural disasters such as a hurricane or forest fire

- **Update Enumerate**
  - Update the address frame and enumerate respondents in geographically remote areas with low housing unit density, are sparsely populated, or have challenges with accessibility, including:
    - Remote Areas of Maine and Alaska
    - Select Tribal Areas

- **Remote Alaska**
  - Sub-operation of Update Enumerate and largely follows the listing and enumeration process of Update Enumerate
  - Work in partnership with Village Leaders to identify and hire enumerators who speak the local language and can translate and facilitate the collection of census response data
2020 Census
Special Populations – group quarters and service-based enumerations

We go to extraordinary lengths to count everyone once, only once, and in the right place

- Group Quarters (GQs) Enumeration
  - Places where people live or stay, in a group living arrangement, that are owned or managed by an entity or organization providing housing and/or services for the residents (e.g., college/university student housing, residential treatment centers, nursing/skilled nursing facilities, group homes, correctional facilities, workers’ dormitories, and domestic violence shelters).

- Service-Based Enumeration
  - Provides an opportunity for people without conventional housing or people experiencing homelessness to be included in the census by enumerating them at places where they receive services or at pre-identified outdoor locations.

- Enumeration at Transitory Locations
  - Highly mobile populations that do not have a usual home elsewhere (e.g. campgrounds, recreational vehicle parks, marinas, hotels and motels, racetracks, circuses, or carnivals).

- Federally Affiliated Count Overseas
  - Obtain counts by home state of U.S. military and federal civilian employees stationed overseas and their dependents living with them.
  - Receive administrative records from Defense Manpower, as well as from Federal agencies who have staff stationed overseas.

- Military Enumeration
  - Involves enumeration of people living in GQs (or barracks) on military installations or military vessels.
## 2020 Census Non-English Support
### Non-English Languages for Internet Self-Response, Census Questionnaire Assistance

<table>
<thead>
<tr>
<th>Language</th>
<th>Limited-English-Speaking Households (MOE)</th>
<th>Cumulative Percent of Total Limited-English-Speaking Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish</td>
<td>3,186,101 (12,273)</td>
<td>60.3</td>
</tr>
<tr>
<td>Chinese</td>
<td>447,785 (3,571)</td>
<td>68.8</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>174,439 (2,844)</td>
<td>72.1</td>
</tr>
<tr>
<td>Korean</td>
<td>166,917 (2,619)</td>
<td>75.2</td>
</tr>
<tr>
<td>Russian</td>
<td>145,174 (2,497)</td>
<td>78.0</td>
</tr>
<tr>
<td>Arabic</td>
<td>89,739 (2,255)</td>
<td>79.7</td>
</tr>
<tr>
<td>Tagalog</td>
<td>69,772 (1,664)</td>
<td>81.0</td>
</tr>
<tr>
<td>Polish</td>
<td>65,603 (1,665)</td>
<td>82.3</td>
</tr>
<tr>
<td>French</td>
<td>64,108 (1,620)</td>
<td>83.5</td>
</tr>
<tr>
<td>Haitian Creole</td>
<td>63,220 (1,918)</td>
<td>84.7</td>
</tr>
<tr>
<td>Portuguese</td>
<td>62,881 (2,063)</td>
<td>85.9</td>
</tr>
<tr>
<td>Japanese</td>
<td>59,586 (1,682)</td>
<td>87.0</td>
</tr>
</tbody>
</table>
## 2020 Census Non-English Support Changes

### Data Collection Instruments and Materials

<table>
<thead>
<tr>
<th>Instrument</th>
<th>2020 Non-English Support</th>
<th>2010 Non-English Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Self-Response</td>
<td>• 12 Non-English Languages</td>
<td>• Not in Scope</td>
</tr>
<tr>
<td></td>
<td>Spanish, Chinese (Simplified), Vietnamese, Korean, Russian, Arabic, Tagalog, Polish, French, Haitian Creole, Portuguese, Japanese</td>
<td>Questionnaires in 5 non-English languages, available via phone request or pickup</td>
</tr>
<tr>
<td></td>
<td>• Selection Criteria: 60,000 or more housing units</td>
<td>• Selection Criteria: 100,000 or more housing units</td>
</tr>
<tr>
<td>Census Questionnaire Assistance</td>
<td>• 12 Non-English Languages</td>
<td>• 5 Non-English Languages (Spanish, Chinese, Korean, Vietnamese, Russian)</td>
</tr>
<tr>
<td></td>
<td>Spanish, Chinese (Mandarin and Cantonese), Vietnamese, Korean, Russian, Arabic, Tagalog, Polish, French, Haitian Creole, Portuguese, Japanese</td>
<td>• Selection Criteria: 100,000 or more housing units</td>
</tr>
<tr>
<td></td>
<td>• Selection Criteria: 60,000 or more housing units</td>
<td>• Not in scope</td>
</tr>
<tr>
<td>Enumerator Instrument</td>
<td>• Spanish</td>
<td>• Not in scope</td>
</tr>
</tbody>
</table>
# 2020 Census Non-English Support Changes

