

DOCKET NO. 438 - Cellco Partnership d/b/a Verizon } Connecticut
Application for a Certificate of Environmental Compatibility and }
Public Need for the construction, maintenance, and operation of } Siting
a telecommunications facility located at one of two sites: 596 }
Pendleton Hill Road or 53 Gallup Road, Voluntown, } Council
Connecticut.

August 22, 2013

DRAFT

Findings of Fact

Introduction

1. Cellco Partnership d/b/a Verizon Wireless (Cellco), in accordance with provisions of Connecticut General Statutes (CGS) § 16-50g et seq., applied to the Connecticut Siting Council (Council) on May 10, 2013 for the construction, maintenance, and operation of a telecommunications facility to be known as the “Palmer Pond Facility” and located at one of two sites: 596 Pendleton Road or 53 Gallup Road, in the Town of Voluntown, Connecticut. (Cellco 1, pp. i, 1)
2. Cellco is a Delaware Partnership with an administrative office located at 99 East River Drive, East Hartford, Connecticut. Cellco is licensed by the Federal Communications Commission (FCC) to operate a wireless telecommunications system in Connecticut. The operation of wireless telecommunications systems and related activities is Cellco’s sole business in Connecticut. (Cellco 1, p. 5)
3. The party in this proceeding is the applicant. (Transcript, July 9, 2013, 3:00 p.m. [Tr. 1], p. 4)
4. The purpose of the proposed facility is to provide coverage and capacity relief for Cellco customers along significant portions of Route 49 as well as local roads and residential and commercial land uses in south-central Voluntown, including significant portions of the Pachaug State Forest. The coverage gaps Cellco is seeking to fill exist between its existing Griswold East and North Stonington East cell sites, its approved Bailey Pond and Voluntown cell sites, and its soon to be established Wyassup Lake Cell site. (Cellco 1, pp. i, 1, 4)
5. Pursuant to CGS § 16-50l(b), Cellco published public notice of its intent to submit this application on May 6 and 7, 2013 in the Norwich Bulletin. (Cellco 1, p. 6; Cellco 2 -Affidavit of Publication dated May 6, 2013)
6. Pursuant to CGS § 16-50l(b), Cellco sent notices 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. (Cellco 1, p. 6; Attachment 5)
7. Cellco received return receipts from all of the property owners to whom its sent abutter notices. (Cellco 4, Response 4)
8. Pursuant to CGS § 16-50l (b), Cellco provided copies of its application to all federal, state and local officials and agencies listed therein. (Cellco 1, p. 6; Attachment 3)

9. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public hearing on July 9, 2013, beginning at 3:00 p.m. and continuing at 7:00 p.m. in the Meeting Room of the Voluntown Town Hall, 115 Main Street in Voluntown, Connecticut. (Tr. 1, p. 2 ff.)
10. Cellco posted signs at each of its two proposed sites on June 21, 2013. The signs measured four feet by six feet and gave the date of the public hearing and contact information for the Council. (Cellco 5 –Sign Posting Affidavit)
11. The Council and its staff conducted an inspection of the proposed sites on July 9, 2013, beginning at approximately 2:00 p.m. (Record)
12. The applicant flew a balloon at each of the two proposed sites from 8:00 a.m. until approximately 6:00 p.m. The balloons were flown at the height of the proposed tower at each site. Weather conditions were favorable for the balloon flight for most of the day with calm winds and good visibility. However, a storm came through the area about the time of the Council’s field inspection and created some problems with downdrafts. (Tr. 1, pp. 21-23)

State Agency Comment

13. Pursuant to C.G.S. § 16-50j (h), on June 5, 2013 and on July 10, 2013, the Council solicited written comments regarding the proposed facility from the following State agencies: Department of Energy and Environmental Protection (DEEP); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Agriculture (DOAg); Department of Transportation (DOT); and Department of Emergency Management and Public Protection (DESPP). (Record)
14. The Council did not receive comments regarding Cellco’s proposed facility from any state agency. (Record)

Municipal Consultation

15. On February 6, 2013, Cellco representatives met with Voluntown’s First Selectman to commence the 90-day municipal consultation process. During this meeting, Cellco gave the First Selectman copies of technical information summarizing Cellco’s plans for its Palmer Pond telecommunications facility. (Cellco 1, p. 21)
16. At the Town’s request, Cellco representatives hosted a public information meeting at the Voluntown Town Hall on March 12, 2013. At this meeting, Cellco described its proposed facility, the two alternate site locations being considered, the need for wireless service in Voluntown, and the Siting Council process. Notice of this meeting was sent to owners of property abutting the properties at 594 Pendletown Hill Road and 53 Gallup Road, on which the two alternate sites are located. A notice of this meeting was also published in the Norwich Bulletin. (Cellco 1, p. 21)
17. Cellco has offered free space on its proposed tower to emergency service providers. (Tr. 1, p. 68)

18. Cellco has been notified that the Quinebaug Valley Emergency Service provider would be interested in sharing the proposed facility at either of the proposed sites. (Cellco 1, p. 3)

Public Need for Service

19. In a Report and Order released May 4, 1981 in FCC Docket No. 79-318, the Federal Communications Commission recognized the public need for technical improvement, wide-area coverage, high quality service and a degree of competition in mobile telephone service. (Cellco 1, pp. 6-7)
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. (Cellco 1, p. 7; Council Administrative Notice Item No. 4 - Telecommunications Act of 1996)
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. 4 - Telecommunications Act of 1996; Cellco 1, p. 7)
22. The Telecommunications Act of 1996 prohibits local and state bodies from discriminating among providers of functionally equivalent services. (Council Administrative Notice Item No. 4 - Telecommunications Act of 1996)
23. The Telecommunications Act of 1996 prohibits any state or local entity from regulating telecommunications towers on the basis of the environmental effects, which include human health 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 Item No. 4 - Telecommunications Act of 1996)
24. In recognition of the public safety benefits enhanced wireless telecommunications networks can provide, Congress enacted the Wireless Communications and Public Safety Act of 1999 (the 911 Act). The purpose of this legislation was to promote public safety by making 9-1-1 the universal emergency assistance number and through the deployment of a seamless, nationwide emergency communications infrastructure that includes wireless communications services. (Cellco 1, p. 8)
25. In 2004, Congress enacted the Enhanced 911 (E911) Act for the specific purpose of enhancing and promoting homeland security, public safety, and citizen activated emergency response capabilities. (Cellco 1, p. 8)
26. Cellco's antennas would comply with E911 requirements. (Cellco 4, Response 1)

27. In December 2009, President Barack Obama recognized cell phone towers as critical infrastructure vital to the United States. The Department of Homeland Security, in collaboration with other Federal stakeholders, State, local, and tribal governments, and private sector partners, has developed the National Infrastructure Protection Plan (NIPP) to establish a framework for securing our resources and maintaining their resilience from all hazards during an event or emergency. (Council Administrative Notice Item No. 11 - Barack Obama Presidential Proclamation 8460, Critical Infrastructure Protection)
28. Pursuant to the tower-sharing policy of the State of Connecticut under C.G.S. §16-50aa, if the Council finds that a request for shared use of a facility by a municipality or other person, firm, corporation or public agency is technically, legally, environmentally and economically feasible, and the Council finds that the request for shared use of a facility meets public safety concerns, the Council shall issue an order approving such shared use to avoid the unnecessary proliferation of towers in the state. (Conn. Gen. Stat. §16-50aa)
29. A facility at either proposed site would provide wireless communications services to significant portions of the Pachaug State Forest in Voluntown, where no such service is currently available. (Cellco 1, Attachments 1 and 2; Tr. pp. 52-53)

Existing and Proposed Wireless Coverage

30. In the New London-Norwich, CT market area, Cellco holds licenses issued by the FCC for the “A” Block for cellular frequencies; the “F” Block for Personal Communications Services (PCS) frequencies; the “A,” “B,” “C,” and “E” Blocks for the 700 MHz frequency range (used by Cellco for Long Term Evolution – LTE); and the “B” and “F” Blocks for Advanced Wireless Services (AWS) frequencies. (Cellco 1, Attachment 6)
31. Cellco’s network design thresholds for reliable service are -85 dBm for in-vehicle service and -75 dBm for in-building coverage on all of its operating frequencies. (Cellco 4, Response 7)
32. Cellco’s existing signal strength in the vicinity of the proposed facility ranges from -85 dBm to -106 dBm. (Cellco 4, Response 8)
33. In the sectors that are directed toward the proposed Palmer Pond facility, Cellco’s Griswold East cell site experiences dropped calls at an average rate of 3.0% and ineffective attempts at an average rate of 1.8%. Cellco’s network design objective for dropped calls and ineffective attempts is less than one percent (1%). Because some of the surrounding cell sites have not been activated yet, Cellco relies on other indicators of substandard service including its monthly baseline drive data and propagation modeling tool. (Cellco 4, Response 7)
34. Cellco experiences existing coverage gaps along Route 49, in the vicinity of the proposed Palmer Pond facility, as indicated in the following table:

Frequency	Length of Coverage Gap
	Route 49
Cellular - 850 MHz	4.3 miles
PCS - 1900 MHz	5.4 miles
AWS – 2100 MHz	6.0 miles
LTE - 700 MHz	4.3 miles

(Cellco 4, Response 9)

35. The table below indicates the respective distances Cellco would cover at its different licensed frequencies along the Route 49 from each of its two proposed sites: Site 1 - 596 Pendleton Hill Road and Site 2 - 53 Gallup Road.

Frequency	Distances Covered	
	Site 1	Site 2
Cellular - 850 MHz	4.9 miles	4.5 miles
PCS - 1900 MHz	4.67 miles	4.2 miles
AWS – 2100 MHz	4.0 miles	4.0 miles
LTE - 700 MHz	4.9 miles	4.5 miles

(Cellco 1, pp. 2-3; Cellco 4, Response 17)

36. The table below indicates the respective areas Cellco would cover at its different licensed frequencies from each of its two proposed sites: Site 1 - 596 Pendleton Hill Road and Site 2 - 53 Gallup Road.

Frequency	Areas Covered	
	Site 1	Site 2
Cellular - 850 MHz	9.6 square miles	9.36 square miles
PCS - 1900 MHz	9.53 square miles	8.95 square miles
AWS – 2100 MHz	7.44 square miles	7.1 square miles
LTE - 700 MHz	9.9 square miles	9.54 square miles

(Cellco 1, pp. 2-3; Cellco 4, Response 17)

37. The estimated resident population that would be served by Cellco’s proposed Palmer Pond facility is shown in the table below.

