

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

In the Matter of)
)
Amendment of Parts 1 and 22 of the Commission's) WT Docket No. 12-40
Rules with Regard to the Cellular Service,)
Including Changes in Licensing of Unserved Area) RM No. 11510
)
Amendment of the Commission's Rules with)
Regard to Relocation of Part 24 to Part 27)
)
Interim Restrictions and Procedures for Cellular)
Service Applications)
)
Amendment of Parts 0, 1, and 22 of the)
Commission's Rules with Regard to Frequency)
Coordination for the Cellular Service)
)
Amendment of the Commission's Rules Governing) RM No. 11660
Radiated Power Limits for the Cellular Service)
)

REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING

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I. INTRODUCTION

1. In today’s *Report and Order and Further Notice of Proposed Rulemaking*, we adopt fundamental, sweeping reforms of rules governing the 800 MHz Cellular (“Cellular”) Service, leading to a vastly streamlined Cellular licensing regime. While the existing Cellular Service licensing model was instrumental over the course of decades in fostering wireless deployment throughout the United States, many of the Cellular model’s legacy elements have become unnecessary or even detrimental to system improvements that depend on deployment of the latest digital technologies. With the *Report and Order*, we adopt rules for the Cellular Service based on geographic licensing and achieve the regulatory reform

goals articulated in the 2012 *Notice of Proposed Rulemaking and Order*,¹ recently echoed in the FCC Staff Working Group Report on FCC Process Reform,² with an approach that differs somewhat from the Commission's overlay licensing proposal. We eliminate the need for a wide range of regulatory filings, modernize the rules that will remain in place, and delete obsolete provisions. We reduce administrative burdens and time-consuming regulatory processes for licensees, who will benefit immediately from greater flexibility to modify their systems quickly in response to market demands, facilitating advanced broadband services to the benefit of consumers. The updated rules will also be more consistent with those governing other geographically-licensed commercial wireless services.

2. Specifically, we revise the rules to establish geographic licenses based on Cellular Geographic Service Area ("CGSA") boundaries and provide licensees with significant new flexibility to improve their systems through modifications within those boundaries. We permit incumbents to expand their CGSAs into areas that remain unlicensed ("Unserved Area"), and dramatically reduce their application filing burdens by permitting incumbents to serve indefinitely, on a secondary basis, Unserved Area parcels smaller than 50 contiguous square miles. With the exception of the Gulf of Mexico market, we eliminate the need to submit filings related to negotiated extensions of service area boundaries ("SABs"), and we establish a field strength limit rule tailored to reflect the continued ability to expand Cellular service area coverage. Notably, as part of our modernization of the provisions that remain in place, we eliminate the routine submission of 16 exhibits and other technical information currently required with new-system and major modification applications in the Cellular Service.

3. In the *Further Notice of Proposed Rulemaking* ("*Further Notice*"), we propose additional reforms of the Cellular licensing model that were not considered in the *2012 NPRM*. First, consistent with other flexible wireless service rules, we propose and seek comment on a revised discontinuance rule that defines permanent discontinuance in terms of the licensed geographic area rather than individual cell sites. Second, drawing from the success in other services, we propose to establish frequency coordinators that would review Cellular applications for CGSA expansions and new systems prior to submission to the Commission. Also in the *Further Notice*, in response to a petition for rulemaking submitted by AT&T, we propose and seek comment on adoption of a power spectral density model for the Cellular Service, as well as related rule changes, facilitating deployment of next-generation wireless broadband networks that use advanced technologies such as long-term evolution ("LTE").

II. REPORT AND ORDER

A. Overview

4. The hallmarks of geographic-based licensing include: defining, by fixed geographic boundaries, the area that is licensed on a primary basis and entitled to protection from harmful interference; permitting the addition and modification of transmitter sites within the fixed geographic boundaries without filing applications; and subjecting licensee operations to a signal field strength limit at their geographic license boundaries, while permitting different limits by contractual agreement between

¹ Amendment of Parts 1 and 22 of the Commission's Rules with Regard to the Cellular Service, Including Changes in Licensing of Unserved Area; Amendment of the Commission's Rules with Regard to Relocation of Part 24 to Part 27; Interim Restrictions and Procedures for Cellular Service Applications, *Notice of Proposed Rulemaking and Order*, WT Docket No. 12-40, RM No. 11510, 27 FCC Rcd 1745 (2012) ("*2012 NPRM*" and "*2012 Order*," respectively) (Note: several maps provided in certain appendices to the *2012 NPRM* are not available in the FCC Rcd version, but are in the version available in the FCC's online EDOCs system (FCC 12-20)).

² "FCC Seeks Public Comment on Report on Process Reform," *Public Notice*, GN Docket No. 14-25, 29 FCC Rcd 1338 (2014) (Report of Staff Working Group led by Diane Cornell, Special Counsel to Chairman Tom Wheeler, Recommendation 5.35, recommending building upon the progress made to date to bring this Cellular proceeding to closure), also available at https://apps.fcc.gov/edocs_public/attachmatch/DA-14-199A2.pdf.

adjacent licensees without notification to the Commission.³ In the Sections that follow in this *Report and Order*, we adopt rules that address these hallmarks in the unique context of the Cellular Service, taking into account its 30-year history and evolution.

5. In summary, to modernize the Cellular Service and reduce filings with the Commission, we take the following major steps:

- define geographically licensed areas based on CGSA boundaries, within which licensees will have new flexibility to make system changes;
- adopt a new rule (Section 22.983) to establish a 40 dB μ V/m field strength limit but permit neighboring licensees to negotiate a different limit (lower or higher), and specify the circumstances in which the rule applies;
- preserve a key element of the site-based licensing model – the ability to expand service coverage into remaining Unserved Area in all markets – in a manner that greatly reduces licensees’ filing burdens and increases their flexibility by establishing a CGSA-expansion minimum of 50 contiguous square miles for primary, protected service, and permitting service on a secondary basis indefinitely in smaller Unserved Area parcels without Commission filings;
- revise Section 22.912 of our rules to permit but no longer regulate negotiated service area boundary extensions into neighboring CGSAs and eliminate associated filings for them, but retain the need for agreements and associated filings for extensions into and from the Gulf of Mexico Exclusive Zone;
- eliminate the requirement to notify the Commission of changes or additions to cell sites where the service area boundary remains confined within the CGSA; and
- revise Section 22.953 to eliminate the routine need to submit 16 exhibits and other technical information with new-system and CGSA-expansion applications.

We also adopt new Section 22.960 to address the licensing of the Chambers, Texas market on a permanent basis, and we mandate the electronic filing of maps with certain filings under Sections 22.948, 22.953, and 22.960. In addition, we revise numerous other rules applicable to Cellular licensees, as explained further in Section II.L. of this *Report and Order*, to delete obsolete or unnecessary provisions or otherwise bring the rules up to date to reflect the Cellular licensing approach we adopt today. These include, for example, provisions regarding analog operations and references to the legacy licensing model’s initial five-year and Phase I build-out periods, among other miscellaneous rule changes.

B. Background

6. The Cellular Service, which provided the original foundation of the commercial wireless industry in the 1980s, has a long and complex history. The Commission adopted initial rules governing allocation of spectrum for commercial Cellular service, including the establishment of two channel blocks (Blocks A and B), in 1981.⁴ The Commission established in phases 734 Cellular Market Areas (“CMAs”)⁵ for the purpose of issuing licenses to two Cellular providers per market, and those providers

³ Another hallmark is a flexible service discontinuance rule. As indicated in the Introduction, in the *Further Notice* we propose and seek comment on a non-site-based discontinuance rule for the Cellular Service. See *infra* Section III.A.

⁴ See generally *An Inquiry Into the Use of the Bands 825-845 MHz and 870-890 MHz for Cellular Communications Systems*; and *Amendment of Parts 2 and 22 of the Commission’s Rules Relative to Cellular Communications Systems*, *Report and Order*, CC Docket No. 79-318, 86 F.C.C.2d 469 (1981).

⁵ The 734 CMAs comprise 306 Metropolitan Statistical Areas (“MSAs”) and 428 Rural Service Areas (“RSAs”). See 47 C.F.R. § 22.909.

were given the exclusive right, for a five-year period from the date of grant of the initial construction authorization for that CMA Block, to build out anywhere within the CMA boundary.⁶ The area timely built out during that five-year period became the licensee's CGSA, the licensed area entitled to protection from harmful interference, while any area not built out by the five-year mark was automatically relinquished for re-licensing on a site-by-site basis by the Commission.⁷ Under site-based licensing, the applicant requests authorization to construct at a specific transmitter location (or multiple locations) in Unserved Area and may construct only authorized transmitters. For all CMA Blocks except one (Chambers, Texas, CMA672-A), initial licenses have been issued and their five-year periods have expired.⁸

7. The Commission established two phases for applicants seeking to provide Cellular service in Unserved Area for each CMA Block: Phase I and Phase II.⁹ As of late 2007, the Phase I filing window had ended in all licensed Blocks.¹⁰ Under current rules, Phase II lasts indefinitely.¹¹ Phase II applications specify the area to be licensed as CGSA and, because they are classified as "major" applications no matter how small the expansion area, they are subject to a 30-day public comment period during which petitions to deny and competing applications may be filed. In the event that mutually exclusive applications are accepted for a particular Unserved Area, they are resolved through competitive bidding in closed auctions.¹² Licenses granted in Phase II are subject to a one-year construction deadline for the authorized site; failure to build out results in automatic termination of the authorization for that site, and the Unserved Area again is subject to re-licensing.¹³

8. In the 2012 NPRM, the Commission proposed to transition the Cellular Service to geographic-based licensing by issuing geographic-area overlay licenses through competitive bidding in two stages, with the Stage I auction to include all CMA Blocks meeting a proposed "substantially licensed" test.¹⁴ The current site-based regime was to continue in all other CMA Blocks for a defined period, thus preserving direct access to Unserved Area on an as-needed basis in those CMAs, followed by the Stage II auction to complete the transition.¹⁵ The Commission also proposed to establish a signal field

⁶ See, e.g., *id.* § 22.947.

⁷ See *id.* § 22.911. See also *id.* § 22.907 (obligating licensees to coordinate with each other if their respective transmitters are within a certain proximity and to "make reasonable efforts to resolve technical problems").

⁸ By 1990, in some urban markets (MSAs) the initial 5-year period had already ended. The most recently issued initial licenses were the result of Auction 45 for the following 3 RSAs (*see id.* § 22.969): 332A (Polk, AR); 582A (Barnes, ND); and 727A (Ceiba, PR), and their 5-year construction periods expired in September 2007. See also *infra* Section II.K. (discussing the Chambers, TX license for which the initial five-year period has never commenced).

⁹ See 47 C.F.R. § 22.949 (current rule).

¹⁰ Following each 5-year build-out period, a 1-day Phase I filing window was opened and closed according to a specified timetable. See *id.* § 22.949(a) (current rule). See also Amendment of Part 22 of the Commission's Rules to Provide for Filing and Processing of Applications for Unserved Area in the Cellular Service and to Modify Other Cellular Rules, *Second Report and Order*, CC Docket No. 90-6, 7 FCC Rcd 2449, 2457-58 (1992). The Phase II Unserved Area application period commenced thereafter (with specific timing dependent on the Phase I process for that particular CMA Block). See 47 C.F.R. § 22.949(b) (current rule).

¹¹ See 47 C.F.R. § 22.949(b). See also *id.* § 22.951 (current rule).

¹² See *id.* § 22.949(b)(2) (citing *id.* § 22.131). See also *id.* §§ 22.131(c)(3)(iii) (explaining how mutual exclusivity is determined) and 22.960 (current rule).

¹³ See *id.* §§ 22.946, 22.949(b).

¹⁴ See generally 2012 NPRM, 27 FCC Rcd 1745 (2012).

¹⁵ *Id.*

strength limit and streamline the Cellular Service rules by, for example, updating application requirements and deleting certain data collection requirements.¹⁶

9. The Commission sought comment on all aspects of its proposals as well as on other ideas, proposals, and comments discussed in the *2012 NPRM*, and also invited the submission of alternative ideas.¹⁷ In response, 14 parties submitted comments, and four parties submitted reply comments.¹⁸ Commenters generally supported transitioning the Cellular Service to a geographic-based model but by and large did not favor the Commission's proposed approach, primarily expressing concern that non-incumbents, including speculators with no genuine interest in providing service, might successfully bid for the overlay licenses and could then adversely affect incumbents' rights by preventing system improvements that entail, for example, expanding the licensed CGSA boundary or extending an SAB¹⁹ beyond the CGSA.²⁰ The Rural Wireless Association ("RWA") also expressed concern that larger carriers with greater financial resources would outbid smaller carriers that have traditionally served rural markets.²¹ The Competitive Carriers Association expressed support for the Commission's proposal to revise the Cellular licensing model from site-based to geographic-based through competitive bidding in two stages, thus preserving site-based access to Unserved Area for an extended period of time in certain markets which, it noted, "is particularly important for rural and regional carriers."²²

¹⁶ See *id.*, 27 FCC Rcd at 1747, 1767-71 ¶¶ 3, 54-58, 62-66.

¹⁷ See *id.*, 27 FCC Rcd at 1747, 1750-55, 1768-69 ¶¶ 3, 9-18, 59-61.

¹⁸ See Appendix E for a list of parties that submitted comments and reply comments.

¹⁹ See 47 C.F.R. §§ 22.911 and 22.912. Section 22.911 sets forth formulas for calculating the SAB of an individual cell site in terms of distance from the cell's transmitting antenna, using height above average terrain (H) and effective radiated power (P) values of the proposed new or modified Cellular base station along eight cardinal radials, and explains that the CGSA is the composite of the service areas of all the cells in the system, excluding certain area. See *id.* § 22.911.

²⁰ See, e.g., Comments of AT&T Services, Inc., dated May 15, 2012 ("AT&T Comments"), at iii-iv; Comments of CTIA – The Wireless Association, dated May 15, 2012 ("CTIA Comments"), at 1, 7; Comments of the National Telecommunications Cooperative Association, dated May 15, 2012 ("NTCA Comments"), at 2-4; Comments of the Rural Wireless Association (f/k/a Rural Telecommunications Group, Inc.), dated May 15, 2012 ("RWA Comments"), at 3-4; Comments of United States Cellular Corporation, dated May 15, 2012 ("USCC Comments"), at 1-2; Reply Comments of Verizon Wireless, dated June 14, 2012 ("Verizon Wireless Reply Comments"), at 1, 6. See also Comments of Nsight Spectrum, LLC, dated May 15, 2012 ("Nsight Comments"), at 2, and Comments of Thumb Cellular, LLC, dated May 10, 2012 ("Thumb Comments"), at 2 (identical comments adding that, at least in markets meeting the proposed Substantially Licensed test, only an incumbent should be permitted to expand into Unserved Area and should have the authority to "use the proposed field strength rule to place transmitters within its own CMA without prior Commission approval . . ."). Certain commenters expressed concerns solely with respect to the markets they serve. See Comments of Broadpoint, LLC, dated May 15, 2012 ("Broadpoint Comments") (Gulf of Mexico); Comments of Arctic Slope Telephone Association Cooperative, Inc., dated May 15, 2012 ("Arctic Slope Comments") (Alaska); Comments of Copper Valley Wireless, Inc., dated May 15, 2012, supplemented on May 25, 2012 ("Copper Valley Comments") (Alaska); Comments of General Communication, Inc., dated May 15, 2012 ("GCI Comments") (Alaska).

²¹ See RWA Comments at 3-4. Some commenters did not address the merits of the Commission's transition proposal. Cellular South Licenses, LLC d/b/a C Spire Wireless ("C Spire") limited its comments to data regarding which CMA Blocks would meet the proposed substantially licensed test, see generally Comments of C Spire, dated May 15, 2012; Hammett & Edison, Inc., Consulting Engineers, only addressed a Part 1 rule correction, see *infra* Section II.L.3. (discussing correction of 47 C.F.R. § 1.958).

²² Comments of the Competitive Carriers Association (f/k/a RCA—The Competitive Carriers Association), dated May 15, 2012, at 3-4 (also supporting, see *id.* at 4-5, the *2012 NPRM* proposal to include small business bidding credits in the Commission's competitive bidding procedures to promote participation from designated entities).

10. Following release of the 2012 NPRM, representatives of large and smaller/rural licensees engaged in discussions among themselves and also with Commission staff.²³ In November 2013, CTIA-The Wireless Association (“CTIA”), the National Telecommunications Cooperative Association (“NTCA”), and RWA (collectively, the “Coalition”) jointly filed a letter advocating certain reform measures that would transition all CMA Blocks at the same time to a more geographic-based licensing model, without an overlay auction, to “simplify Cellular licensing while preserving licensee [CGSA expansion] rights.”²⁴ The main reforms requested in the November 2013 Consensus Letter are, briefly, as follows:²⁵

- “conversion” of currently-authorized CGSAs from “site-based coverage areas to geographic market areas,” while still allowing site-based CGSA expansions using the existing Phase II procedures,²⁶ so long as the expansion would be at least 50 square miles;
- in the case of an Unserved Area parcel less than 50 square miles:
 - if bordered on all sides by only one incumbent, such Unserved Area would automatically become part of that incumbent’s CGSA;
 - if bordered by more than one incumbent, all bordering incumbents in the same CMA would be permitted to negotiate a written agreement allocating such Unserved Area among themselves;
 - if bordered by multiple incumbents that do not negotiate a written agreement, the bordering incumbents could only serve such Unserved Area parcel on a shared, secondary (unprotected) basis; and
- a revised permanent discontinuance of service rule specific to the Cellular Service.

The November 2013 Consensus Letter led to additional discussions between Commission staff and industry stakeholders over the ensuing months. In March 2014, the Coalition submitted another letter, essentially reiterating its core reform measures and urging that the Commission proceed to issue an Order adopting them.²⁷

²³ See Appendix E for a list of parties that submitted *ex parte* letters to reflect their respective discussions with Commission staff.

²⁴ See Letter dated Nov. 15, 2013, from Brian M. Josef, Assistant Vice President-Regulatory Affairs, CTIA (“Josef”), Caressa D. Bennet, General Counsel for RWA (“Bennet”), and Jill Canfield, Director-Legal & Industry, NTCA (“Canfield”), to Marlene H. Dortch, Secretary, FCC (“Secretary Dortch”) (“November 2013 Consensus Letter”).

²⁵ See generally November 2013 Consensus Letter (also addressing other issues, *e.g.*, the use of frequency coordinators, discussed in the *Further Notice, infra*).

²⁶ See, *e.g.*, 47 C.F.R. § 22.949.

²⁷ See generally Letter from Josef, Canfield, and Bennet, filed Mar. 21, 2014 (inadvertently dated 2013) to Secretary Dortch (“March 2014 Consensus Letter”). While AT&T, USCC, and Verizon Wireless did not separately sign the Consensus Letters, their representatives participated in numerous meetings and conference calls with Commission staff, including the discussions also involving representatives of CTIA, NTCA and RWA and for which the two Consensus Letters were submitted by the Coalition. Based on our understanding that AT&T, USCC, and Verizon Wireless endorse the reform measures advocated in the Consensus Letters (*see, e.g.*, Letter dated Feb. 11, 2014, from Josef to Secretary Dortch, documenting a meeting with Commission staff that included representatives not only of CTIA, NTCA, and RWA, but also of AT&T, USCC, and Verizon Wireless and stating that “the parties discussed the wireless licensees’ proposal . . . as detailed in their November 13, 2013 filing”), we do not discuss in this *Report and Order* the comments filed separately by AT&T, USCC, and Verizon Wireless except to the extent they make certain points not superseded by the Coalition’s Consensus Letters.

11. In the following Sections, we discuss and adopt specific reforms to the rules governing the Cellular Service, as summarized above in Section II.A., to transition it to a geographic-based service.²⁸ These changes bring the Cellular Service scheme into greater harmony with the more flexible licensing schemes in other similar mobile services, such as the Broadband Personal Communications Service (“PCS”),²⁹ the 700 MHz Services,³⁰ the 600 MHz Service,³¹ and various “Advanced Wireless Services” (“AWS”).³²

C. Geographic License Boundaries

12. *Background.* In the 2012 NPRM, the Commission invited comment generally on transitioning the Cellular Service to geographic-based licensing.³³ It recognized the burdens – for licensees and Commission staff alike – of the existing regime and stated that “[t]hese problems can be addressed by moving to a geographic-based model.”³⁴ The Commission proposed an approach under which licensees in transitioned CMAs would be free to modify their systems within their CGSA boundaries without Commission filings, so long as the CGSA would not be changed as a result, and subject to any obligations imposed on all licensees.³⁵ The Commission emphasized its interest in affording increased system flexibility (including deployment of broadband service) within fixed boundaries for Cellular licensees in a manner consistent with Commission precedent and spectrum management policies.³⁶

13. The Coalition urges the Commission to “direct[] . . . conversion of . . . site-based coverage areas to geographic market areas based on each licensee’s currently-authorized CGSA,” but also to allow continued site-based Unserved Area procedures to expand CGSAs.³⁷ Incumbents serving Alaska also support retention of as-needed site-based access to Unserved Area, contending that it remains “a powerful tool for bringing wireless service to rural America,” and that its abandonment “would limit investment in rural Alaska and hobble multiple providers from obtaining licenses targeted to niche services and business plans, *e.g.*, serving scientific research facilities and petroleum extraction sites.”³⁸

²⁸ Throughout the 2012 NPRM, *see* 27 FCC Rcd at 1757, 1761-64, 1766, and 1768 ¶¶ 25, 36-38, 41, 43-44, 51, 58, and 61, the Commission sought comment specifically on the potential costs of operating under its proposals and other proposals on the record, *e.g.*, the resulting lack of certain data in the Commission’s Universal Licensing System (“ULS”) if certain applications and other filings were no longer required, and the potential costs accompanying all other proposals, ideas, and alternatives discussed as well as any alternatives submitted in response. None of the commenters attempted to quantify, in terms of dollars or person-hours, any such costs. *See, e.g.*, Copper Valley Comments at 3 (asserting that the costs associated with the current licensing system are “known and predictable and easily affordable,” and lower than costs associated with an overlay license auction).

²⁹ *See generally* 47 C.F.R. §§ 24.1 *et seq.*

³⁰ *See generally* 47 C.F.R. Part 27.

³¹ *See* Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, *Report and Order*, GN Docket No. 12-268, 29 FCC Rcd 6567 (2014) (“BIA Report and Order”).

³² *See generally* 47 C.F.R. Part 27.

³³ *See* 2012 NPRM, 27 FCC Rcd at 1746-47 ¶¶ 2-3.

³⁴ 2012 NPRM, 27 FCC Rcd at 1755 ¶ 19.

³⁵ *Id.*, 27 FCC Rcd at 1755, 1759-60 ¶¶ 20, 31.

³⁶ *Id.*, 27 FCC Rcd at 1764 ¶ 46.

³⁷ November 2013 Consensus Letter at 1 (reiterated in March 2014 Consensus Letter at 1). *See also* 2012 NPRM, 27 FCC Rcd at 1751-52 ¶ 12 (noting that CTIA’s revised plan entailed the establishment of fixed license boundaries based on existing CGSAs).

³⁸ GCI Comments at 2; Arctic Slope Comments at 3. *See also generally* Copper Valley Comments.

14. *Discussion.* First, we define the area within which each licensee will be afforded flexibility to make certain system changes without Commission filings. This is a hallmark of geographic licensing. Throughout this proceeding, the goal has been to provide Cellular licensees with far greater flexibility to make changes to their systems within their CGSAs. While the traditional geographic licensing model, such as the PCS, AWS, 600 MHz and 700 MHz Services models, entails awarding licenses (via competitive bidding if mutually exclusive applications are accepted) for areas whose boundaries are co-terminus with well-known political boundaries or other market areas established by the Commission, such as Metropolitan Statistical Areas, we agree with the Coalition that geographic areas should be defined for the Cellular Service at this time by CGSA boundaries.³⁹ We find that defining the Cellular geographic-based license area as the CGSA is consistent with our goals and recognizes the history and current status of the Cellular Service.

15. As explained in the *2012 NPRM*, the Commission digitized all CGSAs using the most recent maps on file for licensed CGSAs, creating map files in geographic information system (“GIS”) format.⁴⁰ Since then, Bureau staff has regularly updated the files, and in October 2013, made them publicly available online.⁴¹ They draw directly from official ULS station records for the Cellular Service, using the most recent CGSA maps of record, including those accompanying applications submitted under Sections 22.929 and 22.953 of the Commission’s rules.⁴² Bureau staff uses them to determine the official boundary of an authorized CGSA (and a proposed CGSA when reviewing a Cellular Service application). They will continue to be updated regularly,⁴³ and licensees as well as new-system applicants should consult them to verify CGSA boundaries.⁴⁴ In the sections below, we describe the specific changes we are making to our requirements and policies, discuss the basis in the record for those changes, and explain how they will provide substantially enhanced flexibility and certainty to Cellular licensees within these CGSA boundaries.

D. Field Strength Limit

16. *Background.* In the *2012 NPRM*, the Commission agreed with the proposal initially put forward by Verizon Wireless to subject all Cellular licensees to a 40 dB μ V/m signal field strength limit at their respective license boundaries.⁴⁵ The Commission noted that, in the Cellular band, this limit would

³⁹ As discussed below in Section II.G., unlike the boundaries in other flexible wireless services, CGSA boundaries will not be *permanently* fixed insofar as licensees in all CMA Blocks will still be permitted to claim Unserved Area to expand CGSAs under certain circumstances.

⁴⁰ See *2012 NPRM*, 27 FCC Rcd at 1755 n.88 (providing the following link for access to the PDF and interactive versions: <http://www.fcc.gov/rulemaking/12-40>). The map files accessible through this particular link have remained static as of January 11, 2012, and do not reflect current CGSA boundaries. See *infra* note 41 and accompanying text.

⁴¹ See “Wireless Telecommunications Bureau Makes 800 MHz Cellular Geographic Service Area Map Files Available Online,” *Public Notice*, 28 FCC Rcd 14705 (WTB 2013). The map files, which can be downloaded to view detailed CGSA boundaries, are available at the following link: <http://fcc.gov/encyclopedia/cgsa>. Depending on the type of GIS software they opt to use, interested parties may also sort and filter the map file data to suit their particular application needs, and if desired, generate and print CGSA maps.

⁴² 47 C.F.R. §§ 22.929 (current rule), 22.953.

⁴³ For example, if a Cellular Service application is filed, returned for curative amendment, or granted by Friday at 11:59 pm in Week 1, it will be included in the Week 2 CGSA map files made available to the public. Each CGSA map file will be identified as Current (*i.e.*, licensed), Pending, or Returned. The prior week’s files will be overwritten with each weekly update, and when accessing the files, parties will see an “as of” date.

⁴⁴ Interested parties may still choose to review the most up-to-date CGSA maps of record by searching individual applications in ULS. See also *infra* Section II.I. (discussing mandatory submission of electronic maps).

⁴⁵ See *2012 NPRM*, 27 FCC Rcd at 1751-52 ¶ 12 (citing Verizon Wireless Comments filed Feb. 23, 2009 at 5) and 1767-68 ¶¶ 54-58.

be comparable to the 47 dB μ V/m limit that has worked well for PCS licensees.⁴⁶ Also consistent with the PCS rules,⁴⁷ the Commission proposed to allow neighboring Cellular licensees to negotiate different field strength limits, so long as they comply with the applicable Cellular effective radiated power limits.⁴⁸ The Commission further proposed to retain the requirements for mandatory coordination set forth in Section 22.907,⁴⁹ and explained that SABs and CGSAs, including CGSA expansion areas, would still be calculated using the formulas set forth in Section 22.911.⁵⁰

17. AT&T supports the proposed field strength limit but does not offer comment regarding Sections 22.907 and 22.911.⁵¹ Verizon Wireless reiterates its support for the 40 dB μ V/m limit but argues that “[t]his proposal, which parallels existing field strength *contour* rules for other wireless services . . . would eliminate the complex Carey formula set forth in Section 22.911 to calculate cellular CGSAs”⁵² Broadpoint strongly opposes applying the 40 dB μ V/m limit to the Gulf of Mexico Service Area (“Gulf”). Broadpoint argues that it would disproportionately benefit land-based carriers adjoining the Gulf and would disadvantage Broadpoint’s Gulf-based operations, as land-based carriers would be able to retain their customers longer as they venture into the Gulf, and Broadpoint would lose roaming customers.⁵³ Nsight Spectrum, LLC (“Nsight”) and Thumb Cellular, LLC (“Thumb”) support the proposed 40 dB μ V/m limit but request that we clarify how field strength should be determined to ensure that all licensees are using the same methodology.⁵⁴

18. *Discussion.* Based on the record in this proceeding, we find that the proposed 40 dB μ V/m field strength limit is appropriate for the Cellular band and, accordingly, we adopt a new rule establishing this limit.⁵⁵ We also find it appropriate, consistent with other geographic-based wireless services, to permit neighboring co-channel Cellular licensees to negotiate different field strength limits – higher or lower than 40 dB μ V/m.⁵⁶ We emphasize that Cellular licensees must comply at all times with the applicable radiated power limits as well as applicable provisions of international agreements and treaties.⁵⁷

⁴⁶ 2012 NPRM, 27 FCC Rcd at 1767-68 ¶¶ 54-58.

⁴⁷ See 47 C.F.R. § 24.236.

⁴⁸ See 2012 NPRM, 27 FCC Rcd at 1768 n.149 and accompanying text. The field strength limit, usually measured in microvolts per meter (μ V/m), is the maximum intensity of the electric field allowed at any point along the licensed boundary of the adjacent or neighboring co-channel licensee and is a product of the relevant signals emitted across a measurement bandwidth from a licensee’s base stations. Effective radiated power (“ERP”) is the product of the power supplied through a transmission line to the antenna and its gain relative to a half-wave dipole in a given direction emitted from a base station.

⁴⁹ 47 C.F.R. § 22.907.

⁵⁰ 2012 NPRM, 27 FCC Rcd at 1767 ¶ 54; 47 C.F.R. § 22.911.

⁵¹ See AT&T Comments at 20.

⁵² Verizon Wireless Reply Comments at 4 (emphasis added). Verizon Wireless does not address the coordination requirements of Section 22.907.

⁵³ See Broadpoint Comments at 6-9.

⁵⁴ Nsight Comments at 6-7 (raising questions, e.g., about antenna heights and gains, noting that the PCS rule, 47 C.F.R. § 24.236, also does not contain a methodology for determining field strength); Thumb Comments at 6-7 (same).

⁵⁵ See Appendix A (Final Rules), § 22.983.

⁵⁶ See, e.g., 47 C.F.R. § 24.236 (PCS).

⁵⁷ In today’s companion *Further Notice*, see Section III.C., we propose revisions to the radiated power limits for Cellular base stations, including power measurement, and the rules governing compliance with international agreements and treaties.

19. However, given that we are preserving the ability to expand service coverage into any Unserved Area nationwide, both through CGSA expansions and SAB extensions (as discussed further below in Sections II.G. and H.), we find it appropriate to depart from the Commission's proposal to subject all Cellular licensees to a 40 dB μ V/m (or negotiated) signal field strength limit at their respective license boundaries. In other geographic-based services, typically every licensee has a permanently fixed boundary that is shared with adjacent licensees, and observation of the established (or negotiated) field strength limit along the entire common boundary is warranted. In contrast, under the approach we adopt today, a Cellular licensee's CGSA will not always be adjacent to a neighboring co-channel licensee's CGSA; it may in some cases be bordered by Unserved Area. Therefore, increased flexibility for Cellular licensees is warranted when applying the field strength limit rule.

20. Accordingly, we adopt a rule today that will apply at every point along the neighboring co-channel licensee's CGSA boundary. The following two examples illustrate this new rule: (1) if a licensee's CGSA borders Unserved Area (whether currently or through a service coverage expansion in compliance with our new rules), that licensee can exceed the 40 dB μ V/m limit at its own CGSA boundary, so long as it complies with that limit (or a negotiated limit) at every point along the neighboring co-channel licensee's CGSA boundary;⁵⁸ (2) if two co-channel licensees' CGSAs are adjacent, both licensees will be subject to the field strength limit rule at every point along their shared CGSA boundary to protect one another. We conclude that this more flexible approach serves the public interest. It takes into account the unique features of the Cellular licensing system reflected in today's *Report and Order*, yet ensures appropriate protection of Cellular licensees from harmful interference at their licensed geographic area (*i.e.*, CGSA) boundaries.⁵⁹

21. We decline at this time to provide a methodology regarding how the field strength should be determined, as proposed by Nsight and Thumb.⁶⁰ As both of those commenters note, the Commission has not specified a methodology in the field strength limit rule for PCS licensees,⁶¹ and licensees generally apply sound engineering practices consistent with their particular technology and deployment scenario. Cellular licensees are best positioned to choose a methodology that takes into account factors unique to their systems and the area involved, including, for example, technologies, traffic loading, topography, and location of major roads.⁶²

22. We agree with Broadpoint and recognize that the existing regime in the Gulf was carefully crafted following lengthy Commission and judicial proceedings.⁶³ Accordingly, as set forth in the field strength limit rule we adopt today (Section 22.983) and the revised version of Section 22.912 that we also adopt today (discussed further below), we find that, rather than risking disruption, it serves

⁵⁸ That same licensee expanding its service is entitled to protection at its own CGSA boundary under the Cellular field strength limit rule we are adopting today; it is not protected under the rule at the boundary of its service coverage expansion area unless and until that area becomes part of its licensed geographic area (*i.e.*, its CGSA).

