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

In the Matter of	)	
	)	
Inquiry Concerning the Deployment of Advanced Telecommunications Capability to all Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as amended by the Broadband Data Improvement Act	)	GN Docket Nos. 09-47 and 09-137
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51

To: The Commission

COMMENTS – NBP Public Notice #6
THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

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Table of Contents

Summary of Comments – NBP Public Notice #6

The Wireless Internet Service Providers Association ("WISPA") is pleased to provide its Comments in response to the Commission's Public Notice NBP #6 to bring a unique, compelling perspective to aid the Commission's considerations on the sufficiency of existing and future spectrum allocations for purposes of the Commission's development of a National Broadband Plan. WISPA urges the Commission to adopt its recommendations to significantly improve spectrum efficiency in existing bands, to fundamentally change its spectrum allocation policies for future spectrum allocations, and to make a significant amount of additional spectrum available. This trio of objectives will promote widespread fixed wireless broadband deployment, particularly in unserved and underserved areas of the country.

As the trade association representing the wireless Internet service provider ("WISP") industry, WISPA brings unique qualifications to comment on the challenges and opportunities associated with current spectrum allocations that are designated for WISP services. Spawned by changes to the Part 15 rules in the 1990s, WISPs now provide wireless broadband service – typically with license-free spectrum – to more than 2,000,000 citizens at homes, businesses, police and fire stations and schools in every state. In many communities, the local fixed wireless ISP is the only means by which consumers can achieve broadband access. Despite these successful deployments, WISPs suffer from a "noisy" RF environment, a lack of affordable access to "second mile" connectivity and "middle mile" backhaul and an inability to acquire licensed spectrum under auction rules that favor well-financed, larger carriers.

As a first step, the Commission must change service rules to alleviate burdens that contribute to underutilization of certain bands. Such efforts will promote increases in intensive spectrum use, spectral efficiency within existing spectrum allocations and will help move spectrum allocations toward their highest and best use in the public interest, particularly in rural areas where fixed broadband deployment has been hindered by economic and regulatory barriers.

TV White Spaces. In recent months, WISPA has offered proposals to enable cost-efficient, wide-area deployment of fixed devices in the TV White Spaces and WISPA urges the Commission to move forward to adopt these rules. The Commission should increase the maximum antenna height for TV band device ("TVBD") base stations from 30 meters above ground to 100 meters above ground, based on a proposed table of required separation distances from protected contours. The Commission also should increase the power limit from 4 Watts EIRP to a maximum of 20 Watts based on a sliding scale such that higher power would only be available in uncongested rural areas. WISPA has also recommended the adoption of "licensed-lite" requirements for fixed TVBD services, whereby the Commission would require TVBD operators to examine the geolocation database prior to commencing service and to adhere to a duty of cooperation with other licensees. WISPA also has urged the Commission to act quickly to implement its database administration process to expedite the deployment of fixed services in the TV White Spaces. These changes would help ensure that the anticipated benefits of the TV white spaces will result in widespread fixed deployments that enable affordable broadband access.

3650 MHz Band. WISPA has advocated changes to the 3650 MHz Band service rules and registration procedures to enable more efficient and economical broadband deployment, especially in rural areas. WISPA recommends increases in the power density limits, which were based on "worst case" scenarios to protect FSS earth station operations but have unnecessarily resulted in exclusion zones that are larger than necessary and have failed to account for antenna orientation, terrain obstruction and other factors, thereby creating unnecessary barriers to broadband deployment in rural areas. In addition, WISPA believes that the Commission should invite comment regarding whether to allow "restricted" protocols in the entire 3650-3700 MHz band. Also, in light of difficulties in deploying broadband near FSS exclusion zones, the Commission should streamline the associated coordination process and should consider adopting "safe harbors" for registration purposes in lieu of negotiated consent. The fixed station registration process also should be changed to facilitate point-to-multipoint service by eliminating burdensome requirements to register every end user location – a process change that can be made in the ULS without a rule amendment.

As a second step, the Commission should make fundamental changes to its spectrum allocation rules. In addition to the auction and license-free models, the Commission should expand use of "licensed lite" procedures and incorporate "spectrum homesteading" into the process.

The "Licensed Lite" Approach. Under this approach, the Commission would assign non-exclusive licenses, which will have the benefits of lower market-entry costs and the protections of interference coordination rights through a database registration process for base and fixed stations. WISPA believes that such a licensing scheme should be adopted for the 2155-2180 MHz bands and others, especially for rural markets where the lowered market entry costs would help offset high per-subscriber costs resulting from the lack of affordable connectivity and sparse population.

"Spectrum Homesteading." WISPA advocates a policy of "spectrum homesteading," whereby spectrum would be made available on a non-exclusive basis, and those wireless providers that meet an accelerated build-out and service schedule would then obtain an exclusive license for the area. WISPA believes that this policy would promote expeditious, cost-effective service, and would increase opportunities for the provider to obtain financing to deploy services more quickly and more affordably in more areas of the country.

