



FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON

OFFICE OF THE
CHAIRWOMAN

March 30, 2022

The Honorable John Thune
Ranking Member
Subcommittee on Communications, Media, and Broadband
Committee on Commerce, Science, and Transportation
United States Senate
511 Hart Senate Office Building
Washington, DC 20510

Dear Ranking Member Thune:

Thank you for your letter regarding the Federal Communications Commission's spectrum auction program. I welcome this opportunity to respond to your questions and to provide you with additional information about the Commission's efforts to manage the nation's airwaves in ways that are smart, efficient, and—true to statute—consistent with the public interest.

The most important and immediate goal of United States spectrum policy is to ensure that wireless communications, which lie at the center of the digital economy, continue to spur economic growth, investment, and job creation. During the past three decades, spectrum auctions have been an indispensable tool for meeting these national goals and harnessing the promise of beneficial, new technologies. Commission auctions have dramatically changed the way spectrum licenses are valued, distributed, and aggregated. These changes have fueled competition, provided consumers with a vast array of new wireless technologies and services, and ensured that scarce spectrum resources are put to their highest and best use. To date, the Commission has held 98 auctions in which more than 94,000 licenses and permits were won, raised more than \$233 billion in revenues, and unlocked more than \$1 trillion in benefits for the American people. As a result, our efforts have been a model for regulators worldwide.

Over the last year in particular, the Commission has used its auction authority to free up more spectrum—and especially mid-band spectrum—to deliver next-generation wireless service that is fast, secure, resilient, and, most importantly, available everywhere in this country. In October, the Commission started an auction of 100 megahertz of prime mid-band spectrum in the 3.45-3.55 GHz band. It concluded as one of the most successful auctions in the Commission's history. This July the Commission will start another mid-band auction of the 2.5 GHz band that will help extend 5G service beyond our most populated areas. The Commission also has granted more than 5,600 mid-band licenses in C-band airwaves that are now delivering 5G service to more than 100 million consumers across the country and 335 licenses in the 2.5 GHz band that are expanding service in our Tribal communities. Looking ahead, the Commission is working with its federal partners to open up the next tranche of mid-band spectrum in the 3.1-3.45 GHz range.

I look forward to working with you on these efforts. Below, I have provided answers to the specific questions listed in your letter.

1. Congress has granted frequency-specific, extended statutory authority for auctions to the FCC in some instances. Please detail the specific auction authority the FCC will retain after the expiration of the general auction authority.

The Commission's authority to grant a license or permit through a system of competitive bidding relies on Section 309(j) and after the expiration date in (j)(11) (September 30, 2022) will be limited to licenses or permits with respect to the following statutorily specified spectrum:

- (a) 30 megahertz to be identified pursuant to the Spectrum Pipeline Act of 2015; and
- (b) spectrum between 3.1 to 3.45 GHz identified pursuant to the Infrastructure Investment and Jobs Act of 2021 (IIJA). *See* 47 USC 309(j)(11), as amended by P.L. 114-75 (Spectrum Pipeline Act) and P.L. 117-58.

Because Section 309(j)(11) does not permit the issuance of licenses after September 30, 2022, after that date the Commission will hold any licenses won in non-exempt auctions pending reauthorization.

2. What spectrum auctions are pending or in the rulemaking process? When will those auctions be completed?

The Commission currently has two auctions pending: (1) Auction 108, an auction for overlay licenses in the 2.5 GHz band scheduled to begin in July; and (2) Auction 112, an auction of full-power broadcast television construction permits scheduled to begin in June.

On March 21, 2022, the Commission adopted procedures for Auction 108, scheduling bidding to begin on July 29, 2022. Auction 108 is an auction of approximately 8,000 geographic overlay licenses in the 2.5 GHz band, extending from 2496 to 2690 MHz. These licenses are in areas with unassigned 2.5 GHz spectrum—mostly rural parts of the country—following disposition of applications filed in the Commission's Rural Tribal Priority Window, which has to date resulted in the grant of 355 licenses to serve Tribal communities. The window to file applications to participate in the auction closes on May 10, 2022.

On November 19, 2021, the Commission announced Auction 112, an auction of 27 construction permits for new full power television stations in communities with no license for the allotted station and sought comment on auction procedures. On February 10, 2022, the Commission's Media Bureau and Office of Economics and Analytics adopted auction procedures and announced that bidding in Auction 112 would commence on June 7, 2022. The window to file applications to participate in the auction, *i.e.*, to qualify as a bidder, closes on March 30, 2022.

