

Diamond State Networks





Lots of Ways to "distribute" Internet

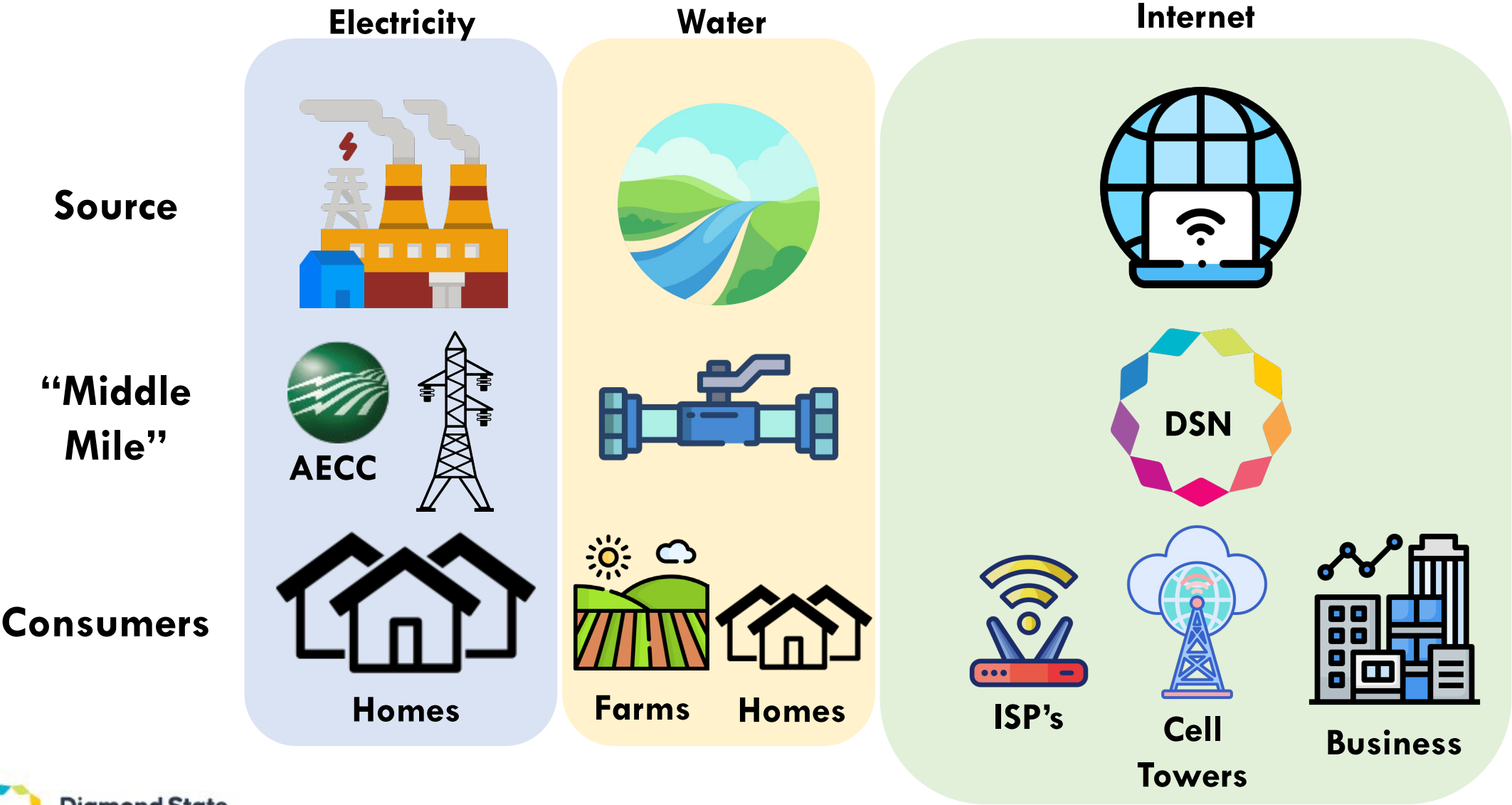
Wired Connections

- Dial-Up
- DSL
- Coaxial Cable
- Fiber Optic
- Ethernet

Wireless Connections

- Microwave
- 4G Public
- Private LTE
- 5G
- Satellite (GEO or LEO)

Getting resources to Consumers:





The Best and Worst States Scored by Internet Coverage, Speed, and Price Access

BROADBANDNOW RESEARCH

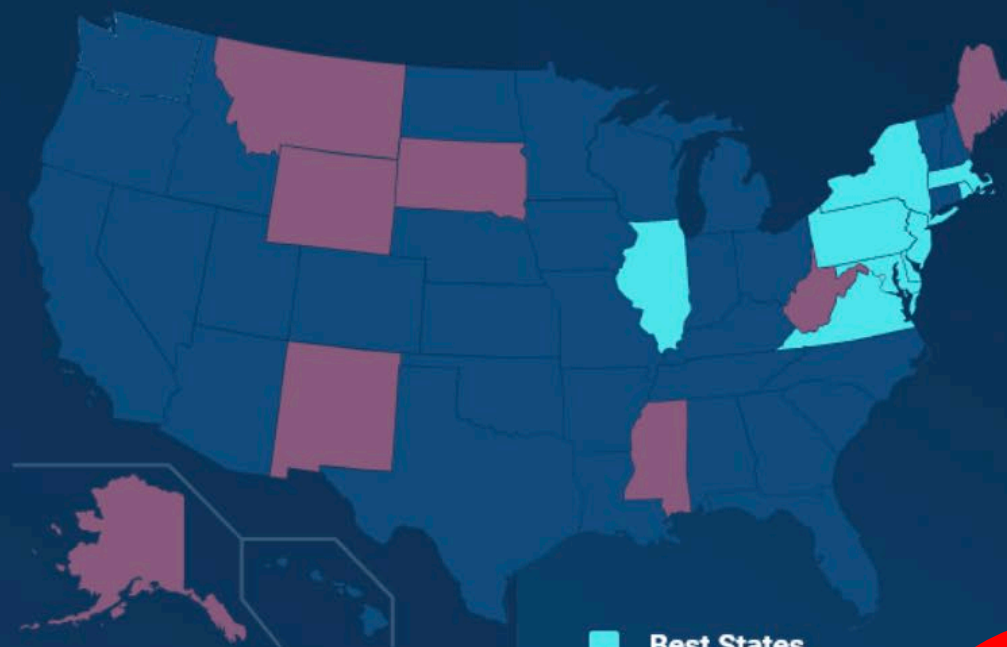
Top 10 States



1. District of Columbia
2. Rhode Island
3. Massachusetts
4. Maryland
5. Delaware
6. New Jersey
7. New York
8. Pennsylvania

