2020 Census and 2020 Census Redistricting Data

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Census Fundamentals

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Census Fundamentals
Decennial Census of Population and Housing

Why do we take the census?

Mandated by Article 1, Section 2 of the U.S. Constitution.

Data are used to determine congressional representation.

States use data to redraw congressional and legislative districts.

Federal funds, grants and support to tribal, state and local governments.

Who is counted in the census?

The census counts every person living in the U.S. once, only once, and in the right place.

For the 2020 Census...

- 67% of households self responded.

- 32.9% of households were enumerated in Nonresponse Followup (NRFU).

- Total of 99.9% of households enumerated.

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2020 Census Redistricting Data Program
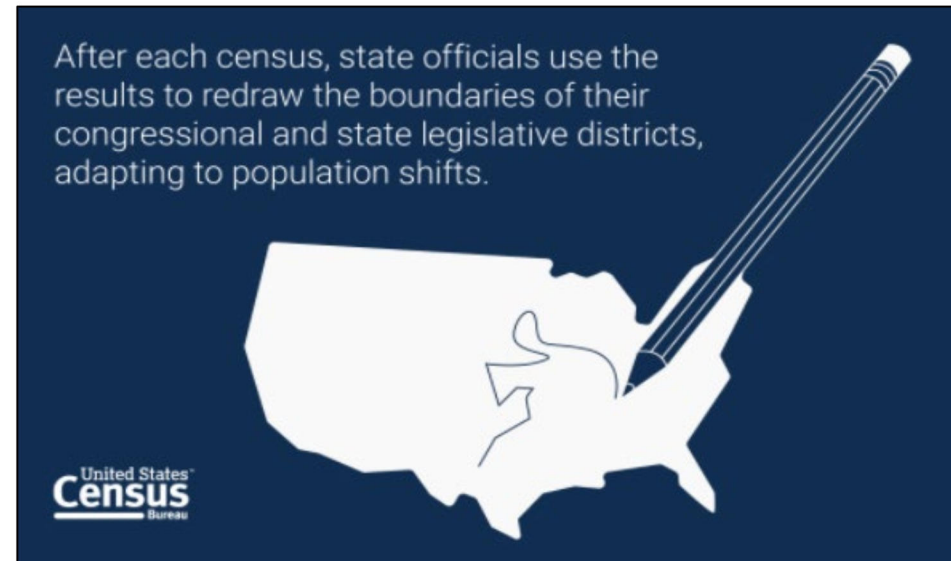## Public Law 94-171

Program Mission: Provide states an opportunity to identify the geographic areas for which specific tabulations of population are needed for legislative redistricting and to deliver high quality data for those areas in a timely manner

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

Requirements:
- Conduct the program in a non-partisan manner
- Establish program criteria
- Identify required tabulations
- 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.

After each census, state officials use the results to redraw the boundaries of their congressional and state legislative districts, adapting to population shifts.

