DOCKET NO. 168 - An application of Springwich Cellular Limited Partnership for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located on the former site of the Bethany Airport, 719 Amity Road (Route 63) in Bethany, Connecticut.	}	Connecticut
	}	Siting
	}	Council
	}	July 6, 1995

FINDINGS OF FACT

INTRODUCTION

1. Springwich Cellular Limited Partnership (Springwich) in accordance with provisions of General Statutes §§ 16-50g through 16-50aa applied to the Connecticut Siting Council (Council) on March 24, 1995, for a Certificate of Environmental Compatibility and Public Need for the construction, operation, and maintenance of a telecommunications facility in the Town of Bethany, Connecticut. The purpose of the facility would be to expand and improve cellular service in Bethany and New Haven County, within the New Haven, New England County Metropolitan Area (NECMA). (Springwich 1, Section 1, pp. 1, 5.)

2. Public Notice of the application, as required by General Statutes § 16-501 (b) was published in the New Haven Register on March 17 and 18, 1995; and the Beth-Wood News on March 14 and 28, 1995. (Springwich 1, Section 1, pp. 5-8; Springwich 5, Q. 22.)

3. Pursuant to General Statutes § 16-50m, the Council, after giving due notice thereof, held a public hearing on the application on May 9, 1995, beginning at 3:00 p.m., and reconvening at 7:00 p.m., in the Commission Room, Bethany Town Hall, 40 Peck Road, Bethany, Connecticut. (Council Hearing Notice, p. 1.)

4. The Council and its staff made an inspection of the proposed tower site on May 9, 1995. During the field inspection, Springwich flew a balloon at the tower site to simulate the height of the proposed 150-foot above ground level (AGL) tower. (Council Hearing Notice, p. 2; Transcript May 9, 1995, Afternoon (Tr. 1), pp. 15, 16.)

5. On December 8, 1983, the Southern New England Telephone Cellular (SNET) received an operating license (Radio Station Authorization) from the Federal Communications Commission (FCC) to construct and operate cellular radio telecommunications sites in the New Haven NECMA, within which the Town of Bethany (Town) is located. This license was subsequently transferred to Springwich, a subsidiary of SNET. Springwich currently operates seven certificated cellular sites in the New Haven NECMA. (Springwich 1, pp. 5, 6; Springwich 1, Section I, p. 3; Springwich 1, Section VI, p. 29.)

NEED

6. The FCC has determined that there is a general public need for cellular service and applicants for cellular facilities are not required to demonstrate a general public need for cellular service to State regulators. The FCC also has pre-empted state regulation of cellular telephone service in the areas of technical standards and market structure. (Springwich 1, pp. 3-5; Springwich 1, Section III, pp. 1-4.)

7. 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). (Springwich 1, pp. 2, 3, Springwich 1, Section II, pp. 1-3; Springwich 1, Section IV, pp. 4, 5.)

8. The FCC designates certain frequencies for wireline and non-wireline carrier use. Springwich, the wireline carrier, and the non-wireline carriers have each been allocated 25 megahertz (Mhz) of frequency spectrum, which provides 416 two-way radio channels for each carrier. (Springwich 1, Section III, p. 3.)

CELLULAR COVERAGE

9. The proposed Bethany cell site location in New Haven County would provide cellular coverage within the New Haven NECMA in accordance with Springwich's system design to provide additional and improved coverage to the Bethany area. (Springwich 1, p. 5; Springwich 1, Section IV, pp. 2-4; Springwich 1, Section VI, p.1.)

10. Cellular coverage at the proposed 150-foot tower height AGL would provide additional and improved coverage to Routes 42, 63, 68, and 69, to the greater Bethany area, and to sections of Prospect. The proposed site would overlap Springwich's coverage from existing facilities in Woodbridge, Waterbury, and Cheshire and would provide limited hand-off to Middlebury, Oxford, and Wolcott. Coverage in the Bethany area is currently at a level greater than -95 dbm, which is considered poor or non-existent and has led to customer complaints. (Springwich 1, p. 5; Springwich 1, Section VI, pp. 1, 2, 9, 34; Springwich 5, Question (Q.) 10, Q. 15; Tr. 1, pp. 39-42.)

11. With the proposed Bethany facility in operation, inadequate or no overage would still exist along Route 8 between Naugatuck, Seymour, and Beacon Falls, west of Bethany, and in several small areas in Bethany. (Tr. 1, pp. 41-43.)

GENERAL DESCRIPTION

12. The Town Planning and Zoning Commission Committee and the Bethany Airport (Airport) Study Committee obtained the assistance of the King's Mark Environmental Review Team (ERT), which performed an environmental assessment of the proposed site. The ERT concluded the proposed site was acceptable for a cellular facility and would not conflict with other land uses proposed for the airport property. (Springwich 1, Section VI, pp. 16-18; Springwich 3, Attachment, Bethany Airport Property, King's Mark Environmental Review Team Report, April 1993; Tr. 1, pp. 5-10.)