Illinois

Virginia



Best States
Worst States

Bottom 10 States

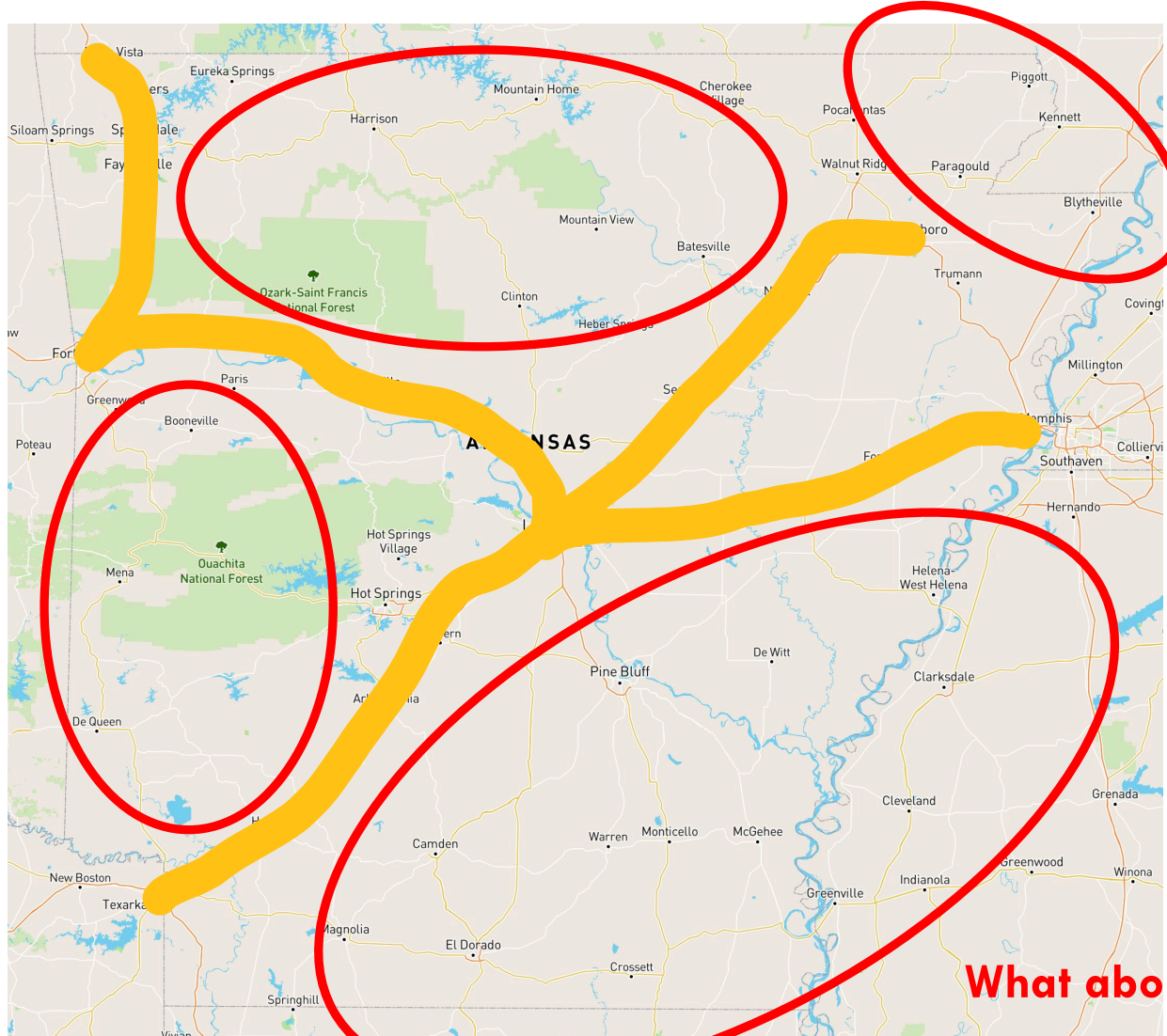


42. Alabama
43. South Dakota
44. Maine
45. New Mexico
46. West Virginia
47. Wyoming
48. Mississippi
49. Alaska
50. Arkansas
51. Montana

Source:

<https://broadbandnow.com/research/best-states-with-internet-coverage-and-speed>

The “Source” of Rural Broad Issues



Arkansas’s “Digital Highway” centers around 3 areas:

1. Large Metros

- Top 6 or 7 Cities

2. Interstates

- I-30, I-40, I-49 and US 67

3. “Exit” Cities

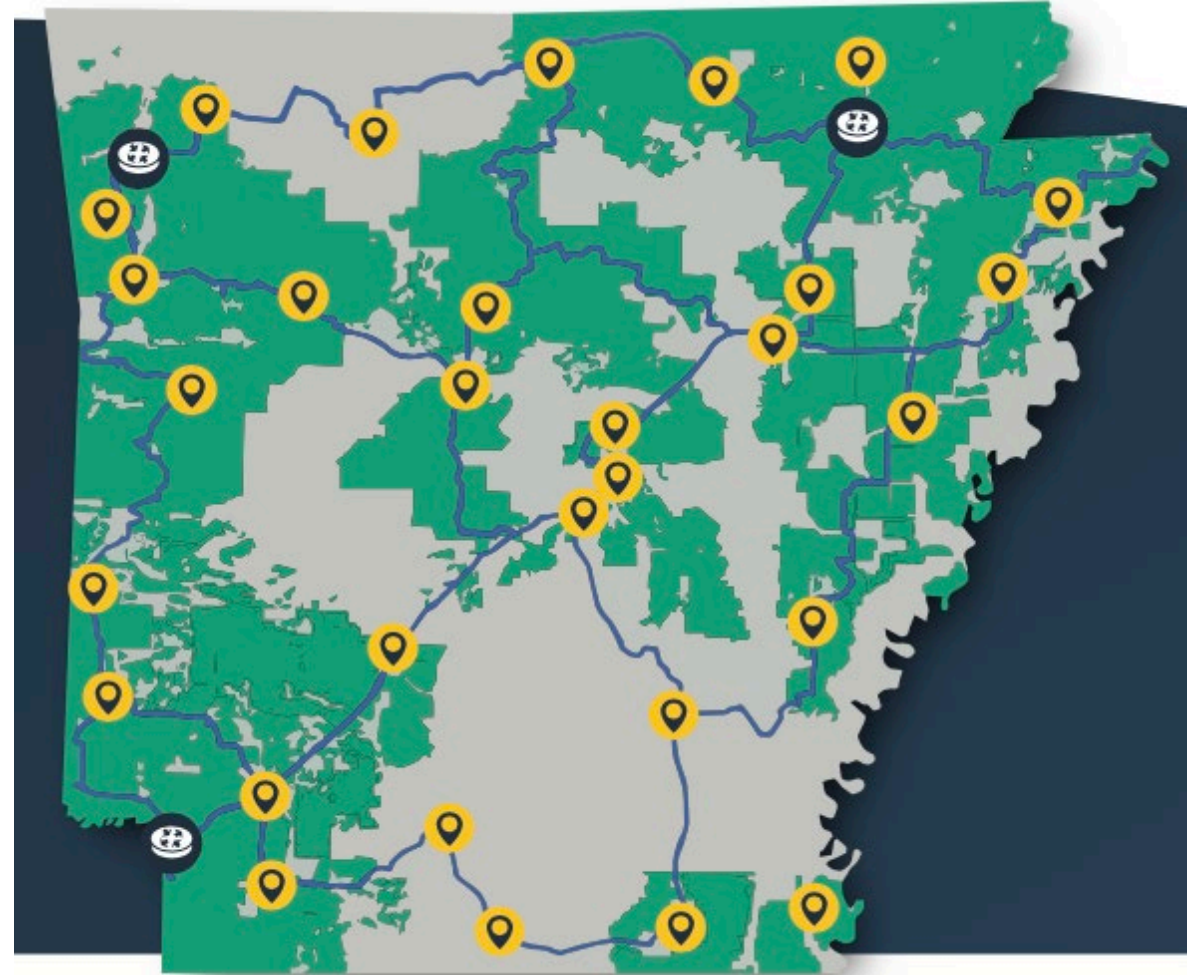
- Memphis, Texarkana

What about rural Arkansans?