For the third step, WISPA endorses an audit of the Commission's and governmental spectrum resources to identify and determine new sources of spectrum for fixed broadband. The Commission would determine whether existing spectrum is being utilized, whether existing spectrum can be more effectively assigned and would identify sources of underutilized government spectrum that can be transferred to the Commission for commercial allocation and assignment. Assuming spectrum resources can be uncovered, WISPA believes that an additional 300 MHz of spectrum will be needed for fixed wireless broadband to replace the noisy and crowded license-free spectrum and to meet consumer demands for emerging bandwidth-intensive applications.

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COMMENTS – NBP Public Notice #6
THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

The Wireless Internet Service Providers Association ("WISPA") provides these Comments in response to NBP Public Notice #6 to assist the Commission's development of a National Broadband Plan for our country's future.[1] As the trade association representing the interests of wireless Internet service providers ("WISPs") that deliver fixed broadband service to residences, businesses and anchor institutions in urban, suburban and rural areas across the country, WISPA brings its unique and compelling perspective to the record in this proceeding. WISPA offers concrete recommendations on how to make existing spectrum allocations more conducive for efficient and expeditious fixed broadband deployment in areas where demand is greatest. WISPA also advocates allocation of 300 MHz of additional spectrum so that consumers and businesses will have sufficient, sustainable and high-quality fixed access for bandwidth-intensive applications.

[1] *See* Public Notice, *Comment Sought on Spectrum for Broadband,* DA 09-2100, GN Docket Nos. 09-47, 09-51 and 09-137 (rel. Sept. 23, 2009) ("*Public Notice*").

Background

About WISPA

WISPA was founded in 2004 and represents the interests of more than 300 WISPs, vendors, system integrators and others interested in promoting the growth and delivery of fixed wireless broadband services to Americans. WISPA estimates that more than 2,000 WISPs operate in the United States today. WISPA's ongoing research reveals that WISPs cover more than 2,000,000 square miles in all 50 states. Using primarily license-free frequencies authorized under Part 15 of the Commission's Rules, WISPs provide fixed wireless broadband services to more than 2,000,000 people in residences, businesses, hospitals, first responders and educational facilities. Many subscribers live in rural areas with little or no broadband access via DSL or cable. Other subscribers live in unserved "pockets" in urban areas that have been bypassed as "unprofitable" by wireline broadband providers. In urban areas where DSL and cable are available, WISPs provide an important diverse Internet access capability that typically remains in service when accidents, emergencies or weather extremes impair other Internet access networks.

The vast majority of WISPs are "small business concerns," as defined in the Small Business Act.[2] WISPA believes that most WISPs are self-financed, and therefore expansion occurs slowly because operating revenues must provide the finance source. In recent years, there have been a few efforts to consolidate WISPs through acquisitions and clustering operations to take advantages of scale, but until the regulatory climate changes in ways that promote third-party investment, WISPs will continue to lack the resources necessary to expand service.

Fixed wireless broadband offers cost advantages over other technologies and is the only broadband source for many consumers. As WISPA stated in its earlier Comments in this proceeding:

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[2] 15 U.S.C. § 632.

> In a rural county that includes 300 possible subscribers, the cost to deploy wireless service may be less than $1,000 per end user, whereas the cost to install fiber may be more than $20,000 per end user, an amount that is not cost-effective under any measure and would not offer a reasonable rate of return within a reasonable time period. In fact, even the wireless cost may be prohibitive, but at least with wireless, government funding and other assistance may bridge the gap. In many cases, there is just no business case to be made to support expensive landline technologies. In many rural communities, wireless may be the only viable choice.[3]

By any measure, and despite numerous obstacles, WISPs have flourished in the 14 years since the first WISP began operating.

To build upon this history of innovation and service, WISPA has filed extensive comments[4] and *ex parte* presentations[5] promoting interference-free use of the television white spaces and has sought reconsideration of the TV white spaces rules seeking to eliminate costly and burdensome spectrum sensing rules and to amend other rules to make WISP deployment more flexible, cost-effective and attractive to investment. WISPA representatives have contributed to proceedings at NTIA, RUS and the FCC concerning the broadband stimulus provisions of the American Recovery and Reinvestment Act of 2009 ("Recovery Act"), advocating grant eligibility and selection criteria to best promote broadband service delivery to rural and/or unserved Americans.[6] Additionally, WISPA submitted Reply Comments in response to the Commission's Public Notice regarding access to aggregate Form 477 data under

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[3] Comments of WISPA in *A National Broadband Plan for Our Future*, GN Docket No. 09-51, filed June 8, 2009 ("WISPA NOI Comments") at 15.

[4] *See* WISPA Comments filed Feb. 20, 2007 in *Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, First Report and Order and Further Notice of Proposed Rulemaking, ET Docket Nos. 04-186, 02-380, 21 FCC Rcd 12266 (rel. Oct. 18, 2006). *See also* Petition for Reconsideration of the Wireless Internet Service Providers Association in ET Docket Nos. 04-186, 02-380 filed March 16, 2009.

