

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

**IN RE:**

APPLICATION OF NEW CINGULAR,  
WIRELESS PCS, LLC FOR A  
CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AND PUBLIC NEED  
FOR THE CONSTRUCTION,  
MAINTENANCE AND OPERATION OF A  
TELECOMMUNICATIONS FACILITY AT  
95 BALANCE ROCK ROAD, HARTLAND,  
CONNECTICUT

DOCKET NO. 408

January 27, 2011

PRE-FILED TESTIMONY OF  
ANTHONY WELLS

Q.1. 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.

Q.2. 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 and assistance to AT&T's in-house radio frequency engineers in preparing for and presenting this application to the Siting Council.

Q.3. 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 preparation coverage plots; our review of information regarding AT&T's network and coverage objectives, technical constraints in selecting proposed facilities, evaluation of proposed alternative sites and the specific need for the proposed facility.

Q.4. 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 as part of AT&T's Application and responses to the Siting Council's interrogatories. AT&T currently experiences a coverage gap along Route 20 in the

north-eastern portion of Hartland. The proposed facility at either Site A or Site B will provide needed wireless communications service to Route 20 and the surrounding roads and areas as well as portions of Tunxis State Park. The proposed facility will hand-off with AT&T's existing facility to the east on the Town-owned tower located at 22 Welsh Road.

A propagation plot for the proposed Site B facility is attached.

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

A: C Squared reviewed the proposed facility 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 Hartland. 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 facility would provide service to the target area and confirmed the minimum height required for the proposed facility.

Q.6. What is the approximate distance along Route 20 that currently does not have service that will be served by the proposed Facility?

A. The existing gap along Route 20 is approximately 3.0 miles. The proposed facility will provide service along 2.8 miles of this gap.

Q.7 Please explain why AT&T cannot meet its coverage objectives by locating a facility on towers in Granville, Massachusetts.

A. The existing towers in Granville, Massachusetts are located too far from the area that AT&T is seeking to provide service. In addition, AT&T is currently located on the two towers located in Granville (North Lane and Sodom Street) to provide service outside of the area targeted for service by the proposed facility.

Q.8. Please explain why AT&T cannot meet its coverage objectives for this proposed facility by increasing the height of its surrounding existing facilities.

A. AT&T cannot meet its coverage objectives by increasing the height of its existing surrounding sites due to the distance of the surrounding existing facilities from AT&T's objective area and the terrain that characterizes the area where AT&T is seeking to serve. Simply stated, the existing surrounding towers are located too far from AT&T's objective area and increasing the height of AT&T's existing facilities would not overcome the terrain in this area. This is demonstrated in a coverage plot that was submitted on January 7, 2011 which depicts coverage from the surrounding sites with AT&T's facilities located at 200' AGL. This plot clearly shows that even at 200' AGL, AT&T's existing surrounding sites cannot meet the coverage objectives of the proposed facility.

Q.9. Will the proposed facility provide wireless service to the south along Route 179?

A. The proposed facility will cover some portion of Route 179 near the intersection with Route 20. However, the proposed facility will not provide service along all of Route 179 heading further south from the intersection of Route 20.

Q.10. Will AT&T require another facility to the south to provide service along Route 179 and the areas south of the intersection of Route 179 and Route 20?

A. Yes. A facility other than the proposed facility will be required to provide service along Route 179 south of the Route 179 and Route 20 intersection. It is not possible to meet the coverage objectives for the proposed facility and provide service along Route 179 to south of the intersection of Route 179 and Route 20.

As shown on the propagation plot attached, the proposed facility will work in conjunction with an additional proposed site to the south at 261 South Road.

Q.11. Does AT&T use the same frequency in this area of Connecticut and Granville area of Massachusetts?

A. Yes, AT&T uses the same frequency in this area of Connecticut and the Granville area of Massachusetts.

The statements above are true and accurate to the best of my knowledge.

*anthony wells*

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Anthony Wells

Date: January 27, 2011

CERTIFICATE OF SERVICE

I hereby certify that on this day, a copy of the foregoing was submitted electronically and by overnight mail to the Connecticut Siting Council and to:

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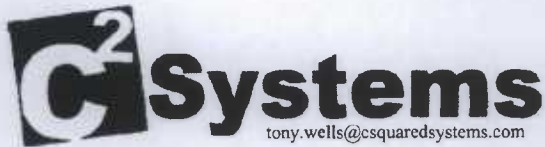
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Dated: January 27, 2011

  
Lucia Chiochio

cc: Michele Briggs, AT&T  
David Vivian, SAI  
Anthony Wells, C Squared  
Scott Pollister, C Squared  
Dean Gustafson, VHB  
Michael Libertine, VHB  
Christopher B. Fisher, Esq.





