

WELCOME





WELCOME

To the BEAD Success Summit!



David Stehlin
CEO
TIA



Helpful Information

Please silence phones/devices during sessions.

Event Wi-Fi Information:

Network: **Marriott_CONFERENCE**

Passcode: **BEAD23**

Phone charging station is in the back of the room.

Download the Mobile App to access the agenda, speaker bio's, special announcements and more!

Exhibit Hall hours 1pm – 5pm

Have Questions? Visit the Registration Desk for help.

Download the **BEAD Success Summit Mobile App**:

STEP 1 - Download the **Aventri Events App** in your app store (Apple or Android)

STEP 2 - Input Access Code:

790087

STEP 3 - Enter the email address you used to register

STEP 4 - Input **BEAD23** for your password



About TIA

GOVERNMENT AFFAIRS

- Advocate for ICT manufacturers and suppliers (U.S. & Globally)
- Advance policy positions on wide range of issues
- Impacting ICT industry globally

STANDARDS DEVELOPMENT

- ANSI Accredited
- >3,600 global standards and technical documents
- >1,000 volunteers from 20+ countries

TECHNOLOGY ENABLEMENT PROGRAMS

- Innovative technologies for an increasingly connected world
- Smart Buildings
- Edge Data Centers

QuEST FORUM COMMUNITY

- SCS 9001 Cyber and Supply Chain Security Standard
- TL 9000 Quality Management System
- Sustainability Tool and Benchmarking



Telecommunications Industry Association

THE
TRUSTED INDUSTRY
ASSOCIATION
FOR THE CONNECTED WORLD.



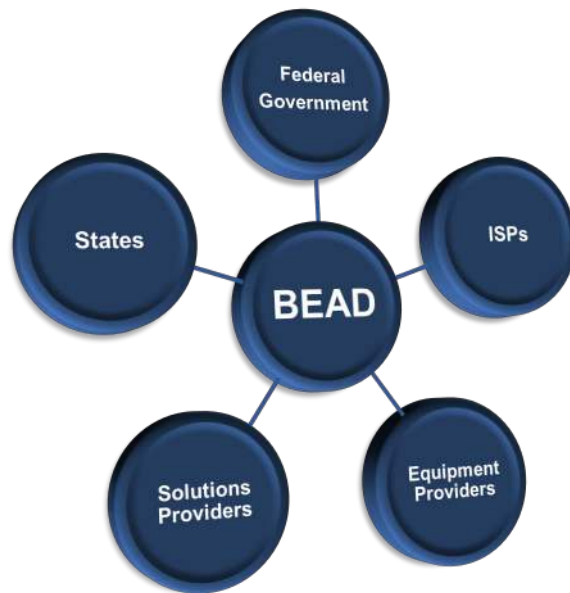
Strong Industry Support

Over 400 Global Members and Participants





Purpose of the BEAD Success Summit





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NOKIA

SUPERIOR
ESSEX

WILKINSON
BARKER
KNAUER
W)B)K



Meet the Exhibitors!

Adtran

Amphenol Network Solutions

Avion Networks

Calix

CHR Solutions

CommScope

Corning

DZS

Ericsson

Irby

Nokia

Ribbon

Sabre Industries

Superior Essex

TIA

Vantage Point

Wesco



Day 1 - April 19

| Start Time | Sessions | Speakers |
|--------------------|---|---|
| 7:30 | Breakfast | |
| 8:30 | Opening Remarks | David Stehlin, TIA |
| 9:00 | Fireside Chat | U.S. Senator Mark Warner David Stehlin, TIA |
| 9:30 | Broadband Maps | Sarah Morris, NTIA |
| 9:45 | Setting the Extreme High Cost Per Location Threshold | Opening Remarks: Nick Alexander, NTIA Edyn Rolls, Oklahoma Broadband Office Earnie Holtrey, Indiana Broadband Office Tim LeDonne, Connected Nation Moderator: Trevor Smith, CommScope |
| 10:30 | Break | |
| 11:00 | Securing Critical Infrastructure | Allan Friedman, CISA |
| 11:15 | Cyber and Supply Chain Risk Management Requirements | Meghan Sandfoss, Kentucky Broadband Office Chandler Vaughan, Virginia Broadband Office Angela Smith, NIST Moderator: Mike Regan, TIA |
| 11:45 | Building a Workforce for Broadband Deployments | Amelia De Jesus, WIA Thomas Tyler, Louisiana Broadband Office Roddy Flynn, Delaware Broadband Office Moderator: Richard Zinno, MasTec |
| 12:15 | Lunch | John Chamberlain, CommScope |
| 1:00 | Exhibits Open | |
| 1:30 | Digital Equity: The 'E' in BEAD | Deborah Lathen, Lathen Consulting Paul Garnett, Vernonburg Group Moderator: Melissa Newman, TIA |
| 2:00 | Fiber to the Premises: Maximizing Bandwidth While Overcoming Reach Constraints | Bob Whitman, Corning Phillip Watkins, Hosted America Geoff Burke, DZS Jason Livingood, Comcast Moderator: Greg Manganello, Fujitsu |
| 5:00 – 7:00 | Networking Reception & Extended Exhibit Hall Time | |

