Response to Written Question Submitted by Chairman Roger F. Wicker to Tim Donovan

Question. Mr. Donovan, in your testimony you state that policymakers should apply a specific set of factors to standardize data collection for broadband maps. Please explain why the inclusion of standardized data relating to Signal Strength, Cell Edge Probability, Cell Loading, and Clutter Factors would help produce better broadband maps? Would legislation be helpful in ensuring that those factors are included in the FCC's data collection and broadband mapping processes?

Response. Signal strength, cell edge probability, cell loading and clutter factors are parts of a technological link budget that determine the transmission to a receiver, which is ultimately the experience of the wireless user. Standardizing, and in the case of clutter factors disclosing, these aspects at the levels included in my testimony will help produce a mobile coverage map that more closely reflects the on-the-ground experience. With regard to using the resulting map to determine areas initially eligible for support through programs like the Mobility Fund II, more reliable maps will allow policymakers to better target support to appropriate areas and reduce the chances of overbuilding. Further, starting the process with maps based on more reliable data will reduce the need for an excessively burdensome challenge process, such as the experience in the challenge process last year, which we now know was fatally flawed.

Legislation is helpful to ensure that the above-mentioned RF factors are included in the FCC's data collection and broadband mapping process, and will produce more accurate coverage maps that are based on your constituents' experience. Together, these modifications will help policymakers to more accurately target future support, and CCA encourages the advancement of legislation to accomplish this important policy goal.

Response to Written Questions Submitted by Honorable John Thune to Tim Donovan

Question. I convened a subcommittee hearing last month on rural broadband deployment. During that hearing, we heard testimony from Justin Forde of Midco, a company that uses a fixed wireless broadband connection into parts of South Dakota. Fixed wireless covers areas like farmland, and knowing that these areas are covered by broadband is critical for precision agriculture. Can you explain the benefits of mapping broadband coverage as "shapes" and whether or not this would be valuable to show broadband availability in a more practically useful way?

Response. Shapefiles demonstrate coverage over a particular geographic area. Wireless broadband coverage shapefiles have the benefit of showing all areas where one can reasonably anticipate coverage meeting the characteristics that the shapefile data is based upon. This is valuable to identify wireless broadband availability to the extent that the shapefile data is created using reliable data; if data is not based on engineering principles, a shapefile could indicate significant areas where coverage is expected but not available at the predicted levels, which limits the utility of the shapefile data overall.

Response to Written Questions Submitted by Honorable Jerry Moran to Mr. Tim Donovan

Question 1. My office has heard from constituents in Kansas, including your member company Nex-Tech Wireless, about their concerns with the FCC's one-time collection of 4G LTE coverage data from carriers that produced the critically flawed initial eligibility map published in February 2018. Your testimony identified a number of weaker standards for data submissions that contributed to the initial eligibility map not adequately reflecting on-the-ground mobile broadband coverage in Kansas. Are there any other factors besides those that you listed in your testimony that you believe contributed to the flawed map?

Response. In addition to the RF factors included in my testimony, on-the-ground mobile broadband coverage may be weaker than coverage estimates because modeled propagation is often based on individual cell sites. This does not adequately reflect an environment with multiple base stations. In the real world, sites often include several antennas operating using various frequencies, as well as radiating coverage that can overlap with other sites, particularly near the cell edge. When this overlap takes place, intersite or intercell interference can have the effect of reducing coverage compared to modeled coverage, as the device must operate with increased interference. In rural areas in particular, this can lead to significant areas where models predict coverage at the 5 Mbps download level suggested in the Mobility Fund II Initial Eligible Areas Map that when tested will fail to have this level of service available.

Question 2. The fact that the Mobility Fund eligibility map is reliant upon private citizens and carriers to contest the accuracy of mobile broadband data collected by the FCC based on standards that the agency set remains concerning to me. Acknowledging that initial data collection processes need to be improved upon, do you think that there will continue to be a role for public challenge processes to improve the Mobility Fund eligibility map that determine the allocation of federal resources?

Response. The FCC's Mobility Fund II challenge process placed an enormous burden on challengers, which proved unworkable to sufficiently improve the current coverage map. However, beyond government actors or carriers, the public, including groups like the Kansas Farm Bureau, could only participate in the Mobility Fund II challenge process through successfully obtaining a waiver.

Because any modeled coverage is just that – a model – there will remain a role for a challenge process to ensure the appropriate allocation of federal resources to support preserving and expanding broadband service. With sufficient improvements to the data collection process, the baseline for determining challenged areas will have fewer false positives and dramatically reduce the burden on challengers.

In addition to improving the underlying data, CCA also supports improvements to the challenge process itself to further reduce the burden on government, industry, and public participation.

Question 3. As the Chairman of the Appropriations Subcommittee with jurisdiction over the National Telecommunications and Information Administration (NTIA), I have interest in seeing how NTIA could build upon the data collection of the FCC in its Form 477 process. More

specifically, we have appropriated substantial resources in recent years to NTIA to broaden and update the National Broadband Map using their developed state partnerships. While NTIA has already announced its partnership with eight states to contribute data and other inputs into the map, would you agree that adding more state partnerships to contribute to the map would likely improve the overall accuracy of the map?

Response. States, tribes, municipalities, organizations and consumers often know where they receive wireless service and where coverage gaps exist. Further partnerships can contribute to improving the overall accuracy of the map by relying on their expertise, which the FCC acknowledged by including state and local governments in the challenge process. However, improving the reliability of the data collected by the FCC, including through the Form 477 process, will help all of these entities in improving the map by beginning the process with more reliable data.