NATIONAL GOVERNORS ASSOCIATION

Laying the Foundation: Broadband, 5G Deployment, and Ensuring Rural Equity

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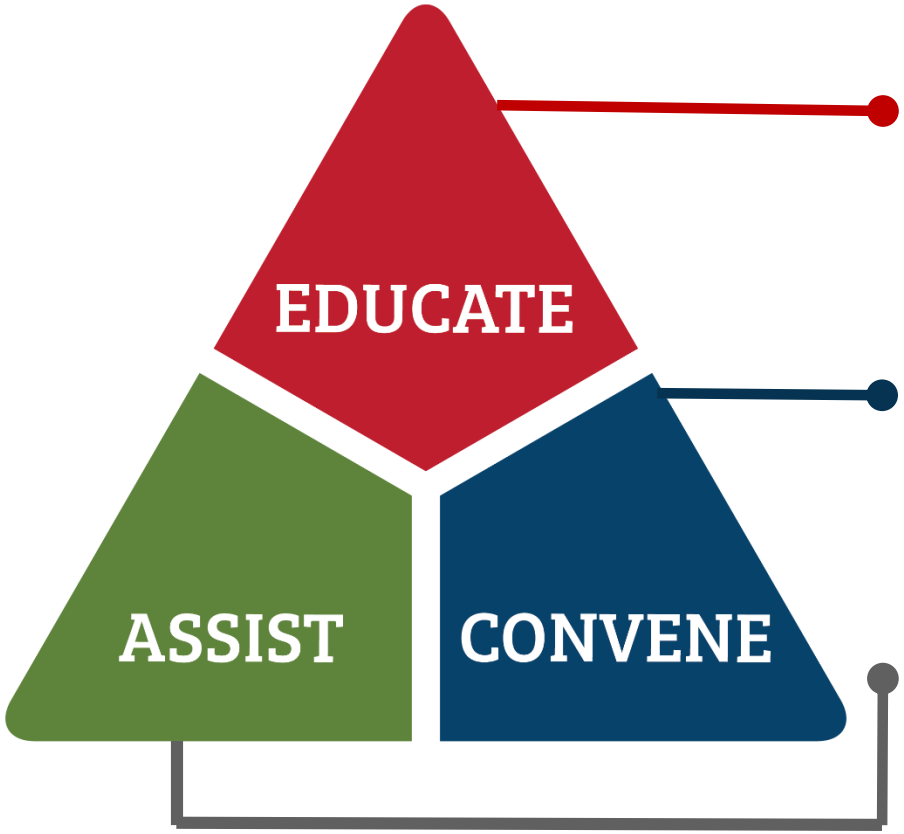
The National Telecommunications and Information Administration (NTIA) advises on telecom policy issues

