

**TESTIMONY OF BRENDAN CARR  
COMMISSIONER, FEDERAL COMMUNICATIONS COMMISSION**

**BEFORE THE UNITED STATES SENATE  
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION**

**“THE RACE TO 5G: A VIEW FROM THE FIELD”**

**SIOUX FALLS, SOUTH DAKOTA**

**OCTOBER 12, 2018**

Chairman Thune, thank you for the invitation to testify. It is great to be back with you in South Dakota. I want to commend you and the Committee for holding this field hearing on 5G. Spending time like this outside of D.C.—hearing directly from community leaders and broadband providers alike—is critical. I can think of no better way to identify both the regulatory barriers that needlessly slow down broadband deployment and the steps we can take back in Washington to remove them.

On my way here, I spent time in Minnesota, North Dakota, and South Dakota. I heard firsthand the challenges that broadband providers face in building next-gen networks in rural America. And I saw the grit and determination that telecom crews demonstrate in getting the job done: Whether it was with Justin on top an already snow covered grain elevator in Thompson, North Dakota, that’s now beaming broadband to the community of 1,000 people; or with Steve while he attached a new radio on a water tower in Shorewood, Minnesota, that’s adding capacity to the network; or with Ammon and Mike earlier today on the nearly 2,000 foot broadcast tower in Rowena, South Dakota. These visits underscore the work we need to do to make these jobs easier. And this week, I also heard directly from the Great Plain’s innovators, job creators, and healthcare providers that simply would not be operating in these communities without a broadband connection.

So this Sioux Falls field hearing is important. It puts our shared goal for 5G front and center: We want every community in the country, from New York to Yankton, to see the economic opportunity that broadband enables.

As this hearing makes clear, spectrum and infrastructure are key for 5G. So I want to start by commending the Committee for leading on these two issues. Chairman Thune championed the MOBILE NOW Act, which frees up the spectrum necessary for next-generation wireless service. And on the infrastructure side, I want to acknowledge both Chairman Thune and Senator Schatz for their work on the bipartisan STREAMLINE Small Cell Deployment Act. This bill would update our nation’s infrastructure policies by cutting the red tape that threatens the deployment of 5G networks. At the FCC, we are building on your efforts, and we recognize that the time to act is now.

In the U.S., we are on the cusp of a major upgrade in wireless to 5G. The WALL STREET JOURNAL has called it transformative from a technological and economic perspective. And they’re right. Winning the global race to 5G—seeing this new platform deployed in the U.S. first—is about economic leadership for the next decade. Those are the stakes, and here’s how we know it.

Think back ten years ago when we were on the verge of upgrading from 3G to 4G. Think about the largest stocks and some of the biggest drivers of our economy. It was big banks and big oil. Fast

forward to today: U.S.-based technology companies, from FAANG (Facebook, Apple, Amazon, Netflix, and Google) down to the latest startup, have transformed our economy and our lives.

Think about your own life. A decade ago, catching a ride across town involved calling a phone number, waiting 20 minutes for a cab to arrive, and paying rates that were inaccessible to many people. Today, we have Lyft, Uber, Via, and other options.

A decade ago, sending money meant going to a brick-and-mortar bank, standing in that rope line, getting frustrated when that pen leashed to the table was out of ink (again!), and ultimately conducting your transaction with a teller. Now, with Square, Venmo, and other apps you can send money or deposit checks from anywhere, 24 hours a day.

A decade ago, taking a road trip across the country meant walking into your local AAA office, telling them the stops along your way, and waiting for them to print out a TripTik booklet filled with maps that you would unfold as you drove down the highway. Now, with Google Maps and other apps you get real-time updates and directions right on your smartphone (Otherwise, there's little doubt that I'd still be lost in Yankton instead of speaking to you today).

American companies led the way in developing these 4G innovations. And it's not by chance or luck that the United States is the world's tech and innovation hub. We have the strongest wireless economy in the world because we won the race to 4G. No country had faster 4G deployment and more intense investment than we did. Winning the race to 4G added \$100 billion to our GDP. It led to \$125 billion in revenue for U.S. companies that could have gone abroad. It grew wireless jobs in the U.S. by 84 percent. And our world-leading 4G networks now support today's \$950 billion app economy.

That history should remind policymakers at all levels of government exactly what is at stake. 5G is about our leadership for the next decade.

And being first matters. It determines whether capital will flow here, whether innovators will start their new businesses here, and whether the economy that benefits is the one here. Or as Deloitte put it: "First-adopter countries . . . could sustain more than a decade of competitive advantage."

After all, we're not the only country that wants to be first to 5G. One of our biggest competitors is China. They view 5G as a chance to flip the script. They want to lead the tech sector for the next decade. And they are moving aggressively to deploy the infrastructure needed for 5G.

Since 2015, China has deployed 350,000 cell sites. We've built fewer than 30,000. China is deploying 460 cell sites a day. That is twelve times our pace. China now has 1.9 million cell sites. We have around two to three hundred thousand. Put differently, China has more than 13 times the number of cell sites per mile as the U.S.

We have to be honest about this infrastructure challenge and show the courage to act.

