DOCKET NO. 154 - An application of the Department of Public Safety, Division of State Police for a Certificate of Environmental Compatibility and Public Need for the construction, operation, and maintenance of a telecommunications facility located off Steep Road, on property owned by the State of Connecticut, approximately 7000 feet northwest of the intersection of Steep Road and Canaan Mountain Road, in the Town of Canaan, Connecticut.

: Connecticut

: Siting

: Council

: February 11, 1993

ORIGINAL

FINDINGS OF FACT

Introduction

1. On June 4, 1992, the Connecticut Department of Public Safety, Division of State Police (CSP), pursuant to sections 16-50g to 16-50z of the Connecticut General Statutes (CGS), applied to the Connecticut Siting Council (Council) for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, operation, and maintenance of a telecommunications tower, associated equipment, and access road (facility) at a site located approximately 7000 feet northwest of the intersection of Steep Road and Canaan Mountain Road, in the Town of Canaan, Connecticut. (CSP 1, Tab 3, p. 1; CSP 1, Tab 5, p. 1)

2. The proposed facility would serve the CSP Troop B area which includes the Towns of Salsbury, North Canaan, Canaan, Norfolk, Colebrook, Hartland, Barkhamsted, New Hartford, Winchester, Torrington, Goshen, Cornwall, and Sharon, Connecticut. (CSP 4, Q. 4)

3. Pursuant to CGS section 16-50l(b), public notice of the CSP's application for a Certificate was published twice in newspapers serving the Canaan area. (CSP 1, Tab 6)

4. Pursuant to CGS section 16-50m, the Council, after giving due notice thereof, held public hearings concerning the proposed facility at the Lee H. Kellogg Elementary School in Falls Village, Connecticut on August 11 and October 19, 1992, and a third hearing at the Housatonic Regional High School in Falls Village, Connecticut, on November 10, 1992. Prior to the August 11 and October 19 hearings, Council members and staff inspected the proposed facility site. (August 11, 1992, Transcript (Tr. 1); October 19, 1992, Transcript (Tr. 2); November 10, 1992, Transcript, (Tr. 3); Council Hearing Notice)

5. On August 11, 1992, the CSP flew a balloon 120 feet above ground level (AGL) at the proposed facility site to approximate the height of the proposed tower. (Council Hearing Notice; Tr. 1 Afternoon, p. 49)

Existing CSP Telecommunications System

6. The CSP currently uses a low-band, two-way radio system that was implemented in the 1940s to serve 290 personnel statewide. The existing system has been upgraded over the years and now serves approximately 1000 personnel statewide. This system is compromised by technical and physical factors, including but not limited to, co-channel interference (interference with other CSP personnel), "skip" interference (interference from other radio systems), coverage "dead spots", insufficient traffic handling capacity, lack of encryption capability, lack of additional frequency availability for mobile communications, and physical plant age. (CSP 1, Tab 2, pp. 1-3, 9; CSP 1, Tab 9, p. 3)

7. The CSP currently leases telephone copper landlines from the Southern New England Telephone Company (SNET) to provide point-to-point data transfer. The existing point-to-point system experiences the following: lack of capacity for system growth, inability to transfer high speed digital data, noise, and incompatibility with computer controlled technologies of state-of-the-art two-way mobile radio systems. (CSP 1, Tab 8, pp. 1-2; CSP 1, Tab 9, p. 1)

8. Leased telephone copper landlines are subject to outages that affect the point-to-point data transfer capabilities of the CSP. Troop B experienced approximately 41 and 141 hours of landline related outages in 1990 and 1991 respectively. (CSP 4, Q. 13; Tr. 1 Afternoon, p. 31)

Proposed CSP Telecommunications System

9. The CSP is proposing to replace the existing low-band, two-way mobile radio system on a statewide basis with a new 800 megaHertz (MHz) trunked radio system. The new system would provide state-of-the-art communications capabilities for the CSP. New 800 MHz frequencies have been granted to public safety organizations nationwide by the Federal Communications Commission (FCC). The proposed 800 MHz frequencies are not prone to skip or co-channel interference, support encryption capabilities, and allow for usage of mobile and portable radios as well as mobile data terminals. (CSP 1, Tab 11, pp. 3-4; CSP 9, Robert F. DiBella Letter to CSP, August 5, 1992)

