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Fall 12-16-2019

### Rural America Faces Roadblocks in Joining the Internet Highway

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## **Rural America Faces Roadblocks in Joining the Internet Highway**

BY SPENCER LEE

When Lucas Fiedler and family purchased a home in Duanesburg, New York, he made sure all of their utilities and other essentials were taken care of before signing on the dotted line.

“I was brought up that failure to plan is planning to fail,” he said. “On top of the things I did was to research who our internet provider would be. One of the local major providers for cable internet and phone services told me, ‘Yes, we serve your area here. You’re all set.’”

A week after moving in, Fiedler received an unpleasant surprise. Local technicians said his home was not equipped for service as promised. After meeting some of his Duanesburg neighbors, he realized his story was not unique.

“They all were told the exact same thing – that we’re all good and ‘you’ll be able to get service with us,’” he said. “And then they move in and find out, ‘Oh, we don’t have cable, internet or phone wires for your town.’”

In the span of just a few decades, broadband – or high-speed – internet has become a standard 21st-century tool both in the workplace and at home. Yet a surprising number of rural communities in the U.S. currently lack access to speeds fast enough to complete regular household or school tasks, with some areas –including pockets of Duanesburg – forced to go without wired connections altogether. The holes in internet connectivity across the country are placing barriers to career and educational growth, suppressing rural incomes and home values and causing population declines. Without faster technology, the future survival of many rural towns is at risk.

“When you’re selling a house in a rural area, and there is no broadband connection, and people find that out, they don’t offer less money for your home. They walk away,” said Annabel Felton, chair of the Duanesburg Broadband Committee. Felton has been actively trying to bring high-speed internet service to cover the entire town since 2014.

### **DUANESBURG**

Duanesburg sits approximately 25 miles west of Albany, New York, and was once an important stop on the Delaware and Hudson train line. Although its status as a rail hub ended decades ago, freight trains still regularly run through town. Today, Duanesburg is home to a cross-section of residents, including those involved in farming and agriculture and professionals like Fiedler who commute to jobs in Albany or Schenectady. But Duanesburg still retains a rural character, with small-town diners, two-lane country roads and a wealth of natural attractions nearby.

These attractions were what led Chet and Lisa Boehlke to purchase 14 acres of land in Duanesburg in the early 2000s. They long dreamed of having a home on the property, but with two young children on the spectrum to raise, it wasn't until 2019 they could commit the resources to building one. In the fall, they finally put the first nail in the ground, temporarily relocating to a trailer onsite with their children – now high-school age – and installing most of the plumbing and wiring themselves. The Boehlkes enjoy living in their new community, despite having been aware of limitations they would face.

None of the homes on their rural half-mile stretch of road have any access to high-speed internet. The couple realizes that short-term sacrifices will have to be made to help their son and daughter make up for the internet gap. Currently, the children get schoolwork done in the afternoons at the local YMCA.

“We don't know what it'll take to get Wi-Fi. And we'll make that commitment if we have to take the kids to the “Y” or to the library or to the school to get their work done,” Lisa Boehlke said.

But as their daughter enters community college and their son begins his final years of high school in 2020, the Boehlkes understand that home internet access will quickly become a necessity. For their childrens' future success, they hope a better solution emerges soon than what is available to them now.

“We'll probably end up getting a hotspot,” Chet Boehlke said. “There's not too many viable options.”

Although Fiedler's children are younger – six- and four-years old – and have little need yet for broadband, Fiedler also realizes it will develop into a major problem should they grow up in what he calls their “forever” home without a fast internet connection. As technology improves, school assignments will likely become more complex and demand the use of technology, and students without the tools to complete them will be in danger of being left behind.

For now, Fiedler and his wife, both of whom work in the banking industry, are the ones suffering from the consequences of living in a broadband desert. The couple purchased a hotspot as a stopgap.

“She has the option to solely work at home, and she would want to. But she wouldn't be able to fully facilitate and achieve her job duties with the level of internet service we have,” Fiedler said.

Other Duanesburg neighbors have run into similar issues when trying to telecommute, and it has even meant being forced to forgo potential career opportunities.

After Lisa Dennison discovered in 2013 that the new home she and her husband had purchased had no high-speed internet coverage, the only solution they could come up with was to turn their phones into hotspots and add data to their plans. A young couple in their 30s who enjoy logging

on the internet for games and streaming entertainment, they realized that the speeds they got would not be enough to do much of either. More troubling was how inconvenient it was for her husband Tom, an IT security professional, to get work done.

