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

In the Matter of	)	
	)	
Wireless E911 Location Accuracy Requirements	)	PS Docket No. 07-114

COMMENTS OF
SPRINT NEXTEL CORPORATION

Sprint Nextel Corporation ("Sprint") responds to the Commission's request for comment on certain recent proposals for modifying the E911 Phase II location accuracy rules.[1] Sprint supports the proposal developed by the Association of Public-Safety Communications Officials ("APCO"), the National Emergency Numbering Association ("NENA"), and Verizon Wireless for handset-based Phase II location accuracy solutions – hereinafter, "the Handset Location Accuracy Proposal."[2]

I. BACKGROUND

Sprint is continually engaged in improving the accuracy of its E911 Phase II location data. Among other things, Sprint updates and improves the software that operates its Mobile Positioning Center and Positioning Determining Equipment. Sprint has also released new handsets equipped with more sensitive Global Positioning Satellite ("GPS") receivers that will allow the handsets to "hear" more GPS satellite signals in more environments. Sprint has conducted trials with alternative location vendors and actively assesses new technologies as they are developed and proposed. It conducts audits of its Base Station Almanac, an important

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1 *See Wireless E911 Location Accuracy Requirements,* 73 Fed. Reg. 55473 (Sept. 25, 2008).

2 As a carrier using a "handset-based" E911 solution, Sprint does not address in these comments the different proposals for "network-based" E911 solutions.

variable in the calculation of location when GPS satellite information is not available. Sprint has deployed "Location Accuracy Devices" in over 1,300 of its maintenance vehicles, part of an automated location testing system, which generates more granular data concerning the operation of its location technology. Such data provides it and public safety with a more precise understanding of 911 location accuracy. Earlier this year, Sprint issued a "Request for Proposals," seeking vendor plans for network consolidation and progression to the next generation E911 standard that NENA has proposed - *NENA i3* - and which the Emergency Services Interconnection Forum is currently examining in detail.

As recognized by the Handset Location Accuracy Proposal, despite these kinds of refinements and improvements, location accuracy in the foreseeable future will remain limited by several basic physical realities. Location accuracy is determined by both the number of available data points (whether they are satellites or cell sites) and the quality of each of those data points (whether line of sight is direct or indirect, as reflection and other factors resulting from indirect line of sight make a handset appear further or closer than its actual location). Terrain obstructions between a handset and the data points, whether natural or manmade, can considerably reduce accuracy – either by reducing the number of available data points and/or by reducing their quality. Different geographic areas have different levels of terrain obstructions making it difficult (and in some cases, impossible) to meet in all areas the identical location accuracy benchmarks. For example, counties in the Great Plains do not present nearly the same location accuracy challenges as counties located in heavily forested areas or counties that include numerous taller structures.

As explained below, Sprint agrees with APCO and NENA that the Handset Location Accuracy Proposal constitutes a "sensible approach that will achieve improved accuracy in a

reasonable time frame,"[3] while recognizing the reality that some areas are far more challenging than others in meeting any national location accuracy benchmarks.

II. SPRINT SUPPORTS THE APCO/NENA/VERIZON WIRELESS PROPOSAL FOR HANDSET-BASED E911 SOLUTIONS

Sprint, as it previously advised the Commission,[4] supports the Handset Location Accuracy Proposal that APCO, NENA and Verizon Wireless submitted jointly on August 20, 2008. Location accuracy would be measured on the county level. Because of the more granulized testing and the new challenges that much smaller measurement areas would present given today's technology, two adjustments would be made to the 150-meter location accuracy requirement: (1.) Two years after the new rules are adopted, 80 percent of all Phase II calls in each county must be accurate to within 150-meters and, six years later, 90 percent of all Phase II calls in each county must be accurate to within 150-meters; and, (2.) A carrier may exclude up to 15 percent of all counties from the 150-meter requirement based on terrain obstructions, whether natural or manmade.[5] No adjustments would be made to the current 67%/50-meter benchmark. In addition, public safety and industry will meet to evaluate methodologies for assessing location accuracy for E911 calls made indoors, reporting back to the Commission in one year.

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[3] APCO/NENA Written Ex Parte, PS Docket No. 07-114, at 1 (Sept. 9, 2008).

[4] *See* Letter from Anna Gomez, Sprint Nextel Corporation, to Chairman Kevin Martin, PS Docket No. 07-114 (Aug. 21, 2008); Letter from Charles McKee, Sprint Nextel Corporation, to M. Marlene Dortch, FCC Secretary, PS Docket No. 07-114 (Sept. 24, 2008).

