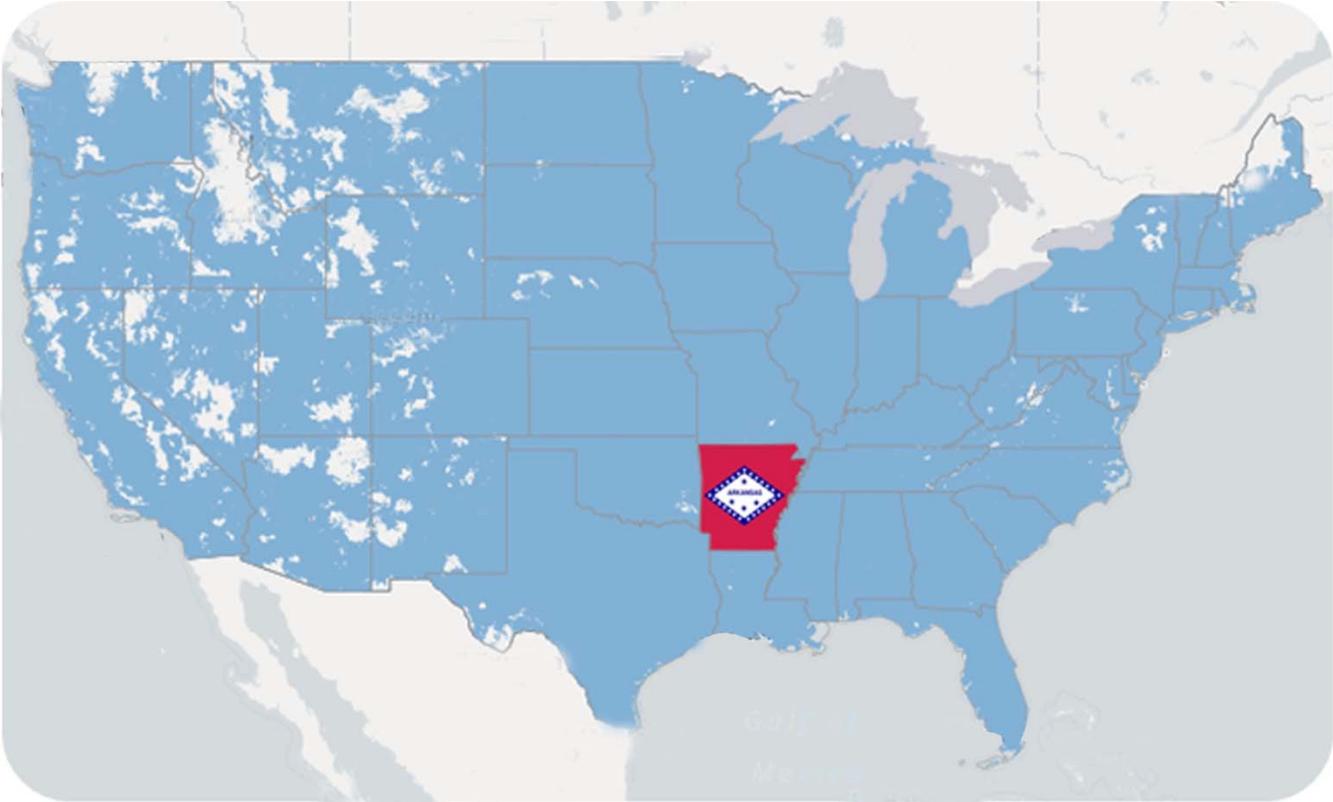


# ARKANSAS STATE BROADBAND MANAGER'S REPORT

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PERIOD ENDING June 30, 2016

*Cover Art: This is the National Broadband Map displaying broadband technologies offered to end users (DSL, cable, wireless, fiber, etc.). This data is created and maintained by the National Telecommunications and Information Administration (NTIA) in collaboration with the Federal Communications Commission (FCC), and in partnership with the 50 states, five territories and the District of Columbia.*

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## Executive Summary

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### Background

[Act 1168 of 2013](#) designates the director of the Arkansas Department of Information Systems to serve as the state broadband manager to promote, develop, and coordinate broadband expansion and appropriate broadband infrastructure for all areas of the state. Requirements in the legislation are for the state broadband manager to submit a report on a semiannual basis to the Arkansas Governor's Office, Arkansas Legislative Council, and Joint Committee on Advanced Communications and Information Technology of the activities and operations of the state broadband manager for the preceding six months. The report is to be submitted on or before January 1 and July 1 of each year.

### What is Broadband?

#### Definitions:

- Arkansas's Definition (Act 947 of 2009)- "Broadband" means any service used to provide internet access at a minimum speed that is the greater of:  
(A) Seven hundred sixty-eight kilobits per second (768 kbps) in at least one (1) direction; or  
(B) The minimum speed for broadband as defined by regulations of the Federal Communications Commission as of January 1, 2009, or as of a later date if adopted by rule of the Arkansas Broadband Advisory Council
- FCC's Definition - (Federal Communications Commission) categorizes an internet service as "broadband" if it transmits at a speed of at least 25 megabits/second (Mbps) for downloading and at least 3 Mbps for uploading  
*Broadband speed requirements vary for personal use versus use by institutions*
- Advanced Telecommunications Capability- The FCC has sometimes used the term "broadband" to refer to "advanced telecommunications capability." The definition of advanced telecommunications capability found within this report is without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology." The term broadband is not equated to advanced telecommunications capability, but the availability of various broadband services that contribute to advanced telecommunications capability is taken into consideration.

Source: [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-16-6A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-6A1.pdf)

## What are the Types of Broadband?

- Digital Subscriber Line (DSL)
- Fiber
- Satellite
- Cable Modem
- Wireless (Wi-Fi, Mobile, and Fixed Wireless)

## Why is Broadband Important?

Broadband is fast becoming of primary importance for

- Citizens
- Public safety
- Economic development
- Business
- Education
- Health care
- Government
- Environmental management

All of which are significant enablers to economic growth, delivery of services and quality of life.

## How Important Is Broadband Speed?

The FCC definition of broadband speed changes as technologies continue to evolve. In its 2015 Broadband Progress Report, the FCC indicated that advances in technology, market offerings by broadband providers and consumer demand prompted updating broadband benchmark speeds to 25 Mbps for downloads and 3 Mbps for uploads. The commission found that speeds established in 2010 were outdated and inadequate for evaluating whether advanced broadband is being efficiently deployed to Americans.

Source: <https://www.fcc.gov/reports/2015-broadband-progress-report>

What Do You Want/Need To Do Online?		What Speed Do You Need ?					
		1.5 Mbps	3 Mbps	5 Mbps	10 Mbps	20 Mbps	20+ Mbps
Web Surfing	  	✓	✓	✓	✓	✓	✓
Email							
Online Shopping	  						
Internet Phone			✓	✓	✓	✓	✓
Music Streaming							
Short Video Clips							
SD Video Streaming	  			✓	✓	✓	✓
Skype							
Facetime	 				✓	✓	✓
Online Video Gaming							
HD Video Streaming							
Online Education							
Multiple Heavy Users						✓	✓
Smart Home							
Video Surveillance							
Telemedicine							✓
Video Conferencing							
Super Computing							

Source: <http://www.teammidwest.com/wp-content/uploads/2013/10/What-Speed-Do-You-Need.jpg>

Median Download Broadband Speeds in Arkansas		
Location	Cumulative Tests	Median Speed
Home	4,373	4.8 Mbps
Schools, Libraries, Community Centers	100	7.6 Mbps
Medium/Large Business	157	10.1 Mbps
Small Business	312	4.2 Mbps
Mobile	16,244	2.0 Mbps

Arkansas's National Ranking for Access to Broadband Speeds			
	2015 National Ranking	2014 National Ranking	2013 National Ranking
<b>Speed</b>	34 <sup>th</sup>	41 <sup>st</sup>	41 <sup>st</sup>
<b>Speed: The state's speed ranking indicates the percent of the population with access to various download/upload speeds compared to the nation's population.</b>			

### Key Findings: FCC 2016 Broadband Progress Report

- 10 percent of all Americans (34 million people) lack access to 25 Mbps/3 Mbps service.
- 39 percent of rural Americans (23 million people) lack access to 25 Mbps/3 Mbps.
- Only 4 percent of urban Americans lack access to 25 Mbps/3 Mbps broadband.
- The availability of fixed terrestrial services in rural America continues to lag behind urban America at all speeds: 20 percent lack access even to service at 4 Mbps/1 Mbps, down only 1 percent from 2011, and 31 percent lack access to 10 Mbps/1 Mbps, down only 4 percent from 2011.
- Americans living in rural and urban areas adopt broadband at similar rates where 25 Mbps/ 3 Mbps service is available, 28 percent in rural areas and 30 percent in urban areas.