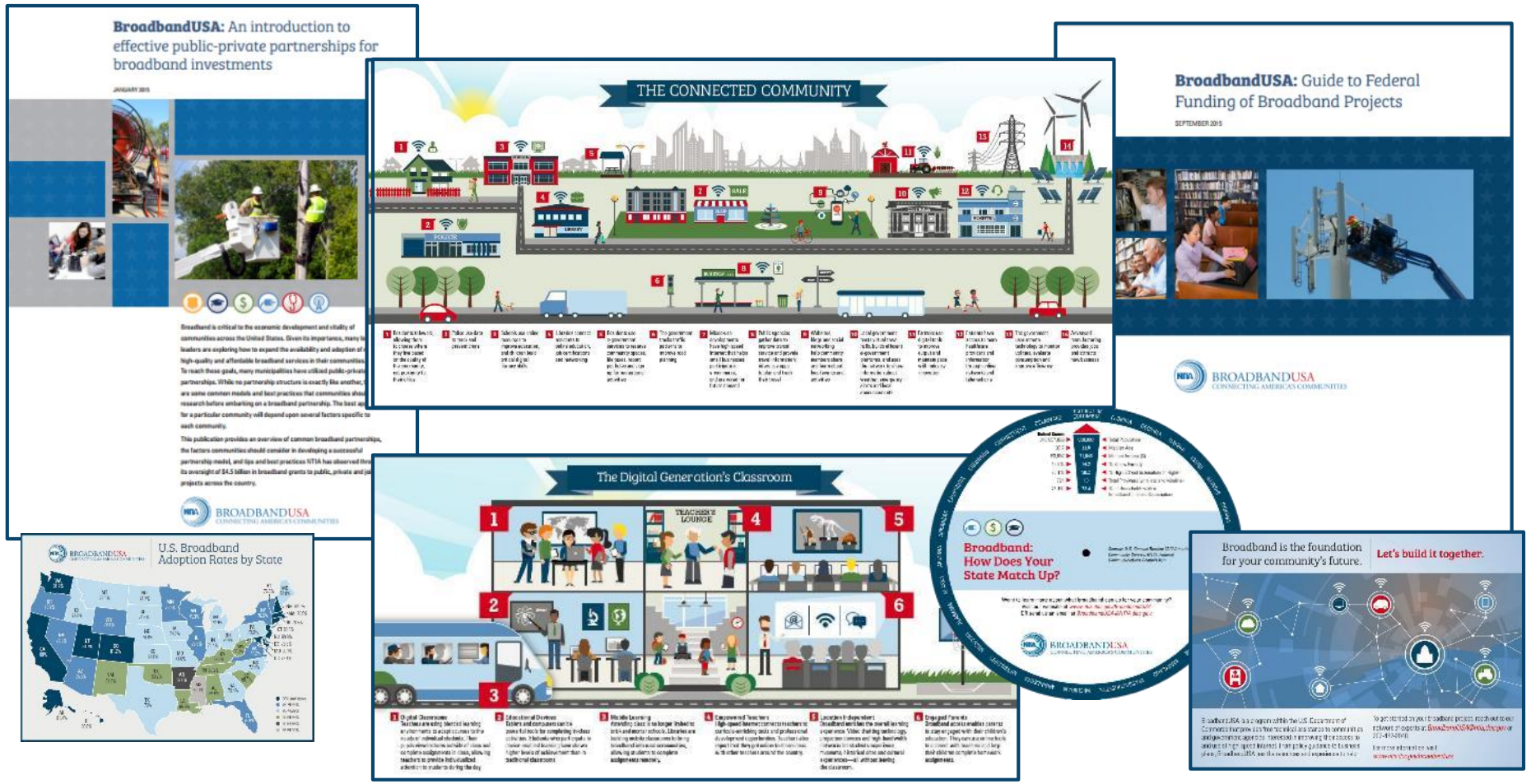
- Serves as principal advisor to the Executive Branch
- Expanding broadband access and adoption
- Expanding the use of spectrum by all users
- Ensuring that the Internet remains an engine for continued innovation and economic growth
- Supporting public safety communications

NTIA's BroadbandUSA program educates stakeholders, facilitates relationships and provides helpful resources

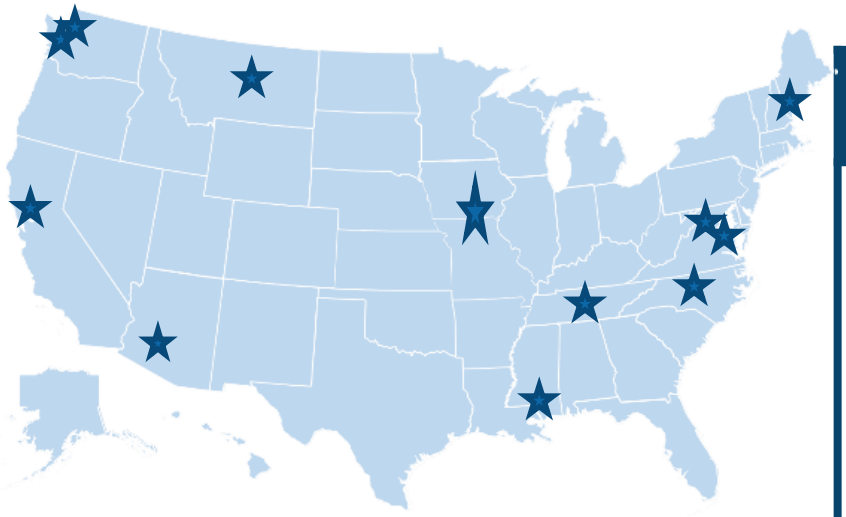


- Arm stakeholders with key information to have more effective discussions with providers
- Convene & facilitate the right conversations
- Provide guidance to stakeholders, partners and providers