Day 2 - April 20

| Start Time | Sessions | Speakers |
|------------|--|--|
| 7:30 | Breakfast | |
| 8:30 | Opening Remarks | David Stehlin, TIA |
| 8:45 | Keynote | Kevin Gallagher, U.S. Department of Commerce |
| 9:00 | Broadband Funding and Investments | Blair Levin, Brookings Institute |
| 9:15 | Sharing the Cost and Benefits of Building Broadband Networks | Courtney Dozier, NTIA Elena Thaxton, New Jersey Broadband Office Meghan Sandfoss, Kentucky Broadband Office Moderator: Greg Bathrick, Calix |
| 10:00 | Buy America Update | Will Arbuckle, NTIA |
| 10:15 | Break | |
| 10:45 | The Effects of Climate Change on Broadband Networks | Ben DeAngelo, NOAA |
| 11:00 | Building in Climate Resiliency | Russell Hanser, NTIA Glen Howie, Arkansas Broadband Office Thomas Tyler, Louisiana Broadband Office Moderator: William Marx, DZS |
| 11:30 | Lessons Learned from Previous Broadband Grant Programs | Erin Scarborough, AT&T Teresa Ferguson, NRTC Moderator: Nathan Weber, P.E., Vantage Point |
| 12:15 | Lunch | Geoff Burke, DZS |
| 1:00 | Exhibits | |
| 1:30 | The Importance of Supporting Anchor Institutions | John Windhausen, Jr., SHLB Coalition |
| 2:00 | Stretching BEAD Funds to the Hard-to-Reach with Fixed Wireless Network Technology | Craig Schwechel, Ericsson Greg Agami, UScellular Mark Gibson, CommScope Will Adams, T-Mobile Moderator: Leslie Barnes, Qualcomm |
| 3:00 | NTIA / SBLN Closed Door Session | |
| 5:00 | Event Close | |



Fireside Chat:

The Importance of Broadband for America

Host:



David Stehlin
CEO
TIA



U.S. Senator
Mark Warner
from Virginia



Broadband Maps

An Update from NTIA



Sarah Morris
Senior Advisor, Office of
the Assistant Secretary,
NTIA



Setting the Extreme High Cost Per Location Threshold

Opening Remarks:

Moderator:



Nick Alexander
Senior Policy Analyst
NTIA



Trevor Smith
VP, Strategy and
Business Development
CommScope



Tim LeDonne
Executive Director,
State Programs
Connected Nation



Earnie Holtrey
Deputy Director
Indiana Broadband
Office



Edyn Rolls
Director of Broadband
Strategy
Oklahoma
Broadband Office



Extremely High Cost Per Location Threshold

Goal: Broadband for Everyone

- *Unserved and underserved locations*
- *After these are complete, flexibility in using funds*
- *Gigabit services to anchor institutions*



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Each Eligible Entity must establish its Extremely High Cost Per Location Threshold in a manner that maximizes use of the best available technology while ensuring that the program can meet the prioritization and scoring requirements set forth in Section IV.B.6.b of this NOFO. NTIA expects Eligible Entities to set the Extremely High Cost Per Location Threshold as high as possible to help ensure that end-to-end fiber projects are deployed wherever feasible



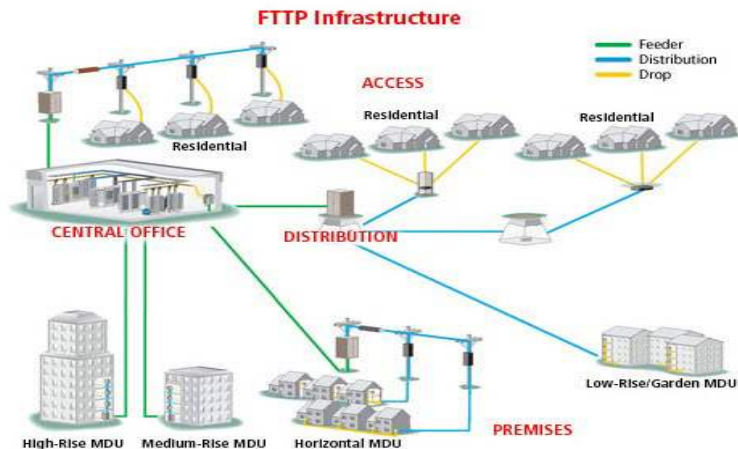
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Preference: Fiber Heavy



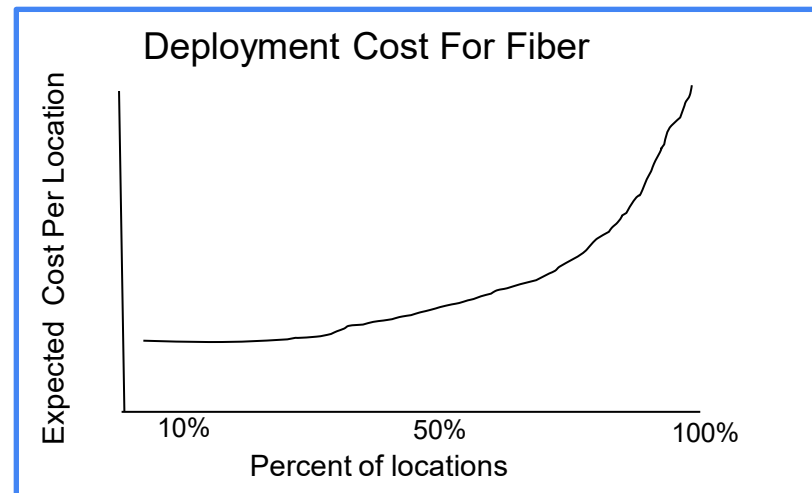


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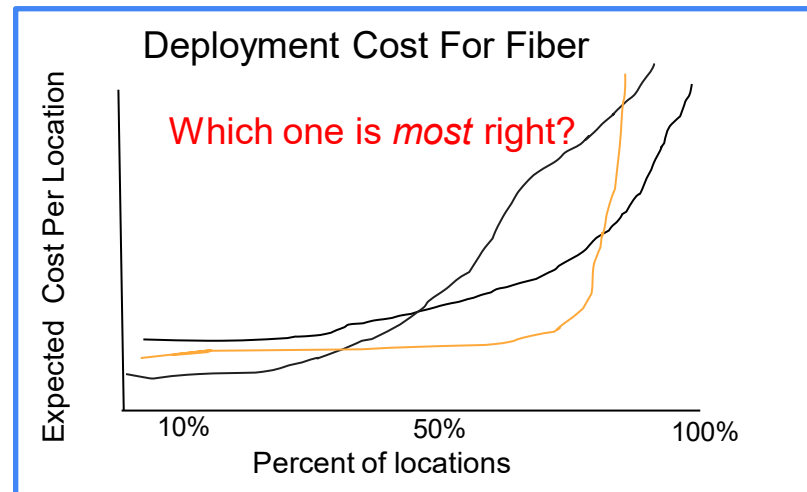
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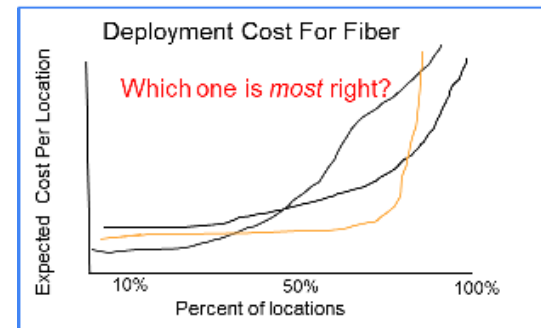
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Moderator: Trevor Smith TIA and CommScope

