



Measuring the Digital Divide: Review of Recent Surveys and Data

NTIA Webinar Series

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February 20, 2019

Participants

Presenters

- Rafi Goldberg, Policy Analyst, NTIA Office of Policy Analysis and Development
- Ryan Dolan, Data Visualization Specialist, U.S. Census Bureau
- Gerson Vasquez, Data Visualization Specialist, U.S. Census Bureau

Moderator

- Karen Archer Perry, Senior Policy Analyst, NTIA's BroadbandUSA



American Broadband Initiative: The Administration's Initiative for Promoting Broadband Connectivity

March 20, 2019 | 2:00 pm EST

Registration is required for each webinar:

<https://broadbandusa.ntia.doc.gov/event>

Helpful Information

Questions

- Please type questions and comments in the question box on the right hand side of the screen. Questions will be taken after the final presenter.

Presentation

- The presentation along with a transcript and an audio recording will be available on the BroadbandUSA website within 7 days of this webinar under Events/past events.
- <https://broadbandusa.ntia.doc.gov/past-event>

Technical Assistance

- Guides, products, publications, and other tools are available to assist you with the planning, funding and implementation of your broadband project.
- <https://broadbandusa.ntia.doc.gov>

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Measuring the Digital Divide

NTIA's Internet Use Survey

February 20, 2019

Rafi Goldberg

Policy Analyst

NTIA Office of Policy Analysis and Development

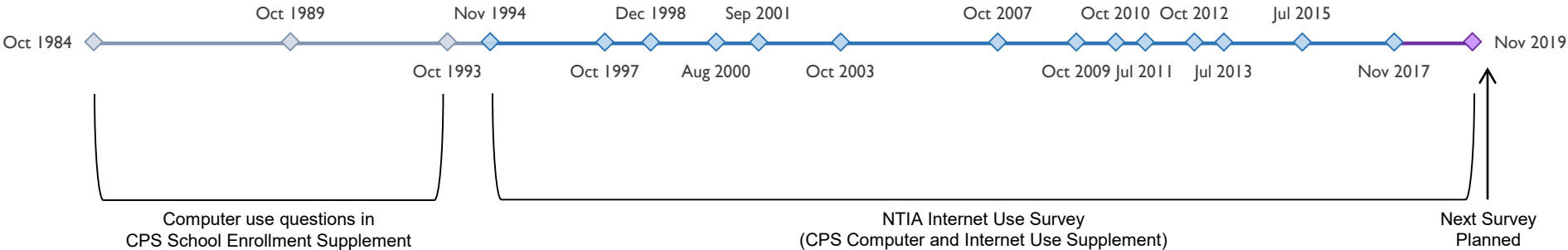
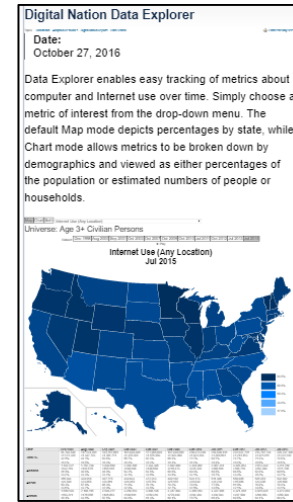
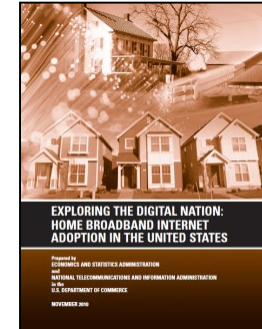
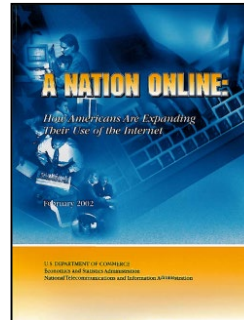
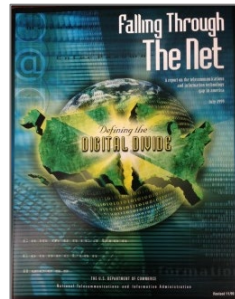
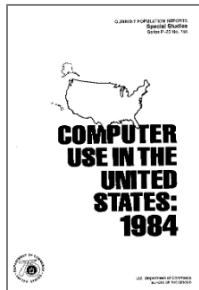


Major Federal Data Sources

- Current Population Survey Computer and Internet Use Supplement (NTIA Internet Use Survey)
- American Community Survey (ACS)
- FCC Form 477 (Broadband deployment and subscription)

