

<p><b>DOCKET NO. 469</b> – 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 located at Killingly Tax Assessor’s Map 143, Lot 6, 520 Bailey Hill Road, Killingly, Connecticut.</p>	<p>} Connecticut } Siting } Council } December 22, 2016</p>
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**Findings of Fact**

**Introduction**

1. Cellco Partnership d/b/a Verizon Wireless (Cellco), in accordance with provisions of Connecticut General Statutes (C.G.S.) § 16-50g, et seq, applied to the Connecticut Siting Council (Council) on July 26, 2016 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 520 Bailey Hill Road in Killingly, Connecticut. (Cellco 1, pp. i and 1)
2. Cellco is a Delaware Partnership with an administrative office located at 99 East River Drive, East Hartford, Connecticut. Cellco is licensed by the Federal Communications Commission (FCC) to provide personal wireless communication service to Windham County, Connecticut. (Cellco 1, p. 2; Cellco 1, p. 6 and Tab 5)
3. The only party in this proceeding is Cellco. (Transcript 1, October 6, 2016, 3:00 p.m. [Tr. 1], p. 5)
4. The purpose of the proposed facility is to provide improved wireless coverage to existing service gaps in Killingly and capacity relief to Cellco’s existing Killingly cell site (beta sector) that is currently operating at or near capacity limits. (Cellco 1, p. i)
5. Pursuant to C.G.S. § 16-50/(b), the applicant provided public notice of the filing of the application that was published in The Bulletin on July 21, and July 22, 2016. (Cellco 1, p. 3; Cellco 2)
6. Pursuant to C.G.S. § 16-50/(b), notice of the application was provided to all abutting property owners by certified mail. Return receipts were received by Cellco for 35 of the 41 abutters. Cellco submitted a copy of the notice letter to the other six abutters via regular mail. (Cellco 3, response 1)
7. On July 26, 2016, Cellco provided notice to all federal, state and local officials and agencies listed in C.G.S. § 16-50/(b). (Cellco 1, Tab 2 – Certification of Service)

**Council Procedures**

8. Upon receipt of the application, the Council sent a letter to the Town of Killingly, on July 27, 2016, as notification that the application was received and is being processed, in accordance with C.G.S. § 16-50gg. (Record)
9. By letter dated August 5, 2016, the Council requested an extension of time until September 2, 2016 to complete the application completeness review process. By letter dated August 5, 2016, Cellco consented to such extension. (Council Request for Extension of Completeness Review dated August 5, 2016; Cellco Consent to Completeness Review Extension dated August 5, 2016)
10. During a regular Council meeting on September 1, 2016, the application was deemed complete pursuant to the Regulations of Connecticut State Agencies (R.C.S.A.) § 16-50/1a and the public hearing schedule was approved by the Council. (Record)

11. Pursuant to C.G.S. § 16-50m, the Council published legal notice of the date and time of the public hearing in The Bulletin on September 6, 2016. (Record)
12. Pursuant to C.G.S. § 16-50m, on September 2, 2016, the Council sent a letter to the Town of Killingly to provide notification of the scheduled public hearing and to invite the municipality to participate. (Record)
13. On September 13, 2016, the Council held a pre-hearing teleconference on procedural matters for parties and intervenors 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 site scheduled for October 6, 2016. (CSC Pre-Hearing Conference Memoranda, dated September 12, 2016 and September 13, 2016)
14. In compliance with R.C.S.A. § 16-50j-21, the Applicant installed a four-foot by six-foot sign at the entrance to the subject property on September 21, 2016. The sign presented information regarding the project and the Council's public hearing. (Cellco 5; Tr. 1, pp. 14-15)
15. The Council and its staff conducted an inspection of the proposed site on October 6, 2016, beginning at 2:00 p.m. During the field inspection, the applicant flew a 4-foot diameter red balloon at the proposed site to simulate the height of the proposed tower. Weather conditions during the field review were very favorable with winds approximately three miles per hour or less with some gusts to five or six miles per hour. During the field review, the top of the balloon reached a height of 154 feet above ground level (agl) with a string height or bottom of the balloon at 150 feet agl. 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 September 2, 2016; Tr. 1, pp. 13-14)
16. Pursuant to C.G.S. § 16-50m, the Council, after giving due notice thereof, held a public hearing on October 6, 2016, beginning with the evidentiary portion of the hearing at 3:00 p.m. and continuing with the public comment session at 7:00 p.m. at the Killingly Town Hall, Town Meeting Room, 172 Main Street, Killingly, Connecticut. (Council's Hearing Notice dated September 2, 2016; Tr. 1, p. 1; Transcript 2 – 7:00 p.m. [Tr. 2], p. 1)

#### State Agency Comment

17. Pursuant to C.G.S. § 16-50j (g), on September 2, 2016 and October 7, 2016, 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)
18. The Council received a response from the DOT's Bureau of Engineering and Construction on August 26, 2016 indicating that DOT had no comments. (DOT Comments received August 26, 2016)
19. The following agencies did not respond with comment on the application: DEEP, DPH, CEQ, PURA, OPM, DECD, DOAg, CAA, DESPP, and SHPO. (Record)

### **Municipal Consultation**

20. Cellco commenced the 90-day pre-application municipal consultation process by meeting with Killingly Town Manager Sean Hendricks on December 1, 2015. Cellco provided copies of the technical report to Mr. Hendricks at such meeting. (Cellco 1, p. 18)
21. At the request of the Town of Killingly, Cellco hosted a Public Information Meeting (PIM) at the Killingly Town Hall on June 16, 2016. At this meeting, Cellco discussed, in detail, the aspects of the proposed tower facility, the need for wireless service in Killingly, and the Council application process. Notice of the PIM was sent to abutting property owners. Notice of the PIM was also published in The Bulletin. (Cellco 1, pp. 18-19)
22. Cellco did not receive any comments or recommendations from the Town of Killingly regarding the proposed project. (Tr. 1, p. 15)
23. Cellco has designed its tower to accommodate municipal emergency services antennas if needed and is willing to provide space for such antennas. However, if the project is approved, Cellco requests that providing space for municipal emergency services antennas be a condition of approval so that such commitment would still be enforceable in the event that the Certificate for the tower facility is ever transferred to another entity. (Tr. 1, pp. 15-17)
24. However, to date, the Town of Killingly has not expressed an interest in co-locating emergency services antennas on the proposed tower. (Cellco 1, p. 8; Cellco 3, response 26; Tr. 1, p. 15)

### **Public Need for Service**

25. 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)
26. 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 Windham County, Connecticut. (Council Administrative Notice Item No. 4 – Telecommunications Act of 1996; Cellco 1, p. 6 and Tab 5)
27. 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)
28. 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)

29. 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)
30. 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. 18 – The National Broadband Plan)
31. 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)
32. In December 2009, President Barack Obama recognized cell phone towers as critical infrastructure vital to the United States. The Department of Homeland Security, in collaboration with other federal stakeholders, state, local, and tribal governments, and private sector partners, has developed the National Infrastructure Protection Plan (NIPP) to establish a framework for securing our resources and maintaining their resilience from all hazards during an event or emergency. (Council Administrative Notice Item No. 11 – Presidential Proclamation 8460, Critical Infrastructure Protection)
33. 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)
34. 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. 20 – FCC Wireless Infrastructure Report and Order; Council Admin Notice Item No. 12 – Presidential Executive Order 13616, Accelerating Broadband Infrastructure Development)

35. 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. 20 – FCC Wireless Infrastructure Report and Order)
36. 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. (Conn. Gen. Stat. §16-50aa)

#### **Existing and Proposed Wireless Services**

37. Cellco's proposed facility would provide both coverage and capacity. (Cellco 1, p. i)
38. Cellco's existing Killingly site at 1380 North Road, Killingly would be provided capacity relief from the proposed facility via its Beta sector. Cellco is experiencing gaps in wireless service in the area at its 700 MHz, 850 MHz, 1900 MHz and 2100 MHz frequencies. (Cellco 1, pp. 7-8)
39. Cellco would initially provide service over the 700 MHz frequency band at this time at the proposed site. However, the facility would be set up for 1900 MHz and 2100 MHz in the near term. Cellco would then consider providing 850 MHz service in the more distant future after 1900 MHz and 2100 MHz. (Tr. 1, pp. 41-42; Cellco 3, response 11)
40. Cellco's LTE network is designed using a 120 dB Reverse Link Operational Path Loss (RLOPL) standard. For its CDMA service, Cellco's design signal strengths for in-building and in-vehicle coverage are -75 dBm and -85 dBm, respectively. (Cellco 3, response 18)

41. For 700 MHz, Cellco’s existing signal strength in the area of the proposed facility that Cellco seeks to cover ranges from 103 dB RLOPL to 127 dB RLOPL. For 850 MHz, Cellco’s existing signal strength in the area of the proposed facility that Cellco seeks to cover ranges from -78 dBm to -107 dBm. For 2100 MHz, Cellco’s existing signal strength in the area of the proposed facility that Cellco seeks to cover ranges from 117 dB RLOPL to 139 dB RLOPL. Cellco does not currently have any coverage in the area at 1900 MHz. (Cellco 3, response 19)

42. The table below indicates Cellco’s approximate existing coverage gaps along main roads (i.e. roads with a route number) at various frequencies.