In addition, there are a number of spectrum bands in various stages of the rulemaking process, some of which could lead to auctions, including 1675-80 MHz, 3.1 - 3.45 GHz, 12 GHz,

26 GHz, 42 GHz, and 50 GHz. At present there are also six pending applications from the 2.5 GHz Rural Tribal Priority Window in which the applicant has sought access to a spectrum license that overlaps the area and frequencies being sought in another pending application. Under Section 309(j) of the Communications Act, if these applicants are not able take voluntary steps to resolve the overlaps in their applications, these mutually exclusive applications would have to be resolved through a system of competitive bidding. It is not anticipated that such an auction, if required, would begin until after the conclusion of Auction 108.

The timeline for completing an auction and the associated post-auction licensing process depends on a number of factors and varies between auctions. Commission auctions are structured to accept the highest bid placed on a given license or a license market area in each round. The auctions typically are conducted electronically from Monday through Friday and can last from a few days to several months. In the early stages of an auction, there are a limited number of rounds per day and each round lasts for an hour or two. As the auction progresses, however, the Commission will increase the number of rounds per day and reduce the time period for each round. The Commission employs various bidding activity rules to keep auctions progressing to a conclusion while also allowing sufficient opportunity for active bidders to obtain licenses. In some cases, once the auction concludes, winning bidders may participate in a second auction process, known as the assignment phase, to bid on frequency-specific license blocks. The auction closes once all bidding has stopped on all licenses.

Once bidding concludes, the Commission traditionally issues a Public Notice announcing the close of the auction, the winning bidders and their winning bid amounts, and procedures for submitting down payments, final payments, and FCC Form 601 “long-form” applications. All winning bidders must then make a down payment, typically equivalent to 20 percent of its total winning bids. The deadline for making the down payment typically is 10 business days after the Public Notice announcing the close of the auction. A winning bidder’s final payment, equivalent to the remaining balance due on its winning bids, is typically due within 10 business days after the down payment deadline.

The winning bidder must file the long-form application, usually on the same date the final payment is due. Commission staff then reviews the long-form application to determine the applicant’s qualifications and may request additional information. Long-form applications also are subject to petitions to deny by third parties, although such challenges are infrequent. In past auctions, the Commission typically has begun the process of granting licenses to auction winning bidders within two months of receiving long-form applications. This process can take weeks to months, depending on the specific facts.

3. What statutory tools, beyond auction authority, do you believe would improve the FCC’s ability to make additional spectrum available for auction in the future?

Our nation’s wireless leadership depends on how much spectrum is available to support wireless innovation. But today, our nation’s spectrum management is under stress and strain from so many new challenges. Greenfield spectrum—open and cleared for use—is no longer simple or easy to find. In addition, repurposing spectrum for burgeoning new services often requires lengthy and complex bureaucratic processes. In many parts of the spectrum chart,

existing receivers may constrain what is possible in adjacent or nearby spectrum. Moreover, we often do not know with accuracy how federal spectrum is being used or about future needs.

To overcome these challenges and create a steady spectrum pipeline, I believe we need to rethink allocation processes, explore new federal and commercial incentives, and leverage new technologies.

First, the Spectrum Innovation Act would require the Secretary of Commerce, in consultation with the Secretary of Defense, the Director of Office of Science and Technology Policy, and the Commission to identify at least 200 megahertz of spectrum in the 3.1-3.45 GHz band for auction. This legislation would provide much needed certainty about the near-term availability of mid-band spectrum to support next-generation wireless networks, which is crucial to U.S. innovation and closing the digital divide.

Second, Congress should consider updating the Commercial Spectrum Enhancement Act (CSEA) to make it an even more effective tool for repurposing spectrum. Today, the Act encourages federal incumbents to clear spectrum not being put to its most productive use by establishing a Spectrum Relocation Fund to reimburse federal agencies operating on certain frequencies that have been reallocated for commercial use. Congress should consider improving the CSEA to ensure that a full range of costs are covered to provide federal agencies adequate incentives and assistance, including up-front planning, technology development, and staffing to support the relocation effort. In particular, Congress could revise the CSEA to provide for payments of relocation funds to federal users in adjacent spectrum that may be impacted by repurposing activities or to federal users that vacate spectrum and make use of commercial networks instead of alternative dedicated federal spectrum.