Source: [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-16-6A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-6A1.pdf)

### What are the Areas of Focus for Arkansas?

- **Availability**  
Broadband is available if it is accessible to accomplish all necessary goals regardless of the nature of those goals (business or educational, economic or legislatively mandated).
- **Affordability**  
Broadband is affordable if it is both affordable to the consumer to purchase and for the provider to offer.
- **Adequacy**  
Broadband is considered adequate if it provides enough bandwidth to meet the personal, business, educational, and economic development needs of each constituency and is capable of expansion to meet future needs.

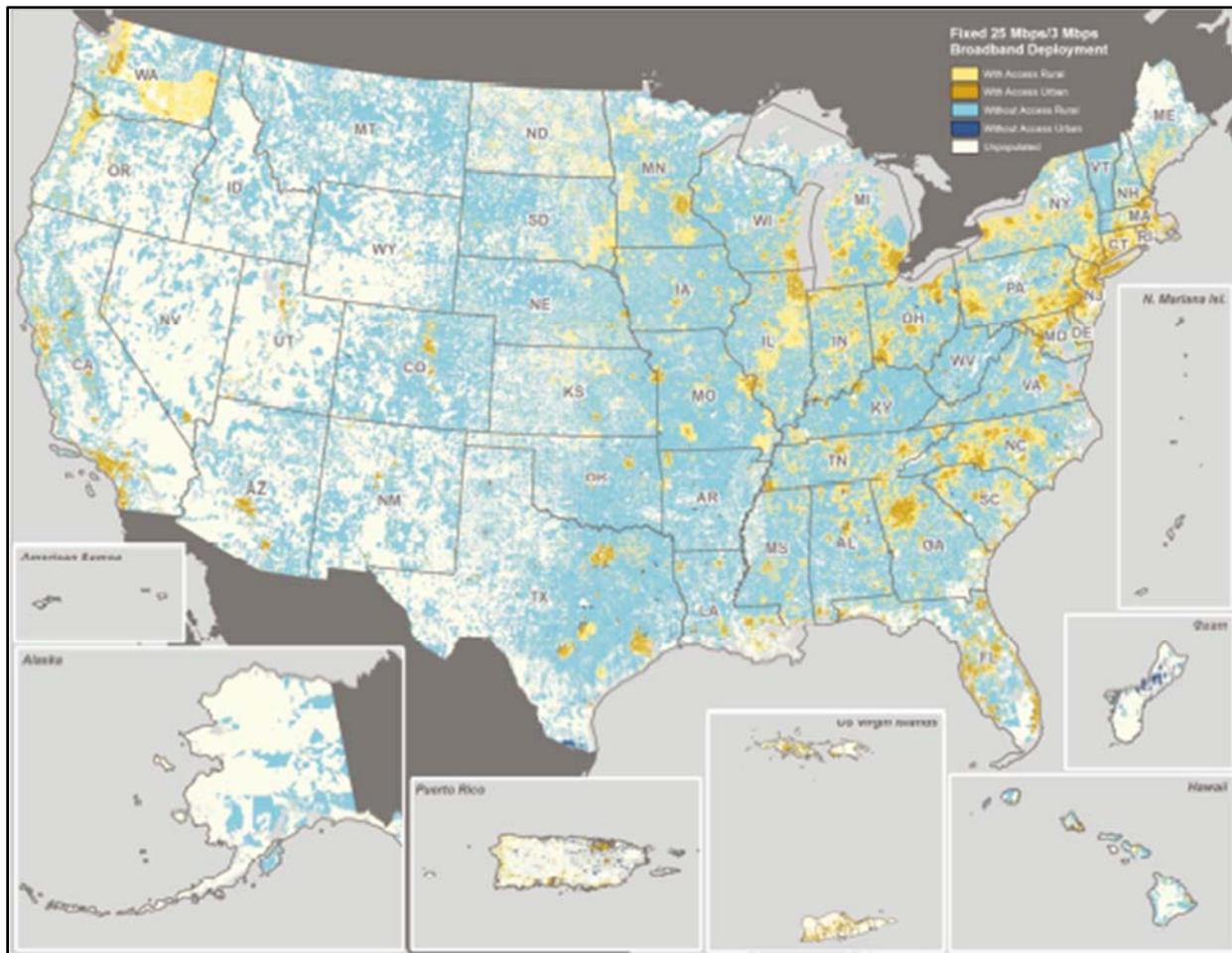
## What is the State of Broadband Coverage in Arkansas?

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The FCC released a report January 30, 2015, entitled Broadband Availability in America. According to report data, Americans residing in the states with the lowest population density are 10 times more likely to lack access to broadband than Americans residing in the states with the highest density.

**Source:** [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-331734A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-331734A1.pdf)

FCC 25 Mbps/3 Mbps Broadband Deployment Map



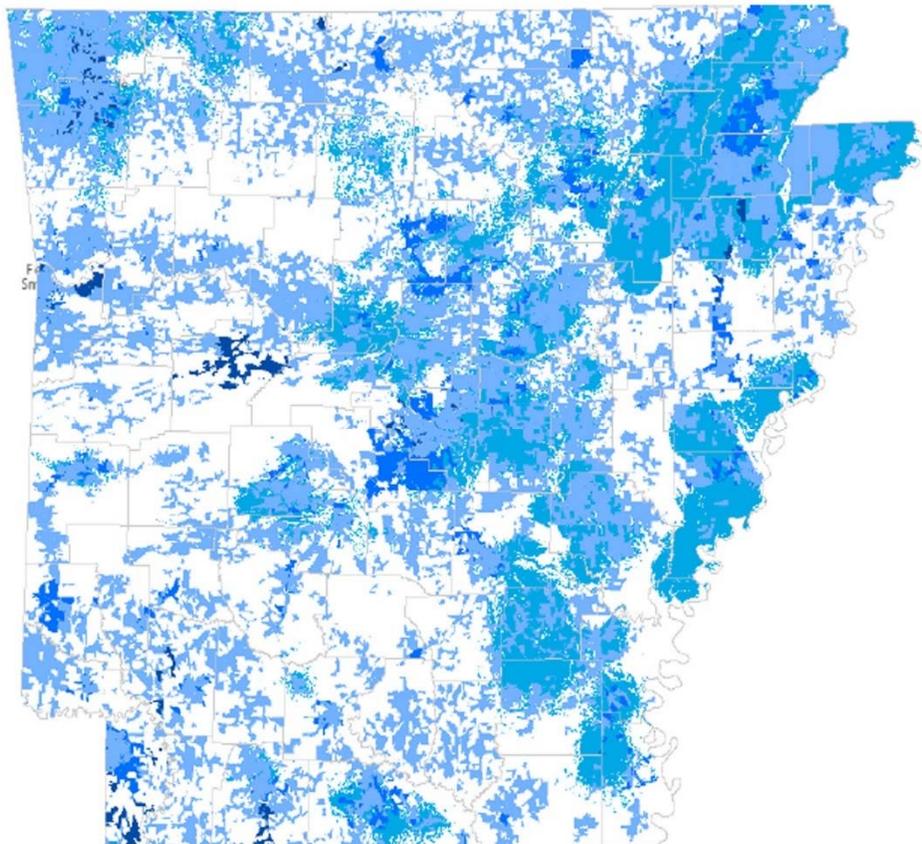
Major broadband mapping results in Arkansas were accomplished by Connect Arkansas. Connect Arkansas was the state's designated grantee that received a share of \$293 million from the National Telecommunications and Information Administration's (NTIA) State Broadband Initiative.

In addition to broadband mapping, Connect Arkansas used this funding to support a number of broadband-related initiatives including surveys to better understand barriers to broadband adoption and to create initiatives to expand adoption by Arkansans.