Panelists:

Edyn Rolls, Oklahoma Broadband Office
Earnie Holtrey, Indiana Broadband Office
Tim LeDonne, Connected Nation



Thank you!

Trevor Smith, TIA and CommScope
Edyn Rolls, Oklahoma Broadband Office
Earnie Holtrey, Indiana Broadband Office
Tim DeLonne, Connected Nation





Securing Critical Infrastructure

Opening Remarks



Allan Friedman
Senior Advisor and
Strategist
CISA



Cyber and Supply Chain Risk Management Requirements

Opening Remarks:

Moderator:



Allan Friedman
Senior Advisor and
Strategist
CISA



Mike Regan
Vice President of
Business Performance
TIA



Angela Smith
Technical Lead,
Cybersecurity and
SCRM Program
NIST



Meghan Sandfoss
Executive Director
Kentucky Broadband
Development Office



Chandler Vaughan
Sr. Broadband Analyst
Virginia Broadband
Office



Building a Workforce for Broadband Deployment

Moderator:



Richard Zinno
Vice President
Mastec



Amelia De Jesus
Vice President of
Workforce Solutions
WIA

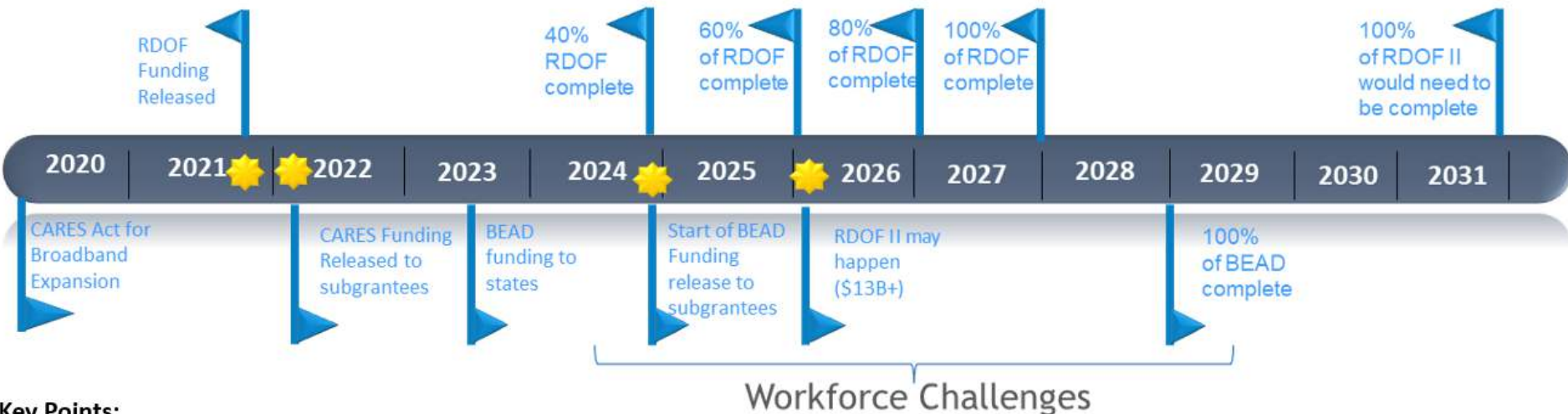


Roddy Flynn
Executive Director
**Delaware Broadband
Office**



Thomas Tyler
Deputy Director
**Louisiana Broadband
Office**

Broadband Funding Timeline and Workforce Challenges



Key Points:

- ❖ Current funding is being driven by RDOF and CARES State Grant Activity
- ❖ **Broadband Equity Access Deployment (BEAD)** program is \$42.5B restricted to unserved/underserved. **Notice of Funding Opportunity (NOFO)** went out May 2022 to the states
- ❖ States will receive funding from the NTIA (June 2023). Individual states will administer to subgrantees for deployment (Likely late 2024, early 2025).
- ❖ BEAD subgrantees must complete buildout and begin providing broadband service within 4 years
- ❖ States can spend BEAD (and other) funds on workforce development, but it's really-up to the states how much they want to devote to it
- ❖ Texas is poised to get the most funding in the program – approximately \$3.5B. The state poised to get the second highest amount of funding is Michigan. Other states in the top 10, in descending order, are Missouri, Alabama, Georgia, Florida, Virginia, Arkansas, California and Louisiana.
- ❖ Workforce, labor and equipment for the buildout will be one of the main challenges for subgrantees and states to fulfill the intent of the BEAD program
- ❖ MasTec has set up 12 aerial lineman and underground construction schools across the country to create new workers (MasTec Academy of Construction)



Thank you!

Richard Zinno, MasTec (Moderator)

Amelia De Jesus, WIA

Roddy Flynn, Delaware Broadband Office

Thomas Tyler, Louisiana Broadband Office





Sponsor Remarks



John Chamberlain
Vice President of Technology
Connectivity and Cable Solutions
CommScope



Historic Time

Be Aware ...

This time in history is when THE WORLD becomes personally connected. We're in the middle of it and the next 10 years will bring ...

