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

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In the Matter of	)	
	)	
Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies To Provide Spectrum-Based Services	)	WT Docket No. 02-381
	)	
2000 Biennial Regulatory Review Spectrum Aggregation Limits For Commercial Mobile Radio Services	)	WT Docket No. 01-14
	)	
Increasing Flexibility To Promote Access to and the Efficient and Intensive Use of Spectrum and the Widespread Deployment of Wireless Services, and To Facilitate Capital Formation	)	WT Docket No. 03-202

NOTICE OF PROPOSED RULEMAKING

Adopted: September 10, 2003 **Released:** October 6, 2003

Comment Date: 45 days from publication in the Federal Register
Reply Comment Date: 75 days from publication in the Federal Register

By the Commission: Chairman Powell; Commissioners Abernathy, Copps, Martin and Adelstein issuing separate statements.

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I. INTRODUCTION AND OVERVIEW

1. In this Notice of Proposed Rulemaking (NPRM), we continue to examine ways to promote the rapid and efficient deployment of quality spectrum-based services in rural areas.[1] We build

[1] The NPRM addresses regulations and policies pertaining to the provision of commercial and private terrestrial wireless services and, in certain respects, unlicensed systems and devices. In addition, pursuant to Section 11 of the Communications Act, the NPRM examines whether our cellular cross-interest rule continues to be necessary in the public interest, in light of meaningful economic competition. *See* 47 U.S.C. §§ 161(a)(1), (2). While the policies and proposals discussed herein are targeted at promoting wireless services to consumers in rural areas, certain of our proposals have broader application to non-rural areas as well. While satellite-based services present another viable means to serve rural and underserved areas, we do not propose any rule changes to our policies or

(continued....)

upon the record developed in response to our Notice of Inquiry, in which we sought comment on how we could modify our policies to further encourage the provision of wireless services in rural areas.[2] We also draw upon the findings and recommendations of the Spectrum Policy Task Force, which identified and evaluated potential changes in our spectrum policy that would increase public benefits from spectrum-based services.[3]

2. In this proceeding, the Commission continues its efforts in the spectrum policy arena to facilitate the provision of wireless services to all Americans, including those residing in or traveling through rural areas. The continued development and operation of quality wireless facilities, systems and devices using licensed and unlicensed spectrum in rural areas is critical. In our highly mobile and increasingly untethered world, consumers value wireless services that offer ubiquitous and seamless coverage in a reliable manner. The Commission's primary mission is the promotion of "communication by wire and radio so as to make available, so far as possible, to all the people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid, efficient, Nation-wide, and world-wide wire and radio communication service."[4] Furthermore, for auctionable services, the Commission is required to promote various objectives in designing a system of competitive bidding, including the development and rapid deployment of new technologies, products, and services for the benefit of the public, "including those residing in rural areas," and "the efficient and intensive use of spectrum."[5] Under Section 706 of the Communications Act, the Commission is also directed to "encourage the provision of new technologies and services to the public."[6] Consistent with these statutory mandates, the Commission's spectrum policy goals generally have been to facilitate efficient use, competition, and rapid, widespread service consistent with the goals of the Communications Act.[7]

3. On a national scale, the deployment of wireless mobile services has been a huge success,

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regulations governing satellite-based services at this time, nor do we address regulations governing the provision of broadcast, wireline telecommunications or information services. We note that, in the broadcasting context, we have recently issued an NPRM regarding extending digital television opportunities to rural areas. *See* Amendment of Parts 73 and 74 of Commission's Rules To Establish Rules for Digital Low Power Television, Television Translator, and Television Booster Stations, and To Amend Rules for Digital Class A Television Stations, *Notice of Proposed Rulemaking*, FCC 03-198, 2003 WL 22023945 (rel. Aug. 29, 2003).

[2] Facilitating the Provision of Spectrum-Based Service to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services, *Notice of Inquiry*, 17 FCC Rcd 25554 (2002) (*Rural NOI*).

[3] *See* Federal Communications Commission, Spectrum Policy Task Force Report, ET Docket No. 02-135 (released Nov. 2002) (*SPTF Report*). This report and other materials can be found at <http://www.fcc.gov/sptf>. *See also* "Commission Seeks Public Comment on Spectrum Policy Task Force Report," *Public Notice*, 17 FCC Rcd 24316 (2002).

[4] 47 U.S.C. § 151.

[5] 47 U.S.C. § 309(j).

[6] 47 U.S.C. § 157.

[7] 47 U.S.C. §§ 151, 309(j).

resulting in increased competition and services overall.[8] We believe that a number of measures that the Commission has already adopted have contributed to this successful deployment of wireless service. For example, we have adopted mechanisms such as small business bidding credits,[9] partitioning and disaggregation,[10] and the designation of various sizes of geographic service areas for spectrum licenses in order to encourage participation in spectrum auctions and facilitate deployment of wireless services generally.[11] Existing data indicates that wireless service providers have taken advantage of these regulatory mechanisms. As of July 2003, the Commission has completed 35 auctions for terrestrial wireless licenses. 76 percent of the winning bidders in these auctions claimed eligibility status as a "small business" and were the winning bidders for 52 percent of the licenses sold.[12] Furthermore, within the 35 completed auctions, 12 percent of the winning bidders self-certified as being rural telephone companies (rural telcos), as that term is defined by the Communications Act.[13] Moreover, the

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[8] *See* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile Services, *Eighth Report*, 18 FCC Rcd 14783 (2003) (*Eighth Competition Report*).

[9] *See* Implementation of Section 309(j) of the Communications Act – Competitive Bidding, *Second Report and Order*, 9 FCC Rcd 2348, 2350 ¶ 6 (1994) (*Competitive Bidding Second Report and Order*). *See also* Extending Wireless Telecommunications Services to Tribal Lands, *Report and Order and Further Notice of Proposed Rulemaking*, 15 FCC Rcd 11794 (2000).

[10] Partitioning and disaggregation is now permitted in the 218-219 MHz Service (47 C.F.R. § 95.823), 220 MHz Service (47 C.F.R. § 90.1019), 800 MHz (47 C.F.R. § 90.911) and 900 MHz (47 C.F.R. § 90.813) Specialized Mobile Service (SMR), 24 GHz Service (47 C.F.R. § 101.535), 39 GHz Service (47 C.F.R. § 101.56), Local Multipoint Distribution Service (LMDS) (47 C.F.R. §101.1111), Location and Monitoring Service (LMS) (47 C.F.R. § 90.365), Multiple Address Systems (MAS) (47 C.F.R. §101.1323), Multipoint Distribution Service (MDS) (47 C.F.R. § 21.931), Maritime Services (47 C.F.R. § 80.60), Paging and Radiotelephone Service (47 C.F.R. § 22.513), Cellular Radiotelephone Service (47 C.F.R. § 22.948), broadband Personal Communications Services (PCS) (47 C.F.R. § 24.714), narrowband PCS (47 C.F.R. § 27.104), and all Part 27 services (47 C.F.R. §§ 27.15, 27.605).

[11] The smallest of these geographic service areas are Rural Service Areas (RSAs) and Metropolitan Statistical Areas (MSAs), of which there are 734 licenses comprising the United States and its territories. The Commission has also licensed spectrum according to Economic Area Groupings (EAGs), which make up six licensing areas for the entire country. Some terrestrial wireless services, such as narrowband Personal Communications Services (PCS) and 1670-1675 MHz, have geographic service areas that have nationwide coverage. Narrowband PCS is also licensed on a regional basis. *See* 47 C.F.R. § 24.102. Other geographic service areas fall along a range of intermediate sizes between RSAs and nationwide service areas, *e.g.*, Major Trading Areas (MTAs), Basic Trading Areas (BTAs), Economic Areas (EAs), and Major Economic Areas (MEAs). *See* Summary of Completed Auctions, *available at* <http://wireless.fcc.gov/auctions/> (denoting geographic service areas for each auction that has been conducted pursuant to 47 U.S.C. § 309(j)). We note that Rand McNally & Company owns the copyright to the MTA and BTA listings. *See* Rand McNally, 1992 Commercial Atlas and Marketing Guide at 36-39 (123rd ed. 1992).

[12] For the purposes of this analysis, "small business" includes all winning bidders that claimed eligibility status as a small or very small business for the purposes of qualifying for bidding credits. The data for this analysis was obtained from publicly available information from the Commission's Auctions website. *See* <http://wireless.fcc.gov/auctions>.

[13] *See* 47 U.S.C. § 153(37) (defining "rural telecommunications carrier"). We note that the list of entities self-certifying as rural telcos and the list of entities that claimed eligibility as small businesses are not mutually exclusive.

Commission's analysis of applications for geographic partitioning and spectrum disaggregation reveals that 13.5 percent of all assignees have voluntarily identified themselves as rural telcos.[14] In addition to these regulatory mechanisms, the Commission has also adopted flexible regulations for unlicensed systems under Part 15 and is in the process of examining targeted issues raised by wireless Internet service providers (WISPs) with respect to unlicensed spectrum in rural areas.[15] Recently, the Commission took steps to facilitate spectrum leasing in secondary markets, building upon existing, flexible, market-based policy efforts to encourage more efficient use of spectrum.[16] The Commission did so with the belief that secondary markets would also facilitate investment in rural areas. We will be monitoring investment to see whether secondary markets have contributed to the growth of wireless services in rural areas.

