

**DOCKET NO. 471** - Cellco Partnership d/b/a Verizon Wireless } Connecticut  
application for a Certificate of Environmental Compatibility and }  
Public Need for the construction, maintenance, and operation of a } Siting  
telecommunications facility located at Hamden Tax Assessor's Map }  
2826, Block 24, 208 Kirk Road (a/k/a 1075 Paradise Avenue), } Council  
Hamden, Connecticut.

September 28, 2017

### Opinion

On March 3, 2017, 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, maintenance, and operation of wireless telecommunications facility located at 208 Kirk Road in Hamden, Connecticut. The purpose of the proposed facility is to provide reliable wireless service to existing gaps in the central portion of Hamden and to increase existing network capacity at surrounding cell sites.

The United States Congress recognized a nationwide need for high quality wireless services in part through the adoption of the Federal Telecommunications Act of 1996 and directed the Federal Communications Commission (FCC) to establish a market structure for system development, and develop technical standards for network operations. Connecticut State law directs the Council to balance the need for development of proposed wireless telecommunications facilities with the need to protect the environment, including public health and safety.

Cellco is currently located on eight existing telecommunications facilities within a five-mile radius of the proposed site, and due to current network demands, these sites cannot adequately service the central Hamden area. Currently, Cellco is experiencing unreliable service for the 700 MHz LTE frequency in areas totaling 1.2 square miles and unreliable service for the 2100 MHz LTE frequency in areas totaling 2.3 square miles. Cellco confirmed a need through wireless network modeling and an analysis of ineffective attempt/drop call ratios as well as a drive test analysis. In addition to providing wireless service to deficient areas, the proposed facility would allow for capacity relief at six surrounding Cellco sectors, two of which are currently reaching capacity limits, thus enhancing Cellco's overall network performance.

Through an examination of potential telecommunications facility sites, Cellco found no existing, suitable towers or sufficiently tall structures available within Cellco's search area. Additionally, a small cell installation would not be feasible due to the limited service area of a small cell deployment. For this area, a macrosite deployment is the most efficient and cost effective way to provide the current wireless service need. Wireless service needs cannot be efficiently met by multiple small cell deployments given the large number of small cells that would be required to provide comparable service and capacity relief to the wireless network in this area. The amount of planning for the numerous small cells that would be required would not solve current network performance issues in a timely manner. Cellco's proposed tower facility will be designed to support the co-location of three additional telecommunication carriers, furthering the Council's charge of promoting tower sharing to avoid the unnecessary proliferation of towers in the state.

Cellco investigated available vacant land sites for a new tower and reviewed five specific sites as well as several other properties and locations. Two of the sites, the Proposed Site at 208 Kirk Road and a site suggested by the Town at the Town-owned Laurel Valley Country Club (LVCC) met Cellco's coverage needs. After a town-held public meeting to describe the two locations, the Town withdrew the LVCC site from consideration, leaving only the privately-owned Kirk Road parcel as a viable site. The Kirk Road parcel was previously leased by AT&T but no formal plans for an AT&T tower were developed.

The 208 Kirk Road property consists of a 9.3-acre parcel, zoned residential, with road frontage at the end of both Kirk Road and Country Club Drive. It is currently used as a Christmas tree farm and a wood cutting business and contains mostly open field areas for Christmas trees. Several ridges traverse the property and some wooded areas are present, generally in the western and central sections of the parcel. The property owners' residence is located in the central portion of the property and is accessed from the north end of Kirk Road. Abutting properties include the LVCC to the west, undeveloped wooded parcels to the north, and residential development to the east and south.

Cellco proposes to construct a tower at one of three locations on the Kirk Road parcel. Initially, one site was proposed in the application, referred to as the Proposed Site, and is located in a wooded area on the west end of the parcel and north of the abutting Sorrentino property. Based on comments from the Council and Ms. Sorrentino, a party in the proceeding, Cellco investigated three other locations on the parcel and submitted two for Council consideration, referred to as Alternate Site 1 and Alternate Site 2, both located to the east of the Proposed Site. A third site further east on the property and referred to as Alternate Site 3, was rejected by the landowner and was therefore not presented to the Council for consideration. Thus, no detailed field work was performed to examine its viability.

All three sites under consideration would consist of a monopole tower and a 55-foot by 50-foot fenced tower compound to house ground-mounted radio equipment and a backup power source. In the event an outage of commercial power occurs, Cellco would rely on a battery system that can provide about four hours of backup power. Cellco would also install a 20-kW diesel generator in order to recharge the batteries during prolonged outages. The generator could also be used to provide emergency power directly to the facility.

The Proposed Site consists of a 160-foot monopole and tower compound located at the west end of the parcel, in a wooded area bordering the LVCC to the west and Ms. Sorrentino's property at 46 Country Club Road to the south. The tower would be 220 feet from the Sorrentino residence and approximately 70 feet from the west property line. Access to the site would be from a new 12-foot wide, 386-foot long gravel access drive extending from the Country Club Road cul-de-sac through a wooded area along the south property line, or alternatively, along the edge of the tree farm. Development of the access road would require significant grading and the installation of stormwater control features as it descends a ridge slope to the tower site. Approximately 27 to 29 trees with a diameter greater than six inches at breast height (6" dbh) would be removed to develop the site.

Alternate Site 1 consists of a 150-foot monopole and tower compound located at the northern edge of the tree farm, near the base of the central ridge on the property. It is approximately 157 feet east northeast of the Proposed Site. The Alternate Site 1 tower would be 347 feet from the Sorrentino residence, 319 feet from the residence at 50 Country Club Drive, and approximately 30 feet from the north property line. Access to the site would be by a new 12-foot wide, 348-foot long gravel access drive extending northerly from Country Club Drive and through the tree farm. The access drive would turn westerly near the north edge of the tree farm, descending at a 20 percent grade to the compound area. Development of the access road would require significant grading and side slope stabilization as it descends the ridge slope to the tower site. Approximately 11 trees with a diameter greater than 6" dbh would be removed to develop the site.

