

DOCKET NO. 145 - An application of the : CONNECTICUT
 Department Public Safety, Division of State :
 Police, for a Certificate of Environmental : SITING
 Compatibility and Public Need for the :
 construction, operation, and maintenance : COUNCIL
 of a telecommunications facility to be :
 located at the former West Haven toll :
 stop, I-95 eastbound, in the City of :
 West Haven, Connecticut. : April 21, 1992

FINDINGS OF FACT

Introduction

1. The Department of Public Safety, Division of State Police (State Police), in accordance with provisions of sections 16-50g to 16-50z of the Connecticut General Statutes (CGS), applied to the Connecticut Siting Council (Council) on October 24, 1991, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a telecommunications tower, associated equipment, and building in the City of West Haven, Connecticut, to provide telecommunications service within the New Haven County. (State Police I, Sections 1 and 3)
2. Public notice of the application, as required by CGS section 16-50l(b), was published in the New Haven Register on October 15, and 18, 1991; and in the West Haven News on October 17, 1991. (State Police IV, Q. 2, Attachment B)
3. The Council and its staff inspected the proposed site in the City of West Haven, Connecticut, on January 15, 1992. (Council Hearing Notice)
4. Pursuant to section 16-50m of the CGS, the Council, after giving due notice thereof, held a public hearing for this application on January 15, 1992, beginning at 3:00 P.M. and reconvening at 7:00 P.M., in the West Haven City Hall, 355 Main Street, West Haven, Connecticut. (Council Hearing Notice; and Transcript Afternoon and Evening)

Existing State Police Radio System

5. The State Police currently utilizes a two-way, low-band communications system originally designed in 1940 to service 290 troopers and has not materially changed since it was installed. This system consists of 11 hill top base stations, one for each troop. Four frequencies are

shared by the 11 troops and their district headquarters. Today over 1,000 sworn personnel continue to use this same system. (State Police I, pp. 8-2 and 9-4)

6. Point-to-point communication services are presently provided by leased telephone landlines. Three troops utilize analog microwave systems for their two-way mobile radio system. The two-way radio system is a low-band VHF, voice only, simplex system. (State Police I, pp. 8-1 and 8-2)
7. Leased point-to-point landlines are deficient in many aspects related to public safety. Specific problems with the existing network includes: a) lack of capacity for system growth, b) inability to configure the system for tactical responses and other emergencies, c) limits to data transmission speed, d) inherent noise levels, e) frequent and unacceptable delays of circuit failures, and f) outages when communications are crucial for dispensing information and delivery of aid to the citizens of the State. (State Police I, pp. 5-2 and 9-1)
8. The State Police investigated and rejected the following five point-to-point systems because: a) copper wire landlines could not support the numbers of channels or transmission speed required with the use of a computer driven operation, b) satellite terminals were cost prohibitive in usage charges, c) fiber optic installation charges on the number of miles necessary was an unaffordable expense and susceptible to damage and extended outages, d) leased fiber optic networks did not offer any cost savings or managerial and budgetary control, and e) an analog microwave network did not provide higher transmission speed, system expansion, or intelligence networking. (State Police I, pp. 11-1 and 11-2)
9. Problems and design faults with the existing two-way radio system include: a) 50 year old design not sized for the traffic demands of an existing 1,000 plus trooper police force, b) physical structures are old and in need of replacement, c) sites are not fenced or alarmed, d) channel capacity varies from radio to radio and the frequency band in use is not being further developed, e) frequencies are subject to propagation and noise problems, f) areas of poor or no communication ("dead spots"), and g) no voice encryptions or mobile data terminals (MDT) are available. (State Police I, pp. 2-2, 9-3, and 9-4)
10. Low-band VHF frequencies experience atmospheric interference caused by other radio signals propagating hundreds of miles which can interfere with or block local transmission. (State Police I, p. 9-4)

11. The current radio system has some poor or no communication areas and cannot be totally compensated for by propagation or antenna techniques available to low-band VHF. (State Police I, p. 9-5)
12. Voice encryption and MDTs are not available on low-band VHF channels because of equipment and technology limitations. The current radio system cannot support the digital data transmission speeds required for either of these uses. (State Police I, p. 9-5)
13. The existing State Police communication system has been operating for over 50 years without major modifications. There are no methods of procurement of new equipment or applications of new technologies that would update the current system to meet present or future demands. (State Police I, pp. 2-2 and 8-3)

Proposed State Police Radio System

14. The proposed Connecticut Telecommunications System (CTS) would be a digital microwave network for point-to-point communication supporting an 800 MHz trunked two-way mobile radio system. The 41 site CTS network would be owned, operated, and maintained by the Connecticut Department of Public Safety, Division of State Police. (State Police I, pp. 2-10, 5-3, 5-4, and 12-8)
15. The Connecticut State Police in conjunction with other public safety groups belonging to the tri-state and New England committees for spectrum utilization cooperated in developing plans for licenses from the Federal Communications Commission (FCC). These groups were established under a FCC mandate to allocate 800 MHz two-way radio frequencies on an equal basis among all eligible licensees in the public safety community. (State Police I, p. 2-12)
16. The CTS would serve two functions: 1) to provide statewide radio coverage to troopers in vehicles and carrying handheld radios and 2) to ensure all fixed State Police operation centers and affiliated agencies have access to a communication system should the public telephone system fail. (State Police I, p. 12-1)
17. The proposed CTS would handle large volumes of daily radio traffic as well as large numbers of simultaneous messages generated during emergency situations. The system would be designed, developed, and implemented to enhance public safety, increase levels of security for sworn personnel, and provide service well into the next century while allowing for technological advancements. (State Police I, p. 10-1)

