Statement of Brian Shepperd
University of New Hampshire, Director of Broadband Services
before the
U.S. Senate Committee on Commerce, Science, & Transportation
Field hearing on broadband deployment in New Hampshire
October 13, 2017

Good morning Senator Hassan and members of the Committee. Thank you for the opportunity to appear before you to speak on this important topic.

My name is Brian Shepperd and I am the Director of Broadband Services at the University of New Hampshire. I am responsible for the University System's fiber-based wide area network, which serves all of the System's institutions, the Community College System of New Hampshire, as well as some public safety entities. I have been a member of the Governor's Telecommunications Planning and Development Advisory Committee since 2001.

I serve on the NH School Connectivity Initiative (NHSCI), created by former Governor Hassan and now continuing under Governor Sununu. Working in collaboration with the national non-profit EducationSuperHighway, NHSCI's goal is to help facilitate fiber connectivity to all of our K-12 schools, enhance utilization of E-Rate dollars, and expand the use of Wi-Fi to increase the impact of digital learning.

From 2011-2014, I was the program director for New Hampshire's National Telecommunications and Information Administration (NTIA) Broadband Technology Opportunities Program (BTOP) grant, which constructed over 850 miles of fiber optic communications cable in all 10 counties of New Hampshire. It also included a 19-site public safety broadband microwave network shared by five agencies, and a last mile fiber project in the western part of NH.

New Hampshire's broadband providers have made significant progress over the past few years, but still have a lot of work to do to ensure that all of our community anchor institutions, businesses, and residents have access to fast, reliable, and affordable broadband. My work in this area has provided insight into ways to improve access and streamline deployment. I am here to recommend improving pole attachment rules, continued funding for broadband mapping and planning, and leveraging the E-Rate program.

Pole Attachments: The NH Public Utilities Commission Chapter 1300 rules regulate the pole attachments process in New Hampshire. As a component of the BTOP project, we hung fiber on over 24,000 poles in the state, which highlighted a significant area needing improvement.

The pole attachment process begins with an applicant paying a fee for a new attachment. Once that fee is paid, the pole owners oversee the make-ready process to make room for the new attacher. This typically consists of the pole owner lowering their own cable plant and then coordinating with each of the existing third-party providers on that pole to move their own cable plant in a lengthy and potentially costly sequential process (see Attachment 1). The PUC1300 rules require the pole owners to compete their make-ready work within 150 days and each of the

third-party attachers is allowed to set their own "just and reasonable" rates for their individual moves based on make-ready rules that are not clearly defined.

During the BTOP construction process, we experienced one provider who simply refused to move their cable plant and the pole owners were unwilling to move it for them under threat of a lawsuit. The hearings related to this revealed that the PUC 1300 rules never envision a third-party attacher purposely "blocking" a new attacher from accessing the legally-obtained space on a utility pole and therefore provided no relief in the matter.

As we prepare for the next decade of technology, it is critical that we streamline the pole attachment process. The upcoming transition to 5G LTE will likely place even greater demand on the pole attachment process as microcells and distributed antenna systems will utilize both the top of the poles for antennas as well as the communications space for backhaul.

While pole attachment issues exist in most states, they can be minimized by implementing the concept of One Touch Make-Ready (OTMR). Several local governments have passed One Touch Make Ready legislation (Louisville, San Antonio, Nashville) and, while specific portions of the local statutes vary, all carry a unifying theme. Certified construction crews chosen either by the pole owners or local governments are allowed to make all the necessary changes to a utility pole to make it ready for a new attachment. This streamlines the make-ready process, shortens the timeline, and reduces costs for existing and new entrants since it only takes one truck-roll, one police detail, and one scheduler to accomplish the work.

Like New Hampshire, a large number of states also legislate their own pole attachment rules. Perhaps the FCC rules should be amended to require those states to meet or exceed the FCC timetables for pole owners and third-party attachers.

Broadband Mapping and Planning: The NH Broadband Mapping & Planning Program (NHBMPP) was established within the University of New Hampshire Earth Systems Research Center in 2010 under the auspices of the NTIA State Broadband Initiative (SBI). The Program works to improve broadband access and use in the state by assessing and mapping broadband availability, and by engaging with communities and other stakeholders around planning, technical assistance, capacity building, and training initiatives. The mapping component involves regularly accessing Form 477 provider data posted by the FCC and analyzing it to determine areas of the state that are served, underserved, or unserved by broadband.

This work is challenged by the generalized resolution in the provider data as one home connected at the census block level makes it appear as though the whole census block is served. Instead, we propose that providers be required to submit address-level service data so that estimates of availability are not overstated. In addition, there is a considerable delay between when the data are submitted to the FCC and when they are made publically available. This has resulted in efforts to enhance broadband in areas that the providers claim are already served. We also find that there is a lack of full participation by some providers with no apparent recourse for not submitting their broadband connectivity data.

The planning/outreach component is challenged by a lack of resources. A state broadband fund and state broadband authority could provide much-needed support to regional planning commissions and municipalities in support of broadband expansion and utilization. The NHBMPP offers an important service by delivering data and resources, which are critical to making informed decisions around broadband issues in the state. Ideally, there would be funds made available to continue this type of program in each state.

E-Rate: Over the past 2 years, the Universal Service Administrative Company (USAC) Schools and Libraries (E-Rate) Program has placed an emphasis on high-speed connections. However, there is some ambiguity related to allowing a provider to add fiber strands to a funded construction project for the purpose of serving other CAIs or businesses along the same path. At a Schools, Health, Libraries, and Broadband (SHLB) conference attended by both FCC and USAC representatives, one agency indicated it is acceptable to do so as long as the provider pays the uplift for the additional strands that are not part of the E-Rate project. In another session, attendees heard that the cost of construction for the E-Rate project should be divided proportionally between the total number of organizations served by that fiber build.

Allowing the utilization of an E-Rate funded project to be the catalyst for further expanding broadband in an area is a fiscally sound practice and should be encouraged. I recommend that the USAC legislation be reviewed and clarified to allow and encourage providers to pay the uplift costs should they decide to provide new fiber service to other CAIs or commercial interests along the way. The USDA Rural Utility Service telehealth programs allow for this type of project enhancement so perhaps that language could provide guidance to USAC.

Federal Funding: Finally, I recommend that any future federal funding be focused on construction of high capacity, scalable networks. Fiber has the greatest long-term scalability so funding projects that push fiber out closer to the rural neighborhoods and then utilize the existing copper-based infrastructure to complete the last mile would provide a suitable interim plan until fiber is ultimately deployed everywhere.

I thank you for this opportunity to testify before you today. With permission of the Chair, I am available to answer any questions.

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Attachment 1