4. We recognize that the inherent economic challenges of providing telecommunications services in sparsely populated, expansive rural areas are of significant importance to any carrier that serves or is considering serving these areas. We note that the Federal-State Joint Board has solicited comment on issues relating to the eligibility of wireless carriers to receive universal service support.[17] Further, the Wireless Telecommunications Bureau and the U.S. Department of Agriculture's Rural Utilities Service (RUS) have recently initiated a "Federal Rural Wireless Outreach Initiative" that seeks to harmonize the agencies' policies regarding rural wireless deployment and highlight the RUS loan programs available to wireless companies that serve rural communities.[18] We will continue to monitor developments in those arenas and will consider the impact that these policy issues may have on the delivery of spectrum-based services in rural areas.

5. At present, a number of explicit programs are available to support the provision of spectrum-based services in rural areas. For example, wireless telecommunications carriers may seek Universal Service Fund support for service in high cost areas and can also apply for RUS funds in the deployment of broadband services. From the beginning of fiscal year 2000 through June 24, 2003, 18 companies received infrastructure and pilot broadband loans totaling almost $158 million from RUS

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[14] *Rural NOI* at 25559 ¶ 8.

[15] Additional Spectrum for Unlicensed Devices below 900 MHz and 3 GHz Band, *Notice of Inquiry*, 17 FCC Rcd 25632 (2002); *see also SPTF Report.*

[16] *See* "FCC Adopts Spectrum Leasing Rules and Streamlined Processing for License Transfer and Assignment Applications, and Proposes Further Steps To Increase Access to Spectrum through Secondary Markets," *News Release*, 2003 WL 21088542 (rel. May 15, 2003) (*Secondary Markets News Release*). This new policy will facilitate the development of secondary markets in spectrum by allowing licensees to engage in certain types of spectrum leases with minimal regulatory involvement.

[17] *See* "Federal-State Joint Board on Universal Service Seeks Comment on Certain of the Commission's Rules Relating to High-Cost Universal Service Support and the ETC Designation Process," *Public Notice,* FCC 03J-1 (rel. February 7, 2003). Although we received substantial input into Universal Service issues in response to the *Rural NOI,* we do not address direct subsidy programs further in this proceeding, but acknowledge their importance to promoting the availability of rural service and will address them in separate proceedings.

[18] *See* "FCC and USDA Hold Kick-Off Meeting of the "Federal Rural Wireless Outreach Initiative," *News Release*, 2003 WL 21511807 (rel. July 2, 2003) (*Federal Rural Wireless Outreach Initiative News Release*).

to provide wireless service.[19] The Universal Service Administrative Company (USAC) projects that 102 competitive Eligible Telecommunications Carriers (ETCs) will receive portable high-cost support in the third quarter of 2003.[20] In addition, USAC projects that, in the third quarter of 2003, competitive ETCs will receive approximately $32 million or 3.7 percent of all federal high-cost support.[21]

6. We believe that rural as well as urban consumers and businesses have benefited from our market-oriented policies that promote facilities-based competition for telecommunications services. The Commission recently found that there is effective competition in the CMRS marketplace as a whole, including in rural areas.[22] The Commission's policy to let market forces determine the number of firms operating in a given geographic area, subject to limits on spectrum availability and aggregation, recognizes this fact, and allows firms to operate at a competitive and efficient scale of operation. The providers are then able to pass along to consumers the cost savings from efficient operation. In contrast, if there were more than an efficient number of providers in a market, absent other support such as subsidies, in the long run some of these providers would go out of business, causing a loss of service and other inconvenience to consumers.

7. The Commission recognizes that, as a result of varying technical and demographic characteristics, the economics of providing service can be significantly different in rural areas as compared to urban areas. Our proposals attempt to acknowledge that market characteristics, especially demographics, will affect the optimal market structure. For example, because of economies of scale in wireless networks and lower population densities in rural areas, the economically efficient number of providers likely will be fewer. On the other hand, fewer competitors in rural areas may indicate a market failure. Any small, new entrant attempting to serve a niche market might face barriers to entry arising from its inability to exploit economies of scale, and will inevitably have less bargaining power to secure equipment, supplies, or negotiate agreements. This may be the case in some rural markets, and raises the question of the effect on consumer welfare of inducing additional providers to serve rural areas. Our proposals attempt to account for these market realities and to promote rural service in a manner consistent with our statutory obligations.

8. Furthermore, there may well be a public interest in policies that encourage potential users to become mobile subscribers due to the network externalities that would result. In short, network externalities occur when adding a user to a communications network increases the value of the network for existing users who wish to communicate with that new user.[23] For this reason, it is an especially

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[19] Information provided by correspondence from Ken Ackerman, Assistant Administrator – Program Accounting and Regulatory Analysis, RUS, to Cindi Scheiber, Analyst, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, on June 24, 2003.

[20] *See* Federal Universal Service Support Mechanism Fund Size Projections for the Third Quarter 2003, at HC-1, available at <http://www.universalservice.org/filings> (filed May 2, 2003). Most competitive ETCs are wireless providers.

[21] *Id.*

[22] *Eighth Competition Report* at 14792 ¶¶ 12, 13.

[23] *See* M. L. Katz and C. Shapiro, "Systems Competition and Network Effects," *Journal of Economic Perspectives* 8: 93-115 (1994); M. L. Katz and C. Shapiro, "Technology Adoption in the Presence of Network Externalities," *Journal of Political Economy* 94: 822-841 (1986); M. L. Katz and C. Shapiro, "Network Externalities, Competition, and Compatibility," *American Economic Review* 75: 424-440 (1985); Jeffrey Rolfs, "A Theory of

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important Commission goal to facilitate access to service broadly, not just in urban markets but also in rural areas, to enable Americans who travel, reside or conduct business throughout the country to communicate effectively for the benefit of the general public interest.

9. As a complement to the measures the Commission has already taken, we seek to minimize regulatory costs and eliminate unnecessary regulatory barriers to the deployment of spectrum-based services in rural areas. At the same time, however, regulatory initiatives may be appropriate to encourage and promote the rapid deployment of new technologies, products, and services for the benefit of those residing in rural areas consistent with our statutory obligation. As reflected in the proposals set forth in the following NPRM, we believe there are additional spectrum policy initiatives the Commission can adopt to reduce the overall cost of regulation and increase flexibility in a manner that will facilitate spectrum access, capital formation, build out and coverage in rural areas. Specifically, we focus upon the following issues: (1) determining an appropriate definition of what constitutes a "rural" area for purposes of our policies and requirements; (2) creating mechanisms for access to "unused" spectrum; (3) relaxing performance requirements to remove disincentives to serve rural areas and to allow all geographic area licensees to satisfy construction requirements by providing "substantial service" in their initial license term; (4) determining whether geographic area licensees should be required to provide coverage to increased portions of their licensed areas after their initial license term; (5) amending our regulations to permit increased power limits in rural areas for both licensed services and unlicensed services; (6) evaluating the appropriate size of licensing areas for geographic area licenses; (7) determining what, if any, regulatory or policy changes should be made to complement the RUS program for low interest loans for deployment of broadband services; (8) considering whether we could enhance access to capital by permitting the grant of conditional security interests in spectrum licenses to RUS; (9) considering whether we should modify application of the cellular cross-interest rule in Rural Service Areas ("RSAs") with greater than three competitors; (10) establishing a clear, predictable policy on infrastructure sharing; and (11) updating and refining our rules governing the Rural Radiotelephone Service ("RRS") and Basic Exchange Telephone Radio Systems ("BETRS").

II. NOTICE OF PROPOSED RULEMAKING ON INCREASING FLEXIBILITY AND THE DEPLOYMENT OF SPECTRUM-BASED SERVICES IN RURAL AREAS

A. Definition of "Rural"

10. As an initial matter, we seek comment on an appropriate definition of a "rural area" for use in conjunction with each of the policies addressed in this proceeding.[24] We seek comment on whether a uniform definition of "rural area" is appropriate to the proposals discussed in this item, or whether the definition of "rural area" should differ depending upon the particular regulatory initiative at issue. Furthermore, given the various definitions of "rural" that already have been utilized by federal agencies generally and the Commission specifically, we believe that some clarification of the term is necessary in order to ensure that our proposals are appropriately tailored to promote service to consumers

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Interdependent Demand for a Communications Service," *Bell Journal of Economics and Management Science* 5, no. 1 (Spring 1974), pp. 16-37.

[24] We note that any definition of "rural area" adopted for purposes of this proceeding would not affect the definition of rural in other contexts, such as the Commission's rules related to universal service and rural areas, or designation of eligible telecommunications carriers.

in rural areas and ensure uniform understanding of how our regulatory proposals will be implemented. Although Sections 309(j)(3) and 309(j)(4) of the Communications Act direct the Commission to promote the development and deployment of spectrum-based services to "rural areas," the Communications Act does not define "rural areas," nor has the Commission adopted a specific definition of "rural areas" for purposes of implementing Section 309(j).[25] In the *Seventh* and *Eighth Competition Reports*, the Commission used three different proxy definitions of "rural" for purposes of analyzing the average number of mobile telephony competitors in rural versus non-rural counties: the Commission compared the number of competitors in: (1) RSA counties versus MSA counties[26]; (2) non-nodal Economic Area (EA) counties versus nodal EA counties;[27] and (3) counties with population densities below 100 persons per square mile versus those with population densities above 100 persons per square mile.[28] In connection with administering universal service support programs for schools, libraries, and rural health care providers, the Commission defines "rural area" as any county outside of an MSA (with some exceptions).[29] Moreover, the federal government has multiple ways of defining "rural," reflecting the multiple purposes for which the definitions are used.[30] The Commission has used RSAs as a proxy for "rural" in certain instances.[31] In administering its financial assistance program for broadband access to rural areas, RUS defines "rural" as any place that is not located within an MSA and that has no more than 20,000 inhabitants (based upon the most recently available Census data).[32] The Economic Research Service of the USDA, in conjunction with others, developed a definition of "rural" based on a set of metrics that delineates each census tract as being either rural or urban.[33] By contrast, the Census Bureau

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[25] We note that "rural telephone companies" are defined under Section 3 of the Communications Act. *See* 47 U.S.C. § 153(37). Because the regulatory measures discussed in the NPRM are focused upon promoting service to consumers residing within rural areas, and not upon whether a wireless service provider itself is a "rural" company, we do not believe this particular definition is appropriate with respect to the proposals discussed herein.