⁵⁹ All Cellular licensees should be mindful that, because we are preserving certain CGSA expansion rights, as explained below in Section II.G., CGSA boundaries are subject to change, and application of the field strength limit rule will change accordingly.

⁶⁰ See Nsight Comments at 6-7; Thumb Comments at 6-7.

⁶¹ 47 C.F.R. § 24.236.

⁶² We do, however, seek comment in the *Further Notice* on whether the introduction of a PSD model to facilitate wideband technologies will require additional provisions or clarification to our field strength limit rule to ensure parity among licensees deploying technologies of varying bandwidths. See *infra* Section III.C.5.

⁶³ See generally Broadpoint Comments; Cellular Service and Other Commercial Mobile Radio Services in the Gulf of Mexico; Amendment of Part 22 of the Commission's Rules to Provide for Filing and Processing of Applications for Unserved Areas in the Cellular Service and to Modify Other Cellular Rules, *Report and Order*, WT Docket No. 97-112 and CC Docket No. 90-6, 17 FCC Rcd 1209 (2002) (explaining the rules adopted and also providing extensive history and background on Cellular licensing in the Gulf) (prior history omitted).

the public interest to continue to maintain the *status quo* Gulf regime in most respects and not apply the new field strength limit rule.⁶⁴ Specifically, we will continue to require service area extension agreements and associated filings with the Commission as follows: land-based carriers adjoining the Gulf will be required to negotiate any desired SAB extensions into the Gulf of Mexico Exclusive Zone and submit minor modification applications to the Commission, certifying that such consent has been obtained; and licensees in the Gulf of Mexico Exclusive Zone will likewise be required to negotiate any desired SAB extensions into the licensed area of neighboring land-based carriers and submit minor modification applications to the Commission, certifying that such consent has been obtained. We clarify that all land-based carriers will, however, be subject to the new field strength limit rule to protect the licensed CGSA boundaries of all neighboring co-channel land-based licensees.

23. No commenters objected to the proposal to retain the requirements for mandatory coordination currently set forth in Section 22.907, and we find that it serves the public interest to adopt that proposal.⁶⁵ We disagree, however, with Verizon Wireless's argument that a Cellular field strength limit rule "parallels existing field strength contour rules" and would eliminate the need for the Section 22.911 formulas. In other geographic-based licensing services such as PCS, the field strength limit rules do not – and are not intended to – provide a method by which a defined service area *contour* is calculated; clearly such other licensees have geographic market boundaries that are not determined by service area contours at all. The applicable field strength limits – predicted or measured at the fixed geographic license boundaries in such service bands – are an effective way to ensure protection of neighboring licensees. In contrast, as we emphasize above, Cellular licensees will be permitted to expand their CGSAs and extend their SABs (in compliance with the new rules we adopt today), which are calculated based on contours. The formulas in Section 22.911 provide a proven method for the requisite calculation of such contours and the service area within them, and we find that they do not warrant change at this time.⁶⁶ We do, however, revise Section 22.911 to delete provisions rendered obsolete by today's decision to adopt a field strength limit rule and our related decision to eliminate certain requirements governing SAB extensions into another licensee's CGSA, discussed in the next Section, in connection with transitioning the Cellular Service to a geographic-based model.⁶⁷ Our revisions to Section 22.911 do not affect the formulas for calculating CGSAs and SABs.

E. SAB Extensions Negotiated with Another Licensee

24. *Background.* Currently, a licensee seeking to extend service coverage on a secondary basis into the licensed area of a neighboring co-channel licensee is required to negotiate an SAB extension agreement and is then required to file a minor modification application for the extension and certify that the neighboring licensee's consent has been obtained.⁶⁸ In the *2012 NPRM*, the Commission stated that an established field strength limit would in essence replace the SAB extension rule, although

⁶⁴ As explained below, we find that applying to the Gulf certain rule changes we adopt today does further the public interest. See *infra* Section II.M. (clarifying that new rules adopted today in the interest of streamlining and modernizing the Cellular Unserved Area licensing model will apply to any Gulf licensee that is subject to the Unserved Area licensing rules).

⁶⁵ *But see infra* Section III.C.10.b. (seeking comment on Section 22.907 of our current rules in the context of possible adoption of a PSD model).

⁶⁶ We are, however, seeking comment on the potential need to revise (not abandon) the formulas in the event we adopt a PSD model for the Cellular band as proposed in the companion *Further Notice* that we also adopt today. See *infra* Section III.C.10.a.

⁶⁷ See Appendix A (Final Rules), § 22.911(d) ("Protection afforded"). See also *infra* Section II.L.1. of this *Report and Order* (explaining deletion of obsolete references in Section 22.911, such as the legacy 5-year build-out period).

⁶⁸ See 47 C.F.R. §§ 22.912 and 22.953.

SABs and CGSAs for new systems and expansions would still be calculated under the current provisions of Section 22.911.⁶⁹

25. According to AT&T and Verizon Wireless, with the adoption of the proposed field strength limit, the regulation of SAB extensions into other Cellular licensed geographic areas is entirely unnecessary and the Commission should no longer require certifications or Commission filings for them.⁷⁰ They also caution that previously negotiated SAB extension agreements should not be disrupted by the Commission.⁷¹ Broadpoint similarly asks that we clarify that existing SAB extension agreements “are not overruled.”⁷² No other commenter addressed negotiated SAB extensions.

26. *Discussion.* As discussed above, for other geographic-based wireless services, including PCS, AWS, and 700 MHz Services, the Commission has found that establishing a field strength limit coupled with permitting neighboring licensees to negotiate a different limit has worked effectively to provide licensees flexibility in system design, while limiting the amount of signal incursion into an adjacent licensed area.⁷³ Consistent with the approach taken in other commercial services and our goals in this proceeding to provide flexibility and reduce the number of required applications and related filings, we revise Section 22.912 of our rules to reflect that we will no longer require applications for SAB extensions into neighboring CGSAs, and we adopt a conforming change to Section 22.911(d).⁷⁴

27. We clarify that, so long as a licensee either meets the 40 dB μ V/m field strength limit we adopt today or negotiates a different limit (higher or lower) with the neighboring co-channel licensee, resulting SAB extensions into a neighboring licensee’s CGSA will be permitted without a minor modification application or a certification that consents have been obtained. The exception is with respect to the Gulf, as discussed in the preceding Section of this *Report and Order*. We emphasize that we do not seek to disrupt previously negotiated SAB extension agreements between Cellular licensees, nor do we seek to prohibit new ones.⁷⁵ We fully expect that parties will continue to comply with the terms of their existing SAB extension agreements or negotiate new terms if they deem warranted.

F. SABs Remaining within CGSA Boundaries

28. *Background.* Currently, Cellular licensees are required to file minor modification applications notifying the Commission of the addition or modification of transmitter sites that form the CGSA boundary – so-called border sites. While system changes to purely internal (non-border) sites generally do not require a Commission filing,⁷⁶ changes to border sites require the notifications (but not prior approval) even when the resulting new or modified SAB remains entirely within the CGSA boundary.⁷⁷

⁶⁹ See 2012 NPRM, 27 FCC Rcd at 1767 ¶ 54.

⁷⁰ See AT&T Comments at 16, 19-21; Verizon Wireless Reply Comments at 7-8.

⁷¹ See AT&T Comments at 19-20; Verizon Wireless Reply Comments at 7-8.

⁷² Broadpoint Comments at 5.

⁷³ See 47 C.F.R. §§ 24.236, 27.55. See also BIA Report and Order, 29 FCC Rcd at 6866.

⁷⁴ See Appendix A (Final Rules), § 22.912; see also *id.* § 22.911(d) (also revised, as discussed in the preceding Section of this *Report and Order*, to reflect today’s adoption of a field strength limit rule).

⁷⁵ See Appendix A (Final Rules), § 22.912(b) (permitting the negotiation of SAB extension agreements).

⁷⁶ Certain filings, such as administrative updates, license renewals, and filings required under the rules implementing the National Environmental Policy Act of 1969, as amended (*see* 47 C.F.R. Part 1, Subpart I, §§ 1.1301 *et seq.*), are required for all licensees, and will continue to be required under all applicable rules.

⁷⁷ See Revision of Part 22 of the Commission’s Rules Governing the Public Mobile Services, *Report and Order*, CC Docket No. 92-115, 9 FCC Rcd 6513, 6519 (1994) (eliminating the notification requirement for non-border internal sites but retaining it for border sites) (other captions omitted). We address separately below, in Section II.H., the

(continued....)

29. In the *2012 NPRM*, the Commission noted CTIA's argument that, once fixed boundaries were established, licensees should be permitted to add and modify transmitter sites within those boundaries without filings, subject to a field strength limit at the license boundary.⁷⁸ The Commission proposed that licensees in transitioned CMA Blocks would be free to modify their systems without filings so long as the CGSA would not be expanded or reduced.⁷⁹

30. The Commission also proposed a change to the Cellular-specific provision in Section 22.165 regarding the addition of transmitters.⁸⁰ The introductory clause of Section 22.165 limits the scope of the entire rule to transmitters that may be added without prior Commission *approval*. Subsection 22.165(e) governs Cellular licensees solely in that context and does not address whether or not the addition of transmitters triggers a need to file a *notification* with the Commission. The Commission proposed revisions to address the addition of Cellular transmitters in the context of the two-stage overlay license auction proposal.⁸¹

31. CTIA argues that, in establishing the CGSA as the licensed geographic area, the Commission should give licensees "the ability to make changes . . . that do not extend the existing coverage footprint," without Commission filings.⁸² Both AT&T and Verizon Wireless argue that it should be clear that SABs of additional transmitters or modified cell sites would only be subject to the established field strength limit or the limit negotiated with the neighboring licensee.⁸³ AT&T asserts that the Commission's proposed changes to Section 22.165(e) would have the effect of requiring that the SABs from any additional transmitters always remain within the CGSA.⁸⁴ AT&T also generally requests relief from filings for minor modifications that do not change the CGSA, including minor changes of location parameters for border sites.⁸⁵ Other commenters did not explicitly address this issue.

32. *Discussion.* Geographic-based licensing generally authorizes the placement of sites anywhere within a particular licensed area's boundary without the need for Commission filings. We find that it serves the public interest to no longer require that Cellular licensees notify the Commission of changes to cell sites, or the addition of new cell sites, where the SAB remains confined within the existing CGSA boundary. This approach is consistent with our goals of reducing licensee administrative burdens, enhancing flexibility to adapt quickly to technological and market place changes, and increasing harmonization of the Cellular Service rules with those of other geographically licensed services.

33. *Section 22.165(e).* As noted above, the introductory clause of Section 22.165 limits the scope of the entire rule to transmitters that may be added without prior Commission approval, and subsection 22.165(e) governs Cellular licensees solely in that context; it does not address whether adding a Cellular transmitter triggers the requirement to file a notification with the Commission. The proposed revisions in the *2012 NPRM* were not intended to change the scope of the rule or require that the SABs of added transmitters remain within the CGSA boundary. In any event, consistent with the licensing approach we adopt today, we adopt a simplified Section 22.165(e) that eliminates references to the legacy

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requirements when a licensee extends an SAB beyond its CGSA boundary into Unserved Area through the addition or modification of a transmitter but does not claim the Area as part of its CGSA for primary, protected service.

⁷⁸ See *2012 NPRM*, 27 FCC Rcd at 1751-52 ¶ 12 (citations omitted).

⁷⁹ *Id.*, 27 FCC Rcd at 1759-60 ¶ 31.

⁸⁰ 47 C.F.R. § 22.165.

⁸¹ See *2012 NPRM*, 27 FCC Rcd at 1759-60 ¶ 31 and at 1812 (Appendix E (Proposed Rules), § 22.165(e)).

⁸² CTIA Comments at 2.

⁸³ See AT&T Comments at 19-20; Verizon Wireless Reply Comments at 7-8.

⁸⁴ See AT&T Comments at 19.

⁸⁵ See Letter from Linda Vandeloop, Director-Regulatory, AT&T Services, Inc., dated Feb. 19, 2014, at 1.

Cellular licensing model (*e.g.*, the five-year construction period of an initial primary license) and clarifies when a Cellular transmitter may be added without prior Commission approval.⁸⁶

G. 50-Contiguous-Square-Mile Minimum for CGSA Expansions

34. *Background.* There is currently no required minimum for expansion of an existing system's CGSA into Unserved Area, and any expansion no matter how small requires a major modification application seeking prior Commission approval under Section 22.949.⁸⁷ All CGSA-expansion applications are placed on public notice for 30 days.⁸⁸ In the *2012 NPRM*, the Commission noted Verizon Wireless's argument that "preserving site-based licensing should be limited to areas greater than 50 square miles."⁸⁹

35. In response to the *2012 NPRM* proposals, Verizon Wireless reiterates its argument in favor of preserving Unserved Area licensing for areas greater than 50 square miles, asserting that, with an immediate implementation of geographic-based licensing in all CMAs, licensees "would be able to make modifications to their network without the currently required burdensome filings."⁹⁰ Alaskan carriers argue in favor of retaining the current site-based licensing regime unchanged.⁹¹ Arctic Slope Telephone Association Cooperative, Inc. ("Arctic Slope") argues that the Commission should not only retain the site-based model as is, but also establish a two-year buildout requirement for Unserved Area in Alaska rather than subjecting Alaskan carriers to the one-year buildout requirement applicable to all Cellular licensees.⁹² In its November 2013 and March 2014 filings, the Coalition asserts that a 50-square-mile minimum CGSA expansion requirement should apply in all CMA Blocks following the "conversion" of CGSAs to geographic licenses.⁹³

36. *Discussion.* Under the current licensing scheme, a high volume of Cellular major modification applications seek relatively small CGSA expansions stemming from minor technical system improvements. Indeed, in response to industry concerns about unduly burdensome filings, this reform proceeding evaluates whether there is a continued need in this context for modification applications and subsequent buildout notifications for very small system changes. Moreover, a high number of amendments are subsequently filed, either to cure applicant errors or change the coverage or certain technical parameters initially proposed. For example, in 2013, roughly one-third of the Cellular applications filed (major and minor) were amendments. The result is a process that consumes significant licensee and FCC resources. Commission data indicate that, by limiting CGSA-expansion major modification applications to those that propose expansion of 50 contiguous square miles or more, together with adopting a streamlined procedure for service coverage expansions of less than 50 contiguous square miles, the volume of major modification applications and associated amendments for CGSA expansions will be dramatically reduced. Based on Commission data from 2013, we estimate that the volume would

⁸⁶ See Appendix A (Final Rules), § 22.165(e). See also *infra* Sections II.E. and II.H. (discussing SAB extensions beyond the CGSA boundary).

⁸⁷ 47 C.F.R. § 22.949. Section 22.951 of our current rules establishes a minimum coverage requirement for new systems: the applicant must propose (in an application classified as "major") a CGSA of at least 130 square km (50 square miles) of Unserved Area. *Id.* § 22.951 (current rule).

⁸⁸ See 47 U.S.C. § 309(b).

⁸⁹ *2012 NPRM*, 27 FCC Rcd at 1754 ¶ 17 (citation omitted). See also *id.*, 27 FCC Rcd at 1747 ¶ 3 (inviting comment generally on several proposals in the record at that time and summarized elsewhere in the *2012 NPRM*, including Verizon Wireless's proposal).

⁹⁰ Verizon Wireless Reply Comments at 3.

⁹¹ See generally Arctic Slope Comments; Copper Valley Comments; GCI Comments.

⁹² Arctic Slope Comments at 3.

⁹³ See November 2013 Consensus Letter at 1. See also March 2014 Consensus Letter at 1.

be reduced by at least 60% (counting major modification applications and amendments to such applications). Likewise, the volume of build-out notification filings would also be significantly reduced.

37. We are persuaded, as noted above, to continue to permit CGSA expansions in *all* CMA Blocks at this time.⁹⁴ Consistent with our overarching goals to modernize the Cellular rules and minimize burdens for licensees and applicants, and based on the record, we agree with the commenters that it serves the public interest to establish by rule a minimum requirement of 50 contiguous square miles (as determined pursuant to the applicable formula in Section 22.911) for all CGSA expansions (*i.e.*, to expand service coverage on a primary, protected basis).⁹⁵ We conclude that this approach balances the concerns of large and smaller carriers alike, particularly because we will not only continue to permit secondary operation to serve smaller parcels (less than 50 contiguous square miles), but will enhance flexibility by eliminating previously required Commission filings for such parcels, as discussed in detail in the next Section of this *Report and Order*. We incorporate this minimum requirement for CGSA expansions into the revised version of Section 22.949 that we adopt today and, consistent with our regulatory reform agenda to streamline our rules where possible, we consolidate the existing new-system coverage requirements currently set forth in Section 22.951 into Section 22.949.⁹⁶

38. Our decision today will eliminate the many major modifications applicants have filed for relatively small CGSA expansions as well as the notifications they are required to file to report build-out of these small authorized CGSA expansion areas. We anticipate that licensees will not make unnecessary filings under the new rules we adopt today. We clarify that, to the extent that applications are filed claiming Unserved Area as CGSA without meeting the new minimum square mileage requirement, Commission staff will not process them; rather, they will return or dismiss such filings unless first withdrawn by the applicant.

39. We decline at this time to adopt Artic Slope's proposal to establish a two-year build-out requirement for Cellular licensees in Alaska. We find that the existing one-year build-out requirement applicable to all Cellular licensees has served the Cellular Service well, fostering rapid build-out, including in rural areas. In limited instances, Cellular applicants have sought waiver of the Commission rules⁹⁷ and extension of the build-out period, and we have granted such requests where we have determined that our waiver standard has been met.⁹⁸ We will continue to give similar requests due consideration in the best interest of the public and grant relief where warranted.

H. SAB Extensions into Unserved Area; Shared Service on a Secondary Basis

40. *Background.* Since 2004, the Commission has permitted Cellular licensees to extend their SABs into adjacent Unserved Area and provide service on a secondary basis without first filing a major modification application seeking prior Commission approval, so long as the extension is less than

⁹⁴ We also confirm, in response to the Coalition's request (*see* November 2013 Consensus Letter at 2), that so-called dual licensing will continue to be permitted in the Cellular Service. Consequently, the same licensee (or commonly controlled licensees) of two CGSAs may serve area within both CGSAs from a single transmitter site (if technically feasible), but may not claim any served area as part of more than one CGSA. Likewise, a licensee (or commonly controlled licensees) of two CGSAs wishing to file an application to claim, in compliance with all applicable rules, two separate parcels of Unserved Area as CGSA may propose to serve both parcels from a single transmitter site (if technically feasible), but may not claim either parcel as part of more than one CGSA.

⁹⁵ By "contiguous" we refer to the claimed Unserved Area parcel itself and do not require that such area be adjacent to the applicant's existing CGSA. Particularly in Alaska, we observe that a CGSA may involve parcels that are not adjacent to one another.

⁹⁶ *See* Appendix A (Final Rules), § 22.949 (deleting § 22.951).

⁹⁷ 47 C.F.R. § 1.925.

⁹⁸ *See, e.g.*, Stefan M. Lopatkiewicz, Dorsey & Whitney, *Letter*, 22 FCC Rcd 16273 (WTB 2007) (granting waiver to permit more time to construct authorized Cellular operations in Alaska).

50 square miles.⁹⁹ In such instances, the licensee has been required to file only a notification upon commencing service on an unlicensed, unprotected basis.¹⁰⁰ A licensee seeking to claim the area as part of its CGSA (*i.e.*, for primary, protected service) is required to submit a major modification application subject to a 30-day public comment period, no matter how small the area.¹⁰¹ The 2004 relaxation of the prior approval requirement in such circumstances was designed to provide licensees “with additional flexibility to respond to operational demands” immediately in a manner that remained consistent with our site-based licensing rules.¹⁰²

41. In the *2012 NPRM*, the Commission invited comment on permitting Cellular licensees to extend service into currently Unserved Area without modification filings, as part of its overlay license proposal.¹⁰³ The *2012 NPRM* also sought comment on a proposal offered by CTIA that, in so-called fully served CMA Blocks, any remaining Unserved Area should simply be incorporated into existing CGSAs through a consultation process among incumbents in a given CMA, without requiring Commission filings seeking approval or providing notification.¹⁰⁴ Although the Commission’s overlay licensing proposal did not incorporate these aspects of CTIA’s and Verizon Wireless’s proposals, the Commission sought comment on those proposals as well as others on the record, and invited alternative ideas not discussed in the *2012 NPRM*.¹⁰⁵

42. In response to the *2012 NPRM*, Verizon Wireless submitted reply comments advocating geographic-based licensing, asserting that “[t]his system would greatly decrease the regulatory burden on Cellular licensees by eliminating the requirement that modification filings that do not affect the CGSA boundary be filed with the FCC,” resulting in “many fewer required modification filings”¹⁰⁶ AT&T also submitted comments arguing that, with geographic-based licensing, “licensees that do not seek to expand their CGSA into Unserved Area will have no site-based licensing filings,” and that “the number of filings will be much fewer than the volumes of technical filings that are currently required and, as a result, Cellular licensees and Commission staff will continue to benefit from a substantial reduction in administrative burdens.”¹⁰⁷

43. In the November 2013 and March 2014 Consensus Letters, the Coalition argues that, in the case of an Unserved Area parcel less than 50 square miles and bordered on all sides by only one incumbent, such Area should automatically become part of that incumbent’s CGSA, *i.e.*, constituting an expansion of its CGSA, licensed on a primary basis and protected from harmful interference, without prior Commission approval.¹⁰⁸ With respect to any parcel less than 50 square miles that is bordered by

⁹⁹ See Year 2000 Biennial Regulatory Review – Amendment of Part 22 of the Commission’s Rules to Modify or Eliminate Outdated Rules Affecting the Cellular Radiotelephone Service and Other Commercial Mobile Radio Services, *Order on Reconsideration*, WT Docket No. 01-108, 19 FCC Rcd 3239, 3255-57 (2004) (“2000 Biennial Review Reconsideration Order”).

¹⁰⁰ See *id.*

¹⁰¹ See 47 C.F.R. § 1.929(b)(1) (defining a CGSA-expansion application as a major modification application). See also *id.* § 22.949 (Unserved Area licensing process).

¹⁰² See 2000 Biennial Review Reconsideration Order, 19 FCC Rcd at 3255.

¹⁰³ *2012 NPRM*, 27 FCC Rcd at 1759 ¶¶ 30-31.

¹⁰⁴ See *id.*, 27 FCC Rcd at 1747 n.3, 1751 ¶ 11 (explaining that, under the CTIA proposal, a CMA Block would be deemed fully served if either: (1) 90% of the total land area is served; or (2) there is no parcel of Unserved Area measuring at least 50 contiguous square miles).

¹⁰⁵ *2012 NPRM*, 27 FCC Rcd at 1747 ¶ 3 (inviting comment generally on several proposals in the record at that time and summarized elsewhere in the *2012 NPRM*, including CTIA’s proposal).

¹⁰⁶ Verizon Wireless Reply Comments at 1, 3.

¹⁰⁷ AT&T Comments at 15-16.

¹⁰⁸ November 2013 Consensus Letter at 1; March 2014 Consensus Letter at 2.

multiple incumbents, the Coalition makes an argument similar to CTIA's proposal described above -- namely, that all bordering incumbents in the same CMA should be permitted to negotiate a written agreement allocating the parcel of Unserved Area among themselves, *i.e.*, constituting expansions of their respective CGSAs, again without prior Commission approval. The Coalition further argues that, in the absence of a written agreement, the bordering incumbents should be permitted to serve such Unserved Area parcel only on a shared, secondary (unprotected) basis (*i.e.*, the area would not become part of any incumbent's CGSA).¹⁰⁹ Nsight and Thumb contend that incumbent licensees in markets deemed substantially licensed (under the Commission's overlay license proposal) should be permitted to "fill in their CMA market areas" and provide service, without prior FCC approval, provided that the proposed 40 dB μ V/m field strength is honored.¹¹⁰

44. *Discussion.* As explained in the preceding Section of this *Report and Order*, to balance the concerns of smaller, more rural carriers and large carriers alike, today we adopt rules for the Cellular Service based on a geographic licensing model while also preserving certain elements of the existing site-based model, including the continued ability to expand CGSAs into Unserved Area so long as the proposed expansion area is at least 50 contiguous square miles. A high volume of applications under current Cellular rules are to make improvements in response to technological changes, demographic changes, and consumer demand that change the CGSA boundary by an extremely small amount. We find that it serves the public interest to permit continued access to these small parcels of Unserved Area, but we recognize, based on concerns expressed by industry representatives, that filings associated with minor system changes that expand service into these small parcels often constitute hindrances to system improvements. As we state above, one of the hallmarks of geographic-based licensing is to provide flexibility to make system improvements within the geographic license boundary.

45. We decline to adopt commenters' unsupported proposals to permit Cellular incumbents simply to absorb small parcels of Unserved Area into their existing CGSAs, even when bordered on all sides by only one incumbent. We find these proposals to be inconsistent with Commission precedent.¹¹¹ Consistent, however, with the approach we adopt in this *Report and Order* to increase flexibility to make changes to an existing system without Commission filings, we find it serves the public interest to permit incumbents to extend their SABs (as calculated under Section 22.911) into adjacent Unserved Area parcels that are less than 50 contiguous square miles and provide service coverage on a secondary basis indefinitely and without any filings with the Commission.¹¹² We clarify that this is applicable whether the SAB extension is the result of an added transmitter, modification of a cell site, or both. A licensee extending its SAB into an Unserved Area parcel of less than 50 contiguous square miles must: (1) pursuant to Section 22.983 that we adopt today, comply with the 40 dB μ V/m field strength limit at the boundary of the neighboring co-channel licensee's CGSA or negotiate a different field strength limit; (2) accept interference from other Cellular systems; and (3) avoid causing harmful interference to any neighboring co-channel licensee's CGSA.¹¹³ To the extent that more than one incumbent borders and

¹⁰⁹ November 2013 Consensus Letter at 1; March 2014 Consensus Letter at 2.

¹¹⁰ Nsight Comments at 5-6; Thumb Comments at 5-6.

¹¹¹ See, e.g., Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, *Memorandum Opinion and Order on Reconsideration and Third Report and Order*, WT Docket No. 96-18, PR Docket No. 93-253, 14 FCC Rcd 10030, 10058 (1999).

¹¹² This approach builds on the Commission's decision in the 2000 Biennial Review Reconsideration Order, 19 FCC Rcd at 3255-56, which afforded flexibility to provide service immediately without prior Commission approval on a secondary basis only, but required the incumbent to file a notification. As the Commission also stated in that Order, the Cellular licensee providing service on a secondary basis is required to pull back its coverage in the event another licensee is granted approval to incorporate the area as part of its CGSA. See *id.*, 19 FCC Rcd at 3256.

¹¹³ See 47 C.F.R. § 22.911(d). See also *id.* § 22.99 (defining a CGSA as the area within which a Cellular system "is entitled to protection . . .").

wishes to serve the same Unserved Area parcel less than 50 contiguous square miles, such incumbents will be required to provide service in that parcel on a shared secondary (unprotected) basis only. In sum, pursuant to this *Report and Order*, Cellular incumbents are authorized to serve Unserved Area parcels less than 50 contiguous square miles on a secondary basis consistent with the requirements discussed herein.

46. As a result of this decision, we anticipate that the volume of filings will be much smaller, thereby reducing quite significantly the administrative burdens for Cellular licensees. These revisions, which are reflected in revised Sections 22.165(e) and 22.912(a),¹¹⁴ are a logical outgrowth of the 2012 *NPRM*.¹¹⁵ We find that these revisions serve the public interest and further our goals in this proceeding.

I. Submission of Maps

47. *Background.* In the 2012 *NPRM*, the Commission noted that, pursuant to delegated authority and rules adopted in the ULS proceeding to eliminate paper filings, the Bureau had announced optional electronic filing of CGSA map files in lieu of the large-scale (1:500,000 scale) paper CGSA maps required to be submitted with certain Cellular applications.¹¹⁶ The Commission also reaffirmed the Bureau's delegated authority to determine and announce the effective date of mandatory electronic filing of such maps, with instructions for the public regarding access to such submissions.¹¹⁷ As discussed above, the Bureau subsequently made CGSA map files in GIS format available to the public online.¹¹⁸ To date, the Bureau has continued its voluntary policy to allow all Cellular licensees, including the smaller carriers, time to explore and choose appropriate software for their electronic map filings. The 2012 *NPRM* anticipated mandatory electronic filing and sought comment on proposed rules incorporating this requirement.¹¹⁹ No commenter addressed this issue.

48. *Discussion.* Nearly all large-scale CGSA maps are now submitted by applicants electronically in ULS, and this has greatly facilitated the Bureau's efforts to maintain up-to-date CGSA map files online. We find that, in conjunction with the numerous other changes we are adopting today to modernize the Cellular rules, it is appropriate to adopt final rules that require mandatory electronic filing

¹¹⁴ See Appendix A (Final Rules), § 22.165(e) (additional transmitters for existing systems) (also discussed *supra* in Section II.F.) and § 22.912(a) (service area boundary extensions).

¹¹⁵ See *Pub. Serv. Comm'n of the Dist. of Columbia v. FCC*, 906 F.2d 713, 717 (D.C. Cir. 1990) (stating "it is well established that the exact result reached after a notice and comment rulemaking need not be set out in the initial notice for the notice to be sufficient. Rather, the final rule must be 'a logical outgrowth' of the rule proposed."). The focus of the logical outgrowth test is whether commenting parties should have anticipated that the Commission might adopt the requirement at issue. *Aeronautical Radio, Inc., v. FCC*, 928 F.2d 428, 445-46 (D.C. Cir. 1991) ("*ARINC*"). Our elimination of the notification/minor modification requirement for SAB extensions less than 50 contiguous square miles meets the *ARINC* standard. In particular, the 2012 *NPRM* proposed eliminating this requirement as part of the Commission's overlay license proposal. 2012 *NPRM*, 27 FCC Rcd at 1759 ¶ 30. Moreover, the 2012 *NPRM* invited comment on CTIA's proposal to permit Cellular licensees to extend service into Unserved Area without a modification application or any other filing requirement. *Id.*, 27 FCC Rcd at 1747, 1750-51 ¶¶ 3, 9-11.

¹¹⁶ See 2012 *NPRM*, 27 FCC Rcd at 1769 n.156 (citing "Wireless Telecommunications Bureau Announces Electronic Filing Option for Cellular Radiotelephone Service Full-Size Maps," *Public Notice*, 26 FCC Rcd 11475 (WTB 2011); 47 C.F.R. § 1.913(b); and Biennial Regulatory Review – Amendment of Parts 0, 1, 13, 22, 24, 26, 27, 80, 87, 90, 95, 97, and 101 of the Commission's Rules to Facilitate the Development and Use of the Universal Licensing System in the Wireless Telecommunications Services, *Report and Order*, WT Docket No. 98-20, 13 FCC Rcd 21027, 21094 (1998), *recon. granted in part*, 14 FCC Rcd 11476, 11492 (1999)); 47 C.F.R. §§ 22.929(c), 22.953(a) (current rules).

¹¹⁷ See 2012 *NPRM*, 27 FCC Rcd at 1769 n.156.

¹¹⁸ See *supra* Section II.C.

¹¹⁹ See 2012 *NPRM*, 27 FCC Rcd at 1813-16 (Appendix E (Proposed Rules), §§ 22.947, 22.948, 22.953).

of map files (rather than the large-scale paper CGSA maps) in GIS format with any Cellular applications that require maps.¹²⁰ The Commission will continue to accept and preserve large-scale paper maps filed prior to the effective date of the electronic filing requirement that we adopt today. Thereafter, the Commission will not accept paper maps with Cellular applications unless it finds that a large-scale paper map is necessary to review and act on a particular application and requests such a submission. Applications that do not comply with the new requirement will either be returned to the applicant or dismissed.

J. Elimination of Certain Application Content Requirements

49. *Background.* In an effort to streamline and modernize the Cellular Service-specific rules in Subpart H as well as certain Part 1 and other Part 22 rules applicable to Cellular licensing, the Commission proposed in the *2012 NPRM* numerous rule deletions and changes to current requirements. The Commission specifically indicated that, in the future, certain information and exhibits currently required pursuant to Sections 22.929 and 22.953(a) of its rules would not be routinely required by the Commission's engineering staff in their review of Cellular new-system and modification applications, and therefore proposed streamlining the information requirements in those rules.¹²¹ No commenter specifically addressed this issue.

