

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION OF CELLCO PARTNERSHIP	:	PETITION NO. _____
D/B/A VERIZON WIRELESS FOR A	:	
DECLARATORY RULING ON THE NEED TO	:	
OBTAIN A SITING COUNCIL CERTIFICATE	:	
FOR THE INSTALLATION OF A SMALL	:	
CELL TELECOMMUNICATIONS FACILITY	:	
AT 85-91 SOUTH LEONARD STREET,	:	
WATERBURY, CONNECTICUT	:	JUNE 30, 2015

PETITION FOR A DECLARATORY RULING:
INSTALLATION HAVING NO
SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

I. Introduction

Pursuant to Sections 16-50j-38 and 16-50j-39 of the Regulations of Connecticut State Agencies (“R.C.S.A.”), Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Petition”) that no Certificate of Environmental Compatibility and Public Need (“Certificate”) is required under Section 16-50k(a) of the Connecticut General Statutes (“C.G.S.”) to install a new “small cell” telecommunications facility on an existing industrial storage building at 85-91 South Leonard Street in Waterbury, Connecticut (the “Property”). The Property is owned by CASLU, LLC. Cellco has designated this site as its “Waterbury SC4 Facility”.

II. Factual Background

The Property is a 0.75-acre parcel in Waterbury’s IG-Industrial zone and is used for industrial (storage) purposes. The Property is surrounded by similar industrial uses to the north, south and east and by Route 8 to the west. See Attachment 1 – Site Vicinity and Site Schematic

Maps (Aerial Photograph). Cellco is licensed to provide wireless telecommunications services in the 850 MHz, 1900 MHz, 700 MHz and 2100 MHz frequency ranges throughout the State of Connecticut. Initially, the proposed Waterbury SC4 Facility described above will provide wireless service in Cellco's 1900 MHz and 2100 MHz frequency ranges only. Coverage plots showing Cellco's service in Waterbury today and the coverage footprint for the proposed Waterbury SC4 Facility in its 1900 MHz and 2100 MHz frequency ranges, are included in Attachment 2.

As shown on the coverage plots, Cellco currently maintains six (6) cell sites within approximately two (2) miles of the proposed Waterbury SC4 Facility, including its Waterbury 2, Waterbury DT, Waterbury Central, Waterbury 6, Naugatuck Relo and Naugatuck 3 cell sites. The proposed Waterbury SC4 Facility will fill existing gaps in 1900 MHz and 2100 MHz service to the southeast of the Property and provide capacity relief to Cellco's existing Waterbury DT and Naugatuck 3 cell sites.

III. Proposed Waterbury SC4 Facility

The proposed Waterbury SC4 Facility would consist of a single canister-type antenna on a small tower mast attached to and extending approximately 5'-5" above an existing chimney on the building. A single remote radio head ("RRH") will also be attached to a lower portion of the chimney. Equipment associated with the Waterbury SC4 Facility will be located on an 8-foot by 8-foot concrete pad on the ground near the southwest corner of the building. Power and telephone service will extend from existing service inside the building. (See Cellco's Project Plans included in Attachment 3). Specifications for the small cell antenna (Commscope Model NH360QS-DG-F0M) and RRH (Model 2X60-AWS) are included in Attachment 4.

IV. Discussion

A. The Proposed Facility Modifications Will Not Have A Substantial Adverse Environmental Effect

The Public Utility Environmental Standards Act (the “Act”), C.G.S. § 16-50g et seq., provides for the orderly and environmentally compatible development of telecommunications towers in the state to avoid “a significant impact on the environment and ecology of the State of Connecticut.” C.G.S. § 16-50g. To achieve these goals, the Act established the Council, and requires a Certificate of Environmental Compatibility and Public Need for the construction of cellular telecommunication towers “that may, as determined by the council, have a substantial adverse environmental effect”. C.G.S. § 16-50k(a).

1. Physical Environmental Effects

Cellco respectfully submits that the installation of a small tower mast and a single canister antenna attached to and extending above the chimney of the building and a RRH attached to the side of the chimney, will not involve a significant alteration in the physical and environmental characteristics of the Property. Ground disturbance associated with the facility is limited to an 8-foot by 8-foot equipment compound area. The equipment will be surrounded by a 6-foot tall security fence.

