Infrastructure Week Special: Successful Models and Best Practices for Rural Broadband Deployment

NTIA Webinar Series - #TimetoBuild

You must dial in to hear the webinar.
Conference Line: 800-593-7190 Passcode: 984-4951#

May 16, 2018

Helpful Information #TimetoBuild

Questions

- Please type questions in the Q&A box on the right hand side of the screen. Questions will be taken after the final presenter.

Presentation

- The presentation along with a transcript and recording will be available on the BroadbandUSA website within 7 days of this webinar under Events/past events.

- https://broadbandusa.ntia.doc.gov/past-event

Technical Assistance

- Guides, products, publications, and other tools are available to assist you with the planning, funding and implementation of your broadband project.

- https://broadbandusa.ntia.doc.gov

Participants

Moderator

- **Karen Archer Perry**, Senior Policy Analyst, BroadbandUSA, NTIA

Presenters

- **Debra Hansen**, Director, Washington State University, Stevens County Extension
- **Wes McCart**, Commissioner, Stevens County, WA
- **Bob Hance**, President and CEO, Midwest Energy Communications
- **Gina Shuler**, Marketing Director, Home Telecom

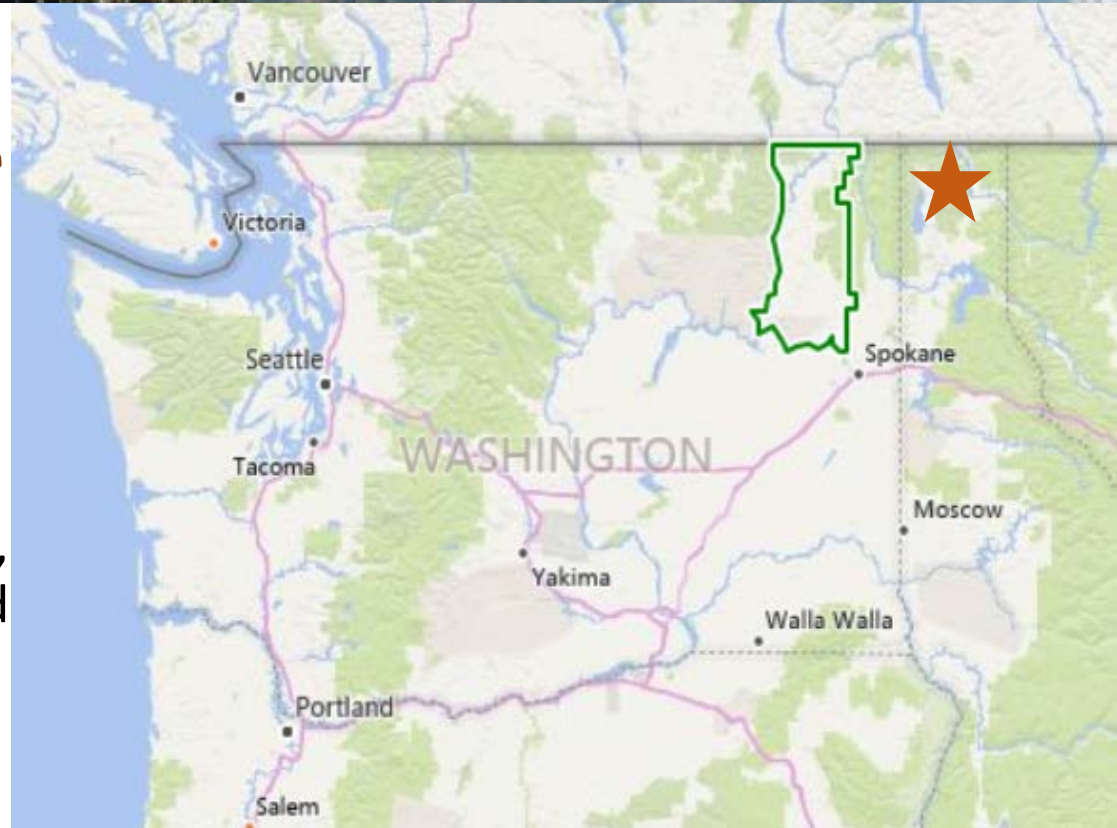# Stevens County and Spokane Tribe
Broadband Action Team (BAT)

Provider Success:
One Project at a Time

- Northeast Washington

- 36.4 acres per person

- Six cities and towns

- Geography challenges: rivers, mountains, and forested land

Stevens County and Spokane Tribe
Broadband Action Team (BAT)

Wildland Fires of 2015 Spark a New Passion for Broadband

Community and Business:
- BAT Coordinator
- WSU Extension
- School Districts
- Library
- Economic Development
- Health Care
- Spokane Tribe

County Departments:
- Emergency Management
- Information Systems
- Fire Districts

Elected Officials:
- Commissioners
- City (Mayors/Council)
- State
- Federal

Supporting providers

The geeky, techie home and garden show.

