



**HOMELAND TOWERS, LLC (HOMELAND)
NEW CINGULAR WIRELESS PCS, LLC (AT&T)**

**Application to the
State of Connecticut Siting Council**

**For a Certificate of
Environmental Compatibility and Public Need**

–NORTHERN CHESHIRE FACILITY–

Docket No. _____

**HOMELAND TOWERS, LLC (HOMELAND)
22 SHELTER ROCK LANE, BLDG. C
DANBURY, CONNECTICUT**

**NEW CINGULAR WIRELESS PCS, LLC (AT&T)
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ROCKY HILL, CT 06067**

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1. AT&T’s Statement of Radio Frequency (RF) Need with Coverage Plots
2. Town of Cheshire Public Safety Radio System Need with RF Propagation Surveys
3. Summary of Site Search, Municipal Evaluation and List of Existing Tower/Cell Sites
4. Site Evaluation Report, Site Impact Statement, Tree Inventory
5. Aerial Map, Topographical Map, Drawings, FAA 2-C Survey Certification and TOWAIR Determination Results
6. Environmental Assessment Statement
7. Wetland Investigation
8. Power Density Analysis
9. Visibility Analysis
10. CT Department of Energy and Environmental Protection (DEEP) NDDB Correspondence
11. SHPO Determination
12. Materials related to municipal consultation

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 15. Connecticut Siting Council Application Guide

I. Introduction

A. Purpose and Authority

Pursuant to Chapter 277a, § 16-50g et seq. of the Connecticut General Statutes (C.G.S.), as amended, and § 16-50j-1 et seq. of the Regulations of Connecticut State Agencies (R.C.S.A.), as amended, Homeland Towers, LLC (“Homeland”) and New Cingular Wireless PCS, LLC (“AT&T”) (together the “Applicants”), hereby submit an application and supporting documentation (collectively, the “Application”) for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a telecommunications tower facility (the “Facility”). The Facility is proposed on a 59 acre parcel of Town owned property at 1325 Cheshire Street (the “Parcel”), which property is currently developed and used as a municipal water pollution control facility and municipal recreation fields. Construction of the Facility will permit the Town of Cheshire’s Police, Fire and Emergency Services Departments, AT&T and other FCC licensed wireless carriers to provide reliable emergency communications and wireless services to residents, businesses, schools, municipal facilities and visitors to northeastern Cheshire.

B. Executive Summary

AT&T lack reliable wireless services in this part of the community and Town emergency communications networks require augmentation and improvements which can be accomplished with the proposed Facility. The lack of service is fundamentally due to the absence of any existing tower infrastructure or other wireless facility siting opportunities in this part of the community. Siting efforts date back approximately two years. Over that period of time, Homeland and AT&T representatives independently explored existing structures to serve AT&T’s need including a non-residential rooftop and a Connecticut Light and Power transmission tower which were evaluated and rejected by AT&T’s radio frequency engineers and/or deemed to provide insufficient coverage in northeastern Cheshire. Homeland conducted its own review of properties suitable for tower facility development.

As part of Homeland's discussions with Town officials regarding potential availability of town-owned property, details regarding the Town's own communications needs were made known. The Town's needs resulted in collaboration on a multi-use tower to be made available for both commercial wireless and Town emergency communication use. Consultation led to coordination of site design details, design visits and specific discussion of the Town's height requirements. A referral to the Planning & Zoning Commission under Connecticut General Statute Section 8-24 was made and a lease was executed between Homeland and the Town.

AT&T has entered into a lease agreement with Homeland for its proposed use of the tower Facility. Homeland has also reserved space on the tower and in the compound to the Town for its public safety communications radio system for their use of the tower facility. Homeland would own, maintain and operate the tower facility subject to any Certificate the State Siting Council may issue for the project

The tower facility in this application has been designed in accordance with Town requirements as part of its lease. Homeland Towers proposes to construct a 170' AGL self-supporting monopole within a 4,650 square foot fenced compound. The Town's emergency communications antennas would be installed at the top of the tower, rising to an overall height of 180', with space reserved within the equipment compound for the Town's equipment. Importantly, the new tower would provide the Town with the capability to install Point-to-Point ("PTP") backhaul communications equipment.

AT&T's antennas would be installed at the 155' level on the tower with an equipment shelter and generator in the compound. The tower and fenced area are further designed to support the antennas and equipment of three other FCC licensed wireless carriers. Access to the facility will be from Cheshire Street, along an existing bituminous driveway, then along a proposed 140' gravel access drive to the tower compound. Site utilities are proposed to extend from an existing SNET Pole #5715 located on site. The facility will be

unmanned with no sanitary or water facilities and generates on average 1 vehicle trip per month by each Facility user consisting typically of a service technician in a light duty van or truck.

The Applicants respectfully submit that the public need for a tower in northeastern Cheshire far outweighs any potential adverse environmental effects from the Facility as proposed in this Application. The Town's emergency service agencies have a need to augment and improve emergency communications networks in this part of the community to support public safety activities. The Town's public safety radio system antennas mounted on a low level existing building at this location simply are not high enough to best serve this area of the community. Indeed Northeastern Communications, Inc., on behalf of the Town as its consultant, evaluated the Town's need and determined that a new 170' tower at this site is needed for emergency service antennas and PTP backhaul communications equipment. AT&T's 4G LTE services will be greatly improved as well from a facility at this location.

C. The Applicants

The Applicant, Homeland Towers LLC ("Homeland"), is a Connecticut corporation with offices at 22 Shelter Rock Lane, Danbury, Connecticut. Homeland Towers currently owns and/or operates numerous tower facilities in the state of New York and is developing tower sites in Connecticut. Homeland Towers has entered into a long term lease with the Town of Cheshire and AT&T has since entered into a lease agreement with Homeland. Homeland Towers will construct, maintain and own the proposed Facility and would be the Certificate holder.

Applicant New Cingular Wireless PCS, LLC ("AT&T"), is a Delaware limited liability company with an office at 500 Enterprise Drive, Rocky Hill, Connecticut 06067. The company's member corporation is licensed by the Federal Communications Commission ("FCC") to construct and operate a personal wireless services system, which has been interpreted as a "cellular system", within the meaning of CGS Section 16-50i(a)(6).

Neither company conducts any other business in the State of Connecticut other than the development of tower sites and provision of personal wireless services under FCC

rules and regulations. Correspondence and/or communications regarding this Application should be addressed to the attorneys for the Applicants:

Cuddy & Feder, LLP
445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
Attention: Daniel M. Laub, Esq.
Christopher B. Fisher, Esq.

A copy of all correspondence shall also be sent to:

Homeland Towers, LLC
22 Shelter Rock Lane, Bldg C.
Danbury, CT 06810
Attention: Vincent Xavier

AT&T
500 Enterprise Drive
Rocky Hill, Connecticut
Attention: Jessica Rincon

D. Application Fee

Pursuant to R.C.S.A. § 16-50v-1a (b), a check made payable to the Siting Council in the amount of \$1,250 accompanies this Application. Included in this Application and its accompanying attachments are reports, plans and visual materials detailing the design and location for the proposed Facility and the environmental effects associated therewith. A copy of the Siting Council's Community Antennas Television and Telecommunication Facilities Application Guide with page references from this Application is also included in Attachment 15.

E. Compliance with C.G.S. §16-50/ (c)

Neither of the Applicants is engaged in generating electric power in the State of Connecticut. Therefore, the Facility is not subject to C.G.S. § 16-50r. Furthermore,

the proposed Facility has not been identified in any annual forecast reports. Accordingly, the proposed Facility is not subject to § 16-50/ (c).

II. Service and Notice Required by C.G.S. § 16-50/ (b)

Pursuant to C.G.S. § 16-50/ (b), copies of this Application have been sent by certified mail, return receipt requested, to municipal, regional, state, and federal officials. A certificate of service, along with a list of the parties served with a copy of the Application is included in Attachment 14. Pursuant to C.G.S. § 16-50/ (b), notice of the Applicant's intent to submit this application was published on two occasions in The Cheshire Herald, the publication used for planning and zoning notices in the Town of Cheshire. The text of the published legal notice is also included in Attachment 13. The original affidavits of publication will be provided to the Siting Council once received from the publisher. Furthermore, in compliance with C.G.S. § 16-50/ (b), notices were sent to each person or entity appearing of record as the owner of a property which abuts the premises on which the Facility is proposed. Certification of such notice, a sample notice letter, and the list of property owners to whom the notice was mailed are also included in Attachment 13.

III. Statements of Need and Benefits

A. Statement of Need

1. United States Policy & Law - Wireless Facilities

United States policy and laws continue to support the growth of wireless networks. In 1996, the United States Congress recognized the important public need for high quality wireless communications service throughout the United States in part through adoption of the Telecommunications Act (the "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." H.R. Rep. No. 104-458, at 206 (1996) (Conf. Rep.). With respect to wireless communications services, the Act expressly preserved state and/or local land use authority over wireless facilities, placed several requirements and legal limitations on the exercise of such authority, and preempted state or local regulatory oversight in the area of emissions as more fully set forth in 47 U.S.C. § 332(c)(7). In essence, Congress struck a balance between legitimate areas of state and/or local

regulatory control over wireless infrastructure and the public's interest in its timely deployment to meet the public need for wireless services.

Eighteen years later, it remains clear that the current White House administration, The Congress and the FCC continue to take a strong stance and act in favor of the provision of wireless service to all Americans. In December 2009, President Obama issued Proclamation 8460 which included wireless facilities within his definition of the nation's critical infrastructure and declared in part:

Critical infrastructure protection is an essential element of a resilient and secure nation. Critical infrastructure are the assets, systems, and networks, whether physical or virtual, so vital to the United States that their incapacitation or destruction would have a debilitating effect on security, national economic security, public health or safety. From water systems to computer networks, power grids to cellular phone towers, risks to critical infrastructure can result from a complex combination of threats and hazards, including terrorist attacks, accidents, and natural disasters.¹

President Obama further identified the critical role of robust mobile broadband networks in his 2011 State of the Union address.² In 2009, The Congress directed the FCC to develop a national broadband plan to ensure that every American would have access to "broadband capability" whether by wire or wireless. What resulted in 2010 is a document entitled "Connecting America: The National Broadband Plan" (the "Plan").³ Although broad in scope, the Plan's goal is undeniably clear:

[A]dvance consumer welfare, civic participation, public safety and homeland security, community development, health care delivery, energy independence and efficiency, education, employee training, private sector

¹ Presidential Proclamation No. 8460, 74 C.F.R. 234 (2009).

² Cong. Rec. H459 (Jan. 25, 2011), also *available at* <http://www.whitehouse.gov/the-press-office/2011/01/25/remarks-president-state-union-address>. Specifically the President stressed that in order "[t]o attract new businesses to our shores, we need the fastest, most reliable ways to move people, goods, and information—from high-speed rail to high-speed Internet."

