STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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Daniel F. Caruso
Chairman

July 6, 2010

TO: Parties and Intervenors

FROM: S. Derek Phelps, Executive Director

RE: **DOCKET NO. 399** - T-Mobile Northeast LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility at 166 Pawcatuck Avenue, Stonington, Connecticut.

As stated at the hearing in Stonington on April 13, 2010, after the Council issues its draft findings of fact, parties and intervenors may identify errors or inconsistencies between the Council's draft findings of fact and the record; however, no new information, evidence, argument, or reply briefs will be considered by the Council.

Parties and Intervenors may file written comments with the Connecticut Siting Council on the Draft Findings of Fact issued on this docket by July 12, 2010.

SDP/CDM/laf

Enclosure

LIST OF PARTIES AND INTERVENORS
SERVICE LIST

Status Granted	Document Service	Status Holder (name, address & phone number)	Representative (name, address & phone number)
Applicant	☐ E-mail or ☒ U.S. Mail	T-Mobile Northeast, LLC	Julie D. Kohler, Esq. Jesse A. Langer, Esq. Cohen and Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-0211 (203) 394-9901 fax jkohler@cohenandwolf.com jlanger@cohenandwolf.com
Intervenor *(granted on March 9, 2010)*	☒ E-mail or ☐ U.S. Mail	Cellco Partnership d/b/a Verizon Wireless	Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597 (860) 275-8200 (860) 275-8299 fax kbaldwin@rc.com
	☐ E-mail or ☐ U.S. Mail		
	☐ E-mail or ☐ U.S. Mail		

DOCKET NO. 399 – T-Mobile Northeast LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications facility at 166 Pawcatuck Avenue, Stonington, Connecticut.	}	Connecticut
	}	Siting
	}	Council

May 20, 2010

DRAFT

Findings of Fact

Introduction

1. Pursuant to Chapter 277a, Sections 16-50g et seq. of the Connecticut General Statutes (CGS), as amended, and Section 16-50j-1 et. seq. of the Regulations of Connecticut State Agencies (RCSA), T-Mobile Northeast, LLC (T-Mobile) applied to the Connecticut Siting Council (Council) on February 1, 2010 for the construction, operation, and maintenance of a telecommunications facility, which would include a 120-foot monopole tower, located at 166 Pawcatuck Avenue in the Town of Stonington, Connecticut. (See Figures 1, 2, and 3) (T-Mobile 1, p. 1)

2. T-Mobile is a limited liability company, organized under the laws of Delaware, with a Connecticut office at 35 Griffin Road South, Bloomfield, Connecticut. The company and its affiliated entities are licensed by the Federal Communications Commission (FCC) to construct and operate a personal wireless services system in Connecticut. (T-Mobile 1, p. 2)

3. The party in this proceeding is T-Mobile. Cellco Partnership d/b/a Verizon Wireless (Cellco) is an intervenor. (Transcript, April 13, 2010, 3:00 p.m. [Tr. 1], p. 6)

4. T-Mobile's proposed facility would provide coverage to Pawcatuck Avenue, River Road and Greenhaven Road, just south of Interstate 95, residential areas in the vicinity, and the Amtrak rail line that passes through the area. (T-Mobile 1, p. 1)

5. Pursuant to CGS § 16-50*l*(b), notice of the applicant's intent to submit this application was published on November 19 and 21, 2009 and again on January 22 and January 24, 2010 in the New London Day. (T-Mobile 1, pp. 3-4; Exhibit F; T-Mobile 4, A1)

6. Pursuant to CGS § 16-50*l*(b), T-Mobile sent notice of its intent to file an application with the Council to each person appearing of record as owner of property abutting the property on which the site is located. Notices were sent on November 17, 2009 and January 20, 2010. T-Mobile received return receipts from all of the property owners to whom it sent notices. (T-Mobile 1, p. 4; Exhibit G; T-Mobile 4, A1)

7. Pursuant to CGS § 16-50*l* (b), T-Mobile provided a copy of its application to all federal, state, regional, and local officials and agencies listed therein. (T-Mobile 1, p. 3, Exhibit E)

8. On or about March 26, 2010, T-Mobile posted a sign giving public notice of T-Mobile's pending application and the public hearing scheduled for it. The sign was posted along Pawcatuck Avenue, near the host property at the request of the Council, in order to provide better visibility. (T-Mobile 5a, Pre-Filed Testimony of Raymond Vergati, A11)

9. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public hearing on April 13, 2010, beginning at 3:00 p.m. and continuing at 7:00 p.m. in the auditorium of the Stonington Community Center, 28 Cutler Street, Stonington, Connecticut. (Tr. 1, p. 3 ff.)

10. The Council and its staff conducted an inspection of the proposed site on April 13, 2010 beginning at 2:00 p.m. On the day of the field inspection, T-Mobile flew a balloon to simulate the height of the proposed tower from approximately 7:50 a.m. to 6:00 p.m. Winds were calm during most of the morning until approximately 11:30 a.m. when they increased to approximately five to seven miles per hour. The sky was clear with good visibility. (Tr. 1, pp. 23-24)

State Agency Comments

11. Pursuant to CGS § 16-50*l*, the Council solicited comments on this application on March 9, 2010 and April 14, 2010 from the following state departments and agencies: Department of Agriculture, Department of Environmental Protection (DEP), Department of Public Health, Council on Environmental Quality, Department of Public Utility Control, Office of Policy and Management, Department of Economic and Community Development, Department of Emergency Management and Homeland Security, and the Department of Transportation. (CSC Hearing Package dated March 9, 2010; Letter to State Department Heads dated April 14, 2010)

12. The Connecticut Department of Transportation (ConnDOT) responded to the Council's solicitation with no comments. (ConnDOT Letter dated March 16, 2010)

13. Except for ConnDOT, no state agencies submitted comments in response to the Council's solicitation. (Record)

Municipal Consultation

14. On September 29, 2009, T-Mobile submitted a technical report on its proposed facility to Stonington's First Selectman, Edward Haberek. (T-Mobile 1, p. 18; T-Mobile 1, Exhibit Q)

15. On November 5, 2009, T-Mobile representatives met with the Stonington's First Selectman, Director of Public Works, and Town Engineer to discuss the proposed facility. Town officials also invited property owners abutting the proposed facility to participate in the meeting. (T-Mobile 1, p. 18)

16. On November 25, 2009, the Stonington First Selectman wrote a letter in which he stated that the town had no objections to T-Mobile's proposal. In the letter, the First Selectman also requested that T-Mobile provide space on the proposed tower for town emergency services equipment. (T-Mobile 1, p. 18; T-Mobile 1, Exhibit Q – Letter from Town of Stonington Selectman's Office, dated November 25, 2009)

17. The Town of Stonington's Water Pollution Control Authority wrote a letter to the Council in which it sought assurances that T-Mobile's antennas at the proposed site would not cause interference to the spread spectrum radio system used in the operation of a sanitary sewer pumping station located across the street from the property at 166 Pawcatuck Avenue. The radio system operates at approximately 900 MHz. (Letter from Stonington WPCA, dated December 3, 2009)

18. T-Mobile's antennas would not cause interference for the existing 900 MHz radio system in use at the sanitary sewer pumping station because its transmit and receive frequencies are spectrally separated by approximately 1 gigahertz from the frequencies used at the pump station. Furthermore, T-Mobile's antenna system includes filters to reduce, or attenuate, any emissions outside its licensed operating bands. (T-Mobile 4, A6)

19. T-Mobile would make space on its proposed tower available for the town's public safety communications free of charge. (T-Mobile 1, p. 9; Tr. 1, p. 72)

Federal Designation for Public Need

20. In 1996, the United States Congress recognized a nationwide need for high quality wireless telecommunications services, including cellular telephone service. Through the Federal Telecommunications Act of 1996, Congress seeks to promote competition, encourage technical innovations, and foster lower prices for telecommunications services. (Council Administrative Notice Item No. 7 - Telecommunications Act of 1996; T-Mobile 1, p. 4)

21. In issuing cellular licenses, the Federal government has preempted the determination of public need for cellular service by the states and has established design standards to ensure technical integrity and nationwide compatibility among all systems. (Council Administrative Notice Item No. 7 - Telecommunications Act of 1996)

