

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

IN RE:

APPLICATION OF OPTASITE TOWERS LLC  
AND OMNIPOINT COMMUNICATIONS, INC.  
FOR A CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AND PUBLIC NEED FOR  
THE CONSTRUCTION, MAINTENANCE AND  
OPERATION OF A TELECOMMUNICATIONS  
FACILITY AT 93 LAKE STREET  
MANCHESTER, CONNECTICUT

DOCKET NO. 351

Date: JANUARY 22, 2007

**PRE-FILED TESTIMONY OF SCOTT HEFFERNAN**

Q1. Please summarize your professional background in telecommunications.

A. My career in the wireless industry has spanned the past eleven years. For the past two years, my responsibilities as a contractor for T-Mobile have included the design and integration of the T-Mobile wireless network. Prior to this period, I was responsible for the design, integration, optimization and management of network buildouts for commercial wireless carriers, including Nextel, AT&T Wireless, Cingular, and Voicestream (T-Mobile's predecessor). Additionally, I have been involved in network design for government entities such as the Department of Homeland Security, Department of the Army, Department of the Navy, and the United States Marine Corps.

Q2. What does your testimony address?

A. The purpose of my testimony is to provide information relating to T-Mobile's existing network in this area of the state and to describe the need for a

proposed facility in the area. This includes information on the general design of T-Mobile's network and the technical constraints in selecting proposed facilities.

Q.3. Please describe T-Mobile's wireless network in Connecticut.

A. T-Mobile's predecessor entities began building a wireless network to provide PCS service in Connecticut in the mid 1990s. T-Mobile is licensed by the Federal Communications Commission to provide PCS service using frequencies in the 1900 MHz range. T-Mobile operates approximately 550 sites in Connecticut. Current efforts are directed to providing signal to areas without coverage and meeting demand for additional capacity within areas already served. Each new site must be chosen to meet the need for coverage and/or capacity without creating RF interference among sites.

Q4. What requirements does the nature of wireless technology place on T-Mobile's selection of cell site locations?

A: Like all personal communications service providers, T-Mobile's wireless network is based on the principle of frequency reuse. Cell site locations must be chosen to provide for sufficient signal strength overlap to allow call hand-off between cells without creating unnecessary duplicative coverage and frequency interference. Terrain variations and local land use policies and development further limit cell site locations.

Technological advances in service, such as the availability of data and video services through customer handsets, are also significant factors in system

development. Increased customer demand and expectations resulting from those advances drive the need for additional sites.

T-Mobile's required lower limit threshold is -84 dBm, which is expected to provide reliable in-vehicle coverage. A higher threshold level of -76 dBm is the minimum required to provide reliable in-building coverage. At levels below the -84 dBm threshold, signal degradation would be expected to result in areas of unreliable service to T-Mobile customers for voice and data services. In addition, levels below -84 dBm would adversely affect T-Mobile's ability to provide reliable E-911 services as mandated by the federal government.

Q5. Please describe T-Mobile's need for the proposed site.

A. The interrelationship between the proposed site and T-Mobile's existing system (including recently approved but not yet on-air sites) is depicted in the propagation plots included in Exhibit G of the Application. As shown, this proposed site is needed primarily to provide new coverage along Route 6/Route 44, Middle Turnpike East and the surrounding area.

Q6. How did T-Mobile analyze the proposed sites?

A. T-Mobile's RF engineers first utilized propagation prediction tools to determine the potential effectiveness of the proposed locations in meeting the identified coverage need. That analysis confirmed that the site would provide and would improve service generally within the area.

In order to determine the minimum height required to achieve the coverage objective, T-Mobile then conducted a drive test. The drive test allowed T-Mobile to gather accurate signal strength measurements along the target routes at various heights.

The drive test revealed that an antenna center line of 107' would allow T-Mobile to achieve the coverage objective levels in this area. At heights below 107', the coverage along Route 6/Route 44 as well as Middle Turnpike starts to break apart and fall below the T-Mobile minimum required threshold of -84 dBm.

Q7. Please summarize the basis for the height of this proposed facility

A. Based upon the results of the drive test conducted at the proposed Manchester facility, the minimum height required to fully cover the intended coverage objective is 107' AGL. At heights below 107' AGL, the coverage within the target area of Route 6/Route 44, starts to fall below the required minimum T-Mobile coverage threshold of -84 dBm. For that distance, T-Mobile users would be likely to briefly experience poor service quality in this area. A minimum height of 107' at the Site to locate T-Mobile's antennas, will allow T-Mobile to provide adequate coverage within the targeted portion of Route 6/Route 44, Middle Turnpike East and the surrounding area.

Q8. Please summarize the relationship between the proposed site at 93 Lake Street and the site proposed by T-Mobile at 1027 Middle Turnpike East in Docket No. 328.

As discussed in the Application, the proposed site at 93 Lake Street at the proposed 107' AGL will negate T-Mobile's need for a facility at 1027 Middle Turnpike East in Docket No. 328.

Q9. Please summarize the relationship between the proposed site at 93 Lake Street and the site proposed by T-Mobile at 12 Carpenter Road in Bolton in Docket 323.

Because of the existing terrain in this area of Manchester and Bolton, T-Mobile cannot obtain its coverage objectives for this application and the Docket 323 (12 Carpenter Road in Bolton) application through the use of a single site due to the existing terrain in this area. T-Mobile requires both sites in order to provide adequate coverage in this area. Therefore, approval of Docket 323 does not negate T-Mobile's need for this proposed site. This can be seen from the propagation maps, included in the Application, showing T-Mobile's existing coverage in the area (including coverage from the Docket 323 site) and existing and proposed coverage.

01/21/2008

Date



Scott Heffernan

Subscribed and sworn before me this 21<sup>st</sup> day of January, 2008.

By:



Notary

TINA CODELLA  
NOTARY PUBLIC  
My Comm. Expires 12/31/2012