

<p>DOCKET NO. 453 – American Tower Corporation and New Cingular Wireless PCS, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility located at Manchester Tax Assessor Map 133, Block 3700, Lot 701, 701 Lydall Street, Manchester, Connecticut.</p>	<p>} } }</p>	<p>Connecticut Siting Council April 16, 2015</p>
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Findings of Fact

Introduction

1. American Tower Corp. (ATC) and New Cingular Wireless PCS, LLC (AT&T), in accordance with provisions of Connecticut General Statutes (CGS) § 16-50g, et seq., applied to the Connecticut Siting Council (Council) on November 4, 2014 for the construction, maintenance, and operation of a telecommunications facility, which would include a 104-foot monopole tower, at 701 Lydall Street in the Town of Manchester, Connecticut. (ATC/AT&T 1, p. 1)
2. ATC is a Massachusetts corporation with offices located at 10 Presidential Way, Woburn, Massachusetts. It owns and operates numerous facilities in Connecticut. ATC has a lease agreement with the property owner to develop a wireless telecommunications facility at the proposed site and would be the certificate holder. (ATC/AT&T 1, p. 2)
3. AT&T is a Delaware limited liability company with an office at 500 Enterprise Drive, Rocky Hill, Connecticut. It is licensed by the Federal Communications Commission (FCC) to construct and operate a personal wireless services system within the meaning of CGS Section 16-50i(a)(6). (ATC/AT&T 1, pp. 2-3)
4. The parties in this proceeding are the co-applicants. State Representative Kelly Luxenberg and State Senator Steve Cassano are intervenors. (Transcript, January 20, 2015, 3:00 p.m. [Tr. 1], pp. 4-6)
5. The purpose of the proposed facility would be to enable AT&T and other wireless carriers to provide reliable wireless services to an area in the vicinity of Vernon Street, Lydall Street, Meadowbrook Drive, State Highway 85 (Lake Street) and other local roads and homes in the surrounding northeast area of Manchester as well as the adjacent communities of Bolton and Vernon. (ATC/AT&T 1, p. 1; Tab 1 p.10)
6. Pursuant to CGS § 16-50(b), the applicants published public notice of their intent to submit this application on October 30 and November 1, 2014 in The Journal Inquirer, a publication of wide circulation in the Manchester area. (ATC/AT&T 1, p. 4; ATC/AT&T 2 – Publisher’s Affidavits of Publication dated November 10, 2014)
7. Pursuant to CGS § 16-50(b), the applicants sent notices of their intent to file an application with the Council to each person appearing of record as an owner of property abutting the property on which the proposed facility is located on October 28, 2014. (ATC/AT&T 1, p. 4; Attachment 11)
8. The applicants received certified mail receipts from all but two abutters to whom notice was sent. A second notice was sent to these two abutters via first class mail. (ATC/AT&T 4, A1)

9. Pursuant to CGS § 16-50/(b) on November 3, 2014, the applicants provided copies of their application to all federal, state and local officials and agencies listed therein; including the towns of Bolton and Vernon, which are both within 2,500 feet of the proposed facility. (ATC/AT&T 1, p. 18 and Attachment 12; ATC/AT&T 3)

Council Procedures

10. Upon receipt of the application, the Council sent letters to the Towns of Manchester, Bolton and Vernon on November 4, 2014 as notification that the application was received and requested location preferences in accordance with C.G.S. §16-50gg. (record)
11. The Council published legal notice of the date and time of the public hearing in the Journal Inquirer on December 16, 2014 in accordance with C.G.S. §16-50m. (record)
12. Pursuant to C.G.S. § 16-50m, on December 12, 2014, the Council sent letters to the Towns of Manchester, Bolton, and Vernon to provide notification of the scheduled public hearing and to invite the municipalities to participate. (record)
13. In accordance with C.G.S. §16-50m, the Council published legal notice of the date and time of its public hearing on this proceeding in the Manchester Journal Inquirer on December 16, 2014. (Transcript, January 20, 2015, 7:00 p.m. [Tr. 2], p. 106; Record)
14. On January 3, 2015, the applicants posted a sign at the entrance of the proposed site on the host property giving the date of the public hearing and contact information for the Council, meeting the requirements of the Regulation of Connecticut State Agencies (RCSA). §16-50j-21. (ATC/AT&T 6)
15. The Council and its staff, together with representatives of the applicants and the intervenors and the public, conducted an inspection of the proposed site on January 20, 2015 beginning at approximately 2:00 p.m. (Record; Tr. 2, p. 106)
16. During the field inspection, the applicant tethered a red balloon at the proposed tower location at 104 feet to simulate the height of the proposed tower. Weather conditions were conducive for good visibility and moderate winds affected optimal balloon float. The balloon was aloft during the prescribed times (7:00 a.m. to 4:00 p.m.) for the convenience of the public. (Council's Hearing Procedure Memo dated December 18, 2014; March 3, 2015 Transcript (Tr. 3), p. 147 ff.)
17. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public hearing on January 20, 2015, with the evidentiary portion of the hearing at 3:00 p.m. and continuing with the public comment session at 7:00 p.m. in the Hearing Room of the Lincoln Center, 494 Main Street in Manchester, Connecticut. (Council's Hearing Notice dated February 6, 2004; Tr. 1, p. 2; Transcript 2 – 7:00 p.m. [Tr. 2], p. 3) (Tr. 1, p. 1 ff.)
18. The public evidentiary hearing was continued on March 3, 2015 beginning at 1:01 p.m. at the Council's offices in New Britain, Connecticut. (Tr. 3, p. 142 ff.)

State Agency Comment

19. Pursuant to C.G.S. § 16-50j (g), on December 12, 2014 and March 4, 2015, the Council solicited written comments regarding the proposed facility from the following State agencies: Department of Energy and Environmental Protection (DEEP); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Agriculture (DOAg); Department of Transportation (DOT); Department of Emergency Management and Public Protection (DESPP); Connecticut Airport Authority (CAA); and the State Historic Preservation Office (SHPO). (Record)
20. DOT responded to the Council's solicitation with no comments. (DOT Letter of November 26, 2014)
21. DPH responded to the Council's solicitation with the observation that the proposed site is located within a public water supply watershed - Lydall Reservoir of the Manchester Water Department. (See Finding of Fact No. 86)(DPH Letter dated December 30, 2014)
22. No Comments were submitted by DEEP; CEQ; PURA; OPM; DECD; DOAg; DESPP; CAA and SHPO. (Record)

Municipal Consultation

23. On May 30, 2014, the applicants sent a technical report to the towns of Manchester, Bolton, and Vernon. As a follow up to the submission of the technical report, representatives of the applicants spoke with the Manchester town planner, who requested additional materials related to the visibility of the proposed tower. The Applicants provided a detailed visibility analysis to the three towns on July 17, 2014. (ATC/AT&T 1, p. 19)
24. Representatives of the applicants made a presentation to the Manchester Planning and Zoning Commission at its meeting of August 4, 2014. They provided an overview of AT&T's coverage needs and details of the proposed facility. The Planning and Zoning Commission did not offer any comments, suggestions or alternative sites. (ATC/AT&T 1, p. 19)
25. The applicants did not receive any comments from the Towns of Bolton and Vernon. (ATC/AT&T 1, p. 19)
26. The applicants followed up their presentation with a phone call to the Manchester town planner, who confirmed that the town did not have any formal comments on the proposed facility nor an interest in sharing the tower. (ATC/AT&T 1, p. 19; Tr. 1, p. 21)

Public Need for Service

27. In 1996, the United States Congress recognized a nationwide need for high quality wireless telecommunications services in part through the adoption of the Federal Telecommunications Act (Act). A core purpose of the Act was to "provide for a competitive, deregulatory national policy framework designed to accelerate rapidly private sector deployment of advanced telecommunications and information technologies to all Americans." (ATC/AT&T 1, p. 4; 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. (Council Administrative Notice Item No. 4 - Telecommunications Act of 1996)

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. 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 regulatory 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)
33. 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 19 - Connecting America: The National Broadband Plan)
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 (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 No. 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 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 Administrative Notice Item No. 22 – FCC Wireless Infrastructure Report and Order; Council Administrative Notice Item No. 12 – Presidential Order No. 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. 18, FCC Public Notice – Wireless Telecommunications Bureau offers guidance on interpretation of Section 6409(a) of the 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. (Conn. Gen. Stat. §16-50aa)

