Comparing the American Community Survey (ACS) and Population Estimates Program (PEP)

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Slides available at:
census.gov/programs-surveys/acs/news/events/ACS-PEP-webinar.html

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About the U.S. Census Bureau

- The U.S. Census Bureau is the federal government's largest statistical agency.
- We are home to more than 100 censuses, surveys, and programs, including
  - **The Decennial Census** – the once-a-decade population and housing count of all 50 states and U.S. territories
  - **The American Community Survey** – the ongoing, annual survey of the social, economic, housing, and demographic characteristics of the nation's population
  - **The Population Estimates Program** – area that produces the annual estimates of the population and housing units for the United States, states, counties, cities and towns, the Commonwealth of Puerto Rico and its municipios, and metropolitan/micropolitan statistical areas
- Our mission is to serve as the nation's leading provider of quality data about its people and economy.

Outline

- **American Community Survey (ACS) basics**
- Population Estimates Program (PEP) basics
- Similarities and differences
- When to use what?
- Resources for learning more
- Questions

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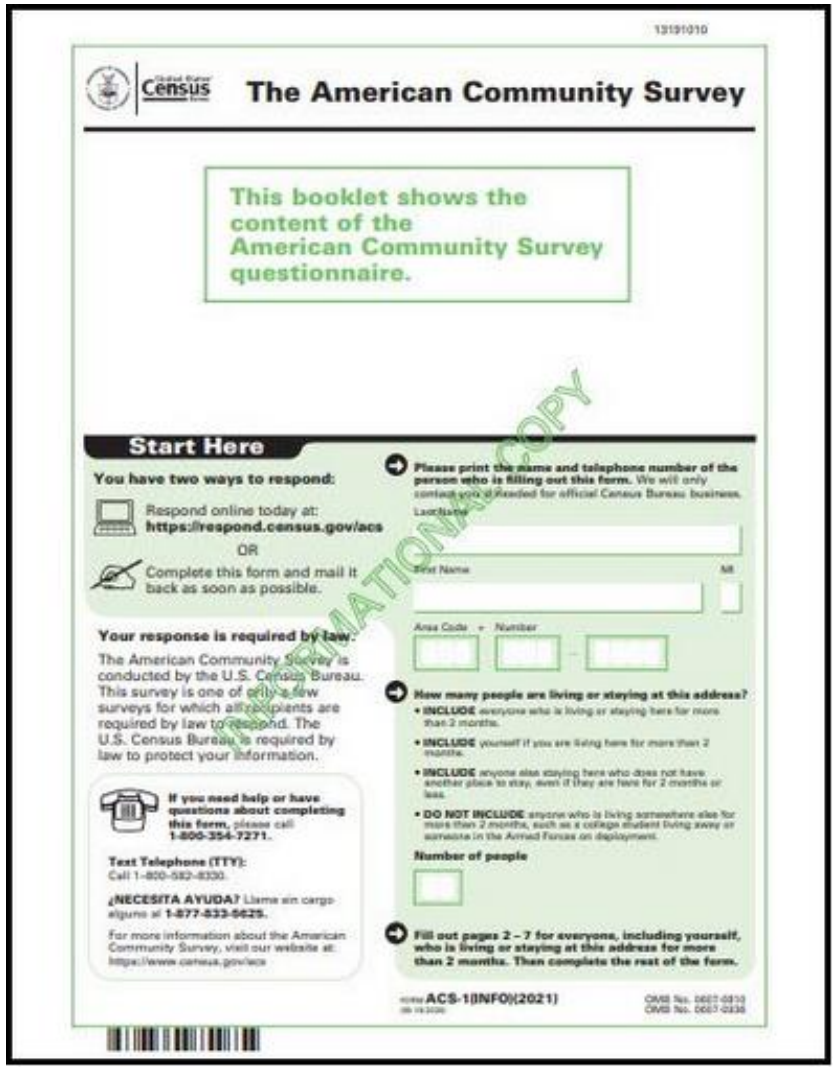
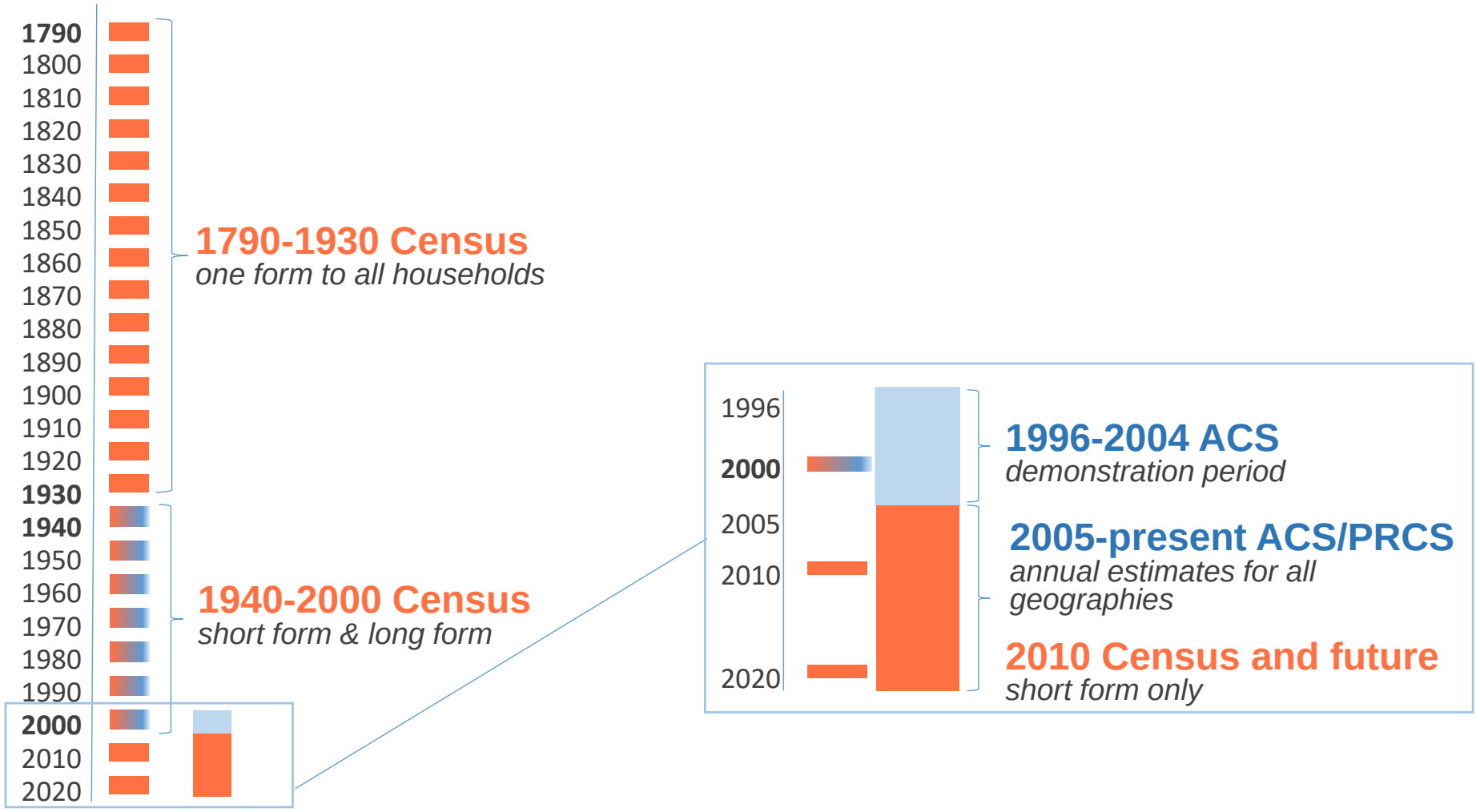
The Foundation of the American Community Survey