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.

**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**

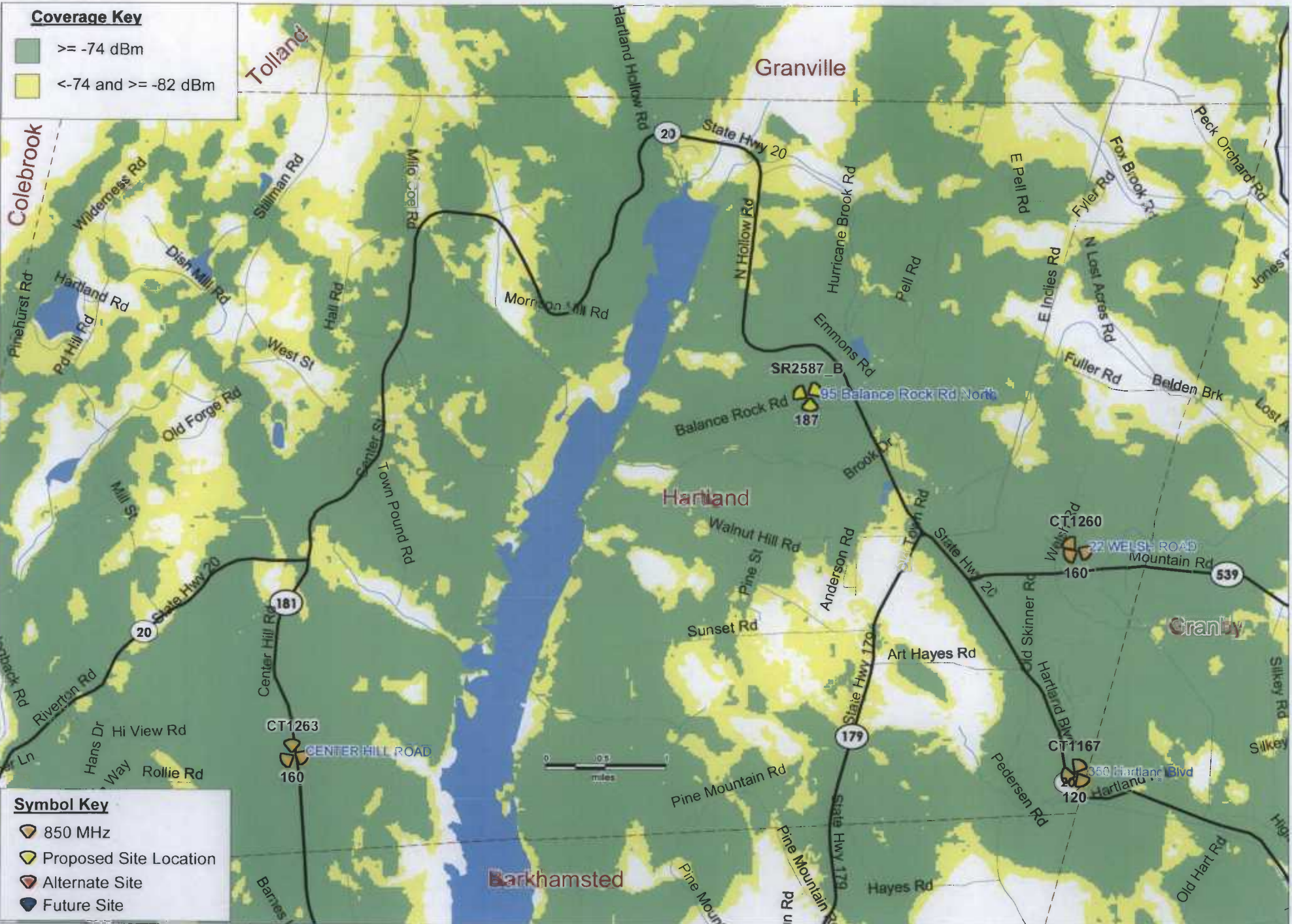
- Responsible for the design and performance of an analog 800 MHz communication system consisting of over 200 cell sites in New England.
- Responsible for testing and verification of over 100 cell sites to insure accuracy of propagation models and cell site placement.
- Monitored and improved system 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.

