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SUMMARY

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Advanced Wireless Services (AWS-3) Spectrum: Issues for Congress

Radio spectrum refers to the range of radio frequencies used to enable wireless communications. Technologies such as smartphones, Wi-Fi routers, radionavigation systems on ships, military radar systems, and police radios rely on radio frequencies to transmit and receive communications. Technologies are built to transmit communications on certain frequencies, under specific rules to ensure transmissions from one device do not interfere with the transmissions of another device. As such, spectrum access and use are typically regulated. In the United States, the National Telecommunications and Information Administration (NTIA) manages federal spectrum use and the Federal Communications Commission (FCC) manages nonfederal spectrum use (e.g., commercial and state and local use).

As adoption of smartphones was increasing, Congress passed and the president signed the Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96), which named several spectrum bands for reallocation from federal to nonfederal use and directed the FCC to work with NTIA to reallocate those bands for mobile broadband use. Among the bands identified were the Advanced Wireless Services (AWS-3) band, which includes the bands with frequencies from 1695-1710 megahertz (MHz), 1755-1780 MHz, and 2155-2180 MHz. The FCC auctioned the AWS-3 band in 2015. In total, 70 bidders qualified, and some of these bidders were eligible for small business bidding credits (i.e., discounts on bids). After the auction, several other bidders challenged two bidders' small business status and rights to bidding credits. Upon review, the FCC found that the two entities were under de facto control by DISH Network Corporation and denied their small business status and bidding credits. The two entities, which had won over 700 of the 1,611 licenses awarded, paid for some licenses but selectively defaulted on 197 others that were returned to the FCC. The two entities challenged the FCC decision on their small business status in court. The D.C. Circuit rejected the entities' challenge in 2022 and the U.S. Supreme Court denied review in June 2023. Under FCC rules, winning bidders that default are liable for any difference between their winning bid and the amount of the winning bid the next time licenses for the same spectrum are auctioned, plus a penalty payment. The FCC's general auction authority expired on March 9, 2023; the licenses could not be auctioned and thus remained in the FCC's inventory.

In the Servicemember Quality of Life Improvement and National Defense Authorization Act for Fiscal Year 2025 (P.L. 118-159, Title LIV), enacted December 23, 2024, the FCC was directed to initiate an auction of the available AWS-3 frequencies within 18 months of enactment (i.e., by June 23, 2026). The FCC was also authorized to borrow from the Treasury $3.08 billion for the Secure and Trusted Communications Networks Reimbursement Program (also called "rip-and-replace")—a program to remove certain China-made equipment from U.S. communication networks; the Secretary of Commerce was authorized to borrow up to $220 million for regional technology hubs. Per P.L. 118-159, AWS-3 auction proceeds would be used to reimburse the Treasury for funds borrowed. P.L. 118-159 specified any remaining amount up to $280 million after reimbursing the Treasury is to be made available to the Secretary of Commerce for regional technology hubs; any remaining funds after that are to be deposited in the general fund of the Treasury and used for deficit reduction.

On February 27, 2025, the FCC proposed rules for auctioning the remaining AWS-3 frequencies, including new rules on bidding credits for small businesses and rural service providers, and creation of a tribal licensing window, which allows tribes to obtain spectrum licenses prior to the auction, without bidding. Small businesses and tribal entities said these provisions could "level the playing field" for small bidders, prevent consolidation of spectrum with a few large service providers, and expand services in rural and tribal areas. Others, including large wireless service providers, said a tribal window could affect the auction timing and proceeds, including directives in P.L. 118-159 to repay the $3.08 billion in borrowed funds, and argued that the FCC lacks authority to create a tribal window. EchoStar, which acquired DISH and is responsible for the difference between the winning bid and new bid, argued that the FCC should keep the same rules used for the first auction to ensure a wide bidding pool and competitive bidding. On July 24, 2025, the FCC adopted final rules for the auction, denying a tribal window and keeping the small business credits as proposed in February 2025. The FCC set an auction start date of June 2, 2026. EchoStar challenged the FCC bidding credits rules in court; the two parties are negotiating to resolve the issues.

Congress may monitor the AWS-3 auction to ensure it begins by the mandated timeline and proceeds can repay the borrowed funds. Congress may also be interested in the AWS-3 auction as it may serve as a bellwether for future auctions, including those authorized under the FY2025 reconciliation act (P.L. 119-21), which are expected to generate $85 billion in offsetting receipts. For these and future auctions, Congress could specify auction terms (e.g., tribal window, bidding credits, allocation of proceeds) or may defer to the FCC on auction terms—either of which could affect auction proceeds.

Contents

Tables

Contacts

Introduction

Radio spectrum is the foundation of wireless communications. It is the range of radio frequencies used to transmit and receive radio signals (e.g., radio waves that carry voice and data communications) from one location to another wirelessly. Different technologies—such as smartphones, Wi-Fi routers, radio systems on ships, police radios, and Department of Defense (DOD) radar systems[1]—use different frequencies to facilitate wireless communications. To ensure all users have access to spectrum and their transmissions do not interfere with one another, governments regulate spectrum access and use. In the United States, the National Telecommunications and Information Administration (NTIA), an agency in the Department of Commerce, manages federal spectrum use, and the Federal Communications Commission (FCC) manages nonfederal spectrum use (e.g., commercial use, state and local use). As wireless technology use increases, the demand for spectrum also increases. The U.S. government has taken action to make additional spectrum available for commercial use, which sometimes requires reconfiguring spectrum previously allocated to other incumbent uses and users (including federal and nonfederal users).

This report provides background on a set of frequencies allocated for advanced wireless services (e.g., mobile voice, data, video, messaging),[2] known as AWS-3 bands. It discusses the initial auction of AWS-3 spectrum in 2015 and bidding issues raised during the auction that resulted in 197 licenses being returned to the FCC. It also discusses the Servicemember Quality of Life Improvement and National Defense Authorization Act for Fiscal Year 2025 (P.L. 118-159, Title LIV), enacted December 23, 2024, which directs the FCC to initiate an auction of the available AWS-3 frequencies within 18 months of the act's enactment (i.e., by June 23, 2026), and FCC rules implementing P.L. 118-159. Lastly, this report discusses issues for congressional consideration as the FCC proceeds with this auction and future planned auctions.

Background on AWS-3 Spectrum (2010-2012)

Below is a brief background on the AWS-3 spectrum, how the bands were originally identified, and congressional actions to move the AWS-3 band to auction.

FCC Identifies AWS Bands in National Broadband Plan

With the emergence of more affordable cell phones in the 1990s and smartphones in the early 2000s, ownership of mobile devices and use of mobile data increased, which led to increased demand for spectrum.[3] In 2010, the FCC released *The National Broadband Plan*, which called for more spectrum to be made available for mobile broadband use.[4] The FCC recommended that the U.S. government make 500 megahertz of spectrum available for mobile broadband use within the next 10 years to meet consumer and business demands for broadband services and to spur U.S.

[1] The Department of Defense is "using a secondary Department of War designation" under Executive Order 14347 of September 5, 2025, "Restoring the United States Department of War," 90 *Federal Register* 43893, September 10, 2025, https://www.federalregister.gov/documents/2025/09/10/2025-17508/restoring-the-united-states-department-of-war.

[2] Mobile broadband service generally refers to the ability to access broadband services (high-speed internet) from a mobile phone using a mobile phone network (e.g., cell phone network). At the time (2010), accessing high-speed broadband from a mobile phone was considered "advanced wireless services."

[3] Thomas K. Sawanobori and Robert Roche, *Mobile Data Demand: Growth Forecasts Met*, June 22, 2015, pp. 1-5, https://api.ctia.org/docs/default-source/default-document-library/062115mobile-data-demands-white-paper-new.pdf.

[4] Federal Communications Commission (FCC), *Connecting America: The National Broadband Plan*, March 17, 2010, https://www.fcc.gov/general/national-broadband-plan (hereinafter FCC, *National Broadband Plan*).

innovation, economic growth, and leadership in wireless technologies.[5] The FCC recommended that several bands be allocated or designated for mobile communications and auctioned to wireless service providers.[6] Among the bands identified in *The National Broadband Plan* was the 2155-2175 MHz band—a single band that the FCC called (at the time) "AWS-3" spectrum.[7]

At the time, the AWS-3 spectrum was allocated to other commercial uses (i.e., not mobile broadband).[8] The FCC asserted there was potential to pair the AWS-3 spectrum with certain federal bands, which would allow for uplink (from the mobile device to the cellular base station) and downlink (from cellular base station to the mobile device) for mobile communications.[9] Pairing the AWS-3 band with certain federal bands would also (1) align U.S. allocations with global allocations of spectrum for mobile use and (2) enable U.S. wireless service providers to use the ecosystem of equipment already developed and operating in those bands, which could expedite service availability. Specifically, the FCC wrote,

> Potential synergies exist between the AWS-3 band [2155-2175 MHz] and spectrum currently allocated to federal use [in the 1700 MHz band]. There are a number of countries that have allocated spectrum in the 1710–1780 MHz band for commercial use and devices already exist in the international market for that spectrum. Consequently, pairing the AWS-3 band [2155-2175 MHz] with spectrum from the [federal] 1755–1780 MHz band has the potential to bring benefits of a global equipment ecosystem to this band.[10]

The FCC recommended that NTIA, working with the FCC, should examine whether this pairing was possible. The FCC asserted that if, after studying the band, the FCC and NTIA found there was a strong possibility that the federal spectrum band (1710-1780 MHz) could be paired with the AWS-3 band (2155-2175 MHz) and used for mobile broadband, then NTIA should commence reallocation proceedings. If, however, the agencies found that pairing was not feasible, then the FCC would adopt final rules to auction the AWS-3 spectrum (2155-2175 MHz) on a stand-alone basis.[11]

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[5] FCC, *National Broadband Plan*, p. 29. The abbreviation "MHz" (megahertz) or "GHz" (gigahertz) is used to indicate a specific frequency or range of frequencies in the band. When the term *megahertz* is spelled out, it refers to the bandwidth or quantity of spectrum. For example, the spectrum band containing frequencies in the 3450-3550 MHz range has a bandwidth of 100 megahertz.

[6] For bands identified by the FCC, see FCC, *National Broadband Plan*, pp. 84-89. Some of these bands were allocated for exclusive or primary federal use; some were allocated for commercial use (but not mobile broadband).

[7] FCC, *National Broadband Plan*, p. 86. With the emergence of smartphones, the FCC designated several bands for advanced wireless services (AWS). Typically, these bands are paired, where one band is used for uplink (transmissions from a user device to a cell tower) and the other for downlink (transmissions from a cell tower to a user device). For a description of the bands designated for AWS, see FCC, "Advanced Wireless Services (AWS)," https://www.fcc.gov/wireless/bureau-divisions/broadband-division/advanced-wireless-services-aws.