³ Connecting America: The National Broadband Plan, Federal Communications Commission (2010), *available at* <http://www.broadband.gov/plan/>.

investment, entrepreneurial activity, job creation and economic growth, and other national purposes.⁴ [internal quotes omitted]

The Plan notes that wireless broadband access is growing rapidly with “the emergence of broad new classes of connected devices and the rollout of fourth-generation (4G) wireless technologies such as Long Term Evolution (LTE) and WiMAX.”⁵ A specific goal of the Plan is that “[t]he United States should lead the world in mobile innovation, with the fastest and most extensive wireless networks of any nation.”⁶

In April 2011, the FCC issued a Notice of Inquiry concerning the best practices available to achieve wide-reaching broadband capabilities across the nation including better wireless access for the public.⁷ The public need for timely deployment of wireless infrastructure is further supported by the FCC’s Declaratory Ruling interpreting § 332(c)(7)(B) of the Telecommunications Act and establishing specific time limits for decisions on land use and zoning permit applications.⁸ More recently, the critical importance of timely deployment of wireless infrastructure to American safety and economy was confirmed in the Middle Class Tax Relief and Job Creation Act of 2012, which included a provision, Section 6409, that preempts a discretionary review process for eligible modifications of existing wireless towers or base stations.⁹

2. United States Wireless Usage Statistics

Over the past thirty years, wireless communications have revolutionized the way Americans live, work and play.¹⁰ The ability to connect with one another in a mobile environment has proven essential to the public’s health, safety and welfare. As of

⁴ Id. at XI.

⁵ Id. at 76.

⁶ Id. at 25.

⁷ FCC 11-51: Notice of Inquiry, In the Matter of Acceleration of Broadband Deployment: Expanding the Reach and Reducing the Cost of Broadband Deployment by Improving Policies Regarding Public Rights of Way and Wireless Facilities Siting, available at http://transition.fcc.gov/Daily_Releases/Daily_Business/2011/db0407/FCC-11-51A1.pdf.

⁸ WT Docket No. 08-165- Declaratory Ruling on Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance (“Declaratory Ruling”).

⁹ Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, §6409 (2012), available at <http://gpo.gov/fdsys/pkg/BILLS-112hr3630enr/pdf/BILLS-112hr3630enr.pdf>; see also H.R. Rep. No. 112-399 at 132-33 (2012)(Conf. Rep.), available at <http://www.gpo.gov/fdsys/pkg/CRPT-112hrpt399/pdf/CRPT-112hrt399.pdf>.

¹⁰ See, generally, History of Wireless Communications, available at http://www.ctia.org/media/industry_info/index.cfm/AID/10388 (2011)

June 2012, there were an estimated 321.7 million wireless subscribers in the United States.¹¹ Wireless network data traffic was reported at 341.2 billion megabytes, which represents a 111% increase from the prior year.¹² Other statistics provide an important sociological understanding of how critical access to wireless services has become. In 2005, 8.4% of households in the United States had cut the cord and were wireless only.¹³ By December 2012, that number grew exponentially to an astonishing 38.2% of all households.¹⁴ Connecticut in contrast lags behind in this statistic with 20.6% wireless only households.¹⁵

Wireless access has also provided individuals a newfound form of safety. Today, approximately 70% of *all* 9-1-1 calls made each year come from a wireless device.¹⁶ Parents and teens have also benefited from access to wireless service. In a 2010 study conducted by Pew Internet Research, 78% of teens responded that they felt safer when they had access to their cell phone.¹⁷ In the same study, 98% of parents of children who owned cell phones stated that the main reason they have allowed their children access to a wireless device is for the safety and protection that these devices offer.¹⁸

Wireless access to the internet has also grown exponentially since the advent of the truly “smartphone” device. Cisco reported in 2011 that global mobile data traffic grew in 2010 at a rate faster than anticipated and nearly tripling again for the third year in

¹¹ CTIA's Wireless Industry Indices: Semi-Annual Data Survey Results, A Comprehensive Report from CTIA Analyzing the U.S. Wireless Industry, Mid-Year 2012 Results (Semi-Annual Data Survey Results). See also, “CTIA-The Wireless Association Semi-Annual Survey Reveals Historical Wireless Trend” *available at* <http://www.ctia.org/media/press/body.cfm/prid/2133>.

¹² *Id.*

¹³ CTIA Wireless Quick Facts, *available at* <http://www.ctia.org/your-wireless-life/how-wireless-works/wireless-quick-facts> *citing Early Release of Estimates from the National Health Interview Survey, December 2012, National Center for Health Statistics*, June 2013.

¹⁴ CTIA Wireless Quick Facts

¹⁵ *Early Release of Estimates from the National Health Interview Survey, December 2012, National Center for Health Statistics*, June 2013. See also, “Wireless Substitution: State-level Estimates From the National Health Interview Survey, 2012”, National Health Statistics Report, No. 70, December 18, 2013.

¹⁶ Wireless 911 Services, FCC, *available at* <http://www.fcc.gov/guides/wireless-911-services>

¹⁷ Amanda Lenhart, *Attitudes Towards Cell Phones*, Pew Research, *available at* <http://www.pewinternet.org/Reports/2010/Teens-and-Mobile-Phones/Chapter-3/Overall-assessment-of-the-role-of-cell-phones.aspx>

¹⁸ *Id.*

a row.¹⁹ It was noted in 2010, mobile data traffic alone was three times greater than all global Internet traffic in 2000. Indeed, with the recent introduction of tablets and netbooks to the marketplace, this type of growth is expected to persist with Cisco projecting that mobile data traffic will grow at a compound annual growth rate (CAGR) of 92% from 2010 to 2015.²⁰

3. Public Need For A Tower For Wireless Services

The Facility proposed in this Application will be an integral component of AT&T's network in its FCC licensed areas throughout the state. There is a significant deficiency of AT&T's communications service in the northern Cheshire. The proposed facility will provide reliable services in AT&T's network to an area that includes over 5,000 residents of the Town and River Road (State Highway 70), Nob Hill Road, Riverside Drive, Redstone Drive, Cheshire Street, Allen Avenue and other local roads in northeastern Cheshire. The facility is needed in conjunction with other existing and proposed facilities for AT&T to provide reliable wireless services to the public that are not currently provided in this part of the State. Attachment 1 is a Radio Frequency Engineering Report with coverage plots depicting the "Current Coverage" provided by AT&T's existing facilities in this area of the state and "Proposed Coverage" as predicted from the proposed facilities together with existing coverage from adjacent sites. Additional statistics regarding the overall area, population and roadway miles of expanded coverage in the community are included in AT&T's report.

4. Municipal & Town Emergency Communications Need

The Town supports this project and requires it for emergency communications antennas and equipment at the site. See correspondence in support included in Attachment 2. The proposed Tower Facility will be a critical element of the Town's emergency communications network. Irrespective of wireless carrier services, the Town requires a new tower in northern Cheshire to support its own emergency communications needs in this area of Town. This project represents an opportunity for the Town to avoid its own capital costs of tower site construction and the operational costs associated with owning, leasing and maintaining a tower site needed for emergency communications.

¹⁹ Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2010-2015, February 1, 2011.

²⁰ Id.

B. Statement of Benefits

Carriers have seen the public's demand for traditional cellular telephone services in a mobile setting develop into a requirement for anytime-anywhere wireless connectivity with critical reliance placed on the ability to send and receive, voice, text, image and video. Provided that network service is available, modern devices allow for interpersonal and internet connectivity, irrespective of whether a user is mobile or stationary, which has led to an increasing percentage of the population to rely on their wireless devices as their primary form of communication for personal, business and emergency needs. The proposed facility would allow AT&T and other carriers to provide these benefits to the public that are not offered by any other form of communication system. In addition, the proposed facility will improve public safety communications both for the installation of radio antennas and point-to-point (PTP) backhaul antennas benefitting both Fire and Police services in the Town of Cheshire.

Beyond the above noted benefits, carriers have seen the public's demand for traditional cellular telephone services in a mobile setting develop into a requirement for anytime-anywhere wireless connectivity with critical reliance placed on the ability to send and receive, voice, text, image and video. Provided that network service is available, modern devices allow for interpersonal and internet connectivity, irrespective of whether a user is mobile or stationary, which has led to an increasing percentage of the population to rely on their wireless devices as their primary form of communication for personal, business and emergency needs. The proposed facility would allow AT&T to provide these benefits to the public that are not offered by any other form of communication system.

Moreover, AT&T will provide "Enhanced 911" services from the Facility, as required by the Wireless Communications and Public Safety Act of 1999, Pub. L. No. 106-81, 113 Stat. 1286 (codified in relevant part at 47 U.S.C. § 222) ("911 Act"). The purpose of this federal legislation was to promote public safety through the deployment of a seamless, nationwide emergency communications infrastructure that includes wireless communications services. In enacting the 911 Act, Congress recognized that networks that provide for the rapid, efficient deployment of emergency services would enable faster delivery of emergency care with reduced fatalities and severity of injuries. With each year since passage of the 911 Act, additional anecdotal evidence supports the public safety value of improved wireless communications in aiding lost, ill, or injured

individuals, such as motorists and hikers. Carriers are able to help 911 public safety dispatchers identify wireless callers' geographical locations within several hundred feet, a significant benefit to the community associated with any new wireless site.

On May 15, 2014, AT&T along with other wireless carriers began offering text-to-911 services nationwide in localities where municipal Public Safety Answering Points (PSAPs) support text-to-911 technology.²¹ This advancement is part of an evolution that will change what it means to "call 911" and extend access to emergency services to those who are deaf, hard of hearing, have a speech disability, or are in situations where a voice call to 911 might otherwise be dangerous or impossible. In coming years, individuals will be able to communicate with 911 operators and emergency services via voice, text and other media, including live video, which has the potential to revolutionize how emergency services personnel react and to respond to people in need.²²

In 2009, Connecticut became the first state in the nation to establish a statewide emergency notification system. The CT Alert ENS system utilizes the state Enhanced 911 services database to allow the Connecticut Department of Homeland Security and Connecticut State Police to provide targeted alerts to the public and local emergency response personnel alike during life-threatening emergencies, including potential terrorist attacks, Amber Alerts and natural disasters. Pursuant to the Warning, Alert and Response Network Act, Pub. L. No. 109-437, 120 Stat. 1936 (2006) (codified at 47 U.S.C. § 332(d)(1) (WARN), the FCC has established the Personal Localized Alerting Network (PLAN). PLAN will require wireless service providers to issue text message alerts from the President of the United States, the U.S. Department of Homeland Security, the Federal Emergency Management Agency and the National Weather Service using their networks that include facilities such as the one proposed in this Application. Telecommunications facilities like the one proposed in this Application enable the public to receive e-mails and text messages from the CT Alert ENS system on their mobile devices. The ability of the public to receive targeted alerts based on

²¹ *FCC Chairman Julius Genachowski Announces Commitment by Major U.S. Wireless Carriers & Public Safety Leaders to Accelerate Nationwide Text-to-911 Services; Calls for Continued Engagement with FCC on Next Generation 9-1-1 Initiatives* (Dec. 6, 2012), available at <http://www.fcc.gov/document/chairman-genachowski-announces-commitments-accelerate-text-911>; see Next Generation 9-1-1 Advancement Act of 2012, Pub. L. No. 112-96, 123 Stat. 156, § 6501 et seq. (2012).

