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May 18, 2004

Via Electronic Filing

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

Re: Amendment of Parts 1, 21, 73, 74 and 101 of the
Commission's Rules to Facilitate the Provision of
Fixed and Mobile Broadband Access, Education
and other Advanced Services in the 2150-2162 and
2500-2690 MHz Bands, WT Docket No. 03-66
Notice of Ex Parte Presentation

Dear Ms. Dortch:

Fixed Wireless Holdings, Inc. ("FWH"), a wholly-owned subsidiary of Clearwire Corporation, ("Clearwire"), and Clearwire (together "Clearwire"), submit this *ex parte* letter to expand upon and clarify a number of points set forth in FWH's comments and replies filed in the above referenced proceeding.

Clearwire and FWH intend to use Multipoint Distribution Service ("MDS") and Instructional Television Fixed Service ("ITFS") frequencies to launch a new wireless service that provides broadband voice and data to residential customers in both urban and rural areas as a low cost alternative to the broadband access provided by incumbents. Clearwire and FWH are acquiring rights to MDS and ITFS frequency channels by purchasing licenses outright or by negotiating excess capacity leases. Clearwire and FWH will utilize non-line-of-sight ("NLOS") plug-and-play wireless access equipment manufactured by its affiliate Nextnet Wireless, Inc. to deliver the service.

As an initial matter, Clearwire concludes that a limited number of changes to the rebanding proposals before the Commission could dramatically improve the overall operation of the band and help to ensure more efficient and effective use of the spectrum. Specifically, Clearwire agrees that the public interest would be served by the continued allocation of a limited segment of the 2.5 GHz band for high power uses, such as those provided by ITFS entities to deliver educational content to their students. As licensees begin to rely upon more efficient and less costly methods to deliver educational programming, however, a transition mechanism should be employed to reassign the reserved high power band segment for low power uses (and allow non ITFS eligible

licensees to access the spectrum.) Second, the Commission should adopt a substantial service requirement for all licenses in the rebanded spectrum to ensure its full and efficient use. Third, the Commission should ensure a technology neutral band plan so both time division duplex (“TDD”) and frequency division duplex (“FDD”) technologies can operate without causing interference to each other. Finally, Clearwire responds to certain statements made by the Wireless Communications Association International, Inc. (“WCA”) in its April 27, 2004 *ex parte* filing.

I. Transition Plan For The High Power Band Allocation

Clearwire agrees with the Coalition¹ that a number of ITFS and MDS licensees are providing valuable services using high power, analog, line-of-site (“LOS”) technology² and that some limited spectrum should continue to be allocated for this use even though it may not be the most efficient use of a scarce resource. Today’s evolving technology using NLOS, cellular architecture, however, enables licensees to make more efficient and effective use of the MDS/ITFS spectrum and should be encouraged by the Commission. Accordingly, the Commission should adopt a transition plan that will allow the high power frequencies to be reallocated over time to low power use. The transition plan is a simple easily administered proposal as described below. Clearwire does not suggest any other changes to the Coalition’s recommendations for the band plan.

First, Clearwire suggests, that if all existing license holders in a geographic area as defined by the Commission chooses to define them certify that within a two-year period, each licensee agrees that they will be filing to modify its operation to low power, the entire band should be immediately allocated for low power use. An existing licensee could submit a showing and apply for low power use of the band beginning upon the effective date of the Commission’s report and order in the proceeding. This would eliminate the need for licensees to relinquish current spectrum and relocate to the high power portion of the band. The interference rules adopted for the low power segment of the band could be applied throughout the entire band in the formerly high power segment of the band.

Second, any licensee that intends to continue to provide high power services should be assigned spectrum starting from the center of the high power band in a given geographic market so that the minimum amount of spectrum is allocated for high power uses, allowing the greatest possible amount of spectrum to be allocated for spectrally efficient low power uses.

