

JESSE A. LANGER

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May 10, 2010

VIA FEDERAL EXPRESS and ELECTRONIC MAIL

Mr. S. Derek Phelps  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 06051

RECEIVED  
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CONNECTICUT  
SITING COUNCIL

**Re: Docket No. 399,**  
**Application by T-Mobile Northeast LLC for a Certificate**  
**of Environmental Compatibility and Public Need for a**  
**Telecommunications Facility at 166 Pawcatuck Avenue**  
**in the Town of Stonington, Connecticut**

Dear Mr. Phelps:

Enclosed herein please find the following document filed on behalf of the Applicant,  
T-Mobile Northeast LLC:

- (1) Original and twenty (20) copies of Responses by T-Mobile Northeast LLC to the Post-Hearing Interrogatories by the Connecticut Siting Council.

Please contact me if you have any questions.

Very truly yours,

  
Jesse A. Langer

JAL:dIm  
Enclosure

cc: Service List

**STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL**

RE: APPLICATION BY T-MOBILE  
NORTHEAST LLC FOR A  
CERTIFICATE OF ENVIRONMENTAL  
COMPATIBILITY AND PUBLIC NEED  
FOR A TELECOMMUNICATIONS FACILITY  
AT 166 PAWCATUCK AVENUE THE TOWN  
OF STONINGTON, CONNECTICUT

DOCKET NO. 399

Date: May 10, 2010

**INTERROGATORY RESPONSES TO CONNECTICUT SITING  
COUNCIL FROM APPLICANT T-MOBILE NORTHEAST LLC**

The Applicant, T-Mobile Northeast LLC ("T-Mobile"), submits the following responses to the first set of Post-Hearing Interrogatories propounded by the Connecticut Siting Council ("Council") in connection with the above-captioned Application. T-Mobile reiterates its objection to the request for information related to the use of alternative technologies, specifically – deployment of an outdoor distributed antenna system ("Outdoor DAS") in lieu of the proposed 120 foot monopole structure at 166 Pawcatuck Avenue, Stonington, Connecticut ("Facility"). Consideration of any particular form of technology, such as DAS, as a potential alternative to the Facility proposed in this application exceeds the scope of the Council's authority over wireless carriers and services under federal law.

Any requirement or preference for Outdoor DAS is preempted by federal law. The federal government has occupied the field of technical standards for wireless transmissions for decades, and any action by a state or local government entity to dictate or encourage the adoption of alternative technologies, such as DAS, interferes with the federal regulatory scheme and is preempted. *See, e.g., New York SMSA Ltd. Partnership v. Town of Clarkstown*, 603 F. Supp. 2d 715 (S.D.N.Y. 2009), *appeal*

*docketed*, No. 09-1546 (2d Cir. Apr. 14, 2009). In addition, selecting or encouraging particular technologies conflicts directly with the Federal Communication Commission's goal of encouraging maximum flexibility on the part of personal wireless service providers in selecting the technology that they wish to use to deploy their federally-licensed services. Further, any requirement or preference for the use of a particular technology would establish an unlawful barrier to entry under 47 U.S.C. § 253, insofar as it would "materially inhibit[] or limit[] the ability of any competitor or potential competitor to compete in a fair and balanced legal and regulatory environment." *TCG New York, Inc. v. City of White Plains*, 305 F.3d 67, 76 (2d Cir. 2002) (quotation and citation omitted). Finally, any Outdoor DAS preference or requirement likely constitutes preempted entry regulation under 47 U.S.C. § 332(c)(3)(A), and could run afoul of particular restrictions on local zoning in Section 332(c)(7)(B).

Without waiver of its rights under federal law, T-Mobile voluntarily provides the following general information to resolve expeditiously the pending application.

1. Is it possible to utilize DAS technology in the area to be served by the proposed facility, particularly along Amtrak rail line?

