

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Parts 1, 20, 27, and 90

[WT Docket No. 06–150; CC Docket No. 94–102; WT Docket No. 01–309; WT Docket No. 03–264; WT Docket No. 06–169; PS Docket No. 06–229; WT Docket No. 96–86; FCC No. 07–72]

Service Rules for the 698–806 MHz Band and Revision of the Commission's Rules Regarding Enhanced 911 Emergency Calling Systems, Hearing Aid-Compatible Telephones, and Public Safety Spectrum Requirements

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, the Federal Communications Commission (FCC) adopts final rules governing wireless licenses in the 698–806 MHz Band (*i.e.*, the 700 MHz Band). This spectrum is currently occupied by television broadcasters and is being made available for wireless services, including public safety and commercial services, as a result of the digital television (“DTV”) transition.

DATES: Effective May 16, 2007, except for the amendments to §§ 20.18(a), 27.50(c)(5), and 27.50(c)(8) which contain information collection requirements that have not been approved by the Office of Management and Budget (OMB). The Commission will publish a document in the **Federal Register** announcing the effective date.

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SUPPLEMENTARY INFORMATION: This is a summary of the Commission’s Report and Order, WT Docket No. 06–150; CC Docket No. 94–102; WT Docket No. 01–309; WT Docket No. 03–264; WT Docket No. 06–169; PS Docket No. 06–229; WT Docket No. 96–86, FCC No. 07–72, adopted April 25, 2007 and released April 27, 2007. The full text of the Report and Order is available for public inspection on the Commission’s Internet site at <http://www.fcc.gov>. It is also

available for inspection and copying during regular business hours in the FCC Reference Center (Room CY–A257), 445 12th Street, SW., Washington, DC 20554. The full text of this document also may be purchased from the Commission’s duplication contractor, Best Copy and Printing Inc., Portals II, 445 12th St., SW., Room CY–B402, Washington, DC 20554; telephone (202) 488–5300; fax (202) 488–5563; e-mail FCC@BCPIWEB.COM.

Final Paperwork Reduction Act of 1995 Analysis

The Report and Order contains modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104–13. It will be submitted to the Office of Management and Budget (OMB) for review under § 3507(d) of the PRA. OMB, the general public, and other Federal agencies are invited to comment on the new information collection requirements contained in this proceeding. Public and agency comments are due sixty days from publication of a summary of the Report and Order in the **Federal Register**. Comments should address the following: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission’s burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on respondents, including the use of automated collection techniques or other forms of information technology. In addition, the Commission notes that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107–198, *see* 44 U.S.C. 3506(c)(4), we previously sought specific comment on how the Commission might “further reduce the information collection burden for small business concerns with fewer than 25 employees.” In this present document, we have assessed the potential effects of the various policy changes with regard to information collection burdens on small business concerns, and find that there are no results specific to businesses with fewer than 25 employees. We note that the information collections contained in § 20.18(j)(4) are a result of the amendments to § 20.18(a). We also note that § 213 of the Consolidated Appropriations Act 2000 provides that rules governing frequencies in the 746–806 MHz Band become effective immediately upon publication in the

Federal Register without regard to certain sections of the Paperwork Reduction Act.¹ The Commission is therefore not inviting comment on any information collections that concern frequencies in the 746–806 MHz Band.

Synopsis

1. In this Report and Order, the Commission addresses rules governing wireless licenses in the 698–806 MHz Band (*i.e.*, the 700 MHz Band). This spectrum currently is occupied by television broadcasters in TV Channels 52–69 and is being made available for wireless services, including public safety and commercial services, as a result of the digital television (DTV) transition. The Commission has been considering rules related to the use of this spectrum in three ongoing proceedings: (1) The 700 MHz Commercial Services proceeding,² (2) the 700 MHz Guard Bands proceeding,³ and (3) the 700 MHz Public Safety proceeding.⁴ Because decisions on certain issues in the three proceedings are potentially interrelated, the three proceedings are being jointly addressed in the Report and Order. In doing so, the Commission seeks to promote access to 700 MHz Band spectrum and the provision of service to consumers across the county, including in rural areas, as

¹ In particular, this exemption extends to the requirements imposed by Chapter 6 of Title 5, United States Code, Section 3 of the Small Business Act (15 U.S.C. 632) and Sections 3507 and 3512 of Title 44, United States Code. Consolidated Appropriations Act 2000, Pub. L. No. 106–113, 113 Stat. 2502, Appendix E, Sec. 213(a)(4)(A)–(B); *see* 145 Cong. Rec. H12493–94 (Nov. 17, 1999); 47 U.S.C.A. 337 note at Sec. 213(a)(4)(A)–(B).

² *See* Service Rules for the 698–749, 747–762 and 777–792 MHz Bands, WT Docket No. 06–150, Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94–102, and § 68.4(a) of the Commission’s Rules Governing Hearing Aid-Compatible Telephones, WT Docket No. 01–309, *Notice of Proposed Rule Making, Fourth Further Notice of Proposed Rule Making, and Second Further Notice of Proposed Rule Making*, 21 FCC Rcd 9345 (2006).

³ *See* Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission’s Rules, Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, WT Docket Nos. 06–169 and 96–86, *Notice of Proposed Rule Making*, 21 FCC Rcd 10413 (2006).

⁴ *See* Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, PS Docket 06–229, WT Docket No. 96–86, *Ninth Notice of Proposed Rule Making*, 21 FCC Rcd 14837 (2006); Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, *Eighth Notice of Proposed Rulemaking*, WT Docket Nos. 96–86 and 05–157, 21 FCC Rcd 3668 (2006).

well as opportunities for broadband service for Public Safety users.

A. 700 MHz Commercial Services

1. Facilitating Access to Spectrum and Provision of Service to Consumers

(i) Mix of Geographic Service Area Sizes

2. The FCC finds that providing for a mix of geographic licensing areas in the 700 MHz Band will balance the demand for differently sized licenses demonstrated in the record and enhance access to the spectrum by a variety of potential licensees. In particular, the FCC determines to replace the unassigned Economic Area Groupings (EAGs)-sized license areas, as established in the current band plan, with a mix of geographic licensing areas consisting of Cellular Market Areas (CMAs), Economic Areas (EAs), and Regional Economic Area Groupings (REAGs). These revisions are consistent with the goal of providing greater access to spectrum for small providers and parties in rural areas, and improving the opportunity for a wider range of potential licensees to obtain access to this valuable spectrum.

3. In determining the size of service areas, the FCC has stated as a general principle that it will consider licensing the spectrum over a range of various sized geographic areas, including smaller service areas such as CMAs, where consistent with the record in that proceeding and with other factors that may be relevant to the spectrum. Many commenters, including small and regional service providers and entities that represent rural interests, favor an approach that would provide for a variety of license sizes beyond those in the current band plan. The FCC agrees with those commenters who observe that a revised mix of smaller license sizes would provide a more balanced set of initial licensing opportunities at this time and make available more licenses to match the needs of different potential users. The opportunities afforded by providing licenses with a mix of geographic areas were seen in the results of Auction No. 66 involving Advanced Wireless Services (AWS)-1 licenses, where many different bidders won smaller and mid-sized licenses, such as CMAs and EAs. The same policy of providing a mix of licenses that balances competing interests is appropriate here. These revisions will advance the FCC's statutorily directed goals to promote service to rural areas, promote investment in and the rapid deployment of new technologies and services, avoid the excessive concentration of licenses, and provide

for the dissemination of licenses among a wide variety of applicants.

4. The FCC concludes that providing a mix of CMA, EA, and REAG licenses in the 700 MHz Commercial Services spectrum will be an effective means of providing increased access to spectrum, especially in rural areas, while simultaneously meeting other Commission goals. The FCC disagrees with commenters who argue that any changes to smaller area licenses should be limited to the Upper 700 MHz Commercial Services Band, and not be implemented in the Lower 700 MHz Band.

5. Consistent with its earlier findings with respect to license sizes in the Upper and Lower 700 MHz Bands, the FCC declines to adopt nationwide licensing for any of the 700 MHz Commercial Services spectrum blocks. It also declines to adopt service areas smaller than CMAs, such as county-sized areas, or other size areas, including Major Economic Areas (MEAs). Because the band plan for the 700 MHz Commercial Services Band no longer contains EAGs, for the EAs, REAGs, and CMAs the FCC will separately license the Gulf of Mexico with each of the following license divisions: EA licensing area 176; REAG licensing area 12; and Metropolitan Statistical Area (MSA) licensing area 306. The FCC adopts: (i) The same definition of EAs set forth in § 27.6(h) of the rules, currently applicable for AWS-1 spectrum, for EA licenses in the 700 MHz Commercial Services Band; (ii) the same definition of REAGs set forth in § 27.6(h) of the rules, currently applicable for AWS-1 spectrum, for REAG licenses; and (iii) the same definition of Metropolitan Statistical Areas and Rural Service Areas (MSAs/RSAs) set forth in § 27.6(c), currently applicable to Block C of the Lower 700 MHz Band, for CMAs. As the FCC has done in licensing other part 27 services, the Gulf of Mexico service area is comprised of the water area of the Gulf of Mexico starting 12 nautical miles from the U.S. Gulf coast and extending outward.

(ii) Secondary Markets

6. The FCC declines to adopt rules that would require 700 MHz Commercial Services Band licensees to make "good faith" efforts to negotiate with potential spectrum lessees, either as part of their performance requirements or as part of the criteria associated with license renewal. The FCC believes that such changes are unnecessary given the other measures it is adopting to promote access to spectrum in the 700 MHz Commercial

Services Band. These measures involve revising the 700 MHz Commercial Services band plan to include a mix of smaller geographic licensing areas.

7. Most commenters support a decision not to impose a "good faith" negotiation obligation on the 700 MHz Commercial Services Band licensees. Some of these commenters argue that such a requirement would be unnecessarily burdensome and could lead to uneconomic decisions. Commenters supporting the adoption of a "good faith" requirement argue that the FCC should consider a licensee's secondary markets participation as part of its license renewal process. The FCC notes, however, that its current spectrum leasing rules already provide a licensee with significant incentives to enter into spectrum leasing arrangements because licensees may rely on the activities of its spectrum lessee(s) for purposes of complying with the licensee's construction requirements. The FCC concludes that its decision to adopt a mix of geographic license area sizes, combined with our existing secondary markets rules, are sufficient to promote access to spectrum. Accordingly, the FCC declines to adopt further secondary markets requirements at this time.

2. Auctions-Related Issues

(i) Aggregating Licenses

8. The FCC concludes that the public interest would be better served by relying on the existing secondary market to aggregate existing and new licenses rather than attempting to develop new rules and policies for incorporating existing 700 MHz Commercial Services licenses into an auction of new licenses. Parties bidding on new licenses should be able to accurately value those licenses, even absent an opportunity to simultaneously aggregate new with existing licenses. New licenses in the 700 MHz Commercial Services spectrum can be used independently of existing licenses. Applicants will be able to seek any of multiple new licenses, of varying geographic size, to serve any given location. Thus, the value of the new licenses is unlikely to depend significantly upon a party's ability to aggregate existing and new licenses. Moreover, the interests of aggregators are likely to be met in large part by the existing secondary market. Accordingly, the FCC concludes that no new rules or policies are needed to facilitate aggregation of existing and new 700 MHz Commercial Services licenses in order to increase the likelihood that these licenses will be assigned to the

parties most likely to put them to their most effective use.

(ii) Bidding Preferences

9. The FCC rejects the suggestions of certain commenters that it set aside licenses in the 700 MHz Commercial Services Band auction solely for designated entities and the argument that the FCC adopt a third small business definition to provide for a 35% bidding credit. Consistent with the FCC's tentative conclusion not to adopt Access Spectrum *et al.*'s band plan proposal and in light of various difficulties in implementing such a bidding credit, the FCC also does not adopt a bidding credit based on providing access to spectrum for 700 MHz public safety services.

10. Although the Communications Act requires that the FCC ensure that "designated entities" are given the opportunity to participate in the provision of spectrum-based services and, for such purposes, consider the use of bidding preferences, these preferences can take many forms. In an early attempt to meet these mandates, the FCC set aside blocks of spectrum in the Broadband PCS band to be held by designated entities. The FCC's experience in Broadband PCS auctions and subsequent auctions has demonstrated, however, that bidding credits for designated entities afford such entities substantial opportunity to compete with larger businesses for spectrum licenses and provide spectrum-based services. For example, Auction No. 66 demonstrated very recently that designated entities can succeed in auctions for licenses for valuable spectrum without any set-asides. In Auction No. 66, more than half the winning bidders were designated entities that received discounts on their gross winning bids and designated entities won over twenty percent of the licenses sold. Moreover, setting aside licenses risks denying the licenses to other applicants that may be more likely to use them effectively or efficiently for the benefit of consumers. Potentially excluding such applicants could compromise the FCC's pursuit of various statutory objectives including promoting the development and deployment of new technologies, products, and services for the benefit of the public and promoting efficient and intensive use of the spectrum.

(iii) Competitive Bidding and Aggregating New Licenses

11. The FCC's current competitive bidding rules authorize the use of package bidding and the FCC already has utilized a form of package bidding.

Consequently, the question before the FCC now is whether it needs to make changes to our competitive bidding rules in order to enable a new form of package bidding for the 700 MHz Commercial Services auction. The FCC concludes that modifications to our current bidding systems, including those suggested by commenters, can be made without modifying its competitive bidding rules.

(iv) Modifications to the Tribal Land Bidding Credit

12. No parties provided suggestions for possible modifications to the FCC's tribal land bidding credit rules to promote the deployment of wireless services to tribal lands or addressed the relationship between post-auction credits and the deadline for depositing payments. In light of the record, the FCC concludes that it need not modify the tribal land bidding credit at this time.

3. Additional Rules for Licensees

(i) Criteria for Renewal

13. The FCC clarifies that all licensees in the 700 MHz Commercial Services Band seeking renewal of their authorizations at the end of their license term must file a renewal application in accordance with the provisions of § 1.949 of the FCC's rules. Consistent with existing rules, as part of this renewal requirement licensees must demonstrate in their applications that they have provided substantial service during their past license term, which is defined as service that is sound, favorable, and substantially above a level of mediocre service that just might minimally warrant renewal. This requirement is distinct from performance requirements. Substantial service in the renewal context, as opposed to coverage benchmarks established for the performance requirement context, encompasses FCC consideration of a variety of factors including the level and quality of service, whether service was ever interrupted or discontinued, whether service has been provided to rural areas, and any other factors associated with a licensee's level of service to the public. Accordingly, a licensee that meets the applicable performance requirements might nevertheless fail to meet the substantial service standard at renewal. Licensees must demonstrate at renewal that they have substantially complied with all applicable FCC rules, policies, and the Communications Act of 1934, as amended, including any applicable performance requirements.

14. Under the revised § 27.14 of the FCC's rules, the FCC also is eliminating

the filing of competing applications to requests for renewal of these 700 MHz licenses. The FCC is mindful of the potential costs and the burdens they impose on both it and licensees. The FCC agrees with comments that such administrative processes "harken[] back to an old era * * * where competitors were known to file 'strike' applications against a renewal in the hope of getting a payoff." Under the revised § 27.14 of the FCC's rules, the FCC is therefore adopting a process by which 700 MHz Commercial Services Band licenses come back to the FCC for re-auction if a license is not renewed. The existing petition to deny process, coupled with the ability of a petitioner to participate in any subsequent auction to re-license spectrum that is returned to the FCC for lack of renewal, creates sufficient incentives to challenge inferior service or poor qualifications of licensees at renewal. This approach protects the public interest without creating incentives for speculators to file "strike" applications.

15. By eliminating the filing of competing applications at renewal, the FCC finds that the concerns raised by the majority of commenters in this proceeding about renewal expectancies are moot. The FCC recognizes that the majority of commenters that addressed renewal issues did not support any changes to the part 27 renewal rules applicable to 700 MHz Commercial Services Band licensees. Moreover, some of these commenters expressed concern that any revision to the rules governing renewal proceedings would eliminate the concept of "renewal expectancy" that applied in comparative hearings. Because smaller carriers and rural interests in particular seemed concerned that certain rule changes would place a new burden on carriers ill-equipped to meet it, we have decided to maintain 700 MHz Commercial Services Band licensees' expectations of renewal by eliminating provisions for competing applications. This action provides additional certainty for all 700 MHz Commercial Services Band licensees, and requests by certain commenters to do otherwise could result in additional administrative burdens on licensees that we find not to be in the public interest.

(ii) License Terms

16. The FCC revises its rules to provide that initial authorizations for the 700 MHz Commercial Services Band will have a term not to exceed 10 years from February 17, 2009, which is the firm deadline for the DTV transition. Subsequent renewals will be for terms not to exceed 10 years. This revised

license term will apply to all licenses in the 700 MHz Commercial Services Band. However, because § 307(c)(1) of the Communications Act provides that a license for operating a broadcast station shall not be granted for a term that exceeds 8 years, the FCC retains the current provision that a part 27 licensee commencing broadcast services will be required to seek renewal of its license for such services at the termination of the eight-year term following commencement of such operations. The FCC does not revise the license term for Guard Band licensees because such revisions fall beyond the scope of the 700 MHz Commercial Services proceeding.

17. The FCC is extending the revised license term to both the already auctioned and unauctioned licenses in the 700 MHz Commercial Services Band. The FCC finds that uniformly extending the license term in this manner provides a level of parity for services within the same band. In addition, this treatment recognizes that band clearing and the resulting unencumbered use of the spectrum in the pre-DTV Act period was tied to a transition scheme that has now been replaced with a firm statutory transition date of February 17, 2009. Specifically, the underlying reason behind the current rule changed with passage of the DTV Act. The FCC previously determined that a definite termination date, e.g., January 1, 2015, was preferable to a discrete term of years following the end of the DTV transition, which at that time was subject to extension on a market-by-market basis. The same license terms that were adopted in the *Upper 700 MHz First Report and Order* were applied to licenses in the Lower 700 MHz Band. However, the DTV Act's uniform deadline for the DTV transition has effectively removed the issue of market-by-market broadcast incumbency. Under these circumstances, the FCC provides a level of uniformity by extending the revised license terms to all licensees in the 700 MHz Commercial Services Band, except for those engaging in broadcast services.