Test drive a device to increase adoption

Broadband Planning Approach

- ✓ Comprehensive planning framework
- ✓ Leverages national data and local insight
- ✓ Documents current assessment; future goals
- ✓ **Builds the case for investment**

Quick Start   **Framework**   **Online Assessment**   **Action Report**   **Resources**
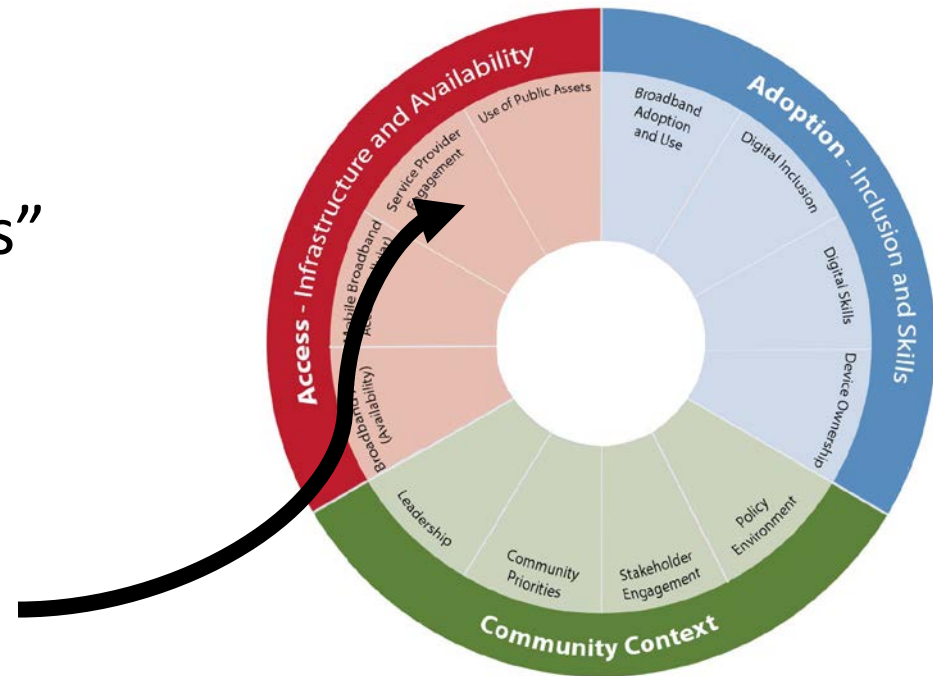
Stevens County: BCAT results

- New questions
- New resources and "broadband friends"
- Strengthened relationships
- **Prepared us for a service provider meeting**

Planning our approach

Determined gaps and opportunities
Personal invites to all ISPs
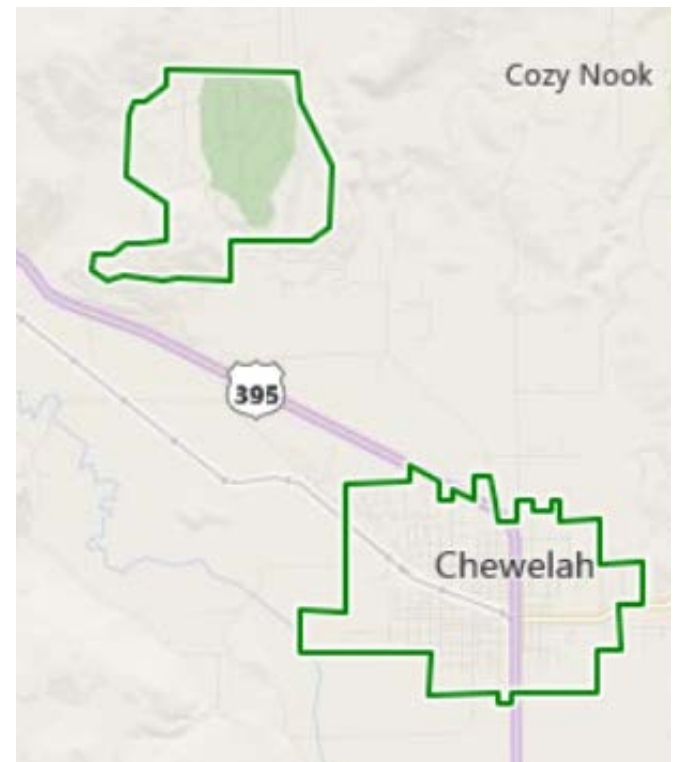**Attitude** of partnership