13. Since July 15, 1992, Springwich has met with Town officials on numerous occasions to discuss Springwich's plans to develop a cell site in Bethany. The Town offered Springwich space on town-owned property at the Airport for a cell site. Following negotiations and review by the Bethany Airport Study Committee and the Bethany Board of Selectmen, in an open public hearing held on February 27, 1995, the Town approved leasing a parcel on the Airport property to Springwich for construction of the proposed facility. (Springwich 1, p. 7; Springwich 1, Section VI, pp. 2, 3; Springwich 5, Q. 2, Q. 3, Q. 23, Q. 25; Tr. 1, pp. 6.)

14. Springwich signed an agreement on March 24, 1995, with the Town to lease the proposed site and construct the 150-foot tower, equipment building, and access driveway. (Springwich 1, Section VI, pp. 1, 28; Springwich 3, Notice of Lease, dated March 1, 1995.)

15. The Town supports the construction of the proposed Springwich cell-site at the northern end of the Airport property adjacent to the future Town Maintenance Facility. The Town facility would be completed in the fall of 1995. (Springwich 1, Section VI, p. 35; Springwich 5, Q. 27; Tr. 1, pp. 6, 9, 10.)

PROPOSED FACILITY

16. Springwich would construct a 150-foot, self-supporting, steel monopole tower designed to support two triangular-shaped, antenna platforms approximately ten feet wide by four feet high. Springwich would mount four-foot by two-foot, flat, panel-type directional antennas on the top-mounted platform. A second platform would be mounted twelve feet below the top of the tower to be used by any future user of the tower. (Springwich 1, Section V, pp. 2-4, 7, 8.)

17. The tower foundation and mounting base would be approximately 18 feet square by eight feet deep. The foundation would be made of reinforced concrete with the tower attached by 12 six-foot long, two and one-quarter inch diameter steel bolts embedded in the concrete. (Springwich 1, Section V, p. 3.)

18. The monopole would be designed to Electronic Industries Association, EIA-RS-222E, specifications to withstand 100 miles per hour winds while covered with one-half inch of radial ice. (Springwich 1, Section V, p. 3.)

19. The tower's fall zone would lie entirely within the Airport property. The only building encompassed by the tower's fall zone would be Springwich's proposed equipment building. (Springwich 5, Q. 4.)

20. Springwich has offered to share the tower with other entities, and the Town has expressed interest in mounting Town antennas on the proposed tower but has made no commitment to do so. No other entity has indicated a desire to share the tower. (Springwich 1, Section VI, p. 26; Springwich 5, Q. 12; Springwich 6, Q. 3; Tr. 1, pp. 18, 19, 51; Transcript May 9, 1995, Evening, p. 16.)

21. The height of the proposed tower and antenna platform structure would be 154 feet AGL. Town fire and police department antennas, if placed on the tower, would not exceed 175 feet AGL. (Springwich 1, Section VI, p. 30; Springwich 5, Q. 12, Q. 24.)

22. On January 20, 1995, the Federal Aviation Administration (FAA) determined the proposed tower would not be an obstruction to air navigation and would not require obstruction marking or lighting. Springwich would not install lights on the tower. (Springwich 1, p. 4; Springwich 1, Section VI, p. 30; Springwich 5, Q. 24.)

23. The FAA determination of No Hazard to Air Navigation for construction of the proposed tower expires on September 1, 1995. (Springwich 1, Section VI, p. 30.)

PROPOSED SITE

24. The proposed site is a leased 100-foot by 100-foot, nearly level parcel located on the northern end of a 126 acre parcel containing the Town-owned, former Bethany Airport. The proposed site is located on a hill-top approximately 800 feet west of Amity Road (Route 63), and 500 feet south of the intersection of Route 63 and Fairwood Road. The proposed site would be constructed about 120 feet north of the new Town maintenance facility and salt storage shed. (Springwich 1, Section VI, pp. 2, 5, 6, 8, 11, 12, 18; Springwich 5, Q. 4; Department of Environmental Protection (DEP) Letter, received May 7, 1995.)

25. Although most of the Airport property is located in a public water supply watershed, the proposed site is located in a portion of the property that is not located in the public water supply watershed. (Springwich 5, Q. 19, Attachment, Bethany Airport Property, King's Mark Environmental Review Team Report, April 1993, p. 18; Tr. 1, p. 8.)

26. The Town has directed Springwich to place the facility within a wooded area to provide a visual buffer for the proposed facility and preserve the existing open areas for parking. (Tr. 1, pp. 9, 22-24.)

