STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
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APPLICATION OF T-MOBILE NORTHEAST, LLC FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF A TELECOMMUNICATIONS TOWER FACILITY AT 232 SHORE ROAD, OLD LYME, CONNECTICUT	:	DOCKET NO. 391
	:	JANUARY 6, 2010

RESPONSES OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS TO CONNECTICUT SITING COUNCIL PRE-HEARING INTERROGATORIES SET ONE

On December 23, 2009, the Connecticut Siting Council ("Council") issued Pre-Hearing Interrogatories to the Applicant, Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to the above-captioned docket. Below are Cellco's responses.

Question No. 1

What is Cellco Partnership d/b/a Verizon Wireless' (Cellco) existing signal strength in the area that would be covered by the proposed facility?

Response

Cellco's signal strength in the area to be covered by the proposed facility ranges from -87 dBm to -98 dBm.

Question No. 2

What is the minimum signal level Cellco would consider acceptable for service in the vicinity of the proposed site?

Response

Cellco's minimum signal strength for reliable service is -85 dBm throughout its wireless network.

Question No. 3

What is the minimum signal level that Cellco requires in order to provide adequate in-vehicle coverage? What is the minimum signal level that Cellco requires in order to provide adequate in-building coverage?

Response

Cellco's coverage thresholds are -85 dBm for reliable in-vehicle service and -75 dBm for reliable in-building service.

Question No. 4

At what height would Cellco center its antennas on the proposed tower? How many antennas would be installed? How would the antennas be mounted, e.g. T-arm, low-profile platform, etc.?

Response

Cellco is proposing the installation of twelve (12) panel-type antennas at a centerline height of 90 feet above-ground level on the proposed tower. Cellco would prefer to attach its antennas to a low-profile platform for ease of antenna maintenance but, if required, could install its antennas on T-arms.

Question No. 5

Provide the distance and direction from the proposed site to the existing (or proposed) sites that the proposed tower would interact with. Also include the addresses, tower heights, antenna heights and tower types (e.g. monopole).

Response

Old Lyme South – 125 Mile Creek Road, Old Lyme, CT. This tower is located approximately 1.1 miles to the northwest of the proposed T-Mobile tower site.

Old Lyme – 36 Hatchetts Hill Road, Old Lyme, CT. This tower is located approximately 2.0 miles to the northeast of the proposed T-Mobile tower site.

Question No. 6

Would flush-mounted or T-arm-mounted antennas provide the required coverage? Would either configuration result in reduced coverage and/or necessitate greater antenna height? Explain.

Response

The installation of antennas on T-arms would allow Cellco to install its full array of twelve (12) antennas at the 90-foot level on the proposed tower. Cellco intends to operate all three of its licensed operating frequencies (cellular – 850 MHz; PCS – 1900 MHz; and LTE 700 MHz) at the proposed Shore Road facility. If Cellco were required to use flush-mounted antennas at this site, it would be required to install three sets of flush-mounted antennas, one for each of the three operating frequencies, at three different levels on the tower. Operating antennas in a flush mounted configuration results in a loss of two to three db of coverage, thereby shrinking of the coverage footprint from the site. To make up for this loss of coverage, Cellco would also need to increase the height of all of its antennas by 10 feet. Under this scenario, Cellco would require antenna locations at the 100-foot, 90-foot and 80-foot levels on the proposed tower in order to provide coverage comparable to that from a full array of antennas at the 90-foot level. Requiring the use of flush-mounted antennas would significantly reduce the co-location potential on the tower and would result in an increase in height of the structure.

Question No. 7

Would Cellco provide cellular coverage initially and then PCS service later? Explain.

Response

Cellco anticipates that it will provide cellular, PCS and LTE service from the proposed facility. Depending upon the ultimate construction schedule, its LTE service may not be activated until sometime after the activation of the cellular and PCS service.

Question No. 8

Provide existing and proposed coverage plots assuming Cellco's antennas are centered at their proposed height, ten feet lower, and twenty feet lower, respectively.

Response

The coverage plots requested are included behind Tab 1.

Question No. 9

Provide the individual lengths of the coverage gaps (in miles) for the roads that Cellco seeks to provide coverage to. Describe criteria and parameters in determining the lengths of the road.

Response

Cellco currently experiences a 1.0 mile gap in cellular coverage and a 2.4 mile gap in PCS coverage along State Route 156, between its existing Old Lyme and Old Lyme South cell sites. These are gaps in reliable service where Cellco's signal strength drops below -85 dBm. Signal strength from the adjacent sites is measured on a monthly basis through baseline drive tests. In addition to coverage along Route 156 and generally in this southerly portion of Old Lyme, the proposed facility will provide service along Amtrak's Acela rail line.

Question No. 10

Provide the individual lengths of coverage (in miles) that would be provided by the proposed facility on the roads that Cellco seeks to provide coverage to. Provide similar data

assuming the tower is ten feet shorter and twenty feet shorter, respectively.

Response

Antenna Height	Acela Coverage Cellular (Miles)	Acela Coverage PCS (Miles)	Route 156 Coverage Cellular (Miles)	Route 156 Coverage PCS (Miles)
90'*	2.94	2.10	2.41	2.34
80'	2.71	1.87	2.33	2.17
70'	2.61	1.59	2.20	1.86

*Proposed Antenna height in Docket No. 391 Application

Question No. 11

Provide the areas (in square miles) that would be covered by this facility assuming that Cellco's antennas are centered at the proposed height, ten feet shorter, and twenty feet shorter, respectively.

