STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

APPLICATION OF NEW CINGULAR WIRELESS PCS, LLC (AT&T) FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF A TELECOMMUNICATIONS TOWER FACILITY AT 85 PAPER MILL ROAD IN THE TOWN OF WOODBURY	DOCKET NO. 375 May 6, 2009

PRE-FILED TESTIMONY
OF
JOHN BLEVINS

Question 1: Please summarize your professional background in telecommunications.

Answer: I am a Senior Radio Frequency Engineer and have been employed by AT&T and its predecessors for over thirty years. My current responsibilities include the identification of signal coverage gaps in AT&T's wireless telecommunications network in Massachusetts and Connecticut and assessing whether proposed facilities will adequately fill those signal coverage gaps. I am also responsible for frequency planning, E911 implementation, and other Radio Frequency engineering requirements for AT&T. I have been employed in this role for over twenty years. Prior to my current responsibilities and in the period from 1978 to 1986, I was responsible for radio frequency deployment of SNET's paging network in the State of Connecticut. From 1986 to 1988, I worked in the cellular engineering department responsible for the original deployment of SNET Cellular's network in the State of Connecticut. In the days before cellular technology, I was employed by SNET working as a technician and a microwave/mobile telephone engineer from 1974 to 1986. Prior to that I served in the United States Army as a microwave technician.

Question 2: What does your testimony address?

Answer: The main purpose of my testimony is to provide additional background information relating to AT&T's proposed wireless facility beyond that already provided in the Application and Responses to Interrogatories. This includes information on the general design of the fixed wireless network, the technical constraints in selecting proposed facilities, and other RF issues such as coverage.

Question 3: Please generally describe the design of AT&T's wireless network in Connecticut.

Answer: The traditional cellular network build-outs of the past have involved the initial construction of wide-area coverage sites often spaced apart by several miles. As traffic and coverage demands have grown over time, cellular system operators have been forced to re-engineer their networks to include a greater number of smaller (lower) sites, at closer spacing, to accommodate an ever-increasing subscriber base while mitigating the effects of RF interference, and increasing frequency re-use across the network.

Question 4: How does AT&T's wireless network generally operate in Connecticut?

Answer: AT&T operates in the FCC assigned "D", "E", and "A" 1900 MHz PCS and Cellular "b" bands throughout the State. AT&T's use of these various bands is seamless to the wireless subscriber in areas where dual band coverage exists.

Question 5: In what ways does the nature of wireless technology limit the Company's ability to select cell site locations?

Answer: Cell site selection is heavily impacted by terrain variation as well as local land use policies within intended service areas. The presence of widely varying, hilly terrain and heavy residential land use in the State of Connecticut poses challenges to the wireless engineer whose ultimate goal is to construct a seamless network of interconnecting and adequately overlapping cell sites. Cell site locations must be chosen such that sufficient signal strength overlap is achieved to ensure call hand-off between cells. Proper spacing between cells is critical for maintaining sufficient signal strength overlap and eliminating unnecessary duplicative coverage between cells. The wireless industry has also experienced a revolution in handset technology whereby the availability of inexpensive, small, and lower powered handsets with longer battery life has fueled consumer demand for ubiquitous service. The infrastructure required to support this demand drives the need for additional facilities.

Question 6: What is the significance of antenna height in wireless network design?

Answer: Laws of physics dictate radio signal losses associated with RF propagation between a fixed wireless network antenna site, and both fixed and mobile users of the fixed wireless network antenna site. Higher relative fixed network antenna heights, as compared with surrounding terrain, generally provide a greater coverage distance and a stronger signal amplitude at most distances from the fixed wireless network antenna site. Higher relative fixed network antenna heights are the result of higher antenna support structure attachment height. A two-way communication system cannot simply increase the power transmitted by the fixed network antenna to make up for lower fixed network antenna height, like a one-way broadcaster, since it is limited in the reverse path by the low power user handset's ability to "talk-back" to the fixed network antenna. Having said this, there is also a practical maximum fixed network antenna height, above which there will be a sharp increase in the negative effects of RF interference across the network, thus limiting frequency re-use and capacity across the network.

Question 7: Please explain the interrelationship between the proposed site and the Company's current system.

Answer: The interrelationship between the proposed site and the current system is depicted in the various propagation prediction plots. The design goals are (1) to provide sufficient signal strength overlap between neighboring cell sites to maintain continuity of wireless coverage and (2) to provide adequate capacity within the intended service area of the proposed facility. The industry has seen a migration towards "fixed wireless" services whereby consumers now utilize their wireless handsets for residential use in addition to the more familiar mobile application. This adds an additional dimension to the network as "fixed" subscribers utilize the offered capacity of cells in a very localized fashion, while mobile subscribers simply move through the chain of cells. It is thus possible to view the network as both a series of highly inter-related cells, as well as an independent collection of "island cells" which service purely local traffic.