27. Springwich would construct a 12-foot by 26-foot, single story modular equipment building faced with a textured finish. Security and fire alarms would be installed inside the building. The building and tower would be surrounded by an eight-foot high, chain link security fence. (Springwich 1, Section V, pp. 1, 2, 5, 6; Springwich 1, Section IV, p.11.)

28. Access to the site would be from Amity Road over a new, paved driveway constructed by the Town, leading to the proposed maintenance facility. Springwich would construct a 20-foot wide, gravel driveway approximately 80 feet long from the paved area of the maintenance facility to the site. (Springwich 1, Section VI, pp. 11, 12, 18; Springwich 5, Q. 3-Attachment Exhibit A, Q. 4; Tr. 1, pp. 21, 22.)

29. The Town's utility lines would be placed underground along the proposed Town driveway or overhead from an existing utility pole located on Fairwood Road to the Town maintenance facility. The location of the utility lines would be determined when the proposed Town facility is completed. Springwich would extend its utilities underground from the Town facility to the proposed site. (Springwich 1, Section VI, p. 18; Springwich 3, Airport Study Committee, Minutes of Meeting, January 20, 1993; Springwich 5, Q. 4; Tr. 1, pp. 26-28.)

HEALTH EFFECTS

30. Springwich proposes to initially transmit on 19 voice channels at a maximum output of 100 watts per channel within the FCC allocated frequency range of 880-894 Mhz. The facility would have the capability to expand to 56 voice channels. (Springwich 1, Section II, pp. 2, 6, Springwich 1, Section III, p. 3; Springwich 1, Section IV, p. 3; Springwich 1, Section VI, p. 26.)

31. Using FCC Guidelines, OST Bulletin No. 65, the electromagnetic radio frequency power density at the proposed tower base using a center of radiation at 152 feet AGL, for 19 channels operating at maximum power of 100 watts per channel, would be 0.046191 milliwatts per square centimeter (mW/cm^2) for uncontrolled environments or 7.9 percent of the 1992 Standard of 0.5867 mW/cm^2 for cellular telephone frequencies, as adopted by the State of Connecticut. (Springwich 1, Section IV, pp. 7, 8; Springwich 1,

Section VI, p. 26; Connecticut Siting Council Administrative Notice: OST Bulletin No. 65, Evaluating compliance with FCC Specified Guidelines for Human Exposure to Radio Frequency Radiation, Federal Communications Commission, Office of Science and Technology, October 1985; and, ANSI Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 Ghz, Revision of ANSI C95.1-1982, American National Standards Institute, November 18, 1992.)

32. The electromagnetic radio frequency power density from Town fire and highway department antennas, if placed on the tower, would be 0.01160 mW/cm^2 or 5.8 percent of the 1992 American National Standards Institute Standard of 0.2000 mW/cm^2, as adopted by the State of Connecticut. (Springwich 1, Section V, p. 26.)

ENVIRONMENTAL EFFECTS

33. The proposed site is located approximately ten feet lower than the highest ground elevation of the Airport property and is surrounded by a wooded area adjacent to cleared fields towards the east and south. The proposed site is located in an area zoned B&I, for business and industrial development. (Springwich 1, Section VI, p. 25; Springwich 5, Q. 1, Attachment, Bethany Zoning Regulations, p. 97, Q.4.)

34. Springwich would need to clear vegetation from the proposed site and accessway to construct the facility. Springwich would remove approximately 12 trees of six-inch diameter or more for construction of the accessway. Approximately 24 trees of six-inch diameter or greater would be removed from the tower site. (Springwich 1, Section IV, p. 24; DEP letter, received May 3, 1995; Tr. 1, pp. 21, 22.)

35. The topography of the proposed tower site varies from 737 feet to 743 feet above mean sea level (AMSL). Some surface grading would be necessary to accommodate construction of the tower and equipment building. The site would be leveled at a height of 740 feet AMSL. Following construction, disturbed areas would be stabilized or reseeded to prevent erosion. (Springwich 1, Section VI, pp. 20, 21; Springwich 5, Q. 5; Tr. 1, p. 25.)

36. To control erosion, Springwich would use erosion and sedimentation control techniques, such as spreading hay mulch on loose soil and temporarily placing staked hay bales or other sediment barriers in accordance with the State of Connecticut Guidelines for Soil Erosion and Sediment Control. (Springwich 1, Section VI, pp. 19-21; Tr. 1, p. 26.)

37. Noise emanating from the site would be temporary, created by construction work, and from an air conditioning unit used for facility operation. During normal operations, no water or air pollutants would be emitted from the physical structures on the site. (Springwich 1, Section VI, pp. 20-22.)

38. A portable, diesel-fueled, 35 kW emergency generator would be brought to the site and used to provide back-up electrical power during electrical outages. No generator or fuel would be permanently stored on the site. Springwich's emergency generators have been permitted by the DEP. (Springwich 5, Q. 26; Tr. 1, pp. 29-31.)

