

Exhibit

4

Five-Year Action Plan

Executive Summary

August 2023



Background

In June 2023, the National Telecommunications and Information Administration (NTIA) announced an allocation of approximately \$1.4 billion to support additional internet expansion in Alabama through the Broadband Equity, Access, and Deployment (BEAD) Program. In response, ADECA developed a Five-Year Action Plan for investing those funds to achieve universal broadband service in the state. The Five-Year Action Plan identifies all currently unserved locations in the state, documents the varied needs of residents in all 67 counties, and proposes strategies for working with many partners (including state agencies, non-profits, internet service providers (ISPs), and community organizations) to expand high-speed internet access to link all Alabamians.



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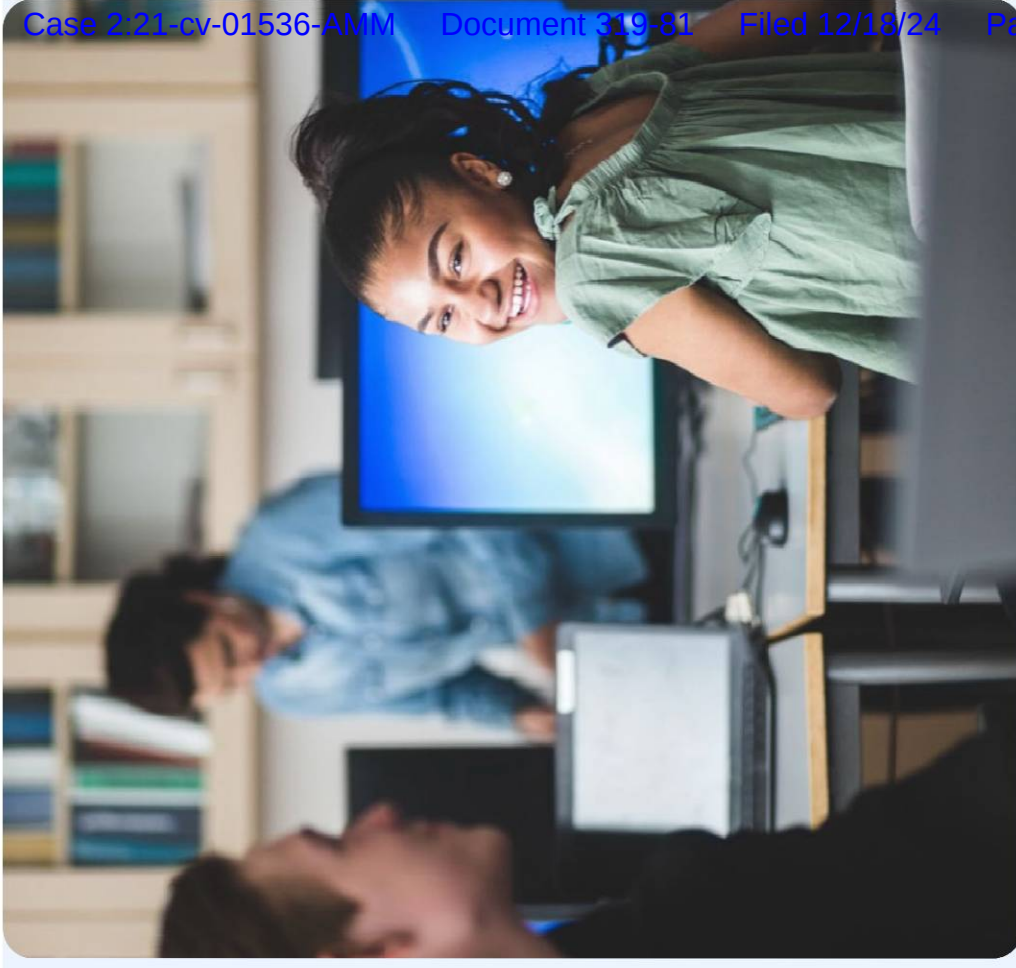




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3. Needs and Gaps

Data regarding needs and gaps in broadband deployment, availability, and digital opportunities, including a breakdown of broadband infrastructure grants across the state.

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An overview of the necessary steps towards facilitating broadband expansion and digital opportunity throughout the state.

Overview

Vision

The State of Alabama's vision is to promote the expansion and availability of high-speed broadband networks, services, and technologies throughout the state, including, but not limited to, rural areas, underserved areas, and unserved areas of the state.

Goals and objectives

Alabama's broadband connectivity goals are to:

- Facilitate the expansion of high-speed broadband
- Consider the need for broadband expansion in rural, underserved, and unserved areas
- Address obstacles to broadband adoption
- Develop funding strategies and plans for middle-mile and long-haul fiber, as well as last-mile infrastructure and services

Priorities for BEAD funding

1. Serve 100 percent of unserved locations (i.e., below 25/3 Mbps) with a minimum of 100/20 Mbps service within five years
2. Serve 100 percent of underserved locations (i.e., between 25/3 Mbps and 100/20 Mbps) with a minimum of 100/20 Mbps service within five years (if sufficient funds are available)
3. Deliver gigabit connections to anchor institutions that do not have that level of service within five years (if sufficient funds are available)



Current State

This section presents an overview of broadband and digital opportunity in Alabama, including a summary of current and future partners in the implementation of the state's broadband goals.



