WNGN Broadband Regional Leadership Summit

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Broadband Infrastructure Office

January 27, 2020

NC DIT
Broadband Infrastructure Office

Vision

Every North Carolinian should be able to access affordable high-speed internet anywhere, at any time.

State Broadband Plan Goals

Increase the percentage of households with access to broadband to 100 percent by June 2021

Increase the percentage of households with access to fiber optic cable to 50 percent by June 2021

Increase household adoption rates to over 60 percent by June 2021

Affordable access to the internet outside of school for 100 percent of K-12 students by June 2021

Ensure high-speed internet access is available at all libraries by 2020

A state-wide model for the development and deployment of local, community-based digital literacy programs

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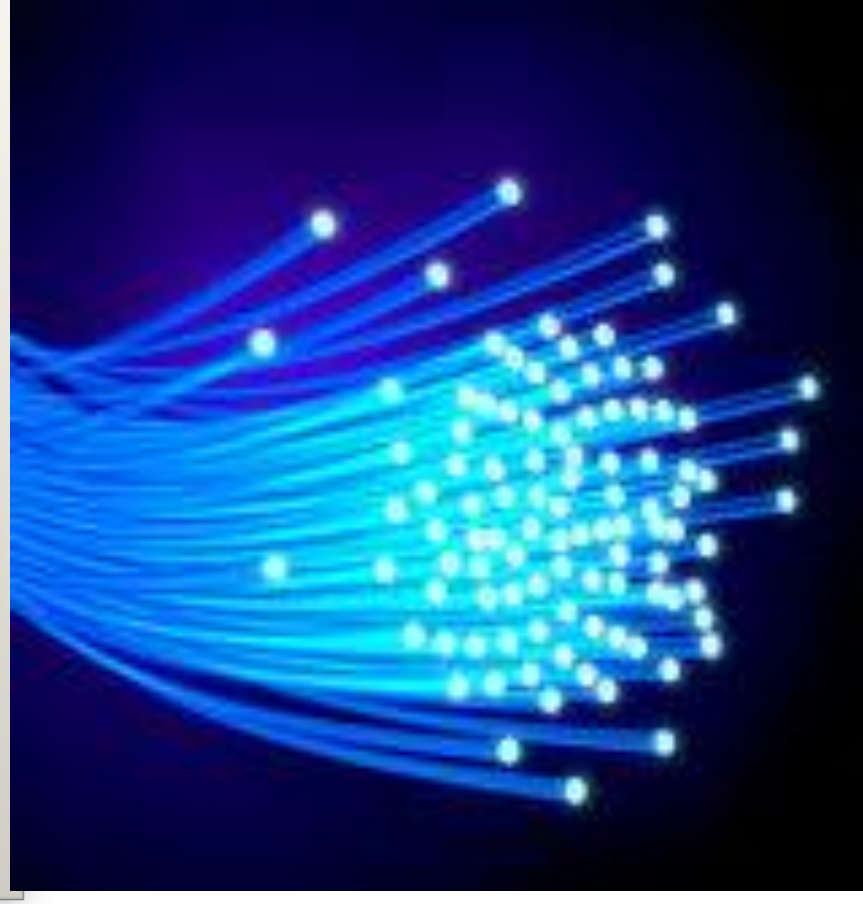

What is Broadband?

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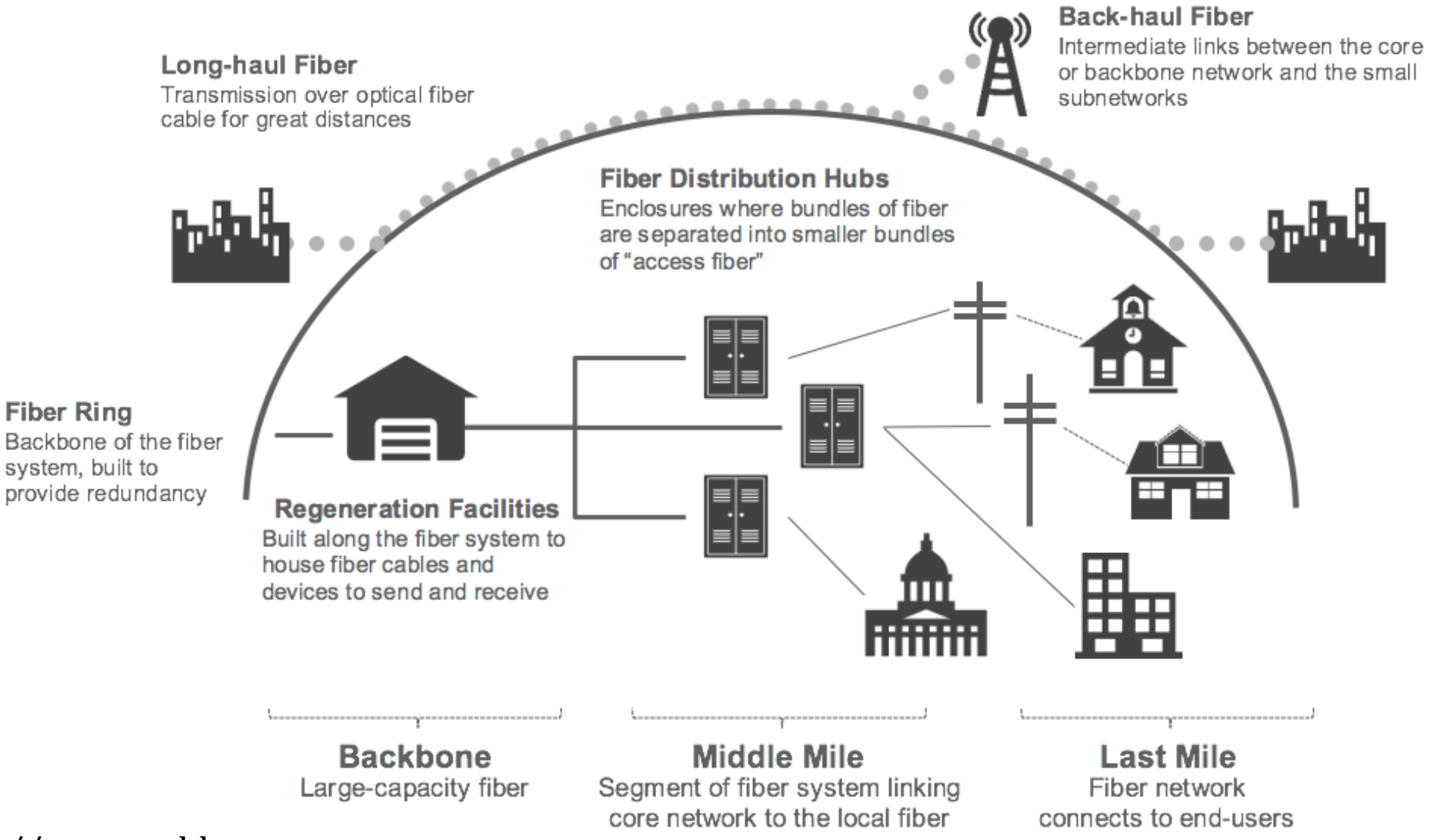
Broadband 101 – Typical Broadband Usage

	Light Use (Basic functions only: email, browsing, basic video, VoIP)	**Moderate Use** (Basic functions plus *one* high-demand application: streaming HD video, teleconferencing, online gaming)	**High Use** (Basic functions plus *more than one* high-demand application running at the same time)
1 user on 1 device	3-8 Mbps	3-8 Mbps	12-25 Mbps
2 users or devices	3-8 Mbps	12-25 Mbps	12-25+ Mbps
3 users or devices	12-25 Mbps	12-25 Mbps	25+ Mbps
4 users or devices	12- 25 Mbps	12-25 Mbps	25+ Mbps