2. Visual Effects

The installation of a small tower mast supporting a canister antenna and a RRH attached to the side of the chimney at the Property would have minimal visual effects on the Property and the surrounding area. (*See Limited Visual Assessment and Photo-Simulations (“Visual Report”) included in Attachment 5*). As discussed in the attached Visual Report, the views of the tower mast and antenna are limited to select locations within approximately 200 feet of the Property along South Leonard Street. As such, Cellco has determined that the small cell facility

components would not be highly visible and would not have a significant impact on aesthetics in the area.

3. FCC Compliance

Radio frequency (“RF”) emissions from the proposed installation will be far below the standards adopted by the Federal Communications Commission (“FCC”). Included in Attachment 6 is a General Power Density table, including a calculation that demonstrates that the Waterbury SC4 Facility will operate well within the FCC safety standard.

4. FAA Summary Report

Included in Attachment 7 is a Federal Airways & Airspace Summary Report verifying that the unipole tower attached to the roof of the building at the Property would not constitute an obstruction or hazard to air navigation and that notification to the FAA is not required.

B. Notice to the Town, the Property Owner and Abutting Landowners

On June 30, 2015, a copy of this Petition was sent to Waterbury’s Mayor Neil M. O’Leary, and to CASLU, LLC, the owner of the Property. Included in Attachment 8 are copies of the letters sent to Mayor O’Leary and CASLU, LLC.

A copy of the Petition was also sent to each owner of land that abuts the Property. A sample abutter’s letter, and the list of those abutting landowners who were sent notice of the filing of the Petition is included in Attachment 9.

V. Conclusion

Based on the information provided above, Cellco respectfully requests that the Council issue a determination in the form of a declaratory ruling that the installation of a small tower mast attached to the chimney of the building and a small equipment cabinet adjacent to the building, will not have a substantial adverse environmental effect and does not require the

issuance of a Certificate of Environmental Compatibility and Public Need pursuant to § 16-50k
of the General Statutes.