Current State of Broadband & Digital Opportunity Programs

- Alabama's broadband efforts are regarded as both ground-breaking and exemplary nationwide.
- Since 2018, ADECA has administered several rounds of broadband grants for last-mile projects—awarding over \$90 million in grant funds with a matching private investment of over \$191 million for projects in rural unserved areas of the state through the Alabama Broadband Accessibility Fund.
- In 2022, the Alabama legislature appropriated over \$191 million in American Rescue Plan Act (ARPA) funds for a last-mile broadband grant program.
- In 2023, the Alabama legislature appropriated additional ARPA funds, of which \$245 million has been allocated for an anchor institution/middle-mile broadband grant program.
- The Alabama Broadband Map provides address-level data showing statewide broadband availability and is a critical tool for managing broadband deployment programs.
- Through expansive engagement in every county in the state, ADECA forged and strengthened partnerships among local governments, community-based organizations, and ISPs.
- Seven Historically Black Colleges and Universities and Minority-Serving Institutions in Alabama have received NTIA Connecting Minority Communities Pilot Program grants since 2022—supporting access and digital opportunities.
- Throughout the pandemic, the state provided direct support to low-income students and to low-income families seeking federal internet subsidies.



Partnerships

- BEAD and digital opportunity planning efforts benefited from input from a wide range of partners throughout Alabama across government, private industry, education, workforce, nonprofits, and other community service organizations.
- This infographic displays the categories of current and future partners that are developing and implementing the state's BEAD goals. The 15 categories represent the 140+ state partners in this process.



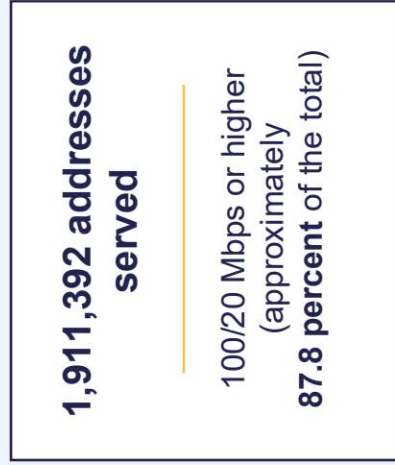
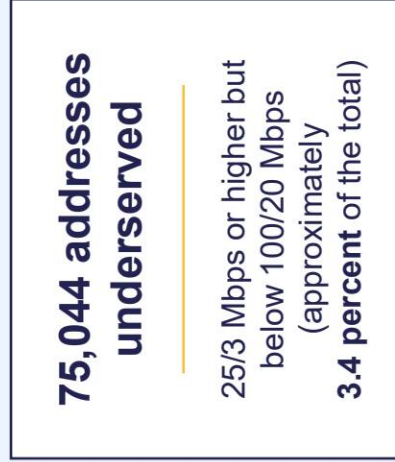
Needs and Gaps

This section presents a synopsis of internet availability in Alabama, including a breakdown of the distribution of state and federal government broadband infrastructure grants across the state.



Needs and Gaps Assessment

Based on the FCC National Broadband Map data and federal and state broadband deployment grants, internet service availability at 100/20 Mbps or higher in Alabama is **87.8 percent**, based on a total of **2,177,600 addresses**:



These data are expanded upon in the following slides with maps specifically outlining the deployment of grant funding in Alabama, unserved locations in the state, underserved locations in the state, and, finally, served addresses throughout Alabama.

