

2020 Census Redistricting Data Program

Tennessee State Data Center
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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:

- 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)

Redistricting Data Program

5 Phases of the 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

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Phase 1

Phase 1 – Block Boundary Suggestion Project

Activity	Date
Initial Delineation	December 2015 – May 2016
Verification	December 2016 – May 2017

Activities

- States can influence the 2020 tabulation blocks
 - Must Hold/ Do Not Hold
 - Missing Features
 - Misaligned Features
- Update Area Landmark (state parks, prisons, etc.) boundaries
- Block size review - NEW for 2020
- Suggest updates to legal boundaries – NEW for 2020

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Phase 2

Phase 2 – Voting District Project

Activity	Date
Initial Delineation	January 3, 2018 – May 31, 2018
Verification I	January 2, 2019 – May 31, 2019
Verification II*	January 2, 2020 – March 31, 2020
*Added a short second round of verification for those states who participate in both the Initial Delineation and the first round of Verification	

Activities

- States provide their Election Districts/Precincts/Wards
- States can influence the 2020 tabulation blocks
 - Missing Features
 - Misaligned Features
- Update Area Landmark (state parks, prisons, etc.) boundaries
- Suggest updates to legal boundaries – NEW for 2020

Redistricting Data Program

Phase 3 – P.L. 94-171 Redistricting Data Products Delivery Timing

Phase 3 – Prototype Data

Activity	Date
Prototype geographic support products	February 2019 (Complete)
Prototype P.L. 94-171 Redistricting Data	March 2019 (Complete)

<https://www.census.gov/programs-surveys/decennial-census/about/rdo/program-management.html#P3>

Phase 3 – Official Data

Activity	Original Planned Dates	New Planned Date
Geographic support products	Nov. 20, 2020 – Feb. 1, 2021	Tentative -1st week of March 2021
P.L. 94-171 Redistricting Data	Feb. 18, 2021 – March 31, 2021	TBD*

* Statutory deadline April 1, 2021

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Phase 3 – P.L. 94-171 Redistricting Data Geographic 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
Maps	https://www.census.gov/geographies/reference-maps.html
Block Assignment Files	https://www.census.gov/geographies/reference-files.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
- Maps (PDF only) – County Block; State Legislative with Voting 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

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Phase 3 – P.L. 94-171 Redistricting Data Shapefiles

State-based Shapefile
American Indian/Alaska Native/Native Hawaiian Area
American Indian Tribal Subdivision
Alaska Native Regional Corporation
State and Equivalent
Block
Block Group
Census Tract
113th Congressional District
116th Congressional District
Consolidated City
County and Equivalent
County Subdivision
Place
Elementary School District
Secondary School District
Unified School District
State Legislative District Lower Chamber
State Legislative District Upper Chamber
Subbarrio (Subminor Civil Division)
Voting District
Urban Growth Area
Primary and Secondary Roads