The American Community Survey is on the leading edge of survey design, continuous improvement, and data quality.

- The nation's most current, reliable, and accessible data source for local statistics on critical planning topics such as age, children, veterans, commuting, education, income, and employment
- Surveys **3.5 million** addresses
- Along with other Census programs (including PEP), helps inform over **$675 billion** of Federal government spending each year
- Covers **40+ topics**, supports over **300** evidence-based Federal government uses, and produces **11 billion** estimates each year
- Three key annual data releases:
  - 1-year Estimates (for large populations)
  - 1-year Supplemental Estimates (for small populations)
  - 5-year Estimates (for very small populations)



Census & ACS



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ACS Data Collection Process

SELF-RESPONSE

NONRESPONSE FOLLOWUP

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ACS Content Overview

POPULATION		HOUSING
SOCIAL Ancestry Citizenship Citizen Voting Age Population Disability Educational Attainment Fertility Grandparents Language Marital Status Migration School Enrollment Veterans	**DEMOGRAPHIC** Age Hispanic Origin Race Relationship Sex **ECONOMIC** Class of Worker Commuting Employment Status Food Stamps (SNAP) Health Insurance Hours/Week, Weeks/Year Income Industry & Occupation	Computer & Internet Use Costs (Mortgage, Taxes, Insurance) Heating Fuel Home Value Occupancy Plumbing/Kitchen Facilities Structure Tenure (Own/Rent) Utilities Vehicles Year Built/ Year Moved In

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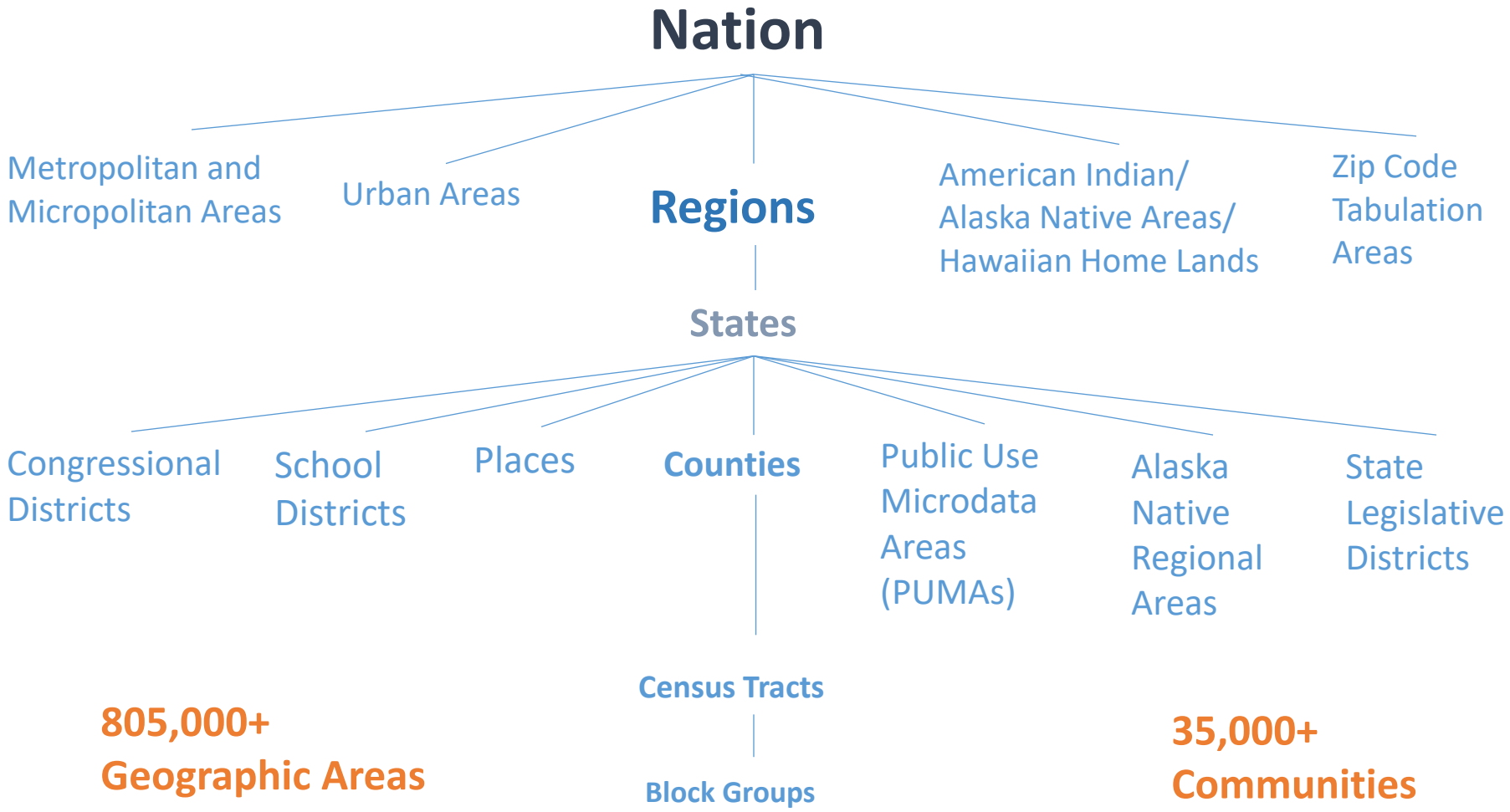
Selected Census Geographic Concepts