Our resources help stakeholders learn, share and implement the benefits of community connectivity



BroadbandUSA also engages communities through webinars and events across the country



FY18 Events

- Regional convenings and workshops
- Monthly "BroadbandUSA Practical Broadband Conversations" Webinars
- State Broadband Leaders Summit
- TN and VA Broadband Workshops

Sample Events FY16-17

- Big Sky Broadband Summit
- AZ, IA ,WV, GA Technical Assistance Workshops
- State Broadband Leaders Network Workshop
- Technical Assistance Webinars
- California Broadband Workshop
- Digital NW Broadband Summit

BroadbandUSA: Technical Assistance

Planning (e.g., RFP Development/Review, Preliminary Network Design, Asset Inventory)

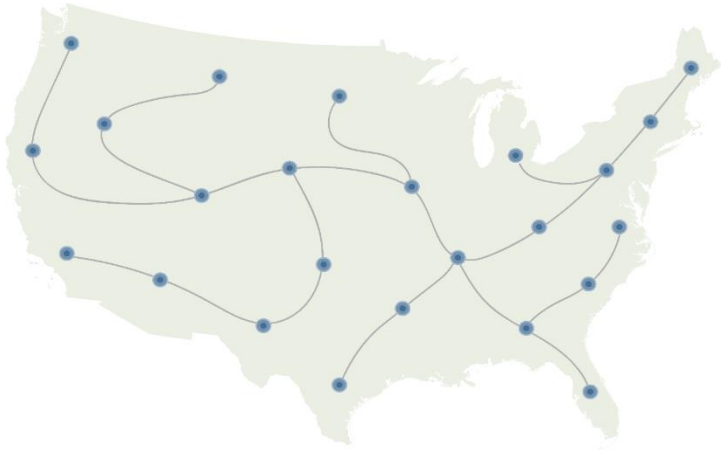
Funding (e.g., Partnership Facilitation, Funding Option Assessments)

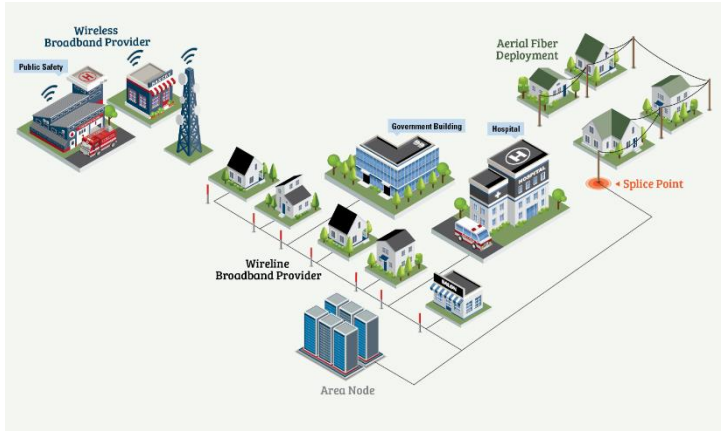
Implementation (e.g., Network Design, Regulatory Approvals, Interconnection, Permitting)

90% of TA requests involve broadband planning and
62% involve questions related to funding

Broadband Network Architecture 101

Backbone	Major high-speed transmission lines that link smaller networks across the country
Middle Mile	Connection between the backbone network and local networks
Last Mile	Connection between the local network and end user homes and businesses





Broadband Technologies: No Silver Bullets

	Application		
Technology	**Backbone**	**Middle Mile**	**Last Mile**
Fiber			
Aerial Fiber	✓	✓	✓
Buried Fiber	✓	✓	✓
Copper-Based			
Coaxial Cable		✓	✓
DSL			✓
Wireless			
Fixed		✓	✓
Mobile (4G/5G)			✓
Satellite			✓
Microwave		✓	✓

Efforts to expand broadband access are helping, but the digital divide still persists

10% of all Americans (34 million people) and **39% of rural Americans** (23 million people) lack access to broadband speeds