The NTIA reports that more than 50 percent of the grant funds were used to gather data twice a year on the availability, speed, and location of broadband services, as well as the broadband services for community institutions, such as schools, libraries and hospitals. That data was used to populate the National Broadband Map through June 2014, the most recent edition of the map.

The FCC requested additional funding to maintain and update the National Broadband Map, but this request was not granted. With federal grant funds exhausted, Connect Arkansas requested funding from the state to continue operations, but this request was not granted and the organization dissolved in 2015.

### Combined Coverage by Technology (DSL, Cable, Fiber, Fixed Wireless)



■ Fiber

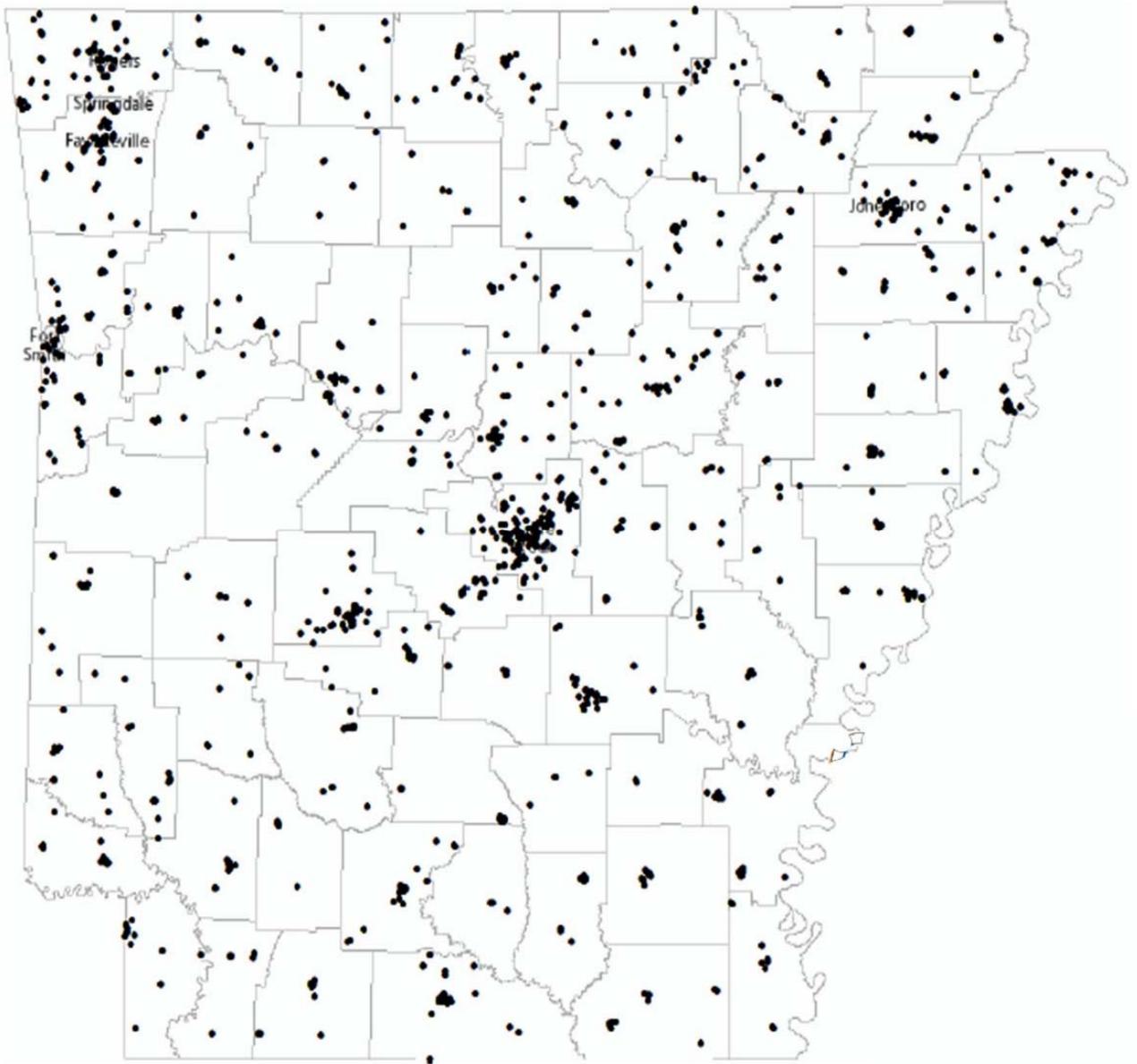
■ Cable

■ Fixed Wireless

■ DSL

## State Community Anchor Institutions

The dots on this map are state government locations including schools, libraries and other governmental entities where broadband exists.



## Fixed Broadband

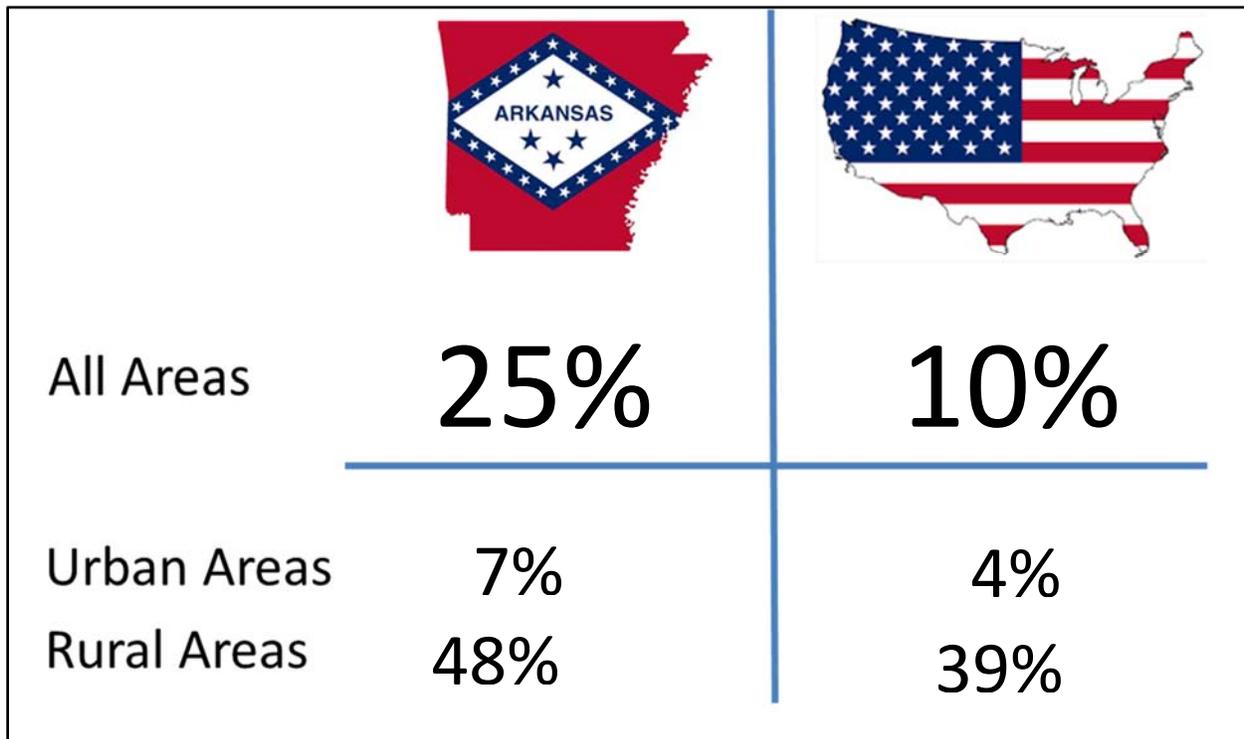
Fixed broadband services generally require a physical transmission path to connect a user to the internet. Examples include coaxial cable, copper wire, or fiber-optic cable. Cable modem service is the most common fixed broadband service in the United States, accounting for approximately 59 percent of all fixed broadband service subscriptions. Cable, DSL, and fiber, collectively represent approximately 97 percent of the fixed broadband market.

Consumers use fixed broadband service for high capacity home use, including streaming high definition (HD) video, uploading large files and certain web services.

**Source:** [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-16-6A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-6A1.pdf)

This chart, created from data cited in the 2016 Broadband Progress Report, compares the population of Arkansans without access to fixed advanced telecommunications capability compared to the nation's population.