“Sometimes he had to work on a project or be available for system upgrades,” Lisa Dennison said. “He didn’t want the signal to be interrupted and have to restart. So if he had maintenance for work, we would go to my parents’ house. He would work from there, or just stay late at work.”

Those trips usually entailed a 40-minute round-trip drive and sometimes a late-night return home for the couple. The long days would make subsequent mornings challenging, especially for the early wake-up calls Lisa Dennison had as a schoolteacher.

The lack of internet options also disqualified her husband from jobs he wanted to pursue, as he had hoped to transition to work-from-home or telecommuting positions. Eventually, he found no point in applying for them while living at their home because he would not be able to do the work effectively.

## IMPACTS ON RURAL AMERICA

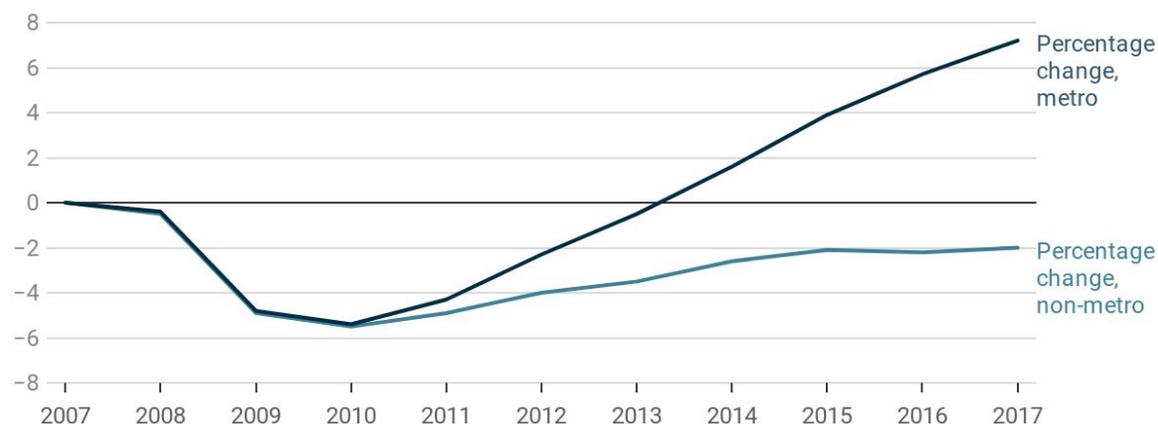
Poor technology infrastructure in many rural areas is a factor in the increasing economic disparity between urban and rural communities – a trend that began to emerge decades ago. That gap has exacerbated even more in the last decade. The urgency to come up with plans that will address the digital divide has politicians across the political spectrum demanding action. Current Democratic presidential candidates Pete Buttigieg, Bernie Sanders and Elizabeth Warren are calling for public broadband options, with Buttigieg and Warren making rural high-speed access a key part of their platforms.

Buttigieg’s Internet for All initiative would invest \$80 billion to help public and community-based providers build out their networks and also create a Broadband Innovation Incubator office. Warren has gone even further, promising to provide every home in the country with an affordable fiber connection. Her proposed Office of Broadband Access would oversee an \$85-million program to expand broadband availability through grants specifically aimed at local cooperatives, nonprofits and local municipalities. Those grants would be designated to build fiber infrastructure in their communities.

While urban areas – especially those connected to technology industries – have rebounded strongly since the end of the recession in 2010, the recovery in rural communities has not been nearly as robust. The number of jobs in large American metropolitan areas have not only recovered, they have surpassed 2007 numbers. In non-urban communities, employment has yet to return to pre-recession levels. Home value growth in rural areas is also off the national average by almost 10% since 2010.

