

Alternative Technologies

ClearLinx Distributed Antenna System

102. ClearLinx, through petition 782, since withdrawn, sought to construct and operate a DAS system on the Merritt Parkway in the towns of Westport, Norwalk, New Canaan, Stamford, and Greenwich, including the parkway in the Round Hill Road area of Greenwich. (Council Administrative Notice Item No. 13, p. 1, Attachment C; Cellco 4, Q. 2)
103. The ClearLinx DAS is designed to provide wireless service exclusively to the Merritt Parkway. (Tr. 5, p. 82)
104. The ClearLinx DAS could accommodate multiple service providers utilizing the same DAS infrastructure. The DAS could support all current wireless service technologies, including carriers utilizing different technologies and/or frequencies. (Council Administrative Notice Item No. 13, p. 6; Tr. 5, pp. 37-38)
105. ClearLinx's DAS infrastructure consists of a base station and nodes. The base station houses the wireless service provider equipment. Wireless radio frequency signals are routed via fiber optic cable from the base station to the nodes. The nodes consist of a repeater and a small antenna that transmits wireless radio frequency signals to the coverage area. (Council Administrative Notice Item No. 13, p. 3)
106. Each node could provide approximately 800-1,000 feet of coverage along the Merritt Parkway at a signal level threshold of -84 dBm. (Council Administrative Notice Item No. 13, p. 4; Tr. 5, p. 55)
107. ClearLinx proposed to install three nodes on the Merritt Parkway in the Round Hill Road area of Greenwich. The nodes would provide approximately 1.5 miles of coverage to the highway in this area. (Council Administrative Notice Item No. 13, Attachment C)
108. The nodes in the Round Hill Road area would be suspended over the highway using braided steel cables attached to existing utility poles. (Council Administrative Notice Item No. 13, Attachment E)
109. Coverage from each node would extend approximately 500 to 1,000 feet into areas surrounding the highway, depending on the location of the node. The quality of this incidental coverage would vary, since areas outside of the highway are not ClearLinx's infrastructure objectives. (Tr. 5, pp. 58, 118)
110. The ClearLinx DAS would not provide a comparable amount of coverage to that provided by the proposed Round Hill Road facility. (Tr. 5, p. 83)
111. ClearLinx is not proposing to install a DAS in the residential sections of the Round Hill Road area. (Tr. 5, pp. 89, 118)
112. Cellco, Cingular, T-Mobile, and Sprint-Nextel do not have any executed contracts, letters of intent, letters of interest, or any other legal document with ClearLinx to use the Merritt Parkway DAS. (Tr. 5, pp. 134, 136, 173, 184, 189, 201)
113. Prior to submission of the application, Cellco considered using a design of a short structure at the proposed site combined with a limited DAS system, but rejected this alternative due to the number of nodes required to achieve coverage equal to that of the proposed facility. Approximately 30 nodes would be required. (Cellco 9, p. 8; Tr. 3, pp. 35-36)

114. Cellco would not locate on the ClearLinx DAS if it were constructed. Cellco seeks to provide coverage to the Merritt Parkway as well as residential areas north and south of the parkway. The Round Hill Road site provides adequate coverage to the Merritt Parkway as well as residential areas north and south of the highway. (Cellco 23, pp. 3-4; Cellco 24, Q. 2)
112. If a DAS served the Merritt Parkway in the Round Hill area, Cellco would need a facility at the Round Hill location to provide service to areas north and south of the highway. Technically, other locations could provide such coverage, but finding suitable property to develop an alternative facility in this area is problematic. Cellco has searched for a suitable facility location in this area for approximately 10 years. (Cellco 1, Attachment 8; Cellco 23, pp. 3-4; Tr. 5, pp. 29, 165-166)
113. T-Mobile would not locate on the ClearLinx DAS if it were constructed. T-Mobile seeks to provide coverage to both the Merritt Parkway and surrounding residential areas. (T-Mobile 3, Q. 18; T-Mobile 6, pp. 1-2; Tr. 4, p. 55; Tr. 5, pp. 184-185)
114. T-Mobile estimates that ClearLinx DAS would provide approximately 40% of the coverage footprint and approximately 60% of the roads in the Round Hill area when compared to the coverage provided by the proposed Round Hill Road site. (T-Mobile 6, pp. 4-5)
115. New Cingular would not locate on the ClearLinx DAS if it were constructed. New Cingular seeks to provide coverage to both the Merritt Parkway and surrounding residential areas. (New Cingular 2, Q. 18; New Cingular 9, Q. 2)
116. Sprint Nextel would not locate on the ClearLinx DAS if it were constructed. Sprint Nextel seeks to provide coverage to both the Merritt Parkway and surrounding residential areas. (Sprint 9, Q. 1; Tr. 5, pp. 137-138)