Current Population Survey

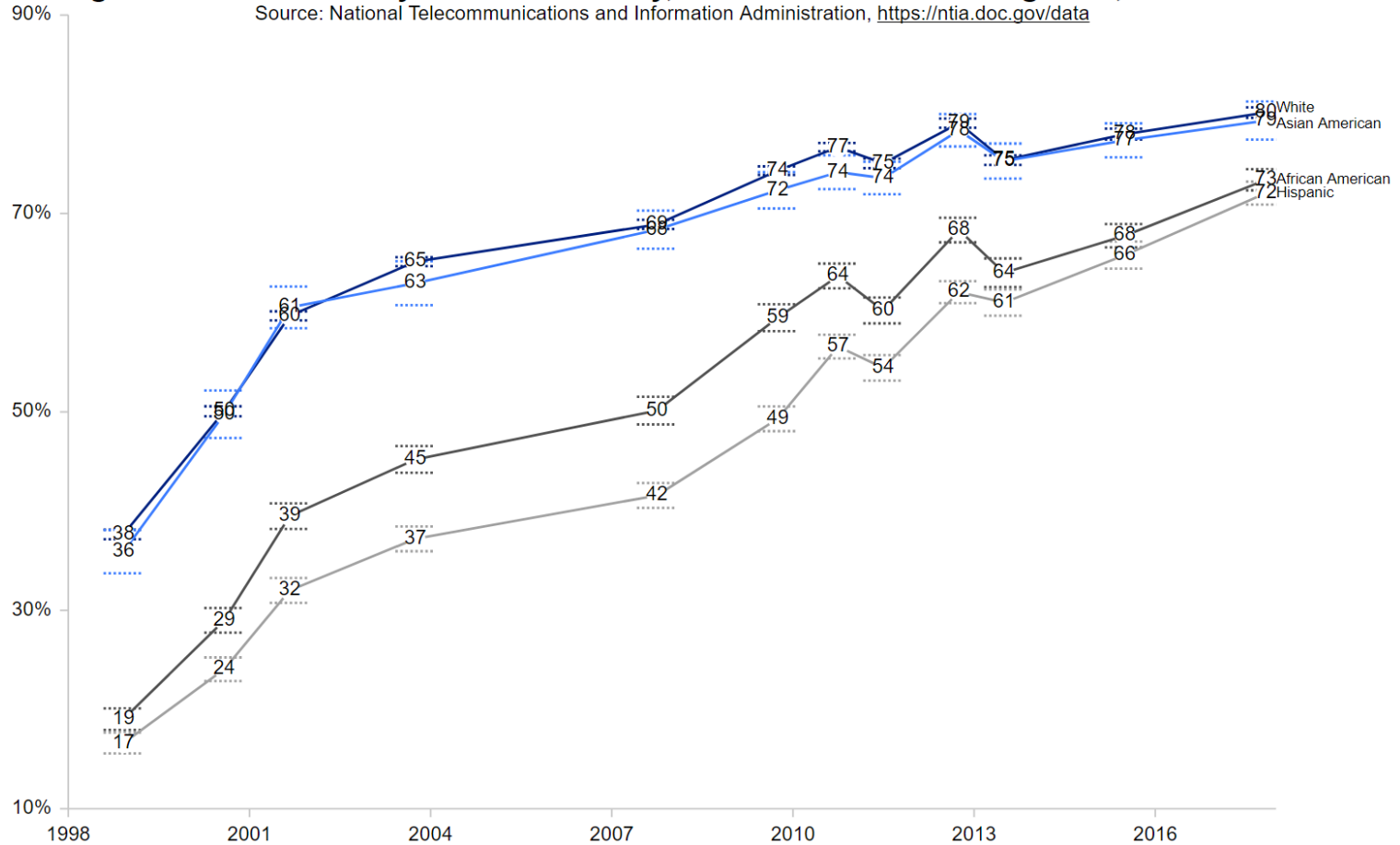
- In the field every month since 1940
- ~52,000 households each month, state-based sample design, in-person & live phone interviews
- NTIA has periodically sponsored Computer and Internet Use Supplement since 1994



Tracking the Digital Divide

Figure 2: Internet Use by Race or Ethnicity, Percent of Americans Ages 3+, 1998–2017

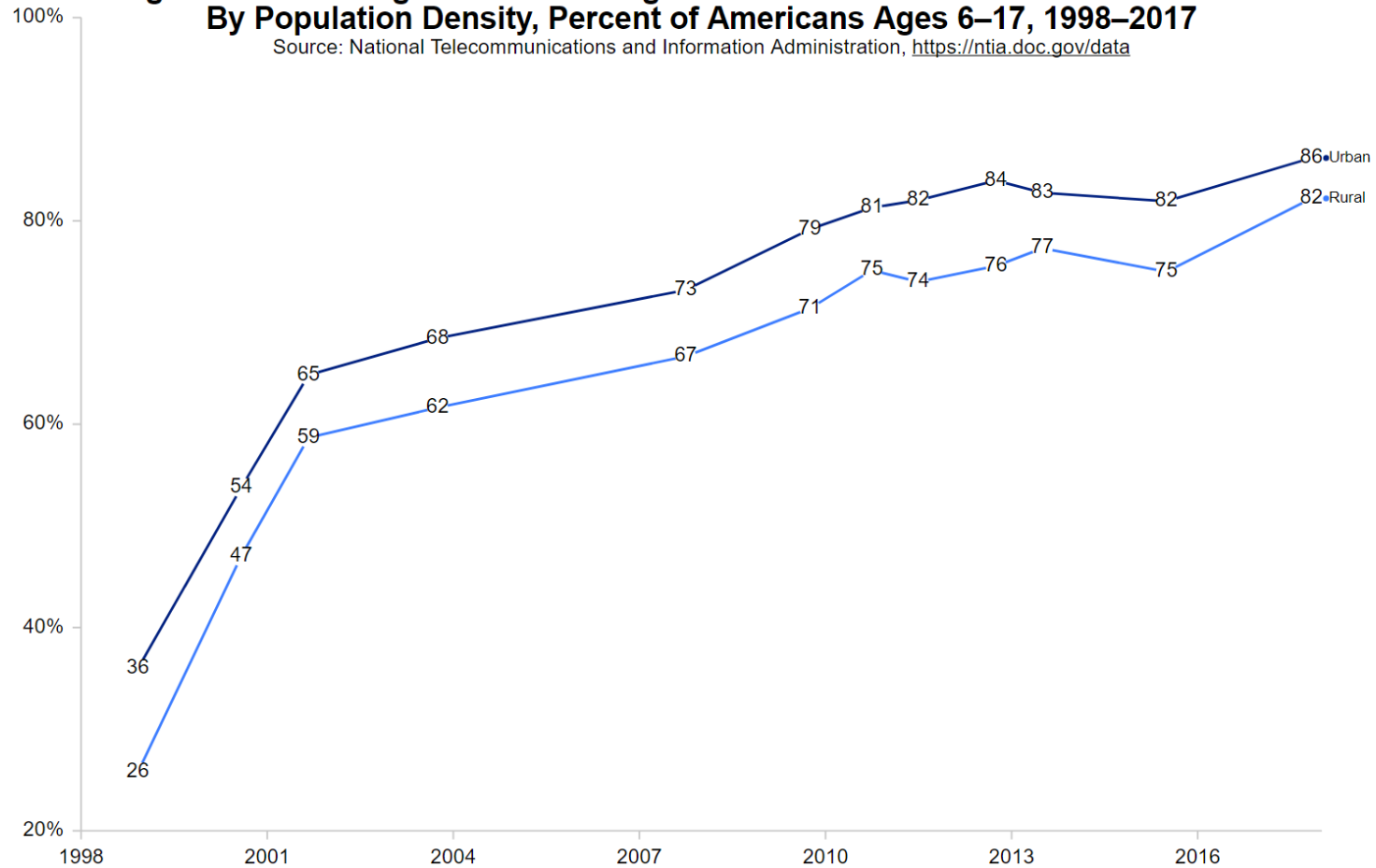
Source: National Telecommunications and Information Administration, <https://ntia.doc.gov/data>