### Arkansans without Access to Fixed Advanced Telecommunications Capability Compared to the U.S. Population



**Source:** [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-331734A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-331734A1.pdf)

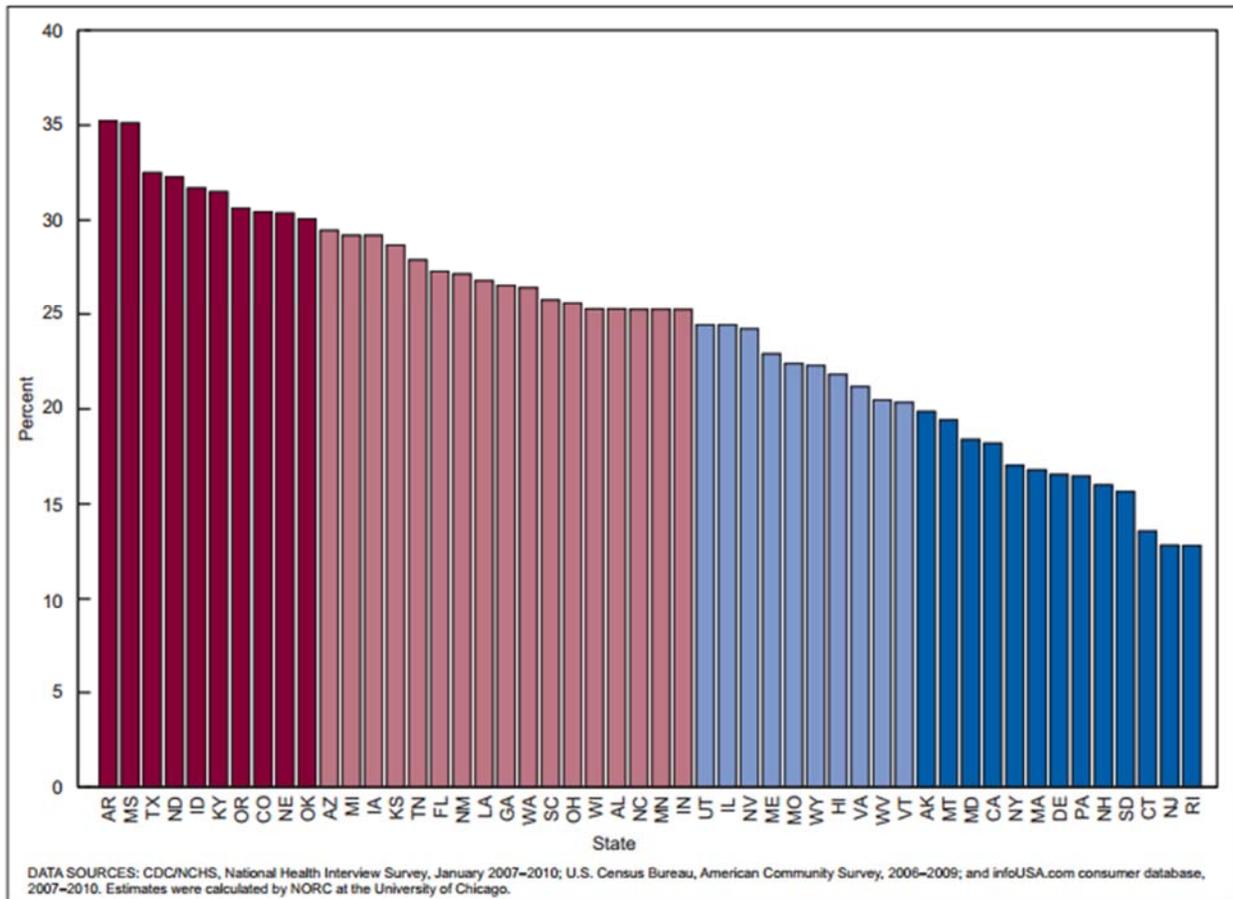
Appendix I: Americans without Access to Fixed Advanced Telecommunications Capability by State and U.S. Territory

## Mobile Broadband

Mobile devices have become an indispensable tool of daily life that serve in a personal as well as a business capacity. Smartphones and tablets commonly rely upon mobile broadband services for texting, email, social media, and entertainment applications. At home, work or traveling, mobile devices are also most likely to be used to call 9-1-1 in emergency situations. The smartphone share of mobile phones in the U.S. increased to 77 percent in November 2015 from 50 percent two years earlier.

In a National Health Statistics Report by the Center for Disease Control (CDC) presenting state-level estimates of the percentage of adults and children living in households that did not have a landline telephone, but did have at least one wireless telephone, Arkansas led the nation.

This report revealed 35.2 percent of Arkansans were abandoning landline telephones in favor of cellphones. CDC research found that lower-income people, younger people and renters are more likely to have only wireless phones.



Source: [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-16-6A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-6A1.pdf)  
<http://www.cdc.gov/nchs/data/nhsr/nhsr039.pdf>

## What is the State of Broadband Adoption in Arkansas?

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Cost continues to be the number one obstacle for broadband adoption at home. A study of barriers to broadband adoption by Pew Research Center pointed to multiple factors for why residents do not subscribe to high-speed service at home.

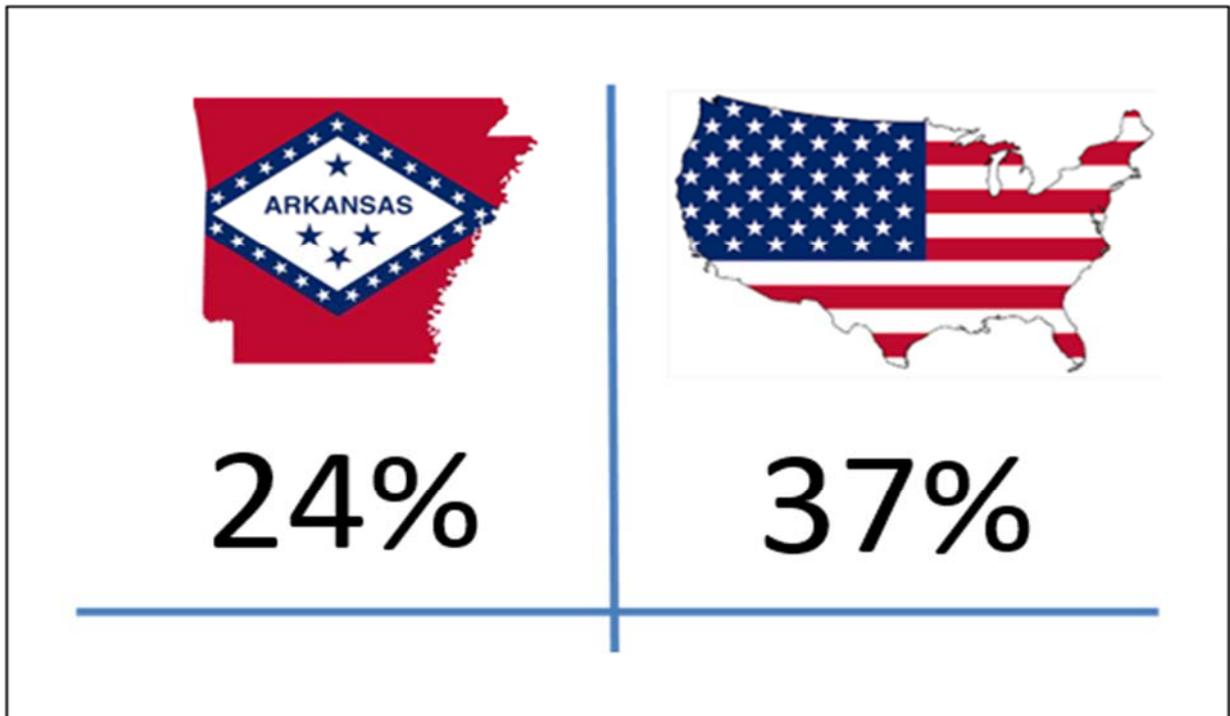
- Monthly cost of a broadband subscription is too much
- Cost of a computer
- Functionality of mobile devices rivals the monthly cost of in-home broadband makes traditional broadband a lesser priority
- Lack of access to suitable broadband service in their area

A majority (65 percent) of non-adopters said that a lack of home broadband is a major disadvantage of some sort.

