

<p>DOCKET NO. 458 – Florida Tower Partners LLC d/b/a North Atlantic Towers Application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation, of a telecommunications facility at one of two locations at Bethel Tax Assessor’s Map 65, Block 57, Lot 122, 62-64 Codfish Hill Road, Bethel, Connecticut.</p>	<p>} Connecticut } Siting } Council September 17, 2015</p>
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Findings of Fact

Introduction

1. Florida Tower Partners LLC d/b/a North Atlantic Towers (NAT) in accordance with provisions of Connecticut General Statutes (C.G.S.) § 16-50g, et seq, applied to the Connecticut Siting Council (Council) on March 19, 2015 for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a wireless telecommunications facility at one of two locations at 62-64 Codfish Hill Road in Bethel, Connecticut. (NAT 1, pp. 1-2)
2. NAT proposes to construct a 120-foot monopole at Site 1 or a 150-foot monopole at Site 2 (refer to Figure 1). (NAT 1, pp. 1-2)
3. NAT is a Delaware limited liability company with an administrative office located at 1001 3rd Avenue West, Bradenton, Florida. (NAT 1, p. 5)
4. The party in this proceeding is the applicant. The intervenors are the Codfish Hill Environmental Trust (CHET) and Cellco Partnership d/b/a Verizon Wireless (Cellco). (Transcript 1, June 2, 2015, 3:00 p.m. [Tr. 1], p. 5)
5. New Cingular Wireless PCS, LLC (AT&T) was originally an intervenor to the proceeding, seeking to locate on the proposed facility. AT&T participated in the public hearing held on June 2, 2015. AT&T subsequently withdrew its intervention without prejudice on June 26, 2015 for various business reasons. (Tr. 1, p. 5; AT&T 1; AT&T correspondence dated June 26, 2015)
6. The purpose of the proposed facility is to provide wireless services for Cellco in the eastern section of Bethel and western section of Newtown. (Cellco 4, response 5)
7. Pursuant to C.G.S § 16-50/(b), NAT published public notice of its intent to submit this application on March 4 and March 5, 2015 in *The News-Times*. (NAT 1, Attachment C)
8. Pursuant to C.G.S § 16-50/(b), NAT 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 sites are located. Proof of service of notice was not received for six abutters. NAT resent notice to these abutters by first class mail. (NAT 1, p. 7; Attachment D; NAT 3, response 1)
9. On March 19, 2015, NAT provided notice to all federal, state and local officials and agencies listed in C.G.S. § 16-50/(b). (NAT 1, Attachment B)
10. Upon receipt of the application, the Council sent a letter to the Town of Bethel (Town) on March 20, 2015 as notification that the application was received and is being processed in accordance with C.G.S. §16-50gg. (Record)
11. During a regular Council meeting on April 16, 2015, the application was deemed complete pursuant to Connecticut Regulations of State Agencies (R.C.S.A.) § 16-50/-1a and the public hearing schedule was approved by the Council. (Record)

12. Pursuant to C.G.S. §16-50m, on April 21, 2015, the Council published legal notice of the date and time of the public hearing in *The News-Times*. (Record)
13. Pursuant to C.G.S. §16-50m, on April 17, 2015, the Council sent a letter to the Town to provide notification of the scheduled public hearing and to invite the Town to participate in the proceeding. (Record)
14. In compliance with the R.C.S.A. §16-50j-21, on May 15, 2015, NAT installed a four-foot by six-foot sign on the property fronting Codfish Hill Road. The sign presented information regarding the project and the Council's public hearing. (NAT 2)
15. The Council and its staff conducted an inspection of the two proposed sites on June 2, 2015, beginning at 2:00 p.m. On the day of the field inspection, the applicant flew a four-foot diameter balloon at each of the two proposed sites from approximately 7:45 a.m. to approximately 6:00 p.m. The balloons were tethered to line so they would fly at the original heights proposed in the application; 150 feet above ground level (agl) at Site 1 and 170 feet agl at Site 2. Weather conditions were favorable for the balloon fly until early afternoon, when winds began to increase and light rain began to fall. (Council Hearing Procedure Memo dated April 28, 2015; Tr. 1, pp. 14-16, 84-85)
16. Pursuant to C.G.S. § 16-50m, the Council, after giving due notice thereof, held a public hearing on June 2, 2015, beginning with the evidentiary portion of the hearing at 3:05 p.m. and continuing with the public comment session at 7:05 p.m. at the Bethel Town Hall, 1 School Street, Bethel, Connecticut. (Council's Hearing Notice dated April 17, 2015; Tr. 1 p. 2; Transcript 2 – June 2, 2015, 7:05 p.m. [Tr. 2], p. 2)
17. The Council continued the evidentiary hearing on July 14, 2015, beginning at 11:12 a.m. at the Council's offices at 10 Franklin Square, New Britain, Connecticut. (Council's Continued Hearing Memo dated June 3, 2015; Transcript 3 – July 14, 2015, 11:00 a.m. [Tr. 3], p. 1)

State Agency Comment

18. Pursuant to C.G.S. § 16-50j (g), on April 17, 2015 and July 15, 2015, the following State agencies were solicited by the Council to submit written comments regarding the proposed facility: Department of Energy and Environmental Protection (DEEP); Department of Public Health; Council on Environmental Quality; Public Utilities Regulatory Authority; Office of Policy and Management; Department of Economic and Community Development; Department of Agriculture; Department of Transportation (DOT); Connecticut Airport Authority; State Historic Preservation Office; and Department of Emergency Services and Public Protection (DESPP). (Record)
19. On April 21, 2015, the DOT responded with a written "no comment" letter. The DPH responded on April 29, 2015 stating that the site does not appear to be located within a public water supply source water area. (DOT correspondence dated April 21, 2015; DPH comments received April 29, 2015)
20. No other state agencies submitted comments to the Council regarding the proposal. (Record)

Municipal Consultation

21. Pursuant to C.G.S. § 16-50(f), on June 28, 2013, NAT commenced the 90-day pre-application municipal consultation process by submitting a technical report to the Bethel First Selectman, Matt Knickerbocker. The technical report contained information regarding a single proposed site on the property at Site 1. (NAT 1, p. 34)

22. On July 25, 2013, NAT met with First Selectman Knickerbocker, Land Use Director Steven Palmer, and Assistant Zoning Director/Inland Wetlands Agent Beth Cavagna to discuss the project. At the meeting, NAT agreed to redesign the proposed access drive to avoid a wetland. (NAT 1, p. 34)
23. NAT attended a public information meeting that was held in Bethel on December 5, 2013. (NAT 1, p. 34)
24. On December 16, 2013, the Town sent a letter to NAT requesting that the proposed facility be relocated to a more central location of the property so that the proposed facility would not disproportionately affect residential properties abutting the site. The proposed site was located in the eastern portion of the property near Twin Maple Drive. The Town also requested that NAT examine other properties for telecommunication use. (NAT 1, p. 34; Tr. 3, pp. 58-59)
25. On January 22, 2015, NAT met with Mr. Palmer and Ms. Cavagna to update the Town regarding the proposed filing of the application to the Council. At this time, NAT indicated two sites are proposed with Site 1 being the original proposed location and Site 2 being an alternate location more centrally located on the property. (NAT 1, pp. 34-35)
26. On April 20, 2015, First Selectman Knickerbocker provided written comment to the Council, requesting that the Council deny the project and that NAT seek alternative locations for a facility. (Town of Bethel letter dated April 20, 2015)

Public Need for Service

27. 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. 4)
28. 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. Cellco is licensed by the Federal Communications Commission (FCC) to provide personal wireless communication service to Connecticut wireless markets, including the proposed service area. (Council Administrative Notice Item No. 4; Cellco 2, response 1)
29. Section 253 of the Telecommunications Act of 1996 prohibits any state or local statute or regulation, or other state or local legal requirement from prohibiting or having the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service. (Council Administrative Notice Item No. 4)
30. Section 704 of the Telecommunications Act of 1996 prohibits local and state entities from discriminating among providers of functionally equivalent services and from prohibiting or having the effect of prohibiting the provision of personal wireless services. This section also requires state or local governments to act on applications within a reasonable period of time and to make any denial of an application in writing supported by substantial evidence in a written record. (Council Administrative Notice Item No. 4)

31. Section 704 of the Telecommunications Act of 1996 also prohibits any state or local entity from regulating telecommunications towers on the basis of the environmental effects of radio frequency emissions, which include effects on human health and wildlife, to the extent that such towers and equipment comply with FCC's regulations concerning such emissions. (Council Administrative Notice Item No. 4)
32. In February 2009, as part of the American Recovery and Reinvestment Act, Congress directed the FCC to develop a National Broadband Plan to ensure every American has "access to broadband capability." Congress also required that this plan include a detailed strategy for achieving affordability and maximizing use of broadband to advance "consumer welfare, civic participation, public safety and homeland security, community development, health care delivery, energy independence and efficiency, education, employee training, private sector investment, entrepreneurial activity, job creation and economic growth, and other national purposes." (Council Administrative Notice Item No. 19)
33. Section 706 of the Telecommunications Act of 1996 requires each state commission with regulatory jurisdiction over telecommunications services to encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans, including elementary and secondary schools, by utilizing regulating methods that promote competition in the local telecommunications market and remove barriers to infrastructure investment. (Council Administrative Notice Item No. 4)
34. 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 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)
35. In February 2012, Congress adopted the Middle Class Tax Relief and Job Creation Act to advance wireless broadband service for both public safety and commercial users. The Act established the First Responder Network Authority to oversee the construction and operation of a nationwide public safety wireless broadband network. Section 6409 of the Act contributes to the twin goals of commercial and public safety wireless broadband deployment through several measures that promote rapid deployment of the network facilities needed for the provision of broadband wireless services. (Council Administrative Notice Item No. 8)
36. In June 2012, President Barack Obama issued an Executive Order to accelerate broadband infrastructure deployment declaring that broadband access is a crucial resource essential to the nation's global competitiveness, driving job creation, promoting innovation, expanding markets for American businesses and affording public safety agencies the opportunity for greater levels of effectiveness and interoperability. (Council Administrative Notice Item No. 12)
37. Pursuant to Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, also referred to as the Spectrum Act, a state or local government may not deny and shall approve any request for collocation, removal or replacement of equipment on an existing wireless tower provided that this does not constitute a substantial change in the physical dimensions of the tower. The Federal Communications Commission defines a substantial change in the physical dimensions of a tower as follows:
 - a) An increase in the existing height of the tower by more than 10% or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater. Changes in height should be measured from the dimensions of the tower, inclusive of originally approved appurtenances and any modifications that were approved prior to the passage of the Spectrum Act.