## U.S. employment (number of jobs) in metro and non-metro areas since recession

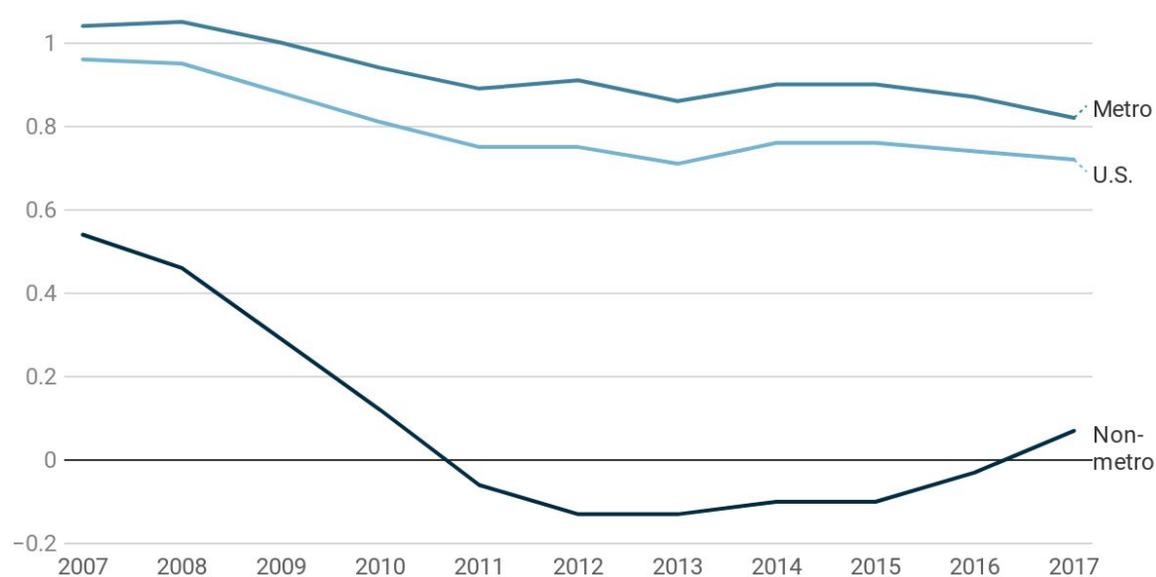
Percentage change since 2007



Source: USDA, Economic Research Servi • Created with Datawrapper

## Population change by metro/non-metro status in the U.S.

Year-over-year change by %



Source: USDA, Economic Research Service • Created with Datawrapper

The current struggle Duaneburg and other rural towns like it are facing is not the first time rural Americans have been left behind.

“Rural broadband is basically the equivalent of the 1930s rural electrification project that was foundational for rural America, at least attempting to catch up with their urban counterparts,” said Dr. Jason Evans, executive director of the Institute for Rural Vitality at SUNY-Cobleskill.

The drive for rural electrification came to the forefront of public consciousness during Franklin D. Roosevelt’s presidency. In his first term, Roosevelt established the Rural Electrification Administration, a key component of the New Deal that put many small towns on the electrical grid. The plan created a financial program to lend money to rural cooperatives, permitting them to build energy infrastructure. \$210 million was initially allotted for the program in the first two years in order to build 100,000 miles of power lines around the country. Within 25 years, the percentage of rural households with electricity increased from 11% to over 90%.

Much of the indifference and skepticism directed toward Roosevelt’s rural electrification goals are echoed in today’s push for rural broadband. The largest communications providers, like Charter Communications and Verizon, have shown virtually no interest in extending technology infrastructure due to the high cost of bringing it to sparsely populated areas. But that argument holds little sway for those who now see broadband internet an asset that needs to be available to all Americans in the digital age, comparable to other utilities.

“How many years did it take us to get rural electrification and how much of a federal investment did it require? Extrapolate that to 2019. And that’s what we need to invest and that’s what we need to do,” said Felton.

In the current absence of a comprehensive agenda to specifically tackle the issue, rural communities nationwide have been left to fend for themselves, seeking their own funding to achieve broadband parity. Funding has come in the form of investments, loans or grants from a variety of sources, including private, regional cooperative, state or federal agencies.

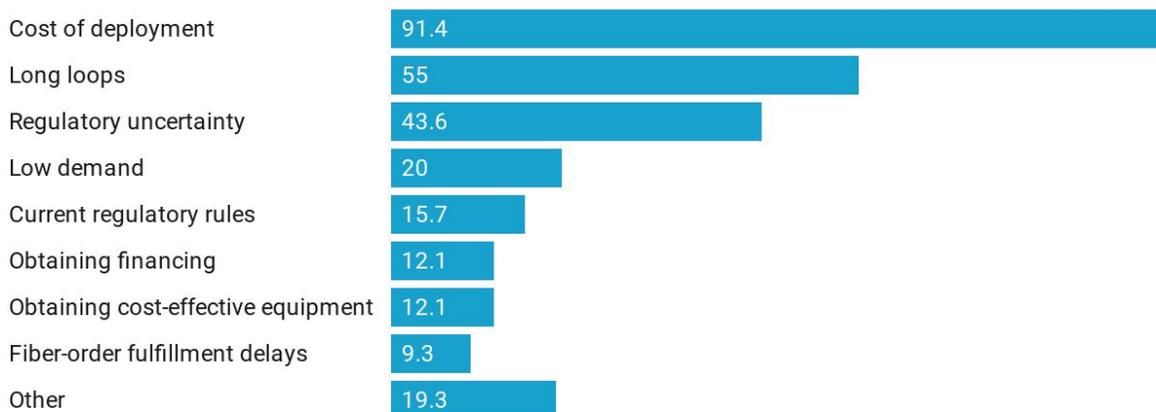
In parts of upstate New York, local cooperatives and small communications providers teamed together and successfully obtained grants to install approximately 3,600 miles of fiber-optic cables. The money provided the means to build what is called the “middle mile” – cable and routes that provide the backbone of broadband infrastructure – as well as the “last mile,” which brings wires up to individual homes and businesses. But it still left large areas unserved, and installation has not come cheap.

