

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)
)
Reallocation of 470-512 MHz (T-Band) Spectrum) PS Docket No. 13-42

NOTICE OF PROPOSED RULEMAKING

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I. INTRODUCTION

1. For decades, public safety entities and other private land mobile radio service users have relied on spectrum associated with broadcast television channels 14-20 (470-512 MHz or T-Band) to help

meet their internal communications needs in eleven major urbanized areas across the United States. Nonetheless, Section 6103 of the Middle Class Tax Relief and Job Creation Act of 2012 (T-Band Mandate)¹ directs us to reallocate T-Band spectrum used by “public safety eligibles” and begin a system of competitive bidding to grant new initial licenses for the use of the spectrum by February 22, 2021,² to relocate these public safety entities from the T-Band no later than two years after completion of the system of competitive bidding, and to make auction proceeds available to the National Telecommunications and Information Administration (NTIA) to make grants as necessary to cover relocation costs for the public safety entities for which the statute requires relocation.³

2. This Notice of Proposed Rulemaking (*Notice*) is the commencement of the process to meet each of the statutory deadlines and directives. We seek comment on reallocating T-Band spectrum, assigning new licenses by auction for the 6 megahertz to 18 megahertz of spectrum that is potentially available in each of the eleven urbanized areas, and relocating “public safety eligibles” from the T-Band. Specifically, we propose rules that would allow for flexible use in the auctioned T-Band, including wireless (fixed or mobile) use. We also propose to permit broadcast operations and seek comment on how best to facilitate this and other potential uses. We seek comment on transition mechanisms and costs for relocating public safety eligibles from the T-Band, including whether to transition these licensees only where auction revenues exceed anticipated transition costs. We also propose an auction framework and licensing, operating, and technical rules for the reallocated spectrum that would preserve the current environment for incumbents remaining in the T-Band. Finally, we seek comment on how to best address the non-public safety operations in the T-Band to maximize opportunities for new entrants, including whether and how to transition non-public safety operations.

II. BACKGROUND

A. Allocation and Use of T-Band Frequencies

3. In 1970, the Commission allocated spectrum in the 470-512 MHz band in certain “major urbanized areas” for sharing between broadcast television and “public safety, industrial, and land transportation” private land mobile radio services (PLMR).⁴ The Commission did so to address spectrum shortages and congestion in certain urbanized areas for those services and to anticipate future PLMR growth and spectrum needs.⁵ Today, T-Band spectrum is assigned to Public Safety Pool and Industrial/Business PLMR operations in the following eleven urbanized areas: Boston, MA; Chicago, IL; Dallas/Fort Worth, TX; Houston, TX; Los Angeles, CA; Miami, FL; New York, NY/NE NJ;

¹ Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6103, 126 Stat. 156, 205-206 (2012), (codified at 47 U.S.C. § 1413) (Spectrum Act).

² *Id.* § 6103(a).

³ *Id.* § 6103(a)-(c).

⁴ *Amendment of Parts 2, 89, 91, and 93; Geographic Reallocation of UHF TV Channels 14 Through 20 to the Land Mobile Radio Services for Use Within the 25 Largest Urbanized Areas of the United States; Petition Filed by the Telecommunications Committee of the National Association of Manufacturers to Permit Use of TV Channels 14 and 15 by Land Mobile Stations in the Los Angeles Area*, Docket No. 18261, RM-566, First Report and Order, 23 F.C.C.2d 325, 339, para. 31 (1970) (*T-Band Allocation First Report and Order*); see also *Amendment of Parts 2, 21, 89, 91, and 93 of the Commission’s Rules and Regulations to Extend Land Mobile/UHF-TV Sharing, for Channels 14-20 to Houston and Dallas-Fort Worth, Texas, and Miami, Florida*, Docket No. 18261, Fifth Report and Order, 48 F.C.C.2d 360, 365, para. 15 (1974) (expanding sharing to Houston, and Dallas/Ft. Worth, Texas, and Miami, Florida urbanized areas) (*T-Band Allocation Fifth Report and Order*).

⁵ *T-Band Allocation First Report and Order*, 23 F.C.C.2d at 327, para. 4; *T-Band Allocation Fifth Report and Order*, 48 F.C.C.2d at 361, para. 5.

Philadelphia, PA; Pittsburgh, PA; San Francisco/Oakland, CA; and Washington, D.C./MD/VA.⁶ Additionally, in some urbanized areas, T-Band spectrum within the lowest 300 kilohertz of each broadcast television channel is designated for part 22 public mobile service.⁷ Commission rules allow T-Band licensees an operational radius of 128 kilometers (80 miles) from the geographic center of each urbanized area.⁸

4. Each television broadcast channel consists of a 6 megahertz block, with the number and frequency range of broadcast channel(s) open for assignment to T-Band users varying in each urbanized area.⁹ With limited exceptions, T-Band frequency assignments within each broadcast channel are available in the eleven urbanized areas for use by either type of licensee.¹⁰ Paired frequencies are assigned in 12.5 kilohertz or 25 kilohertz bandwidths, with each frequency pair separated by 3 megahertz to avoid interference.¹¹ As a result, Public Safety frequency assignments are interleaved with Industrial/Business frequency assignments in most T-Band channels. T-Band spectrum consists of interleaved narrowband channels and is heavily used by these entities across the eleven urbanized areas. According to Commission licensing records, there are approximately 925 Public Safety licensees with 3,000 stations, and approximately 700 non-public safety entities with 1700 stations throughout the T-Band spectrum.¹² In addition, some entities in the T-Band, both public safety and Industrial/Business, operate through waivers of section 90.305 of the Commission's rules governing location of T-Band stations.¹³ The ratio of public safety to Industrial/Business usage varies from urbanized area to urbanized area.

⁶ 47 CFR § 90.303. Two additional cities, Detroit, MI and Cleveland, OH, were included in the initial allocation but T-Band spectrum was never assigned in those cities due to lack of agreement between the United States and Canada regarding operations in the border areas. *Id.* § 90.303(b) nn. 2-3; *Expanding the Economic and Innovation Opportunities of Spectrum through Incentive Auctions*, GN Docket No. 12-268, Notice of Proposed Rulemaking, 27 FCC Rcd 12357, n.33 (2012) (*Incentive Auctions NPRM*).

⁷ 47 CFR §§ 22.621, 22.651.

⁸ *Id.* § 90.305(a)-(b) (allowing base stations to be located within 80 kilometers (50 miles) of the geographic center and mobile units operated within 48 kilometers (30 miles) of their associated base station or stations).

⁹ Television broadcast channels correlate to spectrum available for assignment to T-Band users as follows: Boston (14, 16); Chicago (14, 15); Dallas/Fort Worth (16); Houston (17); Los Angeles (14, 15, 16, 20); Miami (14); New York (14, 15, 16); Philadelphia (19, 20); Pittsburgh (14, 18); San Francisco/Oakland (16, 17); Washington, D.C. (17, 18). *See* 47 CFR §§ 90.303, 90.311.

¹⁰ In the Los Angeles and New York areas, some T-Band frequency assignments are available only for public safety operations. *See* 47 CFR § 90.303(c) (setting aside the entirety of 482-488 MHz (TV Channel 16) for public safety operations in the following areas: New York City; Nassau, Suffolk, and Westchester counties in New York State; and Bergen County, New Jersey), *County of Los Angeles, California*, File Nos. 0002981309, *et al.*, Order, 23 FCC Rcd 18389 (PSHSB 2008) (granting waiver request by the County of Los Angeles to use broadcast television channel 15 (476-482 MHz) for public safety operations).

¹¹ 47 CFR § 90.311(a). Once a frequency pair is assigned to a category of T-Band user in an urbanized area, that frequency pair is available for assignment only to other entities in the same pool for shared use, subject to loading and spacing criteria. *Id.* § 90.311(a)(2), *see also id.* § 90.311(a), (a)(1)(i-vii) (limiting availability of assignable frequencies to certain part 22 services and seven "categories of users:" 1) "[p]ublic safety (as defined in § 90.20(a));" 2) power and telephone maintenance licensees; 3) special industrial licensees; 4) business licensees; 5) petroleum, forest products, and manufacturers licensees; 6) railroad, motor carrier, and automobile emergency licensees; and 7) taxicab licensees. The Commission's T-Band rules also allow licensees to achieve exclusivity in certain situations, *see* 47 CFR § 90.313.

¹² *See* Universal Licensing System records.

¹³ 47 CFR § 90.305. *See, e.g., Somerset County New Jersey*, Order, 28 FCC Rcd 4321 (PSHSB 2013). These types of waivers range from proximity issues to airborne operations and include approximately 850 sites, plus mobile use and temporary sites.

5. *Public Safety Usage.* Operations using T-Band spectrum provide mission-critical, push-to-talk voice communications for numerous police, fire/emergency medical entities, and other public safety entities. Systems are often designed to support regional interoperability among multiple entities. In most of the eleven urbanized areas, T-Band provides public safety entities with significant and much-needed additional channel capacity to support their operations. Major public safety T-Band licensees include the County of Los Angeles, the New York City Police Department, and the City of Chicago Office of Emergency Management Communications; in the Boston, Los Angeles, Philadelphia, and New York areas, public safety usage of T-Band is significantly greater than Industrial/Business usage.

6. *Industrial/Business Usage.* T-Band spectrum is used by multiple types of business and critical infrastructure entities (e.g., utilities, oil & gas entities, chemical plants) for voice communications and monitoring to support a variety of internal needs. For example, a non-profit organization near Houston holds over 80 Industrial/Business T-Band licenses to operate a centralized trunked voice radio system combining “the fire-fighting, rescue, hazardous material handling, and emergency medical capability of the Houston Ship Channel refining and petrochemical industry,” while hospitals in southeast Florida use T-Band spectrum for security communications.¹⁴ In the Dallas, Houston, Miami, San Francisco, and Washington areas, Industrial/Business usage is heavier than public safety usage. The usage ratio between Industrial/Business entities and public safety entities is about equal in the Chicago and Pittsburgh areas.

B. Statutory Directive and Prior Action

7. In February 2012, Congress enacted the Middle Class Tax Relief and Job Creation Act of 2012.¹⁵ Section 6103, the T-Band Mandate, provides that, not later than February 22, 2021, the Commission shall “(1) reallocate the spectrum in the 470-512 MHz band (referred to in this section as the ‘T-Band spectrum’) currently used by public safety eligibles as identified in section 90.303 of title 47, Code of Federal Regulations;” and “(2) begin a system of competitive bidding under section 309(j) of the Communications Act of 1934 (47 U.S.C. 309(j)) to grant new initial licenses for the use of the spectrum described in paragraph (1).”¹⁶ The statute also provides that proceeds from the auction of T-Band spectrum shall be available to [NTIA] to make grants in such sums as necessary to cover relocation costs for the relocation of public safety entities from the T-Band spectrum.¹⁷ Furthermore, the statute provides that “relocation shall be completed not later than 2 years after the date on which the system of competitive bidding . . . is completed.”¹⁸ In enacting the T-Band Mandate, Congress noted that the years-long timeframe “provide[d] an opportunity for continued assessment of the viability of this transition – and its impact on public safety communications.”¹⁹

8. Prior to commencing this rulemaking, the Commission had taken several interim steps in anticipation of meeting the statutory deadlines. For example, following passage of the T-Band Mandate, the Wireless Telecommunications and Public Safety and Homeland Security Bureaus (collectively, the Bureaus) imposed a freeze on future licensing or expanded operations in the 470-512 MHz band to avoid

¹⁴ Comments of the Land Mobile Communications Counsel, PS Docket No. 13-42, at 4, 6 (filed May 13, 2013).

¹⁵ Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, §§ 6001-6303, 6413, 126 Stat. 156, 201-222, 235-36 (codified at 47 U.S.C. §§ 1401-1443, 1457).

¹⁶ *Id.* § 6103(a).

¹⁷ *Id.* § 6103(b) (“Proceeds (including deposits and upfront payments from successful bidders) from the competitive bidding system described in subsection (a)(2) shall be available to the Assistant Secretary to make grants in such sums as necessary to cover relocation costs for the relocation of public safety entities from the T-Band spectrum.”).

¹⁸ *Id.* § 6103(c).

¹⁹ 158 Cong. Rec. S.889 (daily ed. Feb. 17, 2012) (statement of Sen. John D. Rockefeller).

adding to the cost and complexity of the eventual relocation.²⁰ Based on the potential future migration of T-Band licensees, the Bureaus, with the Office of Engineering and Technology, waived the narrowbanding requirement, which otherwise would have required that Industrial/Business and Public Safety Radio Pool licensees in the T-Band move from a 25 kilohertz to a 12.5 kilohertz bandwidth or use a technology that achieves equivalent efficiency by January 1, 2013.²¹ In February 2013, the Bureaus released a Public Notice in order to gather information to develop a better understanding of feasible options for implementing the auction and relocation mandates.²² In 2014, the Commission made the 700 MHz band Reserve Channels available for public safety use and afforded T-Band public safety licensees priority for licensing.²³ The Commission took similar action in 2018 by affording T-Band licensees priority for three years for licenses in the 800 MHz band interstitial channels.²⁴ Finally, in December 2019, the Bureaus announced a suspension in processing applications to renew T-Band licenses, while allowing licensees with pending renewal applications to continue operating pending implementation of the T-Band Mandate.²⁵

9. In analyzing the T-Band Mandate's potential impact, the Government Accountability Office concluded in 2019 that T-Band relocation poses significant challenges, including uncertainty of available spectrum, high cost, and interoperability concerns, and that implementation of the T-Band Mandate could deprive first responders of their current ability to communicate by radio.²⁶ The National Public Safety Telecommunications Council, in both a 2013 report and a 2016 updated report, calculated the cost to relocate public safety operations from the T-Band would be approximately \$5.9 billion.²⁷

²⁰ *Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau Suspend the Acceptance and Processing of Certain Part 22 and 90 Applications for 470-512 MHz (T-Band) Spectrum*, Public Notice, 27 FCC Rcd 4218, 4218-19 (WTB/PSHSB 2012) (*T-Band Freeze Public Notice*). The Bureaus issued a further clarification of the suspension on June 7, 2012. *Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau Clarify Suspension of the Acceptance and Processing of Certain Part 22 and 90 Applications for 470-512 MHz (T-Band) Spectrum*, Public Notice, 27 FCC Rcd 6087, 6087-88 (WTB/PSHSB 2012).

²¹ *Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended, Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies*, WT Docket No. 99-87, RM-9332, Order, 27 FCC Rcd 4213 (WTB/PSHSB/OET 2012). The Bureaus also waived the prohibition on the continued manufacture and importation of equipment capable of operating with only one voice path per 25 kilohertz of spectrum in the 470-512 MHz band. *Id.*

²² *Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau Seek Comment on Options for 470-512 MHz (T-Band) Spectrum*, PS Docket No. 13-42, Public Notice, 28 FCC Rcd 1130 (WTB/PSHSB 2013).

²³ *Proposed Amendments to the Service Rules Governing Public Safety Narrowband Operations in the 769-775/799-805 MHz Bands*, PS Docket No. 13-87, PS Docket No. 06-229, WT Docket No. 96-86, RM-11433, RM-11577, Report and Order, 29 FCC Rcd 13283 (2014).

²⁴ *Creation of Interstitial 12.5 Kilohertz Channels in the 800 MHz Band Between 809-817/854-862 MHz; Amendment of Part 90 of the Commission's Rules to Improve Access to Private Land Mobile Radio Spectrum*, WP Docket No. 15-32, RM-11572, WP Docket No. 16-261, Report and Order and Order, 33 FCC Rcd 10222, 10242, para. 50 (2018).

²⁵ *Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau Suspend the Processing of Applications to Renew Part 22 and 90 Licenses for Systems Operating on 470-512 MHz (T-Band) Spectrum*, Public Notice, 34 FCC Rcd 11136, 11136-37 (WTB/PSHSB 2019).

²⁶ *Required Auction of Public Safety Spectrum Could Harm First Responder Capabilities*, GAO 19-508 (June 21, 2019), available at <https://www.gao.gov/products/GAO-19-508#summary>.

²⁷ *See* National Public Safety Telecommunications Council, T-Band Report, PS Docket No. 13-42 (filed Mar. 15, 2013) (NPSTC T-Band Report); National Public Safety Telecommunications Council, T-Band Update Report, PS Docket No. 13-42 (filed May 31, 2016) (NPSTC T-Band Update Report). This calculation included costs for items

(continued....)

10. The Commission's own estimates from early 2019 indicated that relocating public safety users from the T-Band would have an estimated cost between \$5 and \$6 billion and that these estimated relocation costs would greatly exceed the total expected revenues from an auction for both wireless use and the provision of broadcast services.²⁸

11. Bipartisan Congressional opposition to the T-Band Mandate has increased as the deadline approaches. Multiple bills have been introduced that would repeal the T-Band Mandate.²⁹ The Subcommittee on Communications and Technology of the Committee on Energy and Commerce of the U.S. House of Representatives recently marked up and reported out a bill that would couple a repeal of the mandate with the elimination of 911 fee diversion,³⁰ as did the Committee on Commerce, Science, and Transportation of the U.S. Senate.³¹ Congressional statements calling for repeal note the critical nature of these public safety communications as well as the substantial concern that the potential value of the spectrum at auction would not cover relocation costs.³² For example, in a recent letter to Senate leadership, eight senators wrote that access to the T-Band "is essential to first responders' ability to protect the public and keep the American people healthy and safe," and urged that the next coronavirus stimulus bill include language repealing the T-Band Mandate.³³

III. DISCUSSION

12. In this proceeding, we propose an approach to implement the T-Band Mandate for the 470-512 MHz band and address a variety of issues, such as an expanded allocation, band plan, spectrum block size, overlay license rights, and license area size, that would allow new flexible-use licensees to make use of the spectrum vacated by the mandatory transition of public safety eligibles. We also address

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such as new towers, cables, antennas, and mobile, portable, and vehicular radios, as well as other cost considerations.

²⁸ A valuation based on comparable broadcast station sales reflected an estimated total of between \$2 and \$3 billion, and a valuation based on an auction of comparable wireless licenses reflected estimated total revenue of \$100-120 million.

²⁹ See, e.g., Don't Break Up the T-Band Act of 2018, H.R. 5085, 115th Cong. § 2 (2018); Don't Break Up the T-Band Act of 2018, S. 3347, 115th Cong. § 2 (2018); Don't Break Up the T-Band Act of 2019, S. 2748, 116th Cong. § 2 (2019); Don't Break Up the T-Band Act of 2019, H.R. 451, 116th Cong. § 2 (2019); 5G Spectrum Act of 2019, S. 2881, 116th Cong. § 4 (2019); FIRST RESPONDER Act of 2020, H.R. 5928, 116th Cong. § 2 (2020); HEROES Act, H.R. 6800, 116th Cong. § 2, Div. M, Title V (2020); Take Responsibility for Workers and Families Act, H.R. 6379, 116th Cong. (2020).