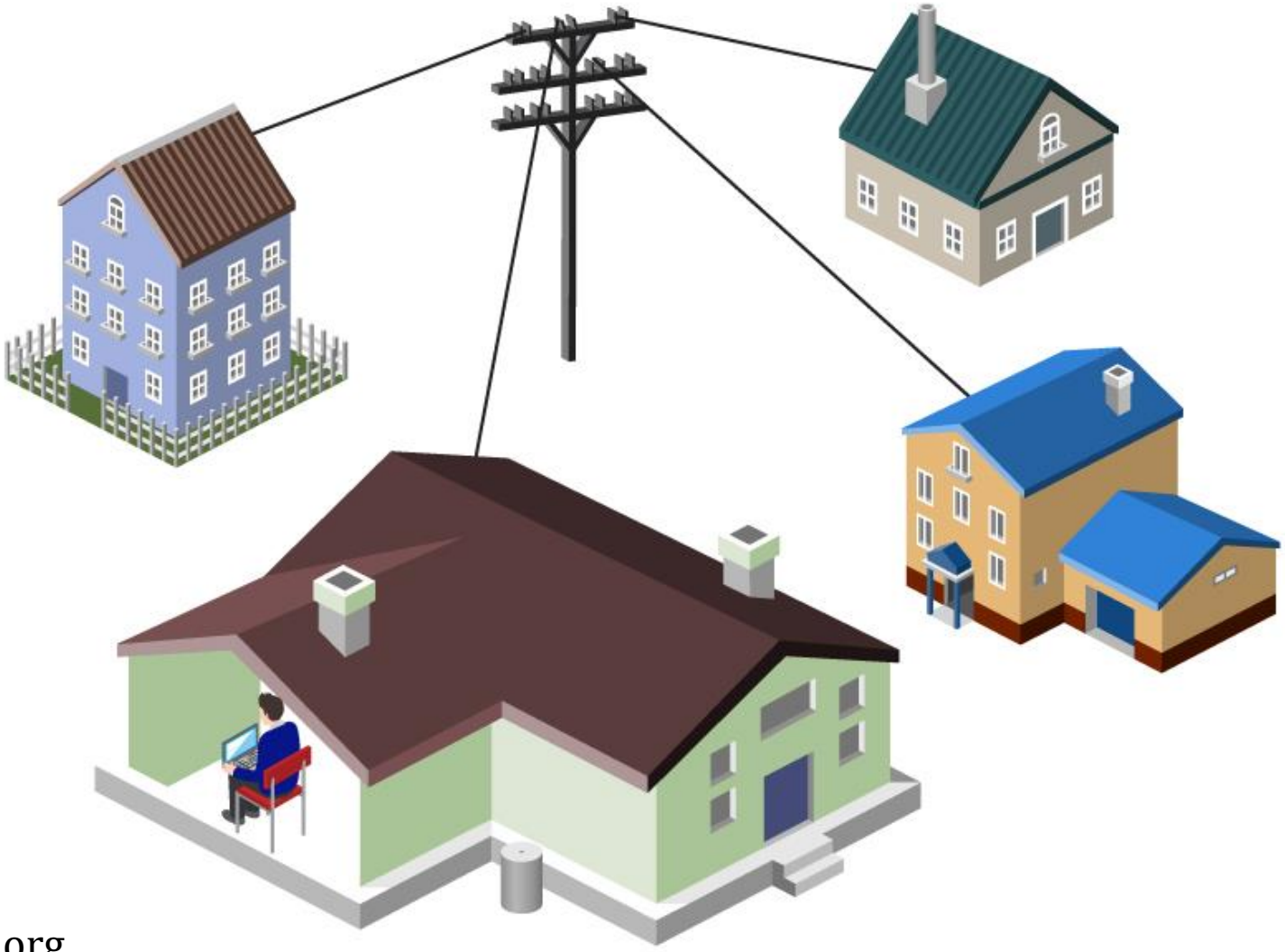
Source: https://www.fcc.gov/research-reports/guides/household-broadband-guide

Broadband 101 – Backbone, Middle Mile, Last Mile



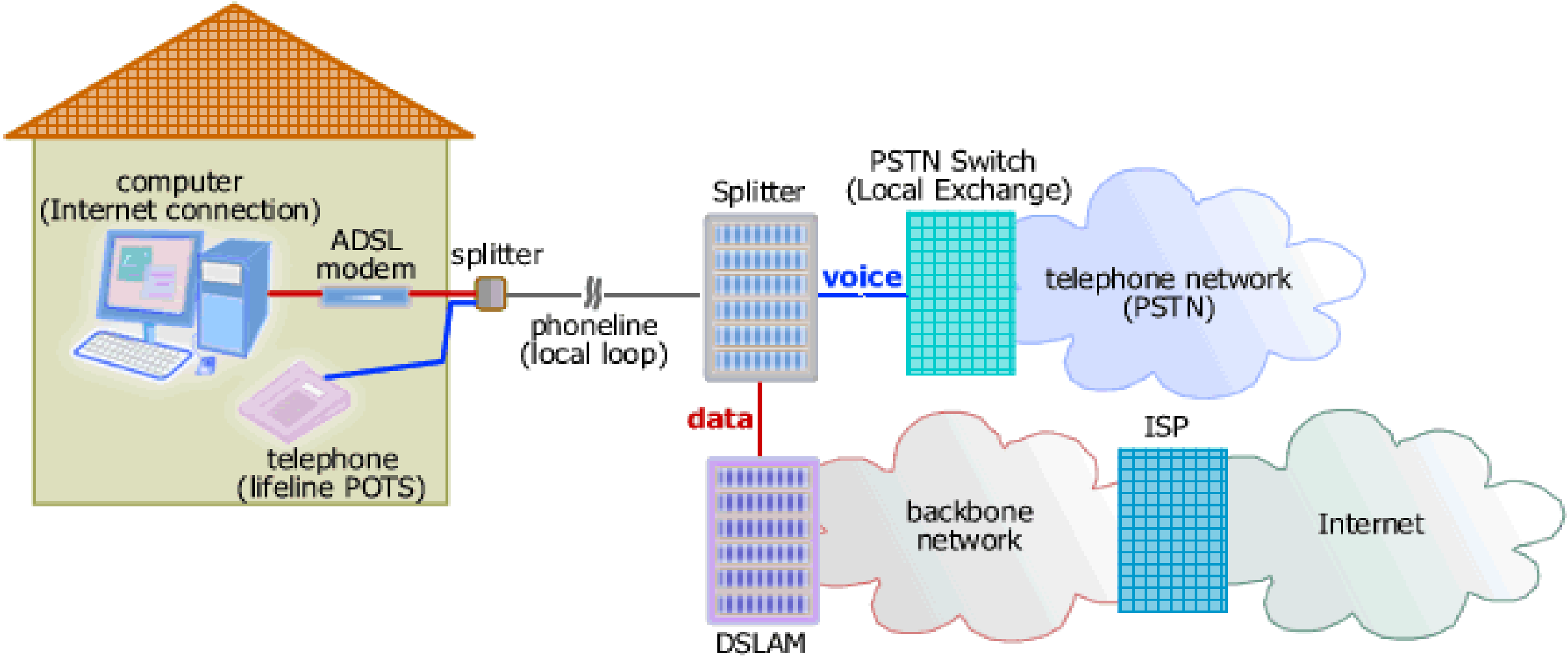
Source: https://scottmadden.com

Broadband 101 – Last Mile



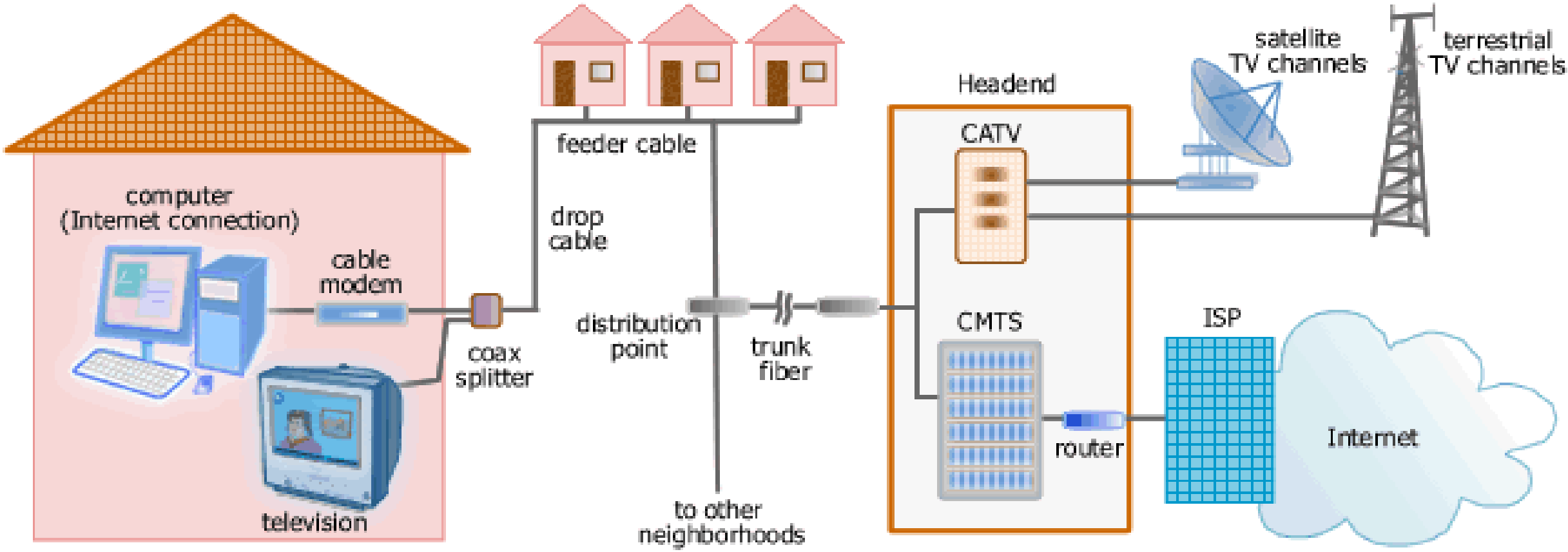
Source: http://masstech.org

Broadband 101 – Digital Subscriber Line (DSL)