Combined and Dual Band Antennas

117. A combined antenna system, a system that consolidates all of the carriers' transmit and receive needs onto one antenna, is not a viable alternative since no known manufacturer markets such a product. (Cellco 19, p. 3; Cingular 2, Q. 17; Tr. 4, pp. 109-110)
118. Dual band antennas allow for the use of cellular and PCS frequencies on the same antenna. (Cellco 19, p. 2)
119. Cellco would not use dual-band antennas in the Round Hill area since dual band technology would reduce coverage by 1.5 db. Installing dual-band antennas at 110 feet at the proposed site would reduce Cellco's coverage footprint from 4.3 square miles to 3.4 square miles and would include a 0.1-mile gap in PCS coverage on the Merritt Parkway. (Cellco 4, Q. 8; Tr. 3, p. 60; Tr. 4, p. 31)
120. Sprint Nextel operates an iDEN and PCS network. Each network would require separate antennas since a dual band antenna suitable for operation of both networks has not been developed. (Tr. 4, pp. 141-142)
121. New Cingular proposes to use dual-band antennas at the site. (New Cingular 1, Q. 9)

DOCKET NO. 309 - Cellco Partnership d/b/a Verizon Wireless }
application for a Certificate of Environmental Compatibility and }
Public Need for the construction, maintenance, and operation of a }
wireless telecommunications facility located at the Round Hill }
Community Church, 395 Round Hill Road, Greenwich, }
Connecticut.

Connecticut

Siting

Council

February 6, 2007

Opinion

On November 9, 2005, Cellco Partnership d/b/a Verizon Wireless (Cellco) applied to the Connecticut Siting Council (Council) for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, operation, and maintenance of a wireless telecommunications facility at 395 Round Hill Road, Greenwich, Connecticut. The proposed facility would provide wireless coverage to the Merritt Parkway and surrounding roads in the Round Hill area of Greenwich.

On August 31, 2006, the Council denied Cellco's application without prejudice in order to best determine if the installation of a Distributed Antenna System (DAS) on the Merritt Parkway, if such a system were installed, might interrelate with or otherwise duplicate the represented benefit of the proposed Round Hill Road facility. On September 16, 2006, the Council, pursuant to Connecticut General Statutes Section 4-181a (a), voted to reconsider the denial without prejudice and reopen the record. The Council conducted a hearing on November 9, 2006 to hear testimony from the applicants, parties and intervenors, and a DAS representative regarding coverage objectives and wireless system design limitations in the Round Hill area.

Intervenors to the proceeding are Omnipoint Communications, Inc. (T-Mobile), New Cingular Wireless PCS LLC (New Cingular), Sprint Nextel Corporation (Sprint Nextel) and local residents Elizabeth Galt and Cliff Berger.

Cellco proposes to construct two 115-foot telecommunications towers on an 8.1-acre parcel owned by the Round Hill Community Church at 395 Round Hill Road in Greenwich. On the westerly tower, Cellco would locate PCS antennas at a height of 110 feet and cellular antennas at 100 feet. New Cingular would install dual band antennas at a height of 90 feet. On the easterly tower, T-Mobile would install antennas at the 110 foot level, and Sprint Nextel would install antennas at the 100-foot and 90-foot levels. A U-shaped equipment building would be constructed at the base of the facility. The facility would be located within a wooded area on the eastern portion of the parcel. The western portion of the parcel is developed with church-related buildings.

The Council has carefully analyzed the record in this proceeding, evaluating the proposed coverage objectives, existing facilities in the area, alternative properties and structures, and alternative technologies, including DAS. All four carriers seek to provide coverage to the Merritt Parkway and surrounding residential areas of the Round Hill section of Greenwich. The nearest existing tower facilities to the Round Hill area are located 1.1 miles east and 2.0 miles south of the proposed site. Propagation modeling for all of the carriers indicates these facilities are too far from the target service area to provide adequate coverage.

The Round Hill area is primarily a low density residential area that lacks commercial and industrially zoned parcels except for a gas station near the Round Hill Community Church site and CL&P distribution switchyard adjacent to the Merritt parkway. These parcels are not available due to property size constraints. T-Mobile attempted to develop a tower at the Round Hill Fire Department but ultimately did not pursue the site after receiving significant neighborhood opposition. Two church steeples exist in the area but are not of sufficient height to allow for adequate coverage throughout the area, and the owners of these properties were not interested in lease arrangements. No other suitable structures are within the Round Hill area.

All four carriers examined the feasibility of using a DAS to provide coverage to the area. None of the carriers would locate on a DAS, since the DAS would be designed for the sole purpose of providing coverage to the Merritt Parkway. Areas within 500 to 1,000 feet of the highway may receive incidental coverage from the DAS; however, residential areas north and south of the Merritt Parkway would not have adequate coverage.

Based on the substantial gaps in existing coverage for all four wireless telecommunications carriers, the limited coverage provided by a DAS, and the lack of suitable existing structures, the Council finds a technical need for a new tower in the Round Hill area.

The Council finds the site appropriate for telecommunications use due to the wooded nature of the site and the low density residential development in the surrounding area. The site itself is surrounded by trees ranging in height from 55 feet to 90 feet. The average tree height in the surrounding area is 60 feet.