Tracking the Digital Divide

Figure 3: School-Age Children Living in Households with Home Internet Service By Population Density, Percent of Americans Ages 6–17, 1998–2017

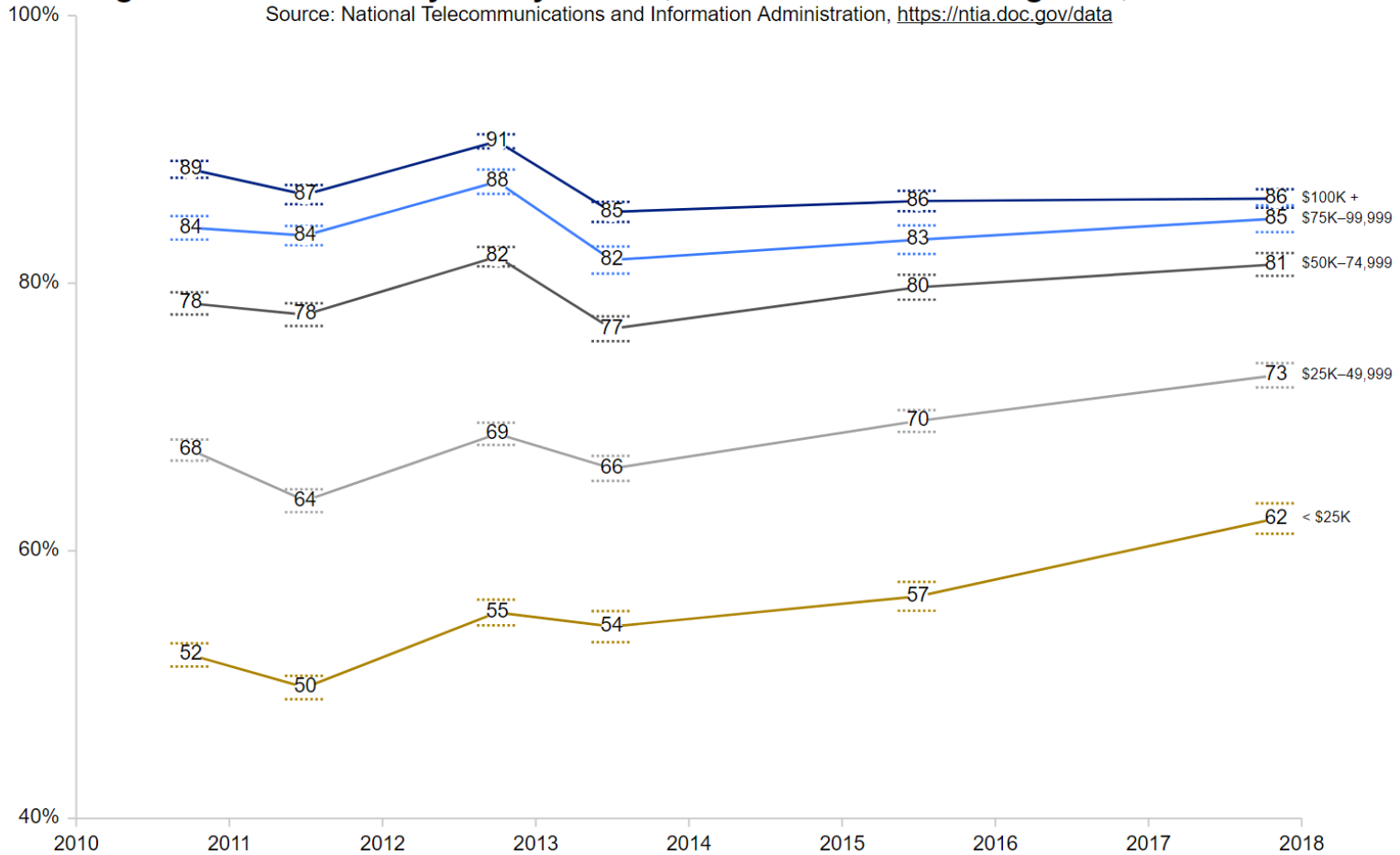
Source: National Telecommunications and Information Administration, <https://ntia.doc.gov/data>



Tracking the Digital Divide

Figure 1: Internet Use by Family Income, Percent of Americans Ages 3+, 2010–2017

Source: National Telecommunications and Information Administration, <https://ntia.doc.gov/data>