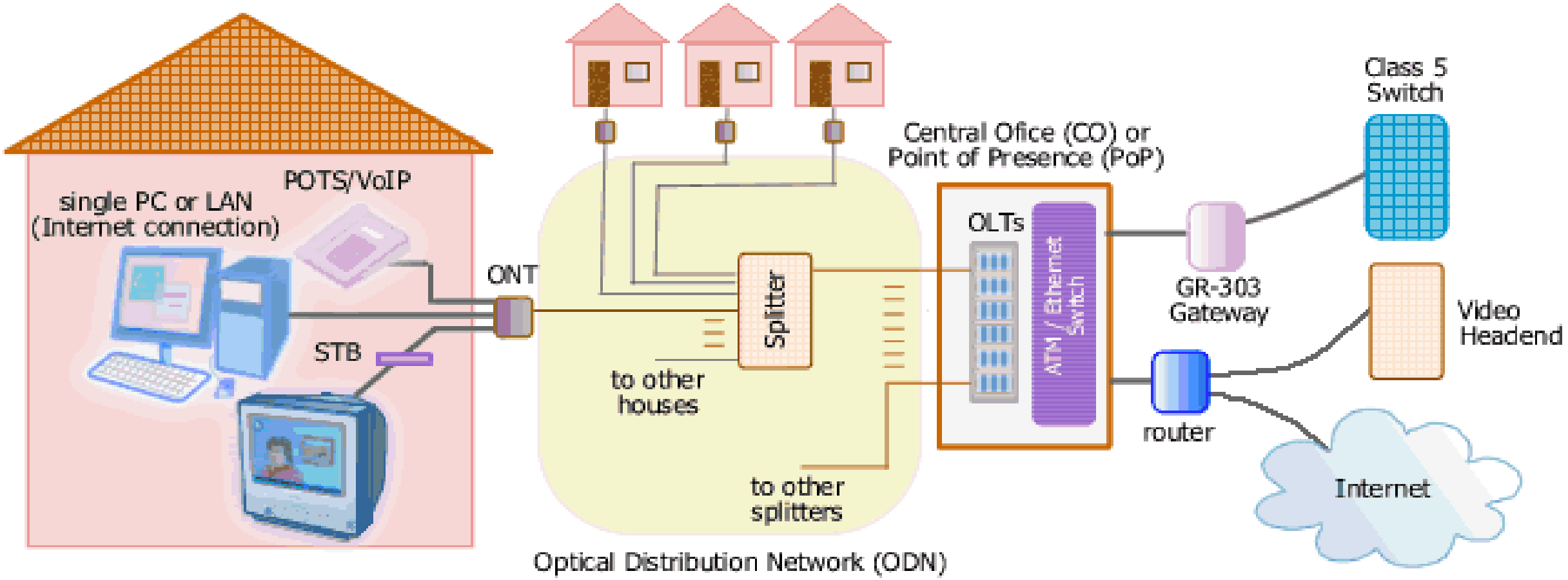
Source: http://www.conniq.com/InternetAccess_ADSL.htm

Broadband 101 – Cable (Coax or DOCSIS)



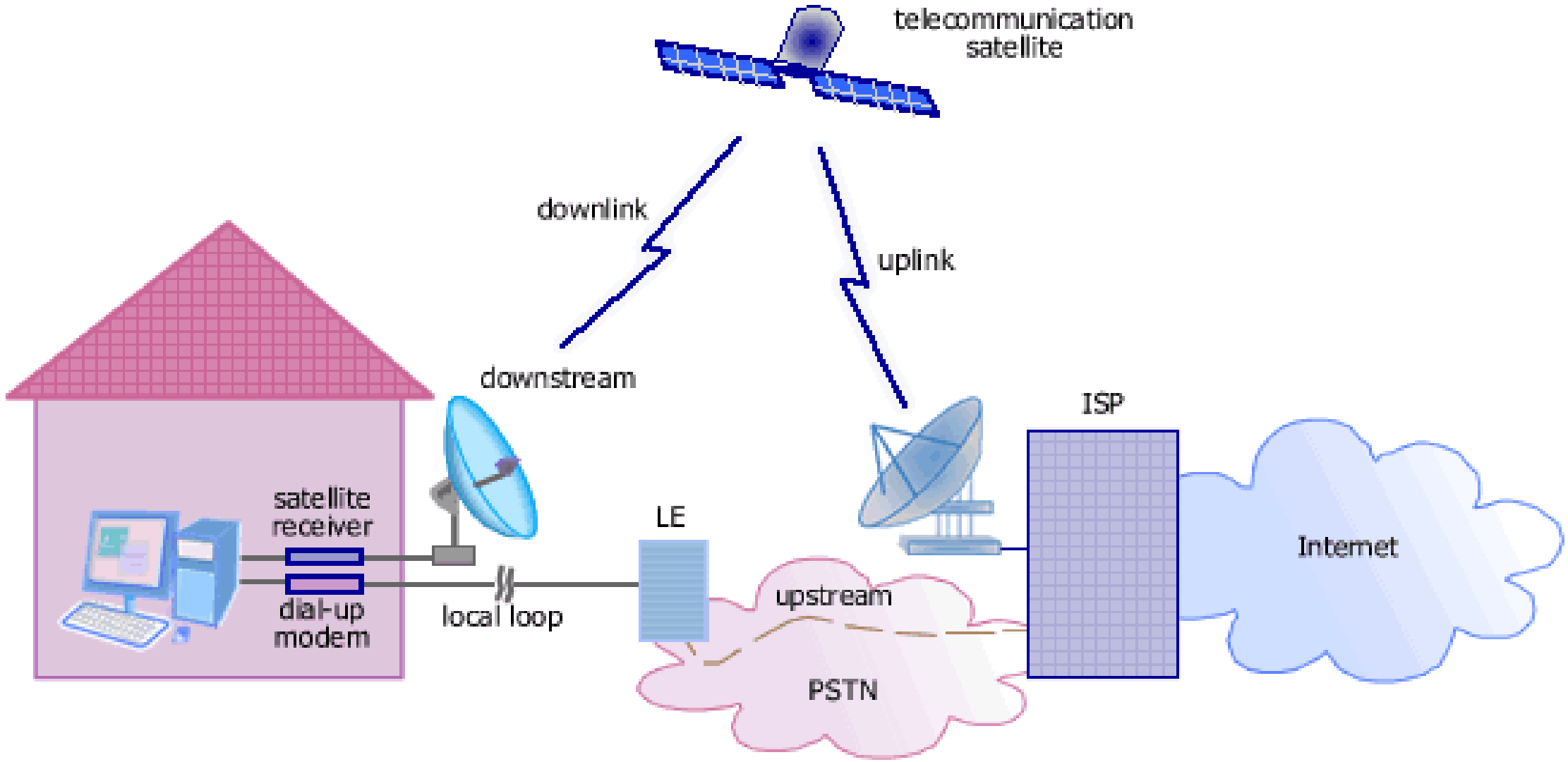
Source: http://www.conniq.com/InternetAccess_cable.htm

Broadband 101 – Fiber to the Home (FTTH)



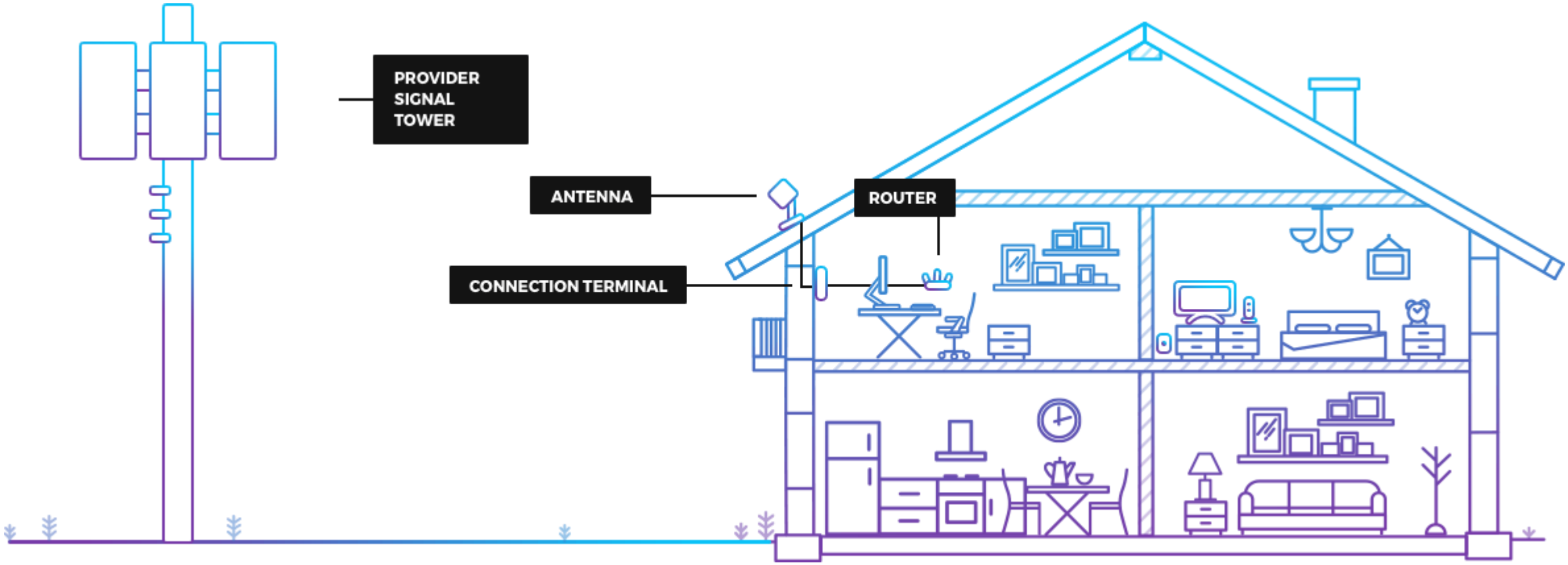
Source: http://www.conniq.com/InternetAccess_cable.htm

