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on

The Race to 5G: Views from the Field

before the

Committee on Commerce, Science, and Technology

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Chairman Thune and Members of the Committee, thank you for inviting me here today to discuss Midco's view from the field on the impact of 5G in our footprint. We at Midco have developed innovative approaches to help us get high speed and reliable broadband to all of our customers, and I'm excited to share them with you today and our thoughts on the impact of mobile 5G technology.

My name is Justin Forde, and I am the Senior Director of Government Relations for Midcontinent Communications ("Midco"). Midco is the leading provider of Internet and connectivity, cable TV, phone, data center, home security and advertising services in the Upper Midwest. We also operate a regional sports network, Midco Sports Network, which broadcasts live, local high school and regional college sports.

Over 400,000 residential and business customers count on Midco services in 342 communities in South Dakota, North Dakota, Minnesota, Kansas, and Wisconsin. Midco community populations range from less than 100 in places like Dodge, North Dakota, to our largest community, Sioux Falls, South Dakota, which has a population of approximately 180,000.

Innovation and foresight have shaped Midco's course for more than 85 years. In particular, we have made it our mission to ensure that our most rural communities are at the leading edge of technology. Our goal throughout our footprint is to continue to find ways not only to meet, but to exceed, the communications needs of our customers.

Midco's History of Innovation

Midco has a history of innovation in the Upper Midwest. Founded in 1931, Midco began by operating movie theatres, with a vision of always staying one-step ahead of ever-changing

technology. Midco then entered the radio business, and in 1954, became the owners of the first television station in South Dakota. We continued to innovate with the introduction of cable television and phone service, and on April 15, 1996, in Aberdeen, South Dakota, launched our broadband internet service, which today is the largest portion of our business.

Our commitment to innovation continues to motivate our business initiatives today. We own and operate four data centers in North Dakota and South Dakota to give local businesses a cost-effective way to secure critical data and their IT infrastructure. We provide solutions for regional and national banking, healthcare, energy, and government customers, among many other industries. We combine our data center services with powerful network solutions through our wholly-owned, operated and engineered Midco fiber network. Our data centers are directly connected to our fiber backbone, giving businesses access to some of the fastest internet speeds in the country.

In 2017, we launched the Midco Gig Initiative – a commitment to bring Gigabit internet speeds to our entire service area – from the region’s smallest towns to its largest cities. Today, Midco Gig is now available to more than 80% of our customers – with more communities to come in 2018 – while the rest of our customers have a choice to receive speeds anywhere from 50 Mbps to 250 Mbps. It is important to remember that the majority of the communities we serve are very rural –nearly all of the 342 communities we serve have less than 50,000 people, with most having a population closer to 500 than to 5,000.

To date, we have invested over \$56 million to upgrade our network to deliver Gigabit speeds to some of the most rural areas in America – in addition to the millions of dollars we invest in our network annually. In 2017 alone, we invested more than \$125 million in capital projects in our service area.

Our continuing investment and almost 10,000 miles of fiber also serve as the connectivity source for mobile operators to connect their mobile customers to the internet. As mobile carriers advance their 5G initiative, local fiber and cable companies, like Midco, will continue to be an indispensable partner to connect consumers from small cell towers to the Internet.

Midco's innovation and continuing capital investment in our fiber stems from our desire to serve the communities where we live and raise our families. While the national push for 5G technology may yield a benefit to urban areas within our footprint, such as Sioux Falls or Rapid City, fiber and fixed wireless companies will continue to be the primary source of broadband in the more rural and remote areas. For example, last year, we extended our fiber-optic network to Littlefork, Canby, Porter, Tauton, Minneota and Ghent, Minnesota – six small communities that now have access to Midco's fiber network, Gig speeds, and our data centers. Not only do we invest in our fiber and fixed wireless infrastructures, but we are also a Midwestern company and are deeply committed to giving back to the communities we serve. To date, the Midco Foundation has contributed more than \$3.8 million in grants to the work of non-profits, local governments, and schools.

Midco's Innovative Use of Fixed Wireless to Reach More Communities with Broadband

While extending the Midco network and bringing our service to rural communities has always been part of Midco's culture and priorities, there are still folks out there who lack access to our network, or to any reliable and affordable internet source. There are challenges and high costs associated with building fiber in many communities in our area, due to difficult terrain or sparse population in the vast farmland of the Upper Midwest.