[8] Per the FCC's 2014 final rules on AWS spectrum, the 2160-2180 MHz portion of the AWS-3 band was used for other commercial services (not mobile broadband). This included (1) Fixed Microwave Service (typically for reliable, long-haul wireless transmission of voice, data, and video using radio frequencies, especially useful in areas where fiber may be difficult to install, such as over mountain ranges); and (2) Broadband Radio Service (BRS), used for high-power video stations, low-power cellular two-way systems, and others. FCC rules state that "AWS licensees in these bands must protect incumbent operations or relocate the incumbent licensees to comparable facilities, until the applicable 'sunset date,' after which the incumbents must cease operating if the AWS licensee intends to operate a [mobile] station in the relevant area." See FCC, "Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands," 79 *Federal Register* 32393, June 4, 2014.

[9] Generally, pairing refers to using two different frequency bands to facilitate two-way communications, one for uplink and one for downlink.

[10] FCC, *National Broadband Plan*, p. 86.

[11] FCC, *National Broadband Plan*, p. 87.

NTIA Issues 10-Year Plan to Make Spectrum Available

In June 2010, President Barack Obama issued a memorandum, "Unleashing the Wireless Broadband Revolution," which, among other things, directed NTIA to coordinate with the FCC to make 500 megahertz of spectrum available for wireless broadband use within 10 years.[12]

In October 2010, NTIA published a 10-year plan to make 500 megahertz of spectrum available for mobile broadband use.[13] NTIA identified about 20 federal bands to study for repurposing from federal to nonfederal use or for shared federal and nonfederal use. These included

- 2155-2175 MHz, the AWS-3 band;
- 1755-1780 MHz, the band that was (at the time) supporting federal use—the band that the FCC suggested be shared with the AWS-3 band; and
- 1675-1710 MHz, a band that was supporting federal and nonfederal use.[14]

In its 10-year plan, NTIA targeted some of the 20 federal bands for study. At the request of the Office of Management and Budget (OMB), the National Economic Council, and the Office of Science and Technology Policy, NTIA conducted fast-track evaluations of several bands to make them available for commercial wireless use within five years. Among the bands identified for fast-track evaluation were

- 1755-1780 MHz; and
- 1675-1710 MHz.[15]

Congress Expedites Spectrum Reallocation and Auction

In the Middle Class Tax Relief and Job Creation Act of 2012 (P.L. 112-96, Title VI, §6401(a)(3)), enacted February 22, 2012, Congress expedited the reallocation of spectrum from federal to nonfederal use. The act directed the Secretary of Commerce to submit, within a year of enactment, a report to the President identifying 15 megahertz of spectrum within the band of frequencies from 1675-1710 MHz for reallocation from federal to nonfederal use. Section 6401(a)(1) directed the President to withdraw or modify the assignment of spectrum for federal agency users in the band to make some or all of the band available for commercial use and to notify the FCC when the withdrawal or modification of the frequency assignment was complete. Section 6401(b)(1) directed the FCC to reallocate that spectrum to commercial use and, through a system of competitive bidding (i.e., auctions), to grant licenses making the spectrum available for commercial use within three years of enactment (i.e., by February 2015).

Congress identified several other bands in the act that should be considered for commercial use, including the AWS band (2155-2180 MHz). Congress also directed the Secretary of Commerce

[12] Executive Office of the President, "Unleashing the Wireless Broadband Revolution," presidential memorandum, June 28, 2010, https://obamawhitehouse.archives.gov/the-press-office/presidential-memorandum-unleashing-wireless-broadband-revolution.

[13] National Telecommunications and Information Administration (NTIA), *Plan and Timetable to Make Available 500 Megahertz of Spectrum for Wireless Broadband*, October 2010, https://www.ntia.gov/report/2010/ten-year-plan-and-timetable-make-available-500-megahertz-spectrum-wireless-broadband-presidents (hereinafter NTIA Ten-Year Plan).

[14] NTIA, *An Assessment of the Near-Term Viability of Accommodating Wireless Broadband Systems in the 1675-1710 MHz, 1755-1780 MHz, 3500-3650 MHz, and 4200-4220 MHz, 4380-4400 MHz Bands*, October 2010, p. vi, https://www.ntia.gov/files/ntia/publications/fasttrackevaluation_11152010.pdf.

[15] NTIA, *An Assessment of the Near-Term Viability of Accommodating Wireless Broadband Systems in the 1675-1710 MHz, 1755-1780 MHz, 3500-3650 MHz, and 4200-4220 MHz, 4380-4400 MHz Bands*, October 2010, p. iv, https://www.ntia.gov/files/ntia/publications/fasttrackevaluation_11152010.pdf.

and the FCC to each identify 15 megahertz of spectrum for commercial use. Thus, Congress gave the agencies discretion to select which bands should be reallocated from federal to nonfederal use. Pursuant to P.L. 112-96, the Department of Commerce, through NTIA, issued a report in February 2013, identifying 15 megahertz of spectrum; it selected a portion of the 1675-1710 MHz band—specifically, 1695-1710 MHz—for reallocation from federal to commercial use.[16]

Under the Commercial Spectrum Enhancement Act (CSEA; P.L. 108-494, Title II), enacted December 23, 2004,[17] a Spectrum Relocation Fund (SRF) was established to compensate federal agencies for the costs of relocating or reconfiguring systems if their spectrum is reallocated to commercial use and their systems are affected, using spectrum auction proceeds. P.L. 112-96 amended the CSEA to allow federal agencies to use the SRF not only for costs associated with relocating from a band but also for costs associated with *sharing* a band, to incentivize sharing. In addition, agencies could use the SRF for pre-auction costs, such as planning, engineering studies, and economic analyses, as well as for replacement of technologies, alternative technologies, and state-of-the-art technologies. To receive SRF funding, agencies complete transition plans with estimates of costs and timelines, which are approved by NTIA and OMB. NTIA notifies the FCC of estimates and transition timelines.[18] The FCC uses these estimates to set (minimum) reserve prices for auctions to ensure that auction proceeds cover 110% of agency relocation, sharing, and other related costs.

Before the reallocation process began, there were federal systems operating in the 1695-1710 MHz band. NTIA determined, with the input of agencies affected by the reallocation, that some of these systems would continue to operate, while others would be relocated to alternative bands.[19] Where federal systems would continue to operate in the band, the FCC and NTIA developed agreements to share the spectrum, with some protection for federal systems. For example, in the 1695-1710 MHz band, the National Oceanic and Atmospheric Administration continued to operate the Polar Operational Environmental Satellites system, which transmits weather and other meteorological data to Earth station receivers. The FCC and NTIA established protection zones for 47 federal Earth stations. In these zones, federal Earth stations would operate on a coequal, primary basis with new AWS commercial operations, meaning that each user has a right to protection from interference. All other federal Earth stations would operate on a secondary basis to AWS operations, meaning that they could not cause interference and must accept interference from others.[20] Any *new* base stations planned for the 1695-1710 MHz band would have to adhere to certain technical requirements to avoid interference among users and coordinate with users prior to operation.[21]

On May 13, 2014, NTIA informed the FCC of initial estimated relocation and sharing costs for the 1695-1710 MHz and the 1755-1780 MHz spectrum bands of $527.1 million and $4.576

[16] NTIA, *Identification of 15 Megahertz of Spectrum Between 1675 and 1710 MHz for Reallocation from Federal Use to Non-Federal Use Pursuant to Section 6401(A) of the Middle Class Tax Relief and Job Creation Act of 2012: Report to the President*, February 2013, https://www.ntia.doc.gov/files/ntia/publications/1675-1710_mhz_report_to_president_02192013.pdf.

[17] P.L. 112-96, Title VI, Subtitle G, extends allowable costs eligible for reimbursement as a result of relocation.

[18] NTIA, *Commercial Spectrum Enhancement Act: Annual Progress Report for 2022*, October 2023, p. 6, https://www.ntia.gov/sites/default/files/publications/2022-csea-report.pdf.

[19] NTIA, *1695-1710 MHz*, December 2015, p. 9, https://www.ntia.gov/files/ntia/publications/compendium/1695.00-1710.00_01DEC15.pdf. (Multiple agencies were operating in the band, including the Army; Navy; Air Force; Departments of Justice, Homeland Security, and Commerce; and National Park Service.)

[20] NTIA, *1695-1710 MHz*, December 2015, p. 9, https://www.ntia.gov/files/ntia/publications/compendium/1695.00-1710.00_01DEC15.pdf.

[21] FCC, "Joint Public Notice Announcing AWS-3 Coordination Details," July 18, 2014, https://www.fcc.gov/document/joint-public-notice-announcing-aws-3-coordination-details.

billion, respectively.[22] NTIA also provided timelines for transition, which ranged from a few months to 10 years, depending on the agency and system. To ensure that the auction would cover the relocation costs, the FCC set reserve prices—minimum amounts for which the bands must be sold—that aligned with the federal relocation costs for each band.[23]

First AWS-3 Auction (2014-2015)

In June 2014, pursuant to P.L. 112-96, the FCC finalized rules pertaining to the use and auction of three bands together, which it called the "AWS-3" auction:[24]

- 1695-1710 MHz;
- 1755-1780 MHz; and
- 2155-2180 MHz.

The 1695-1710 MHz band was auctioned as a single band (unpaired) spectrum.[25] The 1755-1780 MHz band was auctioned in a paired configuration with the 2155-2180 MHz band, as the FCC suggested in *The National Broadband Plan*. The FCC offered 1,614 AWS-3 licenses, granted for 12 years with a renewal term of 10 years.

The FCC offered bidding credits to small businesses, allowing them a discount on their winning bids.[26] Per FCC rules,

- a "small business" bidder—a business "with attributable average annual gross revenues that do not exceed $40 million for the preceding three years"—could receive a 15% discount on its winning bid; and
- a "very small business" bidder—a business "with attributable average annual gross revenues that do not exceed $15 million for the preceding three years"—could receive a 25% discount on its winning bid.[27]

The FCC also offered a tribal bidding credit for winning bidders that intended to use their licenses to serve federally recognized tribal lands that were unserved by any telecommunications carrier

[22] Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, NTIA, to Tom Wheeler, Chairman, FCC, May 13, 2014, Attachments, https://www.ntia.gov/sites/default/files/publications/notification_to_fcc_re_est_costs_for_1695_and_1755_bands_05132014_0.pdf.

[23] FCC, "Auction 97: Advanced Wireless Services (AWS-3)," https://www.fcc.gov/auction/97.

[24] FCC, *In the Matter of Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands*, March 31, 2014, https://docs.fcc.gov/public/attachments/FCC-14-31A1.pdf.

[25] Under AWS-3 rules, the unpaired 1695-1710 MHz band could be used for low-power mobile transmit (uplink), from end user to base station. Unpaired spectrum was typically used for broadcasting (i.e., one-way communications); new technologies were emerging that could use unpaired spectrum for two-way communications. Some experts asserted that if the 1695-1710 MHz band were paired, it could have yielded greater value at auction. Michael O'Rielly, "AWS-3: Lessons Learned," *FCC Blog*, March 27, 2015, https://www.fcc.gov/news-events/blog/2015/03/27/aws-3-auction-lessons-learned.

