

DOCKET NO. 102 - An application of : Connecticut Siting
SNET Cellular, Inc., for a :
Certificate of Environmental : Council
Compatibility and Public Need :
for cellular telephone antennas : July 25, 1989
and associated equipment in the
Town of Redding, Connecticut.

FILE
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F I N D I N G S O F F A C T

1. SNET Cellular, Inc., (SNET) in accordance with the provisions of Sections 16-50g to 16-50z of the Connecticut General Statutes (CGS) applied to the Connecticut Siting Council (Council) on November 22, 1988, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a telecommunications tower and associated equipment to provide domestic public cellular radio communication service (cellular service) in the Town of Redding within the Fairfield New England County Metropolitan Area (Fairfield NECMA). (Record)
2. The fee as prescribed by Section 16-50v-1a of the Regulations of State Agencies (RSA) accompanied the application. (Record)
3. The Council and its staff made an inspection of the proposed Redding site on February 27, 1989. This inspection was publicly noticed in the Danbury News-Times. During the field review, SNET flew a balloon at the site of the proposed tower. (Record)

4. Pursuant to Section 16-50m of the CGS, the Council, after giving due notice thereof, held public hearings on the proposed tower site on February 27, 1989, beginning at 3:15 p.m. and continuing at 6:30 p.m. the same day. Additional public hearings were held in the Redding Town Hall on March 9, 1989, beginning at 11:00 a.m., and on April 18, 1989, beginning at 10:00 a.m. (Record)
5. The parties in the proceeding are the applicant and those persons and organizations whose names are listed in the Decision and Order which accompanies these Findings of Fact. (Record)
6. The Department of Environmental Protection filed written comments with the Council pursuant to Section 16-50j of the CGS on February 15, 1989. (Record)
7. Cellular service consists of small, overlapping broadcast regions, two to ten miles in diameter, known as cells. Each cell is served by a transmitter limited by the Federal Communications Commission (FCC) to no more than 100 watts effective radiated power per channel. Each cell is connected to a central switching point containing electronic apparatus uniting the cells into a system. Mobile units are limited by the FCC to a maximum of seven watts of effective radiated power. (SNET 1, Section II, p.2)
8. The FCC has determined that the public interest requires two licenses for cellular service be made available in each market of each NECMA. (SNET 1, p.3)

9. Applicants for FCC cellular system authorizations are not required to demonstrate a public need for the service, since the FCC has pre-empted this issue through the exercise of its primary jurisdiction. (SNET 1, Section III, p.3)
10. The FCC has pre-empted the States' regulations of cellular service in three major areas: technical standards to assure technical integrity of systems and nationwide compatibility, market structure, and state certification prior to Federal application for a construction permit. (SNET 1, Section III, pp.3-4)
11. The FCC granted SNET cellular radio authorization for the Fairfield NECMA on June 21, 1984. (SNET 1, p.3)
12. As part of the SNET's overall system, the proposed site in Redding is planned to overlap with existing cellular coverage from sites in Danbury and Newtown. (SNET 1, Section VI, p.1; Tr., 2/27/89, 3:15 p.m., p.31)
13. The coverage from the proposed Redding tower site would include Routes 7, 35, 53, 102, and 107 within the towns of Redding, Ridgefield, Weston, Wilton, and Bethel. (SNET 1, Section VI, p.1; Tr., 2/27/89, 3:15 p.m., p.31)
14. To ensure the processing of a call, SNET designs for a signal strength of -90dBm or lower. (SNET 13; Tr., 3/9/89, pp.36-37)