18. The FCC finds that a term not to exceed 10 years from February 17, 2009, should be used for initial authorizations in the 700 MHz Commercial Services Band, and that subsequent renewal terms will be 10 years. A ten-year license term is consistent with most other part 27 services, with the exception of recently auctioned AWS-1 licenses, which we address below, as well as with the license terms for other similar spectrum, such as that used for cellular service and PCS. In addition,

this period will offer licensees regulatory certainty and help promote investment in the band. Under the current rules, all licensees would have terms that extend until January 1, 2015, which is only approximately six years from the end of the DTV transition. Thus, licensees that acquire their authorizations in a future auction would have had an initial license term less than ten years, and more likely for a shorter period, i.e., six or seven years, depending on the date of the auction and issuance of the authorizations. In similar fashion, current licensees in the 700 MHz Commercial Services Band would only have approximately six years of access to their spectrum free from broadcasters. The FCC finds that a longer period should be made available to all licensees in order to provide sufficient time for the recovery of costs related to the development and deployment of new services, especially those based on technologies that are more advanced, more expensive, and which may take longer to develop. The 700 MHz Commercial Services Band is a likely band for the use of these more advanced technologies and we are concerned that a license term that expires only six years from the DTV transition provides too short a time period.

19. The FCC declines to increase the length of initial or renewal terms to fifteen years. The FCC disagrees with those commenters who argue that parity with AWS-1 services mandates a fifteen-year term for 700 MHz services. The "relocation and band clearance issues" that provided the rationale for the fifteen-year initial licenses for AWS-1 services do not apply here. The date certain of February 17, 2009, for the end of the DTV transition means that spectrum in the 700 MHz Band will be clear for use by 700 MHz Band licensees as of that date.

20. The FCC also disagrees with commenters who argue that the current license term should be retained in order to promote prompt use of the spectrum and with commenters who argue that the current rule should be kept to spur the development of a secondary market. The combination of the FCC decisions in this Report and Order and the FCC's secondary markets policies make it unlikely that this highly valued spectrum will sit unused. The FCC's secondary market spectrum leasing policies focus on promoting spectrum leasing arrangements, and the FCC has taken steps in this Report and Order to improve use of the spectrum, including the provision of a mix of geographic license areas consisting of CMAs, EAs, and REAGs.

21. Finally, because of the specifically applicable statutory limitation, the FCC will retain the current requirement that 700 MHz Commercial Services Band licensees commencing broadcast services will be required to seek renewal of their licenses for such services prior to the termination of the eight-year term following commencement of such operations. As stated above, § 307(c)(1) of the Communications Act provides that licenses granted for operating broadcast stations "shall be for a term not to exceed 8 years."

(iii) Power Limits for Lower 700 MHz Band and Upper 700 MHz Commercial Services Band Base Stations

22. The FCC modifies its power limit rules for the Lower 700 MHz Band and the Upper 700 MHz Commercial Services Band in a number of ways. First, the FCC implements a PSD model for defining power limits for base stations operating in the entire 700 MHz Commercial Services Band. The current power limit rules do not specify a bandwidth over which a licensee's power is to be limited, and could be construed to mean that the power limit applies on a "per emission" basis. Because some licensees may only transmit one emission within their given bandwidth, while others using technologies with narrower emissions might employ multiple emissions over that bandwidth, construing the power limit to apply on a "per emission" basis could allow licensees employing multiple emissions to transmit more total energy in their authorized spectrum blocks than licensees with only one emission in their spectrum blocks. To better accommodate all technologies, the FCC is clarifying that the maximum allowable power levels in the 700 MHz Commercial Services Band are to be defined on a "per megahertz of spectrum bandwidth" basis, rather than on a "per emission" basis. This clarification will enable higher power signals from wider band technologies, but will not result in a decrease in the total power currently allowed in the band from narrower band technologies. Given this clarification, the FCC is also adopting additional measures to protect against any possible increased risk of interference, especially to 700 MHz public safety users.

23. More specifically, the FCC will allow 700 MHz Commercial Services Band licensees employing bandwidths greater than 1 megahertz to meet a base station power limit of 1 kW/MHz ERP (i.e., no more than 1 kW ERP in any 1 megahertz band segment). Licensees operating with bandwidths of less than one megahertz will, however, continue

to be permitted to operate at power levels up to 1 kW ERP over their bandwidth. Thus, for example, a licensee transmitting a signal with a bandwidth of 5 megahertz could employ a power level of 5 kW ERP over the 5 megahertz bandwidth, with each 1 megahertz band segment within the 5 megahertz bandwidth being limited to 1 kW ERP; and a licensee transmitting a signal with a bandwidth of 200 kilohertz could employ a power level of 1 kW ERP over the 200 kilohertz bandwidth. This approach to defining power limits will achieve a degree of technological neutrality by ensuring that all licensees regardless of technology choice have enough power to operate a viable service. This neutrality would not exist if all licensees, regardless of their operating bandwidth, were required to limit their base station power levels to 1 kW ERP per emission.

24. In response to proposals by parties seeking greater power limits for rural area operations, the FCC will permit power levels of up to 2 kW/MHz ERP in rural areas, and consistent with its decision above, the FCC will allow rural licensees operating with bandwidths less than one megahertz to operate at power levels up to 2 kW ERP over their bandwidth. In implementing this decision, the FCC will define rural areas, consistent with the *Rural Report and Order*, as those counties in the U.S. having a population of fewer than 100 people per square mile, based on the most recently available population statistics from the Bureau of the Census. Increasing the permissible power in rural areas will enable 700 MHz Commercial Services Band licensees operating in such areas to more easily implement their systems; and increasing power levels in rural areas would be consistent with the recent FCC decision to permit rural carriers in the Cellular, AWS, and Broadband PCS services to operate at higher power levels. The FCC notes that in the *Rural Report and Order*, where the same power increase was adopted, it decided, as a "cautionary measure," to require carriers operating at higher power levels to coordinate with licensees operating within 75 miles of their base stations. Consistent with this decision, the FCC shall require any 700 MHz Commercial Services Band licensee seeking to operate a base station under our rules permitting power levels greater than 1 kW ERP in rural areas to coordinate in advance with all non-public safety 700 MHz licensees authorized to operate within 75 miles of the station and with all 700 MHz Regional Planning

Committees that have jurisdiction within 75 miles of the station.

25. As noted above, licensees in the Lower 700 MHz Band are allowed to use up to 50 kW ERP if they do not produce signals exceeding a power flux density (PFD) of 3 mW/m² on the ground within 1 kilometer of the station. A number of commenters expressed views on the appropriateness of the current, maximum 50 kW ERP capability for Lower 700 MHz Band operations. Considering these comments, the FCC makes certain modifications to the power limit rules in the Lower 700 MHz Band. Specifically, the FCC will retain the ability of incumbent C and D Block licensees to employ power levels up to 50 kW ERP. In addition, because the FCC believes that unpaired blocks are conducive to the provision of broadcast-type operations, it shall permit licensees operating in any unpaired block(s) in the Lower 700 MHz Band to operate at a power level of 50 kW ERP as well. However, because the FCC believes that paired blocks are generally more conducive to the provision of mobile services, it shall not extend to new licensees operating in any Lower 700 MHz Band paired blocks the ability to operate at 50 kW ERP. This action helps preserve the flexibility the FCC originally envisioned for the Lower 700 MHz Band, *i.e.*, the use of both broadcast and mobile services in the band, by providing an environment conducive to mobile systems in the paired blocks and an environment conducive to broadcast-type systems in the unpaired blocks. Current and future licensees nevertheless will have the flexibility to implement broadcast-type or mobile systems in any particular block. For example, a licensee may implement a broadcast-type system in a paired block, but rather than a high-power, high-site system, it would have to design a distributed broadcast system.

26. In reaching this decision, the FCC concludes that it would not be appropriate to reduce the power limits of incumbent Lower 700 MHz Band licensees, who acquired their spectrum with the expectation that they would be able to employ 50 kW ERP transmissions in the band. Although the FCC recognizes concerns expressed by certain parties regarding the potential for adjacent band interference into the current unauctioned paired blocks (*i.e.*, the current A and B Blocks) from high power emissions in adjacent incumbent and unauctioned unpaired blocks, the FCC continues to believe that our out-of-band emission limits coupled with the 3 mW/m² PFD requirement will be effective in protecting unauctioned paired blocks from adjacent channel

interference. The FCC notes, however, that the 50 kW ERP limit in the Lower 700 MHz Band was based on a traditional broadcast emission, which consists of a single emission within the licensed bandwidth. The FCC never intended that emissions within a single block in the Lower 700 MHz Band exceed 50 kW ERP. Accordingly, the FCC clarifies that the 50 kW ERP limit for the current C and D Blocks, and any additional unpaired block(s) in the Lower 700 MHz Band, is a cap on the average total power of all emissions within the full authorized spectrum of the blocks. For example, a single incumbent C or D Block base station with an emission bandwidth of 1 megahertz could transmit with the full 50 kW ERP, but no other emissions would be permitted in the remaining 5 megahertz of the block. This limit would also apply to the cumulative emissions of both licensees if a 6 megahertz incumbent or unauctioned unpaired block is disaggregated.

27. In implementing this PSD approach to the power limits in both the Lower 700 MHz Band and the Upper 700 MHz Commercial Services Band, the FCC continues to remain concerned that transmissions at higher power levels could potentially cause interference to adjacent channel operations. To mitigate the potential for harmful interference to adjacent channel operations, the FCC requires the following. For Lower 700 MHz Band licensees, if operating with a bandwidth of 1 megahertz or less and a transmitting power greater than 1 kW ERP non-rural or 2 kW ERP rural, or if operating with a bandwidth of more than 1 megahertz and a PSD greater than 1 kW/MHz ERP non-rural or 2 kW/MHz ERP rural, then that licensee must comply with the 3 mW/m² PFD limit. Thus, for example, a non-rural licensee transmitting an 8 kW ERP signal in a 5-megahertz bandwidth or a rural licensee transmitting a 4 kW ERP signal in a 1.25 megahertz bandwidth would have to satisfy the 3 mW/m² PFD limit. However, a licensee transmitting an 800 watt ERP signal in a 200 kilohertz bandwidth or a 4 kW ERP signal in a 5-megahertz bandwidth, or a rural licensee transmitting an 8 kW ERP signal in a 5-megahertz bandwidth, would not have to meet the PFD limit. Because the FCC wishes to remain especially vigilant regarding the potential for interference to public safety operations, it impose the following additional requirement on Commercial Services licensees operating in the Upper 700 MHz Band. Specifically, all Upper 700 MHz Commercial Services Band licensees,

both rural and non-rural, transmitting signals at a power levels greater than 1 kW ERP, irrespective of bandwidth, must satisfy the 3 mW/m² PFD limit. Thus, for example, an Upper 700 MHz Commercial Services Band licensee transmitting a 4 kW ERP signal in a 5-megahertz bandwidth would have to meet the PFD limit.

(iv) Power Limit Issues in WT Docket No. 03-264

28. The FCC will employ PSD for defining power limits in the 700 MHz Band. The FCC has thus granted the second of CTIA's requests as it applies to the 700 MHz Commercial Services Bands. However, the FCC shall not apply to the 700 MHz Band CTIA's proposal to double power limits in the PCS and AWS-1 bands—*i.e.*, a power increase that would apply in both rural and non-rural areas and would not be accompanied by a PFD limit. CTIA provides no justification for permitting an unrestricted doubling of power levels for the 700 MHz Commercial Services Bands, and the FCC finds no basis for adopting such limits for the band. Instead, as discussed above, the FCC is adopting rules for 700 MHz Band licensees that will allow for a power limit of 1 kW/MHz ERP in non-rural areas and 2 kW/MHz ERP in rural areas.

29. The FCC does, however, find merit in extending to the 700 MHz Commercial Services Band CTIA's proposal to use "average," rather than "peak" power in measuring power levels. Although the use of "average" power will effectively result in an increase in 700 MHz Band power levels for non-constant envelope technologies, such as CDMA and WCDMA, the "average" measurement approach is a more accurate measure of the interference potential for these technologies. The FCC finds that any effective increase in power that would result through the use of an "average" measurement approach will be modest, and in any event will be outweighed by the benefit of measuring today's technologies using a more realistic and appropriate technique.

30. For purposes of clarifying the use of the "average power" measurement technique, the FCC makes the following determinations. First, the FCC concludes that the technique shall be made during a period of continuous transmission and be based on a measurement using a 1 megahertz resolution bandwidth. Second, the FCC shall restrict the peak-to-average ("PAR") ratio of the radiated signal to 13 dB. Limiting the PAR to 13 dB strikes a balance between enabling licensees to use modulation schemes with high

PARs (such as OFDM) and protecting other licensees from high PAR transmissions. Parties seeking to employ the "average power" measurement technique should consult with the FCC Laboratory for guidance on the appropriate averaging method for the particular technology they plan to use.

(v) Other Technical Issues

31. The FCC will retain the existing OOB limits for commercial base stations operating in the Upper 700 MHz Commercial Services Band because it finds these restrictions provide sufficient and appropriate protection to 700 MHz public safety operations. The FCC also declines to impose any technical restrictions on Upper 700 MHz Commercial Services Band licensees to address potential IM interference to 700 MHz public safety operations. The FCC will, however, require Upper 700 MHz Commercial Services Band licensees and 700 MHz public safety entities, upon request from the other, to exchange information about their stations and systems. The FCC is adopting this requirement in order to limit the potential for IM interference to 700 MHz public safety mobile and portable devices from the transmissions of Upper 700 MHz Commercial Service Band base stations.

32. With regard to the argument for the need for increased OOB limits, the conclusion that the FCC's 76 +10 log P OOB limit will result in interference to 700 MHz public safety operations is based on the assumption of a 65 dB site isolation figure in analyzing potential interference between commercial base stations and public safety mobile/portable receivers. However, the FCC rejected this same premise in deciding not to adopt stricter OOB limits in the *Upper 700 MHz Band Third MO&O*. In the *800 MHz Report and Order*, the FCC decided not to adopt stricter OOB limits to protect 800 MHz public safety operations. The FCC stated, as its rationale for not increasing the existing OOB limit for the 800 MHz band, that the additional filtering needed to achieve proposed OOB standards "would add cost and complexity—but no benefit—to those cells in a system in which, because of their location, or otherwise, unacceptable OOB interference would not occur" and the FCC was therefore unwilling to "impose stronger OOB limits on every cell of every system in the country; particularly if only a handful of cells in a system might require them." The FCC continues to believe that any change to the OOB limit required for commercial Upper 700 MHz Commercial Services Band base stations is unsupported.

(vi) 911/E911 Requirements

33. The FCC concludes that § 20.18(a) should be amended to apply 911/E911 requirements to all commercial mobile radio services (CMRS), including services licensed in the 700 MHz Commercial Services Band and the AWS-1 bands, to the same extent as they apply to wireless services currently listed in the scope provision of § 20.18. Thus, CMRS providers must comply with the 911/E911 requirements solely to the extent that they "[offer] real-time, two way switched voice service that is interconnected with the public switched network and utilize an in-network-switching facility which enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls" (hereinafter, the "§ 20.18(a) criteria"). The FCC will continue, however, to exclude MSS from § 20.18 in conformity with the Commission's decision in the *E911 Scope Order*.

34. The public interest generally requires wireless services meeting the § 20.18(a) criteria to provide 911/E911 service, even if not expressly enumerated. The FCC has observed previously that "911 service is critical to our Nation's ability to respond to a host of crises," and that E911 in particular "saves lives and property by helping emergency services personnel do their jobs more quickly and efficiently." The FCC also takes note of Congress's finding in the *Ensuring Needed Help Arrives Near Callers Employing 911 Act of 2004 (ENHANCE 911 Act)* that "for the sake of our Nation's homeland security and public safety, a universal emergency telephone number (911) that is enhanced with the most modern and state-of-the-art telecommunications capabilities possible should be available to all citizens in all regions of the Nation" and that "enhanced 911 is a high national priority." Accordingly, it is critical that mobile telephone services meeting the § 20.18(a) criteria continue to offer 911 and E911 as they make use of new frequencies.

35. The FCC further finds that commercial mobile radio services meeting the 20.18(a) criteria will also meet the four criteria set forth in the *E911 Scope Order*.⁵ In particular, the

⁵Specifically, the Commission determined that it would consider whether (1) the service offers real-time, two-way voice service that is interconnected to the public switched network on either a stand-alone basis or packaged with other telecommunications services; (2) the customers using the service or device have a reasonable expectation of access to 911 and E911 services; (3) the service competes with traditional CMRS or wireline local exchange service; and (4) it is

FCC finds that these services are likely to compete with services provided pursuant to cellular, broadband PCS, or 800/900 MHz SMR licenses, and that subscribers will have similar expectations of emergency access from services meeting the § 20.18(a) criteria regardless of what frequencies carriers are using to provide them. Indeed, the FCC has found that for many Americans, “the ability to call for help in an emergency is the principal reason they own a wireless phone.” This should be no less true for a consumer calling from a phone utilizing 700 MHz, AWS, or any other spectrum. Further, the FCC finds no support in the record, and consider it unlikely, that additional, terrestrial-based commercial mobile radio services meeting all of the criteria of § 20.18(a) will present any special technical obstacles, as compared to currently deployed services, that would warrant modifications of the 911/E911 requirements. To the extent that such obstacles become apparent as new services are established, appropriate modifications can be considered at that time. The FCC therefore agrees with the commenters that the extension of the 911/E911 requirements under § 20.18 to all commercial mobile radio services meeting the § 20.18(a) criteria is justified by the interest in competitive neutrality as well as by the critical public safety benefits of 911/E911.

(vii) Hearing Aid-Compatible Wireless Handsets

36. For reasons similar to those discussed in the E911 section above, the FCC determines that all digital CMRS providers, including providers of such services in the 700 MHz Commercial Services Band and the AWS-1 and BRS/EBS bands, should be subject to hearing aid compatibility requirements under § 20.19 to the extent they offer real-time, two-way switched voice or data service that is interconnected with the public switched network and utilizes an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls. In addition, manufacturers of wireless handsets that are capable of providing such service also should be made subject to the applicable requirements of § 20.19. As discussed below, however, the existence of an established, applicable technical

standard is a statutory requirement for imposing hearing aid compatibility requirements. Because no such standard currently exists for any services beyond the broadband PCS, Cellular, and certain SMR bands, the FCC cannot presently impose hearing aid compatibility requirements on additional services. The FCC does commit to bringing all digital CMRS within the scope of the § 20.19 requirements as appropriate technical standards are developed, and we take steps to promote the development of these technical standards, as discussed below. In particular, the FCC establishes a specific timetable for the development of the necessary technical standards for those new services that have governing service rules in place. The FCC amends the rule to reflect these determinations, including its decision that hearing aid compatibility requirements will apply to any CMRS to the extent that it meets the criteria discussed above and there is an established technical standard for hearing aid compatibility applicable to the relevant handsets.