BROADBAND to EVERYONE





Applications Driving the Need for Improved Infrastructure

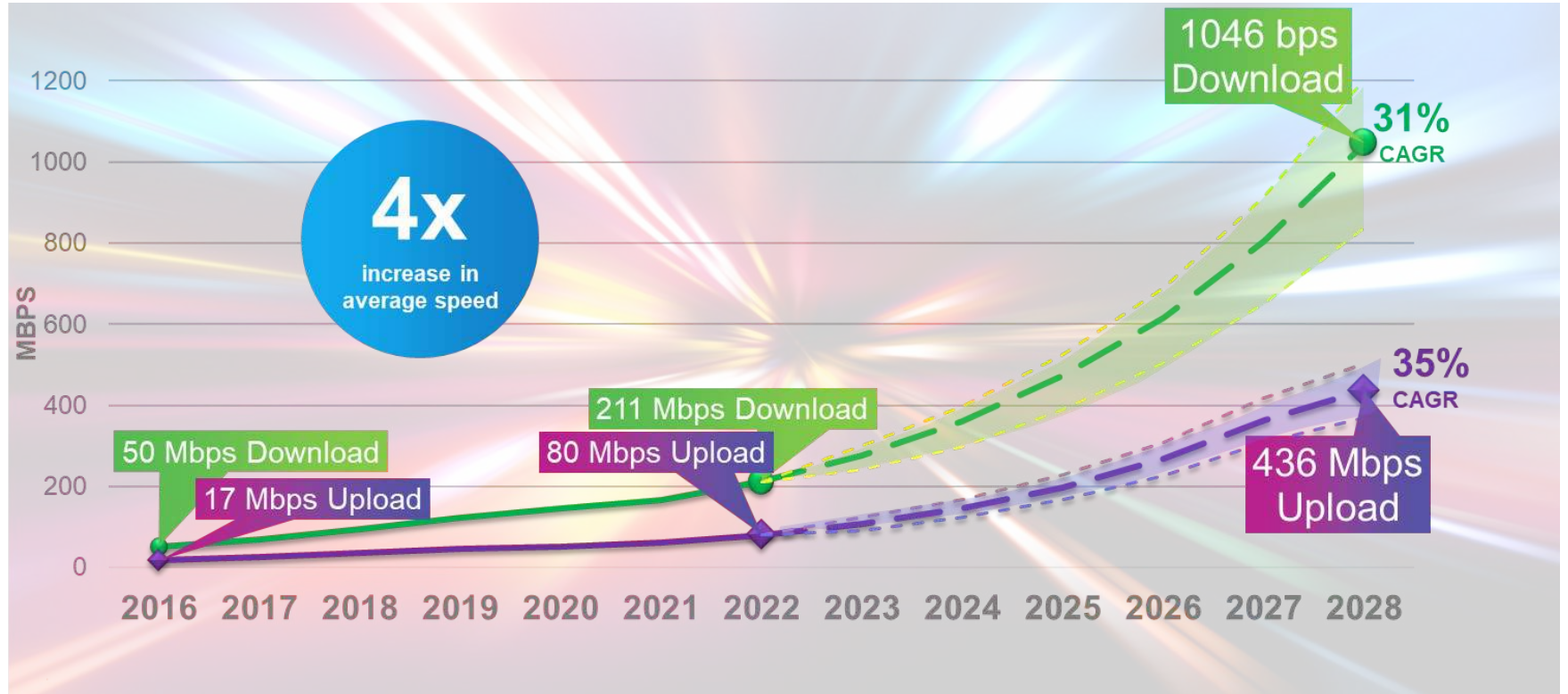


Speeds *high enough*, latency *low enough* to support real-time, interactive applications.



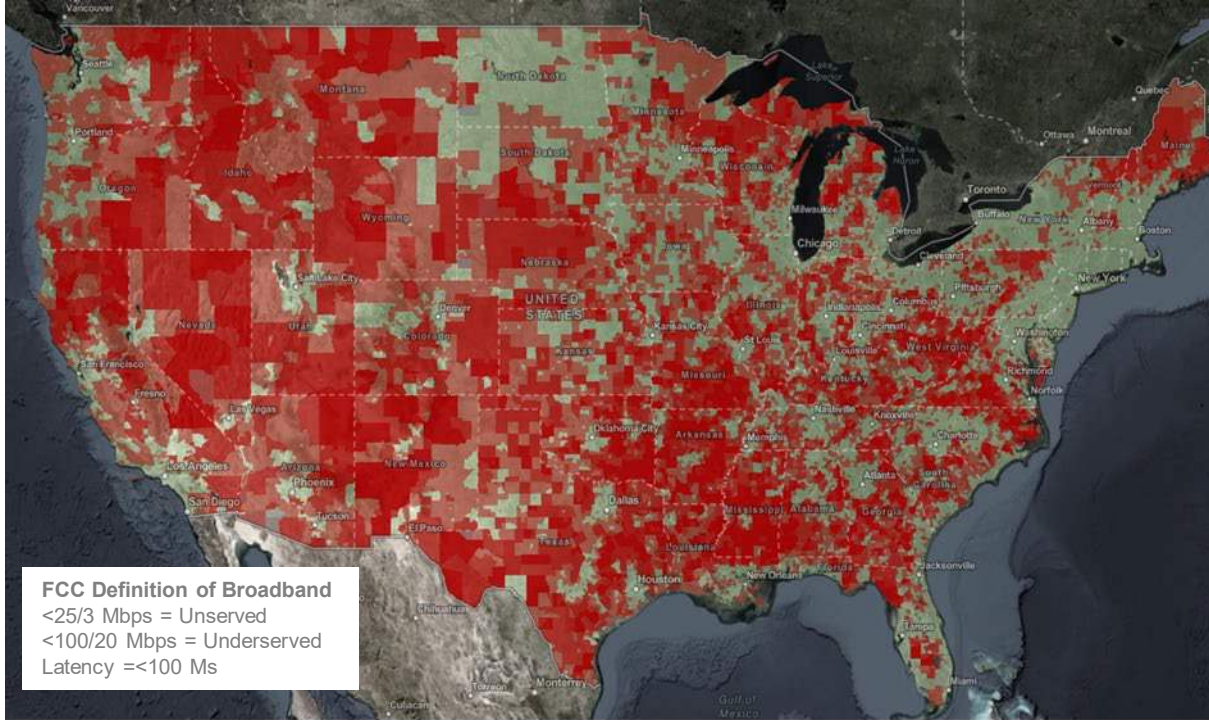


Current And Projected Future Internet Speed US Market





The Digital Divide



FCC Definition of Broadband
 <25/3 Mbps = Unserved
 <100/20 Mbps = Underserved
 Latency =<100 Ms

