Statement by

Catherine Moyer
Chief Executive Officer and General Manager
Pioneer Communications
Ulysses, Kansas

On behalf of

NTCA–The Rural Broadband Association

Before the

United States Senate
Committee on Agriculture, Nutrition, & Forestry

Hearing from the Heartland: Perspectives on the 2018 Farm Bill
Manhattan, KS

February 23, 2017

INTRODUCTION

Chairman Roberts, Ranking member Stabenow, and members of the committee, thank you for this opportunity to testify before you about rural telecommunications and the 2018 Farm Bill. I am Catherine Moyer, CEO/General Manager at Pioneer Communications. My remarks today are on behalf of Pioneer, as well as NTCA–The Rural Broadband Association, which represents approximately 850 member-owned cooperatives and commercially-owned carriers in 45 states that are largely based in the communities they serve and offer a variety of communications services throughout the rural far reaches of the nation.

Small, rural telecom providers like Pioneer connect rural Americans with the world, and these companies make every effort to deploy advanced networks that respond to consumer and business demands for cutting-edge, innovative services. Fixed and mobile broadband, video and voice are among the numerous services that rural Americans can access thanks to our industry's commitment to serving sparsely populated areas. Small rural telecom providers have always been at the forefront of resourceful entrepreneurship and technological innovation, being" first movers" in the telecom industry by converting to digital switched systems, providing wireless options to their hardest to reach customers, enabling distance learning and tele-health applications, and deploying as the chance permits future-proof all-fiber systems.

I have been part of the industry for more than 15 years, spending most of those years at Pioneer Communications. Pioneer is a local telecommunications provider with 113 employees serving a 5,000-square mile area – an area roughly the size of Connecticut, but with three million-plus fewer people than that state. We provide 21,000 total connections to wireline voice, high-speed broadband and video services over a network that utilizes a mix of fiber, copper and coax facilities. On average, we have just over two subscribers per square mile. However, when considering that 81 percent of our customers live in our small population centers, the "density" of our rural subscribers per square mile drops to just under 0.5. Put another way, 81 percent of our customers reside in approximately 15 square miles, while the remaining 19 percent reside in the other 4,985 square miles. In actual network terms, we have deployed 375 route miles (14 percent of our route miles) to serve that 81 percent of our customers, while it takes 2,325 route miles (86 percent of our route miles) to serve the remaining 19 percent of our customers. While one might ask why we serve these areas, we are the provider of last resort – in addition to its legal obligations to serve these consumers and businesses who were left behind long ago when larger companies picked first where to serve, if Pioneer does not provide them now with service, there is no one else available to do so. And atop all of that, our largest population centers are still tiny compared to even Tier 3 or Tier 4 "cities" – and our serving area is roughly 400 miles away from major cities like Denver or Kansas City. So at Pioneer, like many other NTCA members that serve agricultural communities and other rural areas, the challenges of distance and density hit very close to home.

Our broadband-capable networks are critical for the communities we serve to overcome these challenges; if anything, cutting-edge networks and advanced services are more important for rural consumers than in urban areas where distance is of little to no concern and densities are high. Our networks allow agricultural producers and other rural businesses to communicate with suppliers and sell to new markets, they enable education of our children on par with opportunities in urban areas, and they make our communities places to

which people and businesses want to relocate and/or remain. In rural America, that translates into economic development that produces jobs, not only in agriculture, energy and other industries with a strong rural presence, but in the healthcare sector, and just about any other retail industry that requires broadband to operate.

As this committee deliberates the upcoming Farm Bill reauthorization, it should be mindful that access to capital for rural broadband projects is limited. Although there are a few options for the smaller broadband providers like Pioneer and other NTCA members to finance network construction, the fact is that there are truly just a few. Small rural broadband providers cannot walk into large commercial banks to obtain loans for networks where the addressable market of consumers is so small, the costs are so high, and the payback is therefore often measured in decades rather than years. There is no "Wall Street" financing for rural broadband. Cost-effective Rural Utilities Service (RUS) loans offered through the U.S. Department of Agriculture (USDA) are therefore an essential resource for small businesses looking to deploy broadband in rural America. In the end, it takes a mix of private capital and financing from a few committed, mission-driven lenders like RUS, CoBank, or the Rural Telecommunications Finance Cooperative (RTFC) to enable small rural providers to build networks in their communities, with the complementary cornerstone of universal service funding then helping to justify the business case for such construction. Universal service funding ensures that consumers can afford to adopt services on the constructed networks and make continuing use of those networks over time.