15. An area of importance intended to be covered by the proposed tower is a three-mile gap along Route 7. This 3-mile gap is in the general coverage area of an existing Danbury facility on Moses Mountain, but is shadowed by steep valley walls adjacent to Route 7. Signal strength along the three mile gap on Route 7 is presently in the range of -100dBm to -95dBm. This three mile gap would be completely covered by the proposed 150-foot tower. (Tr., 2/27/89, 3:15 p.m., pp.32-34; SNET Exhibit 13)
16. According to a map of existing and expected cellular coverage, the proposed site would provide coverage which overlaps approximately two-thirds with existing coverage from the existing Danbury Moses Mountain site to the north and from the existing Norwalk site to the south. However, due to nulls and voids within coverage not apparent on this map, the coverage overlap might be somewhat less. (SNET 13; Tr., 3/9/89, pp.36-37)
17. The proposed Redding site is a four acre parcel of land owned by the Department of Motor Vehicles (DMV), 1600 feet south-southwest of the intersection of Barretts Lane and Old Redding Road. The proposed site is at the terminus of a dirt roadway known as Fire Tower Road. (SNET 1, Section VI, p.4)
18. SNET proposes to replace the existing 49-foot scaffold tower owned by the DMV and known as the Redding Lookout Tower, with a 150-foot monopole and associated one-story equipment building. The existing tower was once used as a

firetower. The proposed new tower and building would be shared by SNET with the DMV and the Northwest Connecticut Public Safety Communications Center (NCPSCC). After construction, ownership of the proposed tower and building would be transferred to the DMV. The existing tower now being used by the DMV and the NCPSCC would then be removed. (SNET 1, Section VI, p.1, p.5, p.11; SNET 2, Q.20; Tr., 2/27/89, 3:15 p.m., p.19, p.23, p.39)

19. The coordinates of the proposed site are $41^{\circ}17'28''$ latitude, and $73^{\circ}25'49''$ longitude. Access to the proposed site would be via the existing Fire Tower Road. Telephone and electric utilities already serve this site via a direct buried cable from Old Redding Road. (SNET 1, Section VI, p.14, p.28)
20. The proposed site is atop a ridgeline, and has an elevation of 740 feet above mean sea level (AMSL). (SNET 1, Section VI, p.5, p.14, p.28; Tr., 3/9/89, p.84)
21. The proposed site is zoned rural residential (R-2). Redding R-2 zoning requires a minimum lot area of 87,120 square feet (2 acres); 50 feet minimum frontage; 10 percent maximum building coverage; 30-foot building height maximum, and 50-foot front, 50-foot rear, and 40-foot side minimum yard distances. (SNET 2, Q.10, p.12)
22. Broadcast towers of up to 100 feet in height are permitted under Redding zoning regulations. (SNET 2, Q.10, p.5; Tr., 3/9/89, p.98)

23. The proposed site is within an area of upland forest which includes trees such as oaks, maples, hickories, birches, poplars, beeches, and dogwoods. Two homes are presently located within a 1000-foot radius of the proposed site, the nearest of which stands 600 feet to the west. (SNET 1, Section VI, p.15; SNET 2, Q.9; Guitar Exhibit 5, p.B-22)
24. In the construction of the proposed tower and equipment building, approximately 12 trees would have to be removed. (SNET 2, Q.14)
25. There are no wetlands on the proposed site or along the access road. (SNET 2, Q.6)
26. The Real Vest Corporation owns 137.6 acres of land that includes the proposed access road to the site, Fire Tower Road, that surrounds the proposed site. On January 26, 1989, the Real Vest Corporation filed an application with the Redding Planning and Zoning Commission to construct a 25-home subdivision on this parcel of land. The fall zone of the proposed tower would be 167 feet and extend onto this parcel by 33 feet. (SNET 2, Q.9, Q.22; Guitar 4, p.2)
27. The nearest house in the proposed Real Vest subdivision would be 250 feet from the proposed tower. (Tr., 4/18/89, p.20; SNET Exhibit 14; Real Vest Exhibit 13)
28. The existing tower on the DMV property is not readily visible from housing sites on the proposed Real Vest subdivision. (Tr., 3/9/89, pp.133-134)