17.3% Rural Americans
1.2% Urban Americans

lacked fixed terrestrial access of speeds of 25/3Mbps¹

27 Million

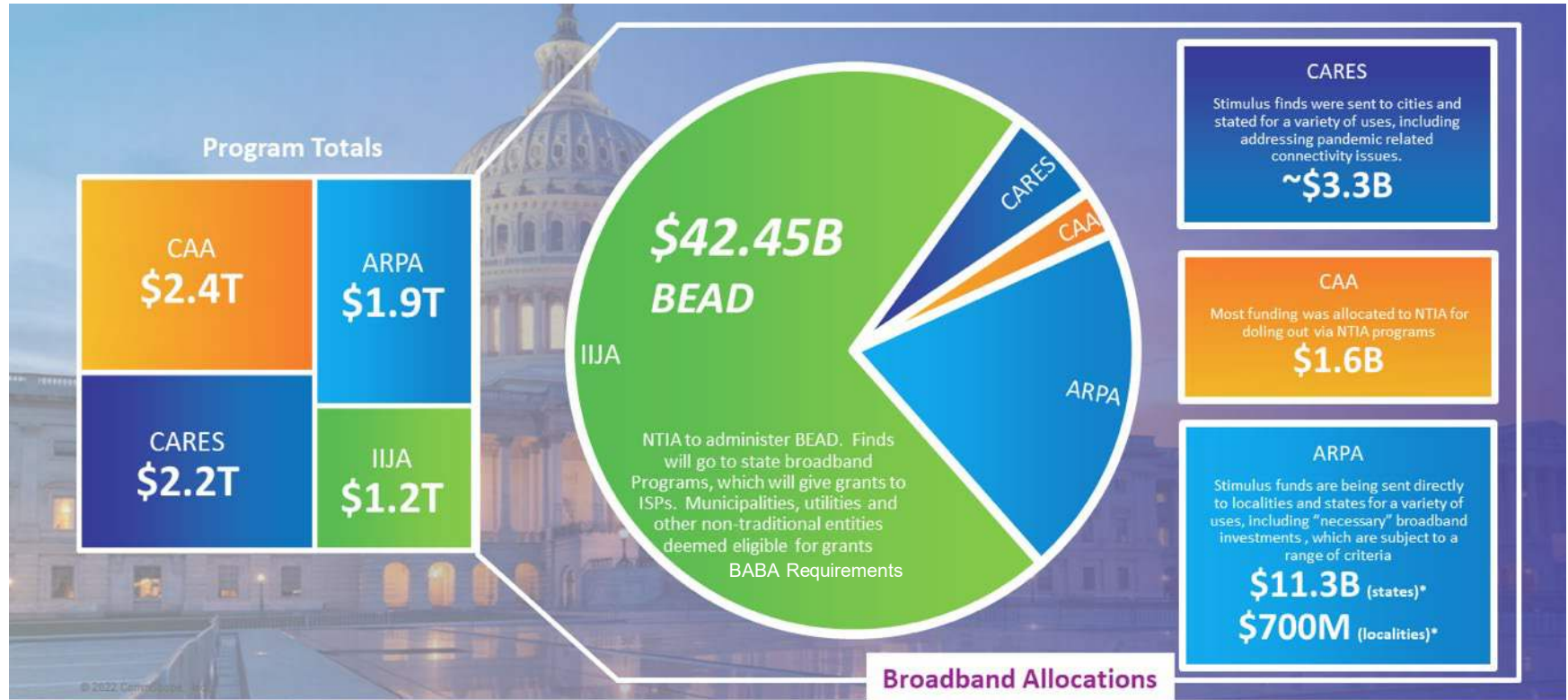
households in America (22.5%) are estimated to not have access or ability to purchase broadband internet²

¹Source: United States Department of Commerce, National Telecommunications and Information Administration (NTIA)

