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

In the Matter of	)	
	)	
Request for Declaratory Ruling By Wireless Strategies, Inc., Regarding Coordination of Microwave Links Under Part 101 of the Commission's rules	)	WTB Docket No. 07-121

REPLY COMMENTS OF
SPRINT NEXTEL CORPORATION

I. Introduction

The Commission has sought comment on a proposal by Wireless Strategies, Inc. (WSI) to repurpose fixed point-to-point licenses to fixed point-to-*multipoint* use.[1] WSI provides insufficient technical information to assess the feasibility and interference potential that point-to-multipoint operations would cause in the point-to-point bands. As a result, WSI's petition for declaratory ruling does not "terminat[e] a controversy" or "remov[e] uncertainty," but instead raises more questions than it answers and should be dismissed or denied.[2]

While WSI's proposal holds some promise for increased efficiency in the fixed microwave spectrum, realizing the promise of WSI's proposal would require considerably more analysis than the instant petition provides. If WSI or other parties can offer more detailed proposals for conducting fixed point-to-multipoint operations in the point-to-point spectrum

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[1] *See Wireless Telecommunications Bureau Seeks Comment on Request for Declaratory Ruling by Wireless Strategies, Inc. Regarding Coordination of Microwave Links under Part 101 of the Commission's Rules*, Public Notice, DA 07-2684, WTB Docket No. 07-121 (rel. June 19, 2007); Wireless Strategies, Inc., *Request for Declaratory Ruling on Compliance of Fixed Microwave Antennas Having Distributed Radiating Elements*, WTB Docket No. 07-121 (filed Feb. 27, 2007) ("WSI Request").

[2] 47 C.F.R. § 1.2 (authorizing declaratory rulings to "terminat[e] a controversy" or "remov[e] uncertainty").

bands, then the Commission might consider issuing a notice-and-comment rulemaking proceeding. Until then, however, the Commission should prevent harmful interference and other operational constraints by ensuring that fixed point-to-point services continue to have access to fixed point-to-point spectrum bands.

II. While WSI's Petition Generates More Questions than It Answers and Must Be Denied, the Prospect of More Efficient Use of the Fixed Point-to-Point Microwave Bands May Warrant Further Consideration.

Sprint Nextel, which holds more than 1300 fixed point-to-point licenses, has a strong interest both in maximizing the efficient use of the point-to-point spectrum bands and in guarding against harmful interference to incumbent operations. Although WSI's proposals offer the intriguing prospect of more intensive use of the point-to-point bands, WSI does not discuss many detailed aspects that the Commission must consider and resolve prior to authorizing the use of distributed antenna systems in the point-to-point bands.

Having operated more than one-thousand fixed point-to-point links for several decades, Sprint Nextel recommends the Commission embrace three general goals when considering any changes to the point-to-point rules:

> (1) protect existing point-to-point microwave operations against harmful interference;
>
> (2) permit carriers to establish additional point-to-point links as needed over time to accommodate increased traffic and a growing appetite for data services; and
>
> (3) establish easier and more efficient coordination, licensing and use of the point-to-point spectrum.

Almost regardless of the potential efficiencies involved, any proposal that cannot meet these three objectives would inhibit the ability for carriers to add new point-to-point capacity. As demand for voice and data services continues to grow, constraining the number of new point-to-point links would increase the already substantial backhaul bottleneck that exists to the great detriment of carriers and the consumers they serve.

Generally speaking, WSI proposes to use the side lobes that fixed point-to-point antennas already generate to support additional communications links. WSI's insight is that side lobes, which fixed point-to-point licensees have tended to regard as useless spectrum, might one day employ distributed antenna systems to support useful communications links.

Beyond that fundamental insight, however, WSI's proposal is ambiguous. WSI offers only vague details of how point-to-multipoint operations might be coordinated within the point-to-point bands. WSI, for instance, appears to propose either a new method of coordinating point-to-point facilities that would decrease the availability of point-to-point links in the future, or a "sustaining link" analysis that would require highly detailed information on antenna patterns that is currently unavailable to licensees. At times, WSI appears to propose that the coordination instead rely on the *maximum* permitted power levels and the maximum permitted worst-case antenna provisions in the current rules. The current coordination process, however, is based on actual transmitted power and antenna patterns. Switching from real-world interference coordination to worst-case interference coordination would preclude some new point-to-point facilities from operating even when their operations would not actually cause harmful interference by declaring more territory "off limits" to new point-to-point licenses than is actually necessary to prevent harmful interference. This change in engineering assumptions would greatly reduce the ability of carriers to construct, build, and operate new point-to-point links in the future.