²² See Next Generation 9-1-1 Advancement Act of 2012, Pub. L. No. 112-96, 123 Stat. 156, § 6503(e)(5) (2012).

their geographic location at any given time represents the next evolution in public safety, which will adapt to unanticipated conditions to save lives.

C. Technological Alternatives

The FCC licenses granted to wireless carriers operating in Connecticut authorize them to provide wireless services in this area of the state through deployment of a network of wireless transmitting sites. At this time, there are no known existing tower sites or structures in the northeastern Cheshire area that would meet the technical requirements and/or are available for lease or acquisition for construction of a tower site could support a wireless facility or the Town's emergency communications equipment. In addition, repeaters, microcell transmitters, distributed antenna systems and other types of transmitting technologies are not a practicable or feasible means to providing such services within Cheshire. The Applicants submit that there are no equally effective, feasible technological alternatives to a new tower for providing reliable personal wireless services and emergency communications in the northeastern Cheshire area.

IV. **Site Selection and Tower Sharing**

A. Site Selection

AT&T currently does not provide reliable services in most areas of northern Cheshire. No tall structures in this area of the Town of Cheshire were deemed suitable to provide the service needed by AT&T. The area consists principally of single family residential structures, schools, open space and parks along with some municipal property such as the host parcel which hosts a water treatment facility.

AT&T and Homeland independently investigated a number of different parcels of land within northern Cheshire for construction of a new tower facility. Their site searches date back approximately two years and municipally owned properties were investigated. As provided in Attachment 3, other than the proposed candidate location these other sites were either deemed unavailable or inappropriate for the siting of a tower facility or technically inadequate to satisfy AT&T or the Town's coverage requirements in this area of need.

B. Tower Sharing

The proposed Facility is designed to accommodate the antennas and equipment of the Town, AT&T and three (3) additional wireless carriers.

V. Facility Design

The proposed Facility includes an approximately 75' x 75' lease area located in the center of the 59 acre Parcel. The tower is proposed as a new self-supporting monopole 170' in height. The Town's antennas would be installed at the top of the tower reaching an overall height of approximately 180' AGL. AT&T would install up to twelve (12) panel antennas and related equipment at a centerline height of 155' above grade level (AGL) on the tower. The tower would be designed for future shared use of the structure by other FCC licensed wireless carriers.

The tower compound would consist of a 62' x 75' area (4,650 sq. ft.) to accommodate AT&T's ground equipment and provide for future shared use of the facility by other carriers as well as space for the Town's own emergency communications equipment. The tower compound would be enclosed by an 8' high chain link fence. An AT&T 11.5' x 16' equipment shelter would be installed at the tower base on a concrete pad within the tower compound together with provisions for a fixed back-up power generator. Space is reserved for the Town to install equipment on a concrete pad within the compound.

Vehicle access to the facility would be provided from Cheshire Street, largely over an existing bituminous driveway for a distance of approximately 1,360' to an existing gate north of the water treatment plant and then over a proposed gravel access drive approximately 140' to the equipment compound gate. Utilities will be provided from an existing utility pole on site approximately 385' from the proposed equipment compound. Attachments 4 and 5 contain the specifications for the proposed Facility, including an abutters map, site access maps, a compound plan, tower elevation, and other relevant details of the proposed Facility.

Included as Attachments 6 through 11 are various documents obtained or created as part of the Applicants' environmental review including a comparative Visual Resource Evaluation Report (Attachment 9). Some of the relevant information included in these Attachments reveals that:

- Grading and clearing of the compound and access driveway would require the importation of 160 cubic yards of broken stone for the construction of the proposed access drive;
- On-site management of stormwater and erosion controls are required during and after construction due to on-site wetlands; with the proposed mitigation measures and controls, the proposed Facility will have little to no impact on water flow or water quality.

VI. Environmental Compatibility

Pursuant to C.G.S. §16-50p (a) (3) (B), the Siting Council is required to find and determine as part of the Application process any probable impact of the Facility on the natural environment, ecological balance, public health and safety, scenic, historic and recreational values, forest and parks, air and water purity, and fish and wildlife. As demonstrated in this Application, the Facility will be constructed in compliance with applicable regulations and guidelines, and best practices will be followed to ensure that the construction of the proposed Facility will not have a significant adverse environmental impact. In addition, the regular operation and monthly maintenance of the Facility will not have a significant environmental impact.

A. Visual Assessment

Included in Attachment 9 is a visual assessment which contains a view shed map and photo simulations of off-site views. It is anticipated that approximately 735 acres of the 8,042-acre study area will have visibility of the proposed Facility, and only 53+/- additional acres of visibility is expected year-round. Topography, vegetation and the location of the tower would help obscure, partially or totally, views of the tower from most locations in the study area. Views are otherwise limited to the Host Property and its immediate vicinity and the northern portion of the Quinnipiac River Trail. Seasonal views are anticipated from the southern portion of the Quinnipiac River Trail as well as some locations within the Ives Farm trails system. No views are predicted to extend to the Hanover Pond Trails or Cheshire Park. Weather permitting, the Applicants will raise a balloon with a diameter of at least three (3) feet at the proposed site on the day of the Siting Council's first hearing session on this Application, or at a time otherwise specified by the Siting Council.

B. CT DEEP, SHPO and Other State and Federal Agency Comments

Representatives of the Applicants submitted requests for review from federal and state entities including the Connecticut Department of Energy and Environmental Protection (CTDEEP) and the Connecticut State Historic Preservation Officer (SHPO). The CTDEEP was consulted regarding the location of the proposed Facility and determined that while wood turtles and eastern box turtles are present in the area, protection measures similar to those used at wireless facilities approved in other Dockets and elsewhere in the state will ensure the protection of these turtles. Please see Attachment 10. SHPO review indicated no potential adverse effect on any historic resources eligible for or listed on the National Register of Historic Places with provisos that the tower be constructed to be as non-visible as possible and the removal of the tower within 90 days if the tower is not in use for six (6) consecutive months. Please see Attachment 11. As required by statute, this Application is being served on these and other state and local agencies, which may choose to comment on the Application prior to the close of the Siting Council's public hearing.

C. Power Density

In August of 1996, the FCC adopted a standard for Maximum Permissible Exposure (MPE) for RF emissions from telecommunications facilities like the one proposed in this Application. The tower site will fully comply with federal and state MPE standards. The cumulative worst-case calculation of power density from AT&T's operations in addition to those belonging to Town emergency services at the facility would be 2.74% of the MPE standard. A maximum power density report is included in Attachment 8.

D. Wetlands, Drainage & Other Environmental Factors

The proposed Facility would be unmanned, requiring monthly maintenance visits approximately one hour long. Carriers that maintain antennas and equipment at an approved Facility monitor same 24 hours a day, seven days a week from a remote location. The proposed Facility does not require a water supply or wastewater utilities. No outdoor storage or solid waste receptacles will be needed. Furthermore, the proposed Facility will neither create nor emit any smoke, gas, dust, other air contaminants, noise, odors, nor vibrations other than those created by any heating and

ventilation equipment or generators installed by carriers and the Town. During power outages and weekly equipment cycling an emergency generator would be utilized with air emissions in compliance with State of Connecticut requirements.

The Parcel currently supports an on-site wetland that is a forested floodplain wetland associated with the nearby Quinnipiac River. The Applicants will provide erosion and stormwater control controls for the site to ensure no significant adverse impacts to wetlands, the host property or adjacent parcels. A wetland investigation is included in Attachment 7. As noted therein a very poorly drained depressional wetland feature dominated by buttonbrush is located approximately 150' west of the proposed Facility and could potentially provide "cryptic style" vernal pool habitat potentially supportive of breeding amphibians. While further review of this wetland is being completed, no impact is anticipated with the provision of proper protection measures and construction protocols. Overall, the construction and operation of the proposed Facility will not have a significant impact on wetlands or water quality and drainage will be appropriately managed on-site.

E. National Environmental Policy Act Review

The Applicants have evaluated the project in accordance with the FCC's regulations implementing the National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852(codified in relevant part at 42 U.S.C. § 4321 et seq.) ("NEPA"). The parcel was not identified as a wilderness area, wildlife preserve, National Park, National Forest, National Parkway, Scenic River, State Forest, State Designated Scenic River or State Gameland. Furthermore, according to the site survey and field investigations, no federally regulated wetlands or watercourses will be impacted by the proposed Facility.

F. Air Navigation

The proposed Facility was analyzed for potential impacts to air navigation. The Applicants obtained an FAA survey and TOWAIR analysis indicating no marking or lighting of the tower for air navigation safety is required as the tower will not be an obstruction to aviation. See materials included in Attachment 5.

VII. Consistency with the Town of Cheshire's Land Use Regulations

Pursuant to the Siting Council's Application Guide, a narrative summary of the consistency of the project with the Town's zoning and wetland regulations and plan of conservation and development is included in this section. A description of the zoning classification of the site and the planned and existing uses of the proposed site location are also detailed in this section.

A. Cheshire's Plan of Conservation and Development

The Cheshire Plan of Conservation & Development ("Plan"), effective October 28, 2002 and amended July 9, 2007 is included in the Bulk Filing. The Plan "recommends the most desirable use of land within the municipality for residential, recreational, commercial, industrial and other purposes and for the most desirable population densities within the municipality." Plan p. 1. The Plan addresses wireless siting specifically noting that it is "important from the town perspective that towers should not be placed on ridgelines, in wetlands, or where they will adversely impact scenic views." Plan p. 36. Further, the Plan notes that Towers should also be sited in areas that have the least population density so that any negative effects on surrounding property values will be minimized." Plan p. 36. The Applicants submit the project is generally consistent with the Town's Plan; a position supported by the Planning and Zoning Commission's own review included in Attachment 12.

B. Cheshire's Zoning Regulations and Zoning Classification

The Town of Cheshire Zoning Regulations set forth general requirements for communications tower siting in Section 80. The Facility site is classified in the R-40 zoning district where wireless communications facilities are permitted by Special Use Permit. The table below provides a review of general requirements of tower facilities under the Town of Cheshire Zoning Regulations (Section 80.7 - Standards of Review) accompanied by compliance of the Facility with those requirements.