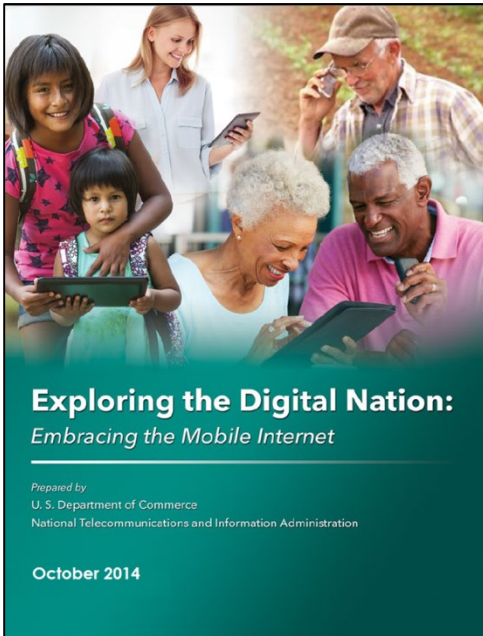


Over 50 Questions About Internet Use

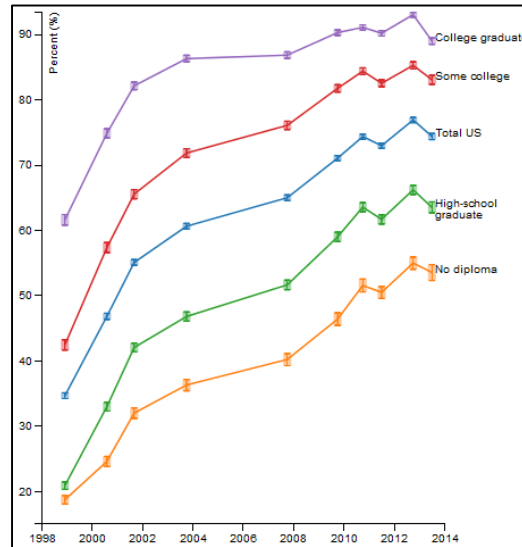
- Devices and Internet access technologies
- Locations of use
- Online activities
- Reasons for non-use
- Privacy and security concerns

NTIA Data Central

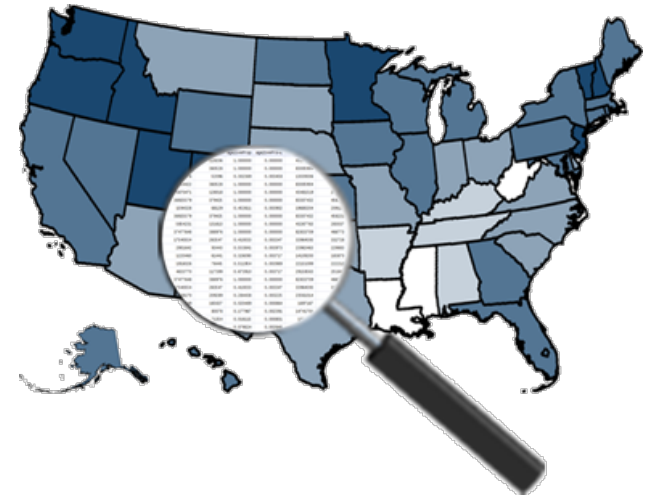
<https://ntia.doc.gov/data>



Digital Nation Blog



Data Explorer



Research Center

2017 American Community Survey - Computer & Internet Use Data



Ryan S. Dolan
Data Visualization Lead
U.S. Census Bureau
ryan.s.dolan@census.gov



Gerson D. Vasquez
Data Visualization Lead
U.S. Census Bureau
gerson.d.vasquez@census.gov

The American Community Survey: The Foundation

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 and informs over **\$675 billion** of Federal government spending each year
- Covers **35+ 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)
 - 5-year Estimates (for very small populations)



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THE American Community Survey

This booklet shows the content of the American Community Survey questionnaire.

Start Here

Respond online today at:
<https://respond.census.gov/acs>
OR
Complete this form and mail it back as soon as possible.

This form asks for information about the people who are living or staying at the address on the mailing label and about the house, apartment, or mobile home located at the address on the mailing label.

If you need help or have questions about completing this form, please call 1-800-354-7271. The telephone call is free.

Telephone Device for the Deaf (TDD):
Call 1-800-523-2550. The telephone call is free.

¿NECESITA AYUDA? Si usted habla español y necesita ayuda para completar su cuestionario, llame sin cargo alguno al 1-877-833-5625. Usted también puede completar su entrevista por teléfono con un entrevistador que habla español. O puede responder por Internet en: <https://respond.census.gov/acs>

For more information about the American Community Survey, visit our web site at: <http://www.census.gov/acs/www/>

Please print today's date.
Month Day Year

Please print the name and telephone number of the person who is filling out this form. We may contact you if there is a question.

Last Name

First Name MI

Area Code + Number

How many people are living or staying at this address?

- **INCLUDE** everyone who is living or staying here for more than 2 months.
- **INCLUDE** yourself if you are living here for more than 2 months.
- **INCLUDE** anyone else staying here who does not have another place to stay, even if they are here for 2 months or less.
- **DO NOT INCLUDE** anyone who is living somewhere else for more than 2 months, such as a college student living away or someone in the Armed Forces on deployment.

Number of people

Fill out pages 2, 3, and 4 for everyone, including yourself, who is living or staying at this address for more than 2 months. Then complete the rest of the form.

FORM ACS-1(INFO)(2015)
08 11 2016

CMS No. 0807-0210
CMS No. 0807-0366

American Community Survey (ACS) Estimates – [Data Subjects](#)

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

American Community Survey (ACS) - Key Product [Releases](#)

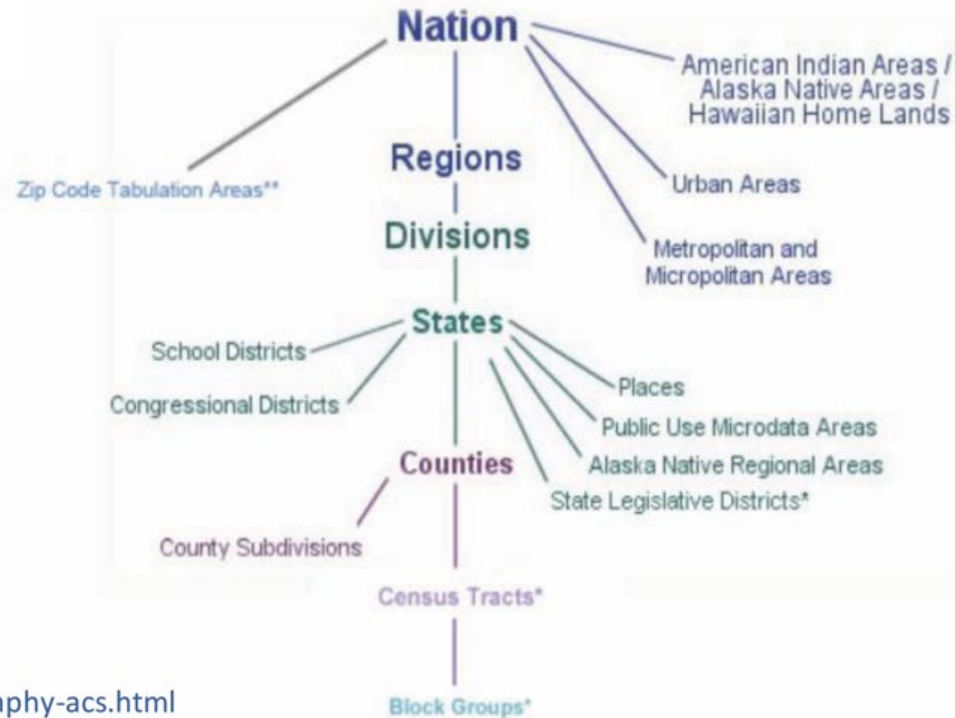
Estimated Population of Geographic Area	1-Year Estimates	5-Year Estimates
65,000 or more	X	X
20,000 or more		X
Less than 20,000		X
Release Date	September 13, 2018	December 6, 2018

