

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
A National Broadband Plan for Our Future	)	GN Docket Nos. 09-47, 09-
	)	51, 09-137
Comment Sought on Spectrum for Broadband NBP Public	)	
Notice #6	)	

**COMMENTS OF CLEARWIRE CORPORATION—NBP PUBLIC NOTICE #6**

**INTRODUCTION**

Clearwire Corporation, on behalf of itself and its license-holding and service-providing subsidiaries (collectively “Clearwire”), is filing these comments in response to the Federal Communications Commission’s (“Commission”) Public Notice, which seeks comment on spectrum suitable for broadband for the purposes of the Commission’s development of a National Broadband Plan.<sup>1</sup>

In addition to its answers to the questions posed below, Clearwire encourages the Commission to consider that spectrum, while important, is only one component of the foundation for successful wireless broadband competition. As the Commission has acknowledged, fostering investment in the risky, capital-intensive wireless communications market is complex and will not be solved with a single silver bullet. Additional spectrum resources, for example, while important, alone will not create a solid foundation for wireless competition and growth. The Commission should recognize the multifaceted challenge before it, identify the group of economic and regulatory barriers beyond access to new spectrum that restrain growth of wireless

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<sup>1</sup> *Comment Sought on Spectrum for Broadband NBP Public Notice #6*, GN Docket Nos. 09-47, 09-51, 09-137, (rel. September 23, 2009)(“*Public Notice*”).

broadband and undermine investment, and then act to address these barriers directly. Only this multi-faceted approach will produce real-world results.

Clearwire operates open, Internet-Protocol (“IP”) 4G wireless broadband networks in 51 markets in the United States and Europe covering approximately 18.2 million people. These networks provide communities with high-speed residential and mobile Internet access services and residential voice services. As of the end of June 2009, Clearwire had over half of a million wireless broadband subscribers and is now deploying 4G broadband wireless service that utilizes the WiMAX technology standard in new markets and converting our pre-WiMAX markets to the 4G standard. Clearwire provides 4G WiMAX service in 14 markets today covering approximately 10 million people. By the end of the year, Clearwire’s 4G WiMAX network is expected to be available in more than 25 markets covering approximately 30 million people in places such as: Atlanta, GA; Baltimore, MD; Boise, ID; Chicago, IL; Las Vegas, NV; Philadelphia, PA; Charlotte, Raleigh, and Greensboro, NC; Honolulu and Maui, HI; Seattle and Bellingham, WA; Portland and Salem, OR; and Dallas/Ft. Worth, San Antonio, Austin, Abilene, Amarillo, Corpus Christi, Killeen/Temple, Lubbock, Midland/Odessa, Waco and Wichita Falls, TX. By the end of 2010, Clearwire’s 4G WiMAX network is expected to be available in more than 80 markets covering up to 120 million people. Some of the markets scheduled to launch in 2010 include: New York, NY; Boston, MA; Washington, D.C., Houston, TX and the San Francisco Bay Area among others.

## **DISCUSSION**

As Clearwire noted in previous comments in response to Commission National Broadband Plan inquiries, access to spectrum, whether licensed or unlicensed, is only part of the equation. The Commission must also ensure that wireless providers can deploy and access the

necessary infrastructure needed to compete with the industry's dominant players. For example, the Commission should ensure that tower-siting processes do not unnecessarily delay facility construction and deployment. Specifically, the Commission should grant the CTIA "shot clock" petition setting forth reasonable 45 day and 75 day time periods for tower-siting determinations.<sup>2</sup> In addition, the Commission should make explicit that Section 332(c) of the Act, which places restrictions on local control over wireless facilities that discriminate among "functionally equivalent services," applies to *all* mobile service providers, rather than CMRS providers exclusively.<sup>3</sup> Additionally, Clearwire urges the Commission to adopt its tentative conclusion in the *Pole Attachments NPRM* that Section 224 of the Act, which grants carriers and cable providers the right to pole attachments at just and reasonable rates, terms, and conditions, should apply to all pole attachments used to provide broadband Internet access.<sup>4</sup>

In addition to access to necessary infrastructure, Commission spectrum management policies should provide capital markets with the regulatory certainty and predictability necessary to attract the large investments required to compete in the mobile broadband market against well-entrenched incumbents.