Broadband 101 – Satellite



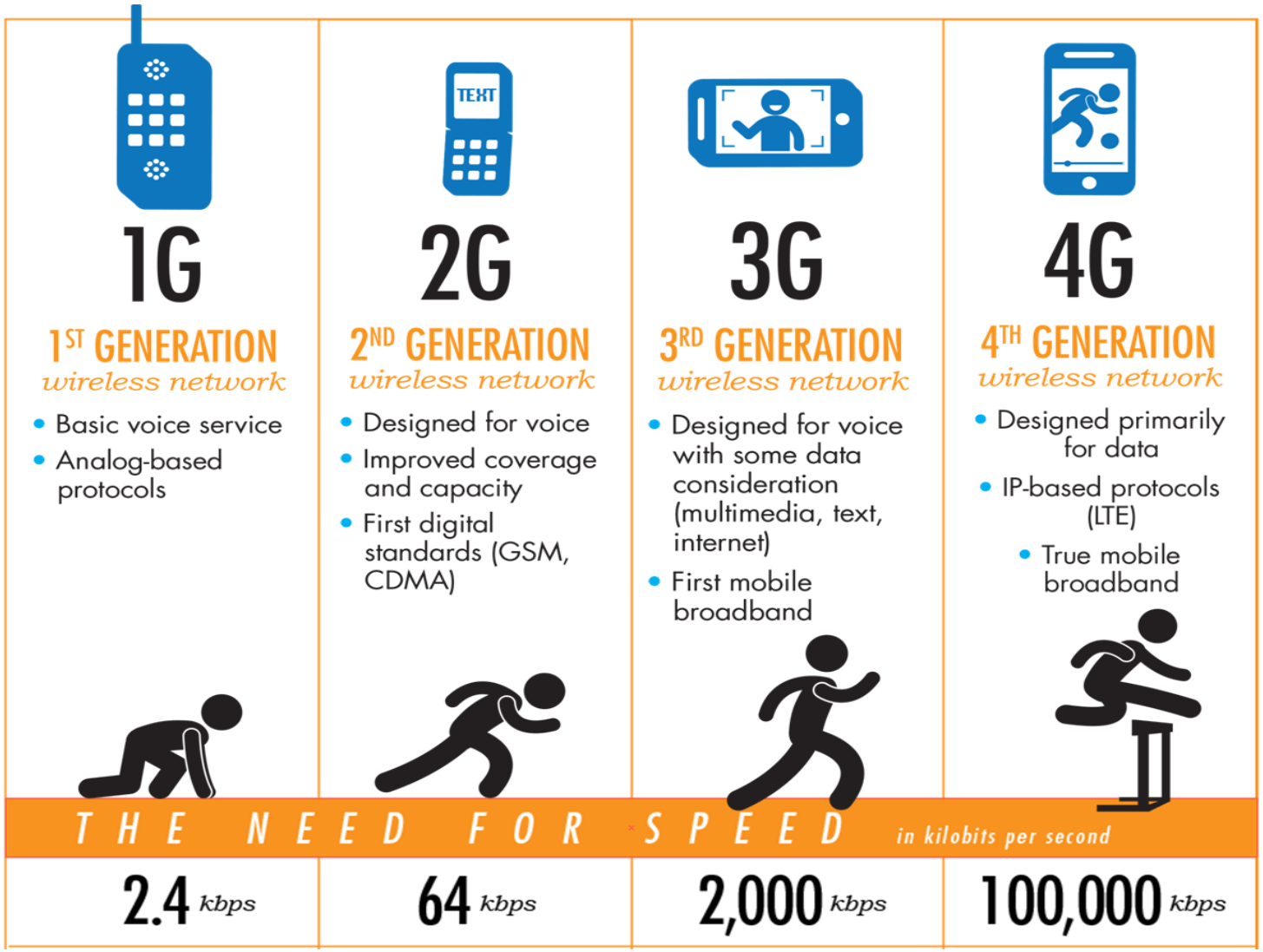
Source: http://www.conniq.com/InternetAccess_others.htm