Approximately **21 million children** do not have the bandwidth needed for digital learning

34% of non-metro healthcare facilities lack sufficient broadband connectivity for electronic medical records and information exchange

42% percent of public libraries have 10 Mbps or slower connections

Broadband access and use is critical to the growth of communities

Up to $600 Per Student Saved Annually Using Digital Resources

Hospital Admissions by 35% Hospital Stay by 59%

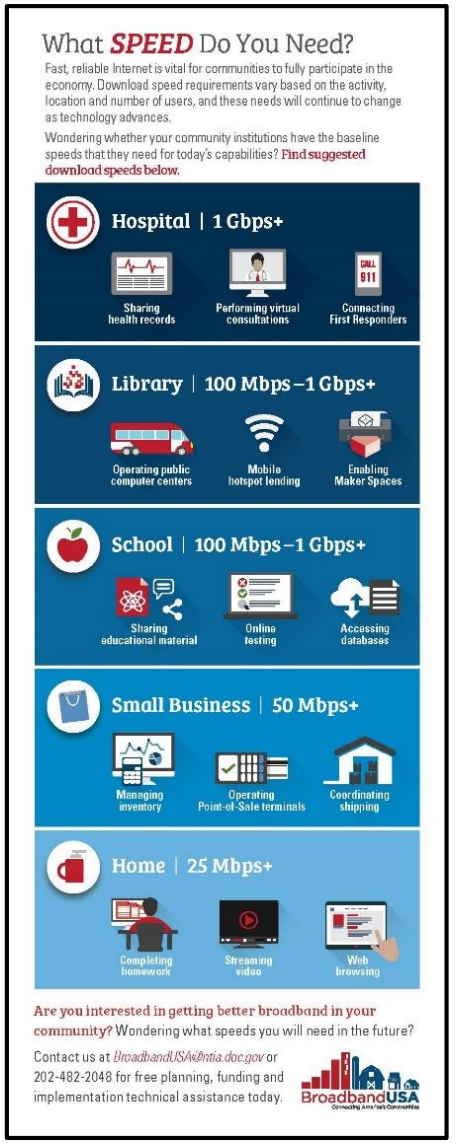
Home Value by 3.1%

79% of Unemployed Americans Search for Jobs Online

Annual Median Business Revenue by $300,000

The Urban-Rural Divide in Broadband

- Recent research by the FCC, which defines home broadband as 25 Mbps down and 3 Mbps up, shows:
  - 39% of rural Americans, 4% of urban Americans lack access
  - 34% of non-metro healthcare facilities lack adequate speeds
  - 42% of public libraries have speeds less than 10Mbps
  - 23% of schools do not meet the FCC's 100 Kbps per student standard, mostly in rural areas



BroadbandUSA – Data Collection and Mapping

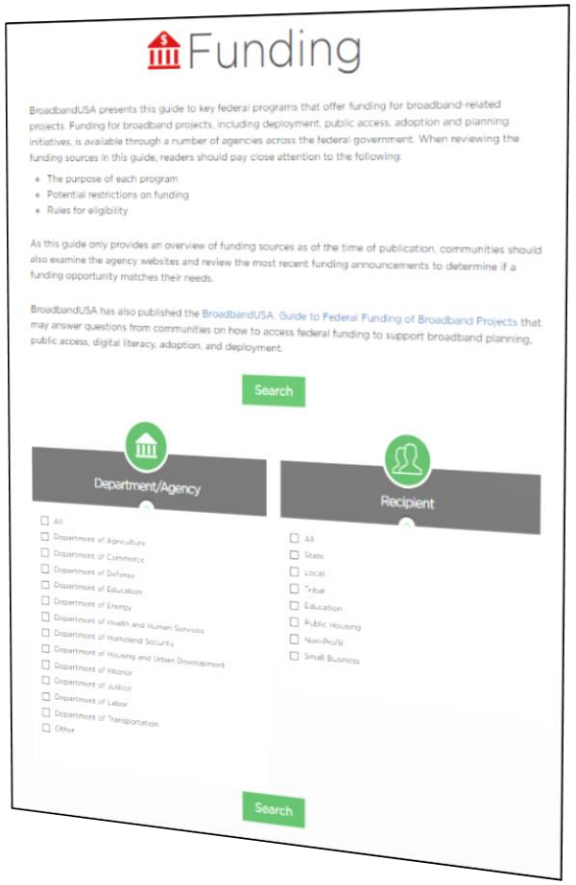
- Consolidated Appropriations Act of 2018 – Congress authorized $7.5M to update the National Broadband Availability Map in coordination with the FCC and previous partnerships developed by the States.