[26] See "Small Business Credit" on the FCC AWS-3 auction page at FCC, "Auction 97: Advanced Wireless Services (AWS-3)," https://www.fcc.gov/auction/97. The size of the bidding credit depended on "the average annual gross revenues for the preceding three years for the applicant, its affiliates, its controlling interests, and the affiliates of its controlling interest, as well as the average annual gross revenues of any entity with which the applicant has an attributable material relationship" (see "Fact Sheet" tab).

[27] FCC, "Auction 97: Advanced Wireless Services (AWS-3)," https://www.fcc.gov/auction/97.

or that had a wireline penetration rate below 85%.[28] The FCC began the AWS-3 auction on November 13, 2014, and closed the auction on January 29, 2015. At the close, 31 bidders had won 1,611 of 1,614 licenses, generating over $41 billion, which, at the time, was the highest net proceeds generated by an FCC auction.

Dispute over Small Business Bidding Credits

Before the first AWS-3 auction began, the FCC invited applications from potential bidders. The FCC received 80 initial or "short-form" applications from bidders, of which 70 were qualified to participate in the auction.[29] Among those approved was DISH Network Corporation (DISH), bidding through its wholly owned subsidiary American AWS-3 Wireless I LLC. Also approved were Northstar Wireless, LLC (Northstar), and SNR WirelessCo, LLC (SNR), which both reported associations with DISH and DISH affiliates but certified their gross revenues at $15 million for the previous three years, indicating they were "very small businesses" eligible for the 25% bidding credit.[30]

At the auction's closing, Northstar and SNR won in total over 40% of the licenses (702 licenses).

FCC Denies Two Bidders Small Business Bidding Credits

After the auction, Northstar and SNR filed "long-form applications" to obtain their licenses and requested the 25% bidding credit, which would reduce their payment from over $13 billion to about $10 billion.[31] As part of their long-form applications, they were required to include details about their corporation, including their business agreements with DISH. In response to the publicly filed long-form applications, eight entities (i.e., other bidders) filed petitions with the FCC, arguing that Northstar and SNR were not "very small businesses," that DISH had de facto control of the entities, and that DISH's gross revenues should be attributed to both Northstar and SNR. The complainants asked the FCC to deny Northstar's and SNR's requests for bidding credits.[32]

In its review, the FCC found that DISH had provided equity contributions and loans to the entities, which accounted for approximately 98% of their winning bid amounts; held an 85% equity interest in each of the companies; had provided the majority of their capital; and had contracted to manage the build-out and operation of their networks.[33] Thus, in an August 2015 opinion, the FCC found that Northstar and SNR were not eligible for the approximate $3.3 billion in bidding credits. The FCC determined that under its rules, Northstar and SNR could retain the

[28] The bidding credit is based on a formula driven by square miles of tribal land served (47 C.F.R. §1.2110(f)(3)). For more information on tribal windows, see CRS In Focus IF13014, *Tribal Spectrum and Broadband Access: Background and Considerations for Congress*, by Colby Leigh Pechtol and Jill C. Gallagher.

[29] FCC, "Auction of Advanced Wireless Services (AWS-3) Licenses: 70 Bidders Qualified to Participate in Auction 97," October 30, 2014, https://docs.fcc.gov/public/attachments/DA-14-1564A1.pdf.

[30] FCC, *In the Matter of Northstar Wireless, LLC and SNR Wireless LicenseCo, LLC,* August 17, 2015, p. 7, https://docs.fcc.gov/public/attachments/FCC-15-104A1.pdf.

[31] FCC, "FCC Reaffirms That SNR Wireless and Northstar Wireless Are Ineligible for $3.3 Billion in Bidding Credits," press release, November 23, 2020, https://docs.fcc.gov/public/attachments/DOC-368321A1.pdf.

[32] FCC, *In the Matter of Northstar Wireless, LLC and SNR Wireless LicenseCo, LLC,* November 17, 2020, pp. 2, 6, https://docs.fcc.gov/public/attachments/FCC-20-160A1.pdf.

[33] FCC, *In the Matter of Northstar Wireless, LLC and SNR Wireless LicenseCo, LLC,* November 17, 2020, pp. 5-6.

licenses won but were liable for the gross amounts of their winning bids; failure to pay would result in a default, and the entities would be liable for the default payment under FCC rules.[34]

Bidders Selectively Default and Relinquish Some AWS-3 Licenses to the FCC

After the FCC's decision, Northstar and SNR notified the FCC that they would pay the full bid amount for some of the licenses they won—$9.8 billion for about 500 licenses—but would default on the rest (197 licenses).[35] Combined, the entities relinquished about one-third of their licenses, worth about $3.4 billion;[36] this included potentially high-value licenses,[37] such as

- New York I Block license (1765-1770/2165-2170 MHz), bid for $1.3 billion;
- Chicago G Block license (1755-1760/2155-2160 MHz), bid for $509 million;
- Chicago H Block license (1760-1765/2160-2165 MHz), bid for $583 million; and
- Boston G Block license (1755-1760/2155-2160 MHz), bid for $166 million.

For defaulting on the bands, the FCC ordered the entities to pay an interim default penalty of 15% of their winning bids—$333,919,350 for Northstar and $181,635,840 for SNR—and held them accountable for compensating the FCC for the difference between their total winning bid and the amount the FCC receives when it reauctions the spectrum.[38]

Bidders Challenge FCC Decisions in Court, Supreme Court Denies Review

SNR and Northstar sought judicial review of the FCC's denial of bidding credits. In 2017, the U.S. Court of Appeals for the D.C. Circuit (D.C. Circuit) held that the denial was reasonable but remanded to the FCC to give the entities an opportunity to cure the DISH-control issue that caused the denial.[39] The companies restructured their business agreements with DISH (which included DISH guarantees for the default payments); however, the FCC determined that the companies remained under de facto control by DISH and denied the credits on remand.[40] The entities sought D.C. Circuit review of the remand order. In 2022, the D.C. Circuit rejected the

[34] 47 C.F.R. §1.2104(g). The default payment is to be deducted from any upfront payments or down payments that the defaulting bidder has deposited with the FCC.

[35] FCC, *In the Matter of Northstar Wireless, LLC and SNR Wireless LicenseCo, LLC*, November 17, 2020, p. 8. Northstar selectively defaulted on 84 licenses, for which it bid $2,226,129,000. SNR selectively defaulted on 113 licenses, for which it bid $1,210,905,600.

[36] The FCC required the entities to pay 15% of their winning bids. The interim default payment of $181,635,840 is 15% of a $1,210,905,600 winning bid. The interim default payment of $333,919,350 is 15% of a $2,226,129,000 winning bid. The sum of the winning bids ($1,210,905,600 and $2,226,129,000) is approximately $3.4 billion.

[37] Kim Randolph, "Tuning in to Spectrum Valuation," *Stout* (blog), May 1, 2017, https://www.stout.com/en/insights/article/sj17-tuning-in-to-spectrum-valuation. Randolph notes that "location is a key value driver for two reasons, both of which relate to the size of the market. The population coverage of the license is one of the largest value drivers, as a licensee's ability to generate cash flow is typically correlated with the size of the population ... within the coverage area. Generally speaking, more densely populated markets have greater value."

[38] Letter from Roger C. Sherman, Chief, FCC Wireless Telecommunications Bureau, to Mark F. Dever, Esq., Counsel for Northstar Wireless, October 1, 2015, https://docs.fcc.gov/public/attachments/DA-15-1108A1.pdf; and Letter from Roger C. Sherman, Chief, FCC Wireless Telecommunications Bureau, to Ari Q. Fitzgerald, Esq., Counsel for SNR Wireless, October 1, 2015, https://docs.fcc.gov/public/attachments/DA-15-1109A1.pdf. (To address FCC concerns that Northstar and SNR may be unable to provide the difference between the total winning bid and the amount the FCC may receive at auction, DISH, with each entity, provided the FCC with security against that risk in the form of a guaranty.)

[39] *SNR Wireless LicenseCo, LLC v. FCC*, 868 F.3d 1021 (D.C. Cir. 2017).

[40] FCC, *In the Matter of Northstar Wireless, LLC and SNR Wireless LicenseCo, LLC*, November 17, 2020, pp. 1-3.

entities' challenge.[41] Northstar then sought Supreme Court review.[42] In July 2023, the Supreme Court denied review.[43] During the legal challenge, the spectrum remained in the FCC's inventory.

With legal remedies exhausted, the licenses remained with the FCC. Normally, the FCC could have auctioned the licenses, in which case the defaulting entity would be responsible for the difference between the total winning bid and the amount the FCC receives when it reauctions the spectrum.[44] The FCC could not reauction the licenses because its auction authority expired during the legal challenge.

Expiration of FCC Auction Authority (2023)

On March 9, 2023, the FCC's general auction authority expired.[45] The FCC no longer had authority to auction the spectrum and the licenses remained in the FCC's inventory.

Congress Directs FCC to Auction AWS-3 Spectrum

In the Servicemember Quality of Life Improvement and National Defense Authorization Act for Fiscal Year 2025 (P.L. 118-159), enacted December 23, 2024, Congress included as Title LIV the Spectrum and Secure Technology and Innovation Act of 2024 (Innovation Act). Section 5403 of the Innovation Act directs the FCC to initiate an auction for available radio frequencies in the AWS-3 band no later than 18 months after the date of enactment (June 23, 2026). Congress granted the FCC authority to auction available frequencies in the AWS-3 band only; it did not restore the FCC's general auction authority (i.e., authority to auction any band).[46]

The Innovation Act grants certain agencies authority to borrow funds from the Treasury, and the act requires proceeds from the future AWS-3 auction be used to repay the borrowed funds.[47] Section 5404(c)(1) of the Innovation Act grants the FCC authority to borrow an amount not to exceed $3.08 billion to fully fund the Secure and Trusted Communications Networks

[41] *Northstar Wireless, LLC v. FCC*, 38 F.4th 190 (D.C. Cir. 2022).

[42] SNR Wireless did not join the petition for writ of certiorari. "SNR shareholders exercised their right to sell the company to DISH" while the company's second petition for review was before the D.C. Circuit. *Northstar Wireless, LLC v. Federal Communications Commission*, No. 18-1209 (D.C. Cir. 2022), p. 17.

[43] *Northstar Wireless, LLC v. FCC*, 143 S. Ct. 2693 (2023).

[44] Ownership interests in the companies have changed since the auction. See *Northstar Wireless, LLC v. FCC*, 38 F.4th 190 (D.C. Cir. 2022). (Indicating that ownership interests in the companies changed. "In late 2020, DISH acquired all but three percent of Northstar's outstanding common shares from Northstar's managing shareholders. The following year, SNR shareholders exercised their right to sell the company to DISH.") See also FCC, *Applications Granted for the Transfer of Control of Dish Network Corp. and Its Subsidiaries to EchoStar Corp.*, December 6, 2023, https://docs.fcc.gov/public/attachments/DA-23-1137A1.pdf. The FCC approved the transfer of control to EchoStar of the licenses held by DISH and its subsidiaries (including Northstar and SNR). FCC documents indicate that DISH guaranteed Northstar's and SNR's default payments. See FCC, *In the Matter of Northstar Wireless, LLC and SNR Wireless LicenseCo, LLC*, November 17, 2020, p. 39 n. 262, https://docs.fcc.gov/public/attachments/FCC-20-160A1.pdf.