Frequency	Population Covered	
	Site 1	Site 2
Cellular - 850 MHz	677	569
PCS - 1900 MHz	641	591
AWS – 2100 MHz	514	449
LTE - 700 MHz	646	534

(Cellco 4, Response 18)

38. The average number of daily vehicle trips along Route 49 in the vicinity of Cellco’s proposed Palmer Pond facility is between 1400 and 1500. (Cellco 4, Response 19)

39. Cellco’s proposed facility would hand off signals with the adjacent facilities identified in the following table.

Hand Off Facility Location	Distance and Direction from Proposed Site
Griswold East – 1439 Voluntown Rd, Griswold	3.5 miles, NW
Bailey Pond – 497 Ekonk Hill Rd, Voluntown	4.75 miles, N
Voluntown – 422 Rockville Rd, Voluntown	2.25 miles, E
North Stonington East – 31F Clarks Falls Rd, No. Stonington (proposed site)	5.5 miles, S
Wyassup Lake – 177 Cossaduck Hill Rd. No. Stonington (proposed site)	4.0 miles, SW

(Cellco 4, Response 2)

40. The lowest feasible heights at which Cellco could achieve its coverage objectives in the vicinity of the proposed facilities are 130 feet above ground level (AGL) at Site 1 and 150 feet AGL at Site 2. (Cellco 4, Response 3)
41. At heights below those at which Cellco seeks to locate its antennas, Cellco would experience small coverage gaps on Route 49 and on some local secondary roads where the signal strength would go below Cellco’s design threshold. (Tr. 1, p. 23)
42. Cellco’s RF engineers would prefer Site 1 due to the better coverage that would be achieved from this location. (Tr. 1, pp. 26-27)

Site Selection

43. Cellco initiated a site search process for a facility in this area in May 2009. (Cellco 1, p. 12)
44. Cellco’s search area comprised approximately four square miles and was centered approximately 0.8 mile east of Route 49. (Cellco 4, Response 10)
45. Cellco maintains three existing telecommunications facilities within approximately five miles of the two proposed sites and has identified two other existing tower sites as future facility locations. None of these facilities, existing or future, can provide the service Cellco is seeking to provide from either of the two proposed sites. Cellco’s existing and future sites are listed in the following table.

Cellco Site Name	Facility Height and Type	Location	Cellco Ant. Ht.	Distance and Direction to Facility
Griswold East	180’ monopole	1439 Voluntown Rd, Griswold	157’	3.5 miles, NW (existing)
Bailey Pond	180’ monopole	497 Ekonk Hill Rd, Voluntown	153’	4.75 miles, N (existing)
Voluntown	160’ monopole	422 Rockville Rd, Voluntown	160’	2.25 miles, E (approved)

(Table continued on next page)

North Stonington East	150' monopole	31F Clarks Falls Rd, North Stonington	130'	5.5 miles, S (proposed)
Wyassup Lake	190' monopole	177 Cossaduck Hill Rd, North Stonington	177'	4.0 miles, SW (proposed)

(Cellco 1, p. 4; Attachment 9)

46. Cellco identified and investigated 11 properties during its site search process. These properties and the determinations of their suitability are listed below.
- a. Gallup Property – 596 Pendleton Hill Road, Voluntown – This is a 30- acre property on which Cellco’s proposed Site 1 would be located.
 - b. Gallup Property – 53 Gallup Road, Voluntown – This is a 261-acre property on which Cellco’s proposed Site 2 would be located.
 - c. Gallup Property – 860 Pendleton Hill Road, Voluntown – This location would not satisfy the coverage objectives of Cellco’s RF engineers.
 - d. Groton Sportsmen Club Property – 110 Wheeler Road, Voluntown - This location would not satisfy the coverage objectives of Cellco’s RF engineers.
 - e. Groton Sportsmen Club Property – 237 Tom Wheeler Road, North Stonington - This location would not satisfy the coverage objectives of Cellco’s RF engineers.
 - f. SBA Tower – 2172 Glasgo Road, Griswold - This location would not satisfy the coverage objectives of Cellco’s RF engineers.
 - g. First Baptist Church – 793 Pendleton Hill Road, North Stonington – Cellco could not satisfy its coverage objectives from the steeple of this church.
 - h. Agricultural Silos – 969 Pendleton Hill Road, Voluntown - Cellco could not satisfy its coverage objectives from this location.
 - i. SBA Proposed Tower Site – 207 Coal Pit Hill Road, North Stonington - Cellco could not satisfy its coverage objectives from this location.
 - j. Turco Property – 249 Sand Hill Road, Voluntown – The owner of this property was not interested in leasing space to Cellco for a tower site.
 - k. Palmer Property – 167 Sand Hill Road, Voluntown – According to this property’s owner, its development rights have been sold to the Connecticut Department of Agriculture. Cellco could not, therefore, lease any space for a tower site.

(Cellco 1, Attachment 9)

47. A Distributed Antenna System would not be a viable alternative to provide the large area of macrocoverage that would be possible from Cellco's proposed tower because there are large areas of state forest without any kind of infrastructure such as light poles or telephone poles. (Tr. 1, p. 16)
48. Cellco could not identify any equally effective technological alternatives to the proposed facility that would provide service of comparable quality. (Cellco 1, p. 11)

Facility Description

Site 1

49. Cellco's proposed Site 1 would be located on the west side of Route 49 on a 30-acre parcel at 596 Pendleton Hill Road. The property is owned by Benjamin Gallup and Byron D. Gallup and is used for agricultural purposes. There is also a saw mill that operates in the southerly portion of this property. (See Figures 1 and 2) (Cellco 1, Attachment 1)
50. The Gallup property at 596 Pendleton Hill Road is located in a Rural District according to the Town's zoning regulations. Telecommunications towers are permitted in Rural Districts as a Special Exception use. (Cellco 1, p. 19; Bulk Filing – Town of Voluntown Zoning Regulations)
51. Cellco's Site 1 would be located in the northwest portion of the Gallup property. Cellco would lease a 100-foot by 100-foot parcel, within which it would develop a 50-foot by 50-foot compound that would include a 130-foot monopole tower and a 12-foot by 30-foot shelter for its ground equipment. The compound would be enclosed by an eight-foot high chain link fence topped with barbed wire. (See Figure 3)(Cellco 1, pp. 2, 13; Attachment 1)
52. The proposed tower would be located at 41° 32' 26.931" North latitude and 71° 50' 35.66" West longitude. Its elevation at ground level would be approximately 400 feet above mean sea level. (Cellco 1, Attachment 1, p. 4)
53. Emergency backup power would be provided by a diesel-fueled generator that would be located in a segregated room within Cellco's equipment shelter. (Cellco 1, pp. 3, 13; Attachment 1)
54. The diesel-fueled generator would be capable of operating for approximately 48 hours before it would need to be refueled (based on a 210 gallon fuel tank). (Cellco 4, Response 20)
55. In addition to the diesel generator, the site would have a battery backup system to be able to provide uninterrupted service in the case of a power failure. (Cellco 4, Response 21)
56. Cellco's proposed tower would be designed in accordance with the specifications of the Electronic Industries Association Standard EIA/TIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Support Structures." The diameter of the tower would be approximately 55 inches at its base and 30 inches at its top. (Cellco 1, Attachment 1, p. 6)
57. The proposed tower would be designed to accommodate a minimum of four wireless carriers and any Town or local emergency service providers, if such a need exists. (Cellco 1, p. 12)
58. Cellco's proposed tower at Site 1 would be extendable by 20 feet. (Tr. 1, p. 18)

59. Cellco would install a total of 12 antennas—three cellular (850 MHz) antennas, three PCS (1900 MHz) antennas, three AWS (2100 MHz) antennas, and three LTE (700 MHz) antennas—at a centerline height of 130 feet AGL. The antennas would extend to an overall height of 133 feet AGL. (Cellco 1, p. 2; Attachment 1; Cellco 4, Response 23)
60. Cellco’s antennas would be mounted on a low-profile platform. (Cellco 4, Response 13)
61. The proposed facility at Site 1 would require approximately 97 cubic yards of cut and 284 cubic yards of fill. (Cellco 4, Response 9)
62. Vehicular access to the proposed Site 1 would extend from Pendleton Hill Road over an existing dirt and gravel driveway for a distance of approximately 905 feet. (Cellco 1, p. 2; Attachment 1; Tr. 1, pp. 10-11)
63. Utility service would extend underground along the access driveway from Pendleton Hill Road to the proposed Site 1 facility. (Cellco 1, p. 2; Attachment 1, p. 5)
64. Cellco does not anticipate that blasting would be required to develop the proposed facility at Site 1. Any final determination of the need for blasting, however, would be made after a more thorough geotechnical survey of the project site. (Cellco 4, Response 11)
65. There are no schools or commercial child day care facilities located within 250 feet of Site 1. The nearest school (Voluntown Elementary School) is located approximately 2.7 miles northwest of Site 1. The nearest commercial child day care center (Little Log School House) is located approximately 5.7 miles northwest of Site 1. (Cellco 1, Attachment 10, p. 8)
66. The setback radius of the proposed tower at Site 1 would lie completely within the Property. (Cellco 4, Response 14)
67. There are no residences within 1,000 feet of Site 1. (Cellco 1, p. 15; Attachment 1, Abutters Map)
68. The closest residence is located approximately 1,167 feet to the southeast of Site1 at 614 Pendleton Hill Road. It is owned by Stephen and Lise Stephanski. (Cellco 1, Attachment 1, Abutters Map)
69. Land use within ¼ mile of the proposed site is comprised of very low density residential areas, agricultural land, and portions of the Pachaug State Forest. (Cellco 1, Attachment 1, p. 4)
70. The estimated cost of the proposed facility at Site 1, including antennas, is:

Cell site radio equipment	\$450,000
Tower, coax, and antennas costs	130,000
Power systems costs	20,000
Equipment building costs	50,000
<u>Miscellaneous costs</u>	<u>135,000</u>
Total costs	\$785,000

(Cellco 1, p. 23)