10. The proposed 800 MHz two-way radio system has been designed to provide 95 percent coverage 95 percent of the time for mobile units and 90 percent coverage 90 percent of the time for portable units. (CSP 1, Tab 12, p. 15)

11. Dead spots with the 800 MHz system cannot be determined until the system is in operation, at which time the need for fill-in sites would be considered. (CSP 14, Q. 10)

12. The CSP is proposing a statewide digital microwave radio network to provide point-to-point data transfer. The digital microwave network would provide radio control, voice and data circuits, high transmission speeds, system reconfiguration capability, and expansion capacity between CSP barracks and base stations. The digital microwave system would also enable all base stations in a troop area to act as a single base station (SIMULCAST). The CSP microwave system has been designed to meet the Bell System Standard for microwave services, i.e., system outages due to propagation failures shall not exceed one hour per year (approximately 99.99 percent reliability). To achieve this objective the average outage time of each path must not exceed 5.5 minutes per year (99.999 percent reliability). (CSP 1, Tab 11, pp. 1-2; CSP 1, Tab 12, pp. 9-12)

13. The digital microwave radio network can be degraded by severe weather, possibly rendering the signal unusable until the severity of the weather diminishes. (Tr. 2 Afternoon, pp. 71-72)

14. The CSP has received funding for their proposed microwave network. The CSP has not yet received funding for the proposed 800 MHz two-way radio system. (Tr. 2 Afternoon, p. 87)

System Alternatives

15. The CSP considered the following alternatives to its proposed statewide digital microwave network:

Alternative	Reason for Rejection
Copper wire landlines	o would not support numbers of channels or transmission speeds required for digital data transmission o would not support SIMULCAST o susceptible to landline related outages
Satellites	o cost prohibitive o frequency spectrum not yet designated for satellite mobile radio o satellites compatible for public safety mobile radio needs are not yet in operation

Fiber Optics	o increased installation costs o susceptible to landline related outages
Private Leased Network	o increased statewide system costs by 10 percent o loss of budgetary and managerial control
Analog Microwave	o would not provide high transmission speed o would not allow for system expansion o would not provide intelligent networking available with digital microwave technology

(CSP 1, Tab 11, pp. 1-2; CSP 3, CSP Letter to Senator Flemming, April 24, 1992)

16. In 1988, SNET proposed a statewide mixed media (microwave and fiber optic) telecommunications system for use by the CSP to support the 800 MHz trunked, SIMULCAST two-way radio. In the Troop B area, SNET proposed to provide point-to-point service between the Troop B facility in North Canaan, with a replacement of an existing SNET tower on Rattlesnake Hill in North Canaan, use of an existing SNET tower on Loon Meadow Road in Norfolk, use of an existing State-owned tower in Winchester, use of an existing State-owned tower in Hartland, use of an existing State-owned tower on Mohawk Mountain in Cornwall, and placement of a SNET-provided controller site in Harwinton. Antennas to provide 800 MHz two-way radio coverage would have been placed at the SNET-owned Rattlesnake Hill and Loon Meadow Road towers, and at the State-owned towers. (CSP 23, Tab 2, p. 1; CSP 23, Tab 3, p. 1, Ex. G; Tr. 3 Morning, pp. 97-104)

17. The CSP rejected the statewide SNET proposal in favor of its proposed digital microwave and 800 MHz two-way radio system. The CSP did not reconsider the SNET proposal for use in the Troop B area. (Tr. 3, Morning, pp. 88-89)

18. To achieve a microwave link between the Troop B facility, the SNET Rattlesnake Hill tower, the SNET Loon Meadow Road tower, and the Mohawk Mountain tower, the Rattlesnake Hill tower would have to be raised from 80 feet AGL to 180 feet AGL and the Loon Meadow tower from 160 feet AGL to 180 feet AGL. (CSP 4, Q. 6)