<b>Street Name</b>	<b>700 MHz Coverage Gap</b>	<b>850 MHz Coverage Gap</b>	<b>1900 MHz Coverage Gap</b>	<b>2100 MHz Coverage Gap</b>
Route 101	1.78 miles	1.51 miles	4.91 miles	4.55 miles

(Cellco 3, response 22)

43. The tables below indicate the distances that Cellco would cover along main roads in the area of its proposed facility at 150-foot and 140-foot heights for various frequencies.

<b>Street Name</b>	<b>700 MHz Coverage at 150 feet</b>	<b>700 MHz Coverage at 140 feet</b>	<b>2100 MHz Coverage at 150 feet</b>	<b>2100 MHz Coverage at 140 feet</b>
Route 101	5.14 miles	5.14 miles	4.91 miles	4.91 miles

<b>Street Name</b>	<b>850 MHz Coverage at 150 feet</b>	<b>850 MHz Coverage at 140 feet</b>	<b>1900 MHz Coverage at 150 feet</b>	<b>1900 MHz Coverage at 140 feet</b>
Route 101	5.09 miles	5.09 miles	2.93 miles	2.93 miles

(Cellco 1, p. 7; Cellco 3, response 21)

44. The table below indicates Cellco’s approximate existing coverage gaps that would be covered along secondary roads (i.e. roads without a route number) at various frequencies at 150 feet.

<b>Street Name</b>	<b>700 MHz Coverage Gap</b>	<b>850 MHz Coverage Gap</b>	<b>1900 MHz Coverage Gap</b>	<b>2100 MHz Coverage Gap</b>
Secondary Roads	2.17 miles	2.91 miles	6.43 miles	9.94 miles

(Cellco 3, response 23)

45. Cellco’s proposed facility would interact with the adjacent existing facilities identified in the following table.

Site Location	Distance and Direction from Proposed Tower	Height of Cellco’s Antenna Centerline above ground level (AGL)	Structure Type
1380 North Road, Killingly	2.8 miles north	262 feet	Tower
190 Louisa Viens Drive, Killingly	5.0 miles northwest	75 feet	Water tank
79 Putnam Pike, Killingly	3.6 miles west	108 feet	Tower
246 East Franklin Street, Killingly	4.0 miles southwest	155 feet	Tower
812 Providence Pike, Killingly	2.8 miles south	145 feet	Tower

(Cellco 1, pp. 8-9; Cellco 3, response 12)

46. This table indicates the total areas that Cellco would cover from its proposed facility for prescribed frequencies at various heights.

Antenna Height	Area Coverage with 700 MHz	Area Coverage with 850 MHz	Area Coverage with 1900 MHz	Area Coverage with 2100 MHz
150 feet	39.18 square miles	34.53 square miles	14.53 square miles	14.94 square miles
140 feet	38.29 square miles	33.78 square miles	7.17 square miles	14.69 square miles

(Cellco 1, p. 7; Cellco 3, response 21)

47. The minimum antenna centerline height for Cellco to meet its coverage objectives is 150 feet. (Cellco 3, response 14)

#### Site Selection

48. Cellco established a search ring for its Dayville facility in March 2015. The search ring was located in the vicinity of Bailey Hill Road and south of Bear Hill Road. (Cellco 1, p. 12 and Tab 8)
49. With an approximately five-mile radius of the proposed facility location, Cellco maintains six existing macro-cell facilities. However, there are no other existing towers or other sufficiently tall structures available within Cellco’s search area. (Cellco 1, Tab 8 – Site Search Summary, p. 2)
50. After determining there were no suitable structures within the search area, Cellco searched for properties suitable for tower development. Cellco investigated two parcels/areas, one of which was selected for site development. The one rejected parcel/area and reason for its rejection is as follows:

- a) **721 Bailey Hill Road, Killingly** – The owner of this parcel was not interested in leasing ground space to Cellco for a tower site.  
 (Cellco 1, Tab 8 – Site Search Summary, p. 2)

51. While it is technically possible to utilize small cells to provide the required wireless service by the proposed tower, it would be difficult to penetrate some of the more rural residential areas near the proposed facility location as it would require the installation of antennas on private property and a significant number of small cells would be required. Thus, the proposed macro-cell tower site would be the most efficient and cost effective means of enhancing wireless service in the area. (Cellco 3, response 15)

### **Facility Description**

52. The proposed site is located on an approximately 648-acre parcel at 520 Bailey Hill Road in Killingly. The parcel is owned by Tri Lakes LLC. The proposed site location is depicted on Figure 1. (Cellco 1, p. i; Tr. 1, p. 12)
53. The subject property is zoned Rural Development and is currently undeveloped except for an existing access driveway to reach a lake. (Cellco 1, p. 17; Tr. 1, p. 13)
54. The tower site is located in the northwestern portion of the property, at an elevation of approximately 799 feet above mean sea level (amsl). (Cellco 1, Tab 1, p. 4 and Sheets C-1 and C-2)
55. Land uses immediately surrounding the subject parcel include undeveloped land and low-density residential uses. (Cellco 4, Tab 1 – Site Evaluation Report, p. 4)
56. The proposed facility would consist of a 150-foot monopole within a 100-foot by 100-foot leased area. The tower would be approximately 57 inches wide at the base tapering to 20 inches wide at the top. The tower would be designed to support a minimum of four wireless carrier antenna arrays as well as municipal emergency services antennas. The tower and foundation would be designed to be expandable in height by up to 20 feet. (Cellco 1, pp. 8 and 12; Cellco 1, Tab 1 – Sheets A-2 and C-2; Cellco 3, response 2; Cellco 1, Tab 1 – Facilities and Equipment Specification, p. 6)
57. The monopole would have a grey steel finish. (Cellco 1, Tab 9 – Visibility Analysis, p. 1 and Proposed Photosimulation No. 1)
58. Cellco would install nine panel antennas and nine remote radio heads at a centerline height of 150 feet agl. The total height of the facility with antennas would be 153 feet agl. (Cellco 1, p. i; Cellco 1, Tab 1 – Sheet A-2)
59. Cellco prefers the use of a low-profile antenna platform for maintenance purposes. Cellco could utilize T-arm antenna mounts, but could not utilize flush-mounted antennas. Use of flush-mounted antennas would have a significant negative impact on wireless service in the area (e.g. an approximately 3 dB loss of service), and it would require Cellco's use of two antenna levels on the tower. A flush-mounted configuration could also further limit Cellco's ability to deploy new technologies and antenna types at this site and limit space available to other carriers in the future. (Cellco 3, response 7)
60. A 50-foot by 50-foot fenced equipment compound would be established at the base of the tower. The size of the lease area would be able to accommodate the equipment of at least four wireless carriers and municipal emergency services. Cellco would install its equipment on an elevated 12-foot by 26-foot platform\* with an ice canopy on top.

\*The platform was originally proposed as 10-foot by 20-foot, but was revised to 12-foot by 26-foot for more flexibility.

(Cellco 1, p. 12; Cellco 1, Tab 1 – Sheet A-1; Tr. 1, p. 10)



61. The platform would have an open steel grate design and would be elevated about three feet above grade to prevent snow from accumulating around its equipment. (Cellco 3, response 6; Cellco 1, Tab 1 – Sheet A-1)
62. No air conditioning units would be required because of the “open canopy” design for the equipment shelter. (Cellco 1, response 43)
63. The proposed equipment compound will be surrounded by an eight-foot high chain-link fence. While two-inch chain link mesh is a typical size and smaller mesh sizes are available, the smaller mesh sizes may not permit the installation of privacy slats. If required by the Council, Cellco is willing to include anti-climbing mesh material or an anti-climb fence design in its final fence design in the D&M Plan. (Cellco 1, Tab 1 – Sheets A-1 and A-2; Cellco 3, response 9; Tr. 1, p. 35)
64. The fenced compound would have a crushed stone surface approximately three inches thick on top of Mirafi fabric that would provide stabilization and prevent weed growth. (Cellco 1, Tab 1 – Sheet A-1; Tr. 1, p. 18)
65. No other wireless carriers have expressed an interest in co-locating on the proposed tower at this time. (Cellco 3, response 26; Tr. 1, p. 15)
66. Development of the site would not require cuts or fills because no significant grading is expected to be required to construct the facility. (Cellco 3, response 3)
67. Access to the tower site would be from an existing approximately 17-foot wide by 582-foot long gravel drive extending from Bailey Hill Road and then over a new 12-foot wide gravel access driveway for approximately 92 feet to the facility compound. (Cellco 1, p. i; Cellco 1, Tab 1 – Sheet C-2)
68. The average grade of the 674-foot long access drive is expected to be less than five percent. (Cellco 1, Tab 1 – Sheet C-2; Tr. 1, p. 18)
69. Utilities would originate at existing pole #3403 and then cross Bailey Hill Road overhead to reach a proposed utility pole south of the access drive. The utilities would then be installed underground generally following the existing and proposed access drive to reach the tower site. (Cellco 1, Tab 1 – Sheet C-2)
70. To reduce visual impacts, Cellco is willing to consider an underground trenching of the utilities to cross Bailey Hill Road, subject to the Council and the electric utility requirements. If the project is approved, the final utility connection design would be included in the Development and Management Plan (D&M Plan). (Cellco 3, response 41)
71. The nearest property boundary from the proposed tower is approximately 515 feet to the northeast (Jussaume property). (Cellco 1, Tab 1 – Sheet C-1)
72. There are approximately six residential structures within 1,000 feet of the proposed tower site. The nearest off-site residence is located at 721 Bailey Hill Road, approximately 690 feet west of the tower site (Hall residence). There are no known on-site residential structures. (Cellco 1, p. 14; Cellco 1, Tab 1 – Sheet C-1; Tr. 1, p. 13)