Site 2

71. Cellco's proposed Site 2 would be located on the east side of Route 49 on a 261-acre parcel at 53 Gallup Road. The property is owned by Benjamin Gallup and Byron D. Gallup and is used for agricultural and residential purposes. (See Figures 1 and 2) (Cellco 1, Attachment 2)
72. The Gallup property at 53 Gallup Road is located in a Rural District according to the Town's zoning regulations. Telecommunications towers are permitted in Rural Districts as a Special Exception use. (Cellco 1, p. 19; Bulk Filing – Town of Voluntown Zoning Regulations)
73. Cellco's Site 2 would be located in the southeast portion of the Gallup property. Cellco would lease a 100-foot by 100-foot parcel, within which it would develop a 50-foot by 52-foot compound that would include a 150-foot monopole tower and a 12-foot by 30-foot shelter for its ground equipment. The compound would be enclosed by an eight-foot high chain link fence topped with barbed wire. (See Figure 4)(Cellco 1, pp. 2-3, 13; Attachment 2)
74. The proposed tower would be located at 41° 32' 12.496" North latitude and 71° 49' 45.356" West longitude. Its elevation at ground level would be approximately 458 feet above mean sea level. (Cellco 1, Attachment 2, p. 4)
75. Emergency backup power would be provided by a propane-fueled generator that would be located in a segregated room within Cellco's equipment shelter. A 1,000-gallon propane tank would be located adjacent to Cellco's equipment shelter on a separate concrete pad. Cellco would utilize a propane-fueled generator at Site 2 because of its proximity to wetlands. (Cellco 1, pp. 3, 13; Attachment 2; Tr. 1, pp. 23-24)
76. The propane-fueled generator would be capable of operating for approximately 70 hours before it would need to be refueled (based on a 1000 gallon fuel tank). (Cellco 4, Response 20)
77. In addition to the propane generator, the site would have a battery backup system to be able to provide uninterrupted service in the case of a power failure. (Cellco 4, Response 21)
78. Cellco's proposed tower would be designed in accordance with the specifications of the Electronic Industries Association Standard EIA/TIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Support Structures." The diameter of the tower would be approximately 60 inches at its base and 36 inches at its top. (Cellco 1, Attachment 2, p. 6)
79. The proposed tower would be designed to accommodate a minimum of four wireless carriers and any Town or local emergency service providers, if such a need exists. (Cellco 1, p. 12)
80. Cellco's proposed tower at Site 2 would be extendable by 20 feet. (Tr. 1, p. 18)
81. Cellco would install a total of 12 antennas—three cellular (850 MHz) antennas, three PCS (1900 MHz) antennas, three AWS (2100 MHz) antennas, and three LTE (700 MHz) antennas—at a centerline height of 150 feet AGL. The antennas would extend to an overall height of 153 feet AGL. (Cellco 1, p. 2; Attachment 2; Cellco 4, Response 23)
82. Cellco's antennas would be mounted on a low-profile platform. (Cellco 4, Response 13)

83. The proposed facility at Site 2 would require approximately 192 cubic yards of cut and 429 cubic yards of fill. (Cellco 4, Response 9)
84. Vehicular access to the proposed Site 2 would extend from Gallup Road over an existing gravel driveway for a distance of approximately 80 feet. (Cellco 1, p. 3; Attachment 2, p. 5)
85. Cellco could move the location of Site 2 closer to Gallup Road to reduce the amount of grading work necessary. (Tr. 1, pp. 57-58)
86. Utility service would extend underground along the access driveway from Gallup Road to the proposed Site 2 facility. (Cellco 1, p. 3; Attachment 2, p. 5)
87. Cellco does not anticipate that blasting would be required to develop the proposed facility at Site 2. Any final determination of the need for blasting, however, would be made after a more thorough geotechnical survey of the project site. (Cellco 4, Response 11)
88. There are no schools or commercial child day care facilities located within 250 feet of Site 2. The nearest school (Voluntown Elementary School) is located approximately 3.3 miles northwest of Site 2. The nearest commercial child day care center (Little Log School House) is located approximately 6.3 miles northwest of Site 2. (Cellco 1, Attachment 10, p. 8)
89. The setback radius of the proposed tower at Site 2 would extend over the nearest property line, to the south along Gallup Road. The distance to Gallup Road would be approximately 92 feet. All other property boundaries are farther than the tower's setback radius. (Cellco 4, Response 14)
90. There are no residences within 1,000 feet of Site 1. (Cellco 1, p. 15; Attachment 2, Abutters Map)
91. The closest residence to Site 2 is located approximately 1,500 feet to the west on the 53 Gallup Road parcel. It is owned by Benjamin and Byron Gallup. (Cellco 1, Attachment 2, Abutters Map)
92. Land use within ¼ mile of the proposed site is comprised of very low density residential areas, agricultural land, and portions of the Pachaug State forest. (Cellco 1, Attachment 2, p. 4)
93. The estimated cost of the proposed facility at Site 2, including antennas, is:

Cell site radio equipment	\$450,000
Tower, coax, and antennas costs	130,000
Power systems costs	20,000
Equipment building costs	50,000
<u>Miscellaneous costs</u>	<u>55,000</u>
Total costs	\$725,000

(Cellco 1, p. 23)

Environmental Considerations

94. After reviewing the plans of the two alternate sites for Cellco's proposed telecommunications facility, the State Historic Preservation Office (SHPO) concluded that no historic properties would be affected by this project. (Cellco 7, SHPO Letter dated June 21, 2013)
95. According to DEEP's Natural Diversity Database (NDDDB), the pink sallow moth, a state threatened species, may occur in the vicinity of Sites 1 and 2. DEEP recommends that, should the development of either site impact any wetland habitat, a pink sallow moth study be conducted. (Cellco 1, pp. 17, 20)
96. Cellco's environmental consultant conducted pink sallow moth Habitat Surveys at each of the two proposed sites. The surveys found that no suitable habitat for Pink Sallow Moths exists at either site. After reviewing the surveys, DEEP agreed that the installation of a telecommunication facility at either site would be unlikely to negatively impact the pink sallow moth. (Cellco 6, Supplemental Environmental Information, dated July 1, 2013)
97. Subsequent to the original NDDDB review, three additional listed species were identified as potentially occurring within the vicinity of the two proposed sites: the Eastern Box Turtle, the Red Bat, and the Silver-haired Bat. (Cellco 6, Supplemental Environmental Information, dated July 1, 2013)
98. Cellco would implement measures designed to protect the Eastern Box Turtle during construction of an approved site. Protective measures would include: isolation of the project perimeter, periodic inspection and maintenance of isolation structures, turtle sweeps, education of all contractors and sub-contractors prior to initiation of work on the site, and regular reports. (Cellco 6, Supplemental Environmental Information, dated July 1, 2013)
99. Cellco would not conduct any tree-clearing for the proposed Site 1 and would not, therefore, impact any bat tree-roosting habitat. (Tr. 1, pp. 37-38)
100. At Site 2, Cellco would conduct any tree-clearing work during a time of year when such work would not affect the two bat species. (Tr. 1, p. 38)
101. State Route 49 (Pendleton Hill Road) is a state-designated scenic highway in the vicinity of the proposed facility. (Cellco 1, Attachment 10, p. 8)
102. The closest wetland to Site 1 is located 950 feet to the northeast. The closest wetland to Site 2 is located 160 feet to the northeast. The development of either site would not have any adverse wetlands impact. (Cellco 1, p. 20; Attachment 13)
103. Cellco 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. (Cellco 1, p. 20)

104. Both sites, 1 and 2, are located outside of the 500-year flood plain as delineated by the Federal Emergency Management Agency's Flood Insurance Rate Map for New London County. (Cellco 1, Attachment 1, Drawing C-1A; Attachment 2, Drawing C-1A; Attachment 14)
105. No trees with a six-inch diameter at breast height would need to be cleared for Site 1, and 29 such trees would need to be removed for Site 2. (Cellco 1, Attachment 1, p. 4; Attachment 2, p. 4)
106. The tower at either site would not constitute an obstruction or hazard to air navigation and would not require any obstruction marking or lighting. (Cellco 1, p. 22; Attachment 15)
107. Neither of Cellco's proposed sites is located in or near an Important Bird Area (IBA) as designated by Audubon Connecticut. The closest IBA is the Barn Island Wildlife Management Area, located approximately 12 miles to the south in Stonington. (Cellco 4, Response 15; Tab 2 – Avian Resources Evaluation)
108. Cellco's facility at either proposed site would comply with the recommendations of the United States Fish and Wildlife Service's *Interim Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers*. (Cellco 4, Response 16; Tab 2 – Avian Resources Evaluation)
109. The cumulative worst-case maximum power density from the radio frequency emissions from the operation of all Verizon's proposed antennas at Site 1 is 18.18% of the standard for Maximum Permissible Exposure, as adopted by the FCC, at the base of the proposed tower. At Site 2, the cumulative worst-case maximum power density is 13.2%. 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. (Cellco 1, p. 18; Attachment 1, p. 8; Cellco 4, Response 24)

