DOCKET NO. 148 - An application of Metro Mobile CTS of Hartford, Inc., for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telephone tower and associated equipment in the Town of Clinton, Connecticut. The proposed site is located on an interior portion of a 59 acre parcel off Glenwood Road approximately 3,500 feet north of I-95. The alternate site is located on a six acre parcel off Cow Hill Road, approximately 300 feet north of I-95.

Connecticut

Siting

Council

May 5, 1992

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 December 27, 1991, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, operation, and maintenance of a cellular telephone telecommunications facility in the Town of Clinton, Connecticut, to provide increased cellular service in the Hartford New England County Metropolitan Area (NECMA). (Metro Mobile I, p.1)

2. Public notice of the application, as required by CGS section 16-501(b) was published in the New Haven Register on December 23 and December 24, 1991. (Metro Mobile VII)

3. Pursuant to CGS section 16-50m, the Council, after giving due notice thereof, held a public hearing on the application on February 20, 1992, beginning at 3:00 P.M., and reconvening at 7:00 P.M., in the Clinton Town Hall, 54 East Main Street, Clinton, Connecticut. (Hearing Notice, p. 1)

4. The Council and its staff made inspections of the proposed prime and alternate sites in Clinton, Connecticut, on February 19, 1992, and February 20, 1992. During the February 20, 1992, field inspection, Metro Mobile flew balloons at the proposed prime and alternate sites in order to simulate the heights of the proposed prime and alternate towers. (Hearing Notice, p. 3; Tr., 2/20/92, 3:00 P.M., p. 30)

5. On October 18, 1990, Metro Mobile received an operating license (Radio Station Authorization) from the Federal Communications Commission (FCC) to construct and operate cellular radio telecommunications sites within the Hartford NECMA, within which the Town of Clinton is located. (Metro Mobile I, p. 8; Attachment 12)

6. The FCC rules permit a licensee to modify its system, including the addition of a new cell site, without prior FCC approval as long as the licensee's authorized service area is not enlarged. The facilities proposed in this application would not enlarge Metro Mobile's authorized service area. (Metro Mobile I, p. 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. (Metro Mobile I, p. 7)

8. The FCC has preempted State regulation of cellular telephone service in the areas of technical standards, market structure, and State certification prior to federal filing. (Metro Mobile I, pp. 6-7)

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, called a cell. 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). (Metro Mobile I, p. 14; Docket 147, Springwich I, pp. 2-3; Docket 147, Springwich I, Section II, pp. 2-3)

10. The FCC has designated certain frequencies for wireline and non-wireline carrier use. Springwich Cellular Limited Partnership (Springwich), the wireline carrier, and Metro Mobile, the non-wireline carrier, have each been allocated 25 MHz of frequency spectrum. The 25 MHz of spectrum provides 416 two-way radio channels for each carrier. (Metro Mobile I, p. 10; Docket 147, Springwich I, p. 3; Docket 147, Springwich I, Section III, p. 3)

11. Metro Mobile submitted a Notice of Proposed Construction or Alteration to the Federal Aviation Administration (FAA) on October 11, 1990, for approval of a structure with a total height of 193 feet above ground level (AGL), including all appurtenances, for its proposed prime Clinton tower site. On November 23, 1990, the FAA determined the proposed prime Clinton tower would not be an obstruction, and that obstruction marking and

lighting would not be necessary for this tower. On December 31, 1990, Metro Mobile notified the FAA that Metro Mobile would now require a tower with a total height of 173 feet AGL, including appurtenances, at its proposed prime Clinton tower site. On January 17, 1991, the FAA acknowledged Metro Mobile's change in tower height to 173 feet AGL for its proposed prime Clinton tower. (Metro Mobile I, Section 1, pp. 12-16)

12. On October 28, 1991, Metro Mobile submitted a Notice of Proposed Construction or Alteration to the FAA for its proposed alternate Clinton tower, which would have a total height of 223 feet AGL, including appurtenances. On February 26, 1992, the FAA determined the proposed Clinton alternate tower would be an obstruction and would have to be obstruction marked and lighted. (Metro Mobile Late File XI)

13. Construction of the proposed prime or alternate Metro Mobile tower sites in Clinton would have no effect on Federally Endangered and Threatened Species or Connecticut Species of Special Concern. (Metro Mobile I, Section 4)

