

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

IN RE:

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 933 STILLWATER POND  
ROAD IN THE CITY OF TORRINGTON

DOCKET NO. 394

January 20, 2010

PRE-FILED TESTIMONY  
OF  
ANTHONY WELLS

Q1. Please summarize your professional background in telecommunications.

A. 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.

Q2. Please describe your involvement with New Cingular Wireless PCS, LLC ("AT&T")

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

Q3. What does your testimony address?

A. 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 a facility at the Site in the captioned application as discussed with Mr. John Blevins.

Q3. Please describe AT&T's need for the proposed facility.

A. The interrelationship between the proposed facility and AT&T's existing system is depicted in the propagation plots submitted with AT&T's Application and as part of AT&T's response to the Siting Council's First Set of Interrogatories. As shown, AT&T currently experiences a coverage gap in this area of Torrington, along route 272 and the surrounding areas.

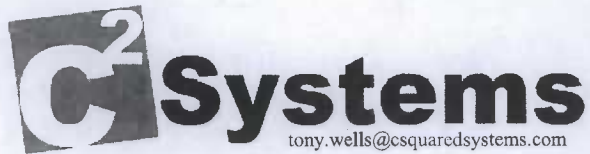
Q4. How did C Squared analyze the proposed Site?

A. C Squared's RF engineers reviewed AT&T's RF information provided to the Siting Council and spoke with AT&T's RF engineers regarding the proposed facility and surrounding sites. C Squared's analysis confirmed that the proposed facility would provide service to the target area and would improve service generally within the area. Utilizing data from AT&T, C Squared produced plots which are attached as Attachment 2. These plots depict AT&T's current coverage and the service provided by AT&T antennas at 180' and 160' above ground level. In addition, these plots also provide additional data in the form of street names and municipal boundaries for the Council's reference.

Q7. In addition to AT&T, are you aware of any other carrier need in this area?

A. As the Council is aware, Youghiogheny Communications Northeast LLC ("Pocket Wireless") provided a comment letter to the Siting Council dated January 19, 2010 indicating that Pocket Wireless experiences a coverage gap in this area of Torrington and would seek at 170-foot antenna centerline height.

## **ATTACHMENT 1**



Resume of: **Anthony Wells**

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**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.