[5] *See, e.g.*, Notices of Ex Parte Presentations from Stephen E. Coran, Counsel to WISPA, to Marlene H. Dortch, FCC Secretary, ET Docket Nos. 04-186 and 02-380, dated Aug. 1, 2008; Letter from Jack Unger, WISPA Secretary and FCC Committee Chair, to Marlene H. Dortch, FCC Secretary, ET Docket Nos. 04-186 and 02-380, dated Oct. 22, 2008; Notices of Ex Parte Presentations and Letters from Stephen E. Coran, Counsel to WISPA, to Marlene H. Dortch, FCC Secretary, ET Docket Nos. 04-186 and 02-380, dated Oct. 28, 2008.

[6] *See generally* WISPA NOI Comments.

the Broadband Data Improvement Act,[7] and Comments in response to the Commission's Notice of Inquiry concerning Section 706[8] and the Public Notice regarding wireless innovation and investment.[9]

WISPs and Unlicensed Spectrum

By promulgating Part 15 rules to enable wireless broadband service, the Commission empowered WISPs to provide fixed broadband service to those communities where demand for broadband is great and few, if any, alternatives exist. Most WISPs are using license-free 900 MHz, 2.4 GHz and 5.8 GHz spectrum – whatever is best to serve a customer – often from access points located on water tanks, grain elevators and leased towers. Some WISPs have procured licensed spectrum through auction or via the secondary market, but these circumstances are rare for WISPs.

WISPs use spectrum to provide vital lifeline and educational connectivity. Schools in heavily forested, rainy and mountainous areas of West Virginia would not receive broadband service speeds above T1 levels but for the efforts of a local WISP that, through creativity, ingenuity and opportunity, has built fixed wireless broadband networks to serve them. Hospitals and medical facilities far from urban centers would be unable to receive X-rays, diagnostic materials and other documents in time to provide treatment and save lives if they did not have access to affordable fixed broadband links that local WISPs provide. Farmers in Nebraska

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[7] *See* Reply Comments of WISPA filed August 4, 2009 in response to Public Notice, "Comment Sought on Providing Eligible Entities Access to Aggregate Form 477 Data as Required by The Broadband Data Improvement Act," DA 09-1550, rel. July 17, 2009 ("*Public Notice*"); Erratum, rel. July 23, 2009.

[8] *See* Comments of WISPA filed September 4, 2009 in *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996, as Amended by the Broadband Data Improvement Act; A National Broadband Plan for Our Future*, GN Docket No. 09-137; GN Docket No. 09-51 (rel. Aug. 7, 2009).

[9] Comments of WISPA filed Sept. 30, 2009 in *Notice of Inquiry, Fostering Innovation and Investment in the Wireless Communications Market; A National Broadband Plan for Our Future*, GN Docket Nos. 09-157 and 09-51 (rel. Aug. 27, 2009).

would not have access to timely weather information critical to crop harvesting, irrigation and fertilization without wireless broadband access. These are just a few examples of ways that WISPs – and only WISPs – are providing crucial connectivity in unserved and underserved areas.

In some respects, WISPs have become victims of their success. In urban areas and even some rural areas, the license-free bands have become "noisy" as access points proliferate and bandwidth requirements increase. WISPs generally do a good job of managing interference among themselves, but the time has come when existing unlicensed bands are congested, leaving customers to choose between sub-optimal service or no service at all.

WISPs and the Future

Fixed wireless broadband must remain a staple of telecommunications policy if the Commission's National Broadband Plan will be truly "national" in scope. Residences, businesses, farms, schools, hospitals, libraries and other fixed locations must continue to have access to broadband to promote economic development, job creation and education.

WISPs are using unlicensed spectrum "efficiently and productively in the public interest,"[10] but the problems inherent in these bands must be addressed. *First*, WISPs often lack affordable and competitive "second mile" and "middle mile" connectivity. Sparsely populated remote areas are more expensive to serve with any terrestrial technology, but in many cases fixed wireless offers the only sustainable business model. Yet, even with fixed wireless, lack of connectivity to the Internet backbone is a critical problem that must be addressed if broadband availability and adoption are to increase.[11] *Second*, the rules for existing licensed and "licensed-

[10] *Public Notice* at 6.

[11] WISPA anticipates responding more fully to the "second mile" and "middle mile" problems in response to the Commission's Public Notice, *"Comment Sought on Impact of Middle and Second Mile Access on Broadband Availability and Access,"* DA 09-2186, GN Docket Nos. 09-47, 09-51 and 09-137 (rel. Oct. 8, 2009). As stated in

lite" bands do not enable WISPs to put that spectrum to its highest and best use. As a result, certain bands that hold promise for unserved and underserved areas where WISPs can provide service – specifically TV white spaces and the 3650 MHz Service – will continue to suffer from underutilization if the rules continue to place costly and unnecessary regulatory burdens on WISPs. *Third*, the cost to acquire licensed spectrum is often prohibitive. The majority of WISPs are self-financed, community-based small businesses that simply cannot afford to compete with large, nationwide companies to purchase spectrum, a fact that precludes meaningful participation in spectrum auctions. Moreover, Commission auctions designate spectrum for large geographic areas, and bidders that desire to serve smaller areas are forced to either buy spectrum for areas they do not intend to serve or they simply get priced out by winning bidders that are often focused on serving the urban core rather than the outlying suburban and rural areas. Many licensees – and this is certainly true in the 2.3 GHz WCS band – are unwilling to lease, partition or disaggregate spectrum in rural areas for WISPs to use. As a result of these factors, and despite WISPA's recommendations for changes to the auction rules,[12] WISPs continue to lack adequate access to licensed spectrum.