14. Construction of the proposed prime or alternate Metro Mobile tower sites in Clinton would have no effect on any sites having historical significance in the area. (Metro Mobile I, Section 4)

15. The proposed Metro Mobile alternate site lies within the coastal boundary regulated under the Connecticut Coastal Management Act. However, the construction of the alternate site would not conflict with any coastal resources under the jurisdiction of the Connecticut Coastal Management Act. Neither the proposed nor alternate Clinton tower site would affect any properties managed by the Department of Environmental Protection. (DEP Comments, 2/6/92, p. 2)

Need

16. The proposed Metro Mobile Clinton facility would provide coverage to existing gaps in coverage along Interstate 95 (I-95), Routes 1 and 79, and provide additional cellular traffic handling capacity in the Towns of Clinton, Killingworth, Madison, and Westbrook. Cellular propogation coverage maps indicate that Metro Mobile presently experiences approximately two miles of inadequate coverage along I-95 and 2/3 mile of inadequate coverage along Route 79. (Metro Mobile I, Section 3, p. 1; Metro Mobile II, Q. 4; Metro Mobile I, p. 8; Metro Mobile I, Section 7, p. 1; Metro Mobile Late File IX)

17. The proposed Clinton facility would increase the call handling capacity of the existing Metro Mobile Guilford and Killingworth cell sites and enhance the quality of service within Metro Mobile's Hartford NECMA. The Clinton region has areas in which cellular telephone calls are dropped or cannot be originated at all, including calls carried on state-of-the-art cellular telephone units. In addition, in the near future, a projected increase in demand for mobile telephone communications would exceed the capacity of existing facilities, which the proposed Metro Mobile Clinton facility would serve to meet. (Metro Mobile I, p. 2; Metro Mobile I, p. 2, p. 8; Metro Mobile III, Q. 10; Tr. 2/20/92, 3:00 P.M., p. 40)

18. Metro Mobile considered 10 sites in its search for a cell site in the Clinton area, two of which became the prime and alternate sites. The other eight sites were rejected for reasons which included being too close to the existing Killingworth site, existing towers which were too short or structurally incapable of holding the required antennas, a lack of interest in leasing a site by property owners, proximity to planned residential developments, and distance from the search area. (Metro Mobile I, Section 3, pp. 1-3)

19. The location and size of the search area depends on the location and distance between the existing cells with which the proposed cell would interface. Coverage holes or capacity shortfalls also influence the delineation of a search area. The Clinton search area was identified to provide acceptable coverage to inadequately covered sections of I-95, Route 1, Route 79, and to off-load traffic from the existing Killingworth site and interface with the existing East Lyme and Guilford sites. (Metro Mobile II, Q. 8)

20. Adding 20 feet to the existing 160-foot Killingworth Metro Mobile tower would not provide adequate coverage to the Clinton area. The antenna attached to the Killingworth tower would have to be over 300 feet AGL to provide the required coverage to Clinton. Placing antennas at that height would cause interference within existing surrounding Metro Mobile cell sites as well as an adjacent cell system on Long Island, New York. (Docket 69, Finding 42; Metro Mobile III, Q.12)

21. The proposed Clinton facility would not exceed its call-handling capacity before the end of 1993. (Metro Mobile III, Q. 11)

Proposed Clinton Prime Site

22. The proposed prime Metro Mobile tower site is a 100-foot by 100-foot parcel of land within a 59-acre parcel owned

by Leo Bugg, Jr., and located off of Glenwood Road in Clinton. The proposed site contains an operating sand and gravel pit within the property of the Shoreline Concrete Company. Vehicular access would be from Glenwood Road over an existing 12-foot wide dirt road. The proposed site has an elevation of 80 feet above mean sea level (AMSL). (Metro Mobile I, Section 1, p. 1, p. 2; Section 6, p. 9; Metro Mobile II, Q.3; DEP Comments, 2/6/92, p. 1)

23. The proposed site is a non-conforming industrial/commercial use within an R-20 Residential Zone. Under the Town of Clinton's Zoning Regulations, a non-conforming use of land which has either ceased or been discontinued for a continuous period of one year or more shall not thereafter be resumed or replaced by any other non-conforming use. The proposed site is heavily wooded with mature deciduous trees on three sides. No structures would be within the fall zone of the proposed tower. (Metro Mobile I, Section 1, p. 6; Metro Mobile II, Q. I, Clinton Zoning Regulations, p. 62; Metro Mobile III, Q.13)