50. *Discussion.* Based on the record and consistent with our regulatory reform agenda, we find that it serves the public interest to adopt revised provisions to minimize the content requirements for Cellular applications. Specifically, we adopt the proposal to delete Section 22.929 and consolidate application requirements into a single revised rule, Section 22.953, such that applicants for new systems or system modifications will no longer be required routinely to submit the following information in their exhibits:¹²²

- Height of the center of radiation of the antenna above average terrain;
- Antenna gain in the maximum lobe;
- Antenna model;
- Antenna manufacturer name;
- Antenna type;
- Antenna height to tip above ground level;
- Maximum effective radiated power;
- Beam-width of the maximum lobe of the antenna;
- A polar plot of the horizontal gain pattern of the antenna;
- The electrical field polarization of the wave emitted by the antenna when installed as proposed;
- Channel plan;
- Service proposal;
- Cellular design;
- Blocking level;
- Start-up expenses; and
- Interconnection.

¹²⁰ See Appendix A (Final Rules), §§ 22.948, 22.953, 22.960.

¹²¹ See *2012 NPRM*, 27 FCC Rcd at 1769-70 ¶ 63, and at 1815-16 (Appendix E (Proposed Rules), proposing to delete § 22.929 and consolidate application requirements into a revised § 22.953).

¹²² See Appendix A (Final Rules), § 22.953. The Commission reserves the right to request the information and exhibits listed here if deemed necessary to review an application. We emphasize that the Commission will continue to require all the information specified in FCC Form 601 (including all applicable Schedules) for Cellular new-system and modification applications.

51. Many of these information requirements were first established in the early years of the Cellular industry to enable the Commission to ensure technical uniformity in the deployment of Cellular service. Networks have matured since those earlier years, with technological advances allowing Cellular providers to increase the capacity and quality of their systems and develop improved wireless services, and virtually all applications are now filed by incumbents – known entities rather than new entrants. In light of these advances and maturity of the Cellular Service, we find that the information and technical exhibits identified above are either no longer routinely necessary for Commission staff in reviewing Cellular applications or can be accessed elsewhere. By eliminating all 16 of these requirements for routine review, we are alleviating to a significant degree the resources that licensees will need to expend on Cellular applications. We conclude that such streamlining and modernization of the current rules serves the public interest.

K. Mutually Exclusive Applications in the Cellular Service

1. Initial License for Chambers, Texas Market (CMA672-A)

52. *Background.* The Commission explained in the 2012 NPRM that Block A of the Chambers, Texas CMA (CMA672-A) (“Chambers”) is the only CMA in the country for which a Cellular initial primary license has never been issued, and that AT&T Mobility of Galveston LLC (“AT&T Galveston”) holds an interim operating authorization – not a permanent license – and provides Cellular service to nearly all of the area under Call Sign KNKP971.¹²³ The Commission proposed that the entire CMA672-A be licensed on a geographic area basis and included in the Stage I overlay license auction. The Commission further proposed not to apply our existing rules concerning the various build-out and application phases that are applicable to other CMAs, including, for example, the five-year build-out period and Phase I process, in light of the proposal to transition the Cellular Service into a new licensing era.¹²⁴ Because the applicable five-year periods and Phase I had already expired for all other initial Cellular licensees, the Commission also proposed to delete provisions that reference the Cellular five-year build-out period and Phase I process in Parts 1 and 22 of our rules.¹²⁵

53. Consistent with its treatment of geographic-based licensees in the 700 MHz proceeding, the Commission proposed that the initial licensee for Chambers would be required to provide signal coverage and offer service over at least 35% of the geographic area of CMA672-A within four years of initial license grant, and to at least 70% of that same area by the end of the license term.¹²⁶ The Commission further proposed that, for purposes of this geographic benchmark, “the licensee is to count total land.”¹²⁷ Failure to meet these coverage benchmarks was to result in automatic termination of the license and its return to the Commission for re-licensing by auction.

¹²³ See 2012 NPRM, 27 FCC Rcd at 1760-61 ¶¶ 33-35 (citing “Cellular Rural Service Areas Auction Scheduled for May 29, 2002,” *Public Notice*, 17 FCC Rcd 4135 (2002); Implementation of Competitive Bidding Rules to License Certain Rural Service Areas, *Report and Order*, WT Docket No. 01-32, 17 FCC Rcd 1960 (2002) (explaining that, in certain RSAs for which permanent Cellular licenses had not yet been issued, the Commission granted interim operating authority to one or more Cellular operators to provide service in Block A, pending the ultimate permanent licensing of these RSAs, and providing history regarding the unlicensed Chambers market)). See also KNKP971 Interim Operating Authorization (“KNKP971 IOA”); FCC File No. 0006136102 (granted modification application filed by AT&T Galveston to expand service coverage, see Wireless Telecommunications Bureau Site-By-Site Action, *Public Notice*, Rep. No. 9491 (rel. Apr. 9, 2014)).

¹²⁴ See 2012 NPRM, 27 FCC Rcd at 1760-61 ¶ 34 (noting that, for Chambers, the 5-year build-out period never commenced under 47 C.F.R. § 22.947 because no initial permanent license has been issued).

¹²⁵ See *id.*, 27 FCC Rcd at 1760-61 ¶ 34.

¹²⁶ See *id.* (citing 47 C.F.R. § 27.14, which sets forth construction requirements and renewal criteria for, *inter alia*, 700 MHz licensees).

¹²⁷ See 2012 NPRM, 27 FCC Rcd at 1813-14 (Appendix E (Proposed Rules), § 22.947).

54. AT&T expresses support for auctioning the Chambers license, without addressing the details of the Commission's proposal.¹²⁸ No other commenter addressed this matter.

55. *Discussion.* In light of our decision in this *Report and Order* to adopt a geographic-based licensing model for the Cellular Service, we find it appropriate to adopt the Commission's proposal regarding the Chambers license, with a few clarifications. Our current rules provide for the acceptance of mutually exclusive applications for the initial license for Chambers, which would be resolved by competitive bidding pursuant to Section 309(j) of the Communications Act of 1934, as amended.¹²⁹ Accordingly, the Bureau will accept applications for a CMA-based initial primary license for Chambers, consistent with initial licensing of other CMA Blocks that have been subject to competitive bidding where mutually exclusive applications have been accepted.¹³⁰

56. We find that it serves the public interest to adopt the proposed geographic coverage build-out requirements, rather than subjecting the new Chambers licensee to the legacy five-year and Phase I/Phase II build-out/application processes. The Chambers licensee will therefore be required to provide signal coverage and offer service over at least 35% of the geographic area of CMA672-A within four years of initial license grant, and to at least 70% of that same area by the end of the license term, as set forth in new Section 22.960 that we are adopting today.¹³¹ As proposed, for purposes of this geographic benchmark, the licensee is to count total land, and failure to meet these coverage benchmarks will result in automatic termination of the license and its return to the Commission for re-licensing by auction. Any licensee that so fails to meet these benchmarks will not be eligible to regain the Chambers license. We emphasize that the holder of the interim operating authorization (currently AT&T Galveston) does not have primary authority to operate and would not be afforded incumbent status entitled to protection from the Chambers licensee.¹³²

57. The performance obligations we adopt today for the Chambers license are consistent with those for geographic area licenses in certain other services similarly issued through competitive bidding. Accordingly, consistent with our regulatory reform agenda and as proposed, we find that it serves the public interest to eliminate the numerous existing provisions pertaining to or referencing the legacy build-out periods for the Cellular Service, which are otherwise obsolete, throughout Parts 1 and 22 of our rules. We also find that it serves the public interest to update references to the Phase II build-out period. We discuss these specific rule changes further in Section II.L., below.

58. Moreover, we conclude that it is appropriate to deem the boundary of CMA672-A as the CGSA boundary of the Chambers licensee. Neighboring co-channel licensees will not be permitted to claim as CGSA any area within CMA672-A, even if not built out by the Chambers licensee by the end of the initial license term. The Chambers licensee will be permitted to claim, as a CGSA expansion, Unserved Area in a neighboring CMA, provided that it has first met all of its build-out requirements in CMA672-A by the end of the initial license term.¹³³

¹²⁸ See AT&T Reply Comments at 5 n.2.

¹²⁹ See 47 C.F.R. § 22.969 (current rule); 47 U.S.C. § 309(j).

¹³⁰ See *id.*, § 22.969 (current rule). See also Appendix A (Final Rules), § 22.961.

¹³¹ See Appendix A (Final Rules), § 22.960. (Note that this represents a renumbering, as the Commission had proposed that these build-out requirements for Chambers be set forth in new Section 22.947, see 2012 NPRM, 27 FCC Rcd at 1813-14 (Appendix E (Proposed Rules), § 22.947).

¹³² See KNKP971 IOA (setting forth transition terms for the IOA holder in the event it does not become the licensee).

¹³³ Any such CGSA expansion area will not, however, remain part of the Chambers license in the event the Chambers license is automatically terminated by Commission rule or revoked for any reason, in which case the area within CMA672-A will revert to the Commission for re-licensing by auction, while the CGSA expansion area will revert to the Commission for re-licensing pursuant to the Unserved Area licensing rules.

59. With respect to licensee protection requirements, pursuant to the field strength limit rule we are adopting today, we clarify that the Chambers licensee will have the flexibility to construct anywhere within CMA672-A subject to Cellular Service technical requirements, but must comply with the 40 dB μ V/m field strength limit at the CGSA boundaries of neighboring co-channel licensees, unless a different limit is negotiated. Further, consistent with the new Cellular field strength limit rule and with our protection requirements in other geographic-based wireless services, such as PCS, a neighboring co-channel Cellular licensee must comply with the 40 dB μ V/m field strength limit at the Chambers licensed area boundary (*i.e.*, the boundary of CMA672-A), regardless of whether the Chambers licensee is yet operating near the border of CMA672-A, or else negotiate a different limit.

60. We conclude that this approach provides the most efficient and effective means to foster the provision of additional advanced wireless service by a primary licensee to this Texas market and serves the public interest. In the event that mutually exclusive applications are accepted for this license, we conclude that new Section 22.961, which we are adopting today consistent with the Commission's proposal in the *2012 NPRM*, shall govern.¹³⁴ We direct the Bureau to proceed, within a reasonable time following the effective date of the final rules we are adopting today, to release the appropriate public notice(s) to implement our decision regarding the Chambers license.

2. Mutually Exclusive CGSA Expansion Applications

61. We emphasize that, with this *Report and Order*, we are not eliminating the existing prohibition on CGSA overlaps.¹³⁵ Accordingly, whenever CGSA-expansion or new-system CGSA applications are mutually exclusive with other pending proposed operations, they will continue to be set for resolution by competitive bidding in a closed auction unless the competing applicants are able to resolve the mutual exclusivity beforehand (for example, through settlement) in accordance with our rules.¹³⁶ Consistent with the Commission's proposals in the *2012 NPRM*, we adopt new Section 22.961 not only to govern the Chambers license, as described above, but also mutually exclusive Cellular Unserved Area applications, and we consolidate into Section 22.961 certain other rules to eliminate redundancy and obsolescence in provisions addressing mutually exclusive Cellular Service applications.¹³⁷

L. Other Amendments; Non-relocation of Rules

62. In this Section, we explain various other changes to our rules in Part 22, Subpart H, and provisions found elsewhere in Part 22 as well as in Part 1. We urge all parties to review and become familiar with all final rules we are adopting today in this proceeding, including the new and revised terms and definitions, which are set forth in Appendix A and which will take effect as specified in Section V. below (Ordering Clauses).

¹³⁴ See Appendix A (Final Rules), § 22.961; *2012 NPRM* at Appendix E (Proposed Rules), § 22.961.

¹³⁵ See 47 C.F.R. §§ 22.131, 22.960 (current rule).

¹³⁶ Cellular licensees have had ample time to determine whether their authorized CGSA boundaries overlap with the authorized CGSA boundaries of any other licensee, especially given that, on February 15, 2012, in releasing the *2012 NPRM*, the Commission also released digitized CGSA map files in PDF format, and has subsequently made available online regularly updated CGSA map files. See *supra* Sections II.C. and II.I. Bureau staff members have worked with licensees over the past several years to resolve CGSA overlaps previously licensed through inadvertent error. To the extent that a few CGSA overlaps inadvertently licensed in the past may still exist, affected licensees are urged to file modification applications to resolve such overlaps. In certain circumstances under which Bureau staff independently learn of such overlaps, they will continue to work with the affected licensees, as they have done previously, to reach a resolution or, as necessary, pursue appropriate action under 47 U.S.C. § 316.

¹³⁷ See Appendix A (Final Rules), § 22.961 (also deleting §§ 22.228 and 22.969); *2012 NPRM*, 27 FCC Rcd at 1812, 1816 (Appendix E (Proposed Rules), § 22.961 (also proposing to delete §§ 22.228 and 22.969).

1. Obsolete or Outdated Terminology and Provisions

63. As stated above in the context of our decision concerning the Chambers license, we proposed in the *2012 NPRM* to delete references to the Cellular legacy five-year build-out period and the Phase I process.¹³⁸ No commenter objected to the proposal. Obsolete and outdated terms are pervasive in the current rules applicable to the Cellular Service. Consequently, consistent with our proposal in the *2012 NPRM*,¹³⁹ a number of revised rules are being adopted in this *Report and Order* solely to bring the rules up to date by eliminating legacy terminology and cross-references, and by replacing outdated terms (such as Phase I). In addition, we adopt revisions here to conform certain rules in Parts 1 and 22 to the rule changes we adopt above in this *Report and Order*.

64. Specifically, we are deleting rules and adopting revised rules as follows: Section 1.929(b) (revised); Section 22.99 (deleting defined terms “Build-out transmitters,” “Five-year build-out period,” and “Partitioned cellular market,” revising slightly the definitions for “Cellular Geographic Service Area,” “Extension,” and “Unserved Area,” and adding and defining the term “Cellular Market Area”); Section 22.131 (revising paragraphs (c)(3)(iii) and (d)(2)(iv)); Section 22.143 (revising paragraph (a)); Section 22.909 (revised); Section 22.911 (deleting paragraph (c) and revising paragraph (e));¹⁴⁰ Section 22.912 (revised);¹⁴¹ Section 22.946 (revised); Section 22.947 (deleted); Section 22.948 (revised); and Section 22.949 (revised).¹⁴² The Commission also proposed to delete Section 1.919(c) governing the reporting of Cellular cross-ownership interests, which is obsolete because the reporting requirement has sunset.¹⁴³ Accordingly, we delete Section 1.919(c) as proposed.¹⁴⁴ We find that adopting these rule changes serves the public interest and advances our regulatory reform agenda.

2. AMPS-related Data Collection

65. *Background.* The Commission noted in the *2012 NPRM* that, with sunset of the requirement to provide analog Cellular service, all of Section 22.901(b) had been rendered moot.¹⁴⁵ Stating its belief that all Cellular licensees have had ample time to make their choice and file either the one-time AMPS sunset certification or the appropriate revised CGSA showing, the Commission proposed

¹³⁸ See *2012 NPRM*, 27 FCC Rcd at 1760-61 ¶ 34.

¹³⁹ In the *2012 NPRM*, the Commission identified some specific rules with obsolete language, and invited commenters to suggest other rules that could be revised or deleted to eliminate additional obsolete language. See *2012 NPRM*, 27 FCC Rcd at 1769-70 ¶ 63, and 1810-17 (Appendix E (Proposed Rules)).

¹⁴⁰ See also *supra* Section II.D.

¹⁴¹ See also *supra* Section II.E.

¹⁴² See Appendix A (Final Rules), §§ 1.929, 22.99, 22.131, 22.143, 22.901, 22.911, 22.912, and 22.946-22.948. See also *supra* Section II.G. of this *Report and Order* regarding additional revisions to 47 C.F.R. § 22.949.

¹⁴³ See 47 C.F.R. § 1.919(c)(3) (current rules) (stating that the requirement would sunset at the earlier of February 14, 2010, or the Cellular licensee’s deadline for renewal).

¹⁴⁴ See Appendix A (Final Rules), § 1.919.

¹⁴⁵ See *2012 NPRM*, 27 FCC Rcd at 1769-71 ¶¶ 63-64; 47 C.F.R. § 22.901(b).

to terminate its collection of such certifications and to delete Section 22.901(b).¹⁴⁶ RWA endorses our proposal.¹⁴⁷ No other commenter addressed this issue.

66. *Discussion.* Based on the record, we find that it serves the public interest to adopt revised Section 22.901, deleting paragraph (b) of the rule as proposed.¹⁴⁸ As of the effective date of revised Section 22.901 that we adopt today, the Commission will cease collecting AMPS sunset certifications from Cellular licensees.

3. Correction of Section 1.958(d)

67. *Background.* The Commission proposed in the 2012 NPRM to correct a clerical error in the distance computation formula in Section 1.958(d) of our rules¹⁴⁹ – an error that was introduced in the process of moving the provision containing the formula from Part 22 (then Section 22.157) to Subpart F of Part 1.¹⁵⁰ Hammett & Edison, Inc. supports the proposed correction and provides an explanation of the mathematical significance of the error.¹⁵¹ RWA likewise supports correcting the clerical error.¹⁵²

68. *Discussion.* The error in the distance computation formula in Section 1.958(d) was inadvertent, and correction is obviously warranted. Accordingly, we adopt the corrected rule as proposed.¹⁵³

4. Non-relocation of Part 22 Cellular and Part 24 PCS Rules to Part 27

69. *Background.* In connection with its overlay licensing proposal to transition the Cellular Service and bring the licensing rules in line with the more flexible rules that govern other wireless services, the Commission invited comment in the 2012 NPRM on whether the revised Cellular Service-specific rules should be incorporated into Part 27, which houses the existing rules for certain other flexible wireless services, such as AWS.¹⁵⁴ The Commission further suggested that, if the revised Cellular Service rules were to be moved into Part 27, then the rules for Part 24 PCS, which is also a flexibly licensed wireless service, should also be moved into Part 27, and sought comment on optimal timing and whether a separate rulemaking should be launched to address any such relocations.¹⁵⁵

¹⁴⁶ See *id.*, 27 FCC Rcd at 1770-71 ¶ 64 (citing Sunset of the Cellular Radiotelephone Service Analog Service Requirement and Related Matters, *Memorandum Opinion and Order*, RM No. 11355, 22 FCC Rcd 11243, 11267 (2007), and noting that a Cellular licensee could also opt to make no filing if, in transitioning from analog to digital technology, there was no effect on its CGSA-defining location, power, or height parameters, and “Wireless Telecommunications Bureau Provides Instructions for Electronic Filing of Cellular Coverage Certifications,” *Public Notice*, 22 FCC Rcd 19922, 19923 (WTB 2007) (referencing <http://wireless.fcc.gov/services/cellular/> with instructions for attaching a certification at the Cellular Coverage Certifications Submission page)).

¹⁴⁷ See RWA Comments at 7.

¹⁴⁸ See Appendix A (Final Rules), § 22.901 (deleting paragraph (b)).

¹⁴⁹ 47 C.F.R. § 1.958(d).

¹⁵⁰ See 2012 NPRM, 27 FCC Rcd at 1771 ¶ 66; Amendment of Part 22 of the Commission’s Rules To Benefit the Consumers of Air-Ground Telecommunications Services, *Report and Order and Notice of Proposed Rule Making*, WT Docket No. 03-103, 20 FCC Rcd 4403, 4448-49 (2005). See also Letter to Marlene H. Dortch, Secretary of the Commission, from Dane E. Ericksen, Hammett & Edison, Inc., dated Mar. 21, 2011.

¹⁵¹ See generally Comments of Hammett & Edison, Inc., Consulting Engineers, dated May 15, 2012.

¹⁵² See RWA Comments at 7.

¹⁵³ See Appendix A (Final Rules), § 1.958(d).

¹⁵⁴ See 2012 NPRM, 27 FCC Rcd at 1771 ¶ 65.

¹⁵⁵ *Id.*

70. RWA objects to relocation of any Part 22 rules to Part 27 at this time, and contends that any consideration of relocating the Part 24 PCS rules is beyond the scope of this proceeding and should be addressed, if at all, in a separate rulemaking proceeding.¹⁵⁶ No other commenter addressed this issue.

71. *Discussion.* The Commission raised the issue of relocating the Part 22 Cellular licensing rules to Part 27 specifically in the event that it adopted a regime that included overlay licenses.¹⁵⁷ In light of our decision today to adopt another transition approach that retains key elements of the site-based licensing model, we conclude that relocating the Part 22, Subpart H Cellular Service rules is not appropriate. Moreover, as the Commission's suggestion to relocate the Part 24 PCS rules was contingent on relocation of the Part 22 Cellular rules, we also conclude that it is not appropriate to further consider relocation of the Part 24 PCS rules in this proceeding.

M. Gulf of Mexico Service Area

72. *Background.* The Commission proposed in the *2012 NPRM* generally to exempt the Gulf from the licensing revisions being considered, except that it proposed to subject Gulf licensees to the same field strength limit as all other Cellular licensees and also to certain rule changes designed to update and streamline the Cellular licensing regime.¹⁵⁸ Broadpoint does not specifically address, with respect to the Gulf, our licensing rule changes proposed in the *2012 NPRM* other than field strength limit and SAB contract extensions, discussed above in Sections II.D. and II.E. No other commenter objected to the proposal in the *2012 NPRM* regarding the Gulf.

73. *Discussion.* We have already described, in Section II.D. of this *Report and Order*, our decision regarding field strength limit and the related issue of contractually negotiated SAB extensions with respect to the Gulf. We conclude that, to the extent Gulf licensees are subject to Unserved Area licensing procedures under the current rules, consistent with the proposal in the *2012 NPRM*, it serves the public interest that Gulf licensees not be exempt from the revised rules and procedures that we are adopting today to modernize and streamline the Cellular Unserved Area licensing model.¹⁵⁹ This does not disrupt the Gulf regime.

N. Freeze Order Lifted and Related Interim Procedures Terminated

74. *Background.* To permit the orderly and effective resolution of the changes and issues raised in the *2012 NPRM*, and consistent with numerous prior proceedings, the Commission adopted a companion Order imposing a freeze on the acceptance of certain Cellular applications and imposing other interim procedures.¹⁶⁰ The freeze and related interim procedures were very limited so as to permit continued expansion of service to consumers by incumbents but nonetheless help the Commission identify Unserved Area in substantially licensed CMA Blocks for purposes of conducting the proposed overlay auction.

75. *Discussion.* Although we are not concluding this proceeding today, we find that it no longer serves the goals of this proceeding or the public interest to continue the freeze or the interim procedures. The additional licensing reforms and reform of the rules governing radiated power limits for the Cellular band, which we are proposing in today's companion *Further Notice*, are unrelated to identification of remaining Unserved Area, and our deliberations regarding the proposed rule changes would not be assisted by any type of freeze or interim processing procedures. Accordingly, as of the date

¹⁵⁶ See RWA Comments at 7-8.

¹⁵⁷ See *2012 NPRM*, 27 FCC Rcd at 1771 ¶ 65.

¹⁵⁸ See *2012 NPRM*, 27 FCC Rcd at 1767 ¶ 53.

¹⁵⁹ For example, 47 C.F.R. § 22.950(d) states that the Gulf of Mexico Coastal Zone is subject to the Unserved Area procedures of 47 C.F.R. § 22.949, which we are revising as discussed above. See Appendix A (Final Rules), § 22.949.

¹⁶⁰ See *2012 Order*, 27 FCC Rcd at 1771-75 ¶¶ 67-75.

set forth below in Section V., the freeze and the interim procedures that were imposed are no longer in force.

III. FURTHER NOTICE OF PROPOSED RULEMAKING

76. In this *Further Notice*, we propose several additional reforms of the Cellular Service to establish a more flexible and efficient licensing approach. Notably, we propose and seek comment on a new rule governing the permanent discontinuance of operations, which is intended to afford licensees operational flexibility to use their spectrum efficiently while ensuring that spectrum does not lay idle for extended periods. We also propose and seek comment on requiring that frequency coordinators perform review of new-system and CGSA-expansion applications in the Cellular Service, pursuant to a new proposed rule (Section 22.985). We tentatively conclude that frequency coordination will result in authorizing Cellular service more efficiently and effectively. In Section III.C., we consider changes to the Cellular radiated power limits that have been in place for over two decades. We propose to include a power spectral density (“PSD”) model that would benefit licensees using wideband technologies such as LTE,¹⁶¹ and accordingly propose revisions to Section 22.913 governing effective radiated power (“ERP”) for Cellular stations.¹⁶² We seek comment on various options that would accommodate the use of a PSD model, as well as related issues, including power flux density, height-power limits, and power measurement. Finally, we invite comment generally on the costs and benefits of all the proposals discussed below.

A. Permanent Discontinuance of Operations

77. Under Section 1.955(a)(3), an authorization will automatically terminate, without specific Commission action, if service is “permanently discontinued.”¹⁶³ Section 22.317 of the Commission’s rules applicable to Part 22 Public Mobile Services stations, including Cellular Service stations, currently defines permanent discontinuance as the failure to provide service to subscribers for 90 continuous days (up to 120 continuous days with an extension).¹⁶⁴ If a Cellular site is permanently discontinued under Section 22.317, the licensee’s CGSA is modified accordingly to reflect the reduction in licensed area. Through its *ex parte* filings, the Coalition advocates a more flexible permanent discontinuance rule for the Cellular Service in connection with a transition of the Cellular licensing model to a geographic-based regime. The Coalition specifically proposes that a Cellular licensee should be required to “file a reduction in service area [only] if . . . that licensee’s actual coverage area drops below 50 percent of its coverage area . . . for more than 12 months.”¹⁶⁵

78. Consistent with our approach regarding permanent discontinuance rules in recent proceedings involving other flexible commercial wireless services, notably certain AWS bands¹⁶⁶ and the

¹⁶¹ While our rules do not define “power spectral density,” a simple description is the amount of effective radiated power that would be allowed per unit of bandwidth from a Cellular base station antenna (*e.g.*, 100 watts/MHz), such that wider bandwidth emissions would be permitted more power commensurate with their bandwidth.

¹⁶² The term “effective radiated power” is not defined in the Cellular Service rules, but a generic definition is in our Part 2 rules: “[t]he product of the power supplied to the antenna and its gain relative to a half-wave dipole in a given direction.” 47 C.F.R. § 2.1.

¹⁶³ *Id.* § 1.955(a)(3).

¹⁶⁴ *Id.* § 22.317. Pursuant to Section 22.317, if an individual Cellular Service site is permanently discontinued, the licensee is required to file the appropriate form in ULS to authorize cancellation of the license with respect to that site.

¹⁶⁵ November 2013 Consensus Letter at 1; March 2014 Consensus Letter at 2. These Letters do not specify whether a new subpart should be added to Section 22.317 or whether an entirely new rule should be added to the Cellular rules in Subpart H of Part 22.

¹⁶⁶ See Amendment of the Commission’s Rules With Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands, *Report and Order*, GN Docket No. 13-185, 29 FCC Rcd 4610, 4670-

600 MHz band,¹⁶⁷ we propose a new service-specific rule, Section 22.947,¹⁶⁸ defining permanent discontinuance for Cellular licensees as 180 consecutive days during which the licensee does not operate or, in the case of a Cellular commercial mobile radio service (“CMRS”) provider, does not provide service to at least one subscriber that is not affiliated with, controlled by, or related to the providing carrier.¹⁶⁹ We also propose to revise Section 22.317 to make it clear that it would no longer apply to the Cellular Service.¹⁷⁰ As in the AWS-4, H Block, AWS-3, and 600 MHz proceedings noted above, our proposed new definition recognizes that, while most Cellular licensees use their systems to provide CMRS offerings, flexibility is needed where Cellular licensees use their systems for private, internal communications because such licensees generally do not provide service to unaffiliated subscribers. We seek comment on all aspects of this proposal.

79. We also propose, in light of the rules we are adopting today to transition the Cellular Service to a geographic-based licensing model, that the new service discontinuance rule be applied to the entire geographic license area, *i.e.*, the CGSA, rather than individual cell sites. Affording Cellular licensees a discontinuance of service period longer than 90 (or 120) days, and applying it on a geographic license area basis, “might better enable licensees to implement technology upgrades involving reconfiguration and possible relocation of cell sites and other network elements.”¹⁷¹ Following the effective date of the new discontinuance rule adopted in this proceeding, a Cellular system not in operation or not providing service within the CGSA to at least one unaffiliated subscriber for the defined permanent discontinuance period – 180 consecutive days under our proposal – would terminate automatically.

80. If an Unserved Area application is filed by a new entrant and granted for a new Cellular system (versus an incumbent’s CGSA expansion) in compliance with the rules we are adopting today, we propose that the new Cellular system licensee would not be subject to the proposed 180-day permanent discontinuance rule until the expiration of the one-year construction period for that system (including

(Continued from previous page) _____

71 (2014) (“AWS-3 Report and Order”) (permanent discontinuance rule for “AWS-3” frequency bands); Service Rules for Advanced Wireless Services H Block – Implementing Section 6401 of the Middle Class Tax Relief and Job Creation Act of 2012 Related to the 1915-1920 MHz and 1995-2000 MHz Bands, *Report and Order*, WT Docket No. 12-357, 28 FCC Rcd 9483, 9570-71 (2013) (“H Block Order”) (permanent discontinuance rule for AWS in “H Block”); Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands, *Report and Order and Order of Proposed Modification*, WT Docket Nos. 04-356 and ET Docket No. 10-142, 27 FCC Rcd 16102, 16203 (2012) (“AWS-4 Report and Order”) (permanent discontinuance rule for “AWS-4” frequency bands).

¹⁶⁷ See BIA Report and Order, 29 FCC Rcd at 6887-89.

¹⁶⁸ See Appendix B (Proposed Rules), § 22.947.

¹⁶⁹ This flexible approach adopted in the AWS-3, H Block, AWS-4 and 600 MHz proceedings was initially discussed in the Commission’s proceeding for certain other wireless radio services. See Amendment of Parts 1, 22, 24, 27, 74, 80, 90, 95, and 101 to Establish Uniform License Renewal, Discontinuance of Operation, and Geographic Partitioning and Spectrum Disaggregation Rules and Policies for Certain Wireless Radio Services, *Notice of Proposed Rulemaking and Order*, WT Docket No. 10-112, 25 FCC Rcd 6996, 7017-19 (2010) (“2010 WRS NPRM & Order”) (proposing to harmonize its rules governing discontinuance of service (as well as renewal and certain other issues) for 40 wireless radio services regulated under Parts 22 (which includes the Cellular Service), 24, 27, 74, 80, 90, 95, and 101). Notwithstanding any action the Commission takes regarding eventual adoption of rules proposed in this *Further Notice*, Cellular Service licensees remain subject to any future Commission action affecting wireless radio services in the pending WRS proceeding.

¹⁷⁰ See Appendix B (Proposed Rules), § 22.317.

¹⁷¹ WRS NPRM & Order, 25 FCC Rcd at 7018.

extensions, if any), so as not to penalize new entrants that choose to operate and provide service early in their construction periods.¹⁷²

81. In addition, consistent with Section 1.955(a)(3), we propose that, if a Cellular licensee permanently discontinues service, the licensee must notify the Commission of the discontinuance within 10 days by filing FCC Form 601 so that the Commission can update ULS to reflect the cancellation for the entire geographic area (*i.e.*, the licensed CGSA). We emphasize that, as under current rules, the Cellular license would automatically terminate without specific Commission action if service is permanently discontinued even if the licensee fails to file the required FCC Form.

82. We tentatively conclude that the approach described above increases licensee flexibility and serves the public interest. We seek comment on all aspects of our proposal, including the associated costs and benefits. We also seek comment on the alternative advocated by the Coalition, including the costs and benefits of that approach, and we invite comment on any additional alternatives not discussed here. For example, with a more flexible discontinuance rule applied on the basis of the entire CGSA, would the resulting lack of data that would otherwise be collected and available to the public through ULS and other databases (*i.e.*, data that is currently available regarding notifications for individual cell sites that have ceased operation) constitute a detrimental cost, given that we are preserving site-based access to Unserved Area, as explained in the *Report and Order*? If so, to what extent? Would the cost be outweighed by the benefits associated with the greatly enhanced flexibility and reduction in regulatory burdens and paperwork under our proposal? Commenters that oppose our proposal and advocate the Coalition's approach or an alternative should also address the expected costs and benefits of their approach and how their preferred approach would better serve the public interest.