²FOURTEENTH BROADBAND DEPLOYMENT REPORT Jan 2021

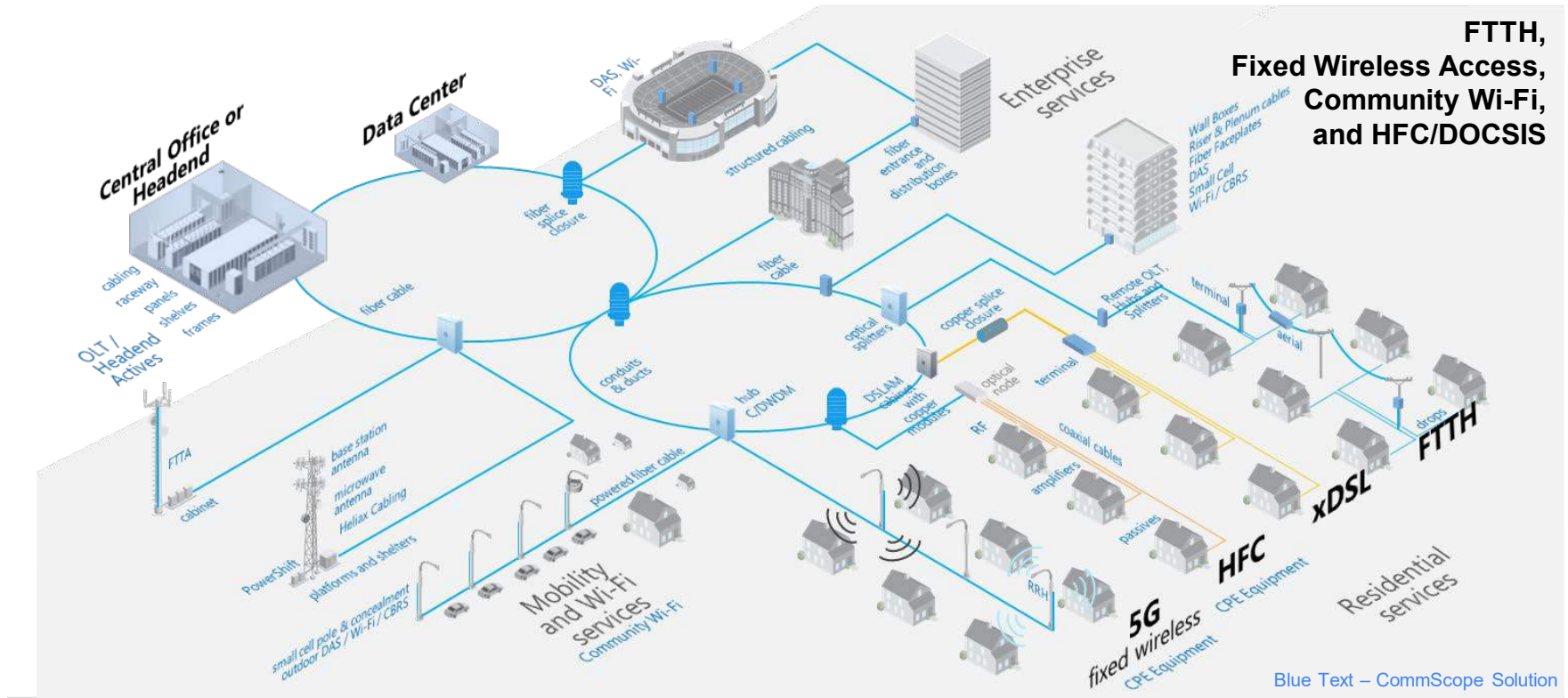


Government Funding Programs



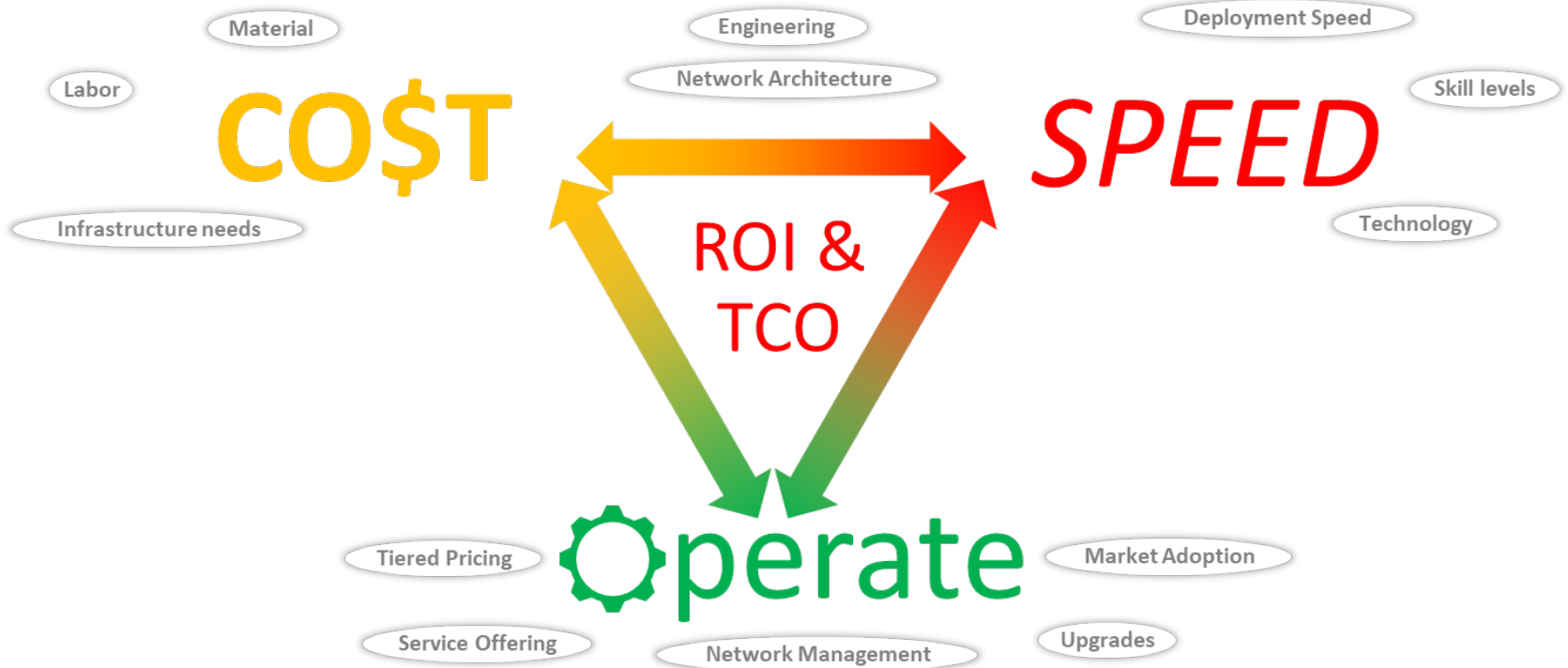


CommScope Delivers All Forms Of Terrestrial Broadband





Elements that Influence Technology Choice





Deployment Technology Comparison

FTTH

Cost Per Premise: \$\$\$ Homes Passed, \$\$ Homes Connected

Deployment Speed: Turtle icon, Human icon

Bandwidth: >1Gb Symmetrical (scalable with same infrastructure)

Lifetime Cost: Bar chart with 5 bars of increasing height

Fixed Wireless (mid-band)

Cost Per Premise: \$\$ Homes Passed, \$ Homes Connected

Deployment Speed: Human icon, Rabbit icon

Bandwidth: 100/20 Mbps

Lifetime Cost: Bar chart with 5 bars of increasing height

HFC/DOCSIS (Brownfield)