³⁰ *Hearing on H.R. 451, et al. Before the House Comm. on Energy & Commerce Subcomm. on Comm'n & Tech.*, 116th Cong. 1 (2020), <https://docs.house.gov/meetings/IF/IF16/20200310/110726/HMKP-116-IF16-20200310-SD003.pdf> (subcommittee action sheet); <https://docs.house.gov/Committee/Calendar/ByEvent.aspx?EventID=110726> (bill and amendment text).

³¹ *Executive Session of the Senate Comm. on Commerce, Science, and Transportation*, 116th Cong. 1 (2019) <https://www.commerce.senate.gov/services/files/376481A7-A616-485C-B78B-C318B81CC04C> (S. 2881, 5G Spectrum Act of 2019, as amended).

³² See, e.g., Congressman Eliot Engel, *Engel Lauds Subcommittee Passage of His Bill to Preserve the T-Band Network for First Responders* (March 11, 2020) ("Reallocating the T-Band would also force police, firefighters, and EMS providers to spend billions of dollars to change their systems and buy new equipment . . . the cost to the New York area alone would be \$1.4 billion—and for many T-Band users, alternative bands of spectrum are limited or nonexistent."), <https://engel.house.gov/latest-news/engel-lauds-subcommittee-passage-of-his-bill-to-preserve-the-tband-network-for-first-responders/>.

³³ Letter from the Hons. Edward J. Markey, Kirsten Gillibrand, Dianne Feinstein, Benjamin L. Cardin, Robert P. Casey, Elizabeth Warren, Chris Van Hollen, and Kamala D. Harris, to the Hons. Mitch McConnell, Roger Wicker, Charles Schumer, and Maria Cantwell, at 1 (April 3, 2020), <https://www.markey.senate.gov/imo/media/doc/Letter%20-%20TBand%20Auction%20Mandate%20Repeal%20CV4%204.3.20.pdf>.

issues related to the transition of public safety incumbents out of the band, including which entities require transition, and seek comment on potential paths forward for incumbent Industrial/Business licensees and licensees operating in the T-Band pursuant to part 22 of the Commission's rules, as the T-Band Mandate is silent with regard to treatment of those licensees. Finally, we propose rules that would allow for flexible use under part 27 of the Commission's rules in the auctioned T-Band spectrum.

A. Reallocation and Licensing of T-Band Spectrum for Flexible Use

13. The T-Band Mandate provides that the "Commission shall . . . reallocate the spectrum in the 470-512 MHz band . . . currently used by public safety eligibles as identified in section 90.303" of the Commission's rules.³⁴ In considering how to reallocate this spectrum, and consistent with our approach to allocation of certain other bands,³⁵ we seek to provide flexibility for new T-Band licensees, after relocation of public safety operations, to tailor the use of the band to their specific operational needs and to maximize network efficiency. We therefore propose a modification of the current 470-512 MHz band co-primary allocations to provide for Mobile Service, Fixed Service, and Broadcasting.³⁶ We seek comment on this proposal. In particular, we ask whether the expansion of the Land Mobile Service allocation for the 470-512 MHz band to permit Mobile Service, which would include not only Land Mobile Service, but Aeronautical Service and Maritime Service, would allow for more efficient use of the spectrum? How might an expanded allocation affect the resulting interference environment in the band, and would additional protections be necessary? How should the addition of either or both of these expanded allocations be reflected in the proposed rules?³⁷ Commenters should discuss in detail the costs and benefits of any expanded allocations.

14. We believe that our proposal meets the requirements for the allocation of flexible use spectrum under Section 303(y) of the Communications Act of 1934, as amended (Act).³⁸ That section allows the Commission to allocate spectrum for flexible uses if the allocation is consistent with international agreements and if it finds that: (1) the allocation is in the public interest; (2) the allocation does not deter investment in communications services, systems, or development of technologies; and (3) such use would not result in harmful interference among users.³⁹ The proposed allocation is consistent with international allocations for use of the 470-512 MHz band.⁴⁰ Further, the proposed licensing

³⁴ Spectrum Act, § 6103(a)(1).

³⁵ See, e.g., *Reallocation of Television Channels 60-69, the 746-806 MHz Band*, ET Docket No. 97-157, Report and Order, 12 FCC Rcd 22953 (1998); *Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59)*, GN Docket No. 01-74, Report and Order, 17 FCC Rcd 1022 (2002) (the Commission found it in the public interest to transfer TV Channels 52-69 (698-806 MHz) from broadcast use to new wireless and public safety uses, and added primary fixed and mobile allocations to the 698-806 MHz band); *Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band*, GN Docket No. 12-354, Report and Order and Second Further Notice of Proposed Rulemaking, 30 FCC Rcd 3959 (2015) (the Commission added co-primary fixed and mobile allocations to the 3550-3650 MHz band to facilitate a new commercial broadband service at 3550-3700 MHz); *Allocation and Service Rules for the 1675-1680 MHz Band*, Notice of Proposed Rulemaking and Order, 34 FCC Rcd 3552 (2019) (*1675 NPRM*).

³⁶ The current allocations are for Land Mobile Service, Fixed Service, and Broadcasting. See 47 CFR § 2.106.

³⁷ Any such changes would require that the US Table of Frequency Allocations, 47 CFR § 2.106, be amended accordingly. Further, we note that table footnotes NG66 and US230 would also require amendment to reflect whatever changes are made to T-Band operations as a result of this rulemaking.

³⁸ See 47 U.S.C. § 303(y).

³⁹ *Id.*

⁴⁰ See 47 CFR § 2.106 (allocating 470-512 MHz for Fixed, Mobile and Broadcasting in Region 3; for Broadcasting, Fixed and Mobile in Region 2; and for Broadcasting in Region 1).

framework for the new T-Band operations could spur innovation and investment in communications services, systems, and wireless technologies. We seek comment on this proposal.

15. *Band Plan.* We propose the band plan below in Figure 1 that would accommodate an auction of geographic area licenses of six megahertz blocks on a block-by-block basis in the 470-512 MHz band. We propose that the following blocks will be available in the listed urbanized areas, consistent with the current T-Band frequency assignments set forth in Sections 90.303 and 90.311 of our rules: A Block (Boston, Chicago, Los Angeles, Miami, New York, Pittsburgh); B Block (Chicago, New York); C Block (Boston, Dallas, Los Angeles, New York, San Francisco); D Block (Houston, San Francisco, Washington D.C.); E Block (Pittsburgh, Washington, D.C.); F Block (Philadelphia); G Block (Los Angeles, Philadelphia), shown in Figure 2.⁴¹ We seek comment on this proposed band plan and any appropriate alternatives, as well as the costs and benefits of any alternatives.⁴²

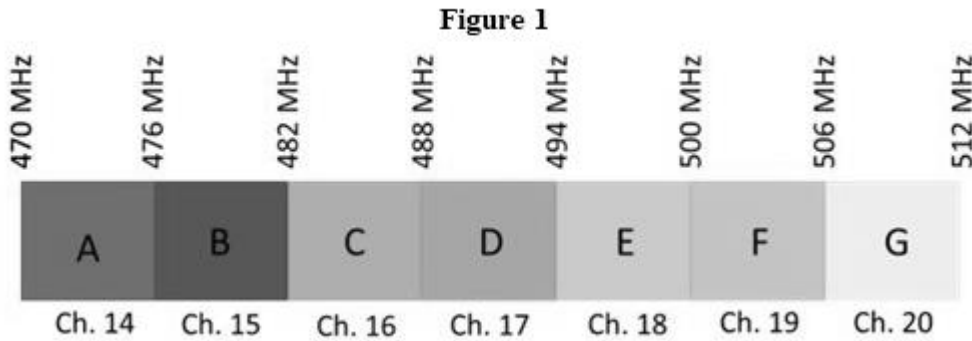


Figure 2

Ch. No.	Block	L Freq.	U Freq.	Bos.	Chi.	Dal.	Hou.	LA	Mia.	NY/NE NJ	Phila.	Pitts.	SF	DC
14	A	470	476											
15	B	476	482											
16	C	482	488											
17	D	488	494											
18	E	494	500											
19	F	500	506											
20	G	506	512											

16. We emphasize that we are not proposing any changes to the other, non-public safety allocations in the band at this time.

17. *Spectrum Block Size and Overlay Licensing.* In proposing the spectrum block sizes for new licenses in the 470-512 MHz band, we are mindful of the existing spectral environment. The T-Band Mandate requires that the Commission use competitive bidding to grant new initial licenses for the use of spectrum currently used by public safety eligibles as identified in section 90.303 of the Commission’s

⁴¹ 47 CFR §§ 90.303 (listing geographic centers and frequency bands available for assignment), 90.311 (listing for each broadcast television channel in 47 CFR § 90.303 the first and last assignable frequencies within each channel and the allowable bandwidth in kilohertz of frequencies).

⁴² *Id.* § 90.303.

rules and to relocate those public safety licensees from the T-Band.⁴³ This approach would necessarily limit available channels to discrete frequency pairings within the six megahertz block in a given urbanized area, and would exclude from competitive bidding all frequencies currently authorized to Industrial/Business licensees pursuant to part 90 of the Commission's rules and all frequencies currently authorized to licensees for point to multi-point operation pursuant to part 22 of the Commission's rules. In the event that we accept mutually exclusive applications for licenses in the band, we will grant the licenses through a system of competitive bidding, consistent with section 309(j) of the Act. Further, to facilitate increased flexibility, we propose to use our authority pursuant to the T-Band Mandate and section 309(j) of the Act to make available for licensing through competitive bidding in a given urbanized area the full six megahertz blocks in the 470-512 MHz band as an overlay authorization. An overlay license authorizes operations for a geographic area "overlaid" on existing incumbent licensees, consisting in the T-Band of part 90 Industrial/Business and Public Safety Pool licensees, and part 22 point to multi-point licensees. This approach requires the overlay licensee to protect existing incumbents from interference indefinitely, i.e., until the incumbent rights are relinquished.⁴⁴ We conclude that offering overlay licenses will best protect the rights of incumbent licensees that might remain in the band.

18. Consistent with an overlay approach, any new licensee operation on a frequency pair within the six megahertz is fully dependent upon whether an incumbent licensee is relocated from the T-Band spectrum. We propose that, as required by the T-Band Mandate, only "public safety eligibles" using T-Band spectrum are to be mandatorily relocated from the T-Band at this time. Would issuing overlay authorizations for the current six megahertz spectrum block, with only public safety eligibles proposed to be relocated from the T-Band, allow for both the provision of potential new services and the maintenance of a status quo incumbent interference environment for existing operations?⁴⁵ We seek comment in general on the overlay auction approach with public safety eligibles relocating from the T-Band. We seek specific comment on whether this approach would lay the foundation for promoting the most efficient and intensive use of the spectrum and the recovery for the public of a portion of the value of the public spectrum resource. We also seek comment any alternatives approaches and the associated costs and benefits.

19. We propose that an overlay licensee in the T-Band would have a right to operate within the channel block to the extent: (1) a frequency is not assigned to an incumbent (either for shared or exclusive use); (2) the incumbent vacates the frequency, whether as required by the T-Band Mandate, voluntary transition, acquisition, failure to renew, or permanent discontinuance; or (3) the incumbent and overlay licensee reach an agreement permitting such operation. We also propose that for a frequency to be considered vacated, the overlay licensee must clear all incumbents, such that there would be no overlap in authorized bandwidth of incumbent and overlay licensee transmissions.

20. Additionally, given the need to protect adjacent broadcast licensees, we do not find feasible, and therefore do not propose, that an overlay licensee can operate co-channel on a frequency licensed to an incumbent by meeting, for example, a specified minimum mileage separation, or through an interference protection showing relying on contour calculations. We seek comment on this approach and whether we should adopt an alternative methodology whereby a technical showing could be made

⁴³ Spectrum Act, § 6103.

⁴⁴ *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, GN Docket No. 18-122, *et al.*, Order and Notice of Proposed Rulemaking, 33 FCC Rcd 6915, 6946, para. 99 (2018); *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands; Transforming the 2.5 GHz Band*, WT Docket Nos. 03-66 and 18-120, Notice of Proposed Rulemaking, 33 FCC Rcd 4687, 4705, n. 84 (2018).

⁴⁵ *See, e.g., Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, WT Docket No. 02-353, Report and Order, 18 FCC Rcd 25162, 25178, para. 44 (2003) (*AWS-1 Service Rules R&O*); *1675 NPRM*, 34 FCC Rcd at 3561, para. 24 & n. 54; *Incentive Auctions NPRM*, 27 FCC Rcd at 12403, paras. 127-28. We note that five-megahertz blocks can support a variety of wireless broadband technologies. *See generally id.*

supporting co-channel operation of an overlay licensee while protecting existing incumbents in the same geographic area.

21. *Geographic License Area Size.* We propose to license the 470-512 MHz band on a geographic area basis with a 128-kilometer (80-mile) operational radius for each urbanized area based on the geographic centers set forth in sections 90.303 and 90.305 of our rules.⁴⁶ Geographic area licensing provides flexibility to licensees, promotes efficient spectrum use, and helps facilitate robust spectrum auctions.⁴⁷ The Commission considers promoting a range of objectives when designing a system of competitive bidding and determining the appropriate geographic license size, including: (1) facilitating access to spectrum by a wide variety of providers, including small entities and rural providers; (2) providing for the efficient use of spectrum; (3) encouraging deployment of wireless broadband services to consumers; and (4) promoting investment in and rapid deployment of new technologies and services.⁴⁸ Other relevant factors here are the presence of incumbent broadcast operations and of non-public safety, Industrial/Business PLMR operations. In light of these factors, we propose to license the 470-512 MHz band with a geographic area consistent with the current T-Band operational radius.

22. We seek comment on this geographic-area licensing approach, and on any alternative licensing approach, including the costs and benefits of adopting such a licensing approach. Commenters also should address how any alternative licensing approach would be consistent with the requirements of section 309(j) and the statutory objectives that the Commission seeks to promote in establishing methodologies for competitive bidding.⁴⁹

23. *Licensing Trigger.* The T-Band Mandate provides that auction proceeds shall be available to cover relocation costs of public safety entities from the T-Band.⁵⁰ As noted above, prior assessments predict that the cost of relocating public safety licensees may approach \$6 billion. We thus propose to issue licenses only where net winning bids would exceed the total estimated relocation costs for all public safety T-Band licensees subject to mandatory relocation, as informed by earlier analyses in the record and the detailed comment we expect to receive in response to this *Notice* regarding the costs of providing comparable facilities to relocated public safety licensees. We seek comment on this proposal, as well as on the statutory meaning of certain terms that will inform the likelihood that net winning bids will in fact exceed total estimated relocation costs. We seek comment on whether the term “proceeds,” as used in the T-Band Mandate, should be limited to monies paid for licenses covering spectrum “currently used by public safety eligibles as identified in section 90.303.” We also seek comment on whether the term “relocation costs,” should be defined consistent with the Commission’s approach in other proceedings.

24. Commenters should address how this approach, or any alternative, would or would not be consistent with the statutory requirements of Section 309(j) and with the T-Band Mandate’s statutory directives.⁵¹ For example, we seek comment on how to address any deficit in net winning bids—should we require public safety licensees to relocate on a city-by-city basis if the bids for a particular urbanized

⁴⁶ 47 CFR § 90.303(b) (listing geographic center coordinates), 90.305 (allowing base stations to be located within 80 kilometers (50 miles) of the geographic center and mobile units operated within 48 kilometers (30 miles) of their associated base station or stations).

⁴⁷ See, e.g., 47 CFR § 27.6(h) and (i) (AWS-1 and AWS-4, respectively); *1675 NPRM*, 34 FCC Rcd 3552 (2019).

⁴⁸ See, e.g., *AWS-1 Service Rules R&O*, 18 FCC Rcd at 25174, para. 31; *1675 NPRM*, 34 FCC Rcd at 3562, para. 26; see also 47 U.S.C. § 309(j).

⁴⁹ See 47 U.S.C. § 309(j)(3)-(4).

⁵⁰ Spectrum Act, § 6103(b) (“Proceeds (including deposits and upfront payments from successful bidders) from the competitive bidding system . . . shall be available . . . to cover relocation costs for the relocation of public safety entities from the T-Band spectrum”).

⁵¹ *Id.* § 6103.

area meet or exceed the cost estimates to relocate public safety licensees in that particular area? Similarly, should licensees be required to relocate on a channel-by-channel basis within urbanized areas where bids for that channel meet or exceed the cost of clearing the channel? Are there alternative spectrum block sizes, licensing areas, or band plans that would meet the statutory directives, result in a status quo inference environment, and nonetheless ensure efficient use of spectrum? Commenters offering alternate methods should address the costs and benefits of a proposed alternate method.

B. Transition of Incumbents from T-Band Spectrum

1. Public Safety Transition

25. As directed by the T-Band Mandate, we propose to relocate from T-Band spectrum all “public safety eligibles as identified in section 90.303” of our rules, and to do so “not later than 2 years after the date on which the system of competitive bidding described in [the statute] is completed.”⁵² We also propose to require that comparable facilities be provided to relocated licensees, and note that transition of Public Safety licensees out of the T-Band to such facilities is subject to reimbursement from auction proceeds to “cover relocation costs.”⁵³ We seek comment on this approach and on the availability of a suitable spectrum destination(s) for Public Safety entities relocated from the T-Band. We emphasize that the Commission is committed under any scenario to ensuring the continuity of such licensees’ public safety mission-critical communications.⁵⁴

26. *Public Safety Entities.* Section 6103(a)(2) requires the auction of “the spectrum in the 470-512 MHz band . . . currently used by public safety eligibles as identified in section 90.303 of title 47, Code of Federal Regulations.”⁵⁵ Section 90.303 states that frequency assignments in the 482-488 MHz band (broadcast television channel 16) are available “for use by eligibles in the Public Safety Radio Pool” in Los Angeles;⁵⁶ New York City; Nassau, Suffolk, and Westchester counties in New York State; and Bergen County, New Jersey.⁵⁷ Section 90.303 also provides that other frequencies are available for assignment in eleven specific urbanized areas, and that these frequencies are listed in section 90.311.⁵⁸ Section 90.311, in turn, provides that 470-512 MHz Band frequencies are available to listed “categories of users,” including “[p]ublic safety (as defined in § 90.20(a)) [the Public Safety Pool].”⁵⁹ We thus interpret “public safety eligibles” to include the entities named in section 90.303(b) and (c) and the entities referenced by section 90.303 that operate on frequencies assigned to the public safety category of users by section 90.311. We seek comment on this statutory interpretation and any alternatives that are consistent with the T-Band Mandate.

27. Following passage of the T-Band Mandate, the Bureaus imposed a freeze on future licensing or expanded operations in the 470-512 MHz band,⁶⁰ thus preventing significant changes to the composition of the T-Band. We interpret the statute’s reference to spectrum “currently used by public safety eligibles” as limiting the reallocation and auction required by the T-Band Mandate to those

⁵² Spectrum Act, § 6103(b)-(c).

⁵³ *Id.* § 6103(b).