Visibility

Site 1

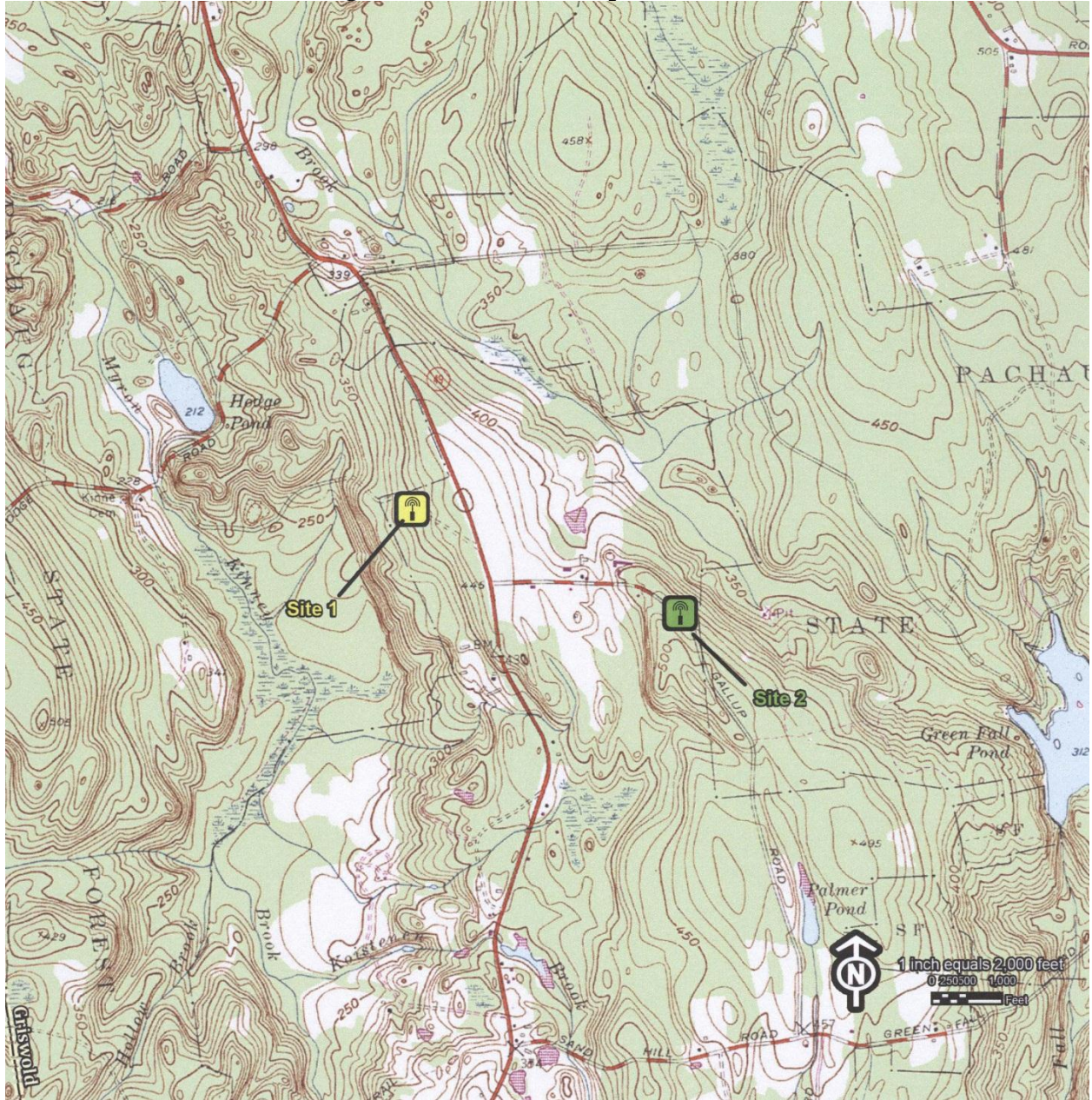
110. Cellco's proposed tower at Site 1 would be visible above the tree canopy on a year-round basis from approximately 153 acres in the surrounding vicinity. The majority of the areas with year-round visibility are open, undeveloped agricultural fields located on the Gallup farm properties and extending onto nearby portions of Pendleton Hill Road and Gallup Road. (See Figure 14) (Cellco 1, p. 15; Attachment 10, p. 7)
111. The proposed tower at Site 1 would be seasonally visible (during "leaf-off" conditions) from approximately 140 additional acres. A large amount of this acreage is open agricultural land and low-lying marsh to the south/southwest at distance of one mile and beyond. (Cellco 1, p. 15; Attachment 10, p. 7)
112. Views of the proposed tower at Site 1 would occur along approximately 0.25 mile on State Route 49 (Pendleton Hill Road). (Cellco 1, Attachment 10, p. 8)

113. Three residential properties, two of which are owned by Gallup farm family members, would have year-round views of a tower at Site 1. (Cellco 1, Attachment 10, p. 7)
114. One additional residential property may have seasonal views (“leaf-off” conditions) of the tower at Site 1. (Cellco 1, Attachment 10, p. 7)
115. Views of the tower at Site 1 may be possible from a few locations on a spur trail that originates off of Pendleton Hill Road and provides access to State Forest land and a trail system around Hodge Pond to the west. However, the tower at Site 1 would not otherwise be visible from the trail systems in the surrounding area. (Cellco 4, Response 22)

Site 2

116. Cellco’s proposed tower at Site 2 would be visible above the tree canopy on a year-round basis from approximately 267 acres in the surrounding vicinity. The majority of the areas with year-round visibility are open, undeveloped agricultural fields located on the Gallup farm properties and extending onto nearby portions of Pendleton Hill Road and Gallup Road. (See Figure 15) (Cellco 1, p. 15; Attachment 10, p. 7)
117. The proposed tower at Site 2 would be seasonally visible (during “leaf-off” conditions) from approximately 60 additional acres. Most of this acreage is on the Gallup Farm, although some distant seasonal views may occur over agricultural fields to the south/southeast. (Cellco 1, p. 15; Attachment 10, p. 7)
118. Views of the proposed tower at Site 2 would occur along approximately 0.75 mile on State Route 49 (Pendleton Hill Road). (Cellco 1, Attachment 10, p. 8)
119. Four residential properties, two of which are owned by Gallup farm family members, would have year-round views of a tower at Site 2. (Cellco 1, Attachment 10, p. 7)
120. Five additional residential properties may have seasonal views (“leaf-off” conditions) of the tower at Site 2. (Cellco 1, Attachment 10, p. 7)
121. Site 2 would not be visible from the spur trail originating off of Pendleton Hill Road except for an area where the trail intersects with Pendleton Hill Road and would not be visible from any of the trail systems in the surrounding area. (Cellco 4, Response 22)

Figure 1: Locations of Proposed Sites 1 and 2



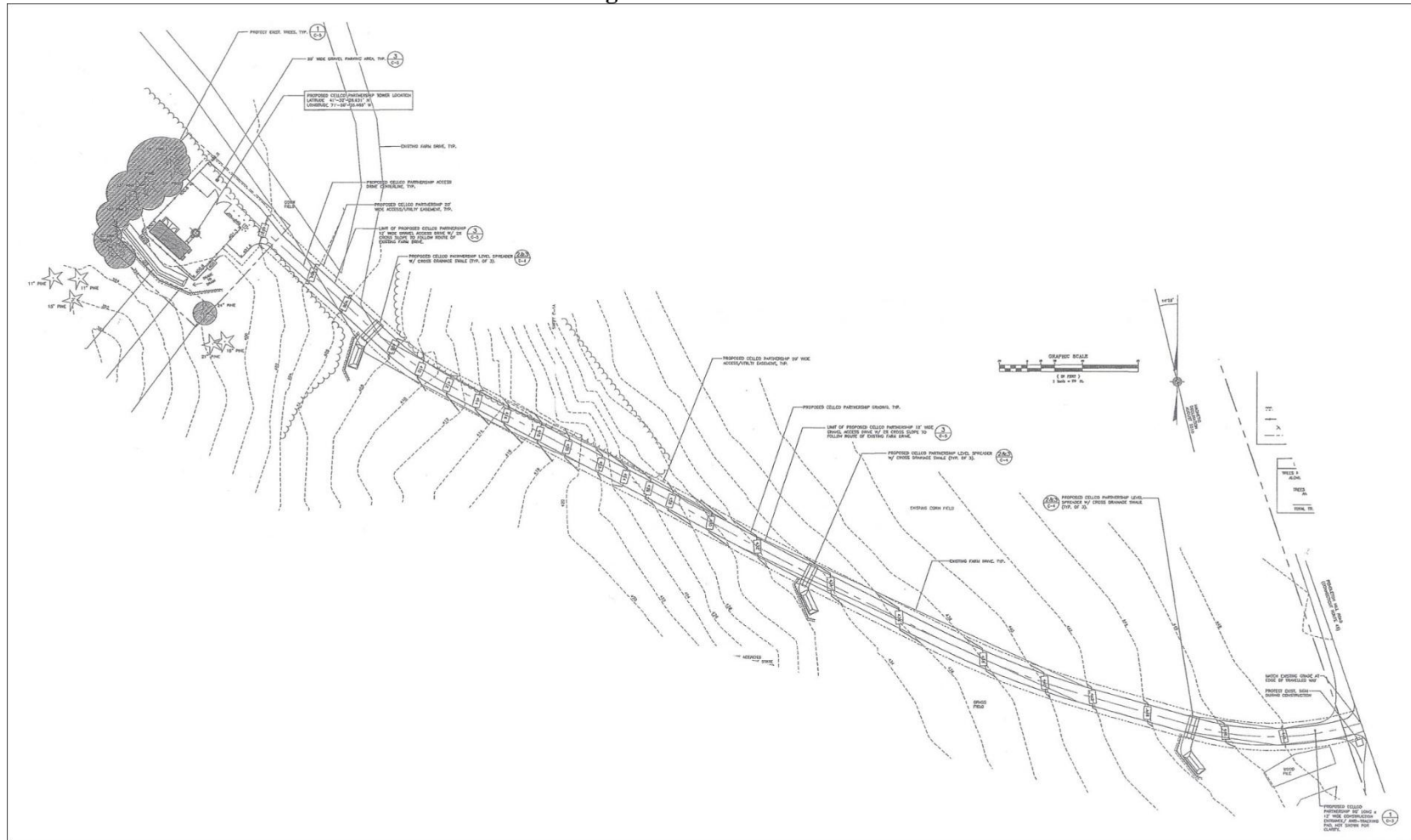
(Cellco 1, p. iii)

Figure 2: Aerial Photograph of Proposed Site Locations



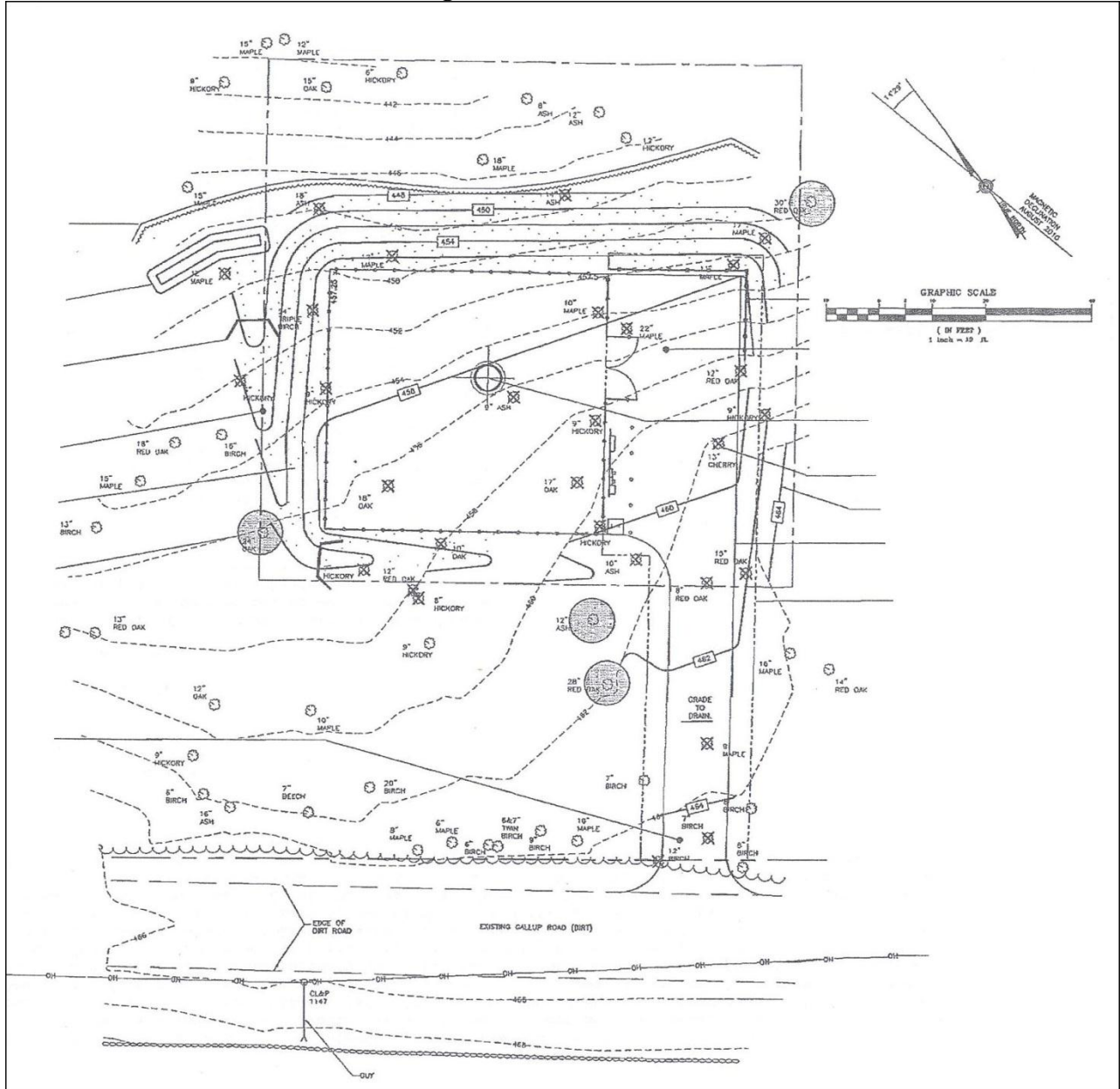
(Cellco 1, p. iv)

