DOCKET NO. 165 - An application of Metro Mobile CTS of Hartford, Inc., for a Certificate of Environmental Compatibility and Need for the construction, maintenance, and operation of a cellular telecommunication facility located at 46 Brendan Street, Stafford, Connecticut. : Connecticut

: Siting

: Council

December 5, 1994

FINDINGS OF FACT

Introduction

1. Metro Mobile CTS of Hartford, Inc. (Metro Mobile), in accordance with provisions of sections 16-50g through 16-50z of the Connecticut General Statutes (CGS), applied to the Connecticut Siting Council (Council) on June 24, 1994, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a cellular telecommunications tower, associated equipment, and equipment building located at 46 Brendan Street, in the Town of Stafford, Connecticut, to provide increased domestic public cellular telephone service to the Hartford, Connecticut, and New England County Metropolitan Area (NECMA). (Metro Mobile 1, p. 1)

2. Public notice of the application, as required by CGS section 16-50l(b), was published in The Hartford Courant on June 22, and 23, 1993. (Metro Mobile 2)

3. Pursuant to CGS section 16-50m, the Council, after giving due notice thereof, held a public hearing for this application on September 8, 1994, beginning at 3:00 p.m. in the Veteran's Meeting Room, Warren Memorial Town Hall, One Main Street, Stafford Springs, Connecticut. (Council Hearing Notice and Transcript I (Tr.))

4. The Council and its staff inspected the proposed and alternate sites in the Town of Stafford, Connecticut, on September 8, 1994. (Council Hearing Notice)

5. On November 1, 1994, the Council reopened the proceeding to receive additional information for a tower site on or access from the Stafford Middle School grounds. Upon receipt of Town of Stafford comments regarding this matter, on November 14, 1994, the Council revoked its order to reopen this proceeding. (Town of Stafford letter, dated November 8, 1994; Council Minutes of Meeting, November 1, 1994 and November 14, 1994.)

Cellular Telecommunications

6. In 1981, the Federal Communications Commission (FCC) recognized the public need for technical improvement, wide-area coverage, high quality service, and establishing a competitive market for mobile telephone service. (Metro Mobile I, p. 6; Council Docket No. 126, Finding of Fact No. 8)

7. The FCC has determined that there is a general public need for cellular service. Applicants for cellular licenses are not required to demonstrate a general public need for cellular service to state regulators. In addition, the FCC has preempted state regulation of cellular telephone service in the areas of technical standards and market structure. (Metro Mobile I, pp. 6, 7, 9; Council Docket No. 126, Findings of Fact No. 9)

8. The FCC has issued two cellular licenses in the Hartford NECMA to provide competition. One license is awarded to the non-wireline carrier, Metro Mobile, and the other to a wireline carrier, Springwich Cellular Limited Partnership (Springwich). (Metro Mobile I, pp. 7, 9, 11, Tab 11; Council Docket No. 126, Findings of Fact No. 10)

9. Cellular service consists of low power transmitter/receiver stations known as cell sites. Cell sites cover a geographic area typically two to ten miles in diameter. The cellular service system design allows for the configuration of cell sites so that the same frequencies can be used at the same time in different cells (frequency reuse) and to provide uninterrupted service throughout a service area (hand-off capability). (Metro Mobile I, pp. 16, 17, Tab 5, pp. 6-9; Council Docket No. 126, Findings of Fact No. 12)

10. The proposed facility would provide coverage along State Routes 19, 30, 32, 140, and 190 and would off-load traffic from existing cell sites in Willington and Somers, Connecticut, and Monson and East Longmeadow in Massachusetts. (Metro Mobile 1, pp. 8-10, Tab 1, p. 2, Tab 6; Metro Mobile 6, Q-10, Q-11; Metro Mobile 7, Q-8; Metro Mobile 11, Set Three, Q-1.)