[45] For background, see CRS Report R48861, *History of the Federal Communications Commission's Spectrum Auction Authority: 1993-2025*, by Patricia Moloney Figliola and Jill C. Gallagher.

[46] The FCC's general auction authority was later restored in P.L. 119-21, enacted July 4, 2025.

[47] Section 5404(a) of the Innovation Act establishes a Spectrum Auction Trust Fund (Fund) in the U.S. Treasury. Section 5404(b)(2)(A) requires that AWS-3 auction proceeds be deposited in the Fund and that 50% of proceeds but not more than $3.08 billion shall be transferred to the general fund of the Treasury to reimburse the amount borrowed for the "rip-and-replace" program; Section 5404(b)(2)(B) requires that 50% but not more than $220 million shall be transferred to the general fund of the Treasury to reimburse the amount borrowed for regional technology hubs.

Reimbursement Program (also called the "rip-and-replace" program).[48] The program was established to reimburse small wireless carriers for costs to replace certain equipment from China-based manufacturers Huawei Technologies Co., Ltd., and ZTE Corporation from their networks. Section 5404(d)(1) grants the Secretary of Commerce authority to borrow an amount not to exceed $220 million for regional technology hubs.[49] Section 5404(b)(4) stipulates that after the amounts borrowed are repaid to the Treasury, any remaining amount up to $280 million shall be made available to the Commerce Secretary for additional regional technology and innovation hub funding. Any remaining funds must be deposited in the Treasury's general fund for deficit reduction.

FCC to Auction Available AWS-3 Spectrum

On February 27, 2025, the FCC adopted a notice of proposed rulemaking (NPRM), which proposed changes to criteria for small businesses, proposed changes to bidding credits for small businesses and rural service providers, and sought comment on a tribal licensing window.[50] The February 2025 NPRM proposed to extend bidding credits (i.e., discounts) to small businesses and very small businesses and to rural service providers.

In the February NPRM, the FCC shared that it had updated its bidding rules in September 2015 in response to issues stemming from the 2015 AWS-3 auction (which concluded in January 2015). The amended rules established eligibility requirements for small businesses; set a 15% bidding credit for a new category of recipients—rural service providers; and established a process to implement a reasonable cap on the total amount of bidding credits that an eligible entity may be awarded in an auction.[51] The FCC also noted after it amended its rules in 2015, the Small Business Runway Extension Act of 2018 (P.L. 115-324) was enacted; that act directed federal agencies proposing to set a size standard for small businesses to use the average annual gross receipts from at least the previous *five* years, instead of the previous three years.[52] The proposed 2025 rules for the second AWS-3 auction reflect this mandate. A comparison of bidding credits for the first and second AWS-3 auction are provided in **Table 1**.

[48] In P.L. 116-260, Congress appropriated $1.895 billion for the rip-and-replace program. Actual costs exceeded appropriated funds by $3.08 billion. Proceeds from the AWS-3 auction would be used to fully fund carriers' costs to rip-and-replace untrusted equipment. See CRS Insight IN11663, *Secure and Trusted Communications Networks Reimbursement Program: Frequently Asked Questions*, by Jill C. Gallagher.

[49] See Economic Development Administration, "Regional Technology and Innovation Hubs," https://www.eda.gov/funding/programs/regional-technology-and-innovation-hubs.

[50] See 47 C.F.R. Part 1 (defining small businesses) and 47 C.F.R. §27.1106 (defining small businesses and bidding credits for the AWS-3 auction specifically).

[51] FCC, "Updating Competitive Bidding Rules," 80 *Federal Register* 56764, September 18, 2015.

[52] For more information about the Small Business Runway Extension Act, see CRS Report R40860, *Small Business Size Standards: A Historical Analysis of Contemporary Issues*, by R. Corinne Blackford and Anthony A. Cilluffo.

Table 1. FCC's Competitive Bidding Credits Rules

Comparison of Competitive Bidding Rules for AWS-3 Auctions

Entity	Competitive Bidding Rules for First AWS-3 Auction (July 2014)[a]	Competitive Bidding Rules Amended After First AWS-3 Auction (September 2015)[b]	Proposed Bidding Rules for Second AWS-3 Auction (February 2025)[c]	Final Bidding Rules for Second AWS-3 Auction (July 2025)[d]
Small business	An entity, together with its affiliates, controlling interests, and affiliates of its controlling interests, with average gross revenues not exceeding $40 million for the preceding three years would be eligible for a 15% small business bidding credit.	A winning bidder that qualifies as a small business and has not claimed a rural service provider bidding credit may receive • 35% credit if it has average gross revenues not exceeding $4 million for the preceding three years; • 25% credit if it has average gross revenues not exceeding $20 million for the preceding three years; or • 15% credit if it has average gross revenues not exceeding $55 million for the preceding three years. Instituted a cap on credits.[e]	An entity that, together with its affiliates, controlling interests, and affiliates of its controlling interests, has average gross revenues not exceeding $55 million for the preceding five years would be eligible for a 15% bidding credit, with a cap.	An entity that, together with its affiliates, controlling interests, and affiliates of its controlling interests, has average gross revenues not exceeding $55 million for the preceding five years would be eligible for a 15% bidding credit, with a cap of $25 million in total bidding credit discount.
Very small business	An entity, together with its affiliates, controlling interests, and affiliates of its controlling interests, that has average gross revenues not exceeding $15 million for the preceding three years would be eligible for a 25% very small business bidding credit.	Competitive bidding rules for three tiers of small businesses are reflected in the cell above, and all include a cap on bidding credits.	An entity that, together with its affiliates, controlling interests, and affiliates of its controlling interests, has average gross revenues not exceeding $20 million for the preceding five years would be eligible for a 25% bidding credit, with a cap.	An entity that, together with its affiliates, controlling interests, and affiliates of its controlling interests, has average gross revenues not exceeding $20 million for the preceding five years would be eligible for a 25% bidding credit, with a cap of $25 million in total bidding credit discount.

Tribes	A tribal entity that intended to use its license to serve federally recognized tribal lands that had a wireline penetration rate below 85% could receive a bidding credit; the credit was based on square miles served.	A tribal entity that intended to use its license to serve federally recognized tribal lands that had a wireline penetration rate below 85% could receive a bidding credit. The credit was based on square miles served.	The proposed rules sought comment on creating a tribal priority window that would allow tribes to directly access unassigned spectrum over their tribal lands, subject to build-out requirements.	The final rules declined to create a tribal priority window.
Rural service providers[f]		A winning bidder that qualifies as a rural service provider (fewer than 250,000 subscribers and serving a rural area) and has not claimed a small business bidding credit will be eligible to receive a 15% credit, with a cap.	Offers a 15% bidding credit to qualifying rural service providers, with a cap.	Offers a 15% bidding credit to qualifying rural service providers (that have not claimed a small business bidding credit), with a cap of $10 million in total bidding credit discount.

Sources:

a. Federal Communications Commission (FCC), "Auction of Advanced Wireless Services (AWS-3) Licenses Scheduled for November 13, 2014; Notice and Filing Requirements, Reserve Prices, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 97," 79 *Federal Register* 47106, August 12, 2014.

b. FCC, "Updating Competitive Bidding Rules," 80 *Federal Register* 56764, September 18, 2015.

c. FCC, "Auction of Advanced Wireless Services (AWS-3) Licenses; Comment Sought on Competitive Bidding Procedures for Auction 113," 90 *Federal Register* 13118, March 20, 2025.

d. FCC, "Bidding Rules for Auction of AWS-3 Licenses," 90 *Federal Register* 36385, August 4, 2025.

e. Bidding credit caps are defined in 47 C.F.R. §1.2110(f)(4)(ii). See also FCC, *Small Entity Compliance Guide*, February 4, 2026, p. 5, https://docs.fcc.gov/public/attachments/DA-26-112A1.pdf.

f. Rural service providers are defined in 47 C.F.R. §1.2110(f)(4)(i).

As noted in **Table 1**, the February 2025 NPRM sought comment on creating a tribal window that would give tribal nations an opportunity to obtain licenses for unassigned spectrum over tribal lands.[53] In its final rules, adopted in July 2025, the FCC declined to create a tribal window.[54] The FCC stated that it would not be in the public interest to adopt a tribal window given Congress's specific directives that spectrum proceeds be used to reimburse the Treasury for funds borrowed for the "rip-and-replace" program, and given the mandate to initiate the auction within 18 months of enactment, or by June 23, 2026.

After the final rules were adopted, some entities—including tribal nations and EchoStar Corporation, the parent company of DISH—challenged the FCC's rules, as discussed in the section below. The FCC has not reconsidered or modified its rules and in December 2025 announced that that auction would begin on June 2, 2026.[55]

[53] FCC, *In the Matter of Enhancing National Security Through the Auction of AWS-3 Spectrum Licenses Applying New Average Annual Gross Revenue Benchmarks for Small Business Bidding Credits*, February 27, 2025, pp. 6-7, https://docs.fcc.gov/public/attachments/FCC-25-12A1.pdf.

[54] FCC, "Bidding Rules for Auction of AWS-3 Licenses," 90 *Federal Register* 36392, August 4, 2025.

[55] FCC, "Auction of Advanced Wireless Services (AWS-3) Licenses; Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 113," 90 *Federal Register* 59979, December 23, 2025.

Issues for Congress

Issues that may be of interest to Congress, as the FCC prepares for the AWS-3 auction planned to begin June 2, 2026, center on spectrum auction proceeds and demand for AWS-3 spectrum; bidding credits and pending court cases related to bidding credits; adoption of a tribal window for the AWS-3 or future auctions; reallocation of spectrum from federal to commercial use; spectrum sharing; and the status of "rip-and-replace" payments.

AWS-3 Spectrum Auction Proceeds

Congress may be particularly interested in AWS-3 auction proceeds, as proceeds from the auction are to be used to repay borrowed funds, and as this auction may serve as a bellwether for future auctions planned in the 2025 budget reconciliation act, P.L. 119-21.

Estimates of Spectrum Auction Proceeds

The Congressional Budget Office (CBO) prepared an estimate of the AWS-3 licenses in July 2024, when it scored a bill (S. 2238) that proposed to, among other things, auction the available AWS-3 spectrum. CBO estimated that, based on past auctions and industry demand, the relinquished AWS-3 licenses would generate $3.3 billion in offsetting receipts over the 2025-2034 period.[56] Other analysts have projected proceeds in the range of $3 billion to $4.5 billion.[57]

In any case, the FCC is expected to receive at least $3.3 billion to $3.4 billion as, under FCC rules, the defaulting entity (now EchoStar, the parent company of DISH) is responsible for any difference between the net defaulted bid and the subsequent net winning bid, or the difference between the bidder's gross defaulted bid and the subsequent gross winning bid, whichever is less.[58] Given the defaulted bids from the 2015 AWS-3 auction totaled around $3.3 billion, the FCC is expected to receive at least that amount.[59] Proceeds are to be used to repay funds borrowed for the "rip-and-replace" program ($3.08 billion) and for regional technology and innovation hubs ($220 million), as specified in P.L. 118-159. If the AWS-3 auction generates more than $3.3 billion, the proceeds could be used for other items named in P.L. 118-159, including an additional $280 million for regional technology and innovation hubs, with remaining amounts deposited in the Treasury's general fund and used for deficit reduction.

