Ramona Schindelheim, WorkingNation editor-in-chief:

You're listening to Work in Progress. I'm Ramona Schindelheim, editor-in-chief of WorkingNation. Work in Progress explores the rapidly changing workplace through conversations with innovators, educators and decision-makers, people with solutions to today's workforce challenges.

Millions of Americans still lack reliable or affordable high-speed internet access, putting them at disadvantage when it comes to education, work, and even healthcare. More than $42 billion has been allocated to the states and US territories by the federal government through the Bipartisan Infrastructure, Investment and Jobs Act to help close that digital divide. Broadband equity, access, and deployment funds, known commonly as BEAD, are designed to help plan and build the needed broadband infrastructure, as well as create community adoption and jobs training programs. At the Connected America Conference in Dallas in March, the importance of broadband as a job creator, economic development driver, and community builder was top of mind with everyone I spoke with. That includes Gary Bolton, CEO of the Fiber Broadband Association, Robin Olds senior business development manager for Cisco, and Eric Frederick, the chief connectivity officer for the state of Michigan. Eric is leading Michigan's initiatives to implement BEAD and other funding programs to improve connectivity and promote digital inclusion.

Eric Frederick, State of Michigan:

Our main missionary office is to create a more digitally equitable state. I'm a very mission-driven person coming from the nonprofit world and having a desire to work in public service. We're very mission-driven. But to do that mission, we are implementing three federal programs. Just like most other states, we implement the BEAD program, the Capital Projects Fund was all allocated for broadband in the state, something like that, and then of course the Digital Equity Capacity Grant program. We weave all three of those programs together to try to address not only the infrastructure gaps in the state, which of course get the most attention because they have the most money, but also make sure that we're closing that digital inclusion gap to affordability devices.

We're also talking about designing one of the most complex and the largest broadband program that's ever existed in our nation's history. We're talking something on scale of rural electrification. We can't just slapdash something together. We have to be, again, deliberate and thorough and comprehensive in how we approach this. Congress gave us a 14-step process to implement BEAD. That's a lot of steps.

Ramona Schindelheim, WorkingNation editor-in-chief:

One of the first steps is to get buy-in from communities and nonprofits and partnerships who can benefit from broadband and to learn what they need before the infrastructure is even built.

Eric Frederick, State of Michigan:

One of the things that we heard during our community listening tour was that communities know communities best, and therefore communities should have a say in how they get connected through BEAD. But we know that not every community has the capacity to take on broadband as a primary topic. They have other things that they're doing, roads and jobs and schools and all that. We wanted to make sure that we could bring communities and ISBs together before BEAD happened so that they could talk. We did this event called BEAD Dating. It was three groups: communities, ISBs who wanted to participate in BEAD, and then suppliers, manufacturers. And brought them into a room together and literally walked them through a speed dating so that they could all sit and talk to each other and get to know each other and make those partnerships. We try to facilitate those conversations whenever we can.

When we talk about individual communities, we have our BEAD eligible locations. We have a quarter million of them in Michigan, so we have a big job to do. And we're making sure that communities are aware that they have these eligible locations. Somebody is going to be bidding on them. I'm going to be awarding somebody to connect these places and making sure they're ready for what's coming.

Ramona Schindelheim, WorkingNation editor-in-chief:

Michigan started taking applications for BEAD last month. Frederick acknowledges there's some bureaucracy, which is to be expected with a large government program, but says the team always remembers the mission: to help the residents get connected.

Eric Frederick, State of Michigan:

We always have to remember that our work is not about the technology, it's about the people. At the end of the day, the people are the ones who are leveraging that technology to improve their quality of life. And so this Word doc that we have, it is just full of one lines it. It's single sentences about who we do the work for. And the very first line is for every student who had to sit outside of McDonald's during the pandemic to do their homework. I get a little misty when I think about it because my kids struggled with it. We all did. It was a very challenging time. But it took that pandemic to really bring to light this digital inequity.

Every household benefits from being connected. There's study after study that shows anywhere from $1,500 to $3,000 annually that households either gain an economic opportunity because they're connected, whether it's through savings or through increasing income, whatever it is. That's significant. When you add all that together. Our quarter million unserved locations in Michigan, that's a lot of annual economic activity.

BEAD is going to increase rural GDP in Michigan by about $1.4 billion annually just from connecting these places and from the economic activity and multiplier effect of building these networks. We have to do it. If we're going to thrive economically as a state and keep our rural areas alive and viable, we have to have this technology. We can't just rely on slapdash short-term solutions to get this job done. That's what got us here in the first place. We have to be investing in technology that solves our connectivity needs not only for tomorrow, but 30 to 40 years from now. That's what we need to be looking at to make sure that, again, we're providing this empowering and enabling tool to folks to, again, improve your quality of life.