24. There are 26 residences within a 1000-foot radius of the proposed tower site, the nearest of which is approximately 650 feet to the northeast, off Oak Ridge Drive. The proposed tower site is approximately 2000 feet from the Jared Elliot Middle School, 1500 feet from the Joel Elementary School, and 2400 feet from the Morgan High School. (Metro Mobile I, Section 1, p. 13; Metro Mobile I, Section 5, p. 2, p. 4; Metro Mobile II, Q. 1; Town of Clinton Inland Wetlands Map)

25. There are no wetlands on the proposed site. During construction, approximately 15-20 trees would have to be removed. (Metro Mobile II, Q.3; Tr., 2/20/92, 3:00 P.M., p. 23)

26. A 14-foot by 40-foot single story equipment building would be constructed on the proposed site. An eight-foot chain link fence would surround the 160-foot tower and equipment building. Utilities would be brought in via overhead lines extending from existing facilities. (Metro Mobile I, Section 1, p.6, p. 9; Metro Mobile I, Section 5, p. 1; Metro Mobile II, Q. 3)

27. The property of the Shoreline Concrete Company and of a large adjacent nursery would provide a buffer for the proposed site toward the west and south. Homes along Glenwood Road and Oak Ridge Drive are within 1000 feet of the proposed prime tower but would be partially screened by intervening woods and local topography. (DEP Comments, 2/6/92, p. 2)

28. The proposed prime tower would be partially visible from from Route 81, Glenwood Road, Field Brook Avenue, and Oak Ridge Drive. There would be little or no visibility of the tower from Ninety Rod Road and Fairy Dell Road. There would be virtually no visibility of the tower from the area along I-95 to the south. (Metro Mobile I, Section 5, p. 2; Tr., 2/20/92, 3:00 P.M., p. 30; Tr., 2/20/92, 7:00 P.M., p. 11)

29. Clinton residents and Town officials opposed the proposed prime tower site, citing its location within a residential area; proximity to three schools; visibility from the surrounding area; and concerns about tower climbing by youths. (Tr., 2/20/92, 7:00 p.m., pp. 10-12, pp. 18-20, p. 22, p. 29)

30. The total estimated costs for the construction of the proposed prime Clinton tower site would be as follows:

Radio equipment		$347,400.
Tower and antenna		32,640.
Power systems		12,000.
Building costs		68,300.
Miscellaneous		157,800.
	TOTAL	$618,140.

(Metro Mobile I, p. 17)

Proposed Clinton Alternate Site

31. The proposed Metro Mobile Clinton alternate site would be an 8153 square-foot parcel of land within a six-acre parcel owned by Raymond E. Heser off of Cow Hill Road abutting I-95, on land zoned Industrial Park (IP) in Clinton. The elevation of the alternate site is 19 feet AMSL. (Tr., 2/20/92, 3:00 P.M., p. 21; Metro Mobile I, Section 2, p. 1, p. 6)

32. The alternate site is within a field at the northern edge of a small industrial park. The surrounding terrain to the north is heavily wooded with mature deciduous trees. (DEP Comments, 2/6/92, p. 2; Metro Mobile I, Section 2, p. 6)

33. Minimal clearing and filling would be required at the alternate site. No trees would be removed. (Metro Mobile I, Section 2, p. 1; DEP Comments, 2/6/92, p. 2; Tr., 2/20/92, 3:00 P.M., p. 22)

34. The alternate site does not contain wetlands, but does border a wetland to the east. The proposed access road would not cross wetlands. The Town of Clinton wetland regulations provide for a 25-foot setback from wetlands. The Town of Clinton regulates any area within 100 feet of wetlands and watercourses. (Metro Mobile II, Q. 3; Tr., 2/20/92, 3:00 P.M., pp. 23-24, p. 27;

Town of Clinton Inland Wetland Regulations, Section 6, p. 11; Section 4)

35. Utilities would be brought into the alternate site via overhead lines from existing utility structures. Vehicular access would be from a newly constructed 12-foot wide gravel roadway extending from an existing roadway leading to Cow Hill Road. The fall zone of the tower would include one structure within its radius, a storage shed belonging to the landlord. (Metro Mobile I, pp. 9-10; Metro Mobile II, Q. 3, Q. 13)