73. Site preparation and engineering would commence following Council approval of a D&M Plan and are expected to be completed within two to four weeks. Equipment installation is expected to take an additional four weeks after the tower and equipment shelter are installed. After the equipment installation, cell site integration and system testing is expected to require about two additional weeks. (Cellco 1, p. 21)

74. The estimated cost of the proposed facility is:

Radio Equipment	\$450,000
Tower, coax and antennas	115,000
Power systems	40,000
Equipment and platform	25,000
Misc. Costs – Site Preparation and Installation	45,000
<b>Total Estimated Costs</b>	<b>\$675,000</b>

(Cellco 1, p. 20)

#### Public Safety

75. 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)

76. The proposed facility would be in compliance with the requirements of the 911 Act and would provide Enhanced 911 services. (Cellco 1, p. 12)

77. 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 Admin. Notice No. 19 – FCC Text-to-911: Quick Facts & FAQs)

78. 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, Cellco is not aware of any PSAPs in the Killingly area. (Cellco 3, responses 34 and 35)

79. 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)

80. Pursuant to CGS § 16-50p(a)(3)(G), the safety standards and/or codes by which equipment, machinery, or technology would be used include the 2016 Connecticut State Building Code and TIA-22-G-1 “Structural Standards for Steel Antenna Towers and Antenna Support Structures.” (Cellco 3, response 33; Tr. 1, p. 10)
81. 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 which adopts the 2012 International Building Code. (Cellco 3, response 33; Tr. 1, p. 10)
82. 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. 19; Cellco 3, response 10)
83. Cellco’s equipment compound would have a locked gate. Cellco’s equipment, battery system, and backup generator would be located inside secure cabinets. (Cellco 3, response 8)
84. Cellco would investigate a suitable amount of final site clearing around the proposed compound to reduce fire risk. (Tr. 1, p. 24-25)
85. The tower setback radius would remain within the boundaries of the subject property. A tower design yield point would not be necessary. (Cellco 1, Tab 1 – Sheet C-2; Tr. 1, p. 17)
86. The cumulative worst-case maximum power density from the radio frequency emissions from the operation of all approved antennas and Cellco’s proposed antennas is 19.8% of the standard for the General Public/Uncontrolled Maximum Permissible Exposure, as adopted by the FCC, at the base of the proposed tower. This calculation was based on methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997) that assumes all antennas in a sector would be pointed at the base of the tower and all channels would be operating simultaneously, which creates the highest possible power density levels. Under normal operation, the antennas would be oriented outward, directing radio frequency emissions away from the tower, thus resulting in significantly lower power density levels in areas around the tower. (Cellco 1, Tab 14; Council Administrative Notice Item No. 2 – FCC OET Bulletin No. 65)

#### **Emergency Backup Power**

87. 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. 46 – Final Report of the Two Storm Panel)
88. In response to the findings and recommendations of the Panel, and in accordance with C.G.S. §16-50//, the Council, in consultation and coordination with the Department of Energy and Environmental Protection, the Department of Emergency Services and Public Protection and the Public Utilities Regulatory Authority (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. 24 – Council Docket No. 432)

89. The Council reached the following conclusions in the study:
- a) “Sharing a backup source is feasible for CMRS 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. 24 – Council Docket No. 432)
90. For backup power, Cellco would primarily rely on a battery backup system that would be charged by commercial power under normal conditions. Cellco also proposes a 15-kilowatt diesel backup generator for its own use. During an interruption in commercial power service, the generator would provide power to Cellco’s radio equipment and to keep battery backup system at full charge. The proposed generator would have a 54-gallon diesel fuel tank, and under normal load conditions, the generator could run for about 60 to 65 hours before refueling would be required. (Cellco 1, p. i; Cellco 3, responses 27, 28, 30, 31)
91. The proposed backup generator would have a double-walled fuel tank with remote alarm to protect against fuel leakage. Also a spill prevention kit would be maintained within the fenced compound near the generator unit. (Cellco 3, response 29)
92. With no air conditioning units proposed, the only noise generating equipment would be the backup generator. 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. (Cellco 3, response 43; R.C.S.A. §22a-69-1.8)
93. The backup generator would operate for testing purposes once every two weeks for a period of approximately 30 minutes. The generator would be typically exercised during daytime hours unless otherwise directed by the Council. (Cellco 3, response 32)

#### **Environmental Considerations**

94. No historic properties would be affected by the proposed facility. (Cellco 3, response 39)
95. The site is located in the Federal Emergency Management Agency Zone X (unshaded), an area outside of the 500-year flood zone. (Cellco 1, p. 18 and Tab 16; Cellco 3, response 5)
96. The proposed facility would not be located within a DEEP-designated Aquifer Protection Area (APA). The nearest APA from the proposed tower site is the Brooklyn Wellfield located approximately three miles to the southwest. (Cellco 3, response 40)
97. The nearest on-site wetland/watercourse to the proposed tower site is associated with a large pond located 425 feet to the southeast. The nearest off-site wetland is Wetland 1, located approximately 500 feet southwest of the proposed facility. (Tr. 1, p. 9; Cellco 1, Tab 15 – Wetland Delineation Field Form, p. 2)
98. Wetland 1 is a non-tidal, seasonally saturated palustrine wetland located on the abutting 688 Bailey Hill Road property (Opperman property) to the southwest of the proposed site. (Cellco 1, Tab 1 – Sheet C-1; Cellco 1, Tab 15 – Wetland Inspection Map and Wetland Delineation Field Form, p. 1)
99. Due to the distance separating the proposed development from these two wetland resource areas, no likely adverse impact to wetlands or watercourses is expected to result from the proposed project. (Cellco 1, Tab 15 – Wetland Delineation Field Form, p. 2)

100. The northern spring salamander is a State-designated Threatened Species. However, no wetland resources that have any spring-type hydraulic characteristics that could potentially support the spring salamander were identified in the vicinity of the project. (Tr. 1, p. 29; Council Administrative Notice Item No. 35)
101. No vernal pool habitat was observed during the field survey. (Cellco 1, Tab 15 – Wetland Delineation Field Form, p. 2)
102. No negative impacts to State-listed species are expected to result from the proposed project. (Cellco 1, Tab 11 – DEEP Letter dated May 19, 2016)
103. The northern long-eared bat (NLEB), a federally-listed Threatened species and State-listed Endangered species, may occur in Killingly. (Cellco 1, p. 15; Council Administrative Notice Item No. 35)
104. The proposed project would not require the removal of any trees six inches or greater in diameter. (Tr. 1, p. 17)
105. There are no known NLEB maternity roost trees in Connecticut. The nearest NLEB habitat resource to the proposed project is located in East Granby, approximately 48 miles to the northwest. (Cellco 1, Tab 10 – NLEB Streamlined Consultation, p. 2)
106. The proposed facility is not likely to adversely impact the NLEB. (Cellco 1, Tab 10 – NLEB Streamlined Consultation, p. 2)
107. The small whorled pogonia is a federally-listed Threatened Species and a State-designated Endangered Species. (Cellco 1, Tab 10 – U.S. Fish and Wildlife Service Letter dated May 3, 2016, p. 3; Cellco 1, Tab 10 – NLEB Streamlined Consultation, p. 2)
108. No suitable habitat supportive of the small whorled pogonia occurs in the vicinity of the proposed facility. Thus, the proposed project is not expected to result in an adverse impact to the small whorled pogonia. (Cellco 1, Tab 10 – NLEB Streamlined Consultation, p. 2)
109. The eastern hognose snake (EHS) is a State-designated Species of Special Concern. While the EHS was not observed during Cellco’s site investigation, the site has the potential to support the EHS. Accordingly, Cellco proposes protective measures including but not limited to installing a restrictive barrier around the main compound construction zone and also providing contractor awareness training. For example, the contractors would be trained to take special precautions when utilizing the existing access drive because the EHS can bask in the sun in an open area. (Tr. 1, pp. 26-27; Council Administrative Notice Item No. 35)
110. The proposed facility is 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 Bafflin Sanctuary Complex, approximately 6.2 miles northwest of the proposed tower site. (Cellco 1, Tab 12, p. 2)
111. The proposed facility would comply with the United States Fish and Wildlife Service guidelines for minimizing the potential for telecommunications towers to impact bird species. (Cellco 1, Tab 12, p. 9)

112. The nearest Connecticut Critical Habitat to the proposed facility is a palustrine forested acidic Atlantic white cedar swamp associated with Middle Reservoir, located approximately 0.62 miles to the northwest. Based on the distance separating this resource from the proposed facility, no adverse impacts are anticipated. (Cellco 1, Tab 12, p. 2)
113. Cellco does not anticipate the need for blasting at the proposed site. However, if the project is approved, a full geotechnical evaluation would be performed to determine for certain if blasting would be required. (Cellco 3, response 4)

### Visibility

114. The proposed tower would be visible year-round from approximately 23.5 acres within a two-mile radius\* of the site (refer to Figure 11). The tower would be seasonally visible from approximately 238 acres within a two-mile radius of the site.