- b) Adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater.
- c) Installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four, or more than one new equipment shelter.
- d) A change that entails any excavation or deployment outside the current site.
- e) A change that would defeat the concealment elements of the tower.
- f) A change that does not comply with conditions associated with the siting approval of the construction or modification of the tower, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would exceed the thresholds identified in (a) – (d).

(Council Administrative Notice Item No. 8; Council Administrative Notice Item No. 12)

38. According to state policy, 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 if the Council also 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. (C.G.S. §16-50aa)

Public Safety

39. The Wireless Communications and Public Safety Act of 1999 (911 Act) was enacted by Congress to promote and enhance public safety by making 9-1-1 the universal emergency assistance number, by furthering deployment of wireless 9-1-1 capabilities, and by encouraging construction and operation of seamless ubiquitous and reliable networks for wireless services. (Council Administrative Notice Item No. 6)
40. Following the enactment of the 911 Act, the FCC mandated wireless carriers to provide enhanced 911 services (E911) that allow public safety dispatchers to determine a wireless caller's geographical location within several hundred feet. (Council Administrative Notice Item No. 7)
41. Cellco would be able to support text-to-911 services nationwide in areas where municipal Public Safety Answering Points support text-to-911 technology. Text-to-911 will extend emergency services to those who are deaf, hard of hearing, have a speech disability, or are in situations where a voice call to 911 may be dangerous or impossible. However, even after a carrier upgrades its network, a user's ability to text to 911 is limited by the ability of the local 911 call center to accept a text message. The FCC does not have the authority to regulate 911 call centers; therefore, it cannot require them to accept text messages. (Council Administrative Notice No. 20; Cellco 2, response 7)
42. Pursuant to the Warning, Alert and Response Network Act of 2006, "Wireless Emergency Alerts" (WEA) is a public safety system that allows customers who own certain wireless phone models and other enabled mobile devices to receive geographically-targeted, text-like messages alerting them of imminent threats to safety in their area. WEA complements the existing Emergency Alert System that is implemented by the FCC and FEMA at the federal level through broadcasters and other media service providers, including wireless carriers. (Council Administrative Notice No. 5)
43. The tower would be constructed in accordance with the 2009 State Building Code. If the facility were approved by the Council, tower structural details would be submitted as part of the Development and Management Plan for the project. (NAT 1, Exhibit E & F)
44. The proposed equipment compound would be surrounded by an anti-climb eight-foot high chain-link fence. (NAT 1, p. 31)

45. Although site blasting is not anticipated to construct either site, any blasting that is required would be properly notified and conducted in accordance with appropriate safety requirements. (Tr. 1, pp. 51-52)
46. The proposed towers would not constitute an obstruction or hazard to air navigation and would not require any obstruction marking or lighting. (NAT 1, p. 31)

Existing and Proposed Wireless Services -Cellco

47. Four existing Cellco facilities are currently providing service to portions of the eastern Bethel - western Newtown area. The locations and the Cellco identification name of these facilities are listed below:
 - a) 38 Spring Hill Road, Bethel (Bethel) – Cellco is located at 95 feet on a 125-foot tower;
 - b) 8 Ferris Road, Newtown (Newtown West) – Cellco is located at 98 feet on a 120-foot tower;
 - c) Sky Edge Drive, Bethel (Bethel North) – Cellco is located at 167 feet on a powermount attached to a 150-foot electric transmission structure; and
 - d) 48 Newtown Road, Danbury (Germantown) – Cellco is located at 90 feet on a 110-foot tower.(Council Administrative Notice No. 24; Cellco 3, response 1)
48. Cellco’s proposed installation, identified by Cellco as “Bethel East”, would provide service to existing wireless service gaps as well as provide capacity relief to adjacent Cellco facilities. (Cellco 3, response 1; Tr. 4, pp. 295-297)
49. Prior to AT&T withdrawing from the proceeding, Cellco originally proposed to locate at the 140-foot level of the Site 1 facility and the 160-foot level of the Site 2 facility, 10 feet below AT&T’s proposed antennas. (Cellco 2, response 5)
50. After AT&T withdrew from the proceeding, Cellco proposes to locate at the minimum height required to meet their service needs: 120 feet at Site 1 and 150 feet at Site 2. The antenna heights are different because there is a 30-foot difference in ground elevation between the two sites. The overall height of the antennas would be the same, 717 feet above mean sea level (amsl), resulting in little difference in Cello’s projected service between the two sites. (Cellco 4, response 5; Tr. 3, pp. 67, 104-105)
51. Cellco would deploy 700 MHz (long-term evolution - LTE) and 2100 MHz (advanced wireless service - AWS) services at the “Bethel East” facility. Both the 700 MHz and 2100 MHz frequencies would provide LTE data and voice services. (Cellco 2, response 3)
52. Cellco would also install antennas capable of providing 850 MHz and 1900 MHz equipment to provide Code Division Multiple Access (CDMA) voice and data services. (Cellco 2, response 1, response 3; Tr. 3, pp. 99-100)
53. Cellco’s LTE service design threshold is 120 dB Reverse Link Operational Path Loss (RLOPL) to establish a minimum reliable service footprint. Cellco’s design threshold for its CDMA network is -85 dBm. (Cellco 2, response 4)
54. The 700 MHz frequency is the base of Cellco’s LTE network, as it would provide service to a larger area than the 2100 MHz network. The 2100 MHz frequency is used for additional LTE capacity within the service footprint. (Tr. 3, pp. 98-99)
55. Cellco’s minimum antenna heights are based on the 700 MHz frequency. (Tr. 3, p. 100)

56. The table below presents Cellco’s existing service gaps along major roads in the site area.

Frequency	Existing Service gaps (miles)			
	Route 302	Route 58	Old Hawleyville Rd.	Plumtrees Rd.
700 MHz	0.65	0.10	0.70	0.30
850 MHz	1.10	0.30	0.85	0.40
1900 MHz	1.50	0.55	1.20	0.50
2100 MHz	1.70	0.65	1.45	0.60

Refer to Figures 2 & 4 for 700 & 2100 MHz maps. (Cellco 3, response 2)

57. Average daily traffic counts performed by the CT DOT in 2013 for roadways in Bethel within the proposed service area indicate 3,900 vehicles on the eastern end of Plumtrees Road, 7,800 vehicles on Old Hawleyville Road at Plumtrees Road, 7,800 vehicles on Route 302 at Wolfpits Road and 6,200 vehicles on the south end of Route 58. (CHET Administrative Notice Item No. 1)

58. The table below indicates the coverage Cellco anticipates from the proposed facility at its different licensed frequencies:

Frequency	Projected Service (square miles)	
	Site 1	Site 2
700 MHz	15.22	15.87
850 MHz	8.07	8.14
1900 MHz	7.23	7.09
2100 MHz	6.73	6.97

Refer to Figures 3 & 5 for 700 MHz and 2100 MHz maps. (Cellco 3, response 2; Cellco 4, response 6)

59. The “Bethel East” would provide service to the identified service gaps in the 700 MHz and 850 MHz frequencies on Route 302, Route 58, Old Hawleyville Road, Plumtrees Road and surrounding areas. Necessary coverage would also be provided for the 1900 MHz and 2100 MHz frequencies but some service gaps would still remain after deployment due to the limited range of these frequencies, particularly to the north of the site in the Plumtrees Road and Old Hawleyville Road areas. (Cellco 2, response 5; Cellco 3, response 2; Cellco 4, Attachment 1; Tr. 3, pp. 98-100)

60. The “Bethel East” facility would also provide capacity relief to Cellco’s adjacent sites, particularly to the 700 MHz LTE alpha sector at the “Bethel” site, which has already reached capacity even though 2100 MHz equipment is also deployed. Service from this sector extends into the Codfish Hill area. (Cellco 2, response 5; Cellco 4, response 3; Tr. 3, pp. 100-101, 107)

61. If the “Bethel East” facility is deployed, Cellco would adjust the frequency service patterns on adjacent Cellco sites to provide necessary capacity relief and reduce potential service interference to adjacent sites. (Tr. 3, pp. 103-104)

Site Selection

62. NAT initiated a site search in the Bethel-Newtown area in June 2010. (NAT 1, p. 2)

63. As a tower infrastructure provider, NAT performs its own radio-frequency modeling to identify potential service needs for telecommunication carriers. Although NAT’s radio-frequency modeling is not specific to one carrier, it can identify areas where wireless service is deficient for carriers, allowing NAT to search for suitable properties for tower development. (NAT 1, Attachment H; Tr. 3, pp. 62-64)