Figure 3: Plan for Site 1



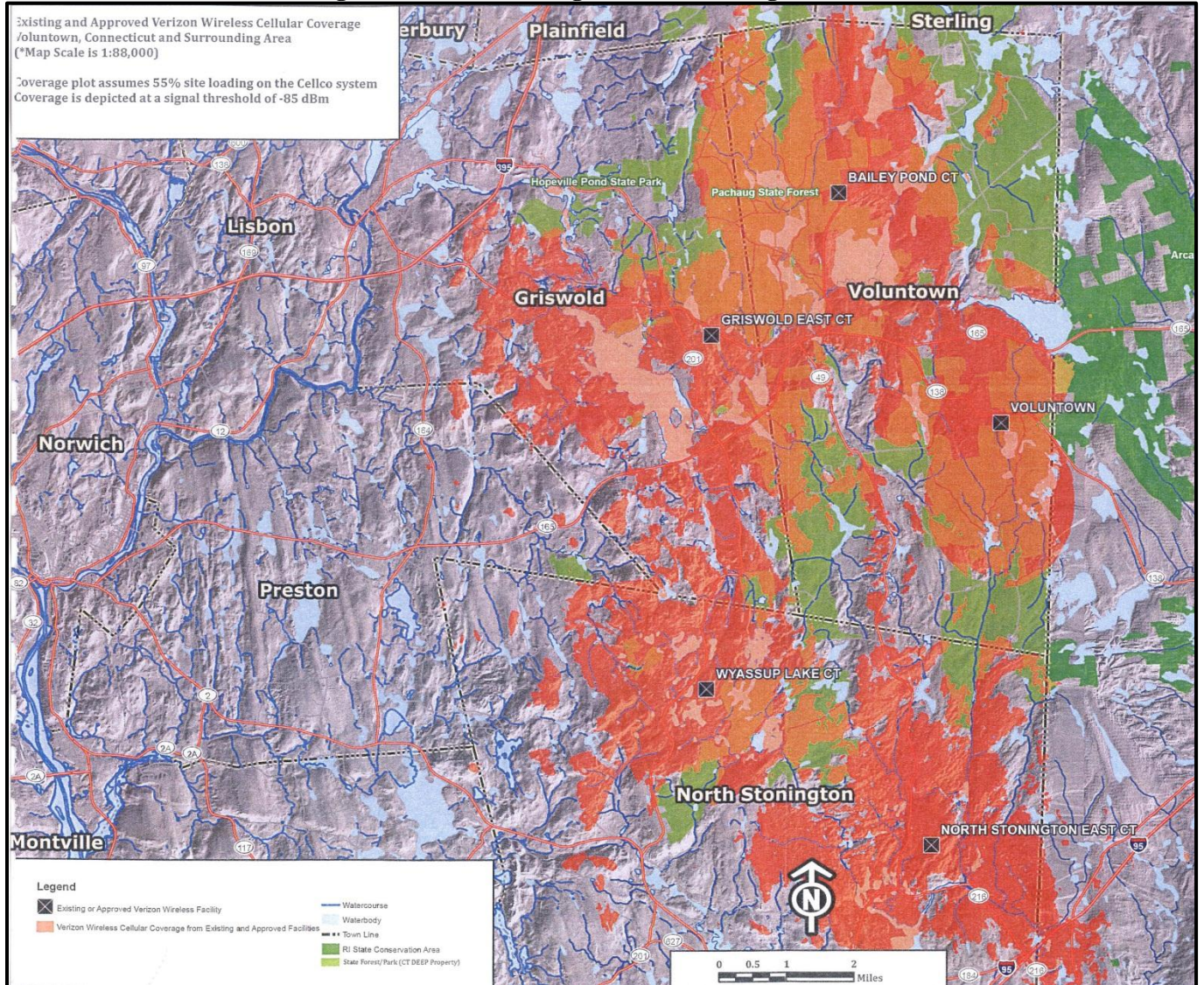
(Cellco 1, Attachment 1, Sheets C-1A and C-1B)

Figure 4: Plan for Site 2



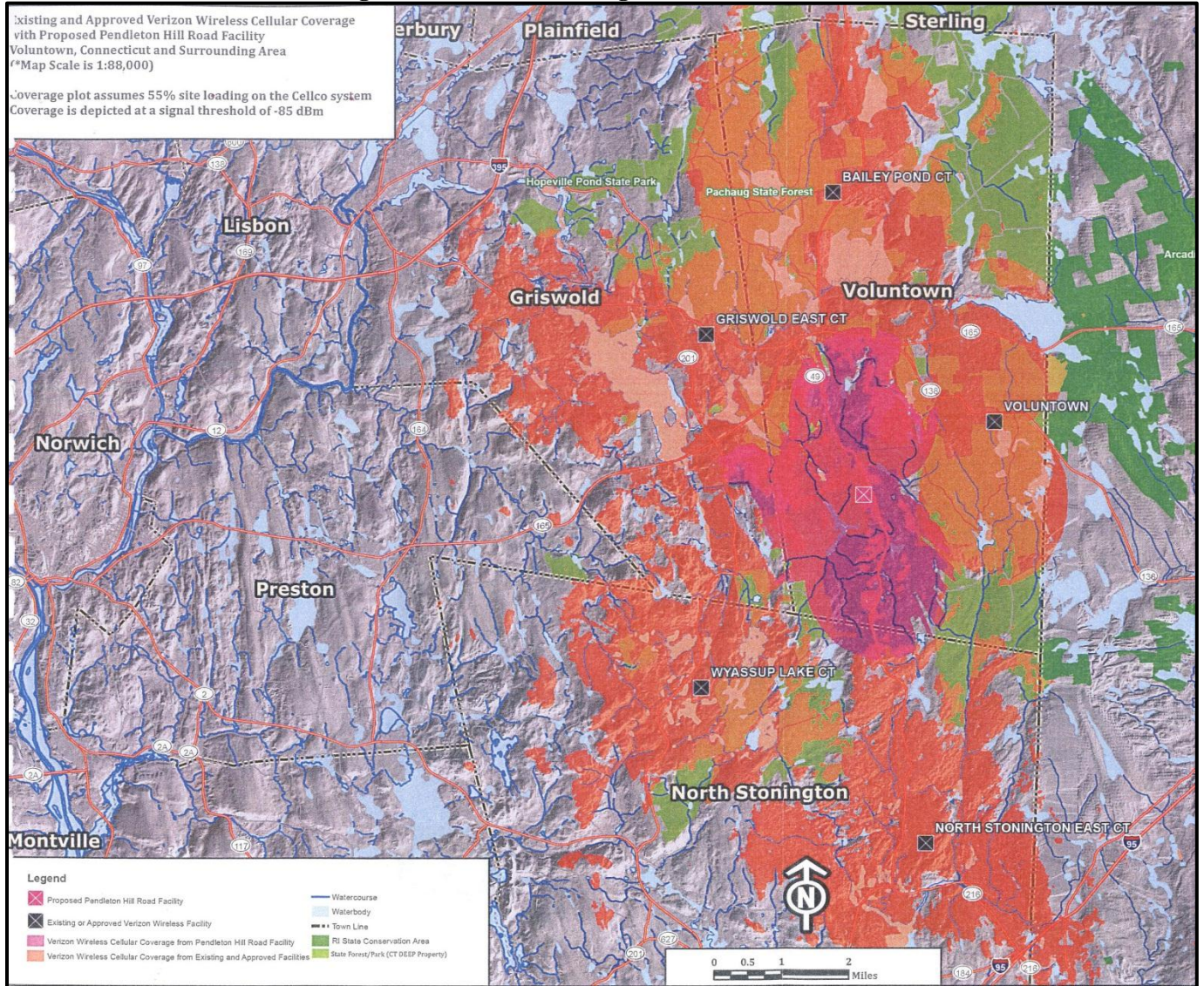
(Cellco 1, Attachment 2, Sheet C-1A)