⁵⁴ *See* 47 U.S.C. § 151 (charging the Commission with “promoting safety of life and property through the use of wire and radio communication”).

⁵⁵ Spectrum Act, § 6103(a)(2).

⁵⁶ 47 CFR § 90.303(b), n. 4.

⁵⁷ *Id.* § 90.303(c).

⁵⁸ *Id.* § 90.303(b).

⁵⁹ *Id.* § 90.311(a)(1)(i).

⁶⁰ *T-Band Freeze Public Notice*, 27 FCC Rcd at 4218.

frequencies in use by the public safety eligibles in the T-Band at the time the freeze was imposed,⁶¹ as opposed to frequencies in use by non-public safety licensees or that are unassigned. We seek comment on this interpretation and, with respect to the applicable licensing timeframe, whether we should interpret “currently used” as the time of the statute’s enactment (i.e., February 22, 2012), which would not take into account subsequent licensing changes in the T-Band.⁶²

28. We reiterate that some public safety licensees operate in the T-Band pursuant to waiver on channels not listed or referenced in section 90.303 of our rules, and thus are arguably outside the scope of the T-Band Mandate.⁶³ For example, the 476-482 MHz block (broadcast television channel 15) in Los Angeles currently is used by public safety incumbents pursuant to a waiver,⁶⁴ and 476-482 MHz is specifically excluded from the list of available frequencies identified in section 90.303.⁶⁵ In addition, other T-Band public safety entities have received waivers of section 90.305 of the Commission’s rules,⁶⁶ or are operating via frequency pair assignments classified as Industrial/Business, pursuant to waivers of section 90.311(a)(2) of the rules.⁶⁷ We seek comment on whether we should interpret the statute to require the Commission to auction T-Band spectrum licensed to public safety entities under the aforementioned waivers, and to require these licensees to relocate out of the T-Band.

29. We seek comment on any issues that may arise if public safety waiver licensees or those operating through Industrial/Business assignments are allowed to remain in the T-Band. For example, what would be the effect on interoperability between public safety systems operating with and without waivers if only public safety licensees not subject to waiver were subject to relocation? Similarly, if a public safety waiver licensee has base station operations both inside and outside the 50-mile radius for base stations, would any operations outside the area authorized by the rules function as a splintered or partial system? Or should such a public safety waiver licensee be required to relocate all operations from the T-Band? Finally, if public safety waiver licensees are not relocated from the T-Band, what criteria would be appropriate to ensure interference is minimized between such licensees and auction licensees?

30. *Comparable Facilities.* Consistent with our approach to mandatory relocation in other services, we propose that public safety licensees relocated from the T-Band will be compensated for reasonable relocation costs and provided with comparable facilities.⁶⁸ Provision of comparable facilities should ensure that public safety eligibles are not unduly burdened and that their operations are not inordinately disrupted by mandatory relocation from the T-Band. Importantly, we seek to ensure that, in providing comparable facilities, the relocation process does not result in degradation of existing service or

⁶¹ *T-Band Freeze Public Notice*, 27 FCC Rcd at 4218.

⁶² *See id.*, 27 FCC Rcd at 4218-20 (imposing a licensing freeze on the T-Band on April 26, 2012, and noting that the Commission would continue to accept and process applications to assign or transfer licenses, delete frequencies, and cancel licenses even after the freeze took effect).

⁶³ 47 CFR § 90.305(a)-(d). For example, there are entities in several T-Band cities operating base stations outside of the 80 kilometer (50 mile) radius from the city center via waivers of 47 CFR 90.305(a). *See, e.g., Somerset County New Jersey*, Order, 28 FCC Rcd 4321 (PSHSB 2013).

⁶⁴ *County of Los Angeles, California*, Order, 23 FCC Rcd 18389 (PSHSB 2008).

⁶⁵ *See* 47 CFR § 90.303.

⁶⁶ *Id.* § 90.305(a)-(d).

⁶⁷ *Id.* § 90.311(a)(2).

⁶⁸ *See, e.g., Review of the Commission’s Rules Governing the 896-901/935-940 MHz Band*, WT Docket No. 17-200, Notice of Proposed Rulemaking, 34 FCC Rcd 1550, 1566, para. 45 (2019) (citing, *e.g.*, 47 CFR § 90.699, which was adopted in the *Upper 200 SMR Second Report and Order*, 12 FCC Rcd at 19112-19114, paras. 89-95, and also used in proceedings such as *Improving Public Safety Communications in the 800 MHz Band*, WT Docket 02-55, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969 (2004) (*800 MHz Report and Order*)).

cause an adverse effect on important public safety communications operations. We propose to define “comparable facility” as a replacement system that is at least equivalent to the public safety eligible’s existing T-Band system with respect to the following four factors: (1) system, (2) capacity, (3) quality of service, and (4) operating costs.⁶⁹ We seek comment on this proposal.

31. We also propose guidelines on how these factors would apply in providing a comparable facility and seek comment on each factor. We propose that a comparable system would be functionally determined from the end user’s point of view (i.e., base station facilities operating on an integrated basis to provide service to a common end user, and all associated mobile units). We propose that a system may include multiple-licensed facilities operated as a unified system if the end user can access all such facilities.

32. We propose that comparable channel capacity must have the same overall capacity as the original configuration, including equivalent signaling capacity, baud rate, and access time, and must achieve coextensive geographic coverage with that of the original system.

33. We propose that comparable quality of service would require the end user to enjoy the same level of interference protection. Quality of service necessarily requires reliability, or the degree to which information is transferred accurately within the system.⁷⁰ For analog or digital voice transmissions, this would be measured by the percent of time that audio signal quality meets an established threshold.⁷¹

34. With respect to operating costs, we propose that compensable costs would include all reasonable engineering, equipment, site and Commission fees, as well as any reasonable, additional costs that the covered incumbent may incur as a result of mandatory relocation. Should the Commission assume that the compensation regime would provide for recovery of all costs associated with relocation, including planning and administrative costs, or should we limit compensable costs to only the cost of retuning and/or replacing equipment? Should the Commission establish a rebuttable presumption or guideline regarding soft costs, including potentially establishing a cap on soft costs as a percentage of hard costs, to determine what is reasonably and unavoidably incurred, and thus properly compensable, consistent with other recent proceedings?⁷²

35. *Relocation Cost Grants.* The T-Band Mandate provides that “[p]roceeds (including deposits and upfront payments from successful bidders) from the competitive bidding system described in subsection (a)(2) shall be available to the Assistant Secretary [of NTIA] to make grants in such sums as necessary to cover relocation costs for the relocation of public safety entities from the T-Band spectrum.”⁷³ The statute refers solely to NTIA’s responsibility for the issuance of grants, appearing to

⁶⁹ *Upper 200 SMR Second Report and Order*, 12 FCC Rcd at 19112-19114, paras. 89-95; *800 MHz Report and Order*, 19 FCC Rcd at 15077, para. 201.

⁷⁰ Reliability is a function of equipment failures (e.g., transmitters, feed lines, antennas, receivers, battery back-up power) and the availability of the frequency channel due to propagation characteristics (e.g., frequency, terrain, atmospheric conditions, radio-frequency noise).

⁷¹ We note that where an analog voice system would be replaced with a digital voice system, we propose to consider the resulting frequency response, harmonic distortion, signal-to-noise ratio, and reliability.

⁷² See, e.g., *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, GN Docket No. 18-122, Report and Order and Order of Proposed Modification, 35 FCC Rcd 2343, 2424, para. 198 (2020) (establishing a rebuttable presumption that soft costs should not exceed 2% of the relocation hard costs and those in excess require justification); *Improving Public Safety Communications in the 800 MHz Band*, Supplemental Order and Order on Reconsideration, 19 FCC Rcd 25120, 25151, para. 70 (2004) (resolving a conflict between the *800 MHz Rebanding Order*, which required Nextel to absorb all reconfiguration costs, including transactional costs, and the rule provision incorporated by reference that limited transaction costs to no more than 2% of the hard costs involved), *aff’d sub nom. Mobile Relay Assocs. v. FCC*, 457 F.3d 1 (D.C. Cir. 2006).

⁷³ Spectrum Act, § 6103(b).

leave responsibility with the Commission to determine reimbursable amounts with respect to costs of relocation, including the provision of comparable facilities. We seek comment on whether Congress intended for the Commission to rely on its expertise to determine the appropriate grant amounts based on both the provision of comparable facilities as well as on other individual licensee relocation costs. Alternatively, we seek comment on whether Congress intended NTIA to issue rules regarding eligible entities and eligible costs in accordance with the statute. Under this alternative reading, we seek comment on how the Commission's expertise could be leveraged to inform the NTIA grant program.

36. We seek comment on additional relocation costs public safety licensees are likely to incur to relocate out of the T-Band, with the caveat that the destination spectrum bands are not yet determined. Should relocation costs for each licensee be determined based on a cost model, such as the model developed by the National Public Safety Telecommunications Council in its T-Band Report?⁷⁴ We seek recommendations on formulas and calculation methods, and what parameters should be considered.

37. *Relocation Spectrum.* The T-Band Mandate does not identify spectrum bands to which public safety entities could be relocated. Prior submissions in the extensive record in this proceeding have discussed the availability of the FirstNet public safety broadband network; the 450-470 MHz band; the 700 MHz band; the 800 MHz band; and the 900 MHz band, though many of these submissions and GAO have questioned whether sufficient alternative spectrum is available to accommodate relocation of any T-Band public safety licensees.⁷⁵ We therefore seek detailed comment on the suitability of these or any other spectrum bands to serve as relocation spectrum, what characteristics must be present to consider a band a viable relocation option—for example, capacity, readily available equipment, and similar propagation characteristics—and the costs and benefits of relocating public safety licensees to a particular band(s). Are there relocation alternatives other than replacement spectrum that we should consider, such as third-party service or other media?

38. *Relocation Deadline.* The T-Band Mandate imposes a specific completion deadline, directing that “[r]elocation shall be completed not later than 2 years after the date on which the system of competitive bidding . . . is completed.”⁷⁶ We seek comment on what constitutes the completion of relocation for purposes of section 6103(c). Commenters should discuss the steps a public safety entity must take to relocate its system, and the estimated timelines for these steps. For example, we expect a transition would require a T-Band public safety licensee to develop, test, and commence operations in destination spectrum band(s) before discontinuing operations in the T-Band. Commenters should provide details of transition planning and specific anticipated timeframes for each phase. In the alternative, we ask whether relocation would be completed once the Public Safety incumbent commences operations on its replacement frequencies, even if the incumbent has not completed all the tasks associated with the relocation.⁷⁷

2. Non-Public Safety Transition

39. The T-Band Mandate does not require relocation nor provide for reimbursement of non-public safety licensees operating in the T-Band. Therefore, under our proposal, the T-Band would remain encumbered with part 90 Industrial/Business licensees on interleaved frequencies and with part 22 licensees in the lowest 300 kHz of most six megahertz blocks. Allowing non-public safety incumbents to remain in the T-Band would result in continued co-channel use of spectrum in a limited geographic area,

⁷⁴ NPSTC T-Band Report at pp. 37-58.

⁷⁵ See, e.g., NPSTC T-Band Update Report at pp. 12-17; *Required Auction of Public Safety Spectrum Could Harm First Responder Capabilities*, GAO 19-508 (June 21, 2019), available at <https://www.gao.gov/products/GAO-19-508#summary>.

⁷⁶ Spectrum Act, § 6103(c).

⁷⁷ See, e.g., *800 MHz Report and Order*, 19 FCC Rcd at 14989, para. 35; *800 MHz Public Notice*, 27 FCC Rcd at 14776.

which likely will prevent broadcast or wireless use by an overlay licensee. In light of these considerations and the statutory mandate to use auction proceeds to fund the relocation of Public Safety incumbents, we seek comment on requiring a mandatory transition of all non-public safety incumbents (i.e., part 90 Industrial/Business licensees and part 22 licensees) out of the T-Band, subject to payment of relocation costs, including provision of comparable facilities, by the overlay licensee.

40. Section 316(a)(1) of the Act provides that “[a]ny station license . . . may be modified by the Commission . . . if in the judgment of the Commission such action will promote the public interest, convenience and necessity.”⁷⁸ We seek comment on whether making contiguous spectrum available for auction, enhancing the usefulness of the spectrum and promoting auction competition, and thus increasing the chances of a successful auction so that the directives of Section 6103 may be executed, would support a determination that ordering license modifications of non-public safety incumbents (e.g., entities that Section 6103 does not take into consideration) would promote the public interest, convenience, and necessity, given all the relevant circumstances, including such factors as the effects on all the incumbent licensees and the costs and benefits to the public that are likely to result from the reconfiguration of this spectrum.

41. We also seek comment on potential other transition or realignment approaches that could meet the statutory mandate to fund public safety relocation costs from auction proceeds and to allow for efficient use of spectrum without requiring a full transition from the T-Band. For example, should the Commission instead realign interleaved Industrial/Business and part 22 licensees in order to create more contiguous spectrum for auction, either within single channel blocks or by relocating Industrial/Business and part 22 operations to a single channel in a city with multiple T-Band channels, resulting in at least one unencumbered six-megahertz channel? We note that, as 3 MHz separation between base and mobile transmit frequencies is required to prevent intra-system interference, any realignment within a channel would still leave two portions of a six-megahertz channel block encumbered.⁷⁹ Should the Commission sunset the 2012 waiver of the narrowbanding requirement for T-Band licensees⁸⁰ and set new narrowbanding deadlines for Industrial/Business licensees in the T-Band? Commenters advocating for realignment or other approaches should also address transition mechanisms, technical issues, such as ease of retuning existing radios, timing and cost considerations, and whether additional protections or rules might be necessary to protect incumbents, whether part 90 Industrial/Business, part 22, or broadcast, from harmful interference.

42. The T-Band Mandate does not confer authority to use T-Band auction revenues to fund non-Public Safety relocation or realignment, whether out of the T-Band, within a T-Band channel, or to different channels within the band.⁸¹ However, the Commission has authority to condition licenses in the public interest, such as by requiring overlay licensees to pay for the costs associated with license

⁷⁸ 47 U.S.C. § 316(a)(1). For example, in the 800 MHz rebanding proceeding, the Commission used this legal authority to relocate license holders on a service-wide basis, without license-by-license consideration, to alternative spectrum. *800 MHz Rebanding Order*, 19 FCC Rcd at 15011-13 paras. 64-68; see *Cnty. Television, Inc. v. FCC*, 216 F.3d 1133, 1140 (D.C. Cir. 2000) (upholding the FCC’s rules establishing procedures and a timetable under which television broadcasters would migrate from analog to digital technology).

⁷⁹ 47 CFR § 90.311(a).

⁸⁰ *Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended, Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies*, WT Docket No. 99-87, RM-9332, Order, 27 FCC Rcd 4213 (WTB/PSHSB/OET 2012).

⁸¹ See Spectrum Act, § 6103(b). Section 309(j)(8) also prohibits the use of proceeds from the auction of non-Public Safety spectrum for the relocation of incumbents. 47 U.S.C. § 309(j)(8) (stating that, with certain exceptions not applicable here, “all proceeds from the use of a competitive bidding system . . . shall be deposited in the Treasury in accordance with chapter 33 of title 31”).

modifications and has used this authority in prior proceedings.⁸² To the extent that we may require T-Band part 90 Industrial/Business and part 22 licensees to relocate from their current frequency assignments, we seek comment on whether to require an overlay licensee to pay for relocation costs of such licensees to comparable facilities. As with mandatory relocation of public safety licensees above, “comparable facilities” would require that a replacement system be provided to an incumbent during mandatory relocation that is at least equivalent to the incumbent’s existing T-Band system with respect to: (1) system, (2) capacity, (3) quality of service, and (4) operating costs.

43. We also seek comment on spectrum bands to which part 90 Industrial/Business and part 22 entities could be relocated. As with public safety entity relocation, we seek comment on whether there are spectrum bands that can accommodate relocation of these incumbents. Are there additional bands that would be more suitable for part 90 Industrial/Business or part 22 licensees, but potentially less appropriate for public safety licensee relocation? We seek comment on the characteristics required to consider a band a viable relocation option—for example, capacity, readily available equipment, and similar propagation characteristics—and the costs and benefits of relocating part 90 Industrial/Business and part 22 licensees to a particular band(s). Are there relocation alternatives other than replacement spectrum that we should consider, such as third-party service or other media?

C. Licensing and Operating Rules; Regulatory Issues

44. Given our proposal to auction T-Band licenses on a block-by-block basis for fixed and mobile use, we propose to designate the new T-Band spectrum as a Miscellaneous Wireless Communications Service governed by part 27 of the Commission’s rules. We therefore propose that all future licensees in the T-Band would be required to comply with licensing and operating rules applicable to all part 27 services, including assignment of licenses by competitive bidding,⁸³ flexible use,⁸⁴ regulatory status,⁸⁵ foreign ownership reporting,⁸⁶ compliance with construction notification requirements,⁸⁷ renewal criteria,⁸⁸ permanent discontinuance of operations,⁸⁹ partitioning and disaggregation,⁹⁰ and spectrum

⁸² Section 303(r) provides that “the Commission . . . as public convenience, interest, or necessity requires shall [m]ake such rules and regulations and prescribe such restrictions and conditions, not inconsistent with law, as may be necessary to carry out the provisions of this chapter. . . .” 47 U.S.C. § 303(r). *See, e.g., 800 MHz Rebanding Order*, 19 FCC Rcd 14969 (requiring Nextel Communications, Inc. to assume financial responsibility for reconfiguring the 800 MHz band, including the costs of relocating incumbent licensees, while modifying its license to authorize operations on 1.9 GHz spectrum).

⁸³ 47 U.S.C. § 309(j); 47 CFR §§ 1.2101-1.2114.

⁸⁴ 47 CFR §§ 2.106, 27.2, 27.3. Section 303(y) of the Act provides the Commission with authority to provide for flexibility of use if: “(1) such use is consistent with international agreements to which the United States is a party; and (2) the Commission finds, after notice and an opportunity for public comment, that (A) such an allocation would be in the public interest; (B) such use would not deter investment in communications services and systems, or technology development; and (C) such use would not result in harmful interference among users.” *Balanced Budget Act of 1997*, Pub. L. No. 105-33, 111 Stat. 251, 268-69; 47 U.S.C. § 303(y).

⁸⁵ 47 CFR § 27.10.

⁸⁶ 47 U.S.C. § 310; 47 CFR § 27.12.

⁸⁷ 47 CFR § 27.14(k).

⁸⁸ 47 CFR § 1.949. We note that the rule the Commission adopted to address renewal – 47 CFR § 1.949 – is pending approval from the Office of Management and Budget. *See Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 To Establish Uniform License Renewal et al.*, WT Docket No. 10-112, Second Report and Order and Further Notice of Proposed Rulemaking and Order, 32 FCC Rcd 8874, 8920-21, para. 135 (2017) (*WRS Renewal Reform 2nd R&O and FNPRM*).