36. Metro Mobile would construct a new 14-foot by 40-foot single story equipment building at the alternate site. An eight-foot security fence would surround the equipment building and tower. (Metro Mobile I, pp. 9-10)

37. Twenty-three homes are within a 1000-foot radius of the alternate site, the nearest of which is approximately 600 feet to the south of the alternate site across I-95. The alternate site would be approximately 6000 feet from the Joel Elementary School, 5800 feet from the Jared Elliot Middle School, and 2500 feet from the Morgan High School. (DEP Comments, 2/6/92, p.2; Metro Mobile I, Section 2, p. 6, p. 13; Metro Mobile I, Section 5, p. 12, 14; Metro Mobile II, Q. 1, Town of Clinton Inland Wetlands Map)

38. The alternate site tower would be most visible from the homes on Sunnybrook Lane, south of I-95, at distances of approximately 600 feet to 1500 feet from the alternate site. All the homes in the Sunnybrook Lane area would have some visual buffer from the alternate tower site due to existing vegetation as well as the separation caused by I-95. The tower would be visible from areas along I-95, Nod Road, and Cow Hill Road. (DEP Comments, 2/6/92, p. 2; Metro Mobile I, Section 5, p. 12, p. 14; Tr., 2/20/92, 3:00 P.M., p. 31)

39. The total estimated costs for the construction of the alternate Clinton Metro Mobile site would be as follows:

Radio equipment	$347,400.
Tower and antennas	60,600.
Power systems	12,000.
Building	68,300.
Miscellaneous	132,800.
TOTAL	$621,100.

(Metro Mobile I, Section 2, p. 9)

Tower and Antennas

40. Metro Mobile would construct a 160-foot self-supporting lattice tower at the proposed Clinton site. The Rohn SSV heavy series tower would support two fifteen-foot omnidirectional transmit antennas base-mounted at the 158-foot level, resulting in a total overall tower height of 173 feet. Six four-foot directional transmit/receive antennas would be attached with a center of radiation at the 154-foot level. (Metro Mobile I, p. 9; Section 1, p. 8)

41. Metro Mobile would construct a 210-foot self-supporting lattice tower at the alternate Clinton site. The Rohn SSV heavy series tower would support two fifteen-foot omnidirectional transmit antennas base-mounted at the 208-foot level, resulting in a total overall tower height of 223 feet. Six four-foot directional transmit/receive antennas would be attached with a center of radiation at the 204-foot level of the tower. (Metro Mobile I, p. 9, Section 2, p. 8)

42. The proposed prime and proposed alternate Metro Mobile towers would be designed to withstand pressures equivalent to 90 mile-an-hour winds with one-half inch of solid ice accumulation, in accordance with Electronic Industries Association standard RS-222-D. (Metro Mobile I, Section 1, p. 9, Section 2, p. 9)

43. Rohn, the manufacturer of the proposed prime and alternate towers, recommends placement of anti-climb sections on all towers to prevent unauthorized persons from climbing its towers. (Metro Mobile I, Section 13, p. 1)

44. Although a lattice tower is preferred by Metro Mobile due to its greater flexibility, a monopole could be used in Clinton. A limited amount of additional tower sharing is possible on a monopole; however, such a tower could be shared by two cellular carriers. (Tr., 2/20/92, 3:00 P.M., pp. 38-39, p. 61)

Tower Site Search Process

45. Over a period of several months, both Springwich and Metro Mobile attempted to negotiate a mutually satisfactory agreement on the sharing of a tower site in Clinton. Due to differing business practices, the two companies were unable to finalize an agreement, and both carriers filed separate

applications for Clinton tower sites with the Council in December 1991. However, at the urging of the Clinton First Selectman, both companies agreed to make another attempt at tower sharing. (Docket 148, Tr., 2/20/92, 3:00 P.M., pp. 32-33; Docket No. 148, Metro Mobile II, Q. 7; Docket 147, Springwich II, Q. 11; Docket 147, Springwich IV, p. 1)

46. On February 11, 1992, Springwich co-signed a sublease with Metro Mobile to share Metro Mobile's proposed prime or alternate Clinton tower site as proposed to the Council in Docket No. 148. The option is for a period of one year. (Docket 148, Tr., 2/20/92, 3:00 P.M., pp. 32-33; Docket 147, Springwich V, Attachment B; Tr., 2/19/92, 3:00 P.M., p. 12)

