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**BEFORE THE SUBCOMMITTEE ON COMMUNICATIONS AND TECHNOLOGY
OF THE UNITED STATES HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE**

**“ACCOUNTABILITY AND OVERSIGHT OF
THE FEDERAL COMMUNICATIONS COMMISSION”**

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Chairman Doyle, Ranking Member Latta, and distinguished Members of the Subcommittee, thank you for the invitation to testify. It is a privilege to appear before you again.

When I testified before the Subcommittee in May, I outlined the bold steps the FCC is taking to accelerate the buildout of 5G and other Internet infrastructure in communities across the country. I am pleased to report that the Commission’s reforms are delivering results. Internet speeds are now up 56 percent compared to just two years ago. The digital divide—the percentage of Americans that lack access to high-speed Internet services—narrowed by about 20 percent. Providers built out more miles of high-speed fiber lines last year than ever before. And investment in broadband networks is back on the rise.

The 5G results are especially exciting. Americans should be proud that we now have the world’s leading 5G platform. The very first commercial 5G service launched here in the U.S. more than one year ago. By the end of 2018, the private sector extended 5G to 14 communities. Halfway through this year, that figure expanded to more than 30, and one provider has now committed to building 5G to 99 percent of the U.S. population.

Many of these 5G builds are powered by small cells. These are the backpack-sized antennas that provide the fiber-like capacity and millisecond latency that are key for many 5G applications. Because of FCC reforms to small cell infrastructure rules, investment in small cells has boomed. The private sector deployed 13,000 small cells in 2017, and then 60,000 in 2018, and an expected 200,000 total by year’s end.

These figures quantify the momentum America now has for 5G investment. But numbers don’t tell the full story of what these infrastructure builds mean for everyday Americans. If 5G builds were limited to the wealthiest neighborhoods of America’s biggest cities, we could not claim that our policies are working. We can claim success only when every community has a fair shot at next-generation connectivity.

That is why I have spent a lot of my time on the Commission outside of D.C. I have visited the communities and neighborhoods that we cannot leave behind as the country transitions to 5G. And while there is much more work to do, I am proud of the progress that common sense infrastructure policies are already delivering in many of these communities.

Take Houston’s Second Ward. This is a part of the city that hasn’t always shared in the prosperity or investments that its neighboring communities have seen. In September, I spent time there

with Mayor Sylvester Turner and a few of the broadband builders working to connect Houstonians. I talked to workers who were trenching fiber and powering up small cells to boost capacity there. Why is there so much private sector investment in that lower-income neighborhood? It's because many households use a wireless connection as their only onramp to the Internet, and the infrastructure rules that the FCC and local officials put in place allow wireless providers to respond to this demand. And that is a good thing because providing more capacity to the Second Ward helps its residents enjoy the benefits of fast broadband like the rest of Houston.

Next-generation builds in Houston and other high-density locations are not enough for the U.S. to claim a leadership role in 5G. We cannot let 5G opportunity be a unique privilege of living in a big city. That is why this Commission has focused on making sure that rural America is not left out of the jobs, education, and healthcare innovations built on 5G. There, too, we are seeing results. In Sioux Falls, South Dakota, a few months ago, I saw small cells being installed that are now live, providing 5G service. Most people would not have picked Sioux Falls to be among the first places to get 5G, and yet thanks to the commonsense infrastructure rules that Mayor Paul TenHaken put in place there—policies that the FCC used as the model for our own infrastructure reforms—Sioux Falls is at the vanguard of 5G.

Sioux Falls will create jobs not only on top of that 5G platform but also through building it. A few months back, I visited the city's Southeast Technical Institute, where the trade school's leadership was considering starting a tower tech training program. Because of the accelerated 5G builds we're seeing, there is an acute shortage of trained workers to construct towers, small cells, and other next-gen infrastructure. Industry estimates that it needs another 20,000 tower techs to deploy 5G. These are quality, well-paid positions—the kind of jobs that you could raise a family on in many parts of the country. And these jobs do not require an expensive four-year degree. They provide a pathway up to the middle class for potentially tens of thousands of American families.

In April, I announced a jobs initiative to help meet this challenge. It looks to community colleges as a pipeline for 5G jobs. And it is modeled on a program developed by Aiken Technical College in Graniteville, South Carolina. Over the course of a few months, the program can take someone with virtually no training, teach them the mix of classroom and physical skills necessary to build and install new cell sites, and enable them to land a good-paying job in the tower industry. The head of Aiken's program reports that 100 percent of her students have received job offers upon graduating from the course. After our meeting, the administrators at Southeast Tech in Sioux Falls studied Aiken's program, and they recently announced that they will open their own tower tech program beginning in January.