22. The Telecommunications Act of 1996 prohibits local and state bodies from discriminating among providers of functionally equivalent services. (Council Administrative Notice No. 7 - Telecommunications Act of 1996)

23. The Telecommunications Act of 1996 prohibits any state or local agency from regulating telecommunications towers on the basis of the environmental effects of radio frequency emissions to the extent that such towers and equipment comply with FCC's regulations concerning such emissions. This Act also blocks the Council from prohibiting or acting with the effect of prohibiting the provision of personal wireless service. (Council Administrative Notice No. 7 - Telecommunications Act of 1996; T-Mobile 1, p. 4)

24. Congress enacted the Wireless Communications and Public Safety Act of 1999 (the 911 Act) in order to promote public safety through the deployment of a seamless, nationwide emergency communications infrastructure that includes wireless communications services. (T-Mobile 1, pp. 5-6)

25. As an outgrowth of the 911 Act, the FCC has mandated that wireless carriers provide enhanced 911 services (E911) as part of their communications networks. (T-Mobile 1, p. 6)

26. The proposed facility would be an integral component of T-Mobile's E911 network in southeastern Connecticut and would comply with FCC's E911 requirements. (T-Mobile 1, p. 6)

Existing and Proposed Wireless Coverage

T-Mobile

27. T-Mobile experiences a coverage gap in the area around the proposed facility, specifically along Pawcatuck Avenue, River Road and Greenhaven Road, just south of Interstate 95, as well as the Amtrak rail line that passes through the area. (T-Mobile 1, pp. 4-5)

28. The proposed facility would provide service in the area of T-Mobile's coverage gap. (T-Mobile 1, p. 5)

29. T-Mobile utilizes Personal Communications Service (PCS) frequencies for its Global System for Mobile Communications (GSM) technology and Advanced Wireless Services (AWS) frequencies for its Universal Mobile Telecommunications System (UMTS) overlay. (Tr. 1, p. 20)

30. T-Mobile's licensed operating frequencies in the New London Basic Trading Area for its GSM and UMTS technologies include:

GSM
Upper 2/3 A
536 to 588
TX: 1935.000 MHz to 1945.000 MHz
RX: 1855.000 MHz to 1865.000 MHz

776 to 781 (C Band)
TX: 1983.000 MHz to 1984.000 MHz
RX: 1903.000 MHz to 1904.000 MHz

UMTS
TX: 2140.000 MHz to 2145.000 MHz
RX: 1740.000 MHz to 1745.000 MHz

(T-Mobile 4, A5)

31. T-Mobile's minimum design signal strength for in-vehicle coverage is -84 dBm. For in-building coverage, it is -76 dBm. (T-Mobile 4, A7)

32. T-Mobile's existing signal strengths in the area that would be covered by the proposed facility range from -76 dBm to below -100 dBm. (T-Mobile 4, A8)

33. Dropped call percentages within the proposed coverage area range from 1.6 percent to 6.3 percent, with an overall dropped call percentage of 3.75 percent. This percentage is higher than the 2 percent T-Mobile considers to be indicative of reliable coverage. (T-Mobile 4, A4)

34. The lengths of the coverage gaps T-Mobile experiences on the major arteries within the proposed coverage area are listed in the following table.

Transportation Artery	**Coverage Gap**	**Distance Covered**
Amtrak Rail Line	1.78 miles	1.98 miles
Pawcatuck Avenue	0.76 mile	0.98 mile
River Road	0.8 mile	0.86 mile
Greenhaven Road	1.1 miles	1.46 miles

(T-Mobile 4, A9 and A10)

35. The total area T-Mobile could cover from the proposed site would be approximately 5.38 square miles. (T-Mobile 4, A11)

36. T-Mobile's antennas at the proposed facility would hand off signals to the sites identified in the following table.

Site Address	**Facility Type**	**Structure Height**	**T-Mobile's Antenna Height**	**Distance & Direction to proposed facility**
811 Stonington Road, Stonington	Flagpole	150 feet	134 feet	1.86 miles; W
82 Mechanic Street, Pawcatuck	Flagpole	150 feet	147 feet	1.38 miles; NE
173 South Broad Street, Stonington	Self-supporting lattice	180 feet	140 feet	0.7 miles; NW
59 Tom Harvey Road, Westerly	Monopole	150 feet	147 feet	2.92 miles; SE

(T-Mobile 4, A12)

37. T-Mobile could best achieve its coverage objectives with its antennas located at the proposed centerline height of 117 feet above grade level. (T-Mobile 4, A13)

38. T-Mobile's signal strength would begin to deteriorate at heights below 117 feet. (T-Mobile 4, A13)

39. T-Mobile would need another facility south of the proposed site to provide additional coverage. The timeline to develop a facility in this area would be approximately five to seven years. (Tr. 1, pp. 20-21)

Cellco

40. Cellco's primary objectives at this site are to provide PCS service to several existing coverage gaps along Route 1, portions of the Amtrak rail line, as well as local roads in the surrounding area. Cellco would also provide 850 MHz wireless services to existing residential and commercial areas immediately south of the proposed tower site, including several commercial marinas and recreational areas and to boaters along the Pawcatuck River and portions of Long Island Sound. (Cellco 2, Response to Question 6)

41. Cellco maintains FCC licenses to operate its wireless system in the cellular (850 MHz), PCS (1900 MHz), and LTE (700 MHz) frequency ranges. (Cellco 2, Response to Question 1)

42. At both PCS and cellular frequencies, Cellco's coverage thresholds are -85 dBm for in-vehicle service and -75 dBm for in-building service. (Cellco 2, Response to Question 2; Tr. 2, p. 25)

43. Cellco's existing signal strength within the area that would be served from the proposed facility ranges from -86 dBm to -97 dBm. (Cellco 2, Response to Question 3)

44. Cellco could provide reliable service from the proposed facility to an area of 9.92 square miles at cellular frequencies, 13.28 square miles at LTE frequencies, and 7.41 square miles at PCS frequencies. (Cellco 2, Response to Question 4)

45. Cellco experiences dropped calls at a rate of 1.81% and ineffective attempts at a rate of 2.02% in the proposed coverage area. (Cellco 2, Response to Question 5)

46. Cellco attempts to achieve a dropped call rate of less than one percent as an indicator of adequate service. (Tr. 2, p. 25)

47. Cellco experiences several coverage gaps along Route 1 that total 1.29 miles and a single coverage gap along the Amtrak rail line of 1.15 miles. (Cellco 2, Response to Question 7)

48. With its antennas at a centerline height of 107 feet, Cellco would provide coverage to a 1.08 mile portion of Route 1 and its entire 1.15 mile gap along the rail line. (Cellco 2, Response to Question 8)

49. The minimum height at which Cellco could achieve its coverage objectives from the proposed facility is 107 feet above ground level. (Cellco 2, Response to Question 14)

50. At 97 feet, Cellco's coverage footprint would decrease from 9.92 square miles to 7.3 square miles at cellular frequencies, from 13.28 to 11.39 square miles at LTE frequencies, and from 7.41 to 5.91 square miles at PCS frequencies. PCS coverage would be reduced from 1.08 miles to 0.87 miles along Route 1. Cellco would still be able to achieve its coverage objectives along the Amtrak rail line. (Cellco 2, Response to Question 15)

51. From the proposed facility, Cellco's antennas would hand off signals with the adjacent facilities identified in the following table.

Site Address	Facility Type	Structure Height	Cellco's Antenna Height	Distance & Direction to proposed facility
173 South Broad Street, Stonington	Self-support lattice	180 feet	150 feet	0.7 miles, NW
34 Summit Street, Stonington Borough	Water tank	143 feet	140 feet	2.8 miles, W

(Cellco 2, Response to Question 11)

Site Selection

52. T-Mobile initiated its search for a site in this vicinity on or about August 15, 2008. (T-Mobile 4, A3)

53. T-Mobile's site search was centered in the vicinity of Pawcatuck Avenue and Hawley Street in Stonington. The radius of the search area was approximately one-half mile. (T-Mobile 4, A3)

54. In the Village of Pawcatuck, within the Town of Stonington, T-Mobile did not find any existing towers, transmission line structures, or other structures that were suitable for installing antennas capable of providing service within the area of its existing coverage gap. (T-Mobile 1, Exhibit J)

55. T-Mobile has antennas on the existing telecommunications towers that are nearest to the area it is seeking to serve from the proposed facility. These existing towers are too far from the area of T-Mobile's coverage gap to provide adequate service. (T-Mobile 1, Exhibit J)

56. T-Mobile identified five telecommunications towers within approximately two miles of its proposed site. None of these towers was found to be located close enough to the target area for its coverage purposes. The towers are listed in the table below.