THE STATE OF RURAL BROADBAND DEPLOYMENT PROGRESS

In the face of the challenges just described, Pioneer Communications and other NTCA members have made remarkable and substantial progress in deploying advanced networks in their communities. In the spring of 2016, NTCA surveyed its members on their activities in providing broadband services and Internet availability to their customers. Responses from 131 member companies indicated that they use a variety of technologies, even within individual serving areas, to find ways to offer the best possible broadband to their customers: 49 percent of respondents' customers are served via fiber- to-the-home (FTTH), 29 percent via copper loops, 15 percent cable modem, 6 percent fiber-to-the-node (FTTN), 0.5 percent fixed wireless, and 0.1 percent satellite.[1]

Despite the multitude of obstacles that small providers face, their rural fiber deployment continues at an impressive pace. In the 2013 survey, 29 percent of respondents' customers were served by FTTH; in 2014, the percentage grew to 39 percent; and in this year's survey, almost half (49 percent) have access to FTTH service. This growth is all the more remarkable given the regulatory instability of recent years. Policies that encourage investments in and then sustain future-proof networks – such as fiber – will be most efficient in responding to consumer demand over the lives of those networks, particularly when compared to short-term strategies that focus on getting lower-speed broadband deployed quickly only to find that consumer demands outpace the capabilities of such low-speed networks in a few short years.

[1] NTCA 2015 Broadband/Internet Availability Survey Report (2016), NTCA-The Rural Broadband Association, Arlington, VA.

Clearly, smaller operators recognize the importance of fiber to their network both now and in the coming future, and are taking the necessary steps to include it in their plans. Fifty percent of those survey respondents with a fiber deployment strategy expect to offer FTTN to more than 75 percent of their customers by the end of 2018. Seventy-eight percent of respondents expect to be able to provide FTTH to at least half of their customers by year-end 2018. An additional 40 percent have already completed fiber deployment to all their customers.

Due in no small part to increased fiber deployment, broadband speeds offered by NTCA to customers continue to increase. Per the survey results, 85 percent of NTCA members' customers can get broadband at speeds of 10 Mbps or higher, including 71 percent who can get service at speeds above 25 Mbps, In the 2013 survey, 66 percent of respondents' customers could subscribe to broadband speeds of 10 Mbps or greater.

The story for Pioneer is very similar. Ninety-seven percent of our customers have access to 10 Mbps service. The remaining three percent of customers are served by long local loops that provide 7 Mbps or 8 Mbps service. We work with those customers on an individual basis to find solutions to their broadband needs. Twenty-one percent of our customers are served by FTTH. Another sixteen percent are currently part of a fiber build, and will be served by FTTH by mid-2017. The remaining 63 percent are served by FTTN, copper or coax, with many of those customers having more than one technology choice. We have deep fiber penetration throughout our service territory that allows us to provide more than the 10 Mbps to a vast majority of our customers.

But for (and likely because of) all this progress, our customers are demanding more and more speed. In 2016, we saw more than 1,000 customers move from the basic 10 Mbps speed to a higher-tier package. Due to this demand, we continue to utilize new technology in our FTTN, copper and coax networks to meet demand, but also continue to deploy fiber. I envision the fiber build to continue at a steady pace until we have reached our entire territory with FTTH. The speed and sustainability of deployment, however, will be predicated on reasonable access to capital and the availability of Universal Service Fund (USF) support – important points I will address further below.