Fixed wireless services can be part of the solution for rural America. In March of 2018, we acquired InvisiMax, Inc., a fixed wireless company operating in the Red River Valley with more than 10 years of innovative spectrum use.

I can personally speak to the benefits of the fixed wireless approach, as I myself am a Midco fixed wireless customer. I get my internet from the top of the grain elevator in Prosper, North Dakota to my small farmstead six miles west of Argusville, North Dakota. On a normal day, my three kids are streaming video or other content, while my wife is using the Internet to run a small business, so this service has been a great asset for our family.

Our extensive fiber network is the connectivity backbone for our fixed wireless business and other fixed wireless businesses through bandwidth wholesale agreements. We use our fiber network as the backbone and edge out our broadband services by using fixed wireless to reach more remote locations.

A fixed wireless option is a huge benefit to our friends and neighbors who are not on Midco's wired network. Fixed wireless allows us to reach remote, rural areas that are up to 50 miles away from our fiber network, and we can implement this solution relatively quickly and without the effort or expense of constructing fiber networks. We can also deploy new fixed wireless networks during the winter months, when harsh weather makes fiber construction impossible.

Through innovative spectrum use, Midco is currently testing residential fixed wireless speeds of 100 Mbps download and 20 Mbps upload using our 3.65 GHz nationwide non-exclusive and 3.5 GHz Citizens Broadband Radio Service band licenses. Once Midco is able to access spectrum in the 3.5 GHz band, we can offer 100/20 speeds more widely in our fixed wireless footprint.

Midco's fixed wireless innovation extends to the millimeter wave, where we are beginning testing. Using shorter distances from towers to consumers, we can use the 70 and 80 GHz bands for our point-to-point connections and the 50 and 60 GHz bands for our point-to-multipoint connections. A new meshing technology will increase redundancy and reliability, and we will be testing Gigabit fixed wireless services. Millimeter wave technology can be an additional tool in the toolbox to offer high-speed and reliable broadband to rural America.

How Congress Can Support Broadband Deployment in Rural America

Midco supports your efforts to ensure all Americans have access to broadband services, and we have invested many millions of dollars to help make that goal a reality. We greatly appreciate the bipartisan commitment of this Committee to produce bills that include and reflect the key components of a broadband deployment-friendly atmosphere – prioritizing unserved areas, instituting competitive principles for awarding broadband dollars, and embracing technological neutrality. Your efforts in the RAY BAUM'S Act and MOBILE NOW Act to include broadband deployment provisions like the Dig Once policy and a spectrum policy balancing licensed and unlicensed uses, and your thoughtful consideration of the ACCESS Broadband Act, have contributed to an environment in which we are able to more easily invest, expand, and deploy. This Committee is leading the way in Congressional efforts to close the Digital Divide and should be commended for its efforts.

Midco also respects your efforts to identify barriers to broadband deployment, including in the STREAMLINE Small Cell Deployment Act, introduced by Chairman Thune and Senator Schatz. As broadband providers develop new ways to deliver connectivity to their customers, it is appropriate to examine the regulatory landscape to ensure that obligations placed on

providers—whether they offer wireless or wireline service—are reasonable, lawful, competitively neutral, and not unduly burdensome, while respecting legitimate interests of local communities. Fortunately, given Midco’s deep connections to the communities we serve, we have been able to work effectively and collaboratively with the great majority of our local officials to advance our shared interest in extending the benefits of broadband to our customers.

We recognize that there is a great deal of interest these days in 5G, which is expected to enhance competition in cities like Sioux Falls and Rapid City. Like other fiber and cable providers, given our deep fiber network and partnership with municipalities across our footprint, we are able to partner with these mobile carriers to provide the necessary connectivity link from their small cell towers to the Internet.

In the race to 5G, which will benefit more highly populated areas with dense networks, Midco hopes that Congress and the Federal Communications Commission (“FCC”) will not neglect rural America. Therefore, today, I would like to offer three suggestions for how you might help us further advance rural broadband.