[26] *See Eighth Competition Report* at 14837, ¶ 113; *see also* Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act – Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, *Seventh Report*, 17 FCC Rcd 12985, 13022 (2002) (*Seventh Competition Report*).

[27] Each EA consists of one or more counties that are "Economic Nodes" and the surrounding counties that are economically related to it. An EA may have more than one economic node. The counties that are economic nodes are metropolitan areas or similar areas that serve as the EA's center(s) of economic activity. As a proxy for urban and rural geographic areas, we looked at counties that make up economic nodes, *i.e.*, nodal counties, versus those counties that do not make up economic nodes, *i.e.*, non-nodal counties. *See Eighth Competition Report* at 14836 ¶ 112; *see also Seventh Competition Report* at 13022.

[28] *See Eighth Competition Report* at 14837 ¶ 114; *Seventh Competition Report* at 13023.

[29] *See* 47 C.F.R. § 54.5.

[30] *See Eighth Competition Report* at 14835 ¶ 108; *see also Seventh Competition Report* at 13022; *Rural NOI* at 25563 ¶ 15.

[31] In the CMRS spectrum cap proceeding, the Commission designated RSAs as rural areas and stated, "[o]ther market designations used by the Commission for CMRS, such as [EAs], combine urbanized and rural areas, while MSAs and RSAs are defined expressly to distinguish between rural and urban areas." Biennial Regulatory Review, Spectrum Aggregation Limits for Wireless Telecommunications Carriers, *Report and Order*, 15 FCC Rcd 9219, 9256 ¶ 84 n. 203 (1999).

[32] *See* 7 C.F.R. § 1738.2

[33] *See* < http://www.ers.usda.gov/briefing/rural/data/desc.htm>.

established a different metric for defining "rural" areas during its 2000 census.[34]

11. Although there are many definitions of "rural" used by the federal government, we have developed a record in response to our *Rural NOI* proceeding that provides some guidance with respect to an appropriate definition of "rural area."[35] We seek to further expand upon that record. Several commenters support the adoption of the definition of an RSA for "rural area."[36] USCC recommends adoption of such a definition because it is "widely known, used and accessible in the industry and because it has already been demonstrated to be a workable proxy for analytical purposes."[37] Other commenters suggest factors that should be taken into account when determining whether an area is rural, such as commuting patterns,[38] or the number of persons per square mile.[39] On the other hand, at least with respect to defining "rural areas" for purposes of CMRS, Dobson Communications Corporation states that, "as the CMRS industry has matured, competition in rural areas has developed sufficiently to make meaningless any competitive distinction between urban and rural areas."[40]

12. Based upon the record developed in the *Rural NOI* proceeding, as well as certain definitions used by the Commission and by other federal agencies as proxies for "rural," we have identified and seek comment on the following potential definitions of "rural area," or some combination of elements combined in these potential definitions: (1) counties with a population density of 100 persons or fewer per square mile; (2) RSAs; (3) non-nodal counties within an EA; (4) the definition for "rural" used by the RUS for its broadband program; (5) the definition for "rural area" used by the Commission in connection with universal service support for schools, libraries, and rural health care providers;[41] (6) the

[34] The glossary on the Census website (<http://factfinder.census.gov/servlet/BasicFactsServlet>) defines "rural" as "Territory, population and housing units not classified as urban. 'Rural' classification cuts across other hierarchies and can be in metropolitan or non-metropolitan areas." The definition of "urban" is all populations in "Urbanized Areas," as defined by the Census, and populations of more than 2,500 people outside of urbanized areas.

[35] *See Rural NOI* at 25563 ¶ 15. In addition, we have received feedback on the appropriate definition of "rural" as a result of the public forum held in connection with the Seventh Competition Report. *See Seventh Competition Report* at 13020 n. 241 (For access to forum participants' presentations, *see* Commercial Mobile Radio Services (CMRS) Competition Report Public Forum, <http://wireless.fcc.gov/cmrs-crforum.html>. The transcript of the forum can be found at Public Hearing for 7th Annual CMRS Competition Report: Transcript of the Day's Event, <http://wireless.fcc.gov/services/cmrs/presentations/020228.pdf>).

[36] *See, e.g., Rural NOI*, Comments of the National Telecommunications Cooperative Association at 9 (NTCA Comments); Comments of United States Cellular Corporation at 5-6 (USCC Comments); *cf.* Comments of South Dakota Telecommunications Association at 5 (suggesting that "[b]y definition, an RSA is an area made up of rural territory," and that "[t]his fact would allow the Commission to avoid the definitional quandary . . . since any construction within the RSA would be service to a rural area").

[37] *Rural NOI*, USCC Comments at 6. USCC noted that, in the *Seventh Competition Report*, the Commission found "that its analysis of the competitive conditions in rural areas based on non-nodal [Economic Areas], population density and RSAs provided '. . . remarkably similar estimates.'" *Id.* (internal citations omitted).

[38] *See* NTCA Comments at 2.

[39] *See Rural NOI*, Comments of Air Networking at 1.

[40] *See Rural NOI*, Comments of Dobson Communications Corporation at 4.

[41] As we noted above, any definition of "rural area" that is adopted for purposes of this proceeding will not affect the definition of rural in other contexts. *See* n.24, *supra*.

definition of "rural" based on census tracts as outlined by the Economic Research Service of the USDA; (7) the Census Bureau definition of "rural" counties; and (8) any census tract that is not within ten miles of any incorporated or census-designated place containing more than 2,500 people, and is not within a county or county equivalent which has an overall population density of more than 500 persons per square mile of land. As a practical matter, we note that definitions based upon county population data would be relatively easy for the Commission to administer: county boundaries are widely known and rarely change, all FCC-defined market areas are comprised of counties, and a considerable amount of data at the county level exists. On the other hand, there are potential drawbacks to a county-based definition. For example, a population-density based definition of "rural" might be unsuitable in cases where a county might have a very dense population center that covers only a small portion of the geographic area of the county, such that the county might be considered "rural" when, in fact, most of the county's population is not rural. In the event that commenters disagree with these potential definitions, we ask commenters to provide alternative definitions of "rural." Commenters that believe that none of these potential definitions are workable or feasible should identify specific factors that the Commission should consider when determining whether an area is a "rural area," such as population density, Census rankings, or other criteria. Commenters should articulate specific reasons and provide quantitative data supporting the use of their proposed definitions of "rural areas." Finally, we recognize that one definition of "rural" may not be universally applied to all situations. Accordingly, we seek comment on whether we should adopt different definitions of what constitutes a "rural area" depending upon the policy initiative for which the definition is used, as set out in this proceeding.

B. Improved Access to Unused Spectrum

1. Background

13. The Commission has promoted access to and efficient use of spectrum through a variety of means that may foster the rapid and efficient deployment of wireless services in rural areas. Applied to licensed spectrum, these approaches may be viewed as existing along a continuum, with voluntary, market-based mechanisms at one end, regulatory incentives and other approaches in the middle, and regulatory mandates and enforcement mechanisms at the other end. More specifically, the means by which the Commission may promote access to and use of spectrum range from allowing voluntary arrangements that move spectrum and licenses between users to establishing regulatory mechanisms by which the Commission reclaims and re-licenses unused spectrum.

14. While the process by which licensees may assign or transfer control of spectrum licenses – or partition, disaggregate, or aggregate spectrum – is well-established,[42] the Commission's efforts to facilitate voluntary movement of spectrum usage rights from licensees to other users through spectrum leasing is more recent.[43] In the 1999 *Policy Statement* outlining principles for spectrum allocation, the Commission stated that a key priority was making additional spectrum available, as well as creating flexibility in its use.[44] In its 2002 Report, the Spectrum Policy Task Force recommended that the Commission promote spectrum leasing that, in addition to partitioning, could make more spectrum

[42] *See* 47 C.F.R. § 1.948. Assignments and transfers of control are regulated under 47 U.S.C. § 310(d).

[43] *See Secondary Markets News Release.*

[44] Principles for Reallocation of Spectrum to Encourage the Development of Telecommunications Technologies for the New Millennium, *Policy Statement*, 14 FCC Rcd 19868, 19870-75 ¶¶ 9-18 (1999).

available in rural areas.[45] A rationale for the Commission's adopting the Report and Order and Further Notice of Proposed Rulemaking in the *Secondary Markets* proceeding was the facilitation of the voluntary exchange of spectrum usage rights and to allow licensees to provide access to other parties when those parties have a need for the spectrum, which, in turn, could increase opportunities for construction and service in rural areas.[46]

15. In many spectrum-based services, the Commission has established rules by which it reclaims unused spectrum and makes it available to other parties. This process for reclaiming unused licensed spectrum differs across services. For example, with site-based private land mobile radio services, licensees generally are given one year to construct particular sites.[47] A licensee with an unconstructed site after one year loses its authorization to operate at that site, and other parties subsequently may request a license to operate in that unused spectrum. In the geographically-based cellular service, initial licensees are given five years to construct facilities and begin providing service within a geographic service area.[48] At the end of the initial five-year period, the licensee is allowed to keep those portions of its licensed area in which it has constructed, while the unconstructed portions of the market become available for licensing to other parties via the cellular "unserved area" licensing process.[49] We refer to this standard as a "keep what you use" approach. Among the advantages of a "keep what you use" approach is that there is a clear relationship between the provision of service to a geographic area and the retention of the licensee's right to serve that area, with spectrum in unserved areas made available to other users. Among the disadvantages, incumbent licensees often engage in contentious battles with other parties that wish to access unused spectrum or service areas.[50]

16. Other geographically licensed services, in contrast, face notably different construction

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[45] *See SPTF Report* at 58-60.