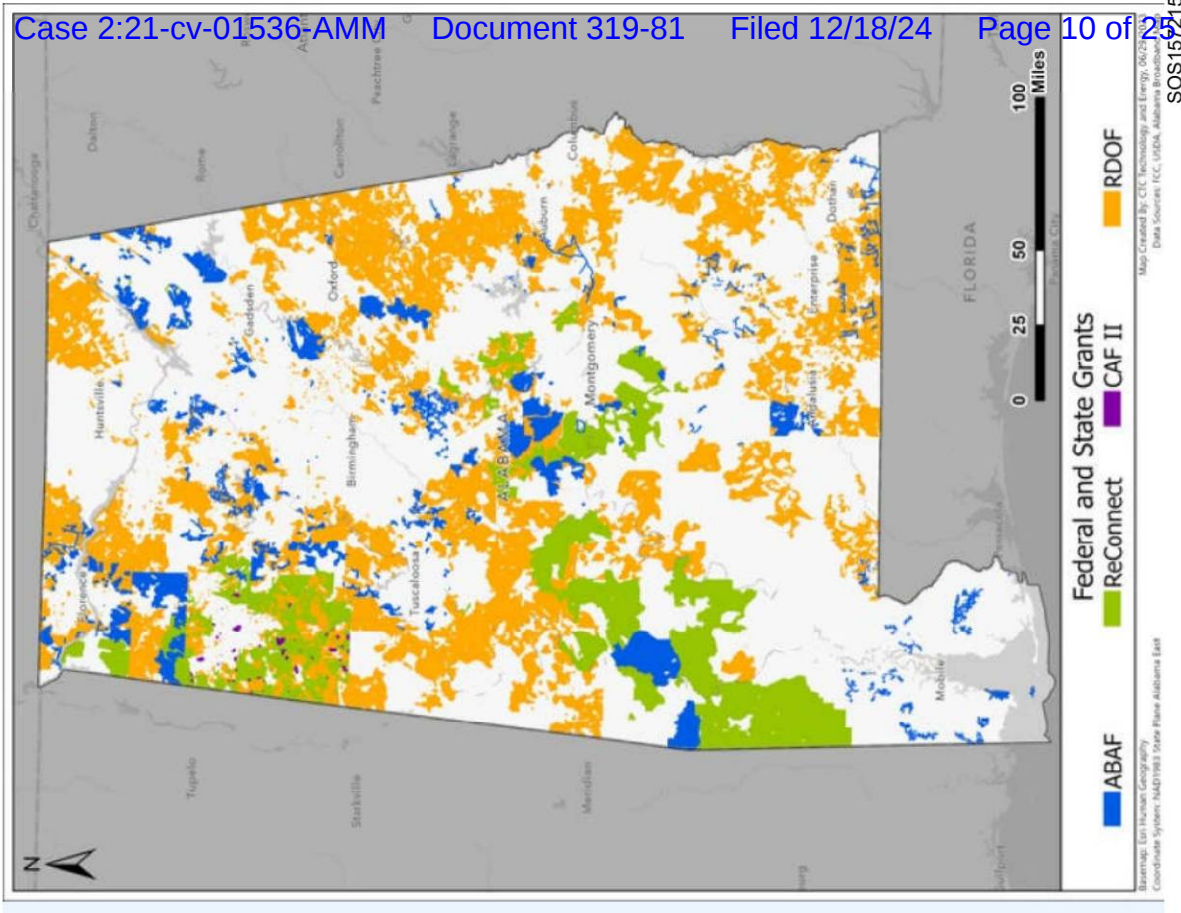


Federal and State Grant Areas

This map highlights the current landscape of broadband deployment project funding from the state and federal governments throughout Alabama, all of which are either planned or currently under construction.

- The Alabama Broadband Accessibility Fund (ABAF) is a robust grant program primarily for the construction of last-mile broadband networks in unserved and underserved areas.
- The ReConnect program is employed by the USDA, and it provides grants and loans for the provision of broadband service in eligible rural areas.
- The Connect America Fund (CAF II) is an FCC program that prioritizes areas in which service is unavailable by subsidizing the upgrades to or deployment of network infrastructure.
- The Rural Digital Opportunity Fund (RDOF) also is an FCC program intended to help unserved rural communities achieve digital opportunity through the deployment of broadband networks.

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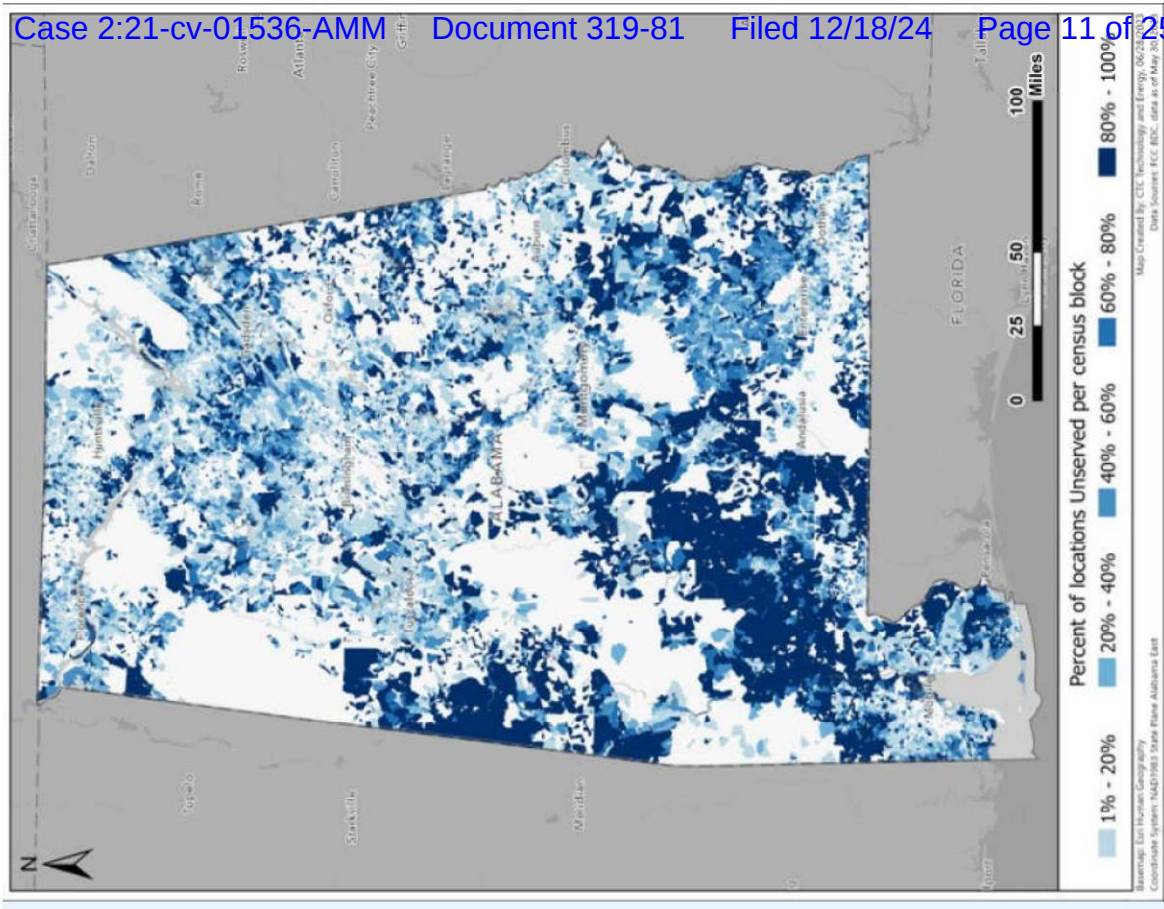