Provider meeting

Vendor neutral.
Technology neutral.
Boundary neutral.

14 providers
23 BAT members

One community led the way

**Chewelah
(pop. 3,000)
is a divided city.**

Mayor Knauss held the first provider meeting.

Many wins for Chewelah

Since January 2018

More clients

Faster speeds

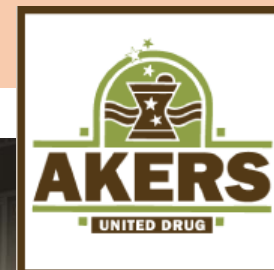# *A satisfied customer*

Akers United Drug

- **11 computers now – *only one could be on before***
- **No drop offs during claims process = *increased productivity***
- **Saves $500 a month**
- **Big, big speeds!**
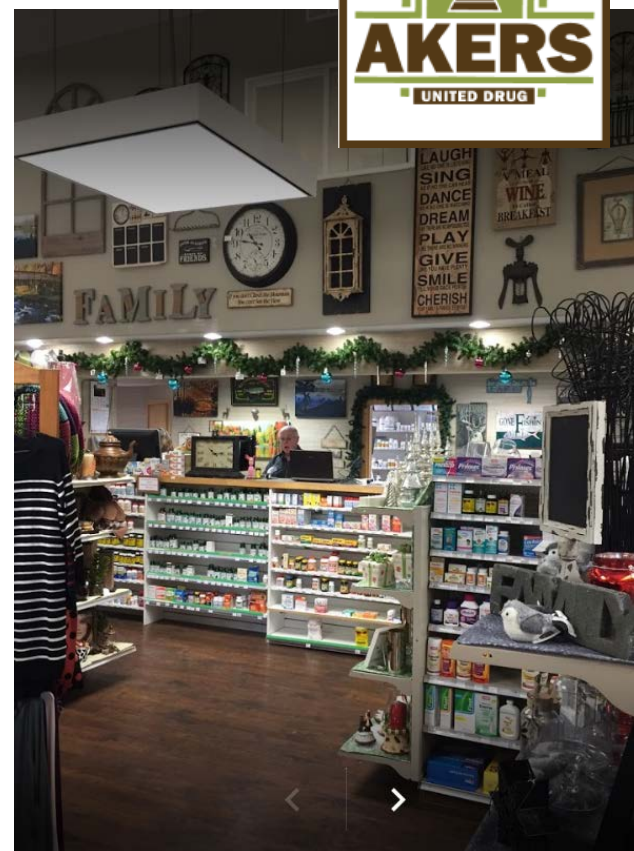
We still have gaps

Chewelah has new broadband.

Much of the rest of our rural county does not.
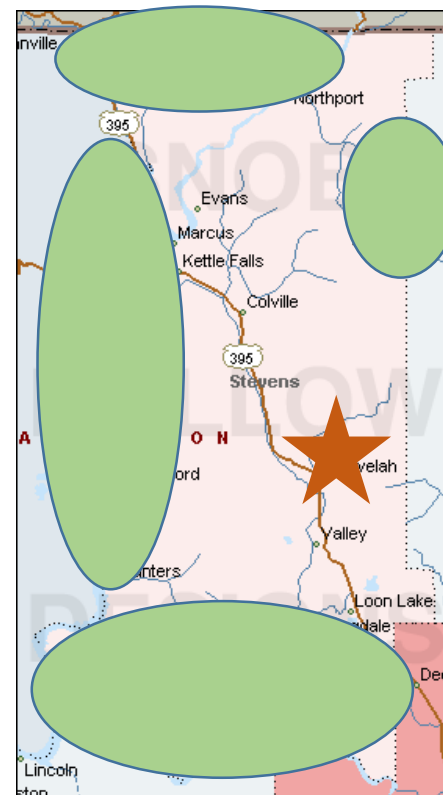
Next steps:

Local projects:

- **Boots on the Ground**
- **Prepositioned Firecamps**
- **Additional meetings**

Local Team: Lessons learned

- **Increases local participation**
- **Expands local, state and national knowledge**
- **Helps identify gaps and opportunities**
- **Builds the case for investment with providers**

The challenge:

- **It's a slow process for a large rural county.**

Stevens County and Spokane Tribe
Broadband Action Team (BAT)

County Commissioner
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WSU Extension County Director
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Presentations

- Debra Hansen, Director, Washington State University, Steven County Extension

- Wes McCart, Commissioner, Stevens County, WA

- **Bob Hance, President & CEO, Midwest Energy Communications**

- Gina Shuler, Marketing Director, Home Telecom

MEC
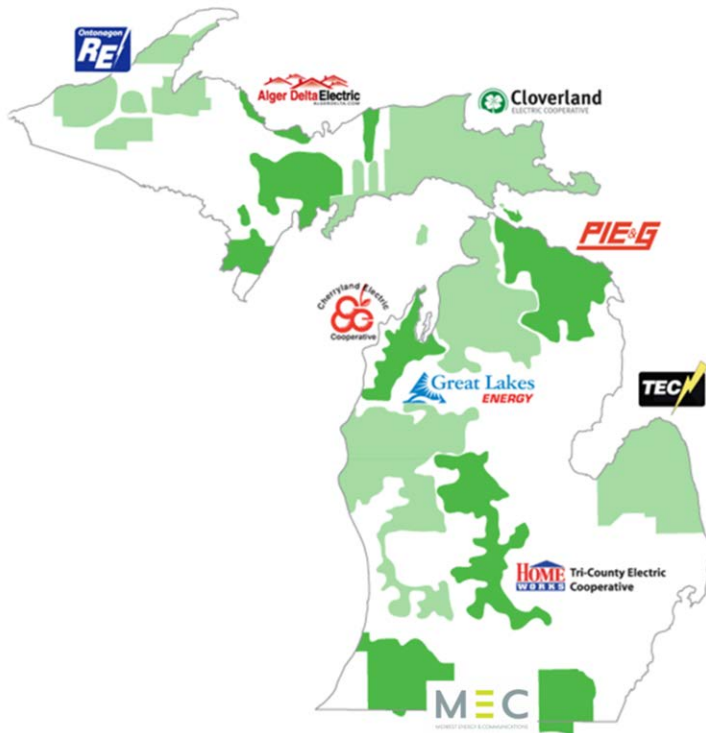
MIDWEST ENERGY & COMMUNICATIONS

Broadband USA

Robert L. Hance

President & CEO

Midwest Energy & Communications

About Midwest Energy & Communications (MEC)

- **Member-owned electric cooperative with three primary lines of business**

  - <u>**Electric Distribution**</u> – Serves approximately 36,000 members in 11 counties in southern Michigan and northern Indiana and Ohio

  - <u>**Propane Sales**</u> – Provides service to 6,400 business and residential customers in 15 counties located in both Indiana and Michigan

  - <u>**Telecommunications**</u> – Provides broadband communications solutions including fiber internet, VoIP and local video to over 6,700 business and residential customers in southwest Michigan

Communication History

- **Dial-Up**
  - In 2000, MEC began offering 50 Kbps dial-up service through TransWorld Network

- **Satellite**
  - In 2004, WildBlue TeleSat Anik F2 launched (1.5 Mbps)
  - In 2007, WildBlue-1 launched (1.5 Mbps)
  - In 2009, WildBlue AMC-15 launched
  - In 2011, Exede ViaSat-1 launched

- **BPL** Broadband Over Power Lines
  - In 2008, MEC offered BPL through IBEC (1.5 Mbps)
  - IBEC files Chapter 11 in 2011