Public Safety

39. The Wireless Communications and Public Safety Act of 1999 (911 Act) was enacted by Congress to promote and enhance public safety by making 9-1-1 the universal emergency assistance number, by furthering deployment of wireless 9-1-1 capabilities, and by encouraging construction and operation of seamless ubiquitous and reliable networks for wireless services. (Council Administrative Notice Item No. 6, 911 Act)
40. Following the enactment of the 911 Act, the FCC mandated wireless carriers to provide Enhanced 911 services (E911) to allow public safety dispatchers to determine a wireless caller's geographical location within several hundred feet. (ATC/AT&T 1,p. 9)

41. On May 15, 2014, AT&T along with other wireless carriers voluntarily began offering text-to-911 services nationwide in areas where municipal Public Safety Answering Points (PSAPs) 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. AT&T is not aware this functionality is available in the area of the proposed site. (ATC/AT&T 4, A18; Council Administrative Notice Item No. 21, FCC Text-to-911: Quick Facts & FAQs)
42. AT&T's equipment at the proposed facility would support E911 and text-to-911 service. (ATC/AT&T 1, p. 9; ATC/AT&T 4, A18)
43. Pursuant to the Warning, Alert and Response Network Act of 2006, the FCC has established a Personal Localized Alerting Network (PLAN) that requires wireless communication providers to issue text message alerts from Federal bodies including the President of the United States. PLAN would allow the public to receive e-mails and text messages on mobile devices based on geographic location. The proposed facility would enable the public to receive e-mails and text messages from the CT Alert Emergency Notification System. (ATC/AT&T 1, pp. 9-10; Council Administrative Notice Item No. 21 – Department of Emergency Services and Public Protection, Division of Emergency Management and Homeland Security, State of Connecticut State Response Framework, Version 2.0, August 2011, Appendix A, p.2)
44. The proposed tower would be designed in accordance with the American National Standards Institute "Structural Standards for Steel Antenna Towers and Antenna Support Structures" and the 2003 International Building Code with 2005 Connecticut Amendment. The foundation design would be based on soil conditions at the site. The diameter of the tower would be approximately five feet at its base and three and a half feet at its top. (ATC/AT&T 1, Attachment 3)
45. The tower would be designed to accommodate up to four wireless carriers and would be extendible up to 20 feet. (ATC/AT&T 4, A14; Tr. 1, p. 22)
46. The compound of the proposed facility would be enclosed by an eight-foot high chain link fence with anti-climb mesh. AT&T's equipment shelter would be remotely monitored for intrusion 24 hours a day. (ATC/AT&T 1, p. 11; ATC/AT&T 4, A3)
47. The setback radius of the proposed tower is within the host property. (ATC/AT&T 1, Attachment 4, Sheet A-1)

Existing and Proposed Wireless Services

48. AT&T provides digital voice and data services using third generation (3G) UMTS technology in the 800 MHz and 1900 MHz frequency bands. It is also deploying fourth generation (4G) LTE technology in the 700 MHz and 1900 MHz frequency bands. AT&T is also licensed to use frequencies in the 2300 MHz band. (ATC/AT&T 1, Attachment 1 – Radio Frequency Analysis Report, p. 1 and Tab 7; ATC/AT&T 9)
49. AT&T has historically designed its 3rd generation (3G) networks using signal strengths of -74 dBm and -82 dBm as its criteria for reliable in-building and in-vehicle service, respectively. AT&T is now using signal strengths of -83 and -93 dBm for its 700 MHz LTE 4th generation (4G) service and -86 and -96 dBm for its 1900 MHz LTE 4G service. The stronger thresholds yield greater data throughput to meet customer expectations for 4G service. (ATC/AT&T 1, Attachment 1 – Radio Frequency Analysis Report, p. 1)
50. Existing signal strengths in the area AT&T would cover from the proposed site range between -93 dBm and -120 dBm for 700 MHz LTE frequencies and between -96 dBm and -120 dBm for 1900 MHz PCS LTE frequencies. (ATC/AT&T 4, A6)

51. From the proposed facility, AT&T's antennas would hand off signals with the adjacent facilities identified in the following table.

Hand Off Facility Location	Type of Structure and Existing Antenna Elevation	Distance and Direction from Site
130 Vernon Road, Bolton	Monopole - 165'	1.9 miles, E
47 Main Street, Vernon	Water Tower - 119'	1.7 miles, NW
12-14 Carpenter Road, Bolton	Monopole - 106'	1.8 miles, S
53-73 Slater Street, Manchester	Monopole - 145'	2.9 miles, W
281 Hartford Turnpike, Vernon	Rooftop - 50'	1.8 miles, NW
60 Industrial Park Road, Vernon	Monopole - 165'	2.5 miles, NE
239 Middle Turnpike East, Manchester	Monopole - 143'	2.1 miles, SW
49 South Road, Bolton	Monopole - 118'	2.7 miles, SE

(ATC/AT&T 1, Tab 1 p. 8-9; ATC/AT&T 4, A5)

52. Signals from the proposed site may not reach the more distant hand-off sites at the 1900 MHz frequency range. (Tr. 1, p. 38)

53. The following table approximates AT&T's coverage gaps at different frequencies in the vicinity surrounding the proposed facility.

	Existing 700 MHz Coverage Gaps		Existing 1900 MHz Coverage Gaps	
	(≥ -83 dBm)		(≥ -86 dBm)	
Population	(≥ -83 dBm)	8,642	(≥ -86 dBm)	10,281
	(≥ -93 dBm)	4,112	(≥ -96 dBm)	7,260
Area (mi ²)	(≥ -83 dBm)	6.93	(≥ -86 dBm)	7.62
	(≥ -93 dBm)	3.61	(≥ -96 dBm)	5.86
Roadway (mi)	Main	14.07	Main	17.02
	Secondary	45.55	Secondary	59.81
	Total:	59.61	Total:	76.84

(ATC/AT&T 1 - Attachment 1 – Radio Frequency Analysis Report, p. 3)

54. The following table shows the approximate statistics for the coverage that would be possible from the proposed facility.

	Incremental Coverage from Proposed Site (700 MHz)		Incremental Coverage from Proposed Site (1900 MHz)	
	(≥ -83 dBm)		(≥ -86 dBm)	
Population	(≥ -83 dBm)	1,058	(≥ -86 dBm)	799
	(≥ -93 dBm)	2,610	(≥ -96 dBm)	2,799
Area (mi ²)	(≥ -83 dBm)	.95	(≥ -86 dBm)	.56
	(≥ -93 dBm)	2.41	(≥ -96 dBm)	2.41
Roadway (mi)	Main	2.72	Main	1.8
	Secondary	13.24	Secondary	13.79
	Total:	15.96	Total:	15.59

(ATC/AT&T 1 - Attachment 1 – Radio Frequency Analysis Report, p. 5)

55. Roads where coverage is lacking within the area being targeted by AT&T with the proposed facility include: Vernon Street, Lydall Street, Meadowbrook Drive in Manchester; State Highway 533 (Lake Street) in Manchester, Bolton, and Vernon; and Richard Road and Grady Road in Vernon. (ATC/AT&T 1 - Attachment 1 – Radio Frequency Analysis Report, p. 2)
56. For specific roads in the vicinity, the lengths of existing coverage gaps and the distances that would be covered by the proposed facility are shown in the following table.

Street Name	700 MHz Frequency		1900 MHz Frequency	
	Gap (mi)	Coverage (mi)	Gap (mi)	Coverage (mi)
Vernon Street	0.98	0.73	1.42	.99
Lydall Street	1.02	0.27	1.37	0.36
Meadowbrook Drive	1.01	1.00	1.01	0.83
Lake Street/S.R. 85	1.89	1.34	2.23	1.06
Richard Road	0.37	0.37	0.37	0.37
Grady Road/School Brook Lane	0.67	0.67	0.67	0.64
Total	5.94	4.38	7.07	4.25

(ATC/AT&T 4, A8)

57. Traffic counts taken by DOT indicate that as many as 4,800 vehicles pass through the intersection of Vernon Street and Richmond Drive on an average day and as many as 3,000 vehicles per day pass through the target coverage area on West Vernon Street. In addition, as many as 5,100 vehicles travel on State Highway 533 (Lake Street) at its junction with Lydall Street. (ATC/AT&T 1, Attachment 1 – Radio Frequency Analysis Report, p. 4)
58. AT&T’s data on dropped calls in the area that would be covered from the proposed facility indicate an elevated level of voice and data drops. Testing of these data further indicates that data service is substandard or nonexistent within this area. (ATC/AT&T 4, A7)
59. The minimum centerline height required to achieve AT&T’s coverage objectives from the proposed facility would be 100 feet above ground level (agl). Below this height, AT&T would lose substantial in-building and road coverage. (ATC/AT&T 4, A9)