Response

Antenna Height	Total Coverage Cellular (Sq. Miles)	Total Coverage PCS (Sq. Miles)
90'*	17.45	8.80
80'	14.45	7.49
70'	12.24	6.72

*Proposed Antenna height in Docket No. 391 Application

The Council may note that the coverage footprint figures provided in the table above are higher than typically seen for similar installations. Because the proposed tower is located proximate to the Long Island Sound, the coverage footprint that extends over the open water of Long Island Sound to the south. Over water, with nothing to block the signal from the proposed tower, coverage from this site extends further to the south than in any other direction.

Question No. 12

Provide the following information: number of channels per sector for each antenna system that would be installed on the proposed tower, ERP per channel for each antenna system, and frequency at which each antenna system would operate. Also, provide a power density analysis of Cellco's proposed antennas to determine the worst-case percent maximum permissible exposure at the tower base.

Response

PCS Antennas

Alpha Sector – 90 ft.	**Beta Sector – 90 ft.**	**Gamma Sector – 90 ft.**
Antenna Type: BXA – 185080/12CF (1)	Antenna Type: BXA – 185063/12CF (1)	Antenna Type: BXA – 185080/12CF (1)
Frequency: Tx: 1965-1980,1945-1950 MHz; Rx: 1885-1900,1865-1870 MHz	Frequency: Tx: 1965-1980,1945-1950 MHz; Rx: 1885-1900,1865-1870 MHz	Frequency: Tx: 1965-1980,1945-1950 MHz; Rx: 1885-1900,1865-1870 MHz
No. Channels: 14	No. Channels: 14	No. Channels: 14
ERP/Channel: 341.48 W Max	ERP/Channel: 482.35 W Max	ERP/Channel: 341.48 W Max

Cellular Antennas

Alpha Sector – 90 ft.	**Beta Sector – 90 ft.**	**Gamma Sector – 90 ft.**
Antenna Type: LPA-80080/6CF (2)	Antenna Type: LPA-80063/6CF (2)	Antenna Type: LPA-80080/6CF (2)
Frequency: Tx: 869-880,890-891.5 MHz; Rx: 824-835, 845-846.5 MHz	Frequency: Tx: 869-880,890-891.5 MHz; Rx: 824-835, 845-846.5 MHz	Frequency: Tx: 869-880,890-891.5 MHz; Rx: 824-835, 845-846.5 MHz
No. Channels: 9	No. Channels: 9	No. Channels: 9
ERP/Channel: 359.39 W Max	ERP/Channel: 403.25 W Max	ERP/Channel: 359.39 W Max

LTE Antennas

Alpha Sector – 90 ft.	**Beta Sector – 90 ft.**	**Gamma Sector – 90 ft.**
Antenna Type: BXA–70063/6CF (1)	Antenna Type: BXA–70063/6CF (1)	Antenna Type: BXA–70063/6CF (1)
Frequency: Tx:746 – 757 MHz; Rx: 776-787 MHz	Frequency: Tx:746 – 757 MHz; Rx: 776-787 MHz	Frequency: Tx:746 – 757 MHz; Rx: 776-787 MHz
No. Channels: 1	No. Channels: 1	No. Channels: 1
ERP/Channel: 825.05 W Max	ERP/Channel: 825.05 W Max	ERP/Channel: 825.05 W Max

Question No. 13

Is Cellco familiar with the proposed SBA Towers II LLC facility at 14 Cross Lane, Old Lyme? If Cellco co-located at this facility, could it provide adequate coverage to the target area that Cellco seeks to cover via the 232 Shore Road tower site? Explain.

Response

Yes. Cellco was contacted by SBA Towers II LLC regarding its facility at 14 Cross Lane in Old Lyme. Cellco's RF engineers determined that its coverage objectives in the area could be satisfied by installing antennas at a height of 120 feet on the SBA tower.

Question No. 14

Would Cellco install an equipment shelter and/or locate its equipment on an equipment pad? Provide the dimensions of the shelter and/or pad.

Response

Yes. Cellco intends to install its standard 12' x 30' equipment shelter within the facility compound.

Question No. 15

Would Cellco have backup power at its tower site? How would backup power be provided, e.g. battery, diesel generator, etc.? Has Cellco considered using a fuel cell as a backup power source for the proposed facility? Explain.

Response

Yes. Cellco would provide back-up power at the proposed tower site as it does with all of its wireless facility installations. A diesel-fueled generator would be installed in a segregated 10' x 12' generator room within the 12' x 30' equipment shelter. Cellco is not considering the use of a fuel cell to provide back-up power to any of its facilities in Connecticut at this time.

Question No. 16

If a generator or fuel cell is to be used as a backup power source, would Cellco meet all applicable noise standards at the subject property boundaries?

Response

Yes. Cellco is confident that its equipment and back-up generator would meet all appropriate noise standards at this location.

CERTIFICATE OF SERVICE

I hereby certify that on the 6th day of January, 2010, a copy of the foregoing was sent, postage prepaid, to:

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