DOCKET NO. 482 - Cellco Partnership d/b/a Verizon Wireless application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility on town-owned property behind Lyman Memorial High School located at 917 Exeter Road, Lebanon, Connecticut.	}	Connecticut Siting Council June 21, 2018

Findings of Fact

Introduction

1. Cellco Partnership d/b/a Verizon Wireless, in accordance with provisions of Connecticut General Statutes (C.G.S.) § 16-50g, et seq, applied to the Connecticut Siting Council (Council) on March 12, 2018, for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a 150-foot monopole wireless telecommunications facility at 917 Exeter Road in Lebanon, Connecticut (refer to Figure 1). (Cellco 1, p. ES-i)

2. Cellco Partnership d/b/a Verizon Wireless (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 provide personal wireless communication service to New London County, Connecticut. (Cellco 1, pp. 3, 7)

3. The party in this proceeding is Cellco. (Transcript 1, May 1, 2018, 3:00 p.m. [Tr. 1], p. 5)

4. The purpose of the proposed facility is to provide reliable wireless service to existing service gaps in the central portion of Lebanon. (Cellco 1, p. 7, Tab 6)

5. Pursuant to C.G.S. § 16-50*l*(b), public notice of the filing of the application to the Council was published in the *Norwich Bulletin* on March 8 and March 9, 2018. (Cellco 2)

6. Pursuant to C.G.S. § 16-50*l*(b), notice of the application filing was provided to all abutting property owners by certified mail. Notice was unclaimed by two abutters at 27 York Road and 953 Exeter Road. Cellco resent notice to these abutters by first class mail. (Cellco 1, Tab 4; Cellco 2, R. 1)

7. On March 12, 2018, Cellco provided notice to all federal, state and local officials and agencies listed in C.G.S. § 16-50*l* (b). (Cellco 1, Tab 2)

Procedural Matters

8. Upon receipt of the application, on March 14, 2018, the Council sent a letter to the Town of Lebanon as notification that the application was received and is being processed, in accordance with C.G.S. § 16-50gg. (Record)

9. During a regular Council meeting on March 29, 2018, the application was deemed complete pursuant to Regulations of Connecticut State Agencies (R.C.S.A.) § 16-50*l*-1a and the public hearing schedule was approved by the Council. (Record)

10. Pursuant to C.G.S. § 16-50m, on March 30, 2018 the Council published legal notice of the date and time of the public hearing in the *Norwich Bulletin*. (Record)

11. Pursuant to C.G.S. § 16-50m, on March 29, 2018, the Council sent a letter to the Town of Lebanon (Town) to provide notification of the scheduled public hearing and invite the municipality to participate. (Record)

12. On April 11, 2018, the Council held a pre-hearing teleconference on hearing procedural matters for interested parties to discuss the requirements for pre-filed testimony, exhibit lists, administrative notice lists, expected witness lists, filing of pre-hearing interrogatories and the logistics of the public inspection of the proposed site. (Council Pre-hearing Conference Memorandum, dated April 5, 2018)

13. In compliance with R.C.S.A. § 16-50j-21, on April 17, 2018, Cellco installed a four-foot by six-foot sign at the entrance to the subject property. The sign presented information regarding the project and the Council's public hearing. (Cellco 4)

14. The Council and its staff conducted an inspection of the proposed site on May 1, 2018, beginning at 2:00 p.m. During the field inspection, the Cellco flew a four-foot diameter red balloon at the proposed site to simulate the height of the proposed 150-foot tall tower. During the field review, winds were generally calm with an occasional wind gust. The balloon was aloft from approximately 7:45 a.m. to 6:00 p.m. for the convenience of the public. (Council's Hearing Notice dated March 29, 2018; Tr. 1, pp. 61-62)

15. Pursuant to C.G.S. § 16-50m, the Council, after giving due notice thereof, held a public hearing on May 1, 2018, beginning with the evidentiary portion of the hearing at 3:00 p.m. and continuing with the public comment session at 6:30 p.m. at the Lebanon Fire Safety Complex, 23 Goshen Hill Road, Lebanon, Connecticut. (Council's Hearing Notice dated March 29, 2018; Tr. 1, p. 1; Transcript 2, May 1, 2018, 6:30 p.m. [Tr. 2], p. 1)

State Agency Comment

16. Pursuant to C.G.S. § 16-50j (g), on March 29, 2018, 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 (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); Connecticut Airport Authority (CAA); Department of Emergency Services and Public Protection (DESPP); and State Historic Preservation Office (SHPO). (Record)

17. The Council received a response from the DPH Drinking Water Section on April 11, 2018. The DPH noted that the proposed facility is not located within a public water supply watershed, and therefore, the DPH had no further comment. (DPH letter dated April 11, 2018)

18. The following agencies did not respond with comment on the application: DEEP, CEQ, PURA, OPM, DECD, DOAg, DOT, CAA, DESPP, and SHPO. (Record)

Municipal Consultation

19. Cellco approached the Town in mid-2015 to discuss possible co-location on an existing municipal tower located at Lyman Memorial High School. (Cellco 1, p. 23)

20. After Cellco determined the existing 80-foot tall light-duty tower could not support additional equipment, Cellco and the Town discussed the feasibility of constructing a new tower on the property for use by Cellco, other telecommunication providers and the Town. (Cellco 1, p. 23)

21. On May 23, 2017, Cellco appeared before the Lebanon Board of Selectman (BOS) to discuss the project and answer questions from Town officials and the public. (Cellco 1, p. 23)

22. On July 10, 2017, the BOS held a Special Town Meeting and voted to approve a lease agreement for a new tower on the school property. (Cellco 1, p. 23)

23. The Town of Lebanon First Selectman Betsy Petrie requested that Cellco immediately proceed to submit the Application to the Council, waiving the need for any additional municipal consultation as required by C.G.S. § 16-50*l* (e). (Cellco 1, p. 24, Tab 16)

24. First Selectman Petrie made a limited appearance statement at the May 1, 2018 hearing expressing support for the proposed facility, stating that the tower would improve town communication as well as provide needed wireless service to large areas of Lebanon. The Town selected the proposed location to reduce visual impact. The high school is also the Town's designated emergency operations center and is a priority facility for Eversource to restore power in the event of Town-wide power outages. (Tr. 2, pp. 9-12)

25. The Town of Lebanon Town Planner, Philip Chester, made a limited appearance statement at the May 1, 2018 public hearing stating that the proposed tower site at the high school property is remote from other land uses, as it is almost entirely surrounded by preserved land. (Tr. 1, pp. 7-8)

26. The Lebanon Fire Department Chief Robert Cady made a limited appearance statement at the May 1, 2018 public hearing stating the proposed facility would improve emergency communications throughout town. Mr. Cady also stated four whip antennas are needed on the new tower to provide service for the fire department and public works department. (Tr. 1, pp. 6-7; Tr. 2, pp. 12-13)

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 – Telecommunications Act of 1996)

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 FCC to provide personal wireless communication service to Connecticut. (Council Administrative Notice Item No. 4 – Telecommunications Act of 1996; Cellco 1, pp. 3, 7)

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 – Telecommunications Act of 1996)

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 – Telecommunications Act of 1996)

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 – Telecommunications Act of 1996)

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. 20 – The National Broadband Plan)

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 – Telecommunications Act of 1996)