Site Selection

60. AT&T issued a search ring for this area in late May of 2013. The proposed site is located on the west perimeter of the search ring. (ATC/AT&T 4, A19)
61. In order to define the extent of its coverage gap in this area, AT&T used propagation modeling and baseline drive test data. (ATC/AT&T 1, Attachment 1 – Radio Frequency Analysis Report, p. 2; ATC/AT&T 9, Tab 3)
62. It would not be possible for AT&T to adjust antenna configurations and power settings at its adjacent sites to cover the area that would be covered from the proposed facility. (ATC/AT&T 8, A4)
63. There are 27 wireless telecommunications facilities located within approximately four miles of the proposed facility. Fourteen of these sites are being utilized by AT&T to provide service within the Vernon/Bolton/Manchester area. None of these facilities would provide adequate and reliable coverage for the area that would be covered by the proposed facility. (ATC/AT&T 1, Attachment 2 – Existing Tower/Cell Site Listing)

64. In addition to the host property, ATC/AT&T investigated five other properties as potential sites. The properties investigated are as follows
- a) Lake Street, Vernon: This property is owned by the Town of Manchester's Water Department. AT&T Radio Frequency engineers rejected this property as it did not meet the coverage objectives.
 - b) 93 Lake Street, Manchester: AT&T Radio Frequency engineers rejected this property as it did not meet the coverage objectives.
 - c) 174 Lake Street, Vernon: AT&T Radio Frequency engineers rejected this property as it did not meet the coverage objectives.
 - d) 33 Mitchell Drive, Manchester: AT&T Radio Frequency engineers rejected this property as it did not meet the coverage objectives.
 - e) 230 Box Mountain Road, Bolton: AT&T Radio Frequency engineers rejected this property as it did not meet the coverage objectives. AT&T engineers examined this site at heights of 100 feet, 170 feet, 200 feet, and 250 feet above ground level. Also, an intervening AT&T site exists (CT1069 at 130 Vernon Road, Bolton).

(ATC/AT&T 1, Tr. 1, p. 19; Attachment 2; ATC/AT&T 8, A1)

65. Representative Luxenberg and Senator Cassano questioned ATC/AT&T's scope of site search and an alternative site; specifically, Manchester Land Trust property surrounding Risley Reservoir. (Tr. 1, p. 91)
66. The Manchester Conservation Land Trust indicated that it was not interested in leasing any portion of its property in the vicinity of Risley Reservoir for the development of a telecommunications facility. (ATC/AT&T 8, A2; Tr. 3, p. 152)
67. AT&T examined other portions of the Manchester Conservation Land Trust property as potential sites for its facility, but it concluded that no other location would provide suitable coverage at heights up to 250 feet. (ATC/AT&T 8, A3)
68. Alternative telecommunications technologies such as repeaters, microcell transmitters, distributed antenna systems and other types of transmitting technologies are not a practicable or feasible means of providing service to the large area, with lesser density of usage, that AT&T is seeking to cover from the proposed site. (ATC/AT&T 1, p. 12; Tr. 1, pp. 29)
69. ATC/AT&T did not consider a location proximal to the gravel operations on the host property because a suitable location was originally identified with the landowner. Also, no radio frequency analysis was done as the gravel operations location was outside the search ring. (Tr. 3 pp. 169-170)

Facility Description

70. The proposed facility is located in the northern portion of a 64-acre parcel located at 701 Lydall Street and owned by Gerald W. Reid. The property is an undeveloped wooded area with hay fields and a small quarry operation surrounded by residential development. (See Figures 1 and 2) (ATC/AT&T 1, p. 11, Attachment 3 – General Facility Description)
71. The host property is located in a Rural Residential (RR) zoning district. Wireless telecommunications facilities are permitted in this zoning district with a special permit and site plan approval. (ATC/AT&T 1, p. 15)

72. On this property, ATC would lease a 100-foot by 100-foot (10,000 square feet) area, within which it would install a 50-foot by 50-foot (2,500 square feet) compound that would include a 104-foot tall monopole tower. The compound would be enclosed by an eight-foot high chain link fence. Inside the compound, AT&T would install a 12-foot by 16-foot equipment shelter to house its ground equipment. (ATC/AT&T 1, p. 11; Attachment 4 – Sheet SP-2)
73. The proposed tower would be located at 41° 48' 8.54" North latitude and 72° 28' 47.27" West longitude. Its elevation at ground level would be approximately 431 feet above mean sea level. (ATC/AT&T 1, Attachment 4 – Sheet T-1)
74. The tower would be designed to support up to five carriers and extend up to 20 feet. (Tr. 1, pp.21-22)
75. AT&T would install 12 antennas at a centerline height of 100 feet above ground level (agl) on the proposed tower. (ATC/AT&T 1, Attachment 3 – General Facility Description; Tr. 1, pp. 14-15)
76. Vehicular access to the proposed facility would be from Lydall Street over an existing dirt road for a distance of approximately 850 feet and then along a proposed gravel drive for a distance of approximately 730 feet. The existing dirt road would be graded and improved with a gravel surface. (ATC/AT&T 1, Attachment 3 – General Facility Description)
77. Utility connections would be routed underground from an existing utility pole on Lydall Street along the vehicular access route. (ATC/AT&T 1, Attachment 3 – General Facility Description; Attachment 4 – Sheet A-1)
78. Blasting is not anticipated for the proposed facility. Should bedrock be encountered when excavating for the utility trenches and the tower foundation, mechanical means of removal would be preferred. (ATC/AT&T 4, A2)
79. Construction of the proposed facility would require 600 cubic yards of cut for utility trenching and less than 100 cubic yards of fill. The compound and driveway would require the importation of 410 cubic yards of broken stone. (ATC/AT&T 1, Attachment 3 – Site Evaluation Report, III. G. Clearing and Fill Required)
80. No trees will be removed to construct the access road or site. (ATC/AT&T 1, Attachment 3 – Site Evaluation Report, III. G. Clearing and Fill Required)
81. No schools or commercial child day care facilities are located within 250 feet of the host property. The nearest school, the Lake Street Elementary School in Vernon, is located approximately 0.77 miles to the northeast. The nearest commercial child day care center is the Indian Valley YMCA Latchkey program. It is located on Lake Street in Vernon, approximately 0.77 miles to the northeast. (ATC/AT&T 1, Attachment 8 – Visibility Analysis: Proximity to Schools and Commercial Child Day Care Centers)
82. There are 45 single family residences within 1,000 feet of the proposed facility. (ATC/AT&T 1, Attachment 4 – Site Impact Statement)
83. The closest off-site residence is approximately 452 feet to the northeast at 277 Deer Run Trail. It is owned by Maureen Couvares. (ATC/AT&T 1, Attachment 4 – Site Impact Statement; ATC/AT&T 4, A20)

84. Surrounding land uses consist primarily of single family residential development, agricultural fields and forest. (ATC/AT&T 1, p. 17; ATC/AT&T 4, A21)
85. The proposed site is within the Lydall Reservoir watershed. DPH recommends the following protective measures:
- proper placement of erosion and sedimentation controls,
 - making provisions to inspect and maintain these controls,
 - servicing machinery outside the watershed area,
 - refueling vehicles and machinery on impervious pads,
 - not storing fuel and other hazardous materials within the water supply area, and
 - keeping a fuel spill remediation kit on-site.
- (DPH Letter dated December 30, 2014)

86. Construction of the proposed facility would take approximately ten weeks. The site preparation stage would take an estimated five weeks. Installation of the tower, compound, antennas, and associated equipment would take an additional five weeks. Facility integration and system testing would take an additional two weeks. (ATC/AT&T 1, p. 20)

87. The estimated cost of the proposed facility is:

Tower and Foundation	\$ 92,875
Utility Installation	59,500
Facility Installation	152,000
Subtotal: Homeland Towers Cost	\$304,375
Antennas and Equipment	\$250,000
Subtotal: AT&T Costs	\$250,000
Total Estimated Costs	\$554,375

(ATC/AT&T 1, p. 19)

Alternative Site Locations, Access Roads, and Facility Type

88. To mitigate visibility concerns from the Deer Run Trail neighborhood, located north of the proposed site, ATC/AT&T investigated shifting the proposed site approximately 350 feet southeast of the proposed site proximal to Station 12 plus 25 on site plan SP-1, referred to as the Alternate site. The Alternate site lease area would be 75 feet by 133 feet and the compound would remain at 50 feet by 50 feet. (ATC/AT&T 9 Attachment 2, SP-1; Tr. 3, p. 149)
89. The alternate site would be 67 feet from an inland wetland and vernal pool habitat. It would be within the 100 foot vernal pool envelope potentially infringing on herpetofauna habitat. (ATC/AT&T 9 , Attachment 2, SP-1; Tr. 3, pp. 165-166)
90. Visibility of the tower at the alternate site would be greater from the Leo J Lane and Bridle Path Lane neighborhood, located east of the alternate site, than from the Deer Run Trail neighborhood. (ATC/AT&T 1, Tab 8, Photo Log; Tr. 3, pp. 154-155)
91. A compromise site located 200 feet southeast of the proposed site would temper the visibility of the tower from both the Bridle Path Lane, Leo J Lane, and Deer Run Trail neighborhoods. (ATC/AT&T 1, Tab 8, Photo Log; Tr. 3, p.