37. Extending hearing aid compatibility requirements to services beyond those currently covered will ensure that comparable service providers and manufacturers will be required to comply with similar hearing aid-compatible handset requirements regardless of the frequency bands on which they operate. Further, end users will be able to expect the full range of functionality found today in mobile phones without having to know the technical details, such as the frequencies on which their phones operate. Moreover, by clarifying the applicability of the hearing aid compatibility rules to these manufacturers and service providers now, the FCC enables them to begin planning to incorporate hearing aid compatibility compliance into their operations at the earliest possible stage, which should also promote a more efficient implementation. The FCC also ensures that the necessary parties become involved in ongoing discussions among the Commission, service providers, standards bodies, and industry representatives to develop additional standards for hearing aid compatibility measurement methods and parametric requirements.

38. The FCC concludes that any CMRS digital service that meets the § 20.19(a) criteria for inclusion should be subject to hearing aid compatibility requirements. The FCC declines, however, to impose hearing aid compatibility obligations on other services and bands at this time. When the FCC imposed the existing hearing

aid compatibility obligations on handset manufacturers and service providers in 2003, it simultaneously approved ANSI C63.19 as an established technical standard applicable to the services covered by the rule. Indeed, the FCC noted that the existence of an established technical standard was a statutory requirement for imposing hearing aid compatibility, and further found that this statutory requirement was “[f]undamental” to the determination of whether to impose hearing aid compatibility on wireless devices. The FCC therefore finds that an applicable technical standard should be in place when hearing aid compatibility obligations are imposed in the 700 MHz Commercial Services Band and other bands.

39. As noted above, none of the available versions of the current hearing aid compatibility standard cover services in the 700 MHz Commercial Services Band or the AWS-1 or BRS/EBS bands. Nor do they provide tests for some of the technologies anticipated in these bands, such as WiMAX. HIA argues that the ANSI C63.19-2006 standard for the 800 MHz band provides an appropriate framework to measure performance in the 700 MHz Band for purposes of determining hearing aid compatibility, but the record does not establish that the existing standard can be extended to that band without modifications or amendments. Indeed, HIA concedes that modifications to the standard may be necessary, and the Hearing Loss Association of America (HLAA) also supports this conclusion, noting that changes to the standard will be necessary to accommodate emerging technologies. Accordingly, the FCC concludes that it cannot extend specific hearing aid compatibility obligations to emerging bands and services until specific standards that establish the hearing aid compatibility measurement methods and parametric requirements for these additional services’ and bands’ devices are developed.

40. The FCC will continue to monitor progress to make sure that the adoption of such standards proceeds in a timely manner. If no standards have been adopted within 24 months, the FCC will consider alternative means to implement compatibility requirements, including whether to develop new metrics for compliance entirely and/or whether to extend the C63.19-2006 standard for the 800 MHz Band into the 700 MHz Commercial Services Band, as HIA suggests. The FCC will not at this time establish a schedule for future action regarding bands other than the current 27.1(b) bands because it does not appear to be possible to develop

technically and operationally feasible for the service or device to support E911. See Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket 94-102, IB Docket No. 99-67, *Report and Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 25340, 25347 ¶ 18 (2003) (“E911 Scope Order”).

compatibility standards in the absence of service rules. The FCC also notes that there is little or no discussion in the record of extending hearing aid compatibility beyond the 700 MHz Commercial Services Band. The FCC will, however, pursue appropriate action as the nature of services in new bands becomes more defined or we find that an applicable standard has been or can be developed.

B. 700 MHz Guard Bands

41. The FCC replaces the Guard Band Manager regime in favor of the spectrum leasing policies and rules adopted in the Secondary Markets proceeding, and removes certain use and eligibility restrictions regarding licensee operations and leasing to affiliates to encourage the most effective and efficient use of the Guard Bands spectrum. While the FCC seeks to provide licensees and spectrum lessees with greater latitude and remove regulatory barriers where possible, it retains the existing Guard Band Manager coordination requirements.

1. Adoption of Secondary Markets Spectrum Leasing Rules

42. Among the FCC's key public interest objectives is to ensure that spectrum is put to its most efficient and effective use, and the FCC has increasingly granted technical and operational flexibility to its licensees to enable them to achieve that goal when it is consistent with preventing unacceptable interference. In adopting the Secondary Markets spectrum leasing policies and rules, the FCC accommodated the demand for significantly broader access to licensed spectrum by enabling a wide array of facilities-based providers to enter into spectrum leasing arrangements with spectrum users. These rules provided licensees with greater ability and incentive to make unused spectrum available to third parties, and thus promoted the provision of new and diverse services and applications. Third parties that could benefit from such spectrum leasing arrangements may include current spectrum operators requiring additional spectrum to meet customer needs over either the short-or long-term, new entrants seeking to provide a niche service and serve a limited area or narrowly targeted end-user market, small businesses trying to deliver services in rural communities, or entities unable or unwilling to participate in spectrum auctions or that otherwise do not have a license through which they can access spectrum to meet consumer or internal operational needs. By adopting the Secondary Markets

spectrum leasing model, the FCC sought to establish spectrum leasing policies that allow licensees and spectrum lessees significant flexibility to enter into leasing arrangements that best meet their respective business needs and enable more efficient use of spectrum.

43. The FCC agrees with commenters that the Secondary Markets spectrum leasing model may be more effective than the existing band manager rules in accomplishing the Commission's goals of permitting the efficient and intensive use of spectrum while protecting public safety operations from harmful interference. Although the FCC sought to provide appropriate incentives to encourage greater participation in band manager leasing arrangements, the Guard Band Managers appear to have had limited success in negotiating spectrum user agreements with third parties. In contrast, the steadily increasing number of spectrum leasing arrangements in the other Wireless Radio Services reflects the growing use and acceptance of Secondary Markets spectrum leasing policies by wireless providers and spectrum lessees as an effective method to make spectrum more readily available to additional spectrum users. Since the Secondary Markets spectrum leasing procedures went into effect in February 2004, licensees and spectrum lessees have entered into approximately 1,200 spectrum leasing arrangements.

44. Accordingly, the FCC determines that providing Guard Bands licensees the additional flexibility offered by the Secondary Markets spectrum leasing regime would enhance spectrum usage in the 700 MHz Guard Bands. Specifically, in order to provide maximum flexibility, Guard Band licensees now will have the option of entering into both spectrum manager leasing and *de facto* transfer leasing arrangements. By permitting Guard Band licensees and spectrum lessees to choose between the two different options, the FCC will afford licensees and spectrum lessees significant flexibility to craft the type of leasing arrangement that best matches their particular needs and the demands of the marketplace. This flexibility could, in turn, help achieve fuller utilization of the spectrum. For example, adopting rules that permit Guard Band licensees to participate in *de facto* transfer leasing—in which primary responsibility for compliance with statutory and regulatory policies and rules is transferred from licensees to spectrum lessees—could encourage a licensee to enter into a leasing agreement that might otherwise be unattractive due to the level of

operational oversight necessary to ensure compliance with the FCC's rules in a specific case.

45. The FCC emphasizes, however, that by affording 700 MHz Guard Band licensees greater flexibility, particularly in the *de facto* transfer leasing context, it is not minimizing in any way the requirement that these licensees must ensure that adjacent public safety operations are protected from harmful interference. Protection of 700 MHz public safety operations from interference remains the primary goal of the Commission's policies relating to the 700 MHz Guard Bands. The FCC agrees with comments that the Secondary Markets spectrum leasing rules provide sufficient mechanisms to ensure non-interference with spectrum users in the adjacent 700 MHz Public Safety Band. As noted by the BOP proponents, the Secondary Markets spectrum leasing rules provide protection equivalent to the band manager rules.

46. Although the FCC recognizes that the additional flexibility afforded by the *de facto* transfer spectrum leasing option transfers the primary responsibility for ensuring interference protection to the spectrum lessee, the FCC concludes that public safety users will still be protected from interference under the Secondary Markets spectrum leasing rules. Under this option, 700 MHz Guard Band licensees continue to retain some responsibility for operations encompassed under their license authorizations, and may be held responsible in cases of ongoing violation or other egregious lessee behavior for which licensees have, or should have, knowledge. More importantly, although the FCC expects Guard Band licensees to continue to exercise some oversight of its lessees, the Commission retains direct authority to pursue remedies against lessees under § 503(b) of the Act. Spectrum lessees, whether under a spectrum manager leasing arrangement or a *de facto* transfer leasing arrangement, must strictly comply with the technical restrictions of the band, and must expressly agree to comply with all applicable Commission rules as a condition of the spectrum leasing arrangement. Regardless of whether the licensee or spectrum lessee holds primary responsibility for compliance with FCC rules, the FCC maintains the ability to take direct and swift action to enforce compliance with its rules.

47. The FCC concludes that it should apply our Secondary Markets spectrum leasing rules to the 700 MHz Guard Bands service. By doing so, the FCC will facilitate more efficient use of the spectrum by licensees and spectrum

lessees, and will produce a more market-driven system that should better meet the needs of the public without compromising the FCC's other core public interest goals—specifically, ensuring that public safety operations are protected from harmful interference. Although the FCC sought comment on whether we should permit licensees to choose between the existing Guard Band Managers regime or the Secondary Markets spectrum leasing rules, the FCC concludes that it is unnecessary to also allow licensees the ability to choose between the two leasing models, and thus replace the Guard Band Manager leasing regime with the Secondary Markets spectrum leasing policies and rules. Application of the Secondary Markets rules to all 700 MHz Guard Bands licensees will provide significant additional flexibility and ensure that these licensees are treated similarly to other Wireless Radio Services holding exclusive use licenses and leasing spectrum usage rights.

2. Use and Operational Flexibility

48. In addition to providing licensees and other spectrum users additional flexibility provided under our general Secondary Markets spectrum leasing rules, the FCC concludes that other changes to the 700 MHz Guard Bands rules should be made to promote more efficient and effective use of this spectrum.

49. *Band Manager Status.* In creating the 700 MHz Guard Bands service, the FCC designated Guard Band Managers as a new class of commercial licensee engaged solely in leasing spectrum to third parties. The FCC agrees with commenters that the FCC should re-evaluate its decision to limit the ability of licensees to act as service providers. The band manager rules and policies that specify that a Guard Band licensee may only act as a spectrum manager unduly restrict the ability of parties to use the spectrum, and may preclude the deployment of services that might otherwise be offered. Depending upon the circumstances, it may be that the Guard Band licensee itself is best positioned to make maximum use of the Guard Bands spectrum. Precluding a licensee from operating as a service provider may prevent access by parties that could make actual use of the band, and hinders, rather than facilitates, the efficient use of the spectrum. The FCC believes that, as long as a 700 MHz Guard Band licensee can fulfill its primary function of effectively managing its licensed spectrum and ensuring that 700 MHz public safety operations are protected from interference, there is little reason to

preclude that licensee from also providing service. Accordingly, the FCC will revise its rules to permit licensees to operate as wireless service providers. To the extent that a licensee chooses to provide service, the FCC requires that the licensee update their license information if they plan to switch their regulatory status, and the FCC notes that licensees will be responsible for meeting all other obligations relating to their change in status.

50. *Restrictions on Leasing to Affiliates.* Similarly, the FCC concludes that it is in the public interest to remove the current restriction precluding any licensee from leasing more than 49.9 percent of its licensed spectrum to affiliates. As in the case of the policy precluding licensees from providing service, the FCC believes that its rule requiring that licensees lease the predominant amount of their spectrum to non-affiliates prevents entities from maximizing use of the spectrum, and hinders the provision of service to end users. This restriction also may prevent licensees and lessees from taking advantage of new technologies. To the extent that the FCC determines that broadband deployment is permissible in one or both of the 700 MHz Guard Bands, the FCC's restrictions that prevent Guard Band Managers from providing service or from leasing any more than 49.9 percent of its license to affiliates would hinder the ability of Guard Band licensees or their affiliates to deploy such service. Restrictions regarding use by the licensee or its affiliates may prevent entities from optimizing the use of the spectrum or entering into Secondary Markets spectrum leasing agreements with adjacent licensees that are not similarly restricted. Accordingly, the FCC eliminates this restriction.

51. *Other Lease Restrictions.* Under existing policies, 700 MHz Guard Band licensees are prohibited from imposing unduly restrictive requirements in the spectrum user agreements regarding access to, and use of, spectrum. In adopting these band manager rules, the FCC noted that Guard Band Managers would be afforded a considerable amount of latitude in determining the most efficient way to manage their spectrum. The FCC concluded, however, that it was necessary to ensure that band managers did not impose unreasonable terms and conditions on lessees or end users. Although these restrictions were aimed at ensuring that band managers do not engage in unreasonable practices, the existing rules may adversely affect the ability of Guard Band licensees to negotiate with spectrum users regarding otherwise

standard lease provisions, such as mandating the use of a particular technology, that other wireless licensees are permitted to negotiate. The FCC notes that our Secondary Markets spectrum leasing rules do not have similar restrictions and its rules generally permit parties to determine the precise terms and provisions of their spectrum lease agreements. As noted above, the FCC is adopting for the Guard Bands the same spectrum leasing policies set forth in the Secondary Markets proceeding. The FCC believes that these policies provide sufficient incentives for licensees to lease spectrum usage rights, while also providing licensees with the ability to establish appropriate operational guidelines with spectrum lessees that protect public safety licensees from interference. As such, the FCC eliminates this requirement.

52. *Coordination Requirement.* The FCC requires Guard Band Managers to notify public safety frequency coordinators in the 700 MHz Public Safety Band, as well as adjacent-area Guard Band Managers, of the technical parameters of any site constructed in the Guard Band Manager's license area. Guard Band Managers must provide such identifying information as the frequencies coordinated, antenna height and location, and effective radiated power. The FCC does not change the coordination requirements for Guard Band licensees currently contained in § 27.601(d)(1) of its rules. The FCC notes that it imposed coordination requirements to minimize the potential for interference, and the FCC reiterates that the primary purpose of the Guard Bands is to prevent interference to adjacent public safety operations. Absent information indicating that its coordination requirements do not serve to prevent interference, the FCC concludes that we should retain the coordination requirements set forth in the rule. Given that the FCC is adopting the Secondary Markets spectrum leasing rules for the Guard Band service, the FCC clarifies how these coordination requirements will work in the context of spectrum leasing arrangements. To the extent a licensee enters into a spectrum manager lease arrangement, it retains *de facto* control of the spectrum and primary responsibility for ensuring compliance with the rules. Accordingly, for this type of spectrum leasing arrangement, the licensee is required to carry out these coordination responsibilities. If, however, a licensee enters into a *de facto* transfer leasing arrangement, the coordination and notification tasks set forth in § 27.601 of

the FCC's rules (as well as other responsibilities associated with *de facto* control) are, upon FCC approval, transferred from the licensee to the spectrum lessee. In this latter type of arrangement, the FCC notes that although the spectrum lessee becomes primarily responsible for complying with the required frequency coordination responsibilities under the license authorization, the FCC will continue to hold licensees responsible for the failure of a spectrum lessee to comply with the FCC's frequency coordination requirements.

Final Regulatory Flexibility Act Analysis

53. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),⁶ separate Initial Regulatory Flexibility Analyses (IRFA) were incorporated in the *700 MHz Commercial Services Notice* in WT Docket No. 06–150, CC Docket No. 94–102, and WT Docket No. 01–309; the *700 MHz Guard Band Notice*, WT Docket Nos. 06–169 and 96–86; and the *700 MHz Public Safety Notice*, PS Docket No. 06–229 and WT Docket No. 96–86.⁷ The Commission sought written public comment on the proposals in these dockets, including comment on the IRFA. This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.⁸

54. Although § 213 of the Consolidated Appropriations Act of 2000 provides that the RFA shall not

apply to the rules and competitive bidding procedures for frequencies in the 746–806 MHz Band,⁹ the Commission believes that it would serve the public interest to analyze the possible significant economic impact of the proposed policy and rule changes in this band on small entities. Accordingly, this FRFA contains an analysis of this impact in connection with all spectrum that falls within the scope of this *Report and Order*, including spectrum in the 746–806 MHz Band.

A. Need for, and Objectives of, the Rules

55. In the *Report and Order*, with regard to commercial services, the Commission takes a number of steps to facilitate access to spectrum and the provision of service to consumers, especially those in rural areas, and to simplify and clarify our rules related to the commercial 700 MHz spectrum. The Commission decides that it will auction the Commercial Services licenses across a mix of geographic service area definitions. The Commission also extends the date for initial license terms from January 15, 2015, to the end of the DTV transition on February 17, 2019. With regard to radiated power limits, the Commission generally adopts a power spectral density model, with certain limitations, to provide greater operational flexibility to licensees operating at wider bandwidths, and provides for higher radiated power levels for those 700 MHz licensees operating in rural areas under the current 1 kW per MHz power limit. The Commission also modifies the 911/E911 rules to remove the service- and band-specific limitations on the applicability of those requirements. Further, the Commission finds that all digital CMRS providers, including providers in the 700 MHz, Advanced Wireless Services, and the Broadband Radio Service/Educational Broadband Service bands, along with manufacturers of handsets capable of providing such services, should be subject to the Commission's hearing aid compatibility requirements to the extent that a service satisfies the scope provision the current rules.

56. The Commission also adopts rules to enhance spectrum usage in the 700 MHz Guard Bands by replacing the Guard Band Manager spectrum leasing regime with the Secondary Markets

spectrum leasing policies and rules. Guard bands licensees will have the option of entering into *de jure* and *de facto* transfer leasing arrangements. By permitting Guard Band licensees and spectrum lessees to choose between the two different options, the Commission affords licensees and spectrum lessees significant flexibility to craft the type of leasing arrangement that best matches their particular needs and the demands of the marketplace.

B. Legal Basis

57. The authority for the actions taken in this *Report and Order* is contained in §§ 1, 4(i), 7, 10, 201, 202, 208, 214, 215, 222(d)(4)(A)–(C), 222(f), 222(g), 222(h)(1)(A), 222(h)(4)–(5), 251(e)(3), 301, 303, 307, 308, 309, 310, 311, 315, 316, 317, 324, 331, 332, 336, 337 and 710, of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 157, 160, 201, 202, 208, 214, 215, 222(d)(4)(A)–(C), 222(f), 222(g), 222(h)(1)(A), 222(h)(4)–(5), 251(e)(3), 301, 303, 307, 308, 309, 310, 311, 315, 317, 324, 331, 332, 336, 337, and 610.

C. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

58. No comments specifically addressed the IRFAs from any of the respective proceedings. We have nonetheless addressed small entity issues found in comments in this FRFA.

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

59. 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.¹⁰ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”¹¹ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.¹² A “small business concern” is one which: (1) Is independently owned and operated; (2) is not dominant in its field

⁶ See 5 U.S.C. 603. The RFA, see 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).