As evidenced in the chart below, Arkansas continues to lag behind the nation in the overall adoption rate of at home or fixed broadband.

**Source:** <http://www.pewinternet.org/2015/12/21/3-barriers-to-broadband-adoption-cost-is-now-a-substantial-challenge-for-many-non-users/>

### Overall Adoption Rates for Fixed Advanced Telecommunications Capability for Arkansas Compared to the U.S. Population



**Source:** [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-331734A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-331734A1.pdf)

Appendix II: Overall Adoption Rates for Fixed Advanced Telecommunications Capability by State and U.S. Territory

## State and Federal Initiatives to Expand Broadband

### Arkansas Public School Computer Network (APSCN)

A top priority for Governor Asa Hutchinson, the Arkansas Department of Education, and the Arkansas Department of Information Systems (DIS) is ensuring that the state's K-12 public schools have sufficient high-speed broadband services. In early 2015, 58 percent of Arkansas districts were meeting the FCC's internet access target of 100 Kbps/student. However, the governor, ADE and DIS set forth a lofty goal for **100 percent** of Arkansas schools to reach 200 Kbps/student of highly secure, E-rate eligible, state funded, high speed broadband connectivity.

An invitation for bid was opened March 9, 2015. Contracts were awarded to 22 telecommunications providers. Work began to upgrade the Arkansas Public School Computer Network (APSCN) to a statewide aggregated network delivered over fiber optic cable to serve the state's schools and education cooperatives.

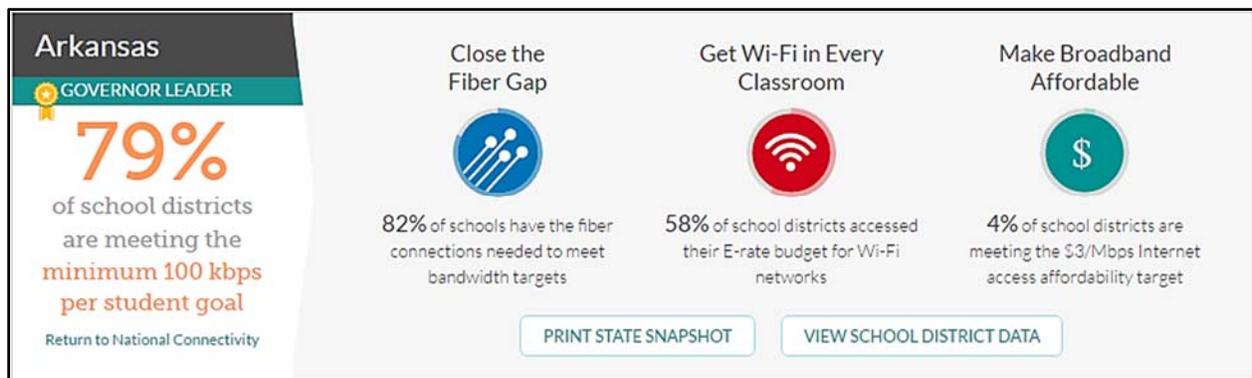
Fort Smith became the first school district in the state to connect to the upgraded high speed network in September 2015. By December 31, 2015, 42 school districts and education cooperatives were functioning on the upgraded broadband Arkansas Public School Computer Network (APSCN). Most recent data indicates that nearly 80 percent of the state's schools now either meet or exceed the FCC's internet access target. The state ranks 21<sup>st</sup> in the nation for broadband connectivity, according to EducationSuperHighway.

As of June 30, 2016, more than half of the state's K-12 system have been upgraded to highly secure, E-rate eligible, high speed broadband delivered over fiber optic cable.

Eureka Springs School District	Gentry School District	Fayetteville School District
Poyen School District	Dawson Education Service Co-op	Two Rivers School District
Danville School District	Magazine School District	Pulaski County School District
NE Arkansas Education Co-op	Earle School District	Greenland School District
Benton County School of Arts	Nevada School District	South Central Service Co-op
Hampton School District	Mayflower School District	Lavaca School District
Fouke School District	Genoa Central School District	Drew Central School District
Paris School District	Booneville School District	Westside School District (Johnson)
Bauxite School District	Monticello School District	Charleston School District
SE Arkansas Education Co-op	Smackover School District	Yellville-Summit School District
NC Arkansas Education Co-op	Hermitage School District	Warren School District
Blevins School District	WC Central School District	Magnolia School District
Augusta School District	England School District	Des Arc School District
Concord School District	Arkansas Virtual Academy	DeWitt School District
Malvern School District	Junction City School District	Cotter School District

Mt. Vernon/Enola School District	Stuttgart School District	McCrary School District
Fordyce School District	Imboden Charter School District	Sloan-Hendrix School District
Nemo Vista School District	Mammoth Spring School District	Dumas School District
Maynard School District	Hector School District	Marmaduke School District
Bearden School District	Haas Hall Academy	Rose Bud School District
Lead hill School District	Pangburn School District	Omaha School District
White Hall School District	Parkers Chapel School District	Mountain Home School District
Hot Springs School District	Arkansas Correctional School	Lamar School District
Jacksonville School District	Dierks School District	Pine Bluff lighthouse Academy
West Fork School District	Centerpoint School District	Kirby School District
Star City School District	Waldron School District	NW Arkansas Classical Academy
Rogers School District	Alma School District	Mountain View School District
Camden Fairview School District	Perryville School District	Cedar Ridge School District
Dollarway School District	Corning School District	Clarksville School District
DeQueen School District	Scott Charter School	Siloam Springs School District
Dardanelle School District	Gravette School District	Bismark School District
Ouachita School District	Piggott School District	Harrison School District
Pea Ridge School District	Texarkana School District	Cedarville School District
Elkins School District	Searcy County School District	Carlisle School District
Bentonville School District	Wilbur Mills Education Co-op	Greenwood School District
Greenwood School District	Blytheville Kipp Middle School	

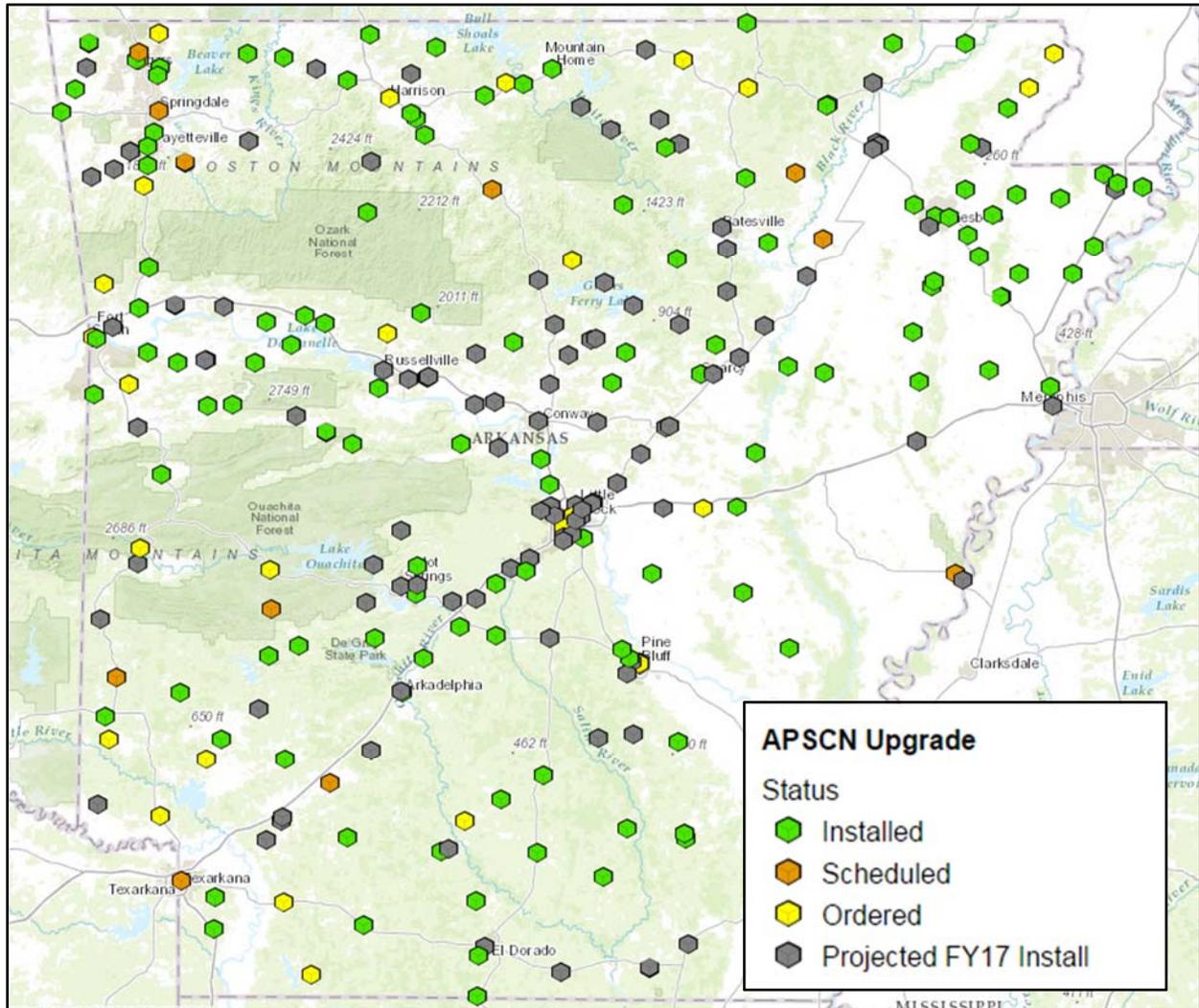
Appendix III: 2015 Completed APSCN Broadband Upgrades