19. To achieve a microwave link between the Troop B facility and the CSP Mohawk Mountain facility using existing towers without height changes, the CSP could use existing towers on Mount Wilcox in Massachusetts (42-13-12 latitude 73-15-59 longitude) or in Austerlitz in Columbia County, New York (42-18-28 latitude 73-29-35 longitude), to link with the approved CSP Winchester facility. (CSP 9, Jim Marshall Memo to CSP, August 10, 1992; Tr. 2 Evening, p. 129)

20. A dedicated private leased data transfer network would offer redundant reliability and multiple interconnection points, would exceed individual channel requirements of the proposed CSP data transfer system, and would not be subject to overload during public emergencies. (Housatonic Valley Association (HVA) 2; Tr. 2 Afternoon, pp. 72, 77-78)

21. The CSP would lose some budgetary and management control and risk of outages on above-ground wires if it used a private leased data transfer network. (Tr. 2 Afternoon, p. 107)

22. Some agencies of the federal government, including the military and the Federal Aviation Administration (FAA) use private leased networks for their communications needs. (HVA 2; Tr. 2 Afternoon, pp. 72, 77-78)

23. The CSP did not give site specific consideration to seek a site in the Troop B area that would provide 800 MHz coverage with a fiber optic link. (Tr. 1 Afternoon, pp. 65-66)

24. The 800 MHz two-way radio coverage from the proposed facility is designed to supplement 800 MHz coverage in the Troop B area that would be provided from the CSP Troop B, Winchester, and Mohawk Mountain sites. Coverage dead spots would remain in portions of North Canaan and Canaan, along Route 7 from Canaan into Cornwall, and along Routes 41 and 4 in Sharon. Coverage in the eastern portions of Troop B including areas along Route 8 would not be significantly improved by coverage from the proposed facility. (CSP 4, Q. 4; Friends of Canaan Mountain 4; Tr. 1 Afternoon, pp. 22-23)

Proposed Site

25. Forty-three sites were investigated in the Troop B area to provide the proposed microwave link and additional 800 MHz two-way radio coverage. Forty-two sites were rejected by the CSP, each one for one or more of the following reasons: sites were located in the Natural Area Preserve, owner not willing to sell, excessive tower heights would be necessary to achieve microwave links, and unacceptable 800 MHz coverage. The CSP's search of towers within a ten-mile radius of the proposed site as required by the Council's regulations included only towers under Council purview and did not include existing municipal or private towers. (CSP 1, Tab 13R, p. 1; CSP 13, Q. 31; Tr. 1 Afternoon, p. 24)

26. The site of the proposed facility tower and equipment building is on an undeveloped, rural/residentially zoned parcel approximately 200 acres in size. This property was formerly owned by Ernest and Emil Fontanella, which was purchased by the Department of Environmental Protection (DEP) for the purpose of adding the parcel to the Housatonic State Forest. The CSP contributed ten percent of the purchase price in return for the facility site and access to the site. (CSP 4, Q. 3; CSP 7; CSP 8)

27. The proposed site had an environmental impact evaluation (EIE) performed for the CSP by Storch Associates, Inc., in accordance with the provision of the Connecticut Environmental Policy Act (CEPA) and its associated regulations. The EIE concluded that the proposed CSP statewide telecommunications system including the proposed site had no significant impact upon the environment of the State of Connecticut. On March 24, 1992, the Office of Policy and Management for the State of Connecticut certified that the EIE met the requirements of CEPA. (CSP 1, Tab 14; CSP 6; CSP 15)

28. The staff biologist of Storch Associates, Inc., did not visit the proposed site. The staff biologist reviewed materials received from DEP concerning the proposed site. Storch's project manager, a non-biologist, walked the proposed access road and site with an expert in vegetation from DEP. (CSP 15; Tr. 3 Morning, p. 13; Tr. 3 Afternoon, p. 302)

