

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

APPLICATION OF NEW CINGULAR WIRELESS
PCS, LLC (AT&T) FOR A CERTIFICATE OF
ENVIRONMENTAL COMPATIBILITY AND
PUBLIC NEED FOR THE CONSTRUCTION,
MAINTENANCE AND OPERATION OF A
TELECOMMUNICATIONS TOWER FACILITY
AT ST. MATTHEW LUTHERAN CHURCH AT
224 LOVELY STREET IN THE TOWN OF AVON

DOCKET NO. 373

MARCH 24, 2009

NEW CINGULAR WIRELESS ("AT&T")
RESPONSES TO TOWN OF AVON
PRE-HEARING INTERROGATORIES SET ONE

- Q1. What is AT&T's minimum acceptable signal strength level for in-building coverage and in-vehicle coverage, respectively?
- A1. The AT&T design criteria for reliable in-building coverage is greater than -74 dBm. The design criteria for reliable in-vehicle coverage is -82 dBm or greater.
- Q2. What is the minimum tower height at the proposed Site required to meet AT&T's minimum acceptable signal strength for in-building and in-vehicle coverage, respectively?
- A2. The coverage plots in Exhibit G of the Applicant's response to Siting Council Interrogatory (Set I), Question 12, identify that even at 100' in height, there will not be overlapping coverage at -74dBm. Further, reductions in height below 100' reveal a small amount of coverage degradation to the north at -82 dBm. Additionally, there is a significant stand of large white pines immediately to the south of the tower site which rise to over 65' in height and require at least 5' to 10' of height to clear for purposes of signal propagation to the south and accounting for the lifespan and additional growth of the nearby trees over the life of the tower facility. Exhibit A provides fact sheets detailing, for example, the long life and significant mature height of the Eastern White Pine. As such, at this location, AT&T submits that a 100' tower height is appropriate to meet AT&T's design criteria and that any tower height below 80' would not be acceptable for effective and reliable signal propagation to the area of need.
- Q3. What is the minimum tower height required to permit co-location at the proposed Site of one and two additional carriers, respectively?

- A3. The application is for a 100' monopole with low profile platforms at 10' intervals. Given the nearby trees which serve to visually screen the tower, but obstruct antenna transmission, it can be expected that no carrier could locate on the tower lower than the 80' level (ie. 77' or 78' antenna centerline). As such, irrespective of AT&T's coverage requirements and needs, a tower with platforms would need to be at least 90' in height to accommodate AT&T and one additional carrier and 100' in height to accommodate a second co-locator. Any change in antenna configuration (ie. flush mount or flagpole designs) would serve to reduce or preclude co-location opportunities by other carriers.
- Q4. Would operation in one frequency band or another, e.g., 850 MHz vs. 1900 MHz, have any impact on the height of the proposed facility? Please explain how, if at all, the proposed facility height would be affected.
- A4. 850 Mhz has a longer wavelength than 1900 Mhz and as such, all else being constant, provides greater signal strength by approximately 8 db. The proposed facility was studied and modeled based on the use of 850 Mhz. Accordingly, the coverage depicted in Exhibit G of AT&T's response to the Siting Council's first set of interrogatories is the more robust coverage associated with 850 Mhz. 1900 Mhz coverage in AT&T's network can be expected to be less than that as shown. All of the surrounding sites have 850 Mhz coverage with the exception of site 1171, located on Bushy Hill Road in Simsbury, as is physically limited as a flagpole to antennas in 1900 Mhz only. If AT&T were limited to 1900Mhz only in this area, existing coverage from its network and proposed coverage from the tower site would be significantly less and less reliable.
- Q5. Referring to AT&T's Exhibit G prepared in response to Council's Pre-Hearing Interrogatory #12 (First Set), explain whether there is a significant difference in coverage provided by the facility as proposed at 100' and at the proposed site at tower heights of 87' and 77'.
- A5. The coverage degrades somewhat between 100' and lower heights of 87' and 77' as modeled. Overall, the coverage footprints are relatively similar at the three heights modeled.
- Q6. Does a proposed tower height of 77', as depicted in the above-referenced Exhibit G meet AT&T's minimum acceptable signal strength for in-building and in-vehicle coverage, respectively?
- A6. Not fully in the area where coverage is sought to be provided.
- Q7. How many carriers, if any, could co-locate at the proposed facility if said facility was no greater than 80 feet in height?
- A7. Probably none. AT&T cannot affirmatively represent the technical needs and specifications of other carriers. However, in light of AT&T's own experience and given the surrounding tree cover, it is unlikely any carriers would be able to co-locate on an 80' tower. Given the lack of towers and tall structures in the area and the commonly

understood wireless communications "dead spot" in this area of Avon, AT&T would anticipate that other carriers would seek to replace or expand an 80' tower in the future.