Source: <http://stateofthestates.educationsuperhighway.org/>

Appendix IV: Snapshot of K-12 Connectivity in Arkansas

DIS, in partnership with the Arkansas Geographic Information Systems Office, developed an interactive map to tracking the progress of the APSCN broadband upgrade. The map can be found at the following link <https://gis.arkansas.gov/dis/viewer/apscn/index.html>.



## **Border to Border Broadband**

In October 2015, state lawmakers announced that, by October 2016, a plan would be prepared to connect every home and business in the state to high-speed broadband internet. The Joint Committee for Advanced Communications and Information Technology voted to find solutions and develop legislation to fix the problem. Members of the committee have also visited rural communities to learn more about challenges to broadband connectivity.

### Meeting, January 25, 2016, at the University of Arkansas-Hope-Texarkana

Speaker 1: Stacy Eads, area manager, Hope Community TV-Prescott, a video-internet provider serving Hope, Camden and Prescott.

Speaker 2: Bob Young, vice president of engineering, WEHCO Cable, an internet service provider for Hope Community Television

Speaker 3: Johnny Ross, general manager, Walnut Hill Telephone Company

Speaker 4: David Wall with Cable ONE, Home Cable Service

#### Broadband Challenges Identified:

- Expense of the cost to install and maintain fiber in rural communities
- Increase in pole attachment fees charged by smaller electric cooperative companies. Eads cited an example in which the pole attachment fee increased from \$5 to \$27 per pole attachment
- Lack of homes/potential customers located on rural roads and highways
- Increasing reliance of rural residents upon wireless technology

#### **Source:**

<http://www.arkleg.state.ar.us/assembly/2015/Meeting%20Attachments/685/I14265/EXHIBIT%20C-3.pdf>

### Meeting, February 19, 2016, at the Southeast Arkansas Education Service Cooperative, Monticello

Speaker 1: Mark Lundy, consultant, South Arkansas Telephone Company

Speaker 2: Bill Hegmann, general manager, Southwest Arkansas Telephone Cooperative

Speaker 3: Donnie Weast, owner, City Wireless

Speaker 4: Charlie Hembree, representative, Vyve Broadband Company

#### Broadband Challenges Identified:

- Low population/potential customer base
- Accessibility to towers and affordable equipment
- Finding a direct path to small communities and getting data to the information highway

#### **Source:**

<http://www.arkleg.state.ar.us/assembly/2015/Meeting%20Attachments/685/I14332/Approved%20Minutes%202-19-16.pdf>

Meeting, March 17, 2016, at Arkansas State University, Jonesboro

Speaker 1: Alan Morse, president, Ritter Communications Holdings

Speaker 2: Michael Zarrilli, vice president for governmental relations, Suddenlink

Speaker 3: Bart Rowe, information technology director, Paragould Light Water and Cable

Broadband Challenges Identified:

- Cost to establish infrastructure in rural areas, especially rugged terrain
- Lack of return on investment
- Lack of funding sources

**Source:** <http://talkbusiness.net/2016/03/arkansas-legislative-committee-hears-about-rural-broadband-cost-issues/>

Minutes from additional meetings were unavailable.

### **FCC Connect America Fund to Expand Rural Broadband**

In May 2016, the FCC announced a push to expand access to broadband in rural areas by investing \$2 billion in rural networks over the next decade. The item adopted by the FCC seeks to expand broadband in targeted rural areas and locations across the country with extremely high deployment costs.

**Source:** [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2016/db0525/DOC-339550A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2016/db0525/DOC-339550A1.pdf)

### **FCC-Mobility Fund**

The Mobility Fund Phase I auction was completed in 2012. Winning bidders were eligible to receive up to approximately \$300 million in one-time support to provide 3G or better mobile voice and broadband services to areas where those services did not exist. By 2015, almost 50 percent of support recipients reported that they had already extended 3G or 4G coverage to 46.59 percent of the total road miles to be covered with Mobility Fund Phase I support.

### **FCC-E-rate Modernization**

The FCC took major steps to modernize the E-rate program to help improve broadband deployment and internet speeds to schools and, by making available funding for Wi-Fi networks within schools. The number of school eligible for E-rate funding for Wi-Fi networks was expanded and additional options were made available for schools and libraries to purchase high-speed broadband services. The funding cap on the E-rate program was raised to make an additional \$1.5 billion in available support. The Universal Service Administrative Company (USAC), administrator of the Universal Service Fund, issued more than \$2.8 billion in funding commitments, including \$1 billion for broadband connections of 100 Mbps and higher, and \$1.1 billion for Wi-Fi for Funding Year 2015.

### **FCC-Lifeline Program**

The FCC's Lifeline program provides discounted voice telephony service to qualifying low-income consumers. In March 2016, the FCC adopted new rules to help make broadband more affordable for low-income Americans. For the first time, Lifeline will support stand-alone broadband service as well as bundled voice and data service packages. The change also phases in mobile broadband over five years and helps

close the homework gap by promoting the offering of mobile devices with Wi-Fi and hotspot functionality.

**Source:** [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-338676A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-338676A1.pdf)

### **FCC-Open Internet Order**

The FCC's Open Internet Order establishes rules banning specific practices that invariably harm the open internet and applied those rules to both fixed and mobile broadband internet access service. The order prevents a broadband service provider from unreasonably interfering with or disadvantaging the ability of end users to access content, applications, devices, or services offered by edge providers. It also reclassifies broadband internet access service as a telecommunications service subject to certain provisions of Title II of the Communications Act guaranteeing internet service providers access to vital infrastructure such as utility poles, including a timeline with built-in remedies and a cost-based, regulated rate. Access to pole and conduit directly enables new entrants to deploy broadband facilities.

### **FCC-Pole Attachment Rate Parity Order on Reconsideration**

The 2011 Pole Attachment Order took a fresh look at the term "cost" as used in the formula used to determine the pole attachment rental rates paid by telecommunications carriers. It sought to bring the telecom rate closer to parity with the different, and generally lower, rental rates that cable companies pay to attach facilities. In November 2015, the FCC adopted the Rate Parity Order on Reconsideration in which it explained that subjecting cable operators to higher pole attachment rates merely because they also provide telecommunications services, such as broadband internet access, could deter investment and undermine the FCC's broadband deployment policy. 384 The decision also removes any rate imbalance that would disfavor investment where pole attachments are federally regulated, and any disruption of investment in rural areas that might result from a large and sudden increase in pole attachment rates.

**Source:** All FCC entries are from the 2016 Broadband Progress Report  
[https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-16-6A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-16-6A1.pdf)

### **Broadband Conduit Deployment Act of 2015**

This federal initiative would amend federal code to provide for the inclusion of broadband conduit installation in certain highway construction projects. It would evaluate the need for broadband conduit as part of any covered highway construction project in consultation with local and national telecommunications providers, including telecommunications service and equipment providers. If the evaluation reveals an anticipated need in the next 15 years for broadband conduit beneath hard surfaces to be constructed by the project, the conduit shall be installed under the hard surfaces as part of the covered highway construction project. To date, this bill is still pending. The last reported action was on October 23, 2015, when it was referred to the Subcommittee on Highways and Transit.

