a capital investment of more than **three-quarters of a billion dollars in a mere 18 months** in order to retain its current licensed territory.

33. Other 39 GHz licensees would face similarly staggering capital requirements, meaning that the proposed rule calls for the nascent 39 GHz industry to invest many billions of dollars in the next 18 months. In contrast, the cellular telephone industry -- one of the most successful start-up industries in American history -- reached the same magnitude of capital expense after roughly a decade of operation.[39] Attempting at this time to impose so severe a construction obligation on existing 39 GHz licensees would be unfair and unprecedented.

34. Furthermore, Milliwave does not believe that the relatively small number of manufacturers currently providing and developing equipment for this band can meet the industry's needs under the proposed standard. Even assuming that they could, Milliwave and others would be forced to make immense technology investments at a time when 37-39 GHz technology is still evolving, placing Milliwave at a competitive disadvantage to future licensees who will be given the leeway to wait for the next generation of equipment. There also is a serious risk that excessive front-end construction requirements will stifle innovations

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[39] The Cellular Telecommunications Industry Association (CTIA) reported a total of $11.3 billion in capital expenditures by December 1992.

in equipment design by forcing manufacturers to continue producing "old" technology to meet Commission-imposed -- rather than market-imposed -- construction requirements.

35. In sum, there simply is no correlation between the Commission's construction proposal for incumbents and the stated purpose of having a construction obligation designed "to minimize speculation without harming existing 39 GHz licensees who are responsibly developing the spectrum they have been assigned."[40] Responsible development -- which must entail use of the spectrum in the public interest -- simply will not occur if the Commission adopts its punitive construction proposal.

C. The Commission Should Not Dictate Efficiency Standards

36. The Commission proposes that all links be "capable of carrying a reasonable amount of communications traffic" in order to be counted toward the construction threshold, and seeks comment on whether it should adopt a specific test of capacity or usage.[41] Milliwave believes that overly emphasizing information density and antenna radiation criteria, to the exclusion of all other factors present in the efficient delivery of communications services

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[40] NPRM, para. 106.

[41] NPRM, para. 105. One suggested standard is a minimum equivalent digital efficiency of 1 bps/Hz over the entire channel block. Id.

at 37/39 GHz, is, at best, unnecessary, and, at worst, counterproductive.

37. In a competitive environment, arbitrarily established "spectrum efficiency" standards -- such as information density specifications -- may actually **reduce** efficient spectrum use. Very real tradeoffs exist between spectrum and hardware,[42] and these can be used to efficiently equalize the supply of and the demand for spectrum capacity. In locales (or at times) when demand for spectrum capacity is great, licensees who make greater investment in hardware that increases the information density in a spectrum-area volume are rewarded. In these situations, spectrum efficiency standards are unnecessary. In contrast, in locales (times) when demand for spectrum is low, unnecessary excess investment in hardware **penalizes** licensees and reduces their ability to compete with alternative media. Clearly under these circumstances both licensees and their prospective customers would not be well served by a spectrum efficiency standard. In assigning

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[42] Systems with greater information density standards would impose costs beyond those directly associated with more sophisticated radio hardware. For example, 4 level FSK or PSK modulation schemes produce greater information density (i.e., bit/Hz) than 2 level FSK systems. But to provide equivalent quality, the higher bit rate systems require a correspondingly larger received signal-to-noise ratio which, in turn, require shorter maximum transmission distances. Accordingly, requiring higher information density specifications than is required based on demand could result in fewer links and less information delivered by a licensee's authorized facilities than would be the case otherwise.

scarce spectrum, the Commission should broaden its notion of "spectrum efficiency" to go beyond information density and antenna radiation criteria, so as to balance the costs of a range of factors which collectively impact the public interest.

38. In addition to the lack of an economic efficiency basis for these requirements, Milliwave is particularly concerned about a usage test because it expects 39 GHz to be well suited for providing redundant and hot standby facilities. In these deployments, requiring a minimum amount of traffic before a facility can be counted toward the construction obligation is inappropriate. Additionally, Milliwave's concept of offering bandwidth on demand necessarily contemplates widely variant usages at different periods which makes a fixed test of capacity or usage difficult to administer. On balance, the Commission should not be in the business of forcing efficiency and defining standards, but should let the market dictate standards.[43/]

[43/] Imposing an efficiency standard for the 37 and 39 GHz bands would be inconsistent with Commission actions such as declining to establish protocols for land mobile technologies, including a single digital standard. See, e.g., Amendment of the Commission's Rules to Permit Liberalization of Technology and Auxiliary Service Offerings in the Domestic Public Cellular Radio Telecommunications Service, 3 FCC Rcd. 7033, 7040 (1988); Technical Compatibility Protocol Standards for Equipment Operating in the 800 MHz Public Safety Bands, 4 FCC Rcd. 3874, 3879 (1989).