EchoStar may raise concerns if the auction does not generate the $3.3 billion. In August 2025, EchoStar challenged the FCC July 2025 rules in the U.S. Court of Appeals, Tenth Circuit, asserting that the FCC impermissibly changed the bidding rules for this second AWS-3 auction. EchoStar maintains that the rules are more restrictive than those used for the first AWS-3 auction,

[56] Congressional Budget Office, "At a Glance: S. 2238, PLAN for Broadband Act," December 2, 2024, https://www.cbo.gov/system/files/2024-12/s2238.pdf (cost estimate for S. 2238 as ordered reported by the Senate Committee on Commerce, Science, and Transportation on July 31, 2024).

[57] Kirk R. Arner and Harold Furchtgott-Roth, "Estimated Value of Potential Spectrum Auction Receipts in the Next Five-Year Window," Hudson Institute, July 18, 2024, https://www.hudson.org/technology/estimated-value-potential-spectrum-auction-receipts-next-five-year-window-kirk-arner-harold-furchtgott-roth.

[58] 47 C.F.R. §1.2104(g)(2). The FCC detailed the interim payments in (1) letter from Roger C. Sherman, Chief, Wireless Telecommunications Bureau, FCC, to Mark F. Dever, Esq., Drinker Biddle & Reath LLP, October 1, 2015, https://docs.fcc.gov/public/attachments/DA-15-1108A1_Rcd.pdf (Northstar), and (2) letter from Roger C. Sherman, Chief, Wireless Telecommunications Bureau, FCC, to Ari Q. Fitzgerald, Esq., Hogan Lovells US LLP, October 1, 2015, https://docs.fcc.gov/public/attachments/DA-15-1109A1.pdf (SNR).

[59] The $3.3 billion could come from bids or, if the bids total less than $3.3 billion, the difference between the total bids and the $3.3 billion would be provided by EchoStar/DISH.

as the rules include new caps on bidding credits, which could reduce participation and "potentially place EchoStar on the hook for a default payment penalty of billions of dollars."[60] EchoStar asked the court to vacate the FCC's July 2025 Order and to direct the FCC to either preserve the rules concerning definitions of small business and very small business and bidding credits that it used in the first AWS-3 auction, or, if the rules are changed, to remove the guaranty and associated financial obligations of EchoStar and its subsidiaries. In October 2025, the court held the case in abeyance pending the outcome of negotiations between EchoStar and the FCC that the parties said could "obviate the need for litigation."[61] The outcome of the negotiations or any subsequent court decision could affect the AWS-3 auction, auction timeline, and proceeds, if EchoStar's default payment obligations are modified.[62]

Second, in its quarterly financial report for the period ending September 30, 2025, EchoStar stated that, in May 2025, it had received notice from the FCC indicating that the FCC was beginning a review of EchoStar's compliance with certain build-out requirements attached to other spectrum licenses it held.[63] EchoStar stated that the "FCC made it clear that it viewed our spectrum as being underutilized and deemed our continued ownership of such spectrum licenses inconsistent with the public interest, and that we must sell a material amount of spectrum licenses or face a wide-ranging license revocation."[64] As such, EchoStar agreed to sell some of its spectrum (not AWS-3) to AT&T for about $23 billion and some (including some AWS-3) to Space Exploration Technologies Corporation (or SpaceX) for about $17 billion, later adjusted to more than $20 billion.[65] Per EchoStar, the transactions require government approvals from the FCC and Department of Justice (DOJ); [66] the FCC approved the two transactions on May 12, 2026.[67] EchoStar indicated that it expects the closing with AT&T to occur in the first half of 2026, and the closing with SpaceX to occur in November 2027.[68]

In its 2025 annual report, EchoStar discussed its financial position, and potential impacts and risks if the AT&T and SpaceX spectrum transactions are not completed. EchoStar stated that it may need to "raise additional capital in the future if the AT&T Transactions and SpaceX Transactions are not complete, which may not be available on favorable terms or at all, to, among other things, make any potential Northstar Re-Auction Payment and SNR Re-Auction Payment for the AWS-3 licenses."[69] Further, it stated that

[60] *EchoStar Corporation v. FCC*, No. 25-9567 (10th Cir., Aug. 29, 2025).

[61] *EchoStar Corporation v. FCC*, No. 25-9567 (10th Cir., Oct. 15, 2025).

[62] An April 14, 2026, case filing of a Joint Status Report states that the parties remain in active negotiations to resolve the matter. See Law360 Docket for *EchoStar Corporation v. FCC, et al* (25-9567), Case Filing, April 14, 2026 (Text Only – No Attachment), https://www.law360.com/cases/68b8753558b04ddc353d491d/dockets.

[63] EchoStar, "Quarterly Report for Period Ended September 30, 2025" (10Q), p. 5, https://ir.echostar.com/static-files/e9c2a950-7340-40db-8e63-41b4c6c0ff2f.

[64] EchoStar, "Quarterly Report for Period Ended September 30, 2025" (10Q), p. 5.

[65] AT&T, "AT&T to Acquire Spectrum Licenses from EchoStar," press release, August 26, 2025, https://about.att.com/story/2025/echostar.html; EchoStar, "EchoStar Announces Spectrum Sale and Commercial Agreement with SpaceX," press release, September 8, 2025, https://ir.echostar.com/news-releases/news-release-details/echostar-announces-spectrum-sale-and-commercial-agreement-spacex; and EchoStar Corporation, *Annual Report* (Form 10-K), for the Fiscal Year Ended December 31, 2025, pp. 2-5, https://www.sec.gov/Archives/edgar/data/1415404/000110465926021817/tmb-20251231x10k.htm.

[66] EchoStar Corporation, *Annual Report* (Form 10-K), for the Fiscal Year Ended December 31, 2025, pp. 2, 4.

[67] FCC, "FCC Secures Win for America's Leadership in Next-Gen Connectivity," press release, May 12, 2026, https://docs.fcc.gov/public/attachments/DOC-421651A1.pdf.

[68] EchoStar Corporation, *Annual Report* (Form 10-K), for the Fiscal Year Ended December 31, 2025, pp. 2, 4.

[69] EchoStar Corporation, *Annual Report* (Form 10-K), for the Fiscal Year Ended December 31, 2025, p. 14.

> until the closing of these transactions, which are subject to receipt of government approvals and other customary conditions, funding is not deemed committed and because we do not currently have the necessary [cash on hand] and/or projected future cash flows or committed financing to fund our obligations for at least twelve months from the issuance of these consolidated financial statements, substantial doubt exists about our ability to continue as a going concern.[70]

In Congress, some Members have raised concerns about these transactions, including concerns related to consolidation of spectrum, competition, and antitrust concerns, and urged the DOJ and FCC to ensure these spectrum transactions are in the public interest.[71] Of additional interest to Congress may be EchoStar's ability to meet its financial obligations if AWS-3 auction proceeds fall short of the $3.3 billion and if the transactions with SpaceX and AT&T are not approved.

Proceeds Driven by Demand for AWS-3 Spectrum

An issue that may be of interest to Congress is the level of demand for the available AWS-3 frequencies, as demand could affect bidding. On the one hand, the spectrum the FCC intends to auction in June 2026 is valuable mid-band spectrum—frequencies with characteristics that are well-suited for mobile broadband use; mid-band spectrum, including the AWS-3 bands, has been in persistent demand.[72] In the 2015 auction, wireless service providers paid over $41 billion for AWS-3 licenses. Since that auction, service providers have acquired AWS-3 spectrum through the secondary market.[73] During the COVID-19 pandemic, the FCC granted a few providers permission to use the AWS-3 licenses in the FCC's inventory to meet increased demands for wireless services.[74]

On the other hand, since 2015, the U.S. government has made several mid-band segments available for commercial 5G use through a series of auctions.[75] Wireless service providers have paid over $100 billion for this spectrum, and they have said that their current spectrum holdings are robust and that they have what they need to execute on their business plans.[76] Some experts note that high levels of spending in recent auctions, and high capital expenditures required to

[70] EchoStar Corporation, *Annual Report* (Form 10-K), for the Fiscal Year Ended December 31, 2025, p. 67.

[71] Letter from Sens. Elizabeth Warren and Greg Casar to Abigail Slater, Assistant Attorney General, Antitrust Division, U.S. Department of Justice, and Brendan Carr, Chairman, Federal Communications Commission, December 17, 2025, https://www.warren.senate.gov/imo/media/doc/warren_casar_letter_to_doj_and_fcc_on_att_and_spacex_acquiring_echostar_spectrum.pdf.

[72] For a description of mid-band spectrum, see Nokia, "5G Spectrum Bands Explained—Low, Mid and High Band," https://www.nokia.com/thought-leadership/articles/spectrum-bands-5g-world/. (Noting that "mid-band spectrum (1 GHz-6 GHz) is considered perfect for 5G because it can carry plenty of data while traveling significant distances.")

[73] Mike Dano, "Verizon to Acquire More AWS-3, mmWave Spectrum," *Light Reading*, October 18, 2019, https://www.lightreading.com/5g/verizon-to-acquire-more-aws-3-mmwave-spectrum.

[74] FCC, "FCC Grants AT&T and Verizon Further Temporary Spectrum Access to Keep Americans Connected During Coronavirus Pandemic," March 20, 2020, https://docs.fcc.gov/public/attachments/DOC-363211A1.pdf.

[75] This includes the 3.5 GHz auction, known as Citizen Broadband Radio Service, or CBRS (2020); 3.7 GHz auction, known as the C-band (2021); 3.45 GHz band (2022); and 2.5 GHz band (2022). See also Sydney Price and David DiMolfetta, "Big 4 Wireless Carriers Spent $100B on 5G Spectrum: Was It Worth It?," *S&P Global*, February 24, 2022, https://www.spglobal.com/ratings/en/research/articles/220224-credit-faq-will-big-spending-in-spectrum-auctions-and-higher-capex-squeeze-u-s-wireless-carriers-12283967.