Tower Location	Height and Type Of Tower	Tower Owner	Approx. Distance and Direction
166 South Broad Street, Pawcatuck	100-foot lattice tower	Town of Stonington	.7 mile to NW
173 South Broad Street, Stonington	150-foot lattice tower	SBA	.7 mile to NW
82 Mechanic Street, Stonington	150-foot flagpole tower	Voicestream (T-Mobile)	1.38 miles to NE
811 Stonington Road, Stonington	150-foot monopole	SBA	1.86 miles to W
Leward Ave at Ward St, Westerly	108-foot tower	National Grid	1.94 miles to NE

(T-Mobile 1, Exhibits I and J)

57. T-Mobile investigated several different properties in the area of its proposed site. Properties that were investigated include:

a. Pawcatuck Thread Mill, 12 River Road: This property is a five-story, former factory building. T-Mobile's investigation concluded that it is too far to the southeast to provide adequate service to its coverage objective.

b. Highland Homestead Inc., 170 Pawcatuck Avenue: This property abuts the proposed facility's host property. The owners of the property were not interested in leasing land to T-Mobile for a telecommunications tower.

c. First Student Bus Company, 50 Extrusion Drive: There is an existing 45-foot light duty lattice tower on this property. The property owners were not interested in having T-Mobile replace the existing tower with a higher telecommunications facility that would be needed to address T-Mobile's coverage goals.

d. Davis Standard, LLC, 1 Extrusion Drive: There is an existing one-story building on this property. T-Mobile determined that the roof of the building was too low to adequately meet its coverage objectives.

e. End South Broad Street, Amtrak Right-of-Way Parcel: Access to this parcel is across property owned by the Town of Stonington. The Town was not interested in constructing a facility on this property because it would be too close to a school and a park.

f. South Broad Street, Town of Stonington Sewer System Pump Station: There is an existing, approximately 25-foot, light duty lattice tower on the pump station property. T-Mobile concluded that the existing tower is too short to provide adequate service and structurally inadequate to support T-Mobile's antennas. T-Mobile met with Stonington's First Selectman about a prospective new facility on this property, but the Town was not interested because the property is too close to a school and a park.

g. 151 Greenhaven Road, Town of Stonington: There is an existing, approximately 30-foot lattice tower, which is no longer in use, on this property. T-Mobile determined that the tower is too far to the southwest to adequately serve its coverage objectives.

h. Town of Stonington Sewer Treatment Plant, 34 Mary Hall Road: There is an existing, 45-foot, light duty lattice tower on a roof on this property. T-Mobile determined that the lattice tower was too far to the southwest to adequately serve its coverage objectives and that a much taller structure would be needed at this location.

i. 333 Greenhaven Road: There is an existing, 35-foot tall windmill on this property. T-Mobile determined that this property was too far to the southwest to adequately serve its coverage objectives and that a much taller structure would be needed at this location.

j. Palmer Neck Road, State of Connecticut: This property is too far to the southwest to adequately serve T-Mobile's coverage objectives.

k. Greenhaven Road, State of Connecticut: This property is too far to the southwest to adequately serve T-Mobile's coverage objectives.

l. Brucker Pentway, State of Connecticut: This property is too far to the southwest to adequately serve T-Mobile's coverage objectives.

m. 568 Greenhaven Road: This property is too far to the southwest to adequately serve T-Mobile's coverage objectives. In addition, the owner of this property never responded to T-Mobile's inquiry about the possibility of locating a telecommunications facility at this location.

(T-Mobile 1, Exhibit J; T-Mobile 5a, Pre-Filed Testimony of Raymond Vergati, A7)

58. An Outdoor Distributed Antenna System (DAS) would not achieve T-Mobile's coverage objectives in this area of Stonington because of: the unavailability of a sufficient number of existing utility poles on which to string the fiber-optic cable and DAS nodes that would be required, the relatively low height of the utility poles that do exist within the area that needs to be covered, the uneven terrain and mature vegetative cover in the coverage area, the unavailability of unused fiber-optic cables that could be utilized in a DAS network, and the need to secure easements and other legal agreements required for the installation of utility poles and other infrastructure components of a DAS network. (T-Mobile Responses to CSC Post-Hearing Interrogatories, A1)

59. Repeaters, microcell transmitters, and other types of transmitting technologies are not practicable or feasible means to provide service within the coverage area that T-Mobile is seeking to serve due to significant terrain variations and tree cover in the area, as well as other practical considerations. (T-Mobile 1, p. 7)

Facility Description

60. The proposed facility would be located at 166 Pawcatuck Avenue on a 5.02 acre parcel owned by Warren Main (the Main property) and used for a single family residence and a farm. The Amtrak rail line right-of-way abuts the Main property to the north. (See Figures 1 and 2) (T-Mobile 1, pp. 1, 9; Exhibits B, C)

61. The Main property is zoned RR-80, a zoning designation for single family residences and other specified uses requiring a minimum lot area of 80,000 square feet. Telecommunications towers are allowed in RR-80 zoning districts with a special permit. Although the proposed facility would be located within the required rear yard setback for RR-80 zoning districts, the tower would comply with the zoning regulations' requirement for a setback from residential properties. A tower's required setback distance from property lines is not specified in the zoning regulations and is subject to the planning and zoning commission's discretion. (T-Mobile 1, p. 16; Bulk-filed Town of Stonington Zoning Regulations)

62. The proposed facility would be located in the northeast corner of the host property. (T-Mobile 1, Exhibit B, Sheet A-1)

63. For its proposed facility, T-Mobile would lease a 2,100 square foot area (30 feet by 70 feet). The facility would include a 120-foot tall steel monopole tower within a 30-foot by 60-foot (1,800 square feet) compound. The compound would be enclosed by an eight-foot high chain link fence. (See Figure 3) (T-Mobile 1, p. 9; Exhibit B, Drawing SP-2)

64. The proposed tower would be located at 41° 21' 37.75" north latitude and 71° 51' 8.75" west longitude. Its ground elevation would be 51 feet above mean sea level (amsl). (T-Mobile 1, Exhibit R)

65. The proposed tower would be designed in accordance with the 2005 Connecticut State Building Code and the Electronic Industries Association Standard ANSI/TIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Support Structures" for New London County. The tower would be between 21 and 26 inches in diameter at its top and between 36 and 42 inches in diameter at its base. The tower would be designed to accommodate the antennas of four wireless carriers plus municipal public safety antennas. (T-Mobile 4, A14; Tr. 1, p. 18)

66. The site of the proposed tower is approximately 50 feet from the tracks of the Amtrak rail line. In order to minimize the possibility of the tower falling onto the tracks, T-Mobile would incorporate a yield point, or hinge point, into the design of the tower at approximately 100 feet above ground level (AGL). (Tr. 1, pp. 18-19)

67. T-Mobile would initially install three antennas (one per sector) at a centerline height of 117 feet nine inches AGL on T-arm mounts. (T-Mobile 1, pp. 1, 9; Tr. 1, p. 16)

68. T-Mobile would use battery back up power for its proposed facility. The battery power system could operate for between 20 to 36 hours. (T-Mobile 4, A20; Tr. 1, pp. 71-72)

69. Cellco would install 12 antennas on a low profile platform at a centerline height of 107 feet AGL. (Transcript, April 13, 2010, 7:00 p.m. [Tr. 2], p. 22)

70. Cellco would install a diesel-fueled generator for backup power. The generator would include a double-walled and alarmed fuel tank. It would provide power for approximately 48 hours. (Cellco 2, Response to Question 18; Tr. 2, pp. 27-28, 39)

71. Cellco would install a 12-foot by 24-foot equipment shelter to house its antenna-related ground equipment. (Cellco 2, Response to Question 17; Tr. 2, p. 24)