[46] *See Secondary Markets News Release*, Joint Statement of Chairman Michael K. Powell and Commissioner Kevin J. Martin, and Separate Statement of Commissioner Jonathan S. Adelstein.

[47] 47 C.F.R. § 90.155.

[48] 47 C.F.R. § 22.947.

[49] 47 C.F.R. § 22.949. At the end of the five-year build-out period, the licensee provides the Wireless Telecommunications Bureau a map of all constructed facilities. All areas within the market that are not covered by those facilities are considered "unserved areas" and become available for re-licensing on a site-by-site basis. The incumbent licensee, neighboring licensees, or new entrants may then apply on a site-by-site basis to serve any and all portions of the unserved area. The Commission receives approximately 40 cellular unserved area applications each month. Dobson Communications Corporation (Dobson) filed a Petition for Reconsideration of the Commission's decision in WT Docket No. 01-108, seeking to permit cellular carriers to extend cellular service area boundaries into unserved areas on a secondary basis. *See* Dobson Communications Corporation Petition for Limited Reconsideration, WT Docket No. 01-108 (filed Jan. 16, 2003) (Dobson Petition). We will address the Dobson Petition in the context of that proceeding. *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, WT Docket No. 01-108, *Report and Order*, 17 FCC Rcd 18401 (2002).

[50] *See* "Wireless Telecommunications Bureau Approves Settlement Agreement between WWC License L.L.C. and WWC Holding Co., Inc. and N.E. Colorado Cellular Inc.," *Public Notice*, 17 FCC Rcd 26148 (rel. December 23, 2002).

benchmarks and means by which unused spectrum may be reclaimed and re-licensed by the Commission. For example, PCS licensees must meet five- and ten-year benchmarks that mandate coverage of a certain percentage of the population of their licensed areas, or where applicable, make a showing of substantial service. Failure to meet these benchmarks results in automatic cancellation or non-renewal of the entire license, including the rights to operate from any facilities already constructed under the authorization.[51] Moreover, for many services, if the licensee loses its authorization for failing to meet the coverage requirements, it is often ineligible to reapply for that authorization.[52] However, once these benchmarks are achieved, licensees are generally afforded exclusive rights and a renewal expectancy for the entire area and band under the license regardless of whether service is being provided in all parts of the area or over all of the spectrum. Because licensees that fail to comply with this coverage requirement lose their entire license, we refer to this standard of termination or forfeiture as the "complete forfeiture" approach. Among the advantages of this model, since licensees subject to this standard do not have to cover their entire geographic license areas or use all of their licensed spectrum capacity, there is a greater incentive during their initial license term for licensees to build out those areas that will ensure their economic viability as providers. Among the disadvantages of this model, and of particular relevance for this proceeding, is the potentially lower likelihood that rural and less-populous areas will be served by the licensee, at least during its initial license term, because there may be an incentive for construction to focus first on populous areas and there may be little corresponding incentive for licensees to construct in rural areas.

17. In addition, there are other approaches the Commission may use to transition spectrum to higher-valued uses. For example, as the Spectrum Policy Task Force observed, the Commission could create expanded "overlay" rights to licensed spectrum, whereby usage rights are given to new licensees.[53] To address issues related to the incumbent licensees in these bands, the Commission could adopt various policies, including mandatory relocation of incumbents to other bands, grandfathering incumbents in the existing band, or providing incentives for band-clearing. Overlays with relocation of incumbents were used in broadband PCS, while grandfathering of incumbents was used in services such as paging and SMR.[54] Among the advantages of this approach, in comparison to other mechanisms such as "keep what you use" and "complete forfeiture," overlays may be more flexible and, in some cases, less burdensome on incumbents.[55] Among the disadvantages of this approach are potential incumbent hold-out problems, lengthy periods for incumbent relocation, and the expense of additional auctions.[56]

18. Because the "keep what you use," "complete forfeiture," and other approaches such as overlays may not be effective tools to ensure prompt delivery of service to rural and underserved areas,[57]

[51] 47 C.F.R. § 24.203.

[52] *See, e.g.*, 47 C.F.R. §§ 24.103(h) (narrowband PCS), 24.203(a) and (b) (broadband PCS), 101.1011 (LMDS); 101.1325 (MAS).

[53] *See SPTF Report* at 48-49.

[54] *Id.*

[55] In order to achieve these benefits, flexible build out rules may be necessary.

[56] To the extent overlays result in mutually exclusive applications for spectrum usage rights, competitive bidding is required. *See* 47 C.F.R. § 309(j).

[57] 47 C.F.R. § 309(j)(4)(B).

we explore below alternative methods to facilitate access to and use of spectrum in these markets.[58] In the discussion that follows, we consider what constitutes use of spectrum by a licensee and, therefore, what spectrum should be subject to the Commission's rules and policies that govern its use or failure to use. We then discuss different re-licensing mechanisms and compare these approaches to more market-based spectrum leasing mechanisms. We seek comment on whether we should advance certain re-licensing mechanisms, such as "keep what you use," so as to further the goal of promoting service in rural areas.

2. Discussion

a. What Constitutes "Use" of Spectrum

19. As the Commission attempts to increase efficient access to and use of spectrum, and as it subsequently establishes policies for access to unused spectrum, we must provide a clear definition of "use" for all parties affected by these rules. That is, licensees that construct or lease their spectrum must understand how this use is construed in terms of construction requirements, re-licensing, and other policies that may affect them so that they will know what rights licensees will retain in the event they do not "use" their spectrum, however we define it. We seek comment on how to define "use" in order to effectively promote access to and use of spectrum in rural areas. We also inquire how to define this term in a flexible manner so as to recognize the many ways in which licensees provide service, or allow other parties to provide service, with their licensed spectrum. Under our current rules for many service bands, "use" is defined to reflect construction and operation of specified facilities by the licensee. We seek comment on whether this is the appropriate baseline standard for determining use and, if not, what this standard or other "performance" criteria should be.

20. We recognize that leasing *via* secondary markets may require viewing the concept of use from a different perspective. That is, under a negotiated spectrum leasing arrangement, a licensee assigns a usage right to a third party. Depending on the nature of the lease, this third party may then construct, operate, or otherwise use the spectrum of the licensee. We propose that spectrum in rural areas that is leased by a licensee, and for which the lessee meets the performance requirements that are applicable to the licensee, should be construed as "used" for the purposes of this proceeding and any other performance criteria we adopt. We expect that this approach would further enhance leasing in rural areas. We note that merely leasing spectrum, where the lessee does not fully meet the lessors' performance requirements, would not be considered "use" under this proposal. We seek comment on this approach and other ways we could better tailor or expand the concept of "use" to encourage service by licensees or lessees in rural and underserved areas. Finally, should our definition of "use" be in any way limited as it applies to leasing? How would such limits be consistent with our attempts to create incentives for licensees to move their spectrum to higher valued uses?

21. Under one approach to defining construction, the Commission would rely on the filings of wireless providers, perhaps with certain reporting criteria. This approach is based on the presumption that wireless providers are in the best position to determine the meaning of "built" for their particular technology and application. Moreover, such an approach is consistent with recent Commission precedent and trends. With broadband PCS licensees, for example, the Commission did not attempt to specify a particular signal level, but instead required licensees to provide a signal level "sufficient to provide

[58] We retain current benchmarks for geographic-area licensees but, as discussed in Section II.C.1, below, we will add a substantial service option to provide such licensees with greater flexibility in meeting their construction requirements.

adequate service" to one-third of the population in the market within five years, and to two-thirds within ten years.[59] The rules require licensees to provide notification to the Commission in the form of maps and other supporting documents showing areas where they provide "a signal level sufficient to provide adequate service"[60] and otherwise demonstrating compliance with the respective construction requirements. The Wireless Telecommunications Bureau has received over 1,800 such notifications. The vast majority (approximately 93 percent) defined their coverage in terms of a signal strength between -92 and -104 dBm. In other words, there was some variance from system to system, but most were in a certain range. In applying this approach to measuring construction, the Commission could provide guidance regarding what type of range would be acceptable and how this might vary from service to service. Alternatively, under this approach, we could decline to provide direction and simply monitor the various means by which licensees report their construction.

22. We recognize that the approach described above, however, may present certain risks, particularly in the event that a licensee claims that it is satisfying the more flexible "substantial service" standard, instead of satisfying a concrete coverage benchmark. The Commission may not have sufficient resources to verify that the many different uses of rural spectrum likely to emerge will actually serve the goals of our build out requirements. We are concerned that companies could assert that a build out scenario was sufficient to meet our substantial service requirements without some baseline established by the Commission. Additionally, we note that this approach might present some risk for the licensee. For example, were it able to do so, the Commission could determine, upon receiving an assertion of compliance by a licensee, that the indicated build out is insufficient and that the licensee must do more in order to satisfy its construction requirements. This would require additional construction and investments not planned for by the licensee, which ultimately could prove more expensive to comply with than if they had been planned for and completed with the original build out. We therefore seek comment regarding whether the Commission should establish a baseline above which a licensee must reach in order to minimally comply with our substantial service requirements. We seek comment on whether this baseline should be determined in terms of signal strength or using some other metric.