Cost Per Premise: \$ Homes Passed, \$\$ Homes Connected

Deployment Speed: Human icon, Human icon

Bandwidth: 1Gb/100 Mbps

Lifetime Cost: Bar chart with 5 bars of increasing height



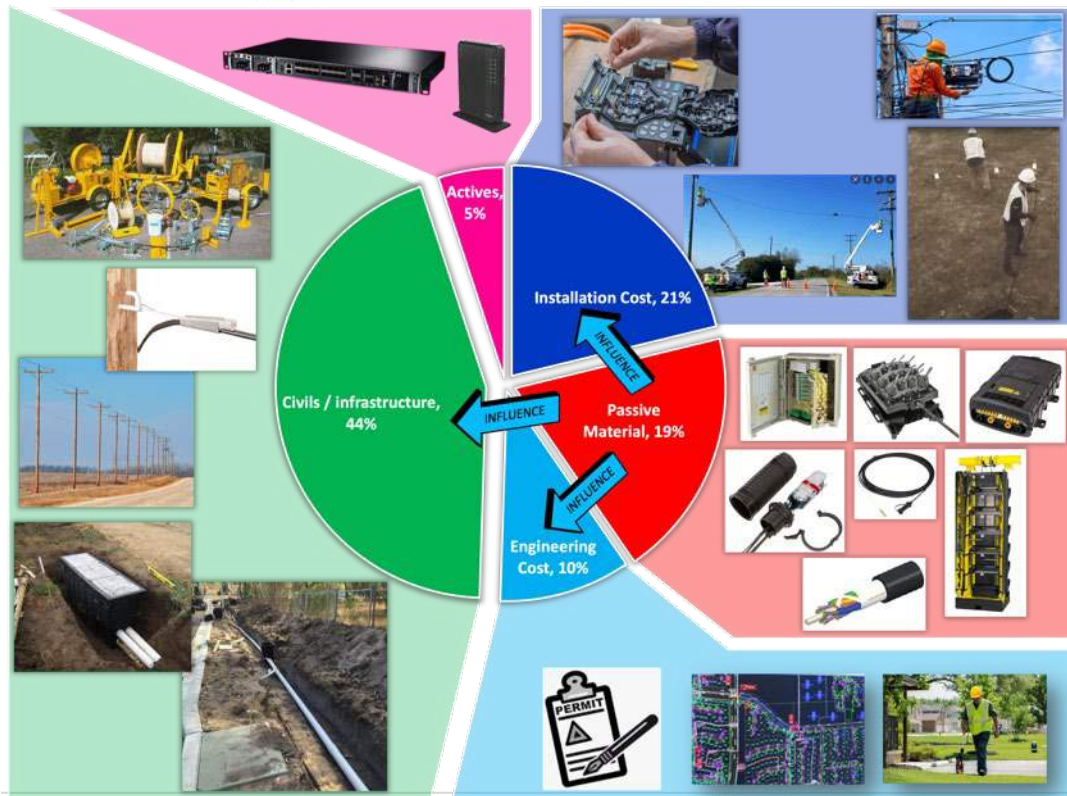
Funding Programs Emphasize Fiber

NTIA has determined that
“Priority Broadband Projects”
are those which use
end-to-end fiber-optic
architecture.

- Only end-to-end fiber will “ensure that the network built by the project can easily scale speeds over time to ...meet the evolving connectivity needs of households and business” and “support the deployment of 5G, successor wireless technologies, and other advanced services”
- End-to-end fiber networks can be updated by replacing equipment attached to the ends of fiber-optic facilities, allowing for quick and relatively inexpensive network scaling as compared to other technologies.
- New fiber deployments will facilitate the deployment and growth of 5G and other advanced wireless services, which rely extensively on fiber for essential backhaul.

Source: Fiber Broadband Association – Webinar – NTIA BEAD NOFO Explained

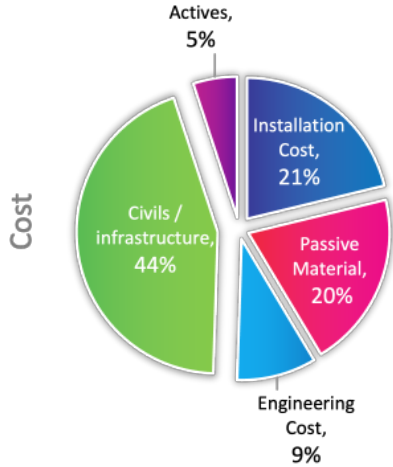
Total Cost of Deployment



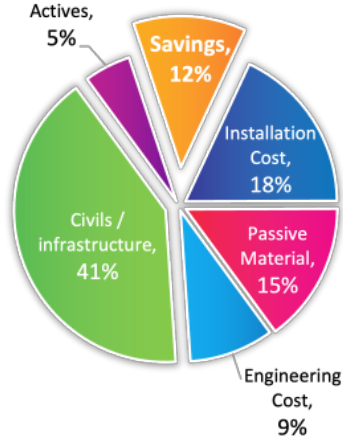
- ~65% of a network cost can be attributed to **Installation Cost and Civils/Infrastructure**
- Typical cost per home passed ranges from \$1K to \$6k
- Extremely high cost threshold ~\$15K-\$20K
- Network and product Selection influences other parts of the network build
- **COST** and **SPEED** of deployment influences ROI