18. The design objective for system outages due to propagation failure would not exceed one hour per year. The average reliability for each microwave path would be ten times more stringent (99.999%) with outages not exceeding five and one-half minutes per year. This criterion forms the basis of the CTS design and determines the combined tower heights and dish antenna sizes. (State Police I, p. 12-9)
19. The digital microwave network would connect all State Police operation centers and would provide radio controlled voice and data circuits (including voice encryptions and MDT); higher transmission speed for computer operations; intelligent digital interface permitting system reconfiguration at remote sites; a building block expansion capacity; computer connection; and emergency telephone circuits in the event the telephone landline network becomes overloaded or inoperative. (State Police I, pp. 2-11, and 11-2; Transcript, Afternoon, p. 58)
20. The CTS is designed to use digital electronics and redundant processors, and to provide uninterrupted operation, additional channel capacity, and communication between local, state, and federal agencies. (State Police I, p. 2-11)
21. A self-supporting lattice tower was selected over guyed and monopole towers because a self-supporting tower is less expensive, less vulnerable to storm damage, and offers expansion capacity. (State Police I, pp. 12-2, 12-5, and 12-6)
22. Completion and on-line operation of a statewide CTS point-to-point microwave system is anticipated by the end of 1994. (State Police I, Section 13Q)

Proposed Tower Site

23. A 120-foot, self-supporting, lattice tower is proposed to be constructed on an approximately 1.7 acre parcel, formerly used as a toll station, owned by the State of Connecticut, Department of Public Safety, located between Interstate 95 eastbound and Highland Street in West Haven, Connecticut. (State Police I, Section 13D and 13H; Transcript, Afternoon, p.51)
24. The proposed structure would have a base width of approximately 21 feet tapering to approximately 8.5 feet at the top. The tower would be constructed of structural steel. (State Police IV, Q. 17)

25. The self-supporting tower is designed with CTS specifications to support one four-foot dish antenna at the 118-foot level operated by the State Police and to hypothetically support three additional six-foot dish antennas at the top of the tower, allowing for expansion capability. The tower design would be in accordance with EIA standard 222-D to withstand a wind loading of 90 mph with one-half inch of radial ice. (State Police I, pp. 12-2, 12-4, 12-7, 13-E-1, and Sections 13F and 13J; State Police II, Q. 7; Transcript, Afternoon, p. 22)
26. The proposed tower in West Haven would interconnect with an existing tower on West Rock Ridge in New Haven approximately 4.5 miles due north. (State Police I, Sections 13A and 13L)
27. The proposed tower site would be placed in the southeast corner of the approximately 1.7 acre parcel which is zoned residential (R-3). (State Police I, Section 13D and 13H)
28. The proposed tower site is adjacent to a cleared parking area at the former toll station within a light-to-moderate dense stand of 21 trees and saplings of which four trees are over 18 inches in diameter and approximately 30 feet high. (State Police I, Section 14 p. 1; State Police IV, Q. 11; DEP letter dated 12/30/91)
29. Access to the proposed site would be off Highland Street via an existing driveway and parking lot. (State Police I, Section 14, pp. 1 and 8)
30. An 18-foot by 25-foot equipment shelter is proposed to be placed adjacent to the tower for storage of CTS radio equipment and an emergency generator. The equipment shelter would have approximately 150 square feet of space available for additional users. (State Police I, Section 13D, Section 14 pp. 1 and 11; State Police IV, Q. 16)
31. Electricity, telephone, sewer, water, and gas utilities all serve the property. Only electricity is proposed to serve the site to provide power for radio equipment, heat, and air conditioning. (State Police I, Section 13G and Section 14)
32. A 12.5 Kw, propane fueled, emergency generator is proposed to be installed in the equipment shelter to provide power during unforeseen outages. A 250-gallon propane tank, 2.5 feet in diameter by 8 feet long, would be placed underground adjacent to the equipment shelter. The emergency generator would operate 15 to 30 minutes per week for maintenance purposes. (State Police I, Section 14, pp. 4, 8, and 11; Transcript, Afternoon, pp. 60-62)