Section from the Zoning Regulations	Standard or Preference	Proposed Facility
80.7.2A	Wireless telecommunication facilities shall be located in the	As a new facility this tower would be the fourth preferred

	<p>following order of preference (the most preferred location is listed first; the least preferred location is listed last):</p> <ol style="list-style-type: none"> 1. On or within existing, approved wireless telecommunication facilities. 2. Within existing structures, including, but not limited to, buildings, water towers, steeples, and spires. 3. On existing structures, including, but not limited to, buildings, water towers, steeples, spires, and utility towers and poles. 4. In locations which provide the greatest amount of screening due to existing topography, vegetation, buildings, or other structures. 	<p>type of facility.</p>
<p>80.7.2B</p>	<p>To the extent possible, wireless telecommunication facilities shall be located in industrial districts or commercial districts.</p> <ol style="list-style-type: none"> 2. Wireless telecommunication facilities are prohibited in the Interchange Zone unless they are located on or in an existing structure (for example, a water tower) or on or in a building. 	<p>The property is zoned residential but is municipally owned and includes a local waste water treatment facility and recreational fields.</p>

	services	
80.7.3B	<p>1. The perimeter of the sites of ground-mounted towers shall be screened so as to minimize their visual impacts on, and to enhance their compatibility with, the neighborhood and the Town.</p> <p>2. If the facility is in a wooded area, a natural, vegetated buffer strip of undisturbed trees shall be retained for at least fifty (50) feet in depth and at least six (6) feet in height at all times around the perimeter of the site and only minimally disturbed where the accessway is located.</p> <p>3. If the facility is not in a wooded area, a vegetated buffer strip of at least fifty (50) feet in depth and at least six (6) feet in height shall be planted around the perimeter of the site. The buffer strip shall be planted with vegetation of a type that has the potential to reach thirty (30) feet at maturity.</p> <p>4. To the greatest extent possible, existing trees, vegetation, and unique site features shall be retained and protected.</p> <p>5.</p>	<p>The site plans do not currently incorporate landscaping given the proposed location on the property and surrounding wooded area, which will remain, and lack of any views into the compound from residences.</p>

	<p>The Commission may require additional landscaping and screening in excess of the standards of this Section 80.7.3.B if the Commission finds that it is necessary to mitigate their visual impact on, and to enhance their compatibility with, the neighborhood and the Town.</p> <p>6. Landscaping, trees, and plants required by this Section 80 shall be planted in a growing condition according to accepted horticultural practices and they shall be maintained in a healthy growing condition. Any landscaping, trees, and plants which are in a condition that does not fulfill the intent of this Section 80 shall be replaced by the property owner during the next planting season for the particular plant material.</p>	
<p>80.7.4</p>	<p>80.7.4 Environmental Standards</p> <p>A. Facilities shall not be located in wetlands or watercourses. Locating facilities in wetland buffer areas shall be avoided to the extent possible, and disturbance to wetland buffer areas shall be minimized.</p> <p>B. No hazardous waste shall be</p>	<p>The Facility is not located in a wetland or watercourse.</p> <p>No hazardous waste will be discharged by this unmanned communication facility.</p> <p>No impact to local aquifer resources is anticipated.</p> <p>Equipment at the facility would</p>

	<p>discharged on the site of any facility. The storage of hazardous materials on site shall conform to the requirements of Section 47.4.5(A)(1) of these Regulations.</p> <p>C. Facilities shall comply with the requirements of Section 47 ("Aquifer Protection") of these Regulations.</p> <p>D. Noise-producing equipment shall be sited, constructed, and insulated so as to comply with State noise laws and regulations</p>	<p>not emit noise other than that provided by the operation of the installed heating, air-conditioning and ventilation system and will comply with local noise standards. Construction noises would occur during facility construction which is expected for about 4-6 weeks. A generator would be used only in emergencies and is exempt from noise regulations.</p>
80.7.5	<p>Radio-Frequency Emissions Standards</p> <p>All facilities shall comply with FCC requirements concerning radio-frequency emissions and exposure, found in the Code of Federal Regulations at 47 C.F.R. Section 1.1307(b), as amended.</p>	<p>The proposed facility will comply with the FCC promulgated MPE standards as it will be only 2.4% of the regulatory limit.</p>
80.7.6	<p>Co-Location Standards</p> <p>A. In order to reduce the number of facilities that are stand-alone, facilities and sites shall be shared whenever technically, legally, environmentally, and economically feasible and whenever such sharing meets</p>	<p>The tower is designed for collocation by both the Town and AT&T as well as at least three (3) additional commercial wireless carriers, which is reflective of the carriers active in Connecticut.</p>

	<p>public safety concerns, will avoid the unnecessary proliferation of such towers, and is in the public interest.</p> <p>B.</p> <p>In order to reduce the number of facilities that are stand-alone, facilities and sites shall be designed and constructed so that they may be shared by at least seven (7) total providers whenever technically, legally, environmentally, and economically feasible and whenever such sharing meets public safety concerns, will avoid the unnecessary proliferation of such towers, and is in the public interest.</p>	
80.7.7	<p>The minimum setback between the base of the ground-mounted facility and any property line; public or private road; habitable dwelling; public recreational area; or commercial, industrial, governmental, or other business or institutional use shall be the height of the tower including any antennas or other appurtenances.</p>	<p>The tower is approximately 433' from the nearest property line; more than double the height of the tower.</p>
80.7.8	<p>80.7.8 Equipment Shelter Standards</p> <p>A.</p> <p>Equipment shelters located on the ground shall comply with the</p>	<p>Independent space for carrier specific shelters or cabinets is provided. As noted no additional landscaping is proposed.</p>

	<p>setback requirements of Section 32.2 of these Regulations.</p> <p>B. Wireless telecommunication facilities shall be served by a single equipment shelter designed to house the equipment of all users of the facility at full build-out.</p> <p>C. Equipment shelters shall be designed with an architectural style which is in harmony with the neighboring properties.</p> <p>D. At least one (1) foundation planting shall be planted every five (5) feet around equipment shelters.</p>	
<p>80.7.9</p>	<p>A. Driveways and access roads which provide access to towers and equipment shelters shall be at least fifteen (15) feet wide; shall be constructed to permit access by, and to support the weight of, emergency vehicles and apparatus; and shall enable emergency vehicles and apparatus to maneuver around the tower and equipment shelter.</p> <p>B. The grade of the driveway or access road shall not exceed ten percent (10%).</p>	<p>The driveway and access design allow for emergency vehicle access and have been reviewed by the Town as part of lease negotiations.</p>

	<p>C. At the end of the driveway or access road, a turnaround shall be constructed with a minimum radius of twenty-five (25) feet.</p> <p>D. If the topographical conditions require drainage pipes, drainage basins, and/or curbing, they shall be constructed as a part of the construction of the driveway or access road.</p>	
80.7.10	<p>Except as may be otherwise required by the Federal Aviation Administration, all external illumination of telecommunication facilities shall be directed or shielded in such a manner that the source of light (bulb, tube, etc.) will not be visible from any street or from any adjoining property.</p> <p>B. Except as may be otherwise required by the Federal Aviation Administration, the illuminated areas shall be confined essentially to the property where the illumination originates.</p>	<p>No tower lighting is proposed. AT&T plans to mount a timed motion sensor light to the shelter for safety of those visiting the compound.</p>
80.7.11	<p>Wireless telecommunication facilities shall be constructed in accordance with applicable construction codes and standards for the tower, mount,</p>	<p>The facility will be built in accordance with the latest applicable codes and standards. A chain link fences is proposed as is signage providing contact</p>

	<p>antenna, equipment, structure, etc. at issue.</p> <p>B. An eight (8) foot high, chain-link fence with 1-inch squares, shall be installed to enclose the tower and equipment shelter.</p> <p>C. A sign no larger than two (2) square feet shall be posted adjacent to the gate into the fence-enclosed area. The sign shall provide the name of the facility owner and the name and telephone number of an emergency contact, available twenty-four (24) hours a day.</p> <p>D. "No Trespassing" and other warning signs may be posted on the fence.</p> <p>E. An emergency access key box, approved by the Cheshire Fire Department, shall be provided for all equipment shelters and fence gate(s) associated with the facility.</p>	<p>information.</p>
<p>80.7.12</p>	<p>B. Wireless telecommunication facilities are permitted to a maximum height of 150 feet.</p> <p>C.</p>	<p>The tower height is 170' with appurtenances reaching 180' AGL in order to meet the Town's emergency communication needs.</p>

	<p>The Commission may permit the height of a wireless telecommunication facility to exceed 150 feet in the following circumstances:</p> <ol style="list-style-type: none">1. The extra height is necessary for one or more of the following reasons:<ol style="list-style-type: none">a. To facilitate the co-location of wireless telecommunication facilities in order to avoid construction of a new tower; orb. To meet the coverage requirements of the applicant's/filer's wireless telecommunication system. These requirements shall be documented with written, technical evidence (certified and signed by a radio-frequency radiation engineer) that demonstrates the height of the proposed facility is the minimum height required to function satisfactorily. No facility that is taller than such minimum height shall be approved	
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C. Planned and Existing Land Uses

The Facility is proposed on a municipal parcel of land hosting a waste water treatment facility adjacent to Town owned open space and recreation fields. Single family residences predominate the area around the municipal parcel. Consultation with Town officials did not indicate any other planned changes to the existing or surrounding land uses. Copies of the Town of Cheshire Zoning Code, Inland Wetlands Regulations, Zoning Map and Plan of Conservation and Development are included in the Bulk Filing.

D. Cheshire's Inland Wetlands and Watercourses Regulations

The Cheshire Inland Wetlands Regulations ("Local Wetlands Regulations") regulate certain activities conducted in "Wetlands" and "Watercourses" as defined therein. The Town has established an upland review area for wetlands and watercourses of 50' for various activities and land uses. In this case, one wetland area located approximately 129' west of the proposed facility outside of the upland review area was identified. See Wetland Investigation included in Attachment 7. As such the project would not constitute a regulated activity under local Wetlands Regulations.

All appropriate sediment and erosion control measures will be designed and employed in accordance with the Connecticut Soil Erosion Control Guidelines, as established by the Connecticut Council of Soil and Water Conservation and DEP (2002). Soil erosion control measures and other best management practices will be established and maintained throughout the construction of the proposed Facility. The Applicants do not anticipate an adverse impact on any wetland or water resources as part of construction or longer term operation of the Facility.