92. The property owner is amenable to moving the proposed site. He would favor the compromise site over the alternate site location as it would provide better access to the field. (Tr. 3, pp. 158-159)
93. The compromise site would be outside the 100-foot vernal pool envelope. (Tr. 3, p. 168)
94. Alternative access roads from the end of Deer Run Trail or Leo J Lane would require removal of numerous mature trees, wetlands crossing disturbance, and construction traffic through residential neighborhoods. (ATC/AT&T 4, A17)
95. A stealth concealment of the proposed tower could take the form of a silo or monopine. A monopine in the proposed location would not fit with the existing deciduous vegetation. A 120-foot silo facility could be developed at the proposed site. (ATC/AT&T 9, p. 1; TR. 1, p. 22;Tr. 3, p.183)
96. A silo would have a wider profile (approximately 20 foot diameter) for the entire height of the facility. A silo structure must be designed upfront with the potential for a future extension. A monopine is more complex in its design and extension capability than a silo. (Tr. 1, pp. 21-28; Tr. 3, pp. 181-184)

Backup Power

97. 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. Two of the Panel's findings are as follows:
 - a. "Wireless telecommunications service providers were not prepared to serve residential and business customers during a power outage. Certain companies had limited backup generator capacity;" and
 - b. "The failure of a large portion of Connecticut's telecommunications system during the two storms is a life safety issue."

(Council Administrative Notice Item No. 41 - Final Report of the Two Storm Panel)

98. The Panel made the following recommendations:
 - a. "State regulatory bodies should review telecommunications services currently in place to verify that the vendors have sufficient generator and backhaul capacity to meet the emergency needs of consumers and businesses;" and
 - b. The Connecticut Siting Council should require continuity of service plans for any cellular tower to be erected. In addition, where possible, the Siting Council should issue clear and uniform standards for issues including, but not limited to, generators, battery backups, backhaul capacity, response times for existing cellular towers.

(Council Administrative Notice Item No. 41 - Final Report of the Two Storm Panel)

99. The Council's Feasibility Study of backup power requirements for telecommunications towers and antennas included consideration of the following matters:
 - a. Federal, state and local jurisdictional issues of such backup power requirements, including, but not limited to, siting issues;
 - b. Similar laws or initiatives in other states;
 - c. The technical and legal feasibility of such backup power requirements;
 - d. The environmental issues concerning such backup power; and
 - e. Any other issue concerning backup power that PURA deems relevant to such study.

(Council Administrative Notice Item No. 26 - Council Docket No. 432- Feasibility study of backup power requirements for telecommunications towers and antennas pursuant to Public Act 12-148)

100. The Council reached the following conclusions in its feasibility study of backup power requirements for telecommunications towers and antennas:
 - 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. 26 - Council Docket No. 432, – Feasibility study of backup power requirements for telecommunications towers and antennas pursuant to Public Act 12-148)
101. 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, are exempt from the State Noise Control Regulations. (R.C.S.A. §22a-69-1.8)
102. ATC proposes to install an 80 kW diesel generator for emergency backup power for use by all its tenants. The planned generator would be able to provide approximately 89 hours of service, based on a standard tank of 305 gallons. (ATC/AT&T 4, A10/A13)
103. ATC’s generator fuel tank would be double-walled to prevent spills. In addition, the generator would be equipped with a remote alarm to signal if fuel enters the outer tank. (ATC/AT&T 4, A11)
104. ATC’s generator would include equipment to minimize noise levels. (Tr. 1, pp. 29-31)

Environmental Considerations

105. After reviewing plans for the proposed facility, the State Historic Preservation Office concluded that no historic properties would be affected by this project. (ATC/AT&T Administrative Notice Item No. 2 – SHPO Project Review Cover Form, dated October 6, 2014)
106. According to the Natural Diversity Data Base, there are extant populations of the eastern box turtle (*Terrapene carolina carolina*), a State Special Concern species, in the vicinity of the proposed facility. DEEP recommends a number of different protection measures and strategies be implemented to minimize potential harm to these turtles. ATC would adhere to DEEP’s recommendations during construction. (ATC/AT&T 4 Request for Administrative Notice and DEEP Letter dated November 12, 2014)
107. No trees with diameters of 6 inches or more at breast height would be removed to develop the proposed facility. (ATC/AT&T 1, Attachment 4 – Tree Inventory)
108. There is one wetland area on the host property. It is a complex of various habitat types that range from forested, hummock/hollow wetland areas to emergent wet meadow areas. The wetland system drains in a southerly direction via a well incised intermittent stream. As it drains to the south, it passes through an artificially dug open water pond within a maintained clearing. (ATC/AT&T 1, Attachment 6 – Wetland Investigation, p. 4)
109. A high-valued ‘cryptic’ style vernal pool habitat exists within the wetland. This habitat is considered to have relatively high breeding activity and a relatively intact neighboring terrestrial habitat. (ATC/AT&T 5; Vernal Pool Evaluation, pp. 1, 2)
110. The total critical terrestrial habitat (CTH) includes land located off the subject property totaling 63.7 acres, with 15 acres consisting of existing residential development and a small quarry operation. This equates to 23.55 percent of the CTH as being already developed. (ATC/AT&T 5; Vernal Pool Evaluation, p. 3)
111. The proposed facility compound and majority of the access road would represent an additional .31 acre of development or 0.48 percent of the total CTH. (ATC/AT&T 5; Vernal Pool Evaluation, p. 3)

112. The proposed facility would not result in disturbance to the vernal pool's surrounding terrestrial habitat above the 25 percent development threshold critical for preserving the pool's ecological value. (ATC/AT&T 5 - Supplemental submission – Vernal Pool Evaluation, p. 2)
113. The compound for the proposed facility would be located approximately 350 feet west of the wetland area. (ATC/AT&T 1, Tab 5, p. 1; Attachment 6 – Wetland Investigation, p. 4, Wetland Delineation Map)
114. The closest edge of the access drive would be approximately 17 feet west of the edge of the wetland area. (ATC/AT&T 1, Attachment 6 – Wetland Investigation, p. 4)
115. To protect the vernal pool the following recommended best development practices include seasonal restriction of construction activities during the peak amphibian movement period between March 1 and May 15 and a vernal pool protection plan for outside the peak amphibian movement period May 16 to September 1; Erosion and Sediment Controls; Contractor Education; Petroleum material storage and spill prevention; Protective measures; Herbicide and Pesticide restrictions; and Reporting. (ATC/AT&T 5, pp. 4-7)
116. Minor temporary impacts to the wetland area may be associated with construction activities and the installation of underground utilities. The installation and maintenance of sedimentation and erosion control, in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* established by the Connecticut Council for Soil and Water Conservation could minimize or avoid these impacts. (ATC/AT&T 1, Attachment 6 – Wetland Investigation, p. 5)
117. The proposed tower at this site would not constitute an obstruction or hazard to air navigation and would not require any obstruction marking or lighting. (ATC/AT&T 1, p. 15; Attachment 4 – TOWAIR Determination Results)
118. The closest Important Bird Area to the proposed facility is the Station 43 Marsh/Sanctuary, which is located 7.4 miles to the west northwest on the Connecticut River. (ATC/AT&T 4, A15; Council Administrative Notice No. 14.)
119. The proposed facility would comply with the recommended guidelines of the US Fish and Wildlife Service for minimizing potential impacts on bird species. (ATC/AT&T 4, A16)
120. The cumulative worst-case maximum power density from the radio frequency emissions from the operation of AT&T's proposed antennas at the base of the proposed tower would be 7.66% 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 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. (ATC/AT&T 15, Attachment 7)