64. Once AT&T determined NAT was already looking for suitable parcels for a facility in the Bethel-Newtown area, AT&T worked directly with NAT to find a suitable site. (NAT 1, p. 2; Tr. 1, pp. 35-36)
65. NAT and AT&T did not find any existing towers or other sufficiently tall structures within the search area suitable to use as a telecommunications facility. (NAT 1, Attachment H)
66. In addition to the proposed site, NAT and AT&T investigated 13 other properties for telecommunications use but determined they were not suitable, as follows:
- a) 89 Codfish Hill Road – landowner not interested;
 - b) 67 Codfish Hill Road – landowner not interested;
 - c) 49 Codfish Hill Road – landowner not interested;
 - d) 47 Codfish Hill Road – landowner not interested;
 - e) 55 Codfish Hill Road – landowner not interested;
 - f) Codfish Hill Road (map 78 Block 55 Lot 29-4) – landowner not interested;
 - g) 57 Codfish Hill Road – landowner not interested;
 - h) 41 Shelley Road – property is too small to host a facility. Site did not work for AT&T;
 - i) 86 Dodgingtown Road - property is too small to host a facility. Site did not work for AT&T;
 - j) 214 Sugar Street, Newtown – site suggested by Town but a lease could not be obtained. Site did not work for AT&T;
 - k) 131 Taunton Hill Road, Newtown – electric transmission structure suggested by Town but location did not work for AT&T;
 - l) 61 Dodgingtown Road, Newtown – landowner not interested; and
 - m) 55 Dodgingtown Road, Newtown – volunteer fire department property is too small to host a facility.
- (NAT 1 – Attachment H; Tr. 3, pp. 92-93)
67. Cellco identified a need for a facility in the Bethel/Newtown area in 2013. A formal search area for available properties did not commence at that time due to budget constraints. (Cellco 2, response 10; Tr. 3, pp. 110-111)
68. Once Cellco learned about the proposed site, Cellco performed a radio frequency analysis and determined the site was suitable for their network needs. Cellco did not investigate other sites as this site met their service requirement. (Tr. 3, pp. 110-111, 113)
69. A Distributed Antenna System is not feasible for Cellco as it could only accommodate certain frequencies and would not be able to support network expansion. (Tr. 3, pp. 111-112)
70. Microcells and repeaters were not considered by Cellco as the as both proposed towers met their service needs. A smaller facility would not be able to provide as much service when compared to the proposed towers. (Tr. 3, pp. 110-111)
71. After the property lease was secured, NAT contacted all of the telecommunication carriers regarding the availability of the subject property. Only Cellco and AT&T expressed interest in the site. (Cellco 1, AT&T 1; Tr. 3, pp. 64-65)
72. On April 17, 2015, the Council sent notice to the telecommunications carriers indicating that the Council received an application for a facility at the proposed site and requesting notification if the carrier intends to locate on the facility in the foreseeable future. No response to the Council's inquiry was received. (Record)

Site Property and Proposed Facility Description

73. The proposed sites are located on an approximate 49-acre parcel at 62-64 Codfish Hill Road. The property, owned by Claudia Stone, is located on the north side of Codfish Hill Road. (NAT 1, p. 2, Attachment E)
74. The property owner's residence is located on the parcel, adjacent to Codfish Hill Road. The remaining areas of the property consist of woodland, wetlands, and old fields. (NAT 1, p. 4 aerial photograph; NAT 7 response 4)
75. The property is zoned residential, with a minimum gross lot area of 80,000 square feet (R-80). (NAT 1, Attachment E; NAT 7, response 2)
76. The property owner is amenable to constructing a facility at either proposed site. (NAT 1, Tab Q)

Proposed Site 1

77. Proposed Site 1 is located on the eastern portion of the parcel, in a wooded area adjacent to an old field. (NAT 1, p. 4 aerial photograph, Attachment E)
78. The proposed tower site is at an elevation of 596 feet amsl. (NAT 1, Attachment E)
79. NAT would construct a 120-foot monopole at the site, capable of supporting a tower extension to facilitate potential future tower sharing. (NAT 8; Tr. 3, pp. 68-69)
80. NAT would construct a 75-foot by 75-foot equipment compound within a 100-foot by 100-foot lease area. The compound would be enclosed by an eight-foot high chain link fence of one and one quarter inch mesh. (NAT 8, Tr. 3, p. 27)
81. Cellco would install 12 panel antennas and associated remote radio heads on an antenna platform at the 120-foot level of the tower. The antennas would extend to a height of 123 feet agl. (NAT 8)
82. Cellco would install a 12-foot by 26-foot equipment shelter within the compound to house its radio equipment and emergency power generator. (NAT 8; Cellco 2, response 12; Tr. 3, p. 96)
83. NAT would construct an approximate 12-foot wide, 1,650-foot long access drive to the tower site, generally following existing dirt roads on the property. (NAT 1, Attachment E)
84. Utility connections servicing the compound would be installed underground along the access drive, originating from existing service on Codfish Hill Road. (NAT 1, Attachment E; Tr. 1, p. 19)
85. Land use within a quarter-mile of the tower site consists of undeveloped woodland and fields on the host property, residential and dedicated open space. (NAT 1, p. 32; NAT 7, response 1, Attachment E)
86. The property owner's residence is located approximately 1,120 feet south of the proposed tower site. (NAT 1, Attachment E)
87. There are 15 residential dwellings within 1,000 feet of the site. The nearest residence is approximately 495 feet south of the site, located at 74 Codfish Hill Road. (NAT 1, Attachment E; NAT 3, response 4)

88. The nearest property boundary from the proposed tower is approximately 330 feet to the south at 74 Codfish Hill Road. The property at 80 Codfish Hill Road, abutting both the host property and 74 Codfish Hill Road is approximately 340 feet south of the tower site. (NAT 1, Attachment E)

89. The estimated construction cost of the proposed Site 1 facility is as follows:

Tower/foundation	\$ 85,000.
Utilities	45,000.
Site development	160,000
Cellco's equipment	300,000.
Total Site 1 Cost (NAT 1, p. 36) 1	\$590,000.

Proposed Site 2

90. Proposed Site 2 is located in a wooded area in the central portion of the parcel. An old field area is located east of the site. (NAT 1, p. 4 aerial photograph, Attachment F)

91. The proposed tower site is at an elevation of 567 feet amsl. (NAT 1, Attachment F)

92. NAT would construct a 150-foot monopole at the site, capable of supporting a tower extension to facilitate potential future tower sharing. (NAT 9; Tr. 3, pp. 68-69)

93. NAT would construct a 75-foot by 75-foot equipment compound within a 100-foot by 100-foot lease area. The compound would be enclosed by an eight-foot high chain link fence of one and one quarter inch mesh. (NAT 9; Tr. 3, p. 27)

94. Cellco would install 12 panel antennas and associated remote radio heads on an antenna platform at the 150-foot level of the tower. The antennas would extend to a height of 153 feet agl. (NAT 9)

95. Cellco would install a 12-foot by 26-foot equipment shelter within the compound to house its radio equipment and emergency power generator. (NAT 9; Cellco 2, response 12; Tr. 3, p. 96)

96. NAT would construct a 12-foot wide, 860-foot long access drive to the tower site. The gravel drive would generally follow an existing dirt road on the property that extends from Codfish Hill Road. (NAT 1, p. 9, Attachment F)

97. Utility connections servicing the compound would be installed underground along the access drive, originating from existing service on Codfish Hill Road. (NAT 1, Attachment F; Tr. 1, p. 19)

98. Land use within a quarter-mile of the tower site consists of undeveloped woodland and fields on the host property, residential and dedicated open space. (NAT 1, p. 32, NAT 7, response 1, Attachment E)

99. The property owner's residence is located approximately 610 feet south of the proposed tower site. (NAT 1, Attachment F)

100. There are 10 residential dwellings within 1,000 feet of the site. The nearest residence is approximately 610 feet southeast of the site, located at 74 Codfish Hill Road. (NAT 1, Attachment F) ; NAT 3, response 4)

101. The nearest property boundary from the proposed tower is approximately 475 feet to the southeast at 74 Codfish Hill Road. (NAT 1, Attachment F; Tr. 1, p. 72)

102. The estimated construction cost of the proposed Site 2 facility is as follows:

Tower/foundation	\$ 95,000.
Utilities	35,000.
Site development	125,000
Cellco's equipment	300,000.
Total Site 2 Cost (NAT 1, p. 37)	\$555,000.

Emergency Backup Power

103. In response to two significant storm events in 2011, Governor Malloy formed a Two Storm Panel (Panel) that was charged with an objective review and evaluation of Connecticut's approach to the prevention, planning and mitigation of impacts associated with emergencies and natural disasters that can reasonably be anticipated to impact the state. (Council Administrative Notice Item No. 40)

104. In accordance with CGS §16-501l, the Council, in consultation and coordination with DEEP, DESPP and the Public Utilities Regulatory Authority, studied the feasibility of requiring backup power for telecommunications towers and antennas, as the reliability of such telecommunications service is considered to be in the public interest and necessary for the public health and safety. The study was completed on January 24, 2013. (Council Administrative Notice Item No. 25)

105. The Council reached the following conclusions in the study:

- a) "Sharing a backup source is feasible for CMRS [mobile radio service] providers, within certain limits. Going forward, the Council will explore this option in applications for new tower facilities;" and
- b) "The Council will continue to urge reassessment and implementation of new technologies to improve network operations overall, including improvements in backup power."