[76] For example, see "AT&T Has 'Really Deep' Spectrum Holdings Ahead of Auctions: CFO," *Communications Daily*, February 25, 2026, https://communicationsdaily.com/article/2026/02/25/att-has-really-deep-spectrum-holdings-ahead-of-auctions-cfo-2602240068?BC=bc_69aee21b9a48b; and Howard Buskirk, "CFO: Verizon Has the Spectrum It Needs to 'Execute on Our Strategy'," *Communications Daily*, February 25, 2026, https://communicationsdaily.com/article/2026/02/25/cfo-verizon-has-the-spectrum-it-needs-to-execute-on-our-strategy-2602240009?BC=bc_69aee21b9a48b. (Link requires paid subscription.)

build out networks, have increased debt loads of telecommunication providers, which may affect their willingness or ability to bid in the AWS-3 auction or future auctions.[77]

Wireless industry groups continue to assert that there is a shortage of mid-band spectrum[78] and that more spectrum is needed to keep pace with existing and future needs[79] and with global economic competitors, such as China.[80] Throughout the two-year lapse in the FCC's spectrum auction authority, when no spectrum was auctioned, providers continued to pursue additional spectrum through the secondary market. For example, in November 2025, EchoStar announced that it agreed to sell some of its AWS-3 spectrum licenses to SpaceX for approximately $2.6 billion.[81]

Given the persistent demand for spectrum, including AWS-3 licenses, some analysts expect high demand for the remaining AWS-3 licenses, especially those that cover major market areas such as New York, Boston, and Chicago.[82] The highest levels of interest may come from entities already holding AWS-3 spectrum; acquiring additional spectrum would give carriers large blocks of valuable mid-band spectrum that they could use to increase capacity on current networks or expand coverage in uncovered areas.[83] Demand may also come from other providers seeking to offer new services. For example, SpaceX, a satellite service provider, was one of 19 entities that filed an application to bid in the June AWS-3 auction.[84] SpaceX's interest and investment in AWS-3 could enable new satellite services, including satellite direct-to-device (D2D).[85]

Of particular interest to Congress may be how the AWS-3 rules (e.g., bidding rules) may affect the bidding pool and proceeds, given the proceeds are to be used to repay funds borrowed for the

[77] Sydney Price and David DiMolfetta, "Big 4 Wireless Carriers Spent $100B on 5G Spectrum: Was It Worth It?," *S&P Global*, February 24, 2022.

[78] CTIA, "Comments of CTIA," March 31, 2025, pp. 2-4, https://www.fcc.gov/ecfs/document/10331067706386/1.

[79] Verizon, *Annual Report* (Form 10-K), February 17, 2026, p. 7, https://quotes.quotemedia.com/data/downloadFiling?webmasterId=104600&ref=319784780&type=HTML&formType=8-A12B&formDescription=Registration+of+securities+%5BSection+12%28b%29%5D&dateFiled=2026-03-05&cik=0000732712. (Citing demands from growth in customer connections, increased data use, artificial intelligence (AI) driven data demands, and future transition to 6G services.)

[80] U.S. Congress, House Energy and Commerce Committee, Communications and Technology Subcommittee, *Strengthening American Leadership in Wireless Technology*, 119th Cong., 1st sess., January 23, 2025. (See documents submitted for the record from stakeholders documenting need for additional spectrum and recommending equal access, at https://www.congress.gov/119/meeting/house/117838/documents/HHRG-119-IF16-20250123-SD5585.pdf); see also National Economic Research Associates (NERA), *The Economic Impact of Each Additional 100 MHz of Mid-Band Spectrum for Mobile*, January 22, 2025, p. 30, https://api.ctia.org/wp-content/uploads/2025/01/The-economic-impact-of-allocating-mid-band-spectrum-to-mobile.pdf (prepared for CTIA, a wireless industry association).

[81] EchoStar, "EchoStar Agreed to Sell Full Unpaired AWS-3 Spectrum License Portfolio to SpaceX," press release, November 6, 2025, https://ir.echostar.com/news-releases/news-release-details/echostar-agrees-sell-full-unpaired-aws-3-spectrum-license.

[82] Spektrum Metrics, "Which AWS-3 Licenses Are at the Center of the FCC-Dish Decision?," *Spectrum Blog*, November 19, 2020, https://www.spektrummetrics.com/blogs/spectrum-blog/which-aws-3-licenses-are-at-the-center-of-the-fcc-dish-decision. See also Phil Goldstein, "Analysts: Bidding in NYC, LA and Chicago in AWS-3 Auction Is 94% Above Average Prices," *Fierce Wireless*, December 19, 2014, https://www.fierce-network.com/wireless/analysts-bidding-nyc-la-and-chicago-aws-3-auction-94-above-average-prices (noting that bidding for licenses in the major markets of New York City, Los Angeles, and Chicago were 94% above average prices in the first AWS auction).

[83] Mike Dano, "AT&T Could Buy More AWS-3 Spectrum Next Year," *Light Reading*, December 13, 2024, https://www.lightreading.com/5g/at-t-could-buy-more-aws-3-spectrum-next-year.

[84] FCC, "Auction 113 (AWS-3) Applications Status," March 26, 2026, https://www.fcc.gov/document/auction-113-aws-3-application-status. SpaceX filed under a subsidiary, Space Exploration Holdings, LLC.

[85] D2D allows devices (e.g., smartphones) to connect directly with satellites for enhanced coverage. For more information, see CRS In Focus IF13198, *Satellite Direct-to-Cellular (D2C) Service: Emergence, Use Cases, and Considerations for Congress*, by Colby Leigh Pechtol.

"rip-and-replace" program and other initiatives. Congress may be interested in monitoring the AWS-3 auction demand and outcomes, as it may serve as a bellwether for future spectrum auctions, including those required in P.L. 119-21, the FY2025 reconciliation act, commonly called the One Big Beautiful Bill Act.[86]

Bidding Credit Considerations

Bidding credits are discounts applied to winning bid amounts. Per FCC rules, the FCC can set limits (or caps) on discounts that winning bidders can receive on an auction-by-auction basis.[87] For the 2026 AWS-3 auction, the FCC extended bidding credits to eligible small businesses and very small businesses, and to rural service providers, and placed caps on total bidding credit discounts they can receive.[88] The FCC may also adopt a market-based cap on an auction-by-auction basis to establish an overall limit on the discount that a small business may receive on bids in certain license areas. For the 2026 AWS-3 auction, the FCC placed a cap of $10 million in bidding credit discounts in total for auction licenses won in markets with a population of 500,000 or fewer.

Some entities had issues with FCC eligibility requirements for small businesses. The Rural Wireless Association supported the bidding credits as proposed by the FCC, stating that they would provide rural carriers with a "more level playing field," support smaller-scale deployment in remote and rural markets, and avoid concentration of licenses with the largest carriers.[89] The Competitive Carriers Association (CCA)—representing large-scale wireless carriers; small, rural wireless providers; and vendors and suppliers of telecommunications equipment—supported the rural service provider credit and requested that the FCC increase the average gross revenue thresholds it uses to define small and very small businesses. CCA argued that the thresholds set in the 2015 rules do not reflect rising costs and that a "carrier with the same number [of] employees and serving the same number of customers in 2025 as in 2015 may no longer qualify as a small business due to inflation alone."[90] CCA argued that in order for the FCC to fulfill its mandate to disseminate licenses among a wide variety of applicants,[91] including small businesses, the FCC could increase its qualifying revenue thresholds to allow small businesses to obtain spectrum and to avoid concentration of licenses with a few large wireless providers. CCA also asserted that rural service providers should be granted the same credit as very small businesses.[92]

Some commenters to the NPRM argued that the same small business rules used in the 2015 AWS-3 auction should be used in the 2026 auction. Council Tree Investors—a private equity firm that invested in Northstar—and EchoStar (which acquired DISH) argued that the FCC must adopt the same rules that were in place for the 2015 auction, citing legal standards asserting that the defaulter should not be liable for a penalty created in part by the FCC's decision to change the

[86] For more information on the spectrum provisions in P.L. 119-21, see CRS Report R48862, *Spectrum Provisions in P.L. 119-21, the FY2025 Reconciliation Law*, by Jill C. Gallagher.

[87] 47 C.F.R. §1.2110(f)(2)(ii).

[88] FCC, *Small Entity Compliance Guide*, February 4, 2026, p. 5, https://docs.fcc.gov/public/attachments/DA-26-112A1.pdf.

[89] Rural Wireless Association, "Comments of the Rural Wireless Association, Inc.," March 31, 2025, p. 2, https://www.fcc.gov/ecfs/document/10331100287975/1.

[90] Competitive Carriers Association (CCA), "Comments of the Competitive Carriers Association," March 31, 2025, pp. 4-6, https://www.fcc.gov/ecfs/document/103312342720321/1.

[91] 47 U.S.C. §309(j)(3)(B).

[92] CCA, "Comments of the Competitive Carriers Association," March 31, 2025, p. 8.

rules at the reauction.[93] EchoStar warned of a "cascading impact" from the revised rules that it said would reduce competition among bidders and therefore lessen bidding amounts, which could increase their deficiency payment and have an adverse impact on EchoStar, Northstar, and SNR.[94] EchoStar stated that "these changes include a restrictive cap on bidding credits for small businesses, restrictions on joint bidding, and a prohibition on investments in multiple [designated entities],"[95] which could include small businesses. EchoStar argued that bidding by designated entities (e.g., small businesses) in the previous AWS-3 auction "added more than $20 billion of proceeds to Auction 97, bringing what was expected to be [an] $18 billion auction up to $45 billion"; the company argued that allowing more bidders led to higher auction proceeds.[96] Council Tree argued many of the same points, including that the rules should be the same as those used under the first auction, and asserted that two auctions (i.e., the 2015 auction and the reauction) are inextricably linked. Council Tree also argued that the FCC should consider the impact of any rule changes on Northstar and SNR and on FCC's obligation to repay the $3.08 billion to the U.S. Treasury borrowed for the rip-and-replace program.[97]

Some entities requested a category and credit for even smaller businesses. WISPA—the Association for Broadband Without Boundaries, which represents wireless internet service providers, infrastructure companies, equipment suppliers, and other broadband industry stakeholders—asked the FCC to consider a bidding credit for a smaller category of business (those with revenues not exceeding $4 million per year).[98] WISPA agreed with other commenters that the revenue thresholds should be adjusted for inflation and that bidding credits for small rural service providers should be increased. It did not agree that the FCC must use the same rules that were used in the 2015 auction, instead arguing that elements of the 2015 auction enabled small businesses to participate and that if there is concern that auction proceeds could be limited under the current rules, then one way to increase proceeds is to increase participation. WISPA suggested that increased participation could be incentivized by adjusting the average gross revenues, increasing the bidding credit, and raising the caps on credits that small businesses can receive.[99]

Congress has directed the FCC to design spectrum auctions that support the development of new technologies, promote economic opportunity and competition, make new technologies available to the public, avoid excessive concentration of licenses, disseminate licenses among a wide variety of applicants, recover for the public a portion of the value of spectrum, and, generally, protect the public interest.[100] Thus, the FCC has some discretion in setting terms and conditions of spectrum auctions. Congress may have an interest in the AWS-3 auction rules and their impact on congressional priorities. For example, in terms of the bidding credits for small and rural businesses, some commenters, especially groups representing small businesses, support them and see them as a way to increase participation in the auction, which could increase competition and

[93] EchoStar Corporation, "Comments of EchoStar Corporation," March 31, 2025, pp. 1-3, https://www.fcc.gov/ecfs/document/103310668313401/1; Council Tree Investors, Inc., "Council Tree Comments on AWS-3 Reauction," March 31, 2025, pp. 9-10, https://www.fcc.gov/ecfs/document/1033169314433/1.

[94] EchoStar Corporation, "Comments of EchoStar Corporation," March 31, 2025, p. 2.

[95] EchoStar Corporation, "Comments of EchoStar Corporation," March 31, 2025, p. 2.