\*A two-mile radius consists of approximately 8,042 acres.

(Cellco 1, Tab 9 – Visibility Analysis Viewshed Map)

115. Approximately one or two residential properties could have year-round views of the proposed tower. These properties are located along Bailey Hill Road. (Cellco 3, response 36)
116. Generally, the vast majority of the year-round visibility area would occur on portions of the 648-acre subject parcel, along portions of the driveway, and extending out from the cell site down to Bailey Hill Road. (Cellco 3, response 37)
117. Approximately two or three residential properties could have seasonal (or “leaf off”) views of the proposed tower. These properties are located along Bailey Hill Road. (Cellco 3, response 36)
118. Residential neighbors in the immediate vicinity of the subject property have substantial amounts of mature trees and other vegetation that would serve to obstruct the site and the proposed facility. Seasonal views of the proposed facility would be through intervening tree trunks and branches. (Cellco 1, Tab 9, p. 6)
119. Pursuant to CGS § 16-50p(a)(3)(F), the nearest school is Killingly Central School approximately four miles northwest of the proposed facility. The nearest commercial child day care facility is Susan Whites Day Care approximately 1.9 miles northwest of the proposed facility. (Cellco 1, Tab 9 – Visibility Analysis, p. 6)

120. Visibility of the proposed tower 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
Bailey Hill Road	1	Year-round – 47 feet	0.09 miles east
Bailey Hill Road	2	Not visible	0.17 miles northeast
Bailey Hill Village	3	Not visible	2.16 miles northeast
Mashentuck Road at Cook Hill	4	Not visible	2.04 miles northeast
Mountain View Landing	5	Not visible	1.60 miles southeast
Slater Hill Road	6	Not visible	0.91 miles southeast
Bailey Hill Road	7	Not visible	1.03 miles southeast
Bailey Hill Road	8	Not visible	1.08 miles southeast
Bailey Hill Road	9	Not visible	1.10 miles southeast
Bailey Hill Road	10	Not visible	1.23 miles southeast
Hartford Pike	11	Not visible	1.20 miles southeast
Hartford Pike	12	Not visible	1.14 miles southeast
Pink Knolls Drive	13	Not visible	0.79 miles southwest
Quinns Hill Road	14	Not visible	1.97 miles southeast
Bear Hill Road	15	Not visible	1.01 miles southeast
Bear Hill Road	16	Not visible	0.77 miles southeast
Bear Hill Road	17	Not visible	0.20 miles southeast

\*See Figure 17.

(Cellco 1, Tab 9 – Visibility Analysis)

121. There are no Connecticut blue-blaze or other designated hiking trails located within the two-mile study area. (Cellco 1, Tab 9 – Visibility Analysis, p. 3)

122. There are no state-designated scenic roads located within the two-mile study area. (Tr. 1, p. 21; Cellco 1, Tab 9 – Visibility Analysis, p. 3)

123. Some limited year-round visibility of the top of the proposed tower may be possible looking through the trees as viewed from Mashentuck Mountain. (Tr. 1, pp. 21-22; Cellco 1, Tab 9 – Visibility Analysis)

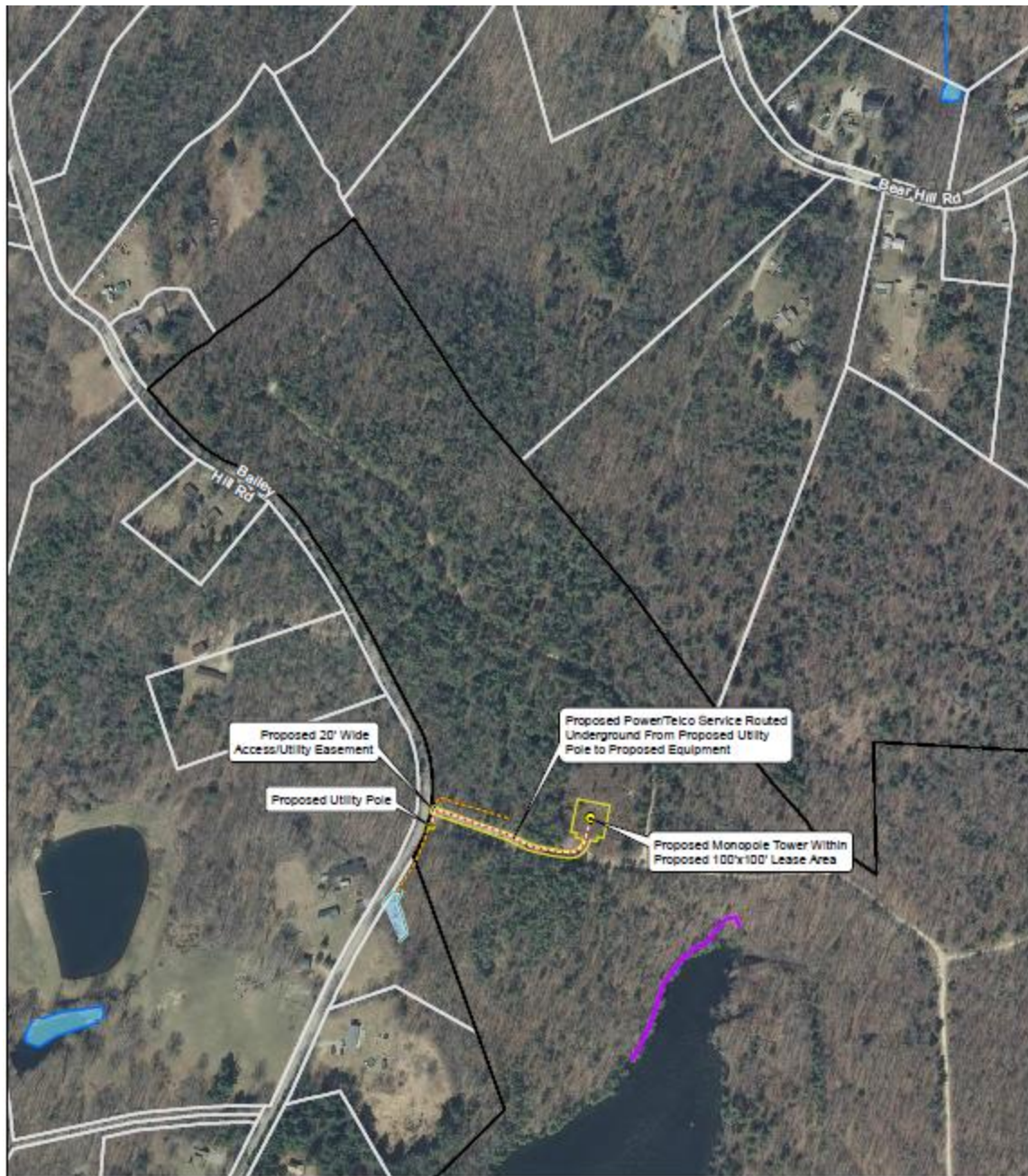
124. The proposed facility would be located within The Last Green Valley National Heritage Area (LGVNHA). Based on the relatively small physical scale of the project area and associated limited visibility of the proposed tower, this facility is not expected to have a material effect on resources within the LGVNHA. (Cellco 3, response 38)

125. Regarding possible stealth tower designs, concealment considerations do not appear warranted due to the limited visibility of the proposed tower. (Cellco 3, response 42)

126. No landscaping is proposed because of the existing wooded vegetation surrounding the site. (Tr. 1, p. 17)



**Figure 1 – Aerial Map**



**Legend**

- |   |                                |
|---|--------------------------------|
| ⊙ Proposed Monopole Tower                         | ~ Watercourse (CTDEEP)         |
| ⊕ Proposed Utility Pole                           | ☑ Open Water (CTDEEP)          |
| □ Proposed Facility Layout                        | — Wetland Boundary             |
| ⋯ Proposed Power/Telco Service Routed Underground | ▬ Dry Drainage Swale           |
| ⬜ Subject Property                                | — Field Confirmed Edge of Pond |
| ⬜ Approximate Parcel Boundary (CTDEEP GIS)        | ☑ Wetland Area                 |

**Site Schematic**

Proposed Wireless  
 Telecommunications Facility  
 Dayville CT  
 520 Bailey Hill Road  
 Killingly, Connecticut

Map Notes:  
 Aerial Map Source: 2010 Aerial Photograph (CTDEEP)  
 Map Scale: 1 inch = 400 feet  
 Map Date: May 2016