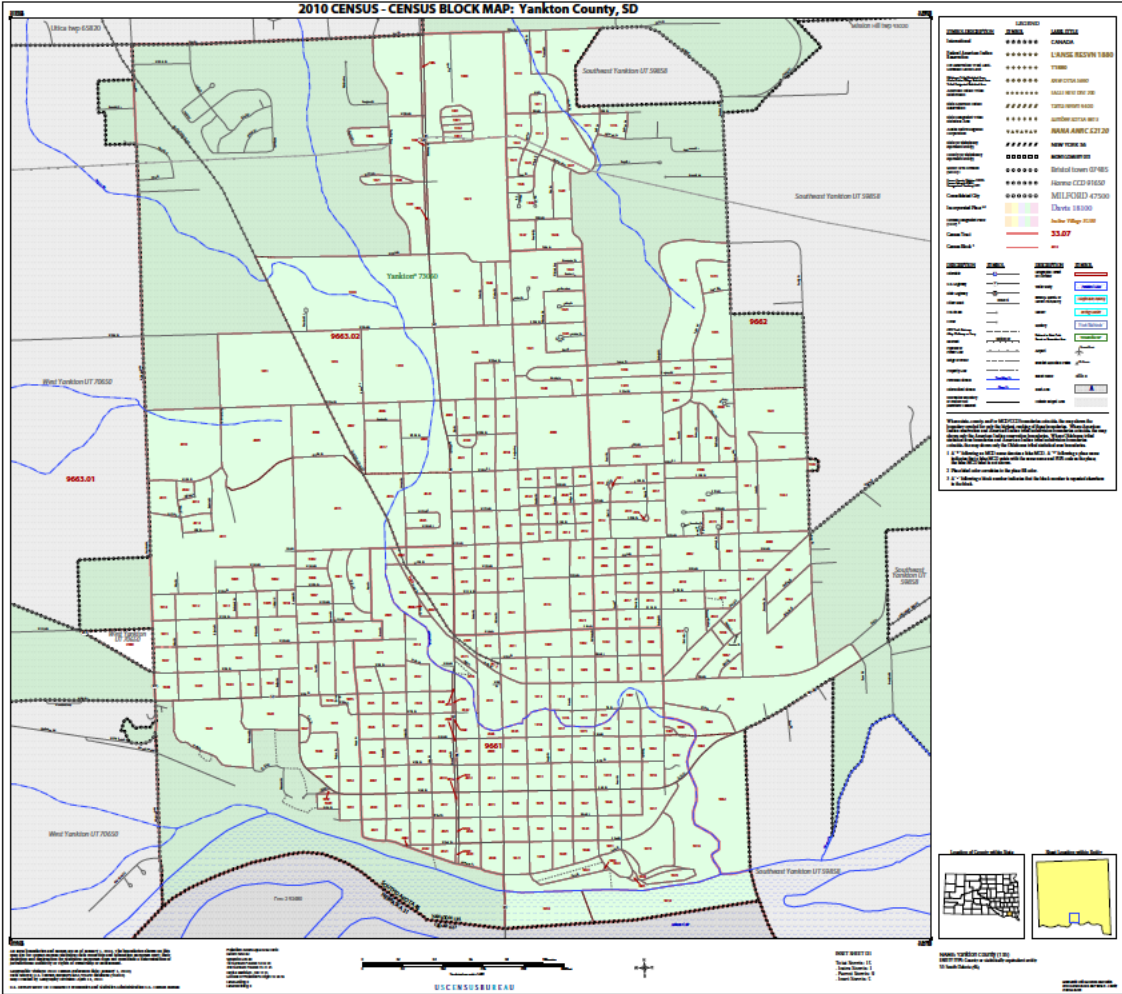
County-based Shapefile
Block
Block Group
Census Tract
County Subdivision
Voting District
All Lines
All Roads
Area Hydrography
Linear Water
Area Landmark
Point Landmark
Topological Faces (Polygons With All Geocodes)
County-based Relational Tables
County-based Relationship File
Address Range-Feature Name
Address Ranges
Feature Names
Topological Faces-Area Landmark
Topological Faces-Area Hydrography

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Phase 3 – P.L. 94-171 Maps & Tabular Data



STATEFP	COUNTYFP	COUSUBFP	NAME	NAMELSAD
44	007	11800	Burrillville	Burrillville town
44	007	14140	Central Falls	Central Falls city
44	007	19180	Cranston	Cranston city
44	007	20080	Cumberland	Cumberland town
44	007	22960	East Providence	East Providence city
44	007	27460	Foster	Foster town
44	007	30340	Glocester	Glocester town
44	007	37720	Johnston	Johnston town
44	007	41500	Lincoln	Lincoln town
44	007	51760	North Providence	North Providence town
44	007	52480	North Smithfield	North Smithfield town
44	007	54640	Pawtucket	Pawtucket city
44	007	59000	Providence	Providence city
44	007	64220	Scituate	Scituate town
44	007	66200	Smithfield	Smithfield town
44	007	80780	Woonsocket	Woonsocket city

BLOCKID	COUNTYFP	COUSUBFP
440070001011000	007	59000
440070001011001	007	59000
440070001011002	007	59000
440070001011003	007	59000
440070001011004	007	59000
440070001011005	007	59000
440070001011006	007	59000
440070001011007	007	59000
440070001011008	007	59000
440070001011009	007	59000
440070001011010	007	59000
440070001011011	007	59000
440070001011012	007	59000
440070001011013	007	59000
440070001011014	007	59000

Name Lookup
Table

Block
Assignment File

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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 – Race for the Population 18 Years and Over

Table P3 – Hispanic or Latino, and not Hispanic or Latino by Race

Table P4 – Hispanic or Latino, and not Hispanic or Latino by Race for the Population 18 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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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

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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: <i>Total population</i>
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
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

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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

Redistricting Data Program

P.L. 94-171 Redistricting Data Tabulations Official Delivery Method

Official Recipients:

- Governors
- Legislative leadership
- Redistricting Commissions (if they exist and have commissioners named)

Method of delivery

- Physical media – DVD/Flash Drive
- Embargoed access to data.census.gov
 - Requires pre-registration
- Confirmation of data's receipt
 - Web monitoring + Phone Call
 - Mail Tracking + Phone Call