Data Collection Instruments and Materials (cont’d)

<table>
<thead>
<tr>
<th>Material</th>
<th>2020 Non-English Support</th>
<th>2010 Non-English Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Glossary</td>
<td>• 59 Non-English Languages</td>
<td>• Not in scope</td>
</tr>
<tr>
<td>Language Identification Card</td>
<td>• 59 Non-English Languages</td>
<td>• 50 Non-English Languages</td>
</tr>
<tr>
<td>Language Guides (Video and Print)</td>
<td>• 59 Non-English Languages</td>
<td>• 59 Non-English Languages</td>
</tr>
<tr>
<td></td>
<td>• Video shells and print templates for additional languages</td>
<td>• Shells/templates not in scope</td>
</tr>
<tr>
<td>Bilingual Paper Questionnaire</td>
<td>• Spanish</td>
<td>• Spanish</td>
</tr>
<tr>
<td>Bilingual Mailing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field Enumeration Materials</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# 2020 Census Non-English Support

**All Non-English Languages** *(order: top to bottom, left to right)*

<table>
<thead>
<tr>
<th>Spanish</th>
<th>Italian</th>
<th>Khmer</th>
<th>Tamil</th>
<th>Croatian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>Farsi</td>
<td>Nepali</td>
<td>Navajo</td>
<td>Bulgarian</td>
</tr>
<tr>
<td>Vietnamese</td>
<td>German</td>
<td>Urdu</td>
<td>Hungarian</td>
<td>Twi</td>
</tr>
<tr>
<td>Korean</td>
<td>Armenian</td>
<td>Romanian</td>
<td>Hebrew</td>
<td>Lithuanian</td>
</tr>
<tr>
<td>Russian</td>
<td>Hindi</td>
<td>Telugu</td>
<td>Malayalam</td>
<td>Yoruba</td>
</tr>
<tr>
<td>Arabic</td>
<td>Ukrainian</td>
<td>Burmese</td>
<td>Swahili</td>
<td>Czech</td>
</tr>
<tr>
<td>Tagalog</td>
<td>Bengali</td>
<td>Punjabi</td>
<td>Yiddish</td>
<td>Igbo</td>
</tr>
<tr>
<td>Polish</td>
<td>Greek</td>
<td>Lao</td>
<td>Indonesian</td>
<td>Marathi</td>
</tr>
<tr>
<td>French</td>
<td>Amharic</td>
<td>Hmong</td>
<td>Serbian</td>
<td>Sinhala</td>
</tr>
<tr>
<td>Haitian Creole</td>
<td>Somali</td>
<td>Albanian</td>
<td>Tigrinya</td>
<td>Slovak</td>
</tr>
<tr>
<td>Portuguese</td>
<td>Thai</td>
<td>Turkish</td>
<td>Ilocano</td>
<td>American Sign Language</td>
</tr>
<tr>
<td>Japanese</td>
<td>Gujarati</td>
<td>Bosnian</td>
<td>Dutch</td>
<td></td>
</tr>
</tbody>
</table>
2020 Census
Nonresponse Followup

Collect data from all households, including group and unique living arrangements

• Leverage automation to efficiently manage and route on-the-ground field staff, as well as manage case assignment and the number of contact attempts

• Field workers will use handheld devices for collecting the data

• Operations such as recruiting, training, and payroll will be automated, reducing the time and staff required for these activities

• Phased approach will ensure accurate and complete count
2020 Census

Nonresponse Followup Administrative Records Usage

• Administrative Records (AdRec) modeling will classify households in the Nonresponse Followup (NRFU) operation as occupied, vacant, or nonexistent.