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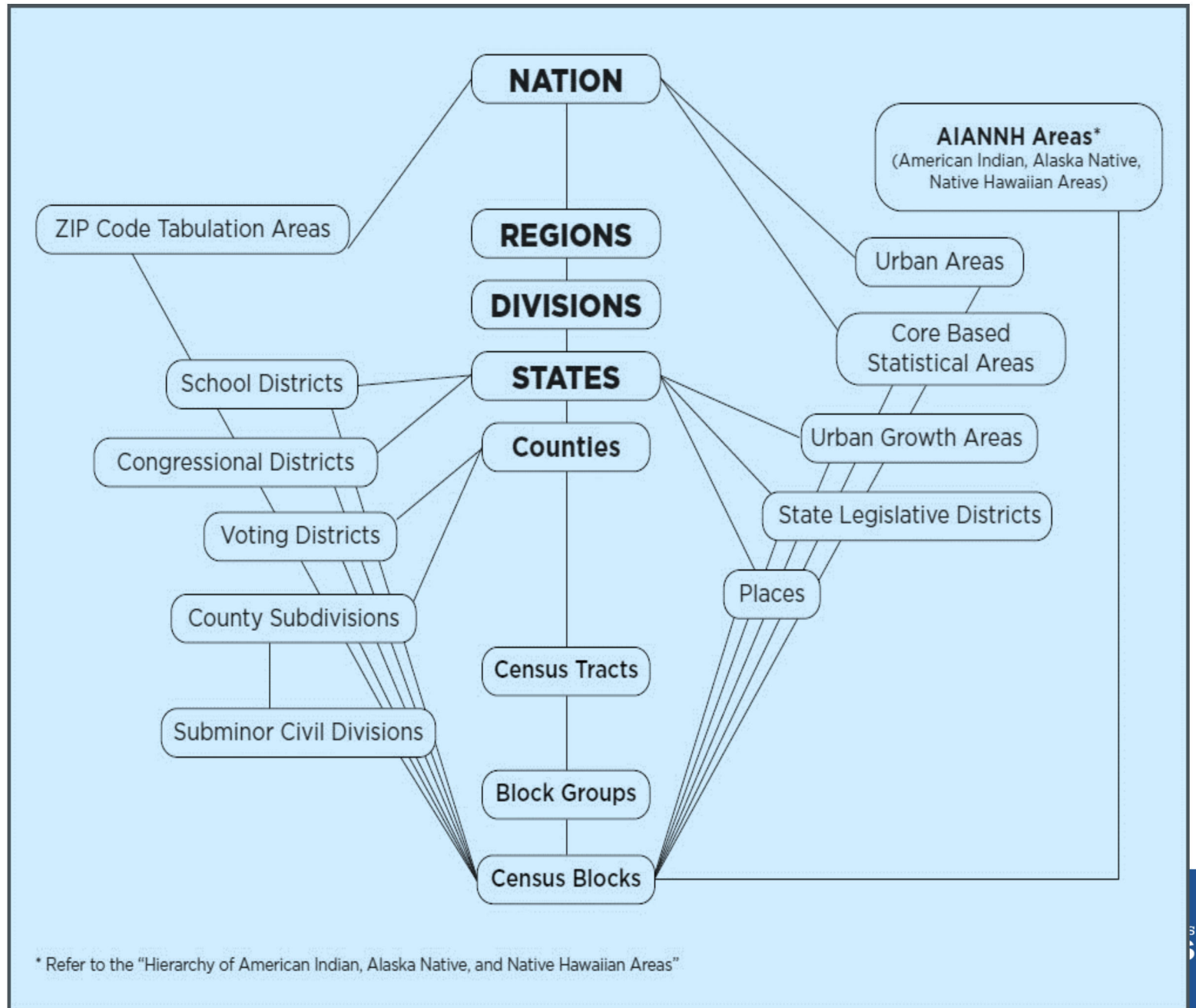
Census Fundamentals
Census Geography

Standard Hierarchy of Census Geographic Entities

Hierarchy displays how legal, administrative, and statistical boundaries related to one another.

Geographic relationships are depicted with a line connection.