11. The proposed use of a maximum of 56 channels within the allocated frequency level of 870-880 megahertz (Mhz) is based on Metro Mobile's current 7-cell reuse pattern, 3-sector design which results in approximately eight channels per sector. A total of 19 channels would be initially used at the site. (Metro Mobile 1, pp. 14, 15, Tab 1, pp. 4, 17; Metro Mobile 6, Q-12; Tr. 1, p. 27)

Alternatives

12. Metro Mobile was unable to identify any acceptable existing facilities or other structures of adequate height, sufficient structural strength, and adequate space to attach antennas and to avoid building a new tower within its 0.6 mile radius cell site search area. (Metro Mobile 1, p. 21, Tab 1, Tab 2, Tab 5, pp. 12, 13)

13. There were 17 sites considered, of which 15 were rejected by Metro Mobile for the proposed Stafford cell site. Reasons for rejection are:

    a) landowners unwilling to lease or sell property for use as a tower site;

b) potential sites eliminated because of poor coverage and distance from the center of the search area;
c) potential sites in close proximity to existing cell sites which could cause interference; and
d) towers with heights in excess of 200 feet would be required because of sites with lower ground elevation than the proposed prime site. (Metro Mobile 1, p. 21, Tab 3, pp. 2-5, Tab 5, p. 12)

14. In 1991, Metro Mobile made proposals to the Town of Stafford to lease space for a tower site at the new Stafford Middle School property, including the construction of a 100-foot, rooftop tower on a school building which had not yet been built. Metro Mobile also discussed sites for a free-standing tower elsewhere on the school grounds. The Middle School Building Committee rejected Metro Mobile's proposals in August 1991 and May 1992. In March 1994, the Town of Stafford again rejected Metro Mobile's proposal. In November 1994, the Town of Stafford affirmed it had no interest in renting space for a tower on the grounds of the Stafford Middle School and would not permit an easement over Town property adjacent to the Stafford Middle School for an accessway. The town has offered no alternative tower sites to Metro Mobile. (Metro Mobile I, Tab 3, p. 4; Metro Mobile 11, Set 2, Q-2; Metro Mobile 12; Metro Mobile 13; Tr. I, pp. 28-49; Tr. II, pp. 7-13; Town of Stafford letter, dated November 8, 1994.)

15. Metro Mobile's cellular system represents state-of-the-art technology, and no viable alternatives to this system are currently available. (Metro Mobile I, p. 22)

General Description

16. The proposed prime and alternate sites are located on property owned by Glen and Peter Tiziani (lessor) within the lessor's parcel, which is zoned General Residence. Land south of the lessor's parcel within the Borough of Stafford Springs is also zoned General Residence. (Metro Mobile 1, Tab 1, pp. 6, 7, Attachment-Zoning Map and Regulations, Town of Stafford, Connecticut)

17. Metro Mobile considered potential tower sites on the lessor's property which would require the shortest possible tower to minimize visibility at the highest possible elevation while providing acceptable cellular service. (Tr. I, pp. 48-50)

18. Metro Mobile investigated various tower heights for the proposed prime and alternate sites and determined a structure height at 870 feet above mean sea level (AMSL) would be the minimum height required at both proposed sites to provide acceptable cellular coverage to Routes 19, 30, 32, 140, and 190 and areas of Stafford, Stafford Springs, Hydeville, Orcuttsville, West Stafford, and Staffordville without interfering with adjacent sites. (Metro Mobile 7, Q-8; Tr. I, pp. 18-21, 78-84)

19. Within the terms of its lease, Metro Mobile has some latitude in locating a tower site within the lessor's property and could renegotiate its lease for a site located between the proposed and alternate sites. (Metro Mobile 11, Q-1; Tr. I, pp. 47-49)

20. At the proposed prime or alternate sites, Metro Mobile would construct a new 21-foot by 30-foot, single-story, equipment building that would not be staffed except for periodic maintenance visits. The building would be equipped with silent intrusion alarms. An 8-foot high, 60-foot by 60-foot security fence, with gate, would surround the proposed tower and equipment building. (Metro Mobile 1, pp. 8, 9, Tab 1, p. 2; Metro Mobile 6, Q-3, Attachment)