B. Frequency Coordinators

1. Introduction and Background

83. In conjunction with today's substantial reform of the Cellular licensing rules explained in the *Report and Order*, we propose to require that frequency coordinators perform the first-line review of Cellular applications, including exhibits and attachments such as the electronic map files, for CGSA expansions and new Cellular systems, and to advise the Bureau on whether these applications are compliant with our rules applicable to the Cellular Service. It has been our experience that many Cellular applications contain inaccuracies, even when resubmitted after return by Bureau staff for correction.¹⁷³ Application errors delay service to Unserved Area and also needlessly consume Commission resources. We tentatively conclude that frequency coordination will result in the Commission authorizing Cellular Service to the public in a more efficient, effective manner, and in the best interest of consumers. We also tentatively conclude that, by having frequency coordinators review certain major applications under the new Cellular licensing paradigm, we will further advance our goal of better focusing limited Commission staff resources.

84. The Commission has long utilized frequency coordinators and has tailored their duties to the service(s) in which the coordinators operate. Frequency coordination in other wireless services generally involves third parties who advise the Commission on whether potential or actual licensees' proposed operations comply with the applicable technical rules of a particular service, while also working

¹⁷² This approach is also consistent with the AWS-4, H Block, AWS-3, and 600 MHz proceedings, where the permanent discontinuance rule was not applied to licensees until at least after the interim construction deadline, which is not present in the Cellular Service, *see* 47 C.F.R. § 22.946, with the exception of the Chambers license under the rules we adopt today in the companion *Report and Order*. We would apply a geographic-based permanent discontinuance rule to the Chambers licensee immediately after the interim construction deadline, set forth in 47 C.F.R. § 22.961 (as adopted in today's *Report and Order*, *see* Appendix A (Final Rules), § 22.961).

¹⁷³ Common mistakes in applications include incorrect CGSA boundaries or SAB contours.

to minimize interference to licensees operating in a given frequency block, band, or geographic area.¹⁷⁴ These third party frequency coordinators have a variety of tools at their disposal to accomplish these goals. For example, a frequency coordinator may identify and recommend to the Commission the radio frequencies appropriate for the specific needs of each applicant, service, and the environmental conditions of the proposed station operations.¹⁷⁵ In addition to recommending frequencies, a frequency coordinator also reviews applications for compliance with rules applicable to the service and, depending on the service, may recommend restrictions that it believes should appear on licenses and comment on other technical issues in applications.¹⁷⁶ In services with multiple frequency coordinators, the Commission often requires a frequency coordinator to notify and transmit certain information to other coordinators certified to coordinate in the affected frequency(ies).¹⁷⁷

85. A prominent example of frequency coordination is in the Part 90 Private Land Mobile Radio (“PLMR”) Service, including the 806-824/851-869 MHz and 896-901/935-940 MHz bands that are adjacent to the Cellular band. The Commission has recognized the value of PLMR frequency advisory committees since the 1950s, and by the late 1980s, the Commission had mandated the use of private frequency coordinators for most PLMR frequencies.¹⁷⁸ Frequency coordination also is used in a variety of other wireless services, such as certain Part 80 maritime and Part 87 aviation frequencies, in which frequency coordinators must consider interference to all other similar frequencies within a specific geographic range.¹⁷⁹ More recently, the Commission decided to require the use of frequency coordinators for licensees operating in the Part 95 WMTS and Medical Device Radiocommunication Service (“MedRadio”).¹⁸⁰ The WMTS and MedRadio coordinators – as opposed to the Commission – are responsible for maintaining a database of WMTS use and Medical Body Area Network (“MBAN”) transmitter locations and operational parameters, respectively.¹⁸¹ The benefits of frequency coordination

¹⁷⁴ See Review of Quiet Zones Application Procedures, *Report and Order*, WT Docket No. 01-319, 19 FCC Rcd 3267, 3280 n.89 (2004) (“Quiet Zones Order”). We have also required the temporary use of a designated frequency coordinator to prevent interference when certain major events take place. See, e.g., “Auxiliary Broadcast Frequency Coordinator Designated for the Republican National Convention in Tampa, Florida, the Democratic National Convention in Charlotte, North Carolina, and the Presidential Inauguration in Washington, D.C.,” *Public Notice*, 27 FCC Rcd 7304 (WTB MB 2012) (temporarily designating a single frequency coordinator to help coordinate short-term Broadcast Auxiliary Service operations during key events of the 2012 election period). See also 47 C.F.R. § 74.24(g)(2).

¹⁷⁵ See Quiet Zones Order, 19 FCC Rcd at 3280 n.89. See also, e.g., 47 C.F.R. §§ 80.513, 87.307, and 90.176.

¹⁷⁶ See, e.g., 47 C.F.R. §§ 80.513(c)(1), 87.307(a)(1).

¹⁷⁷ See, e.g., 47 C.F.R. § 90.176. To prevent or mitigate interference to licensees, a frequency coordinator may have to notify frequency coordinators or licensees in a different service. For example, a PLMR frequency coordinator making a frequency recommendation in the 1427-1432 MHz band must notify and share information with the Wireless Medical Telemetry Service (“WMTS”) frequency coordinator designated in 47 C.F.R. § 95.113. See 47 C.F.R. § 90.176(d).

¹⁷⁸ See, e.g., Frequency Coordination in the Private Land Mobile Radio Services, PR Docket No. 83-737, 103 F.C.C.2d. 1093, 1095-97 (1986) (“Frequency Coordination PLMR R&O”). See also 47 C.F.R. § 90.175.

¹⁷⁹ See, e.g., 47 C.F.R. §§ 80.513 (50 miles), 87.305 (200 miles).

¹⁸⁰ See *id.* §§ 95.1111, 95.1113 (WMTS); §§ 95.1223, 95.1225 (MedRadio).

¹⁸¹ See *id.* §§ 95.1113(b)(2), 95.1225(b)(1). We have adopted coordination requirements and coordinator functions in MedRadio, but coordinators have not yet been selected. See generally Amendment of the Commission’s Rules to Provide Spectrum for the Operation of Medical Body Area Networks, *Order on Reconsideration and Second Report and Order*, ET Docket No. 08-59, FCC 14-124, 2014 WL 4160175 (FCC Aug. 21, 2014).

include ensuring the quality of frequency selections, expediting licensing, and improving spectrum efficiency for users.¹⁸²

86. In its November 2013 Consensus Letter, the Coalition suggests that, if the Commission opts to use frequency coordination for the Cellular Service, it should give the designated coordinators full authority to approve applications. This would include, the Coalition asserts, authorization of proposed CGSA-expansions, and that such authorizations “would become effective 30 days after the frequency coordinator notifies” the Commission.¹⁸³

87. By this *Further Notice*, we seek comment generally on the use of Cellular frequency coordinators, and specifically on the details of our proposal outlined below. In light of a federal court’s decision in *USTA v. FCC*, we do not seek comment on the Coalition’s suggestion to delegate authority to coordinators to grant applications.¹⁸⁴ We especially urge all parties that preliminarily determine they would be interested in being frequency coordinators to indicate such interest during the comment or reply comment period.¹⁸⁵ Commenters should be specific and detailed; they should also address the potential costs and benefits of our proposal. In addition, they should review the proposed new rule and comment on its wording.¹⁸⁶ To the extent commenters offer alternative ideas not considered throughout this Section III.B., they should explain how such alternatives would better serve the public interest and achieve our goals, consistent with Commission precedent and current spectrum management policies.

2. Coordinator Duties

88. In today’s companion *Report and Order*, we eliminated the need for many different types of Cellular applications that have been required for decades. Of the applications that will continue to be filed, we propose to require the use of Cellular frequency coordinators to review the following: (1) major modification applications claiming at least 50 contiguous square miles of Unserved Area as CGSA; and (2) applications seeking authorization for new Cellular systems. Under our proposal, all other applications, including construction notifications and renewal applications, for example, would continue to be filed directly with the Commission.¹⁸⁷ We further propose, however, that to the extent such other filings are submitted with a CGSA-expansion or new-system application, those other filings would also need to be filed with a Cellular frequency coordinator for review. For example, an application that modifies and/or adds a location requiring an Environmental Assessment, which normally (under our

¹⁸² See Amendment of Part 90 of the Commission’s Rules, *Second Report and Order and Second Further Notice of Proposed Rule Making*, WT Docket No. 07-100, 25 FCC Rcd 2479, 2482 (2010).

¹⁸³ November 2013 Consensus Letter at 2 (explaining also that, under this approach, applicants would pay the coordinator fees but would not be charged “associated fees” by the Commission).

¹⁸⁴ Absent affirmative evidence of congressional intent, the Commission does not have authority to subdelegate its substantive authority to parties outside the Commission. *USTA v. FCC*, 359 F.3d 554, 565-66 (D.C. Cir. 2004).

¹⁸⁵ Preliminary indications of interest in being a frequency coordinator for the Cellular Service would not be binding on the party submitting such comments. We do not, however, invite preliminary expressions of interest that are not based on conscientious evaluation of all aspects of our proposal and the changes the *Report and Order* makes to the Cellular Service licensing process. In 2013, the total number of CGSA-expansion (major modification) applications was 565 (908 if amendments are included). We expect the volume to be significantly less once the new rule takes effect establishing the minimum coverage requirement of 50 contiguous square miles for CGSA expansions.

¹⁸⁶ See Appendix B (Proposed Rules), § 22.985.

¹⁸⁷ Other examples of Cellular filings that would generally, under our proposal, be submitted directly to the Commission include: an application resolving a CGSA overlap issue, which requires the submission of a map; an application to partition a CGSA or disaggregate spectrum, or a combination of both (these also require maps); administrative updates; a proposal to modify or add a location that requires an Environmental Assessment under applicable Commission rules; notification of consummation of a transaction; notification of permanent service discontinuance; and a request for Special Temporary Authority. This is not an exhaustive list and parties would be advised to consult with Bureau staff.

proposal) would come directly to the Commission, would have to be submitted to a frequency coordinator if such application is filed along with a CGSA-expansion or new-system application. Using frequency coordinators in this manner could greatly assist in developing and managing the Cellular spectrum.

89. We propose that Cellular frequency coordinators be private organizations certified by the Commission to review certain categories of applications (as outlined above), including any exhibits, FCC Form Schedules, and electronic maps required with those applications, to ensure compliance with all rules applicable to the Cellular Service. Cellular coordinators would review only applicable technical information for compliance with the rules; they would not, for example, review an applicant's financial or ownership information that may accompany or be linked in an application. Frequency coordinators would work with the applicants to resolve any inaccuracies involving technical information, including the SAB and CGSA calculations, and ensure compliance with all applicable rules. When, in the coordinator's assessment, the application satisfies these requirements, the coordinator would submit the application on behalf of the applicant to the Commission. Consistent with rules governing frequency coordination in other wireless services, we propose that the frequency coordinators' recommendations be purely advisory, not binding on either the applicant or the Commission.¹⁸⁸ However, we propose that, in the event of a dispute between an applicant and a frequency coordinator, an applicant would be able to direct the coordinator to submit the application at issue to the Commission without the coordinator's recommendation. In that event, the application would need to explain that the applicant sought frequency coordination but the coordinator did not recommend the proposed operations.¹⁸⁹ We propose that the applicant have the burden of proceeding and the burden of proof in requesting the Commission to grant its application notwithstanding a coordinator's unfavorable recommendation.¹⁹⁰ Final action on all applications filed by a frequency coordinator on behalf of an applicant – whether or not accompanied by evidence of successful frequency coordination – would be taken by the Commission.

90. Part 90 PLMR frequency coordinators are required to file applications electronically using the ULS electronic batch format. We seek comment on whether Cellular frequency coordinators should be subject to the same requirement. We also seek comment on what preparations the Commission would have to make before implementing a frequency coordination regime, such as modifying ULS to accommodate frequency coordinator information and receive electronic batch filing of the applications, including any maps submitted electronically, and educating the frequency coordinators.

91. We seek comment also on whether Cellular frequency coordinators should have additional duties, and if so, what additional duties, and why.¹⁹¹ Are there other types of applications that should be submitted to a frequency coordinator for review before being submitted to the Commission? We invite commenters to address all these issues surrounding the appropriate duties of frequency coordinators for the Cellular Service. Commenters should indicate how their positions serve the public interest, including a cost-benefit analysis.

3. Commission's Continued Role

92. If it appears that a Cellular frequency coordinator's performance is inconsistent with the public interest obligations that would be imposed on it through this proceeding, an inquiry would be initiated that could lead to its decertification, as with other wireless services for which frequency

¹⁸⁸ See, e.g., 47 C.F.R. §§ 87.305(a)(2), 90.175(h).

¹⁸⁹ See, e.g., Frequency Coordination PLMR R&O, 103 F.C.C.2d at 1147-48.

¹⁹⁰ See, e.g., 47 C.F.R. § 90.175(a) (having the same requirement in PLMR services); see also *infra* Section III.B.3. discussing the Commission's continued role to act on these applications.

¹⁹¹ See also *infra* Section III.B.4. (discussing notification among multiple coordinators).

coordinators are used.¹⁹² We would also continue to maintain the Cellular license data, including the online CGSA map files. Given our proposal that frequency coordinator recommendations be advisory and not binding upon either the applicant or the Commission, we envision that Cellular applications would continue to go on public notice once received by the Commission and that we would resolve competing applications and petitions to deny, if any.

93. Many Part 90 PLMR applicants that undergo frequency coordination receive conditional authority; that is, they are permitted to commence their proposed operations once the application has been favorably reviewed and submitted by a frequency coordinator and is pending before the Commission.¹⁹³ In that situation, a minimum wait time of ten days is imposed between submission of the application and the onset of operation, during which the Commission can evaluate the proposed operations, including the frequency coordinator's recommendation, and take adverse action if necessary.¹⁹⁴ Moreover, the Commission has discretion to modify or cancel conditional authority at any time without a hearing.¹⁹⁵ We seek comment on whether Cellular applicants should receive similar conditional operating authority while their applications are pending before the Commission. We tentatively conclude that making conditional authorization available following the frequency coordinator's recommendation – if the Commission does not find a problem with the recommendation – would provide flexibility to Cellular applicants and benefit consumers by permitting more rapid deployment of proposed service. We also ask commenters specifically to address whether sound administrative principles support permitting conditional operation before the 30-day public comment period ends, and whether it should continue even if a competing application or petition to deny is filed.

94. In addition, we propose to oversee the Cellular frequency coordinators and their processes on an ongoing basis, and to work to resolve disputes that cannot be resolved between an applicant and frequency coordinator. We seek comment on the circumstances under which the Commission should become involved in such a dispute, and the timing. Should we specify a reasonable timeframe, *e.g.*, 60 days following the frequency coordinator's recommendation to the applicant, during which the applicant and the frequency coordinator are to endeavor in good faith to resolve the matter before appealing to the Commission? Once the dispute is brought before the Commission, what procedures are appropriate for Commission staff to resolve the dispute? We seek comment on all aspects of the continued role for the Commission.

4. Number of Coordinators and Fees

95. In 1997, the Commission generally permitted certain frequency coordinators in the PLMR Industrial/Business Pool band below 512 MHz to coordinate any frequency in the pool, thus ending exclusive frequency coordination and allowing competition among coordinators on certain

¹⁹² See, *e.g.*, Frequency Coordination PLMR R&O, 103 F.C.C.2d at 1155-1156; see also 47 C.F.R. § 0.131(m) (stating that the Bureau “certifies frequency coordinators; considers petitions seeking review of coordinator actions; and engages in oversight of coordinator actions and practices.”).

¹⁹³ See 47 C.F.R. § 90.159(b) (providing for conditional authority for PLMR applicants below 470 MHz); see also Enterprise Wireless Alliance, *Order*, 28 FCC Rcd 13910 (WTB MD 2013) (providing conditional authority for PLMR applicants above 470 MHz by waiver). The Commission also allows many applicants for new or modified point-to-point microwave radio stations in Part 101 of our rules to operate under conditional authority provided that the submitted applications satisfy certain requirements, including showing evidence of frequency coordination. See 47 C.F.R. § 101.31(b); Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, *Report and Order*, WT Docket No. 94-148, 11 FCC Rcd 13449, 13463 ¶ 30 (1996).

¹⁹⁴ See 47 C.F.R. § 90.159(b)(6).

¹⁹⁵ See *id.* § 90.159(d).

frequencies.¹⁹⁶ The Bureau subsequently introduced competitive coordination to other Part 90 PLMR bands.¹⁹⁷ The introduction of competition among coordinators was intended to promote lower coordination costs for applicants and foster better service to the public,¹⁹⁸ and we believe it has accomplished this purpose. Consequently, we propose to authorize multiple frequency coordinators for the Cellular Service.

96. If there are multiple Cellular frequency coordinators, we propose that they have notification requirements similar to those for Part 90 PLMR frequency coordinators.¹⁹⁹ In particular, a Cellular frequency coordinator would be required to notify other Cellular frequency coordinators within one business day of making a coordination recommendation and on any day when it does not make a recommendation. At a minimum, the notification would include the following information: name of the applicant; type of application at issue; license (call sign) of the applicant (if applicable); CMA description and channel block of the existing license (if applicable); CMA designator(s) and channel block pertaining to where the applicant is expanding its CGSA or starting a new system; new or modified transmitter location(s) along with coordinates and the antenna height; effective radiated power, antenna center of radiation height above average terrain, height above sea level or height above mean sea level, and distance to the SAB and to the CGSA for the eight radials of each new/modified location; and date and time of the recommendation. Upon request, the notifying frequency coordinator would provide any additional information requested by another certified coordinator regarding a Cellular application already reviewed by the notifying coordinator but still pending before the Commission.

97. Under our proposal, it would be the responsibility of each Cellular frequency coordinator to ensure that its recommendations do not conflict with the recommendations of any other Cellular frequency coordinator. Should a conflict arise, the affected coordinators would be jointly responsible for taking action to resolve the conflict, up to and including notifying the Commission that an application may have to be returned. We seek comment on the proposed notification process, including what information should be provided to coordinators with each notification, and the timing of notifications. How else should frequency coordinators interact with each other in the recommendation process?

98. We also invite commenters, including parties that at least preliminarily have an interest in being a frequency coordinator candidate, to address whether the market for Cellular frequency coordination is likely to support multiple entities, as well as whether they perceive any problems in allowing more than one frequency coordinator for the Cellular Service. If problems are conceivable, how might they be resolved? What, if any, changes to the rules and procedures would be warranted if there is only one frequency coordinator?

99. *Fees.* Because we propose to have multiple coordinators, we propose that market forces determine the Cellular frequency coordinators' fees, rather than have the Commission regulate fees. Given that the Commission would continue to process and act on the reviewed applications, as proposed above, applicants would continue to pay Commission application fees.²⁰⁰ We seek comment on all aspects of these fee proposals. Should we adopt a pricing scheme for the frequency coordinators? If so, what specific scheme should we adopt, and why? How would such an approach better serve the public

¹⁹⁶ See Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignments Policies of the Private Land Mobile Services, *Second Report and Order*, PR Docket No. 92-235, 12 FCC Rcd 14307, 14310 (1997) ("Refarming Second Report and Order").

¹⁹⁷ See United Telecom Council, *Order*, 16 FCC Rcd 8436, 8443 (WTB PSPWD 2001).

¹⁹⁸ Refarming Second Report and Order, 12 FCC Rcd at 14328.

¹⁹⁹ See 47 C.F.R. § 90.176.

²⁰⁰ See 47 U.S.C. § 158. Applicants will also continue to pay regulatory fees. 47 U.S.C. § 159.

interest? What are the costs and benefits of a particular scheme? If there is only one frequency coordinator, should the Commission regulate the coordinator fees? If so, how?

100. We seek comment on our proposal to certify more than one frequency coordinator for the Cellular Service and to allow market forces to work for the coordinators' processing fees. Commenters should include an analysis of the costs and benefits of our proposal and of any counter-proposals they offer.

5. Coordinator Certification Criteria and Selection Process

101. We propose that, at a minimum, Cellular frequency coordinators must have the following qualifications: knowledge of the Cellular Unserved Area licensing process (as revised by today's *Report and Order*); ability to register and maintain application information and transmit such information to ULS; technical capability to review applicants' proposed licensing areas for compliance with all rules and procedures applicable to the Cellular Service; and both ability and willingness to develop procedures to work with Cellular applicants, which includes offering coordination services on a non-discriminatory basis and responding to applicant requests or concerns on a timely basis. We also expect that the frequency coordinators would not have a conflict of interest when reviewing applications (or can show that any pre-existing conflict of interest has been resolved). Although we do not propose at this time to require that the coordinators be national in scope and representative of all eligible Cellular licensees, we express strong preference for those characteristics.

102. Permitting current Cellular applicants or licensees to serve as frequency coordinators – either for themselves or for other applicants – could run counter to the public interest and undermine the goals of our proposal. As discussed above, a key goal is to have frequency coordinators resolve the high volume of inaccuracies in Cellular applications so that new service is not delayed, and also so that Commission staff resources are no longer needed for repeated review and return of such filings. We expect that frequency coordinators specifically dedicated to this task would ensure that applications are accurate and compliant with our requirements prior to submitting them to the Commission. Furthermore, having a current Cellular applicant or licensee as a frequency coordinator would increase the likelihood of a conflict of interest – a problem we wish to avoid, as it could delay the processing of Cellular applications contrary to our goal to expedite new service. Therefore, we propose to make Cellular licensees ineligible to be certified as Cellular frequency coordinators.

103. We seek comment on our proposal to not certify Cellular frequency coordinators that are current or prospective Cellular Service licensees. Are there situations in which Cellular licensees/applicants should be allowed to serve as frequency coordinators? If so, what are they? What limits, if any, should the Commission impose if it decides to allow such entities to serve as frequency coordinators? We also seek comment on whether a current Cellular applicant or licensee's agent (*e.g.*, a law firm or a consulting engineering firm), and affiliates of Cellular licensees and applicants, should also be prohibited from serving as a frequency coordinator. If not, how would potential conflicts of interest be resolved? Also, if we decide not to certify affiliates of Cellular licensees and applicants as frequency coordinators, we invite comment on how to define "affiliate" in this context. In particular, we invite comment on whether the definition of affiliate used for purposes of determining whether an auction participant is a "designated entity" could also be used in this context.²⁰¹

104. Under Section 0.131(m) of the Commission's rules, the Bureau has delegated authority to certify frequency coordinators for the services that it administers, including the Cellular Service.²⁰² We propose that, pursuant to this delegated authority, the Bureau would select the Cellular frequency coordinators using the same procedures that were adopted for WMTS and MBANs. Accordingly, in the event that we ultimately adopt rules establishing the use of frequency coordinators for the Cellular

²⁰¹ See 47 C.F.R. § 1.2110(b)(2).

²⁰² *Id.* § 0.131(m).

Service, we would direct the Bureau to issue a Public Notice announcing procedures for interested parties to submit requests to become coordinators. Thereafter, under our proposal, the Bureau would be directed to issue an Order to designate the coordinators and execute a Memorandum of Understanding (“MOU”) with those selected. The MOU would set forth the coordinators’ authority and responsibilities. The frequency coordinators would assume their duties upon execution of the MOU. We seek comment on whether this process, which worked well for selecting the WMTS coordinator, would permit the Commission to complete the coordinator selection process in a timely and efficient manner. We seek comment on all aspects of the frequency coordination certification and selection criteria, including whether there should be additional qualifications for frequency coordinators that we have not considered.

C. Radiated Power Limit Rules for the Cellular Service

1. Introduction

105. The Commission raised the Cellular base station ERP limit from 100 watts (“W”) ERP to the current 500 W ERP in 1988 to facilitate economical coverage in rural areas and to account for technological developments.²⁰³ At the time, industry groups and the Commission were just beginning to explore the possibilities of digital technologies for the Cellular Service. The current power level was able to accommodate two decades of technological advances for mobile communications, but it now may be overly restrictive for modern broadband digital communication technologies. Accordingly, as explained further below, we propose to supplement our existing ERP limits for the Cellular Service with alternative limits based on PSD. This approach would be consistent with other broadband mobile services (*e.g.*, PCS, AWS, 600 MHz and 700 MHz Services) and would update Cellular rules that currently favor narrowband emission systems and penalize wideband emission systems.²⁰⁴ Below, we also make proposals and seek comment on related topics that could be affected by the introduction of PSD limits and topics proposed by commenting parties. We take this action with a goal of implementing technology neutral rules that allow licensees to choose technologies based upon their deployment plans without being hindered by an unnecessarily restrictive rule. We also strive for regulatory parity among competing services with consideration of unique circumstances for the band at issue that may require special requirements to prevent interference.

2. Background

106. In the Petition for Rulemaking filed by AT&T Services, Inc. on behalf of AT&T, Inc. and its subsidiaries (“AT&T”),²⁰⁵ AT&T seeks specifically to modify Section 22.913 of the Commission’s rules²⁰⁶ for Cellular base station ERP so as to permit ERP measurement in terms of PSD, with limits of 250 W/MHz in non-rural areas and 500 W/MHz in rural areas.²⁰⁷ According to AT&T, change is necessary to afford more efficient spectrum utilization for next-generation wideband wireless broadband networks, using technologies such as LTE.²⁰⁸

²⁰³ See Amendment of Parts 2 and 22 of the Commission’s Rules to Permit Liberalization of Technology and Auxiliary Service Offerings in the Domestic Public Cellular Radio Telecommunications Service, *Report and Order*, GEN. Docket No. 87–390, 3 FCC Rcd 7033 (1988).

²⁰⁴ Examples of narrowband systems include those using Time Division Multiple Access (“TDMA”) and the Global System for Mobile Communication (“GSM”). Examples of wideband systems include those using Code Division Multiple Access (“CDMA”), Wideband-CDMA (“WCDMA”), and Orthogonal Frequency-Division Multiplexing (“OFDM”).

²⁰⁵ AT&T Services, Inc., Petition for Expedited Rulemaking and Request for Waiver of Section 22.913 of the Commission’s Rules (filed Feb. 29, 2012) (re-posted in RM No. 11660 on May 20, 2013) (“Petition”).

²⁰⁶ 47 C.F.R. § 22.913.

²⁰⁷ See Petition at 3.

²⁰⁸ See *id.* at 4, 9-12.

107. The Bureau released a Public Notice seeking comment on AT&T's Petition.²⁰⁹ In response, seven parties filed comments and three parties filed reply comments.²¹⁰ The commenters generally support including a PSD model as an option for ERP measurement, although some have expressed concerns or have proposed modifications to AT&T's PSD proposal, as discussed below. Notably, no public safety agencies submitted comments or reply comments in response to the Public Notice.²¹¹ AT&T also filed a request for interim waiver of Section 22.913 to use a PSD model for certain Cellular stations in Florida,²¹² and subsequently filed a request for interim waiver to use the PSD model for certain Cellular operations in Vermont.²¹³ The Bureau sought comment on them,²¹⁴ and in the docket concerning the Florida PSD Waiver Request, several Florida public safety and critical infrastructure entities submitted comments; no public safety entities commented regarding the Vermont PSD Waiver Request.²¹⁵

108. In 2007 and 2008, the Commission revised the radiated power rules for several other wireless services, including PCS and certain AWS,²¹⁶ the 700 MHz Commercial Service,²¹⁷ and 700 MHz public safety broadband operations,²¹⁸ implementing a PSD model (among other related technical rule

²⁰⁹ "Wireless Telecommunications Bureau Seeks Comment on Petition for Rulemaking Filed by AT&T to Make 800 MHz Cellular Base Station Power Rules Consistent with Rules for Other Mobile Broadband Services," *Public Notice*, RM-11660, 27 FCC Rcd 4926 (WTB 2012).

²¹⁰ See Appendix E for a list of parties that submitted comments, reply comments, and *ex parte* letters in this proceeding (RM 11660).

²¹¹ A consulting firm focused on public safety communications, Concepts to Operations, Inc. ("CTO"), submitted comments during the pleading cycle, which are discussed further below.

²¹² See AT&T Services, Inc., Request for Rule Waiver (filed July 22, 2013, under cover letter from William Roughton, Jr., Esq., General Attorney, AT&T Services, Inc., to Marlene H. Dortch, Secretary, FCC) ("Florida PSD Waiver Request"). Earlier, in the context of its rulemaking Petition, AT&T had requested a blanket interim waiver of 47 C.F.R. § 22.913. The Bureau did not seek comment on the blanket waiver request. AT&T later moved to withdraw the blanket request and filed the Florida PSD Waiver Request seeking a limited interim waiver to use the PSD model at six of its Cellular stations in three Florida CMAs.

²¹³ See AT&T Services, Inc., Request for Rule Waiver (filed July 1, 2014, under cover letter from William Roughton, Jr., Esq., General Attorney, AT&T Services, Inc., to Marlene H. Dortch, Secretary, FCC) ("Vermont PSD Waiver Request").

²¹⁴ See "Wireless Telecommunications Bureau Seeks Comment on AT&T Request for Waiver to Permit Power Spectral Density Model for 800 MHz Cellular Operations in Three Florida Markets," *Public Notice*, WT Docket No. 13-202, 28 FCC Rcd 12584 (WTB 2013); "Wireless Telecommunications Bureau Seeks Comment on AT&T Request for Waiver to Permit Power Spectral Density Model for 800 MHz Cellular Operations in Vermont Market," *Public Notice*, WT Docket No. 14-107, 29 FCC Rcd 8336 (WTB 2014).

²¹⁵ See *infra* Section III.C.3. (discussing key comments filed by public safety entities regarding the Florida PSD Waiver Request (in WT Docket No. 13-202), PSD testing conducted in Florida, and the Bureau's recent actions on the Florida and Vermont PSD Waiver Requests).

²¹⁶ See generally Biennial Regulatory Review – Amendment of Parts 1, 22, 24, 27 and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services, *Third Report and Order*, WT Docket No. 03-264, 23 FCC Rcd 5319 (2008) ("Streamlining 3d R&O").

²¹⁷ See generally Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, *Report and Order and Further Notice of Proposed Rulemaking*, WT Docket No. 06-150, 22 FCC Rcd 8064 (2007) (other captions and docket numbers omitted) ("April 700 MHz Order").

²¹⁸ See generally Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, WT Docket No. 06-150, *Second Report and Order*, 22 FCC Rcd 15289 (2007) (other captions and docket numbers omitted) ("August 700 MHz Order").

modifications).²¹⁹ The Commission declined at that time to revise the Cellular ERP rules, primarily because of significant restructuring (800 MHz rebanding) ongoing in the immediately adjacent frequencies, which are used by public safety entities.²²⁰ The Commission also noted a lack of industry support and the need for more time to assess the potential impact of using the PSD model in the Cellular band.²²¹ The rebanding of the 800 MHz band was needed to address the interference that had developed by the evolution of adjacent services that eventually became incompatible with one another. As a result, the Commission commenced a proceeding to realign the service allotments in the 800 MHz band.²²² Specifically, in the 800 MHz rebanding proceeding, the Commission adopted a short-term solution to respond to the ongoing interference problem by implementing technical standards defining unacceptable interference in the 800 MHz band, as well as procedures detailing parties' responsibility for, and steps to take in, abating interference.²²³ For the long-term, the Commission reconfigured the 800 MHz band to address the root cause of the interference by separating generally incompatible technologies and moving public safety entities away from the Cellular band and commercial Enhanced Specialized Mobile Radio ("ESMR") frequencies.

109. Ultimately, the rebanding process will move public safety and other narrowband land mobile operations away from the Cellular and high-density ESMR base station transmitting frequencies, thereby reducing the potential for interference between incompatible services. However, in some parts of the country, the rebanding process is not completed and public safety operations continue using frequencies adjacent to the lower edge of the Cellular base station transmitting band at 869 MHz. Further, even after rebanding is accomplished in a region, some public safety entities may continue to use legacy radios that could be susceptible to Cellular base station interference because the filtering of the radio does not reflect the post-rebanding channel plan for public safety operations. The rebanding proceeding outlined the circumstances where legacy devices would be entitled to interference resolution procedures and also created information exchange procedures so public safety licensees could be notified of new or modified ESMR and Cellular base station activities.²²⁴ In its Petition, AT&T asserts that the restructuring is nearly complete and asks the Commission to reassess the impact of revising Section 22.913 to allow the use of a PSD model.²²⁵

110. We agree with AT&T and other commenters on the record that it is now appropriate to revisit the Cellular radiated power rules, as efficient deployment of broadband technologies such as LTE may not be possible under the current Cellular rules. Based on the preliminary record, and consistent with the Commission's prior revisions to, or newly adopted power rules for, PCS, AWS, 600 MHz and 700 MHz Services, we propose to revise the Cellular power rules to permit measurement of base

²¹⁹ More recently, the Commission adopted the PSD model for the 600 MHz band, AWS-3, H Block and AWS-4. See BIA Report and Order, 29 FCC Rcd at 6865; AWS-3 R&O, 29 FCC Rcd at 4642-43; H Block R&O, 28 FCC Rcd at 9504-05; AWS-4 R&O, 27 FCC Rcd at 16156.