29. The 120-foot by 90-foot site of the proposed facility tower and equipment building is located at 1830 feet above mean sea level in a level, wooded area approximately 7000 feet from the nearest residence. The dimensions of the site to be fenced with an 8-foot high security fence would be 110-feet by 70-feet. Access to the site would be via a three-foot wide personnel gate and a fourteen-foot double leaf gate. Gravel or crushed stone would be used to establish a level grade within the fenced-in area. (CSP 1, Tab 14, pp. 1, 14; CSP 1, Tab 12, p. 5; CSP 4, Q. 2; CSP 25)

30. An 18-foot by 50-foot single story equipment building would house the telecommunications equipment at the proposed site. The building would have full environmental controls, including air conditioning. In the event of electric power loss, a 60-kilowatt (kW) generator located inside of the building would power the telecommunications equipment. A 1000-gallon liquid propane tank would be buried on site to supply the generator with three days of fuel. Batteries would provide back-up to the generator. On-site alarms would alert CSP personnel at the Troop B barracks to a breach of the building, high equipment room temperature, use of generator during power outages, and the presence of smoke or propane leaks. The CSP would remotely test the generator approximately 15 to 30 minutes per week. (CSP 1, Tab 12, pp. 3-4; CSP 1, Tab 14, p. 5; CSP 4, Q. 2, 23)

31. The tower proposed for the facility would be a 120-foot AGL self-supporting, three-legged lattice tower, 25 feet at the base and tapering to 10 feet 7 inches at the top. The tower would be designed to maintain its integrity at 90 miles per hour of wind with one-half inch of radial ice. The tower would not require Federal Aviation Administration lighting or marking. (CSP 1, Tab 13E, p. 1; CSP 1, Tab 13L, pp. 1-3)

32. The minimum tower height at the proposed site required by the CSP to achieve a microwave path between Troop B and Mohawk Mountain would be 110 feet AGL. The proposed height of 120 feet AGL was to make space for antennas of the Hutterian Brethern. (CSP 4, Q. 7)

33. A monopole tower, as an alternative to the proposed self-supporting lattice tower, would have a seven-foot diameter base tapering to a five-foot diameter at the top. (CSP 4, Q. 8)

34. DEP, Litchfield County Dispatch (911 service), Connecticut Department of Education, and Northeast Utilities have expressed an interest in sharing the proposed tower. The Hutterian Brethern were originally interested in placing antennas on the tower, but have since withdrawn interest in doing so. (CSP 4, Q. 10; Tr. 3 Morning, pp. 37-38)

35. The access to the proposed site would be via a 12-foot wide, approximately 7000-foot long access road running north from Steep Road in Canaan. From Steep Road, the first approximately 5200 feet of the access road, beginning at approximately 1574 feet AMSL and having a maximum elevation along this portion of the roadway of approximately 1639 feet AMSL, would generally follow an existing tree line along agricultural fields and an existing logging road owned by the Hutterian Brethern. This gently sloping portion of the access road would be

covered by gravel. The remainder of the access road rising from an elevation of approximately 1570 feet AMSL to the site at 1830 feet AMSL would be paved and would have an average grade of 14.4 percent and with approximately 1320 feet having a maximum grade of 15 percent. (CSP 1, Tab 14, p. 2; CSP 14, Q. 16; CSP 25; Tr. 1 Afternoon, pp. 58-59)

36. The proposed access road would cross a saddle between two wetlands. The wetland to the west drains southerly to Deming Brook. The wetland to the east drains to the southeast into Wangum Lake Brook below Wangum Lake. No surface flow connects the two wetlands. Gravel fill is proposed in order to maintain the subsurface flow. Groundwater for the area is classified GA and is presumed suitable for direct human consumption without treatment. (CSP 1, Tab 14, p. 6, Ex. G; CSP 26B)