Unserved Locations

This map demonstrates the remaining percentage of unserved locations per census block throughout the State of Alabama following deployment of all current or planned broadband infrastructure projects, according to the FCC (< 25/3 Mbps).

- In context of the map, the lighter areas signify smaller percentages of unserved locations per census block. Accordingly, darker hues represent the areas throughout Alabama with higher percentages of unserved locations per census block.
- Though there are pockets of unserved locations throughout the state, there are notably large concentrations of unserved locations in the western and southwestern portions of Alabama.
- The data are current as of May 2023.

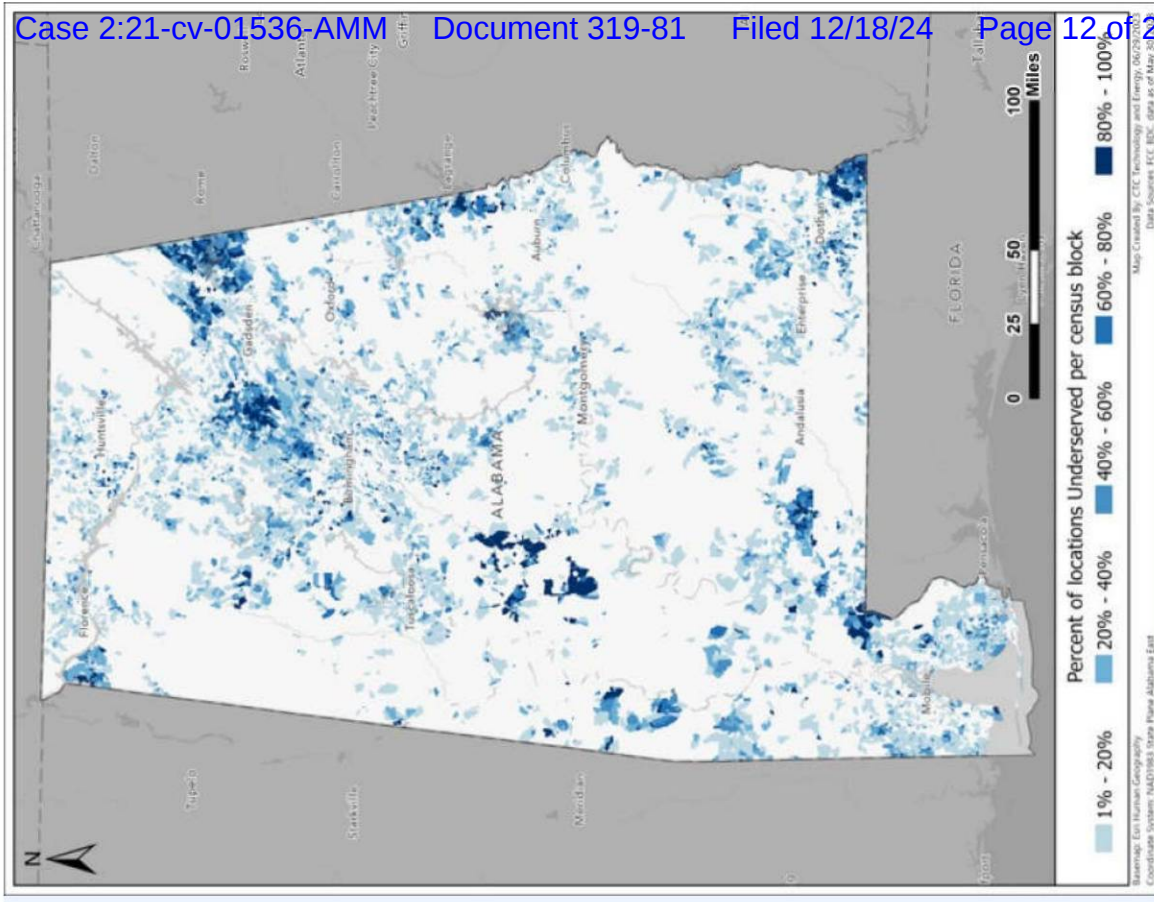
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Underserved Locations

This map demonstrates the remaining percentage of underserved locations per census block throughout the State of Alabama following deployment of all current or planned broadband infrastructure projects, according to the FCC ($\geq 25/3$ Mbps and $< 100/20$ Mbps).