**Radars 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.

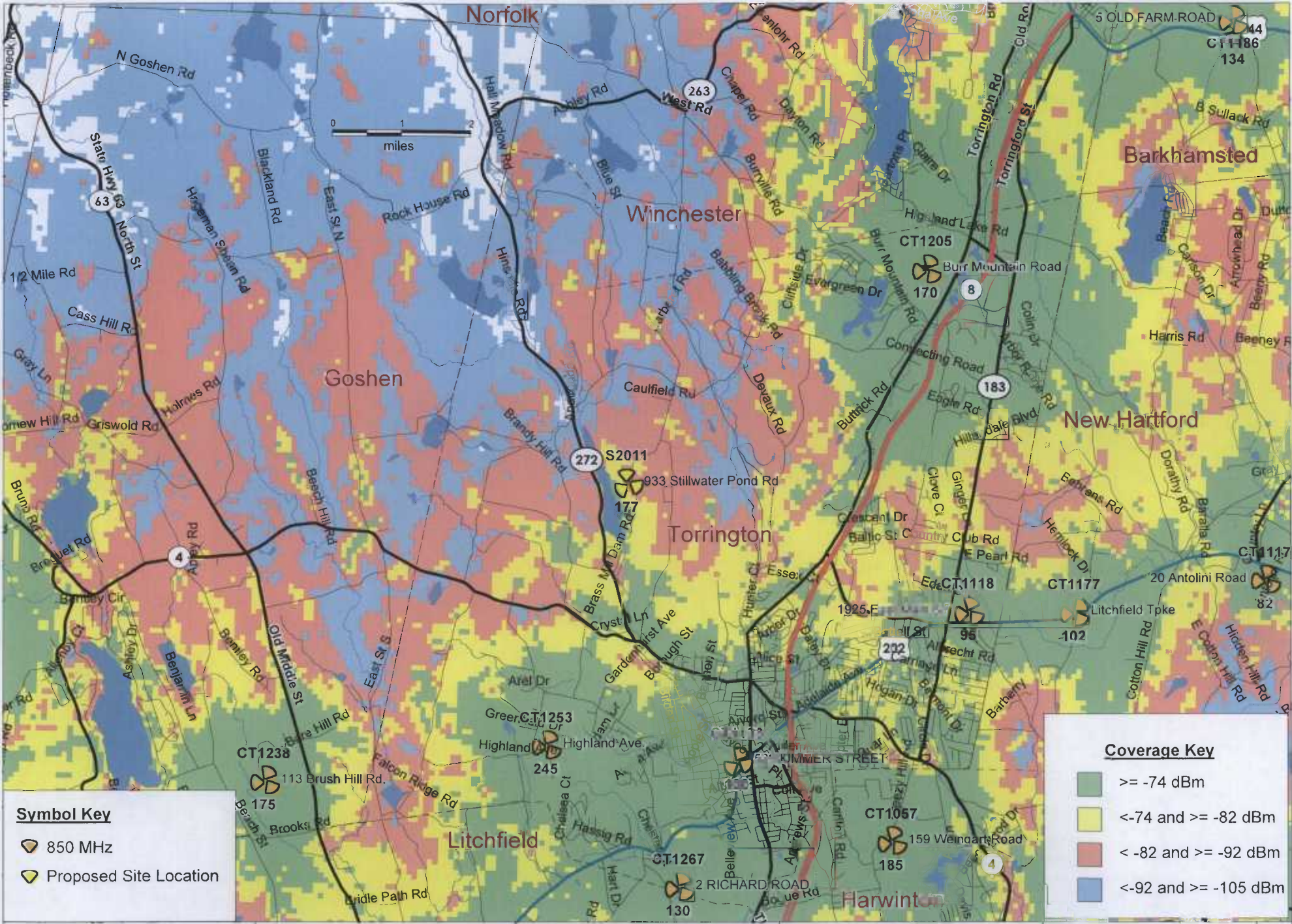
**Radio Frequency Manager****Sprint PCS - 10/95 - 3/98**

- 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.