Broadband 101 – Fixed Wireless – WISP's



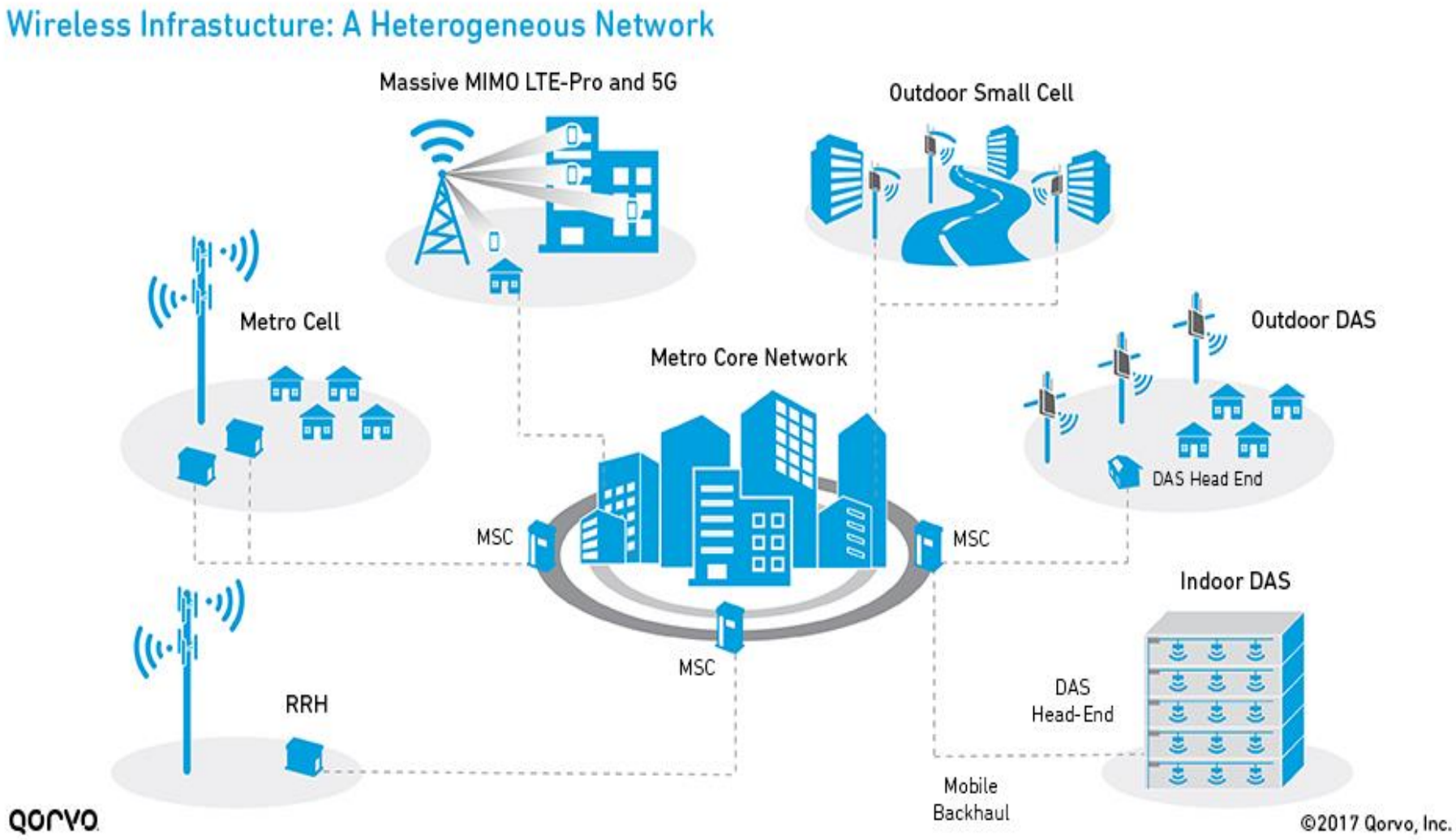
Source: www.inmyarea.com

Broadband 101 – Mobile Wireless – LTE



Source: www.commscopetraining.com

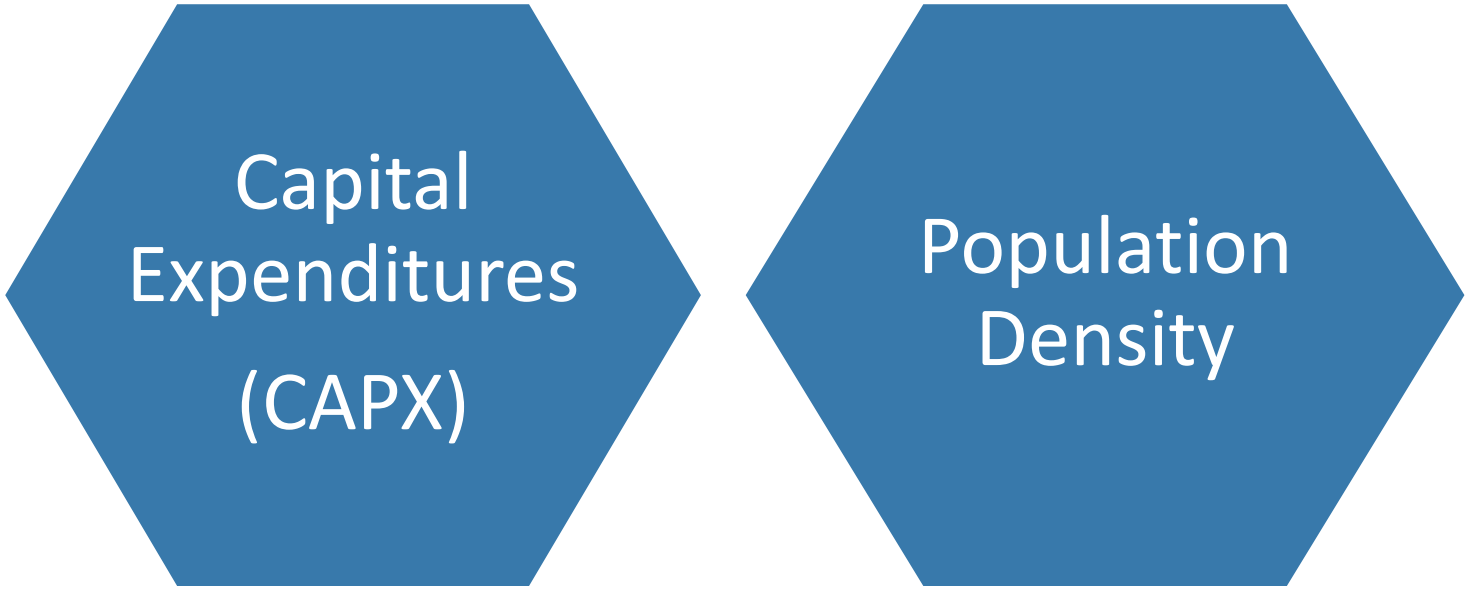
Broadband 101 – Mobile Wireless – 5G



Source: Qorvo.com

Why can’t I get a provider to deploy to my home?

Common Barriers to Broadband Deployment



Broadband Availability Challenges

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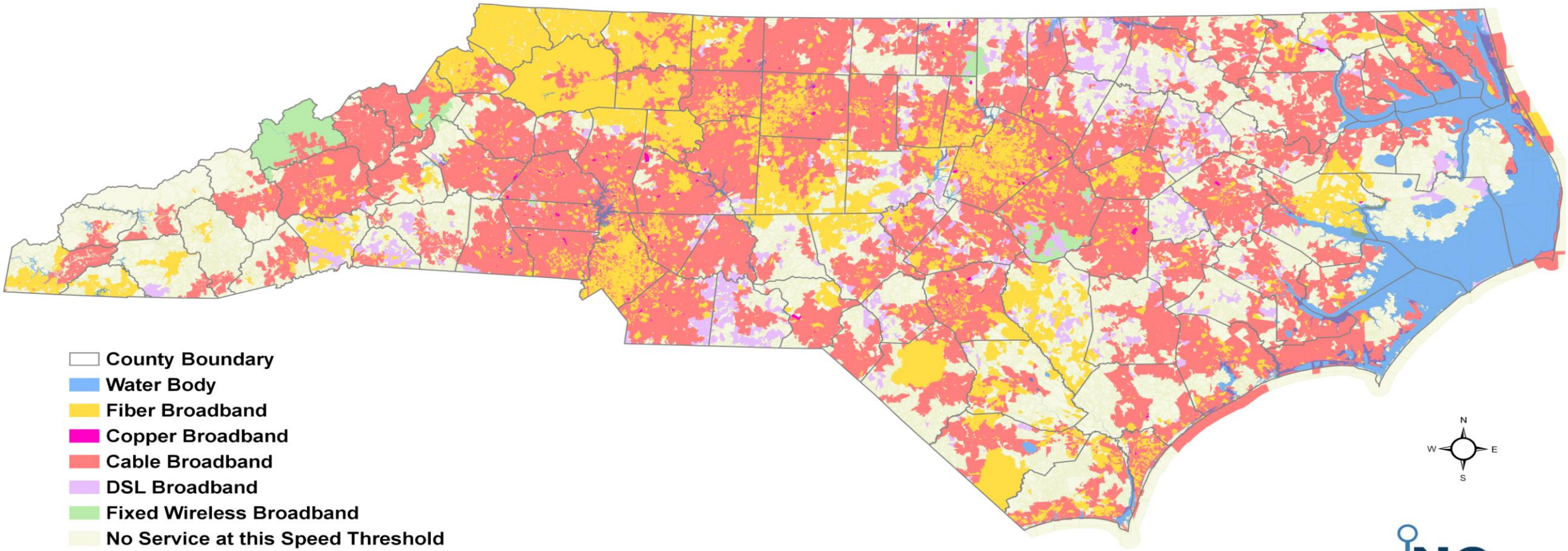
North Carolina Broadband Service Inventory

Advertised Speeds of at Least
25 Mbps Download and 3 Mbps Upload

Data derived from U.S. Federal Communications Commission Form 477 Data Release Dec. 2017.
Note: A provider that reports deployment of a particular technology and bandwidth in a census block may not necessarily offer that service everywhere in the block.



In areas where multiple service options are available this map shows the coverage layers in the order presented above.

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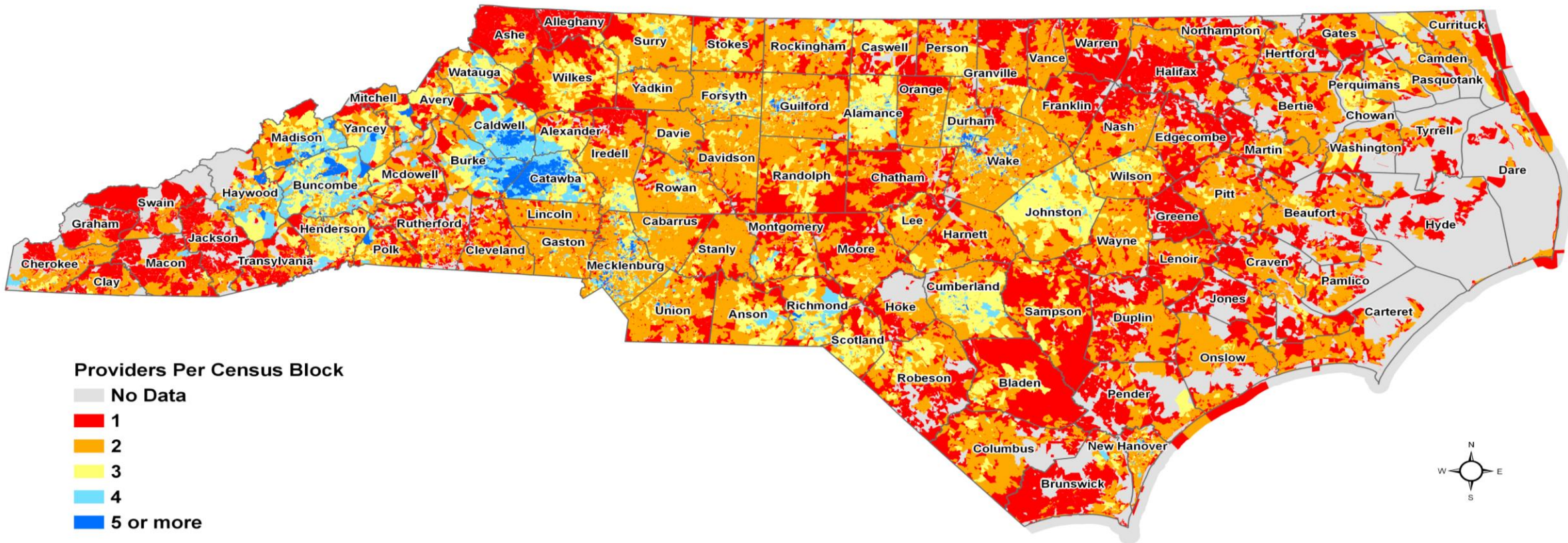
Distribution of Residential Broadband Providers in North Carolina



Providers Per Census Block

- No Data
- 1
- 2
- 3
- 4
- 5 or more

Number of Providers	% Households Served	% Population Served	% Census Blocks Served
0	0.9%	0.8%	10.6%
1	9.5%	9%	26.4%
2	58.4%	58.7%	45.6%
3	23.2%	23.4%	13.7%
4	5.5%	5.6%	2.7%
5 or more	2.6%	2.5%	1.1%

0 25 50 100
Miles

Data derived from U.S. Federal Communications Commission Form 477 Data Release Dec. 2017.
Population and Household figures derived from 2010 U.S. Census Bureau data.
Note: Map includes only wireline and fixed wireless residential providers.

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So Where Are We Now and What Are Our Next Steps?

BIO Community Broadband Playbook

Defined Steps for Broadband Planning:

Broadband Planning Committee
(coordination, clear goals)

Assets & Needs
(demand aggregation, market analysis, vertical & other assets, importance of granular data)

Connecting with Provider Partners
(offer strategies, work with BIO)

Policy & Broadband
(local ordinances, taking advantage of existing State or county infrastructure)

Building the Network
(RFPs/RFIs, funding sources)

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Broadband
Planning
Committee

Assets and Needs

Connecting with
Provider Partners

Policy and
Broadband

Building the
Network

Broadband Planning, First Steps….

Determine Where You Are

Where Is Your Community Now with Information Gathering?

Municipal Assets and Fiber – What do you have, what are you considering?

What Are Your Other County or Regional Assets?

Who are Your Potential Partners, especially Broadband Provider Partners?

Do you have other Projects or Initiatives that can be leveraged?