What is Diamond State Networks?

DSN provides the **largest** and **fastest** middle-mile-access network in Arkansas.

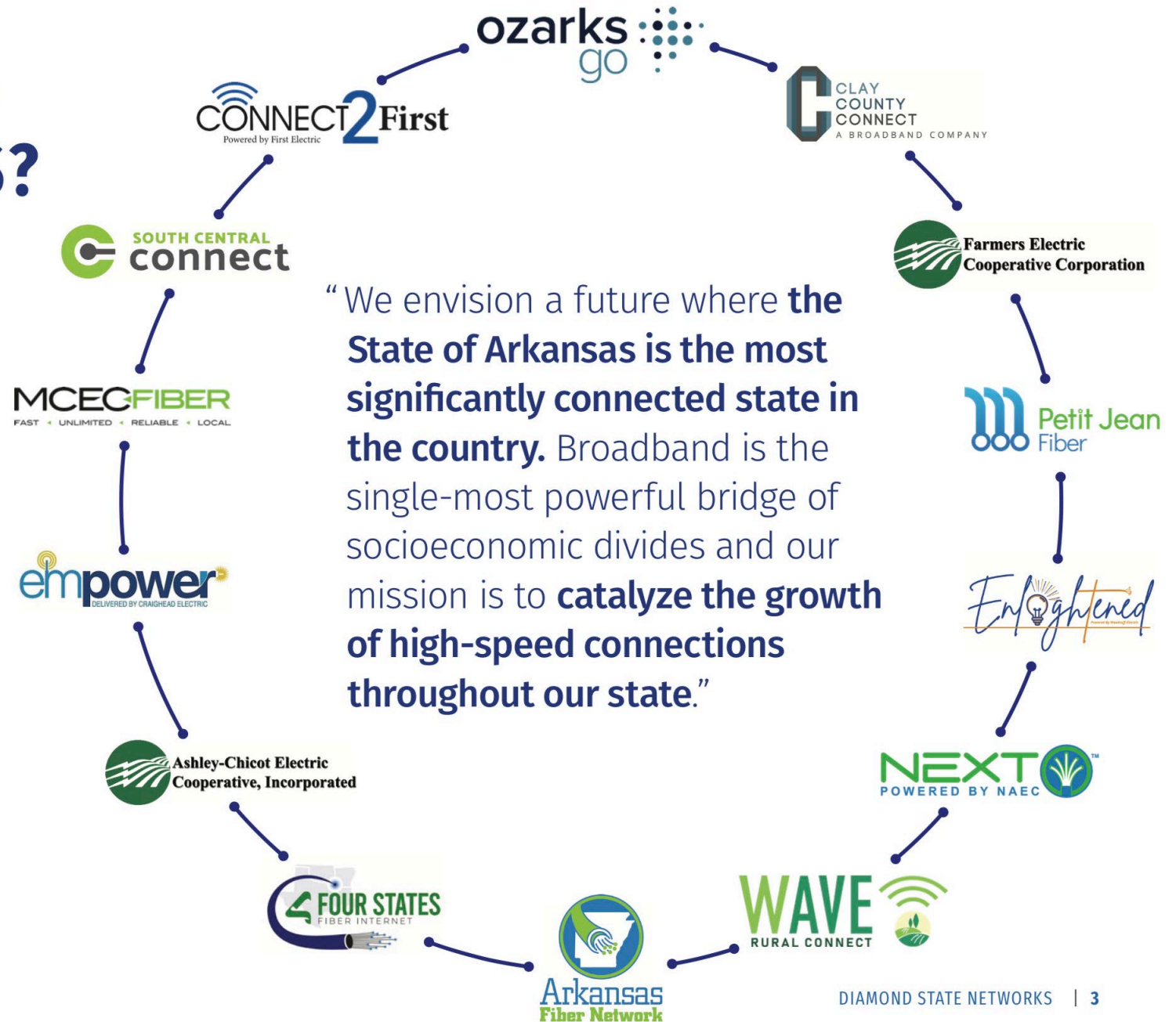
- DSN helps Internet providers to:
 - Build higher capacity/redundancy networks
 - Purchase upstream services less expensively
 - Attract content providers to Arkansas
- More than **40 major access points** spread throughout both rural and metropolitan Arkansas
- More than 50,000 miles of accessible fiber



WHO IS DIAMOND STATE NETWORKS?