(Council Administrative Notice Item No. 25)

106. Cellco proposes to install a 35-kilowatt diesel-fueled back-up generator in their equipment shelter. The generator could run for up to 68 hours assuming a full fuel tank and normal Cellco facility operating conditions. (Cellco 3, response 4)

107. According to R.C.S.A. §22a-69-1.8, noise created as a result of, or relating to, an emergency, such as an emergency backup generator, is exempt from the State Noise Control Regulations. (R.C.S.A. §22a-69-1.8)

Environmental Considerations

108. The State Historic Preservation Office reviewed the project and determined the project would have no effect on historic properties or cultural resources. There are no properties or districts listed on the National Register of Historic Places within a half-mile of the site property. (NAT 1, Attachment J, Attachment L)

109. Development of Site 1 would require the removal of 67 trees with a diameter of six inches at breast height. NAT could reconfigure the middle section of the proposed access drive to avoid removing five large trees that border an old field area. (NAT 1, Attachment E; NAT 7, response 3; Tr. 1, pp. 16-18)

110. Development of Site 2 would require the removal of 63 trees with a diameter of six inches at breast height. (NAT 1, Attachment E; NAT 7, response 3)
111. Five wetlands were delineated on the site property near the project area (refer to Figure 8). Wetland delineation methodology was consistent with both the Connecticut Inland Wetlands and Watercourse Act and the Army Corp of Engineers Wetland Delineation Manual and associated regional supplement. (NAT Attachment N)
112. The nearest wetland to the proposed Site 1 compound area is 180 feet to the north. This wetland, identified as Wetland 2, is a forested hillside seep wetland system with soil saturation occurring at or near the surface. Two wetlands, Wetlands 3 and 4, are located approximately 85 feet from the Site 1 access drive development area. Wetland 3, located south of the access drive, consists of an eroded channel in an old farm road that functions as a seep and incised intermittent watercourse. Wetland 4 is a forested hillside seep that is seasonally saturated. (NAT 1, Attachment N)
113. The nearest wetland to the Site 2 development area is Wetland 3, approximately 48 feet to the south. A second wetland, Wetland 4 is approximately 50 feet northwest of the compound development area. (NAT 1 Attachment F, Attachment N)
114. The wetlands proximate to both sites do not exhibit vernal pool characteristics. The nearest vernal pool may occur in a depressional wetland area 750 feet northwest of Site 2. (Tr. 3, pp. 44-45)
115. There is no significant difference in wetland impacts between the two sites. (Tr. 3, pp. 42-43)
116. The property contains numerous rock outcroppings. NAT anticipates to remove rock using chipping or by heavy machinery. If bedrock is too shallow to accommodate the underground utilities at normal trenching depths, NAT could encase the conduits in concrete to reduce the amount of rock excavation necessary for the excavation. (Tr. 1, pp. 52-55)
117. Throughout the construction period of the proposed facility, NAT would implement 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 DEEP. (NAT 1, p. 26)
118. Neither site is within a designated Federal Emergency Management Agency flood zone. (NAT 1, p. 26)
119. At both sites, NAT would install level spreaders as part of the access drive design to direct and reduce the flow rate of storm water to maintain drainage natural patterns. (NAT 1, Attachment E, Attachment F; Tr. 1, pp. 52-54; 100-102)
120. The property is in proximity to known records of the eastern box turtle and the wood turtle, both State species of special concern. NAT would implement a Turtle Protection Program for both species that includes DEEP-recommended construction practices to reduce impact to turtle populations. (NAT 1, Attachment L)
121. There are no DEEP designated critical habitats near the sites. The nearest critical habitat is a palustrine flood plain forest associated with Limekiln Brook, approximately 2.25 miles to the northwest. (NAT 1, Attachment M)

- 122. The proposed facilities are not located near an Important Bird Area (IBA), as designated by the National Audubon Society. The nearest IBA to the proposed tower site is the Devil's Den property in Redding approximately 6.8 miles southwest of the host property. Given the distance between the site and the IBA, no adverse impact to the IBA is expected. (NAT 1, Attachment M)
- 123. The proposed facilities would comply with the United States Fish and Wildlife Service guidelines for minimizing the potential for telecommunications towers to impact bird species, including a tower height less than 199 feet, no lights on the tower, and no guy wires. Recent studies have shown that towers less than 300 feet high rarely result in migratory bird collisions. (Council Administrative Notice No. 14; NAT 1, Attachment M)
- 124. Site construction would require the removal of trees and mature vegetation that has the potential to support breeding birds protected by the Migratory Bird Treaty Act. To reduce potential disturbance during periods of high bird activity, it is recommended that construction activities not occur from April 15 through July 15. (NAT 1, Attachment L, p. 5)
- 125. The equipment shelter would have air conditioning units. Noise from the air conditioning units would comply with State noise control criteria. The Site 2 location would have less of a noise impact to area receptors than Site 1 as it is more centrally located on the parcel. (Tr. 3, pp. 90-91)
- 126. The cumulative worst-case maximum power density from the radio frequency emissions from the operation of proposed antennas operated by Cellco is 34.2 percent and 17.4 percent of the standard for the General Public/Uncontrolled Maximum Permissible Exposure, as adopted by the FCC, at the base of the proposed Site 1 and Site 2 towers, respectively. 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 telecommunication carrier 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 telecommunication carriers 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. (Council Administrative Notice Item No. 2; Cellco 4, Attachment 2)

Visibility

- 127. Based on field reconnaissance and computer modeling, the estimated visibility of the proposed towers within a two-mile radius of each site is as follows:

Parameter	Site 1 (120 feet agl)	Site 2 (150 feet agl)
Year-round visibility (acres)	77	139
Additional seasonal visibility (acres)	321	264
Residential dwellings with year-round views	24	11

(Tree heights in the site area are variable, with taller specimens ranging from 60 to 90 feet agl. (NAT 10, p. 2; Tr. 1, p. 29; Tr. 3, pp. 33-34)

- 128. The visibility model indicates Site 2 would be visible from a larger area than Site 1 by 62 acres. Most of this additional acreage occurs within 1,300 feet of Site 2, notably along Codfish Hill Road southwest of the site, from the fields on the host property, north off property near Settlers Road, and from the Bethel High School area over a mile west of the site property. (NAT 10)

129. A majority of near views from off-parcel locations are through intervening trees. At a distance of three-quarters of a mile, larger openings appear in the surrounding tree canopy allowing for unobstructed views of both facilities from certain locations. (NAT 10; Tr. 3, p. 34)
130. There would be little difference in far distance views of the towers above the tree canopy as the overall height of both towers are the same above ground (717 feet above mean sea level). Most of the differences in visibility would be from near-view areas. (Tr. 3, pp. 87-90)
131. Potential visibility of the proposed 120-foot Site 1 facility from specific locations within a two-mile radius of the site is presented in the table below:

Specific Location	Photo location on Map*	Approx. Portion of Facility Visible	Approx. Distance & Direction to Tower
#39 Shelly Road	1	Year-round – 20 feet	0.9 mile south
Adjacent to #10 Lime Kiln Court	2	Not visible	0.7 mile south
Adjacent to #3 Race Brook Drive	3	Seasonal – top of tower	0.7 mile southwest
Boulder Creek Road cul-de-sac	4	Seasonal – 30 feet	0.9 mile southwest
Adjacent to #5 Rooster Ridge Road	5	Not visible	0.8 mile southwest
Adjacent to #10 Aunt Patty's Lane East	6	Year-round – 15 feet	0.9 mile northwest
Adjacent to #15 Twin Maple Drive	7	Seasonal – 15 feet	0.2 mile west
Hillside Court cul-de-sac	8	Seasonal – barely discernible through trees	0.2 mile south
Adjacent to #33 Windaway Road	9	Not visible	0.3 mile east
Adjacent to #37 Codfish Hill Road	10	Seasonal – 20 feet	0.2 mile north
Ichabod Road	11	Not visible	0.4 mile northeast
Adjacent to #12 Ichabod Road	12	Seasonal – 15 feet	0.5 mile northeast
Codfish Hill Road and Wolf Pits Road	13	Seasonal – 20 feet	0.6 mile northeast
Adjacent to #9 Wolf Pits Road	14	Year-round – 35 feet	0.7 mile east
Governor's Lane	15	Seasonal – barely discernible against hillside	1.2 mile northeast
Adjacent to #62 Midway Drive	16	Seasonal - 50 feet	1.2 mile east
Bethel High School	17	Year-round – 15 feet	1.2 mile southeast
Adjacent to #66 Linda Lane	18	Seasonal – barely discernible through trees	0.6 mile southeast
Allen Way cul-de-sac	19	Seasonal – 25 feet	0.6 mile southeast
Adjacent to #7 Kellogg Road	20	Seasonal – top of tower	0.7 mile southeast

*Map with photo-locations attached as Figure 9. (NAT 10, Attachment 9; Celco 3 response 14)

132. Potential visibility of the proposed 150-foot Site 2 facility from specific locations within a two-mile radius of the site is presented in the table below:

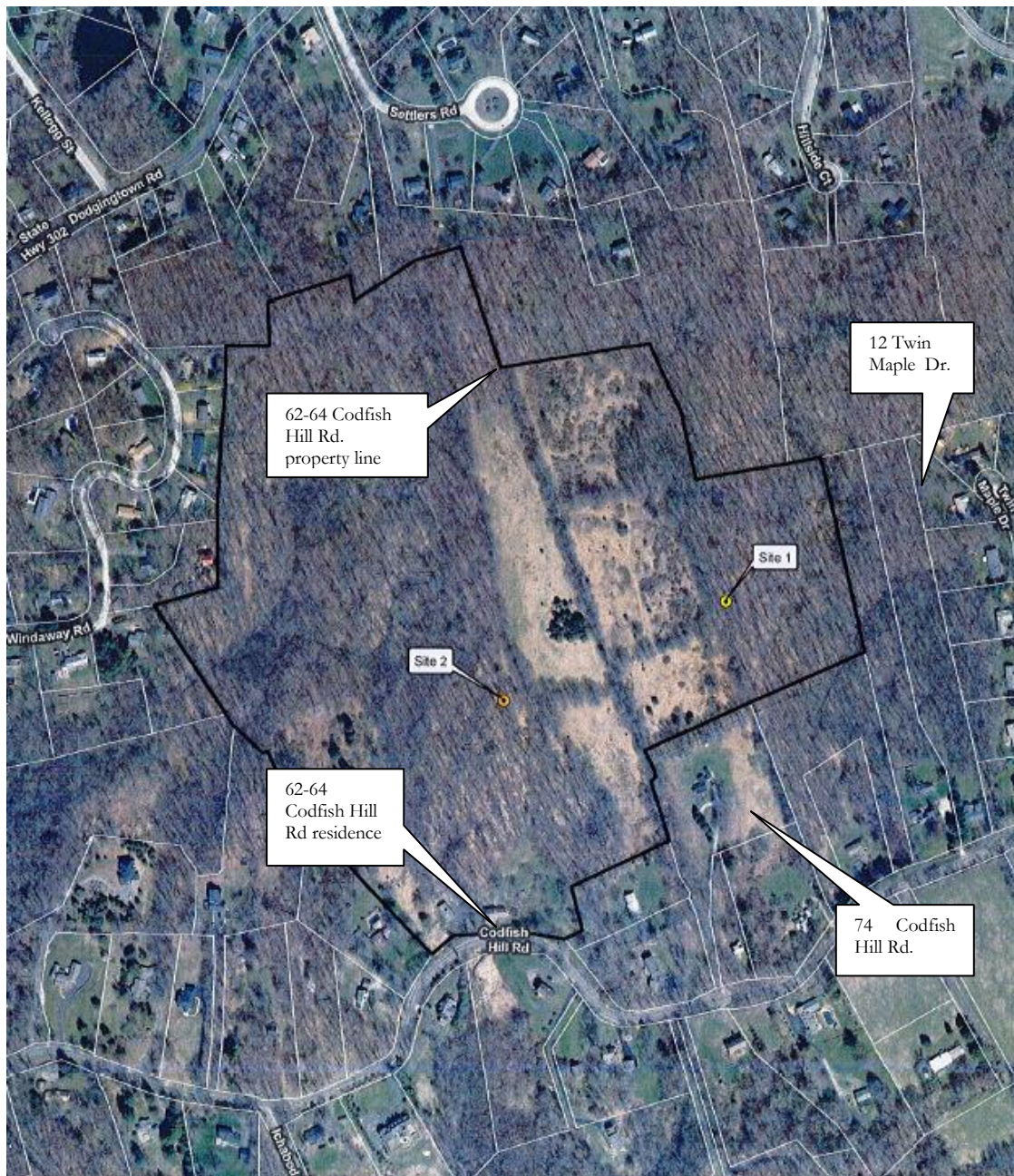
Specific Location	Photo location on Map*	Approx. Portion of Facility Visible	Approx. Distance & Direction to Tower
#39 Shelly Road	1	Year-round – 20 feet	1.0 mile southwest
Adjacent to #10 Lime Kiln Court	2	Not visible	0.8 mile south
Adjacent to #3 Race Brook Drive	3	Not visible	0.7 mile southwest
Boulder Creek Road cul-de-sac	4	Seasonal – top of tower	1.0 mile southwest
Adjacent to #5 Rooster Ridge Road	5	Not visible	0.9 mile southwest
Adjacent to #10 Aunt Patty’s Lane East	6	Not visible	0.8 mile northwest
Adjacent to #15 Twin Maple Drive	7	Not visible	0.2 mile west
Adjacent to #6 Hillside Court	8	Not visible	0.3 mile southwest
Adjacent to #35 Windaway Road	9	Seasonal – 60 feet	0.3 mile southeast
Windaway Road	10	Seasonal – 50 feet	0.3 mile southeast
Unnamed Road off Codfish Hill Road	11	Seasonal – top of tower	0.3 mile northwest
Adjacent to #4 Ichabod Road	12	Seasonal – 40 feet	0.5 mile northeast
Ichabod Road	13	Seasonal – 40 feet	0.4 mile northeast
Codfish Hill Road and Wolf Pits Road	14	Seasonal - 30 feet	0.6 mile northeast
Adjacent to #18 Wolf Pits Road	15	Year-round – 55 feet	0.7 mile east
Adjacent to #140 Hoyts Hill Road	16	Year-round – 60 feet	1.1 mile northeast
Bethel High School	17	Year-round – 35 feet	1.3 mile southeast
Adjacent to #11 Judd Lane	18	Year-round – 40 feet	1.3 mile southeast
Adjacent to #64 Linda Lane	19	Year-round – 50 feet	0.7 mile southeast
Adjacent to #20 Kellogg Rd.	20	Seasonal – 15 feet	0.6 mile southeast
Adjacent to #9 Wolf Pits Road	No photo	Year-round – 35 feet	0.7 mile southeast

*Map with photo-locations attached as Figure 9. (NAT 10, Tr. 1, pp. 70-71; Tr. 3, pp. 87-90)

133. The Site 2 location offers more screening than Site 1 when viewed from Twin Maple Drive as it is 725 feet farther west than Site 1. (NAT 1, p. 4b; Tr. 3, pp. 87-88)
134. The Site 2 location is closer to and more visible from the property owner’s residence than Site 1. (NAT 10)
135. The Site 1 location would be generally less visible than Site 2 from surrounding areas because it is 30 feet shorter in height. (Tr. 3, pp. 52-53, 77-78, 86)

136. The nearest residence to Site 1, 74 Codfish Hill Road, may have limited seasonal views of the compound area. The tower itself would be visible during leaf-off conditions. The upper portion of the Site 2 facility would be visible through the trees from this property during leaf-off conditions (refer to Figure 1). (Tr. 1, pp. 21-24; Tr. 3, pp. 52-53)
137. During preliminary analysis for the preparation of the application, NAT performed a balloon float of Site 1 in November 30, 2013. Although NAT did not notify area residents of the balloon fly, CHET members that reside at 80-82 Codfish Hill Road, 86 Codfish Hill Road, 8 Twin Maple Drive, and 12 Twin Maple Drive observed the balloon through intervening trees from their properties. (Tr. 3, pp. 13 - 20, 28-30)
138. During the balloon fly held as part of the Council's proceeding on June 2, 2015, CHET members that reside at 8 Twin Maple Drive and 12 Twin Maple Drive observed the Site 1 balloon (flown at 150 feet) from their properties through an opening in the intervening tree canopy. (Tr. 3, pp. 14-20)
139. A monopine at either site would be beneficial for near tower views, especially when viewed through existing vegetation. When viewed from a distance from select locations, a monopine at either site would extend significantly above the existing tree canopy. At far distances, a monopine would be indistinguishable from a real tree. (Tr. 3, pp. 30-32, 55, 60-63)
140. CHET favors a monopine configuration, as it would blend in with the tree canopy in respect to near and intermediate views, offering meaningful visual relief to nearby residences with views of the facility. (Tr. 3, pp. 20-22; 30-31)
141. CHET would favor a tower that reduces the visual mass of the antennas, such as a flagpole type tower. (CHET 4, response 11)
142. A tower and antennas with a dark color finish would be of benefit for locations where the tower can be viewed through intervening vegetation. (Tr. 1, pp. 37-38)
143. There are no "blue blazed" hiking trails maintained by the Connecticut Forest and Parks Association within two miles of the site. There would be no views of the proposed sites from the hiking trails within Huntington State Park, approximately 1.7 miles south of the host property (NAT 10; Council Administrative Notice Item No. 55)
144. There are no Town or State scenic roads within two miles of the site. (NAT 10; Tr. 3, pp. 34-35)
145. Pursuant to C.G.S. § 16-50p(a)(3)(G), no schools or commercial day care centers are within 250 feet of the host property. The nearest school is Bethel High School, located 1.25 miles west of the host property. The nearest commercial daycare is located at 26 Dodgingtown Road, approximately 0.87 mile to the west. (NAT 1, Attachment I)

Figure 1 – Aerial Photograph of Proposed Site Locations



(NAT 1, p. 4b)