All of these jobs created from building the 5G platform have a multiplier effect as, in turn, jobs and services are created using 5G networks. I saw how technologists in the healthcare space used next-gen networks on a recent trip to Toledo. Ranking Member Latta invited me to ProMedica Toledo Hospital where Dr. Jumaa uses telemedicine technology to save lives in far-away communities. For Dr. Jumaa's stroke patients, every second matters. Someone who is with a stroke victim can within seconds access a secure video app via their smartphone and virtually see Dr. Jumaa and his team. By talking the patient through a few diagnostic tests, Dr. Jumaa can instruct them on immediate responses and where to go next, often preventing more serious brain damage.

For years, the FCC has played a key role in supporting the deployment of broadband to these facilities through our Rural Health Care Program. But there's a new trend in telehealth—a trend towards connected care everywhere. The delivery of high-tech, high-quality health care is no longer limited to the

confines of connected, brick-and-mortar facilities. With remote patient monitoring and mobile health applications that can be accessed on a smartphone or tablet, we now have the technology to deliver high-quality care directly to patients, regardless of where they are located. We are seeing a shift in healthcare that's the equivalent of moving from Blockbuster to Netflix.

I asked my colleagues at the FCC to support a new initiative in telehealth, which we're calling the Connected Care Pilot Program. Last August, we took the first step by initiating a proceeding to provide up to \$100 million for Connected Care pilots that benefit low-income patients, including those eligible for Medicaid and veterans. It would support a limited number of projects over a two or three-year period, with controls in place to measure and verify the benefits, costs, and savings associated with connected care. Earlier this year, the Commission voted to move to the next phase and seek comment on the specific rules that should govern this new program. I look forward to moving this proceeding to a final order in 2020.

Healthcare, jobs, education—these are the benefits that Americans reap from having the premier 5G network in the world. The United States is not the only country that wants those advantages. And so we in government cannot rest on our early 5G lead. I have shared with you before some of the critical work that this Commission has done on infrastructure. In short, we have sought to update our rules to reflect new technology. We have taken our 2G rules and made them suitable for a 5G world.

I would like to close today by discussing another key component of our strategy to lead in 5G. The infrastructure being built—the small cells attached, the towers raised—pushes signals across spectrum. This FCC has taken an all-of-the-above approach, freeing up low-, mid-, and high-band spectrum and letting the technologists and the market put the spectrum to its best use. This is an overlooked strength. Different 5G applications require different performance characteristics, which are best over different spectrum bands. For example, fiber-like speeds for in-home broadband run on millimeter wave spectrum. Ubiquitous 5G coverage for smartphones likely will run on a layer of low-band spectrum. By freeing spectrum in all bands, we enable all of these diverse use cases.

One of the first actions the new Commission took in 2017 was to open a proceeding on mid-band spectrum. We have been busy at work, freeing up the 2.5 GHz band for more intensive use, expanding opportunities in the 3.5 GHz band, moving forward, as recently announced, with new ideas for the 5.9 GHz band, and announcing that we will open up nearly 300 MHz of mid-band spectrum in the 3.7 to 4.2 GHz range (also known as the C-Band).

As we continue our work to clear the C-Band for 5G, I outlined three principles we should follow. First, we needed to clear a significant swath of spectrum to free sufficient blocks for 5G. Second, the process by which we clear the spectrum had to be one in which we can have confidence, so that at the end of the process, all who want the available spectrum feel like they got a fair shot at it. Third, some of the proceeds from the transaction had to be sent to the Treasury. I am pleased that Chairman Pai announced a plan consistent with those principles. And I am now focused on quickly auctioning this spectrum in 2020, which will help extend U.S. leadership in 5G.

We need to continue this momentum and continue delivering spectrum into the hands of American innovators. So I want to focus on one additional band that I think will play another important role in our country's 5G leadership: the 6 GHz band. A year ago, we sought comment on opening up a large swath—1,200 MHz—of spectrum in this band. Having studied the record, it is clear that the FCC

should free up a significant amount of unlicensed spectrum in the 6 GHz band, including multiple blocks of more than 100 MHz of spectrum.

Large, unlicensed 6 GHz blocks will complement our overall 5G strategy. To understand why, consider one of the leading-edge use cases for 5G—augmented reality (AR) devices. The vision for AR is to have data assist a person’s daily life constantly, without the distraction of pausing to query a smartphone or tablet. AR glasses, for example, may understand what you’re looking at and what task you’re about to do, and using that context, provide helpful information—directions, reminders, recommendations—without your prompting. But these and other innovative applications might not connect directly to a 5G network, at least not at first. Unlicensed 6 GHz spectrum can bridge the last few feet or inches between the 5G network and the devices. Consequently, the 6 GHz band has the potential to hasten and enable the growth of the 5G ecosystem, and action on 6 GHz unlicensed spectrum is a necessary part of our larger U.S. strategy on 5G. I hope we can make progress in that proceeding early next year.

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In closing, I want to thank you again Chairman Doyle, Ranking Member Latta, and Members of the Subcommittee for holding this hearing and for the opportunity to testify. I look forward to continuing to work with the Subcommittee to accelerate the buildout of broadband networks for the benefit of the people we serve. I welcome the chance to answer your questions.