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As You Develop Plans, Keep in Mind…

No One Solution, rather…

a combination of solutions, a combination of providers,
a combination of technologies…even in one county or municipality

Leverage Other Projects, for example…

smart/connected city applications, public safety, economic development, homework gap

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Your Role As A Community Leader

Learn

Plan/Use the Playbook

Identify Eligible Areas

Advocate

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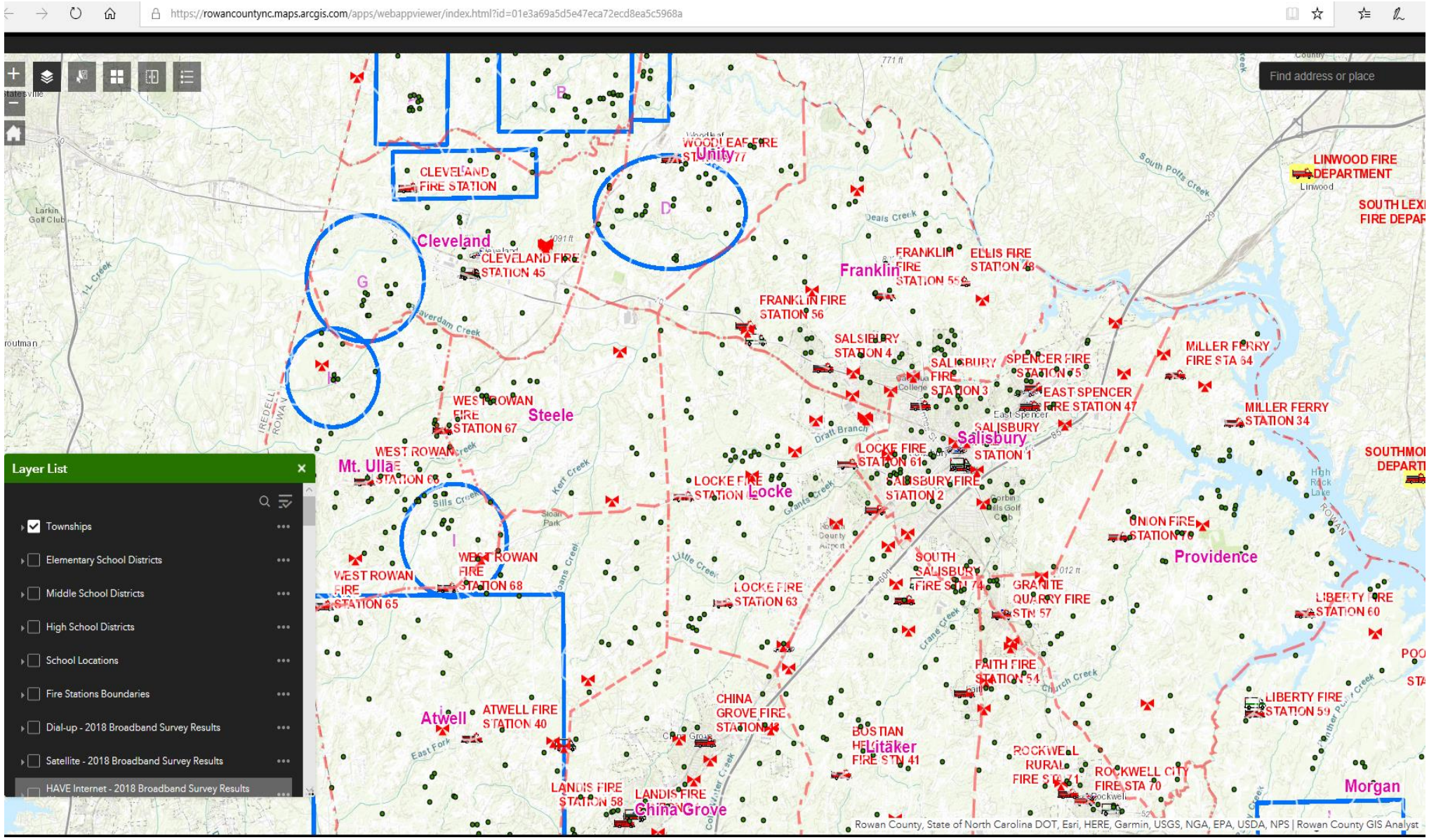
Activities/Models – County Planning

Example:
Planning effort led by Rowan County utilizing the Broadband Infrastructure Office's Community Playbook



County PPPs

Nash County with CloudWyze (Wireless ISP)

- $300,000 Pilot Program with $2m contract overall
- BIO assisted with RFP process and technical assistance

Nash County North Carolina

CloudWyze

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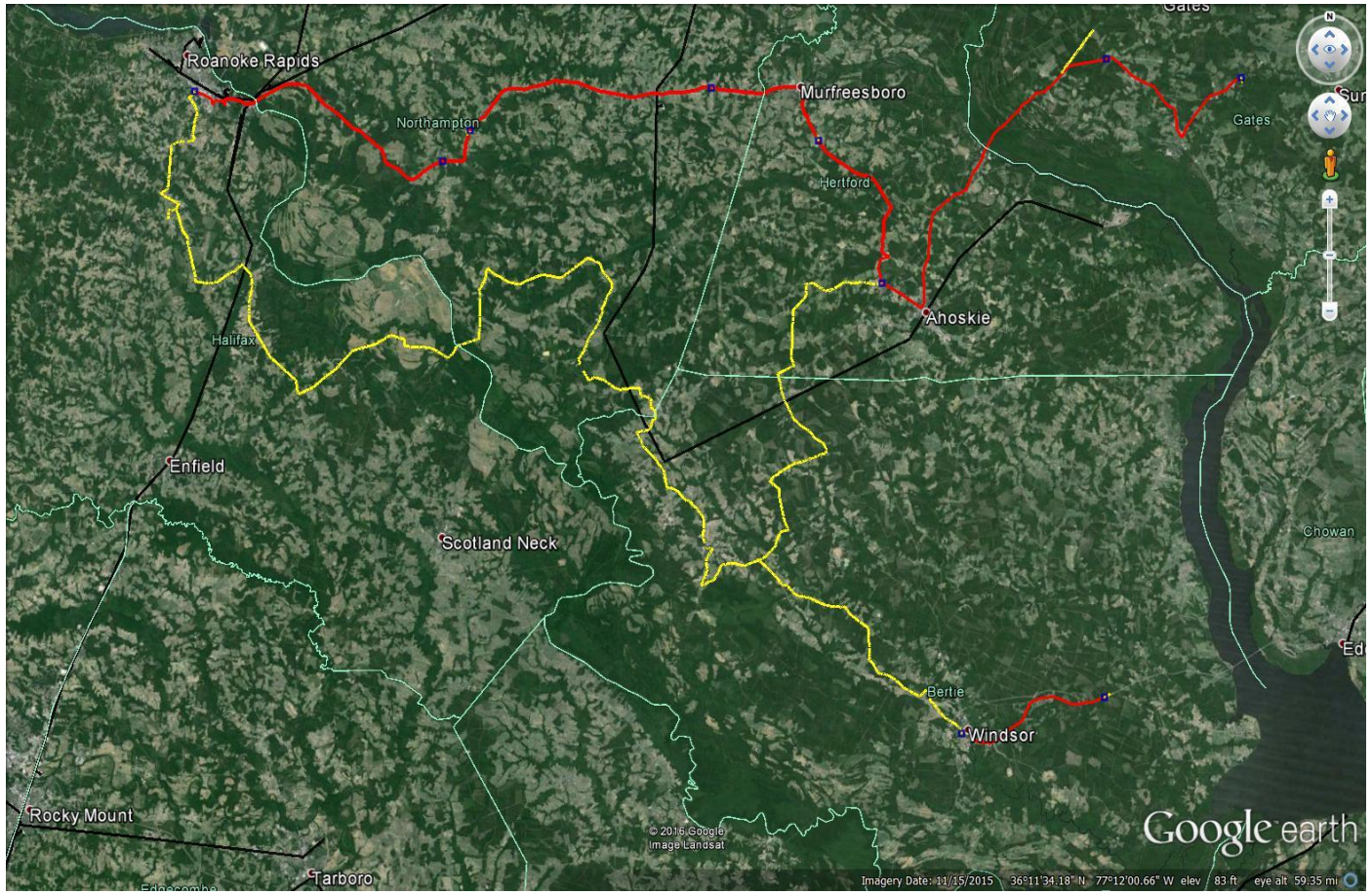
Electric Cooperatives & Broadband

Roanoke Electric Cooperative / Roanoke Connect



- Smart Grid Infrastructure Approach
  (five NE NC counties)
- BIO interested in new provider entrants into NC, discussions with REC on telehealth and other projects

State of North Carolina

ROY COOPER

GOVERNOR

March 14, 2019

EXECUTIVE ORDER NO. 91

ESTABLISHING THE TASK FORCE ON CONNECTING NORTH CAROLINA, PROMOTING EXPANSION OF ACCESS TO HIGH-SPEED INTERNET AND REMOVING BARRIERS TO BROADBAND INFRASTRUCTURE INSTALLATION

Executive Order 91

- Issued in March 2019 by Governor Cooper
- Establishes a Task Force on connecting North Carolina, promoting expansion of access to high-speed Internet and removing barriers to broadband infrastructure installation
- Task Force of Cabinet agencies
- Update 2016 State Broadband Plan and prioritize recommendations
- Statewide Dig Once policy

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GREAT Grant Purpose Statement

To facilitate economic development through the deployment of broadband to unserved areas of the State.