23. We also seek comment on two other approaches for determining whether spectrum is being used in accordance with construction requirements or for purposes of finding available spectrum in rural areas. First, the Commission has developed rules defining protected service areas for site-based incumbents, such as 220 MHz, 800 MHz SMR, and paging licensees. For example, with the 220 MHz Band licensees, we measure the service area that is protected under our rules as that within a 38 dbu service contour,[61] while for 800 MHz SMR licensees we measure this same area as that within a 40 dbu service contour.[62] For paging licensees, the estimate of the service contour uses a formula based on antenna height (HAAT) and ERP (watts).[63] We seek comment on how we should address these and other differences in estimating coverage in rural areas. In light of the fact that our rules defining protected service areas vary by service, we ask commenters whether we should harmonize these regulations across

[59] 47 C.F.R. § 24.203.

[60] 47 C.F.R. § 24.203.

[61] 47 C.F.R. § 90.763(b)(1)(i)(A). Note that 38 dbu is equivalent to -84 dbm, assuming an antenna gain of 0 dbd.

[62] 47 C.F.R. §§ 90.693(b), 90.683, 90.621. Note that 40 dbu is equivalent to -93 dbm, assuming an antenna gain of 0 dbd.

[63] 47 C.F.R. §§ 101.527, 101.17.

services and establish a data base of available "white space" in rural areas. Second, we seek comment on expanding the use of spectrum "audits" and on exploring the means and methodologies for making *in situ* measurements of signal strength in selected rural areas to maintain an "inventory" of available spectrum resources. The Wireless Bureau has recently begun a process of conducting spectrum audits, and we inquire as to whether expanded use of such audits would help identify unused spectrum in rural areas so as to ultimately make more spectrum, and thus more service, available in these markets. We also inquire as to what may be an appropriate way to test whether a spectrum inventory is feasible. Should we limit such an inventory to the most rural or underserved areas? If so, where should we focus our efforts? We believe markets in Alaska, Appalachia, and the Mississippi Delta may be particularly appropriate, and we inquire as to whether commenters recommend these or other areas.[64]

b. Re-licensing vs. Market-Based Mechanisms

24. As described above, the Commission practices re-licensing in several different forms, both in terms of the conditions under which licensed spectrum is returned to the Commission, and in terms of how that spectrum subsequently is made available to other users. Generally, licensed spectrum may return to the Commission due to non-use under a "complete forfeiture" standard, as applied to PCS licensees, or under a "keep what you use" standard, as applied to cellular licensees. Once this spectrum is reclaimed, the Commission may then re-license via competitive bidding, as with PCS licenses, or it may use a non-auction mechanism such as the cellular unserved area re-licensing rule.[65]

25. We seek comment on when, and under what circumstances, the Commission should use re-licensing as a means to increase access to spectrum, and thus service, especially in rural areas. We do not propose to change the current re-licensing rules for any current wireless service. Rather, we inquire as to whether we should apply one of the current rules, or some other rule, to future spectrum allocations. We also inquire as to whether we should apply a new standard to spectrum that has been returned, under the current rules, to the Commission for re-licensing at the end of a licensee's second term.

26. In the event of spectrum re-licensing, we seek comment on whether there are particular construction standards, such as "complete forfeiture" or "keep what you use," that are most effective in promoting access and service, especially in rural areas. What are the costs and benefits associated with each of these approaches? In particular, we seek comment on whether a "keep what you use" standard based on the cellular unserved area model is most appropriate to advance our goal of promoting rural service, should we decide to extend this approach to additional services. Further, how might the "keep what you use" approach work in tandem with the substantial service safe harbor that we propose in section II.C, below? For example, could we use the substantial service safe harbor, as explained below, as a way of defining "use" for purposes of "keep what you use"? Or, do commenters believe that the concepts of having a substantial service safe harbor and a "keep what you use" approach are mutually

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[64] The Consumer & Governmental Affairs Bureau (CGB) recently announced significant new outreach initiatives in these defined regions in light of the disproportionate number of households without basic telephone service compared to the Nation overall. *See* "FCC Commences Lands of Opportunity Initiative for Rural America: Access to Affordable and Quality Telecommunications Services in Rural America," *News Release,* 2003 WL 21804679 (rel. Aug. 6, 2003). CGB's efforts are designed to educate consumers and other stakeholders, including industry participants, about federal programs and policies intended to ensure that all Americans have access to quality, affordable telecommunications services.

[65] If there are mutually exclusive applications to a cellular unserved area, then the Commission auctions the usage rights to that area. *See* Section II.B.1, *supra*, for more details on these re-licensing approaches.

exclusive? We encourage commenters to be specific in their discussion of the advantages and disadvantages of these and alternative models.

27. As described above, in the cellular service, after the initial five-year period, there is an unserved area licensing process whereby unconstructed portions of a market become available to other parties. In a Petition for Reconsideration filed in WT Docket 01-108, Dobson proposed that licensees should be permitted to extend into unserved areas of less than 50 square miles operating on a secondary non-interference basis to any licensee that might be authorized to cover the area in the future.[66] While we intend to address Dobson's petition in the context of that proceeding, we seek comment on whether there are other changes to the cellular unserved area rules that could promote service in rural areas.

28. We also seek comment on whether, for purposes of defining use, the most appropriate approach would be based on the PCS model (*i.e.*, allowing providers to define construction based on their particular technology and application). We note that the approach with the PCS model is technology neutral, yet it requires a sufficiently strong signal to produce a reasonable level of service. What advantages would be associated with alternative measures, particularly those that employ a specific approach or that mandate the services or technologies to be used? How could such alternative measures be applied equitably across this wider variety of services?

29. In addition, we seek comment on the relative merits of re-licensing as compared to secondary markets. Are there particular circumstances or factors that we should consider in deciding to use one approach or the other? We recognize that re-licensing is a more regulatory approach, and we therefore inquire as to whether we should limit its application. If so, for what services, or in what markets? What market conditions or other measures should we consider in determining whether to apply re-licensing to a particular service or in a particular market? Is this approach more appropriate for rural markets, and if so, why?

30. Finally, we note that while the Spectrum Policy Task Force recommended that the Commission, in the first instance, focus on secondary markets as the primary means to increase access to spectrum, it also recommended that, after there has been sufficient time to consider the effectiveness of this approach, the Commission also consider alternative mechanisms such as government-defined easements.[67] We seek comment on whether now is an appropriate time to consider the use of spectrum easements for new licenses. We recognize that, using easements, software-defined radios and other frequency-agile devices may provide third parties with the ability to take advantage of unused portions of licensed spectrum.[68] At the same time, we also recognize that the Commission's efforts to expand the use of secondary markets through spectrum leasing are recent, and that there has been little time to evaluate the effectiveness of this approach.

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[66] Dobson Petition at 3.

[67] *SPTF Report* at 58. As used in the *SPTF Report*, and for purposes of this proceeding, the term "easements" refers to government-defined access rights to licensed spectrum that would not require the easement user to obtain the prior consent of the licensee so long as the user complied with the easement conditions, *e.g.*, non-interference with the licensee's use of the spectrum. *Id.* at 55.

[68] *SPTF Report* at 13-14.

C. Performance Requirements

31. Subsequent to the enactment of Section 309(j), the Commission initiated the *Competitive Bidding* proceeding, which, among other things, addressed how the Commission intended to implement the statutory mandate for "performance requirements" for licenses awarded through competitive bidding.[69] Initially, the Commission focused primarily on the need for performance requirements to prevent spectrum warehousing and provided little or no discussion of the other performance goals in Section 309(j), *i.e.*, service to rural areas and promotion of new technologies and services.[70] Later, when adopting specific service rules, particularly for PCS, the Commission more specifically addressed the issue of service to rural areas. For example, the Commission stated that one of its goals in adopting requirements for PCS was to ensure that PCS service was available in rural and remote areas, but offset this goal with the notion that it did not want to adopt requirements that may lead to coverage where service was not needed and therefore economically unjustified.[71] The Commission concluded that the appropriate balance would be met by adopting minimum coverage requirements.

32. In implementing competitive bidding, the Commission moved away from site-by-site licensing and instead awarded licenses based upon geographic areas. Furthermore, in transitioning towards licensing by geographic areas, the Commission has shifted away from what effectively has been an "all or nothing" construction requirement. A site-specific licensee is required to construct and begin operation on all its authorized frequencies at each particular site – essentially providing 100 percent coverage with 100 percent capacity. In most cases, areas and/or frequencies that were unconstructed at the end of the period reverted back to the Commission to be re-licensed.[72] With geographic area licenses, however, licensees are not required to construct their entire geographic area in order to retain their authorizations because the areas encompassed by these licenses are very large compared to site-based licenses, and because the Commission sought to provide flexibility for licensees to provide a variety of services with their spectrum, some of which do not require ubiquitous geographic coverage. Depending upon the service, the Commission's construction benchmarks may require coverage of a certain percentage of the licensed area's population or coverage of a certain percentage of the licensed area's geographic area. For many, but not all services,[73] the Commission adopted a flexible "substantial service" construction standard that allows licensees that are providing a beneficial use of the spectrum to retain their authorizations.[74] The substantial service approach was intended to provide flexibility for

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[69] *See* Implementation of Section 309(j) of the Communications Act – Competitive Bidding, *Notice of Proposed Rulemaking*, 8 FCC Rcd 7635 (1993).

[70] *Id.* at 7650 ¶¶ 90-92.

[71] *See, e.g.*, Amendment of the Commission's Rules to Establish New Personal Communications Services, *Memorandum Opinion and Order*, 9 FCC Rcd 4957 ¶ 155 (1994) (*PCS MO&O*).