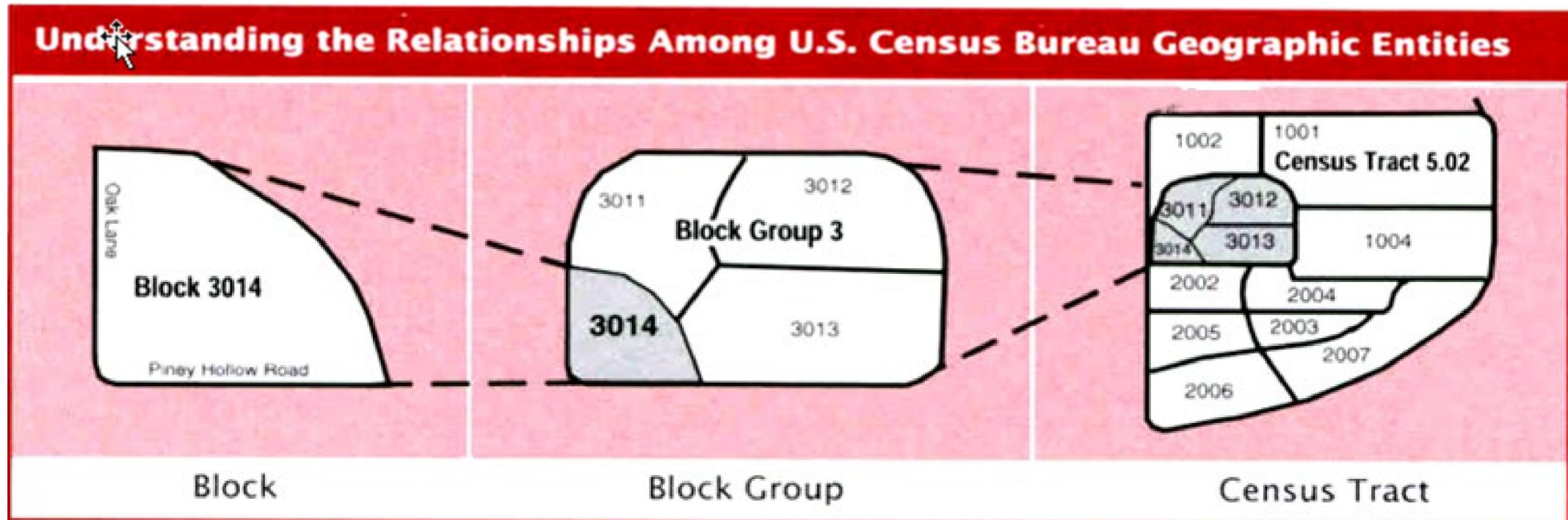Census Blocks are the smallest components of census geography.

Census Blocks are aggregated up to form all other census geographies.

NATION

REGIONS

DIVISIONS

STATES

Counties

ZIP Code Tabulation Areas

School Districts

Congressional Districts

Voting Districts

County Subdivisions

Subminor Civil Divisions

Census Tracts

Block Groups

Census Blocks

AIANNH Areas*
(American Indian, Alaska Native, Native Hawaiian Areas)

Urban Areas

Core Based Statistical Areas

Urban Growth Areas

State Legislative Districts

Places

* Refer to the "Hierarchy of American Indian, Alaska Native, and Native Hawaiian Areas"

Census Geography
Geographic Nesting

Understanding the Relationships Among U.S. Census Bureau Geographic Entities

Block — Block 3014 (Oak Lane, Piney Hollow Road)

Block Group — Block Group 3 (3011, 3012, 3013, 3014)

Census Tract — Census Tract 5.02 (1001, 1002, 1004, 2002, 2003, 2004, 2005, 2006, 2007, 3011, 3012, 3013, 3014)

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Redistricting Data Program & Products

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Apportionment vs. Redistricting

Geography		APPORTIONMENT	REDISTRICTING
Geography	Largest	State	State
	Smallest	State	Census Block
Who is counted		Resident Population + Federally Affiliated Count Overseas	Resident Population Only
What is reported		Total Population only	Race, ethnicity, and select housing characteristics
Disclosure Avoidance		None	Differentially Private (TopDown Algorithm)
Current Timeline		Released April 26, 2021	Legacy Format – by August 16, 2021
			DVDs/Flash Drives & data.census.gov by September 30, 2021

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Redistricting Data Program
Phase 3 – P.L. 94-171 Redistricting Data Geographic Support Products

2020 Census P.L. 94-171 Redistricting Data Geographic Products	
Product Type	**Census Web Address**
Shapefiles	https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html
Reference Maps	https://www.census.gov/geographies/reference-maps.html
Block Assignment Files	https://www.census.gov/geographies/reference-files.html
Name Lookup Tables	https://www.census.gov/geographies/reference-files/time-series/geo/name-lookup-tables.html
Block to Block Relationship Files	https://www.census.gov/geographies/reference-files/time-series/geo/relationship-files.html

- Shapefiles – Geographic information system geometry files.
- Reference Maps (PDF only) – County Block; State Legislative with Voting District; Census Tract; School District.
- Block Assignment Files – Tables identifying the blocks used to build different geographic entities.
- Name Lookup Tables – Contain names and codes for geographic areas within a state.
- Block to Block Relationship Files – Crosswalk of 2010 blocks to 2020 blocks.