VIII. **Consultations with Town Officials**

C.G.S. § 16-50/ generally requires an applicant to consult with the municipality in which a new tower facility may be located for a period of ninety days prior to filing any application with the Siting Council. In this matter, the Applicants consulted with the Town for a period of over two years. This consultation included preliminary discussions regarding both AT&T's and the Town's own Radio Frequency needs. Subsequently these consultations involved design visits at the site and follow up communication and discussion regarding the needed height for the Town's antennas.

This dialogue and collaboration culminated in a lease negotiation process including a C.G.S. § 8-24 referral to the Planning and Zoning Commission which reviewed the proposed facility and found it in keeping with Town planning priorities. Additional technical information was forwarded to the Town Manager, the Planning and Zoning Commission and the Inland Wetlands Commission on June 14, 2014 with the understanding that the next procedural step would be an application to the Siting Council for this mixed use tower. Subsequent correspondence with the Town indicated no further consultation was required.

IX. Estimated Cost and Schedule

A. Overall Estimated Cost

The total estimated cost of construction for the proposed Facility is represented in the table below.

Requisite Component:	Cost (USD)
Tower & Foundation	\$100,000
Site Development	\$100,000
Utility Installation	\$25,000
Facility Installation	\$45,000
Subtotal Homeland Towers Cost	\$270,000
Antennas and Equipment	\$250,000
Subtotal AT&T Cost	\$250,000
Total Estimated Costs	\$520,000

B. Overall Scheduling

Site preparation work would commence following Siting Council approval of a Development and Management (“D&M”) Plan and the issuance of a Building Permit by the Town of Cheshire. The site preparation phase is expected to be completed in 4-5 weeks. Installation of the monopole, antennas and associated equipment is expected to take an additional three weeks. The duration of the total construction schedule is approximately 8 weeks. Facility integration and system testing for carrier equipment is expected to require an additional 2 weeks after construction is completed.

X. Conclusion

This Application and the accompanying materials and documentation clearly demonstrate that a public need for a new tower in northern Cheshire exists to provide both emergency communications and wireless services to the public. This area of Cheshire lacks reliable AT&T service and the Town has its own need for a new facility at this location including point-to-point communications. The Applicants respectfully submit that the public need for the proposed Facility outweighs any potential environmental effects from the development of the tower, none of which have been identified as substantial or significant. Accordingly, the Applicants respectfully request that the Siting Council grant a Certificate of Environmental Compatibility and Public Need to Homeland Towers for a new wireless telecommunications Facility in northern Cheshire.

Respectfully Submitted,

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ATTACHMENT 1

Radio Frequency Analysis Report

S3459A

1325 Cheshire Street, Cheshire, CT



at&t

June 16, 2014



C Squared Systems, LLC
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Auburn, NH 03032

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Fax: (603) 644-2801
Support@csquaredsystems.com

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1. Overview

C Squared Systems was retained by New Cingular Wireless PCS, LLC (“AT&T”) to investigate the extent of coverage that could be potentially obtained by constructing the proposed wireless communications facility at 1325 Cheshire Street, Cheshire, CT at 155 feet AGL.

AT&T is licensed by the FCC to provide wireless communications services throughout the State of Connecticut including the Town of Cheshire where the proposed facility would be located.

This report addresses AT&T’s need for the proposed wireless facility and confirms that there are no other suitable existing structures that could address the coverage gaps in their wireless communications network. The coverage analysis completed by C Squared Systems confirms: AT&T has a gap in reliable service in Cheshire, and that the Proposed Facility provides AT&T with coverage in that service gap. Included as attachments in this report are coverage maps detailing the existing network and expected coverage from the proposed facility, pertinent site information, terrain and network layout maps.

2. Technology Advances & Design Evolution

AT&T provides digital voice and data services using 3rd Generation (3G) UMTS technology in the 800 MHz and 1900 MHz frequency band, and is in the midst of deploying advanced 4th Generation (4G) services over LTE technology in the 700 MHz and 1900 MHz frequency bands as allocated by the FCC. As part of their network expansion and ongoing technology advancements in Connecticut and elsewhere in the Country, the 4G LTE network rollout will build on the existing 3G data services that utilize UMTS technology. These data networks are used by mobile devices for fast web browsing, media streaming, and other applications that require broadband connections. The mobile devices that benefit from these advanced data networks are not limited to basic handheld phones, but also include devices such as smartphones, PDA’s, tablets, and laptop air-cards. With the evolving rollout of 4G LTE services and devices, AT&T customers will have even faster connections to people, information, and entertainment.

It is important to note that with AT&T’s migration from 3G to 4G services come changes in the base station infrastructure and resultant changes in the operating thresholds required by the LTE network. In the past, AT&T has presented receive signal thresholds of -74 dBm for their in-building coverage threshold and -82 dBm for their in-vehicle coverage threshold. Those thresholds were based on network requirements to support 2G/3G data speeds and past usage demand. Today, customers expect low latency and faster data speeds as evidenced by increasing data usage trends and customer demand.

AT&T’s 4G LTE technology is designed to thresholds of -83 dBm and -93 dBm for their 700 MHz LTE and -86 dBm and -96 dBm for their 1900 MHz LTE.¹ The stronger thresholds (-83 dBm and -86 dBm) yield greater throughputs and improved customer experience. The -93 dBm and -96 dBm thresholds are the minimum acceptable levels required to meet customer expectations for 4G service.

¹ The threshold range differences between the 700 MHz and 1900 MHz frequency bands directly correlates to the type branch diversity receivers deployed in AT&T’s receiver design.

3. Coverage Objective

There is a significant coverage deficiency in the existing AT&T wireless communications network along River Road (State Highway 70), Nob Hill Rd, Riverside Drive, Redstone Drive, Cheshire Street, Allen Ave and the surrounding residential areas in Cheshire, referred to herein as the "targeted area". A deficiency in coverage is evidenced by the inability to adequately and reliably transmit/receive quality calls and/or utilize data services offered by the network. Seamless reliable coverage provides users with the ability to successfully originate, receive, and maintain quality calls and/or utilize data applications throughout a service area. Overlapping coverage is required for users to be able to move throughout the service area and reliably "hand-off" between cells to maintain uninterrupted connections.

Due to terrain characteristics and the distance between the targeted coverage area and the existing sites, AT&T's options to provide services in this area are quite limited (maps of the terrain in this area and the distance to neighboring AT&T sites from the proposed site are included as Attachments 1 & 2, respectively.) AT&T's network requires a deployment of antennas throughout the area to be covered. These antennas are connected to receivers and transmitters that operate in a limited geographic area known as a "cell." AT&T's wireless network, including their wireless handsets and devices, operate by transmitting and receiving low power radio frequency signals to and from these cell sites. The signals are transferred to and from the landline telephone network and routed to their destinations by sophisticated electronic equipment. The size of the area served by each cell site is dependent on several factors, including the number of antennas used, the height at which the antennas are deployed, the topography of the land, vegetative cover and natural or man-made obstructions in the area. As customers move throughout the service area, the transmission from the portable devices is automatically transferred to the AT&T facility with the best connection to the device, without interruption in service provided that there is overlapping coverage from the cells.

In order to define the extent of the coverage gap to be filled, both propagation modeling and real-world drive testing has been conducted in the area of Cheshire around the subject areas. Propagation modeling uses PC software to determine the network coverage based on the specific technical parameters of each site including, but not limited to, location, ground elevation, antenna models, antenna heights, and also databases of terrain and ground cover in the area. Drive testing consists of traveling along area roadways in a vehicle equipped with a sophisticated setup of test devices and receivers that collect a variety of network performance metrics. The data are then processed and mapped in conjunction with the propagation modeling to determine the coverage gaps.

Analysis of the propagation modeling and drive testing in and around Cheshire reveal that AT&T's network is unreliable throughout much of the area due to gaps in coverage, and that there is a service deficiency as a result. In order to fill in these coverage gaps and improve the network reliability to Cheshire, a new facility is needed in the area.

Table 1 below approximates the current coverage gap of AT&T's 700 MHz and 1900 MHz (PCS) LTE technology in the vicinity of the proposed site.

	Existing 700 MHz LTE Coverage Gap		Existing 1900 MHz LTE Coverage Gap	
Population:²	(\geq -83 dBm)	7,597	(\geq -86 dBm)	7,893
	(\geq -93 dBm)	5,043	(\geq -96 dBm)	5,920
Area (mi²):	(\geq -83 dBm)	8.70	(\geq -86 dBm)	8.81
	(\geq -93 dBm)	6.10	(\geq -96 dBm)	7.07
Roadway (mi):	Main:	11.69	Main:	12.01
	Secondary:	24.94	Secondary:	29.40
	Total:	36.63	Total:	41.41

Table 1: Estimated Existing Coverage Gap Statistics

² Population figures are based upon 2010 US Census Block Data

Included with this report are Attachments 1-8, which are explained below to help describe AT&T's network in and around Cheshire, and the need for the proposed facility.

- Attachment 1: *3D Terrain Map* details the terrain features around the area of deficient service being targeted by the proposed site in Cheshire. These terrain features play a key role in determining site designs and dictating the unique coverage achieved from a given location. This map is included to provide a visual representation of the ridges and valleys that must be considered when siting a wireless facility. The darker green and blue shades correspond to lower elevations, whereas the yellow and red shades indicate higher elevations.
- Attachment 2: *Map of Distance to Neighbor Sites – Cheshire* provides an overview of AT&T's network of sites in the area, with distances shown from the proposed Cheshire site to the existing sites in the surrounding area.
- Attachment 3: *Neighbor Site Data and Distance to Proposed Site* provides site specific information of existing and planned neighboring sites used to perform the coverage analysis provided in Attachments 4 through 7.
- Attachment 4: *“Existing 700 MHz LTE Coverage” for the Current AT&T Network* depicts 700 MHz LTE coverage from existing sites and demonstrates that there are currently gaps in 700 MHz LTE coverage effecting service along the targeted area. The coverage shown is where the signal strengths are: > -83 dBm (minimum level required for reliable, high quality service and performance at 700 MHz) and, > -93 dBm (minimum level required for adequate level of service at 700 MHz). In an effort to provide the required levels of coverage to these areas, AT&T is proposing to install a wireless facility at the 1325 Cheshire Street location.
- Attachment 5: *“Existing & Proposed 700 MHz LTE Coverage” with Cheshire Site for the AT&T Network* shows how this proposed site would fill in the existing coverage gaps and improve AT&T's 700 MHz LTE network within the targeted areas, as detailed in Table 2.
- Attachment 6: *“Existing 1900 MHz LTE Coverage” for the Current AT&T Network* depicts 1900 MHz LTE coverage from existing sites and demonstrates that there are currently gaps in 1900 MHz LTE coverage effecting service along the targeted area. The coverage shown is where the signal strengths are > -86 dBm (minimum level required for reliable high quality service and performance at 1900 MHz) and > -96 dBm (the minimum required for adequate level of service at 1900 MHz).
- Attachment 7: *“Existing & Proposed 1900 MHz Coverage ” with Cheshire Site for the AT&T Network* shows how this proposed site would fill in the existing coverage gaps and improve AT&T's 1900 MHz LTE network within the targeted areas, as detailed in Table 2.
- Attachment 8: *Connecticut DOT Average Annual Daily Traffic Data - Cheshire* shows the available vehicular traffic volume data for the subject area from the Connecticut Department of Transportation. This data shows as many as 3,300 vehicles per day passing through the subject area on Cheshire Street at the intersection with Allen Road and 4,600 vehicles per day at State Highway 70 and Cheshire Street.