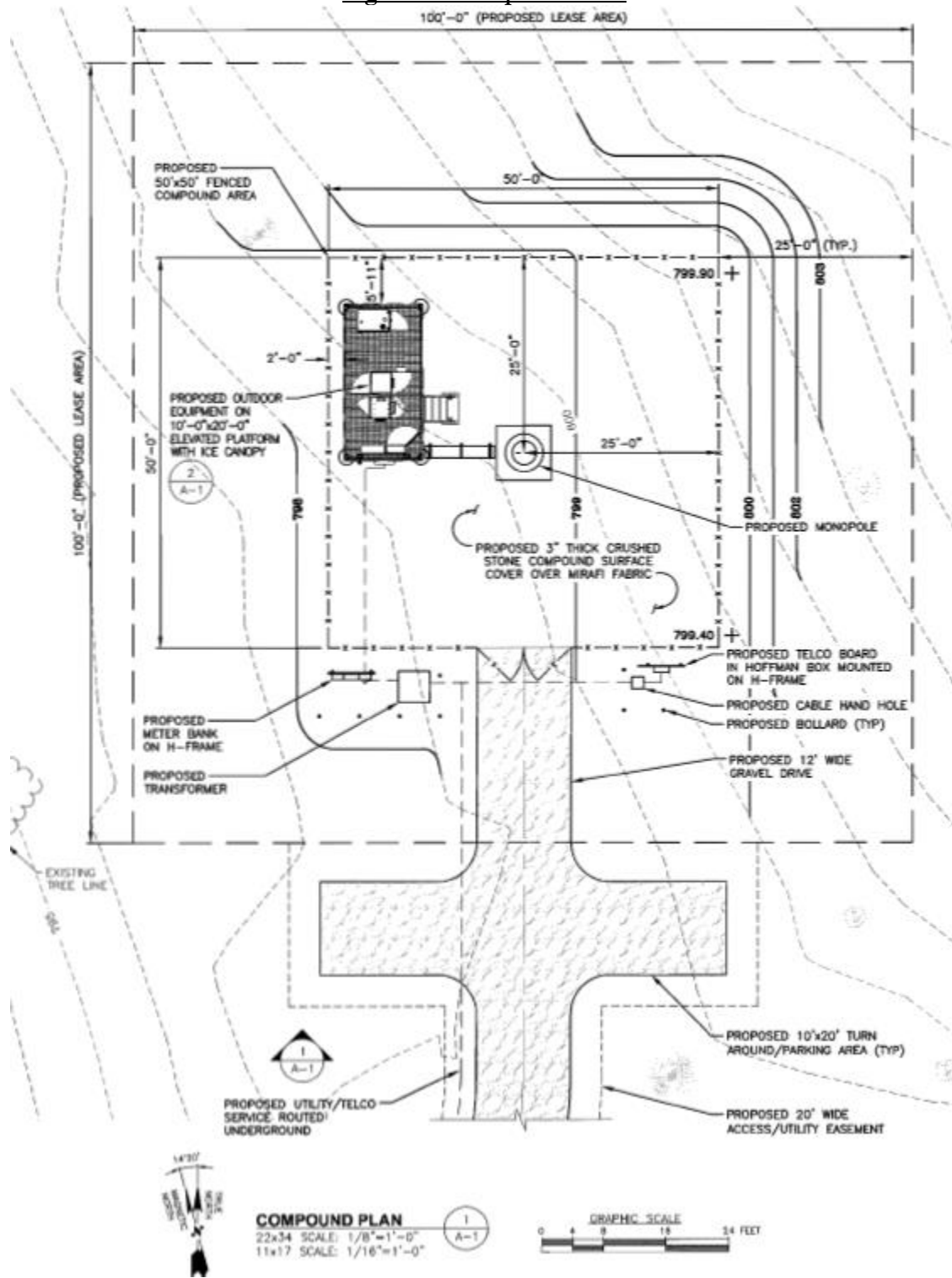


(Cellco 1, p. iii, Site Schematic)