⁸⁹ *Id.* § 1.953. We note that the rule the Commission adopted to address permanent discontinuance of operations – 47 CFR § 1.953 – is pending approval from the Office of Management and Budget. *See WRS Renewal Reform 2nd R&O and FNPRM*, 32 FCC Rcd at 8920-21, para. 135.

leasing.⁹¹ We seek comment on our approach and ask commenters to identify any aspects of our general part 27 service rules that should be modified to accommodate the particular characteristics of the T-Band.

45. We have also sought comment in this *Notice* regarding potential broadcast use of the T-Band, or if there are other uses of T-Band outside of flexible wireless use. How should we modify our licensing and operating rules if there are broadcast or other uses in the band?

46. In addition, we seek comment on service-specific rules for the T-Band, including eligibility, mobile spectrum holdings policies, license term, performance requirements, renewal term construction obligations, and other licensing and operating rules. In addressing these issues, commenters should discuss the costs and benefits associated with these proposals and any proposed alternatives. In the alternative, we ask commenters to address whether new T-Band licensees should be regulated under part 90 of our rules so that new T-Band licensees and incumbent PLMR licensees would be subject to a single set of rules. Commenters favoring this approach should identify the part 90 rules that would need to be amended and suggest specific rule language.

1. Eligibility

47. Consistent with established Commission practice, we propose to adopt an open eligibility standard for licenses in the T-Band.⁹² We seek comment on this approach. Specifically, we seek comment on whether adopting an open eligibility standard for the licensing of the T-Band would encourage the development of new technologies, products, and services, while helping to ensure efficient use of this spectrum.⁹³ We note that an open eligibility approach would not affect citizenship, character, or other generally applicable qualifications that may apply under our rules.⁹⁴ Commenters should discuss the costs and benefits of the open eligibility proposal on competition, innovation, and investment.

48. Finally, a person that, for reasons of national security, has been barred by any agency of the Federal Government from bidding on a contract, participating in an auction, or receiving a grant “is ineligible to hold a license that is required by [the Spectrum Act] to be assigned by a system of competitive bidding under Section 309(j) of the Communications Act.”⁹⁵ This eligibility restriction would apply to the auction of spectrum “currently used by public safety eligibles as identified in section 90.303” of our rules. We seek comment on how this eligibility restriction would apply to the auction of spectrum blocks used by a mixture of Public Safety, Industrial/Business, and part 22 incumbents.

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⁹⁰ 47 CFR § 1.950. We note that the rule the Commission adopted to address construction obligations resulting from partitioning and disaggregation – 47 CFR § 1.950 – is pending approval from the Office of Management and Budget. See *WRS Renewal Reform 2nd R&O and FNPRM*, 32 FCC Rcd at 8920-21, para. 135.

⁹¹ *Id.* § 1.9001 *et seq.*

⁹² The Commission has determined in a number of services that eligibility restrictions on licenses may be imposed only when open eligibility would pose a significant likelihood of substantial harm to competition in specific markets and when an eligibility restriction would be effective in eliminating that harm. This approach relies on market forces absent a compelling showing that regulatory intervention to exclude potential participants is necessary. See, e.g., *Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, Report and Order and Order of Proposed Modification, 27 FCC Rcd 16102, 16193, paras. 241-42 (2012); *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, WT Docket No. 06-150 *et al.*, Second Report and Order, 22 FCC Rcd 15289, 15381, 15383-84, paras. 253, 256 (2007) (*700 MHz Second Report and Order*); *Allocations and Service Rules for the 71-76 GHz, 81-86 GHz and 92-95 GHz Bands*, WT Docket No. 02-146, Report and Order, 18 FCC Rcd 23318, 23346-47, para. 70 (2003).

⁹³ See 47 U.S.C. § 309(j)(3).

⁹⁴ *Id.* §§ 301, 308(b), 310.

⁹⁵ See 47 CFR § 27.12(b) (citing 47 U.S.C. § 1404(c)).

2. Mobile Spectrum Holding Policies

49. Spectrum is an essential input for the provision of mobile wireless services, and the Commission has developed policies to ensure that spectrum is assigned in a manner that promotes competition, innovation, and efficient use.⁹⁶ We seek comment generally on whether and how to address any mobile spectrum holdings issues involving T-Band spectrum to meet our statutory requirements and ensure competitive access to the band. Similar to the Commission's approach in the *2017 Spectrum Frontiers Order and FNPRM* and the *1675-1680 MHz NPRM*, we propose not to adopt a pre-auction, bright line limit on the ability of any entity to acquire spectrum in the T-Band through competitive bidding at auction.⁹⁷ Since such pre-auction limits may restrict unnecessarily the ability of entities to participate in and acquire spectrum in an auction, we are not inclined to adopt such limits absent a clear indication that they are necessary to address a specific competitive concern, and seek comment on any specific concerns of this type.

50. We do not propose that this band be included in the Commission's spectrum screen, which helps to identify those markets that may warrant further competitive analysis, when evaluating proposed secondary market transactions.⁹⁸ Instead, we propose to review spectrum holdings on a case-by-case basis when applications for initial licenses are filed post-auction to ensure that the public interest benefits of having a threshold on spectrum applicable to secondary market transactions are not rendered ineffective. Commenters should discuss and quantify any costs and benefits associated with any proposals on the applicability of mobile spectrum holdings policies to T-Band spectrum.

51. We note that the Commission's rules contain restrictions on the common ownership of commercial full power television stations both in a particular local market and nationwide, as well as restrictions on the cross-ownership of such stations with other media outlets.⁹⁹ To the extent that a successful bidder seeks to operate a full power television station on the reallocated spectrum awarded as a result of this auction, we seek comment on whether the permittee of such new station would need to comply with the Commission's existing media ownership rules.

⁹⁶ The Communications Act requires the Commission to examine closely the impact of spectrum aggregation on competition, innovation, and the efficient use of spectrum to ensure that spectrum is assigned in a manner that serves the public interest, convenience, and necessity. See 47 U.S.C. §§ 303(g), 307, 308(b), 310. Section 309(j)(3) of the Act provides that, in designing systems of competitive bidding, the Commission must "include safeguards to protect the public interest in the use of the spectrum," and must seek to promote various objectives, including "promoting economic opportunity and competition and ensuring that new and innovative technologies are readily accessible to the American people by avoiding excessive concentration of licenses and by disseminating licenses among a wide variety of applicants," and promoting the "efficient and intensive use" of spectrum. *Id.* § 309(j)(3). In addition, section 6404 of the Spectrum Act recognizes the Commission's authority "to adopt and enforce rules of general applicability, including rules concerning spectrum aggregation that promote competition." Spectrum Act, § 6404.

⁹⁷ See *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services et al.*, GN Docket No. 14-177 et al., Second Report and Order, Second Further Notice of Proposed Rulemaking, Order on Reconsideration, and Memorandum Opinion and Order, 32 FCC Rcd 10988, 11009-11011, paras. 70-74 (2017) (*2017 Spectrum Frontiers Order and FNPRM*); *1675 NPRM*, 34 FCC Rcd at 3564, para. 31.

⁹⁸ Rather than potentially restricting competition at auction, we note that the spectrum screen for secondary markets review merely identifies those markets that may warrant further competitive analysis.

⁹⁹ These rules include the local television multiple ownership rule, the newspaper/broadcast cross-ownership rule, and the radio/television cross-ownership rule. 47 CFR §§ 73.3555(b)-(d).

3. License Term, Performance Requirements, Renewal Term Construction Obligations

52. *License Term.* For licensees other than those providing broadcast services, we propose a 15-year initial term for new flexible-use T-Band licenses,¹⁰⁰ and a ten-year term for subsequent renewals, given that relocation, and clearance, and initial performance requirements will have been satisfied upon renewal of a given T-Band license.¹⁰¹ We believe that 15 years affords licensees sufficient time to make long-term investments in deployment and seek comment on the costs and benefits of this proposal. We invite commenters to submit alternate proposals for the appropriate license term, which should similarly include a discussion on the costs and benefits. Importantly, we note that, in the event this spectrum is used for broadcast services, the license term is statutorily limited to eight years and that shorter term will apply.¹⁰²

53. *Performance Requirements.* The Commission establishes performance requirements to ensure that spectrum is intensely and efficiently used.¹⁰³ The Commission has applied different performance and construction requirements to different spectrum bands based on considerations relevant to those bands.¹⁰⁴ We continue to believe that performance requirements play a critical role in ensuring that licensed spectrum does not lie fallow and thus propose and seek comment on certain performance requirements below.

54. We seek comment on adopting specific quantifiable benchmarks as an important component of our performance requirements for licensees not providing broadcast services. We seek comment on requiring a new T-Band licensee, planning to provide mobile or point-to-multipoint service in accordance with our part 27 rules, to provide reliable signal coverage and offer service to at least 45% of the population in each of its license areas within six years of the license issue date (first performance benchmark), and to at least 80% of the population in each of its license areas within 12 years from the license issue date (second performance benchmark). For a licensee deploying point-to-point service, we seek comment on requiring it to demonstrate within six years of the license issue date (first performance benchmark) that it has four links operating and providing service, either to customers or for internal use, if the population within the license area is equal to or less than 268,000. If the population within the license area is greater than 268,000, we seek comment on requiring a licensee deploying point-to-point service to demonstrate that it has at least one link in operation and that it is providing service per every 67,000 persons within a license area. We seek comment on requiring a licensee deploying point-to-point service to demonstrate within 12 years of the license issue date (final performance benchmark) that it has

¹⁰⁰ The Communications Act does not specify a term limit for wireless radio services licenses. The only statutory limit on license terms is eight years for licenses in the broadcast services. *See* 47 U.S.C. § 307(c)(1); *see also* 47 CFR § 73.1020(a).

¹⁰¹ *See, e.g.*, 47 CFR § 27.14(k) (AWS-3 licenses have a 12-year initial license terms and 10-year renewal terms), (l) (600 MHz band licenses have 12-year initial license terms and 10-year renewal terms).

¹⁰² *See* 47 U.S.C. § 307(c)(1); *see also* 47 CFR § 73.1020(a). This approach is consistent with the Commission's adoption of dual license terms when providing for flexible use under part 27 that includes both wireless and broadcast services. *See e.g.*, 700 MHz *Second Report and Order*, 22 FCC Rcd 15289; 47 CFR § 27.13(b).

¹⁰³ *See* 47 U.S.C. § 309(j).

¹⁰⁴ *See, e.g.*, *Service Rules for Advanced Wireless Services H Block—Implementing Section 6401 of the Middle Class Tax Relief and Job Creation Act of 2012 Related to the 1915-1920 MHz and 1995-2000 MHz Bands*, WT Docket No. 12-357, Report and Order, 28 FCC Rcd 9483, 9558-59, para. 195 (2013) (requiring 40% population coverage within four years of initial grant and 75% population coverage within 10 years of initial grant). *See also* AWS-3 *Report and Order*, 29 FCC Rcd at 4659-60, para. 135 (requiring 40% population coverage within six years of initial grant and 75% population coverage within 12 years of initial grant); *Expanding the Economic and Innovation Opportunities of Spectrum through Incentive Auctions*, GN Docket No. 12-268, Report and Order, 29 FCC Rcd 6567, 6877-78, para. 764 (2014) (*Incentive Auctions Report and Order*).

eight links operating and providing service, either to customers or for internal use, if the population within the license area is equal to or less than 268,000. If the population within the license area is greater than 268,000, we seek comment on requiring a licensee deploying point-to-point service to demonstrate that it is providing service and that it has at least two links in operation per every 67,000 persons within a license area. We seek comment on whether in order to be eligible to be counted under the point-to-point buildout standard, a point-to-point link must operate with a transmit power greater than +43 dBm.¹⁰⁵ We note that the proposed period for complying with these performance requirements would begin on the date that the license is issued, irrespective of the extent to which the incumbent licensees have been relocated out of the T-Band.

55. We believe that 12 years will provide sufficient time for any T-Band licensee to meet the proposed coverage requirements. We propose that a T-Band licensee, after satisfying the 12-year second performance benchmark, be required to continue providing reliable signal coverage, or point-to-point links, as applicable, and offering service at or above that level for the remaining three years in the proposed 15-year license term in order to obtain license renewal.¹⁰⁶ Establishing such benchmarks before the end of the license term will allow us time to verify, to the extent needed, that the performance benchmarks have been met before licensees need to renew their licenses. We seek comment on our proposal.

56. We recognize that new T-Band licensees will have the flexibility to provide a range of services, including broadcast services. In the event that T-Band spectrum is used for broadcast services, we seek comment on requiring a broadcast station to be constructed and operational through the transmission of broadcast signals within the initial eight-year license term. Are there other parameters that should be included to ensure the efficient and effective use of T-Band spectrum for broadcast services (e.g., a specific level of market penetration)? We seek comment on this and any other requirements to achieve our goal of ensuring spectrum use. We also seek comment on whether services potentially less suited to a population coverage metric (e.g. Internet of Things-type fixed and mobile services) would benefit from an alternative performance benchmark, for example, geographic coverage benchmarks. Commenters should discuss the appropriate metric to accommodate such service offerings or other innovative services in the T-Band, as well as the costs and benefits of an alternative approach.¹⁰⁷

57. We also seek comment on whether the proposals discussed above achieve the appropriate balance between license-term length and a significant final buildout requirement. We seek comment on the proposed buildout requirements and any potential alternatives. Above, we discuss various mechanisms for expanding flexible use in all or part of the T-Band. We ask proponents of the various approaches described above whether there are issues specific to this section and their preferred approach. For example, given the potential use of the T-Band by private wireless users such as electric utilities or other Industrial/Business Pool eligibles, should we adopt specific performance requirements tailored to account for potential use of the spectrum for private internal business purposes? We also seek comment on whether small entities face any special or unique issues with respect to buildout requirements such that they would require certain accommodations or additional time to comply. Finally, commenters should

¹⁰⁵ In *Spectrum Frontiers*, the Commission defined a “fixed point-to-point link” as “a radio transmission between point-to-point stations (as already defined in Part 30), where transmit power exceeds +43 dBm.” Under this definition, stations or devices transmitting using lower power levels will not count towards the number of fixed links required under the performance metric. Licensees whose networks include such low-power connections may rely on another part of their network to demonstrate buildout (e.g., mobile area coverage or higher-power fixed backhaul links). See *2017 Spectrum Frontiers Order and FNPRM*, 32 FCC Rcd at 11008-09, paras. 66-68.

¹⁰⁶ See *WRS Renewal Reform 2nd R&O and FNPRM*, 32 FCC Rcd at 8886-89, paras. 27-34 (adopting continuity of service and other renewal showing requirements for WRS licensees).

¹⁰⁷ We seek comment above on whether there are any services that would not qualify under Section 603(a)(2)(B) of the MOBILE NOW Act.

discuss and quantify how any supported buildout requirements will affect investment and innovation, as well as discuss and quantify other costs and benefits associated with the proposals.

58. *Penalty for Failure to Meet Performance Requirements.* Along with performance benchmarks, we seek to adopt meaningful and enforceable penalties for failing to meet the benchmarks. We seek comment on which penalties will most effectively ensure timely build-out. Specifically, we propose that, in the event a T-Band licensee fails to meet the first performance benchmark, the licensee's second benchmark and license term would be reduced by two years, thereby requiring it to meet the second performance benchmark two years sooner (at 10 years into the license term) and reducing its initial license term to 13 years. We further propose that, in the event a T-Band licensee fails to meet the second performance benchmark for a particular license area, its license for each license area in which it fails to meet the performance benchmark shall terminate automatically without Commission action. How should we modify this proposal in the event the spectrum is used for broadcast services and is subject to an 8-year license term?

59. We propose that, in the event a T-Band licensee's authority to operate terminates, the licensee's spectrum rights would become available for reassignment pursuant to the competitive bidding provisions of section 309(j). Further, consistent with the Commission's rules for other part 27 licenses, we propose that any T-Band licensee that forfeits its license for failure to meet its performance requirements would be precluded from regaining that license.¹⁰⁸ Finally, we seek comment on other performance requirements and enforcement mechanisms that would effectively ensure timely buildout.

60. *Compliance Procedures.* In addition to compliance procedures applicable to all part 27 licensees, including the filing of electronic coverage maps and supporting documentation,¹⁰⁹ we propose a rule requiring that such electronic coverage maps accurately depict both the boundaries of each licensed area and the coverage boundaries of the actual areas to which the licensee provides service or in the case of a fixed deployment, the locations of the fixed transmitters associated with each link. If a licensee does not provide reliable signal coverage to an entire license area, we propose that it must provide a map that accurately depicts the boundaries of the area or areas within each license area that are not being served. We further propose that each licensee must file supporting documentation certifying the type of service it is providing for each licensed area within its service territory and the type of technology used to provide such service. Supporting documentation must include the assumptions used to create the coverage maps, including the propagation model and the signal strength necessary to provide reliable service with the licensee's technology. We believe that such procedures will confirm that the spectrum is being used consistently with the performance requirements. We seek comment on our proposals. In the event this T-Band spectrum is used for broadcast services, we seek comment on whether and how we should we modify the proposed compliance procedures.

61. *Renewal Term Construction Obligation.* In addition to, and independent of, the general renewal requirements contained in section 1.949 of our rules, which apply to all Wireless Radio Services (WRS) licensees, we also seek comment on application of specific renewal term construction obligations to new T-Band licensees. In the *WRS Renewal Reform FNPRM*, we reiterated the Commission's mandate under the Communications Act to promote "the development and rapid deployment of new technologies, products, and services . . . for those residing in rural areas," and we sought comment on various renewal term construction obligations that might serve those goals.¹¹⁰ Further, we noted that the Communications Act requires that, in prescribing regulations for the assignment of initial licenses through a system of competitive bidding, the Commission shall "include performance requirements, such as appropriate deadlines and penalties for performance failures, to ensure prompt delivery of service to rural areas, to

¹⁰⁸ See, e.g., 47 CFR § 27.14(a) (AWS-1 and AWS-3), (q)(6) (AWS-4), (r)(4) (H Block).

¹⁰⁹ See *id.* §§ 1.946(d); 27.14(k).