## **ATTACHMENT 2**

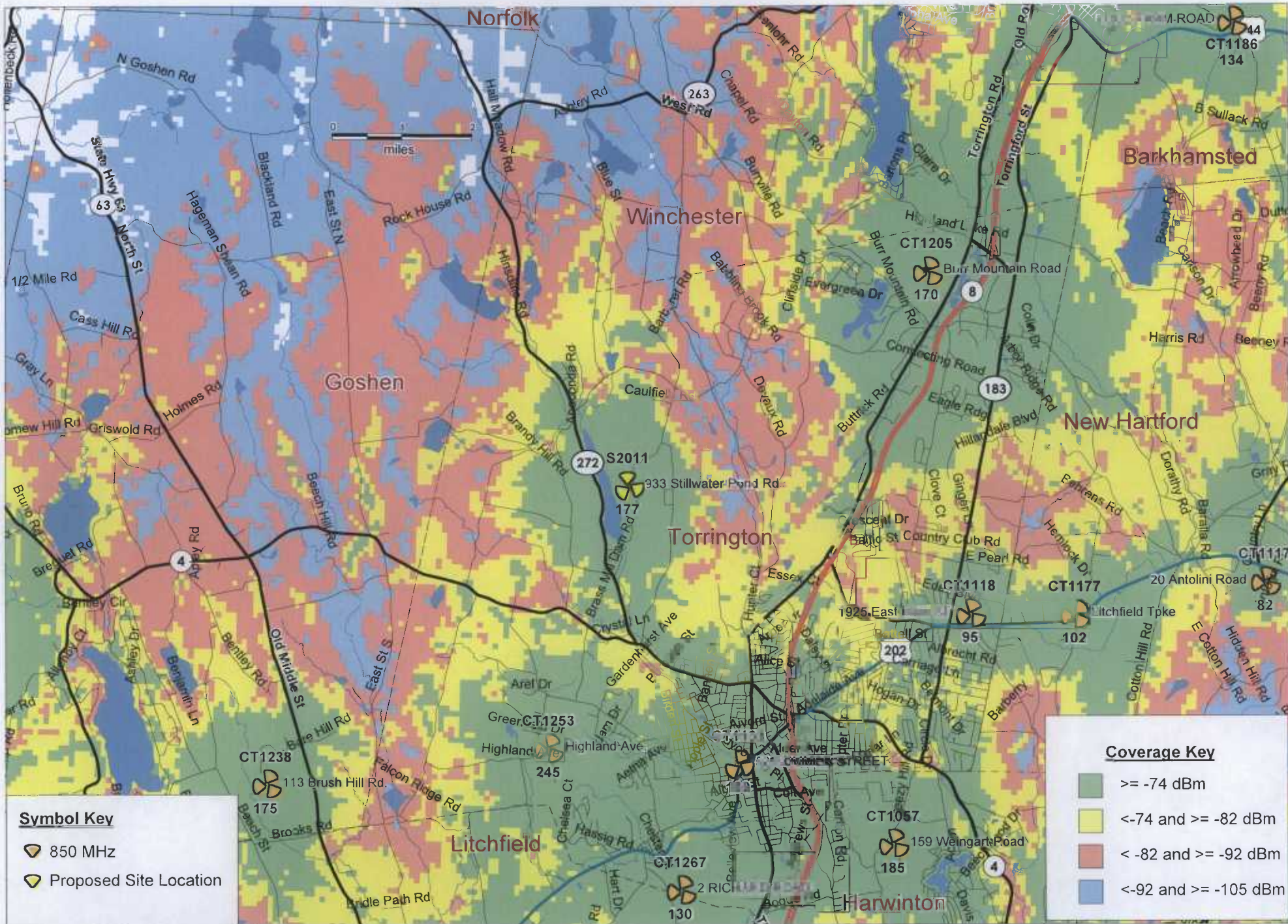


**Symbol Key**



- 850 MHz
- Proposed Site Location

**Coverage Key**





- $\geq -74$  dBm
- $< -74$  and  $\geq -82$  dBm
- $< -82$  and  $\geq -92$  dBm
- $< -92$  and  $\geq -105$  dBm



**Symbol Key**

-  850 MHz
-  Proposed Site Location

**Coverage Key**

-  >= -74 dBm
-  <-74 and >= -82 dBm
-  <-82 and >= -92 dBm
-  <-92 and >= -105 dBm