21. Metro Mobile would install a 50 kilowatt Kohler, Model ROZJ, or a similar diesel oil-powered model as an on-site, standby emergency generator for use during power interruptions. The generator would be installed within a sound shield enclosure. Sound levels are expected to be 66 dbA at 23 feet and would drop rapidly at the nearest property line (100 feet at the prime site and 150 feet at the alternate site). The emergency generator would be subject to a Department of Environmental Protection (DEP) Air Compliance permit which could limit the operating hours and require measures to control air emissions. Metro Mobile would acquire all necessary approvals prior to generator installation. (Metro Mobile 1, p. 24, Tab 1, pp. 17, 18, Tab 2, pp. 17, 18, Tab 12; Metro Mobile 7, Q-5; Tr. I, pp. 15, and 16)

22. Equipment to be used at the proposed cell site other than the emergency generator would not emit air pollutants. (Metro Mobile 1, p. 24)

23. Access to the proposed prime and alternate sites would be provided by using an existing unimproved pathway. A 12-foot wide, crushed stone driveway would extend north from the northern terminus of Brendan Street, approximately 1,500 feet to the prime site or 860 feet to the alternate site. The driveway would be constructed within a 25-foot wide vehicular and utility easement. (Metro Mobile 1, p. 9, Tab 1, p. 7, Tab 2, p. 7; Metro Mobile 6, Q-3, Attachment)

24. Electric and telephone utilities would be placed within the 25-foot easement corridor on an overhead utility line constructed along the proposed improved portion of the existing pathway from Brendan Street to the proposed cell site. (Metro Mobile 1, p. 9, Tab 1, p. 7, Tab 2, p. 7)

25. Metro Mobile would clear vegetation along the 25-foot wide right-of-way to construct the driveway and set the utility poles to stay within the right-of-way while maintaining a two-to-one side slope ratio. The necessary width for vegetative clearing for road construction and placement of utility line poles would vary from 14 to 22 feet. (Metro Mobile 11, Set 2, Q-2; Tr. I, pp. 53-58)

26. The proposed Stafford tower would be designed to withstand wind pressures equivalent to 90 miles per hour (MPH) with a 0.5 inch solid ice accumulation in accordance with the Electronic Industries Association Standard EIA/TIA-222-E, "Structural Standards for Steel Antenna Towers and Antenna Support Structures." The tower foundation design would be based on soil conditions at the site. (Metro Mobile 1, Tab 1, pp. 9, 12, Tab 2, pp. 9, 12)

27. The proposed tower's fall zone at the proposed prime or alternate site would remain totally within the lessor's property. The proposed equipment building would be the only structure within the fall zone. (Metro Mobile 1, Tab 1, p. 17; Metro Mobile 6, Q-3, Attachment)

28. The Federal Aviation Administration (FAA) has not identified the proposed prime or alternate tower as an obstruction to air traffic or a hazard to navigation; therefore tower obstruction marking and lighting are not necessary. (Metro Mobile 1, Tab 1, p. 13, Tab 2, p. 13)

29. There are no known wetlands or other regulated bodies of water within one quarter of a mile from the proposed or alternate sites. No water flow and/or quality changes would be expected from construction and operation of the proposed cell site. The proposed facility would use no water; therefore equipment used for the proposed facility would discharge no pollutants to groundwater or public sewage systems. (Metro Mobile 1, p. 26, Tab 1, pp. 6, 17, Tab 2, pp. 6, 17)

30. There are no historic, architectural, scenic, or recreational resources within the leased parcel. There are no known extant populations of federal and State endangered or threatened Species of special concern at the prime or alternate sites. The proposed facility would have no effect on archaeological resources listed on or eligible for the National Register of Historic Places. The State Historic Preservation Officer of the Connecticut Historical Commission determined the proposed facility would have no effect on historical resources. (Metro Mobile 1, p. 13, Attachment 4, Tab 4)