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Phase 3 – P.L. 94-171 Redistricting Data Tabulation Product

2020 Census P.L. 94-171 Redistricting Data Tabulations
Table P1 – Race
Table P2 – Hispanic or Latino, and not Hispanic or Latino by Race
Table P3 – Race for the Population 18 Years and Over
Table P4 – Hispanic or Latino, and not Hispanic or Latino by Race for the Population 18 Years and Over
Table H1 – Occupancy Status (Housing)
New Table
Table P5 – Group Quarters Population by Group Quarters Type

- All tables produced at multiple geographies including census block
- Group Quarter types: Correctional Institutions for Adults, Juvenile Facilities, Nursing Facilities/Skilled Nursing, Other Institutional, College/University Student Housing, Military quarters, and other non-institutional
- Group quarters is total population only, no demographic breakdown

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Redistricting Data Program
P.L. 94-171 Redistricting Data Tabulation Product

Table P1 – Race
Universe: Total Population

Table P3 – Race for the Population 18 Years and Over
Universe: Total population 18 years and over

RACE [71]
Universe: Total population
Total:
Population of one race:
White alone
Black or African American alone
American Indian and Alaska Native alone
Asian alone
Native Hawaiian and Other Pacific Islander alone
Some Other Race alone
Two or More Races:
Population of two races:
White; Black or African American
White; American Indian and Alaska Native
White; Asian
White; Native Hawaiian and Other Pacific Islander
White; Some Other Race
Black or African American; American Indian and Alaska Native
Black or African American; Asian
Black or African American; Native Hawaiian and Other Pacific Islander
Black or African American; Some Other Race
American Indian and Alaska Native; Asian
American Indian and Alaska Native; Native Hawaiian and Other Pacific Islander
American Indian and Alaska Native; Some Other Race
Asian; Native Hawaiian and Other Pacific Islander
Asian; Some Other Race
Native Hawaiian and Other Pacific Islander; Some Other Race
Population of six races:
White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race

Redistricting Data Program
P.L. 94-171 Redistricting Data Tabulation Product

Table P2 – Hispanic or Latino, and Not Hispanic or Latino by Race
Universe: Total population

Table P4 – Hispanic or Latino, and Not Hispanic or Latino by Race for the Population 18 Years and Over
Universe: Total population 18 years and over

HISPANIC OR LATINO, AND NOT HISPANIC OR LATINO BY RACE [73]
Universe: *Total population*
Total:
Hispanic or Latino
Not Hispanic or Latino:
Population of one race:
White alone
Black or African American alone
American Indian and Alaska Native alone
Asian alone
Native Hawaiian and Other Pacific Islander alone
Some Other Race alone
Two or More Races:
Population of two races:
White; Black or African American
White; American Indian and Alaska Native
White; Asian
White; Native Hawaiian and Other Pacific Islander
White; Some Other Race
Black or African American; American Indian and Alaska Native
Black or African American; Asian
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Native Hawaiian and Other Pacific Islander; Some Other Race
Population of six races:
White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; Some Other Race

Redistricting Data Program
P.L. 94-171 Redistricting Data Tabulation Product

Table H1 – Occupancy Status
Universe: Housing Units
- Total
  - Occupied
  - Vacant

Table P5 - Group Quarters Population by Group Quarters Type
Universe: Total Population in Group Quarters
- Total
  - Institutionalized population
    - Correctional facilities for adults
    - Juvenile facilities
    - Nursing facilities/Skilled-nursing facilities
    - Other institutional facilities
  - Noninstitutionalized population
    - College/University student housing
    - Military quarters
    - Other non-institutional facilities

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Census Fundamentals
Disclosure Avoidance & Differential Privacy

Disclosure Avoidance

- Use of published statistical information to identify an individual who provided information under a pledge of confidentiality is known as data disclosure.