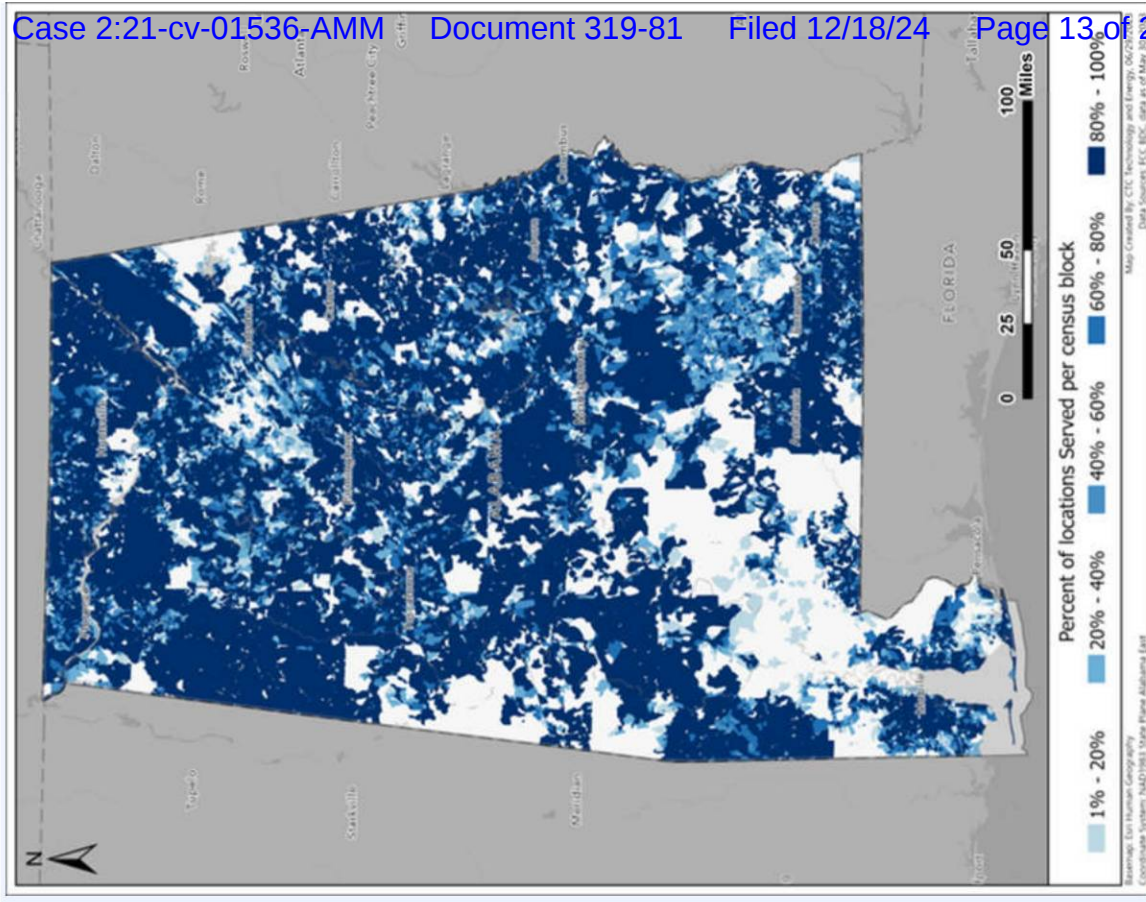
- The data are current as of May 2023.



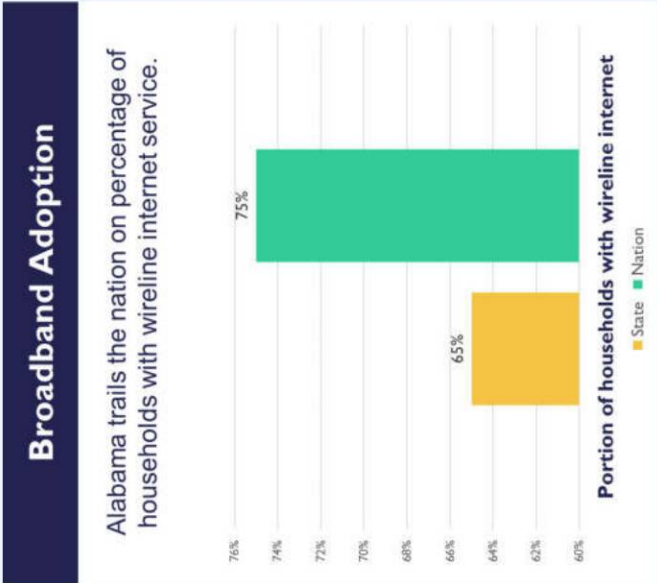
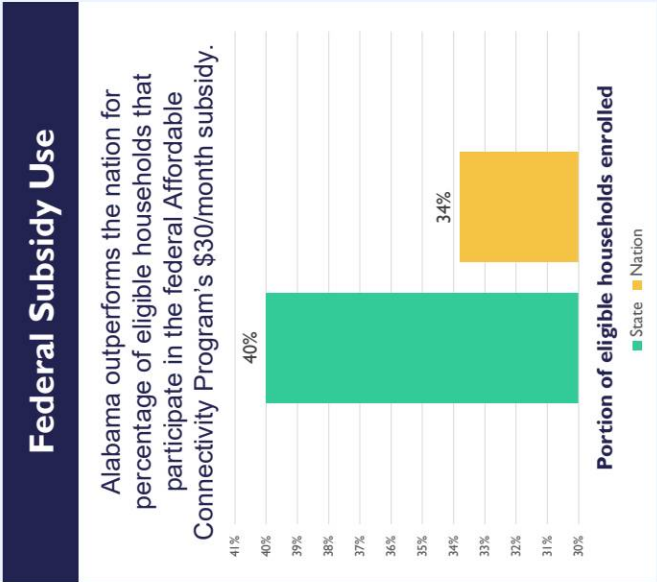
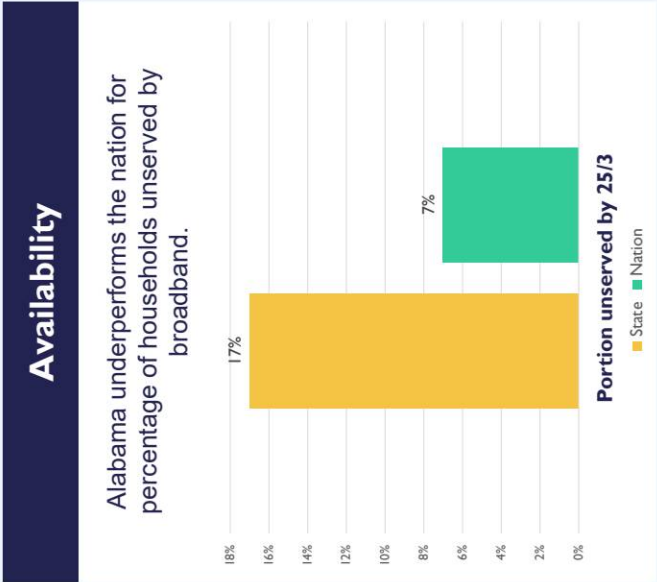
Served Locations