As the noise floor in unlicensed bands rises and bandwidth needs increase, WISPs will require access to additional licensed, "licensed lite" and unlicensed spectrum on affordable and reasonable terms to continue providing fixed broadband service. WISPA believes that these changes can be addressed by modifying the rules for *existing* spectrum allocations, finding new

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the WISPA NOI Comments, "[c]onsideration of the middle mile is essential. In some cases, WISPs may have been unable to serve a community because it is located too far from the Internet backbone and affordable, high-bandwidth solutions are not available. In other locations, the middle mile may be accessible, but the transport costs charged by the backbone provider are prohibitive. Indeed, the *Rural Broadband Report* found that '[e]ven in rural areas where broadband is available, infrastructure deployment has not kept pace with the growing need for faster and more reliable connectivity.'" WISPA NOI Comments at 8-9. At a minimum, assuming the WISP can connect to the backbone, there may be insufficient capacity, and consumers will be unable to use applications such as voice and real-time programs.

[12] See Comments of WISPA, WT Docket No. 06-150, filed May 23, 2007 ("WISPA 700 MHz Comments"); Reply Comments of WISPA, WT Docket No. 06-150, filed June 4, 2007.

and underutilized spectrum and adopting policies that will increase and expedite broadband availability in more general ways. Such efforts will promote increases in intensive spectrum use, spectral efficiency, and will help move spectrum allocations "toward their highest and best use in the public interest,"[13] particularly in rural areas where fixed broadband deployment has been hindered by economic and regulatory barriers. WISPA's Comments address the means by which each of these three objectives can be accomplished to create more spectrum for fixed broadband use.

Discussion

I. THE COMMISSION SHOULD MAKE EXISTING SPECTRUM ALLOCATIONS MORE CONDUCIVE TO BROADBAND BY MODIFYING ITS SERVICE RULES.

The Commission asks whether "adequate spectrum is currently allocated for fixed wireless broadband."[14] By using the word "adequate" and asking other questions in the *Public Notice*, the Commission seeks more information about both the quality and quantity of spectrum for fixed broadband. There is little argument that the Commission will need to increase the *quantity* of spectrum for American consumers to enjoy the future benefits of bandwidth-intensive applications and capabilities for broadband,[15] but the Commission also can improve the *quality* of allocated spectrum by amending its service rules in various existing spectrum bands to make fixed broadband deployment more efficient, expeditious and widespread. Adopting these proposals will have a positive near-term impact on broadband availability and accessibility.

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[13] *Public Notice* at 6.
[14] *Id.*
[15] *See* Part III, *infra.*

A. The Commission Should Quickly Adopt WISPA's Proposals To Enable Cost-Efficient, Wide-Area Deployment Of Fixed Devices In The TV White Spaces.

The TV white space spectrum represents a promising new frontier for broadband innovation and deployment. These bands are "appropriate to support fixed wireless broadband,"[16] and to this end, the Commission must act quickly to ensure that its service rules will facilitate economical wide-area deployment of fixed devices in this critical spectrum in a timely manner.

First, the Commission should allow fixed wireless operations with increased power and height in rural areas.[17] WISPA proposed that the maximum antenna height for TV band device ("TVBD") base stations should be increased from a height of 30 meters above ground to a height of up to 100 meters above ground, based on a proposed table of required separation distances from protected contours. In addition, WISPA advocated adoption of an increase of the power limit from 4 Watts EIRP to a maximum of 20 Watts based on a sliding scale such that higher power would only be available in uncongested rural areas. By adopting these rule changes, the Commission would promote lower infrastructure costs and would make backhaul less expensive in rural areas, without increasing interference to incumbents.[18] Conversely, by failing to adopt these proposals, the TV white spaces may become a white elephant, burdened by regulations that stifle broadband deployment and leave the spectrum underutilized.

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[16] *Public Notice* at 6.

[17] *See* Petition for Reconsideration of WISPA ("WISPA Petition"), filed March 19, 2009, at 13-16, in *Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band,* Second Report and Order and Memorandum Opinion and Order, 23 FCC Rcd 16807 (2008) ("*Second R&O/MO&O*").

[18] Other parties have supported providing flexibility in rural areas. *See, e.g., Motorola Inc. Opposition to Petitions for Reconsideration*, ET Docket Nos. 04-186 and 02-380 (filed May 8, 2009) at 9-13 (proposing increase in maximum permitted height of transmitting antennas from 30 to 100 meters and reduction of the minimum height of receive antennas from 10 to 3 meters; also supporting power increases for fixed devices); *Petition for Reconsideration of the Public Interest Spectrum Coalition* in ET Docket Nos. 04-186 and 02-380 at 3 (stating that WISPs in rural areas could use fallow white space to operate at power levels "substantially above" 4 watts EIRP).