⁷ See Service Rules for the 698–749, 747–762 and 777–792 MHz Bands, WT Docket No. 06–150, Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94–102, and § 68.4(a) of the Commission's Rules Governing Hearing Aid-Compatible Telephones, WT Docket No. 01–309, *Notice of Proposed Rule Making, Fourth Further Notice of Proposed Rule Making, and Second Further Notice of Proposed Rule Making*, 21 FCC Rcd 9345, 9394 (2006) (“*700 MHz Commercial Services Notice*”); Former Nextel Communications, Inc. Upper 700 MHz Guard Band Licenses and Revisions to Part 27 of the Commission's Rules, Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, WT Docket Nos. 06–169 and 96–86, *Notice of Proposed Rule Making*, 21 FCC Rcd 10413, 10440 (2006) (“*700 MHz Guard Bands Notice*”); Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, PS Docket 06–229, Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, WT Docket No. 96–86, *Ninth Notice of Proposed Rule Making*, 21 FCC Rcd 14837, 14853 (2006) (“*700 MHz Public Safety Ninth Notice*”).

⁸ See 5 U.S.C. 604.

⁹ In particular, this exemption extends to the requirements imposed by Chapter 6 of Title 5, United States Code, § 3 of the Small Business Act (15 U.S.C. 632) and §§ 3507 and 3512 of Title 44, United States Code. Consolidated Appropriations Act 2000, Pub. L. No. 106–113, 113 Stat. 2502, Appendix E, Sec. 213(a)(4)(A)–(B); see 145 Cong. Rec. H12493–94 (Nov. 17, 1999); 47 U.S.C.A. 337 note at Sec. 213(a)(4)(A)–(B).

¹⁰ 5 U.S.C. 604(a)(3).

¹¹ 5 U.S.C. 601(6).

¹² 5 U.S.C. 601(3) (incorporating by reference the definition of “small-business concern” in the Small Business Act, 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*.”

of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).¹³

60. *Governmental Entities.* The term "small governmental jurisdiction" is defined as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand."¹⁴ As of 2002, there were approximately 87,525 governmental jurisdictions in the United States.¹⁵ This number includes 38,967 county governments, municipalities, and townships, of which 37,373 (approximately 95.9%) have populations of fewer than 50,000, and of which 1,594 have populations of 50,000 or more. Thus, the Commission estimates the number of small governmental jurisdictions overall to be 85,931 or fewer.

61. In the following paragraphs, the Commission further describes and estimates the number of small entity licensees that may be affected by the rules the Commission adopts in this *Report and Order*. The rule changes affect Upper 700 MHz and Lower 700 MHz Band licensees in the 698–746, 747–762, and 777–792 MHz spectrum bands, as well as all commercial mobile radio services (CMRS) with respect to 911/E911 requirements adopted in this *Report and Order*.

62. Since this *Report and Order* applies to multiple services, this FRFA analyzes the number of small entities affected on a service-by-service basis. When identifying small entities that could be affected by the Commission's new rules, this FRFA provides information that describes auctions results, including the number of small entities that were winning bidders. However, the number of winning bidders that qualify as small businesses at the close of an auction does not necessarily reflect the total number of small entities currently in a particular service. The Commission does not generally require that licensees later provide business size information, except in the context of an assignment or a transfer of control application that involves unjust enrichment issues.

Part 27 Miscellaneous Wireless Communications Services (MWCS)

63. *Wireless Communications Services.* This service can be used for fixed, mobile, radiolocation, and digital

audio broadcasting satellite uses in the 2305–2320 MHz and 2345–2360 MHz bands. The Commission defined "small business" for the wireless communications services (WCS) auction as an entity with average gross revenues of \$40 million for each of the three preceding years, and a "very small business" as an entity with average gross revenues of \$15 million for each of the three preceding years.¹⁶ The SBA has approved these definitions.¹⁷ The Commission auctioned geographic area licenses in the WCS service. In the auction, which commenced on April 15, 1997 and closed on April 25, 1997, there were seven bidders that won 31 licenses that qualified as very small business entities, and one bidder that won one license that qualified as a small business entity.

64. *700 MHz Guard Band Licenses.* In the 700 MHz Guard Band Order, the Commission adopted size standards for "small businesses" and "very small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.¹⁸ A small business in this service is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years.¹⁹ Additionally, a "very small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years.²⁰ SBA approval of these definitions is not required.²¹ An auction of 52 Major Economic Area (MEA) licenses commenced on September 6, 2000, and closed on September 21, 2000.²² Of the 104 licenses auctioned, 96 licenses were sold to nine bidders. Five of these bidders were small businesses that won a total of 26 licenses. A second auction

of 700 MHz Guard Band licenses commenced on February 13, 2001, and closed on February 21, 2001. All eight of the licenses auctioned were sold to three bidders. One of these bidders was a small business that won a total of two licenses.²³

65. *Upper 700 MHz Band Licenses.* The Commission released a Report and Order authorizing service in the Upper 700 MHz band.²⁴ An auction for these licenses, previously scheduled for January 13, 2003, was postponed.²⁵

66. *Lower 700 MHz Band Licenses.* The Commission adopted criteria for defining three groups of small businesses for purposes of determining their eligibility for special provisions such as bidding credits.²⁶ The Commission has defined a small business as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years.²⁷ A very small business is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years.²⁸ Additionally, the Lower 700 MHz Band has a third category of small business status that may be claimed for Metropolitan/Rural Service Area (MSA/RSA) licenses. The third category is entrepreneur, which is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$3 million for the preceding three years.²⁹ The SBA has approved these small size standards.³⁰ An auction of 740 licenses (one license in each of the 734 MSAs/RSAs and one license in each of the six Economic Area Groupings (EAGs)) commenced on August 27, 2002, and closed on September 18, 2002. Of the 740 licenses available for auction, 484 licenses were sold to 102 winning bidders. Seventy-two of the winning bidders claimed

¹⁶ Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service (WCS), *Report and Order*, 12 FCC Rcd 10785, 10879 ¶ 194 (1997).

¹⁷ See Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

¹⁸ See Service Rules for the 746–764 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *Second Report and Order*, 15 FCC Rcd 5299 (2000).

¹⁹ *Id.* at 5343108.

²⁰ *Id.*

²¹ *Id.* At 5343 ¶ 108 n.246 (for the 746–764 MHz and 776–704 MHz bands, the Commission is exempt from 15 U.S.C. 632, which requires Federal agencies to obtain Small Business Administration approval before adopting small business size standards).

²² See "700 MHz Guard Bands Auction Closes: Winning Bidders Announced," *Public Notice*, 15 FCC Rcd 18026 (2000).

²³ See "700 MHz Guard Bands Auctions Closes: Winning Bidders Announced," *Public Notice*, 16 FCC Rcd 4590 (WTB 2001).

²⁴ Service Rules for the 746–764 and 776–794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *Second Memorandum Opinion and Order*, 16 FCC Rcd 1239 (2001).

²⁵ See "Auction of Licenses for 747–762 and 777–792 MHz Bands (Auction No. 31) Is Rescheduled," *Public Notice*, 16 FCC Rcd 13079 (WTB 2003).

²⁶ See Reallocation and Service Rules for the 698–746 MHz Spectrum Band (Television Channels 52–59), *Report and Order*, 17 FCC Rcd 1022 (2002).

²⁷ *Id.* at 1087–88 ¶ 172.

²⁸ *Id.*

²⁹ *Id.* at 1088 ¶ 173.

³⁰ See Letter to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated August 10, 1999.

¹³ 15 U.S.C. 632.

¹⁴ 5 U.S.C. 601(5).

¹⁵ U.S. Census Bureau, Statistical Abstract of the United States: 2006, § 8, pages 272–273, Tables 415 and 417.

small business, very small business or entrepreneur status and won a total of 329 licenses.³¹ A second auction commenced on May 28, 2003, and closed on June 13, 2003, and included 256 licenses: 5 EAG licenses and 476 CMA licenses.³² Seventeen winning bidders claimed small or very small business status and won sixty licenses, and nine winning bidders claimed entrepreneur status and won 154 licenses.³³

67. *Government Transfer Bands.* The Commission adopted small business size standards for the unpaired 1390–1392 MHz, 1670–1675 MHz, and the paired 1392–1395 MHz and 1432–1435 MHz bands.³⁴ Specifically, with respect to these bands, the Commission defined an entity with average annual gross revenues for the three preceding years not exceeding \$40 million as a “small business,” and an entity with average annual gross revenues for the three preceding years not exceeding \$15 million as a “very small business.”³⁵ Correspondingly, the Commission adopted a bidding credit of 15 percent for “small businesses” and a bidding credit of 25 percent for “very small businesses.”³⁶ An auction for one

license in the 1670–1674 MHz band commenced on April 30, 2003 and closed the same day. One license was awarded. The winning bidder was not a small entity.

68. *Advanced Wireless Services.* In the *AWS-1 Report and Order*, the Commission adopted rules that affect applicants who wish to provide service in the 1710–1755 MHz and 2110–2155 MHz bands.³⁷ The *AWS-1 Report and Order* defines a “small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$40 million, and a “very small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million. The *AWS-1 Report and Order* also provides small businesses with a bidding credit of 15 percent and very small businesses with a bidding credit of 25 percent.

69. *Broadband Radio Service (formerly Multipoint Distribution Service) and Educational Broadband Service (formerly Instructional Television Fixed Service).* Multichannel Multipoint Distribution Service (MMDS) systems, often referred to as “wireless cable,” transmit video programming to subscribers using the microwave frequencies of the Multipoint Distribution Service (MDS) and Instructional Television Fixed Service (ITFS).³⁸ In its recently issued *BRS/EBS Report and Order* in WT Docket No. 03–66, the Commission comprehensively reviewed its policies and rules relating to the ITFS and MDS services, and replaced the MDS with the Broadband Radio Service and ITFS with the Educational Broadband Service in a new band plan at 2495–2690 MHz.³⁹ In connection with the 1996 MDS auction,

Commission is not adopting small business size standards for the 1427–1432 MHz band, it instead uses the terms “small business” and “very small business” to define entities with average gross revenues for the three preceding years not exceeding \$40 million and \$15 million, respectively.

³⁷ 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 (2003) (*AWS-1 Report and Order*).

³⁸ Amendment of Parts 21 and 74 of the Commission’s Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of § 309(j) of the Communications Act—Competitive Bidding, MM Docket No. 94–131 and PP Docket No. 93–253, *Report and Order*, 10 FCC Rcd 9589, 9593 ¶ 7 (1995) (*MDS Auction R&O*).

³⁹ See 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, *Report and Order and Further Notice of Proposed Rulemaking*, 19 FCC Rcd 14165 (2004) (*BRS/EBS Report and Order* and *BRS/EBS Further Notice*, respectively).

the Commission defined “small business” as an entity that, together with its affiliates, has average gross annual revenues that are not more than \$40 million for the preceding three calendar years.⁴⁰ The SBA has approved of this standard.⁴¹ The MDS auction resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (BTAs).⁴² Of the 67 auction winners, 61 claimed status as a small business. At this time, the Commission estimates that of the 61 small business MDS auction winners, 48 remain small business licensees. In addition to the 48 small businesses that hold BTA authorizations, there are approximately 392 incumbent MDS licensees that have gross revenues that are not more than \$40 million and are thus considered small entities.⁴³

Additional Wireless Radio Services (WRS)

70. *Cellular Licensees.* The SBA has developed a small business size standard for small businesses in the category “Cellular and Other Wireless Telecommunications.”⁴⁴ Under that SBA category, a business is small if it has 1,500 or fewer employees.⁴⁵ For the census category of “Cellular and Other Wireless Telecommunications,” Census Bureau data for 2002 show that there were 1,397 firms in this category that operated for the entire year.⁴⁶ Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.⁴⁷ Thus, under this category and

⁴⁰ 47 CFR 21.961(b)(1).

⁴¹ See Letter to Margaret Wiener, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Bureau, from Gary Jackson, Assistant Administrator for Size Standards, Small Business Administration, dated Mar. 20, 2003 (noting approval of \$40 million size standard for MDS auction).

⁴² Basic Trading Areas (BTAs) were designed by Rand McNally and are the geographic areas by which MDS was auctioned and authorized. See *MDS Auction R&O*, 10 FCC Rcd at 9608 ¶ 34.

⁴³ 47 U.S.C. 309(j). Hundreds of stations were licensed to incumbent MDS licensees prior to implementation of § 309(j) of the Communications Act of 1934, 47 U.S.C. 309(j). For these pre-auction licenses, the applicable standard is SBA’s small business size standard for “other telecommunications” (annual receipts of \$12.5 million or less). See 13 CFR 121.201, NAICS code 517910.

⁴⁴ 13 CFR 121.201, North American Industry Classification System (NAICS) code 517212.

⁴⁵ *Id.*

⁴⁶ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, “Establishment and Firm Size (Including Legal Form of Organization),” Table 5, NAICS code 517212 (issued Nov. 2005).

⁴⁷ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the

³¹ See “Lower 700 MHz Band Auction Closes,” *Public Notice*, 17 FCC Rcd 17272 (WTB 2002).

³² See “Lower 700 MHz Band Auction Closes,” *Public Notice*, 18 FCC Rcd 11873 (WTB 2003).

³³ *Id.*

³⁴ See Amendments to Parts 1, 2, 27 and 90 of the Commission’s Rules to License Services in the 216–220 MHz, 1390–1395 MHz, 1427–1429 MHz, 1429–1432 MHz, 1432–1435 MHz, 1670–1675 MHz, and 2385–2390 MHz Government Transfer Bands, 17 FCC Rcd 9980 (2002) (*Government Transfer Bands Service Rules Report and Order*).

³⁵ See *Service Rules Notice*, 17 FCC Rcd at 2550–51 ¶¶ 144–146. To be consistent with the size standard of “very small business” proposed for the 1427–1432 MHz band for those entities with average gross revenues for the three preceding years not exceeding \$3 million, the *Service Rules Notice* proposed to use the terms “entrepreneur” and “small business” to define entities with average gross revenues for the three preceding years not exceeding \$40 million and \$15 million, respectively. Because the Commission has not adopted a \$3 million size standard for the 1427–1432 MHz band, it instead uses the terms “small business” and “very small business” to define entities with average gross revenues for the three preceding years not exceeding \$40 million and \$15 million, respectively.

³⁶ See Reallocation of the 216–220 MHz, 1390–1395 MHz, 1427–1429 MHz, 1429–1432 MHz, 1432–1435 MHz, 1670–1675 MHz, and 2385–2390 MHz Government Transfer Bands, *Notice of Proposed Rulemaking*, 17 FCC Rcd 2500, 2550–51 ¶¶ 144–146 (*Government Transfer Bands Service Rules Notice*). To be consistent with the size standard of “very small business” proposed for the 1427–1432 MHz band for those entities with average gross revenues for the three preceding years not exceeding \$3 million, the *Government Transfer Bands Service Rules Notice* proposed to use the terms “entrepreneur” and “small business” to define entities with average gross revenues for the three preceding years not exceeding \$40 million and \$15 million, respectively. Because the

size standard, the majority of firms can be considered small.

71. *220 MHz Radio Service—Phase I Licensees.* The 220 MHz service has both Phase I and Phase II licenses. Phase I licensing was conducted by lotteries in 1992 and 1993. There are approximately 1,515 such non-nationwide licensees and four nationwide licensees currently authorized to operate in the 220 MHz Band. The Commission has not developed a definition of small entities specifically applicable to such incumbent 220 MHz Phase I licensees. To estimate the number of such licensees that are small businesses, the Commission applies the small business size standard under the SBA rules applicable to “Cellular and Other Wireless Telecommunications” companies. This category provides that a small business is a wireless company employing no more than 1,500 persons.⁴⁸ For the census category of “Cellular and Other Wireless Telecommunications,” Census Bureau data for 2002 show that there were 1,397 firms in this category that operated for the entire year.⁴⁹ Of this total, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.⁵⁰ Thus, under this category and size standard, the majority of firms can be considered small.

72. *220 MHz Radio Service—Phase II Licensees.* The 220 MHz service has both Phase I and Phase II licenses. The Phase II 220 MHz service is subject to spectrum auctions. In the *220 MHz Third Report and Order*, the Commission adopted a small business size standard for defining “small” and “very small” businesses for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.⁵¹ This small business standard indicates that a “small business” is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$15 million for the preceding three years.⁵² A “very

largest category provided is for firms with “1000 employees or more.”

⁴⁸ 13 CFR 121.201, NAICS code 517212.

⁴⁹ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, “Establishment and Firm Size (Including Legal Form of Organization),” Table 5, NAICS code 517212 (issued Nov. 2005).

⁵⁰ *Id.* The census data do 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.”

⁵¹ Amendment of Part 90 of the Commission’s Rules to Provide For the Use of the 220–222 MHz Band by the Private Land Mobile Radio Service, *Third Report and Order*, 12 FCC Rcd 10943, 11068–70 ¶¶ 291–295 (1997).

⁵² *Id.* at 11068 ¶ 291.

small business” is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that do not exceed \$3 million for the preceding three years.⁵³ The SBA has approved these small size standards.⁵⁴ Auctions of Phase II licenses commenced on September 15, 1998, and closed on October 22, 1998.⁵⁵ In the first auction, 908 licenses were auctioned in three different-sized geographic areas: three nationwide licenses, 30 Regional Economic Area Group (EAG) Licenses, and 875 Economic Area (EA) Licenses. Of the 908 licenses auctioned, 693 were sold.⁵⁶ Thirty-nine small businesses won 373 licenses in the first 220 MHz auction. A second auction included 225 licenses: 216 EA licenses and 9 EAG licenses. Fourteen companies claiming small business status won 158 licenses.⁵⁷ A third auction included four licenses: 2 BEA licenses and 2 EAG licenses in the 220 MHz Service. No small or very small business won any of these licenses.⁵⁸

73. *Paging.* In the *Paging Second Report and Order*, the Commission adopted a size standard for “small businesses” for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.⁵⁹ A small business is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$15 million for the preceding three years.⁶⁰ The SBA has approved this definition.⁶¹

⁵³ *Id.*

⁵⁴ See Letter to Daniel Phythyon, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated January 6, 1998.

⁵⁵ See generally “220 MHz Service Auction Closes,” *Public Notice*, 14 FCC Rcd 605 (WTB 1998).

⁵⁶ See “FCC Announces It is Prepared to Grant 654 Phase II 220 MHz Licenses After Final Payment is Made,” *Public Notice*, 14 FCC Rcd 1085 (WTB 1999).

⁵⁷ See “Phase II 220 MHz Service Spectrum Auction Closes,” *Public Notice*, 14 FCC Rcd 11218 (WTB 1999).

⁵⁸ See “Multi-Radio Service Auction Closes,” *Public Notice*, 17 FCC Rcd 1446 (WTB 2002).

⁵⁹ Revision of Part 22 and Part 90 of the Commission’s Rules to Facilitate Future Development of Paging Systems, *Second Report and Order*, 12 FCC Rcd 2732, 2811–2812 ¶¶ 178–181 (*Paging Second Report and Order*); see also Revision of Part 22 and Part 90 of the Commission’s Rules to Facilitate Future Development of Paging Systems, *Memorandum Opinion and Order on Reconsideration*, 14 FCC Rcd 10030, 10085–10088 ¶¶ 98–107 (1999).