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 – Presidential Proclamation 8460, Critical Infrastructure Protection)

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 – Middle Class Tax Relief and Job Creation Act of 2012)

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 Admin Notice Item No. 22 – FCC Wireless Infrastructure Report and Order; Council Admin Notice Item No. 12 – Presidential Executive Order 13616, Accelerating Broadband Infrastructure Development)

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 – Middle Class Tax Relief and Job Creation Act of 2012; Council Administrative Notice Item No. 22 – FCC Wireless Infrastructure Report and Order)

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 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. (C. G. S. §16-50aa)

39. On March 29, 2018, the Council sent correspondence to other telecommunications carriers requesting that carriers interested in locating on the proposed facility in the foreseeable future to notify the Council by April 24, 2018. No carriers responded to the Council's solicitation. (Record)

Existing and Proposed Wireless Service - Cellco

40. Cellco's proposed facility would provide coverage to large areas of central Lebanon and surrounding areas. (Cellco 1, Tab 5)

41. Cellco would initially deploy Long Term Evolution (LTE) voice and data service equipment utilizing the 700 MHz and 2100 MHz frequency bands at the proposed site. Cellco designs its LTE network using a -105 dB Reverse Link Operational Path Loss standard for in-vehicle service and -95 Reverse Link Operational Path Loss standard for in-building service. (Cellco 3, R. 9; Tr. 1, p. 13)

42. Cellco's existing 700 MHz service is deficient along 3.8 miles of Route 207, 3.4 miles of Route 87, 0.75 miles of Route 16 and 0.57 miles of Route 289. There is no 2100 MHz service in most areas of Lebanon. Deficient wireless service in the area was confirmed through propagation modeling, drive test analysis, and an analysis of ineffective attempts and dropped call data in the Voice over LTE wireless system. (Cellco 3, R. 12, R. 13)

43. Although the site is designed to improve Cellco's coverage footprint, the site would also provide capacity relief to Cellco's existing "Franklin North" site (gamma sector). (Cellco 3, R. 11)

44. Cellco's proposed facility would interact with adjacent existing facilities identified in the following table:

Cellco Site Designation	Site Address	Distance/direction from Proposed Site	Antenna Height (agl)	Structure Type
Colchester	63 Windham Rd., Colchester	5.0 miles southwest	220 feet	self-supporting lattice
Colchester East	29 Mahoney Rd., Colchester	4.2 miles south	167 feet	monopole
Columbia South	330 Middletown Rd., Columbia	6.5 miles northwest	135 feet	monopole
Coventry South	14 Thompson Hill Rd., Columbia	7.4 miles northwest	146 feet	monopole
Franklin	89 Dr. Nott Rd., Franklin	5.1 miles southeast	169 feet	guyed lattice
Franklin North	36 Ayer Rd., Franklin	5.8 miles northeast	177 feet	monopole
Gilman	12 Polly Lane, Bozrah	4.0 miles southeast	136 feet	guyed lattice
Lebanon	236 Gates Rd., Lebanon	4.5 miles north	120 feet	guyed lattice
Lebanon South	1593 Exeter Rd., Lebanon	3.6 miles west	150 feet	monopole

These existing Cellco facilities surrounding the proposed site cannot provide adequate service to the target service area. (Cellco 1, pp. 8-9, Tab 6; Council Administrative Notice Item No. 25)

45. Coverage models indicate Cellco's proposed installation on the 140-foot level of the 150-foot tower would provide service to the following:

	700 MHz Service	2100 MHz Service
Route 207	7.6 road miles	3.0 road miles
Route 87	8.8 road miles	4.0 road miles
Route 16	1.7 road miles	0.2 road miles
Route 289	2.8 road miles	n/a
Land Area	48.6 square miles	9.0 square miles

Refer to Figures 2, 3, and 4 for wireless service models.
(Cellco 1, p. 8, Tab 6)

46. The coverage model for the proposed site depicts 700 MHz service overlapping with service from several adjacent existing Cellco facilities. The actual coverage area served by the proposed site would be smaller since overlapping areas may be served by these adjacent facilities. (Cellco 1, Tab 6; Tr. 1. pp. 25-26)

Site Selection

47. Cellco established a search area for the site in March 2015 and immediately identified an existing municipal 80-foot lattice tower behind the Lyman Memorial High School that supports town and emergency communication antennas. (Cellco 1, p. 12, Tab 8)

48. The Town and Cellco determined a replacement structure was needed. Several sites on the school property were examined, including a site located a few hundred feet south of the proposed site and a site adjacent to the existing lattice tower. The Town ultimately selected the proposed site as it was least disruptive to school operations. (Cellco 1, Tab 8; Cellco 3, R. 8, R. 23; Tr. 1, pp. 45-46, 54-55)

49. Relocating the proposed site to another area of the school property would require a renegotiation of the site lease. (Tr. 1, pp. 60-61)

50. Although it is technically possible to provide wireless service to the target service area using numerous small cells, the actual number of small cells necessary would be significant due to the large size of the service area to be covered. The use of a macro-cell at the proposed site is the most efficient and cost effective method for providing a large coverage footprint. (Cellco 1, p. 11; Cellco 3, R. 14)

Facility Description

51. The proposed site is located in the southerly portion of a 38.17-acre parcel owned by the Town. (Cellco 1, Tab 1)

52. The subject property is zoned Rural Agricultural Residential (RA) and is developed with Lyman Memorial High School. (Cellco 1, Tab 1)

53. The parcel includes the school, associated athletic fields, agricultural education facilities such as outbuildings, paddocks and fields and a wooded area. (Cellco 1, Tab 1)

54. The proposed site consists of a 50-foot by 50-foot equipment compound within a 100-foot by 100-foot lease area in a wooded area south of a field used for agri-science (refer to Figure 5). The equipment compound would be enclosed by an eight-foot high chain-link fence with anti-climb mesh. (Cellco 1, Tab 1)

55. The compound would be surfaced with gravel to a depth of six-inches. (Tr. 1, p. 36)

56. Within the compound, Cellco would install two radio equipment cabinets, an emergency power battery, and an emergency propane-fueled 35 kilowatt generator on a 9.3-foot by 16-foot elevated steel platform covered by a canopy. A 1,000-gallon propane tank would be installed on an eight-foot by four-foot concrete pad at ground level to serve the emergency generator. (Cellco 1, p. 2, Tab 1)

57. The proposed tower would consist of a 150-foot galvanized steel monopole, approximately 54 inches wide at the base tapering to 24 inches wide at the top. The tower would be designed to support four levels of wireless carrier antennas as well as municipal and emergency service antennas. (Cellco 1, p. 11, Tab 1; Tr. 1, p. 25)

58. The tower site is at a ground elevation of 506 feet above mean sea level (amsl). (Cellco 1, Tab 1)

59. Cellco would install nine panel antennas and nine remote radio heads on a square platform at a centerline height of 140 feet above ground level (agl). The square platform allows for Cellco to orient the antennas in certain directions to enhance coverage objectives in specific locations, such as the Town center. (Cellco 1, Tab 1; Tr. 1. pp. 65-66)

60. Municipal public works and emergency service whip antennas (up to 21 feet in height) would be installed at the 150-foot level of the tower. Radio equipment serving the Town's antennas would be installed on an eight-foot by eight-foot concrete pad within the compound. (Cellco 1, p. 2, Tab 1)

