Testimony of

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Chairman Blackburn, Ranking Member Doyle and members of the Subcommittee, thank you for holding this important hearing and for the opportunity to testify on eliminating barriers to broadband infrastructure deployment. My name is Tam Murray and I am the founder and managing member of Community Wireless Structures (CWS), a small communications tower developer based in Arlington, VA. We have built 50 towers in Northern and Central Virginia.

I currently serve as the Chairman of the Board of Directors of the Wireless Infrastructure Association (WIA), the principal organization representing the companies that build, design, own, and manage wireless broadband facilities throughout the United States. The more than 230 member companies of WIA work daily to ensure that the wireless infrastructure necessary to support our mobile devices is deployed and working whenever and wherever we use it – at home, at work, or at play. As mobile devices and applications continue to evolve, they always need a wireless connection to a wired network — a connection commonly supported by a macro

cellular tower. WIA's mission is to support the connectivity that will promote the expansion of wireless broadband to every point on the map and thus enable wireless providers to meet consumers' ever-increasing demand for data—more of it, anytime, everyplace.

As a small business owner, every day I see the challenges posed by unreasonable deployment barriers at Federal, state and local levels. These barriers include cumbersome siting procedures, inconsistent fees, complicated review processes and obstacles to deploying infrastructure on Federal property.

Small tower developers have a very narrow margin for error, and capital is always tight. Consistency and predictability are important to any business, but the need for fair and reasonable application of regulations is especially important for small businesses like mine. Many of us simply cannot withstand gratuitous additional burdens to infrastructure buildout. While we often work well with local authorities, if a local zoning regulation or entity imposes unnecessary and costly delays or requirements, it impairs, postpones or prevents altogether our ability to deploy broadband. Fortunately, many localities increasingly recognize the importance of wireless broadband for their economic development and general wellbeing, and many work as partners with industry. Still, some localities resist and impose costly and/or time consuming barriers to deployment. Our industry seeks productive partnerships with *all* localities, and we are willing to work together to address legitimate local concerns as we pursue our mission to expand broadband access everywhere. Since this is an acknowledged public policy goal, as well, Congress has a role in addressing particularly unreasonable demands and delays.

I have been in the tower business for over 20 years. I have seen first-hand the growth and evolution of the wireless industry. When I first entered the industry, the world looked much different. What began as an effort to provide the convenience and luxury of mobile voice communications has become an essential part of daily life. And it shows this industry's impact on the economy, a recent Accenture study found that 5G deployment could spur as much as $275 billion in private investment and create three million jobs over the next seven years. According to research from Cisco, over the next five years, global mobile data traffic will increase sevenfold in the United States. Global mobile data traffic will grow two times faster than global fixed IP traffic. By 2021, there will be 5.5 billion mobile users, up from 4.9 billion in 2016, and by 2021 there will be approximately 12 billion mobile-ready devices or connections. These growth statistics underscore the need for government policies that support the burgeoning demand for mobile data and address the industry challenges of meeting it by efficiently and responsibly deploying wireless infrastructure.

This tremendous growth is, at the same time, both encouraging and sobering. The challenge for the wireless infrastructure industry, the communications sector at large, and for this Subcommittee is how to meet consumer demand. All entities must continue to work together to maintain our country's position as the global leader in wireless innovation—a goal this Subcommittee has long-since recognized, embraced and promoted.

To ensure that capacity meets consumer demand, we need to respectfully and responsibly build and deploy every kind of wireless infrastructure, including traditional macro cellular towers, rooftop sites, small cells, distributed antenna systems, and Wi-Fi hot spots. This diverse yet

integrated infrastructure ecosystem results in greater efficiency in the use of spectrum and gives wireless carriers the bandwidth they need to meet growing data demands on their networks. Using spectrum, a finite and limited resource, with the greatest possible efficiency allows more data to flow over existing frequencies. Our wireless networks need to incorporate and harmonize all technologies to deliver the coverage and the capacity we need for maintaining the existing necessary cellular network and for future networks that will enable the Internet of Things and 5G connectivity.

