Appalachian Power-Grayson County, Va. Case Study—'A Game Changer'

Grayson County, Va., is about as far away from Washington, D.C., as one can get without leaving Virginia. Nestled on Virginia's border with both North Carolina and Tennessee, the county is home to about 15,000 residents with a median income, according to Wikipedia, of $28,676 per household. Access to the Internet is basically nonexistent.

In other words, Grayson County is emblematic of the Rural Digital Divide. With mountainous terrain, a population of about 40 people per square mile, and no interstate highway running through it, few if any telecommunications companies are rushing to provide broadband service. Given these facts, one would think that Grayson County would be a priority for programs looking to bridge this digital divide.

Unfortunately, according to the Federal Communications Commission's broadband maps, Grayson County is not considered unserved or underserved, and therefore is not eligible to participate in the agency's $20.4 billion Rural Digital Opportunity Fund (RDOF). This is because the FCC maps consider areas served by census blocks, and if one entity within a given area is served by 25/3 mpbs service, a subpar service speed at best, that area is considered served.

But tell that to the people in Grayson County, where even cellular service is tough to come by. In a May 2020 UTC webinar on how Virginia's investor-owned utilities are bridging the Commonwealth's digital divide, Michael Clemens, President of GigaBeam Networks of Bluefield, Virginia, said Grayson is one of the least connected counties in Virginia. That means the county is losing revenue, people, and economic opportunities.

Looking to assist in filling this void is the county's electric utility Appalachian Power, an affiliate of American Electric Power. Thanks to a new Virginia law, Appalachian Power is engaged in a partnership to provide middle-mile broadband service in its territory in rural Virginia. The utility has received approval from the Virginia State Corporation Commission for a pilot program that would allow it to team up with GigaBeam, with the goal of bringing high-speed broadband service to Grayson County.

If successful, the project could be a watershed moment for the utility and Grayson County, demonstrating again that utilities can empower rural broadband connectivity in numerous ways.

Project Details

Under the arrangement approved by the State Corporation Commission, Appalachian Power will install over 200 miles of middle-mile fiber along its transmission and distribution system to upgrade its electric grid within and near the county. The $17 million project will serve approximately 11,000 electric meters. The utility received permission to recover the costs through its rates, but any revenue it receives from the leasing program will be passed back through to its customers, said Brad Hall, Appalachian Power Vice President of External Affairs, in a May 2020 UTC webinar.

In this project, a portion of this fiber will be leased to Gigabeam, which will own the electronics for its broadband services and will also light its portion of the fiber. Gigabeam will leverage Appalachain Power's infrastructure to bring reliable broadband to the county.

As a result of this project, customers in Grayson County will have access to gigabit-speed broadband service. According to GigaBeam CEO Clemons, this will be a "game changer" for the county.

"Honestly without the collaboration and partnerships we've created [with Appalachian Power], this never would've happened," he said during the UTC webinar. "It's a game changer for the entire county."

Importantly, Appalachian Power approached this project with a business model that included a well-supported project team, along with a thorough understanding of the project area – that means understanding the county's particular needs, infrastructure, costumer density, demographics, available grant dollars, topography, and much more.

Because Appalachian Power already owns the utility poles in the county, it will string the new fiber in the power-supply space on each pole. According to Mr. Hall, Appalachian Power does not allow third parties to place any fiber or equipment in the power space. But by hanging its fiber there, GigaBeam can work collaboratively with the utility to expedite attaching new equipment to utility poles.

In addition to providing broadband capacity, the cable will support the utility's deployment of Advanced Metering Infrastructure (AMI) for customers, as well as equipment and technology that will pinpoint and correct faults on circuits, shortening outages.

This is a true win-win, because in addition to bringing high-speed internet and all its associated benefits, Appalachian Power can upgrade its own communications system to provide better situational awareness and deploy smart-grid technologies that will improve its electricity service.

"Our approach has multiple benefits to the customers. In addition to the benefits of getting hi-speed internet, it also creates the benefits of a smarter grid that will positively

effect customers' experience, reliability, and resilience… By having a fiber backbone out there we're able to communicate with these devices and drastically improve reliability and resiliency for our customers," Mr. Hall said.

Utilities Empower Broadband Deployment

Utilities already deliver essential services—electricity, water, and natural gas. And it is clear that utilities empower the deployment of broadband, which is becoming an increasingly essential service. This project is just one of many that demonstrate UTC's members commitment to serving their communities.