**Source:** <https://www.congress.gov/bill/114th-congress/house-bill/3805/text>

### **Digital Equity Learning Act of 2015**

This federal initiative awards grants to eligible entities meeting the application requirements to develop, implement, and evaluate innovative strategies to increase out-of-school internet access for eligible students. No less than 30 percent of the amounts appropriated shall be reserved for grantees in rural areas. An eligible entity, such as a state educational agency, that receives a grant shall provide at least 10 percent matching funds, from non-federal sources (which may be provided in cash or in-kind). The matching fund requirement may be waived if the eligible entity can demonstrate that matching funds would impose an undue financial hardship. On March 23, 2016, this legislation was referred to the Subcommittee on Early Childhood, Elementary, and Secondary Education.

**Source:** <http://www.king.senate.gov/download/?id=4743E157-EFA6-4671-94BC-E21E28A438F9&inline=file>  
<https://www.congress.gov/bill/114th-congress/house-bill/3582/all-actions>

## Private Initiatives to Expand Broadband

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### **Cable ONE, Home Cable Service, Texarkana, Arkansas**

In the past five years Cable ONE has invested over \$500 million in broadband technology. The company recently announced the addition of home cable service for residents and businesses in the Texarkana area. Future plans include a \$2 million expenditure in system upgrades and infrastructure.

### **AT&T Invests More Than \$550 Million to Enhance Local Networks in Arkansas**

AT&T reported that, since 2013, it has invested \$550 million in its Arkansas wireless and wired networks that drive a range of upgrades to reliability, coverage, speed and overall performance for residents, businesses and to public safety. The company reported adding new cell sites and network capacity as well as new wireless high-speed internet connections.

**Source:** PR Newswire, May 21, 2016

### **AT&T Plans to Launch Fixed Wireless Broadband in Arkansas**

AT&T President Ed Drilling said a project to introduce fixed wireless broadband in Arkansas will be rolled out over the next several years that will bring broadband to over 50,000 "living units" that currently do not have it. An antenna installed on the customer's home will bring broadband internet from AT&T cell towers and creates a Wi-Fi network inside the home. Approximately 40 percent of the project will be completed by 2017. The project is being made possible by funds the company received from the Connect America Fund to provide broadband services in rural and remote areas of the state with little or no high speed internet access.

**Source:** Arkansas Business, May 13, 2016

### **Broadband Development Group Joins RasorNET**

Broadband Development Group of Little Rock joined RasorNET, an Arkansas-based consortium of five regional carriers that have built and deployed fiber networks to several markets across the state. The union is expected to help fixed wireless broadband providers expand in Arkansas and help rural communities in Arkansas gain access to more competitive broadband services.

**Source:** Arkansas Business, May 25, 2016

### **Natco Rolls Out 1GB Internet**

Natco Communications of Flippin invested over \$6 million since 2008 to deliver one-gigabyte broadband internet to homes and business in Flippin, Bull Shoals and Diamond City. The network provides almost unlimited bandwidth to transmit voice, data and video signals. The one-gigabyte service is available to several thousand homes and 200-400 business.

**Source:** Arkansas Business, May 19, 2016

**Madison County Telephone**

Response from provider survey, Madison County Telephone is in the midst of a fiber to the home project throughout its service territory. The project is 20 percent completed with 100 percent completion expected within three to five years.

## Appendix I

### Americans without Access to Fixed Advanced Telecommunications Capability by State and U.S. Territory

	All Areas		Urban Areas		Rural Areas	
	Pop. Without Access	% of Pop.	Pop. Without Access	% of Pop.	Pop. Without Access	% of Pop.
<b>United States</b>	33,981,660	10%	10,551,623	4%	23,430,037	39%
<b>States and District of Columbia</b>	31,353,263	10%	9,001,161	3%	22,352,102	38%
<b>Alabama</b>	985,263	20%	169,154	6%	816,109	41%
<b>Alaska</b>	194,375	26%	26,389	5%	167,986	67%
<b>Arizona</b>	898,724	13%	487,930	8%	410,794	63%
<b>Arkansas</b>	744,572	25%	128,125	7%	616,447	48%
<b>California</b>	2,017,166	5%	920,182	2%	1,096,984	61%
<b>Colorado</b>	539,327	10%	180,754	4%	358,573	53%
<b>Connecticut</b>	47,464	1%	42,220	1%	5,244	1%
<b>Delaware</b>	29,789	3%	13,355	2%	16,434	10%
<b>District of Columbia</b>	10,539	2%	10,539	2%	.	.
<b>Florida</b>	1,297,648	7%	795,839	4%	501,809	29%
<b>Georgia</b>	932,484	9%	306,414	4%	626,070	25%
<b>Hawaii</b>	26,201	2%	2,001	0%	24,200	22%
<b>Idaho</b>	301,118	18%	47,922	4%	253,196	55%
<b>Illinois</b>	1,188,012	9%	419,780	4%	768,232	56%
<b>Indiana</b>	1,131,373	17%	220,696	5%	910,677	52%
<b>Iowa</b>	451,148	15%	76,830	4%	374,318	37%
<b>Kansas</b>	436,249	15%	123,315	5%	312,934	49%
<b>Kentucky</b>	699,360	16%	73,542	3%	625,818	34%
<b>Louisiana</b>	881,763	19%	282,361	8%	599,402	50%
<b>Maine</b>	162,563	12%	20,362	4%	142,201	17%
<b>Maryland</b>	262,002	4%	166,879	3%	95,123	13%
<b>Massachusetts</b>	183,103	3%	129,783	2%	53,320	10%
<b>Michigan</b>	1,153,387	12%	245,299	3%	908,088	37%
<b>Minnesota</b>	641,787	12%	59,140	1%	582,647	43%
<b>Mississippi</b>	1,034,047	34%	129,674	9%	904,373	60%
<b>Missouri</b>	1,257,622	20%	204,409	5%	1,053,213	61%
<b>Montana</b>	317,581	31%	54,888	9%	262,693	61%
<b>Nebraska</b>	304,018	16%	94,847	6%	209,171	51%
<b>Nevada</b>	249,722	8%	151,168	5%	98,554	65%
<b>New Hampshire</b>	99,129	7%	22,094	3%	77,035	15%

	All Areas		Urban Areas		Rural Areas	
	Pop. Without Access	% of Pop.	Pop. Without Access	% of Pop.	Pop. Without Access	% of Pop.
New Jersey	285,478	3%	188,462	2%	97,016	21%
New Mexico	431,125	20%	156,432	9%	274,693	61%
New York	430,202	2%	40,455	0%	389,747	17%
North Carolina	738,306	7%	77,082	1%	661,224	20%
North Dakota	97,315	14%	11,294	2%	86,021	37%
Ohio	983,927	8%	202,958	2%	780,969	31%
Oklahoma	1,066,854	27%	247,333	9%	819,521	66%
Oregon	416,102	10%	150,759	5%	265,343	37%
Pennsylvania	803,645	6%	270,708	3%	532,937	20%
Rhode Island	17,996	2%	15,757	2%	2,239	2%
South Carolina	852,483	18%	247,842	8%	604,641	38%
South Dakota	92,406	11%	9,962	2%	82,444	26%
Tennessee	834,545	13%	106,128	2%	728,417	34%
Texas	2,976,879	11%	1,216,234	5%	1,760,645	46%
Utah	180,004	6%	77,530	3%	102,474	39%
Vermont	106,615	17%	5,223	2%	101,392	27%
Virginia	925,477	11%	186,349	3%	739,128	38%
Washington	200,320	3%	48,339	1%	151,981	14%
West Virginia	554,124	30%	92,104	10%	462,020	48%
Wisconsin	744,002	13%	33,517	1%	710,485	43%
Wyoming	137,922	23%	10,802	3%	127,120	63%
U.S. Territories	2,628,397	66%	1,550,462	54%	1,077,935	98%
American Samoa	54,504	100%	41,307	100%	13,197	100%
Guam	159,377	99%	107,044	99%	52,333	100%
Northern Mariana Islands	51,455	100%	33,906	100%	17,549	100%
Puerto Rico	2,259,097	62%	1,325,683	50%	933,414	98%
U.S. Virgin Islands	103,964	100%	42,522	100%	61,442	100%