⁶⁰ *Paging Second Report and Order*, 12 FCC Rcd at 2811 ¶ 179.

⁶¹ See Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

An auction of Metropolitan Economic Area (MEA) licenses commenced on February 24, 2000, and closed on March 2, 2000. Of the 2,499 licenses auctioned, 985 were sold.⁶² Fifty-seven companies claiming small business status won 440 licenses.⁶³ An auction of MEA and Economic Area (EA) licenses commenced on October 30, 2001, and closed on December 5, 2001. Of the 15,514 licenses auctioned, 5,323 were sold.⁶⁴ 132 companies claiming small business status purchased 3,724 licenses. A third auction, consisting of 8,874 licenses in each of 175 EAs and 1,328 licenses in all but three of the 51 MEAs commenced on May 13, 2003, and closed on May 28, 2003. Seventy-seven bidders claiming small or very small business status won 2,093 licenses.⁶⁵ Currently, there are approximately 24,000 Private Paging site-specific licenses and 74,000 Common Carrier Paging licenses. According to the Commission’s *Trends in Telephone Service*, 375 such carriers reported that they were engaged in the provision of either paging or “messaging service.”⁶⁶ Of these, the Commission estimates that 370 are small, under the SBA-approved small business size standard.⁶⁷ The Commission estimates that the majority of private and common carrier paging providers would qualify as small entities under the SBA definition.

74. *Broadband Personal Communications Service.* The broadband Personal Communications Service (PCS) spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission has created a small business size standard for Blocks C and F as an entity that has average gross revenues of less than \$40 million in the three previous calendar years.⁶⁸ For Block F, an additional small business size standard for “very small business” was added and is defined as an entity

⁶² See “929 and 931 MHz Paging Auction Closes,” *Public Notice*, 15 FCC Rcd 4858 (WTB 2000).

⁶³ See *id.*

⁶⁴ See “Lower and Upper Paging Band Auction Closes,” *Public Notice*, 16 FCC Rcd 21821 (WTB 2002).

⁶⁵ See “Lower and Upper Paging Bands Auction Closes,” *Public Notice*, 18 FCC Rcd 11154 (WTB 2003).

⁶⁶ See *Trends in Telephone Service*, Industry Analysis Division, Wireline Competition Bureau, Table 5.3 (Number of Telecommunications Service Providers by Size of Business) (June 2005).

⁶⁷ 13 CFR 121.201, NAICS code 517211.

⁶⁸ See Amendment of Parts 20 and 24 of the Commission’s Rules—Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, *Report and Order*, 11 FCC Rcd 7824, 7850–7852 ¶¶ 57–60 (1996); see also 47 CFR 24.720(b).

that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years.⁶⁹ These small business size standards, in the context of broadband PCS auctions, have been approved by the SBA.⁷⁰ No small businesses within the SBA-approved small business size standards bid successfully for licenses in Blocks A and B. There were 90 winning bidders that qualified as small entities in the C Block auctions. A total of 93 "small" and "very small" business bidders won approximately 40 percent of the 1,479 licenses for Blocks D, E, and F.⁷¹ On March 23, 1999, the Commission reaucted 155 C, D, E, and F Block licenses; there were 113 small business winning bidders.⁷² On January 26, 2001, the Commission completed the auction of 422 C and F PCS licenses in Auction 35.⁷³ Of the 35 winning bidders in this auction, 29 qualified as "small" or "very small" businesses. Subsequent events concerning Auction 35, including judicial and agency determinations, resulted in a total of 163 C and F Block licenses being available for grant.

75. *Narrowband Personal Communications Service.* The Commission held an auction for Narrowband Personal Communications Service (PCS) licenses that commenced on July 25, 1994, and closed on July 29, 1994. A second commenced on October 26, 1994 and closed on November 8, 1994. For purposes of the first two Narrowband PCS auctions, "small businesses" were entities with average gross revenues for the prior three calendar years of \$40 million or less.⁷⁴ Through these auctions, the Commission awarded a total of forty-one licenses, 11 of which were obtained by four small businesses.⁷⁵ To ensure

meaningful participation by small business entities in future auctions, the Commission adopted a two-tiered small business size standard in the *Narrowband PCS Second Report and Order*.⁷⁶ A "small business" is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than \$40 million.⁷⁷ A "very small business" is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than \$15 million.⁷⁸ The SBA has approved these small business size standards.⁷⁹ A third auction commenced on October 3, 2001 and closed on October 16, 2001. Here, five bidders won 317 (MTA and nationwide) licenses.⁸⁰ Three of these claimed status as a small or very small entity and won 311 licenses.

76. *Specialized Mobile Radio.* The Commission awards "small entity" bidding credits in auctions for Specialized Mobile Radio (SMR) geographic area licenses in the 800 MHz and 900 MHz bands to firms that had revenues of no more than \$15 million in each of the three previous calendar years.⁸¹ The Commission awards "very small entity" bidding credits to firms that had revenues of no more than \$3 million in each of the three previous calendar years.⁸² The SBA has approved these small business size standards for the 900 MHz Service.⁸³ The Commission has held auctions for geographic area licenses in the 800 MHz and 900 MHz bands. The 900 MHz SMR auction began on December 5, 1995, and

Licenses, Winning Bids Total \$617,006,674," *Public Notice*, PNWL 94-004 (rel. Aug. 2, 1994); "Announcing the High Bidders in the Auction of 30 Regional Narrowband PCS Licenses; Winning Bids Total \$490,901,787," *Public Notice*, PNWL 94-27 (rel. Nov. 9, 1994).

⁷⁶ Amendment of the Commission's Rules to Establish New Personal Communications Services, Narrowband PCS, *Second Report and Order and Second Further Notice of Proposed Rule Making*, 16 FCC Rcd 10456, 10476 ¶ 40 (2000).

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ See Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

⁸⁰ See "Narrowband PCS Auction Closes," *Public Notice*, 16 FCC Rcd 18663 (WTB 2001).

⁸¹ 47 CFR 90.814(b)(1).

⁸² *Id.*

⁸³ See Letter to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated August 10, 1999. The Commission notes that, although a request was also sent to the SBA requesting approval for the small business size standard for 800 MHz, approval is still pending.

closed on April 15, 1996. Sixty bidders claiming that they qualified as small businesses under the \$15 million size standard won 263 geographic area licenses in the 900 MHz SMR band. The 800 MHz SMR auction for the upper 200 channels began on October 28, 1997, and was completed on December 8, 1997. Ten bidders claiming that they qualified as small businesses under the \$15 million size standard won 38 geographic area licenses for the upper 200 channels in the 800 MHz SMR band.⁸⁴ A second auction for the 800 MHz band was held on January 10, 2002 and closed on January 17, 2002 and included 23 BEA licenses. One bidder claiming small business status won five licenses.⁸⁵

77. The auction of the 1,050 800 MHz SMR geographic area licenses for the General Category channels began on August 16, 2000, and was completed on September 1, 2000. Eleven bidders won 108 geographic area licenses for the General Category channels in the 800 MHz SMR band qualified as small businesses under the \$15 million size standard. In an auction completed on December 5, 2000, a total of 2,800 Economic Area licenses in the lower 80 channels of the 800 MHz SMR service were sold. Of the 22 winning bidders, 19 claimed "small business" status and won 129 licenses. Thus, combining all three auctions, 40 winning bidders for geographic licenses in the 800 MHz SMR band claimed status as small business.

78. In addition, there are numerous incumbent site-by-site SMR licensees and licensees with extended implementation authorizations in the 800 and 900 MHz bands. The Commission does not know how many firms provide 800 MHz or 900 MHz geographic area SMR pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of no more than \$3 million or \$15 million (the special small business size standards), or have no more than 1,500 employees (the generic SBA standard for wireless entities, discussed, *supra*). One firm has over \$15 million in revenues. The Commission assumes, for purposes of this analysis, that all of the remaining existing extended implementation authorizations are held by small entities.

⁸⁴ See "Correction to Public Notice DA 96-586 'FCC Announces Winning Bidders in the Auction of 1020 Licenses to Provide 900 MHz SMR in Major Trading Areas,'" *Public Notice*, 18 FCC Rcd 18367 (WTB 1996).

⁸⁵ See "Multi-Radio Service Auction Closes," *Public Notice*, 17 FCC Rcd 1446 (WTB 2002).

⁶⁹ See Amendment of Parts 20 and 24 of the Commission's Rules—Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap, *Report and Order*, 11 FCC Rcd 7824, 7852 ¶ 60.

⁷⁰ See Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated December 2, 1998.

⁷¹ FCC News, "Broadband PCS, D, E and F Block Auction Closes," No. 71744 (rel. January 14, 1997).

⁷² See "C, D, E, and F Block Broadband PCS Auction Closes," *Public Notice*, 14 FCC Rcd 6688 (WTB 1999).

⁷³ See "C and F Block Broadband PCS Auction Closes; Winning Bidders Announced," *Public Notice*, 16 FCC Rcd 2339 (2001).

⁷⁴ Implementation of Section 309(j) of the Communications Act—Competitive Bidding Narrowband PCS, *Third Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, 10 FCC Rcd 175, 196 ¶ 46 (1994).

⁷⁵ See "Announcing the High Bidders in the Auction of ten Nationwide Narrowband PCS

79. *Private Land Mobile Radio.* Private Land Mobile Radio (PLMR) systems serve an essential role in a range of industrial, business, land transportation, and public safety activities. These radios are used by companies of all sizes operating in all U.S. business categories, and are often used in support of the licensee's primary (non-telecommunications) business operations. The SBA has developed a small business size standard for the economic census category, "Cellular and Other Wireless Telecommunications," which is any such entity employing no more than 1,500 persons.⁸⁶ 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.

80. *Fixed Microwave Services.* Fixed microwave services include common carrier,⁸⁷ private-operational fixed,⁸⁸ and broadcast auxiliary radio services.⁸⁹ Currently, there are approximately 22,015 common carrier fixed licensees and 61,670 private operational-fixed licensees and broadcast auxiliary radio licensees in the microwave services. The Commission has not yet defined a small business with respect to microwave services. As noted, the SBA has developed a small business size for the broad census category, "Cellular and Other Wireless Telecommunications" companies—that is, an entity with no more than 1,500 persons.⁹⁰ The Commission does not have data specifying the number of these licensees that have more than 1,500 employees, and thus is unable at this time to estimate with greater precision the number of fixed microwave service licensees that would qualify as small

business concerns under the SBA's small business size standard. Consequently, the Commission estimates that there are 22,015 or fewer small common carrier fixed licensees and 61,670 or fewer small private operational-fixed licensees and small broadcast auxiliary radio licensees in the microwave services that may be affected by the rules and policies adopted herein. The Commission notes, however, that the common carrier microwave fixed licensee category includes some large entities.

81. *39 GHz Service.* The Commission defines "small entity" for 39 GHz licenses as an entity that has average gross revenues of less than \$40 million in the three previous calendar years.⁹¹ "Very small business" is defined as an entity that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years.⁹² The SBA has approved these definitions.⁹³ The auction of the 2,173 39 GHz licenses began on April 12, 2000, and closed on May 8, 2000. The 18 bidders who claimed small business status won 849 licenses.

82. *Local Multipoint Distribution Service.* An auction of the 986 Local Multipoint Distribution Service (LMDS) licenses began on February 18, 1998, and closed on March 25, 1998. The Commission defined "small entity" for LMDS licenses as an entity that has average gross revenues of less than \$40 million in the three previous calendar years.⁹⁴ An additional classification for "very small business" was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years.⁹⁵ These regulations defining "small entity" in the context of LMDS auctions have been approved by the SBA.⁹⁶ There were 93

winning bidders that qualified as small entities in the LMDS auctions. A total of 93 small and very small business bidders won approximately 277 A Block licenses and 387 B Block licenses. On March 27, 1999, the Commission re-auctioned 161 licenses; there were 32 small and very small business winning bidders that won 119 licenses.

83. *218–219 MHz Service.* The first auction of 218–219 MHz (previously referred to as the Interactive and Video Data Service or IVDS) spectrum resulted in 178 entities winning licenses for 594 Metropolitan Statistical Areas (MSAs).⁹⁷ Of the 594 licenses, 567 were won by 167 entities qualifying as a small business. For that auction, the Commission defined a small business as an entity that, together with its affiliates, has no more than a \$6 million net worth and, after federal income taxes (excluding any carry over losses), has no more than \$2 million in annual profits each year for the previous two years.⁹⁸ For future auctions in the 218–219 MHz *Report and Order and Memorandum Opinion and Order*, the Commission defined a small business as an entity that, together with its affiliates and persons or entities that hold interests in such an entity and their affiliates, has average annual gross revenues not exceeding \$15 million for the preceding three years.⁹⁹ A very small business is defined as an entity that, together with its affiliates and persons or entities that hold interests in such an entity and its affiliates, has average annual gross revenues not exceeding \$3 million for the preceding three years.¹⁰⁰ The SBA has approved of these definitions.¹⁰¹ At this time, no additional auction is scheduled.

84. *Location and Monitoring Service.* Multilateration Location and Monitoring Service (LMS) systems use non-voice radio techniques to determine the location and status of mobile radio units. For purposes of auctioning LMS licenses, the Commission has defined "small business" as an entity that, together with controlling interests and affiliates, has average annual gross

⁸⁶ See 13 CFR 121.201, NAICS code 517212.

⁸⁷ 47 CFR 101 *et seq.* (formerly, part 21 of the Commission's Rules).

⁸⁸ Persons eligible under parts 80 and 90 of the Commission's rules can use Private Operational-Fixed Microwave services. See generally 47 CFR parts 80 and 90. Stations in this service are called operational-fixed to distinguish them from common carrier and public fixed stations. Only the licensee may use the operational-fixed station, and only for communications related to the licensee's commercial, industrial, or safety operations.

⁸⁹ Auxiliary Microwave Service is governed by part 74 of Title 47 of the Commission's Rules. See 47 CFR part 74. Available to licensees of broadcast stations and to broadcast and cable network entities, broadcast auxiliary microwave stations are used for relaying broadcast television signals from the studio to the transmitter, or between two points such as a main studio and an auxiliary studio. The relay also includes mobile TV pickups, which relay signals from a remote location back to the studio.

⁹⁰ 13 CFR 121.201, NAICS code 517212.

⁹¹ See Amendment of the Commission's Rules Regarding the 37.0–38.6 GHz and 38.6–40.0 GHz Band, *Report and Order*, 12 FCC Rcd 18600 (1997).

⁹² *Id.*

⁹³ See Letter to Margaret Wiener, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, Federal Communications Commission, from Hector Barreto, Administrator, Small Business Administration, dated January 18, 2002.

⁹⁴ See Rulemaking to Amend Parts 1, 2, 21, 25, of the Commission's Rules to Redesignate the 27.5–29.5 GHz Frequency Band, Reallocate the 29.5–30.5 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, *Second Report and Order, Order on Reconsideration, and Fifth Notice of Proposed Rule Making*, 12 FCC Rcd 12545, 12689–90 ¶ 348 (1997).

⁹⁵ *Id.*

⁹⁶ See Letter to Daniel Phythyon, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated January 6, 1998.

⁹⁷ See "Interactive Video and Data Service (IVDS) Applications Accepted for Filing," *Public Notice*, 9 FCC Rcd 6227 (1994).

⁹⁸ Implementation of Section 309(j) of the Communications Act—Competitive Bidding, *Fourth Report and Order*, 9 FCC Rcd 2330 (1994).

⁹⁹ Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218–219 MHz Service, *Report and Order and Memorandum Opinion and Order*, 15 FCC Rcd 1497 (1999).

¹⁰⁰ *Id.*

¹⁰¹ See Letter to Daniel Phythyon, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated January 6, 1998.

revenues for the preceding three years not exceeding \$15 million.¹⁰² A “very small business” is defined as an entity that, together with controlling interests and affiliates, has average annual gross revenues for the preceding three years not exceeding \$3 million.¹⁰³ These definitions have been approved by the SBA.¹⁰⁴ An auction for multilateration LMS licenses commenced on February 23, 1999, and closed on March 5, 1999. Of the 528 licenses auctioned, 289 licenses were sold to four small businesses. In addition, there are numerous site-by-site non-multilateration licensees, and the Commission does not know how many of these providers have annual revenues of no more than \$3 million or \$15 million (the special small business size standards), or have no more than 1,500 employees (the generic SBA standard for wireless entities, discussed *supra*). The Commission assumes, for purposes of this analysis, that all of these licenses are held by small entities.

85. *Rural Radiotelephone Service.* The Commission uses the SBA small business size standard applicable to cellular and other wireless telecommunication companies, *i.e.*, an entity employing no more than 1,500 persons.¹⁰⁵ There are approximately 1,000 licensees in the Rural Radiotelephone Service, and the Commission estimates that there are 1,000 or fewer small entity licensees in the Rural Radiotelephone Service that may be affected by the rules and policies adopted herein.

86. *Air-Ground Radiotelephone Service.* The Commission uses the SBA small business size standard applicable to cellular and other wireless telecommunication companies, *i.e.*, an entity employing no more than 1,500 persons.¹⁰⁶ There are approximately 100 licensees in the Air-Ground Radiotelephone Service, and the Commission estimates that almost all of them qualify as small entities under the SBA standard.

87. *Offshore Radiotelephone Service.* This service operates on several ultra

high frequency (UHF) TV broadcast channels that are not used for TV broadcasting in the coastal area of the states bordering the Gulf of Mexico. At present, there are approximately 55 licensees in this service. The Commission uses the SBA small business size standard applicable to cellular and other wireless telecommunication companies, *i.e.*, an entity employing no more than 1,500 persons.¹⁰⁷ The Commission is unable at this time to estimate the number of licensees that would qualify as small entities under the SBA standard. The Commission assumes, for purposes of this analysis, that all of the 55 licensees are small entities, as that term is defined under the SBA standard.

88. *Multiple Address Systems.* Entities using Multiple Address Systems (MAS) spectrum, in general, fall into two categories: (1) Those using the spectrum for profit-based uses, and (2) those using the spectrum for private internal uses. With respect to the first category, the Commission defines “small entity” for MAS licenses as an entity that has average gross revenues of less than \$15 million in the three previous calendar years.¹⁰⁸ “Very small business” is defined as an entity that, together with its affiliates, has average gross revenues of not more than \$3 million for the preceding three calendar years.¹⁰⁹ The SBA has approved of these special small business size standards.¹¹⁰ The majority of these entities will most likely be licensed in bands where the Commission has implemented a geographic area licensing approach that would require the use of competitive bidding procedures to resolve mutually exclusive applications. The Commission’s licensing database indicates that, as of January 20, 1999, there were a total of 8,670 MAS station authorizations. Of these, 260 authorizations were associated with common carrier service. In addition, an auction for 5,104 MAS licenses in 176 EAs began November 14, 2001, and closed on November 27, 2001.¹¹¹ Seven winning bidders claimed status as small or very small businesses and won 611 licenses.