[96] EchoStar Corporation, "Comments of EchoStar Corporation," March 31, 2025, p. 2. The $45 billion was gross bids; the net bidding was about $41 billion.

[97] Council Tree Investors, Inc. "Council Tree Comments on AWS-3 Reauction," March 31, 2025, pp. 12, 15, https://www.fcc.gov/ecfs/document/1033169314433/1.

[98] WISPA – The Association for Broadband Without Boundaries, "Reply Comments of WISPA – *The Association for Broadband Without Boundaries*," April 14, 2025, https://www.fcc.gov/ecfs/document/104141281613660/1.

[99] WISPA – The Association for Broadband Without Boundaries, "Reply Comments of WISPA – *The Association for Broadband Without Boundaries*," April 14, 2025, pp. 3-5.

[100] 47 U.S.C. §309(j)(3).

auction proceeds; others support the bidding credits but say the restrictions on bidders (e.g., revenue caps, caps on credits that the small business can receive) in the proposed rules could limit the ability of some entities to participate in the auction and limit proceeds. Still others—generally larger telecommunications providers—argue that expanding small business eligibility (e.g., increasing revenue limits, eliminating caps) could reduce the net proceeds and affect the funds available to repay the $3.08 billion borrowed for the rip-and-replace program and help reduce the federal deficit.[101] Congress may consider whether the FCC's proposed rules concerning small and rural businesses strike the balance between promoting competition and generating revenue.

EchoStar and Council Tree raised issues with the FCC's authority to adopt new auction rules and the FCC's notice of such changes; they urged the FCC to use the same rules applied to the 2015 auction.[102] They cited the recent Supreme Court decision in *Loper Bright Enterprises v. Raimondo*, which may limit agency regulatory authorities.[103] In that case, the Court directed the reviewing court to exercise its independent judgment about the meaning of ambiguous statutes rather than deferring to federal agencies' reasonable interpretations of ambiguous statutory provisions.[104] As stated, EchoStar has petitioned the Tenth Circuit Court of Appeals, asking it to vacate the FCC's July 2025 Order and to direct the FCC to either preserve the rules it used in the first AWS-3 auction or, if the rules are changed, to remove the guaranty and associated obligations of EchoStar and its subsidiaries. Although EchoStar and the FCC were granted a joint motion to hold the case in abeyance, "pending the conclusion of negotiations between the parties that could obviate the need for litigation,"[105] a resolution has not been announced. An updated report to the court, filed on April 14, 2026, indicated that the two entities are still in active negotiations to resolve the issue.[106] A consequence of such legal action may be that the auction is delayed or prolonged.

For this and future auctions, Congress could specify auction terms and conditions in legislation, including small business credits and tribal windows. Congress could defer to the FCC on these decisions and allow the FCC to exercise its authority and discretion to develop auction rules that it deems are in the public interest. Some Members representing rural regions may be interested in ensuring small, rural telecommunication providers can participate in spectrum auctions, to meet rural needs and to avoid consolidation of spectrum with the largest providers.[107] Other Members

[101] Commenters argue that the proposed rules could limit bidding, which could also affect the obligation of the previous bidders to compensate the FCC for the difference between their total winning bid in the first auction and the amount the FCC receives when it reauctions the spectrum.

[102] Comments of Council Tree Investors, Inc. to the FCC (Docket No. 25-117), *Public Notice, DA-25-193: Auction of Advanced Wireless Services (AWS-3) Licenses*, April 10, 2025, pp. 4-5, https://www.fcc.gov/ecfs/document/104101182503084/1; and Comments of EchoStar Corporation to the FCC (Docket No. 25-117), *Auction of Advanced Wireless Services (AWS-3) Licenses*, April 10, 2025, pp. 19-21, https://www.fcc.gov/ecfs/document/104103056916036/1.

[103] CRS Report R48320, *Loper Bright Enterprises v. Raimondo and the Future of Agency Interpretations of Law*, by Benjamin M. Barczewski.

[104] CRS In Focus IF12754, *Federal Communications Commission: Agency Regulatory Authority and Selected Rules*, by Colby Leigh Pechtol, Patricia Moloney Figliola, and Peter J. Benson.

[105] *EchoStar Corporation v. FCC*, No. 25-9567 (10th Cir., Oct. 15, 2025).

[106] *EchoStar Corporation, Petitioner v. Federal Communications Commission and United States of America, Respondents* (No. 25-9567), (Joint Status Report), April 14, 2026.

[107] U.S. Congress, House Energy and Commerce Committee, Communications and Technology Subcommittee, *Oversight of the Federal Communications Commission*, 119th Cong., 2nd sess., January 14, 2026. See Responses to Questions for the Record submitted to Chairman Carr by Rep. Robert Latta, p. 1, https://www.congress.gov/119/meeting/house/118825/witnesses/HHRG-119-IF16-Wstate-CarrB-20260114-SD194949.pdf (discussing participation of small businesses in spectrum auctions).

may be more interested in maximizing spectrum auction proceeds, as spectrum is a public resource, and proceeds could be used in the public interest, such as to reduce the deficit.

Tribal Licensing Window

The 2025 NPRM sought comment on creating a tribal licensing window, including whether the statute (P.L. 118-159) permits a tribal broadband window and, more generally, whether a tribal window is suitable in this auction, given that, by law, the proceeds must be used to repay the $3.08 billion borrowed for the rip-and-replace program. The FCC sought input on any impact that creating a tribal licensing window may have on the auction, but ultimately declined to adopt a tribal priority window prior to the AWS-3 auction.

During the comment period for the NPRM, CTIA—The Wireless Association, which represents large wireless service providers, urged the FCC to dismiss calls for a tribal window; it argued that the Communications Act of 1934, as amended, directs the FCC "to assign spectrum licenses by auction where there are mutually exclusive applications, absent limited exceptions that do not include this type of carve-out."[108] CTIA noted that Congress authorized the FCC to use some mechanisms to expand access to spectrum, such as bidding credits, but not a "priority window that would assign licenses without an auction."[109] It argued that P.L. 118-159 required the FCC to initiate a system of competitive bidding and that removing some of the AWS-3 spectrum from the inventory is contrary to congressional direction. CTIA emphasized the success of the first AWS-3 auction, which offered exclusive high-powered spectrum for commercial use, generating $41 billion, and urged the FCC to offer the same for the next AWS-3 auction. Last, it argued that creating a tribal licensing window would slow the auction and generate less in proceeds, which is not in the public interest.

Tribal groups and public advocacy organizations, filing jointly, supported the tribal window. Some cited Title 47, Section 309(j)(3), of the *U.S. Code*, which states that any system of competitive bidding "shall seek to promote the purposes specified in [47 U.S.C. §151]," which is to "make available, so far as possible, to all the people of the United States," wired and wireless communication services with "adequate facilities at reasonable charges." Commenters argue that this includes people who reside on or visit tribal lands. They assert that "carriers have historically displayed little or no interest in serving Tribal lands" and that offering "a new class of extremely small, well-defined licenses that cover Tribal lands" would be in the public interest and should not significantly impact the auction.[110] The Navajo Nation Telecommunications Regulatory Commission noted that there is precedent in granting a tribal priority window. The FCC established a tribal priority window in a 2010 proceeding involving noncommercial radio stations, and in 2019 in the 2.5 GHz auction, where 176 tribes gained pre-auction access to spectrum to support broadband deployment and services in rural tribal areas. Further, it stated that nothing in P.L. 118-159 precludes the FCC from creating a tribal licensing window.[111]

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[108] CTIA, "Comments of CTIA," March 31, 2025, p. 2, https://www.fcc.gov/ecfs/document/10331067706386/1. (CTIA cites 47 U.S.C. §309(j)(1).)

[109] CTIA, "Comments of CTIA," March 31, 2025, p. 6, https://www.fcc.gov/ecfs/document/10331067706386/1.

[110] National Congress of American Indians et al., "Comments of National Congress of American Indians, Tribal Digital Village Network, Tribalbroadbandbootcamp.Org, Public Knowledge, Institute for Local Self-Reliance, X-Labs, Benton Institute for Broadband and Society, and Open Technology Institute at New America," March 31, 2025, pp. 5-8, https://www.fcc.gov/ecfs/document/1033167864849/1. See also Navajo Nation Telecommunications Regulatory Commission (NNTRC), "Reply Comments of the Navajo Nation Telecommunications Regulatory Commission," April 14, 2025, pp. 4-5, https://www.fcc.gov/ecfs/document/104150835401066/1.

[111] NNTRC, "Reply Comments of the Navajo Nation Telecommunications Regulatory Commission," April 14, 2025, pp. 4-5, https://www.fcc.gov/ecfs/document/104150835401066/1.

In its final rules, the FCC determined that it would not be in the public interest to implement a tribal licensing window for the AWS-3 auction, citing directives in the Innovation Act to auction the spectrum in 18 months and to use the proceeds to fully fund the "rip-and-replace" program.[112]

The U.S. government has acknowledged challenges in deploying communications services in tribal lands and has recommended that the FCC undertake efforts to promote tribal access to spectrum.[113] The U.S. government has acted to make spectrum available through previous tribal windows, through specific grant programs aimed at supporting broadband deployment, through federal agency efforts to provide technical assistance, and through a memorandum of agreement among the Department of the Interior, the Department of Commerce, and the FCC to promote the development and deployment of broadband over tribal lands, including expanding access to spectrum.[114] The FCC has supported this effort through tribal licensing windows, which tribal entities say allows tribes to build out broadband infrastructure, better serve their communities, and become more self-reliant; some tribal groups have argued for tribal licensing windows in every auction—a proposal that CTIA opposes.[115]

In designing spectrum auctions, the FCC is mandated to protect the public interest, support the development of new technologies, promote economic opportunity and competition, and disseminate licenses among a wide variety of applicants.[116] In making decisions on spectrum allocations, the FCC may not base a finding of public interest on the expectation of federal revenues from an auction.[117] Yet, in the Innovation Act, Congress requires that proceeds from the AWS-3 auction be used to repay the $3.08 billion borrowed for the rip-and-replace program, and to fund technology hubs; thus, for the AWS-3 auction, the FCC has to consider how the design or terms and conditions of the AWS-3 auction may affect proceeds, as P.L. 118-159 requires that $3.3 billion in proceeds be used to (1) repay the $3.08 billion borrowed for the "rip-and-replace" program and (2) fund $220 million for innovation hubs. For future auctions, options for Congress could include codifying a provision in spectrum-related legislation authorizing or prohibiting tribal licensing windows in spectrum auctions or directing or deferring to the FCC to decide when tribal windows are appropriate and in the public interest, as it did with the AWS-3 auction.

Reallocation of Spectrum from Federal Agencies

A challenge in reallocating spectrum is the time it takes to identify optimal spectrum bands and bring them to auction, and the time and funding it takes to relocate federal systems from one band to another.[118] In the case of the AWS-3 band, while some agencies had completed their transitions

[112] FCC, "Competitive Bidding Rules for Auction for AWS-3 Licenses," 90 *Federal Register* 36391-36392, August 4, 2025.