Figure 5: Cellco Existing Cellular Coverage



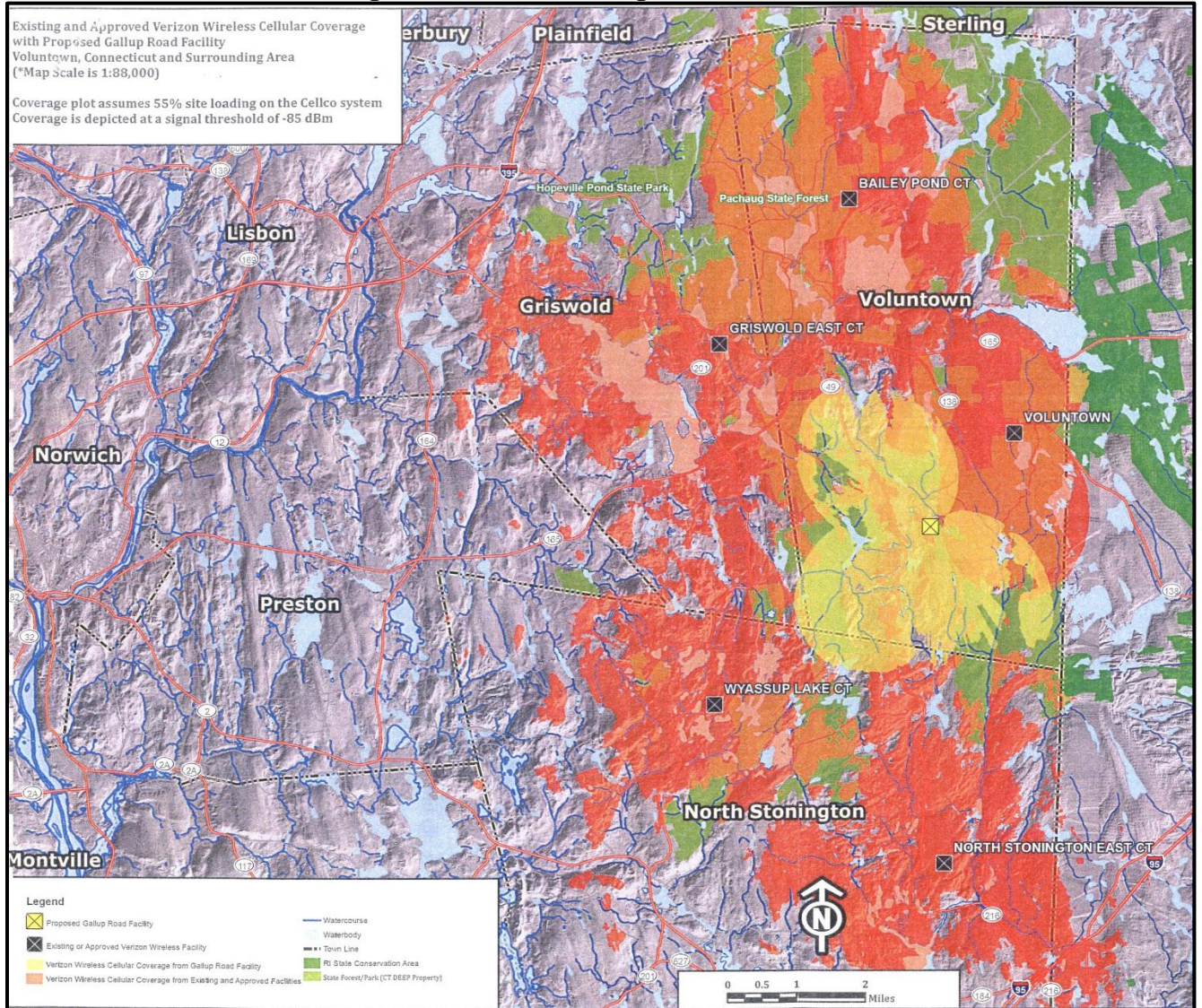
(Cellco 1, Attachment 7)

Figure 6: Cellular Coverage with Site 1



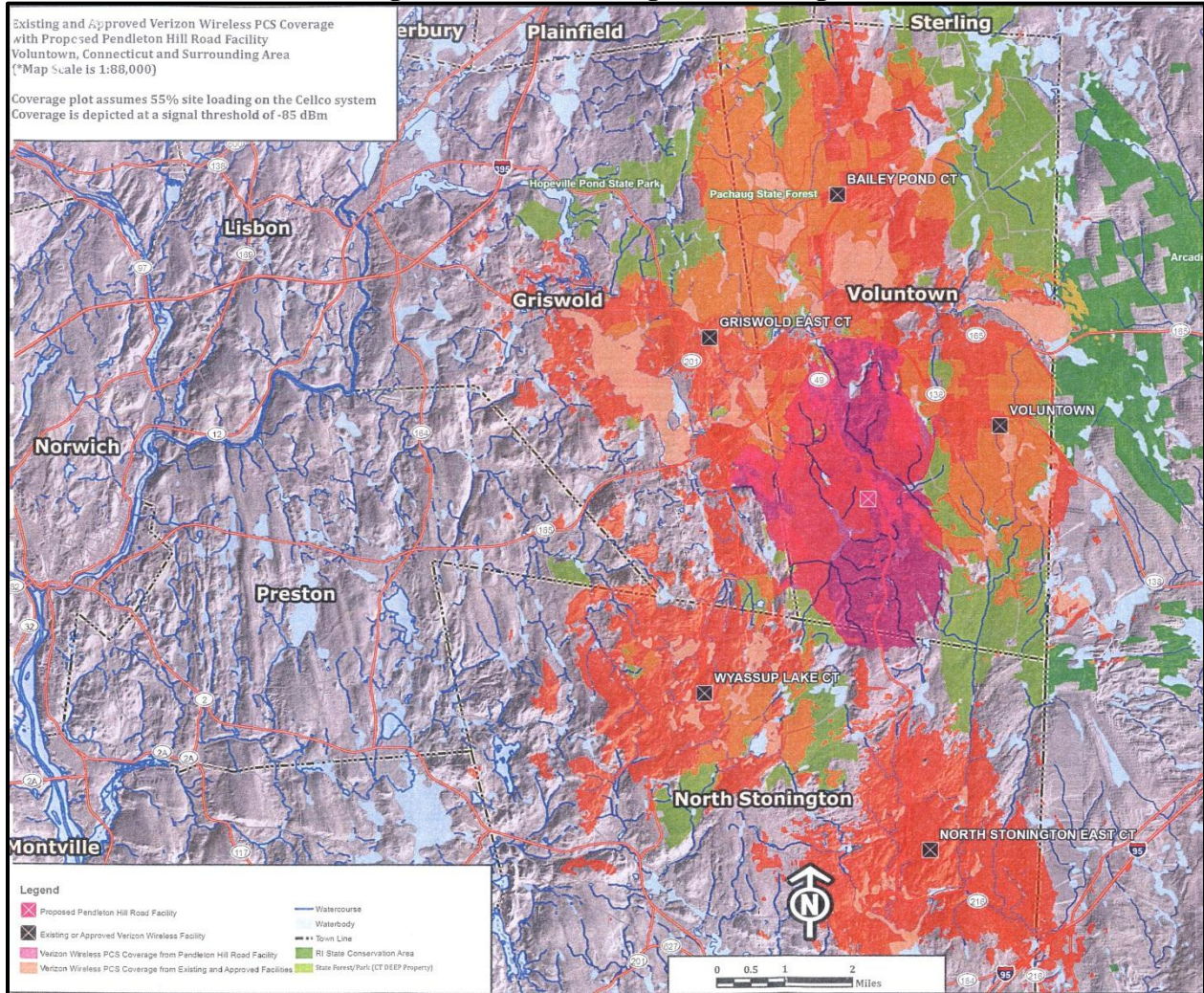
(Cellco 1, Attachment 7)

Figure 7: Cellular Coverage with Site 2



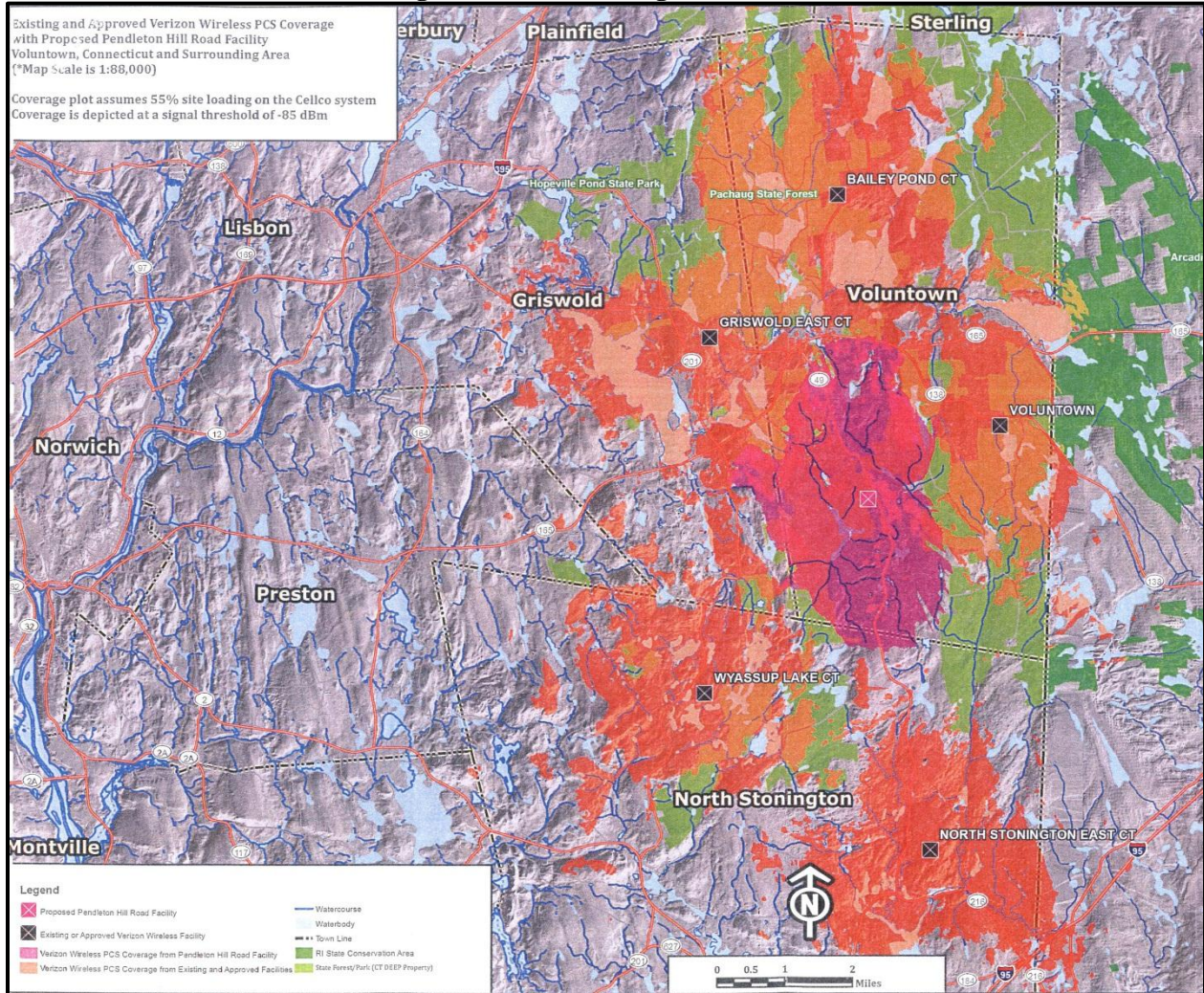
(Cellco 1, Attachment 7)