37. Maximum cuts and fills along the proposed access road would be approximately 4.5 feet deep or high. Approximately 400 feet of the access road, including cut and fill areas, would have a total cleared width of 30 to 40 feet. Guardrails would be placed along fill areas of steep portions of the road. (CSP 25; Tr. 1 Afternoon, p. 63, Tr. 3 Morning, p. 62)

38. The proposed access road would be engineered to distribute stormwater runoff as sheet flow to minimize downhill erosion. (Tr. 2 Evening, p. 48)

39. The CSP would visit the proposed site approximately twice monthly for routine maintenance and inspections. (Tr. 2 Evening, p. 64)

40. Winter access road maintenance would include plowing, sanding, and salting when necessary. (Tr. 2 Evening, p. 64; Tr. 3 Afternoon, p. 273)

41. The Hutterian Brethern with whom the CSP had a draft access easement agreement to the proposed facility site with placement of broadcast antennas on the proposed tower in lieu of payment, expressed a desire to sell the land to a third party and therefore may not grant an easement to the CSP. The CSP has not identified an alternative access route to the site. The State has expressed an interest in purchasing the Hutterian Bretheren's property, but no transaction has taken place. (CSP 10; Tr. 2 Afternoon, pp. 29-30; Tr. 3 Morning, p. 105)

42. The CSP has the power of eminent domain, but has not formally considered exercising this power to secure access to the proposed site. (Tr. 2 Afternoon, pp. 42-43)

Utilities

43. Electric and telephone utilities would be brought to the proposed facility's equipment building. The utilities would be buried in an approximately 30-inch deep trench along a two-foot wide right-of-way along the length of the access road. Separate manholes would be necessary to pull the electric and telephone cables from Steep Road to the equipment building. No water or sewer utilities would be brought to the site. (CSP 1, Tab 14, p. 10; CSP 4, Q. 21; CSP 25; Tr. 1 Evening p. 81)

44. There is exposed ledge along the proposed access road and site. No test borings have been done at the site or along the access road to determine the extent of blasting that would be necessary. (CSP 25; Tr. 1 Evening, p. 80)

Environmental

45. The proposed facility site is located approximately 1000 feet east of a Natural Area Preserve and Natural Area Inventory Site. A Natural Area Preserve is so designated by the Governor and is defined pursuant to CGS section 23-5b as an area of land or water, or land and water, containing, or potentially containing, plant or animal life or geological features worthy of preservation in their natural condition. This Natural Area Preserve was so designated by Governor Meskill during his term in the early 1970s. The Natural Area Inventory Site was identified by the Connecticut Forest and Park Association as an area that should receive special consideration before any proposed development is approved. (CSP 1, Tab 14, Ex. E; CSP 5, Q. 29; Tr. 1 Afternoon, p. 55)

46. A walking trail was proposed by the Trails Committee of the Connecticut Forest and Park Association for the Bradford Mountain area in 1972-1973, but was rejected by the DEP because of its incompatibility with the Natural Area Preserve. (CSP 5, Q. 28)

47. The proposed site and access road are located in the Northwest Highlands of Connecticut. Trees found along the access road and site include oak, maple, birch, and hemlock. Approximately 359 trees of four inches diameter or greater at breast height would be cleared for the proposed access road and site. Approximately 352 of the trees would be removed along the paved portion of the access road (approximately 1800 linear feet) and the site area. The tree removal along the access road would result in a climate change along the edges of the access road area which could result in additional tree blowdowns, erosion, and siltation. (CSP 1 Tab 14, p. 1; CSP 17; CSP 25; Tr. 2 Evening, p. 123; BLEC 3)

48. The cleared area of the access road could alter the mix of edge and interior species that inhabit the area of clearing. Forest interior species, including neo-tropical migrant birds, would face additional pressure from predators such as owls, hawks, cowbirds, raccoons, and coyotes. Many neo-tropical migratory birds such as warblers, vireos, ovenbirds, and thrushes require large unbroken tracts of forest habitat and are experiencing population declines throughout their range because of loss of forest habitat. Declines in neo-tropical migratory bird productivity have been documented from 300 feet to 1000 feet around forest openings. (CSP 27; Tr. 2 Evening, pp. 123-124; Tr. 3 Afternoon, pp. 147-148, 179)

