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| **DOCKET NO. 164** - An Application of Metro Mobile CTS of Hartford, Inc. and Metro Mobile CTS of New Haven, Inc., for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility. The proposed prime site is located approximately 700 feet northeast from the end of the North Chestnut Hill Road cul-de-sac (Lot No. 7), Killingworth. The proposed alternate site is located approximately 350 feet east of 828 Summerhill Road, Madison, Connecticut. | : | Connecticut |
| | : | Siting |
| | : | Council |
| | : | December 5, 1994 |

## FINDINGS OF FACT

### Introduction

1. Metro Mobile CTS of Hartford, Inc. and Metro Mobile CTS of New Haven, 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 in either the Town of Killingworth or the Town of Madison, Connecticut. The proposed facility would provide increased cellular telephone service to the Hartford and New Haven, Connecticut, New England County Metropolitan Areas (NECMA). (Metro Mobile I, pp. 1-2)

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, 1994. (Metro Mobile II)

3. Pursuant to CGS section 16-50m, the Council, after giving due notice thereof, held a public hearing for this application on September 13, 1994, beginning at 3:00 p.m. and reconvening at 7:00 p.m. in the Killingworth Fire House, Route 81, Killingworth, Connecticut. (Council Hearing Notice and Transcript)

4. The Council and its staff inspected the proposed prime and alternate sites in the Towns of Killingworth and Madison, Connecticut, on September 13, 1994. (Council Hearing Notice)

### Cellular Telecommunications

5. 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)

6. The FCC preempts state regulation for the need of cellular telephone service and in the areas of technical standards and market structure. In the Hartford and New Haven NECMAs, the FCC has issued one license to a non-wireline carrier, Metro Mobile, and the other to a wireline carrier, Springwich Cellular Limited Partnership, Inc. to provide competition. (Metro Mobile I, pp. 7 and 11, Tab 11; Council Docket No. 126, Finding of Fact No. 9 and 10)

7. Cellular service consists of low power transmitter/receiver stations known as cell sites. Cellular coverage is limited by topography, antenna height, power output, and interference from adjacent cell sites. The configuration of these cell sites creates a cellular system whereby 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, p. 18; Tab 5 pp. 6 and 7; Council Docket No. 126, Finding of Fact No. 12)

8. Metro Mobile proposes to use a total of 56 channels within the FCC allocated frequency range of 869-892 megahertz (MHz). Metro Mobile's current seven-cell reuse pattern, three-sector design would result in approximately 18-19 channels per sector per cell site. (Metro Mobile I, Tabs 1 and 2 p. 13; Metro Mobile VI, Q. 11)

9. The proposed Killingworth/Madison site would provide improved cellular coverage and traffic handling capacity in the Killingworth/Madison area where existing cellular service is less than acceptable (a radio signal less than negative 90dbm) or does not exist. The proposed site would provide coverage along State Routes 79, 80, 81, and 148 and local roads in Killingworth and Madison, and would off-load cellular telephone traffic from existing adjacent cell sites in Clinton, Killingworth, Haddam, Guilford, North Branford, and Durham (when operational). (Metro Mobile I, P. 8 and 10-11, Tab 5 p. 16; Transcript, p. 17)

## Alternatives

10. Metro Mobile was unable to identify any acceptable existing facilities or other structures of adequate height and sufficient structural strength with adequate space to attach antennas for the purposes of providing adequate cellular service and to avoid building a new tower within its 0.6 mile radius cell site search area. (Metro Mobile I pp. 22-23, Tabs 1 and 2 p. 2, and Tab 3)

11. There were 21 sites considered, of which 19 were rejected by Metro Mobile for the proposed Killingworth/Madison site. Reasons for rejection were:
    a) landowners unwilling to lease or sell property for use as a tower site;
    b) potential sites were eliminated because of poor coverage and distance from the center of the search area; and
    c) because sites with lower ground elevation than the proposed prime and alternate sites would require towers in excess of 200 feet in height.