Q8. Did AT&T consider locating the proposed facility in the Pond Ledge area of Avon, specifically including property owned by Avon Water Company? Refer to Attachment A for reference. Would this location meet AT&T's coverage needs? If answering in the negative, please provide an explanation as to why not.

A8. No, AT&T did not specifically consider locating a tower at the Avon Water Company property at Pond Ledge as part of its initial site search. As noted in the Application, the Pond Ledge area is located well north and east of the proposed site, significantly away from the coverage deficiency along Route 177 and actually in an area where AT&T has existing network coverage. (App. "Site Search Summary" Attachment 2). Please also see drive test data in Exhibit B titled "GWS Benchmark Drive December 2008" depicting the coverage deficiency along Lovely Street ("Drive Test Data"). As such, the location of a tower facility on this property in the Pond Ledge area would be largely redundant with existing coverage and not serve the vast majority of the identified gap in coverage as depicted in the annotated coverage map in Exhibit B depicting AT&T's existing coverage and this and other locations just recently identified by the Town as part of its submission to the Council.

Regardless, we note that under Connecticut General Statutes and associated Regulations, no water company may sell, lease, assign or otherwise dispose of or change the use of any watershed land without a written permit from the Commissioner of Public Health. The Commissioner, in turn, is barred by State statute from the sale, lease or assignment of Class I lands. (C.G.S. Section 25-32(b), see also Regs. Conn. State Agencies Section 25-37d-2) with special exception for location of radio towers and antennas on existing structured (C.G.S. Section 25-32(f)). Class II lands are also severely restricted in their use or development. It is not confirmed at this time that these lands are either Class I or II water district lands. However, State and local mapping, included herein as Exhibit C, identify this area as in or in close proximity to protected aquifer areas indicating a high probability of water company wells in this area and thus classification as either Class I or Class II water company land. Accordingly, development of a wireless telecommunications tower site in this area and on the identified property may not even be legal under State law.

In summary, given AT&T's existing coverage in the area and the likely classification as protected watershed lands the proposed property is not a viable alternative.

Q9. Did AT&T consider Huckleberry Hill in Avon? Refer to Attachment A for reference. Would this location meet AT&T's needs? If answering in the negative, please provide an explanation as to why not.

A9. This overall area on the ridge to the west and north was generally reviewed and rejected by AT&T as part of the overall site search. AT&T does not consider the property identified as Huckleberry Hill Open Space as a viable siting alternative.

Of note, this open space was not identified as a potential siting solution during AT&T's consultations with Town Officials both prior to and subsequent to the filing of its technical report with the Town. Additionally, it is not clear that: 1) the property is now being suggested by the Town as an alternative tower site and 2) that there are no title restrictions on this open space.

Regardless, this property is located well west of the proposed site, away from the center of the coverage deficiency along Lovely Street, as depicted in AT&T's previously submitted plots as well as the attached Drive Test Data in Exhibit B, and towards an area of existing AT&T network coverage as demonstrated in the coverage map in Exhibit B. AT&T currently operates a facility at 277 Huckleberry Hill Road and 4 Market Street in Canton (identified as sites 1175 and 5426 respectively in the coverage map included in Exhibit B). Given the proximity to these sites and the distance from Lovely Street, location of a facility in this general area would not serve the majority of the identified gap in coverage.

- Q10. With respect to sites AT&T identifies in its Site Search Summary, Exhibit 2 to the Application, explain what radio frequency engineering criteria the Juniper Drive and the Governor's Horse Guard sites did not meet.
- A10. These properties are located east of the proposed site, on the other side of a ridge running north/south, away from the center of the coverage deficiency along Lovely Street and towards areas of existing AT&T network coverage as depicted on the coverage map provided in Exhibit B. Given the proximity to these sites and the distance from Lovely Street, location of a facility in this general area would not serve the majority of the identified gap in coverage and would in fact overlap with existing coverage. It should also be noted that these sites are located on the opposite side of a ridge which would preclude effective signal propagation to the target area.
- Q11. Of the existing sites AT&T identified in Avon, Burlington, Canton, Farmington and Simsbury in Exhibit 1 of the Application, were there any sites within a four mile radius of the site search area with co-location potential? If answering in the affirmative, list these sites and explain why co-location was not pursued by AT&T.
- A11. As part of AT&T's site search for this and all sites, AT&T first investigates and pursues opportunities for co-location or location on existing tall structures. None of the existing sites documented in the Council's database or otherwise known to AT&T in this area of the State provide an opportunity for co-location to serve the coverage deficiencies identified through this Application. Notably, a four-mile radius is too large an area to search for co-location opportunities to serve this gap in coverage. In fact, AT&T's surrounding existing sites are all within approximately 2 miles of the proposed facility and surrounding ridgelines impact coverage currently provided to the area. As such, AT&T generally maintained its site search area in this case and searched no more than a 1 mile diameter around the search area center and known coverage deficiency.