61. Vehicle access to the compound would be from a new 12-foot wide, 325-foot long gravel access road extending from an existing paved driveway at the rear of the school. The access drive would extend through an existing field and wooded area to the compound site. (Cellco 1, Tab 1)

62. The proposed access drive would be composed of 16 inches of sub-base/base materials and a 4 inch deep gravel travel surface. (Tr. 1, pp. 37-38)

63. The proposed access drive would traverse a field with poorly drained soils. Additional sub-base material may be required to support construction vehicles. (Tr. 1, pp. 37-38)

64. Approximately 60 cubic yards of fill would be required to construct the access road and compound. (Tr. 1, p. 36)

65. An underground telecommunication line would extend 1,720 feet to the compound through a lawn area along the east side of the school property from a utility pole on Exeter Road. Power would extend underground to the compound for a distance of 495 feet from existing service at the rear of the school. (Cellco 1, Tab 1)

66. Site blasting is not required. If bedrock is encountered, it would be removed by mechanical chipping. (Tr. 1, p 41)

67. The site property is surrounded by a mix of municipal, commercial, residential and agricultural uses. (Cellco 1, Tab 1)

68. There are no residential structures within 1,000 feet of the proposed tower site. (Cellco 1, p. 15)

69. The nearest off-site residence is located approximately 1,800 feet north of the proposed tower at 894 Exeter Road. (Cellco 1, p. 19, Tab 1; Cellco 3, R. 3)

70. The nearest property line from the proposed tower is approximately 297 feet to the south at 953 Exeter Road.

71. Cellco would recover the costs of the facility via the price of its services on a national level. The estimated cost of the proposed facility is:

Tower	$60,000
Generator	$35,000
Cellco radio equipment	$150,000
Site work, preparation	$200,000
Total Estimated Facility Cost	**$445,000**

(Cellco 1, pp. 25-26; Cellco 3, R. 2)

72. Construction of the site would take approximately six to ten weeks, depending on scheduling and site conditions. Once radio equipment and antennas are installed, cell site integration and system testing would require another two weeks before the site is fully operational within Cellco's wireless network. (Cellco 1, p. 25)

Public Safety

73. 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 - Wireless Communications and Public Safety Act of 1999)

74. The proposed facility would be in compliance with the requirements of the 911 Act and would provide Enhanced 911 services. (Cellco 1, pp. 5-6)

75. Wireless carriers have voluntarily begun supporting text-to-911 services nationwide in areas where municipal Public Safety Answering Points (PSAP) 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 Item No. 21 – FCC Text-to-911: Quick Facts & FAQs)

76. Cellco's facility would be capable of supporting text-to-911 service as soon as the PSAP is capable of receiving text-to-911. However, no PSAPs in the vicinity of the proposed tower site are able to accept text-to-911 service at this time. (Cellco 2, R. 17)

77. 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 – FCC WARN Act)

78. Pursuant to CGS § 16-50p(a)(3)(G), the tower would be constructed in accordance with the governing standard in the State of Connecticut for tower design in accordance with the currently adopted 2016 Connecticut State Building Code. (Cellco 3, R. 4, R. 5)

79. The proposed tower would not constitute an obstruction or hazard to air navigation and would not require any obstruction marking or lighting. (Cellco 1, p. 24)

80. The tower radius would remain on the host property. (Cellco 1, Tab 1)

81. The cumulative worst-case maximum power density from the radio frequency emissions from the operation of the proposed municipal and Cellco antennas is 1.04 percent of the standard for the General Public/Uncontrolled Maximum Permissible Exposure, as adopted by the FCC, around the base of the proposed tower. This calculation was based on methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997) that assumes all antennas are operating at full power, all antenna channels would be operating simultaneously, and all radio transmitters are operating at full power which creates the highest possible power density levels. Under normal operation, this equipment would be not at maximum operating capacity and the radio frequency power associated with the antennas would be oriented towards the horizon, thus resulting in significantly lower power density levels in areas around the tower. (Cellco 1, Tab 14)

Emergency Backup Power

82. 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. 47 - Final Report of the Two Storm Panel)

83. In response to the findings and recommendations of the Panel, and in accordance with C.G.S. §16-50*ll*, the Council, in consultation and coordination with DEEP, DESPP, and PURA, 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. 26 – Council Docket No. 432)

84. The Council reached the following conclusions in the study:
    a) "Sharing a backup source is feasible for Commercial 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. 26 – Council Docket No. 432)

85. Cellco's emergency power system consists of a battery cabinet and a 35-kW propane fueled generator. The battery alone could supply four hours of emergency power depending on site loading. The generator would recharge the battery unit and can run for 5.5 days before refueling would be necessary. (Cellco 3, R. 20; Tr. 1, p. 18)

86. Cellco's emergency power system would be shared with the Town, enabling the Town to maintain emergency communications during commercial power outage events. (Cellco 1, p. 11; Tr. 2, pp. 42-43)

87. Emergency power equipment is inspected annually to ensure the equipment is properly maintained. Additionally, the generator would be remotely tested and monitored on a weekly basis for any operational abnormalities. (Tr. 1, pp. 57-58)

88. Pursuant 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)

89. Pursuant to R.C.S.A. §22a-174-3b, the generator would be managed to comply with DEEP's "permit by rule" criteria, therefore the generator would be exempt from general air permit requirements. (Cellco 1, p. 25)

Environmental Considerations

90. No historic properties are within a half-mile of the proposed facility. (Cellco 1, p. 17)

91. The site is within the Last Green Valley National Heritage Corridor, a 35-town area located in northeast Connecticut and south-central Massachusetts, established by Congress in 1994 to recognize the region as a unique national resource. The designation is intended to encourage preservation and promotion of the region's cultural, historical and natural heritage. The proposed site would be visible from portions of the Lebanon Town Green, an identified heritage area resource, approximately 1.5 miles from the site. (Cellco 1, Tab 9; Council Administrative Notice Item No. 62; Tr. 1, pp. 21-23)

92. Development of the site would disturb a 0.18 acre forested area that is classified as edge forest. A total of 12 trees with a diameter of six inches at breast height would be removed to develop the site. Site development would have a negligible effect on an adjacent 62 acre core forest located east of the site. (Cellco 1, Tab 1; Cellco 3, R. 21)

93. According to DEEP's Natural Diversity Database, the eastern box turtle, a State Species of Special Concern, exists in the vicinity of the site the proposed site. Cellco would be willing to incorporate standard construction-related DEEP box turtle protection measures into the D&M Plan for the project. (Cellco 1, pp. 16-17)

94. Connecticut is within the range of the northern long-eared bat (NLEB), a federally-listed Threatened species and State-listed Endangered species. There are no known NLEB hibernacula or known maternity roost trees near the project area and thus the proposed facility is not likely to adversely impact the NLEB. The United States Fish and Wildlife Service (USFWS) did not respond to the Cellco NLEB submittal, and in accordance with USFWS rules, the project site is thus deemed in compliance and no further action is necessary. (Cellco 1, Tab 10; Tr. 1, p. 19)

95. The proposed site is located approximately 4.3 miles from Lyme Forest block, an Important Bird Area (IBA) designated by the Connecticut Audubon Society. The proposed site would have no effect on the IBA. (Cellco 1, Tab 10)