    (Metro Mobile I, p. 23, Tab 3, Tab 5, pp. 11, 12, and 18)

12. There are seven existing towers, all located outside of the proposed Killingworth/Madison cell site search area, that would not meet Metro Mobile's coverage needs to the area. (Metro Mobile I, p. 23, Tab 3, and Tab 5 p. 12; Metro Mobile VII, Q. 2)

13. The proposed cellular system represents state-of-the-art technology and no viable alternatives to this system are available. Even though a mobile phone satellite service has been under development by the FCC, no commercial in-service date has been proposed. (Metro Mobile I, p. 23)

General Description of Proposed Killingworth/Madison Site

14. A new 21-foot by 30-foot single story equipment shelter would be constructed. An eight-foot security fence with a vehicle gate would be installed around the proposed tower and equipment building. (Metro Mobile I, p. 9; Metro Mobile VII, Q. 5)

15. The proposed tower would be designed to withstand pressure equivalent to a 90-mph wind with 0.5 inch of radial ice accumulation. (Metro Mobile I, Tabs 1 and 2 p. 9)

16. The Federal Aviation Administration (FAA) recommends that no obstruction marking or lighting would be required at the proposed prime or alternate tower. (Metro Mobile I, p. 26, Tabs 1 and 2 p. 12)

17. Overhead electric and telephone utilities would be installed adjacent to the access road serving the proposed prime or alternate site. Either site would have a permanent emergency diesel-fueled electric generator installed within the fenced facility to serve the site during power outages. Metro Mobile would obtain a DEP air emission permit for the emergency generator. (Metro Mobile I, p. 26, Tabs 1 and 2, pp. 5, 16, and 17; Metro Mobile VII, Q. 3; Transcript, pp. 15, 19,2 0, and 23)

18. After construction, noise from the proposed Killigworth/Madison site would be from a temperature control unit and/or the emergency generator. The noise level associated with the operation of the 50 kilowatt generator with sound shield enclosures would be approximately 67 decibels at the perimeter of the facility's fenced compound. Noise created as a result of, or relating to, the use of emergency equipment is exempt from State noise regulations. (Metro Mobile I, Tabs 1 and 2 p. 17; Metro Mobile VI, Q. 13; Regulations of Connecticut State Agencies, Title 22a Environmental Protection section 22a-69-1 through 22a-69-74, Control of Noise)

19. The proposed Killingworth/Madison facility would be equipped with intrusion and system alarms. The proposed site would not be staffed; however, Metro Mobile personnel would be available on a 24-hour basis for emergency or maintenance purposes. (Metro Mobile I, p. 9)

20. Metro Mobile has agreed to provide space to local emergency service entities for each respective host municipality. Neither the Town of Killingworth or Madison have expressed a need to mount equipment on the proposed facility in its community. (Metro Mobile I, p. 23; Metro Mobile III, Q. 18; Transcript p. 35)

21. The proposed Killingworth/Madison facility would be linked via microwave to an existing Killingworth site located approximately 4.8 miles east from the prime site and 5.5 miles east from the alternate site. Eventually, the proposed and existing Killingworth sites would be linked to Metro Mobile's Wallingford mobile telephone switching office thus relieving dependency on the wire-line network for switching capability. (Metro Mobile VI, Q. 8; Transcript, pp. 42, 43, and 58)

22. The proposed prime and alternate site would not have a significant adverse effect on scenic, natural, historic, cultural, or recreational values in the Killingworth/Madison area. (Metro Mobile I, P. 17, Tabs 1 and 2, p. 18, and Tab 3; Metro Mobile III)

23. There are no known extant populations of federally endangered or threatened species or Connecticut "species of special concern" occurring at the proposed prime or alternate sites. (Metro Mobile I p. 25 and Tab 3)

24. The worst case electromagnetic radio frequency power density level would be 4.0575 percent of the latest (1992) American National Standard Institute (ANSI) standard for an uncontrolled environment at the proposed prime site and 5.2068 percent of the ANSI standard at the proposed alternate site. Pursuant to CGS sections 22a-162 and 22a-162a, the State has adopted the ANSI standard, as amended, as the State standard. (Metro Mobile I, pp. 15 and 16, Tabs 1 and 2 p. 17; Metro Mobile VI, Qs. 8 and 16)