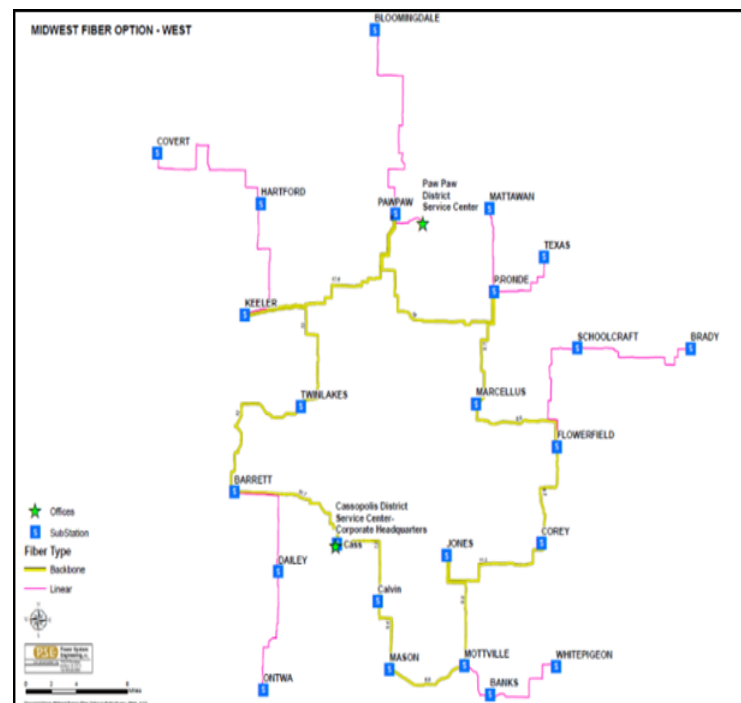# Our Motivation To Move Forward With Fiber

- **2011 - 2014**
  - IBEC Out-of-Business
  - Identified Need for Advanced Utility Communications (Clean Power Plan)
  - Contracted with PSE
  - Member Expectations
  - Universal Service Fund Reformation
  - 243 Miles Through Substations & Facilities
  - 1,800 Miles Of Primary Lines
  - Financed Through RUS Electric Work Plan Loan
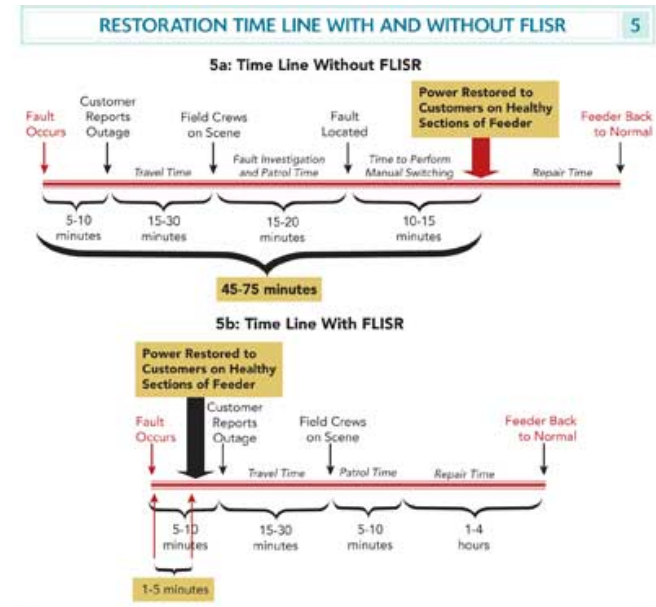 - Board Go-Ahead

Fiber For Advanced Utility Communications

- **2015 – 2019**
  - Fiber for the Smart(er) Grid
    - Distribution Automation in 2018
    - Energy Efficiency
    - Load Control
    - Dynamic Voltage Control
    - Distributed Generation
    - Smart Metering
    - SCADA
    - Whole Home Automation & IoT
    - Precision Farming

RESTORATION TIME LINE WITH AND WITHOUT FLISR   5

5a: Time Line Without FLISR

Fault Occurs | Customer Reports Outage | Field Crews on Scene | Fault Located | Power Restored to Customers on Healthy Sections of Feeder | Feeder Back to Normal

Travel Time | Fault Investigation and Patrol Time | Time to Perform Manual Switching | Repair Time

5-10 minutes | 15-30 minutes | 15-20 minutes | 10-15 minutes

45-75 minutes

5b: Time Line With FLISR

Power Restored to Customers on Healthy Sections of Feeder

Fault Occurs | Customer Reports Outage | Field Crews on Scene | Feeder Back to Normal