[72] In some cases, frequencies for which an applicant was granted exclusivity subject to a loading condition reverted to being available for shared use if the first licensee failed to load fully.

[73] At present, the following geographic area licensees are subject to construction requirements and do not have a substantial service construction option: 30 MHz broadband PCS licensees, 800 MHz SMR (blocks A, B, and C only), 220 MHz licensees providing services other than fixed services and who do not have at least one incumbent licensee in their markets, LMS licensees, and MDS/ITFS licensees.

[74] For some services, such as LMDS and 39 GHz, the Commission has adopted only a "substantial service" construction requirement. *See* 47 C.F.R. §§ 101.1011(a) (LMDS), 101.17(a) (39 GHz).

services with a variety of uses for the spectrum (*i.e.*, fixed or mobile, voice or data) or with a high level of incumbency that would prevent a new geographic-based licensee from meeting the coverage requirements. While the definition of "substantial service" is generally consistent among wireless services, the factors that the Commission will consider when determining if a licensee has met the standard vary among services.[75] Substantial service generally means service that is sound, favorable, and substantially above a level of mediocre service that would barely warrant renewal.[76]

33. In the following paragraphs, we propose modifications to our construction requirements to promote licensee flexibility and to spur build-out in rural areas. First, we seek to increase flexibility by harmonizing construction requirements for wireless geographic area licensees so that all such licensees have the opportunity to provide "substantial service" as a means of complying with their construction requirements. As we discuss below, many geographic area licensees already have the flexibility to provide substantial service, but some geographic area licensees do not. While we intend to retain current benchmarks for individual services, we believe that providing all geographic area licensees with the additional option of satisfying a "substantial service" benchmark will provide all such licensees with parallel flexibility. We also ask whether requiring compliance with additional construction requirements in license terms following initial renewal of the license might be likely to increase build-out in rural areas.

1. Substantial Service Construction Benchmarks

a. Background

34. As we have explained throughout this item, the Commission has taken a market-oriented approach to spectrum policy that, where possible, has allowed economic forces to determine build-out of wireless facilities and the provision of wireless services. The Commission has shifted towards providing licensees increased flexibility to tailor use of their spectrum to unique business plans and needs. This increased flexibility is evident in our adoption of the "substantial service" benchmark for many of our services. In more recently adopted rules for wireless services, such as our Part 27 rules for private services, Lower and Upper 700 MHz, 39 GHz, and 24 GHz, the Commission established the substantial service standard as the only construction requirement. The Commission declined to prescribe more specific coverage benchmarks because the main use of the spectrum was still in question. Especially in services where the Commission envisioned fixed services being deployed, the substantial service standard permits a licensee to make a showing based on criteria other than population or geography covered. In these situations, the Commission determined that the substantial service demonstration within ten years of license grant (*i.e.*, coincident with the first renewal deadline) would satisfy the dictates of Section 309(j)(4)(B). In addition, for licensees subject *only* to the substantial service

[75] For example, in some wireless services, the Commission indicated that licensees providing niche, specialized, or technologically sophisticated services may be considered to be providing "substantial service." *See, e.g.*, Amendment to Parts 2 and 90 of the Commission's Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz and the 935-940 MHz Bands Allotted to the Specialized Mobile Radio Pool, *Second Report and Order*, 10 FCC Rcd 6884 ¶ 41 (1995). In other services, the Commission has indicated that licensees providing an offering that does not cover large geographic areas or population (*e.g.*, point-to-point fixed service), but nonetheless provides a benefit to consumers, also may meet the standard. *See, e.g.*, Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service, 12 FCC Rcd 10943 ¶ 158 (1998).

[76] *See, e.g.*, 47 C.F.R. §§ 22.503(k)(3), 27.14; 90.685(b), 95.831, 101.527(a), 101.1011(a).

requirement, the Commission often has included "safe harbors," *i.e.*, examples of how a licensee would meet the substantial service standard.

b. Discussion

35. As a general matter, we believe that our current performance requirements, in combination with economic incentives and the licensing of multiple competitors, have served to promote significant build out and have resulted in the provision of service to the vast majority of the population, including national population centers, at least during the initial license term. Nevertheless, we believe that current geographic area licensees without a "substantial service" option or a rural-specific construction requirement may be unduly constrained and may lack sufficiently flexibility to provide service to rural areas or to offer niche services. Moreover, given the unique characteristics and considerations inherent in constructing within rural areas, we believe that applying an inflexible construction standard that is based upon coverage of a requisite percentage of an area's population may be an inappropriate measure of levels of rural construction. Accordingly, while we intend to keep our current construction requirements, as they are set forth in our service-specific rule sections, we propose to adopt a "substantial service" alternative for all wireless services that are licensed on a geographic area basis and that are subject to construction requirements.[77] This proposal therefore would affect the following licensees: 30 MHz broadband PCS licensees; 800 MHz SMR licensees (blocks A, B, and C only); certain 220 MHz licensees;[78] LMS licensees; MDS/ITFS licensees; and 700 MHz public safety licensees.[79] If we adopt our proposed modification of our build-out rules, these licensees would have the

[77] Our proposal includes only those types of geographic licenses where our rules require that only a portion of the area be constructed. A substantial service option is one way to provide these licensees flexibility in determining which areas within their geographic license to build based on demand, market conditions, and their business plans. We do not propose to extend this concept to site-based licenses that have applied for and received licenses to construct stations at specific sites of their choosing based on specific technical parameters. For these site-based services, the licensee (not the Commission) dictates the specific location of station facilities and therefore no further flexibility in our construction requirements is necessary.

[78] This proposal would not include Phase II EA and regional 220 MHz licensees offering fixed services or who have at least one incumbent, co-channel Phase I licensee in their markets. These licensees already may satisfy their construction requirement through the provision of substantial service. *See* 47 C.F.R. § 90.767(b). Similarly, Phase II nationwide 220 MHz licensees offering fixed services already have a substantial service option and therefore are excluded from the scope of this proposal. *See* 47 C.F.R. § 90.769(b).

[79] We note that we already have initiated a proceeding that seeks comment with respect to providing MDS/ITFS licensees with a substantial service construction benchmark. *See* Amendment of Parts 1, 21, 73, 74 and 101 of the Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150 - 2162 and 2500 - 2690 MHz Bands; Part 1 of the Commission's Rules - Further Competitive Bidding Procedures; Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and the Instructional Television Fixed Service Amendment of Parts 21 and 74 to Engage in Fixed Two-Way Transmissions; Amendment of Parts 21 and 74 of the Commission's Rules with Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico, *Notice of Proposed Rule Making and Memorandum Opinion and Order*, 18 FCC Rcd 6722 (2003) (*MDS/ITFS NPRM*). We will review the record submitted in response to the *MDS/ITFS NPRM* and will incorporate comments to the extent they pertain to the issue of substantial service for MDS/ITFS licensees. We note that our current construction requirements require 700 MHz public safety licensees to provide "substantial service," but this requirement is premised upon the provision of substantial service to a certain percentage of their licensed population at five and ten years. *See* 47 C.F.R. § 90.529(b). Because this "substantial service" requirement is not a flexible benchmark, we include 700 MHz public safety spectrum within the scope of this proceeding.

flexibility to comply with existing service-specific benchmarks or to satisfy the substantial service benchmark, at their option. While we have some concerns regarding firm population- and geographic-based coverage requirements, as discussed below, we recognize that geographic-area benchmarks nevertheless might be useful in providing licensees with a means of complying with our construction requirements without building out population centers. We therefore seek comment on whether we should adopt a geographic-based construction requirement, as an alternative for licensees with population-based requirements, as a means of providing licensees with yet another option for compliance with our construction requirements.

36. We are concerned that current population- or geographic area-specific benchmarks may impinge upon licensees' abilities to serve niche or less populated areas, and may unintentionally discourage construction in rural areas.[80] Particularly in the case of a population-based construction requirement, a licensee has both an economic and practical incentive to achieve compliance with the requirement by providing service only to the urban areas of its licensed area. For example, in response to the *Rural NOI*, NRTC states that "[t]he Commission's decision to use milestones based on geographic or population statistics is counterproductive to consumers residing in truly rural areas. Once licensees have built out the urbanized portions of their licensing areas, only the more densely populated rural areas are targeted for further buildout."[81] NRTC contends that because the Commission only specifies a population or geographic coverage benchmark, without specifying which population or which areas must be built, "there is no incentive – economic, regulatory or otherwise – to build out rural areas" and that, "[i]n practical terms, this means licensees will naturally tend to build out more densely populated (i.e. non-rural) areas to satisfy Commission[-]established construction milestones."[82] In reference to the population-based build-out requirement for broadband PCS, Corr Wireless states that "[t]he natural consequence of this rule is that licensees concentrate their build-out activities where population density is highest."[83] In addition, because each licensee must satisfy the same population-based benchmark, we are concerned that, as multiple licensees enter a market, they likely will construct systems in the same populous areas, thereby duplicating coverage. Consequently, within any given market, urban areas are likely to have multiple wireless competitors providing service, whereas rural areas may have fewer options.

37. We believe that providing all geographic area wireless licensees with a substantial service option will address concerns that construction requirements based on population or geographic coverage may discourage the build-out of rural areas.[84] As we have explained in past proceedings, the

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[80] Based upon the construction notifications we have received to date, when licensees are given a choice of satisfying either geographic- or population-based benchmarks, they consistently elect compliance with the latter.

[81] *Rural NOI*, NRTC Comments at 10.

[82] *Id.* at 7.

[83] *Rural NOI*, Comments of Corr Wireless Communications, LLC at 11.