31. Metro Mobile is aware that Springwich has expressed an interest in sharing the proposed Stafford tower, but has not directly received any formal request from Springwich to share the proposed Stafford tower. (Tr. I, p. 63; Tr. II, pp. 14, 15)

32. Metro Mobile offered space on the proposed Stafford tower for Town of Stafford antennas, but has received no reply from the Town to this proposal. (Metro Mobile 7, Q-8)

33. Metro Mobile's lease provides for the ability to sublet the tower to other potential users. (Tr. I, p. 53)

Proposed Prime Site

34. The proposed prime cell site is a 60-foot by 60-foot leased parcel located in the northern portion of a 14.49 acre parcel approximately one-quarter mile north of Brendan Street, Stafford Springs. The site is situated approximately 90 feet south of the lessor's northern boundary and 90 feet east of the lessor's western property boundary. The proposed tower would be located about 145 feet south of the lessor's northern boundary and 130 feet east of the lessor's western property boundary. The topographic elevation of the proposed prime site is 755 feet AMSL. A 1,500-foot proposed driveway would rise from 678 feet AMSL at Brendan Street to 755 feet AMSL at the site. (Metro Mobile 1, Tab 1, pp. 1-5, 13, 17; Metro Mobile 6, Q-3, Attachment)

35. The proposed tower site is located on a nearly level area near the top of a heavily wooded ridge. The surface is rocky with heavy undergrowth and deciduous trees of various heights. The site and access driveway would be cleared and graded. No blasting is anticipated. (Metro Mobile 1, Tab 1, p. 1, 5, 6; DEP Letter, dated August 8, 1994)

36. The surrounding terrain is undeveloped, hilly, heavily wooded, and it drains to the east. The highest point on the hill is located at the Stafford Middle School building site on town-owned land approximately 600 feet north of the proposed site. The school's elevation is 20-30 feet higher than the proposed prime site. (Metro Mobile 1, Tab 1, pp. 2, 4-7, 21)

37. The proposed 115-foot monopole tower would have dimensions approximately 3.0 feet in diameter at the base, tapering to about 1.5 feet in diameter at the top. The tower would have a triangular antenna support platform, 13.5 feet on a side, mounted at the top of the tower. The platform would support nine, 4-foot by 2.5-foot panel directional antennas with a center of transmission at 115 feet above ground level (AGL). The total height of the tower structure with appurtenances would be 117 feet AGL and 872 feet AMSL. (Metro Mobile 1, p. 8, Tab 1, pp. 2, 9, 12-14)

38. The nearest single residence is located approximately 250 feet west of the proposed cell site. Laurel Hill, an 85-unit condominium development abuts the southeast portion of the lessor's property and is about 1,300 feet from the proposed cell site. (Metro Mobile 1, Tab 1, p. 7; Metro Mobile 7, Q-2)

39. Potential visibility of the proposed prime tower from Furnace Avenue, Grant Avenue, Brendan Street, and Route 32 would be minimized by the surrounding tree cover and intervening vegetation. The top of the tower may be seen from the nearest residence and through breaks in the trees from portions of Grant Avenue, the Stafford Middle School, and Galotta Street. (Metro Mobile 1, pp. 11, 12, Tab 1, pp. 18, 19; DEP Letter, dated August 8, 1994)

40. The worst-case electromagnetic radio frequency power density power level at the proposed prime tower base for 56 channels operating at maximum power (100 watts per channel) would be 0.052 milliwatts per square centimeter (mW/cm^2) for uncontrolled environments or 8.9 percent of the 1992 American National Standards Institute (ANSI) Standard, as adopted by the State of Connecticut, of 0.583 mW/cm^2 for cellular telephone frequencies. (Metro Mobile 1, pp. 14, 15, Tab 1, pp. 14, 18; Metro Mobile 6, Q-6)

41. The total estimated cost of construction to be incurred by Metro Mobile for the proposed prime site would be:

Cellular radio equipment	$306,400
Tower and antennas	35,900
Power systems	43,500
Building	61,000
Miscellaneous (including site preparation/installation)	182,800
TOTAL COSTS	**$629,600**