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Availability of 2020 Data Products

Estimated Population of Geographic Area	1-Year Estimates	1-Year Supplemental Estimates	5-Year Estimates
65,000 or more	X	X	X
20,000 to 64,999		X	X
Less than 20,000			X
Release Date	September 2021	October 2021	December 2021

census.gov/programs-surveys/acs/news/data-releases.html

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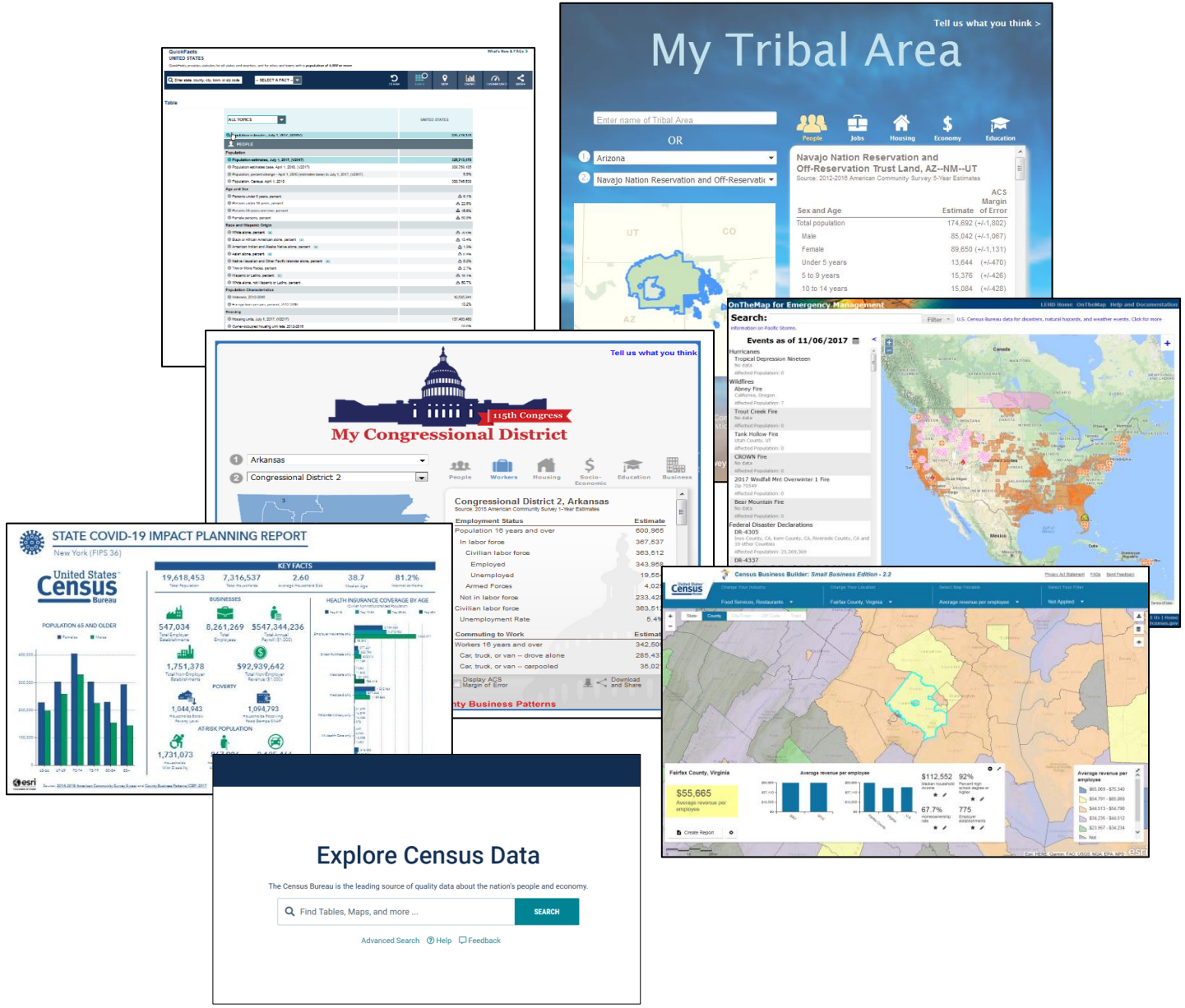
Selected Ways to Access Data

- **QuickFacts**
- My Congressional District
- My Tribal Area
- OnTheMap for Emergency Management
- Census Business Builder
- TIGER/Line Shapefiles w/ Selected Demographic Data
- Application Programming Interface (API)
- **data.census.gov**
- Census COVID-19 Data Hub