Third, such high power licensees should be encouraged to migrate programming to other more spectrally efficient wireless technologies or wired technologies. As this market-based transition occurs for high power licensees, the need for the high power allocation will diminish. Although the Coalition proposal would

¹ The Coalition is comprised of the Wireless Communications Association International, Inc., the National ITFS Association and the Catholic Television Network.

² *See, e.g.*, Letter from Edwin Lavergne, Counsel to the Catholic Television Network, to Marlene H. Dortch, WT Docket 03-66 (March 7, 2003)

allow licensees to provide low power services in the band reserved for high power service, it does not address markets in which high power use is licensed but the licensee is not using the spectrum. Clearwire's transition plan addresses this inefficient use of spectrum. Under the Coalition plan, interference between licensees in the reserved band would inhibit the efficient use of the spectrum and would be detrimental to low power services being provided within the band, unless high power users are migrated to the center of the band, freeing up the outer edges of the reserved high power band for more efficient low power use.

This transition plan would not be administratively burdensome. Clearwire suggests that existing high power licensees be provided a two year transition period in which they must notify the Commission whether they will continue to provide high power services in their licensed spectrum. The Commission could add a single question to the modification application procedure that would require licensees that wish to continue to use high power to certify as to such. Licensees also could be required to certify to continuing high power operations as part of their substantial service showing.

II. Substantial Service

The Commission's rebanding plan should include a substantial service requirement to ensure that efficient and effective use of this valuable spectrum is maintained and that innovative, competitive broadband services are available to consumers in both rural and urban markets. As the Commission has found for other wireless services, a substantial service requirement encourages the rapid development and deployment of new technologies and services and the delivery of new services to rural areas³ and fosters competition.⁴

Further, as the Commission has adopted in other wireless services, Clearwire suggests implementation of a safe harbor that would find licensees that construct, acquire and operate facilities sufficient to cover 50 percent of the population and 50 percent of the licensed geographic area within five years of grant to be providing substantial service. A substantial service requirement is essential to ensure that spectrum, long fallow, be built out within reasonable time limits to ensure at last the delivery of broadband services to substantial numbers of residential customers residing with both urban and rural licensed areas. It ensures that incumbents do not warehouse spectrum and continue to engage in market based speculative transactions instead of using this highly valuable spectrum to provide residential and rural customers with competitive services.

III. Technological Neutrality

The Commission should ensure technological neutrality by adopting a band plan that fully supports both TDD and FDD technologies. Because TDD and FDD systems offer different advantages, the Commission should avoid any band plan that favors one technology over the other. The Commission has a history of remaining

³ Notice of Proposed Rulemaking, FCC 03-56, p. 79 at ¶190 (rel. April 2, 2003).

⁴ Id. at ¶ 191.

technology neutral to permit licensees to provide the types of services demanded by the public. To that end, no matter which band plan the Commission eventually adopts, it must ensure rules that permit the provision of both TDD and FDD.

IV. Response to WCA

Clearwire acknowledges that general support exists for adoption of most of the technical rules that have been advocated by the Coalition in this proceeding. Although Clearwire generally supports the Coalition's initiatives, it takes exception to the positions expressed recently on two key technical issues by the WCA Technical Task Group of its Engineering Committee.

A. Increase in permissible signal strength at geographic service area border

The Coalition proposal advocates a 47 dB μ V/m signal strength limit at the geographic service area border. In their reply comments, both FWH and NextNet, affiliates of Clearwire, objected to this signal strength and proposed keeping the existing 72.8 dB μ V/m signal strength limit at the geographic area for both the lower and upper portions of the proposed spectrum plan. As stated in NextNet's reply comments "the existing signal strength limit is more appropriate for next-generation low-power systems providing broadband data services, where the additional signal strength is a requirement for higher order modulations. The Coalition's proposed signal strength limit of 47 dB μ V/m is based on PCS rules, which are appropriate for low bit-rate voice applications."⁵

The Wireless Communications Association International, Inc.'s ("WCA") written *ex parte* presentation, dated April 27, 2004, recognizes that the Technical Task Group acknowledged "that greater signal strength levels may be necessary to provide certain types of services near the border utilizing certain technologies..."⁶ They go on to say, "In WCA's view, it is essential that interference from one market into an adjoining market be reasonably restricted, even if that imposes some operational burdens on the ability of licensees to serve near their own service area boundaries."⁷ While Clearwire agrees that interference between adjoining markets must be managed, we believe that this has already been addressed by the Coalition proposal. Regardless of whether the limit is set at 47 dB μ V/m or 72.8 dB μ V/m, licensees will need to coordinate their systems at service boundaries.