  – NTIA can acquire, utilize and display available third-party data sets to the extent such data can be used to augment existing data from the FCC, other Federal government agencies, State government, and the private sector. The updated map will help identify regions with insufficient service.

  – NTIA released a Request for Comment, "Improving the Quality and Accuracy of Broadband Availability Data". Received 53 comments.
    - NTIA met with many stakeholders about accessing broadband data sets.
    - NTIA is planning a phased approach to compiling data for a broadband availability map.
    - NTIA will be working with states that already have collected broadband availability data or have strong broadband programs.

Funding Options

- State Funding
- Public Private Partnerships
- Federal Communications Commission (FCC)
- National Science Foundation (NSF)
- Department of Transportation (DOT)
- Department of Homeland Security (DHS)
- Housing & Urban Development (HUD)
- U.S. Department of Agriculture (USDA)
- U.S. Department of Energy (DOE)
- Economic Development Administration (EDA)



Five categories of federal broadband-related funding opportunities

Infrastructure Deployment	Planning	Research	Digital Skills	Public Computer Access
Facilitates the buildout of community connections and technology. This can include network cables, facilities and structural upgrades.	Provides communities and municipalities assistance in creating regional improvement plans directly incorporating broadband.	Strives to improve research and data collection to provide new knowledge surrounding broadband and evidence based solutions.	Offers training to maximize patron knowledge, adoption, and usage of broadband capabilities. Focuses on both usage and understanding.	Targets funding efforts that provide public computer access to broadband hubs in locations such as community centers, schools and libraries.

Federal Funding Options

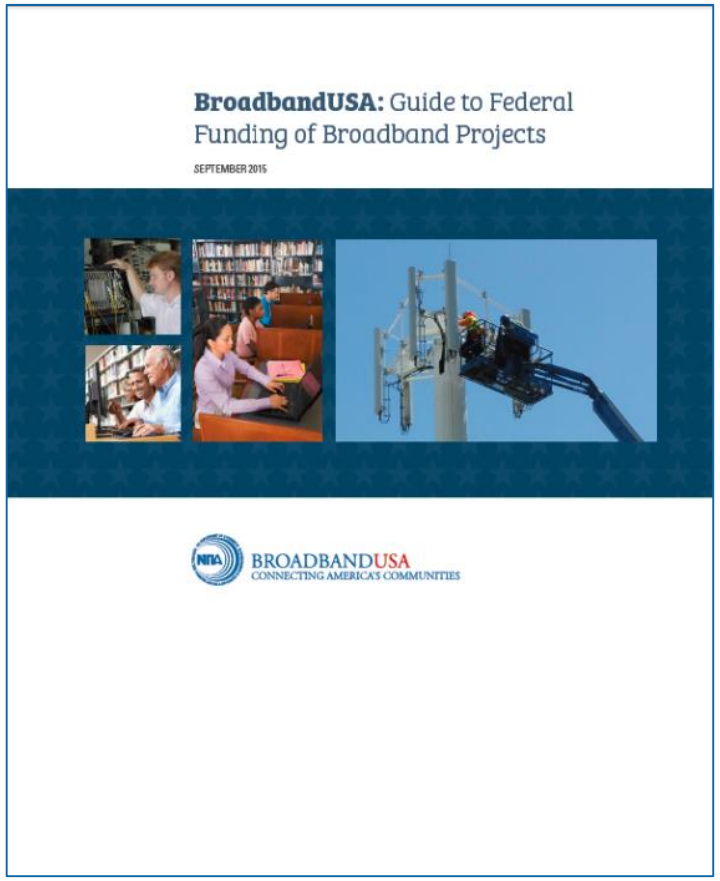
- Federal Communications Commission (FCC) - Universal Service Fund
  - Connect America Fund (High-Cost Program) – reduces the cost of operating and extending infrastructure (both fixed and mobile) to serve consumers and small businesses in rural, high-cost areas.
    - Funding recipient must be designated an eligible telecommunications carrier by the relevant state or the FCC.
  - E-rate (Schools and Libraries) Program – provides discounts of up to 90 percent for broadband connectivity to and within elementary and secondary schools and public libraries.
  - Rural Health Care Program – subsidizes broadband connectivity for public and non-profit health care providers through the Healthcare Connect Fund Program. Funding capped at $400 million per year.