Q12. What are AT&T's mitigation measures for the facility as proposed?

A12. The use of the term "mitigation" assumes that an impact exists that must be addressed for purposes of the siting criteria set forth in Section 16-50p of the General Statutes. AT&T does not believe that the project as proposed presents significant adverse environmental impacts that would require mitigation.

Nevertheless, there are measures that can be implemented to address further the aesthetics of the proposed facility in light of the surrounding residential nature of this area of Avon. As set forth in Exhibit D entitled "Optional Tower Preference Matrix", AT&T is willing to implement alternative tower and antenna designs to address overall aesthetics including a "stealth" evergreen tree, a brown monopole with flush mounted antennas or a "stealth" flagpole. Visual simulations of these alternative towers and antenna configurations are annexed in Exhibit E.

Q13. If the landlord of the proposed Site were to give permission, is it technologically feasible for AT&T to build a second steeple for telecommunications use, including any of the following options:

- a. removing the existing steeple and replacing it with a new steeple in the center of the building
- b. keeping the existing steeple and installing a new steeple for telecommunications use on the opposite gable in the front of the building,
- c. keeping the existing steeple and installing a new steeple for telecommunications use in the rear at the SE corner of the building, or
- d. keeping the existing steeple and building a freestanding steeple type structure for telecommunications use to the rear of building?

A13. At a certain cost, anything is "technologically feasible". Nevertheless, the property owner has very appropriate reasons for not allowing AT&T to disturb its existing building and church sanctuary. As noted in response to Siting Council Interrogatory (Set II), Question 5, replacing the existing steeple or building a new one as part of the existing building to an overall height of at least 95' is not structurally viable and will not be allowed by the Church. Similarly, the placement of a new steeple structure immediately adjacent to the rear of the church and with its own foundation is not viable due to existing underground utilities, possible expansion by the Church in that direction in a zoning compliant manner and the existence of a large stained glass window at the rear of the church building. As such, the only option under the Applicant's control would be construction of a faux free standing steeple in the existing lease area with a likely dimension of at least 25' at the base with an 18' wide mass rising to 115' in order to provide a tapered point. Such a structure would be far more prominent than any of the other alternative tower solutions AT&T is willing to consider in order to address aesthetics. Moreover, based on AT&T's inquiries, the engineering and construction costs of such a "alternative" would themselves be prohibitively costly. As such, AT&T would not be willing to build a faux steeple at this location.

Q14. Has AT&T consulted an architect regarding a steeple design?

A14. No, for the reasons noted in response to Question 13 which relate to engineering and cost considerations. AT&T has nevertheless consulted with the project engineers at Hudson Design Group which consulted with tower manufacturers that design and construct alternative tower structures.

Q15. Is a flagpole design feasible at the proposed Site? Specifically, could AT&T install a monopole designed as a flagpole similar to the tower facility located at Simsbury Commons Mall, a tower on which AT&T has co-located? See Attachment B, photographs depicting flagpole designed facility at Simsbury Commons Mall.

A15. For AT&T alone, the answer is yes. Even for AT&T, the flagpole would need to be larger in diameter than the one installed at the Simsbury Commons Mall to accommodate 850 Mhz antennas. Drawbacks of such a tower at 100' include limiting collocation opportunities for other carriers, eliminating the tower as a location for the Town's emergency services antennas and greater visibility as compared with a brown or tree type tower structure.

Q16. If a flagpole design were utilized, as depicted in Attachment B, what is the narrowest flagpole diameter possible to support a flagpole at the proposed height of 100' and at 80', respectively?

A16. The top of the flagpole at either height would have to be no less than 28 inches in diameter in order to accommodate AT&T's antennas internally. A visual simulation of a flagpole tower at this location is provided in Exhibit E.

Q17. Would utilization of a flagpole designed tower facility enable AT&T to reduce the size of the proposed compound to a size similar to the facility at Simsbury Commons Mall (21' x 45' or 945 sq. ft.).

