ATTACHMENT 1

RADIO FREQUENCY ENGINEERING REPORT

Proposed Watertown, CT Wireless Facility
S1835 Watertown

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Overview

This document is provided in support of AT&T's proposal to operate a ground mounted, wireless telecommunication facility in the Town of Watertown.

This document addresses AT&T's need for the proposed facility and validates that there are no other existing structures that meet AT&T's coverage objective for this area. The proposed facility located at 655 Bassett Road in the town of Watertown at a proposed height of 150 feet above ground level will best address the coverage objective and provide the needed interconnectivity to AT&T's existing neighboring sites and surrounding communities.

Introduction

As enabled under its Federal Communications Commission ("FCC") Licenses, AT&T seeks to design its wireless network to provide reliable and adequate wireless services to its customers, whether those customers are on the street, in a vehicle, or in a building. Providing reliable and adequate service to its customers in each context is critical for AT&T to provide the quality of wireless service that customers demand, and to meet objectives of Congress that a robust, competitive and low cost wireless communications capacity be developed to serve the entire nation.

In order to build out its network and meet customer demand for voice and data services, AT&T must have in place a system of low power “cell sites” to serve portable wireless communication handsets and mobile telephones. A typical cell site, such as the one proposed, consists of antenna mounted to a building, tower, church or other structure. The antennas are connected to radio operating equipment housed at or near the structure.

To maintain effective, reliable and uninterrupted service, there must be a continuous series of cell sites located within close proximity to each other so as to overlap in a system comparable to a honeycomb pattern. If there is no cell site available to accept/receive the signal, network service to the mobile telephone/data service will terminate involuntarily. Accordingly, the overlap of coverage is necessary for the signal to transfer from one cell to another cell site seamlessly and without involuntary termination.

A number of factors determine the distance between the cell sites, including, but not limited to, topography, physical obstructions, foliage, antenna height, operating frequency and line-of-site.

Coverage Objective

AT&T currently has two existing facilities that serve some of Watertown. The first existing facility is located on the southern border of Watertown near the Middlebury/Waterbury town line (AT&T site CT1161) and the other is located close to the center of Watertown (AT&T site CT1130). Current coverage

in Watertown is being provided by these two sites and neighboring sites located in the surrounding towns of Waterbury, Woodbury, Morris, Litchfield and Plymouth.

Map 1, titled, "AT&T Current Coverage in Watertown, CT", is a propagation plot that depicts current coverage in the northern part of Watertown and surrounding towns. In Map 1 the majority of the northern part of Watertown has marginal coverage and a few spots with no coverage at all. It also shows that there is inadequate coverage overlap between existing sites CT1174 and CT1062.

In the map, "green" (=>-74 dBm) represents "in-building" coverage which allows for signal penetration losses (solid walls, partitions, etc.) of 10 dB. Color "yellow" represents "in-vehicle" (=>-82 dBm) which takes into account 5 to 8 dB of vehicle penetration attenuation.

AT&T determined that significant coverage gaps exist particularly in the following roads:

- Along RT 63, Bassett Rd., Hidden Pond Rd., Gilbert Rd., Gibson Rd., Linkfield Rd., Franson Rd., Plungis Rd., Munson Rd., Smith Pond Rd., Bryant Rd.
- RT 109 (Thomaston Rd.) in the town of Thomaston

Improving the coverage on above mentioned roads would not only benefit commuters but also provides better signal penetration on houses and other establishments within the area as well. Map 2, titled, "AT&T Composite Coverage in Watertown, CT", shows the existing coverage in this area of Watertown and proposed coverage from AT&T's proposed facility. Comparing Map 1 and Map 2, clearly shows the roads mentioned above that will have coverage after adding the proposed site. This would mean better quality and uninterrupted service for subscribers travelling between these roads as well as better signal penetration for houses, business establishments, etc. The following tables will show the area and population in this area that will have service from the proposed facility

Table 1 below shows the area analysis for current and proposed coverage. The current uncovered area of 8.2 square miles will be reduced to 5.4 square miles, which is equivalent to 34.16% area gained.

Area Coverage (sq mi)						
Watertown Total Area	**Current Area Covered (=> -82 dBm)**	**Current Area Uncovered (< -82 dBm)**	**Proposed Area Covered (=> -82 dBm)**	**Proposed Area Uncovered (< - 82 dBm)**	**Proposed Area Gain**	**Proposed Area % Gain**
29.56	21.36	8.20	24.16	5.40	2.80	34.16%

Table 1: Area Coverage Analysis

Table 2 below shows the population analysis (2008 Census Block Data) for current and proposed coverage. The current uncovered population of 3795 will be reduced to 3148, which is equivalent to 17% population gained.

Population Coverage (2008 Census Block Data)						
Watertown Total Pops	**Current Pops Covered (=> -82 dBm)**	**Current Pops Uncovered (< -82 dBm)**	**Proposed Pops Covered (=>-82 dBm)**	**Proposed Pops Uncovered (< -82 dBm)**	**Proposed Pops Gain**	**Proposed Pops % Gain**
22842	19047	3795	19693	3148	646	17%

Table 2: Population Coverage Analysis

Table 3 below shows the only roads with average daily traffic data available from CT DOT website.

Street Name	Average Daily Traffic (CT DOT 2008)
Rt. 63	4900
Franson Rd.	60

Table 3: Average Daily Traffic

Table 4 below includes AT&T's existing surrounding sites and the proposed facility.