¹¹⁰ See *WRS Renewal Reform 2nd R&O and FNPRM*, 32 FCC Rcd at 8911-18, paras. 100-23 (quoting 47 U.S.C. § 309(j)(3)(A)).

prevent stockpiling or warehousing of spectrum by licensees or permittees, and to promote investment in and rapid deployment of new technologies and services.”¹¹¹ The *WRS Renewal Reform FNPRM* sought comment on various renewal term construction obligations, such as incremental increases in the construction metric in each subsequent renewal term—*e.g.*, by 5 or 10%—up to a certain threshold.¹¹² In the event that licensees fail to satisfy any additional renewal term construction obligations, the Commission sought comment on a range of penalties and on methods for reassigning the unused spectrum, including automatic termination, “keep-what-you-serve,” and “use or share” approaches.¹¹³

62. The *WRS Renewal Reform FNPRM* proposed to apply rules adopted in that proceeding to all flexible geographic licenses.¹¹⁴ Given our proposal to license this band on a geographic basis for flexible use, any additional renewal term construction obligations proposed in the *WRS Renewal Reform FNPRM* also would apply to licenses in the T-Band. We seek comment on whether there are unique characteristics of the T-Band that might require a different approach from the proposals contained in the *WRS Renewal Reform FNPRM*. For example, we propose geographic areas consisting solely of urbanized areas and the discussion of renewal term construction obligations was tailored to ensuring rural build-out. Further, while many existing wireless radio services have 10-year license terms,¹¹⁵ here we propose and seek comment on a 15-year initial license term with 10-year renewal terms for T-Band licensees providing non-broadcast services (eight years for licensees providing broadcast services). Do any of our proposals for this band necessitate a more tailored approach than the rules of general applicability proposed in the *WRS Renewal Reform FNPRM*? For instance, should we require buildout to 85% of the population by the end of second license term, given the increased length of the initial license term? Similarly, in the event we permit licensees to demonstrate compliance with initial term performance requirements by providing IoT services, should an applicant deploying IoT applications in the T-Band be required to exceed its original construction metric by an additional 5%? If a T-Band license is issued for broadcast use, how would this effect renewal term obligations? Commenters advocating rules specific to the T-Band should address the costs and benefits of their proposed rules. Further, they should discuss how a given proposal would encourage investment and deployment in areas that might not otherwise benefit from significant wireless coverage.

4. Competitive Bidding Procedures

63. Consistent with the competitive bidding procedures the Commission has used in previous auctions, we propose to conduct any auction for licenses for spectrum in the T-Band in conformity with the general competitive bidding rules set forth in Part 1, Subpart Q, of the Commission’s rules.¹¹⁶ We also seek comment on whether any of our Part 1 rules or other competitive bidding policies would be inappropriate or should be modified for an auction of T-Band licenses.¹¹⁷ We seek comment on the costs and benefits of these proposals.

¹¹¹ 47 U.S.C. § 309(j)(4)(B).

¹¹² See *WRS Renewal Reform 2nd R&O and FNPRM*, 32 FCC Rcd at 8912-14, paras. 105-09. The “renewal term” is tied to the license and refers to the second full term a license enters after being renewed at the end of the initial term. Under this incremental increase approach, assignment of the license to a new licensee would not impact whether a license is deemed to be in its first or second full license term. *Id.*

¹¹³ *Id.* at 8915-17, paras. 114-17.

¹¹⁴ *Id.* at 8915, paras. 111-12.

¹¹⁵ See, *e.g.*, 47 CFR §§ 24.15 (PCS); 27.13(a), (c), (d), (e), (g)-(i) (WCS).

¹¹⁶ See *id.* §§ 1.2101-1.2114.

¹¹⁷ Consistent with our longstanding approach, we will initiate a public notice process to solicit public input on certain details of auction design and the auction procedures.

64. We also seek comment on whether to make bidding credits for designated entities available for this band. If we decide to offer small business bidding credits, we seek comment on how to define a small business. In recent years, for other flexible use licenses we have adopted bidding credits for the two larger designated entity business sizes provided in the Commission's Part 1 standardized schedule of bidding credits.¹¹⁸ Accordingly, we seek comment on defining a small business as an entity with average gross revenues for the preceding five years not exceeding \$55 million, and a very small business as an entity with average gross revenues for the preceding five years not exceeding \$20 million.¹¹⁹ A qualifying "small business" would be eligible for a bidding credit of 15% and a qualifying "very small business" would be eligible for a bidding credit of 25%.¹²⁰ We also seek comment on whether the unique characteristics of these frequencies and our proposed licensing model suggest that we should adopt different small business size standards and associated bidding credits than we have in the past.

65. Because new licenses in this band will only be available in eleven urbanized areas within an operational radius of the geographic center of each area, we propose not to offer rural service bidding credits.¹²¹ We seek comment on this proposal.

D. Technical Rules

66. Our goal is to establish technical rules that maximize flexible use of the new T-Band spectrum licenses while appropriately protecting incumbent operations. Many of the technical rules proposed below are based on the rules adopted for the 600 MHz and lower 700 MHz bands, which are similar to T-Band in terms of flexible use, propagation characteristics, and ability to accommodate wideband technologies. We believe that the proposed technical rules regarding transmitter power, antenna height, and out-of-band emissions (OOBE) limits, together with existing interference protection rules, will maintain a status quo interference environment, where an overlay licensee is not permitted to

¹¹⁸ Because the T-Band is adjacent to other former TV bands, the band may have similar characteristics, and the new licensees may be presented with similar issues and capital requirements to those of the 600 MHz band. *See Incentive Auctions Report and Order*, 29 FCC Rcd at 6762, para. 475; *Updating Part 1 R&O*, 30 FCC Rcd at 7524-25, para. 74, 7528, para. 83 (adopting revised small business size standards for auctions of licenses in the 600 MHz Band); *Spectrum Frontiers Report and Order*, 31 FCC Rcd at 8099-8100, paras. 249-50 (adopting small business size standards for auctions of licenses in the Upper Microwave Flexible Use Service); 47 CFR § 1.2110(f)(2)(i)(A)(C) (defining small business entities using average gross revenues thresholds of \$4 million, \$20 million, and \$55 million). While the Commission is not required to adopt bidding credits for a particular service, the Part 1 rules provide that the Commission may do so by adopting small business or rural service provider bidding credits in the service-specific rules for a band. *Id.* § 1.2110(f)(1). Any caps with respect to available bidding credits are adopted on an auction-by-auction basis. *Id.* §§ 1.2110(f)(2)(ii) (cap on designated entity bidding discount), 1.2110(f)(4)(ii) (cap on rural service provider discount).

¹¹⁹ The standardized schedule of bidding credits provided in section 1.2110(f)(2)(i) defines small businesses based on average gross revenues for the preceding three years. In December 2018, Congress revised the standard set out in the Small Business Act for categorizing a business concern as a "small business concern," by changing the annual average gross receipts benchmark from a three-year period to a five-year period. Thus, as a general matter, a Federal agency cannot propose to categorize a business concern as a "small business concern" for Small Business Act purposes unless the size of the concern is based on its annual average gross receipts "over a period of not less than 5 years." 15 U.S.C. § 632(a)(2)(C)(ii)(II), *as amended by* Small Business Runway Extension Act of 2018, Pub. L. 115-324 (Dec. 17, 2018); *see* 13 CFR § 121.903(a)(1)(ii). To implement the proposal in this Notice consistent with the statutory requirements, we therefore propose to adopt the Small Business Act's revised five-year average gross receipts benchmark for purposes of determining which entities qualify for small business bidding credits.

¹²⁰ 47 CFR § 1.2110(f)(2)(i).

¹²¹ Eligibility for a rural service bidding credit may be offered only where s an eligible rural service provider that provides commercial communications services to a customer base of fewer than 250,000 combined wireless, wireline, broadband, and cable subscribers and serves primarily rural areas a 15% bidding credit. *See id.* § 1.2110(f)(4).

cause harmful interference to any operations that remain in or are adjacent to the 470-512 MHz band (e.g., on broadcast television channel 21 or operations below 470 MHz). We seek comment on our proposed technical rules and whether they best achieve our objectives of permitting more flexible use of this spectrum, while at the same time protecting co-channel and adjacent spectrum users from harmful interference.

1. Out-of-Band Emissions Limit

67. Under our proposal, we would license T-Band spectrum in certain geographic areas in six megahertz blocks on a block-by-block basis. Therefore, we must consider how to address potential harmful interference between adjacent blocks within the T-Band, and between T-Band spectrum and adjacent bands.

68. The Commission previously has concluded that attenuating transmitter out-of-band emissions (OOBE) by $43 + 10 \log(P)$ dB,¹²² where P is the transmit power in watts, is appropriate to minimize harmful electromagnetic interference between operators. The Commission adopted this approach in other bands suited for flexible services, including the 600 MHz and lower 700 MHz bands used for wireless broadband services.¹²³ To fully define an emissions limit, the Commission's rules generally specify details on how to measure the power of the emissions, such as the measurement bandwidth. For the 600 MHz and lower 700 MHz bands, the measurement bandwidth used to determine compliance with this limit for both mobile stations and base stations is 100 kHz, with some modification within the first 100 kHz.¹²⁴ Similarly, we believe that it is reasonable to apply this procedure to both mobile and base transmissions in the T-Band.

69. Accordingly, to address potential harmful electromagnetic interference immediately outside each T-Band block, we propose to apply section 27.53(g) of the Commission's rules, which includes OOBE attenuation of $43 + 10 \log(P)$ dB and the associated measurement procedure, to the T-Band.¹²⁵ We seek comment on this proposal, and on whether we would need to modify this proposal if licenses are issued in the band for broadcast operations. We also seek comment on the effect of the proposed OOBE attenuation on the existing interference environment. For instance, how will the OOBE attenuation affect the current interference environment on any remaining part 90 public safety, Industrial/Business, or part 22 point to multi-point operations? How will the OOBE attenuation affect the separation distance to protect adjacent TV channels? And how will the OOBE attenuation affect the current interference environment on PLMR operations at the upper edge of the 450-470 MHz band?

2. Transmitter Power Limits

70. We propose to apply transmitter power limits for T-Band operations that generally are consistent with the 600 MHz and lower 700 MHz bands,¹²⁶ while taking into consideration that the proposed band plan for the T-Band does not have a predetermined uplink and downlink. Accordingly, we propose an effective radiated power (ERP) not to exceed 1000 watts for fixed and base stations transmitting a signal with an emission bandwidth of 1 MHz or less, with maximum permissible power decreasing as the antenna height above average terrain (HAAT) rises above 305 meters. For base stations transmitting a signal with an emission bandwidth greater than 1 MHz, we propose an ERP not to exceed

¹²² We observe that the proposed OOBE limit is consistent with our rules in other flexible use bands, but is less stringent than the current OOBE limit applicable to part 90 T-Band licensees that requires at least $50 + 10 \log(P)$ dB or 70 dB, whichever is the lesser attenuation, on any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz. See 47 CFR § 90.210(d)(3).

¹²³ See e.g., *id.* §§ 24.238(a), 27.53(g)-(h).

¹²⁴ *Id.*

¹²⁵ See *id.*

¹²⁶ See *id.* § 27.50(c).

1000 watts/MHz with the maximum permissible power decreasing as the antenna height above average terrain (HAAT) rises above 305 meters. Alternatively, we seek comment on whether we should limit the ERP for fixed and base stations to 1000 watts/MHz for any emission bandwidth, with maximum permissible power decreasing as the antenna height above average terrain (HAAT) rises above 305 meters. We seek comment on whether this alternate approach would provide sufficient power for narrowband operations in the T-Band. We also propose to afford additional flexibility for licensees seeking to operate at transmit powers higher than we have proposed, provided they comply with a power flux density limit and the notice requirement specified in our rules to mitigate the risk of harmful interference.¹²⁷ This produced power flux density must not exceed 3000 microwatts per square meter on the ground over the area extending to 1 km from the base of the antenna mounting structure.¹²⁸ We further note that the maximum ERP in the current T-Band rules is limited by the distance to the closest co-channel TV station.¹²⁹ We seek comment on this approach, including costs and benefits, noting that our proposal varies from current T-Band rules, but is consistent with other flexible services, specifically 600 MHz and lower 700 MHz. We also seek comment on whether modifications to this proposal are necessary if licenses are issued in the band for broadcast operations.

71. We note that we did not propose to include a rural component to the power limits for the T-Band, as we have included for other services, because under our proposal T-Band base stations would not be permitted to be located more than 80 kilometers (50 miles) from the geographic center of the urbanized areas listed in Commission rule section 27.6.

3. Co-Channel Interference between T-Band Licensees and TV Systems

72. Since we propose to license the T-Band on a geographic area basis with an 80-mile operational radius, we seek to ensure that T-Band licensees do not cause interference to TV co-channel systems operating along common geographic borders. The Commission's 600 MHz and lower 700 MHz rules address the possibility of harmful co-channel interference between geographically adjacent licenses. The rule provides that the predicted or measured median field strength shall not exceed 40 dB μ V/m at any location on the edge of the geographical border of the licensee's service area, unless the adjacent affected service area licensee agrees to a different field strength.¹³⁰ Given the similarities between the T-Band, lower 700 MHz, and 600 MHz bands, we propose to apply the signal strength limit currently set forth in section 27.55(a)(2) of our rules to the T-Band.¹³¹ We also propose to allow licensees in adjacent areas to agree to alternate field strength limits. We seek comment on this approach, including any costs and benefits, and also seek comment on whether any modifications to this proposal are necessary if licenses are issued in the T-Band for broadcast operations.

4. Antenna Height Limits

73. We propose to apply the flexible 600 MHz and lower 700 MHz antenna height rules, as set forth in section 27.50(c) of our rules, to the T-Band.¹³² Although the existing antenna rules for those bands do not set specific antenna height restrictions, ERP reductions are required for base or fixed stations with a height above average terrain (HAAT) exceeding 305 meters and will be applied to T-Band

¹²⁷ See 47 CFR §§ 27.50(c)(8), 27.55(b).

¹²⁸ See *id.* § 27.55(b).

¹²⁹ *Id.* § 90.309. We note that the distances listed in this rule section are based on analog TV channels and may be different for digital TV channels.

¹³⁰ See *id.* § 27.55(a)(2).

¹³¹ See *id.*

¹³² See *id.* § 27.50(c).

licensees.¹³³ In addition, other rules effectively limit antenna heights. For example, all part 27 services are subject to rule section 27.56, which prevents antenna heights that would be a hazard to air navigation.¹³⁴ Also, our proposed co-channel interference rules effectively limit antenna heights because of the limitation on field strength at the boundary of a licensee's service area.¹³⁵ We believe that the general antenna height restrictions are sufficient to afford necessary protections, and therefore do not propose any band-specific limitations on new T-Band licensees. We seek comment on this approach, including the costs and benefits, and also seek comment on whether this approach requires modification if licenses are issued in the band for broadcast operations.

5. Canadian and Mexican Coordination

74. Under our current proposal to license the T-Band on a geographic area basis with an 80-mile operational radius, we do not believe that new T-Band licenses will require coordination with either Canada or Mexico as the areas under consideration are sufficiently separated from the border areas so as to pose no international interference issues. However, if larger geographic license areas are adopted in a future proceeding, international coordination may be required. We note that section 27.57(c) of our rules provides that all part 27 Wireless Communications Services operations are subject to international agreements between the U.S and Mexico and between the U.S. and Canada.¹³⁶

6. Protection of Broadcast Television Service in the T-Band From Wireless Operations

75. We propose to apply to the T-Band the protections of current broadcast TV rules that are consistent with those applied to 600 MHz band licensees.¹³⁷ Specifically, we propose that licensees authorized to operate wireless services in this band be prohibited from causing harmful interference to public reception of the signals of broadcast television stations transmitting co-channel or on an adjacent channel. We propose that such wireless operations comply with the desired to undesired (D/U) ratios in Table 5 in OET Bulletin No. 74, Methodology for Predicting Inter-Service Interference to Broadcast Television from Mobile Wireless.¹³⁸ If a licensee in this band causes harmful interference within the noise-limited contour or protected contour of a broadcast television station that is operating co-channel or on an adjacent channel, we propose to require the licensee to eliminate the harmful interference. We seek comment on this approach, whether additional protections might be necessary, and the cost and benefits of any such modifications.

76. In the event that a new initial T-Band licensee intends to use the license for provision of broadcast services, we seek comment of whether such licensees should be subject to part 73 rules regarding television-to-television protection criteria. If so, we seek comment on what criteria should apply in situations where adjacent licensees hold licenses governed by part 73 and part 27 rules, respectively.

¹³³ The ERP limits that are required when the antenna height is above 305 meters are set forth in Tables 1 and 3 of Section 27.50 and are based on the emission bandwidth of the signal. *See* 47 CFR § 27.50.

¹³⁴ *See id.* § 27.56.

¹³⁵ *See id.* § 27.55(a).

¹³⁶ *Id.* § 27.57(c).

¹³⁷ *See Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, GN Docket No. 12-268, Third Report and Order and First Order on Reconsideration, 30 FCC Rcd 12049 (2015).

¹³⁸ *See* OET Bulletin No. 74 (October 26, 2015), available at <https://transition.fcc.gov/bureaus/oet/info/documents/bulletins/oet74/OET74.pdf>

7. Other Technical Issues

77. Part 27 contains several additional technical rules applicable to all part 27 services, including section 27.51 (Equipment authorization), section 27.52 (RF safety), section 27.54 (Frequency stability), and section 27.56 (Antenna structures; air navigation safety).¹³⁹ We propose to apply all of these part 27 technical rules to new T-Band licensees, including those acquiring licenses through assignment, partitioning or disaggregation. We seek comment on this approach, including the costs and benefits, and we also seek comment on whether modifications to this proposal are necessary if licenses are issued in the band for broadcast operations.

IV. PROCEDURAL MATTERS

78. *Ex Parte Presentations.* The proceeding shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s *ex parte* rules.¹⁴⁰ Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must: (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter’s written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission’s *ex parte* rules.

79. *Comment Period and Filing Procedures.* Pursuant to sections 1.415 and 1.419 of the Commission’s rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission’s Electronic Comment Filing System (ECFS). See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121 (1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://apps.fcc.gov/ecfs/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing.
 - Filings can be sent by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission’s Secretary, Office of the Secretary, Federal Communications Commission.
 - Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9050 Junction Drive, Annapolis Junction, MD 20701.

¹³⁹ 47 CFR §§ 27.51, 27.52, 27.54, 27.56.

¹⁴⁰ *Id.* §§ 1.1200 *et seq.*

- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington, DC 20554.
- Effective March 19, 2020, and until further notice, the Commission no longer accepts any hand or messenger delivered filings. This is a temporary measure taken to help protect the health and safety of individuals, and to mitigate the transmission of COVID-19. *See FCC Announces Closure of FCC Headquarters Open Window and Change in Hand-Delivery Policy*, Public Notice, DA 20-304 (March 19, 2020), <https://www.fcc.gov/document/fcc-closes-headquarters-open-window-and-changes-hand-delivery-policy>.
- During the time the Commission's building is closed to the general public and until further notice, if more than one docket or rulemaking number appears in the caption of a proceeding, paper filers need not submit two additional copies for each additional docket or rulemaking number; an original and one copy are sufficient.

80. **People with Disabilities:** To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

81. *Availability of Documents.* Comments, reply comments, and *ex parte* submissions will be available for public inspection during regular business hours in the FCC Reference Center, Federal Communications Commission, 445 12th Street, S.W., Room CY-A257, Washington, D.C. These documents will also be available via ECFS. Documents will be available electronically in ASCII, Microsoft Word, and/or Adobe Acrobat.