[113] U.S. Government Accountability Office, *Tribal Broadband: FCC Should Undertake Efforts to Better Promote Tribal Access to Spectrum*, GAO-19-75, November 14, 2019, https://www.gao.gov/products/gao-19-75.

[114] *Memorandum of Understanding Among the U.S. Department of the Interior and the Federal Communications Commission and the U.S. Department of Commerce, National Telecommunications and Information Administration*, November 23, 2022, https://www.bia.gov/sites/default/files/dup/inline-files/mou_esb46-009818_doi-fcc-ntia_electromagnetic_spectrum_on_tribal_lands_2022-11-23_final_fcc_ntia_doi_signed_508.pdf.

[115] CTIA, "Comments of CTIA," March 31, 2025, pp. 2-3, https://www.fcc.gov/ecfs/document/10331067706386/1.

[116] 47 U.S.C. §309(j)(3).

[117] 47 U.S.C. §309(j)(7).

[118] Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, NTIA, to Tom Wheeler, Chairman, FCC, May 13, 2014, Attachments, https://www.ntia.gov/sites/default/files/publications/notification_to_fcc_re_est_costs_for_1695_and_1755_bands_05132014_0.pdf.

from AWS-3 spectrum before the 2015 auction,[119] transition activities were still under way for others in 2023.[120] Reallocation of spectrum from federal to commercial use is complex and requires planning, coordination, testing, and time. Congress has, in the past, proposed legislation to expand use of the SRF to incentivize federal agencies to identify spectrum that could be reallocated from federal to nonfederal use or shared between federal and nonfederal users, and to provide funding to upgrade agency systems.[121] In the 119th Congress, legislation has been introduced (H.R. 651) to streamline the process for making funds available to federal agencies.[122] A benefit from streamlining could be that spectrum may come to auction sooner; the challenge is that agencies and oversight bodies may need time to carefully assess and relocate federal systems to ensure federal missions are preserved and protected from interference. In adopting spectrum legislation, Congress may consider timelines for identifying new spectrum, relocating current users, and auctioning spectrum, to give the FCC, federal agencies, and private-sector bidders time to manage spectrum repurposing.

Spectrum Sharing

In 2014, NTIA—through its Commerce Spectrum Management Advisory Committee—evaluated sharing between the commercial mobile systems and federal systems operating in the 1755-1850 MHz band, which was paired with the 2155-2180 MHz band already allocated for commercial mobile use.[123]

The AWS-3 license rules defined coordination zones around federal agency stations and required carriers to coordinate with federal agencies operating in these zones during the 10-year transition period. Carriers were required to submit requests to agencies to ensure that planned commercial operations would not interfere with federal operations. When coordination requests are submitted to DOD, the agency may perform interference analysis to determine whether proposed tower locations are compatible with existing DOD assets operating in the 1755-1780 MHz band and whether transmissions from mobile users would create a risk to DOD systems and capabilities.[124]

In a 2019 paper, researchers asserted that the Defense Information Systems Agency's Defense Spectrum Organization spearheaded testing and improvements in spectrum sharing for many years through its Spectrum Sharing Test and Demonstration Program—formed to help DOD

[119] NTIA, *Commercial Spectrum Enhancement Act, Annual Progress Report for 2023*, September 2024, p. 13, https://www.ntia.gov/sites/default/files/2024-10/2023-csea-report.pdf. The eight agencies are the U.S. Capitol Police; National Oceanic and Atmospheric Administration in the Department of Commerce; Department of Housing and Urban Development; Federal Aviation Administration in the Department of Transportation; National Aeronautics and Space Administration; Department of the Treasury; U.S. Agency for International Development; and Department of Veterans Affairs.

[120] NTIA, *Commercial Spectrum Enhancement Act, Annual Progress Report for 2023*, September 2024, p. 13. The report states that "Army has two systems (Army Telemetry and Army Video) that did not meet their scheduled August 14, 2022, spending timeline deadline and are considered delayed. Army is working with [the Department of Defense Chief Information Officer] on a submission to extend the spending timelines to 2025 in order to complete the projects."

[121] For example, see H.R. 3430 (118th Congress) and H.R. 651 (119th Congress).

[122] NTIA, *Annex O: Procedures and Guidance Related to the Spectrum Relocation Fund and Transition Activities in Support of Relocation of Sharing by Federal Government Stations*, January 2021, https://www.ntia.doc.gov/files/ntia/publications/o_21_1.pdf (see Figure 1, "Transition Planning Process." p. O-5). H.R. 651 (119th Congress) amends this process, reducing most steps allotting reviewing agencies 30 days to 15 days.

[123] Commerce Spectrum Management Advisory Committee, Working Group 5 (WG-5), *1755-1850 MHz Airborne Operations*, March 2014, https://www.ntia.doc.gov/files/ntia/publications/wg5_final_report_posted_03042014.pdf.

[124] Howard McDonald et al., "AWS-3 Interference Mitigation: Improving Spectrum Sharing with LTE & 5G Uplink Spectrum Control," 2019 IEEE Military Communications Conference (MILCOM), Norfolk, VA, USA, pp. 102-107, https://ieeexplore.ieee.org/document/9020877.

transition out of the AWS-3 band. They asserted the same coordination and interference mitigation techniques used in the AWS-3 band could enable sharing in other bands and "improve [DOD] tactical communications operations in constrained, congested, and contested spectrum environments where [DOD] is taking advantage of LTE and 5G technology in the future."[125]

Considering increasing demands for spectrum and limited free and available spectrum, Congress may be interested in developing spectrum sharing approaches. Bills to fund research on such approaches have been introduced in previous Congresses.[126] Options include supporting specific spectrum sharing approaches or researching and developing new spectrum sharing approaches, including techniques used in the AWS-3 band, to facilitate sharing in other bands and to accommodate 5G use for commercial and DOD use. Of particular interest to Congress may be satellite service providers' interest in AWS-3 and other mobile spectrum. As satellite service providers are developing new satellite-to-cell technologies, use of bands for dual services may result in new services for consumers, new industry developments for U.S. providers, and more efficient spectrum use. A challenge in promoting dual use is that new uses could create harmful interference to existing users, which can disrupt or degrade communications. Congress could opt to fund spectrum research and development to promote new uses, direct the FCC to facilitate new technology solutions, periodically assess new sharing opportunities, or allow private industry to continue to cooperate on new technology offerings, with limited or no government intervention.

Funding for the Rip-and-Replace Program

A consideration for Congress is whether the $3.08 billion authorized to be borrowed in P.L. 118-159 is enough to cover the existing rip-and-replace projects. The projects were first funded in 2020. In July 2022, the FCC provided each network operator with funds to cover about 40% of its costs.[127] Over time, costs increased. In 2023, industry associations reported that networks could "go dark" without additional funding.[128] In 2024, one provider said the partial funding has delayed planning, permitting, and contracting, and additional time may be needed to restart projects, which may affect costs.[129] One consulting firm said initial estimates were made in 2021 and do not account for inflation, which they calculated at 14% since costs were first estimated.[130]

On April 15, 2025, the FCC announced that it borrowed the full amount authorized under P.L. 118-159 and has made funding available to existing rip-and-replace applicants.[131] The FCC made disbursements from this allocation on May 8, 2025, and set a deadline for completion by May 8,

[125] Howard McDonald et al., "AWS-3 Interference Mitigation: Improving Spectrum Sharing with LTE & 5G Uplink Spectrum Control," 2019 IEEE Military Communications Conference (MILCOM), Norfolk, VA, USA, p. 102.

[126] For example, see H.R. 1677 (118th Congress) and S.Amdt. 6585 (117th Congress), neither of which were enacted.

[127] FCC, "Wireline Competition Bureau Announces the Grant of Applications for the Secure and Trusted Communications Networks Reimbursement Program," July 18, 2022, https://docs.fcc.gov/public/attachments/DA-22-774A1.pdf.

[128] Linda Hardesty, "Without Funds to Replace Huawei Gear, Some Rural Areas Could Go Dark," *Fierce Network*, November 18, 2022, https://www.fierce-network.com/wireless/without-funds-replace-huawei-gear-some-rural-areas-could-go-dark.

[129] For example, see Northern Michigan University's [Supply Chain Reimbursement Program] Term Extension Request (pp. 8, 10), detailing the impact of partial funding, at https://www.fcc.gov/ecfs/document/102555842173/1.

[130] Letter from J. Armand Musey, President, Summit Ridge Group, to Marlene H. Dortch, Secretary, FCC, April 2, 2024, https://www.fcc.gov/ecfs/document/104021231018469/1.

[131] FCC, "Wireline Competition Bureau Announces Availability of Additional Funding for the Rip-and-Replace Program," April 15, 2025, https://docs.fcc.gov/public/attachments/DA-25-342A1.pdf.

2026.[132] In December 2025, the FCC submitted its seventh report to Congress on the program.[133] The FCC reported that 13 of the 126 recipients have permanently removed the untrusted equipment. While recipients report some challenges in completion including labor shortages, weather-related challenges, and review times in processing reimbursement claims, the FCC reports that "lack of funding" is no longer cited by recipients as an obstacle to completion.[134]

A March 2026 audit conducted by the FCC Office of Inspector General identified financial and security risks associated with the program, including issues with (1) the self-certification process for program eligibility (i.e., verifying that applicants had purchased covered equipment made by Huawei and ZTE); (2) reimbursement for disposal activities without assurance the equipment was "removed, disposed of, and rendered inoperable"; and (3) the adequacy of controls over reimbursement of project management fees without adequate support that costs were incurred.[135] Congress may wish to continue to provide oversight of the program to ensure the funds provided cover the cost of removing and replacing untrusted equipment from U.S. networks, many of which are in rural regions, and that projects are completed on time.[136]

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Disclaimer

[132] FCC, "Wireline Competition Bureau Reminds Rip-and-Replace Program Recipients of the Necessary Steps to Complete Program Participation," April 20, 2026, https://docs.fcc.gov/public/attachments/DA-26-386A1.pdf.

[133] FCC, *Secure and Trusted Communications Networks Reimbursement Program Seventh Report*, December 19, 2025, https://docs.fcc.gov/public/attachments/DOC-416757A1.pdf.

[134] FCC, *Secure and Trusted Communications Networks Reimbursement Program Seventh Report*, December 19, 2025, p. 8, https://docs.fcc.gov/public/attachments/DOC-416757A1.pdf.

[135] FCC Office of Inspector General, "FCC OIG Advisory Regarding Fraud Risks in FCC's 'Rip and Replace' Program," March 2026, p. 1, https://www.fcc.gov/sites/default/files/FCC%20OIG%20Advisory%20Regarding%20Fraud%20Risks%20in%20FCC%26%23039%3Bs%20Rip%20and%20Replace%20Program%20FINAL.pdf.

[136] For a map of affected sites, see U.S. Congress, Senate Committee on Commerce, Science, and Transportation, "FCC Report Shows Urgency to Pass Spectrum and National Security Act," press release, July 9, 2024, https://www.commerce.senate.gov/2024/7/fcc-report-shows-urgency-to-pass-spectrum-and-national-security-act.