American Community Survey (ACS) 5-Year Estimates

5-Year Geography

- All geographic areas down to the tract and block group level
- Over 578,000 geographic areas
- 87 different geography summary levels available

census.gov/programs-surveys/acs/geography-acs.html



American Community Survey ([ACS](#)) 5-Year Estimates

- Describe the characteristics over a specific period of time, not a single point in time
- Data are pooled across 60 months, weighted to produce estimates, and controlled for age, sex, race, and Hispanic origin
 - 5-year estimates are NOT an average of 1-year estimates
- Estimates are based on geographic boundaries as of January 1 of the last year in the 5-year period
- Dollar-value estimates are inflation adjusted to the most recent year for the period

2017 ACS 5-Year Estimates - Computer and Internet Use

Computer and Internet Use

([click here](#) to jump to the corresponding Subject Tables in American FactFinder)

Tables for computer ownership and internet subscription are available for the first time in the 2013-2017 ACS 5-year data products.

- S2801 “Types of Computers and Internet Subscriptions” (Income)
- S2802 “Types of Internet Subscriptions by Selected Characteristics” (Age, Race and Hispanic or Latino Origin, Educational Attainment & Employment Status)
- There are 22 new Detailed Tables available: [B28001](#), [B28002](#), [B28003](#), [B28004](#), [B28005](#), [B28006](#), [B28007](#), [B28008](#), [B28009A-I](#), [B28010](#), [B28011](#), [B99281](#), [B99282](#), and [B99283](#).
- One new Geographic Comparison table (GCT2801) has also been added. Table GCT2801 shows comparisons of various geographies by the percentage of households with a broadband internet subscription.
- Computer ownership and internet subscription have also been added to the Data Profiles ([DP02](#), [DP02PR](#)) and Comparison Profiles ([CP02](#), [CP02PR](#)).

To see more on changes within the 2013-2017 ACS 5-year Estimates, [click here](#).

2017 ACS 5-Year Estimates - Computer and Internet Use Data

Downloading the Data:

Data at the census tract level is available for all tracts within each state or county using [American FactFinder](#) (AFF) or the [Census API](#). For a national picture, it is best to download the table for an entire geographic level via the AFF's [Download Center](#).

Subject	Geography			
	Total		Percent	
	Estimate	Margin of Error	Estimate	Margin of Error
Total households				
TYPES OF COMPUTER				
Has one or more types of computing devices:				
Desktop or laptop				
Desktop or laptop with no other type of computing device				
Smartphone				
Smartphone with no other type of computing device				
Tablet or other portable wireless computer				
Tablet or other portable wireless computer with no other type of computing device				
Other computer				
Other computer with no other type of computing device				
No computer				
TYPES OF INTERNET SUBSCRIPTIONS				
With an Internet subscription:				
Dial-up with no other type of Internet subscription				
Broadband of any type				
Cellular data plan				
Cellular data plan with no other type of Internet subscription				
Broadband such as cable, fiber optic or DSL				
Satellite Internet service				
Without an Internet subscription				
HOUSEHOLD INCOME IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)				
Less than \$20,000:				
With dial-up Internet subscription alone				
With a broadband Internet subscription				
Without an Internet subscription				
\$20,000 to \$74,999:				
With dial-up Internet subscription alone				
With a broadband Internet subscription				
Without an Internet subscription				
\$75,000 or more:				
With dial-up Internet subscription alone				
With a broadband Internet subscription				
Without an Internet subscription				

S2801 TYPES OF COMPUTERS AND INTERNET SUBSCRIPTIONS 2013-2017 American Community Survey 5-Year Estimates