Table 2 below lists the coverage statistics that were compiled for each frequency band of the proposed site:

	Incremental Coverage from Proposed Site (700 MHz)		Incremental Coverage from Proposed Site (1900 MHz)	
	Population Coverage: ³	(\geq -83 dBm)	1,200	(\geq -86 dBm)
(\geq -93 dBm)		3,026	(\geq -96 dBm)	2,083
Area Covered (mi²):	(\geq -83 dBm)	1.25	(\geq -86 dBm)	0.41
	(\geq -93 dBm)	3.64	(\geq -96 dBm)	2.44
Roadway Coverage (mi):	Main:	7.26	Main:	5.29
	Secondary:	15.11	Secondary:	9.55
	Total:	22.37	Total:	14.84

Table 2: Coverage Statistics

³ Population figures are based upon 2010 US Census Block Data

4. Conclusion

AT&T has identified an area of deficient coverage affecting a significant portion of Cheshire, including key traffic corridors through the residential areas of the town. The proposed Cheshire facility will bring the needed fill-in coverage to significant portions of along River Road (State Highway 70), Nob Hill Road, Riverside Drive, Redstone Drive, Cheshire Street, Allen Ave, and the residential neighborhoods in the vicinity of these roads, all of which are currently within this coverage gap of AT&T's network.

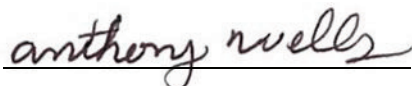
No existing structures were identified and available that would be able to satisfy the coverage requirements needed for this area. The location and the minimum height selected were chosen to achieve an optimal balance between meeting coverage objectives, overcoming the tree line for signal propagation, minimizing the aesthetic impact to the community, and future collocation.

As discussed in this report and depicted in the attached plots, the proposed AT&T site will provide the public need for service in this area, by providing an appropriate coverage footprint for the Cheshire community along with effective connectivity to the rest of AT&T's existing network.

Without a site in this area, at the height requested, significant gaps in service will exist within the Town of Cheshire, and the identified public need for reliable wireless services in this area will not be met.

5. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate.