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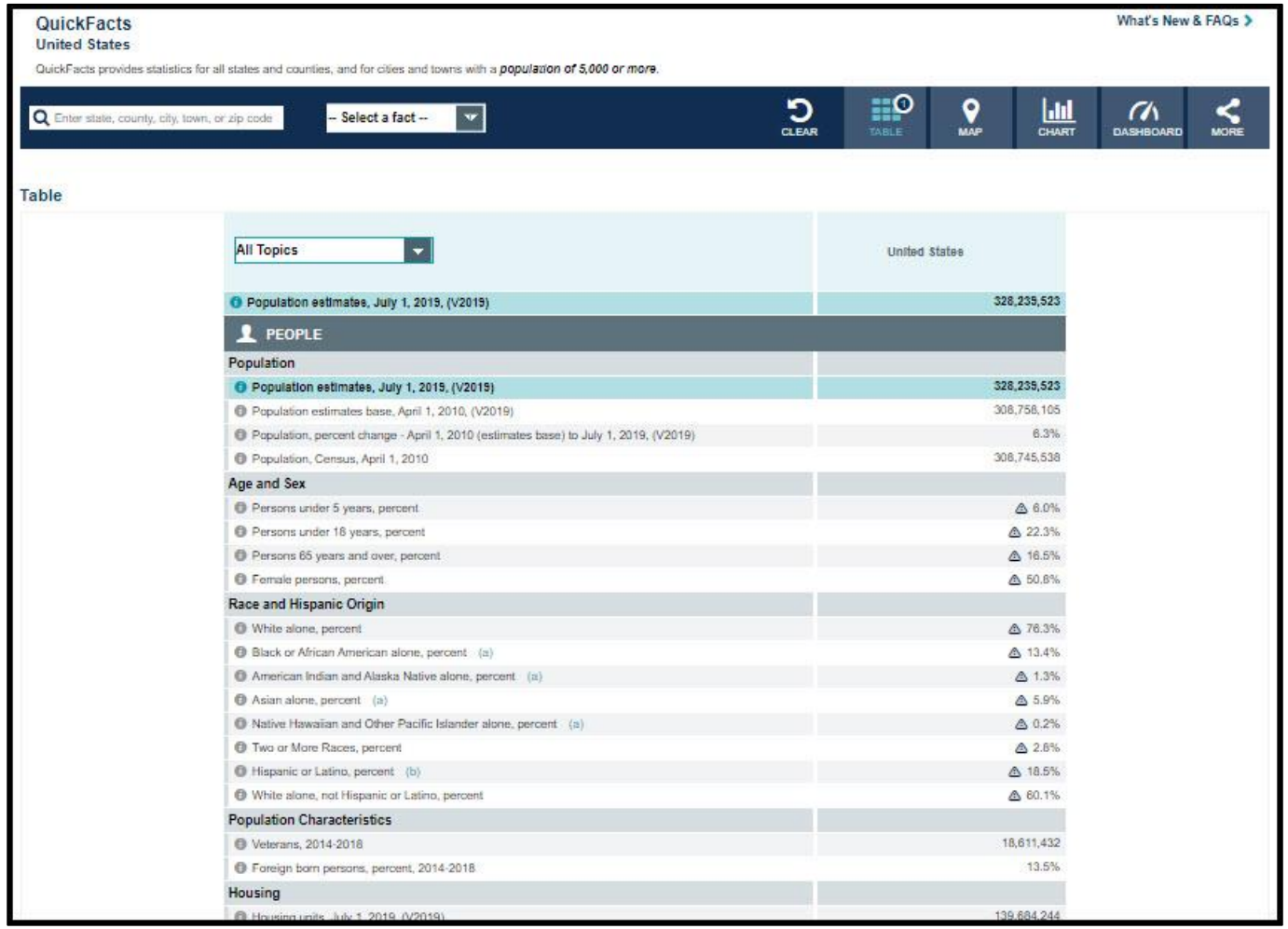
census.gov/data/data-tools.html

QuickFacts



QuickFacts
United States

What's New & FAQs >

QuickFacts provides statistics for all states and counties, and for cities and towns with a *population of 5,000 or more.*

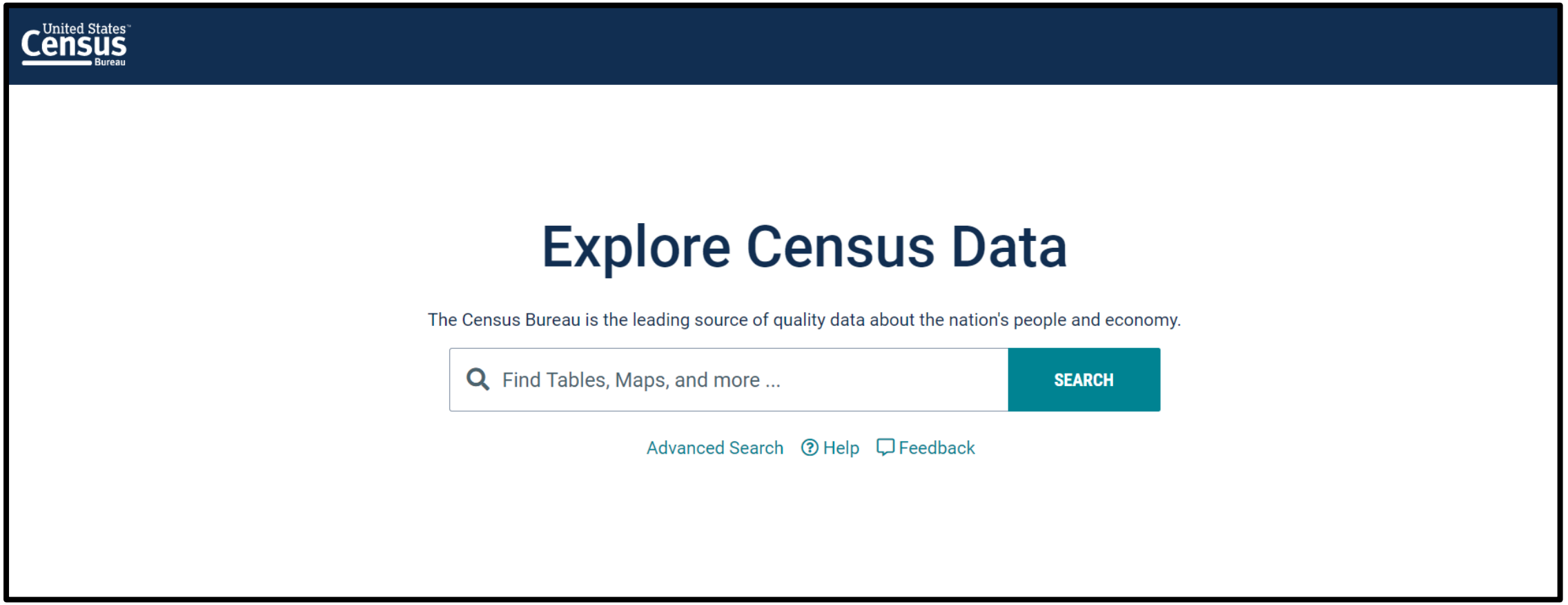
Enter state, county, city, town, or zip code | -- Select a fact -- | CLEAR | TABLE | MAP | CHART | DASHBOARD | MORE