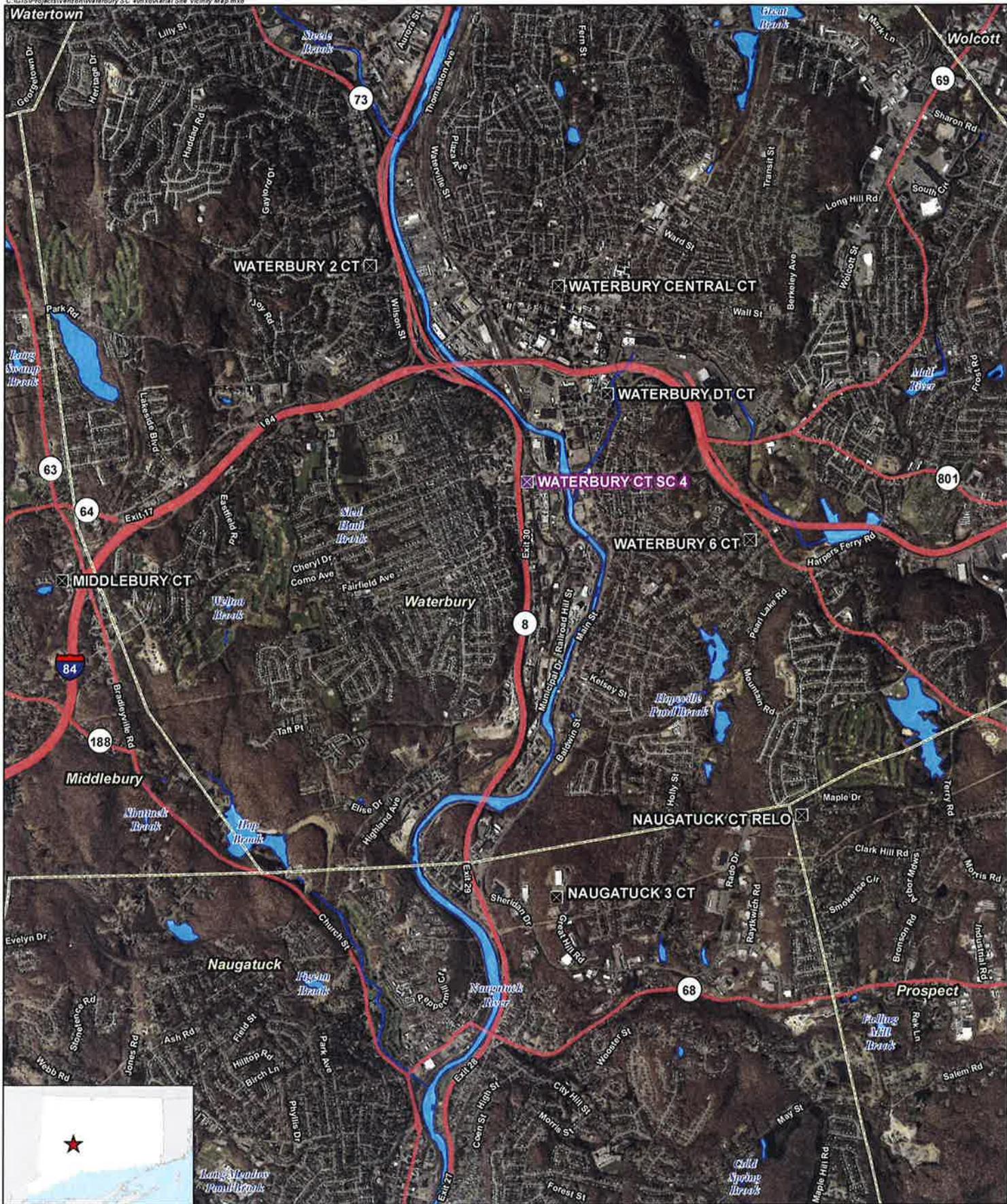
Respectfully submitted,

CELLCO PARTNERSHIP d/b/a VERIZON
WIRELESS

By 

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
(860) 275-8200
Its Attorneys