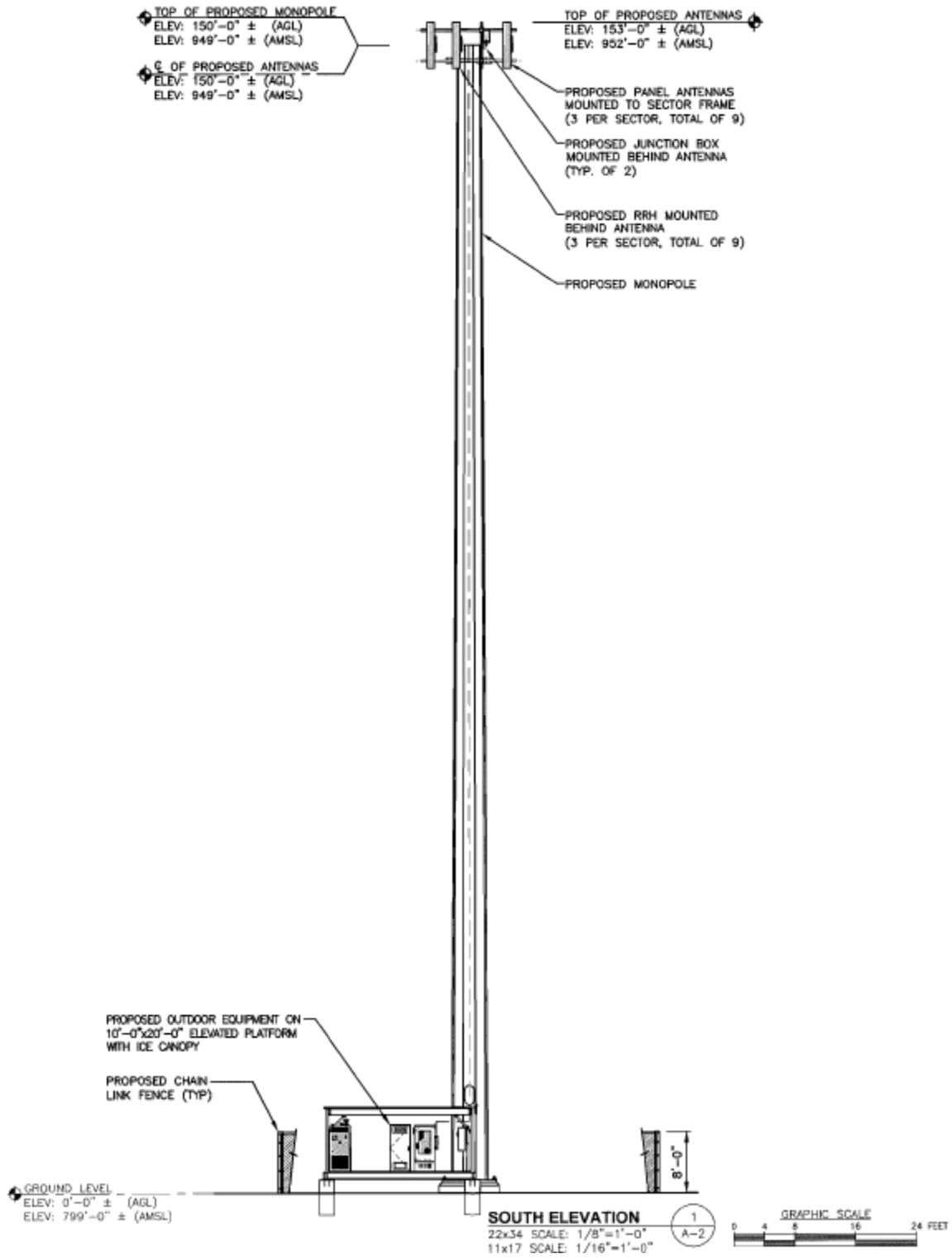




**Figure 3 – Compound Plan**



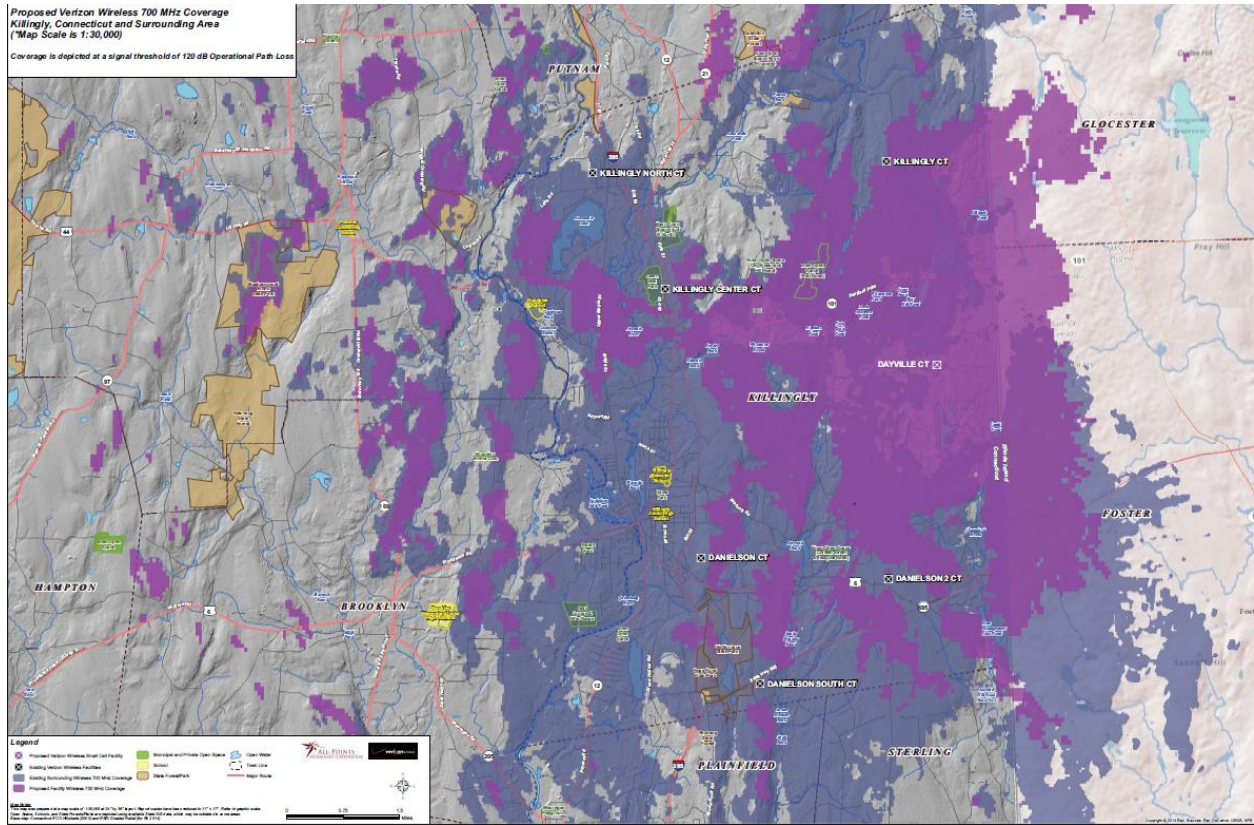
**Figure 4 – Tower Profile Drawing**



(Cellco 1, Tab 1 – Sheet A-2)



**Figure 6 – Proposed 700 MHz Coverage at 150 feet**

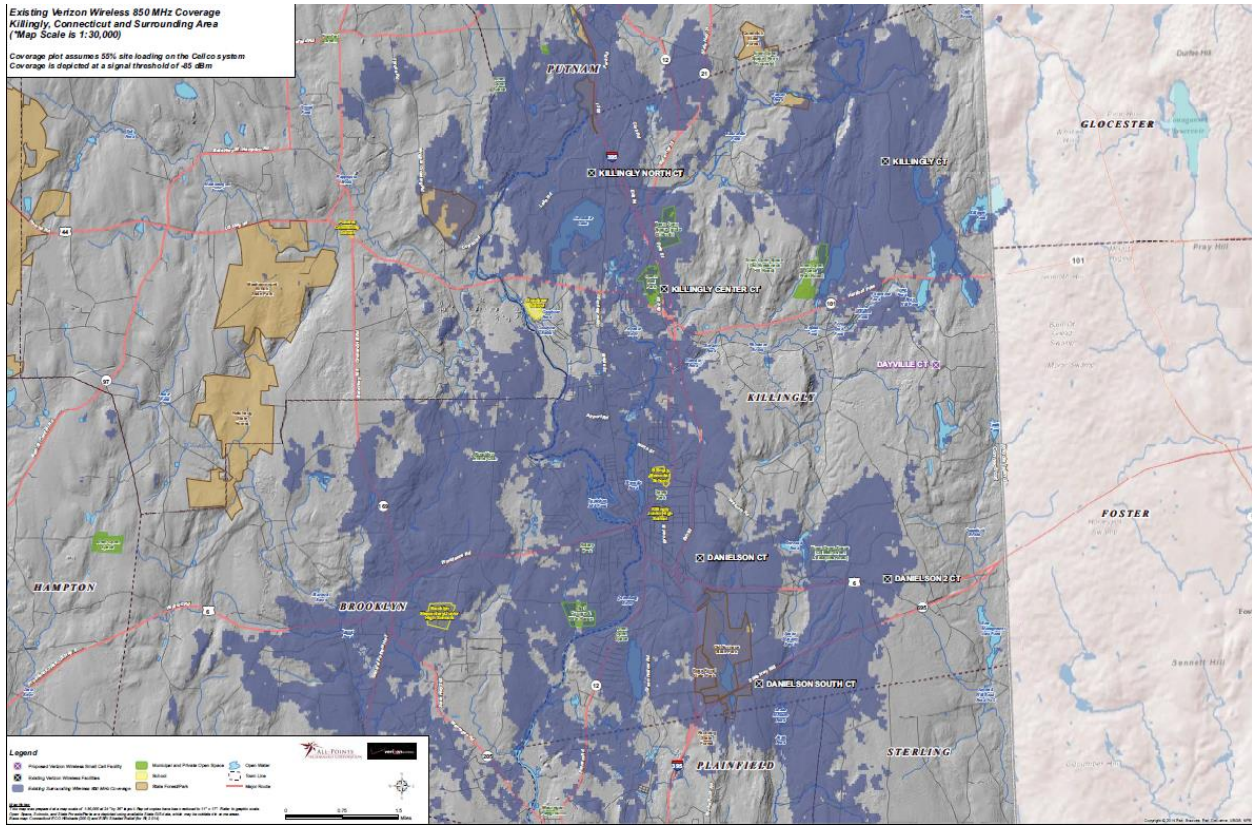


\*Cellco is proposing a macro-cell facility, not a “small cell” facility. (Tr. 1, pp. 23-24; Cellco 1, Tab 6)





**Figure 8 – Existing 850 MHz Coverage**



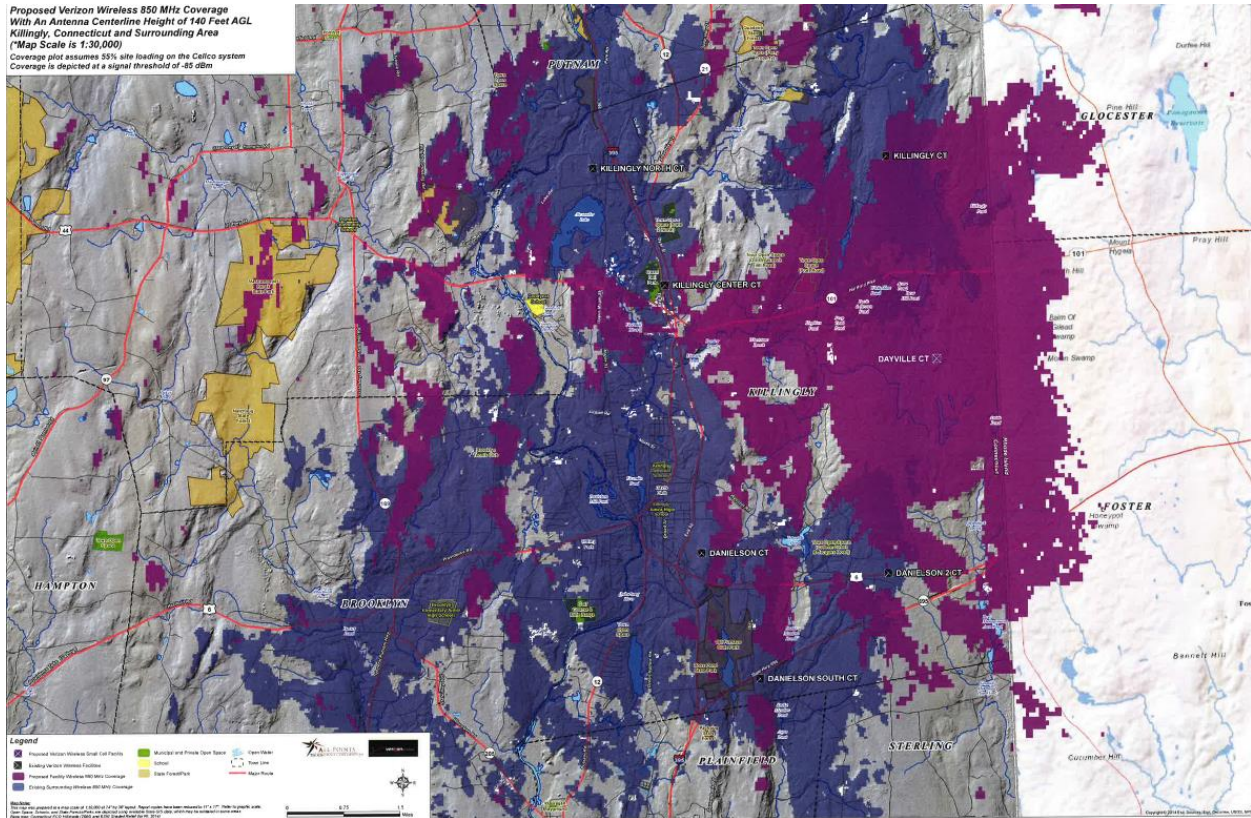
(Celco 1, Tab 6)