Arkansas-based,
Mission-driven
companies

+ 14 Cooperatives



4 Components to our Mission

Access

- Connection Symmetry
- 10-Gigabit+ Services
- Connected Device Access

Cost Control

- 90% reduction in cost
- Local Content Access
- Keep \$\$ in Arkansas

Literacy

- Educational Programs
- Job Skills Training
- ACP, EBB

Affordability

- Economic Bridges
- ACP, EBB

Challenges for Rural Telecom Operators

1. Access to low-cost services

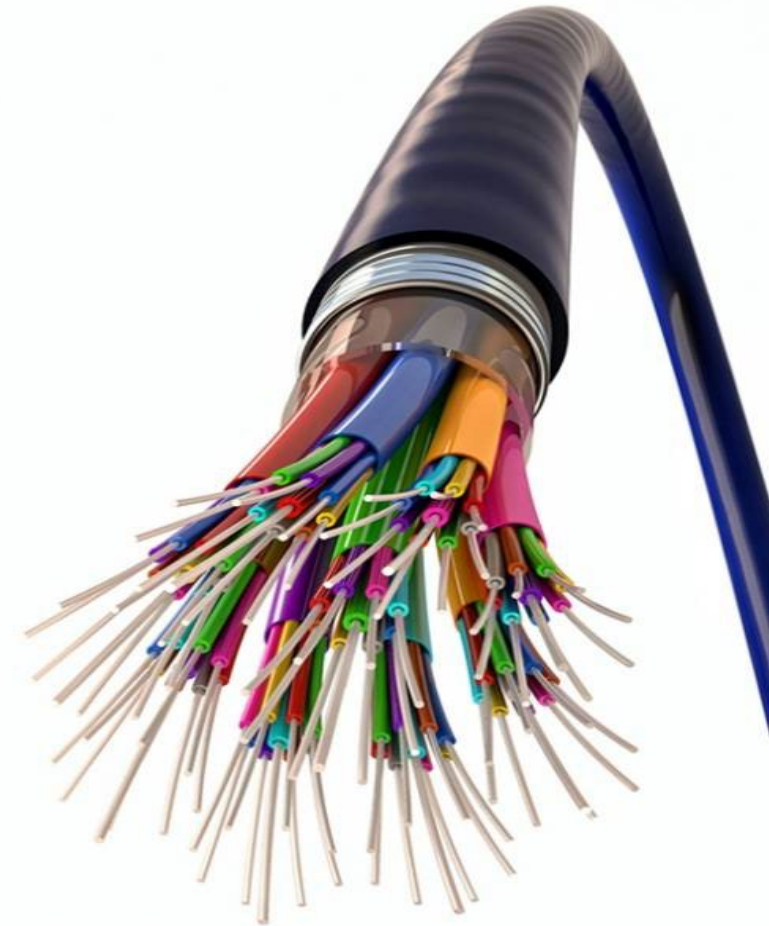
- Limited options; very high prices for wholesale bandwidth
- How do we better control costs?

2. Network redundancy

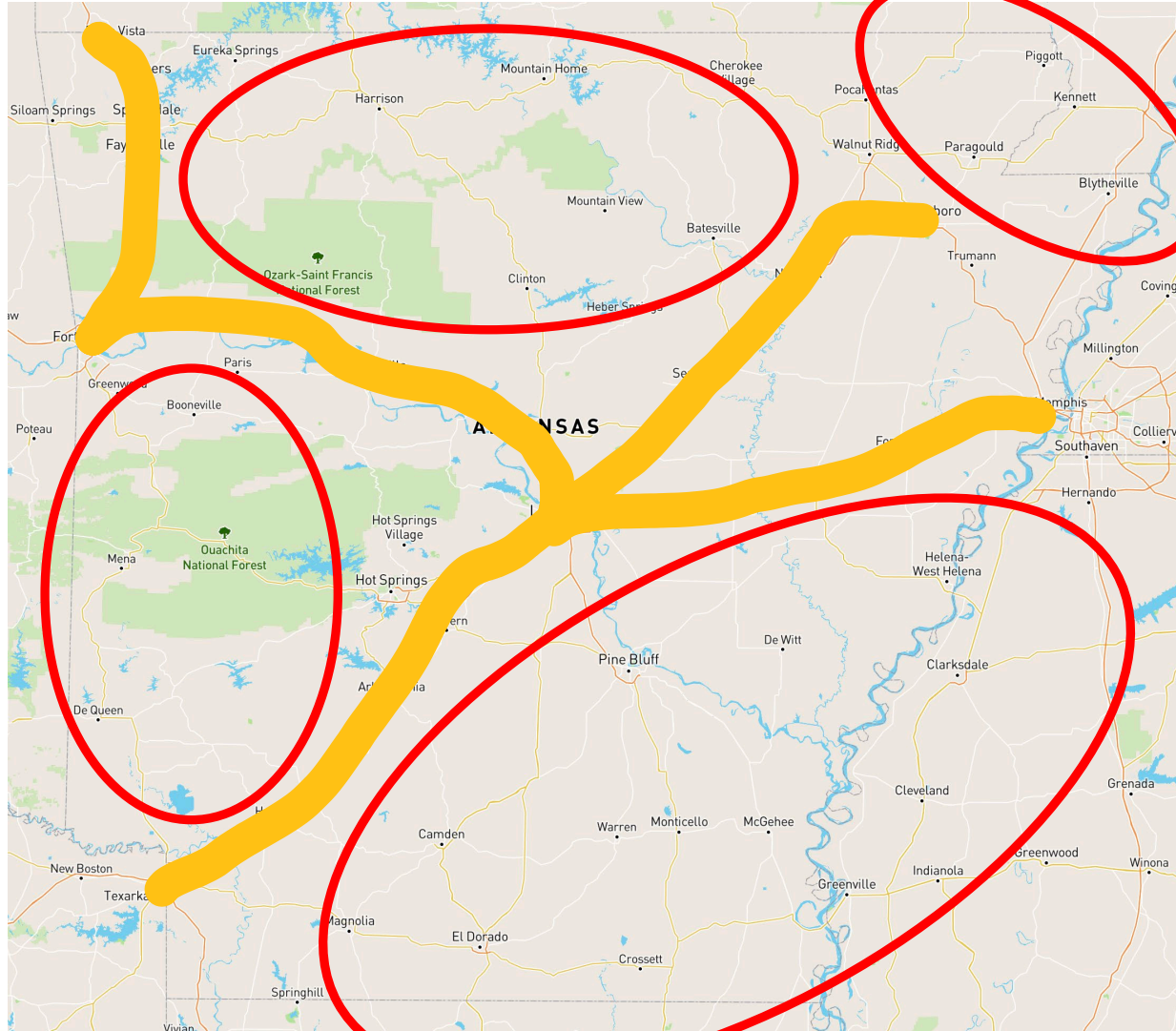
- "Single-threaded" networks
- How do we improve network resilience and improve experience?

3. Connecting Multi-Site Enterprises in Rural Arkansas

- Schools, Medical/Telehealth facilities, Banks, Agriculture
- How do we avoid the network hodgepodge?



Cost of Doing Business Today



Arkansas “Broadband Deserts”:

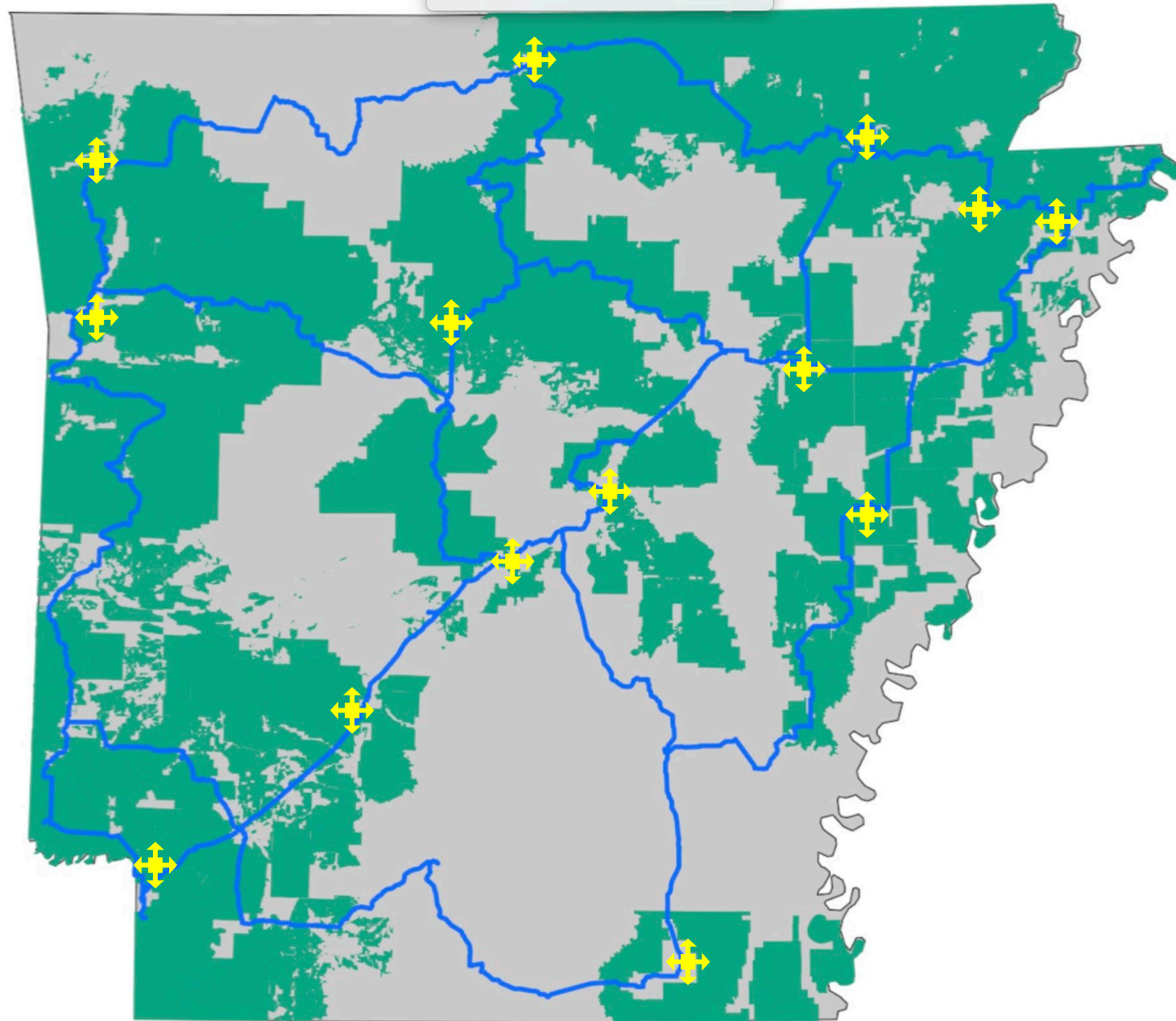
- Sparse Provider Options
 - Most towns have one option (or less)
- High Cost of Reach
 - Can be \$1MM's to get to very limited access points on incumbent networks
- Ongoing Expenses
 - \$0.60/Mb - \$1.25/Mb
 - 10-Gig Wholesale Service = >\$10,000/month

Creating Cost Savings

A large number of small
connections:

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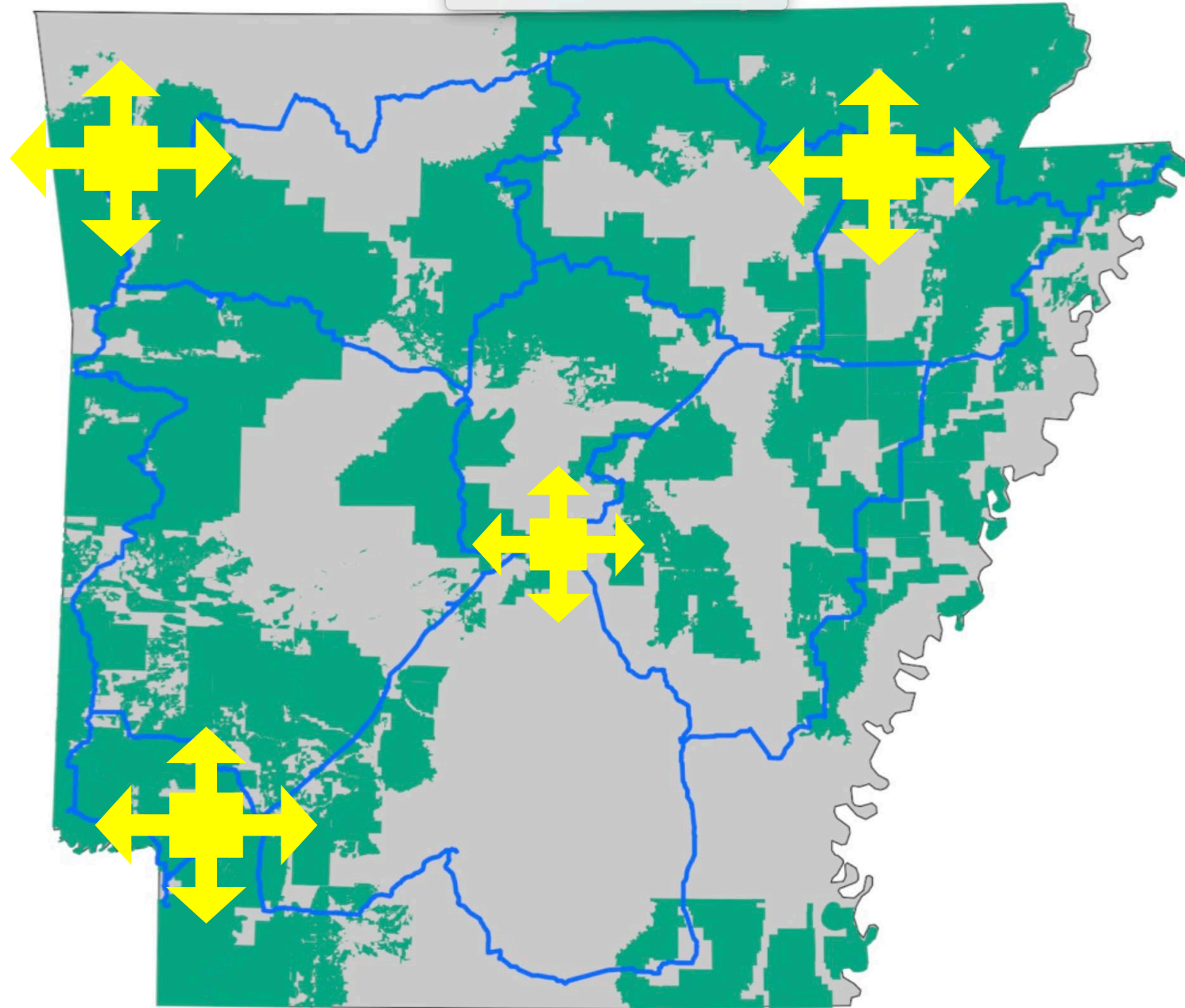
"Big Time Connectivity"