ATTACHMENT 1

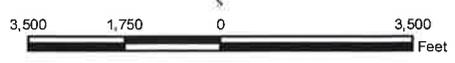


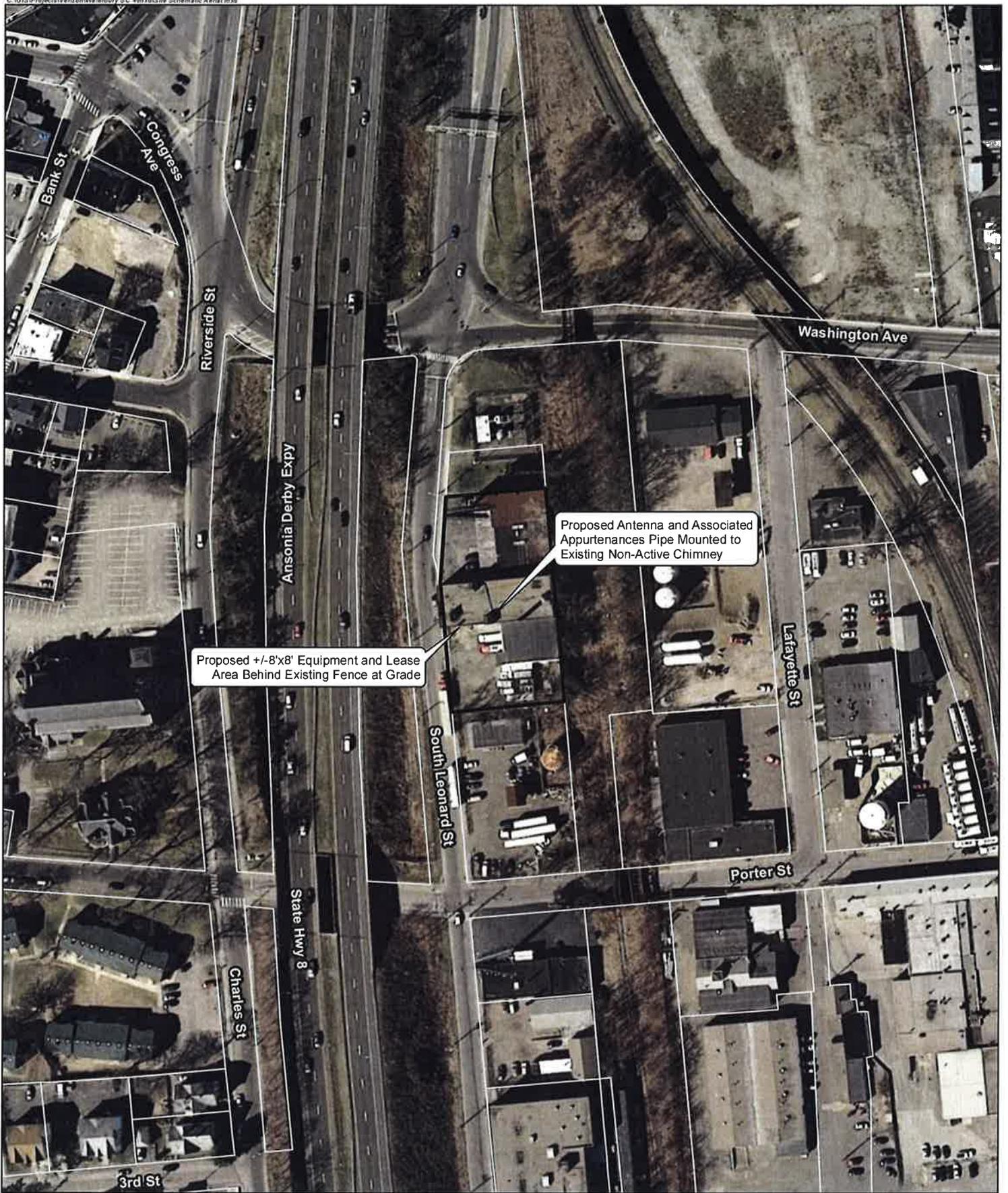
- Legend**
- ✕ Proposed Verizon Wireless Small Cell Facility
 - ⊠ Surrounding Verizon Wireless Facilities
 - ▭ Municipal Boundary
 - 🌊 Waterbody

Site Vicinity Map

Proposed Small Cell Installation
 Waterbury CT SC 4
 85-91 South Leonard Street
 Waterbury, Connecticut

Base Map Source: 2012 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 3,500 feet
 Map Date: June 2015





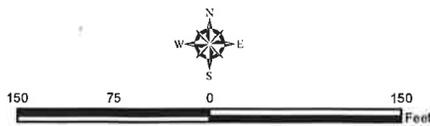
Legend

-  Approximate Subject Property
-  Approximate Parcel Boundary (CTDEEP GIS Parcels Last Updated 2010)

Site Schematic

Proposed Small Cell Installation
 Waterbury CT SC 4
 85-91 South Leonard Street
 Waterbury, Connecticut