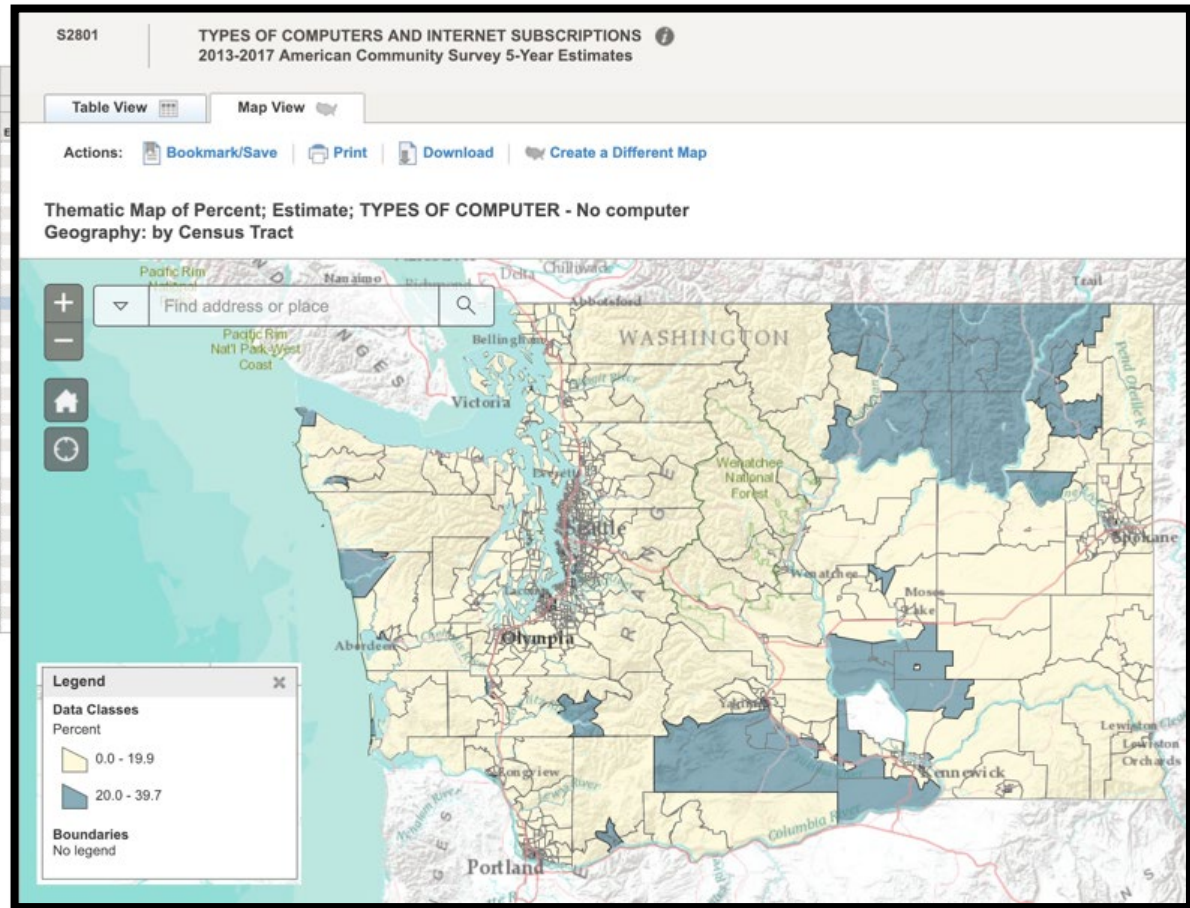
Subject	Geography														
	Total	With a computer								No computer in household		Percent no computer in household			
		Estimate	Margin of Error	Broadband Internet Subscription		Percent Broadband Internet Subscription		Without an Internet Subscription		Percent without an Internet Subscription		Estimate	Margin of Error	Estimate	Margin of Error
				Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error						
Total population in households															
AGE															
Under 18 years															
18 to 64 years															
65 years and over															
RACE AND HISPANIC OR LATINO ORIGIN															
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															
Hispanic or Latino origin (of any race)															
White alone, not Hispanic or Latino															
EDUCATIONAL ATTAINMENT															
Household population 25 years and over															
Less than high school graduate or equivalency															
High school graduate (includes equivalency), some college or associate's degree															
Bachelor's degree or higher															
EMPLOYMENT STATUS															
Civilian population 16 years and over															
In labor force															
Employed															
Unemployed															
Not in labor force															

S2802 TYPES OF INTERNET SUBSCRIPTIONS BY SELECTED CHARACTERISTICS 2013-2017 American Community Survey 5-Year Estimates

2017 ACS 5-Year - Computer and Internet Use Data Mapping

Subject	Census Tract 108.10, Benton County, Washington			
	Total Estimate	Margin of Error	Percent Estimate	Percent Margin of Error
Total households	2,144	+/-90	(X)	(X)
TYPES OF COMPUTER				
Has one or more types of computing devices:	1,935	+/-121	90.3%	+/-3.9
Desktop or laptop	1,856	+/-131	86.6%	+/-4.9
Desktop or laptop with no other type of computing device	206	+/-77	9.6%	+/-3.5
Smartphone	1,676	+/-125	78.2%	+/-5.1
Smartphone with no other type of computing device	29	+/-23	1.4%	+/-1.1
Tablet or other portable wireless computer	1,331	+/-125	62.1%	+/-5.5
Tablet or other portable wireless computer with no other type of computing device	0	+/-17	0.0%	+/-1.5
Other computer	88	+/-55	4.1%	+/-2.6
Other computer with no other type of computing device	0	+/-17	0.0%	+/-1.5
No computer	209	+/-83	9.7%	+/-3.9
TYPE OF INTERNET SUBSCRIPTIONS				
With an Internet subscription:	1,833	+/-126	85.5%	+/-4.7
Dial-up with no other type of Internet subscription	0	+/-17	0.0%	+/-1.5
Broadband of any type	1,833	+/-126	85.5%	+/-4.7
Cellular data plan with no other type of Internet subscription	1,280	+/-141	59.7%	+/-6.4
Cellular data plan with no other type of Internet subscription	104	+/-52	4.9%	+/-2.4
Broadband such as cable, fiber optic or DSL	1,669	+/-131	77.8%	+/-5.1
Satellite Internet service	176	+/-62	8.2%	+/-2.9
Without an Internet subscription	311	+/-102	14.5%	+/-4.7
HOUSEHOLD INCOME IN THE PAST 12 MONTHS (IN 2017 INFLATION-ADJUSTED DOLLARS)				
Less than \$20,000:	212	+/-79	(X)	(X)
With dial-up Internet subscription alone	0	+/-17	0.0%	+/-1.4
With a broadband Internet subscription	187	+/-78	88.2%	+/-11.8
Without an Internet subscription	25	+/-25	11.8%	+/-11.8
\$20,000 to \$74,999:	615	+/-137	(X)	(X)
With dial-up Internet subscription alone	0	+/-17	0.0%	+/-1.5
With a broadband Internet subscription	399	+/-115	64.9%	+/-12.4
Without an Internet subscription	216	+/-91	35.1%	+/-12.4
\$75,000 or more:	1,317	+/-139	(X)	(X)
With dial-up Internet subscription alone	0	+/-17	0.0%	+/-2.4
With a broadband Internet subscription	1,247	+/-137	94.7%	+/-4.2
Without an Internet subscription	70	+/-55	5.3%	+/-4.2