Existing & Proposed Coverage at 180 ft AGL

Torrington, CT

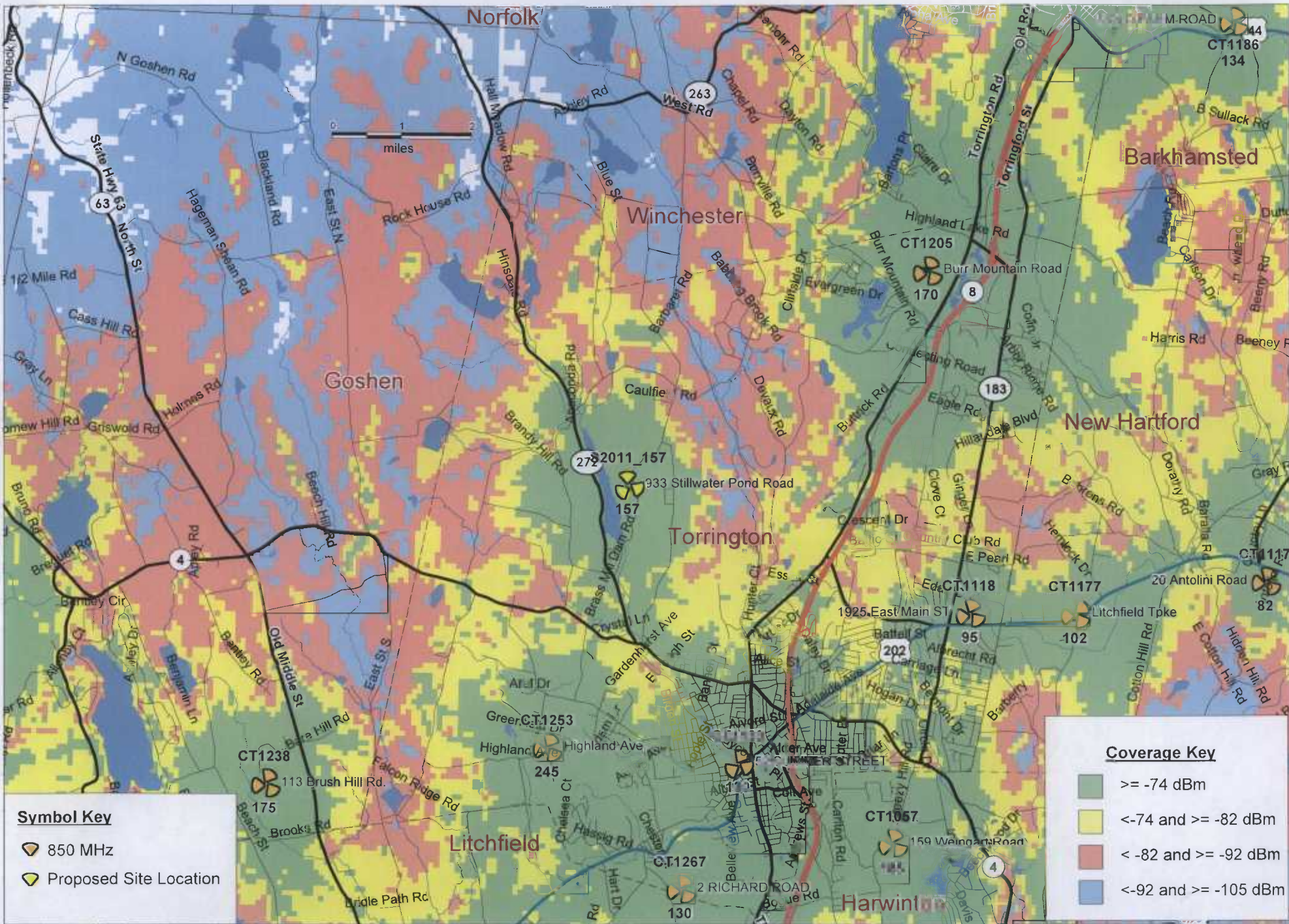
933 Stillwater Pond Road  
Torrington, CT



PREPARED ON  
DATE: 01/19/2010

REV 9





**Symbol Key**

- 850 MHz
- Proposed Site Location

**Coverage Key**

- >= -74 dBm
- <-74 and >= -82 dBm
- < -82 and >= -92 dBm
- <-92 and >= -105 dBm

Existing & Proposed Coverage at 160 ft AGL

Torrington, CT

933 Stillwater Pond Road  
Torrington, CT



PREPARED ON \_\_\_\_\_  
DATE: 01/19/2010

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## CERTIFICATE OF SERVICE

I hereby certify that on this day, an original and twenty copies of the foregoing pre-filed testimony were served on the Connecticut Siting Council electronically via email and by overnight mail.

Dated: January 20, 2010

A handwritten signature in blue ink that reads "Lucia Chiochio". The signature is written in a cursive style and is positioned above a horizontal line.

Lucia Chiochio

cc: Michele Briggs, AT&T  
John Blevins, AT&T  
Anthony Wells, C Squared  
Marie Burbank, SAI  
Rodney Bascom, P.E., CHA  
Christopher Fisher, Esq.