96. The design of the proposed facility would comply with USFWS guidelines for minimizing the potential impact of telecommunications towers to bird species. The guidelines recommend that towers be less than 199 feet tall, avoid the use of aviation lighting, and avoid guy-wires as tower supports, among others. (Cellco 1, Tab 10)

97. The USFWS service guidelines also contain tree clearing recommendations to minimize the risk to migratory birds during site construction. Cellco would consider adhering to the recommendations by restricting tree clearing to certain time periods (April 15 to July 15) or conducting an avian survey to determine if breeding birds would be disturbed and modifying construction scheduling, if possible. (Cellco 1, Tab 10)

98. The Inland Wetlands and Watercourses Act (IWWA), CGS §22a-36, *et seq.*, contains a specific legislative finding that the inland wetlands and watercourses of the state are an indispensable and irreplaceable but fragile natural resource with which the citizens of the state have been endowed, and the preservation and protection of the wetlands and watercourses from random, unnecessary, undesirable and unregulated uses, disturbance or destruction is in the public interest and is essential to the health, welfare and safety of the citizens of the state. (CGS §22a-36, et seq.)

99. The IWWA grants regulatory agencies with the authority to regulate upland review areas in its discretion if it finds such regulations necessary to protect wetlands or watercourses from activity that will likely affect those areas. (CGS §22a-42a)

100. The IWWA forbids regulatory agencies from issuing a permit for a regulated activity unless it finds on the basis of the record that a feasible and prudent alternative does not exist. (CGS §22a-41)

101. Two wetlands are in close proximity to the proposed access road and compound, as follows.
    a) Wetland 1 is 109 feet north of the compound and 26 feet from the proposed access drive. It is characterized as disturbed and partially filled.
    b) Wetland 2 is 107 feet northeast of the compound and 70 feet east of the proposed access drive. It is a forested wetland containing a vernal pool.

    Refer to Figure 6 for wetland locations. (Cellco 1, Tab 11; Tr. 1, p. 14)

102. A single spotted salamander egg mass was identified in the Wetland 2 vernal pool during a field inspection conducted on April 30, 2018. The spotted salamander is not a State-listed species. (Tr. 1, pp. 14, 16)

103. The proposed site is not within 100 feet of the Wetland 2 vernal pool (refer to Figure 6). Using methodology developed by Calhoun and Klemens (2002), development should be avoided within 100 feet of a vernal pool in order to maintain water quality and to provide shade and leaf litter for the vernal pool ecosystem. (Council Administrative Notice Item No. 59; Cellco 1, Tab 11)

104. Development within the Critical Terrestrial Habitat (CTH) surrounding a vernal pool, a distance of 100 feet to 750 feet from the vernal pool edge, should be limited to 25 percent to maintain populations of vernal pool obligate amphibian species. Currently, 35 percent of the CTH around the Wetland 2 vernal pool is developed or does not exhibit quality habitat to support vernal pool obligate species. Development of the site would marginally increase the developed area. Undisturbed forest habitat would remain primarily to the east and south of the vernal pool. (Council Administrative Notice Item No. 59; Cellco 1, Tab 11)

105. Cellco would implement vernal pool Best Management Practices (BMPs) to reduce impacts to the vernal pool and vernal pool obligate species. The BMPs consist of several components including: installation of appropriate erosion controls; periodic inspection and maintenance of isolation structures; herpetofauna sweeps; contractor education and reporting. (Cellco 1, Tab 11)

106. The project would be constructed in compliance with the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control.* (Cellco 1, Tab 11)

107. Construction of the access road would disturb approximately 1,800 square feet of mapped prime farmland soils. (Cellco 1, p. 18; Cellco 3, R. 7)

108. The site is located in the Federal Emergency Management Agency Zone X, an area outside of the 100-year and 500-year flood zones. (Cellco 1, p. 21)

109. The proposed site is not within a DEEP designated Aquifer Protection Area or a public supply watershed. (Cellco 3, R. 25)

110. Natural gas is not available in the proposed site area. (Tr. 1, p. 43)

111. Operation of the proposed facility would not cause any significant noise, air, or water impacts or present a hazard to human health. (Cellco 1, pp. 18-19)

112. Development of the compound would create approximately 400 square feet of impervious surfaces. (Tr. 1, pp. 16, 53)

113. Stormwater along the proposed compound access drive is expected to sheet flow into the existing adjacent agricultural field. (Tr. 1, p. 52)

114. Noise from normal operation of the facility would comply with State guidelines. (Cellco 1, Tab 1)

115. Construction noise is exempt from the State of Connecticut Noise Control Regulations §22a-69-1.8(g), which includes, but is not limited to, "physical activity at a site necessary or incidental to the erection, placement, demolition, assembling, altering, blasting, cleaning, repairing, installing, or equipping of buildings or other structures, public or private highways, roads, premises, parks, utility lines, or other property." (R.C.S.A. §22a-69-1.8(g))

Visibility

116. The proposed tower would be visible year-round from approximately 288 acres within a two-mile radius of the site. During leaf-off conditions, the tower would be visible from an additional 667 acres. A computer model depicting visibility and corresponding field reconnaissance photo-log information is provided in Figure 7. (Cellco 1, Tab 9)

117. A majority of year-round views would occur from areas within 1.0 mile of the site, primarily to the north and south where there are open fields allowing for unobstructed views of the top portion of the proposed tower. Year-round views of the tower would also occur from the Lebanon Town Green, approximately 1.5 miles to the northeast. (Cellco 1, Tab 9)

118. Seasonal views would generally be limited to locations within 1.0 mile of the proposed facility where vegetation on hills or along roads would obstruct year-round views from adjacent open areas. (Cellco 1, Tab 9)