Travel Time | Patrol Time | Repair Time

5-10 minutes | 15-30 minutes | 5-10 minutes | 1-4 hours

1-5 minutes

Fiber for Voice, Data and Video

- **2015 – 2019**
  - Leverage Our Network For FTTx
  - Phase I: Five-Year Build-Out In SW Michigan
  - Over 1,700 Voice Customers
    - 2,000+ By Year-End
    - Solid Profit-Margins (Over 50%)
    - Bundling Provides Value
    - Added Regulatory/Billing Issues (Still Worth It)
  - 6,700 Data Customers
    - Averaging 60 New Customers/Week
  - 140 Local Video Customers
    - Over-The-Top & Adoption Workshops
- **2020 -**
  - SE District
 - Whole Home Automation & IoT

Broadband Service Inventory for the State of Michigan by Platform
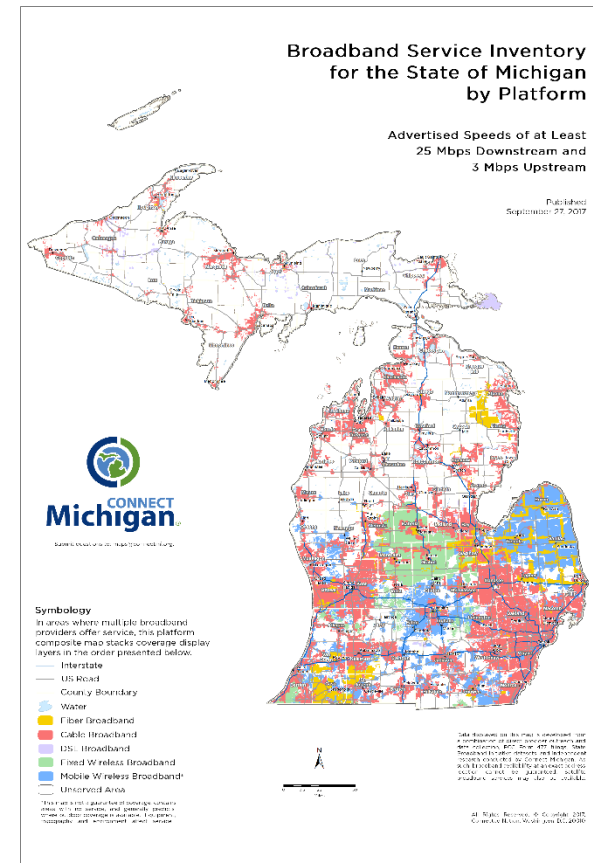
"As a thirty year veteran of the computer industry, I have had to work with a lot of customers needing faster Internet speeds. I can say that, as a professional, there is no substitute for the speed of fiber. Midwest has made things better by providing faster speeds in the country than other providers do in the city. That's pretty amazing. Big kudos to you folks!" (Michael K.)

Lessons Learned

- Endless Possibilities
  - Telemedicine
  - White Spaces
  - Schools & Libraries
  - Promote Adoption
  - Municipal Bonding
  - Michigan Consortium of Advanced Networks
  - Precision Farming

- Cash & Net Income Positive – End Of 2018
- In Mature Areas – Take Rates Exceeding 60%
- Fiber Needed To Preserve Rural America
- More & More Cooperatives Deploying
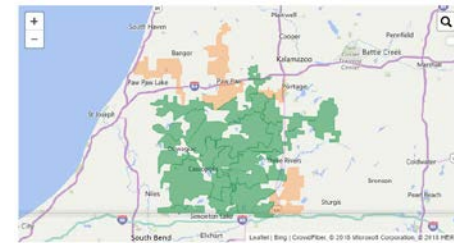
Zones In Pre-Registration

Hartford-Covert	41% to goal | 208 more needed
Texas-Portage	35% to goal | 158 more needed
Paw Paw	34% to goal | 469 more needed
Constantine-White Pigeon	28% to goal | 424 more needed
Bloomingdale	20% to goal | 193 more needed

Presentations

- Debra Hansen, Director, Washington State University, Steven County Extension

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Successful Rural Broadband Deployments

Gina Shuler, Marketing Director

BroadbandUSA Webinar: May 16, 2018

Who We Are

- In 1904, Mr. R.O. Winter and his wife Mary started St. John's Telephone as a community service to 6 buildings in rural Moncks Corner.
- 114 years later, Home Telecom remains a family business, but the technology now serves 27,500 addresses across the Charleston, South Carolina region.
- 185 local professionals offer Business & Residential telecom products & services over Copper, Coax, and Fiber networks.
- Local, 24/7/365 customer support with three local offices, multiple local call centers, and local technicians.