82. *Initial Regulatory Flexibility Analysis.* As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹⁴¹ the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities of the policies and rules addressed in this *Notice*. The IRFA is set forth in Appendix B. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines for comments on the *Notice* and should have a separate and distinct heading designating them as responses to the IRFA. The Commission will send a copy of the *Notice*, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.¹⁴²

83. *Paperwork Reduction Act Analysis.* This document contains proposed new or modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4), we seek specific comment on how we might further reduce the information collection burden for small business concerns with fewer than 25 employees.

84. *Further Information.* For additional information on this proceeding, contact Melissa Conway of the Mobility Division, Wireless Telecommunications Bureau, at Melissa.Conway@fcc.gov or (202) 418-2887.

V. ORDERING CLAUSES

85. IT IS ORDERED, pursuant to the authority found in sections 1, 2, 4(i), 303, 309 and 316 of the Communications Act of 1934, 47 U.S.C. §§ 151, 152, 154(i), 303, 309, and 316, by Section 6103

¹⁴¹ 5 U.S.C. § 603.

¹⁴² *See id.* § 603(a).

of the Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, 126 Stat. 156 (2012), § 6103, and section 1.411 of the Commission's Rules, 47 CFR § 1.411, that this Notice of Proposed Rulemaking IS HEREBY ADOPTED.

86. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A

Proposed Rules

The Federal Communications Commission proposes to amend 47 CFR parts 1, 2, and 27 as follows:

- 1. The authority citation for Part 1 continues to read as follows:

Authority: [INSERT CURRENT AUTHORITY CITATION].

- 2. Amend section 1.9005 by revising paragraph (j) to read as follows:

§ 1.9005 Includ ed services.

* * * * *

(j) The Wireless Communications Service in the 470-512 MHz band and the 698-746 MHz band (part 27 of this chapter);

PART 2—FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

- 3. The authority citation for part 2 continues to read as follows:

[INSERT CURRENT AUTHORITY CITATION]

- 4. Section 2.106, the Table of Frequency Allocations, page 29 is amended as follows:

§ 2.106 Table of Frequency Allocations.

The revisions read as follows:

* * * * *

Table of Frequency Allocations			456-894 MHz (UHF)		Page 29
International Table			United States Table		FCC Rule Part(s)
Region 1 Table	Region 2 Table	Region 3 Table	Federal Table	Non-Federal Table	
456-459 FIXED MOBILE 5.286AA 5.271 5.287 5.288			456-459 US64 US287 US288	456-460 FIXED LAND MOBILE	Public Mobile (22) Maritime (80) Private Land Mobile (90) MedRadio (95)
459-460 FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	459-460 FIXED MOBILE 5.286AA MOBILE-SATELLITE (Earth-to-space) 5.286A 5.286B 5.286C 5.209	459-460 FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	459-460	US64 US287 US288 NG32 NG112 NG124 NG148	
460-470 FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth)			460-470 Meteorological-satellite (space-to-Earth)	460-462.5375 FIXED LAND MOBILE US209 US289 NG124 462.5375-462.7375 LAND MOBILE US289 462.7375-467.5375 FIXED LAND MOBILE US73 US209 US287 US288 US289 NG124 467.5375-467.7375 LAND MOBILE US287 US288 US289 467.7375-470 FIXED LAND MOBILE US73 US288 US289 NG124	Private Land Mobile (90) Personal Radio (95) Maritime (80) Private Land Mobile (90) Maritime (80) Personal Radio (95) Maritime (80) Private Land Mobile (90)
5.287 5.288 5.289 5.290 470-694 BROADCASTING	470-512 BROADCASTING Fixed Mobile 5.292 5.293 5.295 512-608 BROADCASTING 5.295 5.297	470-585 FIXED MOBILE 5.296A BROADCASTING 5.291 5.298 585-610 FIXED MOBILE 5.296A	US73 US209 US287 US288 US289 470-608	470-512 FIXED MOBILE BROADCASTING NG5 NG14 NG66 NG115 NG149 512-608 BROADCASTING NG5 NG14 NG115 NG149	Public Mobile (22) Wireless Communications (27) Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H) Private Land Mobile (90) Broadcast Radio (TV)(73) LPTV, TV Translator/Booster (74G) Low Power Auxiliary (74H)

608-614 RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)	BROADCASTING RADIONAVIGATION 5.149 5.305 5.306 5.307 610-890 FIXED MOBILE 5.296A 5.313A 5.317A BROADCASTING	608-614 LAND MOBILE (medical telemetry and medical telecommand) RADIO ASTRONOMY US74 US246	Personal Radio (95)
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PART 27 – MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

5. The authority citation for part 27 continues to read as follows:

Authority: [INSERT CURRENT AUTHORITY CITATION].

6. Section 27.1 is amended by adding paragraph (b)(15) to read as follows:

§ 27.1 Basis and purpose.

* * * * *

(b) * * *

(15) 470-512 MHz.

7. Section 27.5 is amended by adding paragraph (m) to read as follows:

§ 27.5 Frequencies.

* * * * *

(m) *470-512 MHz band.* The following frequencies are available for licensing pursuant to this part in the 470-512 MHz band:

(1) Seven unpaired channel blocks of 6 megahertz each are available for assignment as follows:

Block A: 470-476 MHz;

Block B: 476-482 MHz;

Block C: 482-488 MHz;

Block D: 488-494 MHz;

Block E: 494-500 MHz;

Block F: 500-506 MHz; and

Block G: 506-512 MHz.

8. Section 27.6 is amended by adding paragraph (m) to read as follows:

§ 27.6 Service areas.

* * * * *

(m) *470-512 MHz band.* The following table lists specific urbanized areas with T-Band frequency bands and blocks that are available for assignment. The available frequencies are listed in § 27.5 of this part. The service area for the 470-512 MHz band extends 128 kilometers (80 miles) from the geographic centers of the urban areas listed below:

Note: coordinates are referenced to the North American Datum 1983 (NAD83).

Urbanized area	Geographic center		Bands (MHz)	TV channels	Blocks
	North latitude	West longitude			
Boston, MA	42°21'24.4"	71°03'23.2"	470-476, 482-488	14, 16	A, C
Chicago, IL	41°52'28.1"	87°38'22.2"	470-476, 476-482	14, 15	A, B
Dallas/Fort Worth, TX	32°47'09.5"	96°47'38.0"	482-488	16	C
Houston, TX	29°45'26.8"	95°21'37.8"	488-494	17	D
Los Angeles, CA	34°03'15.0"	118°14'31.3"	470-476, 482-488, 506-512	14, 16, 20	A, C, G

Miami, FL	25°46'38.4"	80°11'31.2"	470-476	14	A
New York, NY/NE NJ	40°45'06.4"	73°59'37.5"	470-476, 476-482, 482-488	14, 15, 16	A, B, C
Philadelphia, PA	39°56'58.4"	75°09'19.6"	500-506, 506-512	19, 20	F, G
Pittsburgh, PA	40°26'19.2"	79°59'59.2"	470-476, 494-500	14, 18	A, E
San Francisco/Oakland, CA	37°46'38.7"	122°24'43.9"	482-488, 488-494	16, 17	C, D
Washington, DC/MD/VA	38°53'51.4"	77°00'31.9"	488-494, 494-500	17, 18	D, E

9. Section 27.13 is amended by adding paragraph (m) to read as follows:

§ 27.13 License period.

* * * * *

(m) 470-512 MHz band. Authorization for the 470-512 MHz band will have a term not to exceed fifteen years from the date of issuance and ten years from the date of any subsequent license renewal, except that initial authorizations for a part 27 licensee that provides broadcast services, whether exclusively or in combination with other services, will not exceed eight years.

10. Section 27.14 is amended by revising the first sentence of paragraphs (a) and (k), and adding paragraph (w) to read as follows:

§ 27.14 Construction requirements.

(a) AWS and WCS licensees, with the exception of WCS licensees holding authorizations for the 470-512 MHz band, 600 MHz band, Block A in the 698-704 MHz and 728-734 MHz bands, Block B in the 704-710 MHz and 734-740 MHz bands, Block E in the 722-728 MHz band, Block C, C1 or C2 in the 746-757 MHz and 776-787 MHz bands, Block A in the 2305-2310 MHz and 2350-2355 MHz bands, Block B in the 2310-2315 MHz and 2355-2360 MHz bands, Block C in the 2315-2320 MHz band, Block D in the 2345-2350 MHz band, and in the 3700-3980 MHz band, and with the exception of licensees holding AWS authorizations in the 1915-1920 MHz and 1995-2000 MHz bands, the 2000-2020 MHz and 2180-2200 MHz bands, or 1695-1710 MHz, 1755-1780 MHz and 2155-2180 MHz bands, must, as a performance requirement, make a showing of “substantial service” in their license area within the prescribed license term set forth in § 27.13.* * *

* * * * *

(k) Licensees holding WCS or AWS authorizations in the spectrum blocks enumerated in paragraphs (g), (h), (i), (q), (r), (s), (t), (v) and (w) of this section, including any licensee that obtained its license pursuant to the procedures set forth in paragraph (j) of this section, shall demonstrate compliance with performance requirements by filing a construction notification with the Commission, within 15 days of the expiration of the applicable benchmark, in accordance with the provisions set forth in § 1.946(d) of this chapter.* * *

* * * * *

(w) The following provisions apply to any licensee holding an authorization in the 470-512 MHz band:

(1) Licensees relying on mobile or point-to-multipoint service shall provide reliable signal coverage and offer service within eight (8) years from the date of the initial license to at least 45 percent of the population in each of its license areas (“First Buildout Requirement”). Licensee shall provide reliable signal coverage and offer service within 12 years from the date of the initial license to at least 80 percent of the population in each of its license areas (“Second Buildout Requirement”). Licensees relying on point-to-point service shall demonstrate within eight years of the license issue date that they have four links operating and providing service to customers or for internal use if the population within the license

area is equal to or less than 268,000 and, if the population is greater than 268,000, that they have at least one link in operation and providing service to customers, or for internal use, per every 67,000 persons within a license area (“First Buildout Requirement”). Licensees relying on point-to-point service shall demonstrate within 12 years of the license issue date that they have eight links operating and providing service to customers or for internal use if the population within the license area is equal to or less than 268,000 and, if the population within the license area is greater than 268,000, shall demonstrate they are providing service and have at least two links in operation per every 67,000 persons within a license area (“Second Buildout Requirement”).

(2) If a licensee fails to establish that it meets the First Buildout Requirement for a particular license area, the licensee's Second Buildout Requirement deadline and license term will be reduced by two years. If a licensee fails to establish that it meets the Second Buildout Requirement for a particular license area, its authorization for each license area in which it fails to meet the Second Buildout Requirement shall terminate automatically without Commission action, and the licensee will be ineligible to regain it if the Commission makes the license available at a later date.

(3) To demonstrate compliance with these performance requirements, licensees shall use the most recently available decennial U.S. Census Data at the time of measurement and shall base their measurements of population or geographic area served on areas no larger than the Census Tract level. The population or area within a specific Census Tract (or other acceptable identifier) will be deemed served by the licensee only if it provides reliable signal coverage to and offers service within the specific Census Tract (or other acceptable identifier). To the extent the Census Tract (or other acceptable identifier) extends beyond the boundaries of a license area, a licensee with authorizations for such areas may include only the population or geographic area within the Census Tract (or other acceptable identifier) towards meeting the performance requirement of a single, individual license. If a licensee does not provide reliable signal coverage to an entire license area, the licensee must provide a map that accurately depicts the boundaries of the area or areas within each license area not being served. Each licensee also must file supporting documentation certifying the type of service it is providing for each licensed area within its service territory and the type of technology used to provide such service. Supporting documentation must include the assumptions used to create the coverage maps, including the propagation model and the signal strength necessary to provide reliable service with the licensee's technology.

(4) License Renewal. After satisfying the 12-year, final performance benchmark, a licensee must continue to provide coverage and offer service at or above that level for the remaining three years of the 15-year license term in order to warrant license renewal.

11. Section 27.50 is amended by revising paragraph (c), (c)(2), (c)(4), (c)(5), (c)(10), and titles for tables 1 and 3 to read as follows:

§ 27.50 Power limits and duty cycle.

* * * * *

(c) The following power and antenna height requirements apply to stations transmitting in the 470-512 MHz band, the 600 MHz band and the 698-746 MHz band:

* * *

(2) Fixed and base stations, except for fixed and base stations operating in the 470-512 MHz band, located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal with an emission bandwidth of 1 MHz or less must not exceed an ERP of 2000 watts and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts ERP in accordance with Table 2 of this section;

* * *

(4) Fixed and base stations, except for fixed and base stations operating in the 470-512 MHz band, located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal with an emission bandwidth greater than 1 MHz must not exceed an ERP of 2000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts/MHz ERP in accordance with Table 4 of this section;

(5) Licensees, except for licensees operating in the 470-512 MHz band and the 600 MHz downlink band, seeking to operate a fixed or base station located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal at an ERP greater than 1000 watts must:

* * *

(10) Portable stations (hand-held devices) in the 470-512 MHz band, the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 470-512 MHz and 600 MHz uplink band are limited to 3 watts ERP.

* * *

Table 1 to § 27.50—Permissible Power and Antenna Heights for Base and Fixed Stations in the 757-758 and 775-776 MHz Bands and for Base and Fixed Stations in the 470-512 MHz band, 600 MHz, 698-757 MHz, 758-763 MHz, 776-787 MHz and 788-793 MHz Bands Transmitting a Signal With an Emission Bandwidth of 1 MHz or Less

* * * * *

* * * * *

Table 3 to § 27.50—Permissible Power and Antenna Heights for Base and Fixed Stations in the 470-512 MHz band, 600 MHz, 698-757 MHz, 758-763 MHz, 776-787 MHz and 788-793 MHz Bands Transmitting a Signal With an Emission Bandwidth Greater than 1 MHz

* * * * *

* * * * *

12. Section 27.53 is amended by revising paragraph (g) to read as follows:

§ 27.53 Emission limits.

* * * * *

(g) For operations in the 470-512 MHz band, the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

* * * * *

13. Section 27.55 is amended by revising paragraph (a)(2) to read as follows:

§ 27.55 Power strength limits.

(a) * * *

(2) The 470-512 MHz band, 600 MHz, 698-758, and 775-787 MHz bands: 40 dBµV/m.

* * * * *

(b) Power flux density limit for stations operating in the 470-512 MHz band and 698-746 MHz bands. For base and fixed stations operating in the 470-512 MHz band and 698-746 MHz band in accordance with the provisions of § 27.50(c)(6), the power flux density that would be produced by such stations through a combination of antenna height and vertical gain pattern must not exceed 3000 microwatts per square meter on the ground over the area extending to 1 km from the base of the antenna mounting structure.

* * * * *

14. Section 27.57 is amended by revising paragraph (b) to read as follows:

§ 27.57 International coordination.

* * * * *

(b) Wireless operations in the 470-608 MHz, 614-763 MHz, 775-793 MHz, and 805-806 MHz bands are subject to current and future international agreements between the United States and Canada and the United States and Mexico. Unless otherwise modified by international treaty, licenses must not cause interference to, and must accept harmful interference from, television broadcast operations in Mexico and Canada, where these services are co-primary in the band.

* * * * *

15. Section 27.75 is amended by revising paragraph (a)(2) to read as follows:

§ 27.75 Basic interoperability requirement.

(a) * * *

(2) Mobile and portable stations that operate on any portion of frequencies in the 470-512 MHz band or 600 MHz band must be capable of operating on all frequencies in the 470-512 MHz band or 600 MHz band using the same air interfaces that the equipment utilizes on any frequencies in the 470-512 MHz band or 600 MHz band.

* * * * *

16. Section 27.1310 is amended by revising the title and paragraphs (a), (a)(2), (b), (b)(1), (c), and (d)(4) to read as follows:

§ 27.1310 Protection of Broadcast Television Service in the 470-512 MHz band and 600 MHz band from wireless operations.

(a) Licensees authorized to operate wireless services in the 470-512 MHz band and 600 MHz band must cause no harmful interference to public reception of the signals of broadcast television stations transmitting co-channel or on an adjacent channel.

* * *

(2) If a 470-512 MHz band or 600 MHz band licensee causes harmful interference within the noise-limited contour or protected contour of a broadcast television station that is operating co-channel or on an adjacent channel, the 470-512 MHz band or the 600 MHz band licensee must eliminate the harmful interference

(b) A licensee authorized to operate wireless base stations in the 470-512 MHz band, or authorized to operate wireless services in the 600 MHz downlink band:

(1) Is not permitted to deploy wireless base stations within the noise-limited contour or protected contour of a broadcast television station licensed on a co-channel or adjacent channel in the 470-512 MHz band or 600 MHz downlink band;

* * *

(c) A licensee authorized to operate wireless mobile or portable devices in the 470-512 MHz band, or authorized to operate wireless services in the 600 MHz uplink band must limit its service area so that mobile and portable devices do not transmit:

* * * * *

(d) * * *

(4) Co-channel operations in the 470-512 MHz band and 600 MHz band are defined as operations of broadcast television stations and wireless services where their assigned channels or frequencies spectrally overlap;

* * * * *

17. Section 27.1320 is amended to read as follows:

§ 27.1320 Notification to white space database administrators.

To receive interference protection, the 470-512 MHz band and 600 MHz licensees shall notify one of the white space database administrators of the areas where they have commenced operation pursuant to §§ 15.713(j)(10) and 15.715(n) of this chapter.

18. Add new Subpart P to read as follows:

Subpart P – 470-512 MHz Band

Sec.

27.1500 470-512 MHz band subject to competitive bidding.

27.1501 Designated entities in the 470-512 MHz band.

27.1502 Comparable facilities.

27.1503 Overlay licensee rights.

27.1504 Permanent discontinuance of service in the 470-512 MHz band.

§ 27.1500 470-512 MHz band subject to competitive bidding.

Mutually exclusive initial applications for 470-512 MHz band licenses are subject to competitive bidding. The general competitive bidding procedures set forth in 47 CFR part 1, subpart Q of this chapter will apply unless otherwise provided in this subpart.

§ 27.1501 Designated entities in the 470-512 MHz band.

Eligibility for small business provisions.

(a) Definitions.

(1) Small business. A small business is an entity that, together with its affiliates, its controlling interests, and the affiliates of its controlling interests, has average gross revenues not exceeding \$55 million for the preceding five (5) years.

(2) Very small business. A very small business is an entity that, together with its affiliates, its controlling interests, and the affiliates of its controlling interests, has average gross revenues not exceeding \$20 million for the preceding five (5) years.

(b) Bidding credits. A winning bidder that qualifies as a small business, as defined in this section, or a consortium of small businesses may use the bidding credit of 15 percent, as specified in § 1.2110(f)(2)(i)(C) of this chapter, subject to the cap specified in § 1.2110(f)(2)(ii) of this chapter. A winning bidder that qualifies as a very small business, as defined in this section, or a consortium of very small businesses may use the bidding credit of 25 percent, as specified in § 1.2110(f)(2)(i)(B) of this chapter, subject to the cap specified in § 1.2110(f)(2)(ii) of this chapter.

§ 27.1502 Comparable facilities.