Second, the Commission should implement "licensed-lite" requirements for fixed TVBD services. By requiring fixed TVBD operators to examine the Commission's geolocation database for TVBDs and to design non-interfering facilities,[19] WISPs and other fixed TVBD network operators can better coordinate with each other. As WISPA noted in its Petition for Reconsideration of the Second R&O/MO&O, the Commission should impose a duty of cooperation such that fixed TVBD operators would be required to examine the geolocation database prior to commencing service, thus allowing operators to identify potential interference trouble spots beforehand and to coordinate operations with other networks.

Third, as an alternative to overprotective, costly and unnecessary spectrum-sensing requirements, the Commission should adopt WISPA's proposal for accommodating the interests of both fixed TVBDs and wireless microphones. As set forth in ET Docket No. 04-186,[20] WISPA proposed that unlicensed wireless microphones would register in the geolocation database and would access the database on the same terms as fixed white space devices. Registration would elevate unlicensed wireless microphones to co-equal secondary status with TVBDs. In addition, WISPA has proposed that in each market, two channels would be designated for unlicensed wireless microphones to use on a *non-exclusive* basis.[21] Also, wireless microphones licensed under Part 74 would, as required by Commission rules, be registered in the geolocation database. While some have sought eviction of wireless microphones from the TV

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[19] WISPA Petition at 16-17. In its ex parte presentations and the WISPA Petition, WISPA urged the Commission to adopt rules similar to those used in the 3650 MHz Service, which states that "[l]icensees should examine this database before seeking station authorization, and make every effort to ensure that their fixed and base stations operate at a location, and with technical parameters, that will minimize the potential to cause and receive interference." *Id.* at 17, *quoting Wireless Operations in the 3650-3700 MHz Band*, 20 FCC Rcd 6502 (2005) ("*3650 MHz Service Order*"), at 6512-13.

[20] *See* Consolidated Opposition to Petitions for Reconsideration of WISPA in ET Docket Nos. 04-186 and 02-380 (filed May 8, 2009) ("WISPA Opposition").

[21] *Id.* at 6-8.

white spaces, either by a date certain or upon achievement of another benchmark,[22] WISPA's proposal advances a viable approach for accommodating both fixed TVBDs and wireless microphones.

Finally, the Commission should move quickly to implement its database administration process to expedite fixed services. Commenters have staked out various positions on the appropriate role of database administration (e.g., registration only, enforcement, liability), on the protocols to be used and on the basic qualifications inherent in this role. While the mechanics of the database are critical to accommodating the divergent interests of users of the band, at this time, WISPA merely emphasizes that it is imperative for the Commission to act quickly so accelerate the deployment of services by providing the proper apparatus – the white spaces database – to enable new operations in the band. In this way, the Commission can help fulfill its goal to expedite broadband deployment using these frequencies.

Taken together, these proposals are critical to helping ensure that fixed broadband deployments in rural areas have a reasonable opportunity to succeed in the TV white spaces.

B. The Commission Should Change Its 3650 MHz Service Rules And Registration Procedures To Enable More Efficient And Economical Broadband Deployment, Especially In Rural Markets.

In 2005, the Commission allocated spectrum in the 3650-3700 MHz band for wireless services,[23] and two years later the Commission reconsidered some of those rules to open the door

[22] For example, MSTV has recently proposed a "compromise plan" whereby licensed wireless microphone operations in a given 700 MHz band frequency and geographic area would cease upon the earlier of (1) 60 days prior to the date on which the 700 MHz wireless entrant begins service, or (2) February 17, 2012, while licensed wireless microphone operations would vacate portions of the band used by public safety entities by February 17, 2010, and qualifying unlicensed microphone operations could obtain licenses under Part 74 but would be required to cease operations by February 17, 2010. *See* Written Ex Parte Presentation of MSTV in ET Docket Nos. 02-380 and 04-186; WT Docket Nos. 08-166 and 08-167 (filed Sept. 25, 2009). By contrast, Verizon Wireless supports requiring all wireless microphone users to vacate 700 MHz frequencies no later than February 18, 2010, to allow unlicensed devices to transition "out of 700 MHz and into the TV Band" and to address interference protection rights in a "follow-on proceeding." *See* Ex Parte Presentation of Verizon Wireless in WT Docket Nos. 08-166 and 08-167, ET Docket Nos. 02-380 and 04-186 (filed July 27, 2009).

to nationwide licensing of the band in November 2007.[24] Under a two-step "licensed lite" process, the Commission has authorized nearly 1,100 non-exclusive, nationwide licenses to eligible entities and has accepted nearly 3,800 registrations for base and fixed stations, which are required to be obtained before such facilities may operate.[25] WISPA members use the 3650 MHz Service band to provide point-to-multipoint broadband services and point-to-point "second mile" connectivity, and they know first hand the benefits and obstacles of using this spectrum.