Visibility

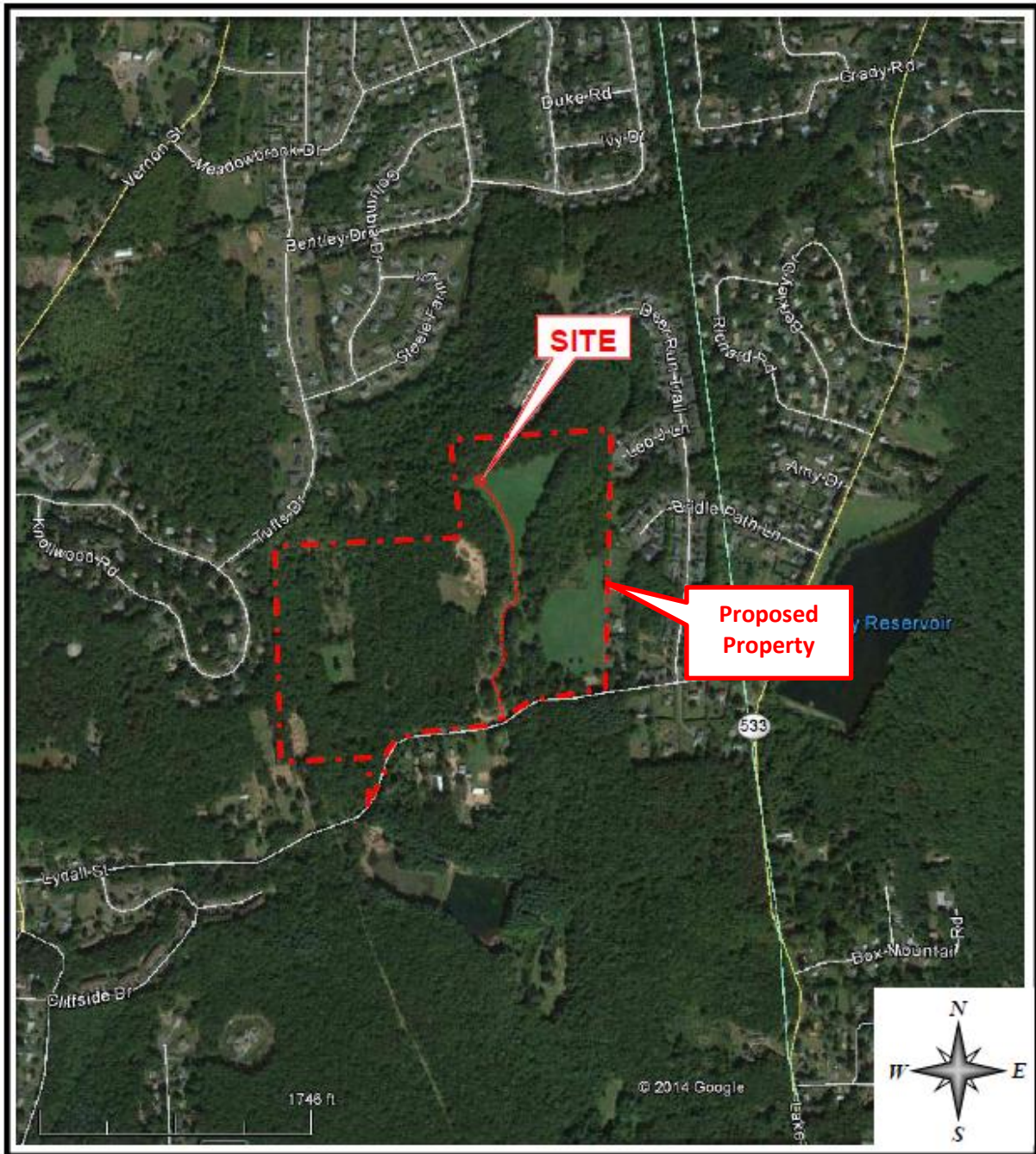
121. Visibility of the proposed tower would be limited to an area extending just beyond 0.5 mile from the host property. In general, the visibility of the proposed Facility would be minimized by the combination of its relatively low height and dense mature tree canopy found within the vicinity of the host property. (See Figure 8) (ATC/AT&T 1, Attachment 9 – Visibility Analysis Results)
122. The proposed tower would be visible above the tree canopy on a year-round basis from approximately 50 acres in the surrounding vicinity. (See Figure 8) (ATC/AT&T 1, Attachment 8 – Visibility Analysis Results)

123. The proposed tower would be seasonally visible (during “leaf-off” conditions) from approximately 198± additional acres. (ATC/AT&T 1, Attachment 8 – Visibility Analysis Results; Tr. 1, p.62)
124. Approximately 25 residential properties would have the potential for year-round views of at least a portion of the proposed tower. Another approximately 30 residential properties would potentially have seasonal views of the proposed tower. (ATC/AT&T 9, p. 1 and Tab 1)
125. Substantial vegetation existed on the Reid property that abuts the Deer Trail Run neighborhood. This vegetation was cleared subsequent to a lease agreement between Mr. Reid and ATC/AT&T. ATC stated landscape planting could be installed to buffer views from Deer Run Trail. (ATC/AT&T 1 Tab 8, Photo 4; Tr. 1, p. 85; Tr. 3, p. 177)
126. The visibility of the proposed tower from different vantage points in the surrounding vicinity is summarized in the following table.

<u>Location</u>	<u>Visibility</u>	<u>Approx. Portion of (104') Tower Visible</u>	<u>Approx. Distance and Direction to Tower</u>
1 – Bridle Path Lane	Year-round	7'	1,580 feet, W
2 – Leo J Lane	Year-round	50'	900 feet, SW
3 – Deer Run Trail	Year-round	20'	950 feet, SW
4 – Deer Run Trail	Year-round	10'	740 feet, SW
5 – Tufts Drive	Year-round	10'	1,800 feet, SE
6 – Tufts Drive	Year-round	15'	2,060 feet, SE
7 – Vernon Street at Meadow Brook Dr	Year-round	20'	2,900 feet, SE

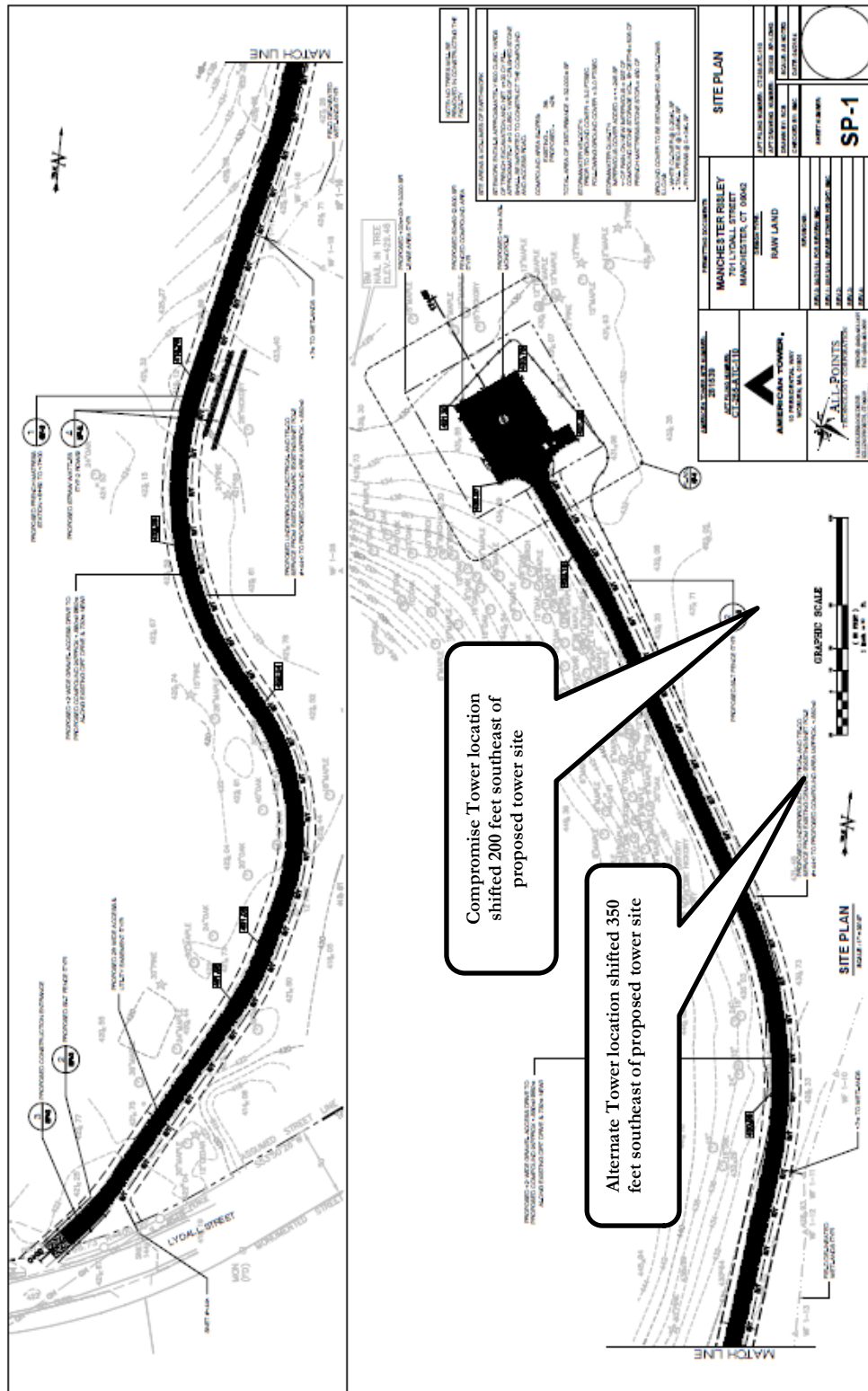
(ATC/AT&T 1, Attachment 9 – Visibility Analysis)

