STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	
APPLICATION OF NEW CINGULAR WIRELESS PCS, LLC (AT&T) FOR CERTIFICATES OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF TWO TELECOMMUNICATIONS TOWER FACILITIES LOCATED OFF OF HAYWARDVILLE ROAD AND ED WILLIAMS ROAD BOTH IN THE TOWN OF EAST HADDAM, CONNECTICUT	DOCKET NO. 395 FEBRUARY 25, 2010

PRE-FILED TESTIMONY
OF
ANTHONY WELLS

Question 1. Please summarize your professional background in telecommunications.

Answer: My career in the wireless industry has spanned the past nineteen years initially for wireless service providers including NYNEX Mobile, now Cellco Partnership (d/b/a Verizon Wireless) and Sprint PCS, now Sprint Nextel. In August, 2000, I started my own RF consulting and design business called C Squared Systems ("C Squared"). C Squared currently provides RF design services to the wireless industry throughout New England. I have extensive experience appearing and testifying before the Connecticut Siting Council. A copy of my resume is attached hereto as Attachment 1.

Question 2. Please describe your involvement with New Cingular Wireless PCS, LLC ("AT&T")

Answer: New Cingular Wireless PCS, LLC ("AT&T") retained the services of C Squared to provide support and assistance to AT&T's in-house radio frequency engineers in preparing for and presenting this application to the Siting Council.

Question 3. What does your testimony address?

Answer: The purpose of my testimony is to provide additional information relating to AT&T's existing network in this area of the state and to further describe the need for a proposed facility in the area. This includes our review of AT&T's coverage plots and our review of information regarding AT&T's network, technical constraints in selecting

proposed facilities, and the specific need for the proposed Devil's Hopyard North and Devil's Hopyard South facilities.

Question 4. Please describe AT&T's need for the proposed facility.

Answer: The interrelationship between the proposed facility and AT&T's existing system is depicted in the propagation plots submitted as part of AT&T's applications and responses to the Siting Council's interrogatories. AT&T currently experiences a coverage gap in this area of East Haddam. The proposed Devil's Hopyard North facility will provide wireless communications service to Devil's Hopyard State Park and along Hopyard Road and Haywardville Road (a/k/a State Route 434, a state service route coursing through Devil's Hopyard State Park) and nearby surrounding areas in East Haddam. The proposed Devil's Hopyard South facility would hand-off with the proposed Devil's Hopyard North facility and serve Devil's Hopyard State Park as well as portions of Hopyard Road, Mitchell Road, Jones Hill Road portions of State Route 82 and nearby surrounding areas of East Haddam.

Question 5. How did C Squared analyze the proposed Site?

Answer: In general, C Squared reviewed the proposed Devil's Hopyard North and Devil's Hopyard South facilities with AT&T's radio frequency engineers to confirm AT&T's need in this area and the proposed coverage. C Squared's RF engineers confirmed the existence of a gap in coverage in AT&T's network in this area of East Haddam. In addition, C Squared conducted a search for alternate/existing structures and determined there are no structures in the area that would be able to host AT&T's antennas to provide the needed coverage. Our firm also confirmed that the proposed facilities would provide service to the target area and the minimum heights required for each of the proposed facilities.

Question 6. In addition to AT&T, are you aware of any other carrier need in this area?

Answer: Yes. As the Council is aware, Youghiogheny Communications Northeast LLC ("Pocket Wireless") provided a comment letter to the Siting Council dated February 24, 2010 indicating that Pocket Wireless experiences a coverage gap in this area of East Haddam. Pocket Wireless indicated it has a need for antennas at the 150' level at both the Devil's Hopyard North and Devil's Hopyard South facilities to provide needed coverage to the area.

C² Systems
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Resume of: Anthony Wells

EDUCATION:

Northeastern University
Master of Science in Electrical Engineering - Communications and Signal Processing Concentration- June 1997

University of Massachusetts, Lowell
Bachelor of Science in Electrical Engineering - December 1989

EXPERIENCE:

Managing Partner C Squared Systems **8/00 - Present**

- Provide RF and software design services to the wireless industry, including preparation of RF coverage analyses to determine radio frequency signal propagation parameters for siting wireless telecommunications facilities.
- Development of custom data collection and propagation software for in-building and macro networks,
- Manage design of a digital 1900 MHz (PCS) network consisting of over 130 cell site locations in New Hampshire and Maine.
- Design and Implementation of in-building repeater systems for multiple carriers.
- Prepare documentation for and testify before Connecticut Siting Council in support of the location of new wireless communications facilities.
- Provide measurement and calculation reports to comply with conditions of approval for municipalities in Connecticut, relating to Federal Communications Commission guidelines for electromagnetic field exposure.
- Develop radio and microwave frequency electromagnetic field calculation software for use in Federal Communications Commission compliance analysis.
- Design and implement custom software applications and database solutions with mapping capability for wireless providers.
- Provide propagation analysis and optimization of propagation models for use in analysis of propagation characteristics for low antenna heights.

Radar Systems Engineer **Raytheon - 3/98-8/00**

- Developed radar systems and simulation using software languages such as C++, Matlab and FORTRAN.
- Processed radar data for use in analysis of tracking algorithms. Implemented C++ wrapper for Matlab mex-files to reduce processing time by over 70%.
- Analyzed results of tracking algorithms. Evaluated statistical cost factors and analyzed radar resource loading in relation to statistical confidence levels for tracking algorithms.
- Calibrated and modified radar simulation software to accurately represent radar hardware performance.

Radio Frequency Manager **Sprint PCS - 10/95 - 3/98**

- Technical Manager responsible for implementation of code division multiple access technology for the New Hampshire and Maine systems.
- Designed and managed a digital 1900 MHz (PCS) network consisting of 70 cell site locations in New Hampshire and Maine.
- Oversaw testing and verification of the network to insure that propagation modeling was accurate and design performed as anticipated.
- Evaluated network performance for vendor compliance with contractual obligations.
- Insured compliance with Federal Communications Commission guidelines for electromagnetic field exposure for the digital network.
- Evaluated and tested accuracy of vendor propagation models and their applicability for use in system design.

Radio Frequency Manager **NYNEX Mobile/Verizon Wireless - 5/90 - 10/95**

- Responsible for the design and performance of an analog 800 MHz communication system consisting of over 200 cell sites in New England.
- Responsible for testing and verification of over 100 cell sites to insure accuracy of propagation models and cell site placement.
- Monitored and improved system performance for the Boston and Rhode Island systems using signal measurement equipment and propagation analysis.
- Evaluated and planned deployment of 800 MHz digital cellular system.
- Evaluated feasibility and integrated high and low power repeaters into the network where applicable.
- Designed microprocessor based automated remote call processing test equipment.
- Implemented repeaters as part of in-building network.
- Managed and optimized frequency plan as part of network optimization.