GREAT Grant Program Statistics

2018-2019 Data As Of 9/1/19

Estimated $9.8 Million	9,720 Households	187 Ag. Operations
284 Businesses	32 Community Anchor Points	3 Active Projects in Region A (Jackson & Swain)
Jackson County Sky-Fi 246 Locations	Swain County Sky Wave 519 Locations	Macon County Morris Broadband 226 Locations

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nconemap.maps.arcgis.com/apps/webappviewer/index.html?id=53c7ed3f104c4600bd0538713f0a10e8

yer List

Layers

- NC County Tiers 2019
- CAF Deployments
- GREAT Phase 1 Awarded Census Block
- Blocks with less than 10mbps Download and 1mbps Upload
- Blocks with less than 25mbps Download and 3mbps Upload
- NC1Map_Parcels

gend

NC County Tiers 2019

Tier 1

Tier 2

Tier 3

GREAT Phase 1 Awarded Census Block

locks with less than 10mbps Download and mbps Upload

ouseholds - 2010

> 100 - 327

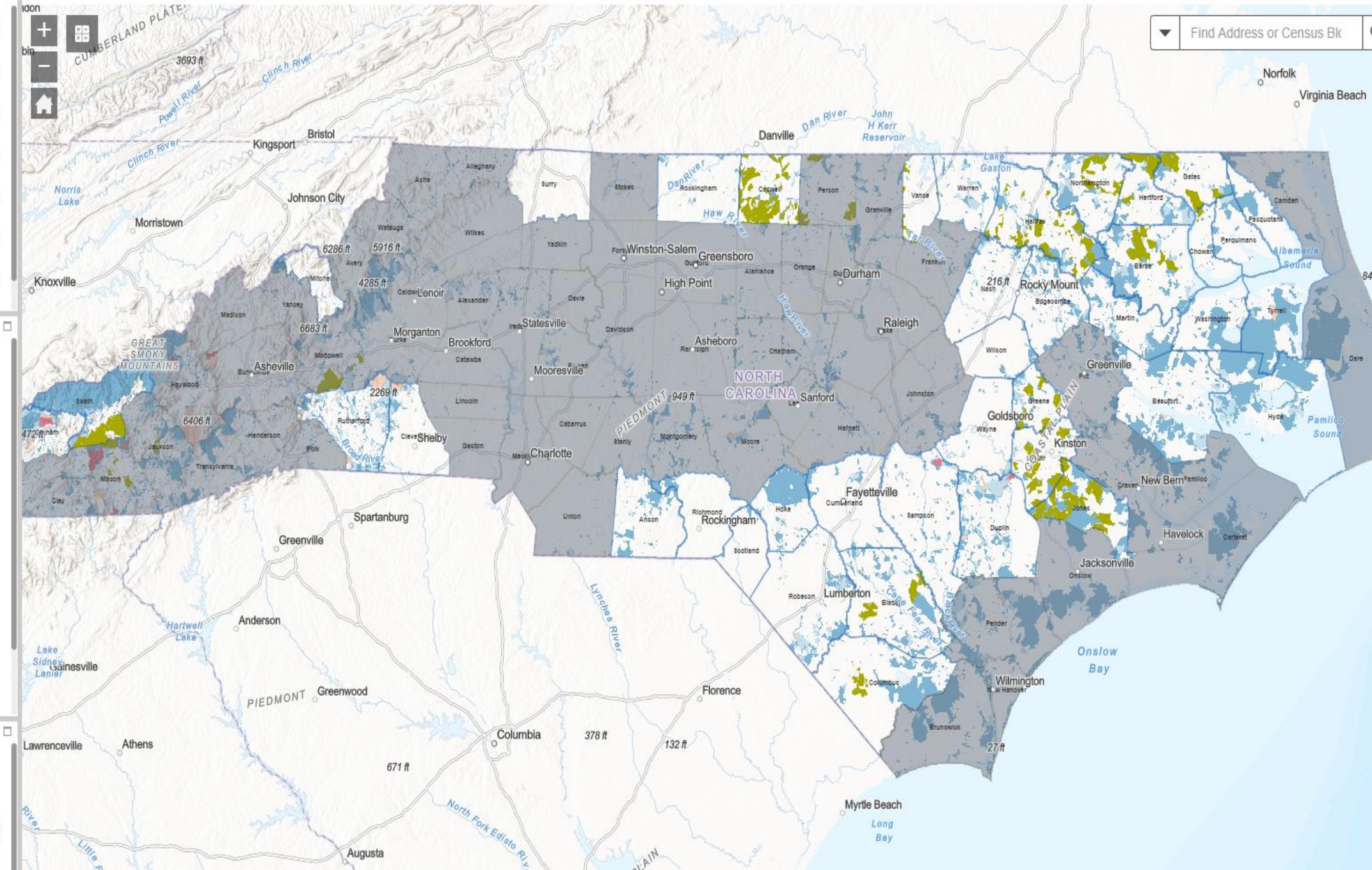
> 50 - 100

ta Used

For instructions on the functionality of this mapping tool, CLICK HERE.

rovider service areas and speeds are based on the FCC xed Broadband Deployment Data from form 477 (June 2017 release). A provider that reports deployment of a

Find Address or Census Bl



Potential Broadband Funding Opportunities

USDA-Rural Utilities Service

- Community Connect
- Distance Learning and Telemedicine Grants
- Rural Broadband Access Loan and Loan Guarantee
- Telecommunications Infrastructure Loans and Guarantees

- Shannon Legree 803-354-3168

USDA ReConnect Loan and Grant Program

- Spring 2020
- Grant only
- Grant/Loan Combo
- Loan only

- Shannon Legree 803-354-3168

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USDA Invests $23.7 Million in Rural Broadband for North Carolina Families

CLINTON, N.C., Nov. 6, 2019 – Today, U.S. Department of Agriculture (USDA) Deputy Under Secretary for Rural Development Donald "DJ" LaVoy announced USDA has invested $23.7 million in high-speed broadband infrastructure that will create or improve rural e-Connectivity for nearly 8,750 rural households in North Carolina. This is one of many funding announcements in the first round of USDA's ReConnect Pilot Program investments.

Press Release
Release No. 0174.19

Weldon Freeman (202) 690-138
Wayne Maloney (202) 720-6101

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Potential Broadband Funding Opportunities

ARC

- Pre-Application open 3/1/20
- Due 4/13/20
- Match required
- $300K construction
- $100K non-construction
- Eligible Applicants: Local governments and non-profits

- Olivia A. Collier 919-218-3623

ARC POWER

- RFP will be available this fall
- Match required
- Funding limits will be detailed in the RFP
- Eligible Applicants: Local governments and non-profits

- Olivia A. Collier 919-218-3623

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Potential Broadband Funding Opportunities

FCC Rural Digital Opportunity Fund

- FCC Vote January 30
- Proposal for $20.4 Billion
- Distribution: Reverse Auction
- Priority funding areas: CAF II (169k HH) and <25/3Mbps
- https://www.fcc.gov/document/fcc-proposes-204-billion-rural-digital-opportunity-fund-0