To be considered comparable facilities under this subpart, a replacement system provided to a public safety licensee during a mandatory relocation from the 470-512 MHz band must be at least equivalent to the licensee's existing system with respect to the following four factors: (1) system; (2) capacity; (3) quality of service; and (4) operating costs.

§27.1503 Overlay licensee rights.

(a) A licensee authorized under part 27 to operate in the 470-512 MHz band shall be permitted to construct and operate on its authorized frequencies within its geographic license area provided:

- (1) a frequency is not assigned to a part 90 or part 22 licensee (either for shared or exclusive use);
- (2) the part 90 or part 22 licensee vacates the frequency, whether by mandatory transition pursuant to Pub. L. No. 112-96, 126 Stat. 156 (2012) (Act), § 6103, voluntary transition, acquisition, failure to renew its license, or permanent discontinuance;

(i) A frequency is considered vacated where all part 90 and part 22 licensees are no longer operational, such that there would be no overlap in authorized bandwidth of part 90 or part 22 licensees with part 27 overlay licensee transmissions; or

(3) the part 90 and/or part 22 licensee and the part 27 licensee reach an agreement permitting such operation.

§ 27.1504 Permanent discontinuance of 470-512 MHz licenses.

A 470-512 MHz band licensee that permanently discontinues service as defined in § 1.953 must notify the Commission of the discontinuance within 10 days by filing FCC Form 601 requesting license cancellation. An authorization will automatically terminate, without specific Commission action, if service is permanently discontinued as defined in § 1.953, even if a licensee fails to file the required form requesting license cancellation.

APPENDIX B

Initial Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹ the Commission has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in the *Notice of Proposed Rulemaking (Notice)*. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the *Notice*. The Commission will send a copy of the *Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).² In addition, the *Notice* and IRFA (or summaries thereof) will be published in the Federal Register.³

A. Need for, and Objectives of, the Proposed Rules

2. Section 6103 of the Middle Class Tax Relief and Job Creation Act of 2012 (T-Band Mandate)⁴ directs the Commission to reallocate T-Band spectrum used by “public safety eligibles” and begin a system of competitive bidding to grant new initial licenses for the use of the spectrum by February 22, 2021,⁵ to relocate public safety entities from T-Band no later than two years after completion of the system of competitive bidding, and to make auction proceeds available to the National Telecommunications and Information Administration (NTIA) to make grants as necessary to cover relocation costs for public safety entities.

3. The *Notice of Proposed Rulemaking (Notice)* is the commencement of the Commission’s process to meet each of the statutory deadlines and directives. The *Notice* proposes to reallocate T-Band spectrum, assigning licenses by auction for between 6 megahertz and 18 megahertz of spectrum potentially available in each of eleven urbanized areas, and relocate “public safety eligibles” from the T-Band.⁶ The *Notice* proposes rules that would allow for flexible use in the auctioned T-Band, including wireless (fixed or mobile) and broadcast operations, and proposes an auction framework and licensing, operating, and technical rules for the reallocated spectrum that would preserve the current environment for incumbents. The *Notice* also seeks comment on transition mechanisms and costs for relocating public safety incumbents from T-Band, including whether to transition public safety licensees only where auction revenues exceed anticipated transition costs. In addition, the *Notice* seeks comment on how to best address the non-public safety operations in T-Band to maximize opportunities for new entrants, including whether and how to transition non-public safety operations.

B. Legal Basis

4. The proposed action is authorized pursuant to sections 1, 2, 4(i), 303, 316, and 1502 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 201(b), 303, 316, and 1502, and section 1.411 of the Commission’s Rules, 47 CFR § 1.411.

¹ See 5 U.S.C. § 603. The RFA, 5 U.S.C. §§ 601–612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

² See 5 U.S.C. § 603(a).

³ See *id.*

⁴ Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6103, 126 Stat. 156, 205-206 (2012), (codified at 47 U.S.C. § 1413) (Spectrum Act).

⁵ *Id.* § 6103(a).

⁶ *Id.* § 6103.

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply

5. The RFA directs agencies to provide a description of, and where feasible, an estimate of, the number of small entities that may be affected by the proposed rules, if adopted.⁷ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”⁸ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁹ A small business concern is one that: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.¹⁰

6. *Small Businesses, Small Organizations, and Small Governmental Jurisdictions.* Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three broad groups of small entities that could be directly affected herein.¹¹ First, while there are industry specific size standards for small businesses that are used in the regulatory flexibility analysis, according to data from the SBA’s Office of Advocacy, in general a small business is an independent business having fewer than 500 employees.¹² These types of small businesses represent 99.9 percent of all businesses in the United States, which translates to 30.7 million businesses.¹³

7. Next, the type of small entity described as a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹⁴ The Internal Revenue Service (IRS) uses a revenue benchmark of \$50,000 or less to delineate its annual electronic filing requirements for small exempt organizations.¹⁵ Nationwide, for tax year 2018, there were approximately 571,709 small exempt organizations in the U.S. reporting revenues of \$50,000 or less according to the registration and tax data for exempt organizations available from the IRS.¹⁶

⁷ 5 U.S.C. § 603(b)(3).

⁸ 5 U.S.C. § 601(6).

⁹ 5 U.S.C. § 601(3) (incorporating by reference the definition of “small business concern” in 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.”

¹⁰ 15 U.S.C. § 632.

¹¹ See 5 U.S.C. § 601(3)-(6).

¹² See SBA, Office of Advocacy, “What’s New With Small Business?”, <https://cdn.advocacy.sba.gov/wp-content/uploads/2019/09/23172859/Whats-New-With-Small-Business-2019.pdf> (Sept 2019).

¹³ *Id.*

¹⁴ 5 U.S.C. § 601(4).

¹⁵ The IRS benchmark is similar to the population of less than 50,000 benchmark in 5 U.S.C § 601(5) that is used to define a small governmental jurisdiction. Therefore, the IRS benchmark has been used to estimate the number small organizations in this small entity description. See Annual Electronic Filing Requirement for Small Exempt Organizations — Form 990-N (e-Postcard), “Who must file,”

<https://www.irs.gov/charities-non-profits/annual-electronic-filing-requirement-for-small-exempt-organizations-form-990-n-e-postcard>. We note that the IRS data does not provide information on whether a small exempt organization is independently owned and operated or dominant in its field.

¹⁶ See Exempt Organizations Business Master File Extract (EO BMF), “CSV Files by Region,” <https://www.irs.gov/charities-non-profits/exempt-organizations-business-master-file-extract-EO-BMF>. The IRS Exempt Organization Business Master File (EO BMF) Extract provides information on all registered tax-exempt/non-profit organizations. The data utilized for purposes of this description was extracted from the IRS EO

(continued....)

8. Finally, the small entity described as a “small governmental jurisdiction” is defined generally as “governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.”¹⁷ U.S. Census Bureau data from the 2017 Census of Governments¹⁸ indicate that there were 90,075 local governmental jurisdictions consisting of general purpose governments and special purpose governments in the United States.¹⁹ Of this number there were 36,931 general purpose governments (county²⁰, municipal and town or township²¹) with populations of less than 50,000 and 12,040 special purpose governments - independent school districts²² with enrollment populations of less than 50,000.²³ Accordingly, based on the 2017 U.S. Census of Governments data, we estimate that at least 48,971 entities fall into the category of “small governmental jurisdictions.”²⁴

9. *Private Land Mobile Radio Licensees.* Private land mobile radio (PLMR) systems serve an essential role in a vast range of industrial, business, land transportation, and public safety activities. Companies of all sizes operating in all U.S. business categories use these radios. Because of the vast array of PLMR users, the Commission has not developed a small business size standard specifically applicable to PLMR users. The closest applicable SBA category is Wireless Telecommunications

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BMF data for Region 1-Northeast Area (76,886), Region 2-Mid-Atlantic and Great Lakes Areas (221,121), and Region 3-Gulf Coast and Pacific Coast Areas (273,702) which includes the continental U.S., Alaska, and Hawaii. This data does not include information for Puerto Rico.

¹⁷ 5 U.S.C. § 601(5).

¹⁸ See 13 U.S.C. § 161. The Census of Governments survey is conducted every five (5) years compiling data for years ending with “2” and “7”. See also Census of Governments, <https://www.census.gov/programs-surveys/cog/about.html>.

¹⁹ See U.S. Census Bureau, 2017 Census of Governments – Organization Table 2. Local Governments by Type and State: 2017 [CG1700ORG02]. <https://www.census.gov/data/tables/2017/econ/gus/2017-governments.html>. Local governmental jurisdictions are made up of general purpose governments (county, municipal and town or township) and special purpose governments (special districts and independent school districts). See also Table 2. CG1700ORG02 Table Notes_Local Governments by Type and State_2017.

²⁰ See U.S. Census Bureau, 2017 Census of Governments - Organization, Table 5. County Governments by Population-Size Group and State: 2017 [CG1700ORG05]. <https://www.census.gov/data/tables/2017/econ/gus/2017-governments.html>. There were 2,105 county governments with populations less than 50,000. This category does not include subcounty (municipal and township) governments.

²¹ See U.S. Census Bureau, 2017 Census of Governments - Organization, Table 6. Subcounty General-Purpose Governments by Population-Size Group and State: 2017 [CG1700ORG06]. <https://www.census.gov/data/tables/2017/econ/gus/2017-governments.html>. There were 18,729 municipal and 16,097 town and township governments with populations less than 50,000.

²² See U.S. Census Bureau, 2017 Census of Governments - Organization, Table 10. Elementary and Secondary School Systems by Enrollment-Size Group and State: 2017 [CG1700ORG10]. <https://www.census.gov/data/tables/2017/econ/gus/2017-governments.html>. There were 12,040 independent school districts with enrollment populations less than 50,000. See also Table 4. Special-Purpose Local Governments by State Census Years 1942 to 2017 [CG1700ORG04], CG1700ORG04 Table Notes_Special Purpose Local Governments by State_Census Years 1942 to 2017.

²³ While the special purpose governments category also includes local special district governments, the 2017 Census of Governments data does not provide data aggregated based on population size for the special purpose governments category. Therefore, only data from independent school districts is included in the special purpose governments category.

²⁴ This total is derived from the sum of the number of general purpose governments (county, municipal and town or township) with populations of less than 50,000 (36,931) and the number of special purpose governments - independent school districts with enrollment populations of less than 50,000 (12,040), from the 2017 Census of Governments - Organizations Tables 5, 6, and 10.

Carriers (except Satellite) which encompasses business entities *engaged in radiotelephone communications*.²⁵ The appropriate size standard for this category under SBA rules is that such a business is small if it has 1,500 or fewer employees.²⁶ For this industry, U.S. Census Bureau data for 2012 show that there were 967 firms that operated for the entire year.²⁷ Of this total, 955 firms had employment of 999 or fewer employees and 12 had employment of 1000 employees or more.²⁸ Thus under this category and the associated size standard, the Commission estimates that the majority of PLMR Licensees are small entities.

10. According to the Commission's records, T-Band spectrum is used by approximately 700 non-public safety entity licensees with 1700 stations.²⁹ T-Band spectrum is also used by approximately 925 public safety licensees with 3,000 stations.³⁰ The Commission does not require PLMR licensees to disclose information about number of employees, so the Commission does not have information that could be used to determine how many PLMR licensees constitute small entities under this definition. We note that any entity engaged in a commercial activity is eligible to hold a PLMR license, and that any revised rules in this context could therefore potentially impact small entities covering a great variety of industries.

11. *Wireless Telecommunications Carriers (except Satellite)*. This industry comprises establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular services, paging services, wireless internet access, and wireless video services.³¹ The appropriate size standard under SBA rules is that such a business is small if it has 1,500 or fewer employees.³² For this industry, U.S. Census Bureau data for 2012 show that there were 967 firms that operated for the entire year.³³ Of this total, 955 firms had employment of 999 or fewer employees and 12 had employment of 1000 employees or more.³⁴ Thus under this category and the associated size standard, the Commission estimates that the majority of Wireless Telecommunications Carriers (except Satellite) are small entities.

²⁵ See U.S. Census Bureau, *2017 NAICS Definition*, "517312 Wireless Telecommunications Carriers (except Satellite)", <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517312&search=2017%20NAICS%20Search>.

²⁶ See 13 CFR § 121.201, NAICS Code 517312 (previously 517210).

²⁷ See U.S. Census Bureau, *2012 Economic Census of the United States*, Table ID: EC1251SSSZ5, *Information: Subject Series: Estab and Firm Size: Employment Size of Firms for the U.S.: 2012*, NAICS Code 517210, <https://data.census.gov/cedsci/table?text=EC1251SSSZ5&n=517210&tid=ECNSIZE2012.EC1251SSSZ5&hidePreview=false&vintage=2012>.

²⁸ *Id.* Available U.S. Census Bureau data does not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees. The largest category provided is for firms with "1000 employees or more."

²⁹ See Universal Licensing System records.

³⁰ *Id.*

³¹ See U.S. Census Bureau, *2017 NAICS Definition*, "517210 Wireless Telecommunications Carriers"(except Satellite)", <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=517312&search=2017%20NAICS%20Search>.

³² See 13 CFR § 121.201, NAICS Code 517312 (previously 517210).

³³ See U.S. Census Bureau, *2012 Economic Census of the United States*, Table ID: EC1251SSSZ5, *Information: Subject Series: Estab and Firm Size: Employment Size of Firms for the U.S.: 2012*, NAICS Code 517210, <https://data.census.gov/cedsci/table?text=EC1251SSSZ5&n=517210&tid=ECNSIZE2012.EC1251SSSZ5&hidePreview=false&vintage=2012>.

³⁴ *Id.* Available U.S. Census Bureau data does not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees. The largest category provided is for firms with "1000 employees or more."

12. *Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing.* This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment.³⁵ Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.³⁶ The SBA has established a small business size standard for this industry of 1,250 employees or less.³⁷ U.S. Census Bureau data for 2012 show that 841 establishments operated in this industry in that year.³⁸ Of that number, 828 establishments operated with fewer than 1,000 employees, 7 establishments operated with between 1,000 and 2,499 employees and 6 establishments operated with 2,500 or more employees.³⁹ Based on this data, we conclude that a majority of manufacturers in this industry are small.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

13. The Commission expects the rules proposed in the *Notice* will impose new and/or additional reporting or recordkeeping and/or other compliance obligations on small entities as well as other applicants and licensees, if adopted. In addition to the proposed rule changes associated with reallocating the T-Band spectrum by assigning by auction between 6 megahertz and 18 megahertz of spectrum potentially available in any of the eleven urbanized areas and relocating public safety eligibles from T-Band, there will likely be other new compliance obligations. For example, while our approach in the *Notice* would allow for flexible use in the auctioned T-Band, including wireless (fixed or mobile) and broadcast operations, we seek comment on other potential uses and what changes to the allocations or rules should be made to accommodate such additional uses. Reporting, recordkeeping and other compliance obligations proposed for small entities and other licensees are described below.

14. *Overlay Licenses.* Our proposal that T-Band licenses be issued pursuant to an overlay licensing structure with new licensees overlaid on incumbent Industrial/Business licensees would authorize operations for a geographic area “overlaid” on existing incumbent licensees, and require the overlay licensee to protect existing incumbents from interference indefinitely, i.e., until the rights are relinquished.⁴⁰

³⁵ See U.S. Census Bureau, *2017 NAICS Definition, “334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing”*, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=334220&search=2017>.

³⁶ *Id.*

³⁷ See 13 CFR § 121.201, NAICS Code 334220.

³⁸ See U.S. Census Bureau, *2012 Economic Census of the United States*, Table ID: EC1231SG2, *Manufacturing: Summary Series: General Summary: Industry Statistics for Subsectors and Industries by Employment Size: 2012*, NAICS Code 334220, <https://data.census.gov/cedsci/table?text=EC1231SG2&n=334220&tid=ECNSIZE2012.EC1231SG2&hidePreview=false>.

³⁹ *Id.* Available U.S. Census Bureau data does not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees. The largest category provided is for firms with “1000 employees or more.”

⁴⁰ *Expanding Flexible Use of the 3.7 to 4.2 GHz Band*, Notice of Proposed Rulemaking, 33 FCC Rcd 6915, 6946, para. 99 (2018); *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission’s Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands; Transforming the 2.5 GHz Band*, WT Docket Nos. 03-66 and 18-120, Notice of Proposed Rulemaking, 33 FCC Rcd. 4687, 4705, n. 84 (2018).

15. *Transitioning from the Band.* With regard to transitioning from the T-Band, we discuss potentially mandating the transition of all non-public safety incumbents (i.e., Industrial/Business licensees and Part 22 licensees) out of T-Band, subject to the requirement that the overlay licensees pay the relocation costs of such licensees to comparable facilities and seek comment on this potential requirement.

16. *Licensing and Operating Rules.* In the *Notice* we propose that all future licensees in the T-Band would be required to comply with licensing and operating rules applicable to all part 27 services,⁴¹ including assignment of licenses by competitive bidding,⁴² flexible use,⁴³ regulatory status,⁴⁴ foreign ownership reporting,⁴⁵ compliance with construction notification requirements,⁴⁶ renewal criteria,⁴⁷ permanent discontinuance of operations,⁴⁸ partitioning and disaggregation,⁴⁹ and spectrum leasing.⁵⁰ We seek comment on this proposal and on whether there are any aspects of our general part 27 service rules that should be modified to accommodate the particular characteristics of the T-Band. Small entities and other licensees may also be subject to new or additional requirements pursuant to our inquiry on how to modify our licensing and operating rules if broadcast or other uses are allowed in the T-Band. In addition, small entities and other T-Band licensees will have to comply with service-specific requirements for the T-Band addressing eligibility, mobile spectrum holdings policies, license term, performance requirements, renewal term construction obligations, and other licensing and operating rules some of which include reporting and recordkeeping obligations.

- a. Eligibility and License Term. An open eligibility standard has been proposed for licensing in the T-Band and with along with a 15-year initial term for new flexible-use T-Band licenses, unless the spectrum is used for broadcast services in which case the license term would be 8 years.

⁴¹ The *WRS Renewal 2nd R&O and FNPRM* adopted a unified framework for construction, renewal, and service continuity rules for flexible-use geographic licenses in the Wireless Radio Services. *See Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 To Establish Uniform License Renewal et al.*, WT Docket No. 10-112, Second Report and Order and Further Notice of Proposed Rulemaking and Order, 32 FCC Rcd 8874 (2017) (*WRS Renewal Reform 2nd R&O and FNPRM*). We note that the rule the Commission adopted to address construction obligations resulting from partition and disaggregation – 47 CFR § 1.950 – is pending approval from the Office of Management and Budget.

⁴² 47 U.S.C. § 309(j); 47 CFR §§ 1.2101-1.2114.