- The Census Bureau modifies or removes all characteristics that put confidential information at risk for disclosure. This is known as disclosure avoidance.
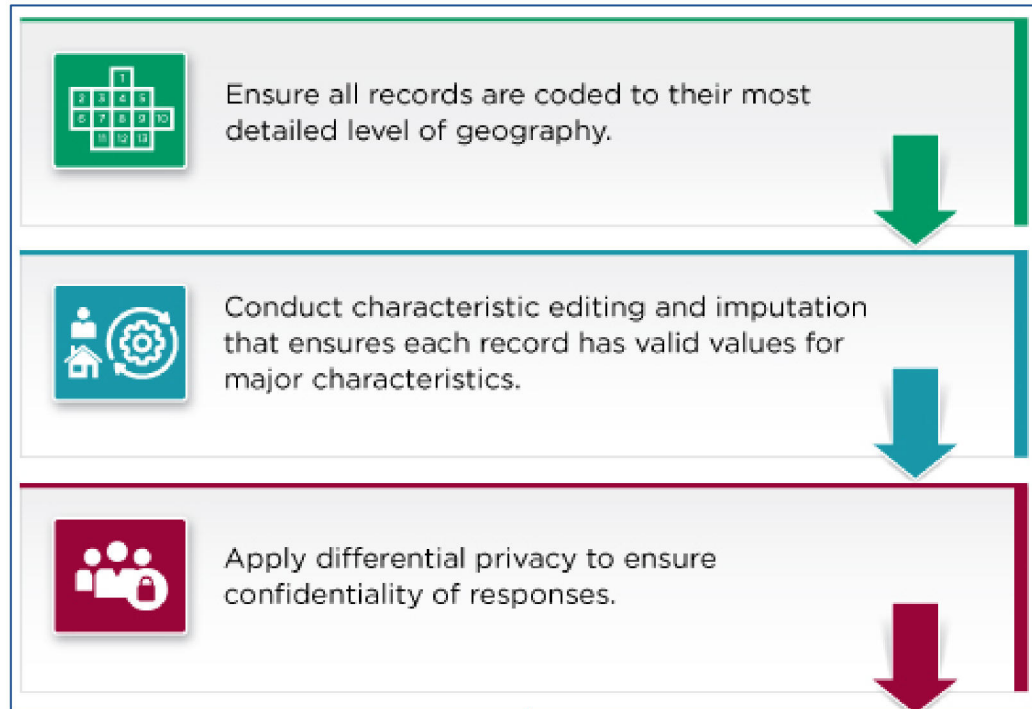
Differential Privacy

- The Census Bureau has implemented a disclosure avoidance system based on differential privacy.

- Differential Privacy adds "statistical noise" to the data we publish to protect respondent identity, while ensuring the resulting data are useful.

- All 2020 Census data products released after apportionment have formal privacy protections applied using differential privacy.

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2020 Census Redistricting Data Program
Phase 3 – P.L. 94-171 Redistricting Data Processing

Ensure all records are coded to their most detailed level of geography.

Conduct characteristic editing and imputation that ensures each record has valid values for major characteristics.

Apply differential privacy to ensure confidentiality of responses.

Tabulate and review all redistricting data in multiple formats.

Legacy Format Summary Files

Create physical media, load and test web-based systems.

Deliver data to the states and public by September 30.