Figure 8: Cellco Existing PCS Coverage



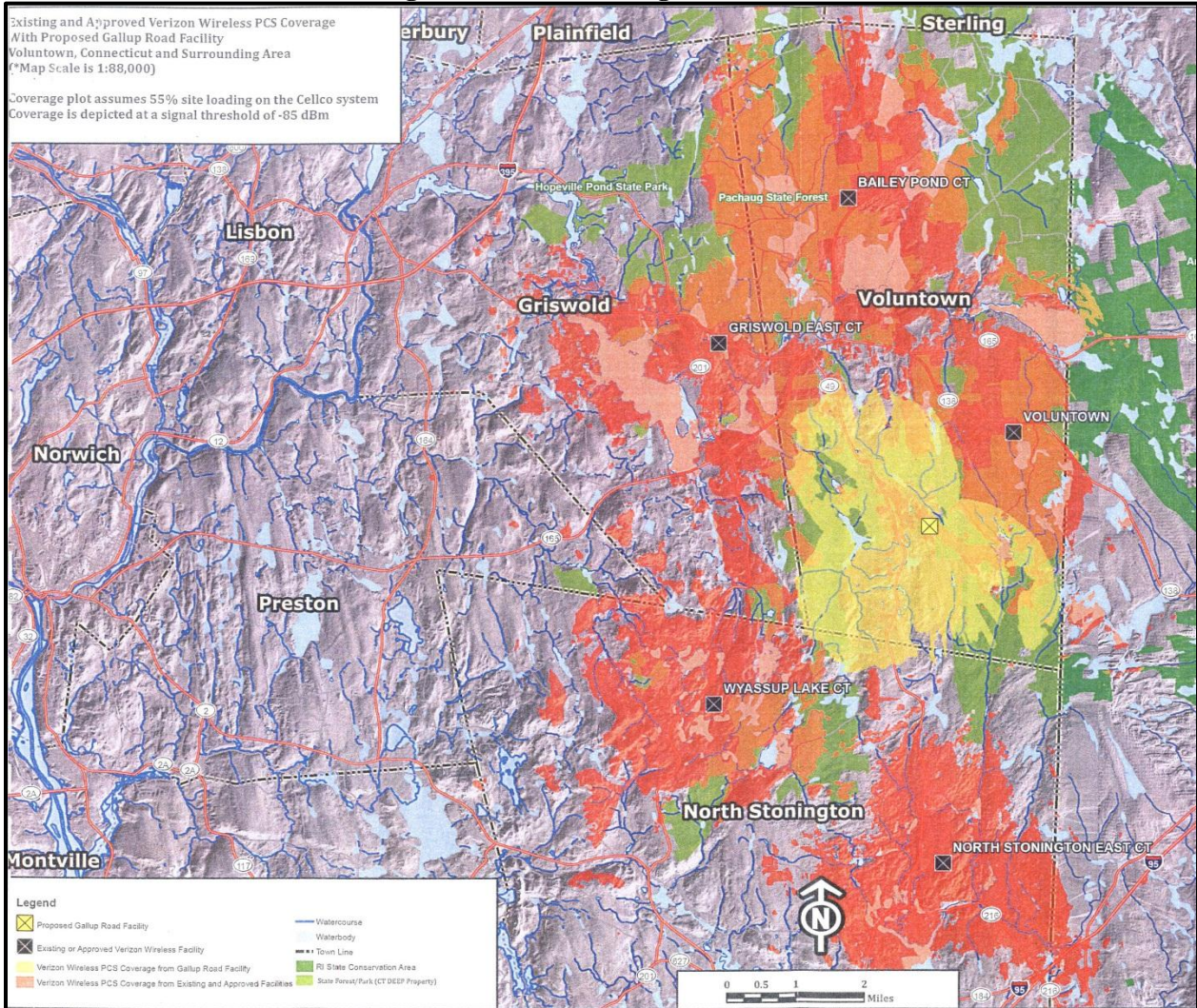
(Cellco 1, Attachment 7)

Figure 9: PCS Coverage with Site 1



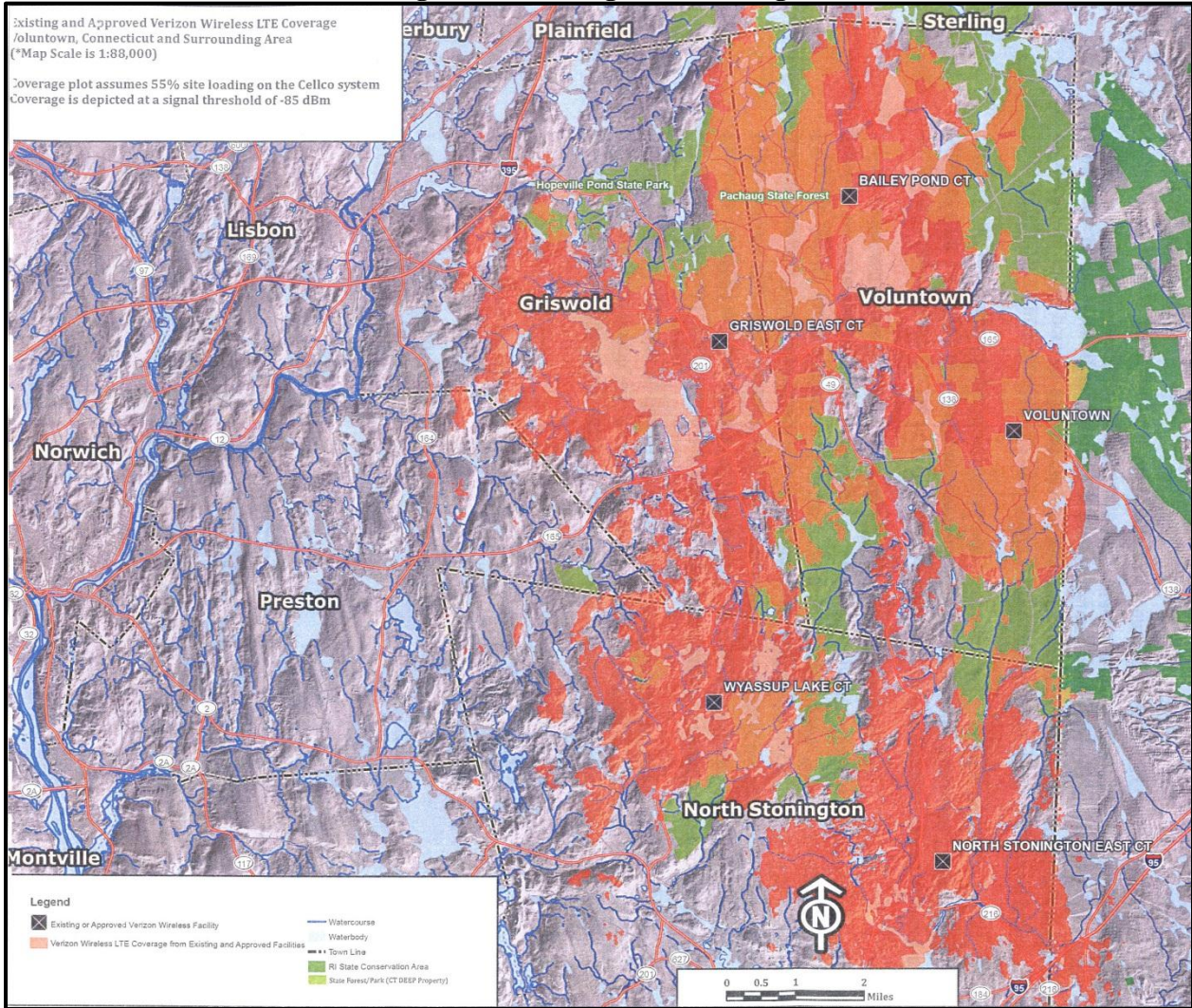
(Cellco 1, Attachment 7)

Figure 10: PCS Coverage with Site 2



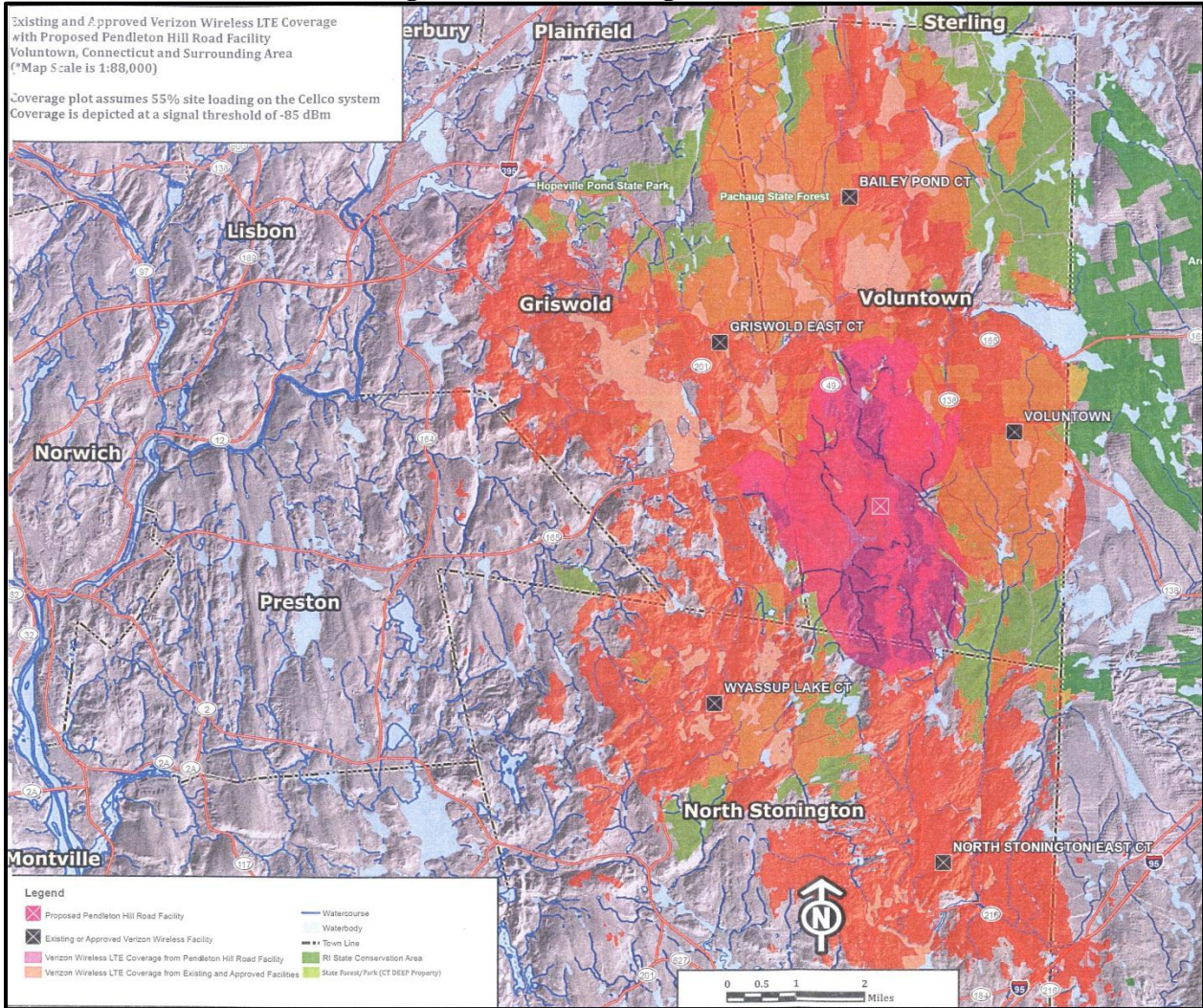
(Cellco 1, Attachment 7)