Now that two years have passed since the 3650 MHz Service was launched, it has become imperative for the Commission to relax its rules to make the band more conducive for fixed broadband deployment. Although WISPA appreciates that this proceeding is not likely to produce rules directly, it believes that the Commission should implement two proposals that do not require rule changes and should issue a notice of proposed rulemaking inviting comment on a number of other recommendations.

1. The Commission Should Consider Increasing Power Density Limits.

Section 90.1321(a) establishes a maximum power of 25 Watts/25 MHz EIRP for base and fixed stations, with a power density limit of 1 Watt in any one-MHz slice of spectrum.[26] The Commission adopted the power density limit to "ensur[e] efficient use of the band" that "results in reasonably sized protection zones around FSS earth stations to maximize the area in which terrestrial licensees can operate while also providing enough power for these terrestrial operations to operate over sufficient ranges to provide services to a large number of users."[27] On

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[23] *See 3650 MHz Service Order.*
[24] *See Wireless Operations in the 3650-3700 MHz Band; Rules for Wireless Broadband Services in the 3650-3700 MHz Band; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band*, Memorandum Opinion and Order 22 FCC Rcd 10421 (2007) ("*3650 MHz Service Recon Order*"). *See also* Public Notice, "Wireless Telecommunications Bureau Announces Start Date for Licensing and Registration Process for the 3650-3700 MHz Band," ET Docket 04-151, WT Docket 05-96; DA 07-4605 (rel. Nov. 14, 2007).
[25] *See* 47 C.F.R. § 90.1307.
[26] 47 C.F.R. §90.1321(a).
[27] *3650 MHz Service Order* at 6520 (footnote omitted).

reconsideration, the Commission rejected requests for increased power, noting its concerns about the potential for increased interference to FSS earth station operations.[28]

WISPA believes that, in vast areas of the country, the power density limit can be increased without grandfathered FSS earth stations suffering increased harmful interference. The 3650 MHz Service rules were adopted based on "worst case" scenarios, leading to power density limits that may be relevant only in areas near the FSS exclusion zones but that are overly limiting in areas with no FSS earth stations. Further, exclusion zones are larger than necessary and fail to account for antenna orientation, terrain obstructions and other factors.

WISPA does not seek increased power in areas where harmful interference to FSS earth stations could occur. Rather, WISPA believes that the farther a base station is from an FSS exclusion zone, the more power it should be able to transmit without increasing the potential for such harmful interference. Simply put, a 3650 MHz Service base station located in the Upper Peninsula of Michigan or Albuquerque – hundreds of miles from the nearest exclusion zone – should not be subject to the same power density limits that might apply in Seattle or Boston, which are located much closer to exclusion zones. The superficial elegance of a "one size fits all" approach stands in the way of cost-efficient broadband deployment in vast areas of the country, particularly rural areas that present no potential for harmful interference.[29]

Depending on humidity, foliage, terrain and other factors, a fixed 3650 MHz Service base station operating at maximum power density can today serve an area within a radius of about three miles (in a rainy, heavily foliated area) to about nine miles (in dry, flat areas with little vegetation). With higher power density limits, in many areas the coverage could be increased,

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[28] *See 3650 MHz Service Recon Order* at 10437-10438.

[29] WISPA is aware that the Commission has authority to waive the provisions of Section 90.1321(a) on a case-by-case basis but believes that a change to the rule will lower the costs of seeking relief and provide greater certainty to licensees.

without any potential for an increase in harmful interference to incumbent FSS earth stations. WISPs will have fewer sites to construct, operate and maintain, and the lower infrastructure costs can lead to lower consumer costs and drive broadband adoption.[30]

WISPA thus asks the Commission to invite comment on whether to increase power density limits in the 3650 MHz Service. In the meantime, however, the Commission should signal in its National Broadband Report a willingness to favorably consider waiver requests that show a lack of increased interference to FSS earth station licensees.

2. The Commission Should Consider Allowing "Restricted" Protocols In The Entire 3650-3700 MHz Band.

WISPA believes that allowing "restricted" devices to operate in the entire 3650-3700 MHz band would promote deployment. WISPA believes that further discussion is required before specific recommendations can be made to assess and manage the potential for interference. The Commission should invite comment on this issue.

3. The Commission Should Consider Changes To Promote Non-Interfering 3650 MHz Service Operations In FSS Exclusion Zones.

In the *3650 MHz Service Order*, with an admitted "high degree of worst-case conservatism," the Commission established a unitary 150 km (93 mile) zone around grandfathered FSS earth stations.[31] The Commission readily acknowledged that these "simplified" zones total more than 70,000 sq. km (43,900 sq. miles) and could result in prohibiting fixed broadband deployments; thus, the Commission allowed 3650 MHz Service licensees to negotiate with FSS licensees and to mutually agree to exceptions. In essence, the Commission sacrificed real-world engineering for administrative convenience.

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[30] Increased power density limits may also facilitate the use of indoor antennas.
[31] *3650 MHz Service Order* at 6526.