Proposed Prime Site - Killingworth

25. The proposed prime site is a vacant 6.59 acre wooded parcel east of the North Chestnut Hill Road cul-de-sac identified as lot #7 in the Annicelli subdivision in the Town of Killingworth, and is owned by Metro Mobile. The applicant proposes to develop an access road and an approximate 3,000-square foot facility compound next to the east property boundary. (Metro Mobile I, Tab 1; Metro Mobile VI, Q. 4)

26. The proposed prime site is 386 feet above mean sea level (AMSL). The 6.59 acre parcel slopes down from a 390-foot elevation at the northeast corner of the property (where the tower would be located) to 320 feet at the southwest corner of the property. The parcel has irregular topography with many rock outcroppings. Clearing and grading would be necessary to construct the driveway and site. (Metro Mobile I, p. 12 and Tab 1)

27. A new 170-foot self-supporting lattice tower is proposed to be constructed approximately 20 feet from the east property boundary. The Town of Killingworth zoning regulations require a rear set back of 30 feet. Nine four-foot directional antennas would be mounted with the center of radiation at the 168-foot level of the tower and a six-foot dish antenna

would be mounted at the 130-foot level of the tower. The total height of the tower with all appurtenances would not exceed 170 feet. (Metro Mobile I, p. 9, Tab 1, pp. 1, 8, 11 and Transcript, p. 42 )

28. An approximate 12-foot wide by 900-foot long gravel driveway would be constructed to access the proposed prime site from the North Chestnut Hill Road cul-de-sac. (Metro Mobile I, p. 10, Tab 1 pp. 1 and 7; Metro Mobile VI, Q. 4)

29. The proposed prime site is located within a rural residential zoned district and it is one of seven parcels within the Annicelli subdivision. The majority of surrounding property consists of forest including a South Central Connecticut Regional Water Authority reservoir west of North Chestnut Hill Road. (Metro Mobile I, p. 28 and 30; Tab I, p. 5 and 6; Metro Mobile VI, Q.4)

30. A stream is located along the southeast property boundary flowing approximately 800 feet south from the property to a wetland located within the Annicelli subdivision. No wetland soils were identified on the proposed prime site parcel; however, wet drainage areas were identified that would be crossed by 100 feet of access road. (Metro Mobile I, p. 31, Tab I p. 6; Metro Mobile VI, Q. 4; Transcript, pp. 29-34)

31. A Phase I Archaeological Reconnaissance Survey was conducted at the proposed prime site by Archaeological Consulting Services and reviewed by the Connecticut Historical Commission. Though the proposed prime site possessed moderate to high sensitivity for prehistoric archaeological resources, it was concluded that the proposed project would not have an adverse effect on cultural resources at the proposed prime site. (Metro Mobile I, pp. 15 and 27 and G; Metro Mobile III)

32. Trees on the proposed prime site are approximately 50 to 60 feet in height. Over 100 feet of the proposed tower may be visible from points along Route 148 and secondary roads in Killingworth. (Metro Mobile I, Tab I, pp. 17-22)

33. The newly developed North Chestnut Hill Road and cul-de-sac, which terminates at Metro Mobile's property, has not been officially accepted by the Town of Killingworth and remains as a private road. Though an abandoned thoroughfare continues north approximately 2,500 feet along a portion of the proposed prime site's west property boundary, the Town has no intentions of accepting any continuance of North Chestnut Hill Road to Bunnell Bridge Road. (Metro Mobile I, Tab 1, p. 14, Metro Mobile VI, Qs. 3 and 4; Transcript, p. 52)

34. Although the quality of coverage could not be precisely determined, a quantitative coverage analysis between a 150-foot tower and 170-foot tower showed little changes in coverage between these tower heights. In addition, a quantitative coverage analysis also indicated that a 200-foot tower would not provide much more coverage than a 170-foot tower. (Metro Mobile VI, Q. 6; Metro Mobile VII, Q. 1; Transcript, pp. 55, 56, 59, 60 and 61)

35. The tower fall zone at the proposed prime site would extend approximately 150 feet onto property east of the proposed site. If the tower were moved elsewhere on the proposed prime site to completely alleviate encroachment of the tower fall zone, the height of the tower would have to be extended over 200 feet to provide the same coverage as the proposed 170-foot tower. The equipment building would be the only structure within the fall zone. (Metro Mobile I, Tab 1, p. 5; Metro Mobile VI, Q. 4; Transcript, p. 76 and 77)