72. Construction of the proposed facility would require 175 cubic yards of cut and 90 cubic yards of fill. (T-Mobile 4, A16)

73. Vehicular access to the proposed facility would extend from Pawcatuck Avenue over an existing gravel driveway for a distance of approximately 600 feet and then over a new gravel drive approximately 160 feet to the proposed compound. (T-Mobile 1, p. 9; T-Mobile 1, Exhibit B, Sheet SP-1; T-Mobile 4, A19)

74. Utility service would be extended underground approximately 425 feet to the proposed facility from an existing transformer on the host property. (T-Mobile 1, p. 9; T-Mobile 4, A18)

75. T-Mobile would not anticipate the need for blasting to develop the proposed facility. (T-Mobile 4, A17)

76. The tower's setback radius would extend approximately 100 feet onto the Amtrak rail line right-of-way. It would also extend approximately 84 feet onto the adjacent property to the east, which is also owned by Warren Main. (T-Mobile 1, Exhibit B, Sheet A-1)

77. The nearest adjacent properties are the Amtrak right-of-way, which is located approximately six feet to the north of the proposed compound's fence line, and another parcel owned by Warren Main, which is located approximately five feet from the proposed compound's northeast corner. (T-Mobile 1, Exhibit B, Sheet SP-1)

78. There are 31 single-family residences within 1,000 feet of the proposed facility. (T-Mobile 1, Exhibit L)

79. The nearest single family residences, not on the host property, are located 427 feet away at 138 Pawcatuck Avenue. They are owned by Hannah Siener. (T-Mobile 1, Exhibit L; T-Mobile 4, A2)

80. Land use in the vicinity of the proposed facility consists primarily of medium- and low-density residential development, agricultural land, undeveloped woodlands, and the Amtrak rail line. (T-Mobile 1, Exhibit M, p. 1)

81. The estimated cost of the proposed facility, not including antennas and related equipment, is:

Tower and foundation costs	$ 70,000
Site development costs	69,000
Utility installation costs	39,000
Total estimated costs	$178,000

(T-Mobile 1, pp. 19-20)

82. T-Mobile's antennas and related ground equipment that would be installed at the proposed facility would cost between $55,000 and $65,000. (T-Mobile 4, A21)

83. The estimated costs of the equipment that Cellco would install at the proposed facility are listed below:

Cell Site Radio Equipment	$450,000
Platform, Antennas, and Coax	64,000
Power Systems	44,000
Equipment Building	50,000
Miscellaneous Site Costs	7,500
Total Estimated Costs	$615,500

(Cellco 2, Response to Question 16)

84. The total estimated cost of the proposed facility, together with antennas and other related equipment and appurtenances, would be $848,500 and $858,000. (Findings of Fact 81, 82, and 83)

Environmental Considerations

85. The proposed facility would have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places. (T-Mobile 1, Exhibit N, Letter from SHPO dated September 30, 2009)

86. The proposed facility would not affect any threatened or endangered species or designated critical habitats. (T-Mobile 1, p. 13)

87. The proposed facility would not affect any of the "listed" categories of the National Environmental Protection Act (NEPA): wilderness preserves; endangered or threatened species; critical habitats; National Register historic districts, sites, buildings, structures or objects; Indian religious sites; flood plains; or federal wetlands. (T-Mobile 1, p. 19; Exhibit P)

88. The proposed facility would be located approximately 3,000 feet from the nearest point of the Barn Island Wildlife Area, which is identified by the National Audubon Society as an Important Bird Area in Connecticut. (T-Mobile 1, Exhibit M – Viewshed Analysis Map; T-Mobile Late Filed Exhibit, dated May 12, 2010 – Attachment C)

89. T-Mobile's proposed tower would comply with recommended guidelines of the United States Fish and Wildlife Service for minimizing the potential for telecommunications towers to impact bird species. These guidelines recommend that towers be less than 199 feet tall and that they do not use guy wires. (T-Mobile Late Filed Exhibit dated May 12, 2010, Attachment E – Service Interim Guidelines for Recommendations on Communications Tower Siting, Construction, Operation, and Decommissioning)

90. Development of the proposed facility would not require the removal of any trees. (T-Mobile 1, pp. 8, 9)

91. T-Mobile's proposed 120-foot tower would not require notification to the Federal Aviation Administration or marking or lighting. A tower with a height exceeding 131 feet above ground level or 182 feet above mean sea level at the proposed site would require notification to the Federal Aviation Administration. (T-Mobile 1, Exhibit R)

92. Although the proposed facility is outside of the Connecticut Coastal Management Act's (CCMA) coastal boundary, it is located within its coastal area. However, there are no coastal resources located on the host property. No federal or state regulated tidal wetlands or watercourses are on the host property. The proposed facility would be located outside the 100-year and 500-year flood plains. The nearest coastal resources are associated with the Pawcatuck River and are located approximately 3,000 feet to the east of the proposed facility. No coastal resources, as defined in the CCMA, would be adversely affected by the proposed facility. (T-Mobile 1, Exhibit N – Coastal Consistency Analysis)

93. The nearest wetlands are located 165 feet west of the proposed compound and 75 feet west of the gravel access drive that would be installed to connect the existing driveway to the proposed compound. Due to the distance separating the proposed facility and its new access drive from the nearest wetland area, and with property sedimentation and erosion controls properly installed, no adverse impact should result to the wetlands. (T-Mobile 1, Exhibit J)

94. T-Mobile would establish and maintain appropriate soil erosion and sedimentation control measures, in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control established by the Connecticut Council for Soil and Water Conservation, in cooperation with the Connecticut Department of Environmental Protection, throughout the construction period of the proposed facility. (T-Mobile 1, p. 17)

95. The cumulative worst-case maximum power density from the radio frequency emissions of the proposed T-Mobile and Cellco antennas is calculated to be 0.475089 mW/cm^2 or 59.24% of the standard for Maximum Permissible Exposure, as adopted by the FCC, at the base of the proposed tower. This calculation was based on methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997) that assumes all antennas would be pointed at the base of the tower and all channels would be operating simultaneously, which creates the highest possible power density levels. Under normal operation, the antennas would be oriented outward, directing radio frequency emissions away from the tower, thus resulting in significantly lower power density levels in areas around the tower. (T-Mobile 1, Exhibit O; Cellco 2, Response to Question 12)

Visibility

96. T-Mobile's proposed tower would be at least partially visible year-round from approximately 99 acres in the surrounding vicinity. The majority of this acreage occurs on the host property and in its immediate vicinity, over portions of the Stonington High School athletic fields located northwest of the proposed facility, and over open water on the Pawcatuck River and its adjacent shoreline to the southeast. There would be some other areas of year-round visibility along select portions of US Route 1, Route 1A (in Rhode Island), South Anguilla Road, Route 184, and several smaller areas located on private property to the northwest and northeast of the proposed facility. Potential areas of visibility are limited by a combination of mature vegetation and the relatively flat topography in the surrounding area. (See Figure 11) (T-Mobile 1, Exhibit M, p. 4)

97. Approximately 12 residential properties would likely have at least partial year-round views of the proposed tower. Four of these properties are located along Pawcatuck Avenue within the immediate vicinity of the host property; two residences are located along Hawley Street; two residences are located along South Anguilla Road; two residences are located along Route 184; and two residences are located along Green Haven Road. (T-Mobile 1, Exhibit M, p. 5)

98. Approximately 51 additional acres would have seasonal ("leaf-off") views of the proposed tower. These areas are generally within .25 mile of the tower's proposed location. (T-Mobile 1, Exhibit M, p. 5)

99. Approximately nine additional residential properties would likely have seasonal views of the proposed tower. Eight of these properties are located along Pawcatuck Avenue, and one property is located along Hawley Street. (T-Mobile 1, Exhibit M, p. 5)

100. The proposed tower would be visible from a short segment of Route 1A, which is designated as scenic road in this area, in Westerly, Rhode Island. The tower would be approximately 1.8 miles to the northwest from this location. Views of the tower would be limited to the upper ten feet of the tower or at the tree-line on the horizon. (T-Mobile 1, Exhibit M, Viewshed Analysis Map; T-Mobile 5d, Pre-Filed Testimony of Michael Libertine, A11)