In addition, Congress could strengthen the CSEA by revisiting statutory requirements for clearing federal spectrum. Currently, the Act requires that any auction of eligible federal frequencies must raise 110 percent of the federal incumbent's estimated relocation costs. In recent spectrum proceedings, this requirement has limited the Commission's ability to design spectrum auctions with maximum flexibility or to leverage new innovations in spectrum policy, such dynamic sharing models, that may raise less revenue. Moreover, in its current form, the CSEA overlooks the value of unlicensed spectrum because it does not raise auction revenue. This misses the broader benefits of unlicensed spectrum to the economy. To illustrate, a new report from the Consumer Technology Association estimates that Wi-Fi and other wireless technologies generate \$95.8 billion per year for the national economy in technology sales alone.

Congress also could replicate the success of the CSEA and consider a similar program to encourage commercial incumbents to clear spectrum not being put to its most productive use. In 2020, the Commission's efforts to repurpose spectrum in the C-Band revealed limitations in the Commission's *Emerging Technologies* framework and existing reallocation tools like incentive auctions. A CSEA-like program could establish a fund to reimburse commercial incumbents operating on or near frequencies that are targeted for newer wireless uses.

Third, Congress should explore how receiver performance may constrain spectrum access. Historically, our discussions about spectrum efficiency have been a one-way effort. They have focused almost exclusively on transmitters. But in several recent Commission

proceedings, receiver performance associated with incumbent services operating near new users or services has been a major consideration. Going forward, policymakers need to consider both transmitting and receiving. Both are vital. That is why, earlier this month, I announced that the FCC will launch a new inquiry on receiver performance and standards. This inquiry, which I plan to circulate to my colleagues this week, will ask how receiver improvements could provide greater opportunities for access to spectrum. It will explore how these specifications could come in the form of incentives, guidelines, or regulatory requirements—in specific frequency bands or across all bands. And it will seek comment on legal authority and market-based mechanisms that could help create a more transparent and predictable radiofrequency environment for all spectrum users—new and old. Once our inquiry is complete, we will notify Congress of any specific legislative needs to adjust or supplement the Commission’s current rulemaking authority. Congress could also explore a similar effort for federal receivers.

Fourth, Congress should consider the broader use of incentives. If we want a robust and reliable spectrum pipeline, I believe we need to make sure that federal authorities see gain—and not just loss—when their airwaves are reallocated for new commercial use. To do this, Congress could explore a series of incentives to serve as a catalyst for freeing up more spectrum for commercial markets. We could begin by developing a spectrum currency with the assistance of the Office of Management and Budget. With a uniform system of valuation for federal spectrum assignments, Congress could explore the development of incentives for efficiency and better understand the opportunity cost of federal use. This would facilitate a supply of spectrum for new commercial uses through a policy based on carrots, rather than sticks.

Fifth and finally, Congress should use this opportunity to consider how we can take the funds from the auction of these public airwaves and put them to broader public purpose than those contemplated in existing statute. Congress can use the billions of dollars in revenues that spectrum auctions could raise to do the very infrastructure projects this country so desperately needs. We could start with using future auction revenues to fund the nation’s transition to next-generation 911, which is sorely needed and would benefit public safety in every state.

4. What specific frequencies, if any, do you believe are good candidates for auction that the FCC does not currently have the authority to conduct following the September 2022 expiration date?

As noted above, the Commission currently is reviewing a number of spectrum bands in various stages of the rulemaking process, some of which could be good candidates for some form of auction. These include 1675-80 MHz, 3.1 - 3.45 GHz, 12 GHz, 26 GHz, 42 GHz, and 50 GHz. With the exception of the 3.1-3.45 GHz band, the Commission does not currently have the authority to conduct auctions in any of these bands following the September 30, 2022, expiration date.

In addition, I believe we need to start planning now to identify and harmonize spectrum for 6G and beyond. Earlier this month, at Mobile World Congress in Barcelona, Spain, I announced that mid-band spectrum, and in particular spectrum in the 7-15 GHz range, will be important to ensure that next-next generation technologies reach everyone, everywhere. I believe the 7-15 GHz range may provide good candidates for future Commission auctions or shared access regimes. Also, in July, I rechartered the Commission's Technological Advisory

Council and charged it with looking beyond 5G and imagining 6G--to set the stage for our success. This effort will help the United States stay on top of new developments and ensure that we can turn the latest scientific research into communications technologies of the future.

