Connectivity for a more resilient county

Ferry County, in rural Washington State, has partnered with the Microsoft Airband Initiative to leverage innovative technology to increase broadband access— and shore up emergency response

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"Given its large geography and not a whole lot of population, it's very difficult to track and respond to emergency events in Ferry County, like flooding and wildfires," explains **Bob Nichols, CEO of Declaration Networks Group**, which recently began installing a network of technology solutions to bring high speed internet to this remote area.

Luckily for residents, those who live in this north-eastern part of Washington have also cultivated a frontier mindset. *"We look for different ways to do things,"* says **Ray Maycumber, sheriff of Ferry County.**

Residents of Ferry County, Washington are used to people referring to their rural home as "frontier." This sparsely populated area is full of mountains, valleys, and hillsides of pine and larch—which make for stunning vistas but also tricky challenges during the region's extreme weather.

Part of that creative problem solving is using advanced wireless technologies to turn this remote region, which previously had little cell service and inconsistent internet access, into an area with ubiquitous access to reliable broadband service. By working with the Microsoft Airband Initiative, leaders within Ferry County have used non-traditional technologies, such as TVWS (TV white spaces), to expand access to reliable high-speed broadband. They are using this connectivity to improve public safety, broaden economic opportunities, and cover previously unserved populations.

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Strengthening public safety

With little to no connectivity and cell service throughout much of this rural Washington county, law enforcement officers and emergency responders often entered dangerous situations without the information they needed. *"Sometimes we have no idea what's happening at a dropped 9-1-1 call or other emergency until after a deputy gets there,"* Maycumber explains. *"The hope for adding connectivity is that it will allow us to get critical information from where things are happening to where we respond from, so we can deal with situations as fast as possible."*

One innovative example: A remote command and control unit outfitted with a TVWS antenna will extend connectivity farther into Ferry County than ever before. The solution was designed and outfitted by Ferry County Commissioner Nathan Davis and Washington State University Extension Lead Dr. Trevor Lane. Microsoft, Declaration Networks Group, and the TV Association of Republic provided network and engineering support. The unit, which consists of an antenna and other hardware mounted to a 4x4 truck, receives a broadband connection from a TVWS tower several miles away.

The unit brings connectivity into previously off-the-grid areas, allowing public safety officers to download maps, send video and otherwise communicate with a central station.

Getting critical information to decision-makers on unfolding emergencies could protect lives and property, as well as save money by addressing problems before they become disasters, Davis says. He continues to tinker with the remote unit, planning to add solar panels to make it self-sustaining and drone capabilities to extend its reach even further beyond the range of a truck.

Maycumber predicts a remote unit like this one— with the ability to go to the site of an emergency, like a wildfire or flood—will save time and maybe even lives. "*This solution will help us respond more efficiently and get help to devastated areas as quick as we can.*"

16x the increase in **download** speed from DSL to high speed broadband

20x the increase in **upload** speed from DSL to high speed

Building a more resilient economy

Natural disasters are a factor never too far from the minds of business owners in Ferry County. During one large wildfire two years ago, the blaze came within a mile of Columbia Cedar, now the county's largest employer.

Brad Welsh, the company's IT specialist, wasn't only worried about the business's lumber going up in smoke; he was also concerned about all its data and files, which were stored on-premise. "*Anything that wasn't bolted down, I picked up and put in my truck until it was safe,*" he remembers.

So when Declaration Networks Group brought in high-speed broadband through the Airband partnership, Welsh set the goal of moving Columbia Cedar's vital information to the cloud, so that in the future, even an emergency won't wipe out the company's order histories, HR records and financial documentation.

The drastically faster connection has other benefits as well. It will allow the lumber company to:

- Run backups, updates and patches throughout the week, instead of the weekend
- Connect to IT specialists to repair equipment remotely
- Conduct safety trainings online
- Schedule video calls for hiring, management and communication with the other Columbia Cedar location
- Utilize powerful tools like Power BI to for reporting and data-driven business practices

Extreme weather and other emergencies cannot always be predicted—or prevented. But by increasing this rural community's connectivity, Ferry County counts itself as more prepared.