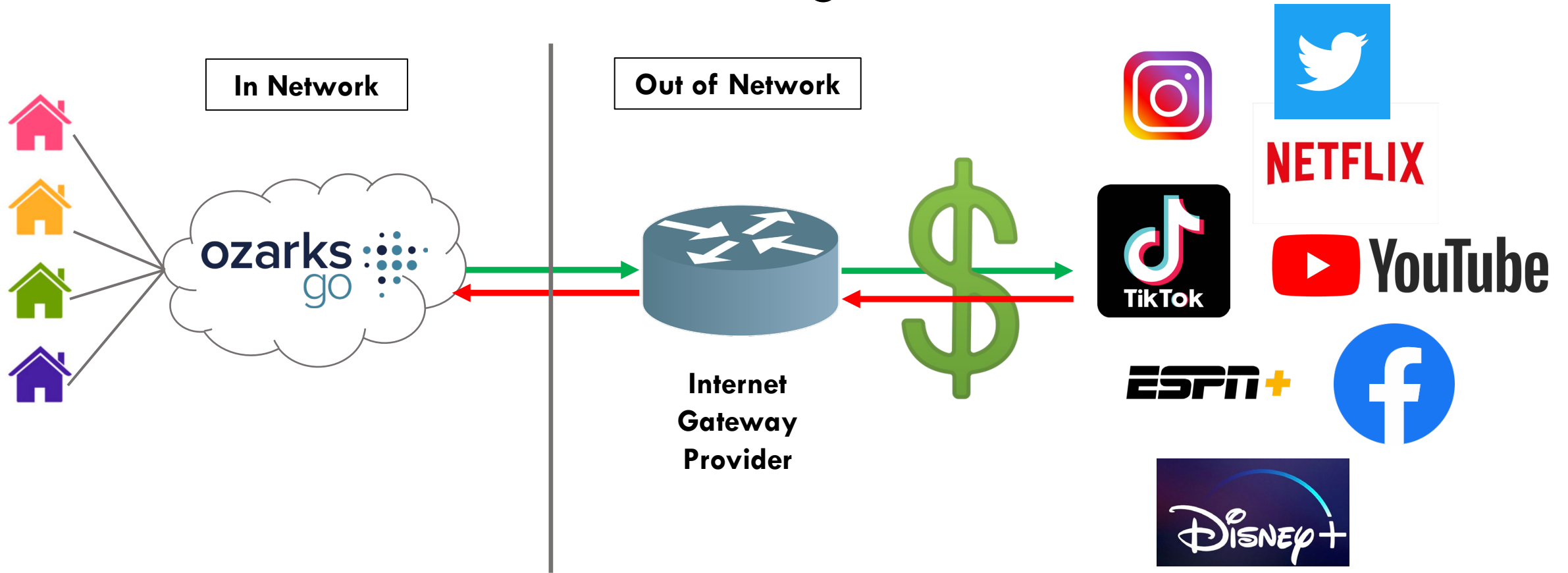
Cost Savings

“Big Time” Connections:

- >100G Connections
- Aggregated Traffic
- Creation of Hubs
- Costs of **<\$0.10/Mb**
- **75% - 95% cost reduction**

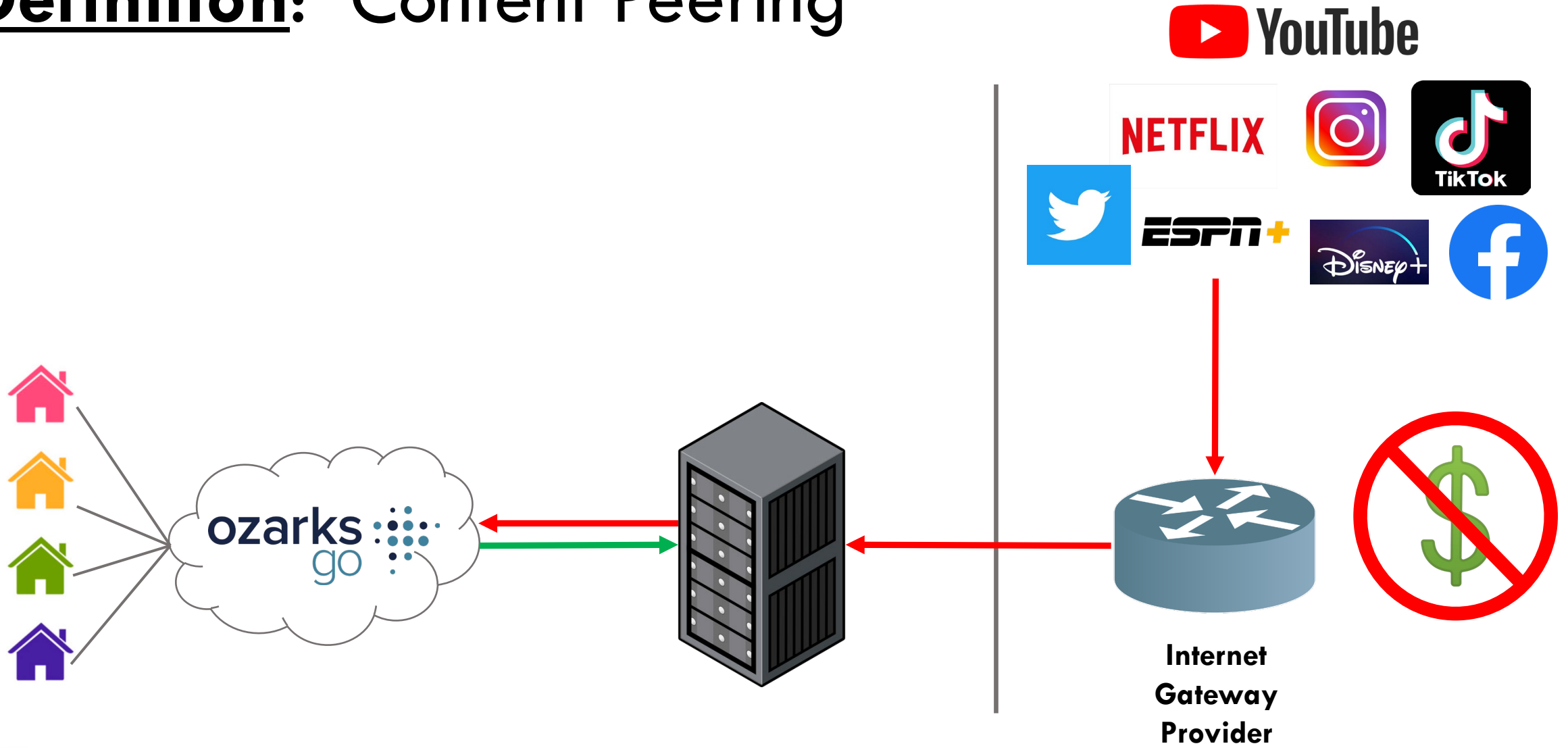


Definition: Content Peering



*As of 2020, video accounts for more than **60%** of all downstream Internet traffic

Definition: Content Peering



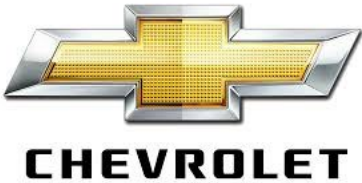
Serving Businesses in AR

Example: Dollar General Corp.