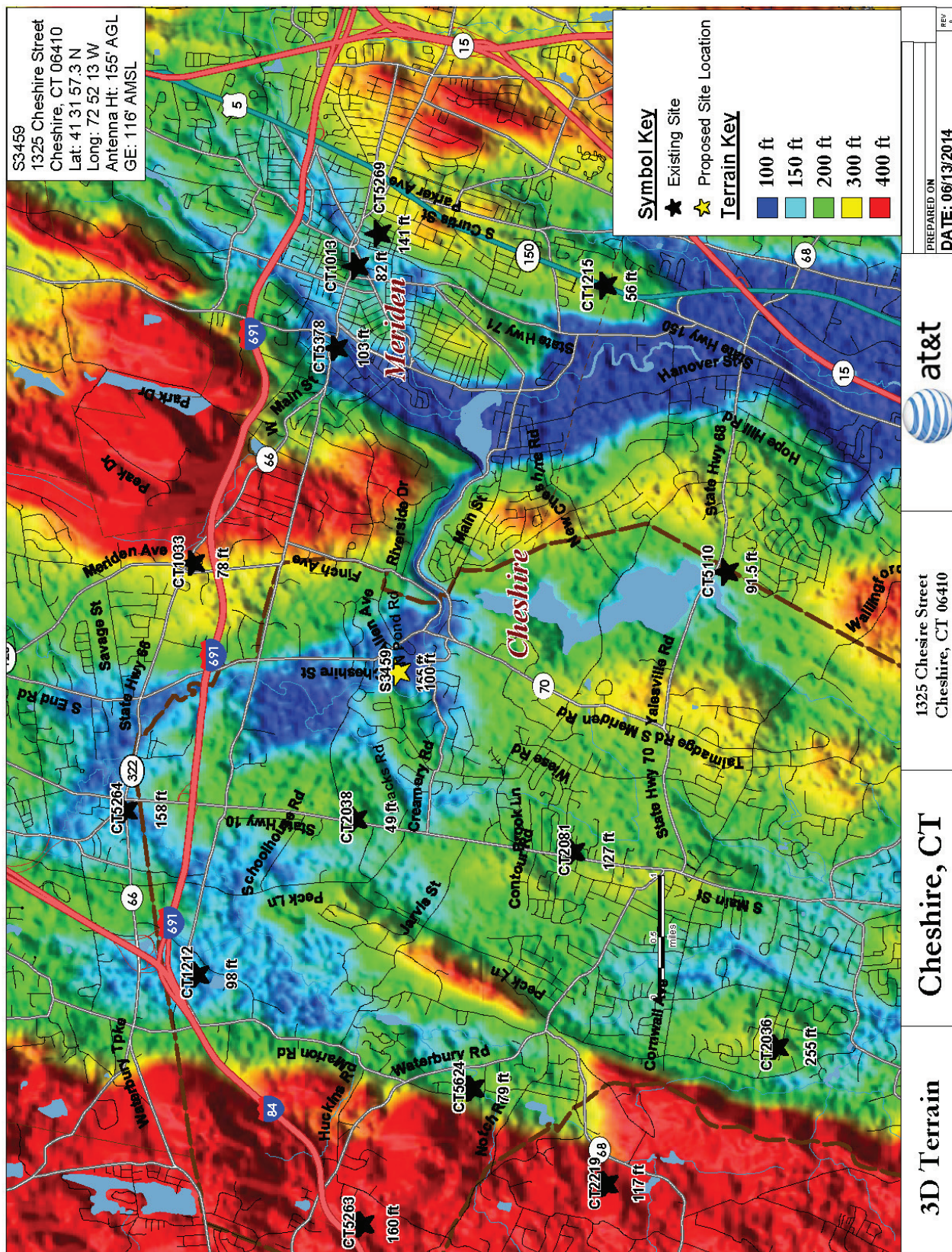


Anthony Wells
C Squared Systems, LLC

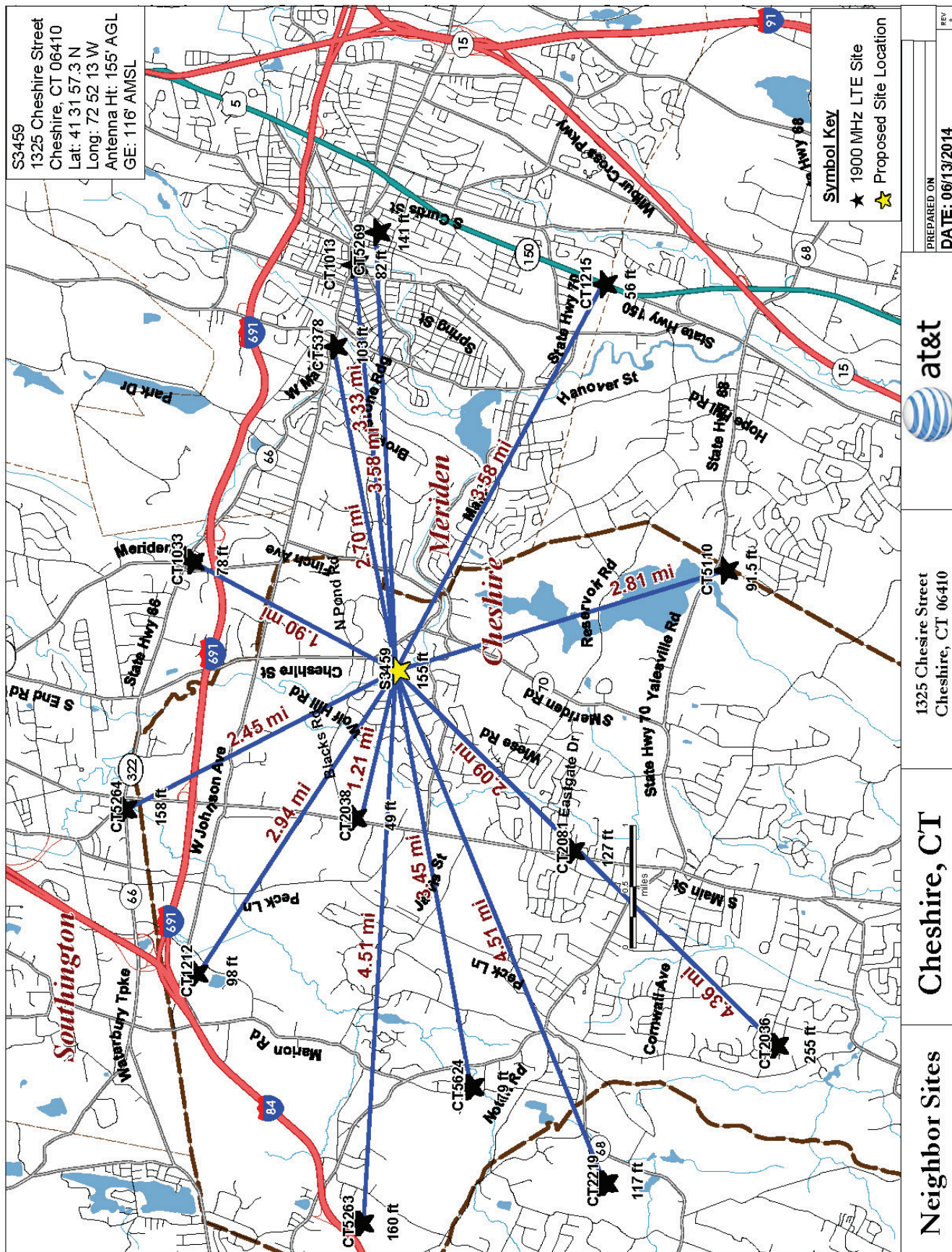
June 16, 2014

Date

6. Attachments



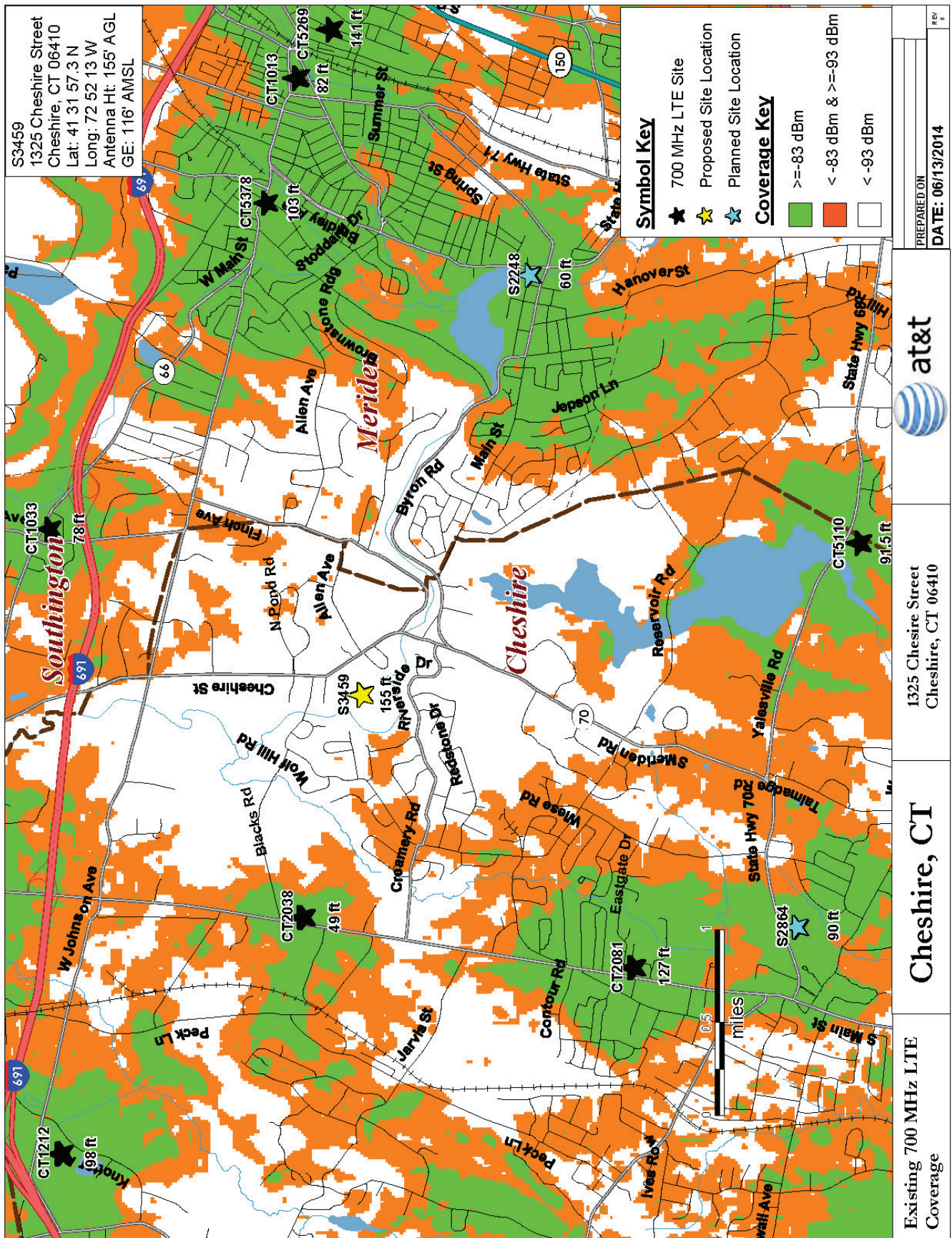
Attachment 1: 3D Terrain Map



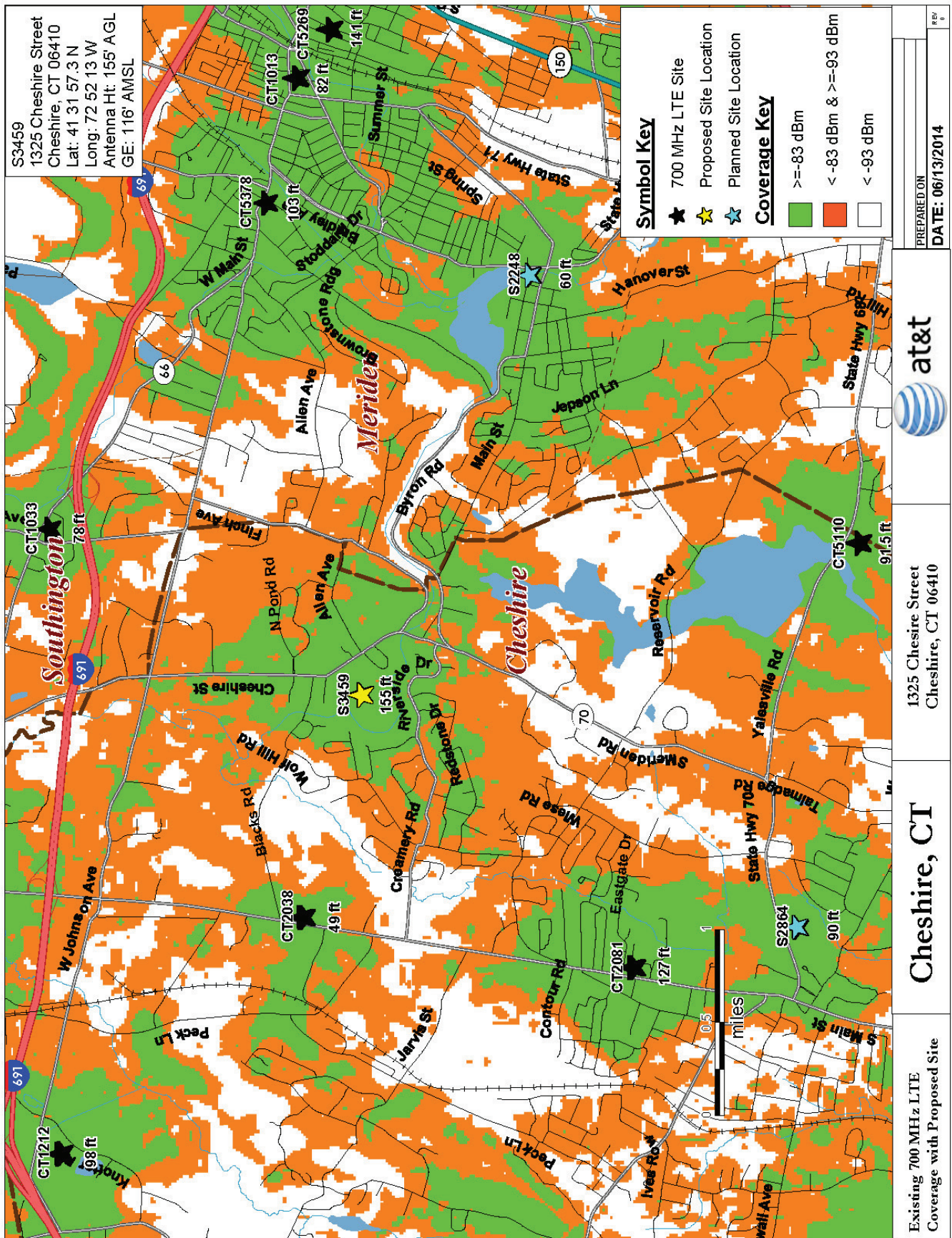
Attachment 2: Map of Distance to Neighbor Sites – Cheshire

Site Name	Address	Town	Latitude	Longitude	Antenna Centerline (feet)	Distance to Proposed Site (miles)	Structure Type	Grd Elev. (feet)
CT1013	27 BUTLER ST	MERIDEN	41.538	-72.806	82	3.3	Rooftop	154
CT1033	250 MERIDEN WATERBURY TRNPKE	SOUTHINGTON	41.557	-72.853	78	1.9	Monopole	336
CT1212	705 WEST JOHNSON AVE	CHESHIRE	41.556	-72.918	98	2.9	Lattice Tower	148
CT1215	546 SOUTH BROAD ST	MERIDEN	41.508	-72.809	56	3.6	Rooftop	254
CT2036	751 HIGGINS RD	CHESHIRE	41.488	-72.929	255	4.4	Lattice Tower	278
CT2038	1338 HIGHLAND AVE	CHESHIRE	41.537	-72.893	49	1.2	Water Tower	208
CT2081	500 HIGHLAND AVE	CHESHIRE	41.511	-72.899	127	2.1	Rooftop	225
CT2219	229 CHESHIRE RD	PROSPECT	41.508	-72.951	117	4.5	Monopole	520
CT5110	989 CHURCH ST	WALLINGFORD	41.494	-72.855	91.5	2.8	Lattice Tower	197
CT5263	1121 SUMMIT RD	CHESHIRE	41.536	-72.957	160	4.5	Monopole	625
CT5264	1394 MERIDEN WATERBURY TRNPKE	PLANTSVILLE	41.564	-72.892	158	2.5	Monopole	126
CT5269	55 WILLOW ST	MERIDEN	41.535	-72.801	141	3.6	Rooftop	173
CT5378	450-478 WEST MAIN ST	MERIDEN	41.540	-72.819	103	2.7	Rooftop	138
CT5624	677 MIXVILLE RD	CHESHIRE	41.524	-72.936	79	3.5	Rooftop	219
S2248	33 MAIN ST	MERIDEN	41.519	-72.827	100	2.5	Planned Monopole	96
S2864	185 ACADEMY RD	CHESHIRE	41.498	-72.894	90	2.7	Planned Monopole	217