FTTH Network Topology Comparison

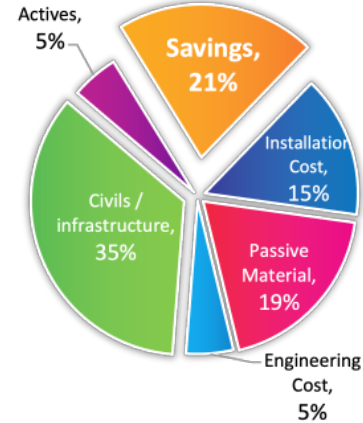
Centralized



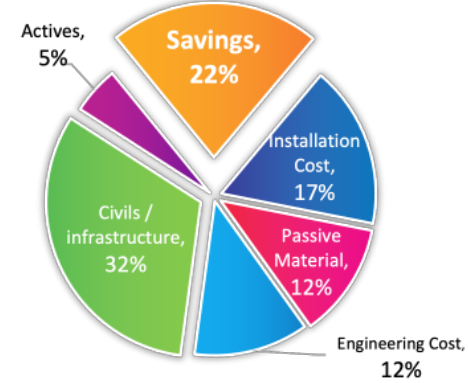
Decentralized



Cascaded - Indexing



Cascaded - TAP



Speed of Deployment



Savings vary dependent on deployment environment

Constrained Skilled Labor Availability

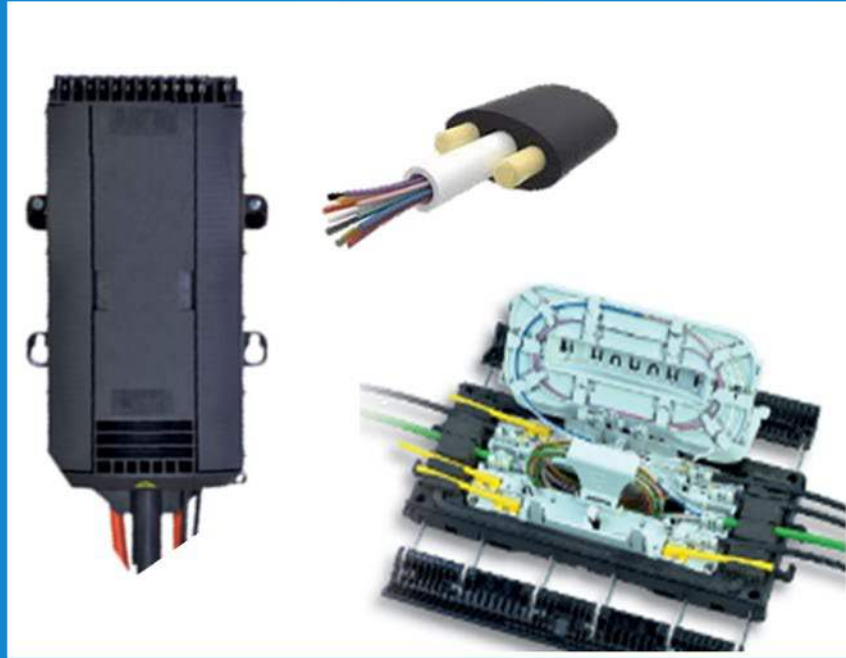


“Rutledge, the chairman and CEO of Charter Communications, is deeply concerned that the company won’t be able to find all the workers it needs to build the 100,000 miles of network infrastructure Charter aims to put in place over the next few years.”

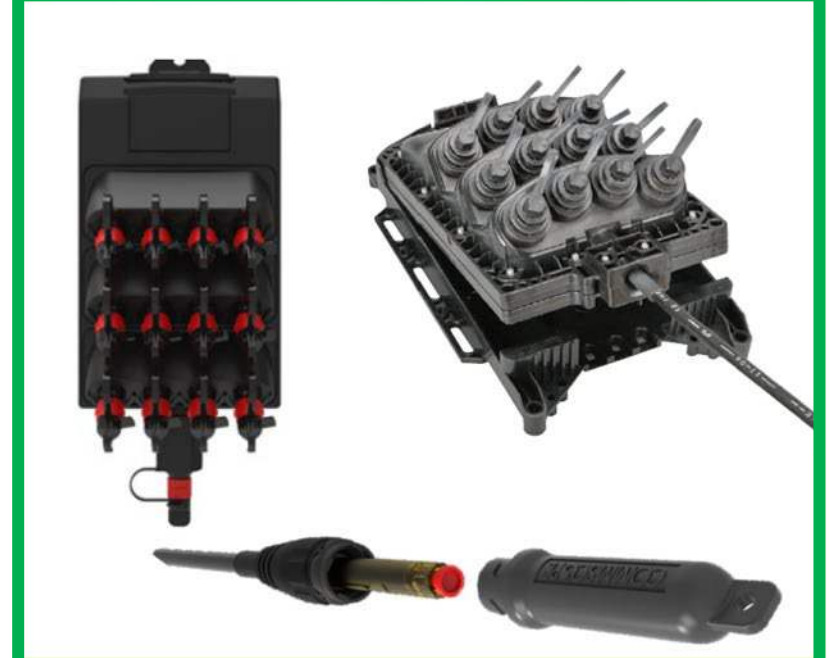
- All Service Providers and Construction Firms will be going after the **same labor pool** to complete their fiber deployments
- US Senate Bill 163 - Telecommunications Skilled Workforce Act. ***If enacted, this bill will establish measures to address the workforce needs of the telecommunications industry***

Technology Influence on Labor Skill Level

SPLICING *High Skill Level*



HARDENED CONNECTORS *Low Skill Level*





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For More Insights & Discussion

BOOTH 12

**Wed-Thurs
April 19-20, 2023**

**2:00 – 3:00
Thursday**

**Mark Gibson/
Panel Discussion**

**Stretching BEAD funds
to the Hard-To-Reach
with Fixed Wireless
Network Technology**

**Post Evt Webinar
June**

Craig Culwell

**The Path to Broadband
for Everyone**



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broadband to everyone

John Chamberlain
CommScope

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Digital Equity: The “E” in BEAD

Moderator:



Melissa Newman
Vice President of
Government Affairs
TIA



Deborah Lathen
Lathen Consulting



Paul Garnett
Vernonburg Group



Fiber to the Premises:

Maximizing Bandwidth While Overcoming Reach Constraints

Moderator:



Greg Manganello
SVP Wireless &
Services Solutions
Fujitsu



Geoff Burke
SVP, Product
Marketing &
Government Affairs
DZS



Jason Livingood
VP Tech Policy,
Product & Standards
Comcast



Phillip Watkins
Founder & CEO
Hosted America



Robert Whitman
VP of Market
Development
Corning