[5] Although the Handset Location Accuracy Proposal specifically referenced only one type of terrain obstruction ("forestation"), it is Sprint's understanding that APCO and NENA agree that the proposal applies to all terrain obstructions, whether natural (cloud cover, mountains) or manmade (buildings), because both types of obstructions adversely affect location accuracy.

The Handset Location Accuracy Proposal imposes significant new burdens on carriers. Under the Proposal, carriers would be required to conduct far more compliance tests, at significant additional costs, because measurements must be made in much smaller geographic areas (a county vs. a state), and more tests would be needed within each of the smaller areas in order to obtain a statistically valid sample within a particular county.[6] The new accuracy standard will require testing in each of the 2,100 counties Sprint currently serves and will take extensive time and resources.

In addition, the Proposal would require carriers to meet a more rigorous location accuracy benchmark. Although the current 67 percent/50-meter rule would remain in place, as a practical matter, this requirement would become more difficult to achieve because it would be applied to *each* county rather than the entire network. For example, rather than applying the 67 percent/50-meter rule to the State of Illinois as a whole, the Proposal would require each wireless carrier to meet this benchmark within each of the 102 Illinois counties where it provides service.

Sprint supports the Handset Location Accuracy Proposal notwithstanding these new burdens the Proposal would impose on it. Sprint recognizes public safety's need to have a better granular understanding of network operations and the desire to impose an accuracy standard that presses carriers to achieve the maximum accuracy capable, while recognizing the limits of technology. The proposed standard strikes a careful balance on these issues. For example, the Proposal recognizes the role that terrain obstructions play in inhibiting location accuracy, noting that measuring location accuracy at the county level is "especially difficult for many carriers due to variations in geography and system developments."[7] To account for these challenges, the

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[6] According to the National Association of Counties, our nation includes 3,066 counties. *See* www.naco.org/Template.cfm?Section=About_NACo.

[7] APCO/NENA Written Ex Parte, PS Docket No. 07-114, at 1 (July 14, 2008).

Proposal modifies the 150-meter benchmark in two ways. First, the 150-meter benchmark would be adjusted to an 80 percent level in two years, but then increases over the following six years requiring carriers to later reach a 90 percent level. Second, APCO and NENA recognize that some counties contain so many terrain obstructions there should be an exclusion from the 150-meter benchmark in a small number of areas (*i.e.*, 15 percent of all counties).

Sprint urges the Commission to adopt promptly the Handset Location Accuracy Proposal. As APCO and NENA correctly observe, Commission adoption of this Proposal would "bring an end to distracting debates regarding the appropriate accuracy standards" and would enable all parties to "focus attention on the important, critical task of implementing and improving wireless E9-1-1 capabilities."[8]

III. THE COMMISSION SHOULD REQUIRE THE OWNERS OF E911 INFRASTRUCTURE TO PASS CONFIDENCE AND UNCERTAINTY DATA UPON PSAP REQUEST

The Commission has asked whether it should "require the provision of confidence and uncertainty data."[9] Sprint is willing and able to transmit this data on a per-call basis to any PSAP upon request and does so today. In fact, Sprint believes that transmission of confidence and uncertainty data is more useful to 911 responders than additional location accuracy testing because, as APCO and NENA have observed, such per-call data would "greatly improve the ability of PSAPs to utilize accuracy data and manage their 9-1-1 calls."[10]

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8 APCO/NENA Written Ex Parte, PS Docket No. 07-114, at 1 (Sept. 9, 2008).

9 *Wireless E911 Location Accuracy Requirements,* 73 Fed. Reg. 55473 (Sept. 25, 2008).

10 APCO/NENA Written Ex Parte, PS Docket No. 07-114, at 2 (Sept. 9, 2008).

It is important to note, however, that a PSAP capable of receiving and using confidence and uncertainty data will receive this data *only* if the Local Exchange Carrier ("LEC") selective router and Automatic Location Information ("ALI") database serving the PSAP is configured to forward this data from a wireless carrier. Some incumbent LECs, however, have declined to upgrade their networks to accommodate the transmission of confidence and uncertainty data. Accordingly, for PSAPs to receive confidence and uncertainty data, the Commission must require the owners of E911 networks to take the steps necessary to accommodate such data.[11]

IV. CONCLUSION

For the foregoing reasons, Sprint respectfully requests that the Commission in this rulemaking proceeding take actions consistent with its positions discussed above.

Respectfully submitted,

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[11] Some PSAPs own their own ALI databases. Any new FCC rules in this area would not need to include such public safety entities because, if they are interested in receiving confidence and uncertainty data, they must necessarily modify their ALI database accordingly.