¹⁰⁷ *Id.*

¹⁰⁸ See Amendment of the Commission’s Rules Regarding Multiple Address Systems, *Report and Order*, 15 FCC Rcd 11956, 12008 ¶ 123 (2000).

¹⁰⁹ *Id.*

¹¹⁰ See Letter to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated June 4, 1999.

¹¹¹ See “Multiple Address Systems Spectrum Auction Closes,” *Public Notice*, 16 FCC Rcd 21011 (2001).

89. With respect to the second category, which consists of entities that use, or seek to use, MAS spectrum to accommodate their own internal communications needs, MAS serves an essential role in a range of industrial, safety, business, and land transportation activities. MAS radios are used by companies of all sizes, operating in virtually all U.S. business categories, and by all types of public safety entities. As noted, the SBA has developed a small business size standard for the broad economic census category, “Cellular and Other Wireless Telecommunications,” which is any such entity employing no more than 1,500 persons.¹¹² The Commission’s licensing database indicates that, as of January 20, 1999, of the 8,670 total MAS station authorizations, 8,410 authorizations were for private radio service, and of these, 1,433 were for private land mobile radio service.

90. *Incumbent 24 GHz Licensees.* The rules at issue could affect incumbent licensees who were relocated to the 24 GHz band from the 18 GHz band, and applicants who wish to provide services in the 24 GHz band. As noted, the SBA has developed a small business size standard for the broad economic census category, “Cellular and Other Wireless Telecommunications,” which is any such entity employing no more than 1,500 persons.¹¹³ The Commission believes that there are only two licensees in the 24 GHz band that were relocated from the 18 GHz band, Teligent¹¹⁴ and TRW, Inc. The Commission understands that Teligent and its related companies have less than 1,500 employees, though this may change in the future. TRW is not a small entity. Thus, only one incumbent licensee in the 24 GHz band is a small business entity.

91. *Future 24 GHz Licensees.* With respect to new applicants in the 24 GHz band, the Commission has defined “small business” as an entity that, together with controlling interests and affiliates, has average annual gross revenues for the three preceding years not exceeding \$15 million.¹¹⁵ “Very small business” in the 24 GHz band is defined as an entity that, together with controlling interests and affiliates, has

¹¹² See 13 FCC Rcd 121.201, NAICS code 517212.

¹¹³ See *Id.*

¹¹⁴ Teligent acquired the Digital Electronic Message Service (DEMS) licenses of FirstMark, the only licensee other than TRW in the 24 GHz band whose license has been modified to require relocation to the 24 GHz band.

¹¹⁵ Amendments to Parts 1, 2, 87 and 101 of the Commission’s Rules To License Fixed Services at 24 GHz, *Report and Order*, 15 FCC Rcd 16934, 16967 ¶ 77 (2000) (*24 GHz Report and Order*); see also 47 CFR 101.538(a)(2).

¹⁰² Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, *Second Report and Order*, 13 FCC Rcd 15182, 15192 ¶ 20 (1998); see also 47 CFR 90.1103.

¹⁰³ Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, *Second Report and Order*, 13 FCC Rcd at 15192 ¶ 20; see also 47 CFR 90.1103.

¹⁰⁴ See Letter to Thomas Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from Aida Alvarez, Administrator, Small Business Administration, dated Feb. 22, 1999.

¹⁰⁵ 13 CFR 121.201, NAICS code 517212.

¹⁰⁶ *Id.*

average gross revenues not exceeding \$3 million for the preceding three years.¹¹⁶ The SBA has approved these size standards. At this time, no additional auction is scheduled.

92. *Cable and Other Program Distribution.* The SBA has developed a small business size standard for Cable and Other Program Distribution, which is: All such firms having \$13.5 million or less in annual receipts.¹¹⁷ According to Census Bureau data for 2002, there were a total of 1,191 firms in this category that operated for the entire year.¹¹⁸ Of this total, 1,087 firms had annual receipts of under \$10 million, and 43 firms had receipts of \$10 million or more but less than \$25 million.¹¹⁹ Thus, under this size standard, the majority of firms can be considered small.

93. *Cable Television Relay Service.* This service includes transmitters generally used to relay cable programming within cable television system distribution systems. The Census Bureau has defined a category of Cable and Other Program Distribution as follows: "This industry comprises establishments primarily engaged as third-party distribution systems for broadcast programming. The establishments of this industry deliver visual, aural, or textual programming received from cable networks, local television stations, or radio networks to consumers via cable or direct-to-home satellite systems on a subscription or fee basis. These establishments do not generally originate programming material."¹²⁰ The SBA has developed a small business size standard for Cable and Other Program Distribution, which is: All such firms having \$13.5 million or less in annual receipts.¹²¹ According to Census Bureau data for 2002, there were a total of 1,191 firms in this category that operated for the entire year.¹²² Of this total, 1,087 firms had annual receipts of under \$10 million, and 43 firms had receipts of \$10 million

or more but less than \$25 million.¹²³ Thus, under this size standard, the majority of firms can be considered small.

94. *Cable Companies and Systems.* The Commission has also developed its own small business size standards for the purpose of cable rate regulation. Under the Commission's rules, a "small cable company" is one serving 400,000 or fewer subscribers, nationwide.¹²⁴ Industry data indicate that, of 1,076 cable operators nationwide, all but eleven are small under this size standard.¹²⁵ In addition, under the Commission's rules, a "small system" is a cable system serving 15,000 or fewer subscribers.¹²⁶ Industry data indicate that, of 7,208 systems nationwide, 6,139 systems have under 10,000 subscribers, and an additional 379 systems have 10,000–19,999 subscribers.¹²⁷ Thus, under this second size standard, most cable systems are small.

95. *Cable System Operators.* The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000."¹²⁸ The Commission has determined that an operator serving fewer than 677,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed \$250 million in the aggregate.¹²⁹ Industry data indicate that, of 1,076 cable operators nationwide, all but ten

are small under this size standard.¹³⁰ The Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million,¹³¹ and therefore it is unable to estimate more accurately the number of cable system operators that would qualify as small under this size standard.

96. *Multichannel Video Distribution and Data Service.* Multichannel Video Distribution and Data Service (MVDDS) is a terrestrial fixed microwave service operating in the 12.2–12.7 GHz band. Licenses in this service were auctioned in January 2004, with 10 winning bidders for 192 licenses. Eight of these 10 winning bidders claimed small businesses status for 144 of these licenses.¹³²

97. *Amateur Radio Service.* These licensees are believed to be individuals, and therefore are not small entities.

98. *Aviation and Marine Services.* Small businesses in the aviation and marine radio services use a very high frequency (VHF) marine or aircraft radio and, as appropriate, an emergency position-indicating radio beacon (and/or radar) or an emergency locator transmitter. The Commission has not developed a small business size standard specifically applicable to these small businesses. As noted, the SBA has developed a small business size standard for the broad economic census category, "Cellular and Other Wireless Telecommunications," which is any such entity employing no more than 1,500 persons.¹³³ Most applicants for recreational licenses are individuals. Approximately 581,000 ship station licenses and 131,000 aircraft station licenses operate domestically and are not subject to the radio carriage requirements of any statute or treaty. For purposes of the Commission's evaluations in this analysis, the Commission estimates that there are up to approximately 712,000 licensees that are small businesses (or individuals) under the SBA standard. In addition, between December 3, 1998 and

¹²³ *Id.* An additional 61 firms had annual receipts of \$25 million or more.

¹²⁴ 47 CFR 76.901(e). The Commission determined that this size standard equates approximately to a size standard of \$100 million or less in annual revenues. *Implementation of Sections of the 1992 Cable Act: Rate Regulation*, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393, 7408 (1995).

¹²⁵ These data are derived from: R.R. Bowker, *Broadcasting & Cable Yearbook 2006*, "Top 25 Cable/Satellite Operators," pages A-8 and C-2 (data current as of June 30, 2005); Warren Communications News, *Television & Cable Factbook 2006*, "Ownership of Cable Systems in the United States," pages D-1805 to D-1857.

¹²⁶ 47 CFR 76.901(c).

¹²⁷ Warren Communications News, *Television & Cable Factbook 2006*, "U.S. Cable Systems by Subscriber Size," page F-2 (data current as of Oct. 2005). The data do not include 718 systems for which classifying data were not available.

¹²⁸ 47 U.S.C. 43(m)(2); see 47 CFR 76.901(f) and nn. 1–3.

¹²⁹ 47 CFR 76.901(f); see Public Notice, *FCC Announces New Subscriber Count for the Definition of Small Cable Operator*, DA 01-158 (Cable Services Bureau, Jan. 24, 2001).

¹³⁰ These data are derived from: R.R. Bowker, *Broadcasting & Cable Yearbook 2006*, "Top 25 Cable/Satellite Operators," pages A-8 and C-2 (data current as of June 30, 2005); Warren Communications News, *Television & Cable Factbook 2006*, "Ownership of Cable Systems in the United States," pages D-1805 to D-1857.

¹³¹ The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority's finding that the operator does not qualify as a small cable operator pursuant to § 76.901(f) of the Commission's rules. See 47 CFR 76.909(b).

¹³² "Multichannel Video Distribution and Data Service Auction Closes," *Public Notice*, DA 04-215 (Feb. 2, 2004).

¹³³ 13 CFR 121.201, NAICS code 517212.

¹¹⁶ 24 GHz Report and Order, 15 FCC Rcd at 16967 ¶ 77; see also 47 CFR 101.538(a)(1).

¹¹⁷ 13 CFR 121.201, NAICS code 517510.

¹¹⁸ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, Table 4, Receipts Size of Firms for the United States: 2002, NAICS code 517510 (issued November 2005).

¹¹⁹ *Id.* An additional 61 firms had annual receipts of \$25 million or more.

¹²⁰ U.S. Census Bureau, 2002 NAICS Definitions, "517510 Cable and Other Program Distribution"; <http://www.census.gov/epcd/naics02/def/NDEF517.HTM>.

¹²¹ 13 CFR 121.201, NAICS code 517510.

¹²² U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, Table 4, Receipts Size of Firms for the United States: 2002, NAICS code 517510 (issued November 2005).

December 14, 1998, the Commission held an auction of 42 VHF Public Coast licenses in the 157.1875–157.4500 MHz (ship transmit) and 161.775–162.0125 MHz (coast transmit) bands. For purposes of the auction, the Commission defined a “small” business as an entity that, together with controlling interests and affiliates, has average gross revenues for the preceding three years not to exceed \$15 million dollars. In addition, a “very small” business is one that, together with controlling interests and affiliates, has average gross revenues for the preceding three years not to exceed \$3 million dollars.¹³⁴ There are approximately 10,672 licensees in the Marine Coast Service, and the Commission estimates that almost all of them qualify as “small” businesses under the above special small business size standards.

99. *Personal Radio Services.* Personal radio services provide short-range, low power radio for personal communications, radio signaling, and business communications not provided for in other services. The Personal Radio Services include spectrum licensed under part 95 of the rules.¹³⁵ These services include Citizen Band Radio Service (CB), General Mobile Radio Service (GMRS), Radio Control Radio Service (R/C), Family Radio Service (FRS), Wireless Medical Telemetry Service (WMTS), Medical Implant Communications Service (MICS), Low Power Radio Service (LPRS), and Multi-Use Radio Service (MURS).¹³⁶ There are a variety of methods used to license the spectrum in these rule parts, from licensing by rule, to conditioning operation on successful completion of a required test, to site-based licensing, to geographic area licensing. Under the RFA, the Commission is required to make a determination of which small entities are directly affected by the rules being adopted. Since all such entities are wireless, the Commission applies the small business size standard “Cellular and Other Wireless Telecommunications,” pursuant to which a small entity is defined as employing 1,500 or fewer persons.¹³⁷

¹³⁴ Amendment of the Commission’s Rules Concerning Maritime Communications, *Third Report and Order and Memorandum Opinion and Order*, 13 FCC Rcd 19853 (1998).

¹³⁵ 47 CFR part 90.

¹³⁶ The Citizens Band Radio Service, General Mobile Radio Service, Radio Control Radio Service, Family Radio Service, Wireless Medical Telemetry Service, Medical Implant Communications Service, Low Power Radio Service, and Multi-Use Radio Service are governed by subpart D, subpart A, subpart C, subpart B, subpart H, subpart I, subpart G, and subpart J, respectively, of part 95 of the Commission’s rules. See generally 47 CFR part 95.

¹³⁷ 13 CFR 121.201, NAICS Code 517212.

Many of the licensees in these services are individuals, and thus are not small entities. In addition, due to the mostly unlicensed and shared nature of the spectrum utilized in many of these services, the Commission lacks direct information upon which to base an estimation of the number of small entities under an SBA definition that might be directly affected by the proposed rules.

100. Despite the paucity, or in some instances, total absence, of information about their status as licensees or regulatees or the number of operators in each such service, users of spectrum in these services are listed here as a matter of Commission discretion in order to fulfill the mandate imposed on the Commission by the RFA to regulate small business entities with an understanding towards preventing the possible differential and adverse impact of the Commission’s rules on smaller entities. Further, the listing of such entities, despite their indeterminate status, should provide them with fair and adequate notice of the possible impact of the instant proposals.

101. *Public Safety Radio Licensees.* As a general matter, public safety radio licensees include police, fire, local government, forestry conservation, highway maintenance, and emergency medical services.¹³⁸ The SBA rules contain a small business size standard for “Cellular and Other Wireless Telecommunications,” which encompass business entities engaged in wireless communications employing no more than 1,500 persons.¹³⁹ According

¹³⁸ See subparts A and B of part 90 of the Commission’s Rules, 47 CFR 90.1–90.22. Police licensees include 26,608 licensees that serve state, county, and municipal enforcement through telephony (voice), telegraphy (code), and teletype and facsimile (printed material). Fire licensees include 22,677 licensees comprised of private volunteer or professional fire companies, as well as units under governmental control. Public Safety Radio Pool licensees also include 40,512 licensees that are state, county, or municipal entities that use radio for official purposes. There are also 7,325 forestry service licensees comprised of licensees from state departments of conservation and private forest organizations that set up communications networks among fire lookout towers and ground crews. The 9,480 state and local governments are highway maintenance licensees that provide emergency and routine communications to aid other public safety services to keep main roads safe for vehicular traffic. Emergency medical licensees (1,460) use these channels for emergency medical service communications related to the delivery of emergency medical treatment. Another 19,478 licensees include medical services, rescue organizations, veterinarians, persons with disabilities, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities, and emergency repair of public communications facilities.

¹³⁹ See 13 CFR 121.201 (NAICS code 517212); U.S. Census Bureau, 2002 Economic Census,

to Census Bureau data for 2002, in this category there was a total of 8,863 firms that operated for the entire year.¹⁴⁰ Of this total, 401 firms had 100 or more employees, and the remainder had fewer than 100 employees.¹⁴¹ With respect to local governments, in particular, since many governmental entities as well as private businesses comprise the licensees for these services, the Commission includes under public safety services the number of government entities affected.

102. *Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing.* The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. 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.”¹⁴² The SBA has developed a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: All such firms having 750 or fewer employees.¹⁴³ According to Census Bureau data for 2002, there were a total of 1,041 establishments in this category that operated for the entire year.¹⁴⁴ Of this total, 1,010 had employment of under 500, and an additional 13 had

Subject Series: Information, “Employment Size of Establishments for the United States: 2002,” Table 2, NAICS code 517212.

¹⁴⁰ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, “Employment Size of Establishments for the United States: 2002,” Table 2, NAICS code 517212.

¹⁴¹ *Id.*

¹⁴² U.S. Census Bureau, 2002 NAICS Definitions, “334220 Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing”; <http://www.census.gov/epcd/naics02/def/NDEF334.HTM#N3342>.

¹⁴³ 13 CFR 121.201, NAICS code 334220.

¹⁴⁴ U.S. Census Bureau, American FactFinder, 2002 Economic Census, Industry Series, Industry Statistics by Employment Size, NAICS code 334220 (released May 26, 2005); <http://factfinder.census.gov>. The number of “establishments” is a less helpful indicator of small business prevalence in this context than would be the number of “firms” or “companies,” because the latter take into account the concept of common ownership or control. Any single physical location for an entity is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses. In this category, the Census breaks-out data for firms or companies only to give the total number of such entities for 2002, which was 929.

employment of 500 to 999.¹⁴⁵ Thus, under this size standard, the majority of firms can be considered small.

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

103. The projected reporting, recordkeeping, and other compliance requirements resulting from the Report and Order will apply to all entities in the same manner. The Commission believes that applying the same rules equally to all entities promotes fairness. The Commission does not believe that the costs and/or administrative burdens associated with the rules will unduly burden small entities. The revisions the Commission adopts should benefit small entities by giving them more information, more flexibility, and more options for gaining access to valuable wireless spectrum.

104. *Renewal Procedures.* In this Report and Order, the Commission revises § 27.14 of the rules to eliminate the filing of competing applications at the time of the renewal of 700 MHz licenses. This rule change will relieve all licensees, including small businesses that hold or will hold licenses in the 700 MHz Band the burden of possibly facing a comparative hearing. The Report and Order also clarifies that within the renewal context, all licensees must make a substantial service showing and demonstrate that they have substantially complied with the Commission's rules, policies, and the Communications Act of 1934, as amended.¹⁴⁶ This requirement is distinct from the performance requirements that the Commission seeks comment on in the *Further Notice*.

105. *911/E911.* There is no general reporting or recordkeeping requirements for 911/E911 compliance. The 911/E911 obligations established in § 20.18 of our rules, however, are extended to cover all commercial mobile radio services (CMRS), including services licensed in the 700 MHz Commercial Services Band and the AWS-1 bands, to the same extent as they apply to wireless services currently listed in the scope provision of § 20.18. The Commission will continue, however, to exclude MSS from § 20.18 in conformity with the Commission's decision in the *E911 Scope Order*.¹⁴⁷ All other CMRS

providers must comply with the 911/E911 requirements to the extent that they offer real-time, two way switched voice service that is interconnected with the public switched network and utilize an in-network-switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls.¹⁴⁸ The Commission finds that this extension of 911/E911 requirements, while substantial for small carriers, is justified by the interest in competitive neutrality as well as by the critical public safety benefits of 911/E911. To the extent that special circumstances arise in particular situations where compliance may not be technically or economically feasible, waiver relief is available on a case-by-case basis. In addition, to the extent that carriers pursue a handset-based compliance solution, implementation should be easier than in previous 911/E911 compliance instances involving other services. Given that the 911/E911 requirements in part 27 will be imposed prior to the commencement of services in the 700 MHz band, all of the subscribers to the new services will have compliant handsets from the commencement of service. Small carriers will therefore not have the complication of replacing phones that lack 911/E911 capability.