²²⁰ See Streamlining 3d R&O, 23 FCC Rcd at 5321, 5341. See also Improving Public Safety Communications in the 800 MHz Band, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order, and Order, WT Docket No. 02-55, 19 FCC Rcd 14969, 15074 (2004) (other captions and docket numbers omitted) ("800 MHz Rebanding Order"), clarified by Improving Public Safety Communications in the 800 MHz Band, Memorandum Opinion and Order, WT Docket No. 02-55, 22 FCC Rcd 9818, 9819-21 (2007).

²²¹ See Streamlining 3d R&O, 23 FCC Rcd at 5338.

²²² See Improving Public Safety Communications in the 800 MHz Band, Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels, Notice of Proposed Rulemaking, WT Docket No. 02-55, 17 FCC Rcd 4873 (2002).

²²³ 800 MHz Rebanding Order, 19 FCC Rcd at 14976. See also 47 C.F.R. §§ 22.970, 22.971, 22.972.

²²⁴ See 47 C.F.R. §§ 22.970, 22.971, 22.972, 22.973.

²²⁵ Petition at 8.

transmitter and Cellular repeater power using a PSD model.²²⁶ Our goal is to promote spectral efficiency and provide licensees with flexibility to select the technology that best suits their needs, whether narrowband or wideband, without being disadvantaged one way or the other. Adding a PSD measurement option will also advance the Commission's long-standing goal of harmonizing our rules across commercial wireless services to the extent practicable, taking into account the unique features of each service band. At the same time, we are mindful of the need to protect systems in the immediately adjacent bands, particularly public safety operations. We seek comment in the Sections below on various options to achieve our goals.

111. Below, we discuss the details of AT&T's proposal, commenters' views and counter-proposals, our proposals, and related considerations under the following specific topics: PSD; power flux density ("PFD"),²²⁷ technological neutrality for field strength limits; height-power limit; mobile transmitters and auxiliary test transmitters; and power measurement. We also address coordination requirements, including international coordination, and the SAB formula set forth in Section 22.911 of the Commission's rules.²²⁸ We seek comment on all issues raised in this *Further Notice*, including our proposals and those of the commenters as discussed herein. We also invite alternative ideas and proposals concerning the Cellular power rules and related provisions. We encourage public safety entities at the local, regional, and national levels to submit their comments on revising the rules to permit all Cellular licensees nationwide to use, at their option, a PSD model.

112. We ask that all commenters be specific, detailed, and include pertinent engineering data and technical analyses. To the extent commenters advocate an alternative or modification to our proposals, they should include an explanation of the public interest benefits of such alternative or modification. We also seek comment on the economic costs and benefits of the various possible approaches. All interested parties should also review and comment on the proposed rules in Appendix B that are related to this Section III.C. of the *Further Notice*, including definitions. Alternative wording should be provided with comments that advocate additions or modifications to our proposals.

3. PSD Proposal for Non-rural and Rural Areas

113. In considering a PSD model for the Cellular Service as an option for licensees deploying wideband technologies, we discuss in detail below and seek comment on the following three specific proposals to develop a better record for determining what the appropriate PSD limits should be:

- AT&T's proposal of 250 W/MHz ERP in non-rural areas, 500 W/MHz ERP in rural areas;
- Union Wireless's proposal of 500 W/MHz ERP in non-rural areas, 1000 W/MHz in rural areas; and

²²⁶ See 47 C.F.R. § 22.99 (defining a Cellular repeater as "a stationary transmitter or device that automatically re-radiates the transmissions of base transmitters at a particular cell site and mobile stations communicating with those base transmitters, with or without channel translation."). Notwithstanding that the terms "repeater" and "booster" are sometimes used interchangeably, Cellular repeaters are distinct from consumer and industrial signal boosters, which are authorized pursuant to 47 C.F.R. § 20.21. See, e.g., Amendment of Parts 22, 90, and 94 of the Commission's Rules to Permit Routine Use of Signal Boosters, *Report & Order*, WT Docket No. 95-70, 11 FCC Rcd 16621, 16622 (1996) (explaining that, under Part 22 of the Commission's rules, "a form of signal booster, generally called a cellular repeater, may be employed by cellular licensees without separate licensing provided that the repeater does not extend the licensee's signal beyond the authorized cellular service area" (citing to 47 C.F.R. § 22.165)).

²²⁷ For the purpose of this proceeding, PFD is the amount of radio frequency energy or power that would be present over a given unit of area (e.g., 100 microwatts per square meter). Therefore, PFD can be used to describe the strength of signals on the ground in a given location.

²²⁸ 47 C.F.R. § 22.911.

- Verizon Wireless's proposal of 1000 W/MHz ERP in non-rural areas, 2000 W/MHz in rural areas.

We also seek comment on alternatives not considered in this *Further Notice*. Each of the proposals listed above specifies power limits that would supplement the current Cellular ERP limits of 500 W in non-rural areas and 1000 W in rural areas. The distinction is that the current limits apply to each emission or channel, so that a licensee using narrow emissions can transmit more total power per MHz than a licensee using wideband emissions. For example, under the current rules, a Cellular licensee using a 5 MHz LTE emission in a non-rural area would be limited to 500 W in those 5 MHz (100 W/MHz), while a licensee in the same 5 MHz could deploy four CDMA channels with an aggregate power of 2000 W ERP (400 W/MHz), or 12 GSM channels with an aggregate power of 6000 W ERP (1200 W/MHz).²²⁹

114. In support of AT&T's proposal that the Commission establish Cellular PSD limits of 250 W/MHz in non-rural areas and 500 W/MHz in rural areas, the Petition includes a study that purports to show that shifting to PSD-based power limits would create an interference environment that is "not appreciably different from that of existing Cellular deployments" and which, according to AT&T, is even better in some cases.²³⁰ AT&T states that the study looked at five different technological cases, including GSM, Universal Mobile Telecommunications System ("UMTS"), and LTE systems in various configurations in the Cellular band. According to AT&T, the study shows that deployments of 2X2 Multiple Input Multiple Output ("MIMO") LTE – using the PSD model with the limits advocated by AT&T – "would maintain the *status quo* with respect to the potential interference impacts on adjacent services – and in particular, the Public Safety Services."²³¹

115. Broadpoint, LLC d/b/a Cellular One, Cincinnati Bell Wireless LLC, NE Colorado Cellular, Inc., Smith Bagley, Inc., and Union Telephone Company d/b/a Union Wireless ("Union Wireless") (collectively, the "GSM Licensees"), which own and operate GSM/EDGE Cellular networks – *i.e.*, technologies with relatively narrow bandwidths – in 14 states and the Gulf of Mexico, argue that imposing AT&T's proposed PSD limits on carriers using such technologies would result in reducing their existing coverage, with a dramatic increase in roaming costs for customers or loss of signal altogether.²³² One of the GSM Licensees, Union Wireless, adds that the revised rule should articulate measurement in terms of effective isotropically radiated power ("EIRP"), just as for PCS and AWS. Specifically, it argues that carriers operating with less than 1 MHz of bandwidth should be permitted up to 820 W EIRP in non-rural areas, 1640 W EIRP in rural areas (equivalent to the current 500 W ERP and 1000 W ERP limit, respectively), and that corresponding PSD limits for carriers operating with more than 1 MHz of bandwidth should be 820 W/MHz EIRP non-rural, 1640 W/MHz EIRP rural (equivalent to 500 W/MHz ERP and 1000 W/MHz ERP, respectively).²³³

²²⁹ This assumes that the licensee is deploying 4 CDMA channels in 5 MHz (4 X 500 W = 2000 W), or using every other GSM channel in 5 MHz for a total of 12 channels (12 X 500 W = 6000 W). While licensees using technology with narrower bandwidths may achieve higher aggregate power across the 5 MHz channel, they also have the ability to not use a channel close to the lower band edge to minimize energy into an adjacent band, whereas the licensee using a 5 MHz channel would not have such flexibility. On the other hand, a 5 MHz LTE carrier only occupies 4.5 MHz, and leaves 250 kHz unoccupied at the lower edge, roughly equivalent to choosing not to use the lowest GSM channel.

²³⁰ Petition at 13 and Appendix A attached thereto.

²³¹ Petition at 12 n.28 (explaining that a MIMO system entails multiple antennas and radiofrequency chains placed at both the transmitter and receiver to multiply throughput of a radio link).

²³² Joint Comments of the GSM Licensees, dated June 1, 2012 ("GSM Licensees Comments"), at 2. *See generally id.* (providing sample calculations and a table (at 5) to illustrate these alleged adverse effects).

²³³ GSM Licensees Comments at 8-9 (attributing these concerns specifically to Union Wireless). USCC supports the PSD model and also supports allowing narrow bandwidth systems to be able to continue using a non-PSD model.

(continued....)

116. In its comments filed May 31, 2012, Bluegrass Cellular, Inc. and Affiliates d/b/a Bluegrass Wireless (collectively, “Bluegrass”), which is a CDMA carrier, generally supports revising the rules to permit a PSD model, but contends that AT&T’s proposal would allow operations at higher power levels at AT&T base stations, causing stronger signals across the border into Bluegrass markets, thereby increasing the noise level in those markets.²³⁴ Because of this interference, Bluegrass argues, carriers like Bluegrass need a sufficient transition period to renegotiate SAB extension agreements to prevent harmful interference.²³⁵ CTO supports a rulemaking to ensure equity among commercial licensees in different bands, but also expresses concern about the fiscal impact of “constant changes” in licensing rules on the budgets of public safety entities.²³⁶

117. In its reply comments, AT&T emphasizes that it does not seek to substitute the PSD limits for existing ERP limits, but only to supplement the rule to permit carriers to use whichever model is better suited to their circumstances.²³⁷ AT&T also counters Bluegrass’s concern by arguing that, at the PSD limits AT&T advocates, based on existing transmit power levels at its sites, the power injected into Bluegrass’s receivers in adjacent areas or co-located sites remains the same.²³⁸

118. Verizon Wireless argues that PSD limits should be added to the rule at significantly higher levels, mirroring the limits set for the 700 MHz Services: 1000 W/MHz for non-rural areas, and 2000 W/MHz for rural areas, for stations transmitting on bandwidths greater than 1 MHz.²³⁹ For stations transmitting on bandwidths of 1 MHz or less, Verizon Wireless argues that the Commission should either retain the current ERP limits as an option, or adopt maximum power limits of 1000 W and 2000 W for non-rural and rural areas, respectively.²⁴⁰ According to Verizon Wireless, the limits proposed in the Petition will negatively impact both coverage and capacity, putting Cellular licensees that deploy broadband technologies at a significant disadvantage compared to carriers deploying such technologies in other service bands, especially in rural areas.²⁴¹ Asserting that AT&T chose limits to ensure against receiver overload interference to operations in adjacent bands, including public safety radios, Verizon Wireless argues there is an alternative way to ensure such protection while improving coverage and capacity through increased PSD limits – specifically, by also adopting a PFD limit (discussed further in the next Section below).²⁴²

(Continued from previous page)

See generally Comments of USCC, dated June 1, 2012, in RM 11660 (“USCC PSD Comments”), and Reply Comments of USCC, dated June 18, 2012, also in RM 11660 (“USCC PSD Reply Comments”).

²³⁴ Comments of Bluegrass, dated May 31, 2012 (“Bluegrass Comments”) at 3-4 and Declaration by Leila Rezanavaz, a telecommunications electrical engineer retained by Bluegrass for this proceeding (attached to the Bluegrass Comments as Exhibit A).

²³⁵ *See* Bluegrass Comments at 2-3.

²³⁶ Comments of CTO, dated May 25, 2012 (“CTO Comments”), at 2 (arguing that it is incumbent upon the Commission and legislative committees “to find a ‘comprehensive plan’ with funding for public safety communications” and a “clear path of consistency in communications” for small public safety entities to allow them to invest in the future and allow the major product suppliers to develop equipment for the long-term).

²³⁷ Reply Comments of AT&T, dated June 18, 2012, in RM 11660 (“AT&T PSD Reply Comments”) at 2-3.

²³⁸ AT&T PSD Reply Comments at 5.

²³⁹ Reply Comments of Verizon Wireless, dated June 18, 2012, in RM 11660 (“Verizon Wireless PSD Reply Comments”) at 4-5 (citing 47 C.F.R. §§ 27.50(b)(4)-(5), and explaining that the limits cited are for antenna heights not exceeding 305 meters). For base stations transmitting on bandwidths of 1 MHz or less, the limits are 1000 W (non-rural) and 2000 W (rural) for the entire emission bandwidth. *See* 47 C.F.R. §§ 27.50(b)(2)-(3).

²⁴⁰ *See* Verizon Wireless PSD Reply Comments at 8 (citing 47 C.F.R. §§ 27.50 (b)(2)-(3) (700 MHz)).

²⁴¹ *See, e.g.*, Verizon Wireless PSD Reply Comments at 5-6.

²⁴² *See, e.g., id.* at 6.

119. As noted above, several Florida public safety entities submitted *ex parte* letters regarding AT&T's Florida PSD Waiver Request.²⁴³ The State of Florida, for example, expressed concern specifically about the technical study submitted by AT&T, arguing that it infers a burden on public safety licensees to incorporate new radios or additional filtering.²⁴⁴ Miami-Dade County asserted that using a PSD model will result in a "significant increase in power from AT&T, causing harmful interference to . . . radio systems [that] have multiple police users . . ." from federal, state, county, city, and Tribal organizations, and urged testing.²⁴⁵ Palm Beach County expressed similar concerns and also urged testing "to either validate AT&T's position . . . or demonstrate that conditions . . . can be developed" to protect public safety communications systems.²⁴⁶ The City of West Palm Beach expressed numerous concerns, including alleged increased costs for public safety licensees if a PSD model is adopted, not only in terms of dollars for new radio purchases, but also in terms of extra weight and size of the radios used, reduced sensitivity, and potential operational burdens.²⁴⁷

120. AT&T then sought and was granted an experimental special temporary authorization to conduct testing using a PSD model in Florida.²⁴⁸ The State of Florida and Miami-Dade County supplemented their initial *ex parte* letters, acknowledging ongoing testing by AT&T in Block B under specified conditions.²⁴⁹ Taking into account the results of the testing, as documented in *ex parte* letters submitted by AT&T and Miami-Dade County,²⁵⁰ the Bureau recently granted the Florida PSD Waiver Request in part, conditioned on compliance with new rules that may be adopted in this rulemaking

²⁴³ See Appendix E for a list of parties that submitted comments, reply comments, and *ex parte* letters in WT Docket No. 13-202 regarding the Florida PSD Waiver Request. We do not discuss all such filings in this *Further Notice*; interested parties may review all filings in the docket through the Commission's Electronic Comments Filing System, available at <http://apps.fcc.gov/ecfs/>.

²⁴⁴ See "Input by the State of Florida to the AT&T Request for Waiver," in WT Docket No. 13-202 (submitted Dec. 5, 2013), at 2 (also specifying certain technical and operational conditions that should be imposed in the event the Commission grants the Florida PSD Waiver Request).

²⁴⁵ Letter from Cindy M. Cast, Radio Systems Manager, Miami-Dade County, in WT Docket No. 13-202 (submitted Dec. 5, 2013), at 1.

²⁴⁶ "Input by Palm Beach County (FL) to the AT&T Request for Waiver," in WT Docket No. 13-202 (undated; filed Jan. 3, 2014), at 1.

²⁴⁷ See Letter from Jeffrey L. Green, City Administrator, City of West Palm Beach, in WT Docket No. 13-202 (submitted Dec. 16, 2013), at 2.

²⁴⁸ See FCC File No. 0376-EX-ST-2014 (assigning call sign WH9XNP for experimental service effective May 9-Nov. 9, 2014, and authorizing testing at a maximum ERP of 250 W/MHz).

²⁴⁹ Letter from Felix Perez, Director, Radio Communications Division, Information Technology Department, Miami-Dade County ("Perez"), dated Mar. 24, 2014, in WT Docket No. 13-202 (specifying technical and operational conditions for AT&T's deployment of LTE, noting also the County's understanding that "AT&T's hardware infrastructure can currently only power to 125 W/MHz . . .") ("March Perez Letter"); "Follow-up Comments by the State of Florida to the AT&T Request for Waiver," dated Apr. 18, 2014, in WT Docket No. 13-202 (noting dialog with AT&T regarding a test plan and endorsing the conditions in the March Perez Letter).

²⁵⁰ See Letter from Linda Vandeloop, Director-Regulatory, AT&T Services, Inc., dated July 9, 2014, in WT Docket No. 13-202 (stating that testing was limited to Block B at 125 W/MHz ERP and resulted in no interference to the public safety radio network, and committing to retest prior to using a PSD model in Block A and/or before raising power levels to 250 W/MHz); Letter from Perez, dated Aug. 13, 2014, in WT Docket No. 13-202, at 1-2 (stating that, under the conditions specified in the March Perez Letter, "[a]n increment in AT&T's RF power to a maximum of 1250 Watts in a 10 MHz carrier in the Cellular [Block B] (880-890 MHz) in the three sites tested[] did not produce any modification in the operating conditions of the Miami-Dade County and [Statewide Law Enforcement Radio System] 800 MHz radio systems.").

proceeding and subject to certain operational conditions to prevent harmful interference.²⁵¹ In addition, the Bureau granted the Vermont PSD Waiver Request, similarly conditioned, also noting the absence of public safety entities with licensed base stations in the Burlington, VT CMA.²⁵²

121. *Proposal.* Now that the 800 MHz rebanding proceeding is largely complete and most public safety licensees are operating on their post-rebanding channels, we believe it is timely to address power flexibility for the Cellular Service. We propose to keep the current base station ERP limits (applied per channel or emission bandwidth) for those licensees that use technologies incompatible with a PSD ERP model (applied per MHz of channel or emission bandwidth), and also provide power flexibility to deploy wideband technologies. We tentatively conclude that a PSD ERP model – as an option – would better accommodate newer technologies employing wider bandwidths, notably LTE, by establishing ERP caps per units of 1 MHz of an emission’s bandwidth rather than capping the ERP per each emission bandwidth. Implementing a PSD model for the Cellular Service would maintain regulatory parity among competing commercial mobile service providers and allow licensees to operate in different mobile service bands using the same technologies and infrastructure if desired.

122. Before we discuss PSD proposals on the record, we address two related issues: flexibility to comply with current limits; and a bandwidth dividing line. First, to minimize adverse effects on licensees operating with GSM and CDMA technologies in the Cellular band, we propose to permit licensees using narrowband technologies to comply with the current limits of 500 W ERP per emission in non-rural areas and 1000 W ERP per emission in rural areas. Maintaining the existing power limits as an option would allow licensees to continue to operate as currently deployed, and would prevent potential power reductions for non-wideband technologies (e.g., GSM and CDMA) if a lower PSD limit is applied.²⁵³ We seek comment on this approach. We also seek comment on whether there is a need to increase Cellular power levels consistent with other services (e.g., the 700 MHz Service rules impose a limit of 1000 W ERP for emissions less than one MHz in non-rural areas, and 2000 W ERP for emissions less than one MHz in rural areas), or whether the current limits are sufficient. If insufficient, what new limits would be the most appropriate for per-emission Cellular transmissions in rural and non-rural markets, respectively? We also seek comment on updating the terminology in the rule. Specifically, should the 500 W ERP be applied per channel, per channel bandwidth, per occupied bandwidth, or some other emission description?²⁵⁴ All commenters addressing this issue should support their arguments with technical showings.

123. Second, with respect to our proposal to implement PSD as an option for licensees deploying wideband technologies, Verizon Wireless recommends applying a PSD limit only to Cellular base stations transmitting emissions greater than 1 MHz.²⁵⁵ We do not propose any such bandwidth

²⁵¹ See Letter to Jeanine Poltronieri, Esq., and William Roughton, Jr., Esq., from Roger S. Noel, Chief, Mobility Division, Wireless Telecommunications Bureau, WT Docket No. 13-202, DA 14-1419 (rel. Sept. 30, 2014) (permitting AT&T to use the PSD model at three Florida stations licensed on Block B with a maximum ERP limit of 125 W/MHz, also setting forth other operational conditions).

²⁵² See Letter to Jeanine Poltronieri, Esq., and William Roughton, Jr., Esq., from Roger S. Noel, Chief, Mobility Division, Wireless Telecommunications Bureau, WT Docket No. 14-107, DA 14-1418 (rel. Sept. 30, 2014) (permitting AT&T to use the PSD model for its Cellular operations in the Burlington, VT CMA (CMA 248) with a maximum ERP limit of 250 W/MHz in non-rural counties and 500 W/MHz in rural counties, also setting forth other operational conditions).

²⁵³ For example, a licensee deploying CDMA technology transmitting a signal with a bandwidth of 1.25 MHz could employ a power level of 500 W ERP under the legacy limit; alternatively, in a 250 W/MHz scenario, the same licensee would have a maximum power level of 312.5 W ERP in 1.25 MHz bandwidth.

²⁵⁴ See 47 C.F.R. § 22.99 for definitions of channel, channel bandwidth, authorized bandwidth, necessary bandwidth, and occupied bandwidth.

²⁵⁵ Verizon Wireless PSD Reply Comments at 8.

dividing line for the purposes of applying PSD in the Cellular Service because it could disadvantage certain carriers. For example, a licensee using a 1.25 MHz CDMA technology would currently be permitted to use 500 W ERP across that channel, but under a 250 W/MHz PSD requirement, that licensee would have to lower its power and reduce service coverage. We invite comment on our proposal not to establish a bandwidth dividing line and on our assumption regarding the potential effect of such a dividing line on certain licensees.

124. Below, we discuss some options presented in the record and their merits and potential weaknesses. We invite comment and technical analysis to ensure that the Cellular power limits and related provisions ultimately adopted in this proceeding permit robust Cellular deployment of advanced technologies and also achieve our goal of compatibility with other spectrum users.

125. First, we seek comment on AT&T's PSD proposal (250 W/MHz in non-rural areas and 500 W/MHz in rural areas). The proposal would provide Cellular licensees with considerably less power than other current CMRS providers (*e.g.*, PCS, AWS, and 700 MHz Services providers), potentially placing Cellular licensees at a competitive disadvantage.²⁵⁶ Cellular licensees deploying LTE base stations might, as a result, have less reliable coverage, necessitating deployment of more base stations at a greater expense, and might have a difficult time supplementing existing service with Cellular spectrum because of the power discrepancy.²⁵⁷ This option would allow an LTE 5 MHz emission a total of 1250 W ERP; however, the power would be spread across a wider bandwidth and unlikely in our view to present increased interference potential to other services. Under the current rules, a Cellular licensee using the same 5 MHz could deploy four CDMA channels with an aggregate power of 2000 W ERP, or 12 GSM channels with an aggregate power of 6000 W ERP. We seek comment on all aspects of the AT&T PSD proposal, including the adequacy of the proposal to allow the full potential of wideband modulation schemes and services that Cellular licensees may wish to provide, and also the potential to cause interference to other services.

126. Next, we seek comment on Verizon Wireless's proposal to adopt PSD limits similar to those adopted for upper 700 MHz licensees (1000 W/MHz in non-rural areas and 2000 W/MHz in rural areas), with a PFD limit to minimize the interference potential on the ground within one kilometer of a base station. The proposal would provide power consistent with certain other CMRS bands, thereby allowing Cellular licensees to compete on a level playing field and also allowing CMRS licensees holding both Cellular and other CMRS spectrum to deploy base stations with an expectation that they could achieve consistent and reliable coverage across different service bands. The increased power does, however, come with an increased risk of potential interference to adjacent public safety operations that have not gone through rebanding or that use radios less capable of filtering out emissions from Cellular base stations. As discussed in more detail below in the next Section, Verizon Wireless contends that the increased PSD limits paired with a PFD limit would address the increased interference potential around the base station, and we seek comment on Verizon Wireless's proposal, its adequacy to address the needs of Cellular licensees seeking to deploy wideband technologies, and its potential to cause interference to public safety operations or any other licensees in adjacent markets or service bands.

127. Further, we seek comment on whether the interference resolution provisions adopted in the rebanding proceeding allow us to adopt Cellular power rules consistent with other CMRS bands with the assurance that any unacceptable interference that does occur will be appropriately addressed pursuant

²⁵⁶ The Commission has adopted the following power limits without apparent interference problems: for the 700 MHz Services band, 1000 W/MHz ERP; for PCS, 1640 W/MHz EIRP or 1000 W/MHz ERP; and for certain AWS, 1640 W/MHz EIRP or 1000 W/MHz ERP. *See* 47 C.F.R. §§ 27.50(c), 24.232(a), and 27.50(d)(2), respectively.

²⁵⁷ For example, if a carrier wanted to supplement its 700 MHz LTE system with Cellular spectrum for more capacity, the Cellular spectrum would not have sufficient power to duplicate the coverage or penetrate buildings as well as the 700 MHz spectrum and, therefore, more towers presumably would be needed.

to Sections 22.970 through 22.973 of our rules.²⁵⁸ Finally, we seek comment on other commenters' PSD approaches, including the proposal by Union Wireless, which specifies power in terms of EIRP and proposes power limits of 820 W/MHz EIRP for non-rural and 1640 W/MHz EIRP for rural areas.²⁵⁹

128. We also propose to allow the doubling of the PSD limit in rural counties, as in other CMRS bands. We seek comment on this proposal and also on whether we should adopt a staggered power limit, whereby the licensee would operate at the suggested AT&T limits (250 W/MHz in non-rural areas and 500 W/MHz in rural areas) if narrowband land mobile operations exist in adjacent spectrum, and at higher power limits after such entities are rebanded to a new location. We also seek comment on how base station power limits should be applied in the deployment of base stations. That is, should the limit be applied per emission or channel, per transmitter, per sector, or for the entire base station, and how is this application affected by MIMO antenna configurations? For example, if a licensee uses 2x2 or 4x4 MIMO, should it be forced to divide its power accordingly?²⁶⁰

129. We seek comment on all aspects of our proposals and others on the record, as discussed above. We also invite commenters to submit alternative proposals and ideas that would advance our goals to provide power flexibility, ensure parity among competing or complementary services, and safeguard spectral compatibility with licensees in adjacent markets and adjacent bands. We reiterate that commenters should be detailed and specific, providing engineering data and technical analysis to support their views, as well as specific wording for the applicable rules, particularly if advocating alternatives not discussed in this *Further Notice*.

4. Power Flux Density

130. As noted above, in conjunction with its proposal for significantly higher PSD limits than those articulated in the AT&T Petition, Verizon Wireless argues that the Commission should also adopt a PFD limit, consistent with the approach for the 700 MHz Services, to mitigate the potential for interference around Cellular base station transmitters, particularly to public safety operations.²⁶¹ According to Verizon Wireless, PFD limits permit the licensee to aim the signal away from the ground, limit signal strength in close proximity to the base station, and allow licensees to operate at greater power levels without sacrificing protection.²⁶² It further contends that the PFD limit applicable to the upper 700 MHz band is appropriate for the Cellular band as well: specifically, in combination with PSD limits of 1000 W/MHz non-rural and 2000 W/MHz rural, "the [PFD] 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."²⁶³ In support of its PFD proposal, Verizon Wireless includes a summary of results of testing conducted by V-COMM.²⁶⁴ We seek comment on all aspects of Verizon Wireless's PFD proposal, including the questions and issues we discuss below.

²⁵⁸ See 47 C.F.R. §§ 22.970-22.973.

²⁵⁹ GSM Licensees Comments at 9.

²⁶⁰ See also FCC OET Knowledge Database ("KDB"), Publication No. 662911, "Emissions Testing of Transmitters with Multiple Outputs in the Same Band" ("KDB Publication 662911") (available at www.fcc.gov/labhelp). This OET equipment authorization document includes guidance for determining equivalent antenna gain for MIMO, smart antenna, etc., equipment with transmitter power specified in terms of ERP or EIRP.

²⁶¹ See, e.g., Verizon Wireless PSD Reply Comments at 6 (citing April 2007 700 MHz Order, 22 FCC Rcd at 8101-02, and 47 C.F.R. § 27.55(c)).

²⁶² See Verizon Wireless PSD Reply Comments at 7.

²⁶³ *Id.* at 6 (quoting 47 C.F.R. § 27.55(c)).

²⁶⁴ See Verizon Wireless PSD Reply Comments at 9, nn.25-26 and the V-COMM attachment ("Public Safety 800 MHz Band Interference Test Results," dated June 18, 2012).

131. It appears that Verizon Wireless intends its proposed PFD limit of 3000 microwatts per square meter to apply to any base station with emissions exceeding 1000 W ERP, similar to the limit for the upper 700 MHz band.²⁶⁵ For the upper 700 MHz band, the Commission established a PFD limit that applies to emissions greater than 1000 W ERP, regardless of the bandwidth of the emission.²⁶⁶ For the lower 700 MHz band where there was no public safety spectrum, the Commission established PFD limits that apply, in non-rural areas, to emissions that exceed 1000 W and 1000 W/MHz, and in rural areas to emissions that exceed 2000 W and 2000 W/MHz, allowing more power relative to the upper 700 MHz band before PFD limits apply.²⁶⁷ This approach might be an effective tool to limit the amount of potentially interfering energy on the ground around base stations if we ultimately decide to adopt higher PSD levels for the Cellular Service than what AT&T proposed. Notably, however, the Commission did not adopt PFD limits for PCS or AWS when it revised the radiated power rules for those services to permit use of a PSD model.

132. A factor in the establishment of the upper 700 MHz band's PFD limit that is shared with the Cellular band is a desire to reduce the interference potential to adjacent channel public safety operations.²⁶⁸ If we adopt AT&T's proposed PSD limits, or some other PSD limits lower than what is proposed by Verizon Wireless, should we also adopt a PFD limit? If so, should the PFD limit only apply if the ERP exceeds a certain level, *e.g.*, 1000 W, as in the upper 700 MHz band? If 1000 W is not the appropriate power limit to trigger applicability of the PFD limit, what is more appropriate? Is 3000 microwatts per square meter on the ground over the area extending to 1 km from the base of the antenna mounting structure the appropriate PFD level to protect public safety operations, or is a different limit more appropriate? Is a different applicable area more appropriate than Verizon Wireless's proposed area? Should a PFD limit only be applicable in areas where the rebanding process has not been completed? Should it be applicable only to those Cellular carriers using the PSD model to measure their ERP, or to all Cellular carriers?

133. We also seek comment on several other issues raised by Verizon Wireless's proposal. How should the microwatts-per-square-meter level, whether it is 3000 microwatts or some other value, be measured? Should the parameter have a reference or measurement bandwidth of 1 MHz, or some other value, to ensure uniform measurement regardless of channel width? Should the PFD value be an average limit, or a peak value that should not be exceeded at any point within the specified area? Would licensees perform a predictive modeling of this parameter before deployment, or is it a measured value? If the PFD is a modeled parameter, would it be better to establish some allowance for exceeding the PFD over a small portion of the subject area? For example, we could require that the PFD not be exceeded over more than 5% or 10% of the area within 1 km of the transmitting structure. Such an allowance may be needed in areas where rolling terrain could increase the PFD over a small portion of the applicable area. What challenges may be created in enforcing a PFD limit, including consistency and parity in application among different technologies?

134. We seek detailed and specific comments on all questions and issues mentioned above surrounding the establishment of a PFD limit, and any other issues that commenters believe are related and pertinent. All commenters, whether supporting or opposing the establishment of a PFD limit, should provide a technical demonstration substantiating their position.

²⁶⁵ See 47 C.F.R. §§ 27.50(b)(6) and 27.50(c)(6).

²⁶⁶ See *id.* §§ 27.50(b)(6) and 27.55(c).

²⁶⁷ See *id.* §§ 27.50(c)(6) and 27.55(b).

²⁶⁸ The Commission stated that, “[b]ecause we wish to remain especially vigilant regarding the potential for interference to public safety operations, we 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 level greater than 1 kW ERP, irrespective of bandwidth, must satisfy the 3 mW/m² PFD limit.” See April 2007 700 MHz Order, 22 FCC Rcd at 8101.

5. Technological Neutrality for Field Strength Measurement

135. In the AWS-3 R&O, the Commission stated that boundary limits that adjust for large differences in channel bandwidth may be appropriate.²⁶⁹ However, in the absence of a more complete record to explore the best method or metric to address boundary limits between licensees, the Commission stated that it intended to explore the issue of a measurement bandwidth to co-channel boundary field strength limits in a future proceeding due to a lack of consensus on how to apply boundary limits for AWS-3.²⁷⁰ With the introduction of power flexibility in the Cellular band, licensees could be deploying different technologies with emission bandwidths ranging from 200 kHz to 10 MHz. Therefore, to promote technological neutrality in our rules among different technologies and licensees, we seek comment on whether the new Cellular field strength limit of 40 dB μ V/m, which we adopt in today's companion *Report and Order*, can be applied in a technology neutral fashion or whether we should adopt a specific measurement bandwidth for field strength measurements or some other limit or metric at the license boundary.