- DG has 16,278 stores
 - More than 500 in Arkansas
- DG technology team's objective is to manage the fewest number of relationships possible at each location.
- More Stores Served = More likely to receive business award

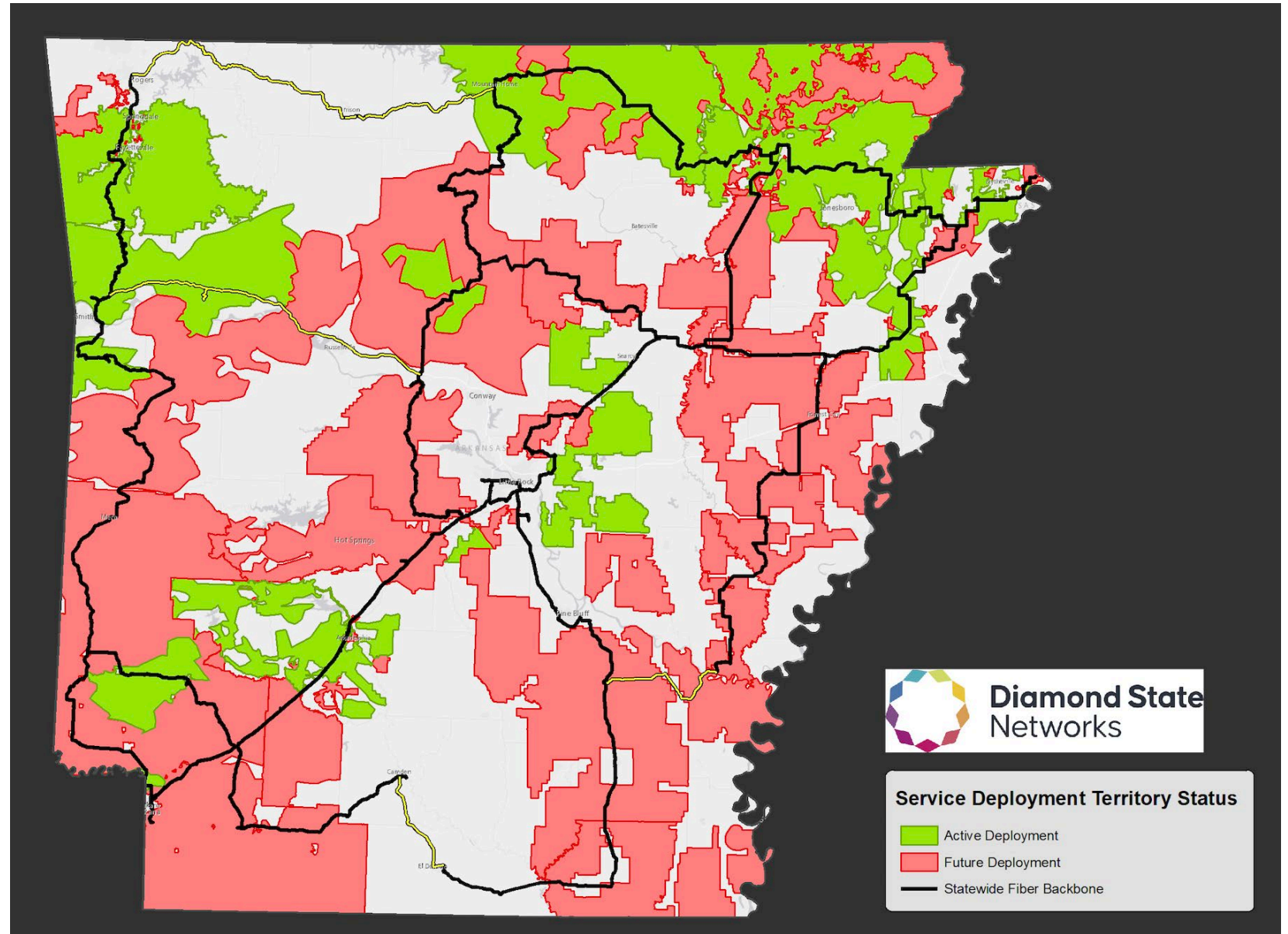


Serving Businesses in AR



Current DSN Deployment:

- >300,000 homes passed
- >100,000 subscribers
- More than 30,000 miles of fiber deployed



The **most impactful**
broadband project in
the history of Arkansas.

50,000+

MILES OF FIBER

100%

FIBER THROUGHOUT THE NETWORK

\$1.66 BIL

TOTAL INVESTMENT

1.5MIL+

RESIDENTS REACHED

800GB

TRANSPORT SERVICES AVAILABLE

600,000

PASSINGS

72 OF 75

AR COUNTIES SERVED

64%

ARKANSAS COVERAGE

Partnering for a Better-Connected State



Alabama Electric Co-ops Get \$82.5M for Middle Mile Network

Posted on October 3, 2022 by [Joan Engebretson](#)