Federal Funding Options – Executive Branch

- USDA Rural Development – manages the primary loan and grant programs that support rural broadband deployment.
- Other Federal Agencies have made broadband an allowable expense within their current funding streams.
- Funding for broadband infrastructure may be supported by block and formula grants provided through programs managed by HUD and the Department of Education.
- The Economic Development Administration, Appalachian Regional Commission, and the Delta Regional Authority have identified broadband as an eligible expense and a priority for economic development.

BroadbandUSA: Federal Funding Guide

- Provides communities with information about federal funding for broadband, including:
  - Information regarding the purpose of each program
  - Potential restrictions on funding
  - Rules for eligibility
  - Updated periodically



State Broadband Leaders Network (SBLN)

- SBLN: community of practitioners who work on state broadband initiatives.
- Outgrowth of State Broadband Initiative Program under BTOP.
- NTIA's BroadbandUSA program coordinates the group and convenes participants to:
  - Share priorities and best practices;
  - Discuss emerging telecommunications policy issues;
  - Link states and local jurisdictions to federal agencies and funding sources; and
  - Address barriers to collaboration across state agencies.

SBLN: Who Participates – 38 States to Date

- SBLN participants represent a variety of state level offices:
  - Senior managers or directors from State Broadband Offices
  - Geographic Information Services (GIS) offices
  - Offices of Information Technology (IT)
  - Public Utility Commissions (PUCs)
  - Commerce Departments/Economic Development Agencies
  - Universities and State Extension Services
  - Public Safety offices and
  - State-designated third party entities

State Actions to Spur Broadband Deployment

- More States are getting involved in supporting broadband deployment and access. More than two thirds of states have dedicated offices, programs, or employees focused on broadband.
  - Twenty-two states now have state-level grant programs (some of these are E-rate matching programs).
  - **Illinois** – first state to become a "smart state" with its Smarter Illinois Initiative.
  - **Nevada** – On July 1, 2017, enacted SB53 to facilitate broadband expansion by allowing NV DOT to install conduit and fiber systems in the state rights-of-way supporting telecommunications facilities and enabling NVDOT to enter into public-private partnerships for cooperative fiber and conduit trades.