101. Visibility of the proposed tower from specific locations in the surrounding area is summarized in the table below.

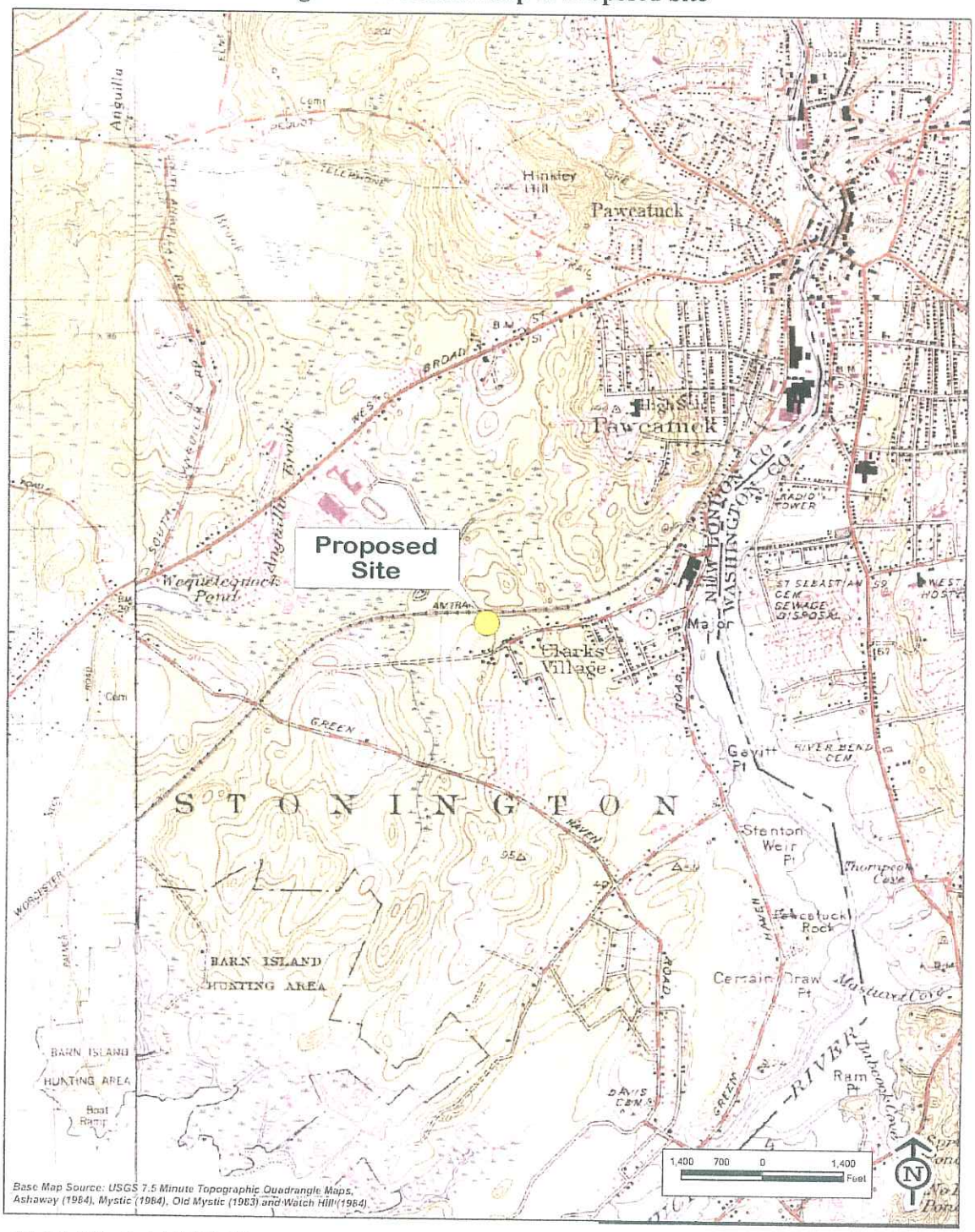
Location	Visible	Approx. Portion of 120' Tower Visible (ft.)	Approx. Distance and Direction to Tower
1 – Stonington High School at Route 1	Yes	20	3,800 feet; SE
2 – Route 1, West of Stonington HS	Yes	20	3,800 feet; SE
3 – Stonington HS soccer field	Yes	10	3,400 feet; SE
4 – 117 South Anguilla Road	Yes	30	6,000 feet; SE
5 – 270 Route 184	Yes	30	8,900 feet; SE
6 – Hawley St., south of Pawcatuck Ave	Yes	30	900 feet; NW
7 – Route 1A, Westerly Yacht Club	Yes	10	8,400 feet; NW
8 – 124 Pawcatuck Avenue	Yes	10	740 feet; NW
9 – Broad Street, over Pawcatuck River	No	n/a	8,400 feet; SW
10 – Buckingham St, at Pawcatuck Ave	No	n/a	2,000 feet; W
11 – Stonington HS tennis courts	No	n/a	2,100 feet; SE

(T-Mobile 1, Exhibit M: Visual Resource Evaluation Report – Photographic Documentation Views)

102. There would be no views of the proposed tower from the Barn Island Wildlife Area or the Pawcatuck River Wildlife Area. (Tr. 1, p. 23)

103. The proposed tower would not be visible from Long Island Sound. (Tr. 1, pp. 56-57)

Figure 1: Location Map of Proposed Site

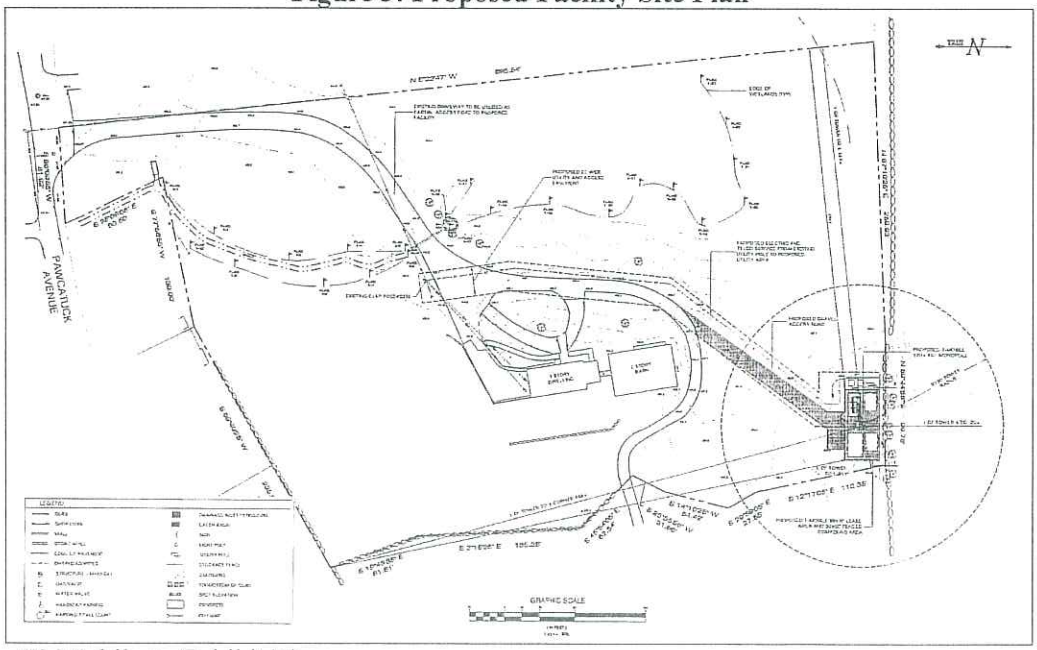


(T-Mobile 1, Exhibit C)