Table

All Topics	United States
Population estimates, July 1, 2019, (V2019)	328,239,523
PEOPLE	
Population	
Population estimates, July 1, 2019, (V2019)	328,239,523
Population estimates base, April 1, 2010, (V2019)	308,758,105
Population, percent change - April 1, 2010 (estimates base) to July 1, 2019, (V2019)	6.3%
Population, Census, April 1, 2010	308,745,538
Age and Sex	
Persons under 5 years, percent	6.0%
Persons under 18 years, percent	22.3%
Persons 65 years and over, percent	16.5%
Female persons, percent	50.8%
Race and Hispanic Origin	
White alone, percent	76.3%
Black or African American alone, percent (a)	13.4%
American Indian and Alaska Native alone, percent (a)	1.3%
Asian alone, percent (a)	5.9%
Native Hawaiian and Other Pacific Islander alone, percent (a)	0.2%
Two or More Races, percent	2.6%
Hispanic or Latino, percent (b)	18.5%
White alone, not Hispanic or Latino, percent	60.1%
Population Characteristics	
Veterans, 2014-2018	18,611,432
Foreign born persons, percent, 2014-2018	13.5%
Housing	
Housing units, July 1, 2019, (V2019)	139,684,244

census.gov/quickfacts

Data.census.gov



data.census.gov

census.gov/data/what-is-data-census-gov.html

Data Product Type: Profiles

Description

- Offer a broad look at a community's social, economic, housing, and demographic characteristics
- Generally include many different variables
- Geography or population group is at the center

Types

- Data Profiles (DP)
- Comparison Profiles (CP)
- Selected Population Profiles (S0201)

census.gov/programs-surveys/acs/guidance/which-data-tool/table-ids-explained.html

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Data Product Type: Tables

Description

- A precise or detailed view of a subject
- Subject matter is at the center of the table

Types

- Detailed Tables (B or C)
- Supplemental Table (K20)
- Subject Tables (S)

census.gov/programs-surveys/acs/guidance/which-data-tool/table-ids-explained.html

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Outline

- American Community Survey (ACS) basics
- **Population Estimates Program (PEP) basics**
- Similarities and differences
- When to use what?
- Resources for learning more
- Questions

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The Population Estimates Program

The Population Estimates Program disseminates official measures of population and housing units between decennial censuses.

- Mandated by federal law, the estimates, along with other Census programs (such as the ACS), inform over **$675 billion** of Federal government spending each year.
  - Recently, the estimates were used to distribute over $100 billion to states and cities for the 2020 CARES Act.
- Cover **basic population and housing topics** supporting:
  - The ACS and other federal surveys (population controls and denominators)
  - Academic and business research
  - Program planning in the public and private sectors
- Current estimates for July 1, 2020
- Estimates extend back to 1900
- Released annually for over 80,000 areas in the United States and Puerto Rico

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PEP Content Overview

POPULATION		HOUSING
SOCIAL • None	**DEMOGRAPHIC** • Total Population • Age • Hispanic Origin • Race • Sex • Components (Births, Deaths, Net Migration) • Group Quarters • Population Universes (U.S. only: Resident, Resident plus Armed Forces Overseas, Civilian, Civilian Noninstitutionalized, Household)	• Total Housing Units
	ECONOMIC • None	

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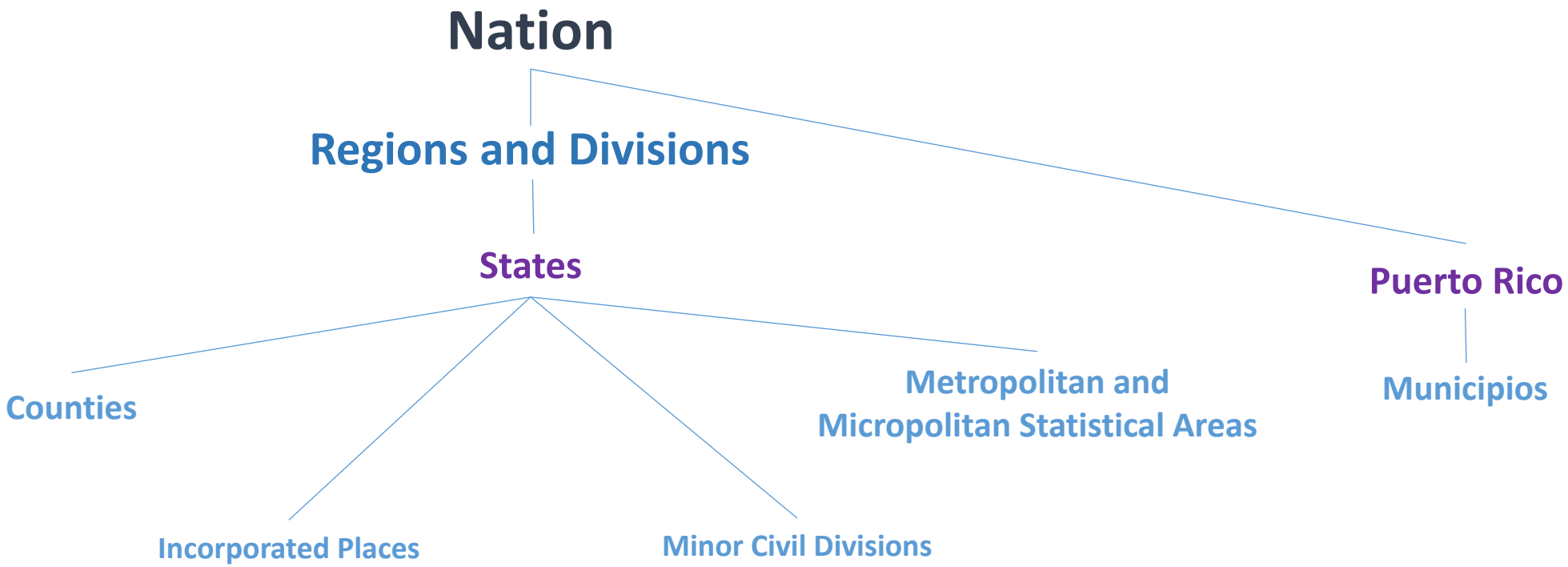
PEP Estimate Geographies



80,000+ Geographic Areas / 40,000+ Communities

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Population and Housing Unit Estimates by Type and Geography

Estimate Type	U.S.	States	Metro/ Micro Statistical Areas	Counties	Places	Puerto Rico	Puerto Rico Municipios
Total Resident Population	X	X	X	X	X	X	X
Components of Change (Births, Deaths, Net Migration)	X	X	X	X		X	
Population Characteristics (Age, Sex, Race, Hispanic Origin)*	X	X		X		X	X
Monthly Population (Five Universes**)	X						
Housing Units	X	X		X			