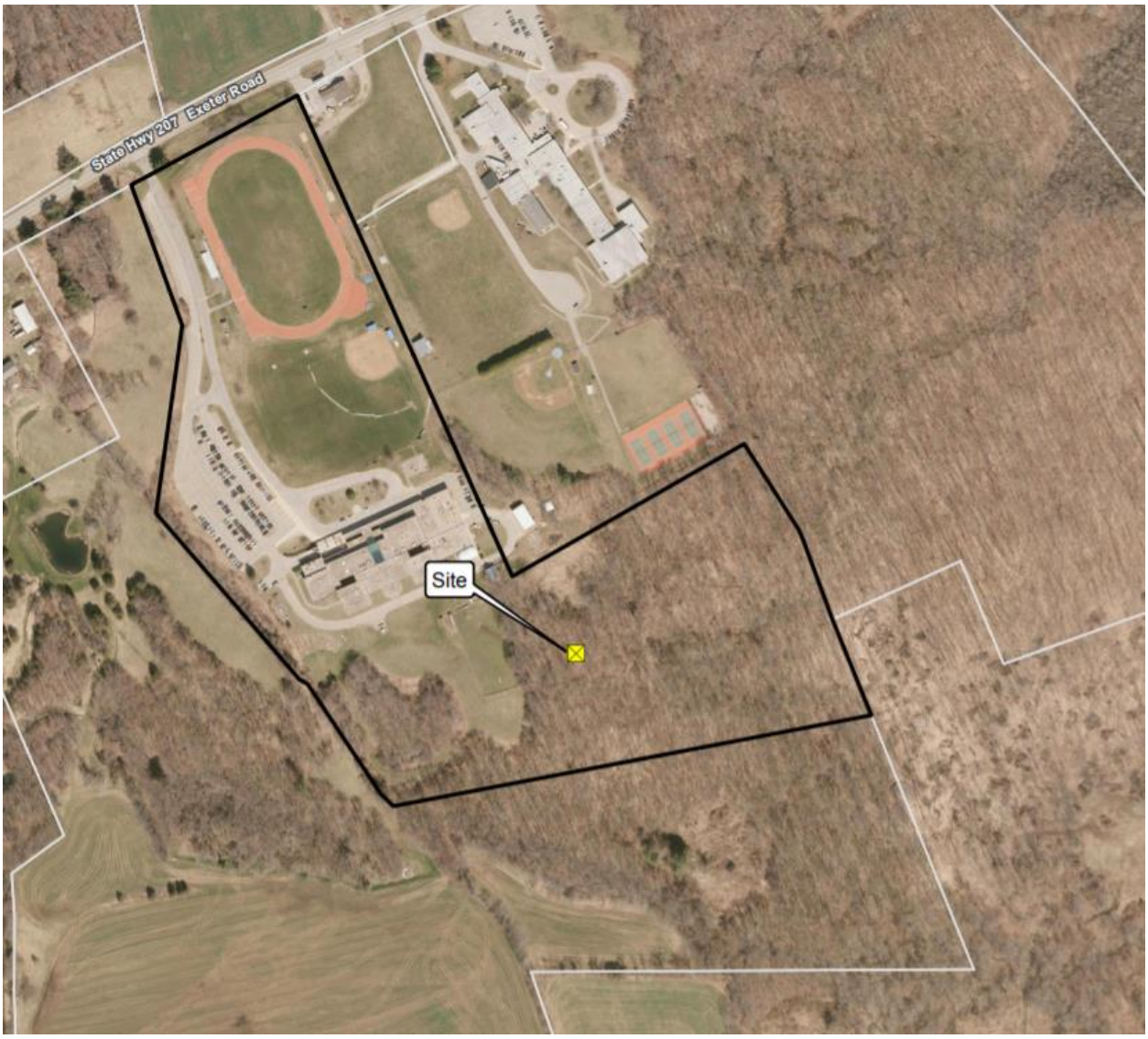
119. No landscaping is proposed as the compound area is located within a wooded area. (Cellco 1, Tab 1)

120. There are no "blue-blazed" hiking trails maintained by the Connecticut Forest and Park Association within one-mile of the site. (Council Administrative Notice Item No. 67; Applicant 1, Tab 9)

121. Pursuant to C.G.S § 16-50p(a)(3)(F), the nearest school is the Lyman Memorial High School located on the property. No commercial child day care facilities are located within two miles of the site. (Cellco 1, Tab 9)

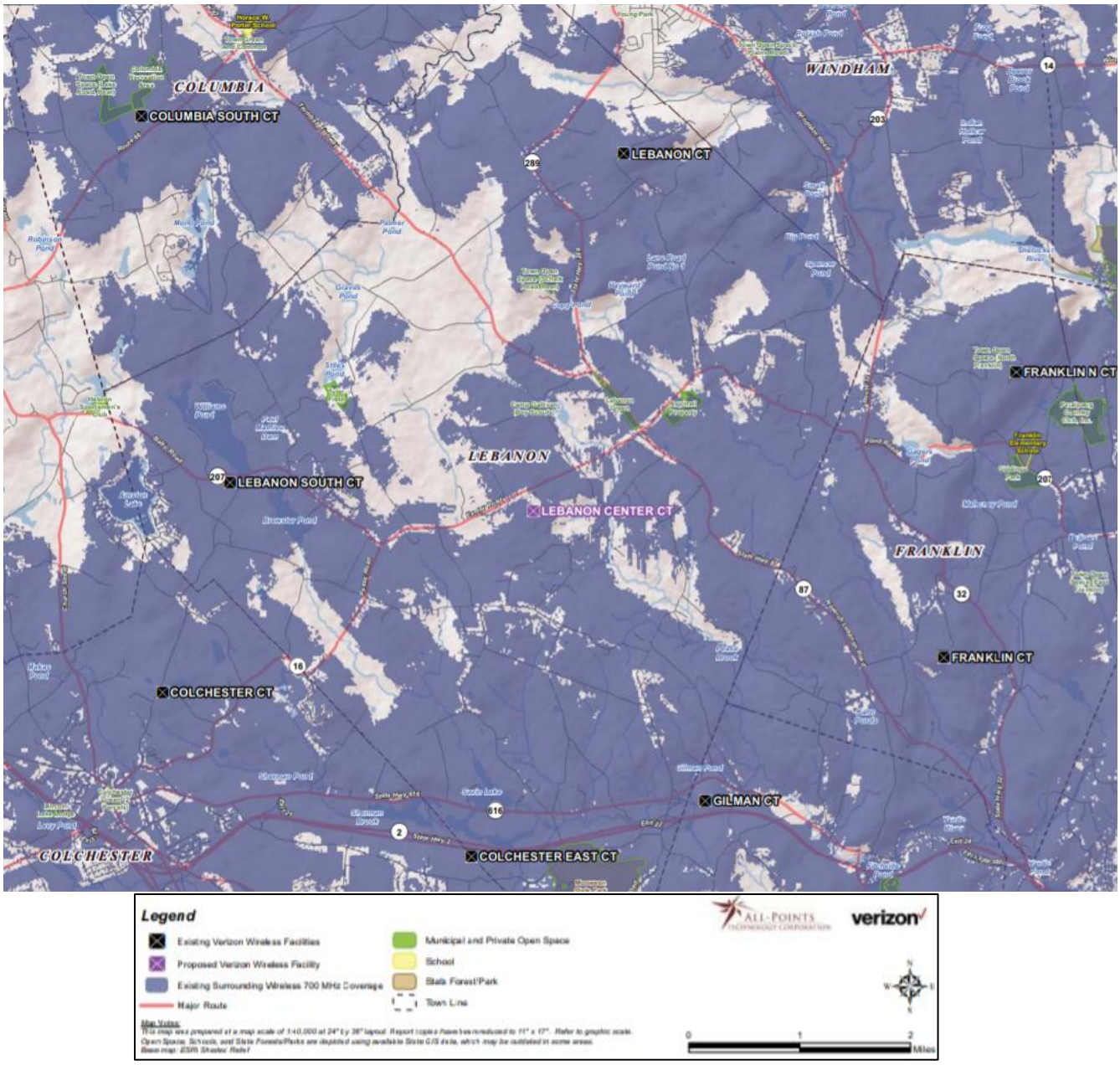
122. A camouflaged tower design such as a stealth silo or fire tower would not be practical at the site due to the antenna height required for both Cellco and the Town's needs. Once a silo or fire tower exceeds a height of 80 to 90 feet, it would appear out of context with the surroundings. (Tr. 1, p. 47)