Figure 2: Aerial Photograph of Proposed Site Location

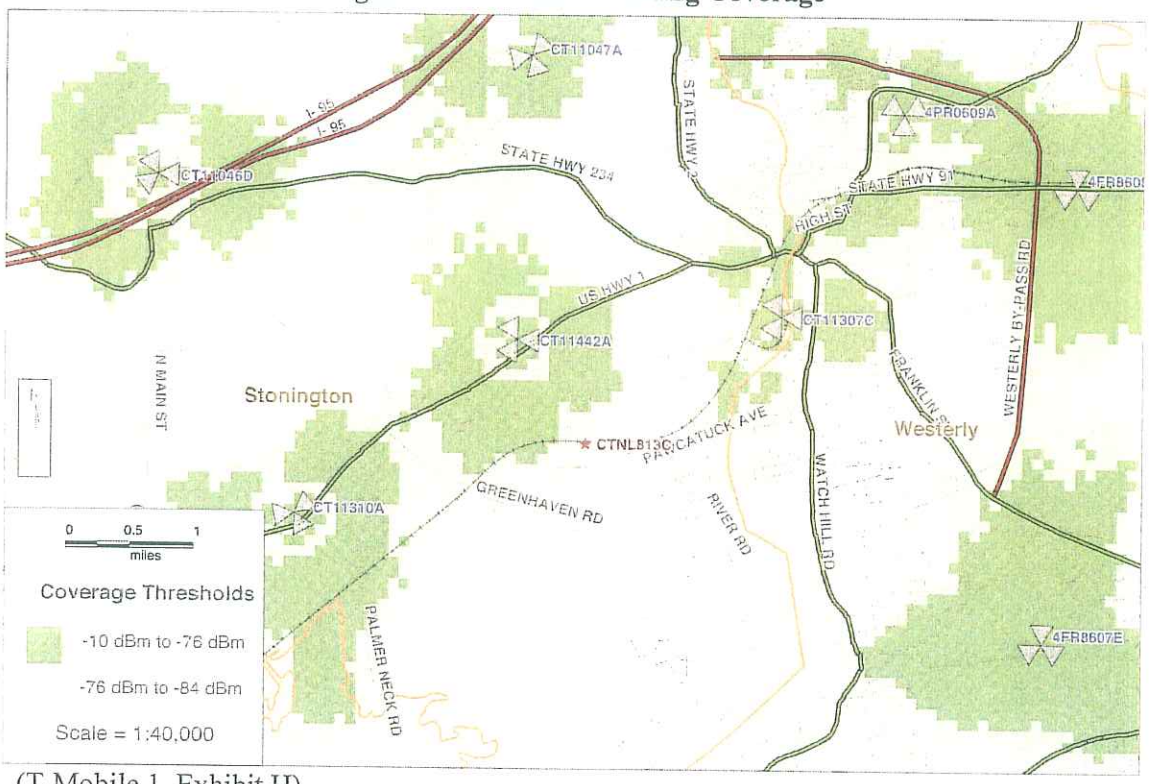
(T-Mobile 1, Exhibit B)

Figure 3: Proposed Facility Site Plan



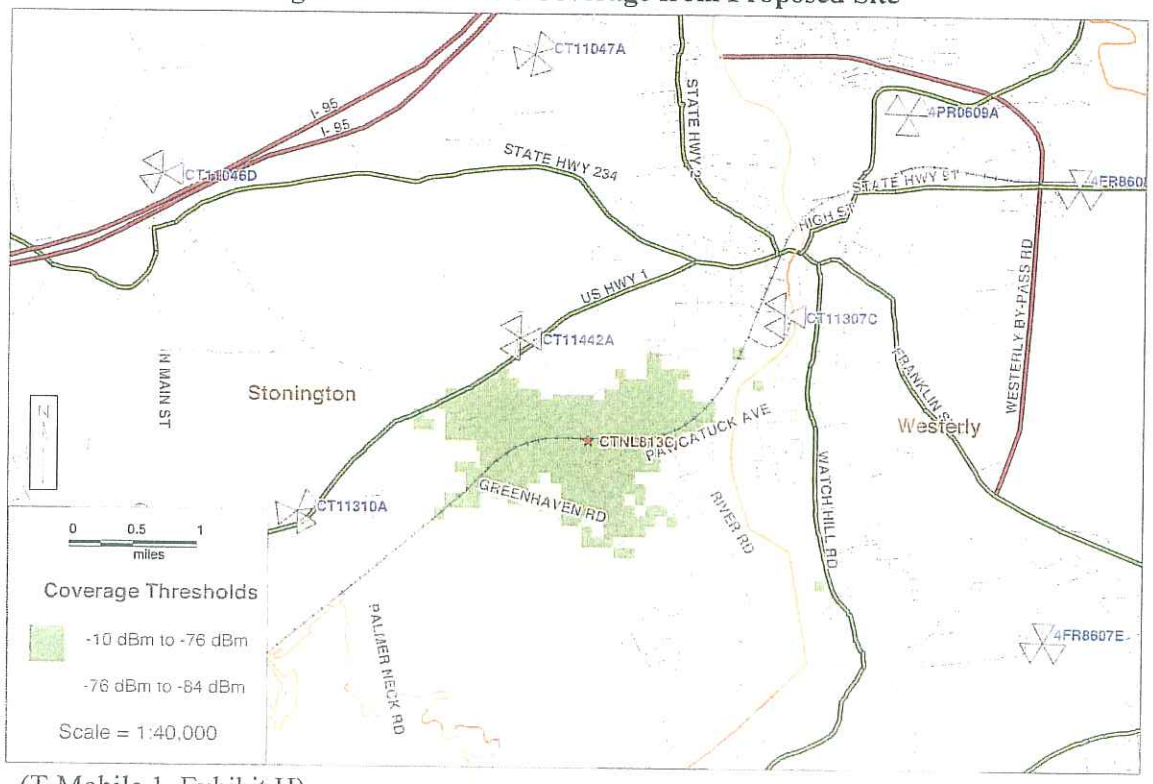
(T-Mobile 1, Exhibit B)

Figure 4: T-Mobile's Existing Coverage



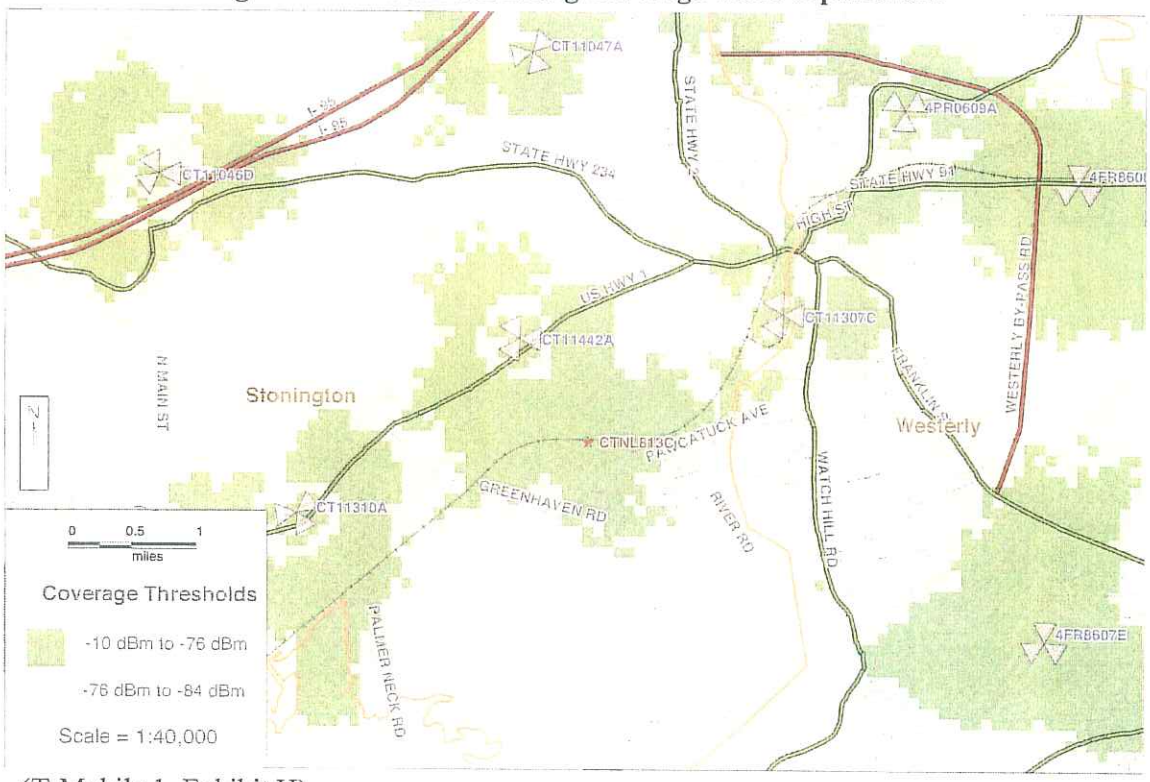
(T-Mobile 1, Exhibit H)