136. Given that the Cellular Service is well-established, what are the considerations for or against specifying a measurement bandwidth for the field strength limit? To ensure uniform application of the limit, would a 100 kHz or 1 MHz measurement bandwidth be appropriate or would that be too stringent, and what would the consequences be? If we adopt a measurement bandwidth that is too wide, would we make it potentially difficult to meet the limit and still have adequate signal to provide service at the boundary area? Is a field strength limit with a measurement bandwidth the best metric to address service area boundary interference, or is there a different type of limit that should be applied, and if so, what should it be? Given our discussion of power and technical flexibility for the Cellular band, it is appropriate that commenters address application of the field strength limit in a technology neutral fashion, and we encourage all commenting parties to support their position with technical demonstrations. We seek comment on any other Part 22 Cellular rules that may not be technology neutral and invite specific proposals on how they should be amended, with analysis of the potential costs and benefits of such changes.

6. Height-Power Limit

137. Section 22.913(b) currently limits the height of a base station antenna such that the ERP may not exceed an amount that would result in the average distance to the SAB being 79.1 km for licensees authorized to serve the Gulf, 40.2 km for all other licensees.²⁷¹ Section 22.913(c) provides an exemption from the height-power limit if the licensee coordinates and obtains concurrence from all co-channel licensees within 121 km.²⁷² No commenter on the record in this proceeding has mentioned changing these height-power provisions. In some other flexible wireless services where the Commission has instituted PSD limits, however, it has also limited the antenna height in which the maximum power may be transmitted and allowed higher antennas if the installation scaled down the power proportionally for antennas above the height allowed for maximum power. For example, under the 700 MHz Services and PCS rules, licensees are required to scale down their power from the maximum levels for antenna heights over 300 and 305 meters, respectively, while AWS and AWS-4 are not subject to such limitations.²⁷³

²⁶⁹ See AWS-3 R&O, 29 FCC Rcd at 4647.

²⁷⁰ *Id.*

²⁷¹ Section 22.911 sets forth formulas for calculating the SAB of an individual cell site in terms of distance from the cell's transmitting antenna, using height above average terrain (H) and effective radiated power (P) values of a Cellular base station along eight cardinal radials. An installation with large numbers for H and P could therefore produce a large SAB contour. See 47 C.F.R. §§ 22.911, 22.913(b).

²⁷² *Id.* § 22.913(c).

²⁷³ See *id.* § 24.232 (PCS); § 27.50(b), (c) (700 MHz); and § 27.50(d) (AWS and AWS-4).

138. We seek comment on whether and how we should amend the Cellular height-power limit and exemption rules. Do we need a scaled height-power requirement similar to the one applicable in the 700 MHz band, and if so, what should the values be? With the adoption in today's companion *Report and Order* of a field strength limit rule to protect neighboring Cellular licensees' CGSA boundaries, we seek comment on whether it is appropriate to delete the current Cellular height-power limit altogether,²⁷⁴ or whether a limit is still necessary, at least for CGSA expansions into Unserved Area. Commenters should be detailed and specific, including proposed wording of any new or revised rule provisions, and should support their positions with technical analyses.

7. Mobile Transmitters and Auxiliary Test Transmitters

139. At this time, we are proposing to permit Cellular licensees to use a PSD model only for base station transmitters and Cellular repeaters. No commenter on the record in this proceeding has suggested changing the power limit for Cellular mobile or portable transmitters. Section 22.913(a)(2) currently sets a limit of 7 W ERP for mobile and auxiliary test transmitters.²⁷⁵ While we tentatively conclude that the 7 W ERP limit is adequate even for 10 MHz channel widths, we seek comment on whether the current limit should be updated or changed, including whether it should be lowered to be consistent with other CMRS bands.²⁷⁶ While we have not adopted PSD for mobile stations in other services such as PCS or 700 MHz,²⁷⁷ we seek comment on whether a PSD limit should be established for mobile and portable Cellular transmitters, and if so, what that limit should be. Does the use of MIMO antenna techniques affect how power is measured and how it should be regulated in mobile devices? We seek comment on these issues. We also seek comment on whether auxiliary test transmitters are still in use and whether a provision applying to such transmitters is still warranted in Section 22.913(a)(2). Are there other types of Cellular transmitters that should be addressed in the radiated power rules? Does it serve the public interest to treat Cellular mobile transmitters differently from auxiliary test transmitters, and if so, what should the respective treatments be? We emphasize that, even if we decide to adopt changes to Section 22.913(a)(2), our environmental regulations will still apply.²⁷⁸

8. Power Measurement

140. Because mobile devices often operate across multiple service bands, we tentatively conclude that it would serve the public interest to establish consistent measurement techniques for equipment to ease the equipment authorization process, while also taking into account unique factors presented by the band, and seek comment on whether the measurement techniques for the Cellular Service should be updated. The Commission's Cellular power rules were created when analog technologies were predominantly used, and are not necessarily applicable to current technologies. Here, we discuss peak power versus average power, peak-to-average power ratio, resolution bandwidth, EIRP versus ERP, and accommodating MIMO antenna techniques.

141. Section 22.913 does not specify how power is to be measured, *i.e.*, peak or average power. Digital modulation techniques often produce instantaneous short duration spikes such that the overall power of the emission is lower under average power measurement compared to peak measurement. In revising the radiated power rules for PCS and AWS, the Commission concluded that,

²⁷⁴ The Commission chose not to adopt a height-power limit in the recent AWS-4 proceeding. Specifically, the Commission found that "the general requirement to not endanger air navigation and the effective height limitations implicitly resulting from our co-channel interference rules obviate the need for specific antenna height restrictions . . ." AWS-4 R&O, 27 FCC Red at 16161-62.

²⁷⁵ 47 C.F.R. § 22.913(a)(2).

²⁷⁶ For example, in the upper 700 MHz band, mobile devices are only permitted 3 W ERP. *See id.* § 27.50(b)(10).

²⁷⁷ *See, e.g., id.* §§ 24.232(c), 27.50(b)(10).

²⁷⁸ *See id.* §§ 1.1307, 1.1310. *See also id.* §§ 2.1091 (governing RF radiation exposure evaluation specifically for mobile devices) and 2.1093 (governing RF radiation exposure evaluation specifically for portable devices).

for non-constant envelope technologies such as CDMA, WCDMA, and OFDM, limiting PCS and AWS power on an average basis would more accurately predict the interference potential for such technologies.²⁷⁹ The record in that proceeding demonstrated that using peak power measurements for non-constant envelope technologies inaccurately suggested a much higher overall operational power, compared to average power levels, due to short duration power spikes.²⁸⁰ The Commission further found that measurement of average power for PCS and AWS operations must be made during a period of continuous transmission based on a 1 MHz resolution bandwidth.²⁸¹ Because the average power approach allows for emissions higher than those under peak power limits, the Commission also concluded that it would serve the public interest to adopt a peak-to-average ratio limit to mitigate the potential for undesirable interference that could result otherwise.²⁸² The current rules for PCS and AWS reflect these various measurement decisions.²⁸³

142. No one on the record in this proceeding has thus far addressed how PSD should be measured if we introduce this model into the Cellular radiated power rules. We tentatively conclude that, to account for the characteristics of digital modulation techniques, Cellular radiated power limits – both the legacy limits we propose to maintain as an option for narrowband technologies and the PSD limits we propose as an option for wideband technologies – should be measured in terms of maximum average power as measured with a root mean square power averaging detector.²⁸⁴ Averaging would, under this approach, be permitted only over the various power levels associated with different symbol states while the device is transmitting at maximum power levels (*i.e.*, averaging during any transmitter quiescent periods or reduced power transmissions is not permitted). Because the peak power associated with a noise-like signal is a random variable and, as such, can place unachievable requirements on the measuring instrumentation (*e.g.*, a resolution/measurement bandwidth that exceeds the signal bandwidth), we tentatively conclude that the Cellular output power should not be specified in terms of peak, unless limited to peak PSD (in which case a reference bandwidth should also be specified).²⁸⁵ We also propose to specify that power should be measured with a resolution bandwidth, but seek comment on what that resolution bandwidth should be. The current resolution bandwidth for measuring unwanted emissions outside of the Cellular band is 100 kHz or greater,²⁸⁶ but the PCS resolution bandwidth for measuring in-band power is specified as being equal to or greater than the authorized bandwidth.²⁸⁷ We seek comment

²⁷⁹ See Streamlining 3d R&O, 23 FCC Rcd at 5337.

²⁸⁰ See *id.*, 23 FCC Rcd at 5335.

²⁸¹ See *id.*, 23 FCC Rcd at 5337 (explaining also that parties are to consult with the FCC Laboratory staff for guidance on the appropriate method of measuring average power for particular technologies). Recommended measurement procedures are available at the KDB website (www.fcc.gov/labhelp).

²⁸² See *id.* See also April 700 MHz Order, 22 FCC Rcd at 8103-04; August 700 MHz Order, 22 FCC Rcd at 15417-18.

²⁸³ See 47 C.F.R. §§ 24.232(d) (PCS) and 27.50(d) (AWS) (specifying power in terms of average power with a peak-to-average ratio).

²⁸⁴ See Appendix B (Proposed Rules), § 22.913(b).

²⁸⁵ This tentative conclusion is consistent with the regulations of the International Telecommunications Union (“ITU”) as they relate to reference bandwidth, measurement bandwidth, and resolution bandwidth. See ITU Recommendations (*available at* <http://www.itu.int/rec/R-REC-SM/en>), and ITU Radio Regulations, Edition of 2012 (*available at* <http://www.itu.int/pub/R-REG-RR-2012>).

²⁸⁶ See 47 C.F.R. § 22.917(b).

²⁸⁷ See *id.* § 24.132(f). The ITU recommends different measurement bandwidths for operations above and below 1 GHz. Therefore, the correct measurement bandwidth for the Cellular band may be different from what is recommended for the PCS band above 1850 MHz. See ITU Radio Regulations, Edition of 2012, Appendices, APPENDIX 3 (*available at* <http://www.itu.int/pub/R-REG-RR-2012>).

on how we should craft the Cellular power measurement rules to accommodate the various technologies used in the band and others that may be used in the future.

143. We also seek comment on whether, if we adopt an average power requirement for Cellular licensees, it should be accompanied by a peak-to-average ratio, as we have adopted for PCS and AWS. If we adopt a peak-to-average ratio to be applied over an emission's bandwidth, we propose that the limit apply to the highest peak power density relative to the highest average power density measured over the entire occupied bandwidth. The reason for specifying the peak-to-average ratio within a reference bandwidth is to be clear we are not referring to the absolute peak power within the total signal but, rather, to the peak within some defined bandwidth, making it a realizable measurement even when the signal greatly exceeds the available resolution/measurement bandwidth. In addition, the peak-to-average ratio would not apply within each and every reference bandwidth bin, as the Commission's Laboratory finds that a peak-to-average ratio limit can be exceeded on a bin-by-bin basis due to intermodulation products, but can be compliant when the overall maximum values are considered.²⁸⁸ Finally, if we adopt a peak-to-average ratio, we propose that it be specified on a statistical basis to reflect the fact that the peak power of a "noise-like" signal is a statistical parameter (*e.g.*, peak-to-average ratio level must comply with the limit 99% of the time). The PCS peak-to-average ratio is 13 dB.²⁸⁹ We seek comment on all aspects of applying a peak-to-average ratio to the Cellular band, including whether the PCS peak-to-average ratio or some other value is most appropriate for Cellular licensees.

144. We also seek comment on whether we should convert our Cellular power requirements to EIRP instead of ERP, as suggested by Union Wireless.²⁹⁰ While these two power specifications entail a simple mathematical conversion from one to another, EIRP may make more sense for the Cellular Service, particularly for mobile and portable devices that have integrated antennas. It is our understanding that dipole antennas are infrequently used to perform compliance measurements and that practically all measurement antennas in use today provide gain values in terms of dBi. Further, we seek comment on the impact of MIMO antenna techniques on our radiated power rules and measurement procedures. Through MIMO, a Cellular base station would deploy multiple antennas, each intended to transmit and receive the same signals, allowing increased throughput and reliability by having multiple signals to add together or to compensate for multipath fading. Does the use of MIMO techniques require a modification to the way we specify Cellular power or perform measurements for equipment authorization? If so, how should we modify the rules and policies to account for MIMO?²⁹¹

145. We seek comment on all the issues discussed above regarding power measurement. We also seek comment on whether any other Part 22 rules regarding equipment standards and measurement need to be updated or modified to be consistent with the equipment certification rules in Part 2.²⁹² For instance, Part 2 requirements related to spurious emissions at an antenna terminal assume that the unwanted emissions are measured at the antenna terminals (*i.e.*, a conducted measurement).²⁹³ Section 22.917 is not clear on whether the Cellular measurement is conducted or radiated. Should Section 22.917 be modified to be consistent with this Part 2 requirement?

²⁸⁸ In statistical histograms, the data are split into intervals that are called bins.

²⁸⁹ See 47 C.F.R. § 24.232(d).

²⁹⁰ GSM Licensees Comments at 9.

²⁹¹ See also KDB Publication 662911 (discussing current measurement techniques for MIMO) ([available at www.fcc.gov/labhelp](http://www.fcc.gov/labhelp)).

²⁹² See 47 C.F.R. §§ 2.1046 (measurements required: RF power output), 2.1047 (measurements required: modulation characteristics), 2.1049 (measurements required: occupied bandwidth), 2.1051 (measurements required: spurious emissions at antenna terminals), 2.1053 (measurements required: field strength of spurious radiation), and 2.1055 (measurements required: frequency stability).

²⁹³ See *id.* § 2.1051 (measurements required: spurious emissions at antenna terminals).

146. We urge all interested parties, including not only Cellular licensees but also licensees in the immediately adjacent bands, equipment manufacturers, and entities that test Cellular equipment, to provide comments on these questions and issues related to power measurement. Commenters should be specific and detailed, explaining the technical reasons for their views, including whether and how the public interest would be served by adopting any or all of the possible revisions discussed in these paragraphs concerning average power, peak-to-average ratio, related measurement techniques, and other technical requirements needed to obtain equipment certification.

9. Out of Band Emission Limits

147. Section 22.917 outlines our current Cellular out of band emission (“OOBE”) limits and how these limits are measured.²⁹⁴ These same OOBE limits are common across many service bands and have proven adequate in suppressing unwanted emissions. Moreover, they have proven to be easily achievable with filtering techniques. Nevertheless, we seek comment on whether, given technological developments, we should increase the suppression levels set forth in Section 22.917. Would increasing the OOBE limits facilitate higher PSD limits without increasing the potential for unacceptable interference to legacy public safety operations? If so, what should the increased OOBE limits be? Given that changing filtering requirements may temporarily increase the cost of radio equipment, what would be the costs and benefits of increasing the Cellular OOBE limits to protect services outside the Cellular band, including legacy public safety operations that are intended to relocate as part of the 800 MHz rebanding proceeding?

148. In measuring Cellular OOBE in close proximity to the authorized frequency band edge, we permit the use of a narrower-resolution bandwidth (of at least 1% of the emission bandwidth of the fundamental emission)²⁹⁵ to measure the unwanted emissions that are on frequencies “immediately outside and adjacent to the frequency block” without any requirement for subsequently integrating the results over the full reference bandwidth.²⁹⁶ We propose to clarify that this provision only applies in the first 100 kHz immediately outside and adjacent to the authorized frequency block/band, and seek comment on the proposal. Further, this methodology (*i.e.*, allowing a reduced bandwidth as a percentage of the fundamental emission (occupied) bandwidth) introduces a bias toward narrowband technologies. Therefore, we also seek comment on whether we should adopt a standard reference resolution bandwidth (*e.g.*, 10 kHz) that would be applicable to all cases irrespective of the signal bandwidth, and thus not create any unnecessary limit discrepancies. We seek comment generally on revising our Cellular OOBE limits, given the changing 800 MHz spectrum environment, technological developments, and compliance measurement techniques.

10. Other Measures

a. Modification of Section 22.911

149. As noted above, Section 22.911 of our rules sets forth the formula for calculating SAB and CGSA contours. The formula, which uses height above average terrain (H) and power (P) values of the proposed new or modified Cellular base station along eight cardinal radials, is designed to establish a uniform license boundary determination method. Under the new rules we adopt today in the *Report and Order*, Cellular licensees continue to be permitted to expand their CGSAs and have added flexibility to

²⁹⁴ *Id.* § 22.917.

²⁹⁵ In the past, “emission bandwidth” has been used as a substitute for “99% occupied bandwidth” (“OBW”). Section 22.917(b) uses -26 dB emission bandwidth as a good approximation, but this could potentially introduce significant error when used as a means for estimating the OBW of wide-bandwidth multi-carrier modulation technologies. Since the advent of the advanced spectrum analyzers and other measurement instruments, which offer post-processing capabilities that include an accurate OBW measurement capability, we believe there is no longer a need for a simplified alternative to OBW.

²⁹⁶ 47 C.F.R. § 22.917(b).

extend their SABs beyond their CGSA boundaries. We indicated that, for purposes of measuring the service area within an SAB extension or CGSA expansion, the Section 22.911 formula is a proven method, and we have not adopted revisions to that formula in today's *Report and Order*. Now, however, in the context of considering the adoption of a PSD model for the Cellular band, we seek comment on how to ensure a technology neutral application of the SAB formula, given that P could vary widely depending on the technology chosen by the licensee.

150. Changing the value could have a significant impact on the CGSA-expansion process because, if we adopt a PSD model as proposed above, P could be increased from a value of 500 W to several thousand W depending on the occupied bandwidth and the specific PSD value. The GSM Licensees argue that the rules should be modified to express what they reference as the 32 dB μ V/m field strength limit and the ERP term of the related SAB distance formulas in Section 22.911 "in terms of electric field spectral density and ERP spectral density (PSD) respectively for broadband carriers."²⁹⁷ If Section 22.913 is revised to include a PSD model without some form of normalization, we are concerned that this could unfairly penalize licensees using narrowband technologies and thus would not serve the public interest. Accordingly, while we find in the *Report and Order* that the Section 22.911 formula should continue to be used for the purpose of calculating SAB contours and CGSAs, we tentatively conclude that a normalization method needs to be developed to accommodate higher ERP values created by wideband emissions.

151. We propose, in the event that we ultimately adopt a PSD model for the Cellular band in this proceeding, to establish some method to allow P in the formula to vary so as to equalize the effects of PSD when applying for Unserved Area to expand a CGSA, or when extending an SAB into Unserved Area and providing service on a secondary basis only, in compliance with the new rules we are adopting today. One option could be to require licensees using a PSD model for their Cellular operations to use only the power (P value) contained in 1 MHz or 2 MHz of their occupied bandwidth for the purpose of determining the contour of the new or modified cell site. If we adopt higher PSD limits, the power in 1 MHz of the emission bandwidth could be the appropriate value for P, but if we adopt lower PSD limits, then 2 MHz may be more appropriate. We could allow licensees using the legacy ERP limits to apply in the formula an aggregate ERP value for P that the station would use over a 1 MHz or 2 MHz reference bandwidth. Alternatively, should a separate formula be added to Section 22.911 for use by those licensees that opt to use the PSD model in measuring their maximum ERP? If so, how should this formula be different from the current one?

152. We seek comment on the issues we raise in the preceding paragraphs and invite suggestions as to any potential methods of addressing the contour calculation under Section 22.911 so that applicants seeking to establish new Cellular systems or expand existing systems into Unserved Area are treated on par with one another regardless of the technology they choose. All suggestions and comments should include a thorough technical analysis and a demonstration of how the various technologies would be impacted. Given the specific provisions in Section 22.911(a)(1) and (2), we also seek comment on whether any revisions to those provisions are warranted in the context of our proposal to permit use of a PSD model for Cellular licensees.

b. Domestic Coordination Requirements

153. Under Section 22.907 of the Commission's rules, Cellular licensees are required to coordinate channel usage at each transmitter location within 121 kilometers (75 miles) of any transmitter locations that are authorized to other licensees or proposed (except those with mutually exclusive applications).²⁹⁸ In today's companion *Report and Order* in this proceeding, we do not change Section 22.907, but we now seek comment in this *Further Notice* on whether, in the event we adopt a revised Section 22.913 to permit the use of a PSD model, the current coordination requirements under Section

²⁹⁷ GSM Licensees Comments at 4.

²⁹⁸ 47 C.F.R. § 22.907.

22.907 are sufficient, or whether they need to be enhanced. Is the coordination distance of 75 miles still adequate? Is there a need for channel coordination if licensees convert to wideband channels of 10 MHz? To the extent commenters argue that the current rule needs to be enhanced or otherwise revised, they should propose specific wording for the new/revised provisions of Section 22.907 and explain in detail why the public interest would be served by such changes.

c. International Coordination Requirements

154. Cellular licensees are currently subject to three separate Part 22 rules governing coordination between the United States government and the governments of Canada and Mexico. The generic rule applicable to all Public Mobile Services licensees, Section 22.169, states that channel assignments are “subject to the applicable provisions and requirements of treaties and other international agreements between the United States government and the governments of Canada and Mexico.”²⁹⁹ The other two rules – Sections 22.955 and 22.957 – are in Subpart H (Cellular Service-specific), and each sets forth the text of a condition that is to be placed on authorizations for all Cellular systems, requiring them to coordinate any transmitter installations within 72 kilometers (45 miles) of the U.S.-Canadian or U.S.-Mexican border, as applicable.³⁰⁰

155. We propose to streamline the rules by eliminating Sections 22.955 and 22.957, preserving Section 22.169 with a minor revision to add a reference to “operation of systems.”³⁰¹ This would advance our regulatory reform agenda by deleting unnecessary or redundant provisions. We tentatively conclude that having the proposed single, slightly revised rule for all Part 22 licensees is sufficient and consistent with the international coordination requirements set forth in other rule parts, such as in Part 27 governing various flexible wireless services, for example,³⁰² and seek comment on our proposal.

d. Proposed Correction of Section 22.355 (Frequency Tolerance)

156. We propose to correct a clerical error in the third column heading of the table in Section 22.355 of our rules.³⁰³ The error – reversing the direction of the mathematical symbol for “less than” (*i.e.*, using instead the mathematical symbol for “greater than”) – was introduced inadvertently in the *Federal Register* when Section 22.355 was revised in 1996.³⁰⁴ The proposed correction is included in Appendix B (Proposed Rules) of this *Further Notice*.

IV. PROCEDURAL MATTERS

A. Paperwork Reduction Act Analysis

157. 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 Section 3507(d) of the PRA. OMB, the general public, and other Federal agencies will be invited to comment on the modified information collection requirements contained in this proceeding. In addition, we note 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. We have assessed the effects of the rule changes

²⁹⁹ *Id.* § 22.169 (international coordination of channel assignments).

³⁰⁰ *See id.* § 22.955 (Canadian condition); *id.* § 22.957 (Mexican condition).

³⁰¹ *See* Appendix B (Proposed Rules), § 22.169.

³⁰² *See, e.g.*, 47 C.F.R. § 27.57 (international coordination).

³⁰³ 47 C.F.R. § 22.355.

³⁰⁴ *Compare* Non-Substantive Editorial Revisions to Part 22 of the Commission’s Rules Governing the Public Mobile Services, *Order*, 11 FCC Rcd 22396 (WTB 1996), *with* 61 Fed. Reg. 54098-02 (1996).

we are adopting on small business concerns and find that businesses with fewer than 25 people will benefit from the elimination of certain filing requirements as well as from the streamlining and updating of various requirements applicable to all Cellular licensees.

158. The *Further Notice* seeks comment on potential new and revised information collection requirements. If the Commission adopts new or revised information collection requirements, the Commission will publish a notice in the *Federal Register* inviting the public to comment on the requirement, as required by the Paperwork Reduction Act of 1995, Public Law 104-13 (44 U.S.C. § 3501-3520). In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. § 3506(c)(4), the Commission seeks specific comment on how it might further reduce the information collection burden for small business concerns with fewer than 25 employees.

B. Congressional Review Act

159. The Commission will send a copy of this *Report and Order and Further Notice of Proposed Rulemaking* to Congress and the Government Accountability Office pursuant to the Congressional Review Act.³⁰⁵

C. Final Regulatory Flexibility Analysis

160. The Regulatory Flexibility Act of 1980 (RFA) requires that an agency prepare a regulatory flexibility analysis for notice and comment rulemakings, unless the agency certifies that “the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities.” Accordingly, we have prepared a Final Regulatory Flexibility Analysis (“FRFA”), set forth in Appendix C, concerning the possible impact of the rule changes contained in the *Report and Order*.

D. Initial Regulatory Flexibility Analysis

161. As required by the RFA, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules proposed in the *Further Notice*. The analysis is found in Appendix D. We request written public comment on the analysis. Comments must be filed in accordance with the same deadlines as comments filed in response to the *Further Notice*, and must have a separate and distinct heading designating them as responses to the IRFA. The Commission’s Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of this *Report and Order and Further Notice of Proposed Rulemaking*, including the IRFA, to the Chief Counsel for Advocacy of the Small Business Administration.

E. Ex Parte Presentations

162. *Permit-But-Disclose*. We will continue to treat this proceeding as a “permit-but-disclose” proceeding in accordance with the Commission’s *ex parte* rules.³⁰⁶ Persons making presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter’s written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed

³⁰⁵ *See* 5 U.S.C. § 801(a)(1)(A).

³⁰⁶ 47 C.F.R. §§ 1.1200 *et seq.*

consistent with rule 1.1206(b). In proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the Commission's Electronic Comment Filing System ("ECFS") available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

F. Filing Requirements

163. *Comments and Replies.* Pursuant to Sections 1.415 and 1.419 of the Commission's rules,³⁰⁷ interested parties may file comments and reply comments concerning the *Further Notice* on or before the dates indicated on the first page of this document. **All filings related to this *Further Notice* should refer to WT Docket No. 12-40.** Comments may be filed using ECFS.³⁰⁸

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://fjallfoss.fcc.gov/ecfs2/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing.
- Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.
 - All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of *before* entering the building.
 - Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
 - U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

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

165. *Availability of Documents.* Comments, reply comments, and *ex parte* submissions will be publically available online via ECFS.³⁰⁹ These documents will also be available for public inspection during regular business hours in the FCC Reference Information Center, which is located in Room CY-A257 at FCC Headquarters, 445 12th Street, SW, Washington, DC 20554. The Reference Information Center is open to the public Monday through Thursday from 8:00 a.m. to 4:30 p.m. and Friday from 8:00 a.m. to 11:30 a.m.

³⁰⁷ *Id.* §§ 1.415, 1.419.

³⁰⁸ See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121-01 (1998).

³⁰⁹ Documents will generally be available electronically in ASCII, Microsoft Word, and/or Adobe Acrobat.

166. *Additional Information.* For further information, contact Nina Shafran of the Wireless Telecommunications Bureau, Mobility Division, at (202) 418-2781, or by email: Nina.Shafran@fcc.gov.

V. ORDERING CLAUSES

167. Accordingly, IT IS ORDERED, pursuant to Sections 1, 2, 4(i), 4(j), 7, 301, 302, 303, 307, 308, 309, and 332 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 154(j), 157, 301, 302, 303, 307, 308, 309, and 332, that this REPORT AND ORDER and this FURTHER NOTICE OF PROPOSED RULEMAKING in WT Docket No. 12-40 ARE ADOPTED.

168. IT IS FURTHER ORDERED that Parts 1 and 22 of the Commission's rules, 47 C.F.R. Parts 1 and 27, ARE AMENDED as specified in Appendix A, effective 30 days after publication in the *Federal Register* except as otherwise provided herein. It is our intention in adopting these rule changes that if any provision of the rules, or the application thereof to any person or circumstance, is held to be unlawful, the remaining portions of the rules not deemed unlawful, and the application of such rules to other persons or circumstances, shall remain in effect to the fullest extent permitted by law.

169. IT IS FURTHER ORDERED that the amendments adopted in the REPORT AND ORDER, and specified in Appendix A, to Sections 22.165(e), 22.948, and 22.953 of the Commission's rules, 47 C.F.R. §§ 22.165(e), 22.948, and 22.953, which contain modified information collection requirements that require approval by the Office of Management and Budget under the Paperwork Reduction Act, WILL BECOME EFFECTIVE after the Commission publishes a notice in the *Federal Register* announcing such approval and the relevant effective date.

170. IT IS FURTHER ORDERED that, effective 30 days after publication in the *Federal Register* of a summary of this REPORT AND ORDER, the freeze and interim procedures that were imposed as of the adoption date of the 2012 Notice of Proposed Rulemaking and Order in this WT Docket No. 12-40 WILL NO LONGER BE IN EFFECT.

171. IT IS FURTHER ORDERED that, pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments on the FURTHER NOTICE OF PROPOSED RULEMAKING on or before 30 days after publication in the *Federal Register* and reply comments on or before 60 days after publication in the *Federal Register*.

172. IT IS FURTHER ORDERED that, pursuant to Section 801(a)(1)(A) of the Congressional Review Act, 5 U.S.C. § 801(a)(1)(A), the Commission SHALL SEND a copy of this REPORT AND ORDER AND FURTHER NOTICE OF PROPOSED RULEMAKING to Congress and to the Government Accountability Office.

173. 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 AND FURTHER NOTICE OF PROPOSED RULEMAKING, including the Final Regulatory Flexibility Analysis and the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A

Final Rules

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 C.F.R. Parts 1 and 22 as follows:

PART 1 – PRACTICE AND PROCEDURE

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, 227, 303(r), 309, 1403, 1404, and 1451.

Amend Section 1.919 by removing and reserving paragraph (c).

* * * * *

(c) [Reserved]

* * * * *

Amend Section 1.929 by revising paragraphs (b), (b)(1) and (b)(2), and by removing and reserving paragraph (b)(3), to read as follows:

§ 1.929 Classification of filings as major or minor.

* * * * *

(b) In addition to those changes listed in paragraph (a) of this section, the following are major changes in the Cellular Radiotelephone Service:

(1) Application requesting authorization to expand the Cellular Geographic Service Area (CGSA) of an existing Cellular system or, in the case of an amendment, as previously proposed in an application to expand the CGSA; or

(2) Application or amendment requesting that a CGSA boundary or portion of a CGSA boundary be determined using an alternative method.

(3) [Reserved]

* * * * *

Amend Section 1.958 by revising paragraph (d) to read as follows:

§ 1.958 Distance computation.

* * * * *

(d) Calculate the number of kilometers per degree of longitude difference for the mean geodetic latitude calculated in paragraph (b) of this section as follows:

$$KPD_{lon} = 111.41513 \cos ML - 0.09455 \cos 3ML + 0.00012 \cos 5ML$$

* * * * *

PART 22 – PUBLIC MOBILE SERVICES

The authority citation for part 22 continues to read as follows:

Authority: 47 U.S.C. 154, 222, 303, 309 and 332.

Amend Section 22.99 by removing the terms “Build-out transmitters,” “Five year build-out period,” and “Partitioned cellular market” and their definitions, and by revising the definitions of Cellular Geographic Service Area, “Cellular markets” and “Extensions,” and by revising the term “Unserved Area” and its definition, and by adding a new term and definition, to read as follows:

§ 22.99 Definitions.

* * * * *

Cellular Geographic Service Area (CGSA). The licensed geographic area within which a Cellular system is entitled to protection and adverse effects are recognized, for the purpose of determining whether a petitioner has standing, in the Cellular Radiotelephone Service, and within which the Cellular licensee is permitted to transmit, or consent to allow other Cellular licensees to transmit, electromagnetic energy and signals on the assigned channel block, in order to provide Cellular service. *See* § 22.911.

* * * * *

Cellular Market Area (CMA). A standard geographic area used by the FCC for administrative convenience in the licensing of Cellular systems; a more recent term for “Cellular market” (and includes Metropolitan Statistical Areas (MSAs) and Rural Service Areas (RSAs)). *See* § 22.909.

* * * * *

Cellular markets (obsolescent). *See definition for “Cellular Market Area (CMA)”.*

* * * * *

Extension. In the Cellular Radiotelephone Service, an area within the service area boundary (calculated using the methodology of Section 22.911) of a Cellular system but outside the licensed Cellular Geographic Service Area boundary. *See* §§ 22.911 and 22.912.

* * * * *

Unserved Area. With regard to a channel block allocated for assignment in the Cellular Radiotelephone Service: Geographic area in the District of Columbia, or any State, Territory or Possession of the United States of America that is not within any Cellular Geographic Service Area of any Cellular system authorized to transmit on that channel block. With regard to a channel allocated for assignment in the Paging and Radiotelephone service: Geographic area within the District of Columbia, or any State, Territory or possession of the United States of America that is not within the service contour of any base transmitter in any station authorized to transmit on that channel.

Amend Section 22.131 by revising paragraphs (c)(3)(iii) and (d)(2)(iv), to read as follows:

§ 22.131 Procedures for mutually exclusive applications.