33. Noise emission from the emergency generator is estimated to range from 50 dBA to 60 dBA at the site boundary; however, noise created as a result of, or related to, an emergency generator is exempt from State noise regulations. (State Police I, Section 14, p. 7; State Police IV, Q. 6)
34. An eight-foot high chain-link fence, topped with three strands of barbed wire would surround the proposed site. No architectural treatment would be used to mask the fence. (State Police I, p. 12-5; State Police V, Q. 26)
35. The nearest residence is 120 feet east from the base of the proposed tower. There are 155 residences and 14 multifamily buildings containing 135 units within a 1000-foot radius of the proposed tower. Interstate 95 bisects this circle just north of the proposed tower. (State Police I, Section 13I; State Police IV, Q.5)
36. The fall zone of the proposed tower encompasses six properties of which five are adjacent residences abutting the sixth property owned by the State of Connecticut. Interstate 95 and residential structures are not situated within the fall zone of the proposed tower. The only structure that will be in the fall zone is the proposed equipment shelter of the State Police. (State Police I, Section 8; Transcript, Afternoon, p. 38)
37. The calculated electromagnetic radio frequency power density at the base of the proposed telecommunications tower base, assuming all channels operating simultaneously at maximum allowable power, is 0.0243 percent of the American National Standards Institute safe limit standard, as adopted by the State of Connecticut under CGS section 22a-162. (State Police I, Section 13Q)
38. The proposed radio system would not likely cause interference to radios, televisions, and telephones. However, if a problem does arise, the State Police would provide guidance to minimize or eliminate such problems. (Transcript, Evening, p. 19)
39. The proposed tower would not be a hazard to air navigation and obstruction marking or lighting would not be necessary. (State Police I, Section 13L)
40. There are no known extant populations of federally endangered and threatened species or Connecticut "species of special concern" occurring at the site. (State Police I, Section 14, p. 10 and Exhibit E)
41. The proposed tower would have no impact to historic, architectural, or archaeological resources listed on or eligible for the National or State Register of Historic Places. (State Police I, Section 14, Exhibit E)

42. The proposed facility would be visited by personnel two to four times per month for routine maintenance and equipment checks. Parking would be provided. (State Police 1, Section 14, p. 8)
43. No alternative site was considered for construction of the proposed tower. (State Police I, Section 15)
44. The State Police has chosen the existing property as a site for a future operation center. Operation centers of the State Police require a telecommunications facility for direct access to the CTS for radio control, radio communications, telephone service, and computer data transmission. (State Police I, Section 14, pp. 2, 8, and 17; Transcript, Evening, p. 17)
45. State Police anticipate construction of a new operation center on the approximately 1.7 acre State of Connecticut parcel to begin late 1993 or early 1994. (State Police I, Section 13Q; and Transcript, Afternoon, p. 46)
46. It is not known what type of State Police operation center would be located adjacent to the proposed tower and whether all or part of Troop "I" in Bethany would be transferred to the proposed West Haven operation center including radio equipment. (State Police IV, Q. 15, Q. 19; Transcript, Afternoon, pp. 23-25)
47. The proposed tower would not be constructed if no State Police operation center were developed on the State of Connecticut parcel. (Transcript, Afternoon, p. 69, Evening, p. 16)
48. For optimum use of the State of Connecticut parcel, the tower site would be located on the eastern or western end of the property. The eastern end was chosen for its clearer microwave path. (State Police IV, Q. 10; Transcript, Afternoon, p. 35)
49. A microwave path from the western end of the property would be partially obstructed by a steel telecommunications tower approximately one mile north and approximately 500 feet to the side of the microwave path. This obstruction may cause signal distortion, signal reflections, and reduced path reliability. To avoid signal distortion and reflection from this tower, a 490-foot tower would be required at the western end of the property. (State Police V, Q. 24; Transcript, Afternoon, p. 33)
50. State Police examined and rejected a plan to place the microwave antenna on the building of a new operation center to be developed on the State of Connecticut parcel because the building would not be high enough or strong enough to support a tower without special reinforcements. (Transcript, Afternoon, p. 44)

51. The State Police could move the proposed tower onto or adjacent to the eastern end of the parking lot on the State of Connecticut parcel; however, a microwave path survey would need to be conducted to determine path reliability and tower height. Tower height could change plus or minus 20 feet from the proposed tower. Movement of the proposed tower could avoid the clearing of existing vegetation and be further away from some existing residences. (Transcript, Afternoon, pp. 36-38; Transcript, Evening, pp. 39-41)
52. Construction work hours of the proposed telecommunications facility would be 8 A.M. to 5 P.M., Monday through Friday, except holidays. (State Police IV, Q. 18)
53. The proposed tower site would be clear of any future construction that the Department of Transportation may perform in upgrading Interstate 95. (Transcript, Afternoon, pp. 48 and 66)
54. Construction of the proposed tower site is estimated to start in the fourth quarter of 1992 and would take approximately six months to finish. (State Police I, Section Q)
55. Erosion and sedimentation controls would be erected before the commencement of construction. All disturbed areas would be revegetated or covered with stone after construction. (State Police I, Section 14, p. 15)
56. The State Police would consider landscaping to screen the proposed facility. (State Police I, Section 14, p. 12; Transcript, Afternoon, pp. 55 and 56)
57. The estimated cost of developing the proposed facility is itemized as follows:

Radio equipment	\$82,300
Tower and antenna	\$95,700
Power systems	\$26,500
Site, road, shelter	\$81,900
Miscellaneous	<u>\$35,100</u>

Total construction cost \$321,500

(State Police I, Section 13P)