Figure 5: T-Mobile's Coverage from Proposed Site



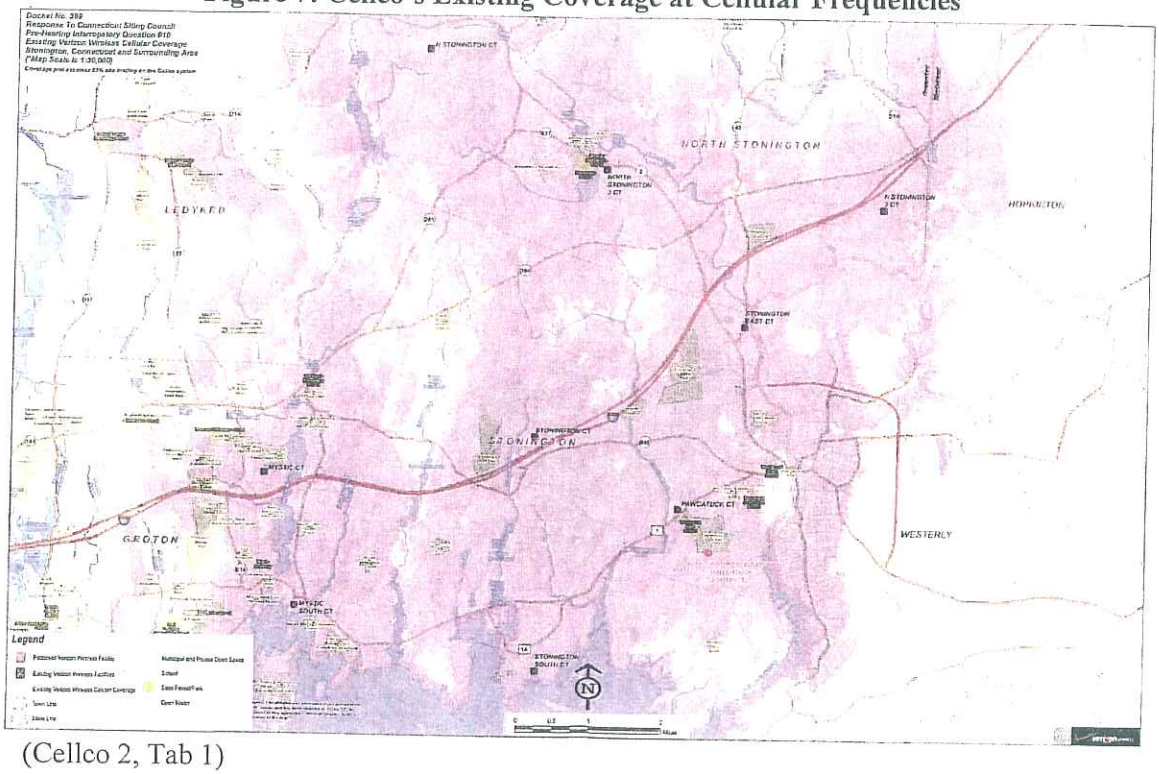
(T-Mobile 1, Exhibit H)

Figure 6: T-Mobile's Existing Coverage with Proposed Site



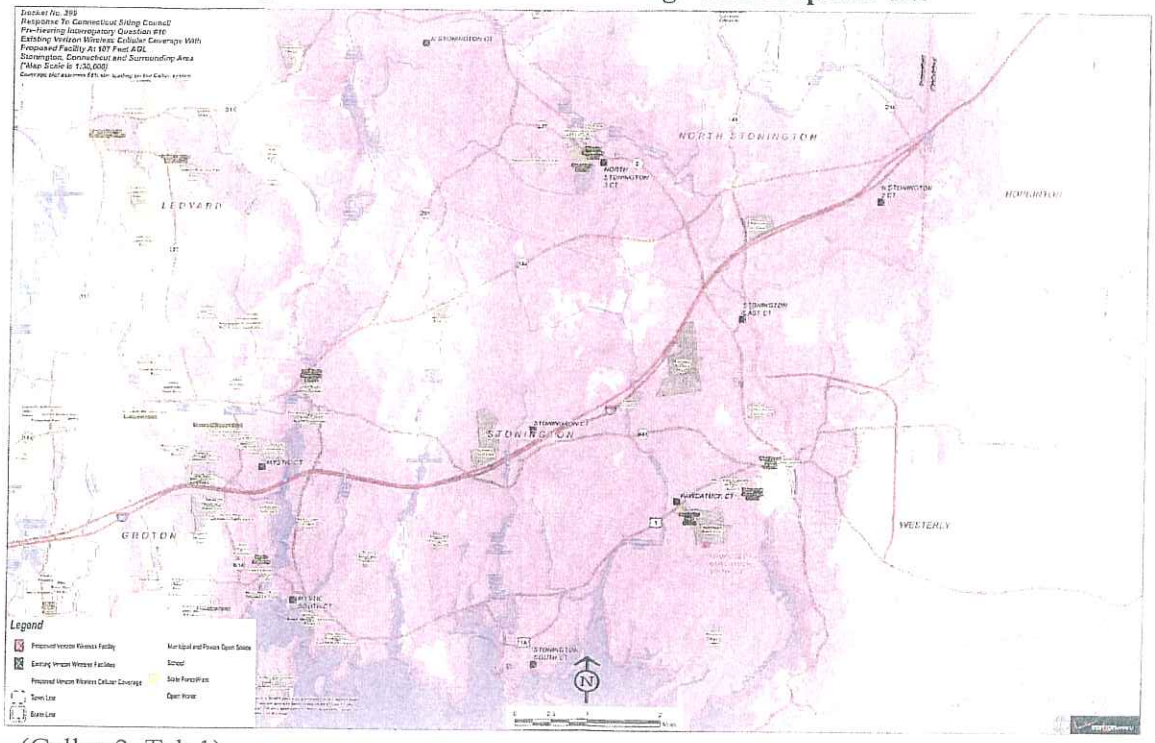
(T-Mobile 1, Exhibit H)

Figure 7: Cellco's Existing Coverage at Cellular Frequencies



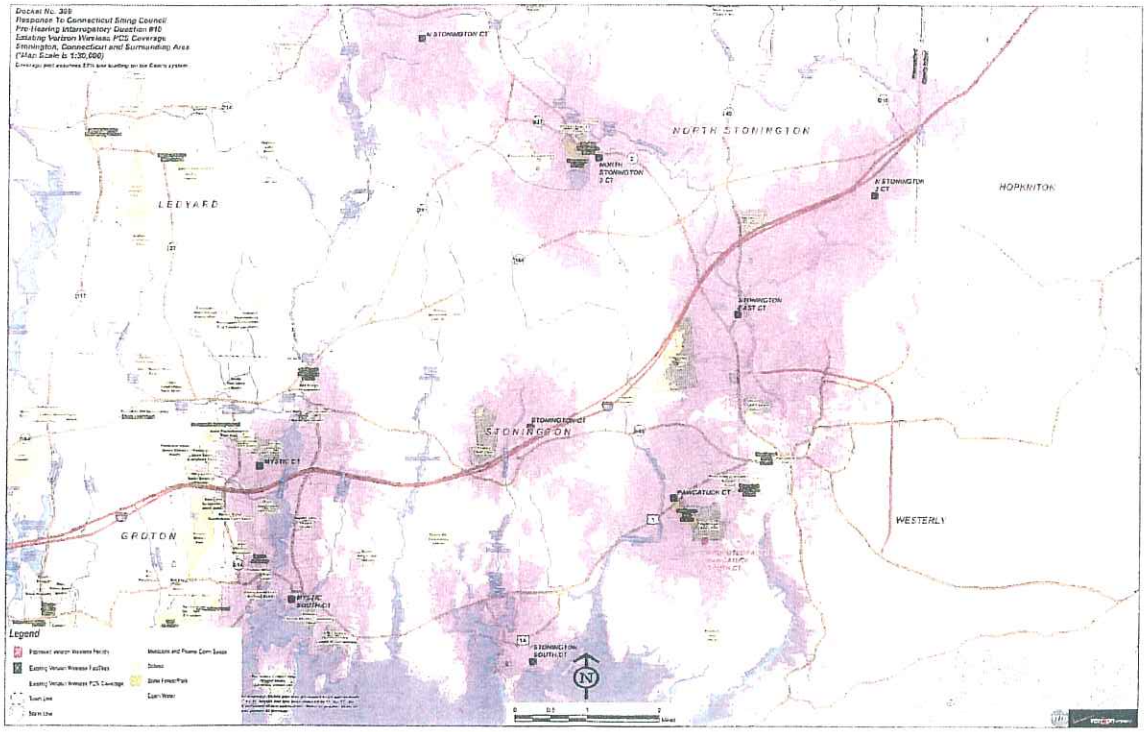
(Cellco 2, Tab 1)