49. Some effects that clearing for the access road and site might have on forest interior species could be mitigated by measures such as retaining maximum canopy cover along the proposed access road, planting of native shrubs and trees, and scheduling work after breeding and major migration periods. (CSP 27, p. 2; Tr. 3 Afternoon, pp. 155, 286)

50. There are no known extant populations of species proposed for State or Federal Endangered and Threatened status, or State Special Concern status at the proposed site. However, the great blue heron, a species proposed for State Special Concern status, has been reported as breeding in the general area of the site. Typically, great blue herons nest in tree tops over wetlands. Other animals identified by the director of the Connecticut Wildlife Atlas as either breeding, wintering, or migrating in the general area of the proposed site and access road, include but are not limited to, the timber rattlesnake, black-throated green warbler, ovenbird, sharp-shinned hawk, red fox, fisher, and black bear. (CSP 1, Tab 14, Ex. E; BLEC 3)

51. The wetlands in the area of the access road are home to the dusky salamander. The presence of the dusky salamander is an indication of pristine water quality. (Tr. 3 Afternoon pp. 125, 137)

52. Stormwater runoff carrying any sediments from the proposed tower site and access road would not pose a significant threat to surface and groundwater public water supplies. If salt were used on the road in the winter time, the runoff containing salt could adversely affect wetland species sensitive to desiccation. To control erosion and siltation, erosion and sediment controls would be used during construction. (CSP 26B; Tr. 3 Afternoon, p. 170)

53. The DEP expressed concerns about the need to preserve the proposed site as part of a large block of contiguous wildlife habitat for forest interior species, including neo-tropical migratory birds, large mammals, and raptor species. The DEP also urged the Council to ensure that all alternatives to the proposed site were thoroughly investigated. (State Agency comment letter to the Council from DEP Commissioner Keeney, October 8, 1992)

54. The proposed facility would not generate solid waste or toxics, nor would it regularly discharge any wastes. Air emissions from the running of the back-up generator would not have an effect on air quality in the region. The noise of the emergency generator located inside of the equipment building and the running of the equipment building air conditioning unit would likely be below 75 dbA and would only affect ambient noise levels in the immediate area of the site. (CSP 1, Tab 14, pp. 4-5, 9, 11)

55. The top of the proposed tower might be partially visible to the north of the site along approximately three miles of Route 44, one of three U.S. routes in the Troop B area, near the Congregational Church in the East Canaan section of the Town of North Canaan. (CSP 4, Q. 17; CSP 13, Q. 31; Tr. 3 Afternoon, p. 311)

56. The proposed facility would have no effect on historic, architectural, or archeological resources. (CSP 1, Tab 14, Ex. E)

57. The total radio-frequency power density at the base of the proposed tower with all of the antennas currently proposed operating at their maximum would be approximately 1.54 percent of the maximum permissible exposure limit of field strength as established by the American National Standards Institute (ANSI) and adopted by the State pursuant to CGS section 22a-162. (CSP 1, Tab 13N)

58. Using the draft 1991 revised power density guidelines currently being considered for acceptance by ANSI, the total maximum electromagnetic radio-frequency power density at the base of the proposed tower would be approximately 7.54 percent of the maximum permissible exposure limit. (CSP 19)

Schedule and Costs

59. The construction schedule for the proposed facility would begin in the fourth quarter of fiscal year 1992-93 and be fully operational by the third quarter of fiscal year 1993-94. (CSP 1, Tab 13Q, p. 2)

60. The estimated total cost of the proposed facility is as follows:

Radio Equipment	$ 422,600
Tower and Antennas	141,100
Utilities	225,000
Site, Road, Shelter Construction	463,200
Miscellaneous	71,400
Total	$1,323,300

(CSP 1, Tab 13P, p. 1; Tr. 1 Afternoon, p. 45)

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