39. The nearest residences to the proposed site are located on private property, one about 450 feet northeast and another 450 feet northwest of the proposed site. The nearest residential zones are located

approximately 550 feet to the north and 400 feet to the west of the site. (Springwich 5, Q. 1-Bethany Zoning Map, Q. 6, Q. 7.)

40. The proposed tower would be visible from areas along Route 63 for approximately one-half mile and possibly from certain residences on Fairwood Road. Intervening deciduous vegetation would diminish the appearance of the tower. (Springwich 1, Section V, p.3; Springwich 5, Q. 8; DEP Letter, received May 3, 1995; Tr. 1, pp. 16-18.)

41. The proposed tower would be painted a blue-gray color to reduce visibility against the background of the sky. Visibility of the facility would also be reduced by surrounding stands of mature trees, some approximately 60-70 feet high. (Springwich 1, Section V, p. 3; Springwich 1, Section VI, p. 22; Springwich 5, Q. 8, Q. 9; DEP Letter, received May 3, 1995.)

42. The DEP Bureau of Parks and Forests has stated that the proposed Bethany facility would not impact interests of the State Park and Recreation Program. (Springwich 1, Section VI, p. 25; Springwich 5, Q. 20).

43. The Natural Resources Center of the State DEP has stated that there are no known extant populations of federal or State Endangered, Threatened or Special Concern Species that occur within the project boundaries. (Springwich 1, Section VI, p. 23; Springwich 5, Q. 18.)

44. The Connecticut Historical Commission has stated that there would be "no effect" as a result of Springwich's proposed tower construction. (Springwich 1, Section VI, p. 25; Springwich 5, Q. 21.).

COSTS

45. The estimated cost to construct the proposed Bethany cellular facility would be as follows:

Radio equipment	$225,000
Antenna equipment and mast	75,000
Power & common equipment	200,000
Land, building	275,000
Miscellaneous	75,000
TOTAL	$850,000

(Springwich 1, Section VI, p. 27.)

46. Estimated construction costs for other Springwich cellular facilities range from $545,800 in 1984 for a facility in Shelton to $750,185 in 1992 for a facility in Rocky Hill. (Council Administrative Notice: Docket No. 45, Findings of Fact Nos. 113 to 119; Docket No. 151, Findings of Fact No. 44).

47. Springwich would construct the proposed facility in about six weeks and would have the facility ready for on-line operation about two weeks following construction. (Springwich 1, Section VI, p. 28.)

ALTERNATIVES

47. Springwich was unable to identify any acceptable existing facilities or other structures of adequate height, sufficient structural strength, and adequate space to attach antennas on within a 1.0 mile radius cell site search area. (Springwich 1, Section VI, pp. 5-7.)

48. Springwich investigated nine sites, including five existing towers in the Bethany area, and rejected eight locations for reasons which included inadequate height to provide adequate coverage, site too close to an existing Springwich facility, low ground elevation, and a tower presently at full capacity. (Springwich 1, Section VI, pp. 3, 4, 6, 7; Tr. 1, pp. 33-38.)

49. Springwich discussed sharing an existing 180-foot tower owned by the Connecticut State Police (CSP) located off Route 63, about 0.6 miles south of the proposed site. At an antenna height allowed by the CSP, cellular coverage would not be adequate to serve the Bethany area. The CSP tower's ground elevation is 80 feet lower than the proposed site. To provide similar coverage, the CSP tower would need to be increased 80 feet. (Springwich 1, Section VI, p. 3; Springwich 5, Q. 13; Tr. 1, pp. 45-47.)

50. Springwich investigated sharing an existing 372-foot, AT&T tower located off Route 63 south of the proposed site. Coverage from antennas located at the top of the tower would duplicate coverage in the southern sections of Bethany by Springwich's existing Woodbridge facility. Coverage of Routes 42, 63, and 69 in northern Bethany would be inadequate from this location. (Springwich 1, Section VI, p. 3; Springwich 5, Q. 14; Tr. 1, pp. 47, 48.)

51. Springwich did not propose an alternate site for a facility in the Bethany area because the Town supported the placement of a cellular site on available land located on the former Bethany Airport property. (Springwich 5, Q. 25.)

52. At a tower height reduced to 130-feet, cellular coverage from the proposed site would be diminished in Bethany for 0.75 miles along Route 42; 0.75 miles along Route 63; 0.40 miles along Route 47; 0.25 miles along Route 68; and 0.75 miles along Route 69. (Springwich 6, Q. 1; Tr. 1, p. 43.)

53. Further reducing the proposed tower's height to 110 feet, would create coverage losses in Bethany for 0.8 miles along Route 42, 1.0 miles along Route 63, 0.4 miles along Route 67, 0.25 miles along Route 68, and 0.8 miles along Route 69. (Springwich 6, Q. 2; Tr. 1, pp. 43, 68.)