106. *Public Safety Notification.* In this Report and Order, the Commission takes steps to address potential intermodulation ("IM") to public safety operations in the 700 MHz Band. Specifically, as the Commission did with respect to 800 MHz ESMR and Cellular licensees,¹⁴⁹ the Commission will require 700 MHz Commercial Services Band licensees, upon request from a 700 MHz public safety entity, to provide to that entity information about the location and parameters of any stations they plan to activate in the public safety entity's area of operation.¹⁵⁰ The Commission will also

18718 ¶ 83 (1996) (*E911 Report and Order*). In the *E911 Scope Order*, upon revisiting the issue, the Commission recognized that MSS operators continued to face unique difficulties in implementing 911 and E911 obligations, and therefore declined to apply the obligations of § 20.18 and instead imposed a separate, limited 911 requirement specifically for MSS, including a requirement to establish emergency call centers. See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket 94-102, IB Docket No. 99-67, Report and Order and Further Notice of Proposed Rulemaking, 18 FCC Rcd 25340, 25347-57 ¶¶ 20-39 (2003) ("*E911 Scope Order*").

¹⁴⁸ 47 CFR 20.18(a).

¹⁴⁹ See 47 CFR 90.675.

¹⁵⁰ As per § 90.675, this would include information about the 700 MHz station's location, effective radiated power, antenna height, and channels available for use. 47 CFR 90.675. Also, as

require, as it did in § 90.675, public safety licensees to provide, upon request of a 700 MHz Commercial Services Band licensee, the operating parameters of their radio systems.¹⁵¹ As indicated in the *800 MHz Report and Order*, these actions can both help prevent potential interference from occurring and help identify possible sources of interference more rapidly, if interference were to occur.¹⁵² It is not anticipated that it will be onerous for small businesses to come into compliance with this requirement, which is triggered only upon a request from a public safety entity. The information to be reported is of a type that the licensee will likely have readily available.

107. *Application of Secondary Markets Spectrum Leasing Policies and Rules to the Guard Bands.* Although the Report and Order replaces the Guard Band Manager spectrum leasing regime with the Secondary Markets spectrum leasing policies and rules, it sustains the requirements that applied to the Guard Band Manager regime with respect to the necessity to file annual reports with the Commission on spectrum use, as well as mandatory coordination with

per § 90.675. Public Safety licensees will not be afforded the right to accept or reject the activation of a proposed 700 MHz station or to unilaterally require changes to the station's operating parameters. We note as well that 700 MHz licensees may regard their operating parameters as proprietary and if so, we encourage such licensees to use non-disclosure agreement whereby third parties will not be given access to such information. Failing that, the affected parties could seek a protective order from the Commission. See Digital Output Protection Technology and Recording Method Certifications, Order, 19 FCC Rcd 4735 (2004). See also 47 CFR 0.457, 0.459. We also encourage, but do not require, that such matters be submitted to arbitration, mediation, or other alternative dispute resolution mechanisms.

¹⁵¹ Public Safety licensees will also be required to provide information about any technical changes they plan to make to their systems.

¹⁵² See Improving Public Safety Communications in the 800 MHz Band, Consolidating the 800 and 900 MHz Industrial/Land Transportation and Business Pool Channels, Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, Petition for Rule Making of the Wireless Information Networks Forum Concerning the Unlicensed Personal Communications Service, Petition for Rule Making of UT Starcom, Inc., Concerning the Unlicensed Personal Communications Service, Amendment of Section 2.106 of the Commission's Rules to Allocate Spectrum at 2 GHz for use by the Mobile Satellite Service, WT Docket 02-55, ET Docket Nos. 00-258 and 95-18, RM-9498, RM-10024, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, 19 FCC Rcd 14969, 15038-39 ¶ 125 (2004) ("*800 MHz Report and Order*") ("if the characteristics of a proposed new cell are known in advance, it is possible to analyze the cell's potential for interference and make any necessary revisions to cell parameters before the cell is activated"), 15039 ¶ 127.

¹⁴⁵ *Id.* An additional 18 establishments had employment of 1,000 or more.

¹⁴⁶ See 47 CFR 27.14 (2006).

¹⁴⁷ The Commission initially excluded MSS from § 20.18 in the *E911 Report and Order*. See Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems, CC Docket No. 94-102, Report and Order and Further Notice of Proposed Rulemaking, 11 FCC Rcd 18676,

public safety entities for all uses of spectrum including that procured through leasing arrangements. The *Report and Order* also eliminates restrictions that had prevented Guard Band licensees from using their spectrum as system operators, and from leasing any more than 49.9 percent of their spectrum to affiliates.

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

108. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include (among others) the following four alternatives: (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 or 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.¹⁵³

109. In the *700 MHz Commercial Services Notice*, the Commission invited comment on extending the license terms of 700 MHz Band licenses to an expiration date beyond 2015 in order to afford licensees a sufficient period of time for deployment of new 700 MHz Band services once the DTV transition is complete. In addition, the *Notice* sought comment on whether the power limits in the existing rules for the 700 MHz Band spectrum should be revised. Finally, the Commission sought comment on its tentative conclusion that services provided in the 700 MHz Band, and in other bands subject to part 27 of the rules such as AWS-1, should be subject to E911 and hearing aid-compatibility requirements to the same extent that such services would be covered if provided in other bands, and on whether such requirements should be extended to all similar wireless services.

110. *Small Geographic Service Areas.* A number of small and rural service providers, as well as several different coalitions of small, regional, and rural carriers proposed a mix of service areas that would include 12 REAGs, 176 EAs, and 734 CMAs, instead of just six EAGs. Several national carriers filed comments in support of leaving the EAG pattern in place. Separate comments were also received seeking a nationwide license and license areas smaller than CMAs.

111. The Commission concluded that providing a mix of CMAs, EAs, and REAGs licenses in the 700 MHz Commercial Services spectrum will be an effective means of providing increased access to spectrum, especially in rural areas, while simultaneously meeting other Commission goals. The Commission agrees with those commenters who observe that a revised mix of smaller license sizes would provide a more balanced set of initial licensing opportunities at this time and make available more licenses to match the needs of different potential users.¹⁵⁴ The most common recommendation made to the Commission by small and rural providers was that additional licenses be made available based on small geographic service areas.¹⁵⁵ Some of these commenters asserted in particular that the use of small geographic license areas provides an incentive for licensees to serve more rural communities, whereas licensing by large geographic license areas may allow licensees to meet their performance requirements only by serving the largest urban markets.¹⁵⁶

112. *Power Limits and Public Safety Notification.* In this *Report and Order*, the Commission takes steps to address potential intermodulation (“IM”) to public safety operations in the 700 MHz band in a manner that minimizes the impact on commercial licensees in the Upper 700 MHz Band, including small businesses with commercial operations in this band. The Commission declines to impose any technical restrictions on Upper 700 MHz Commercial Services Band licensees to address potential IM interference to 700 MHz public safety

operations. The Commission will, however, require Upper 700 MHz Commercial Services Band licensees and 700 MHz public safety entities, upon request from the other, to exchange information about their operating stations and systems. A reporting requirement triggered only by a request of a public safety entity operating on the 700 MHz Band will minimize economic impact on small businesses operating in the commercial 700 MHz Band relative to the alternative of imposing potentially burdensome technical restrictions on Upper 700 MHz Commercial Services Band licensees to address potential IM interference to 700 MHz public safety operations.

113. *911/E911.* Almost all of the commenters addressing the 911/E911 issue support application of the 911/E911 requirements to services in the 700 MHz Commercial Services Band to the extent that those services are similar to the services already subject to the requirements.¹⁵⁷ Several commenters also state, however, that E911 should not apply to 700 MHz Commercial Services Band services to a greater extent than it does to services currently subject to the requirements.¹⁵⁸

114. The Commission concludes that § 20.18(a) of its rules should be amended to apply 911/E911 requirements to all commercial mobile radio services (CMRS), including services licensed in the 700 MHz Commercial Services Band and the AWS-1 bands, to the same extent as they apply to wireless services currently listed in the scope provision of § 20.18.¹⁵⁹ For those small carriers who can demonstrate in a particular circumstance that implementation is not technically or economically feasible, the option of waiver relief is available. The *Report and Order* concludes, however, that such case-by-case circumstances, if any, should not delay the

¹⁵⁴ See Letter from Multiple Commenters to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 06-150 (filed October 20, 2006) (“Balanced Consensus Plan”) (signatories to the Balanced Consensus Plan are Alltel, Aloha, Blooston, C&W, ConnectME Authority, Corr, Dobson, Leap, Maine Office of Chief Information Officer, MetroPCS, NTCA, Nebraska PSC, North Dakota PSC, RCA, RTG, Union, US Cellular, Vermont et al., Vermont Telephone Company); U.S. Cellular Comments in WT Docket 06-150 at 3; Corr Comments in WT Docket 06-150 at 3; NTCA Comments in WT Dockets 06-150 at 5-6.

¹⁵⁵ See Aloha Comments in WT Docket 06-150 at 3-6; Balanced Consensus Plan at attachment; Blooston Comments in WT Docket 06-150 at 2; C&W Reply Comments in WT Docket 06-150 at 2-3; Corr Comments in WT Docket 06-150 at 2-4; Dobson Comments in WT Docket 06-150 at 2-4; Howard/Javed Comments in WT Docket 06-150 at 9; Leap Comments in WT Docket 06-150 at 4, 5-6; MilkyWay Comments in WT Docket 06-150 at 1-6; NextWave Comments in WT Docket 06-150 at 2-6; NTCA Comments in WT Docket 06-150 at 6; OPASTCO Comments in WT Docket 06-150 at 2-3; RCA Comments at 4-8; RTG Comments in WT Docket 06-150 at 2; U.S. Cellular Comments in WT Docket 06-150 at 4.

¹⁵⁶ See Corr Comments in WT Docket 06-150 at 4; RCA Comments in WT Docket 06-150 at 9-10.

¹⁵⁷ See Aloha Comments in WT Docket 06-150 at 12; AT&T Comments in WT Docket 06-150 at 16; Blooston Comments in WT Docket 06-150 at 8; Cingular Comments in WT Docket 06-150 at 15; Dobson Comments in WT Docket 06-150 at 11; Leap Comments in WT Docket 06-150 at 11; NENA Comments in WT Docket 06-150 at 1-2; Qualcomm Comments in WT Docket 06-150 at 24 (supporting application of E911 to both auctioned and previously un auctioned spectrum); U.S. Cellular Comments in WT Docket 06-150 at 18 (same); TIA Comments in WT Docket 06-150 at 9-10; T-Mobile Reply at 6.

¹⁵⁸ See Aloha Comments in WT Docket 06-150 at 12 (700 MHz licensees should be subject to the same E911 requirements, “no more or less,” as other licensees providing services where E911 obligations exist); Cingular Comments in WT Docket 06-150 at 15 (supporting application where services met the *E911 Scope Order* criteria); Qualcomm Comments at 24.

¹⁵⁹ See 47 CFR 20.18.

¹⁵³ 5 U.S.C. 603(c).

implementation of 911/E911 for service providers generally. In this regard, the Commission has observed previously that "911 service is critical to our Nation's ability to respond to a host of crises,"¹⁶⁰ and that E911 in particular "saves lives and property by helping emergency services personnel do their jobs more quickly and efficiently."¹⁶¹ The Commission also takes note of Congress's finding in the "Ensuring Needed Help Arrives Near Callers Employing 911 Act of 2004" that "for the sake of our Nation's homeland security and public safety, a universal emergency telephone number (911) that is enhanced with the most modern and state-of-the-art telecommunications capabilities possible should be available to all citizens in all regions of the Nation" and that "enhanced 911 is a high national priority."¹⁶²

115. *Application of Secondary Markets Spectrum Leasing Policies and Rules to the Guard Bands.* The *Report and Order* maintains the existing requirement for Guard Band licensees to file annual reports regarding their spectrum usage, and thus does not increase the existing recordkeeping and reporting burden. Additionally, the *Report and Order* maintains the existing coordination requirements where all uses of Guard Bands spectrum must be coordinated with public safety operations in the 700 MHz Band. Under the *de jure* transfer leasing option within the Secondary Markets spectrum leasing policies and rules, the Guard Band licensee continues to be responsible for coordinating with the public safety operations. Under the *de facto* transfer leasing option, the lessee becomes primarily responsible for such coordination. As a result, to the extent that a Guard Band licensee is a small entity, the availability of the *de facto* transfer leasing option under the *Report and Order* reduces the overall potential burden on the Guard Band licensee, compared to its previous responsibility as a Guard Band Manager to coordinate all uses of its spectrum.

G. Report to Congress

116. The Commission will send a copy of the *Report and Order*, including this FRFA, in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act.¹⁶³ In addition, the Commission will send a copy of the *Report and Order*, including

this FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of the *Report and Order* and FRFA (or summaries thereof) will also be published in the **Federal Register**.¹⁶⁴

Ordering Clauses

117. Accordingly, *it is ordered* that pursuant to §§ 1, 4(i), 7, 10, 201, 202, 208, 214, 215, 222(d)(4)(A)–(C), 222(f), 222(g), 222(h)(1)(A), 222(h)(4)–(5), 251(e)(3), 301, 303, 307, 308, 309, 310, 311, 315, 316, 317, 324, 331, 332, 336, 337 and 710, of the Communications Act of 1934, as amended, 47 U.S.C. 151, 154(i), 157, 160, 201, 202, 208, 214, 215, 222(d)(4)(A)–(C), 222(f), 222(g), 222(h)(1)(A), 222(h)(4)–(5), 251(e)(3), 301, 303, 307, 308, 309, 310, 311, 315, 316, 317, 324, 331, 332, 336, 337, and 610, this *report and order* in WT Docket No. 06–150, CC Docket No. 94–102, WT Docket No. 01–309, WT Docket No. 03–264, WT Docket No. 06–169, WT Docket No. 96–86 and PS Docket No. 06–229 *is adopted*, and that part 1, part 20, part 27 and part 90 of the Commission's rules, 47 CFR part 1, 47 CFR part 20, 47 CFR part 27, and 47 CFR part 90, *are amended* as set forth in Rule changes. Effective May 16, 2007, except for the amendments to §§ 20.18(a), 27.50(c)(5), and 27.50(c)(8) which contain information collection requirements that have not been approved by the Office of Management and Budget (OMB). The Commission will publish a document in the **Federal Register** announcing the effective date.

118. *It is further ordered* that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, *shall send* a copy of this *report and order*, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

119. *It is further ordered* that the Commission *shall send* a copy of this *report and order* in a report to be sent to Congress and the General Accounting Office pursuant to the Congressional Review Act, 5 U.S.C. 801(a)(1)(A).

Federal Communications Commission.

Marlene H. Dortch,
Secretary.

Final Rules

■ For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR parts 1, 20, 27 and 90 as follows:

PART 1—PRACTICE AND PROCEDURE

■ 1. The authority citation for part 1 continues to read as follows:

Authority: 15 U.S.C. 79 *et seq.*; 47 U.S.C. 151, 154(i), 154(j), 155, 157, 225, 303(r), and 309.

■ 2. Section 1.955 is amended by revising paragraph (a)(1) to read as follows:

§ 1.955 Termination of authorizations.

(a) * * *

(1) *Expiration.* Authorizations automatically terminate, without specific Commission action, on the expiration date specified therein, unless a timely application for renewal is filed. See § 1.949 of this part. No authorization granted under the provisions of this part shall be for a term longer than ten years, except to the extent a longer term is authorized under § 27.13 of part 27 of this chapter.

* * * * *

■ 3. Section 1.9005 is amended by revising paragraphs (gg) and (hh) and adding paragraph (ii) to read as follows:

§ 1.9005 Included services.

* * * * *

(gg) The Common Carrier Fixed Point-to-Point Microwave Service (part 101 of this chapter);

(hh) The Multipoint Video Distribution and Data Service (part 101 of this chapter); and,

(ii) The 700 MHz Guard Bands Service (part 27 of this chapter).

PART 20—COMMERCIAL MOBILE RADIO SERVICES

■ 4. The authority citation for part 20 continues to read as follows:

Authority: 47 U.S.C. 154, 160, 201, 251–254, 303, and 332 unless otherwise noted.

■ 5. Section 20.18 is amended by revising paragraph (a) to read as follows:

§ 20.18 911 service.

(a) *Scope of Section.* The following requirements are only applicable to CMRS providers, excluding mobile satellite service (MSS) operators, to the extent that they:

(1) Offer real-time, two way switched voice service that is interconnected with the public switched network; and

(2) Utilize an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls.

These requirements are applicable to entities that offer voice service to consumers by purchasing airtime or capacity at wholesale rates from CMRS licensees.

* * * * *

¹⁶⁰ See *E911 Scope Order*, 18 FCC Rcd at 25341 ¶ 1.

¹⁶¹ *E911 Report and Order*, 11 FCC Rcd at 18678 ¶ 3, 18679 ¶ 5.

¹⁶² 47 U.S.C. 942, notes (1), (4).

¹⁶³ See 5 U.S.C. 801(a)(1)(A).

¹⁶⁴ See 5 U.S.C. 604(b).

■ 6. Section 20.19 is amended by revising paragraphs (a) and (b) introductory text to read as follows:

§ 20.19 Hearing aid-compatible mobile handsets.

(a) *Scope of Section.* Providers of digital CMRS are subject to hearing aid-compatibility requirements to the extent that they:

(1) Offer real-time, two way switched voice or data service that is interconnected with the public switched network; and

(2) Utilize an in-network switching facility that enables the provider to reuse frequencies and accomplish seamless hand-offs of subscriber calls. Such providers are subject to the requirements set forth in this section to the extent that the established technical standard or standards specified in paragraph (b) of this section are applicable to the service provided. This section also applies to the manufacturers of the wireless phones used in delivery of the services specified in this paragraph.

(b) *Technical standard for hearing aid compatibility.* The technical standard set forth in the standard document ANSI C63.19-2001 "American National Standard for Methods of Measurement of Compatibility between Wireless Communication Devices and Hearing Aids, ANSI C63.19-2001" (published October 8, 2001—available for purchase from the American National Standards Institute) is applicable to providers of Broadband Personal Communications Services (part 24, subpart E of this chapter), Cellular Radio Telephone Service (part 22, subpart H of this chapter), and Specialized Mobile Radio Services in the 800 MHz and 900 MHz bands (including in part 980, subpart S of this chapter). A wireless phone used for these services is hearing aid compatible for the purposes of this section if it meets, at a minimum:

* * * * *

PART 27—MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

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

Authority: 47 U.S.C. 154, 301, 302, 303, 307, 309, 332, 336, and 337 unless otherwise noted.