One of the drivers of wireless innovation over the past two decades has been the shared or "neutral host" infrastructure model adopted by the wireless industry in the United States, where multiple carriers collocate their antennas on a single support structure. Collocation maximizes the use of existing facilities, while it minimizes aesthetic issues and reduces environmental impacts. Shared infrastructure eliminates the need for each tenant to build its own tower, which prevents the unnecessary proliferation of duplicative towers in neighborhoods and communities. In countries where collocation is not supported, we have seen the appearance of so-called "tower farms," where each wireless provider builds its own independent support structure, often adjacent to other towers, resulting in visual clutter. On the other hand, where collocation is promoted, it enhances competition in the wireless industry by lowering a significant barrier to entry for new mobile wireless service providers and other tenants. The neutral host model allows new, smaller competitive wireless providers to operate without having to raise capital to build out their own wireless infrastructure. In fact, the shared infrastructure model is more economically efficient for the entire industry, and is the envy of other countries around the world.

The collocation model has created hundreds of independent tower companies nationwide. During initial carrier build outs 30 years ago, the focus was on proprietary networks -- each carrier developing its own tower, often producing 3-4 towers at the same intersection, and creating unacceptable visual clutter.

Local governments understandably wanted more ordered development, and independent tower companies stepped in to provide that answer, developing a macro cellular site that could accommodate all carriers. The wireless providers benefitted by saving capital expenditures and achieving better service levels at less cost. The municipalities avoided the inefficient review of geographically overlapping applications. And the public ended up with many service choices without tower farms of multiple towers at individual locations.

In my personal experience, the collocation model that CWS introduced in Loudoun County on the Dulles Greenway was duplicated throughout the Commonwealth of Virginia and is now the model approach to infrastructure deployment in every state. In developing towers on the private toll road, Dulles Greenway, in 1996, I partnered with the owner the road. Having a partner who could offer the best real estate along this 12-mile stretch enabled CWS to produce the best infrastructure network. By contrast, if we had to negotiate with 4 different landlords for the 4 different locations, the spacing between the sites -- and the resulting network quality -- might have been poor.

The Federal government is in a similar position to the owner of the Dulles Greenway. Both control wide properties, and as such can offer wireless providers and infrastructure providers a great number of locations that are geographically adjacent. For mobile wireless to work well, each cell site must link with adjacent sites, and having just one landlord for a vast number of adjacent sites can contribute to network quality and efficiency.

This Subcommittee has historically played a significant role in streamlining broadband infrastructure deployment. An outstanding example is this Subcommittee's work on Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012 (the "Spectrum Act"), which has assisted enormously in the speedy deployment of wireless infrastructure. There has been real progress on the speed, cost, and ease of effort to deploy next generation networks as a direct result of this Subcommittee's work.

Now and in the future, there are several things Congress can do to reduce obstacles to infrastructure deployment. Let me describe three of these for your consideration. This Subcommittee should:

1. Consider examining the FCC's tribal consultation process;
2. Pass the legislation you recently released in draft form that will streamline the process for siting infrastructure on Federal Lands, with a few adjustments; and,
3. Ensure that future deployments of 5G infrastructure is not slowed down by unreasonable barriers.

First, Congress should consider examining the FCC's tribal consultation process. The FCC's Tower Construction Notification System ("TCNS") aids in connecting wireless infrastructure providers with federally recognized native nations that have expressed an interest in the area in which the deployment would take place. While we are committed to protecting historic and cultural sites, the existing process is fraught with inefficiencies and lacks the clarity and certainty needed to build out 5G networks. I want to be clear, I am not speaking about deployments *on* tribal lands, an area that this Subcommittee has rightly focused on in the past in seeking to close the digital divide. Rather, I am speaking of those deployments where a tribe has indicated that they may have a historic cultural interest in sites *outside* of identified tribal territories. To improve this burdensome process that is fraught with uncertainty and attendant delay, the FCC should: 1) modernize the TCNS system to proactively exclude those deployments that have no ground disturbance; 2) institute a deemed granted provision, like this Subcommittee put forward in Section 6409(a) of the Spectrum Act; and 3) ensure fees have reasonable limits.