(Metro Mobile 1, Tab 1, p. 10)

Proposed Alternate Site

42. The proposed alternate cell site is a 60-foot by 60-foot leased parcel near the center of a 14.49-acre parcel at 46 Brendan Street, approximately 140 feet east of the lessor's western boundary, 205 feet west of the lessor's eastern property boundary, and 750 feet south of the lessor's northern property boundary. The proposed tower would be located about 700 feet north of Brendan Street, 140 feet east of the lessor's western property boundary, 750 feet south of the lessor's northern property boundary, and 205 feet west of the lessor's eastern property boundary. (Metro Mobile 1, Tab 2, pp. 1-5, 17; Metro Mobile 6, Q-3, Attachment)

43. The topographic elevation of the proposed alternate tower site is 722 feet AMSL. The site slopes toward the east from 726 feet AMSL to 716 feet AMSL. A 860-foot proposed driveway would rise from 678 feet AMSL at Brendan Street to 716 feet AMSL at the proposed enclosure gate. (Metro Mobile 1, Tab 2, pp. 2, 5, 6, 13; Metro Mobile 6, Q-3, Attachment)

44. Metro Mobile would construct a new 150-foot AGL self-supporting monopole tower at the proposed alternate site. The tower would be approximately 3.5 feet in diameter at the base, tapering to about 1.5 feet in diameter at the top. The monopole would have a triangular antenna support platform, 13.5 feet on a side, located at the tower top. The total height of the proposed tower structure would be 152 AGL and 874 feet AMSL. Due to a ground elevation difference of 35 feet between the prime and alternate sites, an additional 35 feet in

tower height would be needed at the alternate tower site to provide comparable coverage as the prime site. (Metro Mobile 1, p. 8, Tab 2, p. 14; Metro Mobile 7, Q-8)

45. The proposed alternate cell site would be on the side of a heavily wooded ridge with terrain sloping down towards the southeast. The surface is rocky with substantial undergrowth and mature deciduous trees of varying heights. The surrounding terrain is undeveloped, hilly, and heavily wooded. The Stafford Middle School is located about 1,300 feet northwest of the proposed alternate site. (Metro Mobile 1, Tab 2, pp. 2, 4-7; DEP Letter, dated August 8, 1994)

46. The nearest single residence is located approximately 600 feet northwest of the proposed alternate cell site. The Laurel Hill condominium development abutting the southeast portion of the lessor's property is about 600 feet south of the cell site. (Metro Mobile 1, Tab 2, p. 7; Metro Mobile 7, Q-2)

47. Potential visibility of the proposed alternate tower from Furnace Avenue, Edgewood Street, Brendan Street, portions of Grant Avenue, and Route 32 would be minimized by the surrounding tree cover and intervening vegetation. The top section of the tower may be seen from the Stafford Middle School, through breaks in the trees along portions of Grant Avenue, Galotta Street, and sections of Laurel Hill condominiums. (Metro Mobile 1, pp. 11, 12, Tab 2, pp. 18, 19; Tr. I, pp. 61, 62; DEP Letter, dated August 8, 1994)

48. The worst-case electromagnetic radio frequency power density level at the proposed alternate tower base for 56 channels operating at maximum power (100 watts per channel) would be 0.030 mW/cm^2 for uncontrolled environments or 5.1 percent of the 1992 ANSI standard of 0.583 mW/cm^2 for cellular telephone frequencies. (Metro Mobile 1, pp. 14, 15, Tab 1, pp. 14, 18; Metro Mobile 6, Q-6)

49. The total estimated cost of construction to be incurred by Metro Mobile for the proposed alternate site would be:

Cellular radio equipment	$306,400
Tower and antennas	43,800
Power systems	43,500
Building	61,000
Miscellaneous (including site preparation/installation)	132,800
TOTAL COSTS	$587,500

(Metro Mobile 1, Tab 2, p. 10)