The price of putting down middle-mile wiring runs between \$20,000 to \$23,000 per mile. To cover the last mile, the cost increases to \$28,000 to \$30,000 due to the extra effort involved.

“There’s a lot more infrastructure that you have to put in place to be able to put drops to the home or the business.” said Jim Becker, president of MIDTEL, a telecommunications company

## Barriers to Widespread Fiber Deployment

Based on responses from 2019 survey of 850 rural telecommunications providers noted by %



Source: NTCA-The Rural Broadband Assn • Created with Datawrapper

in Schoharie County that has built out high-speed internet to most of its coverage area. “That comes both with the cost of that gear but also you have to splice all that in.”

The fiber-optic lines built have also been primarily in the form of overhead wires. Underground cables would have at least doubled the cost.

### DON'T TRUST THE DATA

The Rural Electrification Administration could provide a blueprint for any national initiative to extend broadband availability, but today's efforts are complicated by the difficulty in determining the full extent and cost of the problem. Little government data or reliable maps exist that show how many American households are internet ready. Maps used today seem to even confound internet providers themselves, as both the Fielders and Dennisons discovered. Both families were assured by their provider that broadband would be easy to obtain before they moved, only to be informed differently once they ordered service.

The Federal Communications Commission estimated in 2018 that the percentage of rural American communities without access to broadband was 39% – a number hotly disputed by Felton and others who follow the telecommunications industry because of the way the figure was calculated.

FCC broadband maps illustrating U.S. coverage are defined by census blocks served, with data self-reported by internet service providers. The providers classify an entire census block as covered if as few as one household has broadband internet. This low bar of “coverage” has led to a significant number of households being incorrectly classified by the FCC, making the total

seem much higher than actual reality. Both Buttigieg and Warren listed better mapping data as a key component in their rural internet plans.

To try and address inconsistencies, the industry lobbying group U.S. Telecom conducted a 2019 pilot project in Missouri and Virginia to gauge the accuracy of the FCC maps. Its Broadband Mapping Commission ascertained that over a third of the areas in those two states that the FCC listed as covered were actually unserved. Following that report, Democratic Congressman Antonio Delgado of New York introduced two bills “to address the issues of flawed maps that overstate internet access and speeds in rural communities.”

## THE ROAD AHEAD

While the government and telecommunications industry battle over the data, residents in areas like Duanesburg without broadband still have virtually no affordable options, and it is costing them.

Some residents are considering laying down some of the infrastructure themselves, an investment would require several thousand dollars out of their own pockets.

“We’re actually pondering doing our own trenching and then seeing if we can get, I believe it’s Charter, to come in and drop the line, because they indicated that’s the biggest cost,” Chet Boehlke said.

“Somebody in our group has the ability to potentially do the trenching, and then we’d be able to turn around and say, ‘here it is coming,’ and go from there.”

But he knows that this carrot still might not be enough to entice a provider to bring service immediately.

The burdens the Dennisons faced due to their home’s poor connectivity were factors that eventually caused them to leave Duanesburg in 2019. With no indication that the situation might improve in the near future, the couple packed their bags and currently rent a unit in a neighboring town, where they can get much better internet service.

In the five-plus years they lived in Duanesburg, the Dennisons estimate that they spent approximately \$3,000 more on data and devices for a minimal level of internet service than they otherwise would have had they lived in a neighborhood less than a mile away.

Selling their home also turned into a prolonged ordeal. After they placed it on the market in August 2018, an initial prospect expressed interest, but soon backed out. Lisa Dennison suspected the lack of broadband availability played a part. Subsequent inquiries also resulted in no sale. The couple finally managed to sell the residence in May 2019 after reducing the sale

price by over \$15,000, but while waiting for a buyer, they missed out on promising opportunities to purchase.

Currently, the Dennisons continue searching for a new house and are making sure they cover all their bases before making a commitment. They want to ensure they won't face the same problems again.

"You hear all the normal things like 'Check the taxes. Check the insulation. Check all these,' Lisa Dennison said. "You don't think that in 2019 you're going to have to check and make sure you have internet."