But before moving on to discuss the essential complementary role that access to capital and sufficient and predictable USF play as cornerstones of rural broadband investment, this brings me to a final, critical point about broadband deployment – for all of the success I just described of Pioneer and other NTCA members, the job is far from done in rural America. Where fiber has already been built, we must maintain it over thousands of miles. Where customers already have high-speed broadband, we need to roll trucks many miles or have customer service representatives trained to deal with questions about router and device configurations in ways that were unimaginable when we were just a "telephone company." We also need to address the fact that even the best networks in rural markets are dependent upon so-called "middle mile" or long-haul connections to reach Internet gateways hundreds of miles away in places like Denver and Kansas City. Reaching those distant locations is expensive as well, and as our customers' bandwidth demands increase, so too does the cost of ensuring sufficient capacity on those long-haul fiber routes that connect rural America to the rest of the world.

And then there are all those places where fiber or other robust facilities have *not* yet been built. For the 85 percent of NTCA member customers who can subscribe to 10/1 Mbps services today, that means there are 15 percent of customers who cannot get even that basic level of broadband. For the 37 percent of Pioneer customers that we hope to have connected with fiber to their premises by the middle of this year, that means there are 63 percent who do not yet have such robust future-proof connections. In a country where the Federal Communications Commission (FCC) has indicated that 90 percent of Americans already have affordable access to 25/3 Mbps service and many urban consumers and businesses are already reaping the benefits of 100 Mbps or Gigabit speeds, broadband access in rural America remains far behind urban areas notwithstanding the best efforts of companies like Pioneer and other NTCA members.

Add onto all of this the fact that, on average, many rural Americans need to pay far more for broadband than urban consumers due to insufficient USF funding, and it becomes readily apparent that the job of getting rural America connected – and, just as importantly, keeping rural America connected – is far from done. The narrative of rural broadband deployment progress is therefore at once a story of success and a story of work still to be done.

THE ROLE OF RURAL UTILITIES SERVICE FUNDING

As noted earlier, the upfront financing of network construction is one of two complementary cornerstones necessary to achieve success in rural broadband deployment. In rural areas, the intensive capital costs of communications networks are compounded by the geographic distance over which facilities must be deployed and the often-challenging terrain characteristics. These areas also have relatively small number of users (as compared with more densely populated urban areas) to help recover the costs of deployment and ongoing operations. USDA's Rural Utilities Service plays a crucial role in addressing such rural broadband challenges through its telecommunications programs that finance network upgrades and deployment in rural areas.

RUS has been lending for broadband capable plant since the early 1990s at a net profit for taxpayers, and these programs have been a great success story. The agency has helped advance state-of-the-art networks to rural Americans left behind by providers unable or unwilling to serve low population density markets. Reliable access to capital helps rural carriers meet the broadband needs of rural consumers at affordable rates. While RUS financing is one of several sources of capital for rural carriers, as I noted earlier, there are in fact very few other sources – with rare exception, RUS, CoBank, and RTFC reflect the effective universe of lenders to which most small rural providers can turn for outside financing of substantial network construction projects.

Given the increased attention that has been paid by members of Congress and other policymakers to closing a "digital divide" and allowing rural America to keep pace with the rest of the country and the world from a technological perspective, it will be important therefore to continue providing RUS with the resources it needs to lend in support of rural broadband deployment. In fact, as Congress grapples with where to best direct scarce resources, it is important to note that the RUS Broadband Loan & Guarantees program and the traditional Telecommunication Infrastructure Loan & Guarantees program make loans that must be paid back with interest – creating a win/win situation for rural broadband consumers and American taxpayers.

NTCA also supports the Community Connect Grants program; while limited funding restricts its reach, the grant mechanism makes the program popular with providers serving the highest cost areas where even loans may be difficult to justify. NTCA accordingly urges the committee to continue to support the RUS Broadband Loan program that is subjected to the Farm Bill reauthorization process at or above current funding levels as you formulate recommendations. Furthermore, we urge the committee to continue its long history of support for the Telecommunications Infrastructure and Community Connect programs that are also vital to the ongoing deployment and maintenance of advanced communications infrastructure throughout rural America.