• For AdRec Vacant/Nonexistent:
  • Enumerators conduct one personal visit at the address to determine the unit status and/or attempt an interview
  • If the attempt isn’t successful, but the visit results in an indication that the unit is occupied, the address will remain in the NRFU workload for subsequent visits
  • If the attempt isn’t successful, but results in an indication that the unit is unoccupied or doesn’t exist, and recent Census mailings to the address have been returned as undeliverable, the AdRec Vacant/Nonexistent status will be used for the address
  • If recent Census mailings to the address have successfully been delivered, regardless of the results of the first attempt, the address will remain in the NRFU workload for subsequent visits

• For AdRec Occupied:
  • Enumerators conduct one personal visit at the household to attempt an interview
  • If attempt isn’t successful, and high quality AdRecs for that household exist showing stable historical housing, it is enumerated using AdRec
2020 Census
Tabulate and Release Census Results

- SELF-RESPONSE
- GROUP QUARTERS
- MOTIVATE PEOPLE TO RESPOND
- NONRESPONSE FOLLOWUP
- ESTABLISH WHERE TO COUNT
- TABULATE DATA AND RELEASE CENSUS RESULTS
Disclosure Avoidance

Household swapping was used in 2000 and 2010
- **Advantages of swapping:**
  - Easy to understand
  - Can be run state-by-state
  - Operation is “invisible” to the rest of census processing
- **Disadvantages:**
  - Does not consider or protect against database reconstruction attacks
  - Swap rate and details of swapping must remain confidential
  - Privacy guarantee based on the lack of external data

The 2020 Census will use Differential Privacy
- **Advantages:**
  - Privacy guarantees are *tunable and provable*
  - Privacy guarantees are *future-proof*
  - Privacy guarantees are *public and explainable*
  - Protects against *database reconstruction*
- **Disadvantages:**
  - Entire country must be processed at once for best accuracy
  - Every use of private data must be tallied in the *privacy-loss budget*
Data Release Schedule

Legally required products

• Apportionment
  • NLT 12/31/2020
  • Federally Affiliated Count Overseas + Resident Population

• P.L. 94-171 Redistricting Data
  • Geography – 12/1/2020 through 2/1/2021
  • Tabulation Data – 2/18/2021 through 3/31/2021
  • Resident Population only
Count everyone once, only once, and in the right place.
Thank you!

James Whitehorne
Chief – Census Redistricting & Voting Rights Data Office

www.census.gov/rdo
rdo@census.gov
301-763-4039
Additional background backup slides
2020 Census Non-English Support
Language Determination

ACS Language Data
- Languages spoken for all households

Limited-English-Speaking Household Language Data
- Languages spoken among households where there is no one 14 years or older who speaks English only or speaks English “very well”
- Cutoff at 2,000+ and 60,000+ limited-English-speaking households

Validate Languages
- Verified with regional and state level data
- Assessed translation feasibility
- Added American Sign Language

2020 Census Language List
Editing & Imputation

• Count Imputation
  • The process used to estimate missing or misreported data.
  • Conducted during the construction of the Census Unedited File
  • Uses other data to replace missing count information from housing units identified as occupied

• Edits and Characteristic Imputation
  • Conducted during the construction of the Census Edited File
  • The process used to ensure valid responses to a subset of required fields
Purpose of Edit and Characteristic Imputation

- Edit and characteristic imputation begins post-data collection after the household population is established and does not add people to the Census.

- Edits are used to ensure certain consistencies among characteristics.

- Characteristic imputation is used to ensure that each person and housing unit on the final census file has valid values in the person and housing items.

- Administrative records will be used to improve data quality in characteristic imputation.
Editing & Imputation

Types of Characteristic Imputation

**Assignment:** Assignment occurs when responses are either missing or inconsistent with other responses AND missing item values can be determined based on other information provided for that same person or household.

**Allocation:** Allocation occurs when responses are either missing or inconsistent with other responses AND the missing item value cannot be determined based on information provided for that same person. A response from another person within the housing unit or from a person in a nearby housing unit is used.

**Substitution:** Substitution is a special type of allocation when all of the person characteristics - relationship, sex, age, date of birth, race and ethnicity - for every person record in a housing unit are missing and must be imputed.
## Editing & Imputation

### Overview – 2010 Census Imputation Rates

<table>
<thead>
<tr>
<th>Overall Imputation Rates</th>
<th>Person-Level Items</th>
<th>Household -Level Item</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Relationship</td>
<td>Sex</td>
</tr>
<tr>
<td>Imputed</td>
<td>2.1</td>
<td>1.6</td>
</tr>
<tr>
<td>Assigned</td>
<td>0.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Allocated</td>
<td>1.7</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Substituted 1.9 percent of all persons
Editing & Imputation

2010 Census Age and Date of Birth Imputation Method

Age Only Reported
If age was reported but not date of birth, we keep the age value and assign a date of birth using a random number of possible dates for that age.