First, as Congress and the FCC work to free up additional spectrum, it is vital that companies like Midco that provide high-speed and reliable broadband to the most rural areas of our country have equal access to spectrum.

It would be detrimental to rural America if valuable and limited spectrum was allocated only to 5G, especially as 5G requires a high concentration of small cells to operate. Using current mobile 5G technology, it would take an estimated 350 small cell towers to provide 5G to Sioux Falls, with a square footage of only 74 miles. While technology that requires end users to be in such close proximity to a tower is a possibility in Sioux Falls, Rapid City, and other urban areas, mobile 5G it is not currently a realistic solution to close the Digital Divide in rural areas.

But fixed wireless has been and will continue to be a solution. South Dakota is the fourth least densely populated state in the country, with about 11 people per square mile; and we all know that there is far less population density in our rural and farming communities. Instead of hundreds of feet between a tower and a consumer, our fixed wireless system can beam high-speed broadband 5-28 miles between a tower and a consumer. For example, Midco currently provides fixed wireless broadband to large portions of the Red River Valley with a square footage of approximately 14,000 miles using 140 cell towers, water towers and grain elevators. This partnership of fiber and fixed wireless is a viable, and long-term, solution to closing the Digital Divide.

On behalf of our friends and neighbors who still lack access to broadband, we ask that Congress and the FCC allow fixed wireless providers like Midco to have equal access to spectrum as that valuable resource is freed up for commercial use. We know from field testing that the 3.5 GHz band is key spectrum for us to provide speeds of 100/20 and higher to homes that are over 8 miles away from the tower. The FCC is currently changing the rules for the 3.5 GHz band. However, under those rules, after 2020, we will lose our interference protection in the 3.65 GHz band, and we will then need to either use general authorized access spectrum, in which case our operations would not be entitled to interference protection, or bid on priority access licenses in the 3550-3650 MHz range that will be auctioned. Moreover, only 70 MHz of spectrum will be auctioned, and there is no guarantee Midco will be able to gain access to that spectrum.

In addition, the FCC's priority access licenses in the 3.5 GHz range will only be truly effective in helping rural areas if they are offered in small enough geographic areas that companies like Midco that want to provide broadband via fixed wireless in rural markets can

compete for their purchase. Midco supports the FCC's adoption of county-sized priority access licenses in the draft order released last week. County-sized licenses strike the right balance to enable auction participation by new entrants, including rural providers, and Midco urges the FCC to adopt this aspect of the order at its October open meeting. Midco also encourages the FCC to expand its definition of rural provider for rural bidding credits to be any provider with 250,000 broadband subscribers or less in each state in which the provider seeks a priority access license for the 3.5 GHz band. By measuring and limiting the number of broadband subscribers on a state-by-state basis, mid-sized regional companies that focus their service on rural communities can benefit from the rural bidding credits and the FCC's ultimate purpose for the credits remains intact. Given the push for 5G and need for spectrum for mobile carriers, robust rural bidding credits would allow long-standing rural community providers like Midco to have the ability to compete for priority access licenses.

Beyond the 3.5 GHz band, the FCC is also considering how to more effectively use the 2.5 GHz, or Educational Broadband Spectrum, band. The licensed spectrum in the 2.5 GHz band is attractive because the propagation characteristics and high power allowance allows the broadband signal to penetrate through multiple shelter belts and forests to provide broadband and an internet solution for precision agriculture and cutting-edge farm technology. Currently, however, the 2.5 GHz band can only be licensed to educational institutions or other entities dedicated to educational purposes, who may then lease the spectrum to others. This is true even though much of the spectrum remains unused. Indeed, the FCC estimates that current licensees only cover about half of the geographic area of the United States today, with significant amounts of spectrum going unused in rural areas. Opening the 2.5 GHz band for licensing by other, non-

educational entities would allow Midco to provide fixed wireless service to even more rural residents.

Specifically, we encourage the FCC to open as much of the 2.5 GHz band for commercial auction as possible by doing the following: rationalizing the current, 35-mile wide circular licensees (Government Service Area or GSA) to county-sized licenses if the GSA covers at least 75% of the county's geography; instituting the performance requirements contemplated by the FCC in its May 10, 2018 Notice of Proposed Rulemaking;¹ auctioning all remaining 2.5 GHz whitespace in county-sized licenses through a competitive auction with a defined channel plan and a limit on the amount of spectrum that one competitor could acquire;² and creating robust rural bidding credits as suggested by Midco in the 3.5 GHz band.