ARPA

Electric Cooperatives

Funding

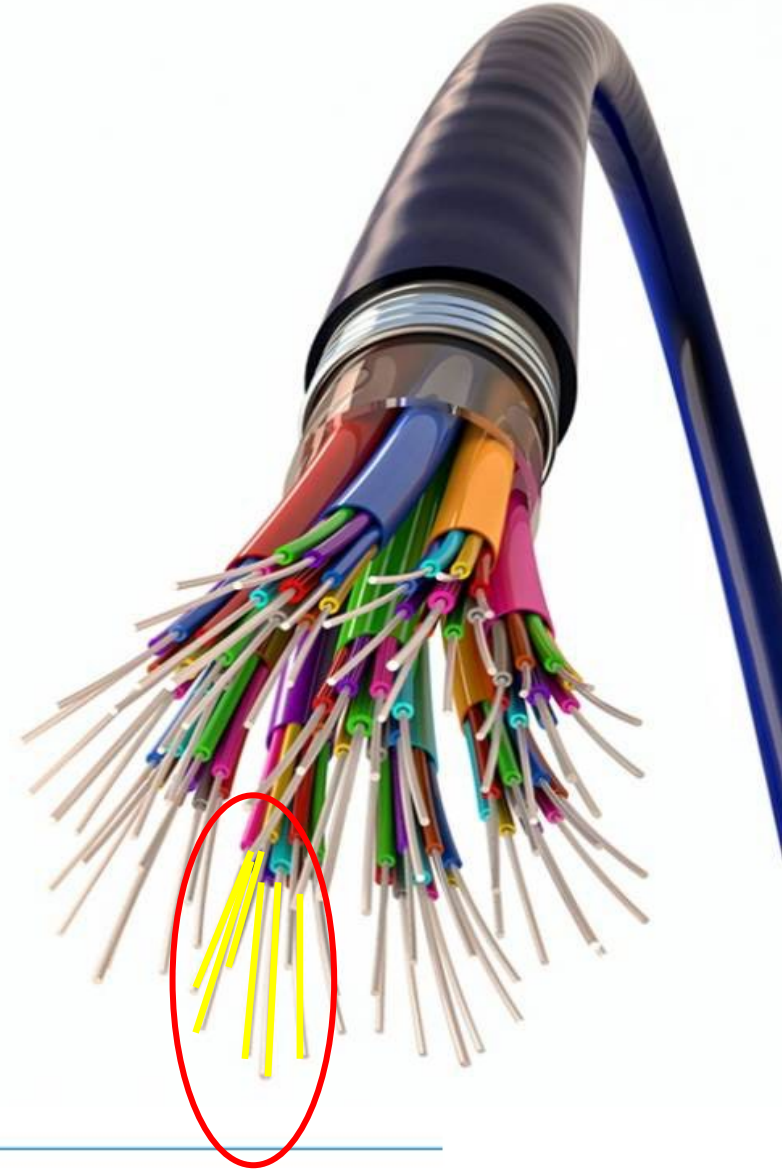
Middle Mile



Diamond State
Networks

Partnering for a Better-Connected Arkansas

- DSN is a best-in-class “**lit fiber**” network open to any and all providers
 - Non-discriminatory pricing
- The most expandable and impactful middle mile networks feature both “**lit fiber**” and “**dark fiber**”
 - Effectively makes for unlimited expandability (“future proofing”)



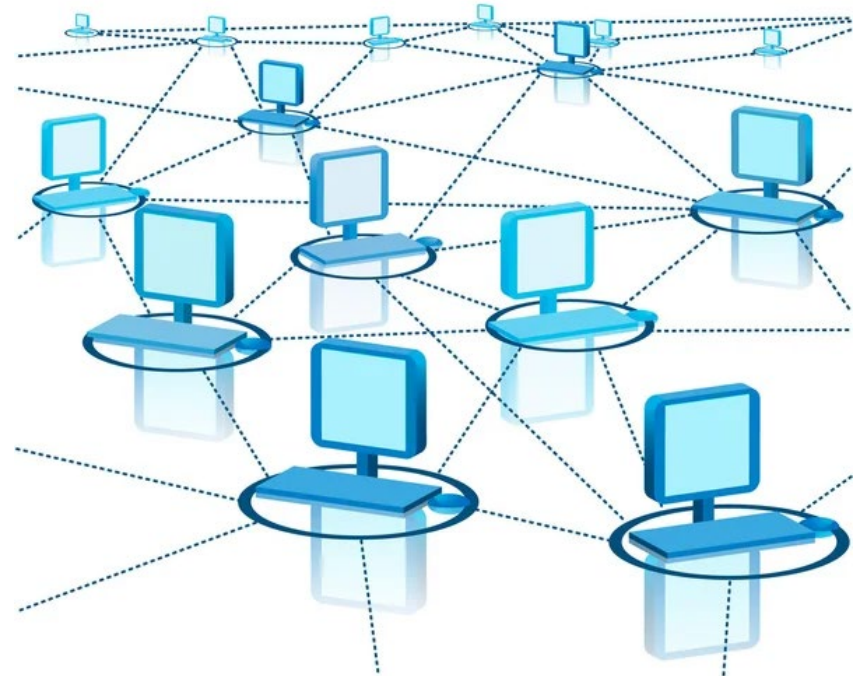
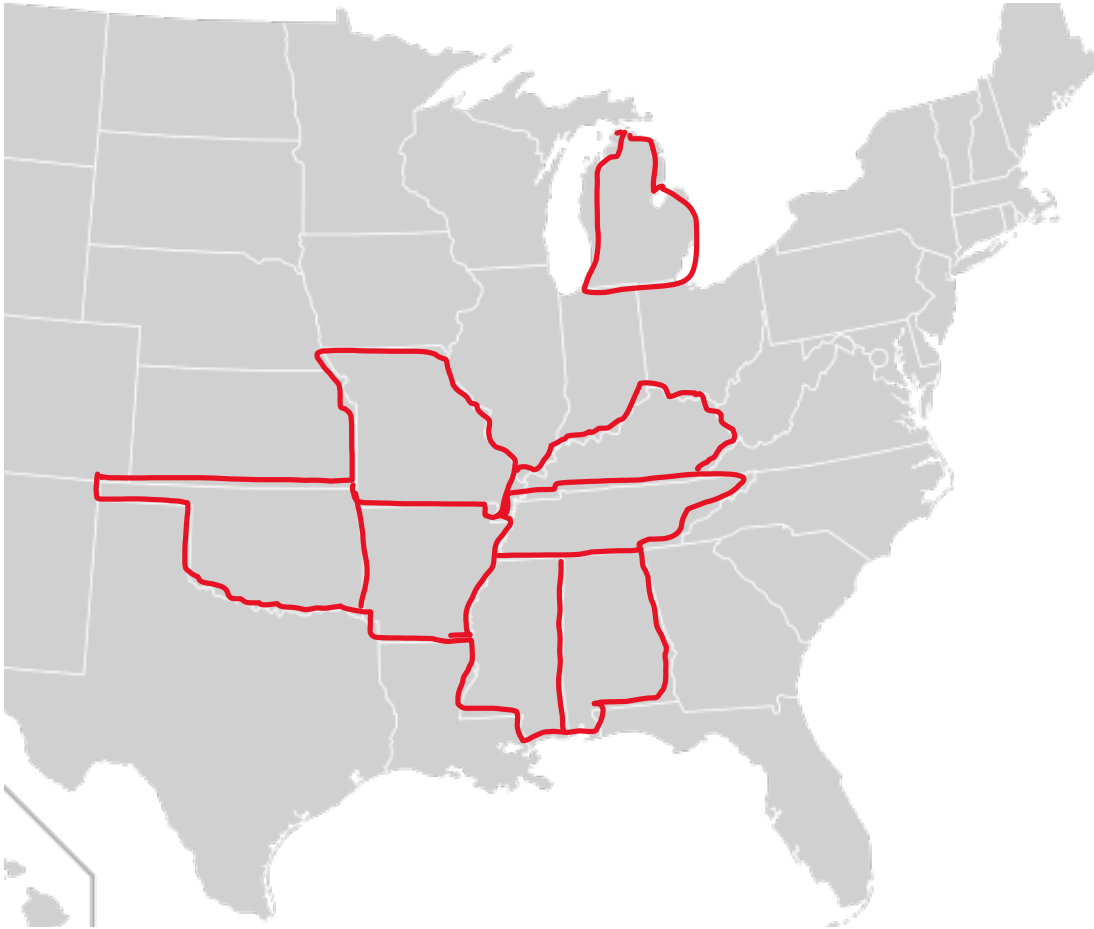
Partnering for a Better-Connected Arkansas

A partnership investment into Middle Mile by the **State of Arkansas** unlocks affordable, high-speed broadband expansion to **rural Arkansans**.

AECC and the Electric Cooperatives of Arkansas have significant dark fiber capacity to offer that could be combined with DSN to form the best middle mile network in the country.



Partnering for a Better-Connected Country





Thank you!