Redistricting Data Program

P.L. 94-171 Redistricting Data Tabulations Public Delivery Method

- Public Release
 - Census Data Explorer – data.census.gov
 - Full Data Explorer functionality
 - Large data download
 - FTP
 - Expert users
 - Full P.L. 94-171 Redistricting Data Summary File
 - Relational tables
 - Geoheader + three data segments
 - Geoheader
 - File 01 (P1 & P2)
 - File 02 (P3, P4 & H1)
 - File 03 (P5)
 - All stored as pipe-delimited text files (including the geoheader)

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Phase 4

Phase 4 – Congressional and State Legislative Districts

Activity	Date
115 th Congress and 2016 State Legislative Districts	November 2015 – April 2016
116 th Congress and 2018 State Legislative Districts	November 2017 – April 2018
117 th Congress and 2020 State Legislative Districts	No Collection
118 th Congress and 2022 State Legislative Districts	November 2021 – April 2022

- Continuous collection of Congressional plans on a 2-year cycle
- Continuous collection of State Legislative District Plans on a 2-year cycle
- Two versions collected - official and tabulation

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Phase 5

Phase 5 – Review and Evaluation

Activity	Date
Publish “The View From the States”	Early 2025

Generate, from the States’ point of view, a report detailing:

- Successes of the 2020 Census Redistricting Data Program
- Areas for improvement to the Census Redistricting Data Program
- Recommendations for the 2030 Census Redistricting Data Program
- Legal landscape changes

Redistricting Data Program

Citizen Voting Age Population by Race and Ethnicity (CVAP)

- Annual Tabulation using the American Community Survey 5-year estimates for 2011 through 2020 publications
 - Typically released in the 1st week of February each year
- 2020 Census CVAP Special Tabulation
 - Calculated using administrative records and released by the P.L. 94-171 deadline

Content
Total:
Hispanic or Latino
Not Hispanic or Latino:
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*
Black or African American and White
American Indian and Alaska Native and White
Asian and White
American Indian and Alaska Native and Black or African American
Remainder of Two or More Race Responses

Geography
Nation
State
Congressional District
State Legislative District, Upper Chamber
State Legislative District, Lower Chamber
County
Minor Civil Division (for CT, MA, ME, MI, MN, NH, NJ, NY, PA, RI, VT, and WI)
Tract
Block Group
Block*

* only for the 2020 Census Special Tabulation

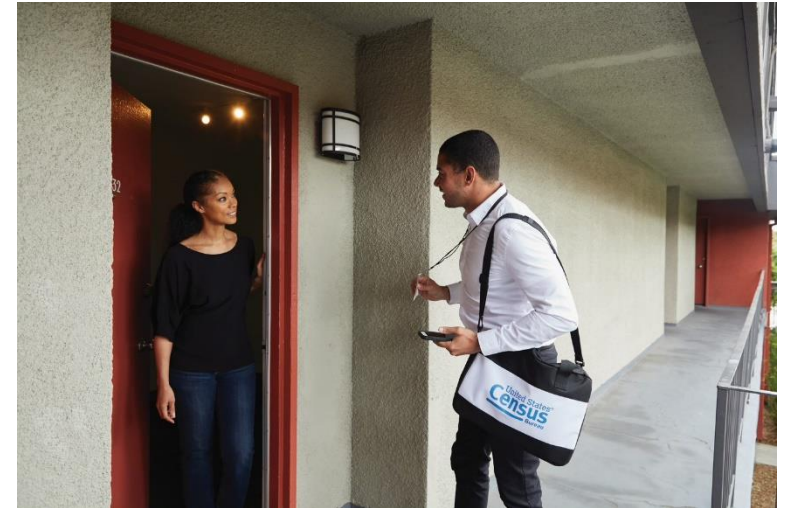
Our Commitment to Data Stewardship

Data stewardship is central to the Census Bureau's mission to produce high-quality statistics about the people and economy of the United States.

Our commitment to protect the privacy of our respondents and the confidentiality of their data is both a legal obligation and a core component of our institutional culture.

*"To stimulate public cooperation necessary for an accurate census...Congress has provided assurances that information furnished by individuals is to be treated as confidential. Title 13 U.S.C. §§ 8(b) and 9(a) explicitly provide for nondisclosure of certain census data, and **no discretion is provided to the Census Bureau on whether or not to disclose such data...**"*

(U.S. Supreme Court, *Baldrige v. Shapiro*, 1982)



The Privacy Challenge

Every time you release any statistic calculated from a confidential data source you “leak” a small amount of private information. If you release too many statistics, too accurately, you will eventually reveal the entire underlying confidential data source.