Date of Birth Only Reported
If date of birth was reported but not age, we calculate age based on the reported date of birth.

Inconsistent Age and DOB, 2+ Years
If both age and date of birth are reported, but the age calculated from the reported date of birth is inconsistent with reported age by two or more years, edits will determine which of the two is more consistent (using relationship, for example). The less consistent reported value will be edited.

Age Adjusted for Household Consistency
It may be necessary to adjust the age for householder/spouse to account for the number of children in the household.

Allocated from Hot Deck
In 2010, allocation came from 11 matrices. All spouses (including parents and parents-in-law) were considered opposite sex relationships. In all but the last two matrices, an age difference is allocated rather than an exact age.
2020 Census Cybersecurity
Evolving Cybersecurity Threat Areas

Cyber Threats
- Compromising Respondent Device
- Compromised External Network Access
- Impersonation of the U.S. Census Bureau
- Data breaches
- Disruptions to the Internet Self-Response Web Site
- Compromised Employee Devices

Data Vulnerabilities
- Data on Individual Devices has minimal value to cybercriminals
- Data collected and protected by the Census Bureau
- Individual Data + Everyone’s Data = High Value

Risk Mitigation Strategy
- Continuous communication and technology mitigate risk
- Continually evolving our cybersecurity program to prevent and detect threats

External Threats
- Beyond U.S. Census Bureau Control

Internal Threats
- Within U.S. Census Bureau Control

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Economics and Statistics Administration
U.S. CENSUS BUREAU
census.gov
# External Cyber Threat Mitigation

## Relying on Partnerships to Respond

<table>
<thead>
<tr>
<th>External Threat Mitigation Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compromising Respondent Device</strong></td>
</tr>
<tr>
<td>§ Minimal storing of data on device</td>
</tr>
<tr>
<td>§ Encryption of data in-transit for website communications</td>
</tr>
<tr>
<td>§ Proactive public outreach and awareness campaign</td>
</tr>
<tr>
<td><strong>Compromised External Network Access</strong></td>
</tr>
<tr>
<td>§ Proactive monitoring of site performance and activity</td>
</tr>
<tr>
<td>§ Proactive monitoring for unauthorized or unusual connection attempts</td>
</tr>
<tr>
<td>§ Industry and interagency coordination and information sharing</td>
</tr>
<tr>
<td><strong>Impersonation of U.S. Census</strong></td>
</tr>
<tr>
<td>§ Proactive identification of rogue websites</td>
</tr>
<tr>
<td>§ Interagency coordination and information sharing</td>
</tr>
<tr>
<td>§ Proactive public outreach and awareness campaign</td>
</tr>
<tr>
<td><strong>Invalid Response</strong></td>
</tr>
<tr>
<td>§ Automated analysis of individual responses to identify irregularities</td>
</tr>
<tr>
<td>§ Analysis of identified irregularities</td>
</tr>
<tr>
<td>§ Data flow analysis</td>
</tr>
</tbody>
</table>

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**Economics and Statistics Administration**
**U.S. CENSUS BUREAU**
census.gov
## Internal Cyber Threat Mitigation

### Monitoring and Directly Responding to Cyber Threats

<table>
<thead>
<tr>
<th>Internal Threat Mitigation Strategies</th>
</tr>
</thead>
</table>
| **Disruption to the Internet Self-Response Web Site** | - Monitoring for traffic spikes and unusual activity in systems/applications  
- Proactive identification of malicious traffic and robots  
- Cyber threat intelligence (federal, commercial, state, and local government)  
- Designed to sustain self response services  
- Use of Distributed Denial of Service (DDoS) protection services  |
| **Data Breaches** | - Monitoring for irregular data flows  
- Monitoring for unauthorized access  
- Encryption of data in-transit and at-rest  
- System/application penetration testing  
- Security management, monitoring, and analytics  
- Timely patch management  
- Cyber awareness training  
- Proactive public outreach and awareness campaign  |
| **Compromised Employee Devices** | - Encryption of data in-transit and at-rest  
- Remote wipe capability  
- Monitoring user activity and detection of malicious end user  
- Two factor authentication  
- Phishing tests  |
2020 Census Cybersecurity

Continuously monitoring for, and ready to respond to, new threats

- Develop an organizational structure to manage cybersecurity risks
- Develop and implement safeguards to effectively deliver and maintain technology services
- Develop and implement activities to identify a cyber event
- Develop and implement activities to take action on a detected cyber event
- Develop and implement activities to maintain operations and restore capabilities affected by a cyber event

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