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 #14
THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

The Wireless Internet Service Providers Association ("WISPA") provides these Comments to address certain aspects of NBP Public Notice #14 to urge the Commission to incorporate into its National Broadband Plan recommendations that will improve the ability of fixed wireless broadband to provide public safety communications in rural and tribal areas.[1]

Background

WISPA was founded in 2004 and represents the interests of more than 300 wireless Internet service providers ("WISPs"), vendors, system integrators and others interested in promoting the growth and delivery of fixed wireless broadband services to

[1] *See* Public Notice, "*Comment Sought on Public Safety Issues Related to Broadband Deployment in Rural and Tribal Areas and Broadband Communications to and from Persons with Disabilities*," DA 09-2369, GN Docket Nos. 09-47, 09-51 and 09-137 (rel. Nov. 2, 2009) ("*Public Notice*").

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, public safety locations 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.

Discussion

In the *Public Notice*, the Commission asks if unlicensed technologies, such as Wi-Fi or licensed-light technologies, such as in the 3650 MHz band, can play a role in public safety broadband deployment in rural or tribal areas.[2] WISPA reports that unlicensed fixed wireless wide-area networks in the 900 MHz, 2.4 GHz and 5.8 GHz bands and lightly-licensed fixed networks in the 3.65-3.7 MHz band already provide affordable cost-effective connectivity and Internet access for public safety facilities in some rural or tribal areas. In many parts of the country, fixed wireless broadband is the primary or secondary means by which public safety officials – police, fire, FEMA and others – access the Internet to coordinate responses to crimes, accidents and natural disasters.

[2] *See id.* at 2.

Thus, even where other technologies are available, fixed wireless provides critical redundancy for public safety and hospitals.

In other cases, fixed wireless technologies provide vital communications during disasters when other technologies are disabled. For example, in the aftermath of Hurricane Katrina, WISPs from around the country traveled to the Gulf Coast to quickly establish wireless Internet service to areas ravaged by the hurricane. Using unlicensed spectrum, when all other networks failed, WISPs were instrumental in providing the means by which public safety and first responders could communicate with each other to direct rescue, recovery and public safety efforts.

Notwithstanding these successes, rural and tribal areas remain underserved, and public safety communications in these areas are no different. The challenge is to be able to cost-effectively deploy these unlicensed and lightly-licensed fixed wireless networks in additional rural locations where the middle-mile and second-mile costs are currently too high[3] and the population density too low to make deployment of unlicensed and lightly-licensed public safety networks cost-effective. If provided access to affordable communications facilities under rule changes urged by WISPA, public safety communications in rural and tribal areas will be improved.

I. THE COMMISSION SHOULD ADOPT WISPA'S PENDING TV WHITE SPACE AND 3650 MHz SERVICE PROPOSALS TO FACILITATE COST-EFFECTIVE AVAILABILITY OF BROADBAND SPECTRUM FOR RURAL PUBLIC SAFETY COMMUNICATIONS.

To reduce deployment costs and to improve broadband availability for public safety professionals using the TV white space spectrum, WISPA urges the Commission

[3] *See* WISPA's Comments in response to Public Notice, "*Comment Sought on Impact of Middle and Second Mile Access on Broadband Availability and Deployment*," GN Docket Nos. 09-47, 09-51 & 09-137, DA 09-2186, filed Nov. 4, 2009.

to revisit and to adopt the recommendations that WISPA already proposed in its petition for reconsideration[4] and in its NBP #6 Comments.[5] In general, WISPA believes that higher power levels and higher base station antenna sites will enable wider area coverage in rural areas at substantially lower cost, thereby improving the likelihood that such spectrum will be efficiently and economically deployed for public safety communications. In its White Spaces Petition, WISPA proposed (among other things) that the Commission increase the maximum allowable antenna height for fixed 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. Increasing base station antenna heights also would improve the return path from lower-power, lower-elevation CPE devices. Consistent with Commission rules for certain mobile services,[6] WISPA also urged the Commission to 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 also asked the Commission to reduce the 10-meter minimum receive antenna height requirement for fixed TVBD CPE locations to 3 meters.

Similarly, in its NBP #6 Comments, WISPA proposed changes to the 3650 MHz Service rules that would enable more cost-effective broadband service to be deployed in rural areas. These recommendations included increasing the power density limits, which are based on "worst case" scenarios that protect FSS earth station operations but have

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[4] *See* WISPA's Petition for Reconsideration, ET Docket No. 04-186, filed March 19, 2009 ("White Spaces Petition").
[5] *See* WISPA's Comments in response to Public Notice, "*Comment Sought on Spectrum for Broadband*," DA 09-2100, GN Docket Nos. 09-47, 09-51 & 09-137, filed Oct. 23, 2009 ("NBP #6 Comments").
[6] *See, e.g.*, Section 22.913(a) (higher power for cellular sites operating in rural areas); Section 27.50(a) (higher power for 700 MHz facilities operating in rural areas).

resulted in exclusion zones that are larger than necessary and that fail to consider FSS antenna orientation and terrain obstructions, thereby creating barriers to effective broadband deployment in rural areas. WISPA also asked that, before rule changes allowing higher-power operation in rural areas are effective, the Commission should be favorably disposed to granting waivers of the power density limits in rural areas. As in the case of TVBDs, increasing power limits would decrease the number of base station tower sites, decrease the number of transmitters and generally decrease capital and operating expenses. The ability to provide 3650 MHz service to rural areas should not be artificially constrained by operating restrictions that have no application to areas with low-density population and that serve only to drive up per-subscriber costs.

By adopting these rule changes, the Commission will reduce many of the barriers that prevent wider deployment of fixed wireless spectrum in rural areas for the benefit of public safety communications.

II. UNLICENSED AND LIGHTLY-LICENSED TECHNOLOGIES CAN BE MADE INTEROPERABLE WITH 4G TECHNOLOGIES.

The Commission asks how unlicensed and lightly-licensed Wi-Fi technologies can be made interoperable with WiMAX networks and LTE networks.[7] WiMAX, Wi-Fi and LTE are air interface (equivalent to Layer 1 in the ISO model) standards. While not directly interoperable over the air (for example, a lightly-licensed 3650 MHz WiMAX base station will not accept direct connections from an LTE subscriber unit), secure public safety interoperability is possible when public safety agencies use server-hosted, browser-based applications along with appropriate mobile routing techniques. Browser-based applications allow a mobile PC running a standard Internet browser (*e.g.*, Mozilla,

[7] *See Public Notice* at 2.

Netscape or Microsoft Internet Explorer) to access server-hosted public safety applications irrespective of which security-enabled wireless network is used. Mobile routing techniques allow mobile PCs to be automatically routed over whatever wireless network is currently available, be it a lightly-licensed 3650 MHz WiMAX network, an unlicensed Wi-Fi network, a licensed 2.5 GHz WiMAX network, or a 3G or 4G cellular network.

Conclusion

To improve the ability of broadband to provide public safety communications in rural and tribal areas, WISPA urges the FCC to adopt the recommendations contained in this and in previous WISPA filings. WISPA urges prompt action on WISPA's White Spaces Petition and on its recommendations for amending the 3650 MHz Service rules to enable improved, cost-effective service to rural areas, thereby enhancing public safety communications in those areas where the need is greatest.

Respectfully submitted,

THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

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By: */s/ Richard Harnish, President*
/s/ Jack Unger, Chair of FCC Committee

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