Dinur, Irit and Kobbi Nissim (2003) “Revealing Information while Preserving Privacy” PODS, June 9-12, 2003, San Diego, CA



More Data and Faster Computers!

In today’s digital age, there has been a proliferation of databases that could potentially be used to attempt to undermine the privacy protections of our statistical data products.

Similarly, today’s computers are able to perform complex, large-scale calculations with increasing ease.

These parallel trends represent new threats to our ability to safeguard respondents’ data.

Reconstructing the 2010 Census: What Did We Find?

1. On the 309 million reconstructed records, census block and voting age (18+) were correctly reconstructed for all records and for all 6,207,027 inhabited blocks.
2. Block, sex, age (in years), race (OMB 63 categories), and ethnicity were reconstructed:
 1. Exactly for 46% of the population (142 million individuals)
 2. Within +/- one year for 71% of the population (219 million individuals)
3. Block, sex, and age were then linked to commercial data, which provided putative re-identification of 45% of the population (138 million individuals).
4. Name, block, sex, age, race, ethnicity were then compared to the confidential data, which yielded confirmed re-identifications for 38% of the putative re-identifications (52 million individuals).
5. For the confirmed re-identifications, race and ethnicity are learned correctly, though the attacker may still have uncertainty.

The Census Bureau's Privacy Protections Over Time

Throughout its history, the Census Bureau has been at the forefront of the design and implementation of statistical methods to safeguard respondent data.

Over the decades, as we have increased the number and detail of the data products we release, so too have we improved the statistical techniques we use to protect those data.



2020 Census

Disclosure Avoidance

- All 2020 Census data products released after apportionment will have formal privacy protections applied through the use of differential privacy.
 - For the P.L. 94-171 Redistricting Data this will be through the use of the Top Down Algorithm (TDA)
 - The TDA is being streamlined to focus solely on the P.L. 94-171 Redistricting Data and the characteristics reported in that file. (Race, Age of 18+, Ethnicity, etc.)
- The Census Bureau, using the 2010 Census as the data source, has been releasing interim output from the TDA as demonstration products
- <https://www.census.gov/programs-surveys/decennial-census/2020-census/planning-management/2020-census-data-products/2020-das-metrics.html>

2020 Census

Disclosure Avoidance

- October 29, 2019 – 2010 Demonstration Data Product Baseline
 - Test running system at scale and progress to date
- July 14, 2020 – Release interim output showing improvements (metrics released earlier on 5/27/2020)
 - Released as Privacy Protected Microdata File (PPMF)
 - Tables created by IPUMS/NHGIS
 - <https://www.nhgis.org/privacy-protected-demonstration-data#v20200527>
 - Series of metrics added for review and comparison
- September 17, 2020 – Release interim output showing improvements
 - Released as Privacy Protected Microdata File (PPMF)
 - Tables were created and published by the IPUMS/NHGIS
 - Tailored specifically and only to the P.L. 94-171 Redistricting Data characteristics
 - Revised series of metrics also published
 - **Error found and the user note being added for data users**
- At least one additional PPMF is expected prior to publishing the official data

Thank You

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<https://public.govdelivery.com/accounts/USCENSUS/subscriber/new>



More information on the 2020 Census:
<http://www.census.gov/2020Census>



More information on the 2020 Census Self-Response Rates:
<https://www.2020census.gov/en/response-rates/self-response.html>



More information on the 2020 Census Nonresponse Followup Completion Rates:
<https://www.2020census.gov/response-rates/nrfu-completion.html>



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instagram.com/uscensusbureau

Additional Resources

Disclosure Avoidance and the 2020 Census Website

https://www.census.gov/about/policies/privacy/statistical_safeguards/disclosure-avoidance-2020-census.html

Questions? Suggestions?

Email them to 2020DAS@census.gov

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Reconstruction

The recreation of individual-level data from tabular or aggregate data.

If you release enough tables or statistics, eventually there will be a unique solution for what the underlying individual-level data were.

Computer algorithms can do this very easily.

	4						2	
			7					4
1		7	8				5	
			9			3		8
5								
			6		8			
3						4		5
	8	5				1		9
		9		7	1			

Re-identification

Linking public data to external data sources to re-identify specific individuals within the data.

Name	Age	Sex	+	Age	Sex	Race	Relationship
Jane Smith	66	Female		66	Female	Black	Married
Joe Public	84	Male		84	Male	Black	Married
John Citizen	30	Male		30	Male	White	Married

External Data

Confidential Data