[84] We note that comments received in response to the *Rural NOI* do not universally support adoption of a substantial service requirement. *See, e.g., Rural NOI*, Joint Comments of the Organization for the Promotion and Advancement of Small Telecommunications Companies/Rural Telecommunications Group at 12-13 ("The Commission should refrain from repeating its recent use of the vague and nearly unenforceable 'substantial service' standard. A 'substantial service' requirement will not speed the delivery of new, spectrum-based services to rural areas."); NTCA Comments at 11 ("The Commission has a 'substantial service' requirement as its construction requirement. Under this approach licensees need merely show that they provide 'substantial service' to either a geographic service area

(continued....)

substantial service option provides licensees with greater flexibility and therefore may result in the more efficient use of spectrum and the provision of service to rural, remote, and insular areas.[85] For example, in the *Chasetel Order*, the Wireless Telecommunications Bureau determined that the licensee was providing substantial service to the Middlesboro-Harlan, KY BTA (Middlesboro BTA) because it was providing service to an educational campus in a relatively remote portion of a rural and sparsely populated market.[86] Providing all wireless licensees with a "substantial service" construction alternative may create more opportunities for CMRS licensees to focus their build-out efforts on previously untargeted niche or rural areas, as in the *Chasetel Order*, rather than having to duplicate existing services and thereby tapping into an otherwise unserved market. Furthermore, in light of the fact that we have been moving towards a more flexible approach to coverage requirements, offering all geographic area wireless licensees a substantial service option will increase regulatory parity. We also note that, by providing terrestrial wireless licensees with greater flexibility in satisfying their construction requirements and by alleviating the pressure of satisfying minimum population-based benchmarks, licenses that are comprised largely of rural areas might be more likely to appeal to a wider range of potential bidders at auction. We think increasing flexibility will make these licenses more attractive because wireless providers will have a wider range of options in terms of developing a business plan that is cost-effective, tailored to their individual needs, and satisfies the Commission's construction requirements.

38. We intend to retain our current construction benchmarks and propose adopting the substantial service benchmark as an additional means of satisfying our construction requirements. Our proposal effectively would harmonize construction benchmarks across all wireless services licensed on a geographic-basis (and that are subject to construction requirements) so that all geographic area licensees have the increased flexibility of a substantial service option. Licensees may elect to satisfy either the construction benchmark options already available to them today or the substantial service benchmark, according to their preference. In the past, in evaluating substantial service showings, we have considered factors such as whether the licensee is offering a specialized or technologically sophisticated service that does not require a high level of coverage to be of benefit to customers, and whether the licensee's operations serve niche markets.[87] In the context of providing substantial service to rural areas, we are

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or to the population within the geographic service area within a specific period of time. Therefore, a licensee may get its license renewed by serving just a portion of the urban area within its licensed territory. It thus provides service to a 'substantial' portion of the population, while completely ignoring and providing no service to the vast majority of the license territory, *i.e.*, the rural territory.").

[85] *See, e.g.*, Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS"), *Report and Order*, 12 FCC Rcd 10785, 10843 ¶¶ 111-112 (1997) (*WCS Report and Order*); *PCS MO&O* at 5018-5020 ¶¶ 154-158.

[86] *See* Chasetel Licensee Corp., Request for Extension of Broadband Construction Requirements and Construction Notification for Call Sign KNLF468 in Middlesboro-Harlan, KY BTA, File Nos. 0000594507, 0000603542, *Order*, 17 FCC Rcd 9351, 9356, ¶ 11 (WTB CWD 2002) (*Chasetel Order*). In addition to the fact that the Middlesboro BTA itself was sparsely populated and rural, the licensee was providing service to an area within the Middlesboro BTA where the mountainous terrain inhibited coverage from neighboring towns, such that the residents of the educational community may have been less likely to receive adequate service by multiple PCS providers in a competitive environment. *Id.* at 9355 ¶ 10.

[87] For example, with respect to the 218-219 MHz service, we have stated that we will consider the following "safe harbor" examples in determining whether a 218-219 MHz service licensee has provided substantial service: (a) a

(continued....)

particularly interested in the following factors: (1) coverage of counties or geographic areas where population density is less than or equal to 100 persons per square mile; (2) significant geographic coverage; (3) coverage of unique or isolated communities or business parks; and (4) expanding the provision of E911 services into areas that have limited or no access to such services. We intend to limit this proposal to wireless services that are currently licensed on a geographic area basis. In the event we adopt geographic areas for new wireless services at a future date, we will examine the appropriateness of adopting a substantial service or alternative construction requirement for the new service at that time.

39. We seek comment on our proposal to adopt a "substantial service" benchmark for all wireless services that are licensed by geographic area and are subject to build-out requirements, but currently do not have a substantial service option. We also seek comment on whether any services should be excluded from our proposal. For example, are there certain radio services where it makes sense not to have a substantial service requirement in order to satisfy other, competing policy objectives? Furthermore, is the "substantial service" requirement likely to promote build-out in rural areas for some services currently licensed on a geographic area basis, but not for others? In what circumstances, and for what services, is an alternative construction benchmark, other than the substantial service standard, likely to be more effective in promoting rural build-out? In the event that commenters believe that a substantial service standard is inappropriate for certain services, we ask commenters to suggest alternative benchmarks that might promote the deployment of service within rural areas. In the event that commenters believe that we should exclude particular services, such as public safety services, commenters should provide us with a detailed explanation for why excluding such services would serve the public interest. We ask commenters whether the adoption of a substantial service requirement is likely to increase deployment of wireless services in rural areas. Finally, because this proposed modification of our rules will apply generally to all geographic area licensees, and not just those licensees serving rural areas, we ask how the adoption of a substantial service requirement might affect the deployment of wireless services in non-rural areas.

40. We also seek comment on whether we should adopt geographic-based construction requirements for those private and commercial terrestrial wireless services that are licensed on a geographic area basis and that currently do not have a geographic area coverage option. Narrowband PCS (NBPCS) licensees, for example, have a choice of meeting a population-based benchmark, a geographic-based benchmark, or making a showing of substantial service.[88] The five-year geographic

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demonstration of coverage to twenty percent of the population or land area of the licensed service area; or (b) a demonstration of specialized or technologically sophisticated service that does not require a high level of coverage to be of benefit to customers; or (c) a demonstration of service to niche markets or a focus on serving populations outside of areas currently serviced by other licensees. *See* Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service, *Report and Order and Memorandum Opinion and Order*, 15 FCC Rcd 1497, 1538 ¶ 70 (1999) (*218-219 MHz Report and Order*). *See also* Amendment of the Commission's Rules To Establish New Personal Communications Services, Narrowband PCS, *Second Report and Order and Second Further Notice of Proposed Rule Making*, 15 FCC Rcd 10456 ¶ 28 (2000); *WCS Report and Order*, 12 FCC Rcd at 10843-44 ¶¶ 111-13; 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*, 14 FCC Rcd 10030, 10072-73 ¶ 70 (1999).

[88] *See* 47 C.F.R. § 24.103. Phase II 220 MHz nationwide licensees also have a choice of meeting a population-based benchmark or geographic benchmark. *See* 47 C.F.R. § 90.769.

benchmark for NBPCS licensees varies based on market size, *i.e.*, nationwide licensees must provide coverage to 750,000 square kilometers, regional licensees must provide coverage to 150,000 square kilometers, while MTA licensees must provide coverage to 75,000 square kilometers or 25 percent of the geographic area in the MTA. A geographic benchmark would provide an alternative for licensees who do not intend to focus construction efforts on population centers. Further, like population-based benchmarks, geographic benchmarks would provide increased certainty for licensees, in comparison to the more flexible substantial service standard. Commenters supporting geographic-based construction requirements should identify the applicable radio service(s) and recommend benchmark levels, or percentages, for the relevant market sizes. We seek comment on whether the benchmark levels may be reduced where the geographic areas in question are rural areas. In this connection, we seek comment on how we should define rural for purposes of implementing geographic benchmarks for these services.

41. In addition to proposing the adoption of a substantial service benchmark for all wireless services that are licensed by geographic area, we propose the adoption of a substantial service "safe harbor" based on provision of rural service. We propose two different rural safe harbors, depending on whether a licensee is providing mobile or fixed wireless service. With respect to mobile wireless services, we propose that a licensee will be deemed to have met the substantial service requirement if it provides coverage, through construction or lease, to at least 75 percent of the geographic area of at least 20 percent of the "rural" counties within its licensed area. We propose that "rural" counties be defined as those counties with a population density less than or equal to 100 persons per square mile.[89] For example, if a licensee's market contains five counties (all having a population density of 100 persons per square mile or fewer), the licensee could meet the safe harbor by providing coverage to 75 percent of the geography in one of those five counties. With respect to fixed wireless services, we propose to define the substantial service requirement as met if a licensee, through construction or lease, constructs at least one end of a permanent link in at least 20 percent of the "rural" counties within its licensed area (using the same "rural" county definition). For example, if a licensee's market contains five counties (all having a population density of 100 persons per square mile or fewer), the licensee could meet the safe harbor by constructing one end of a permanent link in one of those five counties. Our proposal to base the safe harbor on a population density of 100 persons per square mile or fewer is derived from our finding in the *Eighth Competition Report*, which indicates that counties with population densities of 100 persons per square mile or less "have an average of 3.3 mobile competitors, while the more densely populated counties have an average of 5.6 competitors."[90] We note that these proposed "safe harbors" are intended to provide licensees with a measure of certainty in determining whether they are providing substantial service, but are not intended to be the only means of demonstrating substantial service. Accordingly, a licensee may still satisfy a "substantial service" standard without complying with one of the safe harbors; while we intend to provide licensees with regulatory certainty through the establishment of safe harbors, we also seek to optimize licensees' flexibility to pursue individualized business plans.