The visual impact of the facility is mitigated by the relatively short height of the towers, existing wooded vegetation throughout the Round Hill area, low density residential development and a facility design that uses internally mounted antennas rather than antenna platforms. Although a single tower could provide coverage, a significantly higher tower than the one proposed would be required and antennas would need to be mounted on platforms to meet coverage objectives. Additionally, the lessor did not want this type of facility on the property, believing a higher tower with platforms would have a greater visual impact than two 115-foot towers.

The proposed facility would be visible year-round from approximately 18-acres within two-miles of the site. Approximately 17 residences may have views of the upper portions of the facility. Three residences adjacent to the site may have views of the lower portions of the facility. No abutting property would have year-round views of the entire facility. The Council believes the 115-foot height of the facility is not visually excessive to the surrounding area. Photo-documentation of the site indicates the surrounding area is mostly wooded, limiting open views of the structure.

The Council examined the coverage needs of all four carriers, analyzing coverage attained at various antenna heights to best determine the proper height of the facility. Cellco is designing the site with a signal level threshold of -85 dBm and seeks to install three PCS antennas at the 110-foot level of the westerly tower. If antennas were installed at a height of 100 feet, the signal would degrade to -86 to -90 dBm on a 0.2-mile section of the Merritt Parkway east of Round Hill Road. This degradation would not allow the site to operate at Cellco's design standard of 99% reliability.

New Cingular would meet coverage objectives with an antenna height of 90 feet on the westerly tower. Lowering the antenna height would cause vegetation induced signal interference to the residential areas to the northwest.

T-Mobile seeks to install three PCS antennas at the 110-foot level of the easterly tower. T-Mobile's network design uses a signal level threshold of -84 dBm. If T-Mobile installed antennas at 100 feet, the signal would degrade to -86 to -90 dBm on a 0.25-mile section of the Merritt Parkway. Although a call would be maintained through the degraded signal area, a caller would experience call clarity issues and the cell site might have difficulty assigning the call to the proper sector.

Sprint Nextel has designed its coverage objectives for its iDEN network with antennas at 100 feet and its PCS network with antennas at 90 feet on the easterly tower. Coverage objectives for both networks would be met with a tower height of 115 feet.

The Council believes the requested height of 115 feet for both towers is justified when balanced with the visual impact of the facility. Lowering the height of one or both facility towers would compromise wireless coverage on the Merritt Parkway and the surrounding residential areas of Round Hill for only a minor reduction in visual impact.

Development of the proposed facility would not affect any wetlands or watercourses, or any rare, endangered, or special concern species. The proposed facility would have no effect on archaeological or historic resources.

According to a methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997), the combined radio frequency power density level of all the carriers has been calculated to amount to 57.8% of the FCC's Maximum Permissible Exposure at the base of the facility. This percentage is well below federal and state standards established for the frequencies used by wireless companies. If federal or state standards change, the Council will require that the facility be brought into compliance with such standards. The Council will require that the power densities be recalculated in the event other carriers add antennas to the facility. The Telecommunications Act of 1996 prohibits any state or local agency from regulating telecommunications towers on the basis of the environmental effects of radio frequency emissions to the extent that such towers and equipment comply with FCC's regulations concerning such emissions.

Based on the record in this proceeding, we find that the effects associated with the construction, operation, and maintenance of a telecommunications facility at the proposed site, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with policies of the State concerning such effects, and are not sufficient reason to deny this application. Therefore, we will issue a Certificate for the construction, operation, and maintenance of a 115-foot two tower telecommunications facility at 395 Round Hill Road, Greenwich, Connecticut.

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Siting

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February 6, 2007

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Cellco Partnership d/b/a Verizon Wireless, hereinafter referred to as the Certificate Holder, for a telecommunications facility at 395 Round Hill Road Greenwich, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The facility shall be constructed as a two-monopole facility with internally mounted antennas, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Cellco Partnership d/b/a Verizon Wireless and other entities, both public and private, but such towers shall not exceed a height of 115 feet above ground level.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Greenwich for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the towers, tower foundations, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the base of the facility, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed facility for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
6. The Certificate Holder shall provide reasonable space within one of the towers for no compensation for any Town of Greenwich public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.
7. If the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle both towers and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.
8. If the one or both towers of the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the unused portion of the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
9. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.
10. Any request for extension of the time periods referred to in Conditions 7 & 8 shall be filed with the Council not later than sixty days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Greenwich. Any proposed modifications to this Decision and Order shall likewise be so served.
11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Greenwich Time.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

Cellco Partnership d/b/a
Verizon Wireless

Intervenor

Omnipoint Communications, Inc.
(T-Mobile USA, Inc.)

Intervenor

Cliff Berger

Intervenor

New Cingular Wireless PCS, LLC

Intervenor

Sprint Nextel Corporation

Intervenor

Elizabeth Galt

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