⁴³ 47 CFR §§ 2.106, 27.2, 27.3. Section 303(y) of the Act provides the Commission with authority to provide for flexibility of use if: “(1) such use is consistent with international agreements to which the United States is a party; and (2) the Commission finds, after notice and an opportunity for public comment, that (A) such an allocation would be in the public interest; (B) such use would not deter investment in communications services and systems, or technology development; and (C) such use would not result in harmful interference among users.” Balanced Budget Act of 1997, Pub. L. No. 105-33, 111 Stat. 251, 268-69; 47 U.S.C. § 303(y).

⁴⁴ 47 CFR § 27.10.

⁴⁵ 47 U.S.C. § 310; 47 CFR § 27.12.

⁴⁶ 47 CFR § 27.14(k).

⁴⁷ *Id.* § 1.949. We note that the rule the Commission adopted to address renewal – 47 CFR § 1.949 – is pending approval from the Office of Management and Budget.

⁴⁸ *Id.* § 1.953. We note that the rule the Commission adopted to address permanent discontinuance of operations – 47 CFR § 1.953 – is pending approval from the Office of Management and Budget.

⁴⁹ *Id.* § 1.950.

⁵⁰ *Id.* § 1.9001 *et seq.*

- b. Performance Requirements. In the *Notice*, we specifically ask for comment on whether small entities face any special or unique issues with respect to buildout requirements such that they would require certain accommodations or additional time to comply. Small entities and other licensees may be subject to the compliance with the obligations below upon which we seek comment.
- i. Requiring a new T-Band licensee, planning to provide mobile or point-to-multipoint service in accordance with our part 27 rules, to provide reliable signal coverage and offer service to at least 45% of the population in each of its license areas within six years of the license issue date (first performance benchmark), and to at least 80% of the population in each of its license areas within 12 years from the license issue date (second performance benchmark).
 - ii. For licensees deploying point-to-point service, requiring them to demonstrate within six years of the license issue date (first performance benchmark) that they have four links operating and providing service, either to customers or for internal use, if the population within the license area is equal to or less than 268,000. If the population within the license area is greater than 268,000, requiring a licensee deploying point-to-point service to demonstrate that it has at least one link in operation and that it is providing service per every 67,000 persons within a license area.
 - iii. Requiring licensees deploying point-to-point service to demonstrate within 12 years of the license issue date (final performance benchmark) that they have eight links operating and providing service, either to customers or for internal use, if the population within the license area is equal to or less than 268,000. If the population within the license area is greater than 268,000, requiring a licensee deploying point-to-point service to demonstrate that it is providing service and that it has at least two links in operation per every 67,000 persons within a license area. And whether to adopt a requirement that in order to be eligible to be counted under the point-to-point buildout standard, a point-to-point link must operate with a transmit power greater than +43 dBm.⁵¹
 - iv. After satisfying the 12-year second performance benchmark, we will require a licensee to continue to provide reliable signal coverage, or point-to-point links, as applicable, and to offer service at or above that level for the remaining three years in the proposed 15-year license term in order to obtain license renewal.⁵² We also seek comment on whether licensees providing Internet of Things-type fixed and mobile services or other innovative services may benefit from an alternative performance benchmark metric.
 - v. Requiring a new T-Band licensee planning to provide broadcast services to have a broadcast station constructed and operational within the initial 8-year license term.

⁵¹ In *Spectrum Frontiers*, the Commission defined a “fixed point-to-point link” as “a radio transmission between point-to-point stations (as already defined in Part 30), where transmit power exceeds +43 dBm.” Under this definition, stations or devices transmitting using lower power levels will not count towards the number of fixed links required under the performance metric. Licensees whose networks include such low-power connections may rely on another part of their network to demonstrate buildout (e.g., mobile area coverage or higher-power fixed backhaul links). See *2017 Spectrum Frontiers Order and FNPRM*, 32 FCC Rcd at 11008-09, paras. 66-68.

⁵² See *WRS Renewal Reform 2nd R&O and FNPRM*, 32 FCC Rcd at 8886-89, paras. 27-34 (adopting continuity of service and other renewal showing requirements for WRS licensees).

- c. Penalty for Failure to Meet Performance Requirements. Along with performance benchmarks, T-Band licensees will be subject to penalties for failing to comply with performance benchmarks. Specifically, we propose that, in the event a T-Band licensee fails to meet the first performance benchmark, the licensee's second benchmark and license term would be reduced by two years, thereby requiring it to meet the second performance benchmark two years sooner (at 10 years into the license term) and reducing its license term to 13 years. We further propose that, in the event a T-Band licensee fails to meet the second performance benchmark for a particular license area, its license for each license area in which it fails to meet the performance requirement shall terminate automatically without Commission action.
- d. Compliance Procedures. In addition to compliance procedures applicable to all part 27 licensees, which includes the filing of electronic coverage maps and supporting documentation,⁵³ in the *Notice* we propose a rule requiring that such electronic coverage maps accurately depict both the boundaries of each licensed area and the coverage boundaries of the actual areas to which the licensee provides service or in the case of a fixed deployment, the locations of the fixed transmitters associated with each link. If a licensee does not provide reliable signal coverage to an entire license area, we propose that it must provide a map that accurately depicts the boundaries of the area or areas within each license area not being served.

We further propose that each licensee must file supporting documentation certifying the type of service it is providing for each licensed area within its service territory and the type of technology used to provide such service. Supporting documentation must include the assumptions used to create the coverage maps, including the propagation model and the signal strength necessary to provide reliable service with the licensee's technology. The proposed compliance procedures are consistent with existing procedures for part 27 and would likely not require additional staffing for small entities that are existing operators. For small entities that are not existing operators and do not have existing staffing dedicated to regulatory compliance, engineering and legal expertise may be necessary for the purposes of making the requisite filings and demonstrating compliance with the proposed performance obligations.

- e. Renewal Term Construction Obligations. The *WRS Renewal Reform FNPRM* proposed to apply rules adopted in that proceeding to all flexible geographic licenses.⁵⁴ Given the our proposal to license T-Band spectrum on a geographic basis for flexible use, any additional renewal term construction obligations proposed in the *WRS Renewal Reform FNPRM* also would apply to T-Band licenses. The *Notice* therefore seeks comment on whether there are unique characteristics of the T-Band spectrum that might require a different approach from the proposals raised by the *WRS Renewal Reform FNPRM*.
- f. Competitive Bidding Procedures. The *Notice* proposes and seeks comment on, conducting auctions for licenses of T-Band spectrum in conformity with the general competitive bidding rules set forth in Part 1, subpart Q, of the Commission's rules and consistent with the competitive bidding procedures used in previous auctions.⁵⁵ The *Notice* also seeks comment on whether any of our Part 1 rules or other competitive bidding policies would be inappropriate or should be modified for an auction of licenses in this frequency band.

⁵³ See 47 CFR §§ 1.946(d); 27.14(k).

⁵⁴ *WRS Renewal Reform 2nd R&O and FNPRM*, 32 FCC Rcd at 8915, paras. 111-12.

⁵⁵ See 47 CFR §§ 1.2101-1.2114.

For small entities, the *Notice* seeks comment on whether to make bidding credits available and how to define small businesses. Specifically, we propose a requirement for an entity to have average gross revenues for the preceding five years not exceeding \$55 million to be a small business, and such an entity would be eligible for a bidding credit of 15%. To be classified as a very small business an entity would be required to have average gross revenues for the preceding five years not exceeding \$20 million and would be eligible for a bidding credit of 25%.⁵⁶ We do not propose a rural service bidding credit.

17. *Technical Rules.* Small entities and other licensees would also be subject to certain technical rules established to maximize flexible use of the T-Band spectrum while appropriately protecting incumbent operations in neighboring bands. Many of the technical rules proposed are based on the rules adopted for the 600 MHz and lower 700 MHz bands, which are similar to T-Band in terms of flexible use, propagation characteristics, and ability to accommodate wideband technologies. We propose and seek comment on technical rules regarding transmitter power, antenna height, and out-of-band emissions (OOBE) limits, which when combined with existing interference protection rules, will provide maintain a status quo interference environment, where an overlay licensee is not permitted to cause harmful interference to any operations that remain in or are adjacent to the 470-512 MHz band (e.g., on broadcast television channel 21 or operations below 470 MHz).

18. To comply with the proposed rule changes in the *Notice*, small entities may be required to hire attorneys, engineers, consultants, or other professionals. While the Commission cannot quantify the cost of compliance with the proposed rule changes, we note that several of the proposed changes are consistent with and mirror existing policies and requirements used for other part 27 flexible-use licenses. Therefore, small entities with existing licenses in other bands may already be familiar with such policies and requirements and have the processes and procedures in place to facilitate compliance resulting in minimal incremental costs to comply if similar requirements are adopted for T-Band spectrum. The Commission expects that the information it receives in comments will help it identify and evaluate all relevant matters associated with the proposed reallocation and the relocation of public safety operations out of the band, including compliance costs and burdens on small entities.

E. Steps Taken to Minimize the Significant Economic Impact on Small Entities, and Significant Alternatives Considered

19. The RFA requires an agency to describe any significant, specifically small business, alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof for small entities.”⁵⁷

⁵⁶ The standardized schedule of bidding credits provided in Section 1.2110(f)(2)(i) defines small businesses based on average gross revenues for the preceding three years. In December 2018, Congress revised the standard set out in the Small Business Act for categorizing a business concern as a “small business concern,” by changing the annual average gross receipts benchmark from a three-year period to a five-year period. Thus, as a general matter, a Federal agency cannot propose to categorize a business concern as a “small business concern” for Small Business Act purposes unless the size of the concern is based on its annual average gross receipts “over a period of not less than 5 years.” 15 U.S.C. § 632(a)(2)(C)(ii)(II), *as amended* by Small Business Runway Extension Act of 2018, Pub. L. 115-324 (Dec. 17, 2018). We therefore propose to adopt the Small Business Act’s revised five-year average gross receipts benchmark for purposes of determining which entities qualify for small business bidding credits. But because the SBA has not yet revised its regulations to update the definition of “small business concern,” for purposes of compliance with the Regulatory Flexibility Act, the Commission will continue to use the SBA’s current definitions of “small business,” which is based on a three-year benchmark.

⁵⁷ 5 U.S.C. § 603(c)(1)-(4).

20. The Commission has taken steps to enable it to minimize the economic burden on small entities that could occur if some of the proposed rule changes and approaches upon which we seek comment upon in the *Notice* are adopted. More specifically, in many of the proposals for T-Band spectrum, we propose applying existing requirements applicable in other spectrum bands which could lessen the compliance costs for small entities who are already subject to these requirements and have processes and procedures in place for compliance. As such these entities may only incur incremental costs to scale its operations for T-Band spectrum compliance should our proposals be adopted. Below we describe areas where we have taken such an approach.

- *Allocation.* In considering how to reallocate the public safety spectrum, we seek to provide flexibility for new T-Band licensees, after relocation of public safety operations, to tailor the use of the band to their specific operational needs and to maximize network efficiency and therefore propose to apply the current 470-512 MHz band co-primary allocations providing for Fixed Service and Broadcasting and to expand the current Land Mobile Service allocation to provide for Mobile Service.⁵⁸
- *Spectrum Block Size and Overlay Licensing.* Our spectrum block size proposal of six megahertz for new licenses in the 470-512 MHz band is based on our belief that maintaining the current spectrum block size of six megahertz will allow potential new services as well as best protect the rights of incumbent licensees that might remain in the band.⁵⁹
- *Geographic License Area Size.* We propose to license the 470-512 MHz band with a geographic area consistent with the current T-Band operational radius.
- *Comparable Facilities.* As part of our proposal to relocate public safety entities from the T-Band and require that comparable facilities be provided to relocated licensees, we propose to define comparable facilities.⁶⁰
- *License Term.* We are cognizant that small entities must allocate resources carefully over the length of their license term and have more limited funds should they be required to compete at auction for a particular license. We therefore believe that our proposal to apply a 15-year license term for T-Band licenses (or 8 years in the case of a licensee providing broadcast services) will provide the certainty of a longer license term which should give small entities sufficient incentive to make the long-term investments necessary for compliance.
- *Performance Requirements, Performance Requirement Failure Penalties and Compliance Procedures.* The requirements and procedures proposed in the *Notice* are based on or would apply existing part 27 requirements.
- *Technical Rules.* Many of the technical rules proposed in the *Notice* for transmitter power, antenna height, out-of-band emissions (OOBE) limits, and interference protection are based on the rules adopted for the 600 MHz and lower 700 MHz bands, which are similar to T-Band in terms of flexible use, propagation characteristics, and ability to accommodate wideband technologies.

⁵⁸ See 47 CFR § 2.106.

⁵⁹ See, e.g., *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, WT Docket No. 02-353, Report and Order, 18 FCC Rcd 25162, 25178, para. 44 (2003) (*AWS-1 Service Rules R&O*); *1675 NPRM*, 34 FCC Rcd at 3561, para. 24 & n. 54; *Incentive Auctions NPRM*, 27 FCC Rcd at 12403, paras. 127-28. We note that five-megahertz blocks can support a variety of wireless broadband technologies. See generally *id*

⁶⁰ See 47 CFR § 90.699; *Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band*, Second Report and Order, 12 FCC Rcd 19079, 19112-19113, paras. 89-95 (1997) (*Upper 200 SMR Second Report and Order*); *Improving Public Safety Communications in the 800 MHz Band*, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, WT Docket 02-55, 19 FCC Rcd 14969, 15077, para. 201 (2004) (*800 MHz Report and Order*).

- *Competitive Bidding and Bidding Credits for Small Entities.* The Commission administers these bidding credit programs to promote small business service provider participation in auctions and in the provision of spectrum-based services. Based on our analysis of past auction data, the relative costs of participation are lowered for small businesses that take full advantage of the bidding credit programs. Thus, as mentioned in the prior section, we have proposed to conduct any auction for licenses for spectrum in the T-Band in conformity with the general competitive bidding rules set forth in Part 1, Subpart Q, of the Commission's rules and to use competitive bidding procedures used by the Commission in previous auctions.⁶¹ We have also proposed to apply the definition of a qualifying "small business" and a "very small business"⁶² and apply the bidding credits for these two categories consistent with past auctions.

21. In the *Notice*, the Commission specifically seeks comment on its proposals and the questions it raises, to identify whether small entities face any special or unique issues with respect to the buildout requirements that would require certain accommodations or additional time to comply. The Commission also seeks comment on modifications that could be made to our rules regarding administrative processes, which could reduce the economic impacts of proposed rule changes on small entities. By specifically targeting small entities the Commission should be able to obtain the requisite data to allow it to evaluate the most cost-effective approach to minimize the economic impact for such entities while achieving its statutory objectives.

22. Additionally, to assist in the Commission's evaluation of the economic impact on small entities and alternatives, that may result from the actions that have been proposed in this proceeding, in the *Notice* the Commission has raised questions and sought comment on alternatives to identify appropriate relocation options, mechanisms, timing, and costs. Regarding costs, the Commission has specifically requested information on the potential costs to licensees to relocate their operations to another band. Such information may help the Commission identify additional approaches that could further minimize the economic impact on small entities. The Commission expects to consider more fully the economic impact on small entities following its review of comments filed in response to the *Notice*, including costs and benefits information. The Commission's evaluation of the comments filed in this proceeding will shape the final conclusions it reaches, the final alternatives it considers, and the actions it ultimately takes in this proceeding to minimize any significant economic impact that may occur on small entities from the final rules that are ultimately adopted.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules

23. None.

⁶¹ See 47 CFR §§ 1.2101-1.2114.

⁶² The standardized schedule of bidding credits provided in Section 1.2110(f)(2)(i) defines small businesses based on average gross revenues for the preceding three years. In December 2018, Congress revised the standard set out in the Small Business Act for categorizing a business concern as a "small business concern," by changing the annual average gross receipts benchmark from a three-year period to a five-year period. Thus, as a general matter, a Federal agency cannot propose to categorize a business concern as a "small business concern" for Small Business Act purposes unless the size of the concern is based on its annual average gross receipts "over a period of not less than 5 years." 15 U.S.C. § 632(a)(2)(C)(ii)(II), *as amended by* Small Business Runway Extension Act of 2018, Pub. L. 115-324 (Dec. 17, 2018). We therefore propose to adopt the Small Business Act's revised five-year average gross receipts benchmark for purposes of determining which entities qualify for small business bidding credits. But because the SBA has not yet revised its regulations to update the definition of "small business concern," for purposes of compliance with the Regulatory Flexibility Act, the Commission will continue to use the SBA's current definitions of "small business," which is based on a three-year benchmark.

**STATEMENT OF
COMMISSIONER JESSICA ROSENWORCEL**

Re: *Reallocation of 470-512 MHz (T-Band) Spectrum*, PS Docket No. 13-42

With this Notice of Proposed Rulemaking the Federal Communications Commission puts in place a process to auction airwaves used for public safety communications in the T-Band. That's a bad idea, any way you cut it. For one thing, it would disrupt critical communications for first responders in Boston, Chicago, Dallas, Houston, Los Angeles, Miami, New York, Philadelphia, Pittsburgh, San Francisco, and Washington, DC during a nationwide public health emergency. For another, relocating the communications of these existing public safety authorities would cost billions more than we can reasonably expect to recover in this auction. Finally, the lack of alternative public safety spectrum in many of the affected areas would leave a dangerous gap in emergency communications.

Nonetheless, the Middle Class Tax Relief and Job Creation Act of 2012 requires the FCC to auction this spectrum. The agency does not have the authority to waive this statutory requirement, even if under present circumstances this auction is clearly not in the public interest. That is why I support today's decision. It is, under present circumstances, necessary to comply with the law. However, I wholeheartedly agree with the Chairman that congressional action that would stop this auction and allow public safety authorities to continue to communicate using the T-Band is the best way forward.

That being said, I don't think the FCC should simply sit back and wait for Congress to address this problem. This rulemaking contemplates an auction in which the issuance of new licenses is contingent on the winning bids exceeding the estimated relocation costs of public safety. Those costs are expected to be roughly \$6 billion. However, last year the Government Accountability Office found that revenue from this auction is not expected to exceed \$2 billion. So from the start, this auction is destined to fail. That's because in order to succeed the auction revenue from roughly 40 megahertz of spectrum in a limited number of metropolitan areas would need to be greater than the revenue raised from the FCC's previous nationwide auctions of 700 megahertz of spectrum in the 24 GHz band and 850 megahertz of spectrum in the 28 GHz band *combined*. That's a tall order. It's highly unlikely, and will squander significant agency time and resources.

We may also wish to explore in this rulemaking how instead of triggering license grants on winning bids, we can trigger the start of the auction on other indicators of auction success, like upfront payments or short-form applications. This would reduce the administrative expense and time devoted to an auction with no likelihood of success.

In addition, we could take a close look at what conditions we can lawfully place on the bidding eligibility under Section 309(j) of the Communications Act. For instance, if it is possible to limit participation to those who rely on these airwaves today, we might be able to give public safety users a fighting chance to keep their spectrum in the future.

I look forward to reviewing the record that develops in this proceeding. I hope it includes additional ideas about how to move forward under existing law. Because in the end the FCC must find a way to address the T-Band in a manner that advances the public interest, including for our nation's first responders.