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates



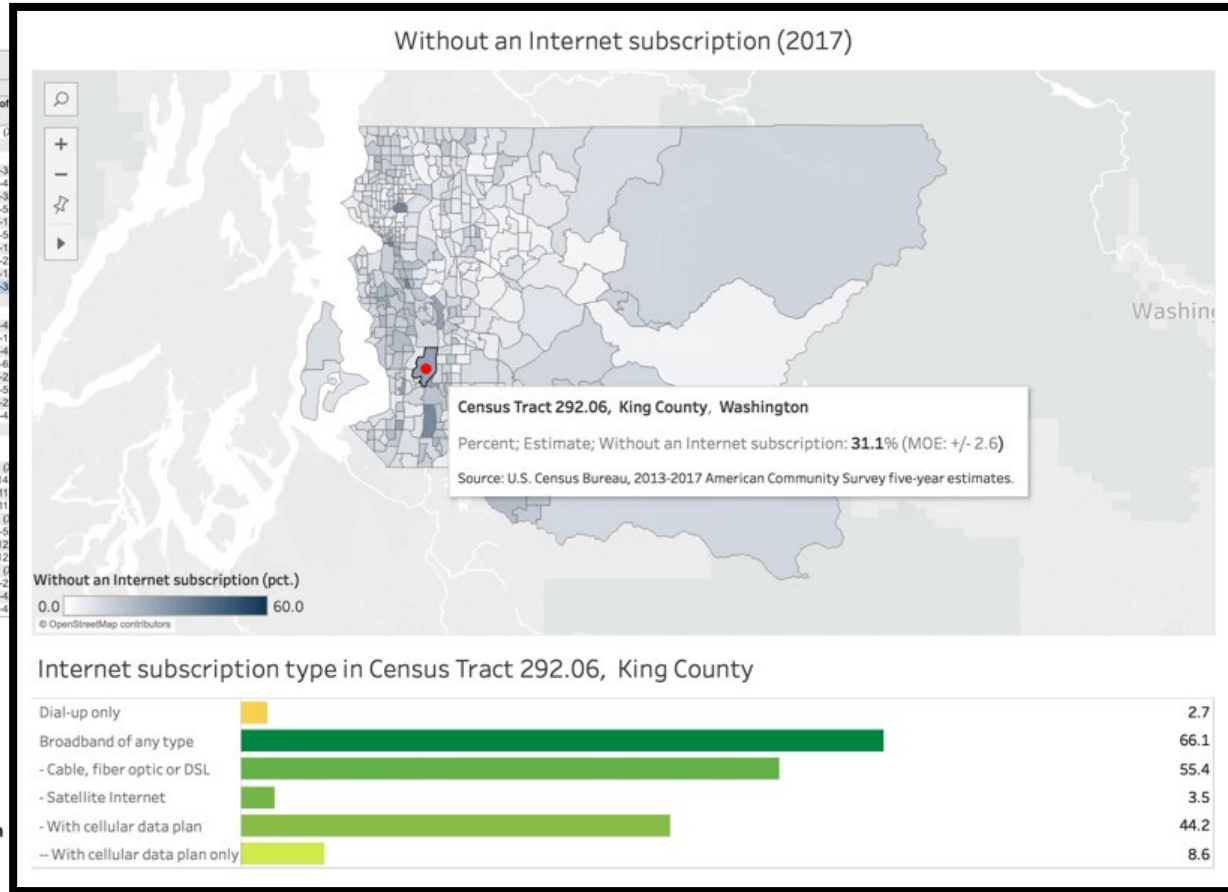
2017 ACS 5-Year - Computer and Internet Use Data Visualization

Subject	Census Tract 108.10, Benton County, Washington			
	Total Estimate	Margin of Error	Percent Estimate	Margin of Error
Total households	2,144	+/-90	(X)	(X)
TYPES OF COMPUTER				
Has one or more types of computing devices:	1,935	+/-121	90.3%	+/-3
Desktop or laptop	1,856	+/-131	86.6%	+/-4
Desktop or laptop with no other type of computing device	206	+/-77	9.6%	+/-3
Smartphone	1,676	+/-125	78.2%	+/-3
Smartphone with no other type of computing device	29	+/-23	1.4%	+/-1
Tablet or other portable wireless computer	1,331	+/-125	62.1%	+/-3
Tablet or other portable wireless computer with no other type of computing device	0	+/-17	0.0%	+/-1
Other computer	88	+/-55	4.1%	+/-2
Other computer with no other type of computing device	0	+/-17	0.0%	+/-1
No computer	209	+/-83	9.7%	+/-3
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Dial-up with no other type of Internet subscription	0	+/-17	0.0%	+/-1
Broadband of any type	1,833	+/-126	85.5%	+/-4
Cellular data plan	1,280	+/-141	59.7%	+/-6
Cellular data plan with no other type of Internet subscription	104	+/-52	4.9%	+/-2
Broadband such as cable, fiber optic or DSL	1,659	+/-131	77.8%	+/-5
Satellite Internet service	176	+/-62	8.2%	+/-2
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Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates



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census.gov



Open Data In Action

- Karen Archer Perry, Senior Policy Analyst, BroadbandUSA



Two examples:

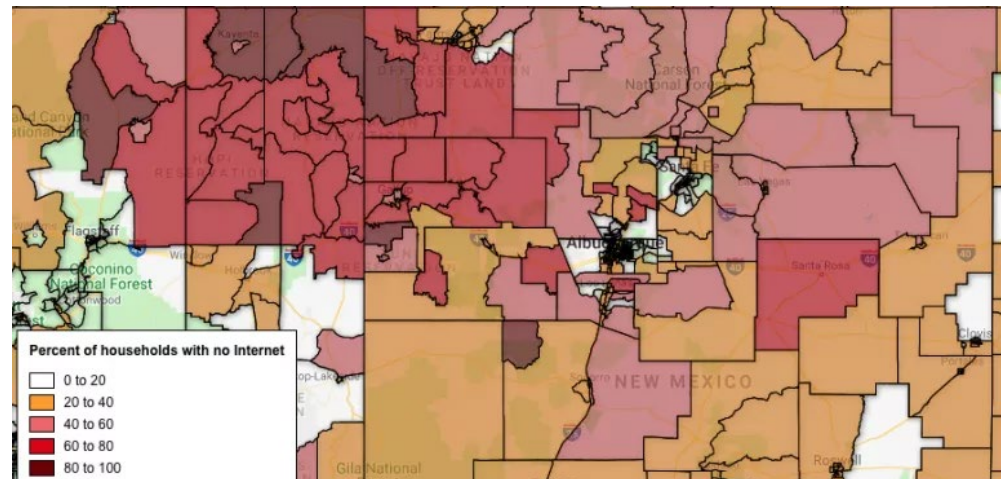
- National Digital Inclusion Alliance – Bill Callahan and Angela Siefer
- Internet is Infrastructure – Bob Ballance

If you have an example or application to share, please add to chat!

ACS Open Data In Action - NDIA

- NDIA Home Internet Maps
 - Cable, fiber, or DSL
 - No Internet
 - By census tract
 - By region

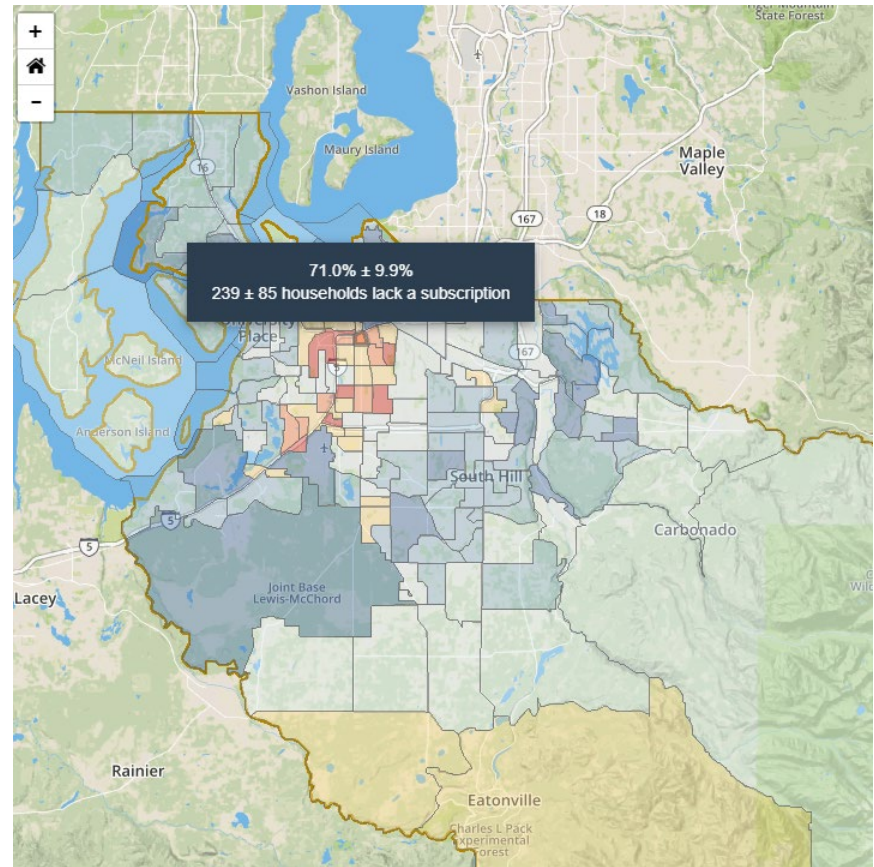
<https://www.digitalinclusion.org/home-internet-maps/>



ACS Open Data In Action – I3 Connectivity Explorer

- Internet-is-infrastructure
 - ACS population data
 - ACS demographic data
 - FCC Form 477 wireline deployment data
 - FCC Form 477 wireless deployment data
 - FCC Form 477 wireline subscription data
 - M-Lab speed test data
 - ACS computer and Internet data

Request a free login from Bob Ballance
ballance@internet-is-infrastructure.org



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Questions and Comments

- Please type your questions in the question box.
- The slides, transcript, and an audio recording will be posted on the BroadbandUSA website within 7 days of the webinar.

<https://broadbandusa.ntia.doc.gov/past-event>

Contact Us

Ryan Dolan, Data Visualization Lead

ryan.s.dolan@census.gov

(612) 718-6041

Gerson Vasquez, Data Visualization Lead

gerson.d.vasquez@census.gov

(770) 543-9900

Customer Liaison and Marketing Office Data Dissemination Branch

census.askdata@census.gov

1-844-ASK-DATA

Rafi Goldberg, Policy Analyst

rgoldberg@ntia.doc.gov

NTIA Data Central

<https://ntia.doc.gov/data>

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Karen Archer Perry, Policy Analyst

Kperry@ntia.doc.gov



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BroadbandUSA

Thank you for attending.

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American Broadband Initiative: The Administration's Initiative for Promoting Broadband Connectivity

March 20, 2019

2:00 pm EST

Registration is required for each webinar:

<https://broadbandusa.ntia.doc.gov/event>

BroadbandUSA is available to help communities with their broadband access and digital inclusion efforts

For General Information:



202-482-2048



broadbandusa@ntia.doc.gov



<https://broadbandusa.ntia.doc.gov/resources>

To Request Technical Assistance (TA):



Broadband TA Request Form -
<https://broadbandusa.ntia.doc.gov/ntia-common-content/how-we-can-help>

BBUSA Resources

- [Implementing a Broadband Network Vision: A Toolkit for Local and Tribal Governments](#)
- [Community Broadband Roadmap Toolkit](#)
- [Guide to Federal Funding of Broadband Projects](#)
- [Using Partnerships to Power Smart Cities](#)