29. A 150-foot tower at the proposed site would be visible throughout portions of the proposed Real Vest subdivision, from the Guitar property, from Old Redding Road, from Seventy Acres Road, and from Topstone Park. The proposed 150-foot tower would not be visible from the intersection of Umpawaug Road and Fox Run Road, from the cul-de-sac on Mine Hill Road, or from the intersection of Old Redding Road and Fire Tower Road. (Tr., 3/9/89, pp.157-158; SNET 1, Section VI, p.5; SNET 2, Q.7 Q.9; Guitar Exhibit 6, p.69; Guitar Exhibit 5, p.B-23)
30. A Connecticut Light and Power (CL&P) company transmission line traverses the proposed Real Vest subdivision. The right of way is 3400 feet in length, and 70 feet in width. The line is supported by wooden poles approximately 60 feet in height. The closest portion of the CL&P line is 1300 feet from the proposed tower site but does not cross the ridgeline of the proposed tower site. (Tr., 4/18/89, pp.10-11; SNET Exhibit 14; Tr., 3/9/89, p.132)
31. A trail system links two town-owned parks, Topstone and Rock Lot-Scott Preserve, through the Real Vest property. Real Vest plans to retain these trails where possible, and relocate other sections. The closest portion of the trail to the proposed tower site would be approximately 200 feet. (Tr., 3/9/89, pp.79-80, pp.136-137, p.169; Real Vest Exhibit 14)

32. Topstone Park is .8 mile to the northwest of the proposed tower site. The highest portion of Topstone Mountain has an elevation of 710 feet AMSL, and views to Long Island Sound. Rock Lot-Scott Preserve is located approximately .75 miles south of the proposed site. (SNET 1, Section VI, p.5; SNET 2, Q.4, Guitar Exhibit 6, p.8, p.69)
33. The proposed tower site is within the Saugatuck West Greenbelt, which is identified by the Town of Redding as "Proposed Open Space". (Tr., 2/27/89, 7:00 p.m, pp.30-31)
34. The proposed site is bounded on the north by Old Redding Road. Umpawaug Hill, from Old Redding Road north, has been proposed as a scenic area by the Town of Redding. (Guitar Exhibit 5, p.29, p.B-22)
35. The proposed tower site is within an area identified by the State Policies Plan for the Conservation and Development of Connecticut, 1987-1992, (State Policies Plan) as a Conservation Area. The State Policies Plan recommends that changes in the use of such an area be compatible with identified conservation values, including lands contributing to the state's need for agricultural, water, and other resources, open space, recreation, and environmental quality. The State Policies Plan provides a policy and planning framework for the administrative and programmatic actions, and capital and operational investment decisions of State government which influence the future growth and development of the State. The

objective is to guide a balanced response to human, environmental, and economic needs in a manner best suiting the future of Connecticut. (Tr., 3/9/89, p.92; State Policies Plan and Locational Guide Map)

36. The proposed tower would be a 150-foot monopole to which a triangular platform would be attached. Between four and six omnidirectional whip antennas would be mounted at the corners of the triangle. The antennas and support structure add 17 feet to the overall height of the tower, thereby resulting in a total structure height of 167 feet. (SNET 1, Section V, pp.2-4)
37. The DMV and NCPSCC antennas would be mounted on a platform at the top of the tower next to the SNET antennas. (SNET 2, Q.5)
38. The NCPSCC would use the tower to provide ambulance-to-hospital communications as part of its Emergency Medical Service Operations. The DMV would use the tower for its own communications. (SNET 1, Section VI, p.30; Tr., 2/27/89, 3:15 p.m. p.25)
39. The Federal Aviation Administration (FAA) has determined that the proposed tower would not be an obstruction under FAA regulations, and that obstruction marking and lighting would not be necessary. (SNET 2, Q.8, Response of 5/10/89)
40. Monopole towers are routinely available in height increments of 60 feet, 75 feet, 100 feet, 130 feet, and 150 feet. (Tr., 2/27/89, 3:15 p.m. p.55)