At other times, WSI seems to propose coordinating point-to-point facilities using the transmitted power level necessary to sustain the primary link and the actual antenna pattern. If WSI wants to use such a "sustaining link" analysis for point-to-point microwave operations, however, then it remains unclear exactly how coordinating parties would identify and resolve the

radiation and antenna patterns of the distributed antennas. Information on those antenna patterns is not available, but would affect the viability of any nearby point-to-point links.

WSI is similarly unclear on whether distributed antennas would be limited to locations within a certain distance of the main antenna. For instance, WSI's proposal talks about locating these distributed antennas in a "Radiation Pattern Envelope" (RPE) area, but neither WSI's petition, nor the Commission's rules defines this area. The so-called RPE area would necessarily vary depending on the directionality of the links subject to coordination. If two microwave links are pointed towards each area, for instance, then a much larger separation distance is needed to avoid interference. If two microwave links are pointing in different directions, by contrast, then their transmitters or receivers can often be located very near to each other. While WSI is correct when it indicates that the distributed elements could theoretically be located in the RPE area without causing interference to other links, WSI ignores the complexity of defining an RPE that would necessarily have to vary in size significantly depending on the geometric orientation of the other microwave links that require coordination.[3]

WSI's proposal raises numerous additional questions that underscore the complexity inherent in its proposal. For instance:

- How would WSI's proposal coordinate future microwave links with a distributed antenna system. Would the coordination only be done with regard to the main antenna? Or would each distributed antenna also need to be protected?
- Should there be a minimum size requirement for the distributed antenna elements? If so, what should that size be? How would that size impact the ability for new microwave links to be coordinated in the future? Would these distributed antennas adequately protect incumbent microwave links?

[3] Trying to determine a variable RPE area based on the orientation of another nearby microwave link poses rulemaking challenges that WSI has not addressed, but – if sufficiently detailed information were generated in a notice-and-comment rulemaking proceeding – the Commission could perhaps adopt distance limits within which the distributed antennas must be located.

- If distributed antennas are "ancillary" to the main beam as WSI proposes, what does "ancillary" mean?[4] Must new point-to-point links protect the distributed elements individually? If so, what would be the impact on new microwave links that have to coordinate not only with the main link, but also with each side link that involves a separate location, separate antenna and power, and separate geometric orientation?
- At what distance would compliance with the RPE be measured? If the distributed elements are located at significant distances from the main transmitter or receiver, how does one calculate compliance in the geographic areas between the main transmitter and the distributed elements?

WSI does not offer answers to these and other questions and, perhaps as many of the parties who have filed in opposition to the WSI proposal have suggested, no answers exist. Having prompted numerous practical questions without offering any specific answers, WSI's bare-bones petition does not satisfy the goals that should inform the Commission's analysis, namely (1) protecting incumbent operations; (2) preserving access to point-to-point links; and (3) simplifying coordination. While WSI's proposal must fail as a declaratory ruling, WSI's proposal may warrant more detailed exploration in a detailed notice-and-comment rulemaking proceeding that could conduct a searching analysis of the cost and benefits of the rule changes that WSI's proposal would require.

III. Conclusion

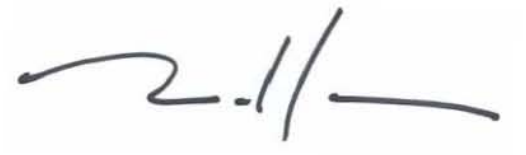
Point-to-point spectrum offers a crucial link for the nation's communications carriers and their customers, including public safety users. WSI's vague request for a declaratory ruling is not sufficiently detailed and must be dismissed or denied. While the Commission should proceed carefully when proposing any changes in how the point-to-point communications bands are used, WSI's fundamental insight of increasing the utility of the point-to-point bands may one day support the issuance of a rule making proceeding where the necessary details about

[4] WSI Request at 7.

distributed antenna proposals can be explored and, if warranted, refined into clear rules that both open new opportunities for licensees and protect existing operations against harmful interference.

Respectfully submitted,

SPRINT NEXTEL CORPORATION



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