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[89] There are approximately 2300 counties within the United States that would satisfy this definition of "rural," constituting roughly 71 percent of all U.S. counties. These counties comprise about 21 percent of the total U.S. population. Of the 51 MTAs, three do not contain any counties with population densities of 100 persons per square mile or less. Of the remaining 48 MTAs, all have at least 3 counties with population densities of 100 persons per square mile or less and 42 of the MTAs have at least 10 counties with population densities below 100 persons per square mile or less. Of the 734 Cellular Market Areas (CMAs), 212 do not contain any counties with population densities of 100 persons per square mile or less. Of the remaining 522 CMAs, 40 contain only one county and the county has a population density of 100 persons per square mile or less. Furthermore, 276 CMAs contain 2 or more counties where all counties have population densities of 100 persons per square mile or less.

[90] *Eighth Competition Report* at 14837 ¶ 114.

42. We seek comment on whether we should adopt rural safe harbors and, if so, whether it is advisable to adopt the specific safe harbors described above. We note that although the analyses of competition in counties with population densities of 100 persons per square mile or fewer were based upon data pertaining to the mobile telephony industry (dominated by cellular, broadband PCS, and digital SMR providers), we believe that 100 persons per square mile nevertheless provides a usable and reasonable proxy for "rural" for the purpose of establishing a rural substantial service safe harbor. We seek comment on this proposed population-density based standard. In particular, we seek comment on whether this safe harbor is suitably flexible to accommodate variances in service areas. For example, will this safe harbor accommodate service areas with relatively few rural counties (using our "rural" county definition described above), as well as service areas with many rural counties? While it may be easier for wireless providers serving areas with relatively few rural counties to satisfy the rural safe harbors, we think that profit incentives and market pressures will encourage construction of more populous areas. Conversely, we recognize that our proposed safe harbors may prove burdensome for wireless providers serving large or nationwide areas with many rural counties; accordingly, we seek comment on how we might modify our safe harbors to accommodate various geographic service areas and uneven population distributions. In the event commenters disagree with our proposed safe harbors, we ask that commenters suggest examples of alternative rural safe harbors, in light of their practical experience and based upon their own service-specific demands and requirements. Should we adopt a rural safe harbor that applies to all services, or are services sufficiently specialized that we should adopt service-specific safe harbors?

2. Renewal License Terms

a. Background

43. At present, we require compliance with our construction requirements during the initial license term. Depending upon the particular service, we require licensees to satisfy minimum coverage benchmarks at an interim period prior to the end of the initial license term, and/or at the conclusion of the initial license term.[91] Licensees obtain authorizations to use designated spectrum for a specific period of time (typically a term of ten years), and may request renewal of their authorizations prior to the expiration of their license terms.[92] Once a licensee renews its license, however, no additional performance requirements are imposed in subsequent license terms.[93]

b. Discussion

44. We seek comment on whether we should require geographic area licensees to satisfy performance requirements during their renewal license terms (for ease of reference, we will refer to license terms subsequent to the initial license term as "renewal terms"). This question of whether licensees should satisfy additional performance requirements during renewal terms is particularly relevant as licensees approach the end of their initial license terms or enter into their renewal terms. In the next few years, a number of our auctioned licenses will be subject to renewal. For example, in 2005,

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[91] *See* 47 C.F.R. §§ 24.203(a),(b) (five-year and ten-year construction requirements for broadband PCS), 90.655(c) (three-year and five-year requirements for 900 MHz SMR), 101.1011(a) (ten-year requirement for MDS).

[92] *See* 47 C.F.R. § 1.949.

[93] *See id.* Licensees must file applications for renewal of their authorizations and must comply with any additional renewal requirements set forth in the applicable service-specific subsections of our rules.

357 broadband PCS licenses and 152 of our 218-219 MHz licenses will be subject to renewal; in 2006, 732 of our 900 MHz SMR licenses will be subject to renewal. We ask whether additional performance requirements are likely to increase the provision of wireless services to rural areas.

45. With respect to commercial mobile wireless services, we have seen the prompt use of at least a portion of the spectrum and provision of at least a minimum level of service. As we noted in the *Eighth Competition Report,* 270 million people, or 95 percent of the total U.S. population, live in counties with access to three or more different operators (cellular, broadband PCS, and/or digital SMR providers) offering mobile telephone service, and more than 236 million people, or 83 percent of the U.S. population, live in counties with five or more mobile telephone operators competing to offer service.[94] While this data appears to suggest that our construction requirements have facilitated competition and have promoted the deployment of wireless services, it is nevertheless difficult to identify whether wireless deployment is the result of our minimum coverage requirements or the operation of market forces. We ask commenters whether market forces, and not build out requirements, should govern any additional construction during renewal terms. Will the imposition of additional performance requirements during renewal terms likely result in uneconomic construction? We note that, at least with respect to certain commercial services such as broadband PCS, demand for these services is high and, particularly with the advent of secondary markets, the opportunity cost of the spectrum is fairly clear. In light of these circumstances, additional performance requirements may be unnecessary because existing and emerging market incentives may be sufficient to ensure deployment in areas where such investment makes sound economic sense. To the extent possible, we are inclined to allow market forces to operate without the imposition of regulatory restrictions or requirements. On the other hand, we recognize that market forces may not always be sufficient to accomplish our statutory objective of promoting the widespread and rapid deployment of wireless services to consumers, including consumers in rural areas. We seek comment on how we can achieve the right balance, in light of these concerns.

46. In the event that commenters believe additional construction requirements are appropriate and necessary to promote the continued deployment of wireless services to consumers in rural areas, we ask what form these construction requirements should take. For example, should we adopt a population- or geography-based benchmark? Should we adopt a modified version of substantial service and require the provision of additional coverage beyond what is sufficient to satisfy "substantial service" during the initial license term (in effect, a "substantial service plus" requirement)? Should we require compliance with these benchmarks at the expiration of the renewal term, or at some interim period prior to the end of the renewal term? Furthermore, given our objective of promoting service to rural consumers, we ask whether renewal term construction requirements should be specifically targeted towards construction in rural areas or otherwise include a rural component. For example, should we require that licensees provide service to some percentage of the rural population of their licensed areas during their renewal terms? What effects might the adoption of such performance requirements have beyond promoting the deployment of service in rural areas?

D. Relaxed Power Limits

1. Background

47. In the following sections, we propose modifications to our regulations governing power limits and technical specifications for operations in rural areas. In its report, the Spectrum Policy Task

[94] *Eighth Competition Report* at 14794-95 ¶ 18.

Force recommended that in less congested areas (*i.e.*, rural areas) spectrum users should be permitted to operate at higher power levels so long as they do not cause interference and do not receive additional interference protection.[95] Similarly, in the *Rural NOI* we observed that technical and operational rules throughout the spectrum-based services are necessary to facilitate efficient use of the radio spectrum while minimizing the potential for interference among licensees.[96] We sought comment on the degree of flexibility that these regulations afford to providers of spectrum-based services in rural areas and asked whether there are aspects of these rules that could be modified or made more flexible to encourage expanded service to rural areas while ensuring that services remain free of interference.[97]

2. Discussion

a. Part 15 Unlicensed Devices and Systems

48. Unlicensed devices are permitted to operate under Part 15 of our rules at very low power levels.[98] The popularity of these devices has grown steadily over the past few years.[99] Today, a growing number of service providers are using unlicensed devices within wireless networks to serve the varied needs of industry, government, and general consumers alike. One of the more significant developments in the use of unlicensed devices is the emergence of wireless Internet service providers or "WISPs." Using unlicensed devices, WISPs around the country are beginning to provide an alternative high-speed connection to cable or DSL services.[100] In addition to providing competition to cable and DSL, we note that the record reflects that WISPs have taken root in many rural areas where these services have been slow to arrive.[101]

49. In response to the *Rural NOI*, a number of WISPs filed comments asking the Commission to permit transmission by Part 15 devices at greater power levels in rural areas. According to these parties, using greater power may, in some cases, allow them to use unlicensed devices to cover

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[95] *See SPTF Report* at 59.

[96] *See, e.g.*, 47 C.F.R. §§ 22.301-22.383 and 22.901-22.925 (Cellular Radiotelephone Service); 47 C.F.R. §§ 24.50-24.55 and 24.229-24.238 (broadband PCS); 47 C.F.R. §§ 90.201-90.219, 90.401-90.469, 90.476-90.483, and 90.635-90.658 (Specialized Mobile Radio Service); 47 C.F.R. §§ 101.101-101.151 (technical standards for fixed microwave services); and 47 C.F.R. §§ 101.201-101.217 (operational standards for fixed microwave services).

[97] *Rural NOI* at 25569, ¶ 27.

[98] 47 C.F.R. Part 15.

[99] One example of the popular use of such devices is the development of Wireless Internet or "Wi-Fi." Many consumers are now able to access the Internet wirelessly through the use of unlicensed devices. The Commission has even installed several points within its headquarters (called "HotSpots") providing limited wireless Internet access for any visitors who have a Wi-Fi (802.11(a) or 802.11(b)) compliant network card installed on their portable devices.

[100] For example, *see* www.part-15.org. Part-15.org is a trade organization formed in 2002. The organization acts as an educational and support resource for emerging and established WISPs. The organization offers certification courses for WISP professionals designed to provide technical background and hands-on experience.

[101] *See, e.g.*, *Rural NOI*, Nextweb Comments at 1, Rodney W. Applegate Comments at 1, and Waverider Communications at 4.