Figure 1 – Site Location



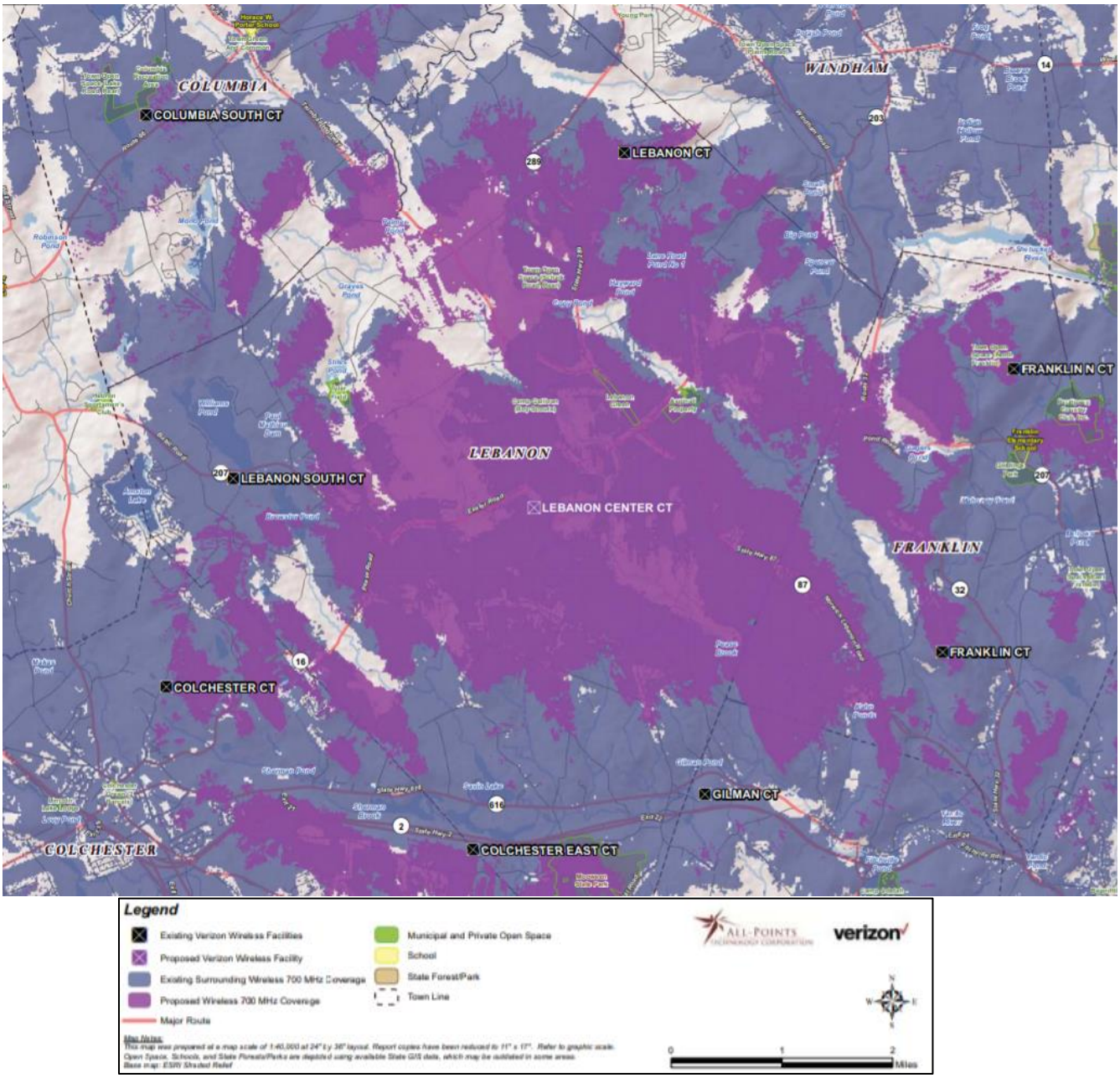
(Cellco 1, p. iii)

Figure 2 - Existing LTE 700 MHz Service



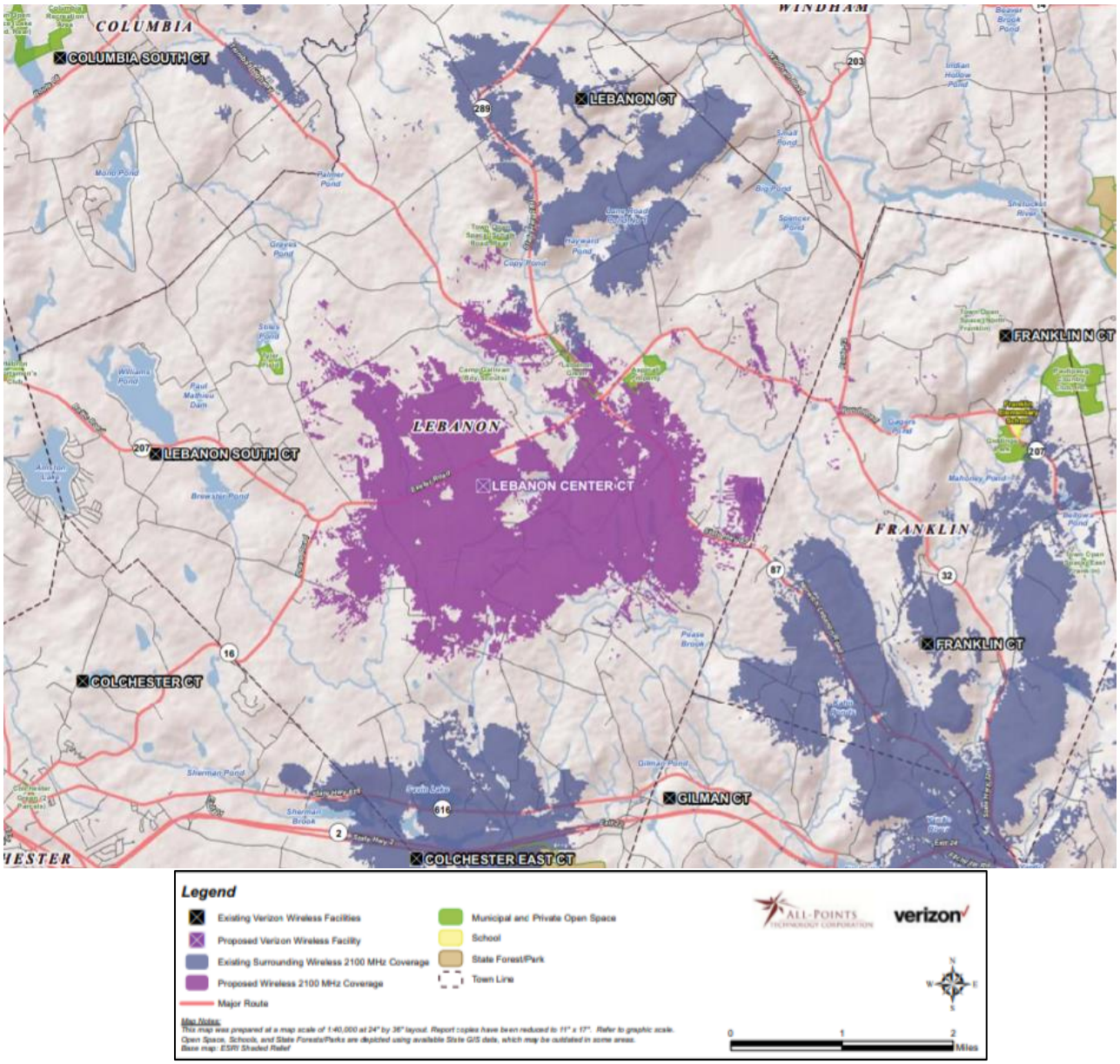
(Cellco 1, tTab 6)