Figure 8: Cellco's Cellular Coverage with Proposed Site



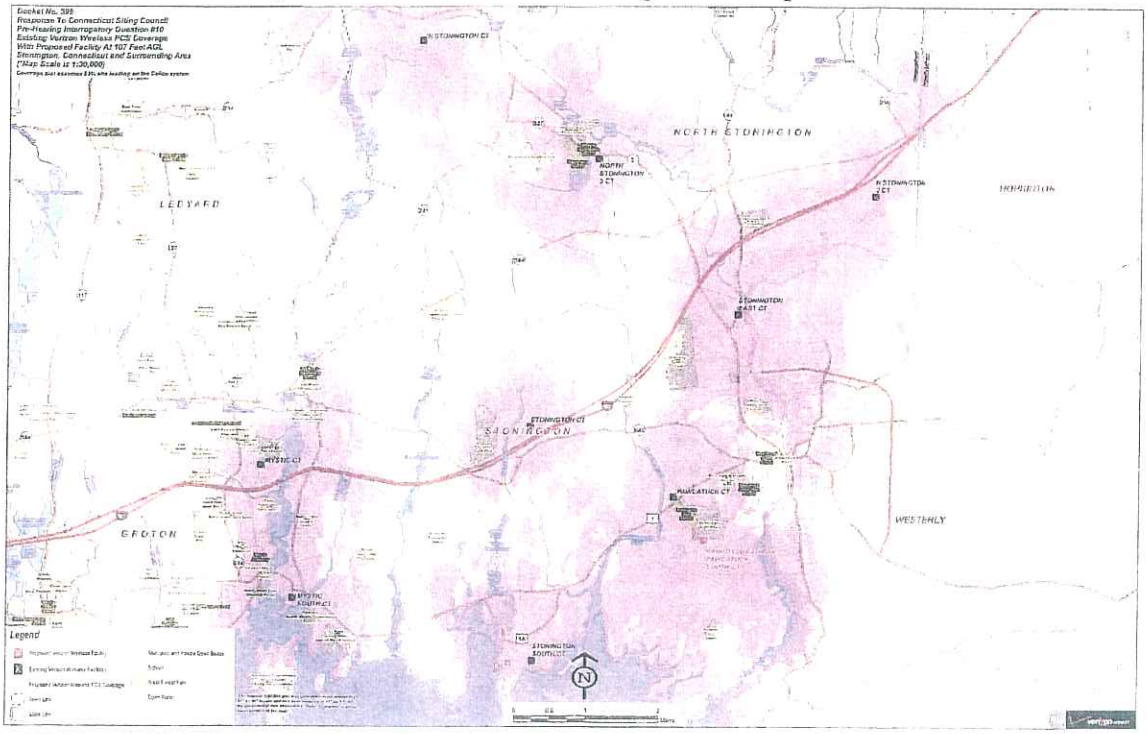
(Cellco 2, Tab 1)

Figure 9: Cellco's Existing Coverage at PCS Frequencies



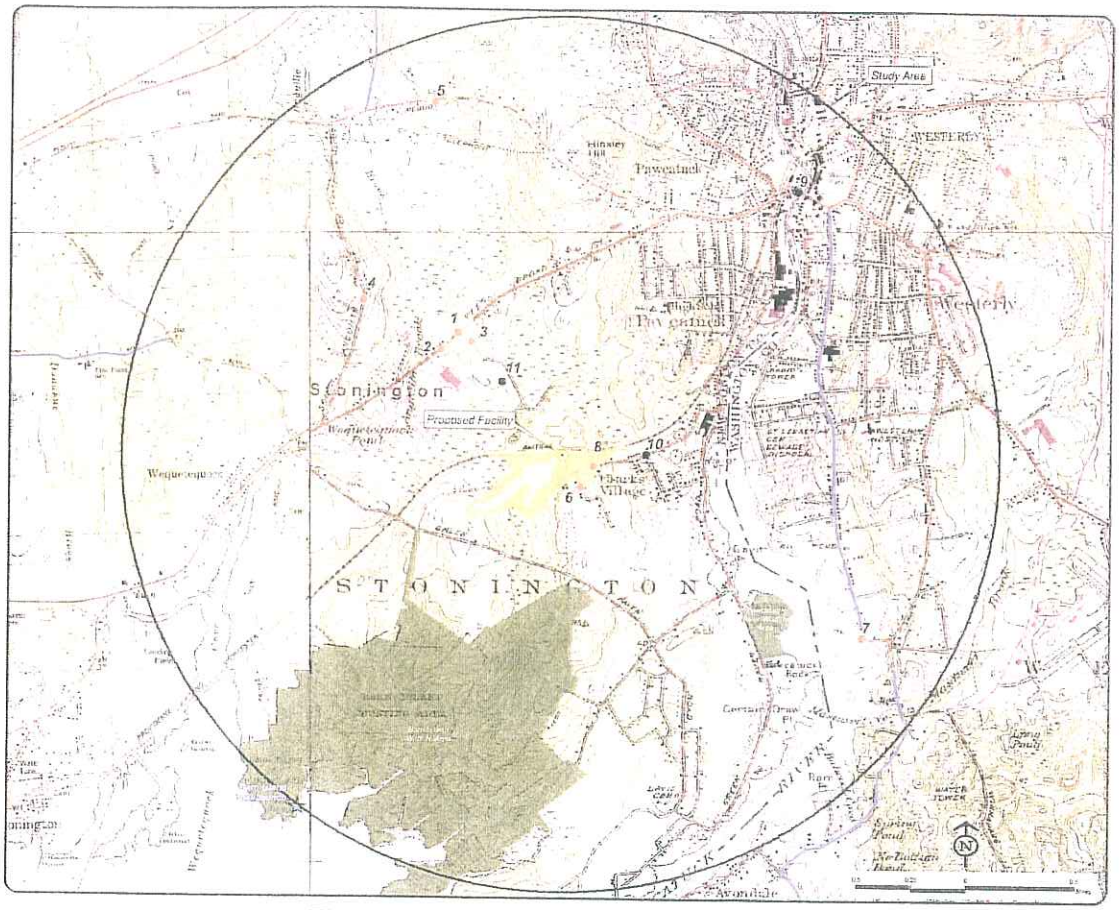
(Cellco 2, Tab 1)

Figure 10: Cellco's PCS Coverage with Proposed Site



(Cellco 2, Tab 1)

Figure 11: Viewshed Analysis



Legend

- Proposed Site Location
- Photographs - September 21, 2009
  - Balloon is not visible
  - Balloon visible above trees
- Year-Round Visibility (Approximately 99 acres)
- Seasonal Visibility (Approximately 51 acres)
- Protected Municipal and Private Open Space Properties, CT (1997)
  - Cemetery
  - Preservation
  - Conservation
  - Existing Preserved Open Space
  - Recreation
  - General Recreation
  - School
  - Uncategorized
- CT DEP Protected Properties (2007)
  - State Forest
  - State Park
  - DEP Owned Waterbody
  - State Park Scenic Reserve
  - Historic Preserve
  - Natural Area Preserve
  - Fish Hatchery
  - Flood Control
  - Other
  - State Park Trail
  - Water Access
  - Wildlife Area
  - Wildlife Sanctuary
- Federal Protected Properties, CT (1997)
- CT DEP Boat Launches (1994)
- Scenic Road (State and Local)
- Town Line

(T-Mobile 1, Exhibit M)