State Actions to Spur Broadband Deployment - Grants

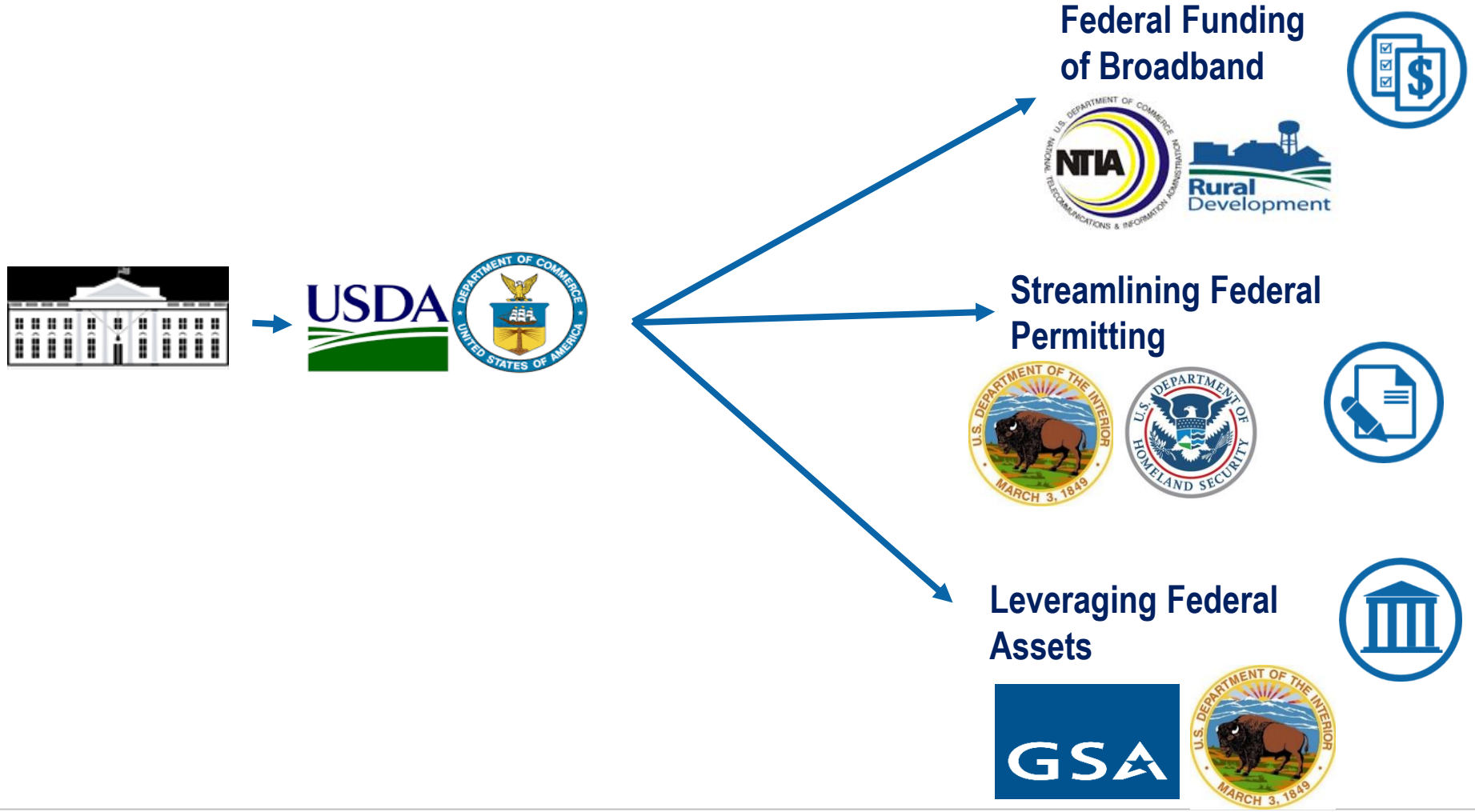
- **Colorado** – Broadband Deployment Board and associated Broadband Fund provides infrastructure grants for last-mile projects in unserved areas of the state. CO's High Cost Support Mechanism (HCSM) allocates monies originally designated for high cost support in areas subsequently deemed competitive to the Broadband Fund. Nearly $2.4 million made available for first grant cycle.
- **Maine –** Funds community planning and infrastructure grants for broadband projects in underserved areas (<25/3Mbps). Has awarded $11.5M over 11 funding rounds since 2007.
- **Minnesota** – As of 2014, grants fund areas without access to 25/3 wireline. Funding through annual general fund appropriation ($20M allocated in 2017)
- **Tennessee** – As of 2017, grants fund areas without access to 10/1 fixed terrestrial connection. $25M available ($10M year 1, $15M year 2).

Executive Office Updates

Presidential Actions

- Executive Order (E.O.) Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure (August 2017)
- E.O. Strengthening Cybersecurity of Federal Networks and Critical Infrastructure (February 2017)
  - Protecting federal networks using the NIST Cybersecurity Framework https://www.nist.gov/cyberframework
- Presidential Memoranda – Directing Interior to make its towers available for co-location (January 2018)
- E.O. Streamlining and Expediting Requests to Locate Broadband Facilities in Rural America (January 2018)

Broadband Interagency Working Group



BroadbandUSA is available to help states and communities improve their with broadband access

BBUSA Resources:

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

- Jennifer Duane, Senior Advisor
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- New BroadbandUSA website:
  www.BroadbandUSA.ntia.doc.gov