FSS licensees are subject to "good faith" negotiation requirements, but that essentially gives them a veto right, even over proposals that, under any definition, would not cause interference. Moreover, the rules require 3650 MHz Service licensees to locate and determine the operating status of grandfathered earth stations, many of which may be abandoned – but even the licensee of a non-operating earth station can hold up the process. WISPs have reported cases where the FSS licensee has inexplicably and unreasonably delayed considering coordination requests. In sum, the ability of 3650 MHz Service licensees to operate in exclusion zones often lies solely with earth station licensees that may be indifferent to the desires of consumers to have affordable broadband access.

Although the Commission addressed alternatives to the circular exclusion zones in the *3650 MHz Service Recon Order*,[32] the passage of time has demonstrated that the industry's fears have materialized. Licensees report inordinate delays and a general lack of cooperation from FSS earth station licensees, which has frustrated expeditious deployment of broadband service near these zones. WISPA thus urges the Commission to solicit comment on ways to streamline the process. Instead of requiring a negotiated consent, the Commission could instead require registrants to certify that they meet "safe harbors" for interference protection. Examples of "safe harbors" could include the methodology contained in Appendix D to the *3650 MHz Service Order*, prior coordination along the lines of Part 101 or the failure of an FSS licensee to timely respond to a coordination request (who would forfeit protection rights with respect to that registrant if it did not respond to a coordination request within 30 days).

[32] *See 3650 MHz Service Recon Order* at 10443-10444.

4. The Commission Should Immediately Change The Fixed Station Registration Process To Facilitate Point-To-Multipoint Service.

Section 90.1307 states in relevant part that a "licensee cannot operate a *fixed* or base station before registering it under its license."[33] By including fixed stations, the Commission is essentially requiring registration in ULS of every end-user location. Today, if a fixed station – for example, a residence – is not registered, it must operate at mobile power levels, which are unusable and not suitable for a fixed station. This problem can be resolved *immediately* without the need for amendment of Commission rules.

Requiring every station to be registered in a point-to-multipoint configuration is a significant deterrent to providing WISP service. This requirement severely restricts the sales process, raises potential privacy issues in a residential setting (i.e., disclosing each subscriber in order to obtain full registration rights), bloats the ULS database, and opens the service provider to competitors poaching customers. Worst of all, the onerous registration process has the side effect of operators not following the rules. WISPA believes that the registration process should be modified so that point-to-multipoint users do not have to go through the registration process for each end-user, while at the same time providing a better record in ULS for subsequent registrants to consider. WISPA suggests that the Commission establish two classifications of registrations, to-wit:

- *Multipoint base station* – this would be for a fixed station that provides service in a defined contour.
- *Point-to-point station* – this would be for a fixed station that is part of a defined point-to-point path.

The above classifications provide existing and future licensees with more information than ULS provides at present. For the multipoint base station, the registration would define a zone of

[33] 47 C.F.R. § 90.1307 (emphasis added).

operation based on real-world properties such as location and foliage. This contour would be a defined area where fixed stations that are subscribers to the base station could operate without separate registration. For a point-to-point station, only the end-points would be registered.

WISPA submits that these changes to the 3650 MHz Service registration process can be implemented without amending Section 90.1307. Rather, the Commission can modify its on-line registration form to query the licensee on its service classification, and the resulting registration would produce the information in a visible field in ULS. With this simple change, point-to-multipoint WISP service would not be shackled with the unnecessary – and often prohibitive or ignored – requirement that each end-user site be registered. WISPA urges the Commission to immediately implement this change.

II. THE COMMISSION SHOULD CONSIDER FUNDAMENTAL CHANGES TO ITS SPECTRUM ALLOCATION PROCEDURES TO FACILITATE RAPID AND AFFORDABLE DEPLOYMENT OF FIXED BROADBAND SERVICES.

In addition to making spectrum more "adequate" by improving the quality of spectrum, the Commission should also make more spectrum available for fixed wireless broadband and fundamentally change the regulatory environment. Too often in the Commission's past, auctioned spectrum has been beyond the grasp of local, community-oriented broadband providers that desire licensed spectrum as a viable alternative to the noisy unlicensed bands. Too often, the Commission has rejected efforts to make auctioned spectrum more accessible.[34] Too often, auctioned spectrum is deployed more quickly in urban markets than in rural markets, deepening the digital divide.

[34] WISPA 700 MHz Comments at 4-12.

In the Recovery Act, Congress is making funding available to help offset the costs of infrastructure in rural, unserved and underserved areas of the country. To WISPs, spectrum is an infrastructure cost, just as fiber is to DSL providers and cable is to cable modem service providers. And, in many areas of the country that remain unserved or underserved, there can be little doubt that the high cost of auctioned spectrum is a primary reason for the disparity in availability and adoption of broadband.

A. The Commission Should Make Spectrum Available Pursuant To "Licensed-Lite" Spectrum Allocation Rules To Increase Availability Of Fixed Wireless Spectrum.