* * * * *

(c) * * *

(3) * * *

(iii) If all of the mutually exclusive applications filed on the earliest filing date are applications for initial authorization, a 30-day notice and cut-off filing group is used.

* * * * *

(d) * * *

(2) * * *

(iv) Any application to expand the Cellular Geographic Service Area of an existing Cellular system. *See* § 22.911.

* * * * *

Amend Section 22.143 by revising paragraph (a) to read as follows:

§ 22.143 Construction prior to grant of application.

* * * * *

(a) *When applicants may begin construction.* An applicant may begin construction of a facility 35 days after the date of the Public Notice listing the application for that facility as acceptable for filing.

* * * * *

Amend Section 22.165 by revising paragraph (e) to read as follows:

§ 22.165 Additional transmitters for existing systems.

* * * * *

(e) *Cellular Radiotelephone Service.* The service area boundaries (SABs) of the additional transmitters, as calculated by the method set forth in section 22.911(a), must not cause an expansion of the Cellular Geographic Service Area (CGSA), and must not extend outside the CGSA boundary into Unserved Area unless such extension is less than 130 contiguous square kilometers (50 contiguous square miles). The licensee must seek prior approval (using FCC Form 601) regarding any transmitters to be added under this section that would cause an expansion of the CGSA, or an SAB extension, of 130 contiguous square kilometers (50 contiguous square miles) or more, into Unserved Area. *See* §§ 22.912, 22.953.

* * * * *

Remove Section 22.228. *See* § 22.961.

Revise Section 22.901 in its entirety to read as follows:

§ 22.901 Cellular service requirements and limitations.

The licensee of each Cellular system is responsible for ensuring that its Cellular system operates in compliance with this section. Each Cellular system must provide either mobile service, fixed service, or a combination of mobile and fixed service, subject to the requirements, limitations and exceptions in this section. Mobile service provided may be of any type, including two-way radiotelephone, dispatch, one-way or two-way paging, and personal communications services (as defined in part 24 of this chapter). Fixed service is considered to be primary service, as is mobile service. When both mobile and fixed services are provided, they are considered to be co-primary services. In providing Cellular service, each Cellular system may incorporate any technology that meets all applicable technical requirements in this part.

Revise Section 22.909 in its entirety, to read as follows:

§ 22.909 Cellular market areas (CMAs).

Cellular market areas (CMAs) are standard geographic areas used by the FCC for administrative convenience in the licensing of Cellular systems. CMAs comprise Metropolitan Statistical Areas (MSAs) and Rural Service Areas (RSAs). All CMAs and the counties they comprise are listed in: “Common Carrier Public Mobile Services Information, Cellular MSA/RSA Markets and Counties,” *Public Notice*, Rep. No. CL-92-40, 7 FCC Rcd 742 (1992).

(a) *MSAs*. Metropolitan Statistical Areas are 306 areas, including New England County Metropolitan Areas and the Gulf of Mexico Service Area (water area of the Gulf of Mexico, border is the coastline), defined by the Office of Management and Budget, as modified by the FCC.

(b) *RSAs*. Rural Service Areas are 428 areas, other than MSAs, established by the FCC.

Amend Section 22.911 by revising the introductory language of paragraph (a), and by removing and reserving paragraph (c), and by revising paragraphs (d) and (e) in their entirety, to read as follows:

§ 22.911 Cellular geographic service area.

* * * * *

(a) *CGSA determination*. The CGSA is the composite of the service areas of all of the cells in the system, excluding any Unserved Area (even if it is served on a secondary basis) or area within the CGSA of another Cellular system. The service area of a cell is the area within its service area boundary (SAB). The distance to the SAB is calculated as a function of effective radiated power (ERP) and antenna center of radiation height above average terrain (HAAT), height above sea level (HASL) or height above mean sea level (HAMSL).

* * * * *

(c) [Reserved]

(d) *Protection afforded*. Cellular systems are entitled to protection only within the CGSA (as determined in accordance with this section 22.911) from co-channel and first-adjacent channel interference and from capture of subscriber traffic by adjacent systems on the same channel block. Licensees must cooperate in resolving co-channel and first-adjacent channel interference by changing channels used at specific cells or by other technical means.

(e) *Unserved Area*. Unserved Area is area outside of all existing CGSAs on either of the channel blocks, to which the Communications Act of 1934, as amended, is applicable.

* * * * *

Revise Section 22.912 in its entirety, to read as follows:

§ 22.912 Service area boundary extensions.

This section contains rules governing service area boundary (SAB) extensions. SAB extensions are areas (calculated using the methodology of § 22.911) that extend outside of the licensee’s Cellular Geographic Service Area (CGSA) boundary into Unserved Area or into the CGSA of a neighboring co-channel licensee. Service within SAB extensions is not protected from interference or capture under § 22.911(d) unless and until the area within the SAB extension becomes part of the CGSA in compliance with all applicable rules.

(a) *Extensions into Unserved Area*. Subject to paragraph (c), the licensee of a Cellular system may, at any time, extend its SAB into Unserved Area and provide service on a secondary basis only, provided that the extension area comprises less than 130 contiguous square kilometers (50

contiguous square miles). If more than one licensee of a Cellular system extends into all or a portion of the same Unserved Area under this section 22.912, all such licensees may provide service in such Unserved Area on a shared secondary (unprotected) basis only.

- (b) *Contract extensions.* The licensee of any Cellular system may, at any time, enter into a contract with an applicant for, or licensee of, a Cellular system on the same channel block to allow one or more SAB extensions into its CGSA (not into Unserved Area).
- (c) *Gulf of Mexico Service Area.* Land-based Cellular system licensees may not extend their SABs into the Gulf of Mexico Exclusive Zone (GMEZ) absent written contractual consent of the co-channel GMEZ licensee. GMEZ licensees may not extend their SABs into the CGSA of a licensee on the same channel block in an adjacent CMA or the Gulf of Mexico Coastal Zone absent written contractual consent of the co-channel licensee.

Remove and reserve Section 22.929.

§ 22.929. [Reserved] See § 22.953.

Revise Section 22.946 in its entirety to read as follows:

§ 22.946 Construction period for Unserved Area authorizations.

The construction period applicable to new or modified Cellular facilities for which an authorization is granted pursuant to the Unserved Area process is one year, beginning on the date the authorization is granted. To satisfy this requirement, a Cellular system must be providing service to mobile stations operated by subscribers and roamers. The licensee must notify the FCC (FCC Form 601) after the requirements of this section are met. See § 1.946 of this chapter. See also § 22.949.

Remove and reserve Section 22.947.

§ 22.947. [Reserved]

Revise Section 22.948 in its entirety to read as follows:

§ 22.948 Geographic partitioning and spectrum disaggregation; spectrum leasing.

Cellular licensees may apply to partition any portion of their licensed Cellular Geographic Service Area (CGSA) or to disaggregate their licensed spectrum at any time following the grant of their authorization(s). Parties seeking approval for partitioning and disaggregation shall request from the FCC an authorization for partial assignment of a license pursuant to § 1.948 of this chapter. See also paragraph (d) of this section 22.948 regarding spectrum leasing.

- (a) *Partitioning, disaggregation, or combined partitioning and disaggregation.* Applicants must file FCC Form 603 (“Assignment of Authorization and Transfer of Control”) pursuant to § 1.948 of this chapter, as well as GIS map files and a reduced-size PDF map pursuant to § 22.953 of this chapter for both the assignor and assignee.
- (b) *Field strength limit.* For purposes of partitioning and disaggregation, Cellular systems must be designed so as to comply with section 22.983.
- (c) *License term.* The license term for a partitioned license area and for disaggregated spectrum will be the remainder of the original license term.
- (d) *Spectrum leasing.* Cellular spectrum leasing is subject to all applicable provisions of subpart X of part 1 of this chapter as well as the provisions of paragraph (a) of this section 22.948, except

that applicants must file FCC Form 608 (“Application or Notification for Spectrum Leasing Arrangement or Private Commons Arrangement”), not FCC Form 603.

Revise Section 22.949 in its entirety to read as follows:

§ 22.949 Unserved Area licensing; minimum coverage requirements.

(a) The Unserved Area licensing process described in this section is on-going and applications may be filed at any time, subject to the following coverage requirements:

(1) Applicants for authority to operate a new Cellular system or expand an existing Cellular Geographic Service Area (CGSA) in Unserved Area must propose a CGSA or CGSA expansion of at least 130 contiguous square kilometers (50 contiguous square miles) using the methodology of section 22.911.

(2) Applicants for authority to operate a new Cellular system must not propose coverage of water areas only (or water areas and uninhabited islands or reefs only), except for Unserved Area in the Gulf of Mexico Service Area.

(b) There is no limit to the number of Unserved Area applications that may be granted on each channel block of each CMA that is subject to the procedures of this section. Consequently, Unserved Area applications are mutually exclusive only if the proposed CGSAs would overlap. Mutually exclusive applications are processed using the general procedures under § 22.131.

(c) Unserved Area applications under this section may propose a CGSA covering more than one CMA. Each Unserved Area application must request authorization for only one CGSA and must not propose a CGSA overlap with an existing CGSA.

(d) Settlements among some, but not all, applicants with mutually exclusive applications for Unserved Area (partial settlements) under this section are prohibited. Settlements among all applicants with mutually exclusive applications under this section (full settlements) are allowed and must be filed no later than the date that the FCC Form 175 (short-form) is filed.

Amend Section 22.950 by revising paragraphs (c) and (d), to read as follows:

§ 22.950 Provision of service in the Gulf of Mexico Service Area (GMSA).

* * * * *

(c) *Gulf of Mexico Exclusive Zone (GMEZ)*. GMEZ licensees have an exclusive right to provide Cellular service in the GMEZ, and may add, modify, or remove facilities anywhere within the GMEZ without prior FCC approval. There is no Unserved Area licensing procedure for the GMEZ.

(d) *Gulf of Mexico Coastal Zone (GMCZ)*. The GMCZ is subject to the Unserved Area licensing procedures set forth in § 22.949.

Remove and reserve Section 22.951.

§ 22.951 [Reserved]

Amend Section 22.953 by revising the introductory text, paragraph (a), paragraphs (a)(1) through (a)(3), (b), and (c), and by removing and reserving paragraphs (a)(4) through (a)(10), and by adding a new paragraph (a)(11), to read as follows:

§ 22.953 Content and form of applications for cellular unserved area authorizations.

Applications for authority to operate a new Cellular system or to modify an existing Cellular system must comply with the specifications in this section.

(a) *New Systems.* In addition to information required by subpart B of this part and by FCC Form 601, applications for an Unserved Area authorization to operate a Cellular system must comply with all applicable requirements set forth in part 1 of this chapter, including the requirements specified in §§ 1.913, 1.923, and 1.924, and must include the information listed below. Geographical coordinates must be correct to ± 1 second using the NAD 83 datum.

(1) *Exhibit I—Geographic Information System (GIS) map files.* Geographic Information System (GIS) map files must be submitted showing the entire proposed CGSA, the new cell sites (transmitting antenna locations), and the service area boundaries of additional and modified cell sites that extend into Unserved Area being claimed as CGSA. See § 22.911. The FCC will specify the file format required for the GIS map files, which are to be submitted electronically via the Universal Licensing System (ULS).

(2) *Exhibit II—Reduced-size PDF map.* This map must be $8\frac{1}{2} \times 11$ inches (if possible, a proportional reduction of a 1:500,000 scale map). The map must have a legend, a distance scale, and correctly labeled latitude and longitude lines. The map must be clear and legible. The map must accurately show the entire proposed CGSA, the new cell sites (transmitting antenna locations), the service area boundaries of additional and modified cell sites that extend beyond the CGSA, and the relevant portions of the CMA boundary. See § 22.911.

(3) *Exhibit III—Technical Information.* In addition, upon request by an applicant, licensee, or the FCC, a Cellular applicant or licensee of whom the request is made shall furnish the antenna type, model, the name of the antenna manufacturer, antenna gain in the maximum lobe, the beam width of the maximum lobe of the antenna, a polar plot of the horizontal gain pattern of the antenna, antenna height to tip above ground level, the height of the center of radiation of the antenna above the average terrain, the maximum effective radiated power, and the electric field polarization of the wave emitted by the antenna when installed as proposed to the requesting party within ten (10) days of receiving written notification.

(4)-(10) [Reserved]

(11) *Additional Information.* The FCC may request information not specified in FCC Form 601 or in paragraphs (a)(1) through (a)(3) as necessary to process an application.

(b) *Existing systems - major modifications.* Licensees making major modifications pursuant to § 1.929(a) and (b) of this chapter must file FCC Form 601 and comply with the requirements of paragraph (a) of this section 22.953.

(c) *Existing systems – minor modifications.* Licensees making minor modifications pursuant to § 1.929(k) of this chapter must file FCC Form 601 or FCC Form 603. See also § 22.169. If the modification involves a contract SAB extension into or from the Gulf of Mexico Exclusive Zone, it must include a certification that the required written consent has been obtained. See § 22.912(c).

Revise Section 22.960 in its entirety to read as follows:

§ 22.960 CMA672-A (Chambers, TX).

This rule section applies only to Cellular systems operating on channel block A of the Chambers, Texas CMA (CMA672-A).

(a) The geographic boundary of CMA672-A is deemed to be the Cellular Geographic Service Area (CGSA) boundary. This CGSA boundary is not determined using the methodology of Section 22.911.

The licensee of CMA672-A may not propose an expansion of this CGSA into another CMA unless and until it meets the construction requirement set forth in paragraph (b)(2) of this Section.

(b) A licensee that holds the license for CMA672-A must be providing signal coverage and offering service (1) to at least 35% of the geographic area of CMA672-A within four years of the grant of such authorization, and (2) to at least 70% of the geographic area of its license authorization by the end of the license term. In applying these geographic construction benchmarks, the licensee is to count total land area.

(c) After it has met each of the requirements of paragraphs (b)(1) and (b)(2), respectively, of this Section, the licensee that holds the license for CMA672-A must notify the FCC that it has met the requirement by submitting FCC Form 601, including GIS map files and other supporting documents showing compliance with the requirement. *See* § 1.946 of this chapter. *See also* § 22.953.

(d) Failure to meet the construction requirements set forth in paragraphs (b)(1) and (b)(2) of this Section by each of the applicable deadlines will result in automatic termination of the license for CMA672-A and its return to the Commission for future re-licensing subject to competitive bidding procedures. The licensee that fails to meet each requirement of this section by the applicable deadline set forth in paragraphs (b)(1) and (b)(2) shall be ineligible to regain the license for CMA672-A.

Revise Section 22.961 in its entirety to read as follows:

§ 22.961 Cellular licenses subject to competitive bidding.

(a) The following applications for Cellular licensed area authorizations are subject to competitive bidding:

- (1) Mutually exclusive applications for Unserved Area filed after July 26, 1993; and
- (2) Mutually exclusive applications for the initial authorization for CMA672-A (Chambers, TX).

(b) The competitive bidding procedures set forth in section 22.229 and the general competitive bidding procedures set forth in part 1, subpart Q will apply.

Remove Section 22.969.

Add a new Section 22.983 to part 22 to read as follows:

§ 22.983 Field strength limit.

- (a) Subject to paragraphs (b) and (c) of this section, a licensee's predicted or measured median field strength limit must not exceed 40 dB μ V/m at any given point along the Cellular Geographic Service Area (CGSA) boundary of a neighboring licensee on the same channel block, unless the affected licensee of the neighboring CGSA on the same channel block agrees to a different field strength. This also applies to CGSAs partitioned pursuant to section 22.948.
- (b) *Gulf of Mexico Service Area.* Notwithstanding the field strength limit provision set forth in paragraph (a) of this section 22.983, licensees in or adjacent to the Gulf of Mexico Exclusive Zone are subject to section 22.912(c) regarding service area boundary extensions. *See* § 22.912(c).
- (c) Cellular licensees shall be subject to all applicable provisions and requirements of treaties and other international agreements between the United States government and the governments of Canada and Mexico, notwithstanding paragraphs (a) and (b) of this section 22.983.

APPENDIX B**Proposed Rules**

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 C.F.R. Parts 0, 1 and 22 as follows:

PART 0 – COMMISSION ORGANIZATION

The authority citation for part 0 continues to read as follows:

Authority: Sec. 5, 48 Stat. 1068, as amended; 47 U.S.C. 155, 225, unless otherwise noted.

Amend Section 0.401 by revising the Note to paragraph (b)(1) to read as follows:

§ 0.401 Location of Commission offices.

* * * * *

(b) * * *

(1) * * * * *

NOTE: Wireless Telecommunications Bureau applications that require frequency coordination by certified coordinators must be submitted to the appropriate certified frequency coordinator before filing with the Commission. After coordination, the applications are filed with the Commission as set forth herein. (See §§ 22.985, 90.127 and 90.175 of this chapter.)

* * * * *

PART 1 – PRACTICE AND PROCEDURE

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, 227, 303(r), 309, 1403, 1404, and 1451.

Amend Section 1.1204 by revising paragraph (a)(7) to read as follows:

§ 1.1204 Exempt ex parte presentations and proceedings.

(a) * * *

(7) The presentation is between Commission staff and an advisory coordinating committee member with respect to the coordination of frequency assignments to stations in the private land mobile services, fixed services, or Cellular Radiotelephone Service as authorized by 47 U.S.C. § 332;

* * * * *

Part 22 of Title 47 of the Code of Federal Regulations is amended as follows:

PART 22 – PUBLIC MOBILE SERVICES

The authority citation for part 22 continues to read as follows:

Authority: 47 U.S.C. 154, 222, 303, 309 and 332.

Amend Section 22.99 by revising the definition of “Cellular system,” and by adding new terms and definitions, to read as follows:

§ 22.99 Definitions.

* * * * *

Cellular system. An automated high-capacity system of one or more base stations designed to provide radio telecommunication services to mobile stations over a wide area in a spectrally efficient manner. Cellular systems employ techniques such as low transmitting power and automatic hand-off between base stations of communications in progress to enable channels to be reused at relatively short distances.

* * * * *

Frequency coordinator. In the Cellular Radiotelephone Service, a person or organization certified by the FCC to review applications submitted by applicants, including any exhibits and electronic maps, to ensure that the applications are in compliance with all rules applicable to the Cellular Service. *See* § 22.985.

* * * * *

Power spectral density (PSD). The power of an emission in a frequency domain, such as ERP or EIRP, stated per unit bandwidth, *e.g.*, watts/MHz.

* * * * *

Revise Section 22.169 in its entirety to read as follows:

§ 22.169 International coordination.

Operation of systems and channel assignments under this part are subject to the applicable provisions and requirements of treaties and other international agreements between the United States government and the governments of Canada and Mexico.

Amend Section 22.317 by adding a sentence at the end to read as follows:

§ 22.317 Discontinuance of station operation.

* * * * * This Section 22.317 does not apply to the Cellular Radiotelephone Service (*see* § 22.947).

Amend Table C-1 of Section 22.355 by revising the heading for the third column, to read as follows:

§ 22.355 Frequency tolerance.

* * * * *

Table C-1—Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency range (MHz)	Base, fixed (ppm)	Mobile > 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	n/a	n/a
929 to 960	1.5	n/a	n/a
2110 to 2220	10.0	n/a	n/a

Amend Section 22.913 by revising the Introduction and paragraph (a), and by adding new paragraph (b), and by revising the existing paragraph (b) and renumbering it as paragraph (d), and by renumbering the existing paragraph (c) as paragraph (e) and reserving paragraph (c), and by revising the existing reference to paragraph (b) as paragraph (d), to read as follows:

§ 22.913 Effective radiated power limits.

Subject to § 22.169, the effective radiated power (ERP) of transmitters in the Cellular Radiotelephone Service must not exceed the limits in this section.

- (a) *Maximum ERP.* The effective radiated power (ERP) in the Cellular Radiotelephone Service must not exceed the following limits:
- (1) The ERP of base transmitters and cellular repeaters must not exceed 500 watts per authorized bandwidth or XXX watts/MHz.
 - (2) For cellular systems operating in areas more than 72 kilometers (45 miles) from international borders that: (i) are located in counties with population densities of 100 persons or fewer per square mile, based upon the most recently available population statistics from the Bureau of the Census; or (ii) extend coverage into Unserved Area (*see* § 22.949), the ERP of base transmitters and cellular repeaters must not exceed 1000 watts per authorized bandwidth or XXX watts/MHz.
 - (3) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.
- (b) *Power measurement.* The ERP limits set forth in paragraph (a) of this section must be measured in terms of average power over a resolution bandwidth of 100 kHz or greater.
- (c) [Reserved]
- (d) *Height-power limit.* The ERP of base transmitters must not exceed the amount that would result in an average distance to the service area boundary of 79.1 kilometers (49 miles) for cellular systems authorized to serve the Gulf of Mexico Service Area and 40.2 kilometers (25 miles) for all other cellular systems. The average distance to the service area boundary is calculated by taking the

arithmetic mean of the distances determined using the procedures specified in § 22.911 for the eight cardinal radial directions.

- (e) *Coordination exemption.* Licensees need not comply with the height-power limit in paragraph (d) of this section if the proposed operation is coordinated with the licensees of all affected cellular systems on the same channel block within 121 kilometers (75 miles) and concurrence is obtained.

Add a new Section 22.947 to part 22 to read as follows:

§ 22.947 Discontinuance of service.

- (a) *Termination of authorization.* (1) Except with respect to CMA672-A (*see* paragraph (a)(2) of this section 22.947), a licensee's Cellular Geographic Service Area authorization will automatically terminate, without specific Commission action, if the licensee permanently discontinues service after expiration of the construction period specified in § 22.946.
- (2) *CMA672-A (Chambers, TX).* The licensee's authorization for CMA672-A will automatically terminate, without specific Commission action, if the licensee permanently discontinues service after meeting its interim construction requirement as specified in § 22.961(b)(1).
- (b) *Permanent discontinuance.* Permanent discontinuance of service is defined as 180 consecutive days during which a licensee does not operate or, in the case of a commercial mobile radio service provider, does not provide service to at least one subscriber that is not affiliated with, controlled by, or related to the providing carrier.
- (c) *Filing requirements.* A licensee that permanently discontinues service as defined in this section must notify the Commission of the discontinuance within 10 days by filing, via the ULS, FCC Form 601 requesting license cancellation. An authorization will automatically terminate, without specific Commission action, if service is permanently discontinued as defined in this section, even if a licensee fails to file the required form requesting license cancellation.

Remove and reserve Sections 22.955 and 22.957.

§§ 22.955-22.957 [Reserved]

Add a new Section 22.985 to part 22 to read as follows:

§ 22.985 Frequency coordination.

- (a) A frequency coordinator in the Cellular Radiotelephone Service shall perform the following functions:
- (1) Review applications (including all exhibits and attachments) listed in paragraph (c) of this § 22.985 for compliance with all rules applicable to the Cellular Service.
 - (2) If, in the coordinator's assessment, an application is not in compliance with applicable rules, the coordinator shall notify the applicant about the noncompliance. The applicant may then correct the application and resubmit the application to the coordinator for review.
 - (3) If, in the coordinator's assessment, an application is in compliance with all applicable rules, the coordinator shall submit the application to the Commission for processing. The coordinator shall also submit along with the application a statement that indicates the

- application is compliant with all applicable rules and recommends that the FCC grant the application.
- (b) The functions and recommendations of a frequency coordinator under this § 22.985 are advisory in nature for the applicant and the Commission, and its recommendations are not binding upon either the applicant or the Commission. If there is a disagreement between an applicant and a coordinator regarding the coordinator's recommendation, the coordinator and applicant are jointly responsible for taking action to resolve the disagreement, up to and including notifying the Commission that the disagreement cannot be resolved. In the event of such an irresolvable dispute, the applicant may direct the reviewing coordinator to submit the application to the Commission without the coordinator's recommendation. Such an application should indicate that the applicant sought frequency coordination and be accompanied by a statement from the coordinator explaining its reasons for not recommending the proposed operations. The affected applicant shall bear the burden of proceeding and the burden of proof in requesting that the Commission overturn a coordinator's recommendation.
- (c) An applicant that files any of the following types of applications must first submit them to a certified frequency coordinator in the Cellular Service for review:
- (1) A major modification application claiming at least 130 square kilometers (50 contiguous square miles) of Unserved Area as Cellular Geographic Service Area (CGSA);
 - (2) An application seeking authorization for a new Cellular system; and
 - (3) Any other application when submitted together with an application type that is listed in paragraph (c)(1) or (c)(2) of this § 22.985.
- (d) Within one business day of making a recommendation, a frequency coordinator must notify and provide the information listed in paragraph (e) of this § 22.985 to all other coordinators who are certified to review Cellular applications. A coordinator that does not make any recommendations regarding Cellular applications on a given day must notify all other certified coordinators for the Cellular Service of such fact. A notification under this paragraph (d) must be made to all the other certified coordinators at approximately the same time and can be made using any method that ensures compliance with this same-business-day requirement.
- (e) At a minimum, the following information must be included in each notification that is required under paragraph (d) of this § 22.985:
- (1) Name of the applicant;
 - (2) The type of application under paragraph (c) of this § 22.985;
 - (3) CMA designator(s) pertaining to where the applicant is expanding its CGSA or starting a new system;
 - (4) For an application type under paragraph (c)(1) of this § 22.985, the license (call sign) at issue, and the CMA description and channel block;
 - (5) New or modified transmitter location(s) along with coordinates and antenna height;
 - (6) Effective radiated power (ERP), antenna center of radiation height above average terrain (HAAT), height above sea level (HASL) or height above mean sea level (HAMSL) and distance to the SAB and to the CGSA for the eight radials of each new/modified location; and
 - (7) Date and time of the recommendation.
- (f) Upon request, each frequency coordinator for the Cellular Service must provide any additional information requested by another certified coordinator regarding a Cellular application already reviewed by the coordinator but still pending before the Commission.

- (g) It is the responsibility of each frequency coordinator to ensure that its recommendations do not conflict with the recommendations of any other certified coordinator for the Cellular Service. Should a conflict arise, the affected coordinators are jointly responsible for taking action to resolve the conflict, up to and including notifying the Commission that an application may have to be returned.

APPENDIX C

Final Regulatory Flexibility Act Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (“RFA”)¹ an Initial Regulatory Flexibility Analysis (“IRFA”) was incorporated in the *Notice of Proposed Rulemaking and Order* (“2012 NPRM”). The Commission sought written public comment on the proposals in the 2012 NPRM, including comment on the IRFA. This present Final Regulatory Flexibility Analysis (“FRFA”) conforms to the RFA.²

A. Need for, and Objectives of, the Report and Order

2. In today’s *Report and Order*, the Commission eliminates numerous filing requirements governing the 800 MHz Cellular Radiotelephone Service (“Cellular”) band through an immediate transition to geographic-based licensing while still preserving the ability to expand service coverage. The tremendous increase in flexibility and significant reduction in time-consuming regulatory processes benefit all licensees and FCC staff alike, and bring the Cellular Service into greater harmony with the more flexible licensing schemes used by other similar mobile services, such as PCS, certain AWS, and the 600 MHz and 700 MHz Services. We recognize the public interest benefits to all entities of having all Cellular licensees under a single scheme and the continued public interest benefits of direct access to areas that remain unlicensed (“Unserved Area”) on an as-needed basis nationwide.

3. Specifically, today the Commission adopts new and revised rules to establish geographic licenses based on Cellular Geographic Service Area (“CGSA”) boundaries, and to provide licensees with new flexibility to improve their systems through modifications within those boundaries without Commission filings. We establish a field strength limit rule that is more flexible than the comparable rules in other competitive wireless services, as appropriate in light of the continued ability to expand CGSAs. Notably, because a licensee’s CGSA will in some cases be bordered by Unserved Area rather than the CGSA of a neighboring co-channel licensee, the rule we adopt applies the 40 dB μ V/m field strength limit at the CGSA boundary of the neighboring co-channel licensee. Consistent with the flexibility provided in other wireless services such as PCS, we permit neighboring co-channel licensees to negotiate different field strength limits.

4. The new rules we adopt today in the *Report and Order* also eliminate the need to obtain consents and submit filings related to extensions of service area boundaries (“SABs”) into the CGSAs of neighboring licensees operating on the same channel block. Recognizing, however, the unique licensing regime established over decades for the Gulf of Mexico Service Area (“Gulf”), including Commission and judicial proceedings, the Commission concludes that it should retain the *status quo* in that region in most respects. Accordingly, we exempt the Gulf from the new field strength limit rule to the following extent: land-based carriers adjoining the Gulf will be required to negotiate any desired SAB extensions into the Gulf of Mexico Exclusive Zone (“Exclusive Zone”) and submit minor modification applications to the Commission, certifying that such consent has been obtained; and licensees in the Exclusive Zone will likewise be required to negotiate any desired SAB extensions into the licensed area of adjacent co-channel land-based carrier and submit minor modification applications to the Commission, certifying that such consent has been obtained. We clarify that all land-based carriers will, however, be subject to the new field strength limit rule to protect the licensed CGSA boundaries of all neighboring co-channel land-based licensees.

¹ 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).

² See 5 U.S.C. § 604.

5. Under the new rules, incumbents will still be permitted to expand their CGSAs into Unserved Area – a key element of the site-based system that is being retained to balance the concerns of smaller, more rural carriers and large carriers alike – so long as the expansion area is at least 50 contiguous square miles. We couple this with permission to serve Unserved Area parcels smaller than 50 contiguous square miles on a secondary basis indefinitely, without notifying the FCC or seeking its prior approval. These reforms will dramatically reduce the number of applications – as well as the associated build-out notifications -- that are, under current rules, required even for extremely small CGSA expansions. We clarify that applications for CGSA expansions that do not meet the new minimum square mileage requirement of at least 50 contiguous square miles will be returned or dismissed unless first withdrawn by the applicant. We anticipate that small entities will particularly benefit from being permitted to provide service on a secondary basis indefinitely in Unserved Area parcels of less than 50 contiguous square miles without Commission filings. This approach enhances the flexibility of small entities to serve smaller parcels and make system improvements within the licensed geographic boundary, which also increases small entities' ability to respond to the market and serve their customers without being hampered by administrative burdens.

6. The initial license for channel block A of the Chambers, Texas market, CMA672-A (“Chambers”), is being addressed under the existing rules' framework, consistent with past initial Cellular Service licenses issued for CMA channel blocks that have been subject to the Commission's competitive bidding procedures (*see* Section 22.969 of the current rules). Accordingly, under the revised Section 22.960, the Wireless Telecommunications Bureau will announce when applications will be accepted for this license, and any mutually exclusive applications that are accepted will be resolved by auction. We adopt the proposed geographic coverage build-out requirements that were set forth in the *2012 NPRM*, rather than subjecting the new Chambers licensee to the legacy five-year and Phase I requirements. Any Chambers licensee that does not meet each of the two build-out benchmarks established in new Section 22.961 will forfeit the license and will not be eligible to regain it.

7. Many of the rules that are remaining in place are being modernized or streamlined. This includes, for example, the adoption of a mandatory electronic filing requirement for submission of the CGSA maps in GIS format (map files) with any applications that continue to require such maps, thus ending the preparation and submission of the large-scale paper maps. As another example of streamlining, we end of routine submission of 16 exhibits and other technical information currently required with new-system and major modification applications under Section 22.953. Additionally, a number of revised rules are being adopted by this *Report and Order* solely to bring the rules up to date in terms of terminology and cross-references, consistent with the *2012 NPRM*. Notably, for example, in light of the adopted new rules governing the licensing of the Chambers market, we delete provisions throughout the Cellular rules that reference the legacy five-year/Phase I build-out requirements under the existing site-based model, and we update references to Phase II accordingly. These modernizations also include a revised Section 22.946 of our rules governing the build-out period for Cellular systems, and an updated version of Section 22.948 governing partitioning and disaggregation. Also as proposed, Section 22.901(b) is being deleted as moot because of the sunset of the requirement to provide analog Cellular service, and we correct an inadvertent error in the distance computation formula in Section 1.958(d), which was introduced in the process of moving the provision containing the formula from Part 22 (then Section 22.157) to Subpart F of Part 1. Various other changes to streamline or modernize the rules are explained in Section II.L. of the *Report and Order*, and all new and revised rules are set forth in Appendix A (Final Rules).

8. In keeping with the Commission's current licensing approach, if mutually exclusive CGSA-expansion or new-system CGSA applications are filed and accepted, they will continue to be set for closed auction unless the competing applicants are able to resolve the mutual exclusivity beforehand, *e.g.*, through settlements, in accordance with our rules. We do, however, consolidate several rules addressing licenses that are subject to competitive bidding procedures where mutually exclusive applications are accepted and filed, and adopt a revised Section 22.960 to eliminate redundancy and unnecessary provisions. The Commission, in recognizing the lengthy Commission and judicial

proceedings that contributed to the current licensing regime in the Gulf of Mexico, preserves the *status quo* of the existing licensing regime in the Gulf for the most part. Retention of the need for land-based carriers to negotiate SAB extension agreements with carriers in the Exclusive Zone provides Gulf licensees with more flexibility to adjust to the demands of the market while preserving their current ability to provide service to consumers. To the extent that Gulf licensees are currently subject to Unserved Area licensing procedures under our rules, they are not exempt from the revised rules and procedures that we are adopting today to modernize and streamline the Cellular Unserved Area licensing model, as consistent with the proposal in the 2012 NPRM.