5. What policy reforms can be made to spectrum auction rules to promote international competitiveness, maximize spectrum use efficiency, and foster the rapid deployment of next-generation technologies?

In the United States, the Commission and the National Telecommunications and Information Administration (NTIA) jointly manage the nation's radio spectrum resources. The FCC and NTIA are required to work together to ensure that spectrum policy decisions promote efficient use of spectrum consistent with both the economic interests and national security of the nation. Going forward, expanding opportunities for spectrum access by any sector—commercial or federal—will require the agencies to work together to navigate issues regarding gaps in governmental coordination, the length and complexity of spectrum allocation processes, inefficient uses of spectrum, challenges in making “room” for new services and technologies, and lack of clarity about spectrum rights and the federal spectrum management process.

To better address these challenges, last month, I announced a new Spectrum Coordination Initiative with Assistant Secretary Alan Davidson. This initiative builds on the fundamental strengths of the NTIA-FCC relationship and strengthens the processes for decision making and information sharing around spectrum policy issues. Specifically, we have committed to the following policy actions:

- The FCC and NTIA will reinstate high level meetings. For the first time, the Chair of the FCC and the Assistant Secretary will hold formal, regular meetings, beginning monthly, to conduct joint spectrum planning.
- The FCC and NTIA will reaffirm roles and responsibilities. Building on NTIA's statutory role as manager of the federal government's use of spectrum, the FCC and NTIA will update the nearly twenty-year-old Memorandum of Understanding between the agencies.
- The FCC and NTIA will renew efforts to develop a national spectrum strategy. The agencies will collaborate to help inform the development of a strategy, increase transparency around spectrum use and needs, and establish long-term spectrum planning and coordination.
- The FCC and NTIA will recommit to scientific integrity and evidence-based policymaking. That means working cooperatively to develop processes for spectrum engineering compatibility analysis and compile principles, guidelines, and accepted technical standards, interference protection criteria, propagation models, and other characteristics.

- The FCC and NTIA will revamp technical collaboration. Earlier this month, the agencies identified experts to participate on each other's cross-agency advisory groups in order to foster proactive technical exchange.

I believe this initiative will help revitalize the interagency coordination process so that it once again is able to produce results for consumers and the economy.

Thank you for your letter. Please let me know if I can be of further assistance.

Sincerely,

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Jessica Rosenworcel



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March 30, 2022

The Honorable Roger Wicker
Ranking Member
Committee on Commerce, Science, and Transportation
United States Senate
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To overcome these challenges and create a steady spectrum pipeline, I believe we need to rethink allocation processes, explore new federal and commercial incentives, and leverage new technologies.

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Second, Congress should consider updating the Commercial Spectrum Enhancement Act (CSEA) to make it an even more effective tool for repurposing spectrum. Today, the Act encourages federal incumbents to clear spectrum not being put to its most productive use by establishing a Spectrum Relocation Fund to reimburse federal agencies operating on certain frequencies that have been reallocated for commercial use. Congress should consider improving the CSEA to ensure that a full range of costs are covered to provide federal agencies adequate incentives and assistance, including up-front planning, technology development, and staffing to support the relocation effort. In particular, Congress could revise the CSEA to provide for payments of relocation funds to federal users in adjacent spectrum that may be impacted by repurposing activities or to federal users that vacate spectrum and make use of commercial networks instead of alternative dedicated federal spectrum.

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FCC will launch a new inquiry on receiver performance and standards. This inquiry, which I plan to circulate to my colleagues this week, will ask how receiver improvements could provide greater opportunities for access to spectrum. It will explore how these specifications could come in the form of incentives, guidelines, or regulatory requirements—in specific frequency bands or across all bands. And it will seek comment on legal authority and market-based mechanisms that could help create a more transparent and predictable radiofrequency environment for all spectrum users—new and old. Once our inquiry is complete, we will notify Congress of any specific legislative needs to adjust or supplement the Commission’s current rulemaking authority. Congress could also explore a similar effort for federal receivers.

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- The FCC and NTIA will recommit to scientific integrity and evidence-based policymaking. That means working cooperatively to develop processes for spectrum engineering compatibility analysis and compile principles, guidelines, and accepted technical standards, interference protection criteria, propagation models, and other characteristics.
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