**A1**

- (1) DAS technology is not a viable alternative to the proposed Facility. The area to be served by the proposed Facility is not confined to the Amtrak rail line, rather it also encompasses Pawcatuck Avenue, River Road and Greenhaven Road, just south of Interstate 95, and the surrounding area.**

(2) While it is difficult to respond to this interrogatory with specificity due to the absence of an existing concrete Outdoor DAS plan, based on a review of the existing conditions found in the area where the Facility is proposed, an Outdoor DAS system faces a panoply of technical problems, including, but not limited to:

(A) The unavailability of a sufficient number of existing utility poles on which to string fiber-optic cable and install Outdoor DAS nodes;

(B) The general, relatively low height of those utility poles that do exist and might be used for the DAS nodes;

(C) The existing, uneven terrain and mature vegetation, which would prevent Outdoor DAS nodes from providing reliable coverage throughout the area where there is currently a gap in coverage;

(D) The unavailability of unused fiber-optic cables ("dark fiber"), to serve as the backbone for the Outdoor DAS network;

(E) The need to access easements, enter pole attachment agreements to use the various utility poles, and/or secure conduit agreements, the complexity of which is compounded by the large number of DAS nodes necessary to provide reliable wireless service over the coverage area which the proposed Facility is designed to serve;

In designing Outdoor DAS systems, these items and others must be studied before any technical design can be performed. Failure to do so can cause a major flaw in the Outdoor DAS network design relative to coverage and capacity. It is for these reasons that Outdoor DAS networks are typically deployed only in limited circumstances where a traditional macro-cell site cannot provide reliable coverage and a DAS system is shown to be a better alternative. Furthermore, today's wireless systems provide enhanced communications beyond just voice along the roadways or transportation corridors, such as the Amtrak line. The demand to provide reliable in-building coverage for voice and data communications, as well as to provide for enhanced 911 access, is a paramount requirement in today's wireless environment.

As a general overview, in an Outdoor DAS system, the base station equipment is located at the end of the fiber run(s). The information is then transferred from pole to pole via fiber-optic cable from a base station hotel to each of the pole attachments. In essence, the wireless system becomes a mesh of wires connecting all of the end points or "nodes." Ultimately, what started out as a wireless system becomes a hybrid wired/wireless network. Moreover, Outdoor DAS systems generally rely upon low-powered nodes (with the available output power at each node shared by one or more wireless carriers) that use short omni-directional antennas or lower gain panel antennas with limited

choices for patterns. These limitations make it difficult for a carrier to maintain control over the design and optimization of a wireless network. By contrast, traditional macro- cell site architecture allows a wireless provider to use directional antennas, specific antenna patterns, and customized orientation or down tilt to allow for optimum coverage and minimal interference. Using antennas that can focus in on one specific direction, also known as "sectorization," is especially important to avoid interference over 3G wideband CDMA networks like the one T-Mobile operates.

By way of additional background, T-Mobile is in the business of providing wireless services to customers using a national network of more than 40,000 independent cell sites. T-Mobile is not a certified telecommunications provider in Connecticut, and thus it does not possess the regulatory authority necessary to secure pole attachment rights and/or gain access easements, both of which would be critical in constructing an Outdoor DAS system in the area in question.

The combination of these factors makes the operation of a DAS network over such a large geographic open area infeasible, especially for T-Mobile, and these issues are thus among the many reasons why most DAS networks are deployed in controlled / confined environments.

2. How many DAS locations would be needed to provide coverage to the area that would be covered by the proposed facility?

A2 It is difficult to provide an accurate response to this interrogatory, given the technical challenges noted in the response to Interrogatory 1. As discussed above, DAS is not a preferred solution in any large, open area such as the one involved in this application, but the lack of available existing infrastructure in the subject area (including suitable utility poles, dark fiber, and easement access) makes it particularly unsuitable for Outdoor DAS deployment. Because the existing infrastructure in the area does not provide a good basis for deploying Outdoor DAS, there is not a ready means of plotting out potential Outdoor DAS node locations and, thus, there is no simple means of determining with specificity how many Outdoor DAS nodes would be needed (since the number of nodes required ultimately will depend on where each node can be located).

With that said, and in the absence of a detailed engineering study, as a very rough estimate, the breadth of the area at issue would likely require T-Mobile to acquire and/or construct a significant number of Outdoor DAS sites, perhaps more than twenty-one (21) DAS nodes, to cover the total coverage objective. This number may grow taking into account the uneven terrain and mature vegetation and the addition of additional frequencies or other carriers.

3. What would be the estimated cost of such a DAS system?

**A3** As discussed in the response to Interrogatories 1 and 2, there are a number of serious technical issues that would make deployment of a DAS solution infeasible in this case, and that make it difficult to even estimate the precise number of Outdoor DAS nodes that would be required to provide service. These technical barriers include a limited number of suitable utility poles on which to place nodes, a lack of available dark fiber to connect the nodes, and a lack of access to easements in which to place nodes and the requisite fiber equipment.