§ 27.4 [Amended]

■ 8. Section 27.4 is amended by removing the definition of "Guard Band Manager."

■ 9. Section 27.10 is amended by revising the introductory paragraph to read as follows:

§ 27.10 Regulatory status.

The following rules apply concerning the regulatory status in the frequency bands specified in § 27.5.

* * * * *

■ 10. Section 27.13 is amended by revising paragraph (b) to read as follows:

§ 27.13 License period.

* * * * *

(b) *698-764 MHz and 776-794 MHz bands.* Initial authorizations for the 698-764 MHz, 747-762 MHz, and 777-792 MHz bands, will extend for a term not to exceed ten years from February 17, 2009, 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. Initial authorizations for the 746-747 MHz, 776-777 MHz, 762-764 MHz, and 792-794 MHz bands shall not exceed January 1, 2015. Subsequent license terms shall be for a term not to exceed ten years. Licensees that initiate the provision of a broadcast service, whether exclusively or in combination with other services, may not provide this service for more than eight years or beyond the end of the license term if no broadcast service had been provided, whichever period is shorter in length.

* * * * *

■ 11. Section 27.14 is amended by revising the section heading, redesignating paragraph (e) as paragraph (f), and by adding new paragraph (e) to read as follows:

§ 27.14 Construction requirements; Criteria for renewal.

* * * * *

(e) Comparative renewal proceedings do not apply to WCS licensees holding authorizations for the 698-746 MHz, 747-762 MHz, and 777-792 MHz bands. These licensees must file a renewal application in accordance with the provisions set forth in § 1.949 of this chapter.

* * * * *

■ 12. Section 27.50 is amended by revising paragraphs (b) and (c) and Table 1 and adding new Table 2, Table 3, and Table 4 to read as follows:

§ 27.50 Power and antenna height limits.

* * * * *

(b) The following power and antenna height limits apply to transmitters operating in the 746-764 MHz and 776-794 MHz bands:

(1) Fixed and base stations transmitting a signal in the 746-747 and 762-764 MHz bands must not exceed an effective radiated power (ERP) of 1000 watts and an antenna height of 305 m height above average terrain (HAAT),

except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section;

(2) Fixed and base stations transmitting a signal in the 747-762 MHz and 777-792 MHz bands with an emission bandwidth of 1 MHz or less must not exceed an ERP of 1000 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 1000 watts ERP in accordance with Table 1 of this section;

(3) Fixed and base stations 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 in the 747-762 MHz and 777-792 MHz bands 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 transmitting a signal in the 747-762 MHz and 777-792 MHz bands with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 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 1000 watts/MHz ERP in accordance with Table 3 of this section;

(5) Fixed and base stations 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 in the 747-762 MHz and 777-792 MHz bands 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;

(6) Licensees of fixed or base stations transmitting a signal in the 747-762 or 777-792 MHz bands at an ERP greater than 1000 watts must comply with the provisions set forth in paragraph (b)(8) of this section and § 27.55(c);

(7) Licensees 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 in the 747–762 MHz or 777–792 MHz bands at an ERP greater than 1000 watts must:

(i) Coordinate in advance with all licensees authorized to operate in the 698–764 MHz and 776–794 MHz bands within 120 kilometers (75 miles) of the base or fixed station; and

(ii) Coordinate in advance with all regional planning committees, as identified in § 90.527 of this chapter, with jurisdiction within 120 kilometers (75 miles) of the base or fixed station;

(8) Licensees authorized to transmit in the 747–762 or 777–792 MHz bands and intending to operate a base or fixed station at a power level permitted under the provisions of paragraph (b)(6) of this section must provide advanced notice of such operation to the Commission and to licensees authorized in their area of operation. Licensees who must be notified are all licensees authorized to operate in the 764–776 MHz and 794–806 MHz bands under part 90 of this chapter within 75 km of the base or fixed station and all regional planning committees, as identified in § 90.527 of this chapter, with jurisdiction within 75 km of the base or fixed station. Notifications must provide the location and operating parameters of the base or fixed station, including the station's ERP, antenna coordinates, antenna height above ground, and vertical antenna pattern, and such notifications must be provided at least 90 days prior to the commencement of station operation;

(9) Control stations and mobile stations transmitting in the 747–762 MHz band and the 776–794 MHz band and fixed stations transmitting in the 776–777 MHz band and the 792–794 MHz band are limited to 30 watts ERP;

(10) Portable stations (hand-held devices) transmitting in the 747–762 MHz band and the 776–794 MHz band are limited to 3 watts ERP;

(11) For transmissions in the 746–747 MHz, 762–764 MHz, 776–777 MHz, and 792–794 MHz bands, maximum composite transmit power shall be measured over any interval of continuous transmission using instrumentation calibrated in terms of RMS-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, etc., so as to obtain a true maximum composite measurement for the emission in question over the full bandwidth of the channel; and

(12) For transmissions in the 747–762 MHz and 777–792 MHz bands, licensees may employ equipment operating in

compliance with either the measurement techniques described in paragraph (b)(11) of this section or a Commission-approved average power technique. In both instances, equipment employed must be authorized in accordance with the provisions of § 27.51.

(c) The following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band:

(1) Fixed and base stations transmitting a signal with an emission bandwidth of 1 MHz or less must not exceed an effective radiated power (ERP) of 1000 watts and an antenna height of 305 m height above average terrain (HAAT), except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section;

(2) Fixed and base stations 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;

(3) Fixed and base stations transmitting a signal with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 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 1000 watts/MHz ERP in accordance with Table 3 of this section;

(4) Fixed and base stations 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 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:

(i) Coordinate in advance with all licensees authorized to operate in the 698–764 MHz and 776–794 MHz bands within 120 kilometers (75 miles) of the base or fixed station;

(ii) Coordinate in advance with all regional planning committees, as identified in § 90.527 of this chapter, with jurisdiction within 120 kilometers (75 miles) of the base or fixed station;

(6) Licensees of fixed or base stations transmitting a signal at an ERP greater than 1000 watts and greater than 1000 watts/MHz must comply with the provisions of paragraph (c)(8) of this section and § 27.55(b), except that licensees of fixed or base stations 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, must comply with the provisions of paragraph (c)(8) of this section and § 27.55(b) only if transmitting a signal at an ERP greater than 2000 watts and greater than 2000 watts/MHz;

(7) A licensee authorized to operate in the 710–716, 716–722, or 740–746 MHz bands, or in any unpaired spectrum blocks within the 698–746 MHz band, may operate a fixed or base station at an ERP up to a total of 50 kW within its authorized, 6 MHz spectrum block if the licensee complies with the provisions of § 27.55(b). The antenna height for such stations is limited only to the extent required to satisfy the requirements of § 27.55(b);

(8) Licensees intending to operate a base or fixed station at a power level permitted under the provisions of paragraph (c)(6) of this section must provide advanced notice of such operation to the Commission and to licensees authorized in their area of operation. Licensees who must be notified are all licensees authorized under this part to operate on an adjacent spectrum block within 75 km of the base or fixed station. Notifications must provide the location and operating parameters of the base or fixed station, including the station's ERP, antenna coordinates, antenna height above ground, and vertical antenna pattern, and such notifications must be provided at least 90 days prior to the commencement of station operation;

(9) Control and mobile stations are limited to 30 watts ERP;

(10) Portable stations (hand-held devices) are limited to 3 watts ERP; and

(11) Licensees may employ equipment operating in compliance with either the measurement techniques described in paragraph (b)(11) of this section or a Commission-approved average power technique. In both instances, equipment

employed must be authorized in accordance with the provisions of § 27.51.

* * * * *

TABLE 1.—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 746–747 MHz AND 762–764 MHz BANDS AND FOR BASE AND FIXED STATIONS IN THE 698–746 MHz, 747–762 MHz, AND 777–792 MHz BANDS TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH OF 1 MHz OR LESS

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) (watts)
Above 1372 (4500)	65
Above 1220 (4000) To 1372 (4500)	70
Above 1067 (3500) To 1220 (4000)	75
Above 915 (3000) To 1067 (3500)	100
Above 763 (2500) To 915 (3000)	140
Above 610 (2000) To 763 (2500)	200
Above 458 (1500) To 610 (2000)	350
Above 305 (1000) To 458 (1500)	600
Up to 305 (1000)	1000

TABLE 2.—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 698–746 MHz, 747–762 MHz, AND 777–792 MHz BANDS TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH OF 1 MHz OR LESS

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) (watts)
Above 1372 (4500)	130
Above 1220 (4000) To 1372 (4500)	140
Above 1067 (3500) To 1220 (4000)	150
Above 915 (3000) To 1067 (3500)	200
Above 763 (2500) To 915 (3000)	280
Above 610 (2000) To 763 (2500)	400
Above 458 (1500) To 610 (2000)	700
Above 305 (1000) To 458 (1500)	1200
Up to 305 (1000)	2000

TABLE 3.—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 698–746 MHz, 747–762 MHz AND 777–792 MHz BANDS TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH GREATER THAN 1 MHz

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) per MHz (watts/MHz)
Above 1372 (4500)	65
Above 1220 (4000) To 1372 (4500)	70
Above 1067 (3500) To 1220 (4000)	75
Above 915 (3000) To 1067 (3500)	100
Above 763 (2500) To 915 (3000)	140
Above 610 (2000) To 763 (2500)	200
Above 458 (1500) To 610 (2000)	350
Above 305 (1000) To 458 (1500)	600
Up to 305 (1000)	1000

TABLE 4.—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 698–746 MHz, 747–762 MHz AND 777–792 MHz BANDS TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH GREATER THAN 1 MHz

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) per MHz (watts/MHz)
Above 1372 (4500)	130
Above 1220 (4000) To 1372 (4500)	140
Above 1067 (3500) To 1220 (4000)	150

TABLE 4.—PERMISSIBLE POWER AND ANTENNA HEIGHTS FOR BASE AND FIXED STATIONS IN THE 698–746 MHz, 747–762 MHz AND 777–792 MHz BANDS TRANSMITTING A SIGNAL WITH AN EMISSION BANDWIDTH GREATER THAN 1 MHz—Continued

Antenna height (AAT) in meters (feet)	Effective radiated power (ERP) per MHz (watts/MHz)
Above 915 (3000) To 1067 (3500)	200
Above 763 (2500) To 915 (3000)	280
Above 610 (2000) To 763 (2500)	400
Above 458 (1500) To 610 (2000)	700
Above 305 (1000) To 458 (1500)	1200
Up to 305 (1000)	2000

■ 13. Section 27.55 is amended by revising paragraph (b) and adding new paragraph (c) to read as follows:

§ 27.55 Power strength limits.

* * * * *

(b) *Power flux density limit for stations operating in the 698–746 MHz bands.* For base and fixed stations operating in the 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.

(c) *Power flux density limit for stations operating in the 747–762 and 777–792 MHz bands.* For base and fixed stations operating in the 747–762 and 777–792 MHz bands in accordance with the provisions of § 27.50(b)(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 27.70 is added to read as follows:

§ 27.70 Information exchange.

(a) *Prior notification.* Public safety licensees authorized to operate in the 764–776 MHz and 794–806 MHz bands may notify any licensee authorized to operate in the 747–762 or 777–792 MHz bands that they wish to receive prior notification of the activation or modification of the licensee’s base or fixed stations in their area. Thereafter, the 747–762 or 777–792 MHz band licensee must provide the following information to the public safety licensee at least 10 business days before a new base or fixed station is activated or an

existing base or fixed station is modified:

- (1) Location;
- (2) Effective radiated power;
- (3) Antenna height; and
- (4) Channels available for use.

(b) *Purpose of prior notification.* The prior coordination of base or fixed stations is for informational purposes only. Public safety licensees are not afforded the right to accept or reject the activation of a proposed base or fixed station or to unilaterally require changes in its operating parameters. The principal purposes of notification are to:

- (1) Allow a public safety licensee to advise the 747–762 or 777–792 MHz band licensee whether it believes a proposed base or fixed station will generate unacceptable interference;
- (2) Permit 747–762 and 777–792 MHz band licensees to make voluntary changes in base or fixed station parameters when a public safety licensee alerts them to possible interference; and
- (3) Rapidly identify the source if interference is encountered when the base or fixed station is activated.

■ 15. The subpart heading for subpart F is revised to read as follows:

Subpart F—Competitive Bidding Procedures for the 698–806 MHz Band

■ 16. The subpart heading for subpart G is revised to read as follows:

Subpart G—Guard Band Service (746–747/776–777 MHz and 762–764/792–794 MHz Bands)

■ 17. Section 27.601 is revised to read as follows:

§ 27.601 Authority and coordination requirements.

(a) Subject to the provisions of § 27.2(b), a Guard Band licensee may allow a spectrum lessee, pursuant to a spectrum lease arrangement under part 1, subpart X of this chapter, to construct and operate stations at any available site

within the licensed area and on any channel for which the Guard Band licensee is licensed, provided such stations comply with Commission Rules and coordination requirements.

(b) Subject to the provisions of § 27.2(b), a Guard Band licensee may allow a spectrum lessee, pursuant to a spectrum lease arrangement under part 1, subpart X of this chapter, to delete, move or change the operating parameters of any of the user’s stations that are covered under the Guard Band licensee’s authorization without prior Commission approval, provided such stations comply with Commission Rules and coordination requirements.

(c) *Frequency Coordination.*

(1) A Guard Band licensee, or a spectrum lessee operating pursuant to a spectrum lease arrangement under §§ 1.9030 and 1.9035 of this chapter, must notify Commission-recognized public safety frequency coordinators for the 700 MHz Public Safety band and adjacent-area Guard Band licensees within one business day after the licensee or the spectrum lessee has:

- (i) Coordinated a new station or modification of an existing station; or
- (ii) Filed an application for an individual station license with the Commission.

(2) The notification required in paragraph (c)(1) of this section must include, at a minimum—

- (i) The frequency or frequencies coordinated;
- (ii) Antenna location and height;
- (iii) Type of emission;
- (iv) Effective radiated power;
- (v) A description of the service area, date of coordination, and user name or, in the alternative, a description of the type of operation.

(3) In the event a licensee partitions its service area or disaggregates its spectrum, it is required to submit the notification required in paragraph (c)(1) of this section to other Guard Band licensees in the same geographic area.

(4) Entities coordinated by a Guard Band licensee, or a spectrum lessee operating pursuant to a spectrum lease arrangement under §§ 1.9030 and 1.9035 of this chapter, must wait at least 10 business days after the notification required in paragraph (c)(1) of this section before operating under the license.

(d) Where a deletion, move or change authorized under paragraph (b) of this section constitutes a discontinuance, reduction, or impairment of service under § 27.66 or where discontinuance, reduction or impairment of service results from an involuntary act subject to § 27.66(a), the licensee must comply with the notification and authorization requirements set forth in that section.

■ 18. Section 27.602 is revised to read as follows:

§ 27.602 Lease agreements.

Guard Band licensees may enter into spectrum leasing arrangements under part 1, subpart X of this chapter regarding the use of their licensed spectrum by spectrum lessees, subject to the following conditions:

(a) The spectrum lease agreement between the licensee and the spectrum lessee must specify in detail the operating parameters of the spectrum lessee's system, including power, maximum antenna heights, frequencies of operation, base station location(s), area(s) of operation, and other parameters specified in Commission rules for the use of spectrum identified in § 27.5(b)(1) and (b)(2).

(b) The spectrum lease agreement must require the spectrum lessee to use Commission-approved equipment where appropriate and to complete post-construction proofs of system performance prior to system activation.

§ 27.603 [Removed]

■ 19. Section 27.603 is removed.

§ 27.605 [Removed]

■ 20. Section 27.605 is removed.

§ 27.606 [Removed]

■ 21. Section 27.606 is removed.

■ 22. Section 27.607 is revised to read as follows:

§ 27.607 Performance requirements and annual reporting requirement.

(a) Guard Band licensees are subject to the performance requirements specified in § 27.14(a).

(b) Guard Band licensees are required to file an annual report providing the Commission with information about the manner in which their spectrum is being utilized. Such reports shall be filed with the Commission on a calendar year basis, no later than the March 1 following the close of each calendar year, unless another filing date is specified by Public Notice.

(c) Guard Band licensees must, at a minimum, include the following information in their annual reports:

(1) The total number of spectrum lessees;

(2) The amount of the licensee's spectrum being used pursuant to spectrum lease agreements;

(3) The nature of the spectrum use of the licensee's customers; and,

(4) The length of term of each spectrum lease agreement, and whether the agreement is a spectrum manager lease agreement, or a *de facto* transfer lease agreement.

(d) The specific information that licensees will provide and the procedures that they will follow in submitting their annual reports will be announced in a Public Notice issued by the Wireless Telecommunications Bureau.

PART 90—PRIVATE LAND MOBILE RADIO SERVICES

■ 23. The authority citation for part 90 continues to read as follows:

Authority: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), 332(c)(7).

■ 24. Section 90.555 is added to subpart R to read as follows:

§ 90.555 Information exchange.

(a) *Prior notification.* Public safety licensees authorized to operate in the 764–776 MHz and 794–806 MHz bands may notify any licensee authorized to operate in the 747–762 or 777–792 MHz bands that they wish to receive prior

notification of the activation or modification of the licensee's base or fixed stations in their area. Thereafter, the 747–762 or 777–792 MHz band licensee must provide the following information to the public safety licensee at least 10 business days before a new base or fixed station is activated or an existing base or fixed station is modified:

- (1) Location;
- (2) Effective radiated power;
- (3) Antenna height; and
- (4) Channels available for use.

(b) *Purpose of prior notification.* The prior coordination of base or fixed stations is for informational purposes only. Public safety licensees are not afforded the right to accept or reject the activation of a proposed base or fixed station or to unilaterally require changes in its operating parameters. The principal purposes of notification are to:

(1) Allow a public safety licensee to advise the 747–762 or 777–792 MHz band licensee whether it believes a proposed base or fixed station will generate unacceptable interference;

(2) Permit 747–762 and 777–792 MHz band licensees to make voluntary changes in base or fixed station parameters when a public safety licensee alerts them to possible interference; and

(3) Rapidly identify the source if interference is encountered when the base or fixed station is activated.

(c) *Public Safety Information Exchange.*

(1) Upon request by a 747–762 or 777–792 MHz band licensee, public safety licensees authorized to operate radio systems in the 764–776 and 794–806 MHz bands shall provide the operating parameters of their radio system to the 747–762 or 777–792 MHz band licensee.

(2) Public safety licensees who perform the information exchange described in this section must notify the appropriate 747–762 or 777–792 MHz band licensees prior to any technical changes to their radio system.

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