The growing difficulties with unlicensed spectrum, the inability of small service-oriented companies to participate in spectrum auctions and the financial incentive of auction winners to focus on high-return urban areas compel changes to the primary means by which the Commission allocates spectrum. WISPA submits that the Commission should incorporate a *non-exclusive* licensing scheme into its spectrum allocation processes as it goes forward. This licensing mechanism – which WISPA has referred to as "licensed-lite" – has worked well in the 3650 MHz Service for several reasons. The primary advantage of non-exclusive licensing is that it is exempt from auctions and thus substantially lowers market-entry costs, yet unlike the case with unlicensed spectrum, it affords licensees some interference coordination rights through a database registration process for base and fixed stations. With lower spectrum acquisition costs, licensees can more economically and efficiently deploy service in rural areas where per-subscriber costs are inherently higher. Because the licenses would be non-exclusive, licensees would have incentive to build out quickly to gain a head start on competitive offerings.

The "licensed-lite" process can be used for licensing rural areas alongside auctions for the same spectrum in urban areas. The Commission is considering service rules for the 2155-

2180 MHz (AWS-3) band,[35] and WISPA understands that the interference and service issues are somewhat contentious. WISPA takes no position on these important issues, but urges the Commission to adopt rules that will allow WISPs – especially those that want to serve small, rural communities – to have affordable access to this spectrum.

WISPA believes that the Commission should adopt a licensing scheme for the 2155-2180 MHz band that reflects these facts and narrows the differences between urban and rural markets. Assuming the Commission allocates spectrum in the 2155-2180 MHz band for broadband, it should ensure that some of that spectrum is made available without the burdens and service-delaying consequences of auctions. Rather, for the rural Cellular Market Areas ("RSAs"), the Commission should make spectrum available on a "licensed-lite" basis under rules similar to those used in the 3650 MHz Service. In addition to the benefits of non-exclusive licensing discussed above, vendors likely would support the large companies that participate in the auction, thereby making equipment available to the non-exclusive licensees.

B. The Commission Should Adopt A "Spectrum Homesteading" Policy To Promote Build-out And Service.

As a complement to "licensed-lite" licensing, the Commission should adopt a policy to promote aggressive wireless broadband construction and service. Referred to by WISPA as "spectrum homesteading," licensees would be awarded non-exclusive licenses that can ripen into an exclusive license if the licensee meets stringent coverage and service benchmarks – not the ten-year "substantial service" metric that the Commission uses for many wireless services, but a more expeditious (e.g., 18-24 months) and market-encompassing service level that facilitates

[35] *See Service Rules for Advanced Wireless Services in the 2155-2175 MHz Band; Service Rules for Advanced Wireless Services in the 1915-1920 MHz, 1995-2000 MHz, 2020-2025 MHz and 2175-2180 MHz Bands*, Further Notice of Proposed Rulemaking, Docket Nos. 07-195 and 04-356, 23 FCC Rcd 9859 (rel. June 20, 2008).

rapid availability and adoption of broadband service. As stated in the WISPA NOI Comments, spectrum homesteading "would create a powerful incentive to provide expeditious and affordable service to areas that may otherwise be unserved, and the issuance of a non-exclusive license would encourage investment by third parties."[36]

Together with a "licensed-lite" spectrum allocation, spectrum homesteading offers the benefits of low entry costs, interference coordination, and expeditious build-out and service. These concepts are worthy of further consideration by the Commission as it develops its National Broadband Plan, implements policy and promotes service to rural, unserved and underserved areas of the country.

III. THE COMMISSION SHOULD CONDUCT AN AUDIT TO IDENTIFY SPECTRUM TO MEET FUTURE DEMAND FOR FIXED BROADBAND SERVICES.

Modifying the rules for existing spectrum allocations will advance near-term benefits to the public, but new sources of spectrum also will be necessary to help satisfy future demand for fixed services. WISPA believes that 300 MHz of "new" spectrum will be required for fixed wireless broadband services. The need for replacement spectrum is illustrated by the existing "noise" issues, a problem that will only worsen as more consumers in rural and unserved areas gain access to broadband and as consumers require more capacity and throughput for bandwidth-intensive applications.

Both Houses of Congress have introduced legislation that would require the Commission and the NTIA to audit spectrum usage.[37] A spectrum audit would determine whether existing spectrum is being utilized, whether existing spectrum can be more efficiently assigned and would

[36] WISPA NOI Comments at 15.
[37] *See* Radio Spectrum Inventory Act, H.R. 3125, 111th Cong. §119 (2009); S. 649, 111th Cong. § 342 (2009).

identify sources of underutilized government spectrum that can be transferred to the Commission for commercial allocation and assignment.

WISPA appreciates that mobile wireless interests claim a need for substantial, additional amounts of spectrum. This spectrum should not come at the expense of fixed wireless operators that provide community lifelines in areas that other broadband providers have chosen not to serve, nor should the Commission be persuaded that existing unlicensed and "licensed lite" bands are sufficient. To the contrary, WISPA believes that some of the spectrum identified through an audit should be allocated without auction for fixed use, especially in rural areas where it is inefficient to deploy wired technologies.

Conclusion

WISPA appreciates the opportunity to participate in this proceeding and respectfully requests consideration of its proposals as the Commission fulfills the important obligation of developing a National Broadband Plan.

Respectfully submitted,

THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

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