Figure 2 – Cellco Existing 700 MHz service



Legend

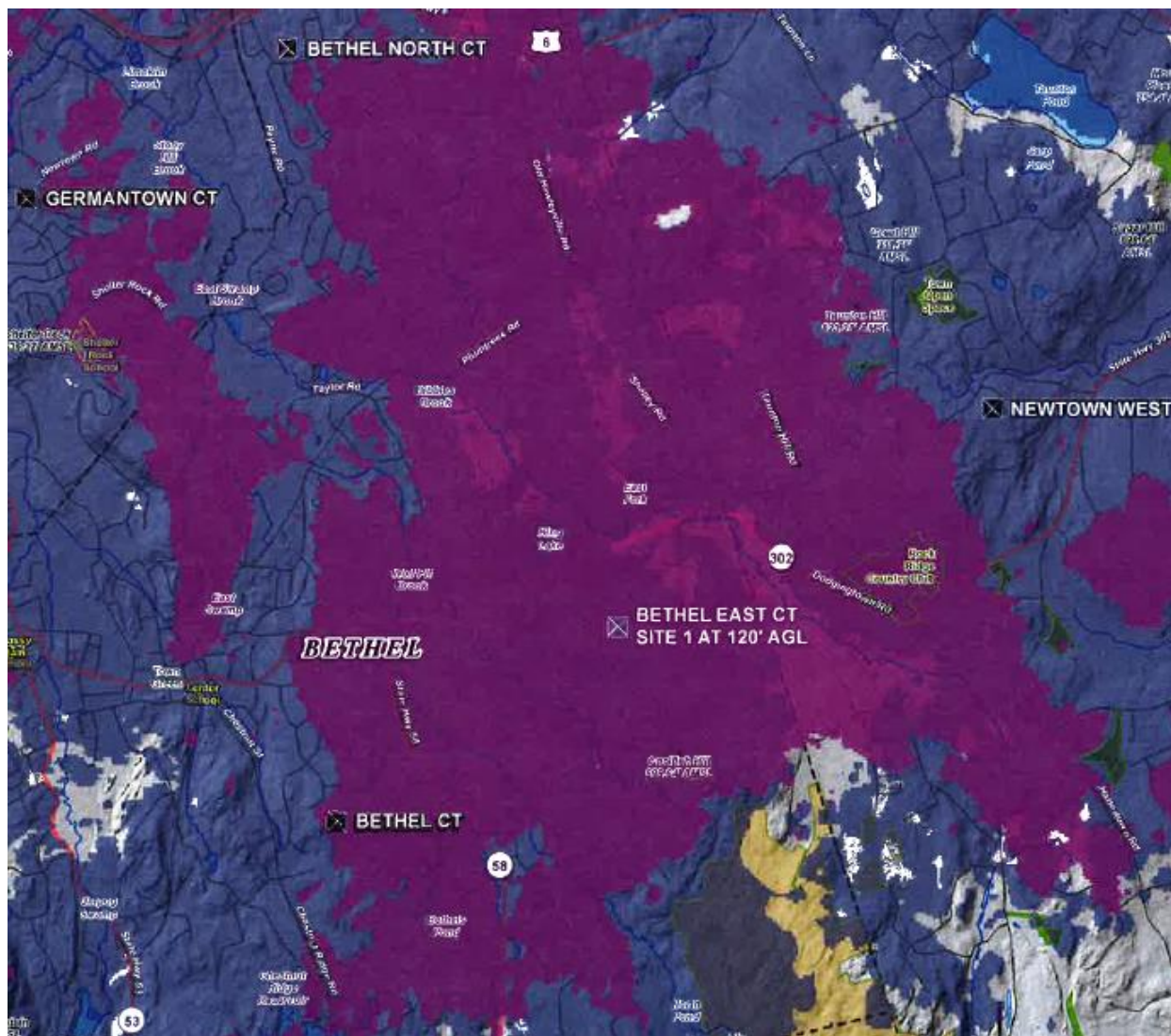
-  Proposed Verizon Wireless Facility
-  Existing Verizon Wireless Facilities
-  Existing Surrounding Wireless 700 MHz Coverage







1 inch = 0.7 mile

(Cellco 2, Attachment 1)

Figure 3 – Cellco Existing and Proposed 700 MHz service



Legend

-  Proposed Verizon Wireless Facility
-  Existing Verizon Wireless Facilities
-  Existing Surrounding Wireless 700 MHz Coverage
-  Proposed Facility Wireless 700 MHz Coverage

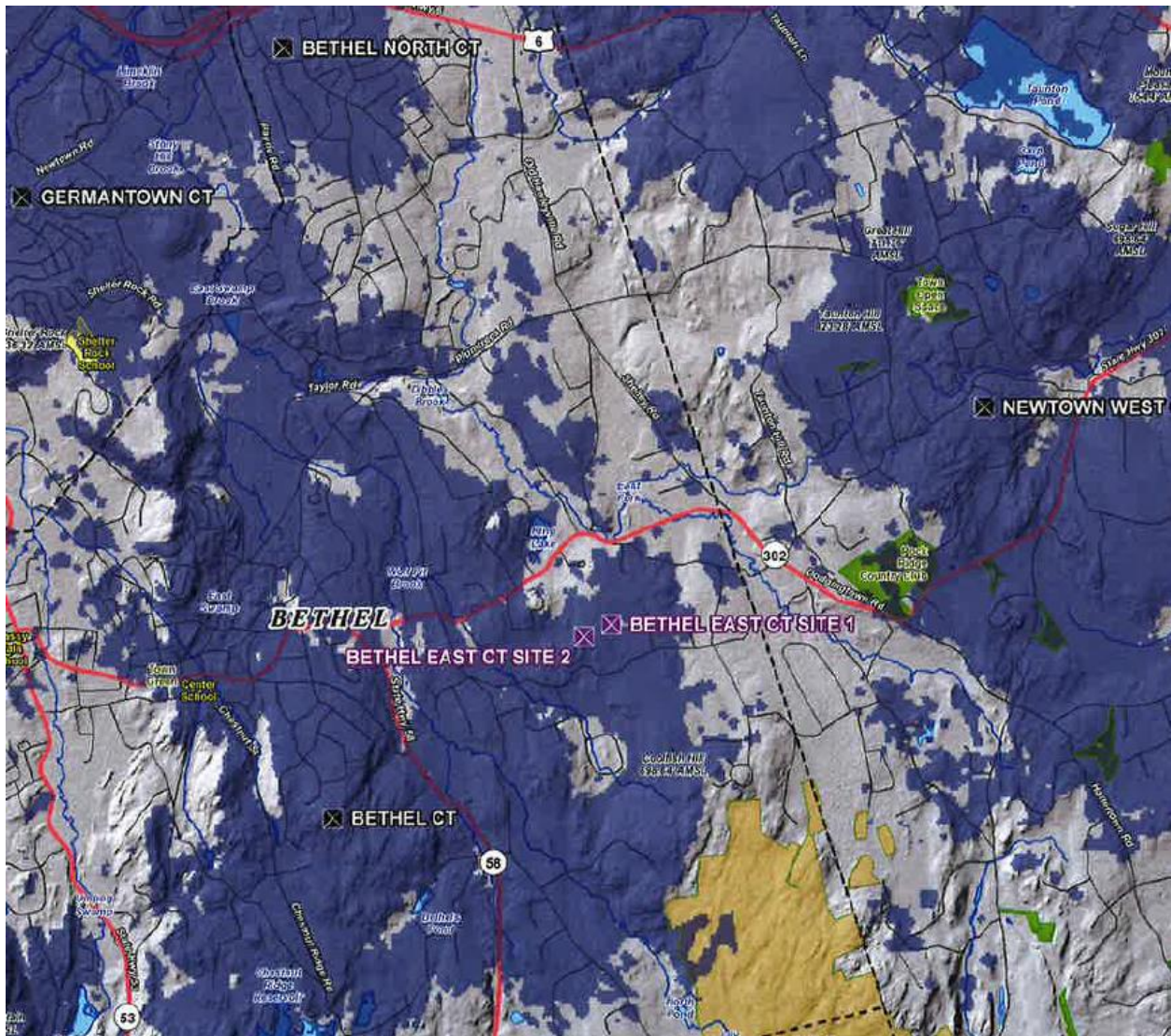


1 inch = 0.7 mile




Projected Service from Site 1 shown. Service from Site 2 would be similar.

(Cellco 4, Attachment 1; Tr. 3, pp. 104-105)

Figure 4 – Cellco Existing 2100 MHz service



Legend

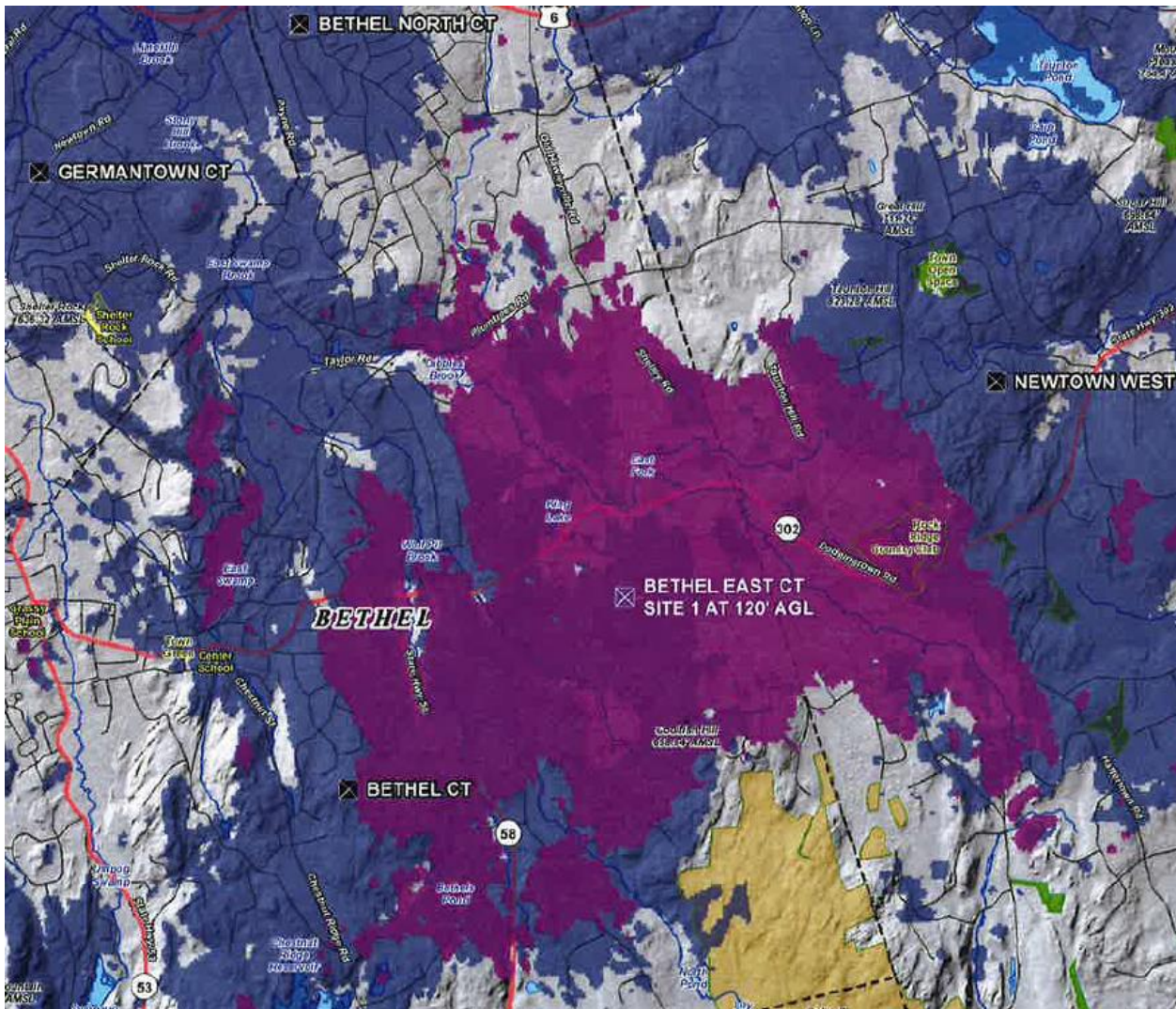
-  Proposed Verizon Wireless Facility
-  Existing Verizon Wireless Facilities
-  Existing Surrounding Wireless 2100 MHz Coverage