Figure 1 - Aerial Image of Proposed Site



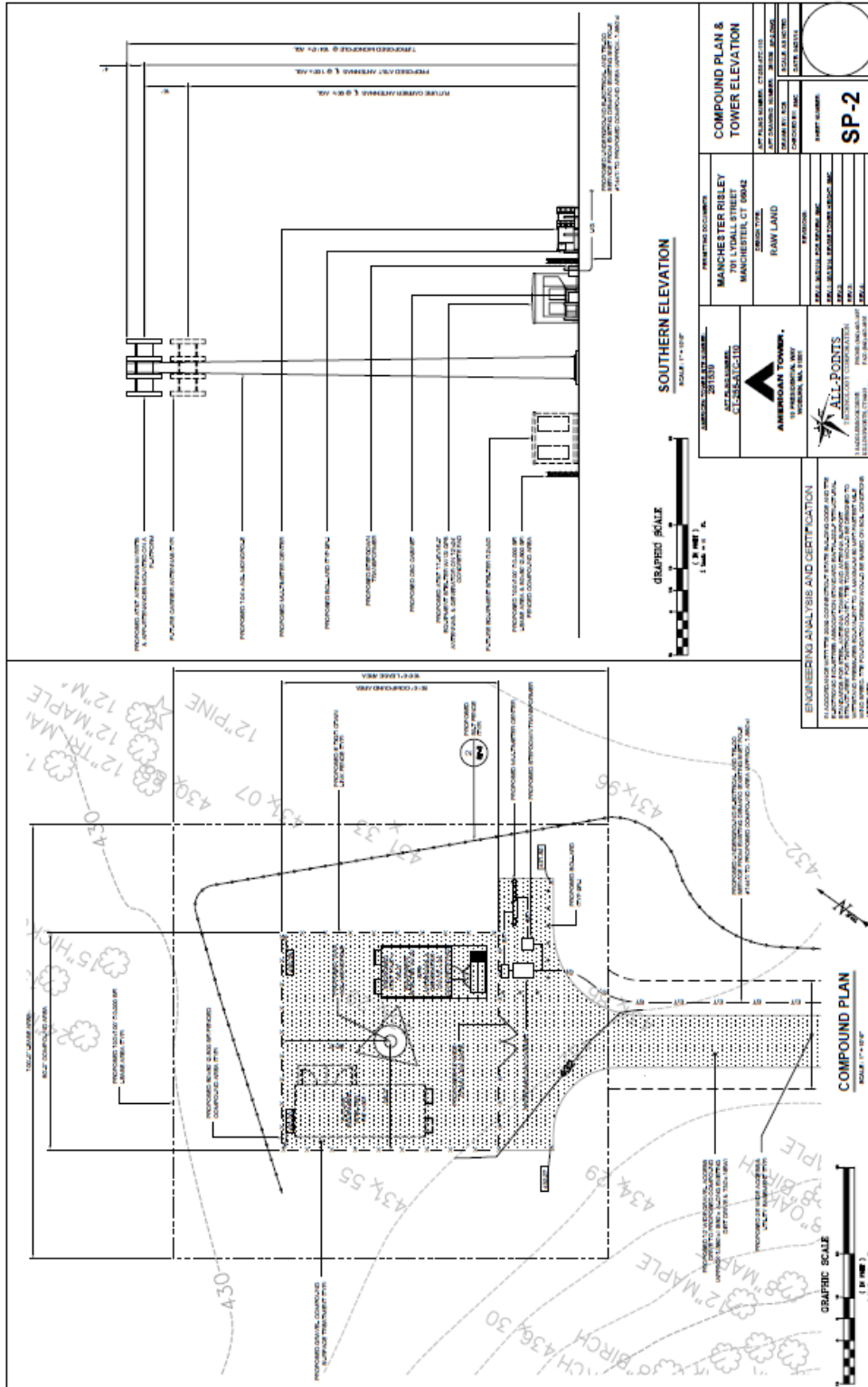
(ATC/AT&T 1, Tab 9, Attachment B)

Figure 2 -Site Plan (showing compound and access road)



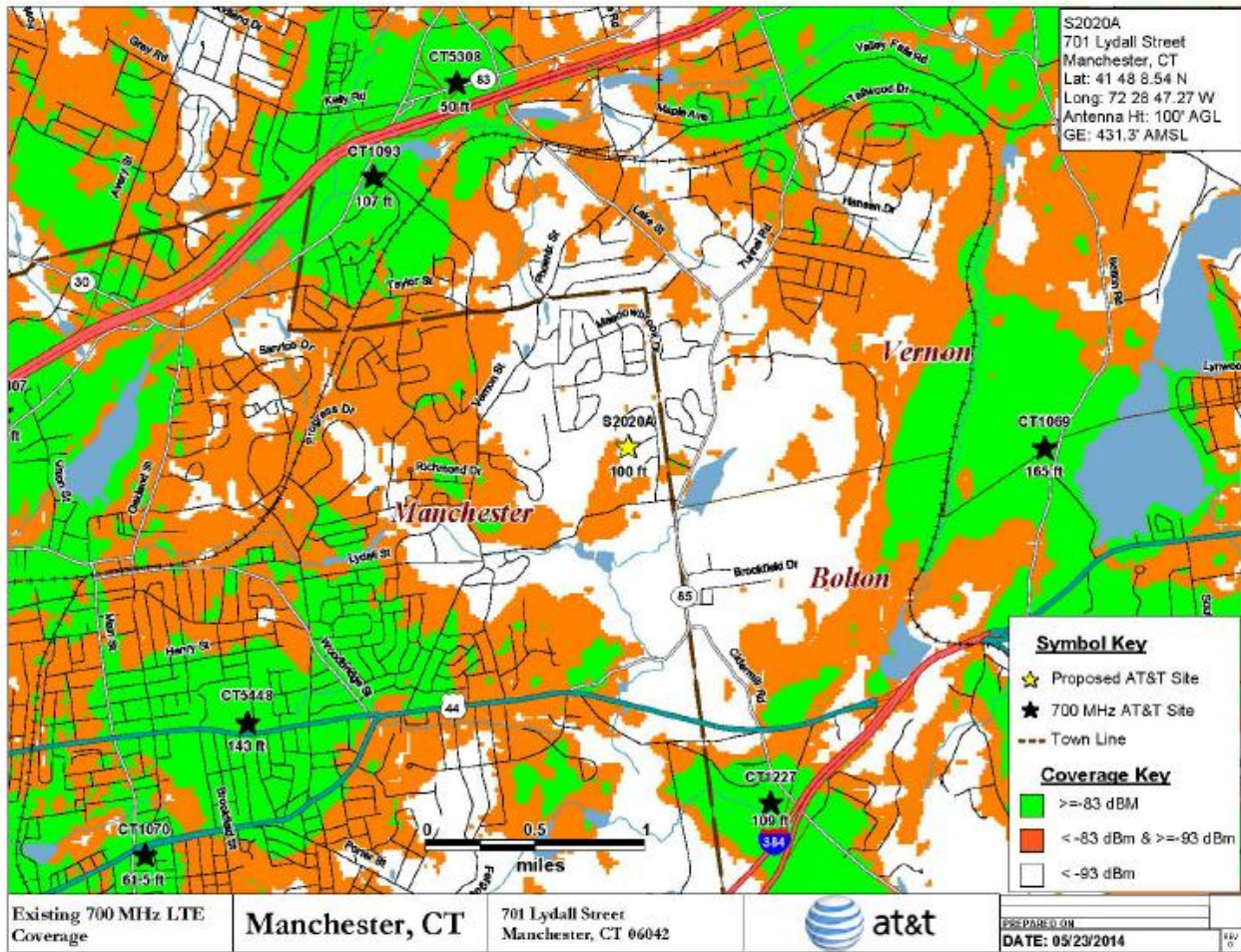
(ATC/AT&T 1, Tab 1, SP-1)