Second, I would like to commend this Subcommittee for its hard work on the recently released staff discussion draft regarding infrastructure. Many of the provisions in this draft will be very helpful in reducing some of the barriers to infrastructure deployment. Particularly useful are the sections on streamlining and expediting the byzantine process of siting wireless broadband infrastructure on Federal lands. This Subcommittee has expressed, on a bipartisan basis, significant interest in this issue and we appreciate your leadership. The Federal government owns or administers nearly thirty percent of all land in the United States, as well as thousands of buildings. Broadband providers currently face significant challenges when working to secure access to Federal lands and buildings.

Although your draft does not include Department of Defense land, commercial wireless service can help augment mission critical DoD operations and enhance quality of life for service men and women. Men and women in uniform, as much as their civilian counterparts, love their smartphones. While there are certain military sites where there are understandable concerns about commercial wireless providers, there is no good reason for DoD's general approval process to be so lengthy and cumbersome. There is good news, however, on this issue. Leaders from the Department of the Navy's spectrum and real estate divisions worked with industry through a task force for almost a year to review the existing siting process on Navy and Marine installations across the country and refine what was once a seven-plus year process down to one that takes less than a year. The new process was launched last year. We are encouraged by the Navy's commitment to update and adjust its processes in an effort to reach its stated goal of on-base coverage that is equal to or *exceeds* the coverage the commercial sector enjoys off-base.

In addition, this Subcommittee released draft legislation requiring that broadband conduits be installed as a part of certain highway construction projects, also known as "dig once." This initiative would help facilitate broadband infrastructure deployment and reduce duplicative Federal reviews for work at the same location.

Third, I would also like to note for the Subcommittee the FCC's responsive action in the Section 253 Public Notice. The deployment of small cells and fiber networks provides new solutions to the capacity crunch facing consumers. If localities put forward policies that favor one technology over another, or if they implement fees that use the public rights of way as a profit center, it will

impede the development of 5G networks and the great promise they offer to consumers. I am encouraged by the FCC's activity in this area and urge the Commission to move swiftly on this item.

5G will require an ongoing densification of mobile networks. From macro towers to small wireless facilities, such as small cells, all forms of infrastructure will be needed to bring about the promise of next generation wireless and to meet consumers' demand for mobile data. When deployed rationally, these types of infrastructure serve to complement each other and improve the network as a whole. For instance, small cells are useful for addressing capacity issues because they allow for a large amount of data to travel a short distance. Small cells also allow for the efficient reuse of spectrum. Macro towers, on the other hand, can serve a large geographic area, and provide the basis for umbrella coverage. This is critical in rural areas where there is less population density.

Small cell deployments need streamlined review to accelerate deployment. To avoid an understandable public backlash, this must be done in a way that respects and addresses local community concerns, including reasonable height limits, so that new towers are not built under the guise of small cells. While this Subcommittee has helped to secure swift deployment of collocations through 6409(a), a new "greenfield" tower uses regular order and community involvement. As is common with any new technology, local communities are struggling to define the small cell deployment process.

The wireless industry supports the streamlined deployment of small wireless facility infrastructure in the public right when it is consistent with existing utility infrastructure in the right of way. For example, the wireless industry has united around a definition that includes volumetric equipment limits, which have been promulgated in FCC regulations. Industry has also proffered a height limit standard of fifty feet for deployments of small cells in the rights of way or 10 feet higher than the prevailing heights of other structures in the proximity. Those support structures that have larger volume or greater height than this standard would, and should, be required to go through appropriate local authorization to ensure responsiveness to local concerns.

In closing, to reap the tremendous benefits of next generation broadband, we all must work together to encourage and incentivize responsible and efficient wireless infrastructure deployment. Your draft bill is a significant and positive step in that direction, and there is much more work to be done. From the threshold of that project, I look forward to working with you and the rest of the Subcommittee on these issues. Thank you again Chairman Blackburn and Members of the Subcommittee for holding this hearing and including me as a witness.