This map demonstrates the percentage of served locations per census block throughout the State of Alabama following deployment of all current or planned broadband infrastructure projects, according to the FCC ($\geq 100/20$ Mbps).

- In context of the map, the lighter areas signify smaller percentages of served locations per census block. Accordingly, darker hues represent the areas throughout Alabama with higher percentages of served locations per census block.
- There are large concentrations of served locations in northern, central, and southeastern Alabama.
- The data are current as of May 2023.



Broadband Availability

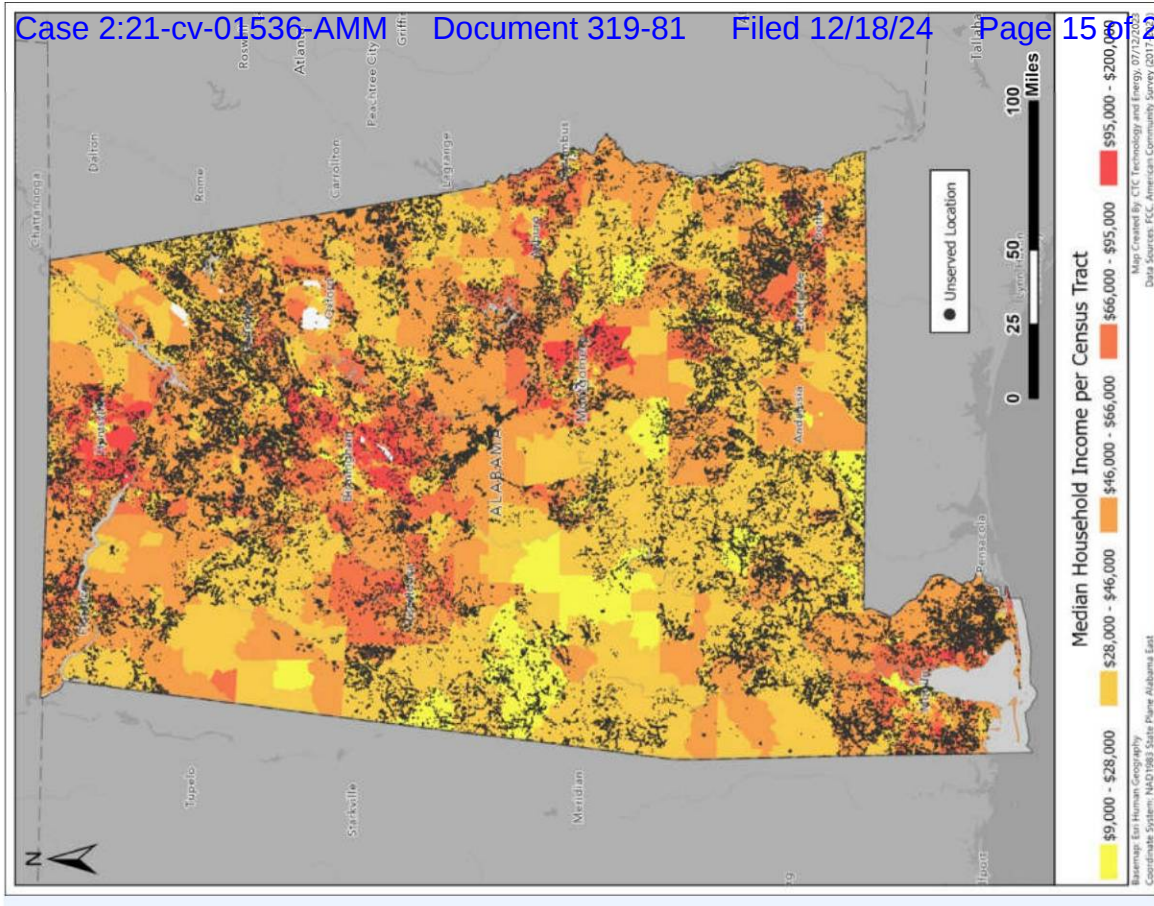


Median Household Income and Unserved Locations

This map shows the intersection of median household income per census tract with unserved locations throughout the state.