36. One residence would be within 1,000 feet of the proposed prime tower. This residence is approximately 750 feet southwest of the proposed tower located on lot #6 of the Annicelli subdivision. (Metro Mobile VI, Q. 4; Transcript, pp. 14 and 72)

37. Metro Mobile could not resubdivide the 6.59 acre parcel, but they could resell the property, including the tower facility. Although Metro Mobile has no intentions of developing the property beyond what is proposed, Metro Mobile would not want to further encumber the property with any type of conservation easement. (Transcript, pp. 36-39)

38. 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 | $ 84,900 |
| Power Systems | $ 43,500 |
| Building | $ 61,000 |
| Site preparation/installation | $182,800 |
| TOTAL | $678,600 |

(Metro Mobile I, pp. 20 and 21; Tab 1, p. 9)

## Proposed Alternate Site - Madison

39. The proposed alternate site is a 70-foot by 100-foot leased area that abuts the rear property line of a 3.28 acre parcel located at 828 Summerhill Road, Madison. The property is owned by Robert and Diane Gourley. (Metro Mobile I, Tab 2)

40. The proposed alternate site is 393 feet AMSL. The site including the lessor's parcel and adjacent properties is heavily wooded with rocky outcroppings. Clearing and grading would be necessary to construct the driveway and site. (Metro Mobile I, p. 12 and Tab 2)

41. A new 150-foot monopole tower would be constructed approximately 90 feet west of the east property boundary. The Town of Madison zoning regulations requires a 30-foot rear set back. Nine four-foot directional antennas would be mounted with the center of radiation at the 150-foot level of the tower and a six-foot dish antenna would be mounted at the 130-foot level of the tower. The total height of the tower with antennas would not exceed 152 feet. (Metro Mobile I, p. 9; Tab 2, pp. 5, 8, and 11-13)

42. An approximate 12-foot wide by 375-foot long driveway would be constructed to access the proposed alternate site off Summerhill Road. While Metro Mobile has a 25-foot wide easement to install utilities and access road, Metro Mobile does not intend to clear the entire width of the easement. (Metro Mobile I, Tab 1, pp. 1 and 7; Transcript, p. 22)

43. The proposed alternate site is located within a rural residential zoned district. The site is not within Town areas designated Environmental Conservation Rural District or Open Space Conservation District. (Metro Mobile I, Tab 2, p. 6; Transcript, pp. 26-28)

44. No wetlands or watercourses are on the leased parcel; however, a drainage culvert is located under a driveway north of the lessor's property and adjacent to the access easement. The shared use of this existing driveway was not explored. (Metro Mobile I, Tab 2, pp. 6 and 7; Transcript, pp. 20, 24, and 25)

45. Trees surrounding the proposed alternate site reach heights of 50 to 60 feet. Approximately 100 feet of the tower may be visible from points south and west of the site. (Metro Mobile I, Tab 2, p. 18)

46. Even though the proposed alternate tower's total height AMSL would be 11 feet lower than the proposed prime tower height, an adequate level of service would be provided to the Killingworth/Madison area. (Metro Mobile I, Tabs 1,2,3, and 6)

47. The fall zone of the proposed alternate tower would encroach approximately 50 feet into property east of the site and approximately ten feet into property north of the site. Metro Mobile's equipment building and the lessor's residence and storage shed would be the only buildings within the tower's fall zone. (Metro Mobile I, Tab 2, p. 5; Metro Mobile VI, Q. 12)

48. An existing wood shed and associated debris are located within the leased parcel. Metro Mobile has negotiated with the lessor to replace the shed and remove the debris. (Transcript, pp. 26 and 27)

49. Nine residences are within 1,000 feet of the proposed alternate tower. The closest residence (lessor's residence) is 150 feet west of the proposed tower. The next closest residence would be approximately 250 feet north from the proposed alternate tower. (Metro Mobile I, Tab 2, p. 18; Metro Mobile VI, Q. 16.)

50. 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 | $ 88,800 |
| Power System | $ 43,500 |
| Building | $ 61,000 |
| Site preparation/Installation | $157,800 |
| TOTAL | $657,500 |

(Metro Mobile I, pp. 20 and 21; Tab 2, p. 9)