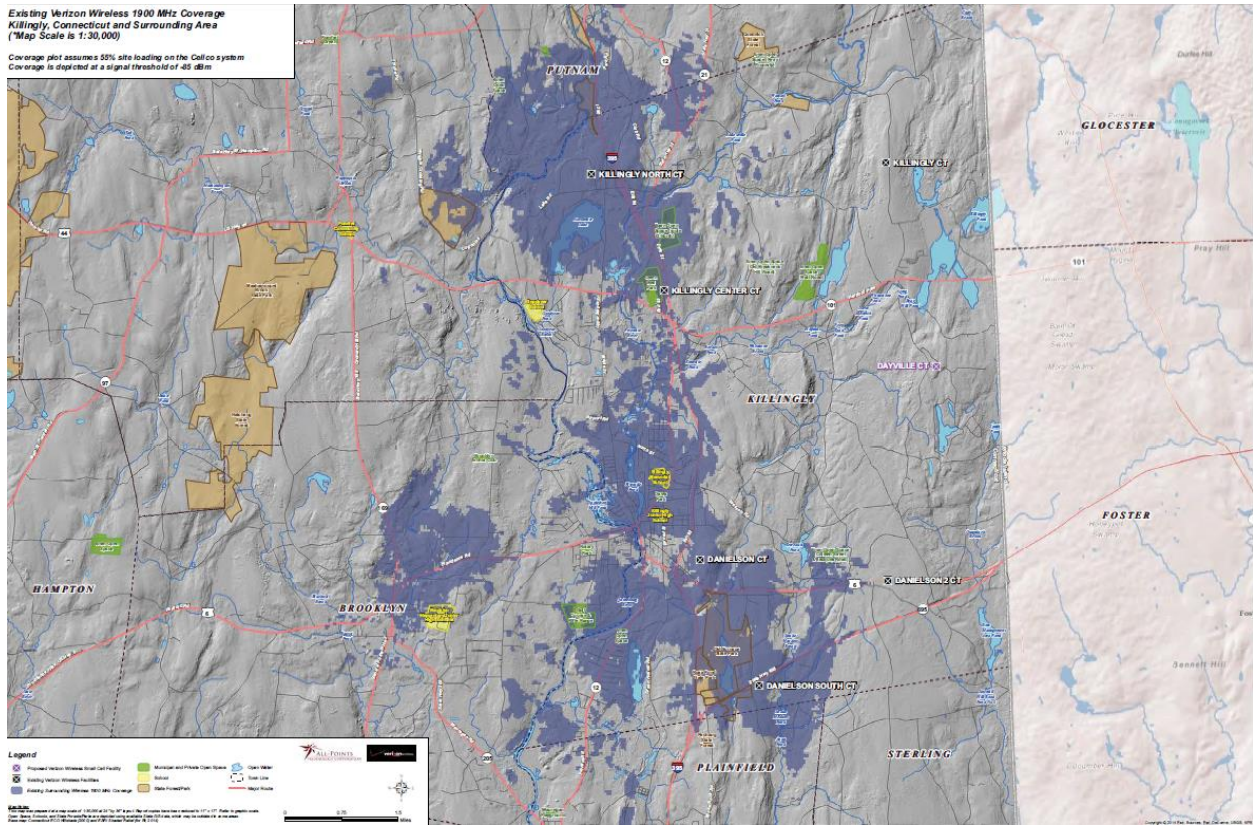


**Figure 10 – 850 MHz Coverage at 140 feet**



(Celco 3, response 17, Attachment 2)

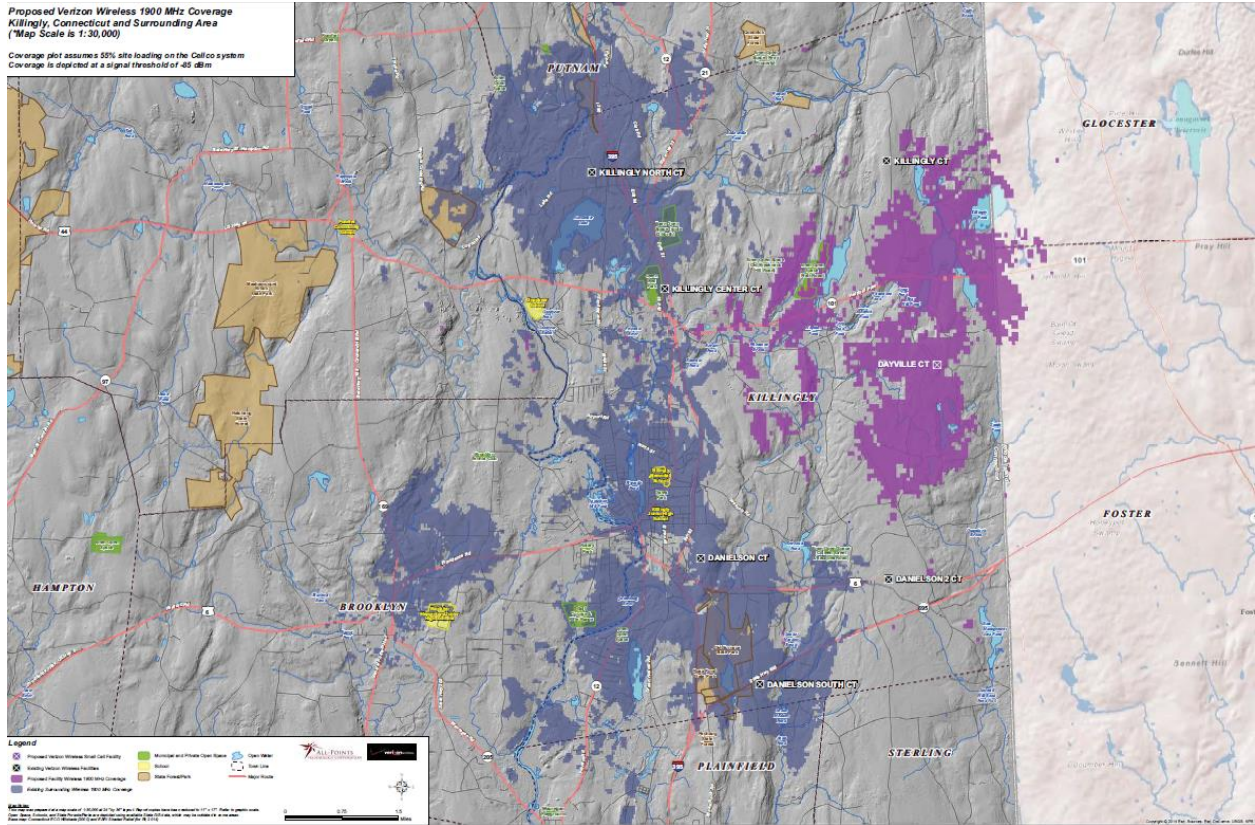
**Figure 11 – Existing 1900 MHz Coverage**



(Celco 1, Tab 6)



**Figure 12 – Proposed 1900 MHz Coverage at 150 feet**



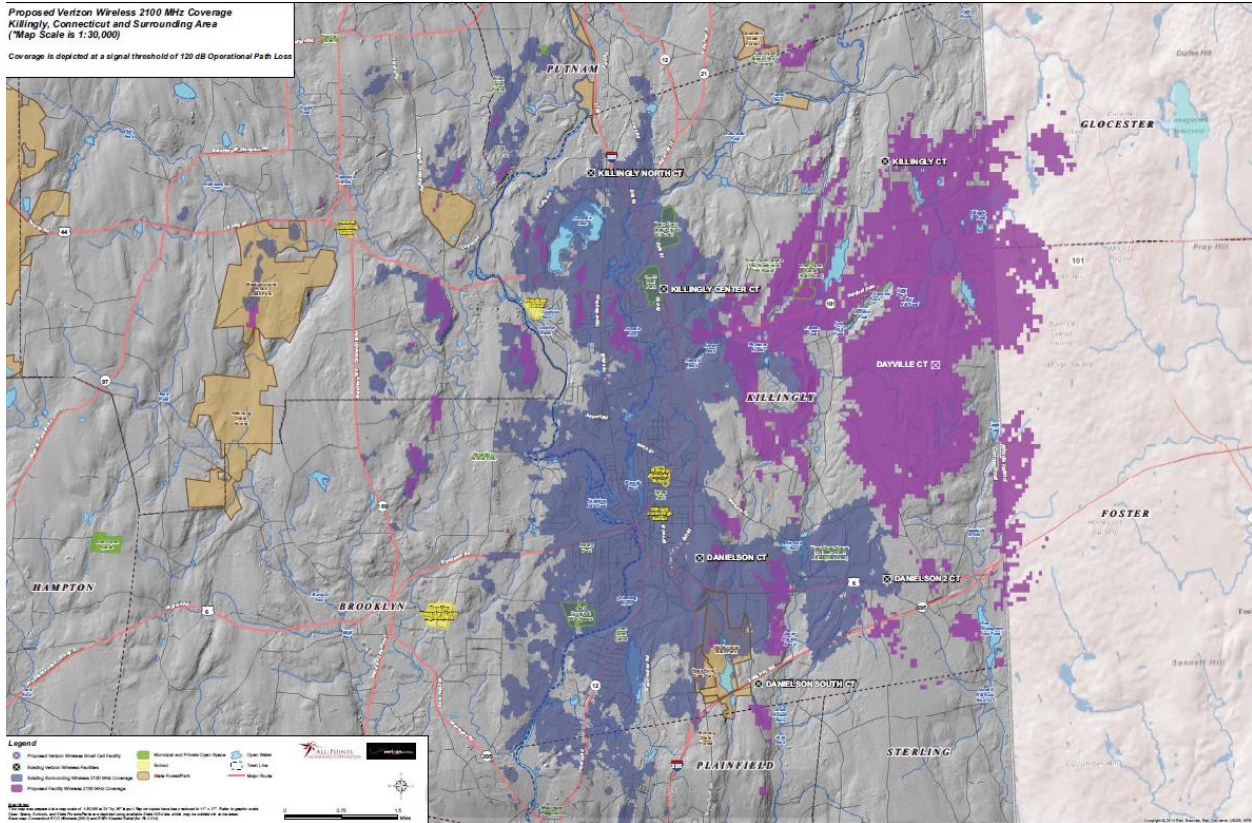
(Cellco 1, Tab 6)