Ramona Schindelheim, WorkingNation editor-in-chief:

Building that broadband infrastructure in Michigan and in every state and territory takes a trained workforce. Right now, the industry has 75,000 openings for just one of those jobs, fiber optic technician. Across the US, the Fiber Broadband Association is helping to build that workforce through classroom training and a registered apprenticeship program. Gary Bolton, the association's CEO, says these are well-paying, family-sustaining careers.

Gary Bolton, Fiber Broadband Association CEO:

We're in a situation right now in the nation is that to get broadband and fiber in particular to every American, we need to be able to the workforce. And when you look at deploying fiber, it's about 66% of the cost of deployment is labor for aerial and 72% for if you have it buried ground. And so there's a lot of job codes that are required. We're at the largest investment cycle in the history of broadband and fiber, so that's one area, but we also look at the industry as a lot of attrition as we're having an aging telecom

industry. And so the money's there. We have non-deployment funds for BEAD for every state broadband office can be able to use these non-deployment funds to be able to fund workforce development.

And so we created a fiber optic technician program. It's Department of Labor accredited. It has 144 hours of classroom, and then there's a registered apprenticeship with the Department of Labor that can be deployed. We work with the WIA, Wireless Infrastructure Association, to cover over 15 different job codes. We're one fiber optic technician, so it's really important to be able to roll that out.

But what the challenge is that since the funding has not flowed yet, the states are sitting there waiting because each state says, "Why would I train people then not have a job for them today that day they graduate?" Because then they worry that someone who graduates, they'll have to leave the state and go somewhere else where this works. They're waiting to get some money flowing before they start training, which then creates a gap. That really becomes a constraint to be able to get deployment done.

We work with community colleges across the nation. We're going to make sure that our training is in all 56 states and territories. And community colleges are great at doing the training, and they can recruit students, but some of them have some relationships with service providers and some don't. It's one thing to get people graduate, it's another thing to have a good placement. We need 100% placement of every graduate. We do have some private partners that are really good that take veterans out, and then they are training people for a specific job. They are working with service providers to make sure that they know in every state how many openings there are so that they can place every student as soon as they graduate. Because there's three elements. It's making sure you recruit the right people, they have the aptitude for what you're doing, it's making sure you have the proper training so they can do the job and they have a job ready for them where they want to work as soon as they graduate, whether it's veterans coming up. In our program, almost 90% of our graduates are veterans. But from any walk of life, do you want to make sure that you have the right aptitude, that you want to be working outside. But even those that want to go to different careers, it's a good starting point to provide a lifelong career in the telecommunications industry.

Ramona Schindelheim, WorkingNation editor-in-chief:

Bolton says these jobs and the training for them will be everywhere, including rural communities, so that people won't necessarily have to move away to get a good job.

Gary Bolton, Fiber Broadband Association CEO:

You have to have a job when someone graduates because the quickest way to kill a program in a community college is to have 18 graduates and zero jobs. And so you want to make sure that before you recruit, you know where the jobs are, you know where they're going to be, what community. With all this money that's going to be flowing, we can be able to provide jobs in the communities where these students live. And so you're not training them in Arizona and then moving them to South Dakota if there were.

Fiber is the number one driver in economic development. Sachin Gupta of Centernet was the keynote this morning. He talked about in a tribal community getting 50 gigabits to each home. Think about how transformative that is. Any community, once you have fiber, you're going to be able to have people that want to move there.

Ramona Schindelheim, WorkingNation editor-in-chief:

In addition to creating jobs, Bolton says the bigger mission is closing the digital divide through reliable, affordable, high-speed broadband. It benefits people in many ways, including more convenient healthcare and remote work.

Gary Bolton, Fiber Broadband Association CEO:

I live on an island. I can do that. I work in DC, but live on an island because I have connectivity. I can do telehealth and I can do everything from my home. My day-to-day, I don't have to sit there and waste time and traffic going to an office. I do a weekly fiber for breakfast.

One of our guests was from Harvard Behavioral Health. And when you think about mental health, they're able to have better patient outcomes by just tracking their iPhones. This is not wearables, this is just having their iPhone. They know how much sleep they get, they know how much activity they get. And so as we see the future of healthcare, it's going to be very AI-oriented. If you don't have broadband, you're not going to be able to have those health outcomes.

Anybody that's had any health issues, you go and you see elderly folks that are in there with their walkers in the waiting room, it's all-day effort to be able to get from their home to a doctor's office, sit around there all day waiting for the doctor to see you, and then being able to have to get all the way back home. That's spending an entire day. And so from the safety of your home, you'd be able to have better outcome, health outcome.