Name	Longitude	Latitude	Address	City	Structure	Status	Antenna Centerline (ft)
CT1056	-73.053666	41.693075	North Street	Plymouth	Monopole	On_Air	186
CT1062	-73.074316	41.663456	580 Chapel Street	Thomaston	Water Tank	On_Air	142
CT1126	-73.05651	41.630025	170 Mount Tobe Road	Plymouth	Monopole	On_Air	108
CT1130	-73.111666	41.603325	76 Westbury Park Road	Watertown	Smokestack	On_Air	133
CT1161	-73.095307	41.569978	Georgetown Drive	Watertown	Water Tank	On_Air	103
CT1174	-73.170491	41.667239	310 Watertown Road	Bethlehem	Lattice Tower	On_Air	165
CT1221	-73.169866	41.589939	1440 North Main Street	Woodbury	Monopole	On_Air	120
S1835 - Bassett Rd. 1	-73.136317	41.657675	655 Bassett Rd.	Watertown	Monopole	Proposed	147

Table 4: Existing and Proposed Sites

Summary

The significant coverage gap seen on Map 1, demonstrates the need for an additional site within the area. It clearly shows that current coverage does not provide sufficient coverage overlap between the sites within Watertown. In other words, existing sites and facilities will not cover the gap in AT&T's service in this area of Watertown.

Statement of Certification

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

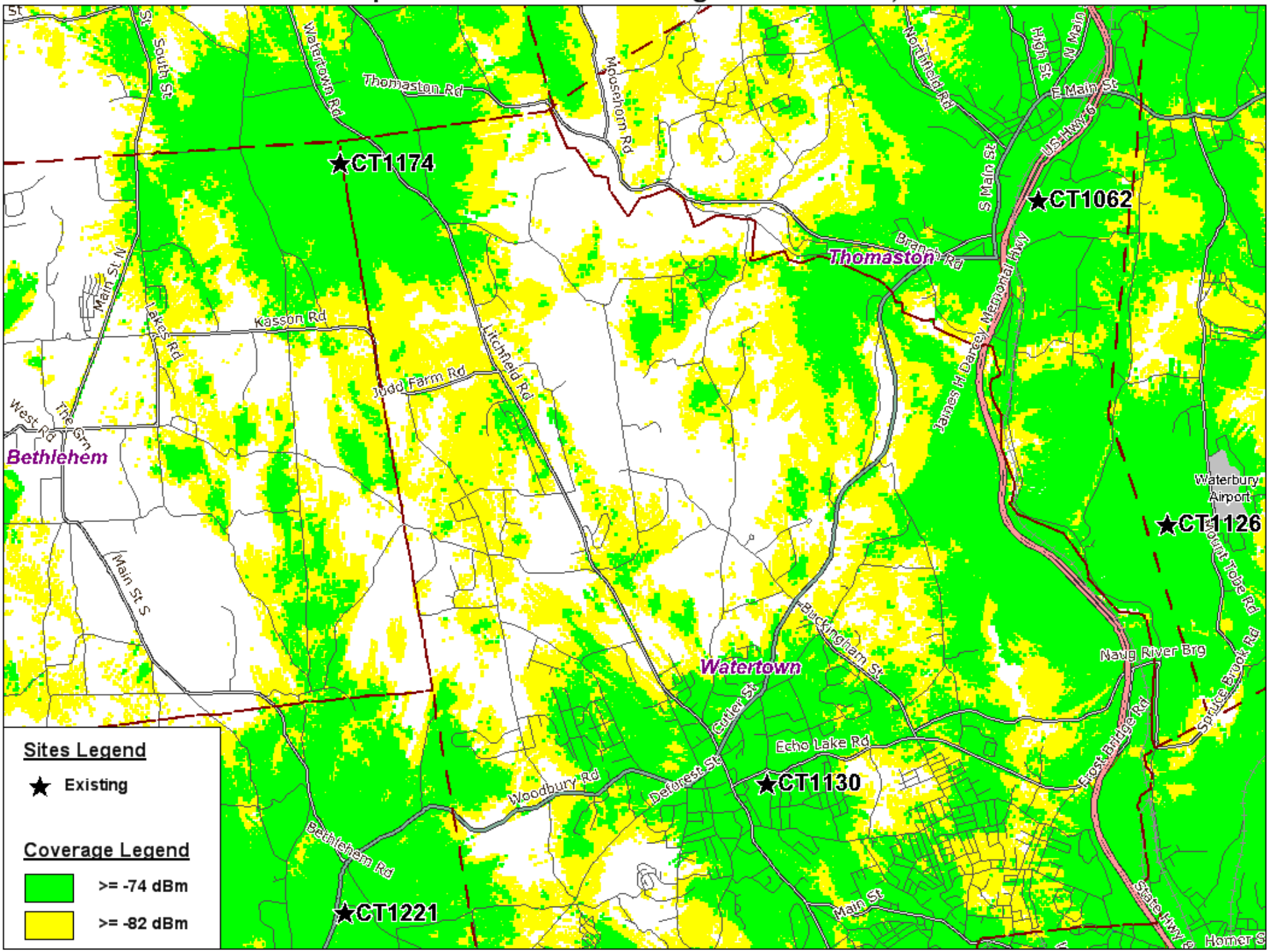
_____ May 02, 2011_____

Michael Doiron
SAI Communications

Date

Attachments

Map 1: AT&T Current Coverage in Watertown, CT



Map 2: AT&T Composite Coverage in Watertown, CT