THE COMPLEMENTARY ROLE OF THE FCC'S UNIVERSAL SERVICE FUND PROGRAMS

Unfortunately, the success, momentum, and economic development enabled by the RUS's telecommunications programs was stalled to some degree in recent years due to uncertainty in the Federal USF program that is so important to help justify the business case for initial construction and to sustain operations on networks once built. From time to time, some observers confuse or conflate RUS (or other lending programs) with USF, but the two in fact serve very different but complementary purposes; access to capital and ongoing USF support are each distinctly important in achieving rural broadband success of the kind seen to date. RUS lending programs, much like other lending programs, are focused on financing the substantial upfront costs of network deployment – but RUS programs and the few others I have mentioned are particularly important in high-cost, sparsely populated rural areas where once again many commercial banks are unlikely to lend.

By contrast, the USF programs do *not* provide substantial upfront financing for network construction. Instead, the USF programs represent a complementary cornerstone of rural broadband by helping to *justify the business case* for such construction. More specifically, the USF programs are aimed by law at ensuring "reasonably comparable" services are available at "reasonably comparable" rates. In this regard, the high-cost USF programs promote *both* availability *and* affordability. Without the cost recovery enabled by USF support, it would be difficult or often impossible to justify obtaining a loan and building a network in a high-cost area, precisely because the pricing of services would then need to be so high that no consumer or business could actually afford to buy those services. In fact, we are already seeing such concerns about affordability arise as it becomes increasingly apparent that USF programs are insufficiently funded, with many consumers still facing the prospect of paying hundreds of dollars per month for standalone broadband services even in the wake of recent FCC reforms intended to fix that problem.

In the wake of reform debates that stretched nearly a decade and created substantial uncertainty in recent years particularly, NTCA has made substantial efforts to restore regulatory certainty to the USF programs, both by working with the FCC on modernizing the programs to more directly support the delivery of broadband to consumers and by seeking more sufficient funding under a USF high-cost budget that had been held constant since 2010. Specifically, in March 2016, the FCC adopted an order that contained a series of reforms to the USF mechanisms upon which Pioneer and other small rural telcos rely to recover the costs of investment and ongoing operations in high-cost areas. The order defined options for telcos to elect either a "model-based" USF support mechanism that would provide carriers with additional support in exchange for

incremental broadband buildout obligations or a reformed "non-model" USF support mechanism that would now provide support to enable more affordable broadband rates for rural consumers and businesses.

Unfortunately, even as the March 2016 order resolved some long-running reform debates and took several important steps to more directly orient the high-cost USF program toward broadband, the order did not address a fundamental concern – the lack of sufficient funding under a budget that effectively provides telcos with less revenue today than they had prior to reforms adopted in 2011. To be clear, the FCC thankfully did provide additional funding in the March 2016 order – $200 million per year – to help facilitate the "model option" as part of the reforms described above; these funds will certainly help enable the expansion of broadband in areas where it is lacking today. But demand for model support far exceeded supply, confirming the insufficiency of a budget that was otherwise held constant at 2010 support levels. In fact, even with the annual incremental infusion of $200 million in support, USF funding for the model remains approximately $110 million per year short of demand, meaning that tens of thousands of rural consumers will see lower speeds or no broadband at all as a result. The FCC is now seeking comment on whether and how to address this shortfall, and NTCA and a number of other stakeholders are urging the FCC to provide full funding to enable the business case for greater expansion of broadband.

But this unfortunately reflects only a portion of the USF funding shortfall that affect rural consumers. As noted earlier, the FCC also reformed the existing "non-model" USF mechanisms to more directly support consumer purchases of broadband services. While this was an important step that offers some promise and for which NTCA and its members were grateful, the fact is that the reforms only fixed the "mechanics" and did not address the underlying problem of insufficient funding. Indeed, due to the budget that has been flat since 2010, the non-model mechanisms look to be underfunded in the amount of at least $140 million this year, and as a result, the new budget control adopted as part of the reforms will cut an estimated 10 percent of USF support this year on average for companies like Pioneer – cutting recovery of costs that we have already incurred in deploying networks and delivering services to consumers. Moreover, the budget control can and will vary from period to period, undercutting the kind of predictability that is called for by law and needed when evaluating future investments. For Pioneer, for example, the unpredictability and impact of the budget control mechanism hits close to home, with our support having been reduced by approximately five percent of support in the last few months of 2016 and some estimates indicating that the budget control could increase to around nine percent this year. This loss of support due to the budget control will translate into higher prices for consumers for broadband, because the only other place we can turn to recover those costs are our consumers – and the unpredictable nature of the level of the budget control hinders our ability to plan for future investments in broadband networks.