Figure 3 – Compound Plan and Tower Profile



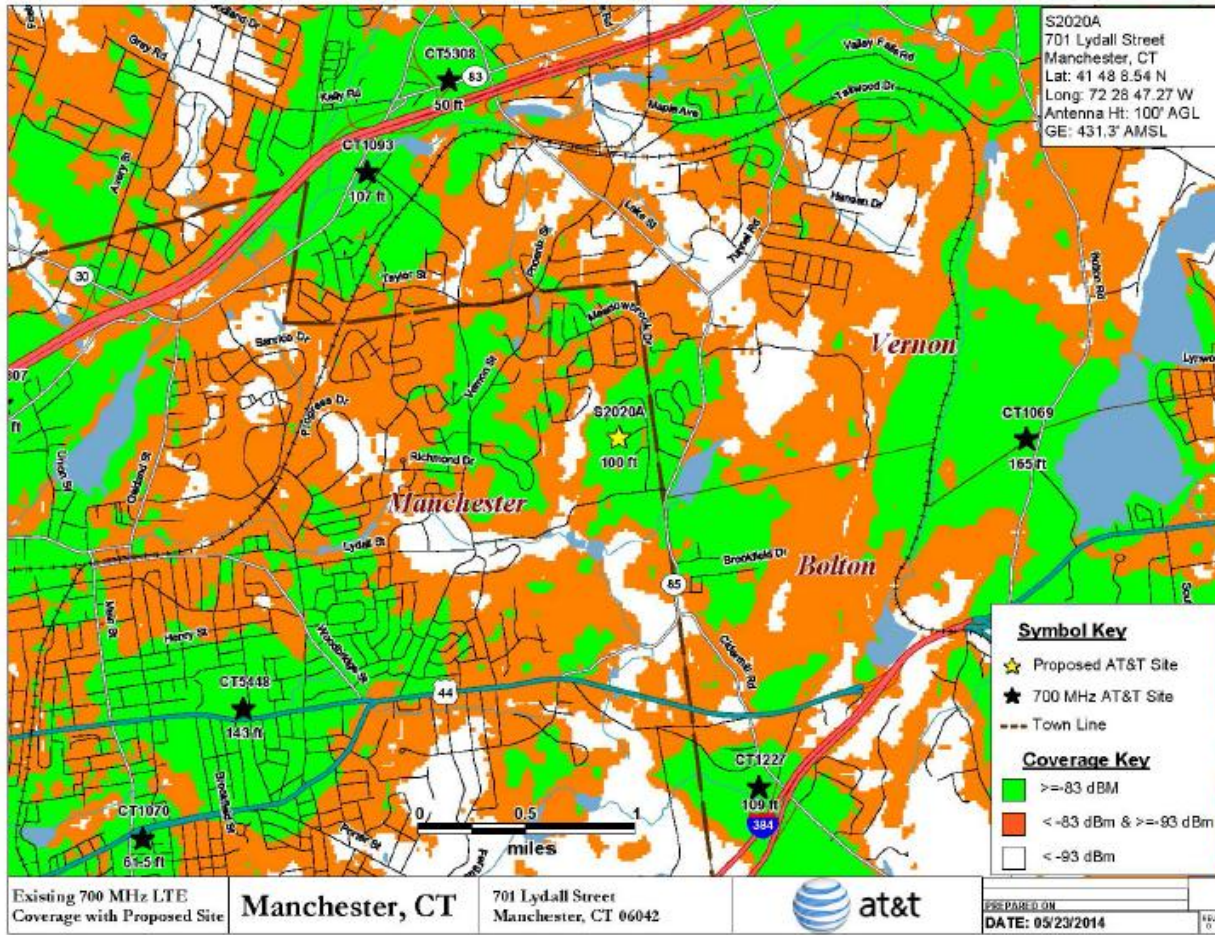
(ATC/AT&T 1, Tab 4, SP-2)

Figure 4 – AT&T Existing 700 MHz Coverage



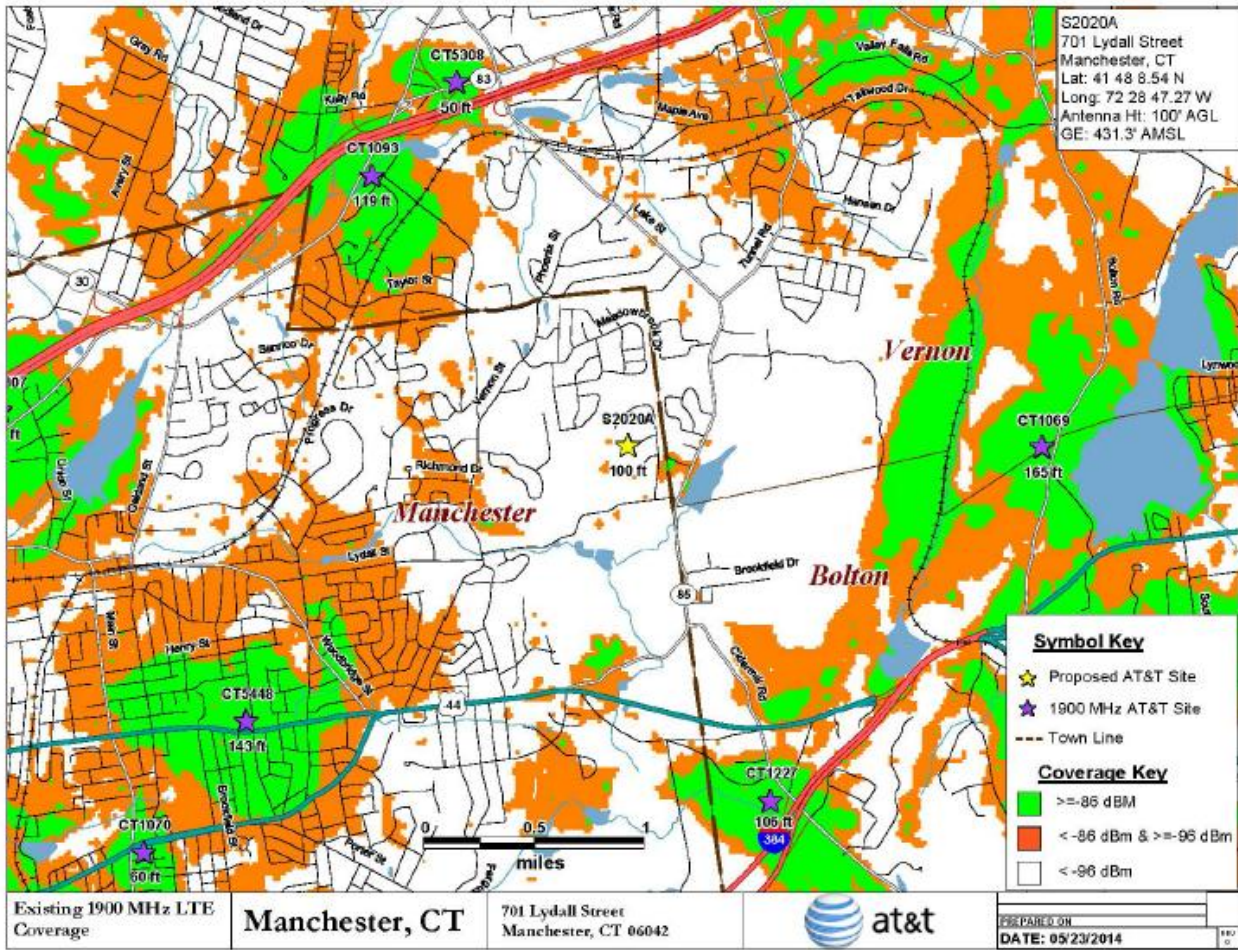
(ATC/AT&T 1, Tab 1, p. 10)

Figure 5 – AT&T Existing and Proposed 700 MHz Coverage (antenna centerline height at 100)