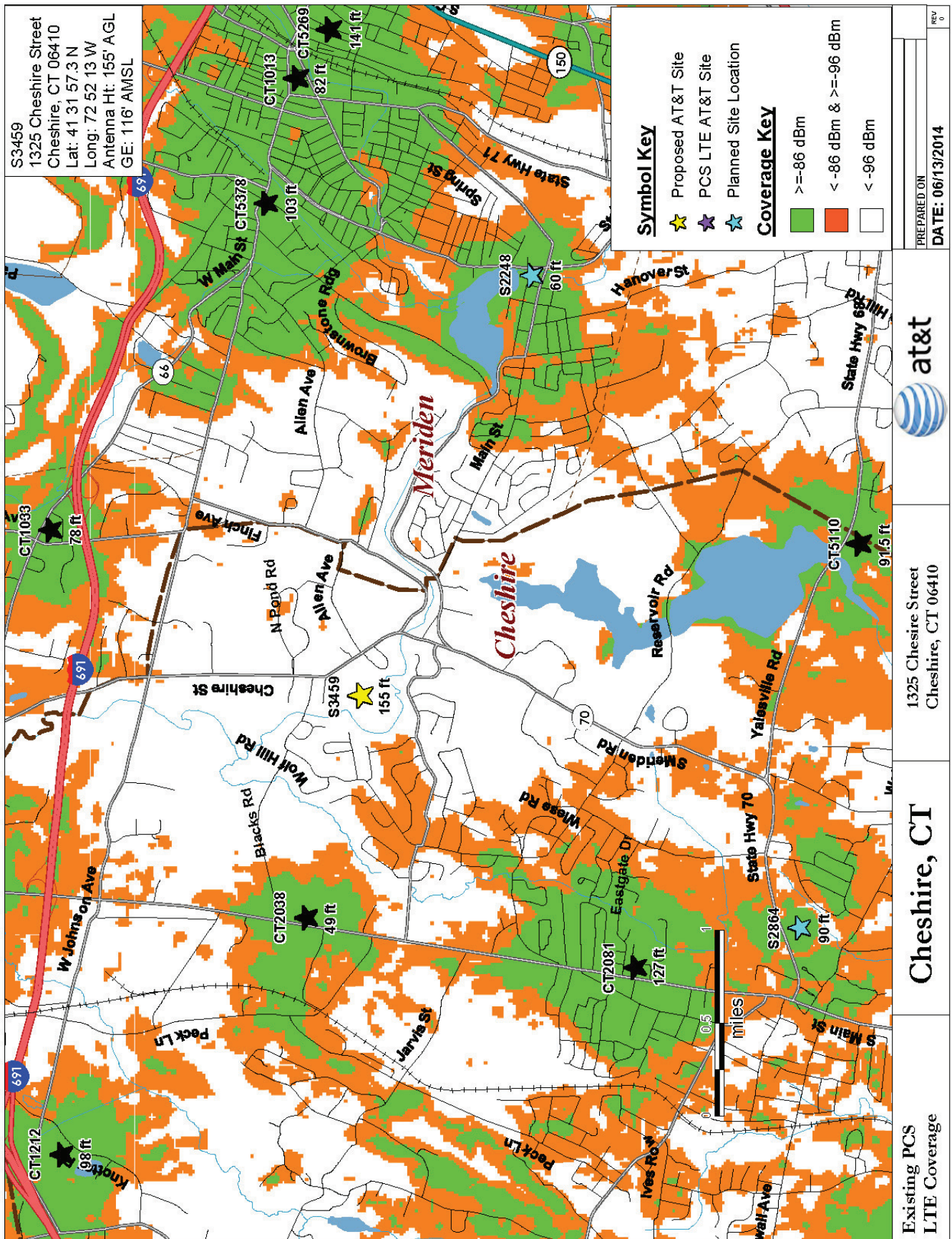
Attachment 3: Neighbor Site Data and Distance to Proposed Site



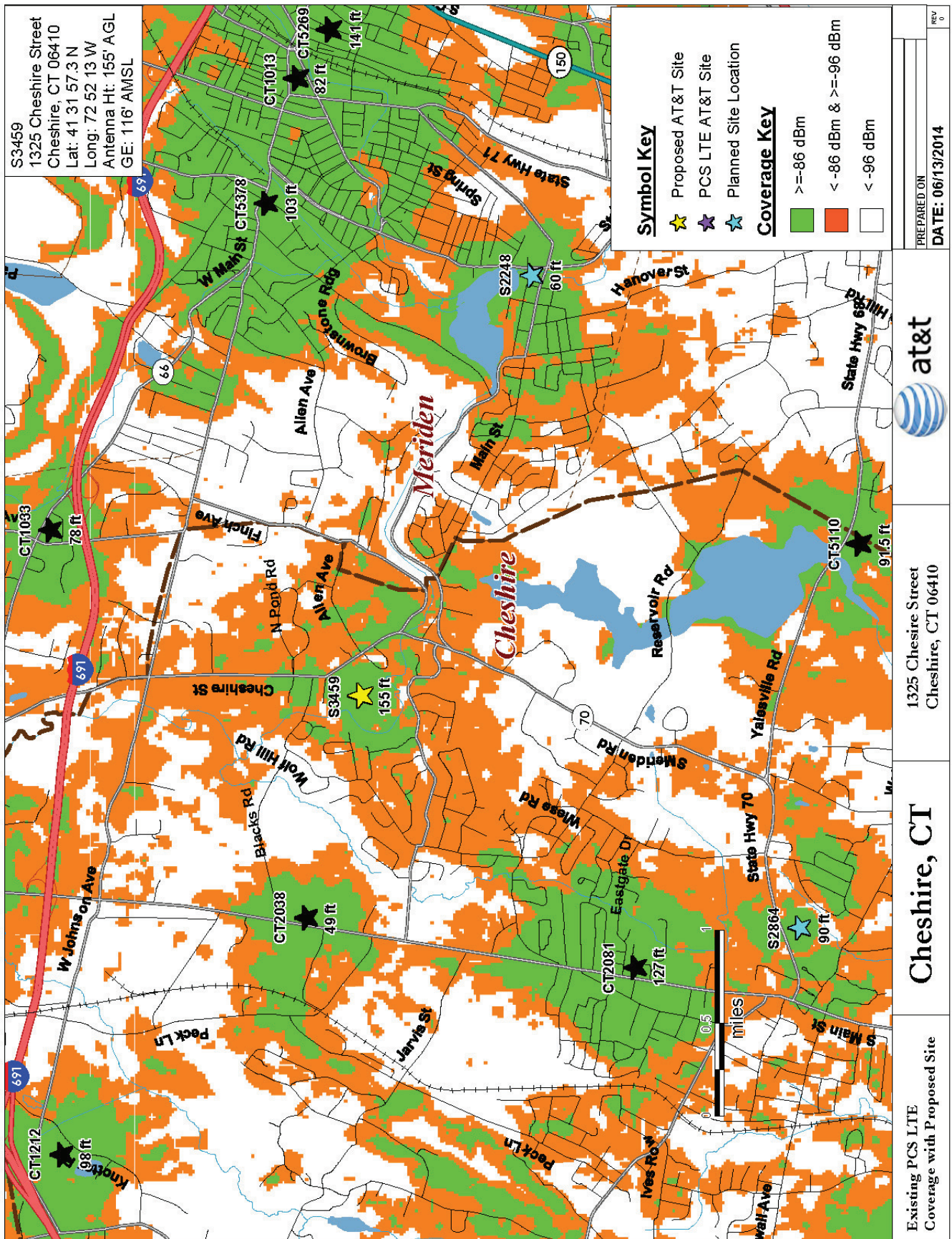
Attachment 4: "Existing 700 MHz LTE Coverage" for the Current AT&T Network



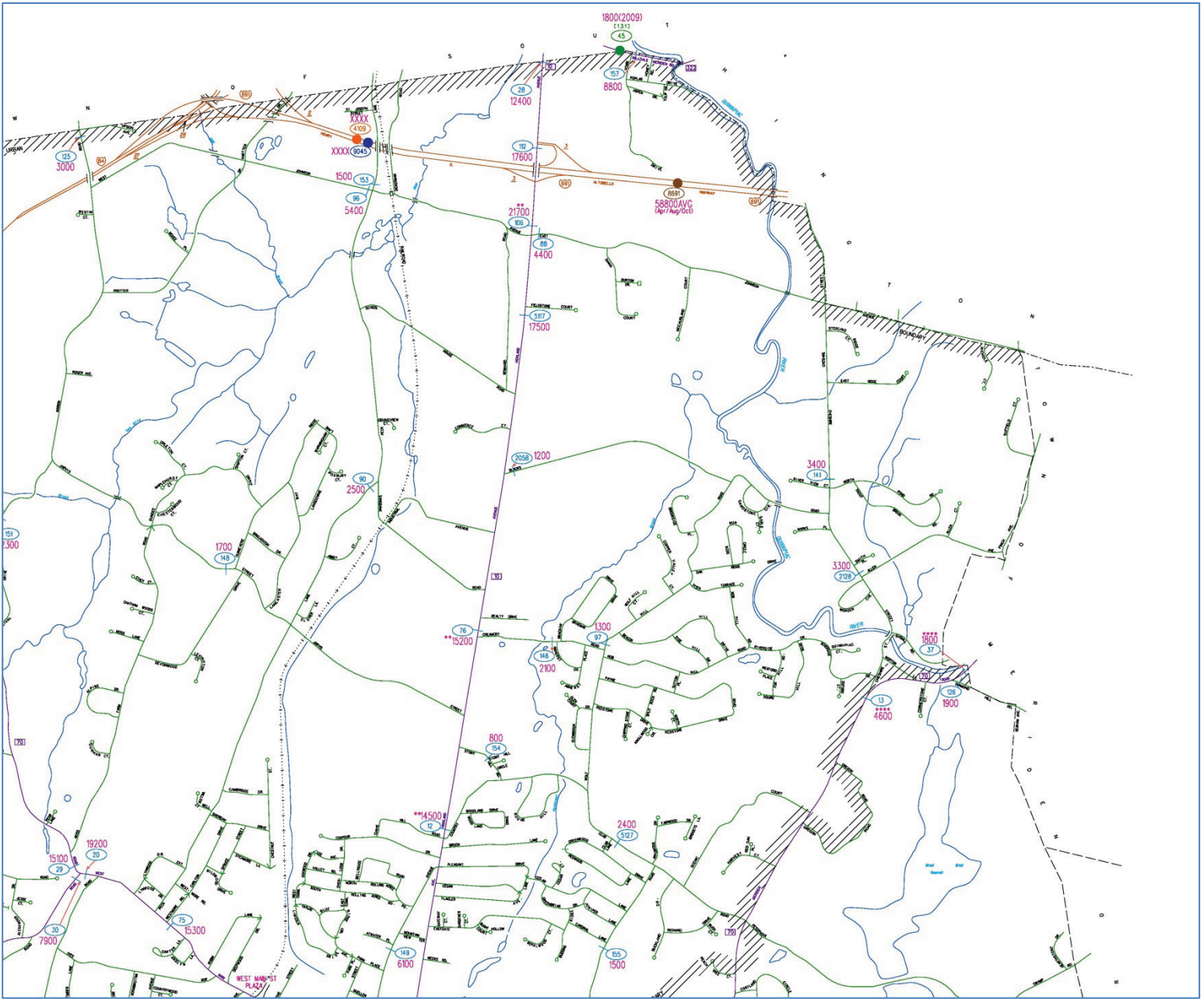
Attachment 5: "Existing & Proposed 700 MHz LTE Coverage" with Cheshire Site for the AT&T Network



Attachment 6: "Existing 1900 MHz LTE Coverage" for the Current AT&T Network



Attachment 7: "Existing & Proposed 1900 MHz LTE Coverage" with Cheshire Site for the AT&T Network



Attachment 8: Connecticut DOT Average Annual Daily Traffic Data – Cheshire