41. A 130-foot tower with antennas and support platform would have a fall zone radius of 147 feet. If placed in the middle of the 268-foot wide DMV parcel, only the whip antennas would exceed the fall zone onto Real Vest property. A 130-foot tower would overlap coverage with existing facilities and provide coverage to Routes 7, 35, 53, 102, and 107 in the Redding area, and provide coverage to approximately 75 percent of the 3-mile gap along Route 7. (SNET 2, Q.22; Tr., 2/27/89, 3:15 p.m., p.20; SNET 8; SNET 15)
42. A 117-foot tower would not provide sufficient overlapping coverage to adjacent existing areas of coverage from the existing Westport site to the south. (Tr., 3/9/89, pp.15-16; SNET Exhibit 2, Q. 17; SNET Exhibit 9)
43. Use of a tower of approximately 98 feet in height would be much less visible to homes within the proposed Real Vest subdivision because of surrounding trees; however, it would result in the loss of 1.3 miles of coverage along a three mile section of Route 7 not presently covered by a tower site on Moses Mountain in Danbury. In addition, this tower would not provide sufficient overlapping coverage with the existing Norwalk site to the south. (SNET 4; Tr., 2/27/89, 3:15 p.m., p.32; Tr., 3/9/89, p.37, pp.170-171; SNET 14; SNET 15; Real Vest 13)

44. Other than its proposed site, the only sites evaluated by SNET that would provide coverage to a three mile coverage gap along Route 7 are a site owned by IBM in Ridgefield at a height of 760 feet AMSL and a site on Cedar Mountain in Ridgefield. In its initial site search SNET considered and rejected six sites in the Redding area. An existing tower used by the Ridgefield Police Department was considered but rejected due to limited coverage, especially along Route 7. A site north of Cross Highway was evaluated, but found to be too far east to provide coverage to Route 7. Coverage from Topstone Mountain was satisfactory, but rejected as a possible site by SNET because the site is within Steichen Town Park. Florida Hill was considered, but rejected due to inadequate coverage. The Millers Pond area of Ridgefield was investigated, but low elevations limited coverage. The Cedar Mountain area of Ridgefield was evaluated, but rejected due to inadequate coverage. (Tr., 2/27/89, 3:15 p.m., p.35; SNET 1, Section VI, pp.3-4; SNET 2, Q.4; Tr., 3/9/89, pp. 117-118)
45. SNET did not consider the placement of a tower along Route 7 to cover the three mile gap in that area. (Tr., 3/9/89, p.120)

46. SNET would construct a 23-foot by 31-foot single story equipment building to house electronic equipment. Parking space for one vehicle would be provided. The building and tower would be surrounded by a chain link fence. (SNET 1, Section VI, pp.1-2; Section VI, p.11, p.31; SNET 2, Q.22)
47. Both the DMV and NCPSCC radio equipment would be relocated from the present site at the base of the existing tower to the inside of the new equipment building. (SNET 1, Section VI, p.31)
48. Intermodulation studies have been conducted to determine there would be no interference between the SNET antennas and equipment and that to be used by the DMV and the NCPSCC. (Tr., 2/27/89, 3:15 p.m., p.62)
49. Based on conservative assumptions, the worst case electromagnetic radio frequency power density (power density) level would be $0.11459\text{mW}/\text{cm}^2$ at the base of the proposed tower. The present power density at the site is $0.0171\text{mW}/\text{cm}^2$. The American National Standards Institute (ANSI) safety standard for the proposed frequency level is $2.933\text{ mW}/\text{cm}^2$. (SNET 1, Section VI, p.23)
50. The General Assembly has directed that the Commissioner of the DEP shall by regulation adopt the standards recommended by the ANSI with respect to human exposure to radio frequency electromagnetic fields. (CGS 22a-162(a))

51. Other than the climate control equipment, the proposed tower and equipment building would not be a source of noise. (SNET 1, Section VI, p.18)
52. There are no existing records of federally endangered or threatened species or Connecticut species of special concern occurring at the proposed tower site. (SNET 2, Q.1)
53. Construction of the proposed tower and associated equipment building would have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places. (SNET 2, Q.2)
54. Facility costs at the proposed Redding tower site are estimated as follows:

Radio Equipment	\$179,515.00
Antenna Equipment and Mast	39,900.00
Power and Common Equipment	171,570.00
Land and Building	235,400.00
Miscellaneous (including site preparation and installation)	<u>77,700.00</u>
Total Cost	\$704,085.00

(SNET 1, Section VI, p.24)

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