Thus, as NTCA summarized in a recent filing with the FCC, "while much effort may have gone into rebuilding 'the engine' of non-model USF reforms, the ongoing lack of 'gasoline in that engine' (in the form of sufficient budget resources) risks rendering its operation inefficient at best and utterly ineffective at worst." This budget crisis – captured in the form of the new budget control mechanism – will deter customer purchases of standalone broadband and ultimately undermine additional deployment too, as small telcos will need to factor estimated support reductions into future planning efforts and scale back investments. Remedying this USF budget concern will be important if we are to achieve the kinds of

network deployment progress and sustained delivery of affordable, high-quality broadband to consumers that this committee and many other members of Congress hope to see in rural America.

RURAL BROADBAND BENEFITS THE ENTIRE U.S. ECONOMY

For years, until uncertainty began to creep into the USF programs, the complementary cornerstones of RUS and other lending efforts on the one hand and the USF programs on the other hand worked well in concert to achieve substantial success in advancing rural telecommunications investments and sustaining rural telecom operations in the form of affordable rates for consumers. As discussed above, after years of reform debates and uncertainty, the FCC has taken steps to finally adopt and implement reforms as discussed above, but there is still much more work to be done to make sure the reforms and programs actually work as intended and that these cornerstones of access to capital and USF can once again operate in concert – and this is important because of what it means for the economy in rural America and nationwide.

Investing in rural broadband has far-reaching effects for both urban and rural America, creating efficiencies in health care, education, agriculture, energy, and commerce, and enhancing quality of life of citizens across the country. A series of studies confirms that significant benefits flow from rural broadband investment to broader urban and statewide populations. For example, a report released in April 2016 by the Hudson Institute in conjunction with the Foundation for Rural Service found that investment by rural broadband companies contributed $24.1 billion to the economies of the states in which they operated in 2015.[2] Of this amount, $17.2 billion was the direct byproduct of the rural broadband companies' own operations while $6.9 billion was attributable to the follow-on impact of their operations. In Kansas, the direct economic impact of rural telecommunications was $468 million with indirect impacts of $171.5 million.

The Hudson study also confirmed that while small telcos like Pioneer produce a range of telecommunications services in rural areas, the economic activity generated by such operations accrues both to the rural areas served and to urban areas as well. In fact, most of this benefit goes to urban than rural areas because many of the vendors, suppliers, and construction firms that rural telcos use are based in urban areas. Only $8.2 billion, or 34 percent of the $24.1 billion final economic demand generated by rural telecom companies accrues to rural areas; the other 66 percent or $15.9 billion accrues to the benefit of urban areas.

Additionally, the report found that the rural broadband industry supported nearly 70,000 jobs nationwide in 2015, including more than 1,200 jobs in Kansas, both through direct employment and indirect employment from the purchases of goods and services generated. Jobs supported by economic activity created by rural broadband companies are shared between rural and urban areas. Forty-six percent are in rural areas; 54 percent are in urban areas.

Other, earlier studies reinforce these findings. For example, the Center for Economic Development and Business Research at Wichita State University found that the total economic impact of Kansas rural telecom companies (in the form of direct wages and induced economic activity) averaged $137.2 million dollars a

[2] "The Economic Impact of Rural Broadband" (2016), The Hudson Institute, Washington, D.C.

year between 2011 and 2014.[3] The companies included in the report spent an average of $98 million dollars per year on capital improvements to maintain and expand communication capacity in rural Kansas.