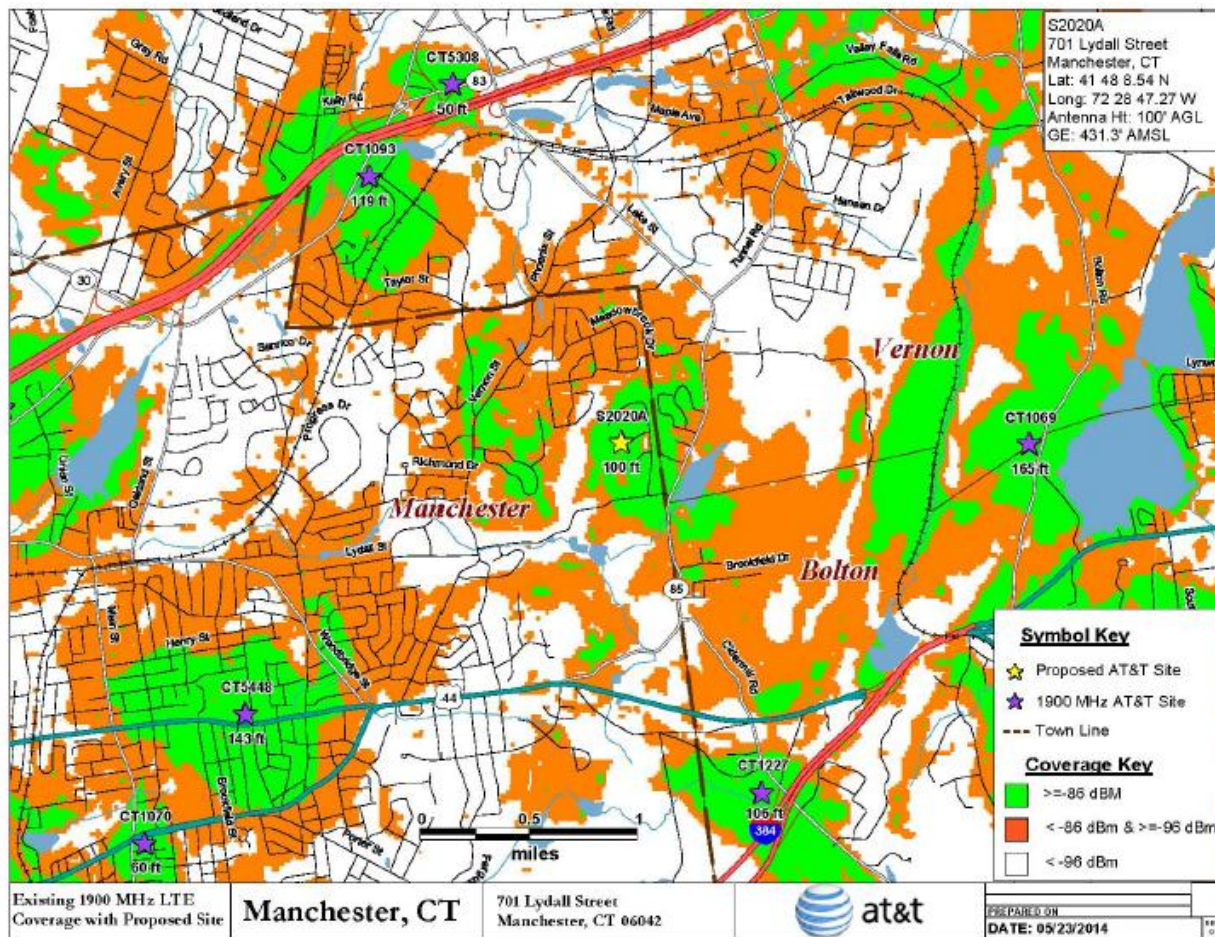
(ATC/AT&T 1, Tab 1, p. 11)

Figure 6 – AT&T Existing 1900 MHz Coverage



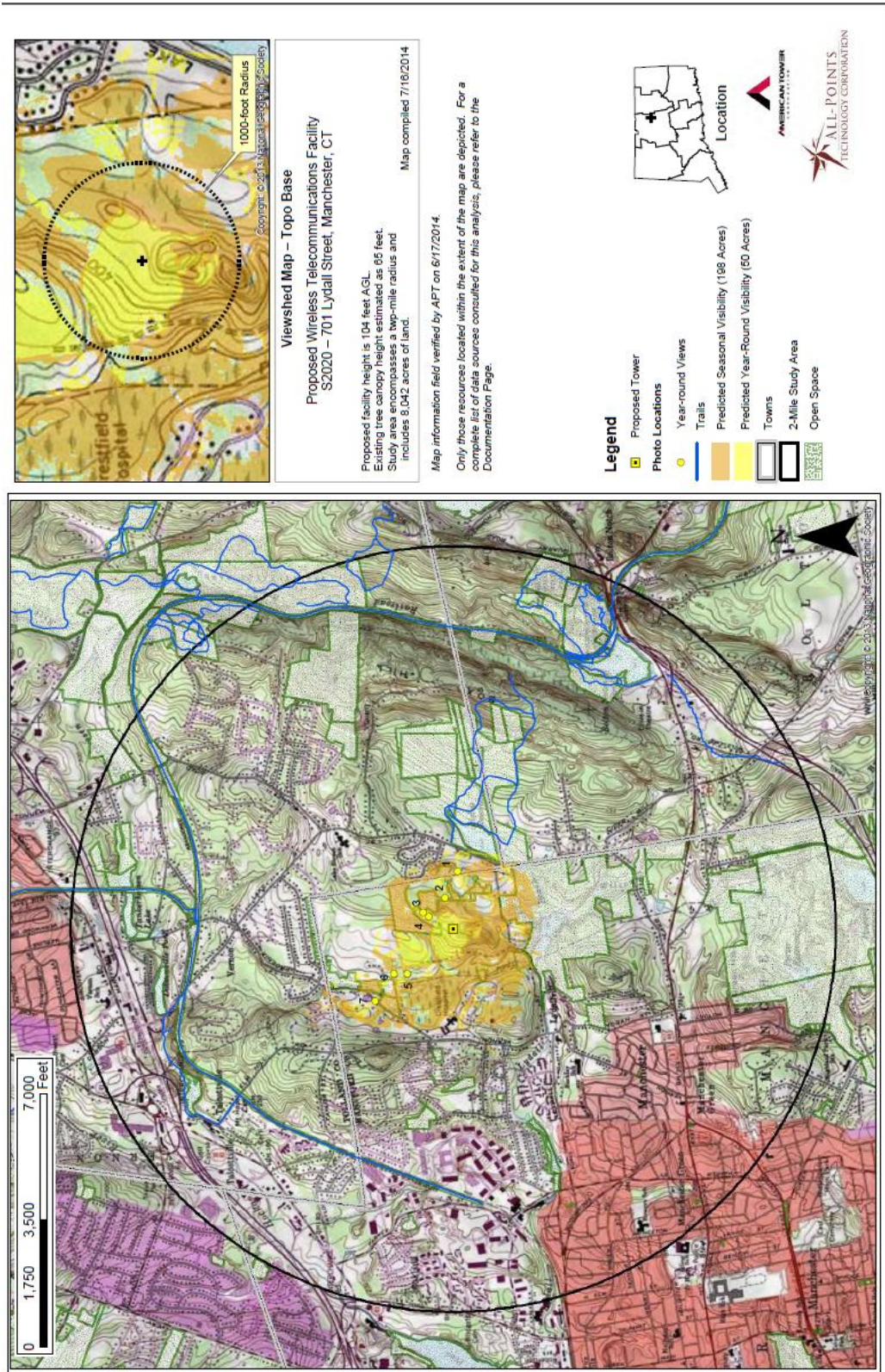
(ATC/AT&T 1, Tab 1, p. 12)

Figure 7 – AT&T Existing and Proposed 1900 MHz Coverage (antenna centerline height at 100 feet)



(ATC/AT&T 1, Tab 1, p. 13)

Figure 8 - Visibility Analysis



(ATC/AT&T 1, Tab 8, Viewshed Map - Topo Base)

Figure 9 - Photo simulation



PROPOSED				
PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	TUFTS DRIVE	SOUTHEAST	+/- 0.39 MILE	YEAR ROUND

(ATC/AT&T 1, Tab 8, Photo-simulation No. 6)

Figure 10 – Silo Photo simulation



PROPOSED				
PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	TUFTS DRIVE	SOUTHEAST	+/- 0.39 MILE	YEAR ROUND



(ATC/AT&T 8, Attachment, Photo-simulation No. 6-Proposed)