DVDs/Flash drives
&
Data.Census.Gov

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Redistricting Data Program
Public Law 94-171 Legacy Format Summary Files – August Release

Legacy Format Summary Files

- Product was always part of the 2020 Census product plan

- Format produced and provided to the states since at least Census 2000

- Requires additional handling to properly extract data from this format

- Fully reviewed and cleared for publication by August 16, 2021

- The same data as what will be released in more user-friendly forms by September 30, 2021

  - Used as the source files for the DVD/Flash Drive creation

- Consultations with major software vendors, NCSL, and individual states to ensure they understand the August format

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Redistricting Data Program
Public Law 94-171 Legacy Format Summary Files – August Release

Physical description

- 2020 formatting is four pipe delimited text files per state contained in a single .ZIP file
  - Geoheader – contains all the geographic codes for the geography include in the redistricting dataset
    - Now contains a GEOCODE field so data can be easily joined to geography
  - Data Segment 1 – Table P1: Race & Table P2: Hispanic or Latino, and not Hispanic or Latino by Race
  - Data Segment 2 – Table P3: Race for the Population 18 Years and Over & Table P4: Hispanic or Latino, and not Hispanic or Latino by Race for the Population 18 and Over & Table H1 – Housing Status (Occupancy)
  - Data Segment 3 – Table P5: Group Quarters Population by Group Quarters Type
- The geoheader must be used together with the data segments in order to access the data

- 2010 formatting was different
  - 3 files in total: 1 geoheader and 2 data segments
  - Geoheader was a fixed width format
  - Data segments were comma delimited
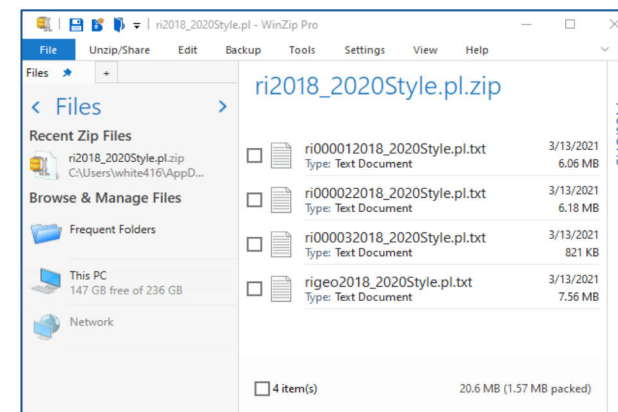
Redistricting Data Program
Public Law 94-171 Legacy Format Summary Files – August Release

Support

- 2020 Census State Redistricting (P.L. 94-171) Summary File Technical Documentation
- Prototype P.L. 94-171 Redistricting Data Summary File
  - Content from the 2018 End-to-End Census Test in Providence County, RI
  - In the format planned for the 2020 Census Legacy Format Summary Files
  - https://www.census.gov/programs-surveys/decennial-census/about/rdo/program-management.html#P3
- Header File – Excel Format
  - Tabs for the header of each file which can be imported into other software or used within Excel
  - Tabs with plain English definition for the headers
- Microsoft Access database shell
  - Tables shells for each file
  - Example queries to demonstrate query logic and provide practice
  - Illustrated step-by-step guide on how to use the Microsoft Access database shell
- SAS & R scripts for import of the Legacy Format Summary File

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Redistricting Data Program
Public Law 94-171 official tools and materials – September Release

The user-friendly tools and materials we intend to deliver in September are the DVDs and Flash Drive and our Data.census.gov Data Explorer platform.

- DVDs and Flash Drives – These are what we deliver to the official recipients with an integrated software browsing tool that allows intuitive browsing of the data. They also contain a custom extraction menu that allows for the extraction of large datasets from the device. Those extractions can then be imported easily into a Geographic Information System or database.

- Data Explorer web tool – The data.census.gov Data Explorer is our online data browsing tool for both the official recipients and the public. Users of the Data Explorer platform can access many different census datasets, including the redistricting data. It has custom filters that allow the user to filter on those geographic and characteristic data for which they are interested. For example, a State could filter the data and easily identify the number of voting-age residents by race or ethnicity in each and every block within a census tract, county, or even for the entire state. They can then view, map, and download these datasets once they have set the filters with their choices.