A17. The size of a monopole foundation whether a "flagpole" or not does not significantly effect the size of a compound. Compound size is more specifically related to the required at grade equipment to be utilized by AT&T and other carriers. The facility at Simsbury Commons Mall (21' x 45') is severely constrained and functionally limited to Sprint and AT&T's 1900 MHz frequencies deployed in cabinets. Long term, that existing site will likely require significant modifications by AT&T and other carriers to effectively support 850 MHz frequencies and otherwise provide service to the community.

Q18. The currently proposed monopole is 42 inches in diameter at the base, tapering to 26 inches at the top, are these diameters the narrowest possible to support the proposed 100' height? If answering in the negative, what are the narrowest respective diameters for the proposed height and what are the narrowest diameters for a monopole restricted to 80' in height?

- A18. The proposed diameters are the typical dimensions for a monopole such as the one proposed at both 100' and 80' in height. Alternate tower configurations such as the flush mounted design noted in A12 and depicted in Exhibit E could have a base diameter of approximately 38" tapering to 18" at the top. An 80' tower utilizing flush mounts would require the same or similar width.
- Q19. State the reasons AT&T requires over 2400 sq. ft. (49' x 49') for the proposed compound?
- A19. As space for AT&T's 12' x 20' equipment shelter, Verizon's typical 12' x 30' shelter (a carrier that has expressed interest in the site), room for additional equipment of another wireless carrier and space for the Town which has expressed a desire to potentially install emergency communications equipment at the site. At 49' x 49' the proposed compound is relatively small as compared to other typical tower sites.
- Q20. What are AT&T's landscaping and screening plans for the proposed facility? Please provide the landscaping plan, if any. Has AT&T consulted a landscape architect or other appropriate professional to determine where screening is needed? Is AT&T willing to provide off-site screening?
- A20. AT&T's application includes an 8' tall stockade fence around the entire equipment compound which will effectively screen the proposed equipment and base of the tower. A landscape plan has not been proposed or prepared. Views of the compound are well screened by the existing church, parsonage and on-site vegetation. Additional on-site screening could be incorporated into a D&M Plan if desired by the Council and based on any off-site direct views of the compound.
- Q21. Does AT&T intend to operate fuel-powered electric generators at the Site?
- A21. A mobile diesel generator may be brought on-site and used in the case of a prolonged power outage. Such use would be limited and not excessive in duration.
- Q22. Provide a detailed list of the technological alternatives AT&T considered as an alternative to the proposed Facility and provide an explanation as to why each were rejected.
- A22. The size of the area where service is deficient in AT&T's network, the density of both the population and traffic in the area and the surrounding environment itself does not warrant or support detailed consideration to technologies other than macro cellular RF design. As already noted in AT&T's Application (p. 6) repeaters, microcell transmitters, distributed antenna systems ("DAS") and other types of transmitting technologies were quickly ruled out as not practicable or feasible to providing service to this area of Avon. These types of technologies do not have capacity, provide coverage to much smaller more discrete areas and/or simply cannot be supported given the nature of the technologies involved. Of note, there are a lack of telephone/utility poles on many of the local streets in this part of

Avon. Given all of the above, no alternative technology was actively considered as an alternative to the construction of a macro cell site in this part of Avon.

Q23. Did AT&T prepare coverage maps simulating potential coverage of each of the technological alternatives considered by AT&T? Please provide any coverage maps. If no maps were prepared, please explain why AT&T did not prepare such maps as part of this process?

A23. No. See answer to Question 22 above.

Q24. Does the design of the proposed monopole permit AT&T to increase the height of the structure in the future?

A24. As proposed in the Application, no. A monopole tower capable of extension could be constructed to provide additional opportunities for future co-location by other carriers if desired by the Council.

Q25. Does AT&T anticipate that the height of the facility, as proposed, will need to be increased in the future to meet its coverage needs?

A25. No.

Q26. Would a flagpole design, as described in Interrogatory #15, limit AT&T's ability to increase the height of the structure in the future?

A26. Yes. Generally, flagpole designs do not allow for tower expansion.

CERTIFICATION OF SERVICE

I hereby certify that on this day, an original and twenty copies of the foregoing was served on the Connecticut Siting Council via electronic and overnight mail with a copy to:

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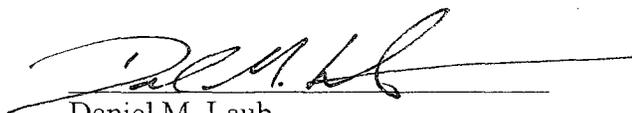
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