Where We Are

➢ Service area = ~ 1,100 square miles.
➢ Serve Berkeley, Charleston and Dorchester Counties.

Broadband Deployed

Direct Connections:

- ➤ DSL
- ➤ Cable Modem
- ➤ Fiber

Wireless:

- ➤ In-Home Wi-Fi
- ➤ Public Wi-Fi
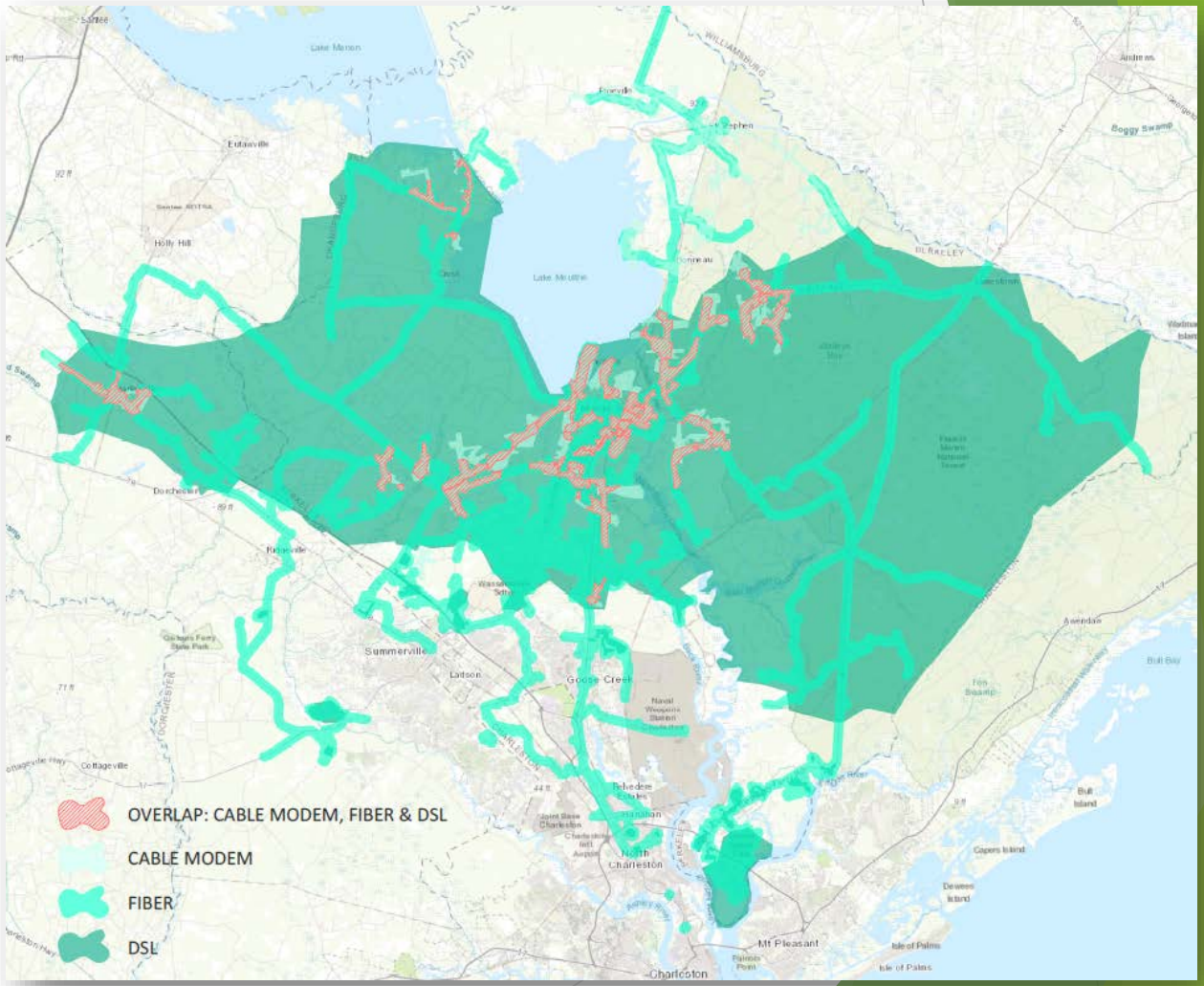
DSL Over Copper Network

- ➤ Began upgrading dial-up customers to DSL over existing copper infrastructure in late 90's.
- ➤ Offer speeds up to 10 Mbps using OCCAM cabinets to ~3600 subscribers.
- ➤ Shortening loop lengths & transitioning to Calix to offer 25 Mbps up and 3 Mbps down.
- ➤ Issue of adoption rates - ongoing process to educate older rural residents why broadband is important.