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Redistricting Data Program
Public Law 94-171 Legacy Format Summary Files - Access

Legacy Format Summary Files – by August 16
- Release files to states and public on Public File Transfer Protocol (Public FTP) site by August 16, 2021.

User-Friendly Redistricting Data Files – by September 30
- Provide files to official state recipients on physical media (DVD/Flash Drive) by overnight mail
  - Governors
  - Majority and Minority Legislative Leadership
  - Redistricting Commissions (if established)
  - Non-partisan State Liaisons

- Release to states and public via the Data Explorer web tool <data.census.gov>

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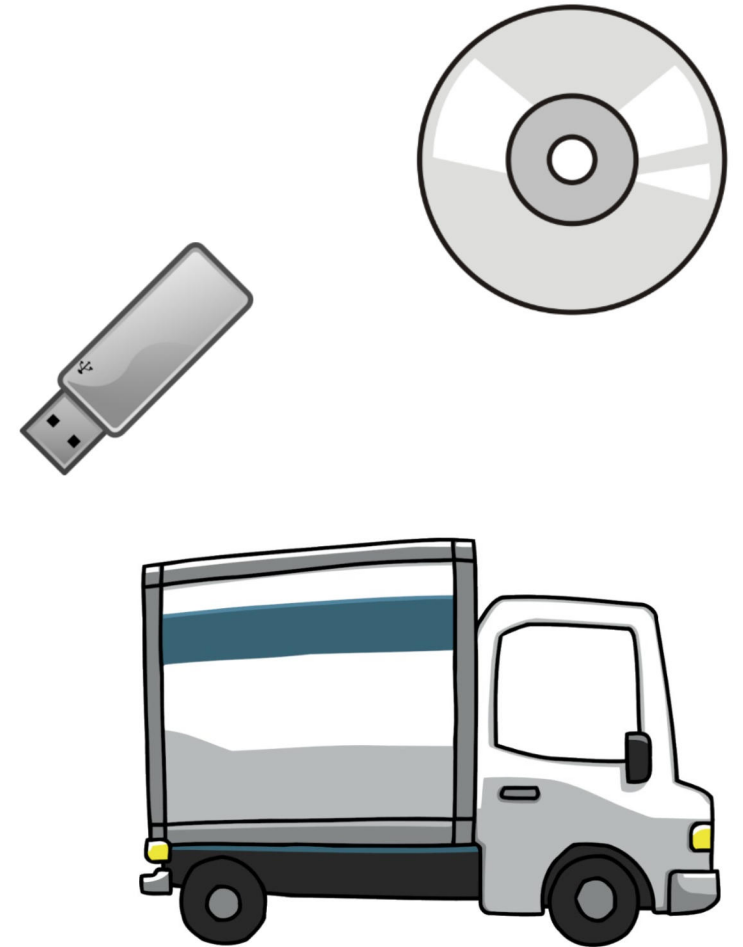
Redistricting Related Census Data

Official 2020 Census redistricting geographic support products
- Includes shapefiles, maps, and tabular data
- Geographic products available for all states, D.C., and Puerto Rico as of 2/12/2021
- https://www.census.gov/programs-surveys/decennial-census/about/rdo/summary-files.html#P2

Census geocoding service
- Updated with 2020 Census geography and address ranges
- Available to the public for geocoding 10,000 or fewer addresses per submission
- Special provision for state redistricting officials to submit lists of up to 50,000 addresses per submission if needed
- https://www.census.gov/programs-surveys/decennial-census/about/rdo/summary-files/2020/GQAssistance_CensusGeocoder.html

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Redistricting Data Program
Where to get the data.

WWW.CENSUS.GOV/RDO

Voting Rights Data
(Section 203 & CVAP)

Prototype Data

Official Data in 2021 Support Products for the Legacy Format Summary Files

Thank You

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