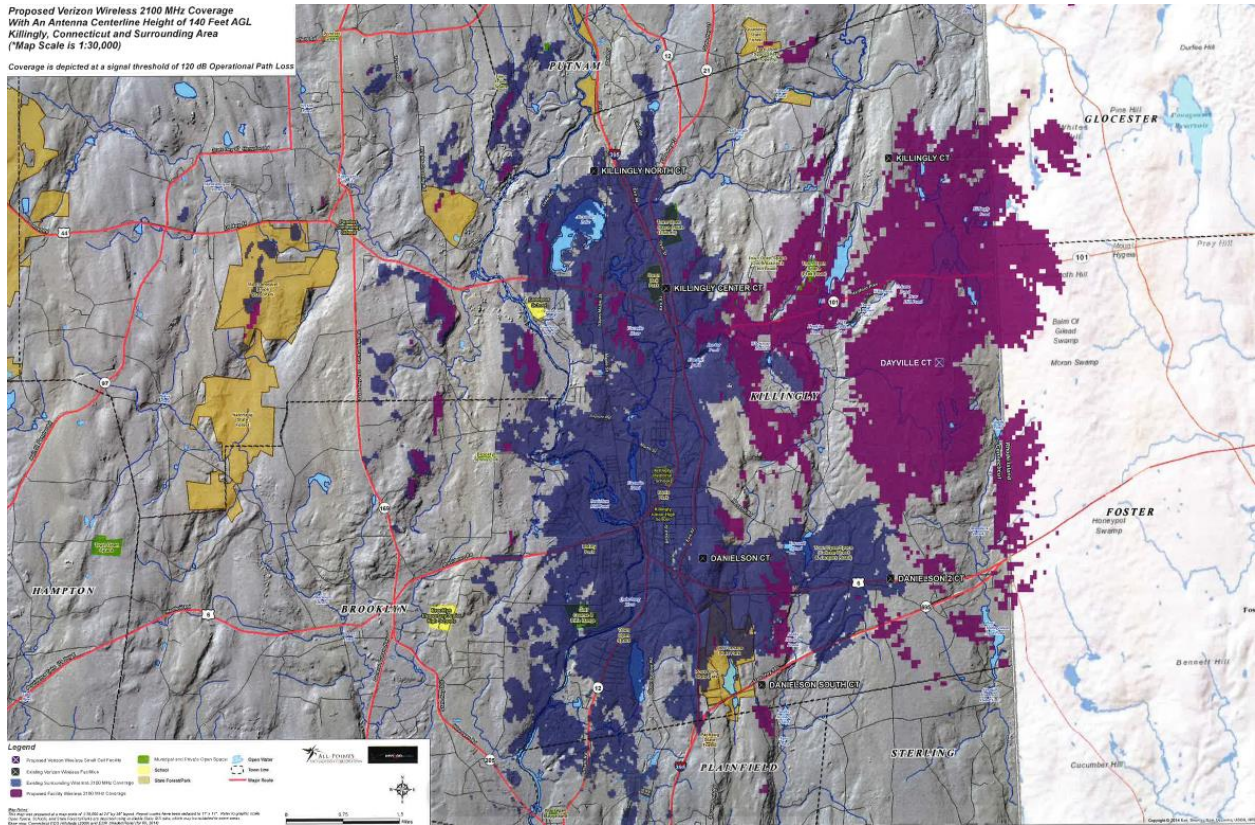
**Figure 15 – Proposed 2100 MHz Coverage at 150 feet**



(Cellco 1, Tab 6)



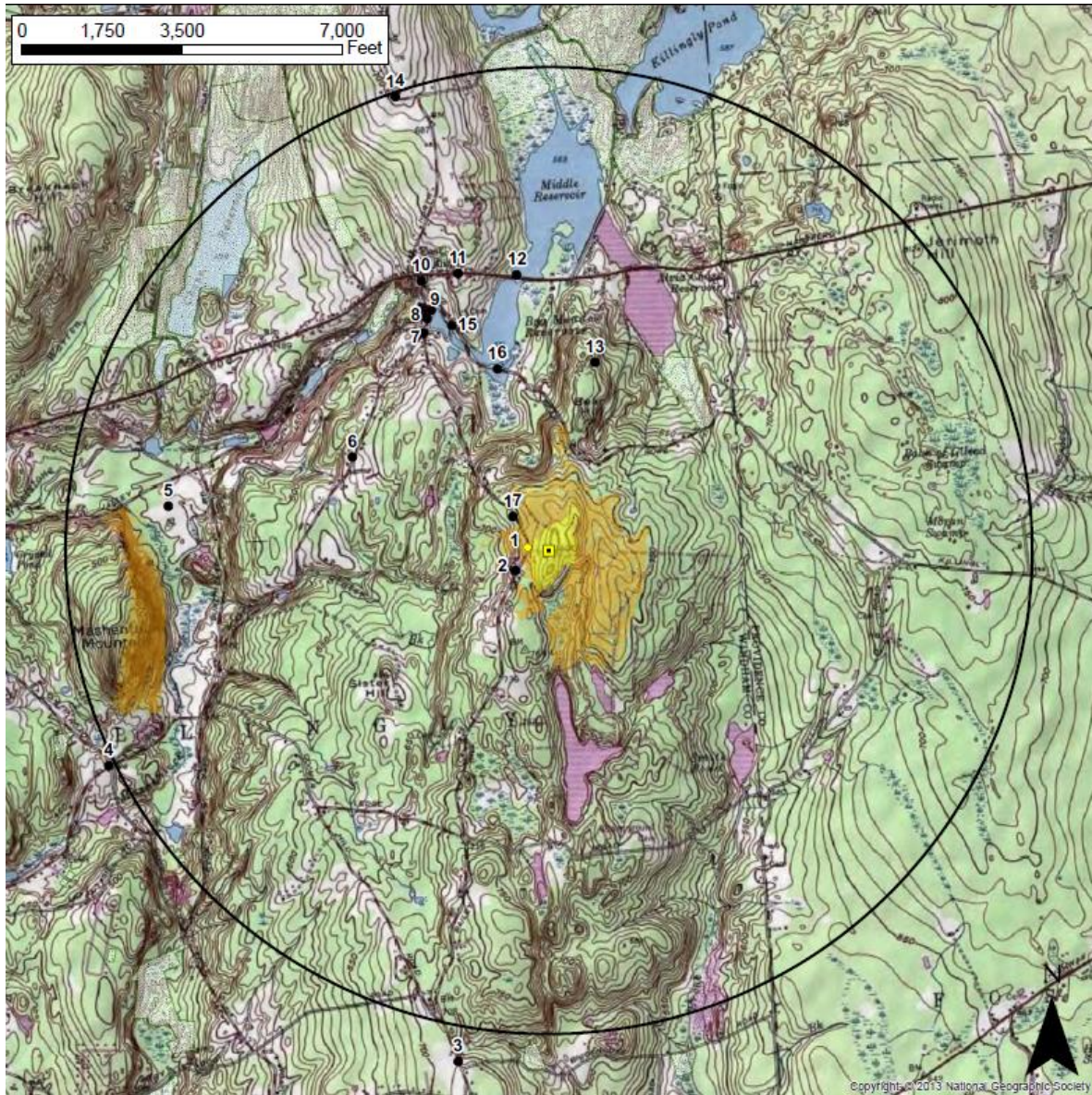
**Figure 16 – 2100 MHz Coverage at 140 feet**











(Cellco 3, response 17, attachment 2)



**Figure 17 – Visibility Analysis**



**Legend**

-  Proposed Tower
- Photo Locations**
-  Not Visible
-  Year-round Views
-  Predicted Seasonal Visibility (238 Acres)
-  Predicted Year-Round Visibility (23.5 Acres)
-  Towns
-  2-Mile Study Area
-  Open Space

(Cellco 1, Tab 9 – Viewshed Map)