Given these technical barriers, it is not possible to provide a realistic cost estimate for deploying an Outdoor DAS in this case. The significant drivers of cost for an Outdoor DAS include, but are not limited to, engineering and design work, the number of nodes required, the types of antennas, back-up power supplies and other equipment at each node, the number of new facilities needed (such as new poles or other structures) to accommodate the placement of these nodes, the cost of gaining access to rights of way, vaulting costs if any of the node equipment needs to be installed *below* ground, and the cost of constructing the infrastructure necessary to connect the nodes where existing infrastructure cannot be used.

Here, the engineering factors set forth in the response to Interrogatory 1 counsel so heavily against the use of Outdoor DAS that it is difficult or impossible to determine even how many nodes would be required or where the fiber would run to connect these nodes. As a result, there does not appear to be any way to easily quantify the cost of constructing a DAS.

4. What would be the process for obtaining the necessary easements for installing a DAS system in this area? From whom would such easements be necessary?

**A4** These interrogatories are difficult to answer, and as discussed in the response to Interrogatory 1, T-Mobile does not have the operating authorities it would need to build, operate and maintain an Outdoor DAS system over public and private rights of way within the State of Connecticut and within municipal rights of way.

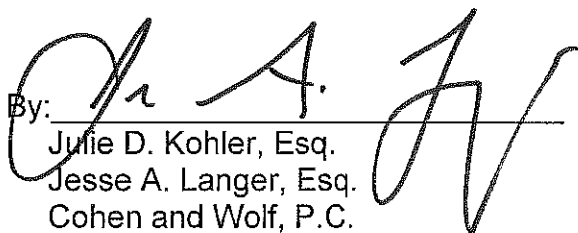
From T-Mobile's general knowledge, the minimum requirements would include: permission from the entity or entities (i.e. utility companies or municipalities) controlling the existing infrastructure, which includes proper agreements for each potential DAS node, as well as necessary access rights for each potential DAS node, which may involve utility providers, state and local governments and related agencies. As noted above, dark fiber to support each potential DAS site would also be required. Without existing dark fiber it would be necessary to install new fiber, either above or below ground. The issue of back-up power is also an important consideration, which would require additional

permissions, by way of easement or similar arrangements. Back-up power must be available at the hub of the DAS system and at each node to avoid a situation where a generalized power failure in the area where the Outdoor DAS system is deployed results in simultaneous failures of the network for multiple wireless service providers and endangers public safety. Putting back-up power systems in place at DAS nodes is typically much more difficult than getting back-up power to a macro cell where there is generally more space to install back-up generators or batteries (and, of course, macrocells require fewer such installations, since there are fewer transmitting locations). If additional back-up power is needed at each node, it can make the Outdoor DAS provider's job of securing necessary easements and other operating authorities more complicated as well as significantly drive up the costs for the wireless providers that chose to implement an Outdoor DAS solution.

Even if an Outdoor DAS system could theoretically provide equivalent coverage (which, for the reasons explained above, it cannot), T-Mobile has an immediate need for the proposed Facility. Accordingly, Outdoor DAS is neither an available nor technologically feasible alternative to the proposed facility. Even if federal law permitted the Council to require consideration of an Outdoor DAS, which it does not, federal law does not permit the denial of a personal wireless facility siting application on the basis of a purely hypothetical alternative.

Respectfully submitted,

T-MOBILE NORTHEAST LLC

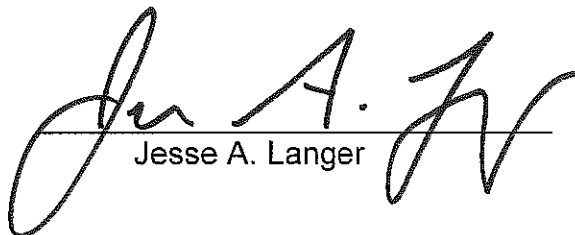
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**CERTIFICATE OF SERVICE**

I hereby certify that on this day a copy of the foregoing was delivered by Electronic Mail and First Class U.S. Mail, postage prepaid, to all parties and interveners of record, as follows:

Kenneth C. Baldwin, Esq.  
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Jesse A. Langer