* Includes state civilian population by age and sex
** Resident, resident plus Armed Forces overseas, civilian, civilian noninstitutionalized, household

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Population and Housing Unit Estimates Methodology

National, state, and county populations

Cohort-component method

Subcounty population (cities and towns)

Distributive housing unit method

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Availability of Vintage 2020 Population and Housing Unit Data Products

Date of Release	Vintage 2020 Population and Housing Unit Estimates Data Products
December 22, 2020	• Total population and Voting-age population—Nation and states
Early May 2021	• Total population and components of change—Nation, states, counties, Puerto Rico Commonwealth and municipios, and metropolitan/micropolitan areas • Population by age and sex—Nation
Late May 2021	• Total population—Cities and towns (incorporated places, minor civil divisions) • Total housing units—Nation, states, counties
June 2021	• Population by age, sex, race, and Hispanic origin—Nation, states, counties • Population by age and sex—Puerto Rico Commonwealth and municipios

census.gov/programs-surveys/popest/about/schedule.html

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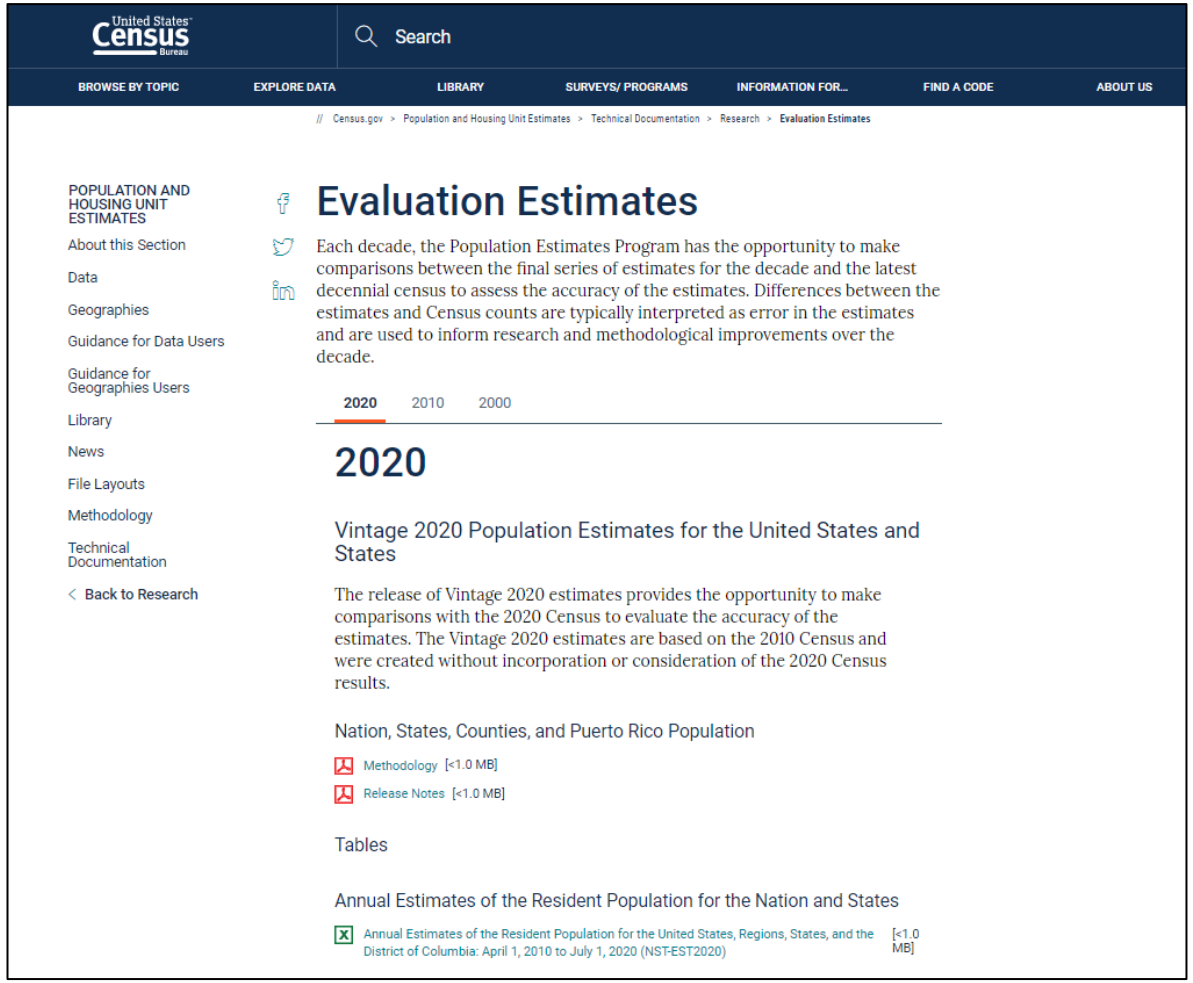
Availability of Vintage 2020 Population and Housing Unit Data Products



census.gov/programs-surveys/popest/technical-documentation/research/evaluation-estimates.html