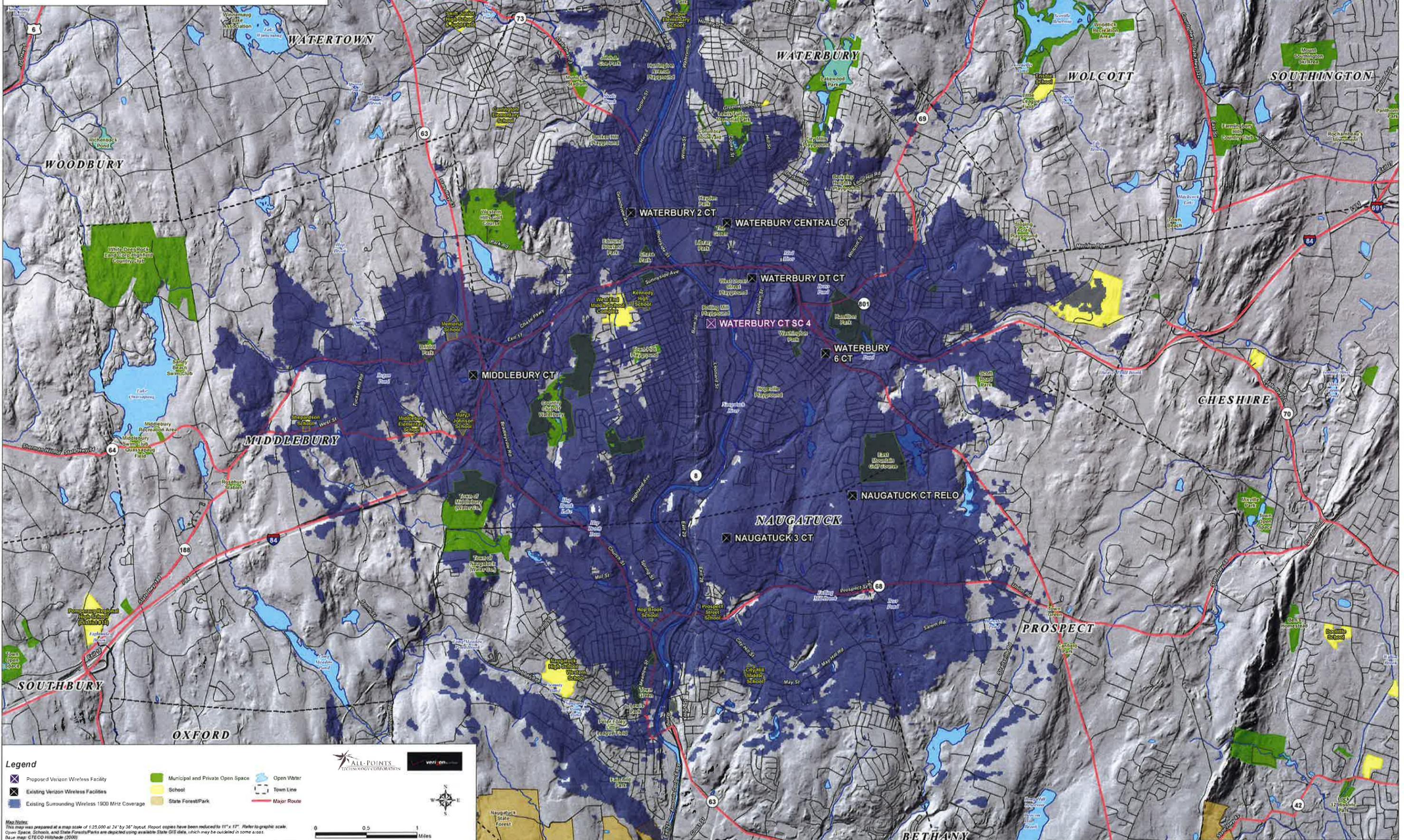
Map Notes:
 Base Map Source: 2012 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 150 feet
 Map Date: June 2015



ATTACHMENT 2

**Existing Verizon Wireless 1900 MHz Coverage
Waterbury, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)**

Coverage plot assumes 55% site loading on the Celco system.
Coverage is depicted at a signal threshold of -85 dBm.



- Legend**
- X Proposed Verizon Wireless Facility
 - X Existing Verizon Wireless Facilities
 - Existing Surrounding Wireless 1900 Mhz Coverage
 - Municipal and Private Open Space
 - School
 - State Forest/Park
 - Open Water
 - Town Line
 - Major Route