- The figure highlights that unserved locations (black dots) tend to be areas with lower income levels.
- In context of the figure, the lighter areas signify areas with a lower median household income per census tract. Accordingly, darker hues represent the areas throughout Alabama with higher median household incomes per census tract.
- The black dots represent the unserved locations throughout the state.
- The largest numbers of unserved households lie in the \$28,000-\$46,000 income range (nearly 70,000) and \$46,000-\$66,000 income range (nearly 90,000), compared to less than 30,000 unserved locations in income ranges over \$66,000.

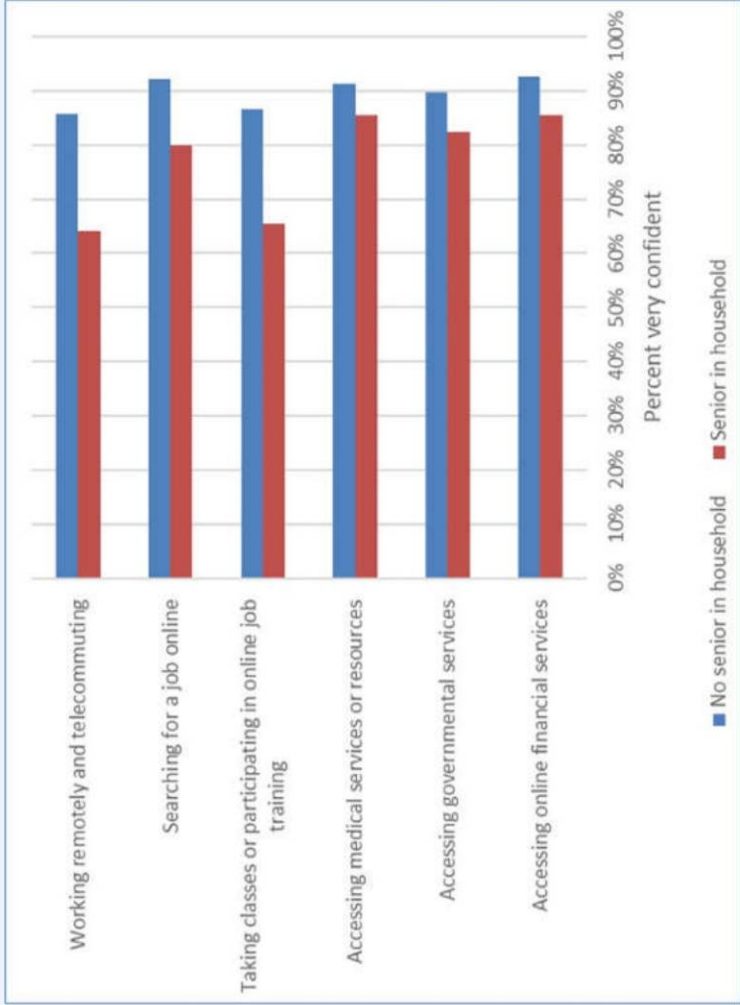
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Needs and Gaps: Digital Opportunity

- As indicated by broadband availability maps and the map showing median household income and unserved locations, Alabamians in low-income households and households in rural areas are in greatest need.
- Low-income and senior households have lower confidence in digital skills and data and privacy protection.
- A 2023 phone survey conducted by ADECA found, among other needs experienced by low-income and senior households, that a substantial number of seniors need basic digital skills training.



Obstacles or Barriers

This section presents obstacles or barriers to deploying Alabama's **BEAD** proposals.



Obstacles or Barriers

Like many states, Alabama faces obstacles to successfully deploy its BEAD proposals.

Key Challenge	Description	State Approach
Labor Shortage	Experts predict that there is a smaller pool of skilled workers for broadband deployment than what is needed for the BEAD-funded broadband projects nationwide. Other federal and state broadband programs will also require broadband deployment personnel; though many programs are underway, there is an anticipated construction schedule overlap.	Leverage the extensive outreach and direct communication conducted with governments, ISPs, educational institutions, and other groups to determine a strategy to mitigate this expected labor shortage.
Supply Chain	The extensive funding allocated to broadband infrastructure deployment by Congress—and the current and planned investments by state and local governments and ISPs nationwide—has caused demand for labor and materials to spike, compounding an already disrupted market as Covid-19 caused factory closures and other issues in the supply chain.	ADECA will continue to monitor this issue and will incorporate the latest data into its grant program design. ADECA will continue to gather information regarding best practices from industry experts.
Affordability	Affordability is an issue for Alabama residents, with approximately 40 percent of eligible households enrolled in the Affordable Connectivity Program (ACP), well above the national average for ACP enrollment.	Recognizing the challenges that affordability presents, ADECA continues to support ACP enrollment.
Digital Skills & Needs of Covered Populations	Though not unique to Alabama, the Alabama resident phone survey shows that a significant percentage of residents, many in covered populations, lack confidence performing basic tasks online.	Take steps to address the issue via approaches identified in the state's Digital Opportunity Plan.