Figure 11: Existing LTE Coverage



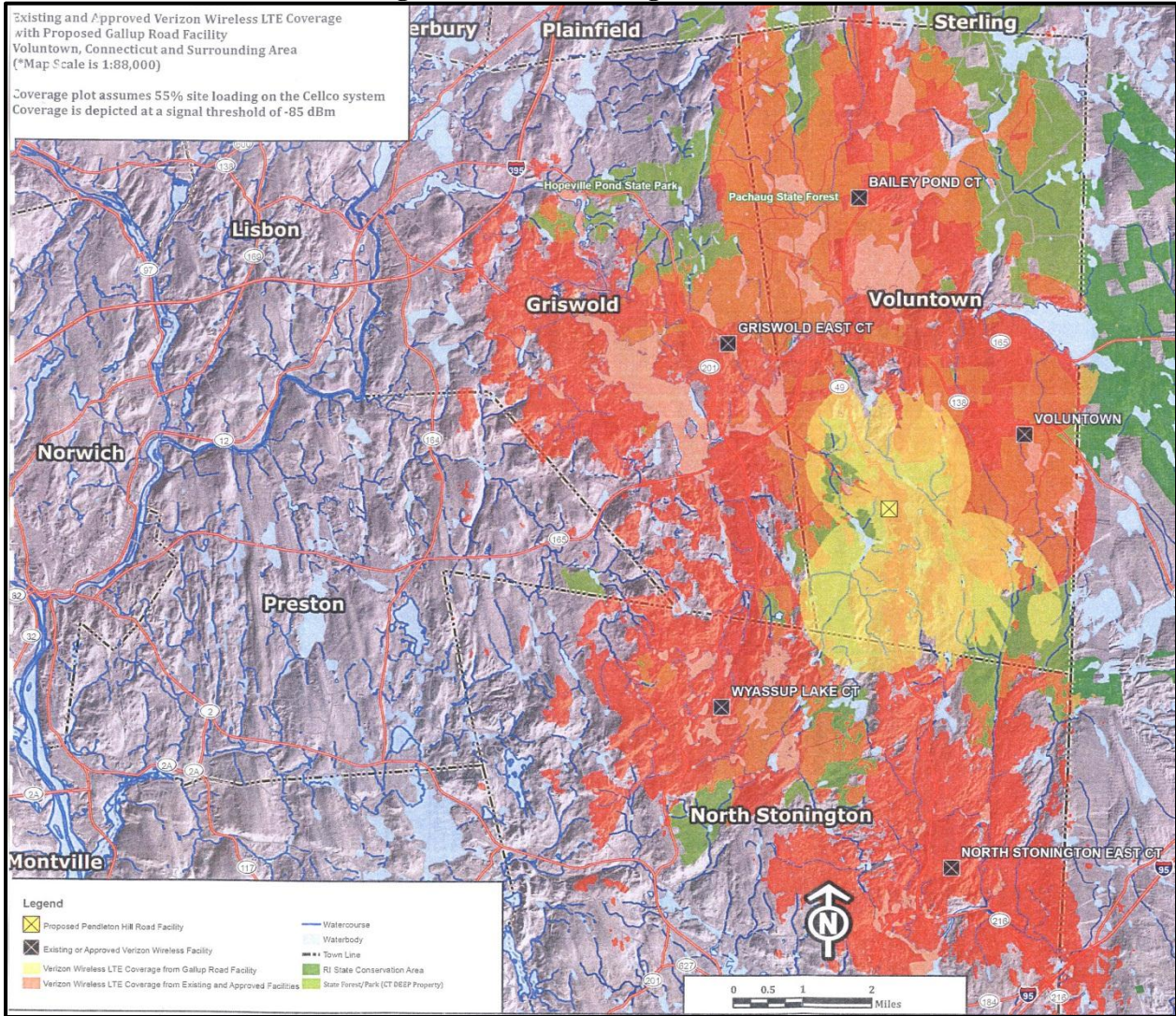
(Cellco 1, Attachment 7)

Figure 12: LTE Coverage with Site 1



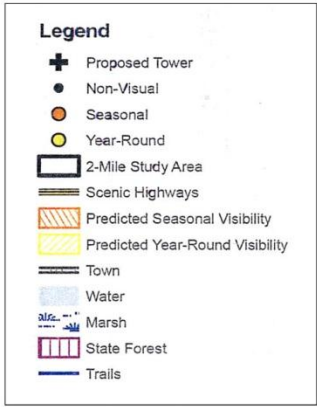
(Cellco 1, Attachment 7)

Figure 13: LTE Coverage with Site 2



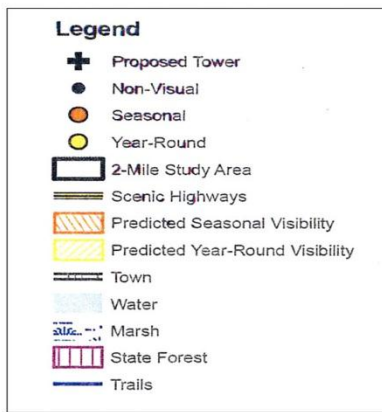
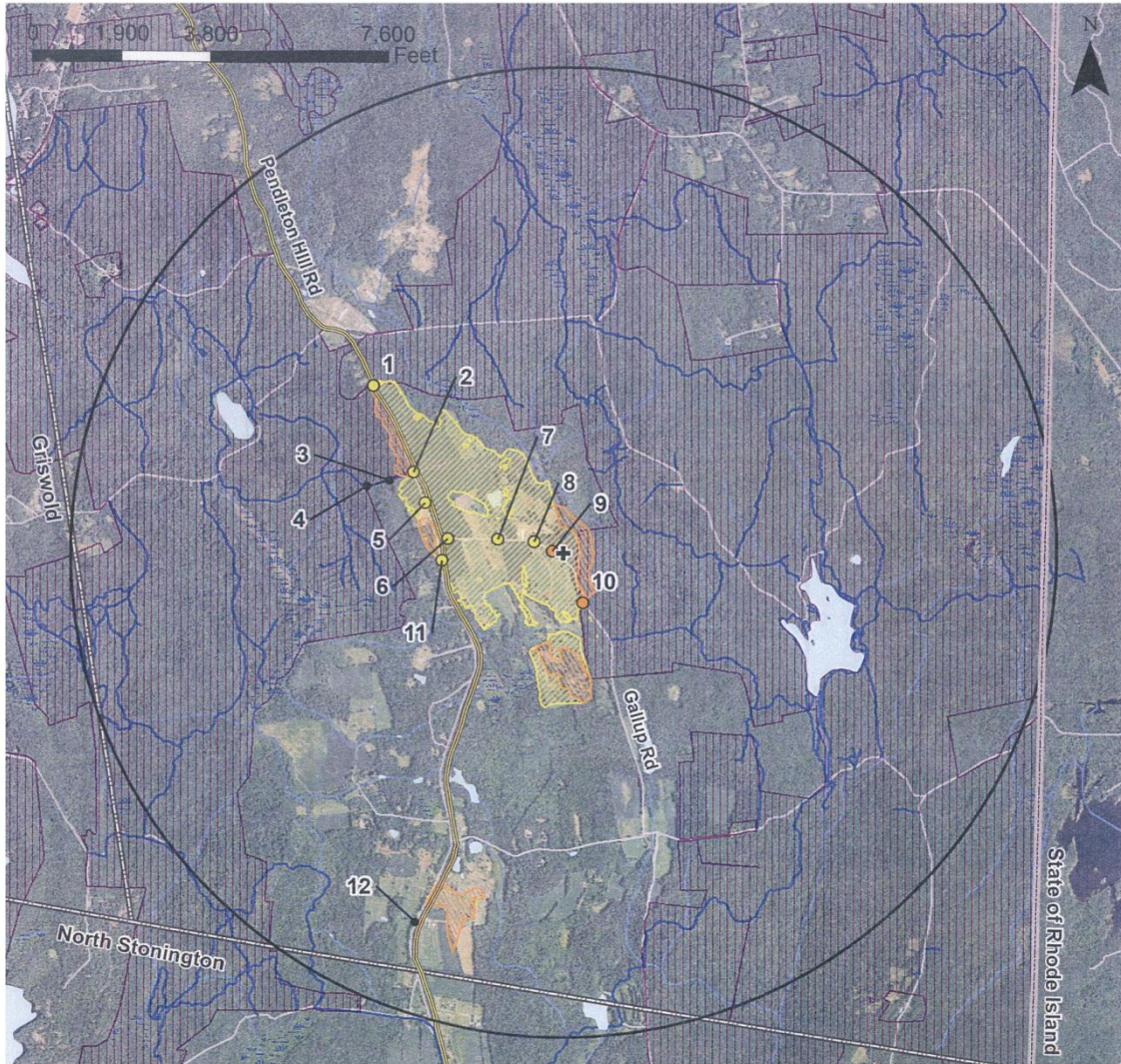
(Cellco 1, Attachment 7)

Figure 14: Site 1 Visibility



(Cellco 1, Attachment 10 – Visibility Analysis)

Figure 15: Site 2 Visibility



(Cellco 1, Attachment 10 – Visibility Analysis)