It is important that rural Americans have access to broadband of a sufficient speed, so that they can stream video on multiple devices, attend webinars and virtual meetings, operate a home security system, and, importantly in Midco's service areas, use the Internet for a variety of precision agriculture needs. We need access to more spectrum so that our customers can engage in all of these activities.

Second, we recognize that government help may be needed to bring broadband to areas that are beyond the reach of private risk capital. In areas where it is not financially viable to build – because they are too difficult to reach, geographically remote, or are otherwise very hard

¹ “For mobile and fixed point-to-multipoint services, we propose an interim benchmark of 50 percent population coverage and a final benchmark of 80 percent population coverage. . . For educational broadcast services, we seek comment on an interim benchmark of 50 percent population coverage and a final benchmark of 80 percent population coverage.” *Notice of Proposed Rulemaking*, WT Docket No. 18-120 (May 10, 2018) at ¶ 54.

² “Midco also discussed and endorsed the channel plan and associated spectrum limitation of no more than 63 MHz advanced . . . specifically: A1-A3 and B1-B3 – 33 MHz of contiguous spectrum in lower band segment; C1-C3 and D1-D3 – 33 MHz of contiguous spectrum in lower band segment; A4, B4, C4, D4, and G4 – 30 MHz of contiguous spectrum in middle band segment; and G1-G3 – 16.5 MHz of contiguous spectrum in upper band segment[.]” *Midco Ex Parte to Wireless Telecommunications Bureau*, WT Docket No. 18-120 (Sept. 26, 2018) at 1-2 (adopting the proposal from the Wireless Internet Service Provider Association).

to serve – broadband deployment grants can alter the financial calculation, making serving an area possible. It is critical, however, that such help and government resources used for this purpose are directed to bring service only to areas that are truly unserved and not to overbuild existing networks.

In the past, some government broadband funding programs have allowed funding to be used in places that already have broadband service. Midco has been overbuilt with our own tax dollars in places like Mitchell and Yankton, South Dakota, as have others in our region. In Yankton, South Dakota, for example, government dollars were used by a fiber company to overbuild two existing providers; and the new provider used those government funds to “cherry pick” a few business customers. We believe that scarce government resources should be targeted to those who will build out areas that do not yet have *any* access to broadband.

We were a participant in the Connect America Fund Phase II Auction hosted by the FCC this year. This was a competitive, reverse auction, and we believe a fair and economical method to fund those last mile technologies. Midco was awarded approximately \$38.9 million in the auction, and we will use the proceeds to extend our fiber and fixed wireless services deeper into rural areas in our service area. We were also encouraged to see that the pilot broadband funding program in the Omnibus Appropriations Act directed that funds be used in areas that are at least 90% unserved, and that the Senate Farm Bill similarly limits funding to areas that are at least 90% unserved. These approaches, implemented in a technology-neutral manner and with appropriate guardrails to ensure areas targeted are truly unserved, can complement the work of this Committee to make a meaningful impact in reducing the number of Americans lacking broadband access.

Third, it is vital that fixed wireless – a service squarely aimed at rural areas – has access to new laws and orders designed to advance 5G technology, as fixed wireless, not mobile 5G, is the solution here and now to solve the Digital Divide. We were encouraged, therefore, to see the definition of “Small Wireless Facilities” in the FCC’s recent *Declaratory Ruling and Third Report & Order on Small Cells* as being structures that are 50 feet or less in height with antennas no more than three cubic feet in volume. This Committee’s STREAMLINE Act contains similar provisions, and we encourage this Committee, Congress, and the FCC to not neglect fixed wireless in revising rules and regulations at the request of 5G operators. We ask only for equal access to benefit from new laws and regulations.

I commend the Committee for its focus on ensuring that all Americans – including those in rural America – receive the full potential of America’s broadband networks. Thank you again for inviting me here today, and we look forward to working with all of you on these important issues.