## Appendix II

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### Overall Adoption Rates for Fixed Advanced Telecommunications Capability by State and U.S. Territory

	25 Mbps/3 Mbps
<b>United States</b>	37%
<b>Alabama</b>	25%
<b>Alaska</b>	3%
<b>Arizona</b>	45%
<b>Arkansas</b>	24%
<b>California</b>	43%
<b>Colorado</b>	52%
<b>Connecticut</b>	43%
<b>Delaware</b>	*
<b>District of Columbia</b>	*
<b>Florida</b>	37%
<b>Georgia</b>	35%
<b>Hawaii</b>	*
<b>Idaho</b>	25%
<b>Illinois</b>	40%
<b>Indiana</b>	30%
<b>Iowa</b>	6%
<b>Kansas</b>	26%
<b>Kentucky</b>	8%
<b>Louisiana</b>	36%
<b>Maine</b>	13%
<b>Maryland</b>	59%
<b>Massachusetts</b>	68%
<b>Michigan</b>	40%
<b>Minnesota</b>	42%
<b>Mississippi</b>	26%
<b>Missouri</b>	27%
<b>Montana</b>	*
<b>Nebraska</b>	34%
<b>Nevada</b>	*
<b>New Hampshire</b>	56%
<b>New Jersey</b>	58%
<b>New Mexico</b>	30%
<b>New York</b>	39%
<b>North Carolina</b>	16%

	25 Mbps/3 Mbps
North Dakota	45%
Ohio	11%
Oklahoma	34%
Oregon	49%
Pennsylvania	46%
Rhode Island	*
South Carolina	23%
South Dakota	40%
Tennessee	40%
Texas	26%
Utah	41%
Vermont	51%
Virginia	53%
Washington	52%
West Virginia	46%
Wisconsin	24%
Wyoming	46%
U.S. Territories	4%
American Samoa	NA
Guam	*
Northern Mariana Islands	NA
Puerto Rico	0%
U.S. Virgin Islands	*
* Data Withheld to maintain confidentiality. NA – Not Available.	

## Appendix III

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### 2015 Completed APSCN Broadband Upgrades

As of December 31, 2015, APSCN and network teams from DIS have completed APSCN upgrades to the following schools and cooperatives.

Scranton School District	Hazen School District	NLR School District (Phase 1)
Hackett School District	Hartford School District	Blytheville School District
Osceola School District	Crowley's Ridge Education Coop	S. Mississippi County
Brookland School District	Marked Tree School District	Westside Cons. School District
Bay School District	Armored School District	Gosnell School District
Jonesboro School District	Buffalo Island Central	Alpena School District
Manila School District	Deer/Mt. Judea School District	Valley Springs School District
Harrisburg School District	Ozark Unlimited Resource Co-Op	Berryville School District
Searcy School District	Trumann School District	East Poinsett Co. School Dist.
Riverside School District	Ozark Mountain School District	Cross County School District
Fort Smith School District	Nettleton School District	Wynne School District
Academics Plus	Nashville School District	Cave City School District
Harmony Grove	Lakeside School District	Greene Co. Tech School District
Fountain Lake School District	Marion School District	Mountainburg School District

Snapshot of K-12 Connectivity in Arkansas

## K-12 Connectivity in Arkansas

Arkansas

LEADER

**Gov. Hutchinson is taking action to upgrade schools**

“ Our children are our future, and if they don't have the connectivity they need to use digital learning tools, we all lose out. That is why I am taking action to get high-speed Internet in every classroom and unleash our students' potential to compete in tomorrow's workforce.



**K-12 connectivity status**

79% of school districts in Arkansas are ready for digital learning today. To meet 2018 demand, the typical school district in Arkansas will need to **grow bandwidth at least threefold**.



79%

Minimum Goal  
100 kbps per student

Overhauled the Arkansas Public School Computer Network contract, upgrading school bandwidth from 5 kbps/student to 200 kbps/student by 2017

**Opportunities for action**

Arkansas can connect all students if they close the fiber gap, put Wi-Fi in every classroom, and make broadband affordable.

**Fiber**



82%

Status:  
At least **82%** of schools have the fiber connections needed to meet bandwidth targets

Opportunity:  
**67%** of new fiber connections will be for rural and small town schools

**Wi-Fi**



58%

Status:  
**58%** of school districts have accessed their E-rate budgets for Wi-Fi networks

Opportunity:  
**\$33M** in E-rate funds are available to support Wi-Fi networks in Arkansas

**Affordability**



4%

Status:  
**4%** of school districts are meeting the \$3/Mbps Internet access affordability target

Opportunity:  
**109,700** more students will have enough bandwidth for digital learning if affordability target is met

Source: USAC Form 471 2015/2016 E-rate applications, n=151 of 238 school districts, n=696 of 1,053 schools, n=319,872 of 458,149 students

**Why high speeds matter**

Teachers in Little Rock School District can now share photos of class projects and activities to their private Class Story page on ClassDojo. By showing parents what their children are working on, the technology is helping to increase engagement and support for the learning process.



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Arkansas State Broadband Manager's Report

Period Ending 6.30.16

## About the metrics

The metrics in this snapshot are based on verified E-rate data from over 6,781 school districts representing nearly 51% of school districts in the U.S., 52% of schools, and 53% of students in America's K-12 public schools.

### K-12 connectivity status

This metric shows the percentage of school districts in the state meeting the Federal Communications Commission's (FCC) Internet access goal.

- The **Minimum Goal** metric measures the percent of school districts meeting the FCC's 100 kbps/student goal (we have not included staff in our analysis). This metric should be viewed as a minimum Internet access threshold that all school districts must achieve in order to implement digital learning.

#### Fiber

These metrics assess the availability of scalable infrastructure in the state and the opportunity presented for rural and small town schools. The FCC's goal is for every school to have a broadband connection capable of scaling to 10 Gbps. Today, only fiber optic connections are capable of meeting that goal. When fiber optic connections are too costly, other technologies such as fixed wireless can be used as an interim substitute for smaller schools.

- **Status:** We estimated the percent of schools that have a fiber optic connection (or other suitable technology) capable of scaling to meet the school's projected broadband need in 2018.
- **Opportunity:** The FCC provided states with an opportunity to build fiber to meet the broadband needs of rural and small town schools. The opportunity metric estimates the percent of new fiber connections that would connect schools in rural and small town locales if the state connects all of their schools to fiber.

#### Wi-Fi

The FCC provided every school district with a \$150 per student total "Category 2" budget from 2015-2019 to put Wi-Fi in its classrooms. These metrics profile the extent to which a state has taken advantage of these new resources.

- **Status:** We calculated the percent of school districts in the state that requested any of their \$150 per student budget in 2015. There are many valid reasons a school district may not have applied for Category 2 E-rate funds in 2015, so this metric should be used to determine if the state may need to inform school districts that these resources are available.
- **Opportunity:** We calculated the total Category 2 budget remaining for 2016-19 in the state after subtracting funds requested in 2015 and subsequently applied the aggregate state discount rate of school districts requesting Category 2 services.

#### Affordability

The affordability of broadband is one of the major roadblocks preventing school districts from meeting the FCC's Internet access goals. \$3/Mbps represents a price at which the E-rate program can support all school districts meeting the FCC's 2018 goal of 1 Mbps/student and is a price already being achieved by over 32% of school districts purchasing 1 Gbps or more of Internet access.

- **Status:** We calculated the percent of school districts in the state that are paying less than \$3/Mbps for Internet access. Internet access includes both ISP costs and the cost of transport between the school district and the ISP.
- **Opportunity:** We calculated the additional number of students in the state who would meet the 100 kbps/student goal if school districts that are not meeting the \$3/Mbps target price today and not meeting the 100 kbps/student goal were to use their existing budget to purchase Internet access at \$3/Mbps.

EducationSuperHighway is the leading non-profit focused on upgrading the Internet access in every public school classroom in America. We believe that digital learning represents an unprecedented opportunity to provide every student with equal access to educational opportunity and that every school requires high-speed broadband to make that opportunity a reality.