Importance of Rural Broadband

Important tool for expanding educational and economic opportunities for consumers in remote, rural locations:

➢ Makes "telemedicine" possible: consult online with medical specialists in more urban areas and share information and test results very quickly.

➢ Efficiently access and use many reference and cultural resources via the Internet.

➢ Take advantage of distance learning opportunities, like online college courses, and continuing or senior education programs.

➢ Shop online quickly and efficiently and save on transportation costs.

➢ Public utilities offer the ability to control usage to increase efficiencies and save money.

Challenges of Rural Broadband

In one word, **<u>COST</u>**!

- It costs millions each year to support the various infrastructures necessary to provide and maintain broadband.
- Higher population means more customers to spread the cost. Sparsely populated areas cost even more to serve and there are fewer customers to spread the costs.
- Long "loops" and distance of customers' homes from equipment makes it more challenging and costly to provide broadband in rural, sparsely populated areas.

Rural Broadband Partnership

- Rural residents 30 to 40 miles from library; no access or unable to afford internet/computer.
- Funds raised to purchase Mobile Library.
- 30 stops with WiFi powered by Home Telecom.
- Laptops on mobile library used for banking, healthcare, and look for jobs.

Cable Modems over Coax Network

➢ In late 1990's, began offering Cable Modems over existing coax infrastructure – used to provide CATV since 1981.
➢ Later purchased another CATV provider in our rural DSL areas allowing us to offer faster speeds.
➢ Offering speeds up to 100 Mbps using DOCSIS 3.0 technology and Arris cable modems to ~6,750 subscribers.
➢ Testing DOCSIS 3.1 to begin offering Gigabit Cable Modem service to over 9,500 addresses.

HOME TELECOM

FTTP Over Fiber Network

- In 2004, Home Telecom entered the FTTP business with its purchase of Daniel Island Media Company in semi-rural Daniel Island:
  - At closing, there were approximately 1,000 residential subs and very few business accounts.
- Continually growing greenfield fiber deployments and overbuilding aging copper plant.
- Today, 84,000 fiber miles running directly to 14,750 addresses.
- 2013 partnership with WestRock in Nexton community of Summerville, SC - 1st Gigabit Internet offering in SC.
  - Preparing to test 10 Gbps GPON access in our "living lab."

Economic Development

Businesses/developers choose to locate when learning of Home Telecom's fiber network:
- ➤ Large healthcare providers
- ➤ Software companies
- ➤ Automobile manufacturing
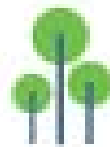- ➤ Mixed-use developments

Lessons Learned

- Hold broadband education meetings in rural areas to promote internet adoption.

- Keep rural areas not capable of true broadband yet informed of build-out progress.

- Partner with local developers and builders when deploying greenfield fiber deployments.

- Educate local economic development agencies of fiber network so they may use as a tool for business recruitment.

- For more information, visit HomeSC.com or email Gina.Shuler@HomeTelco.com.

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Questions and Comments

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Broadband USA

Thank you for attending.
Tune in for the next Practical Conversations Webinar

Smart Agriculture:
Increasing Productivity Through Technology
June 20, 2018
2:00 pm EST

Registration is required for each webinar:
https://broadbandusa.ntia.doc.gov/event

BroadbandUSA is available to help communities with their broadband access and digital inclusion efforts

BBUSA Resources:

- [Implementing a Broadband Network Vision: A Toolkit for Local and Tribal Governments](#)
- [Community Broadband Roadmap Toolkit](#)
- [Guide to Federal Funding of Broadband Projects](#)
- [Using Partnerships to Power Smart Cities](#)

For General Information:

📞 202-482-2048

✉ broadbandusa@ntia.doc.gov

🖥 https:broadbandusa.ntia.doc.gov/resources

To Request Technical Assistance (TA):

📄 Broadband TA Request Form

https://broadbandusa.ntia.doc.gov/ntia-common-content/how-we-can-help