9. On a related, final note, the freeze on the acceptance of certain Cellular applications³ is being lifted and the interim procedures⁴ that were adopted are no longer in force, as of the effective date of the new rules adopted in the *Report and Order*.

B. Summary of Significant Issues Raised by Public Comments in Response to the IFRA

10. No comments were submitted specifically in response to the IRFA.

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

11. 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 rules adopted herein.⁵ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”⁶ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁷ A “small business concern” is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (“SBA”).⁸

12. *Small Businesses, Small Organizations, and Small Governmental Jurisdictions.* Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive, statutory small entity size standards that encompass entities that could be directly affected by the proposals under consideration.⁹ As of 2009, small businesses represented 99.9% of the 27.5 million businesses in the United States, according to the SBA.¹⁰ Additionally, a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹¹ Nationwide, as of 2007, there were approximately 1,621,315 small organizations.¹² Finally, the term “small governmental jurisdiction” is defined generally

³ See the Order portion of the 2102 NPRM & Order (“2012 Order”) ¶¶ 67-72.

⁴ See 2012 Order ¶¶ 73-75.

⁵ 5 U.S.C. § 604(a)(3).

⁶ 5 U.S.C. § 601(6).

⁷ 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.”

⁸ 15 U.S.C. § 632.

⁹ See 5 U.S.C. § 601(3)–(6).

¹⁰ See SBA, Office of Advocacy, “Frequently Asked Questions,” available at <http://web.sba.gov/faqs/faqindex.cfm?areaID=24> (last visited Aug. 31, 2012).

¹¹ 5 U.S.C. § 601(4).

¹² INDEPENDENT SECTOR, THE NEW NONPROFIT ALMANAC & DESK REFERENCE (2010).

as “governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.”¹³ Census Bureau data for 2007 indicate that there were 89,527 governmental jurisdictions in the United States.¹⁴ We estimate that, of this total, as many as 88,761 entities may qualify as “small governmental jurisdictions.”¹⁵ Thus, we estimate that most governmental jurisdictions are small.

13. *Wireless Telecommunications Carriers (except Satellite)*. The SBA has developed a small business size standard for small businesses in the category “Wireless Telecommunications Carriers (except satellite).”¹⁶ The census category of “Cellular and Other Wireless Telecommunications” is no longer used and has been superseded by the larger category “Wireless Telecommunications Carriers (except satellite).” The Census Bureau defines this larger category to include “establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular phone services, paging services, wireless Internet access, and wireless video services.”¹⁷

14. The size standard for that category is that a business is small if it has 1,500 or fewer employees.¹⁸ Census Bureau data for 2007, show that there were 1,383 firms in this category that operated for the entire year. Of this total, 1,368 had employment of 999 or fewer, and 15 firms had employment of 1,000 employees or more.¹⁹ Thus, under this category and the associated small business size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small entities that may be affected by our proposed action. The Commission’s own data—available in its Universal Licensing System—indicate that, as of July 15, 2014, there are 317 Cellular licensees that will be affected by this *Report and Order*.²⁰ The Commission does not know how many of these licensees are small, as the Commission does not collect that information for these types of entities.

¹³ 5 U.S.C. § 601(5).

¹⁴ U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES: 2011, Table 427 (2007).

¹⁵ The 2007 U.S. Census data for small governmental organizations are not presented based on the size of the population in each such organization. There were 89,476 local governmental organizations in 2007. If we assume that county, municipal, township, and school district organizations are more likely than larger governmental organizations to have populations of 50,000 or less, the total of these organizations is 52,095. If we make the same population assumption about special districts, specifically that they are likely to have a population of 50,000 or less, and also assume that special districts are different from county, municipal, township, and school districts, in 2007 there were 37,381 such special districts. Therefore, there are a total of 89,476 local government organizations. As a basis of estimating how many of these 89,476 local government organizations were small, in 2011, we note that there were a total of 715 cities and towns (incorporated places and minor civil divisions) with populations over 50,000. CITY AND TOWNS TOTALS: VINTAGE 2011 – U.S. Census Bureau, available at <http://www.census.gov/popest/data/cities/totals/2011/index.html>. If we subtract the 715 cities and towns that meet or exceed the 50,000 population threshold, we conclude that approximately 88,761 are small. U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES 2011, Tables 427, 426 (Data cited therein are from 2007).

¹⁶ 13 C.F.R. § 121.201, NAICS code 517210.

¹⁷ U.S. Census Bureau, Industry Statistics Portal, “Wireless Telecommunications Carriers (Except Satellite),” 2007 NAICS Definitions, NAICS 517210, available at <http://www.census.gov/econ/isp/sampler.php?naicscode=517210&naicslevel=6#>.

¹⁸ 13 C.F.R. § 121.201, NAICS code 517210.

¹⁹ See http://factfinder2.census.gov/bkmk/table/1.0/en/ECN/2007_US/51SSSZ5//naics-517210

²⁰ See <http://wireless.fcc.gov/uls>. For the purposes of this FRFA, consistent with Commission practice for wireless services, the Commission estimates the number of licensees based on the number of unique FCC Registration Numbers (FRNs).

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

15. This *Report and Order* implements several rule and policy modifications that generally affect all Cellular licensees. The primary changes are as follows: (1) establishing geographic area licenses based on CGSA boundaries; (2) establishing a field strength limit rule that reflects the continued ability to expand CGSAs and extend SABs into Unserved Area; (3) eliminating, except in the case of the Gulf, as explained above, the need to obtain consents and submit filings related to SAB extensions into neighboring co-channel licensees' CGSAs; (4) eliminating the need to submit applications for minor modifications of cell sites where the SAB remains within the CGSA boundary; and (5) permitting incumbents to expand their CGSAs into Unserved Area so long as the expansion is at least 50 contiguous square miles, while dramatically reducing their filing burdens by permitting them to serve an Unserved Area parcel smaller than 50 contiguous square miles indefinitely on a secondary basis, without any Commission filings. These modifications should have a beneficial, if any, reporting, recordkeeping, or compliance impact on small entities because all Cellular licensees are now subject to reduced filing burdens and recordkeeping as a result of the Commission's transition of the Cellular Service to geographic-based licensing.

16. The Commission also implements a customized approach with regard to the initial primary Chambers license.²¹ This approach follows the pattern established by other mobile services such as PCS, certain AWS, and the 700 MHz Services. Application procedures will remain consistent with other initial Cellular licenses for CMA blocks that have been subject to competitive bidding procedures where mutually exclusive applications have been accepted. However, once granted, the Chambers license will be subject to the four-year and ten-year construction benchmarks set forth in the *Report and Order* instead of the legacy five-year and Phase I build-out/application processes. This regulatory framework allows the Chambers licensee to enjoy the same flexibility and reduced administrative burden as other Cellular licensees and other providers of other mobile services.²²

17. The *Report and Order* does not fundamentally alter every Cellular rule pertaining to licensing and expansion applications. For example, where mutually exclusive CGSA-expansion or new system CGSA applications are accepted, they will continue to be set for closed auction unless the competing applicants are able to resolve the mutual exclusivity beforehand in accordance with Commission rules. Nonetheless, this *Report and Order* modernizes in several ways the Cellular rules that are being retained, benefitting all licensees and applicants. Several of these changes will significantly reduce the burden of compliance imposed on small businesses, such as the change that ends routine submission of 16 different exhibits and technical information with new-system and major modification applications. The Commission also adopts the mandatory electronic filing requirement for submission of the maps in GIS format with any applications that continue to require such maps, ending the filing of large-scale paper maps.

18. 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 in this context promotes fairness. The Commission does not believe that the costs and/or administrative burdens associated with the rules will unduly burden small entities. In fact, the revisions adopted by the Commission should benefit small entities by reducing their administrative burdens while simultaneously giving them more flexibility in their Cellular operations.

²¹ See *supra* Section II.K.

²² See Appendix B (Final Rules), § 22.960(a)(ii), (b); see also § 22.961(b) (interplay of rules that create this customized approach).

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

19. The RFA requires an agency to describe any significant alternatives that it has considered in developing its approach, which may include the following four alternatives (among others): (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such 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 such small entities.²³

20. The Commission believes that the transition to a geographic-based licensing system for the Cellular Service will benefit all Cellular incumbents and entrants, regardless of size. The proposed framework will put Cellular licensees more on a regulatory par with other wireless licensees that hold geographic area licenses, such as PCS and certain AWS licensees. As can be seen from the Commission's treatment of these geographic-based wireless services, establishing a field strength limit coupled with permitting neighboring licensees to negotiate a different limit has worked effectively to provide licensees flexibility in system design, while limiting the amount of signal incursion into an adjacent licensed area. As a result, today's *Report and Order* eases the regulatory burden of compliance for Cellular providers by eliminating several key discrepancies in competing services. By reducing a licensee's paperwork burden, we also expect their resulting lower costs to have some positive effect on the rates paid by subscriber groups, including businesses that rely on Cellular Service. Any small business that obtains the initial Chambers license will now benefit from complying with the streamlined build-out requirements as detailed above.

21. In recognition of the lengthy Commission and judicial proceedings that contributed to the existing licensing regime in the Gulf, we are maintaining the *status quo* regarding any desired SAB extensions, as explained in the *Report and Order*. This approach gives Gulf licensees maximum flexibility in adjusting to market demands without destabilizing their ability to provide service to consumers. We see no potential burden on small businesses and believe the benefits provided by maintaining the *status quo* in this regard enhance the competitive standing of small entities in the market.

22. The enhanced ability in numerous scenarios to modify Cellular systems without imposing the need for filings with the Commission is expected to relieve all entities, including small entities, of significant regulatory burdens. Likewise, allowing Cellular licensees to negotiate agreements specifying different field strength limits provides licensees with additional flexibility in their operations.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Rules/Report to Congress

23. None.

G. Report to Congress

24. The Commission will send a copy of the *Report and Order*, including this FRFA, in a report to be sent to Congress pursuant to the Congressional Review Act.²⁴ 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*.²⁵

²³ 5 U.S.C. § 603(c)(1) – (c)(4).

²⁴ See 5 U.S.C. § 801(a)(1)(A).

²⁵ See 5 U.S.C. § 604(b).

APPENDIX D

Initial Regulatory Flexibility Analysis

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

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

2. In the *FNPRM*, we propose several additional reforms of the 800 MHz Cellular Radiotelephone Service (“Cellular” or “Cellular Service”) to advance our goal to establish a more flexible, modernized licensing approach that ensures more efficient use of licensee resources as well as Commission resources. Notably, we propose and seek comment on a new rule in Subpart H of Part 22 that would apply to Cellular licensees with respect to permanent discontinuance of operations. Currently, Cellular licensees are subject to Section 22.317 of the Commission’s rules, which is applicable to all Part 22 Public Mobile Services stations, not only Cellular Service stations. Section 22.317 defines permanent discontinuance as the failure to provide service to subscribers for 90 continuous days, although licensees may have 120 continuous days with an extension. This rule applies to Cellular licensees on a cell-site basis, rather than to their Cellular Geographic Service Area (“CGSA”) in its entirety. Pursuant to Section 22.317, if an individual cell site is permanently discontinued, the licensee is required to file the appropriate form in ULS to authorize cancellation of the license with respect to that site. The licensee’s CGSA is modified accordingly to reflect the reduction in licensed area.

3. Consistent with our approach regarding permanent discontinuance rules in recent proceedings involving other flexible commercial wireless services, we propose to define permanent discontinuance for Cellular licensees as 180 consecutive days during which the licensee does not operate or, in the case of a Cellular commercial service provider, does not provide service to at least one unaffiliated subscriber. In addition to accommodating most Cellular licensees, which provide commercial mobile radio service offerings, we also recognize that flexibility is needed where Cellular licensees use their systems for private, internal communications. The proposed definition would accommodate all Cellular licensees and make the Cellular Service more consistent with other flexible wireless services. We also propose, in light of the rules we adopt today in the *Report and Order*, that the new service discontinuance rule be applied to the entire geographic license area, *i.e.*, the CGSA, rather than individual cell sites. Following the effective date of a new discontinuance rule, a Cellular system not in operation or providing service within the CGSA to at least one unaffiliated subscriber for the defined permanent discontinuance period of 180 consecutive days would terminate automatically. If an Unserved Area application is granted to create a new Cellular system in compliance with the rules adopted today in the *Report and Order*, we propose that the new system would be allowed the full construction period of one year from the date of grant of the authorization before counting the period we may ultimately adopt to define permanent discontinuance for the Cellular Service, unless an extension or waiver is granted.

¹ 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).

² See 5 U.S.C. § 603(a).

³ *Id.*

Under our proposal, therefore, the licensees of new Cellular systems would not be subject to the permanent discontinuance rule until the expiration of the construction period, including extensions, if any. The proposed new rule would provide greatly increased flexibility to all Cellular licensees and avoid penalizing those that choose to operate and provide service early in their construction periods, regardless of size.

4. In addition, consistent with Section 1.955(a)(3) of our current rules, we propose that if a Cellular licensee permanently discontinues service, the licensee must notify the Commission of the discontinuance within 10 days by filing FCC Form 601 or 605 and authorizing license cancellation for the entire geographic area, *i.e.*, the licensed CGSA. We emphasize, however, that under our proposal, the Cellular license would automatically terminate without specific Commission action if service is permanently discontinued even if the licensee fails to file the required FCC Form. Cellular Service licensees will continue to be subject to the existing Section 22.317 for individual cell sites until a new rule is adopted. We also seek comment on an alternative proposal advocated jointly by certain commenters (the “Coalition”). Specifically, it proposes that a Cellular licensee should be required to “file a reduction in service area [only] if . . . that licensee’s actual coverage area drops below 50 percent of its coverage area . . . for more than 12 months.” We seek comment on the costs and benefits of the Coalition’s proposed approach, and we invite comment on any additional alternatives not discussed in the *FNPRM*.

5. As explained in Section III.B., the *FNPRM* proposes to require that applicants use frequency coordinators to review new-system and CGSA-expansion applications that continue to be submitted to the Commission pursuant to the new Cellular Service rules adopted in today’s companion *Report and Order*. The Commission receives many inaccurate Cellular applications, which must then be returned for curative amendment. This delays new service to Unserved Area and consumes significant licensee and Commission resources. We tentatively conclude that using frequency coordinators to review the applications can address this problem. We propose that frequency coordinators meet certain criteria to be certified by the Commission to work with applicants to ensure that new-system and CGSA-expansion applications are accurate and comply with all applicable rules. We further propose that, after a favorable review, the coordinator handling a particular application would submit the application to the Commission with a recommendation that it be granted. Commission staff would then review and act on the application.

6. Under our proposal, a frequency coordinator would also have to provide certain information to all other Cellular Service frequency coordinators on any day it makes a recommendation, as well as on any day that it makes no such recommendations. As in other wireless services in which the Commission has established the use of frequency coordinators, the Cellular Service frequency coordinators’ recommendations would be advisory and not binding on either the applicants or the Commission. However, applicants would have the burden to refute coordinators’ recommendations. We seek comment on a range of issues related to our proposed frequency coordinator regime, including comment on additional coordinator duties, the number of coordinators, the interaction between coordinators, and coordinator certification criteria and the selection process. We also invite preliminary expressions of interest from parties interested in becoming frequency coordinators for the Cellular Service, keeping in mind the changes the *Report and Order* makes to the rules and procedures applicable to Cellular licensees.

7. In the *FNPRM*, the Commission also proposes several changes to the radiated power rules that govern the Cellular Service. Notably, we propose to establish a Power Spectral Density (“PSD”) model as an option for base station transmitters and Cellular repeaters in both rural and non-rural operations. The Commission does not propose specific PSD limits at this point. Instead, we discuss and invite comment on different options with the goal of ensuring, whatever limits and related provisions we may ultimately adopt in this proceeding, that we permit robust Cellular deployment of advanced technologies, such as LTE, and also achieve our goal of compatibility with other spectrum users, especially public safety users in the adjacent bands. The Commission proposes to keep the current base station ERP limit for those Cellular licensees that use technologies incompatible with a PSD model, while also providing flexibility to Cellular licensees seeking to deploy wideband technologies. A PSD model

can better accommodate newer, wideband technologies by establishing ERP caps on a “per MHz of spectrum bandwidth” rather than a “per emission” basis.

8. In connection with our proposal to adopt a PSD model, we also seek comment on whether we should adopt a Power Flux Density (“PFD”) limit as well, and if so, what that limit should be. We also seek comment on whether and how we should amend the Cellular height-power limit and exemption rules. We further seek comment on whether we should change the power limit for Cellular mobile or portable transmitters. Because mobile devices often operate across multiple service bands, we are considering establishing consistent measurement techniques for equipment to facilitate the equipment authorization process, and we propose that the power should be measured in terms of maximum average power as measured with a root mean square power averaging detector. In the event we adopt an average power measurement requirement for Cellular licensees, we seek comment on whether it should be accompanied by a peak-to-average ratio. We also propose to specify that power should be measured with a resolution bandwidth, but seek comment on what that resolution bandwidth should be. In addition, we seek comment on whether we should convert our Cellular power requirements to EIRP instead of ERP. We further seek comment on the impact of MIMO antenna techniques on our radiated power rules and measurement procedures. We invite comment on whether any other Part 22 rules regarding equipment standards and measurement need to be updated or modified to be consistent with the equipment certification rules in Part 2 of the Commission’s rules.

9. Section 22.917 of our rules specifies the current Cellular out of band emission (“OOBE”) limits for suppression of unwanted emissions. We seek comment generally on whether we should revise our Cellular OOBE limits, given the changing 800 MHz spectrum environment, technological developments, and compliance measurement techniques. Section 22.911 establishes a formula for determining the Service Area Boundary (“SAB”) of a cell site, using height above average terrain (H) and power (P) values of the proposed new or modified Cellular base station along eight cardinal radials. In the context of proposing a PSD model and related other changes in the radiated power rules for the Cellular Service, we seek comment on potential methods of addressing the SAB determination under Section 22.911 so that applicants for Unserved Area are treated on par with one another regardless of the technology they choose.

10. Cellular licensees are required to coordinate channel usage at each transmitter location within 121 kilometers (75 miles) of any transmitter locations that are authorized to other licensees or proposed by other applicants, excepting those licensees with mutually exclusive applications. We propose to maintain the requirements as is, but we seek comment on whether the current coordination requirements are sufficient or whether they need to be enhanced, in the event we adopt the use of a PSD model. We also propose to streamline the international coordination rules by eliminating Sections 22.955 and 22.957, while preserving Section 22.169 with a minor revision. This would advance our regulatory reform agenda by deleting unnecessary or redundant provisions. We also propose correction of a clerical error in Section 22.355 of our rules.

B. Legal Basis

11. The proposed action is taken under Sections 1, 2, 4(i), 301, 303, 307, 309, 319, 324, and 332 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 301, 303, 307, 309, 319, 324, and 332.

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

12. 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.⁴ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small

⁴ 5 U.S.C. § 603(b)(3).

organization,” and “small governmental jurisdiction.”⁵ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁶ A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.⁷

D. Small Businesses, Small Organizations, and Small Governmental Jurisdictions.

13. Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive, statutory small entity size standards that encompass entities that could be directly affected by the proposals under consideration.⁸ As of 2009, small businesses represented 99.9% of the 27.5 million businesses in the United States, according to the SBA.⁹ Additionally, a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹⁰ Nationwide, as of 2007, there were approximately 1,621,315 small organizations.¹¹ Finally, the term “small governmental jurisdiction” is defined generally as “governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.”¹² Census Bureau data for 2007 indicate that there were 89,527 governmental jurisdictions in the United States.¹³ We estimate that, of this total, as many as 88,761 entities may qualify as “small governmental jurisdictions.”¹⁴ Thus, we estimate that most governmental jurisdictions are small.

14. *Wireless Telecommunications Carriers (except Satellite)*. The appropriate size standard under SBA rules is for the category Wireless Telecommunications Carriers. The size standard for that

⁵ 5 U.S.C. § 601(6).

⁶ 5 U.S.C. § 601(3) (incorporating by reference the definition of “small business concern” in 15 U.S.C. § 632). Pursuant to the RFA, 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.” *Id.*

⁷ Small Business Act, 15 U.S.C. § 632 (1996).

⁸ *See* 5 U.S.C. § 601(3)–(6).

⁹ *See* SBA, Office of Advocacy, “Frequently Asked Questions,” available at <http://web.sba.gov/faqs/faqindex.cfm?areaID=24> (last visited Aug. 31, 2012).

¹⁰ 5 U.S.C. § 601(4).

¹¹ INDEPENDENT SECTOR, THE NEW NONPROFIT ALMANAC & DESK REFERENCE (2010).

¹² 5 U.S.C. § 601(5).

¹³ U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES: 2011, Table 427 (2007).

¹⁴ The 2007 U.S. Census data for small governmental organizations are not presented based on the size of the population in each such organization. There were 89,476 local governmental organizations in 2007. If we assume that county, municipal, township, and school district organizations are more likely than larger governmental organizations to have populations of 50,000 or less, the total of these organizations is 52,095. If we make the same population assumption about special districts, specifically that they are likely to have a population of 50,000 or less, and also assume that special districts are different from county, municipal, township, and school districts, in 2007 there were 37,381 such special districts. Therefore, there are a total of 89,476 local government organizations. As a basis of estimating how many of these 89,476 local government organizations were small, in 2011, we note that there were a total of 715 cities and towns (incorporated places and minor civil divisions) with populations over 50,000. CITY AND TOWNS TOTALS: VINTAGE 2011 – U.S. Census Bureau, available at <http://www.census.gov/popest/data/cities/totals/2011/index.html>. If we subtract the 715 cities and towns that meet or exceed the 50,000 population threshold, we conclude that approximately 88,761 are small. U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES 2011, Tables 427, 426 (Data cited therein are from 2007).

category is that a business is small if it has 1,500 or fewer employees.¹⁵ Census Bureau data for 2007 show that there were 1,383 firms in this category that operated for the entire year. Of this total, 1,368 had employment of 999 or fewer, and 15 firms had employment of 1,000 employees or more.¹⁶ Thus, under this category and the associated small business size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small entities that may be affected by our proposed action. The Commission's own data—available in its Universal Licensing System—indicate that, as of July 15, 2014, there are 317 Cellular licensees that will be affected by this *FNPRM*.¹⁷ The Commission does not know how many of these licensees are small, as the Commission does not collect that information for these types of entities.

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

15. In the *FNPRM*, the Commission proposes several rule and policy modifications that generally affect all Cellular licensees. In proposing a more flexible permanent discontinuance rule specifically for Cellular licensees that would be applied to the entire geographic license area, *i.e.*, the CGSA, we reduce the recordkeeping and filing burdens on all licensees, as they would no longer need to report permanent discontinuance for individual cell sites, nor would their CGSAs be reduced for individual cell site permanent discontinuance. Permanent discontinuance for Cellular licensees would be defined as 180 consecutive days during which the licensee does not operate any sites within their CGSA, or, in the case of a Cellular CMRS provider, does not provide service to at least one unaffiliated subscriber.¹⁸ Also, applying the operation/service requirement to the CGSA rather than individual cell sites allows licensees to change their service so long as they operate or provide service within the CGSA to at least one unaffiliated subscriber. As a result, licensees will enjoy an increased ability to respond to the market and change their service without the current administrative burden of making multiple reports on a site-by-site basis.

16. In proposing the use of frequency coordinators for new-system and CGSA-expansion applications, we anticipate that Cellular licensees will file fewer amendments to correct application errors and will be able to provide new service more rapidly to areas that remain unlicensed (“Unserved Area”) through the resulting more efficient application procedures.

17. Under the proposed rules in the *FNPRM*, parties seeking the Commission's approval on certain types of applications in the Cellular Radiotelephone Service would be required to utilize the services of a frequency coordinator certified by the Commission. The Cellular frequency coordinator would review the application, including any electronic maps and attached exhibits, for compliance with rules applicable to the Cellular Service. If the application complies with rules applicable to the Cellular Service, the frequency coordinator would file the application with the Commission for action. Any applicant in the Cellular Service would have to submit the following types of applications to the frequency coordinator for review:

- A major modification application claiming at least 130 contiguous kilometers (50 contiguous square miles) of Unserved Area as Cellular Geographic Service Area (“CGSA”);

¹⁵ 13 C.F.R. § 121.201, NAICS code 517210.

¹⁶ See http://factfinder2.census.gov/bkmk/table/1.0/en/ECN/2007_US/51SSSZ5//naics~517210.

¹⁷ See <http://wireless.fcc.gov/uls>. For the purposes of this FRFA, consistent with Commission practice for wireless services, the Commission estimates the number of licensees based on the number of unique FCC Registration Numbers (FRNs).

¹⁸ This flexible approach, adopted for AWS-4, H Block, AWS-3, and the 600 MHz band, was initially discussed in the Commission's 2010 WRS NPRM, *see* 25 FCC Rcd at 7018. Notwithstanding any action the Commission takes regarding eventual adoption of rules proposed in this *Further Notice*, Cellular Service licensees also remain subject to any future Commission action effecting wireless radio services in the WRS proceeding.

- An application seeking authorization for a new Cellular system; and
- Any other application when submitted together with an application type that is listed in paragraph (c)(1) or (c)(2) of the proposed 47 C.F.R. § 22.985.

18. In addition, the frequency coordinator would be required to notify other frequency coordinators of the following information within one business day of making a coordination recommendation:

- The name of the applicant;
- The type of application under paragraph (c) of the proposed 47 C.F.R. § 22.985;
- The CMA designator(s) pertaining to where the applicant is expanding its CGSA or starting a new system;
- For an application type under paragraph (c)(1) of the proposed 47 C.F.R. § 22.985, the license (call sign) at issue, and the CMA description and channel block;
- Any new or modified transmitter location(s) along with coordinates and antenna height;
- The effective radiated power (ERP), antenna center of radiation height above average terrain (HAAT), height above sea level (HASL) or height above mean sea level (HAMSL) and distance to the SAB and to the CGSA for the eight radial of each new/modified location; and
- The date and time of the recommendation.

19. The frequency coordinator would also be required to notify other frequency coordinators in the service on any day that the frequency coordinator has not made a coordination recommendation. The frequency coordinator would be able to use any method of notification that complies with the same-business-day requirement. In the event of a dispute that cannot be resolved between a coordinator and an applicant, the applicant would be permitted to direct a coordinator to submit the application to the Commission without coordination, but the application would need to include a note from the coordinator explaining its reasons for not recommending the proposed operations.

20. The Commission proposes to create PSD limits for base station transmitters and Cellular repeaters in rural and non-rural operations. The Commission does not propose specific limits at this point; instead, we discuss some options and invite comment to ensure, whatever limits and related provisions we may ultimately adopt in this proceeding, that we permit robust Cellular deployment of advanced technologies and also achieve our goal of compatibility with other spectrum users. The Commission also proposes to keep the current base station ERP limit for those licensees that use technologies incompatible with a PSD model. Furthermore, we propose that the power should be measured in terms of maximum average power as measured with an rms power averaging detector. We also propose to streamline the international coordination rules, and we propose to make a correction of a clerical error in Section 22.355 of our rules. The Commission seeks comments on these proposed changes to our rules governing base station transmitters and Cellular repeaters.

21. The Commission also seeks comment on several rule and policy modifications that generally affect all Cellular licenses as follows: (1) we seek comment on what PSD limits we should adopt; (2) we seek comment whether we should adopt a PFD limit and what that limit should be; (3) if we adopt an average power requirement for Cellular licensees, we seek comment on whether it should be accompanied by a PAR; (4) we seek comment on whether we should use EIRP instead of ERP for our Cellular power requirements; (5) we seek comment on the impact of MIMO antenna techniques on our radiated power rules and measurement procedures; (6) we seek comment on whether any other Part 22 rules regarding equipment standards and measurement need to be updated or modified to be consistent with the equipment certification rules in Part 2; (7) we seek comment generally whether we should revise our Cellular OOB limits; (8) we seek comment on any potential methods of addressing the SAB determination under Section 22.911 so that applicants for Unserved Areas are treated on par with one

another regardless of the technology they choose; and (9) we seek comment on whether the current coordination requirements are sufficient, or whether they need to be enhanced, in the event we adopt the use of a PSD model.

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

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

23. The Commission believes that its proposed new service discontinuance rule, its proposed use of frequency coordinators, and its proposed changes to the radiated power rules will benefit all Cellular incumbents and entrants, regardless of size. Particularly with respect to the discontinuance rule and radiated power rule measures, the proposed reforms will provide significant new flexibility to all Cellular licensees to respond more rapidly to changes in demographics, technologies, and market demands. We note that the 180 days provided under the proposed discontinuance rule not affords more flexibility to all licensees, but also exceeds the requests made by the industry during the comment period.²⁰ Also, applying the operation/service requirement to the CGSA rather than individual cell sites allows licensees to change their service so long as they operate or provide service within the CGSA to at least one unaffiliated subscriber. The proposals will also put all Cellular licensees, regardless of size, more on a regulatory par with other wireless service licensees. With respect to the proposed use of frequency coordinators, all Cellular Service applicants will benefit from a more efficient licensing process that will conserve their resources.

24. The *FNPRM* discusses alternatives to its proposals as well as proposals put forth by industry stakeholders thus far in this proceeding. It specifically invites interested parties to comment on these various alternatives and to suggest other alternative proposals. At this time, the Commission has not excluded any alternative proposal from its consideration, but it would do so in this proceeding if the record indicates that a particular proposal would have a significant, unjustifiable, and disparate adverse economic impact on small entities.

25. The Commission believes that its proposals will benefit all Cellular incumbents and new entrants, regardless of size. The proposals regarding permanent service discontinuance and the radiated power rules also help put Cellular licensees more on a regulatory par with other wireless licensees that hold geographic area licenses, such as PCS and certain AWS licensees, thus easing the regulatory burden of compliance by eliminating discrepancies in competing services. The Commission has historically valued harmonization in the rules for wireless licensees by eliminating burdensome requirements, as appropriate. Furthermore, we anticipate that the modernized licensing scheme will encourage Cellular licensees to invest in and deploy ever more advanced technologies as they evolve.

G. Federal Rules that May Duplicate, Overlap, or Conflict With the Proposed Rules

26. None.

¹⁹ 5 U.S.C. § 603(c).

²⁰ See November 2013 Consensus Letter; see also March 2014 Consensus Letter.

APPENDIX E**List of Commenters****WT Docket 12-40 (RM No. 11510)**Comments

Arctic Slope Telephone Association Cooperative, Inc.
AT&T Services, Inc. (“AT&T”)
Broadpoint, LLC (“Broadpoint”)
Cellular South Licenses, LLC d/b/a C Spire Wireless
Competitive Carriers Association (“CCA”) (f/k/a RCA – The Competitive Carriers Association)
Copper Valley Wireless, Inc.
CTIA – The Wireless Association (“CTIA”)
General Communication, Inc.
Hammett & Edison, Inc., Consulting Engineers
National Telecommunications Cooperative Association (“NTCA”)
Nsight Spectrum, LLC
Rural Wireless Association (“RWA”) (f/k/a Rural Telecommunications Group, Inc.)
Thumb Cellular, LLC
United States Cellular Corporation (“USCC”)

Reply Comments

AT&T
CTIA/NTCA/RWA (jointly filed)
USCC
Verizon Wireless

Ex Parte Letters

AT&T
Broadpoint
CCA
CTIA
CTIA/NTCA/RWA (jointly filed)
Dombrowsky, Thomas S.
RWA
Verizon

RM 11660 (PSD Petition)Comments

AT&T
Bluegrass Cellular, Inc. and Affiliates d/b/a Bluegrass Wireless
Broadpoint, LLC d/b/a Cellular One, Cincinnati Bell Wireless LLC, NE Colorado Cellular, Inc., Smith Bagley, Inc., and Union Telephone Company d/b/a Union Wireless (jointly filed)
Concepts to Operations, Inc.
USCC

Reply Comments

AT&T
USCC
Verizon Wireless

Ex Parte Letters

AT&T

WT Docket No. 13-202 (Florida PSD Waiver Request)Comments

(None)

Reply Comments

AT&T

Ex Parte Letters

AT&T
Atlantis (FL) Police Department
City of West Palm Beach (FL)
Juno Beach (FL) Police Department
Major David England, a representative of the Jupiter (FL) Police Department
Miami-Dade County (FL)
Palm Beach County (FL)
Palm Beach County (FL) School Police Department
Palm Beach County (FL) Solid Waste Authority
State of Florida
Town of Palm Beach (FL) Police Department