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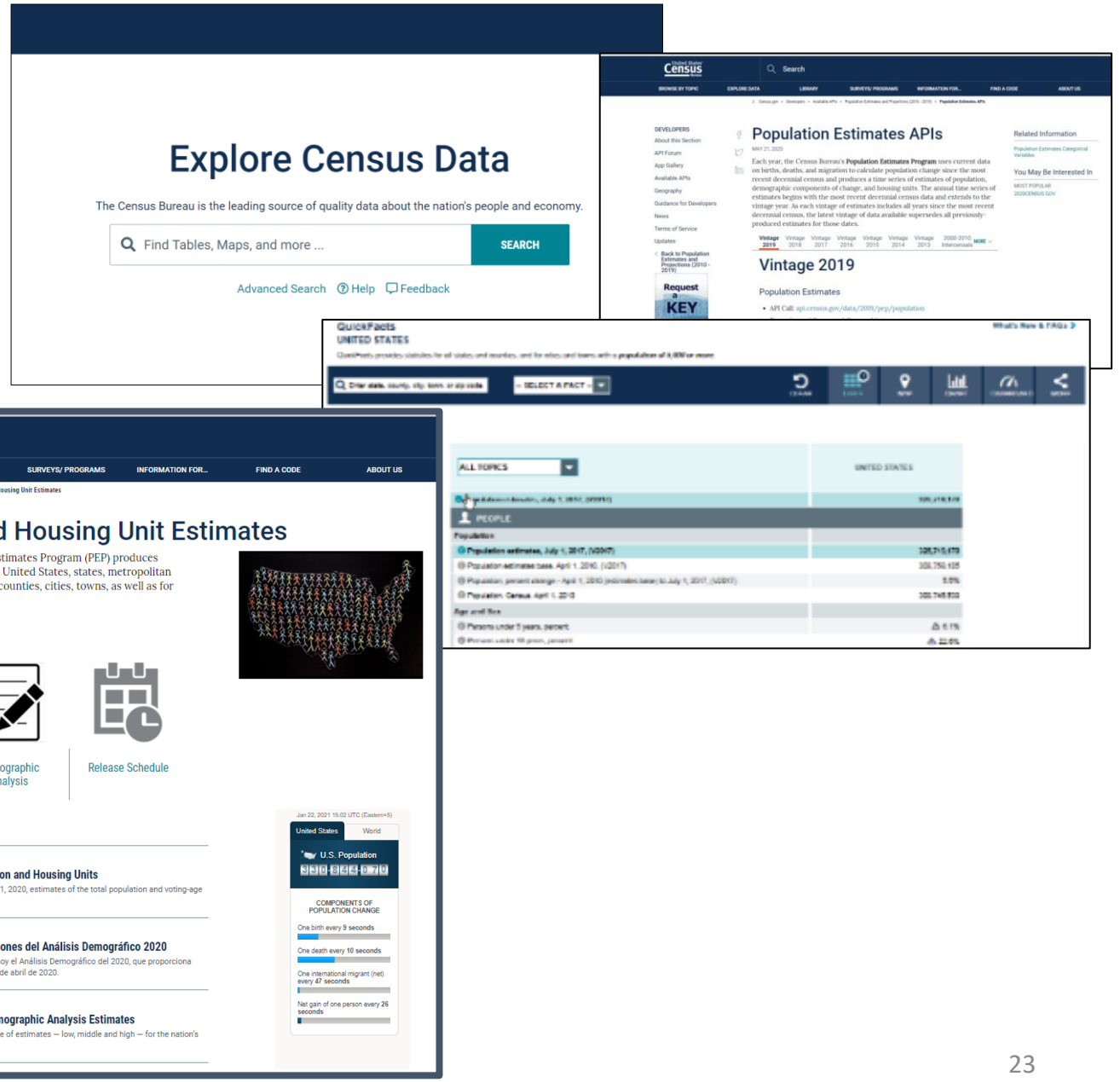
Selected Ways to Access PEP Data

- PEP Webpage:
  census.gov/programs-surveys/popest.html
- data.census.gov
- QuickFacts
- Application Programming Interface (API)



PEP Data on data.census.gov

// Search / Tables / PEPANNRES

ANNUAL ESTIMATES OF THE RESIDENT POPULATION: APRIL 1, 2010 TO JULY 1, 2019 -

Survey/Program: Population Estimates **TableID:** PEPANNRES **Product:** 2019: PEP Population Estimates

Notes | Selections | 1 Geo | Years | Topics | Surveys | Codes | Hide | Filter | Transpose | Margin of Error | Restore

Geographic Area Name	Date Description	Population
Truth or Consequences city, New Mexico	4/1/2010 Census population	6,475
Truth or Consequences city, New Mexico	4/1/2010 population estimates base	6,471
Truth or Consequences city, New Mexico	7/1/2010 population estimate	6,491
Truth or Consequences city, New Mexico	7/1/2011 population estimate	6,468
Truth or Consequences city, New Mexico	7/1/2012 population estimate	6,368
Truth or Consequences city, New Mexico	7/1/2013 population estimate	6,185
Truth or Consequences city, New Mexico	7/1/2014 population estimate	6,040
Truth or Consequences city, New Mexico	7/1/2015 population estimate	6,018
Truth or Consequences city, New Mexico	7/1/2016 population estimate	5,948
Truth or Consequences city, New Mexico	7/1/2017 population estimate	5,912
Truth or Consequences city, New Mexico	7/1/2018 population estimate	5,846
Truth or Consequences city, New Mexico	7/1/2019 population estimate	5,753

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How are the ACS and PEP different?

	ACS	PEP
Purpose	• Sample estimates	• Provide annual estimates of the current population and total housing units by calculating change since the last census
Collects	• Detailed social, economic, housing, and demographic characteristics	• Not a survey • Uses administrative records and other data sources to calculate annual change in population and housing
Content	• Population and housing characteristics	• No social and economic detail • Population characteristics by age, Hispanic origin, race, and sex only • Housing unit totals only
New Data Every	• Year	• Year
Time Represented	• 1-year estimates: January 1-December 31 of data collection year • 5-year estimates: January 1 lower limit year to December 31 of upper limit year	• Estimate dates – First of selected months • Estimate intervals – Monthly, Annual, and Decade

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How are the ACS and PEP different (continued)

	ACS	PEP
Geography	• 1-year ACS estimates contain geographies with populations of 65,000 or more • 5-year ACS estimates can be found down to the block group level for select tables	• Nation, states, counties, cities, and towns • Puerto Rico Commonwealth and its municipios • Metropolitan and micropolitan statistical areas
Statistics	• Margins of error calculated at the 90% confidence level	• Not a product of sampling, so statistical confidence intervals are not needed. • Entire time series back to last census updated annually, so averages for time periods are not used

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How are the ACS and PEP similar?

- Both disseminate total population and housing unit estimates.
- Both disseminate population characteristics estimates by age, Hispanic origin, race, and sex.
- PEP estimates are used as controls for ACS population and housing unit data, so 1-year estimates for larger areas are consistent.