1 inch = 0.7 miles

(Cellco 2, Attachment 1)

Figure 5 – Cellco Existing and Proposed 2100 MHz service



Legend

-  Proposed Verizon Wireless Facility
-  Existing Verizon Wireless Facilities
-  Existing Surrounding Wireless 2100 MHz Coverage
-  Proposed Facility Wireless 2100 MHz Coverage

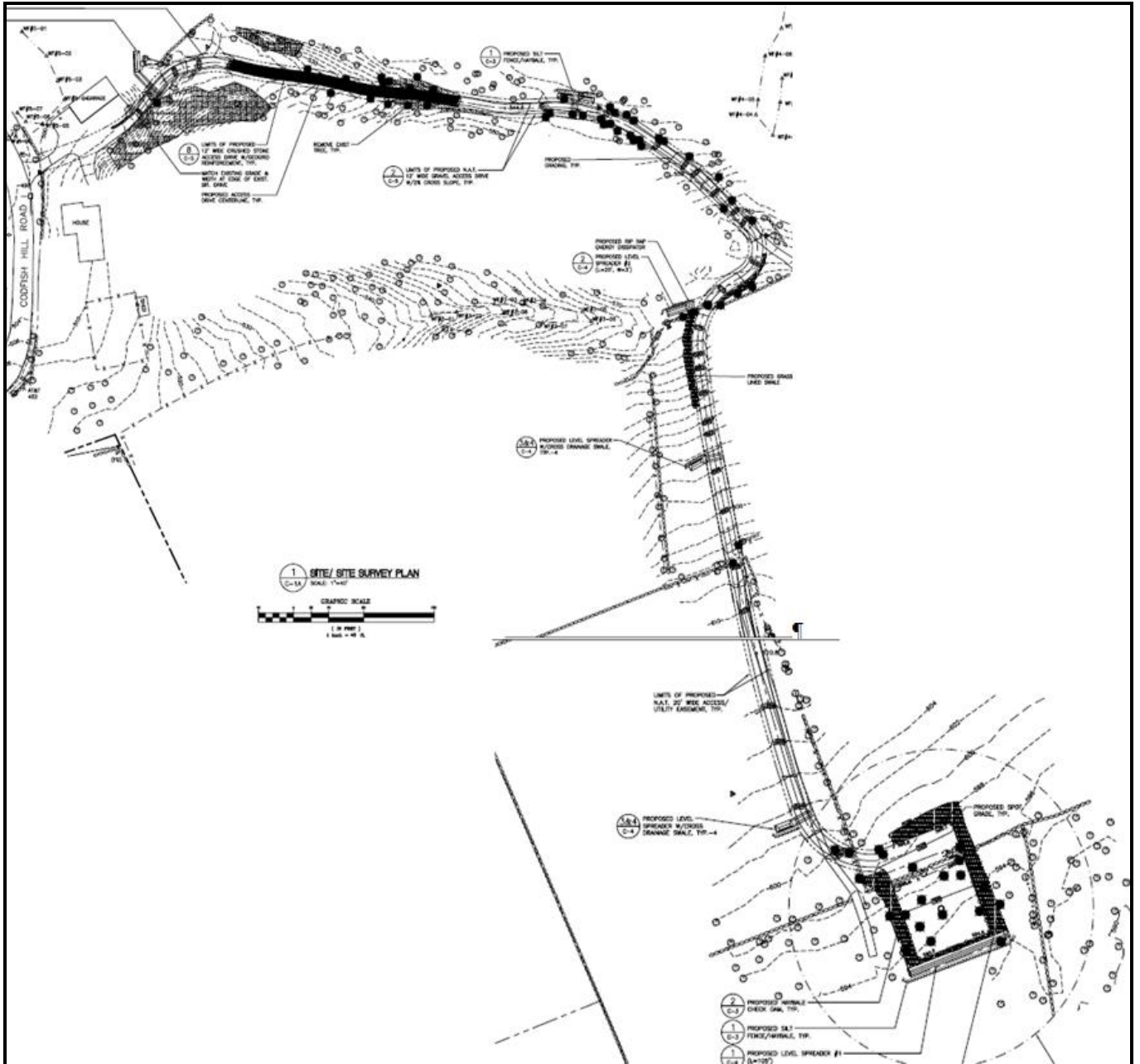


1 inch = 0.7 miles.

Projected Service from Site 1 shown. Service from Site 2 would be similar.

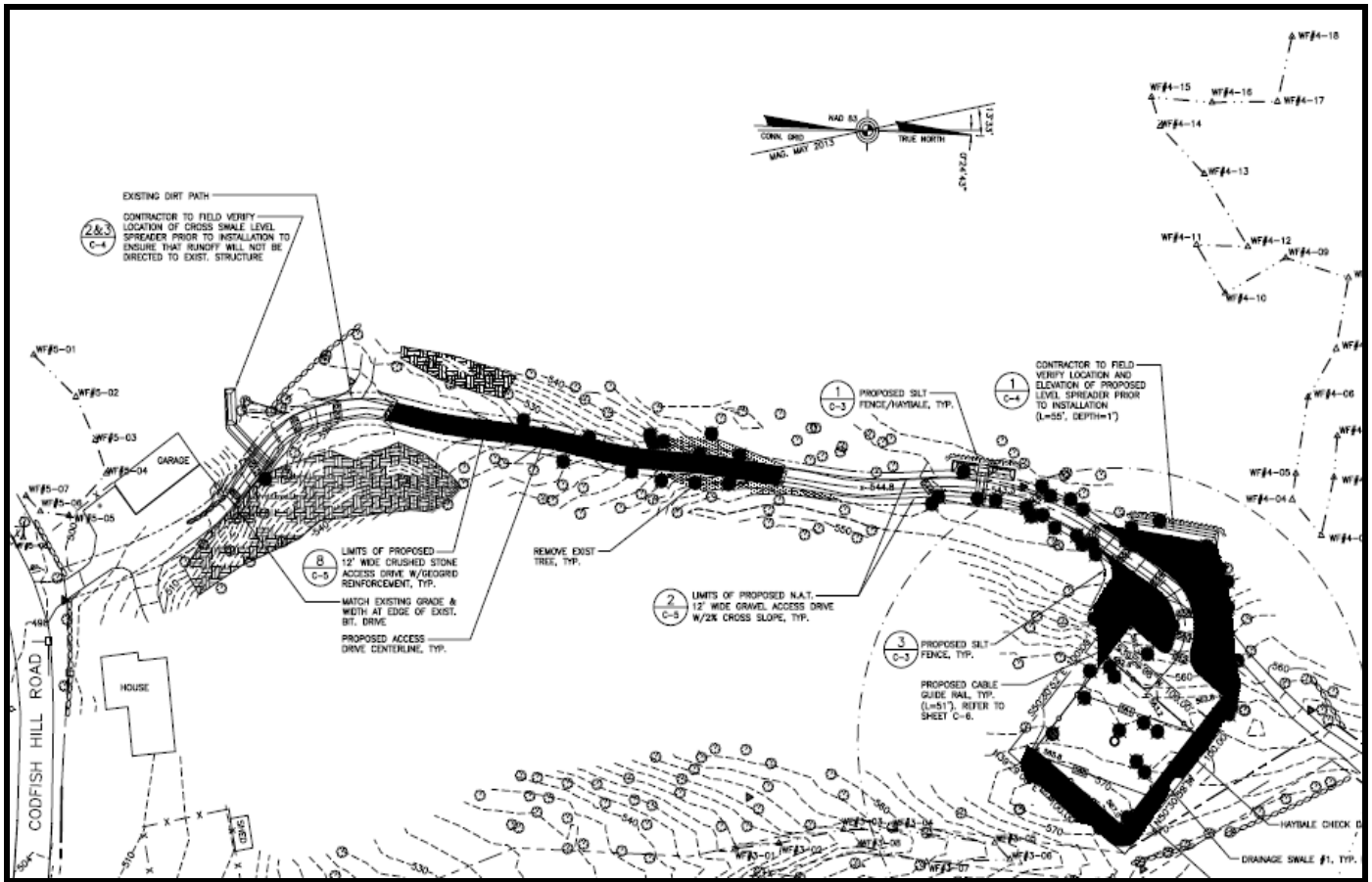
(Cellco 4, Attachment 1; Tr. 3, pp. 104-105)