D. Other Proposals Requiring Modification

39. Milliwave also is concerned with several other aspects of the Commission's proposals, as discussed below:

40. Grandfathered Rights. Milliwave supports the concept of allowing licensees who do not meet the construction obligation to obtain "grandfathered" rights to retain operating links within their service areas. However, the Commission's proposal to grandfather only those links in operation within 18 months of the adoption of a Report and Order in this proceeding, and to relicense such links on an individual basis,[44] fails to give full faith and credit to the current license term. Instead, only incumbent licensees who do not meet the construction obligation by the current February 1, 2001 license renewal deadline, should revert to grandfathered rights (if they file a request with the Commission by that date). Alternatively, licensees should be permitted to redefine their service areas so as to meet the required construction benchmark, and thereafter retain the authority to construct and operate links anywhere within the newly defined region.

41. Operational Flexibility at 37 and 39 Ghz. The Commission seeks comment on whether it should adopt

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[44] NPRM, para. 105.

flexible service rules for the 37 GHz band.[45] Current regulatory philosophy favors the relaxation of permissible use rules to foster innovation and competition in a changing telecommunications market.[46] Consistent with this philosophy, and with the Commission's proposal to harmonize service rules for the 37 and 39 GHz bands,[47] Milliwave endorses flexible rules that will enable the 37 **and 39** GHz bands to be made available for a wider array of services, including point-to-multipoint and mobile.[48] Such alternate services should be co-primary to avoid unnecessary disputes over primary versus secondary service.

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[45] NPRM, para. 13.

[46] See, e.g., WT Docket No. 96-6, In the Matter of Amendment of the Commission's Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Services, Notice of Proposed Rule Making, released January 25, 1996; ET Docket No. 94-32, In the Matter of Allocation of Spectrum Below 5 GHz Transferred From Federal Government Use, First Report and Order and Second Notice of Proposed Rule Making, 10 FCC Rcd. 4769 (1995).

[47] NPRM, para. 13.

[48] In this regard, Milliwave wholeheartedly endorses Chairman Hundt's recent advocacy of his policy

> to make more spectrum available to the private sector, as quickly as possible, and to provide wide latitude for market forces to guide that spectrum to its highest-valued use. By relying on market forces and flexible uses, we not only foster innovation and competition, but also stimulate infrastructure investment, job creation, and efficient spectrum use. This is the lesson of PCS, and we intend to adopt it as a blueprint for the future. (News Release, Feb. 2, 1996, Speech to Washington Research Group.)

42. Interim 39 GHz Licensing Plan. The Commission has ordered that the processing and disposition of all mutually exclusive applications, and all other pending applications that were not cut-off as of November 13, 1995, be held in abeyance during the pendency of the proceeding.[49] Milliwave accepts the fact that licensing must be deferred while a new licensing scheme is put in place, but advocates certain changes in the proposed interim plan.

43. Milliwave agrees that the Commission should continue to process assignment or transfer of control applications.[50] Likewise, the agency should continue to process pending applications that were not mutually exclusive as of November 13, 1995, and for which the cut-off period expired prior to November 13, 1995.[51] However, the Commission should dismiss pending 39 GHz applications that were filed in contravention of the "one-to-a-market" policy, or otherwise failed to properly follow the Commission's prior frequency coordination rules which were designed to avoid mutual exclusivity among point-to-point microwave

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[49] NPRM, paras. 122-125.

[50] NPRM, para. 121.

[51] Based on the announced policy, any application filed on or after September 13, 1995 -- rather than September 14, 1995, as stated in footnote 197 of the NPRM and Order -- should be subject to the processing freeze, because an application filed on September 13, 1995 also would not have been cut-off from competing applications filed on November 13, 1995.

applications. If these dismissals produce any uncontested applications, these should be granted. Such an approach properly penalizes applicants who disregarded the rules, and eliminates penalties to those who have abided by the applicable standards.

44. Finally, incumbent licensees should be allowed to modify their licenses to reduce their authorized service areas.

45. Repacking. The Commission's suggestion that incumbent licensees be "repacked" into a portion of the spectrum[52] is unworkable. Because no party has demonstrated a need for contiguous spectrum, forced channel changes by incumbent licensees are unnecessary. Such a scheme would saddle those licensees who have constructed facilities with substantial and unnecessary expenses. Moreover, there is no basis for requiring licensees to move to accommodate new licensees, which would give incumbents second-class status.

46. Multiple Channels. Milliwave opposes any requirement that 39 GHz incumbents with multiple channels demonstrate that operating links cannot be accommodated in a smaller number of channels.[53] In building a link to meet a customer requirement, a subscriber may reasonably desire sufficient bandwidth to allow its usage to increase over

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[52] NPRM, paras. 108, 109.

[53] NPRM, para. 105.

time. Thus, while two customers may be capable of sharing a link based upon their traffic on day one, a link dedicated to each customer may be needed to meet reasonably foreseeable needs. The licensee will never get the business from these two customers, however, if it cannot be assured of retaining sufficient channels to meet future needs. So, subject to compliance with applicable construction obligations, there should be no Commission-imposed requirement that a licensee demonstrate it is using the absolute minimum number of channels necessary to serve the present needs of its customers.