Figure 3 - Proposed LTE 700 MHz Service



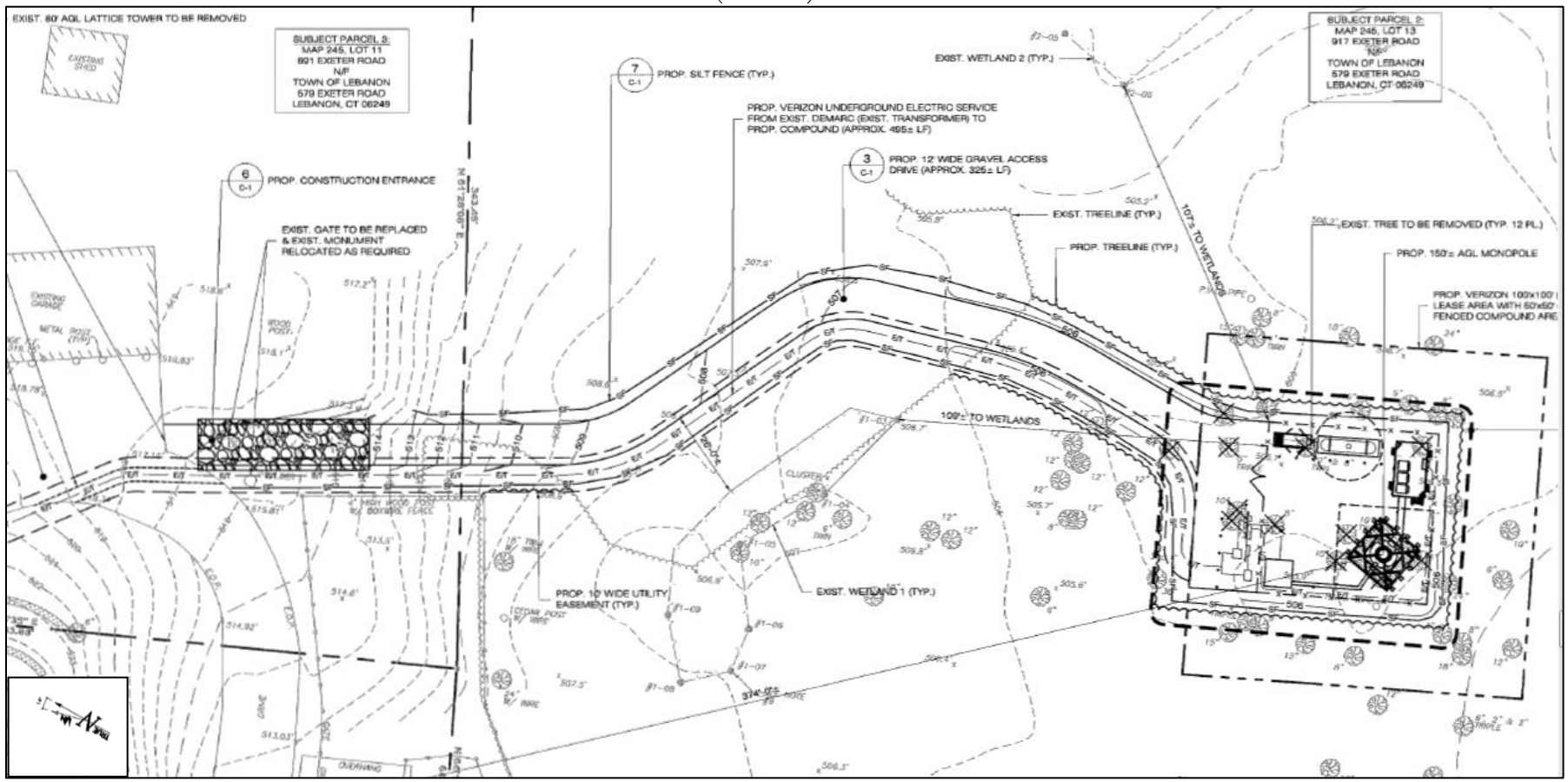
(Cellco 1, Tab 6)

Figure 4 - Proposed LTE 2100 MHz Service
(no 2100 MHZ services exstis in area)



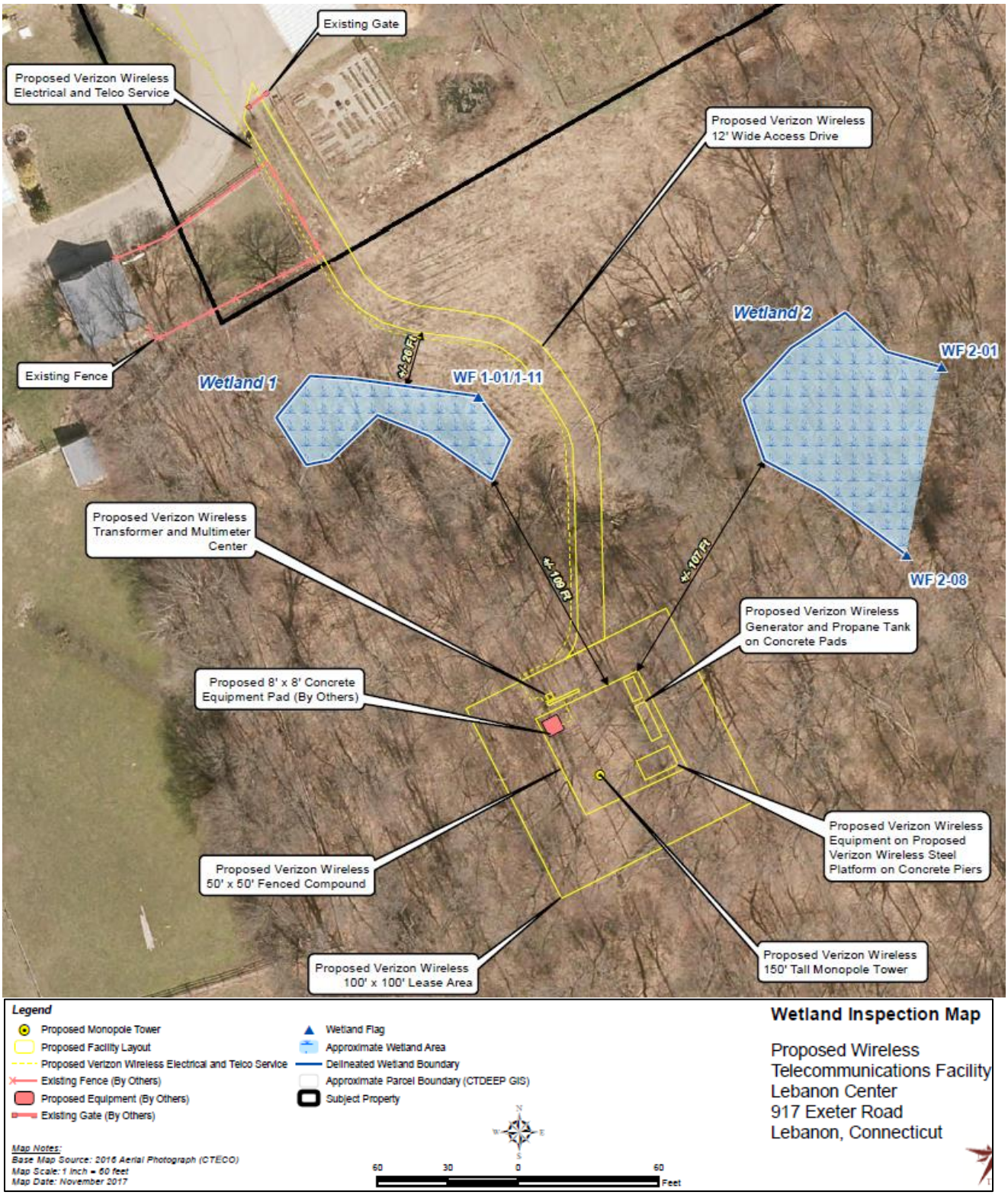
(Cellco 1, Tab 6)