**1. What is the ability of current spectrum allocations to support next-generation build-outs and the anticipated surge in demand and throughput requirements?**

**c. Do unlicensed devices have adequate access to spectrum that can be used to provide wireless broadband services or as a**

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<sup>2</sup> See Public Notice, DA 08-1913, WT Docket No. 08-165 (rel. Aug 14, 2008).

<sup>3</sup> See 47 U.S.C. § 332(c).

<sup>4</sup> See *Implementation of Section 224 of the Act; Amendment of the Commission's Rules and Policies Governing Pole Attachments*, Notice of Proposed Rulemaking, 22 FCC Rcd 20195, 20209 (2007) ("*Pole Attachments NPRM*") at ¶ 36.

**complement to services provided over licensed spectrum? If not, what spectrum should be made available?**

As Clearwire has stated in previous comments, in order to support the continued build-out and growth of next-generation broadband technologies, the Commission should allocate ample spectrum for both unlicensed use and a commercial “test bed.” It should also recognize that unlicensed and “test-bed” bands can provide the spectrum access and spectrum management flexibility needed for certain types of innovations. The Commission should find that access to unlicensed and “test-bed” spectrum offers a unique and important foundation – one that is not provided by licensed spectrum – for innovations that do not require large network investments or guaranteed interference protections. The Commission can adopt a more experimental approach to spectrum management in unlicensed and “test-bed” bands without disrupting investment. The combination of low entry costs and flexible spectrum management rules in unlicensed and designated “test-bed” bands can spur earlier-stage technological advances, applications, and devices. These bands will thereby provide both small entrepreneurs and large corporations in the wireless arena a place to test, develop, and advance their services and products in an open and innovative environment.

Unlicensed spectrum bands provide a low-cost alternative to licensed bands for applications that do not depend on expensive, long-term innovation investments and do not require interference protection. To harness this capacity to stimulate innovation, Clearwire urges the Commission to allocate ample spectrum for unlicensed use, using many of the allocation techniques discussed above. Unlicensed networks, however, because they are necessarily power-limited and provide less certainty and interference protection, must always exist alongside of substantial licensed bands.

Spectrum resources are critical not only for service-delivery, but also in the early-development stage. Without the certainty attached to licensed spectrum, which allows licensees unfettered use, many network providers may choose not to invest in next generation broadband technologies, or find market capitalization of these technologies chased away by the uncertainty created by potential interference or future capacity limitations if providers are forced to share access to their licensed spectrum.

**3. What is the ability of current spectrum allocations to support both the fixed and mobile wireless backhaul market?**

Clearwire is pleased that the Commission has recognized both in this *Public Notice*, and in *Public Notice #11* that access to backhaul should be explored in more detail.<sup>5</sup> Although Clearwire self-provisions backhaul wherever possible, lack of affordable backhaul access may limit the ability even of well-funded providers like Clearwire to enter markets where there is less competition. To remedy this shortcoming, Clearwire urges the Commission to ensure that there is access to ample additional licensed microwave spectrum for wireless backhaul use, including access to spectrum in lower spectrum bands where longer links are more feasible

In addition to ensuring access to additional spectrum for backhaul, Clearwire encourages the Commission to consider making changes to certain of its current licensed microwave antenna rules, which would allow for more efficient use of current licensed microwave spectrum for backhaul, particularly in large metropolitan areas.<sup>6</sup> Wireless broadband providers such as Clearwire, who would otherwise choose to provision its own backhaul in these areas, via licensed microwave spectrum, may find that they must rely on other, often expensive sources for

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<sup>5</sup> *Comment Sought on Impact of Middle Mile and Second Mile Access on Broadband Availability and Deployment, NBP Public Notice #11, GN Docket Nos. 09-47, 09-51, 09-137, (rel. October 8, 2009) (“Public Notice #11”).*

<sup>6</sup> *See 47 C.F.R. § 101.115.*

their backhaul needs. Specifically, the current minimum antenna gain and power limit rules make it difficult to deploy small diameter wireless microwave antennas in large urban areas, where large antennas cannot easily be constructed or permitted. If the antenna gain and power limit rules were improved, broadband providers would be able to deploy smaller antennas in these areas, allowing them to make more resourceful use of the licensed microwave backhaul spectrum they currently have.

**CONCLUSION**

Clearwire submits the foregoing comments and asks that the Commission consider providing the spectrum access and spectrum management flexibility needed for the creation of a competitive mobile broadband marketplace.

Respectfully submitted,

**CLEARWIRE CORPORATION**

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