EXHIBIT A



**Coverage Key**

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



**Symbol Key**

- 850 MHz
- Proposed Site Location
- Alternate Site
- Future Site

Existing & Proposed Coverage - Site B

SR2587

East Hartland, CT



PREPARED ON  
DATE: 01/26/2011

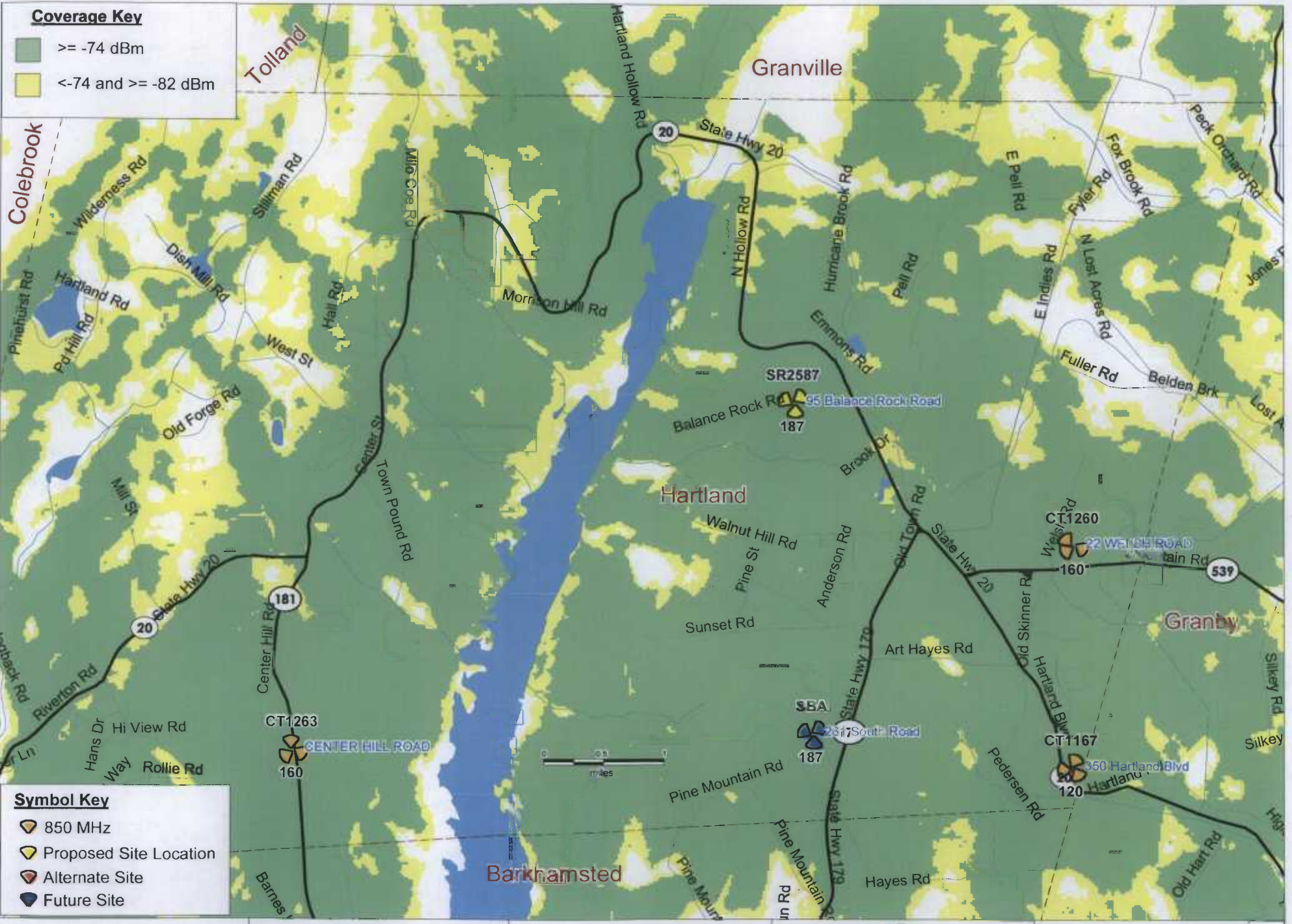
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**EXHIBIT B**

**Coverage Key**

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



**Symbol Key**

- 850 MHz
- Proposed Site Location
- Alternate Site
- Future Site

Existing, Alternate & Future Coverage

SR2587

East Hartland, CT



PREPARED ON  
DATE: 01/26/2011

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