47. As noted, Milliwave holds licenses for only a single channel in its geographic areas, and thus would not be immediately affected by such a requirement. However, Milliwave anticipates that it will acquire additional channel capacity in some markets in response to customer demand and in order to compete with existing and future telecommunications services providers, including other 39 GHz licensees already licensed for multiple channels. Milliwave will provide additional capacity to customers who desire redundant links, standby facilities, and bandwidth on demand, and will dedicate unique channels to customers in order to allow customers to expand to meet its individual needs, if a demand exists for dedicated channel capacity. All 39 GHz licensees should be given the same flexibility to

construct and develop systems free of Commission micromanagement and in response to market needs.

48. Channel Aggregation. Milliwave also opposes limiting a single entity to six of the 28 paired channel blocks and to two of the four unpaired blocks in each BTA in the combined 37-40 GHz band (a total of 700 MHz of spectrum).[54] While this proposal reflects an appropriate government concern, it follows from an unsuitably narrow view of the relevant product market. A proper view of the competitive landscape reveals that such a cap is artificial, arbitrary, and unnecessary. There should be no limit on the number of 37 and 39 GHz channels one entity may control.

49. 39 GHz band licensees face an extremely competitive marketplace. The relevant product market is not limited to the 37 and 39 GHz bands. It also includes local exchange carriers, competitive access providers, cable companies, wireless interconnection, private line, and data transmission services. Clearly, the market which Milliwave and other 39 GHz licensees intend to enter is very large, and it is one in which these licensees currently have zero share. Furthermore, the providers of some of the services with which Milliwave will compete for customers, such as fiber optic and coaxial cable carriers, have no limit on the amount of capacity they have available currently, and no

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[54] NPRM, para. 112.

limit on their ability to add or acquire capacity.[55] Consistent with other rules adopted for the 37-40 GHz band, the Commission should let licensees develop services in response to market demand, and should impose no limit on the aggregation of above-37 GHz channels.

50. Eligibility Restrictions. As an alternative to auctioning licenses for 37 GHz and available 39 GHz spectrum, the Commission proposes limiting eligibility for such licenses only to PCS and other mobile service providers for a limited period of time.[56] Milliwave strongly opposes this proposal.

51. Restricting eligibility interferes with market forces and puts the agency in the position of picking winners and losers.[57] The Commission has on numerous occasions determined that limited eligibility is inconsistent with its desired objective of getting licenses

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[55] Milliwave agrees with Commissioner Chong's recent statement that "[c]ommunications services provided in direct competition with one another should be subject to the same level of regulation.... We should aspire to have similarly situated competing providers of local telephone service -- whether wired or wireless -- regulated similarly." Separate Statement of Commissioner Chong, WT Docket No. 96-6, In the Matter of Amendment of the Commission's Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Services, Notice of Proposed Rule Making, released January 25, 1996.

[56] NPRM, paras. 102-103.

[57] For the same reason, Milliwave opposes allocating some or all of the 37 GHz band for space-to-Earth service for Government use on a co-primary basis with fixed and mobile services. NPRM, para. 14.

into the hands of those who place the highest value on them. Since receiving statutory authority to issue licenses by auction, the Commission repeatedly has determined that open eligibility in an auction context is pro-competitive, leads to diversity among service providers, and deters speculation.[58] In light of the Commission's tentative conclusion to auction 37 and 39 GHz spectrum, eligibility restrictions are inappropriate.

IV. Conclusion

52. In recent years the Commission has adopted numerous measures intended to increase opportunities for the competitive provision of telecommunications services, particularly local telecommunications services. In the process, the Commission has recognized that licensees of new microwave technology "may provide services that compete with local exchange carriers...."[59]

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[58] See, e.g., PR Docket No. 93-144, Amendment of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rule Making, FCC 95-501, released December 15, 1995, para. 126.

[59] In the Matter of Rule Making to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band, to Reallocate the 29.5 - 30.0 GHz Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, Third Notice of Proposed Rule Making and Supplemental Tentative Decision, CC Docket No. 92-297, FCC 95-287, released July 28, 1995, para. 27.

53. The 37 and 39 GHz bands also present a new and exciting resource to provide competitive local services using developing microwave technology. As Chairman Hundt has noted, "this spectrum has always been beyond the beyond,"[60] and commercial applications and equipment are only now becoming viable. However, the Commission cannot expect that 37 and 39 GHz licensees will compete immediately with entrenched local telephone companies and other service providers. Consequently, Milliwave urges the Commission to continue its policy of adopting reasonable and flexible rules for spectrum for new competitive services.

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[60] News Release, September 12, 1995, Speech to Networked Economy Conference.

WHEREFORE, the foregoing premises duly considered, Milliwave Limited Partnership respectfully requests the Commission to adopt rules for the 37.0 - 38.6 GHz and 38.6 - 40.0 GHz frequency bands consistent with the foregoing comments.

Respectfully submitted,

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Certificate of Service

I, Nadine Smith-Garrett, a secretary with the law firm of Bryan Cave LLP, hereby certify that a copy of the foregoing Comments of Milliwave Limited Partners was sent via hand-delivery on March 4, 1996, to the following:

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