From Congress, to the FCC, to the White House, we take this challenge seriously. The U.S. has a plan, and we're executing on it. For our part, the FCC is working to get the government out of the way, so that the private sector can construct the hundreds of thousands of new cell sites needed for 5G in this country.

In March, we updated federal historic and environmental reviews to reflect new, 5G technology. While the old rules were written for 200-foot towers with large footprints, the majority of wireless infrastructure being built today is made up of small cells, often the size of a backpack. Requiring every new small cell to go through the lengthy and costly review designed for 200-foot towers was like

requiring a commercial pilot's license to fly a paper airplane. The outdated reviews were not providing any real benefit to Americans. And they had real costs—in both dollar figures and in the race to 5G.

For evidence of the problem, look no further than last year's Super Bowl, which was played at NRG stadium in Houston. The construction of the stadium itself, including the parking lot, did not involve any federal historic review. But when a wireless provider tried to build 23 small cells on the stadium and on poles in the parking lot so that fans could send pictures and videos from the Big Game, our old approach required historic preservation review for those backpack-sized antennas. In the end, one wireless provider paid nearly \$180,000 in historic review fees to attach small equipment onto the massive concrete stadium and parking lot.

Unfortunately, that was not an isolated incident. Twelve thousand dollars for reviewing a small cell outside a steel factory in East Chicago, Indiana. Another twelve thousand dollars for reviewing a small cell placed between a sidewalk and a highway in Ohio. A million dollars for reviewing small cell nodes in Atlanta. The fees were pointless, increasing, and draining the limited capital needed to deploy broadband and 5G in communities across the country.

So the FCC stepped in to fix that broken federal review process. Given their much smaller size and footprint compared to large towers, we held that small cells should not go through the costly and lengthy reviews designed for 200-foot towers. And we're already seeing results. That decision cut \$1.5 billion in red tape, and one provider reports that it is now clearing small cells for construction at six times the pace as before.

So we're making progress. But hurdles remain. We've heard from dozens of mayors, local officials, and state lawmakers—including officials right here in South Dakota—who get what 5G means. They understand the economic opportunity that comes with next-gen networks. But they worry that the billions in investment needed to deploy these networks will be consumed by the high fees and long delays imposed by big, "must-serve" cities. They worry that, without federal action, they may not see 5G. I'd like to read from a few of the many comments I've received over the last few months.

Duane Ankney is a retired coal miner from Montana, a Member of the Montana State Legislature, and chair of its Energy and Telecommunications Committee. He writes: "Where I see the problem is, that most of investment capital is spent in the larger urban areas. This is primarily due to the high regulatory cost and the cost recovery [that] can be made in those areas. This leaves the rural areas out."

Mary Whisenand, an Iowa commissioner, writes: "With 99 counties in Iowa, we understand the need to streamline the network buildout process so it's not just the big cities that get 5G but also our small towns. If companies are tied up with delays and high fees, it's going to take that much longer for each and every Iowan to see the next generation of connectivity."

Ashton Hayward, the Mayor of Pensacola, Florida, writes: "[E]xcessive and arbitrary fees . . . result[] in nothing more than telecom providers being required to spend limited investment dollars on fees as opposed to spending those limited resources on the type of high-speed infrastructure that is so important in our community."

And the entire board of commissioners from a more rural area in Michigan writes: "Smaller communities such as those located in St. Clair County would benefit by having the [FCC] reduce the costly and unnecessary fees that some larger communities place on small cells as a condition of deployment. These fees, wholly disproportionate to any cost, put communities like ours at an unfair

disadvantage. By making small cell deployment less expensive, the FCC will send a clear message that all communities, regardless of size, should share in the benefits of this crucial new technology.”

They’re right. When I think about success—when I think about winning the race to 5G—the finish line is not the moment we see next-gen deployments in New York or San Francisco. Success can only be achieved when all Americans, no matter where they live, have a fair shot at next-gen connectivity.

So just two weeks ago, we built on the many smart infrastructure policies championed by state and local leaders. We ensured that every city is compensated for its costs in reviewing and approving small cell deployments, while putting guardrails in place to address excessive fees. We updated the shot clocks that have long applied to local reviews to account for the lower impact of new small cell deployments. And we ensured that local governments can take reasonable aesthetic considerations into account when reviewing deployments. After all, it is these local leaders—not FCC commissioners—that will get pulled aside at their grocery store or post office if a provider puts up an ugly small cell.

This was a balanced approach that will help speed the deployment of 5G. It will cut \$2 billion in red tape. To put that in perspective, that’s about \$8,000 in savings per small cell—on top of the \$10,000 in savings from our March decision on federal historic reviews. Cutting these costs changes the prospects for communities that might otherwise get left behind. It will stimulate \$2.4 billion in new small cell deployments. And, importantly, that new investment is enough to cover 1.8 million more homes and businesses with 5G—97% of which are in rural and suburban communities. That means more broadband for more Americans.

So I am pleased with the progress we’re making. But there is more work ahead. The commonsense ideas contained in the STREAMLINE Small Cell Deployment Act would solidify the progress we’ve made while further simplifying the process governing the construction of next-gen networks. It would represent another solid win for the U.S. in the race to 5G.

\* \* \*

Chairman Thune, thank you again for holding this hearing and for the invitation to testify. I look forward to hearing from the other witnesses. And I welcome your questions.