Figure 6 – Site 1 Layout



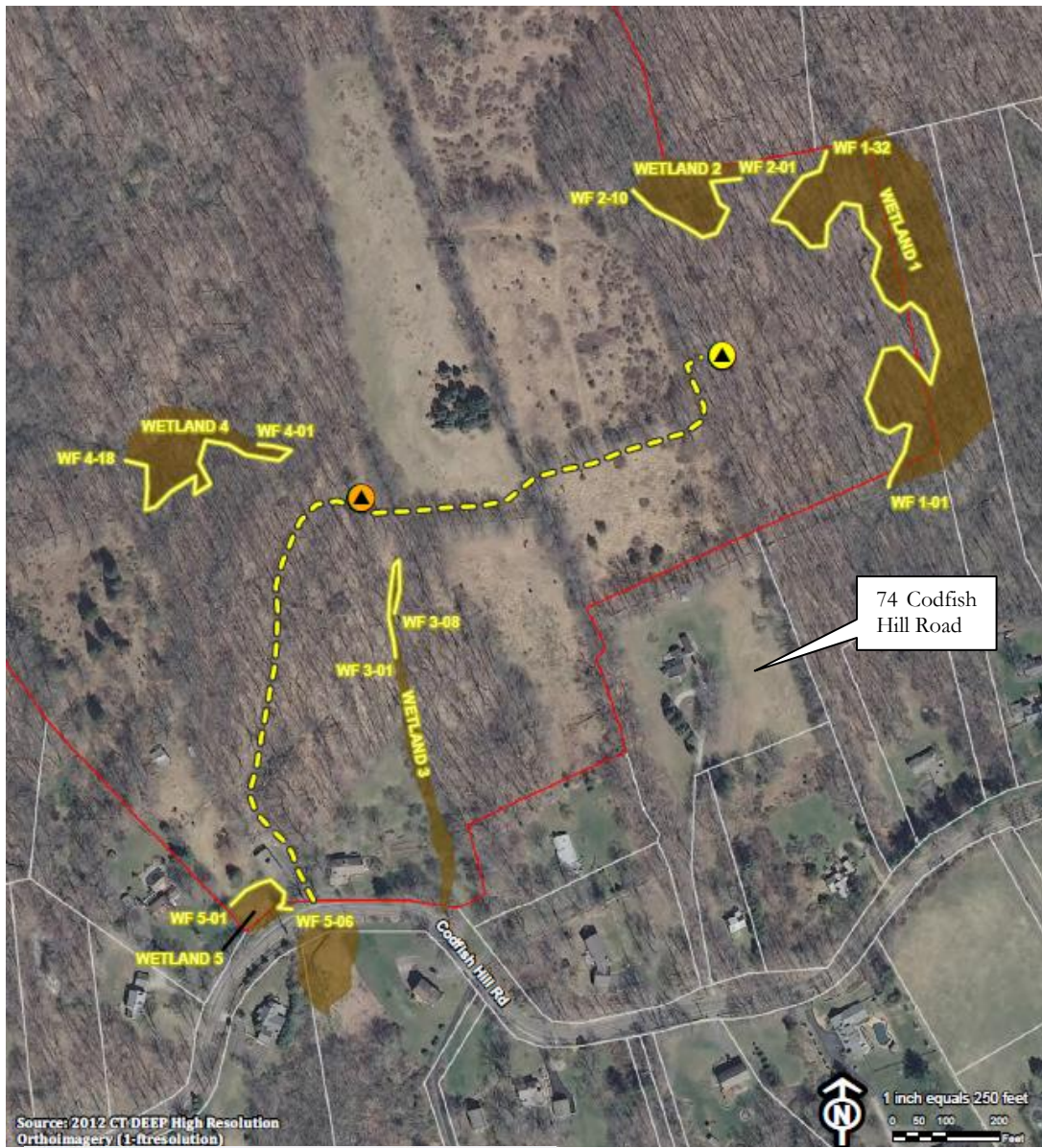
(NAT 1, Attachment E)

Figure 7 – Site 2 Layout









(NAT 1, Attachment F)

Figure 8 – Proposed Sites with delineated wetlands



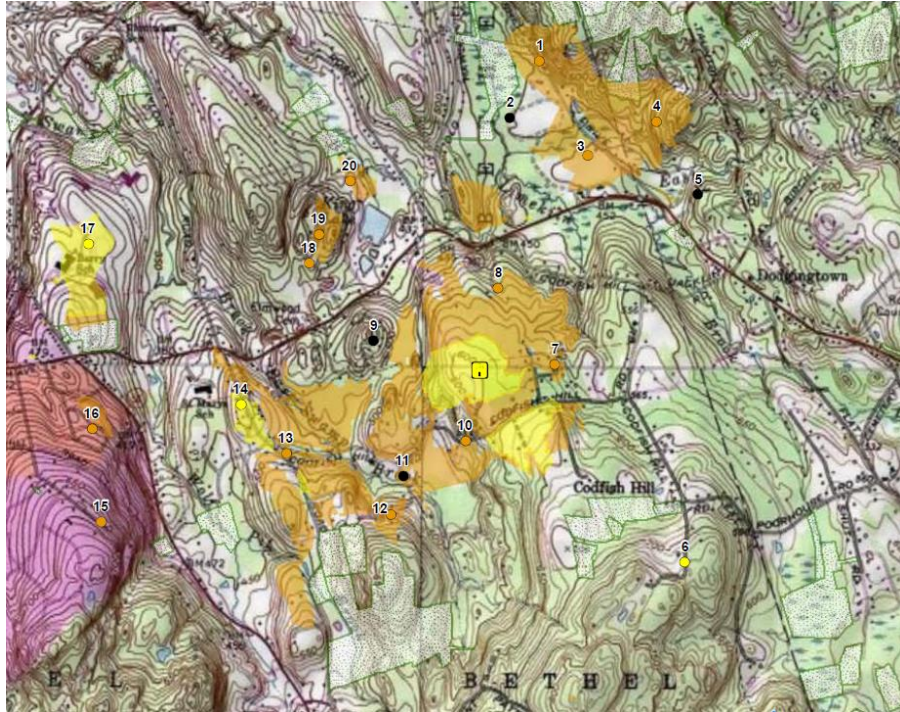
Legend

-  SITE 1
-  Proposed Access Route
-  APT Delineated Wetland Boundary
-  SITE 2
-  Approximate Wetland Area
-  Subject Parcel

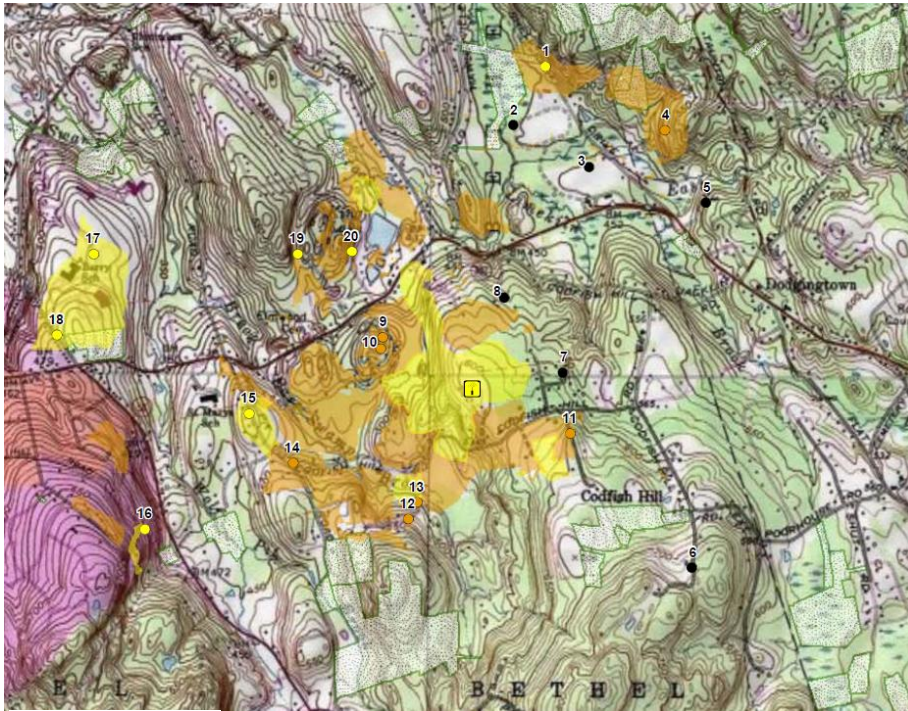
(NAT 1, Attachment L wetland report)

Figure 9 – Projected Tower Visibility

Site 1- 120 -feet



Site 2- 150 feet



Legend

□ Proposed Tower

Photo Locations

● Not Visible

● Seasonal Views

● Year-round Views

○ Predicted Seasonal Visibility

○ Predicted Year-Round Visibility

0.6 inch = 0.25 mile (NAT 10)