Clearwire also disagrees with the example provided in the WCA written *ex parte* presentation which describes an approach for deploying cells along a service boundary and meeting the 47 dB μ V/m limit while still maintaining higher signal strength levels for delivering broadband data services. This example described the placement of cells at the border and using directional antennas to transmit back into a service providers own

⁵ See Reply Comments of NextNet Wireless, Inc., WT Docket No. 03-66 (filed Oct. 23, 2003).

⁶ See Letter from Paul Sinderbrand, Counsel to the Wireless Communications Association International, Inc., to Marlene H. Dortch, WT Docket No. 03-66 at 3 (filed April 27, 2004).

⁷ *Id.*

service area. At MDS/ITFS frequencies, reflections from structures in front of these directional antennas will make it very difficult to control power radiated back across the border.

Clearwire believes that the ability to provide wireless broadband data services to unserved and underserved communities should be the primary factor in determining an appropriate limit in this instance. The importance of providing wireless broadband service to American consumers has most recently been recognized by the FCC with the establishment of a Wireless Broadband Access Taskforce by Chairman Michael Powell. In addition, the recent increase in deployments of wireless NLOS systems re-enforces the demand for this type of service by the public. This trend is also recognized and supported by the WiMAX Forum, a consortium of manufacturers and service providers with member companies including industry leaders such as Intel and Qwest. This organization is establishing interoperability standards to facilitate the delivery of wireless broadband service to both private and public safety entities.

We strongly urge the Commission to consider maintaining the current signal strength limits at service boundaries. Just as adequate channel bandwidth is an important parameter in being able to deliver wireless broadband content, regardless of specific technology, so is signal strength limit an important factor in delivering higher order modulation services to enable IP based services to those customers who need access to fixed and portable broadband content.

B. Limitation of EIRP for base stations

Clearwire believes that lowering the maximum EIRP of base stations operating in both the LBS and UBS portions of the proposed MMDS spectrum plan to 27 dBW is highly desirable in reducing the potential for interference from non-synchronized systems within a geographic service area. This interference may result from either co-channel or adjacent channel systems. Since the Coalition proposal provides for maximum flexibility for service providers to choose their technology solutions, Clearwire feels strongly that limiting the maximum base station EIRP will help to enable such a flexible operating environment by reducing the interference between, by way of example, TDD and FDD systems from operating in close proximity to one another.

The WCA, in their written *ex parte* presentation, dated April 27, 2004, states that “Reducing the maximum EIRP limit by 6 dB as FWH/NextNet propose will reduce coverage and inevitably make it impossible to economically serve rural areas that today are receiving wireless broadband service over MDS/ITFS frequencies.” They go on to say “To compensate for the 6 dB reduction in receive signal level that would result from adoption of the FWH/NextNet proposal, system operators will be required to install more base stations, with the concomitant increase in initial equipment costs and ongoing backhaul, operational and maintenance expenses.” Clearwire strongly disagrees with these statements. Current technology that operates well within the 27 dBW EIRP specification is delivering practical service in real commercial deployments for both rural and urban customers. These systems are deployed across the country and have

demonstrated not only excellent NLOS coverage, but economically low initial deployment costs as well as competitively low ongoing operational costs associated with both backhaul and maintenance.

Pursuant to Section 1.1206(b)(2) of the Commission's Rules, this presentation is being filed electronically. Should any questions arise concerning this matter, kindly contact the undersigned.

Sincerely,

/s/ R. Gerard Salemmé

R. Gerard Salemmé