Attachment —Additional Questions for the Record for Michael Powell

1. **The Honorable Russ Fulcher**

1. My concern is the critical need for broadband in rural areas that are experiencing rapid population growth and demand from heavy data throughput services. Can you provide me with an update on progress you have made toward your strategy to bridge the digital divide in rural areas and how spectrum access can help?

Response:

The cable broadband industry is making progress in bridging the digital divide in rural areas through infrastructure investments and low-cost internet programs. These programs help bring network facilities, affordable broadband, and digital literacy resources to unserved and underserved communities — powered by the shared, unlicensed spectrum that makes Wi-Fi the ubiquitous entry point to the internet.

According to the latest FCC data, broadband providers connected over 2.6 million locations between June 2023 and June 2024, with 2.1 million in rural areas. Cable broadband accounted for 1.1 million of those locations, including 700,000 in rural communities, with nearly all receiving gigabit speeds. In addition to massive infrastructure investments, cable providers continue to close the digital divide through low-cost adoption programs, helping connect over 14 million Americans, offering free digital literacy training, and distributing more than 220,000 devices to low-income households.

Spectrum access is vital to expanding broadband, especially in rural areas. Unlicensed and shared spectrum enable Wi-Fi and private networks, which are the foundation of connectivity inside homes and businesses and often the fastest, most cost-effective solution for extending broadband to hard-to-reach areas. Enabling additional unlicensed and shared licensed spectrum will ensure that a broader range of providers can meet growing data demands and deploy innovative wireless solutions. Moving away from the traditional "clear and auction" model for exclusive licenses toward flexible spectrum-sharing approaches will help deliver faster, more affordable broadband while spurring innovation and expanding coverage to more rural communities.

2. I appreciated hearing the connection you made between the potential of Wi-Fi 7 and the demand coming with VR, new video, and other wider channel applications for quick data flows. This is on top of the mix of new devices bringing heavier bandwidth requirements. I wanted to give you the opportunity to build out where you see R&D applications here? You mentioned some medical research, which likely has heavy data requirements. Can you speak to infrastructure needs and any coordination improvements we can do when it comes to land management agencies that manage federal lands?

Response:

Demand for next-generation consumer applications requiring 320 megahertz channels for delivering high throughputs and low latencies (the kind enabled by Wi-Fi 7 technology) is set to grow exponentially over the coming years as consumers increasingly adopt Wi-Fi 7 devices and consumer demand for advanced applications continues to grow. For example, in North America, between 2024 and 2030, smart glasses shipments will expand at a 74.4% Compound Annual Growth Rate (CAGR) and Virtual Reality (VR) Head-Mounted Displays (HMDs) will see a 17.2% CAGR.

The latest Wi-Fi standards are used to support data-intensive applications outside of the home, including healthcare and clinical environments. In dense networking environments and congested settings such as hospitals, Wi-Fi networks enable a proliferating number of wireless devices to provide advanced patient care through patient monitors, imaging systems, telemedicine appointments, and remote video surgery. These use cases require robust and reliable connections, often with high data throughput. The improved data transfer speeds and lower latency offered by the latest Wi-Fi standards, coupled with wider channels, can allow healthcare organizations to deploy more advanced applications such as robotics and augmented reality (AR) and virtual reality (VR) solutions. These offerings will power remote surgical procedures and medical training, Ultra HD video for real-time assistance from remote medical specialists, and high-speed transfers of 3D images for real-time analysis.

It remains challenging for broadband providers to deploy new network facilities to unserved areas or to upgrade existing facilities when that work requires access to lands owned or controlled by the federal government. There are many different federal agencies responsible for land management, not all of which prioritize requests by broadband providers. It is important that not just the Bureau of Land Management and U.S. Forest Service, but also other agencies like the Bureau of Reclamation, Bureau of Indian Affairs, National Park Service, and Corps of Engineers, assist where necessary. In order for our collective efforts to finally close the digital divide throughout the country to succeed, all federal agencies must act promptly on permitting applications and any fees charged must be competitively and technology neutral, non-discriminatory, and objectively based on actual and direct costs. Without a whole-of-government effort, broadband deployment will get mired in bureaucratic delays and excessive charges, preventing all Americans from being able to take advantage of those new applications with heavier bandwidth requirements.

The Honorable Kathy Castor (DRAFT)

Question: *Mr. Powell, what can we be doing as a country to hold our competitive advantage against China?*

Response:

Maintaining the United States's competitive advantage against China requires a strategic, innovation-driven approach to connectivity that leverages the strengths of our open, market-driven economy. Unlike China, which advances a government-controlled model, the U.S. has led the world in broadband deployment, wireless innovation, and internet technology by fostering competition, investing in advanced infrastructure, and pursuing balanced spectrum policies. Wi-Fi is an inherently open technology, allowing for user-directed communications, which is consistent with U.S. values and anathema to the People's Republic of China. To continue our leadership, we must focus on three key areas.

1. Protecting National Security While Expanding Commercial Spectrum Access

We must not compromise U.S. national defense by reallocating critical spectrum from the U.S. military. The military relies on its spectrum for mission-critical operations, intelligence, and defense systems, and weakening our national security will not help us compete with China—it will weaken us when it counts.

A shared spectrum model allows for coexistence between military, commercial, and private networks, ensuring that spectrum is used efficiently without undermining national security or necessitating long and costly relocations. CBRS is a proven example of how spectrum sharing works—preserving military access while enabling commercial innovation.

A broad coalition of industry leaders, including broadband providers, public interest groups, and tech innovators, has urged policymakers to support spectrum-sharing solutions rather than forcing costly and disruptive exclusive use spectrum clearings that could jeopardize national security (Industry Coalition Letter to FCC).

2. Prioritizing a Balanced Spectrum Policy that Maximizes Innovation

The U.S. must continue expanding access to unlicensed and shared spectrum, which have driven American technological leadership, particularly in Wi-Fi, IoT, and private 5G deployments. Wi-Fi is a major American success story, generating more than $1.6 trillion in economic value by 2028 and carrying over 80% of mobile data traffic (Wi-Fi Forward ABI Report). Ensuring sufficient spectrum for Wi-Fi 6E and Wi-Fi 7 is critical to sustaining U.S. leadership.

A shared spectrum approach—such as that employed by CBRS —ensures the efficient use of finite resources, allowing federal, commercial, and private networks to coexist and maximize spectrum availability.

3. Ensuring Technological Leadership and a Secure Supply Chain

The U.S. must promote domestic innovation in networking technology. Supporting U.S.-based companies developing Wi-Fi, broadband, and wireless equipment is key to maintaining global leadership in digital infrastructure. A continued focus on cybersecurity and secure network infrastructure will ensure that U.S. broadband and wireless networks remain resilient and globally trusted.

Conclusion

The U.S. has maintained its leadership in broadband and wireless technology by pursuing market-driven policies, private investment, and a multifaceted approach to spectrum allocation that fosters innovation. To stay ahead of China, we must protect our national security spectrum, embrace shared and unlicensed spectrum, and encourage continued broadband investment and U.S.-led technology development.