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Broadband Adoption

The Percentage Of The Population That Subscribes To A Broadband Service

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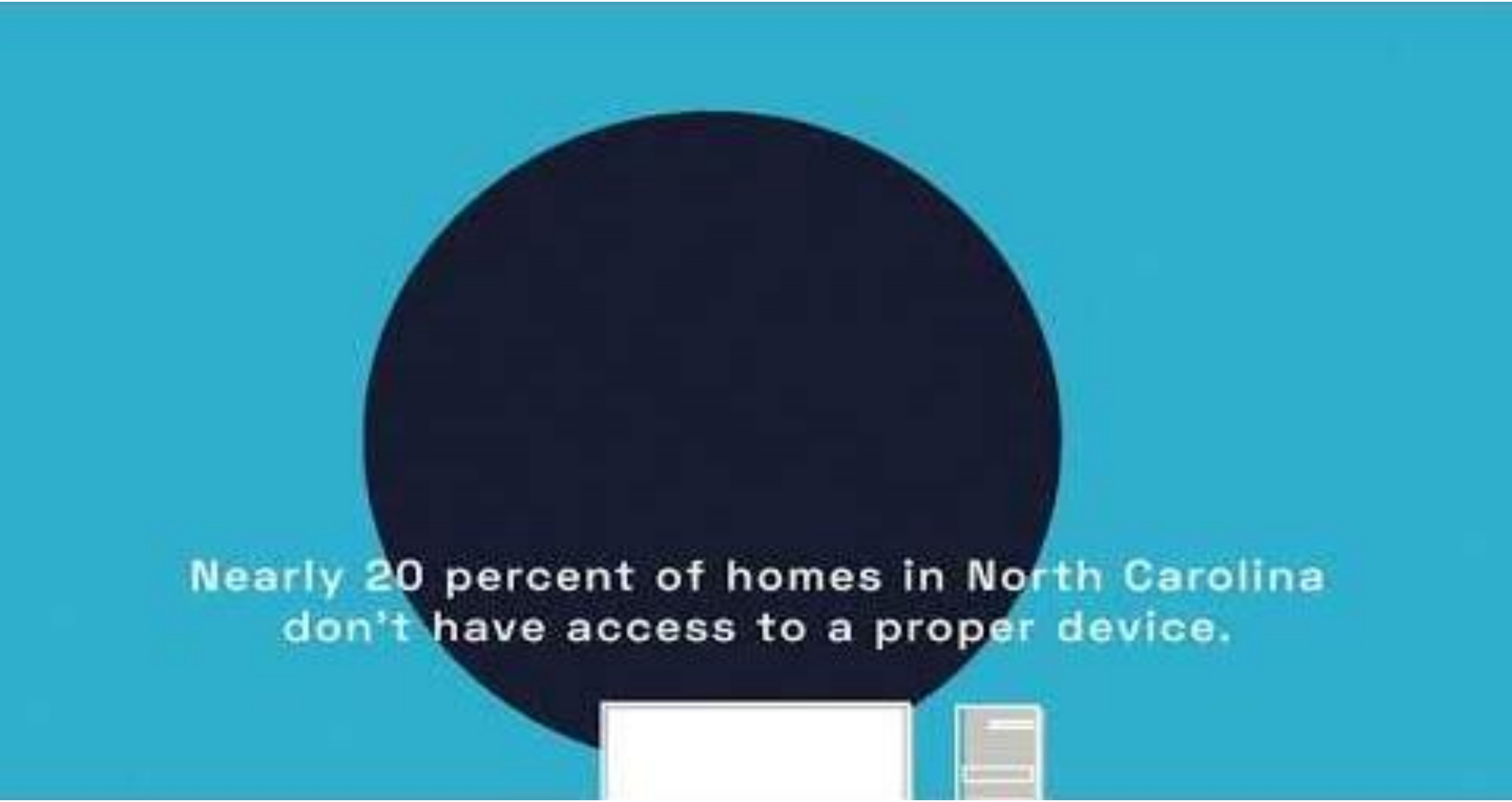
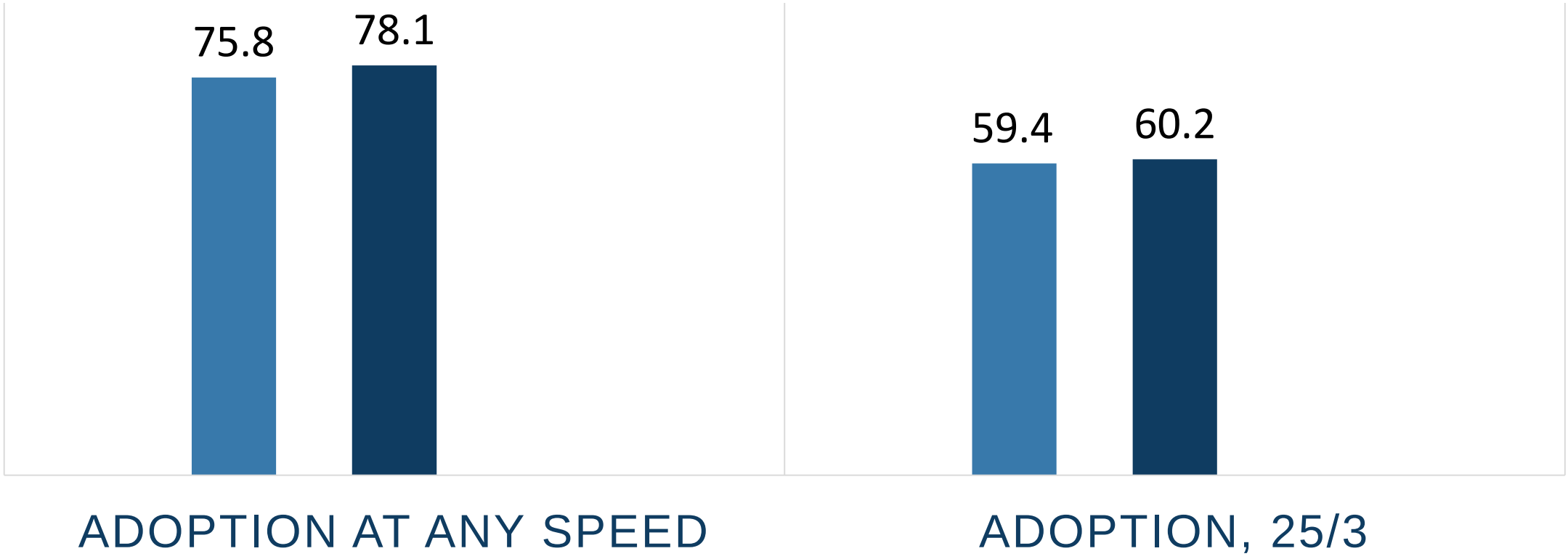
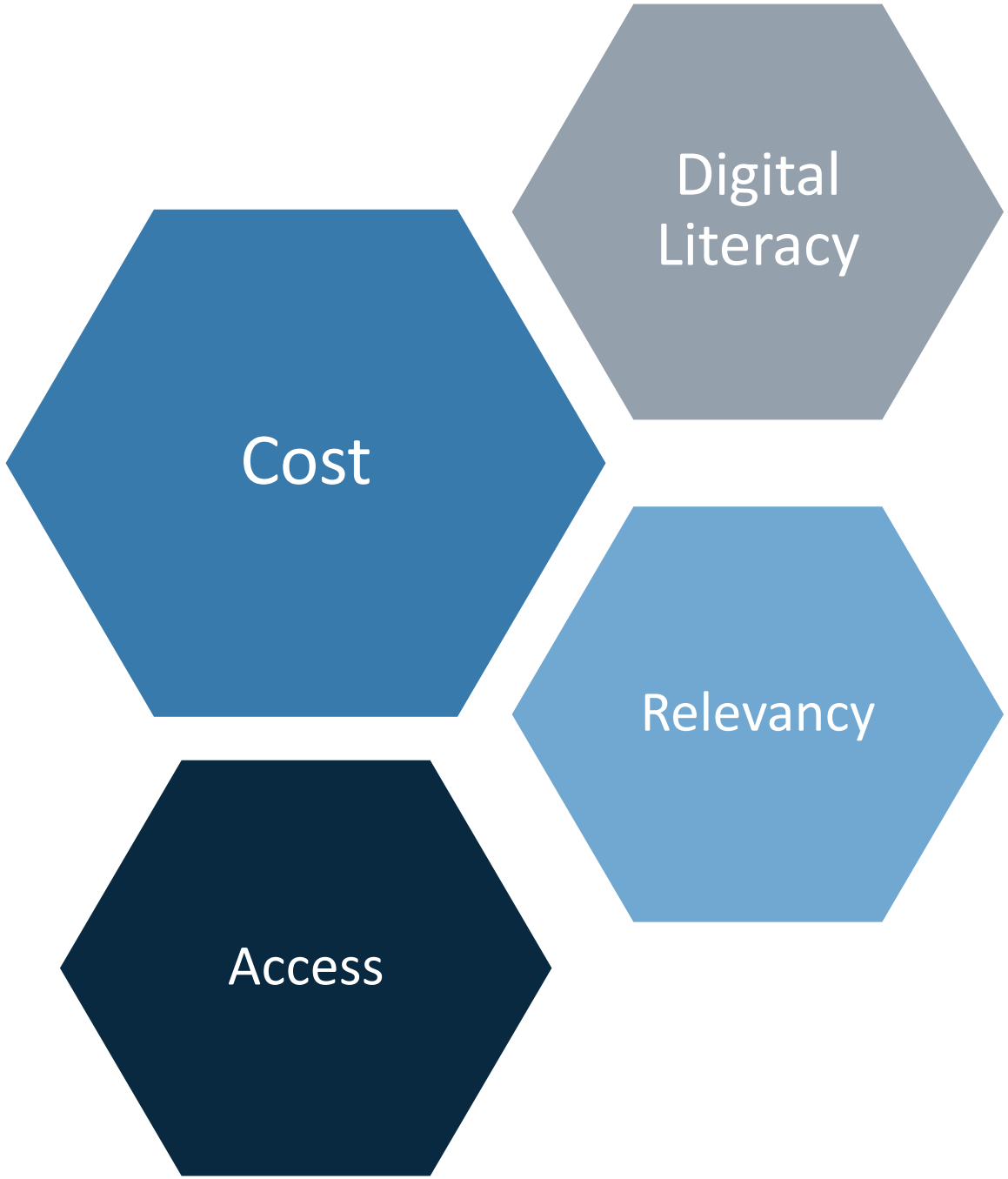

Nearly 20 percent of homes in North Carolina
don't have access to a proper device.

2017 Broadband Adoption Rates



Common Barriers to Broadband Adoption



Homework Gap Pilot

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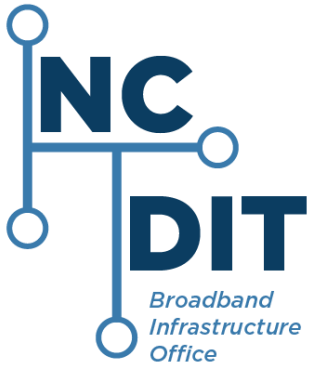
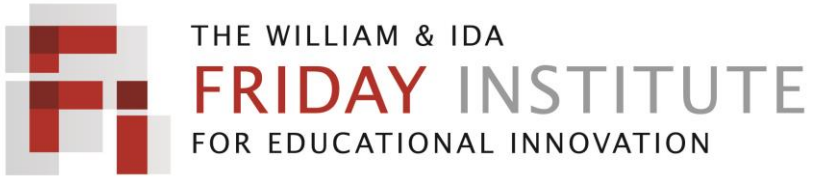
NC Digital Equity and Inclusion Collaborative





Let's Connect!

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