TOTAL POPULATION

Survey/Program: American Community Survey
TableID: B01003

Product: 2019: ACS 1-Year Estimates Detailed Tables
Universe: Total population

	United States	
Label	**Estimate**	**Margin of Error**
Total	328,239,523	*****

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When to use what: ACS or PEP? (general)

Interest	Product
Population and housing unit totals and demographic characteristics (age, Hispanic origin, sex, race)	PEP
Social and economic characteristics	ACS
Estimate percents, means, medians, rates	ACS or PEP depending on the subject
Conducting statistical testing to compare	ACS
Mixture of population, housing, social or economic estimates	All ACS or all PEP (if only using population or housing)

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When to use what: ACS or PEP? (examples)

Example	Product
Population total	PEP
Population by age & sex (including percents) for a state at a point in time	PEP
Population by age & sex (including percents) by educational attainment for a state	ACS 1-year estimates (if being current is priority) ACS 5-year estimates (if precision is priority)
Mean household income for a small geography (population less than 65,000)	ACS 5-year estimates
Comparing mean household income for a small place to its county	ACS 5-year estimates
Comparing difference in married-couple families in the same county between two time periods	ACS (compare 1-year with 1-year or 5-year with 5-year)

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ACS Main Page

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// Census.gov > Our Surveys & Programs > American Community Survey (ACS)

AMERICAN COMMUNITY SURVEY (ACS)

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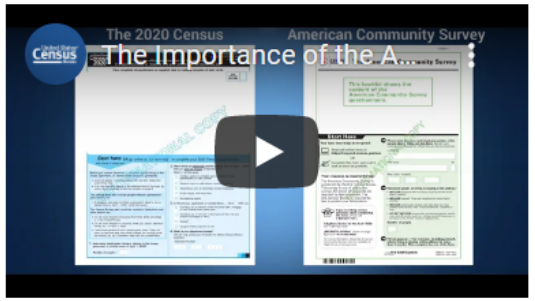
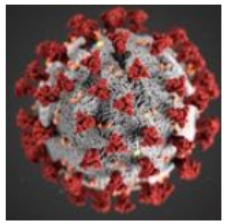
American Community Survey (ACS)

The American Community Survey (ACS) helps local officials, community leaders, and businesses understand the changes taking place in their communities. It is the premier source for detailed population and housing information about our nation.



How do I respond to the ACS?



ACS data help with COVID-19 response efforts

Should I respond to both the ACS and 2020 Census?

census.gov/acs

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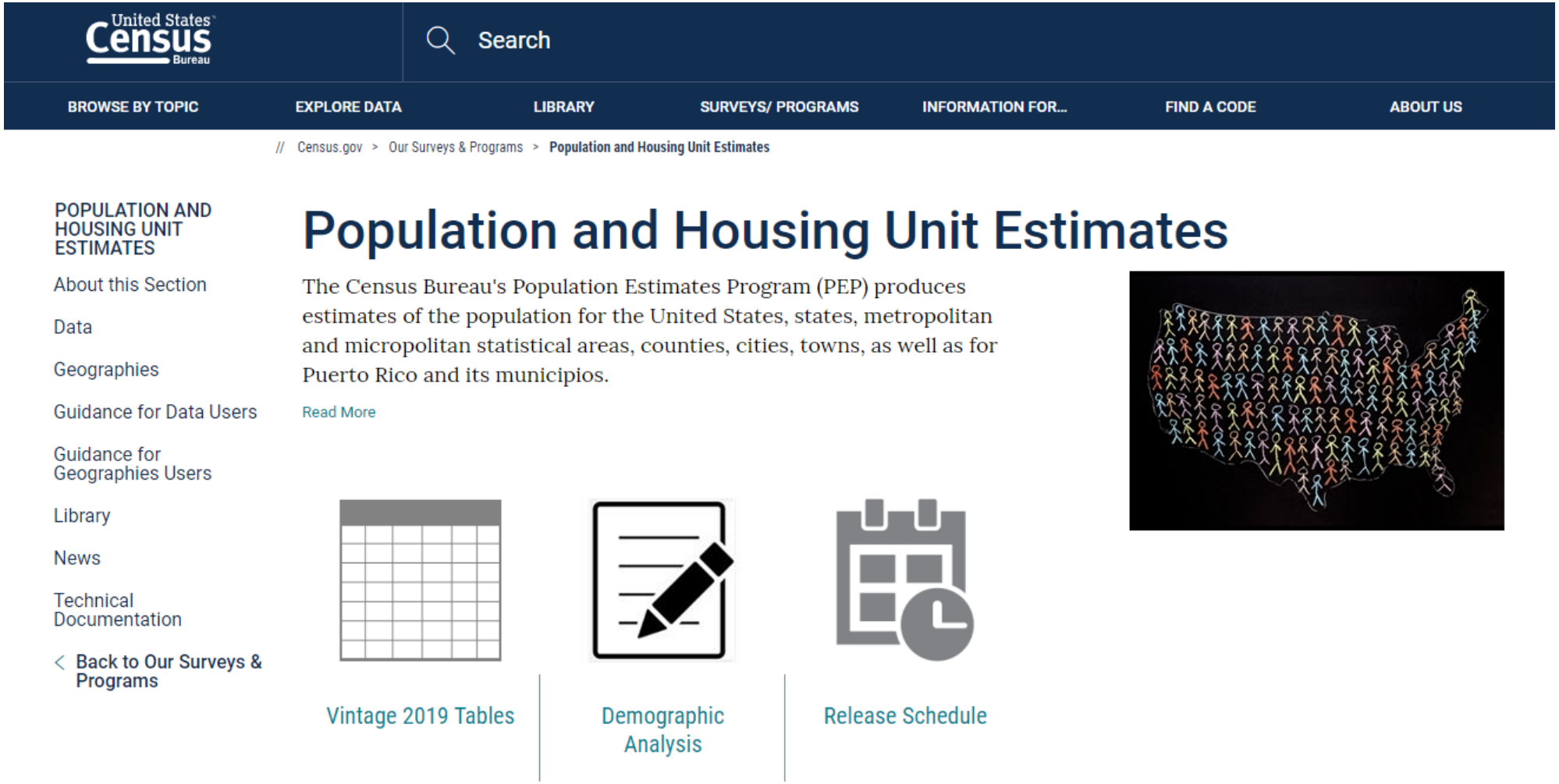
PEP Main Page



census.gov/programs-surveys/popest.html

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More information online:
census.gov/acs
census.gov/popest

Census Customer Service Center
800-923-8282

Social media: @uscensusbureau

acso.users.support@census.gov

pop.cdob@census.gov

Source Us:

U.S. Census Bureau's [YYYY – YYYY] American Community Survey
[1/5]-year [estimates/statistics/data release]

Source: Vintage XXXX Population Estimates
<www.census.gov/programs-surveys/popest.html>

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Questions

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