47. Springwich has determined it could locate its antennas on Metro Mobile's proposed or alternate Clinton tower below the antennas of Metro Mobile without requiring any change in the tower's design, height, or structure. The Springwich antennas would be sufficiently separated from those of Metro Mobile to prevent interference. No paging equipment would be attached to either tower. (Tr., 2/19/92, 7:00 P.M., p. 30; p. 39; Tr., 2/19/92, 3:00 p.m., p. 26, p. 33)

48. The antenna space leased to Springwich on the Metro Mobile prime or alternate Clinton tower would be of sufficient elevation at the proposed tower heights of 160 feet or 210 feet respectively, to meet Springwich's coverage objectives in the Clinton area. (Tr., 2/19/92, 3:00 P.M., p. 59)

49. At Metro Mobile's proposed prime 160-foot lattice tower off of Glenwood Road in Clinton, Springwich would attach one transmit antenna at the 160-foot level; two side-mounted receive antennas between the 123-foot and 134-foot levels; and nine transmit/receive antennas side-mounted between the 137-foot and 141-foot levels of the proposed tower. (Docket 147, Springwich V, Attachment B)

50. At Metro Mobile's proposed alternate 210-foot lattice tower off of Cow Hill Road in Clinton, Springwich would attach one transmit antenna at the 210-foot level and two side-mounted receive antennas between the 173-foot and 184-foot levels; and nine transmit/receive antennas side-mounted between the 187-foot and 191-foot levels of this proposed alternate tower. (Docket 147, Springwich V, Attachment B)

51. Metro Mobile determined that coverage from the Springwich proposed prime Clinton site at 113 Nod

Road and proposed alternate site at 46 Nod Road would be inadequate for its purposes, based on 180-foot towers, as proposed by Springwich, and with Metro Mobile antennas attached at the 150-foot levels. Metro Mobile would require a tower with antennas having a radiation center of approximately 210 feet AGL at the proposed Springwich site and 225 feet AGL at the alternate Springwich site. (Metro Mobile IV, Q, 14; Tr., 2/20/92, 3:00 P.M., p. 83)

52. At either the proposed or alternate Metro Mobile tower site, Springwich would have its own separate equipment building of approximately 400 square feet. (Tr., 2/20/92, 3:00 P.M., pp. 24-26)

53. Metro Mobile has discussed the availability of space on its proposed prime or alternate Clinton tower with the Town of Clinton, and has offered to allow the Town of Clinton to place its antennas there. Space would also be available for Town of Clinton electronic equipment in the Metro Mobile equipment building. (Tr., 2/20/92, 3:00 P.M., pp. 24-26)

Power Densities

54. Based on conservative assumptions, with the proposed prime cell site broadcasting with 90 channels at 100 watts, the electromagnetic radio frequency power density level for the Metro Mobile antennas would be 0.1364 mW/cm^2 at the base of the tower. The power density level for the Springwich antennas, with 45 channels broadcasting at 100 watts, would be 0.1003 mW/cm^2, at the base of the tower. The combined power density total for all of the Metro Mobile and Springwich antennas would be 0.2367 mW/cm^2 at the base of the tower. (Tr., 2/20/92, 3:00 P.M., p. 26; 7:00 P.M., pp. 34-35)

56. Based on conservative assumptions, with the alternate cell site broadcasting with 90 channels at 100 watts, the electromagnetic radio frequency power density level for the Metro Mobile antennas would be 0.0777 mW/cm^2 at the base of the tower. The power density level for the Springwich antennas, with 45 channels broadcasting at 100 watts, would be 0.0516 mW/cm^2 at the base of the tower. The combined power density total for all of the Metro Mobile and Springwich antennas would be 0.1293 mW/cm^2 at the base of the tower. (Tr., 2/20/92, 3:00 P.M., p. 26; 7:00 P.M., pp. 34-35)

57. The American National Standards Institute (ANSI) recommended safety level and current Connecticut Standard for the frequencies used by cellular telephone service is 2.933 mW/cm^2. (Metro Mobile I, Section 5, p. 2; Docket 147, Springwich I, Section VI, p. 25)