Alternate Site 2 consists of a 120-foot monopole and tower compound located at the northern edge of the tree farm, approximately 336 feet east-northeast of the Proposed Site. The Alternate Site 2 tower would be 454 feet from the Sorrentino residence, 364 feet from the residence at 50 Country Club Drive, and 45 feet from the north property line. Access to Alternate Site 2 would be from Country Club Drive by a new 12-foot wide, 250-foot long gravel access drive extending north through the tree farm along the central ridge on the property. Some grading will be required along the ridge to develop the compound and access drive. Approximately 5 trees with a diameter greater than 6" dbh would be removed to develop the site.

No wetlands or vernal pools are in close proximity to any of the development areas. The proposed facility will have no effect on historic properties. The eastern box turtle, a State-listed Species of Special Concern, may occur in the vicinity of the host property. The Department of Energy and Environmental Protection recommends that Cellco adhere to an Eastern Box Turtle Protection Program during site construction. Although tree clearing is proposed for all three sites, tree removal would not materially affect a Core Forest block north of the host property.

Ground disturbance considerations for all three sites include necessary tree clearing, land disturbance to create suitable grades, slope stabilization, and stormwater control. After reviewing these concerns, the Council finds that Alternate Site 2 would have the least ground disturbance of the three sites given its location in an open area on the central ridge on the property whereas the other two sites are located below the ridge. An access road to locations below the ridge would require a cut through the ridge with extensive grading, rip rap slopes, stormwater control swales and some asphalt paving. The access drive to Alternate Site 2, however, extends along the ridgeline, thus requiring minimal grading to create a level travel surface, and would not require additional earthwork necessary for stormwater control or asphalt paving. Minimal tree clearing would be required at Alternate Site 2, thus preserving as much of the surrounding tree canopy as possible in order to maintain existing environmental values as well as to provide as much natural visual screening of the site as possible. As for extending an access road from Kirk Road on the eastern side of the property to the tower site, the Council finds that the tree clearing and ground disturbance required for such construction would be substantial and would have an adverse environmental impact when compared to the relatively short access drive required to reach the tower site from the end of Country Club Drive. Site construction would be in compliance with the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control*.

The visual impact of all three proposals is similar with a majority of views occurring from the residential area to the south and from open areas of the LVCC to the west. Different tower heights were presented for each potential tower site to account for the differences in ground elevation at each site location. All three sites would be relatively the same height above mean sea level due to site specific topography.

Upon review, the Council finds the Proposed Site is too close to adjacent residences immediately to the south and with the loss of trees to develop this site, it would be more visible from these residences than the other two proposed tower locations. Visibility of Alternate Site 1 and Alternate Site 2 are essentially the same with both set back from the abutting residences to the greatest extent possible, thus reducing near views of the facilities. Alternate Site 2 however, is shorter in height, thus the scale of the tower compared to the ground elevation would be less than the Proposed Site or Alternate Site 1 towers.

Based on Ms. Sorrentino's inquiry relative to Cellco's proposed antenna configuration after the close of the evidentiary hearing held on June 13, 2017, the Council, on its own motion, voted to reopen the evidentiary record to consider additional evidence regarding the possibility of using cluster-mount antennas on the tower. The reopened evidentiary proceeding was held on August 15, 2017. The cluster-mount utilizes antenna mounting equipment that does not extend as far from the monopole as a traditional antenna platform, thus reducing the visual profile of the antennas. Cellco intends to deploy this type of antenna mounting equipment at its facilities going forward and would use them at this site. The Council considered requiring all tower users at this facility to utilize a cluster-mount design but ultimately finds that such a restriction could reduce the opportunity for tower co-location if a potential tower user determines that such a design would prevent effective deployment of its wireless services from the site.

After considering the visual impacts of all three proposed sites in conjunction with the other environmental impacts of each site, the Council finds Alternate Site 2 preferable. Given the relatively short height of the Alternate Site 2 tower, the Council considered a monopine in this location but determined it would appear too bulky for the site and out of context with the surrounding deciduous wooded area. The Council finds painting the tower to match leaf-off conditions would reduce visibility when the tower is viewed through the trees and thus will order Cellco to apply such color treatment to the tower and antennas. To address Ms. Sorrentino's concerns regarding the aesthetics of the compound fence and access drive gate, the Council will order Cellco to install a vinyl coated chain link fencing with privacy slats screened by landscaping and install an access drive security gate at least 12 feet from the edge of the Country Club Drive cul-de-sac.

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 levels of the antennas proposed to be installed on the tower have been calculated to amount to 18.4 percent of the FCC's General Public/Uncontrolled Maximum Permissible Exposure, as measured at the base of the tower. This is conservatively based on all antennas of a given sector pointing down to the ground and emitting maximum power. This percentage is well below federal standards established for the frequencies used by wireless companies. If federal standards change, the Council will require that the tower 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 tower. 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. Regarding potential harm to wildlife from radio emission; this, like the matter of potential hazard to human health, is a matter of federal jurisdiction. The Council's role is to ensure that the tower meets federal permissible exposure limits.

Based on the record in this proceeding, the Council finds that the effects associated with the construction, maintenance and operation of a telecommunications facility at Alternate Site 2, 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, the Council will issue a Certificate for the construction, maintenance, and operation of a 120-foot monopole telecommunications facility at Alternate Site 2 located at 208 Kirk Road in Hamden, Connecticut.