Figure 5 – Site Plan
(No scale)



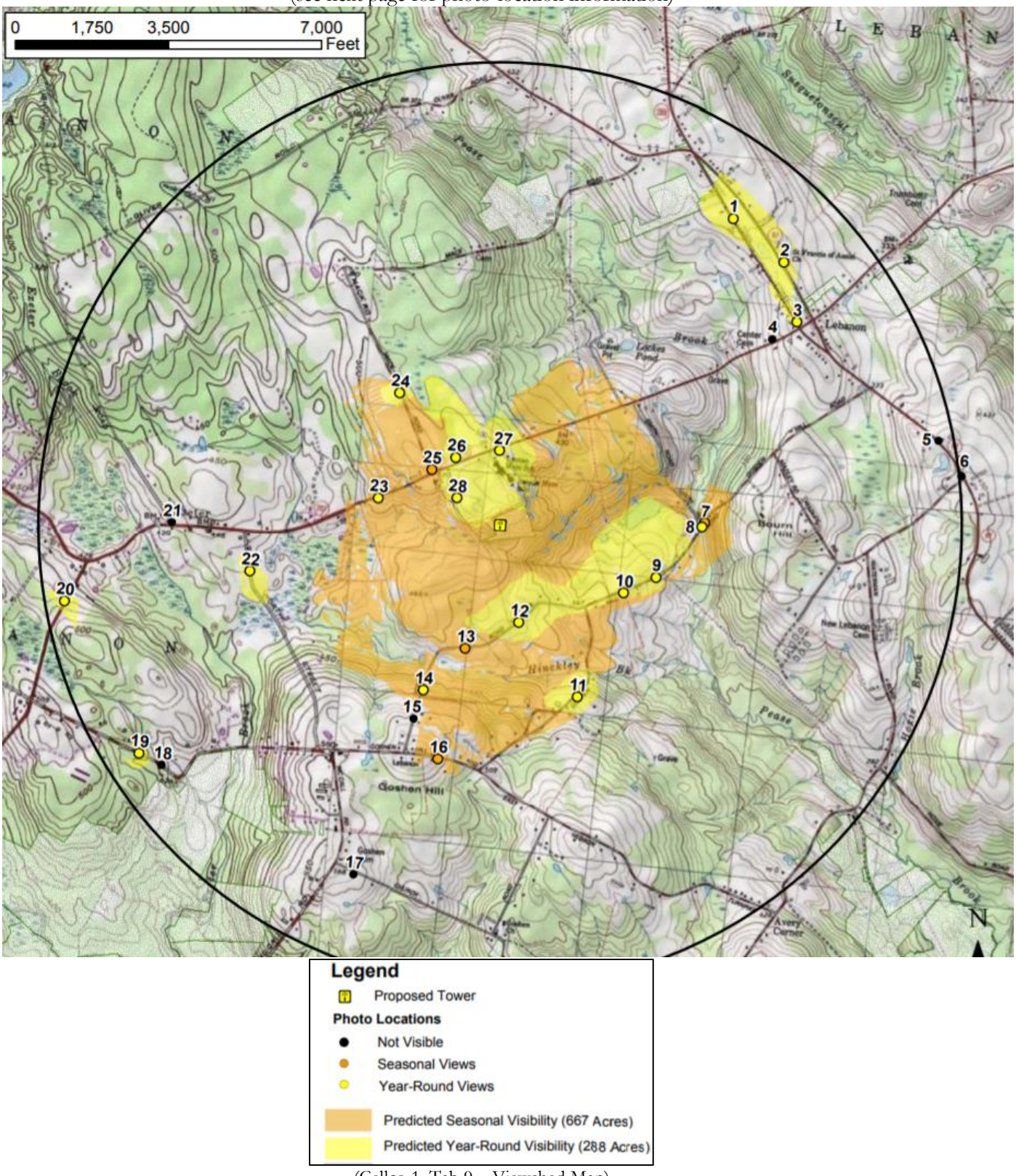
(Cellco 1, Tab 1 – Sheet SP-1 *partial*)

Figure 6 – Wetland Resources



(Cellco 1, Tab 11)

Figure 7 – Visibility Analysis
(see next page for photo-location information)



(Cellco 1, Tab 9 – Viewshed Map)

Visibility Analysis photo-locations - numbers corresponds to locations on visibility map

View	Location	Orientation	Distance to Site	View Characteristics
1	West Town Street	Southwest	±1.65 Miles	Year Round
2	Trumbull Highway	Southwest	±1.66 Miles	Year Round
3	West Town Street	Southwest	±1.55 Miles	Year Round
4	Exeter Road	Southwest	±1.42 Miles	Not Visible
5	Trumbull Highway	Southwest	±1.94 Miles	Not Visible
6	Trumbull Highway	West	±2.03 Miles	Not Visible
7	Goshen Hill Road	West	±0.90 Mile	Seasonal
8	Goshen Hill Road	West	±0.89 Mile	Year Round
9	Goshen Hill Road	Northwest	±0.74 Mile	Year Round
10	Goshen Hill Road	Northwest	±0.64 Mile	Year Round
11	Goshen Hill Road	Northwest	±0.84 Mile	Year Round
12	York Road	North	±0.46 Mile	Year Round
13	York Road	Northeast	±0.58 Mile	Seasonal
14	York Road	Northeast	±0.82 Mile	Year Round
15	York Road	Northeast	±0.94 Mile	Not Visible
16	Goshen Hill Road	Northeast	±1.08 Miles	Seasonal
17	Church Road	Northeast	±1.66 Miles	Not Visible
18	Goshen Hill Road*	Northeast	±1.80 Miles	Not Visible
19	Goshen Hill Road	Northeast	±1.85 Miles	Year Round
20	Lebanon Avenue	Northeast	±1.92 Miles	Year Round
21	Exeter Road	East	±1.42 Miles	Not Visible
22	North Street	Northeast	±1.10 Miles	Year Round
23	Exeter Road	East	±0.53 Mile	Year Round
24	Mack Road	Southeast	±0.69 Mile	Year Round
25	Mack Road at Exeter Road	Southeast	±0.36 Mile	Seasonal
26	Exeter Road	Southeast	±0.32 Mile	Year Round
27	Lebanon Middle School	South	±0.29 Mile	Year Round
28	Lyman Memorial High School	Southeast	±0.20 Mile	Year Round

** Photograph taken with a 35mm focal length.*