First thing you have to do is make sure that fiber is available to every American, and then you have to make sure that everybody is connected. You need to make sure that it's affordable, that people can connect. And then you also have to make sure that those that are connected are be able to use to navigate and be able to leverage the benefits that fiber can deliver. And so when you look at fiber, it's always been the lowest cost per megabit service, and it'll continue to be the lowest. The price of broadband will continue to go down, down, down as we're able to provide more capacity. And so we're going to be going from 50 gigs to terabits. And as we move into quantum networking, AI world, metaverse, all these things are going to transform healthcare, transform education. And we're still at a point where we're going to leave Americans behind if they're not have limitless capacity, low latency, and all the things that fiber can deliver.

Ramona Schindelheim, WorkingNation editor-in-chief:

Closing the digital divide and building out this broadband infrastructure will take consultants and other experts in fiber optics and networking. One company positioning itself to be a key partner in helping service providers and communities expand and adopt broadband is Cisco. Robin Olds is the tech company's senior development manager for broadband. Olds emphasizes the importance of closing the digital divide to enable economic growth, remote work, and access to critical online services, especially in rural and underserved areas.

Robin Olds, Cisco senior business development:

We are not just the hardware manufacturer anymore, we also are a software manufacturer. We are designing solutions around the advent of AI. AI is the big thing right now. Quantum computing is coming. And the important thing that I think Cisco, besides connecting the unconnected, whether it's IoT, Internet of Things, whether it's collaboration or technology, security, data center technologies, or even our, what I call internet mass infrastructure scale technologies, we are trying to take all those solutions and position them to our customers to say, "Look, we have a full gambit of things that you could take advantage of," and to consider us. And really just really, from my perspective, my team, we're looking at

helping them bridge the digital divide that focuses on, really, I'd say two and a half areas, one area being the I and MI, internet and mass infrastructure scale, the old SP route and partially in IoT, because that comes up more and more how can a service provider help a municipality with IoT solutions? And then last thing, probably more importantly, is security. How are they going to address the security aspect of things?

And then AI is coming up more and more. It's another driver for service providers to realize that their bandwidth is being eaten by another technology. And then how do we take a service provider to look at their own AI operations and say, "Hey, your own network operations center or security operations center or network itself could be AI-driven. And how do we help you with that?" We're one of many pieces of the puzzle. We can help with some of those conversations, whether it's our own government affairs like what's happening from a regulatory perspective or from our Country Digital Acceleration Team where we're trying to help really impoverished area. And how can Cisco invest in that? To standard conversations with service riders to help them understand the technologies that they can use.

Ramona Schindelheim, WorkingNation editor-in-chief:

Cisco can deliver hardware, software, and cybersecurity, but it is also working on enabling others to help the communities. Part of those efforts is Cisco's Networking Academy, providing people with skills and credentials to step into careers that don't need a college degree.

Robin Olds, Cisco senior business development:

I love the Cisco academies. I went to one. And it was neat to be able to say, "Hey, I just passed my CCNA." I will caveat that, I did not, but I still went through all the training, and it was well worth it. And now we're expanding that to security practices as well too. It's all over the world. It was announced this morning that at EMEA we're giving out so many thousands of trials for our networking academy for people that live in EMEA. And it's really important to really help them cross that. How do they take it from here's a hardware or software to how do they implement it and make it useful for their people?

Ramona Schindelheim, WorkingNation editor-in-chief:

What's at stake if the country doesn't close the digital divide? With digital access, more people will achieve economic mobility, and without it, they won't.

Robin Olds, Cisco senior business development:

If we don't close that digital divide, I think we're challenged with people, if we ever had another pandemic or some issue where you're working from home, working from home was really important for me to be able to get to my customers, especially the ones that couldn't work from home, which was service providers. They have to be inside the central office. I'm living in a metro area. I knew what their network was, and I knew it was solid that it could withstand people working from home. The challenge is when you look at other areas where they may not have had a good provider or the service is very inadequate. And then as more subscribers hop on because they're working from home, it made a challenge for them from working from home.

But that's really what's at stake. I think it's the ability for the economy to scale. If we're not bridging the digital divide, then the economy will not scale like we thought it would. And that was really the approach to putting the funding out there.

Ramona Schindelheim, WorkingNation editor-in-chief:

My thanks to Eric Frederick, Gary Bolton, and Robin Olds who spoke with me at the Connected America Conference in Dallas in March. I'm Ramona Schindelheim, editor-in-chief of WorkingNation. Thank you for listening.