Of course, these referenced studies only look at the direct and indirect economic impact of the investments and operations of the telcos themselves. The broader socioeconomic benefits of broadband for *users* cannot be ignored. A Cornell University study, for example, found that rural counties with the highest levels of broadband adoption have the highest levels of income and education, and lower levels of unemployment and poverty.[4] A recent Pew Study further finds that among those Americans who have looked for work in the last two years, 79 percent utilized online resources in their most recent job search and 34% say these online resources were the most important tool available to them.[5]

Access to healthcare is a critical issue for rural areas as well, where the lack of physicians, specialists, and diagnostic tools normally found in urban medical centers creates challenges for both patients and medical staff. Telemedicine applications help bridge the divide in rural America, enabling real-time patient consultations and remote monitoring, as well as specialized services such as tele-psychiatry. One study found that doctors in rural emergency rooms are more likely to alter their diagnosis and their patient's course of treatment after consulting with a specialist via a live, interactive videoconference.[6]

There is also a shortage of teachers in many areas of rural America and those public school districts rely on high-speed connectivity to deliver interactive-video instruction for foreign language, science and music classes. For example, students in rural Minnesota can attend online music classes offered through the MacPhail Center for Music in Minneapolis.[7] Broadband networks also enable farmers and ranchers to use the Internet to analyze weather data, manage nutrient application, map their crop yields, and adjust planting for the next season with modern precision agriculture tools, and gain access to new markets. Farmers are relying heavily on both wireless and wireline broadband technologies, resulting in monthly data usage of 30 to 40 Gigabytes.[8]

Retail e-commerce has benefited tremendously from sales in rural America as well, where consumers may lack access to local retail outlets, but through the availability of rural broadband networks, can access a variety of shopping options. According to the Hudson Institute, rural consumers generated $9.2 billion in online sales in 2015 and if all rural Americans had access to broadband networks, the authors estimate that Internet sales would be $1 billion higher.[9]

---

[3] "Economic Impact of Kansas Independent Rural Telephone Companies" (2016), Center for Economic Development and Business Research, W. Frank Barton School of Business, Wichita State University.
[4] Broadband's Contribution to Economic Health in Rural Areas" (2015), Community& Regional Development Institute, Cornell University.
[5] Searching for Work in the Digital Era" (2015), Pew Research Center, Washington, D.C.
[6] "Telemedicine Consultations and Medication Errors in Rural Emergency Departments" (2013), Center for Healthcare Policy and Research and Departments of Pediatrics, University of California Davis.
[7] "Bringing Broadband to Rural Minnesota" (2016), Center for Rural Policy and Development, Mankato, MN.
[8] "Farmers Harvest Gigabytes with Broadband and Wireless Technology" (2016), CoBank Rural Infrastructure Briefings.
[9] "The Economic Impact of Rural Broadband" (2016), The Hudson Institute, Washington, D.C.

CONCLUSION

Entrepreneurial small rural carriers have leveraged public and private capital, universal service support, and public-private partnerships to lead a stunning technological revolution in many parts of rural America. These small businesses play an essential role in deploying broadband to rural areas, and the services enabled by broadband are essential to the startup, operation, and growth of other rural small businesses. Rural America is poised for a bright future powered by smart technologies that promote affordability, sustainability, and efficiency in the operation of rural industry and the delivery of essential services such as healthcare, education, and public safety – all key to sustaining and growing rural population. But such benefits will only be possible if robust broadband is available, affordable and sustainable. Rural telecom providers and lenders such as RUS must have regulatory certainty before they can justify greater investments in the networks of the future, and providers like Pioneer need sufficient ongoing USF support to avoid the prospect of charging rural consumers tens or hundreds of dollars more per month to recover the costs of operating in such rural and remote locations.

Much of the focus in today's broadband policy debates is on what it takes to "get broadband out there." That is an essential question to be sure, and financing programs like those available through RUS and the few other lenders I have mentioned are the most time-tested, effective means of doing so. Yet, just as important is the question of what is needed to "keep broadband out there" – to ensure that rural broadband networks once built can be maintained, that the services atop them remain affordable, reliable, and of a quality comparable to what urban Americans can get. Thus, the mission of universal service – and the economic benefits it delivers locally and to the nation as a whole – requires the resourcefulness and entrepreneurship of small businesses like Pioneer, access to capital from programs like those offered by RUS, and the availability of sufficient and predictable ongoing cost recovery mechanisms like the USF program so that rural consumers and businesses can indeed obtain services that reasonably comparable in price and quality to those available in urban America.