Implementation

This section presents an overview of ADECA's strategies and plans to facilitate the expansion of broadband infrastructure and digital opportunity throughout the state.



Engagement

ADECA conducted extensive, comprehensive engagement with current and potential partners and representative groups throughout the state.

Highlights of this effort include:

- **In-person broadband technical assistance meetings in all 67 counties** - Coordinated with local leadership, these sessions enabled community partners to share challenges related to broadband access and be informed on broadband and digital opportunity funding and programs. Attendees included county and municipal leaders, community partner organizations, ISPs, and members of the public.
- **Statewide facilitated discussions with partners and questionnaires** to gather data on programmatic assets, workforce, covered population barriers and obstacles, affordability programs, and measurable objectives.
- **Statewide resident phone survey** on internet access and digital opportunity issues designed to “oversample” in ways that will identify unique needs of covered populations/underrepresented communities.
- **County-level profiles** that provide analysis of digital opportunity and broadband access data, resident survey results, mapping, research, and modeling to support local partnerships with ISPs and capacity building to address digital opportunity needs.
- **Ongoing outreach** to Tribal Nation, HBCUs, community-based organizations, and state agencies representing covered populations.



Priorities

Priority	Description
Facilitate broadband deployment by utilizing existing partnerships and ADECA's experience	ADECA will utilize all available grant resources to deliver high-quality, future-proof middle-mile and last-mile fiber deployment in the state, with an emphasis on rural and unserved areas.
Develop, maintain, and expand the capacity of a state broadband map that incorporates broadband service data for the public and in support of state grant programs	Alabama's Broadband Map will be a crucial resource in ADECA's data-driven broadband deployment activities and will also help engage and inform the public by providing updated information about BEAD plans and deployment successes.
Support local broadband efforts and encourage local participation in this plan	ADECA conducted technical assistance outreach to partners in every county in the state.
Engage community partner to increase broadband adoption	ADECA will continue to require ISPs that are awarded funds to participate in the ACP, as applicable.
Assist economic development	The Five-Year Action Plan represents an opportunity to ensure that Alabama residents obtain or enhance skills related to broadband deployment and, more broadly, to ensure that Alabama residents have an opportunity to enhance their digital skills in an increasingly digitized world.



Activities

- Develop broadband investment and deployment strategies for unserved and underserved areas through continually engaging the broadband ecosystem, local governments, and covered populations/underrepresented communities, leveraging Alabama's history of success in this area.
- Leverage federal sources of broadband funding and subrecipient capital.
- Ensure that the networks that are built have a sustainable business plan.
- Provide reliable, future-proof broadband access to end users across the state.
- Develop and strengthen partnerships with business partners, particularly in the areas of telehealth, agriculture, education, and small business.
- Develop and strengthen partnerships with local government to help local entities achieve their goals, particularly in public safety and digital government services.
- Via the implementation of the Alabama Statewide Digital Opportunity Plan, provide opportunities for Alabamians to achieve digital skills, improve secure online privacy and cybersecurity, gain access to affordable consumer devices and technical support for those devices, and develop and strengthen partnerships with and between entities that support digital opportunity.
- Develop and strengthen partnerships with and between entities that can work together to create targeted workforce development programs to support future broadband expansion efforts, maintenance, and technical support.



Strategies

Strategy	Description
Building on existing partnerships to increase broadband deployment and adoption	ADECA is creating strong partnerships with community partners to address broadband affordability issues.
Supporting workforce development to enhance Alabama's broadband ecosystem	ADECA recognizes that a local and talented workforce will minimize potential disruptions in the recruitment of needed labor by subrecipients (and their contractors and subcontractors).
Supporting subsidy programs to achieve affordability	Alabama has made broadband affordability and outreach for the ACP and similar subsidy programs a goal of the Alabama Broadband Accessibility Fund and its federally-supported programs.
Preparing for the future	In its state-funded broadband grant programs, Alabama has set a higher broadband threshold than federal laws and regulations require—100 Mbps symmetrical service—to prepare for future rapid increases in broadband demand.



Estimated Timeline for Universal Service

The state plans to expand broadband services to underserved and unserved communities over five years.

Cost component	Estimated cost (unserved)
Physical fiber plant construction – FTTP distribution network	\$1,661,900,000
Core and distribution network electronics	\$79,800,000
Subscriber drop construction	\$153,600,000
Customer premises equipment	\$60,900,000
Total	\$1,956,200,000

Estimated deployment costs to reach all unserved and underserved addresses (5-year performance period reaching 59.5-percent take-rate)

Cost component	Estimated cost (unserved & underserved)
Physical fiber plant construction – FTTP distribution network	\$1,904,900,000
Core and distribution network electronics	\$111,800,000
Subscriber drop construction	\$195,300,000
Customer premises equipment	\$85,300,000
Total	\$2,297,300,000



Disclaimer

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