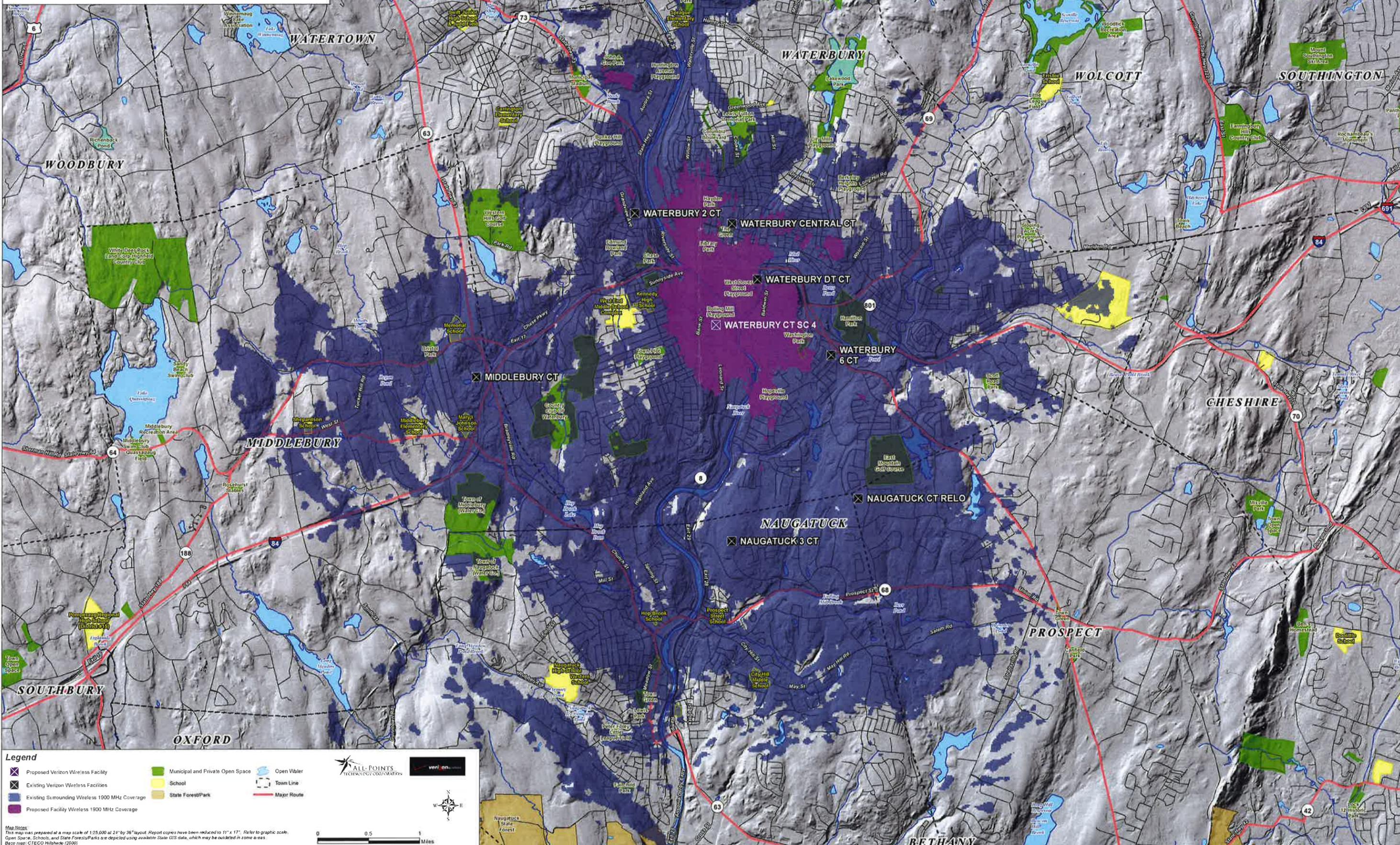
Map Notes:
This map was prepared at a map scale of 1:25,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: GTECO Hillshade (2000)



© 2008 Verizon Wireless. All rights reserved. This map is a service mark of Verizon Wireless.

**Proposed Verizon Wireless 1900 MHz Coverage
Waterbury, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)**

Coverage plot assumes 55% site loading on the Celco system.
Coverage is depicted at a signal threshold of -85 dBm.



Legend

- X Proposed Verizon Wireless Facility
- X Existing Verizon Wireless Facilities
- X Existing Surrounding Wireless 1900 MHz Coverage
- X Proposed Facility Wireless 1900 MHz Coverage
- Municipal and Private Open Space
- School
- Open Water
- State Forest/Park
- Town Line
- Major Route

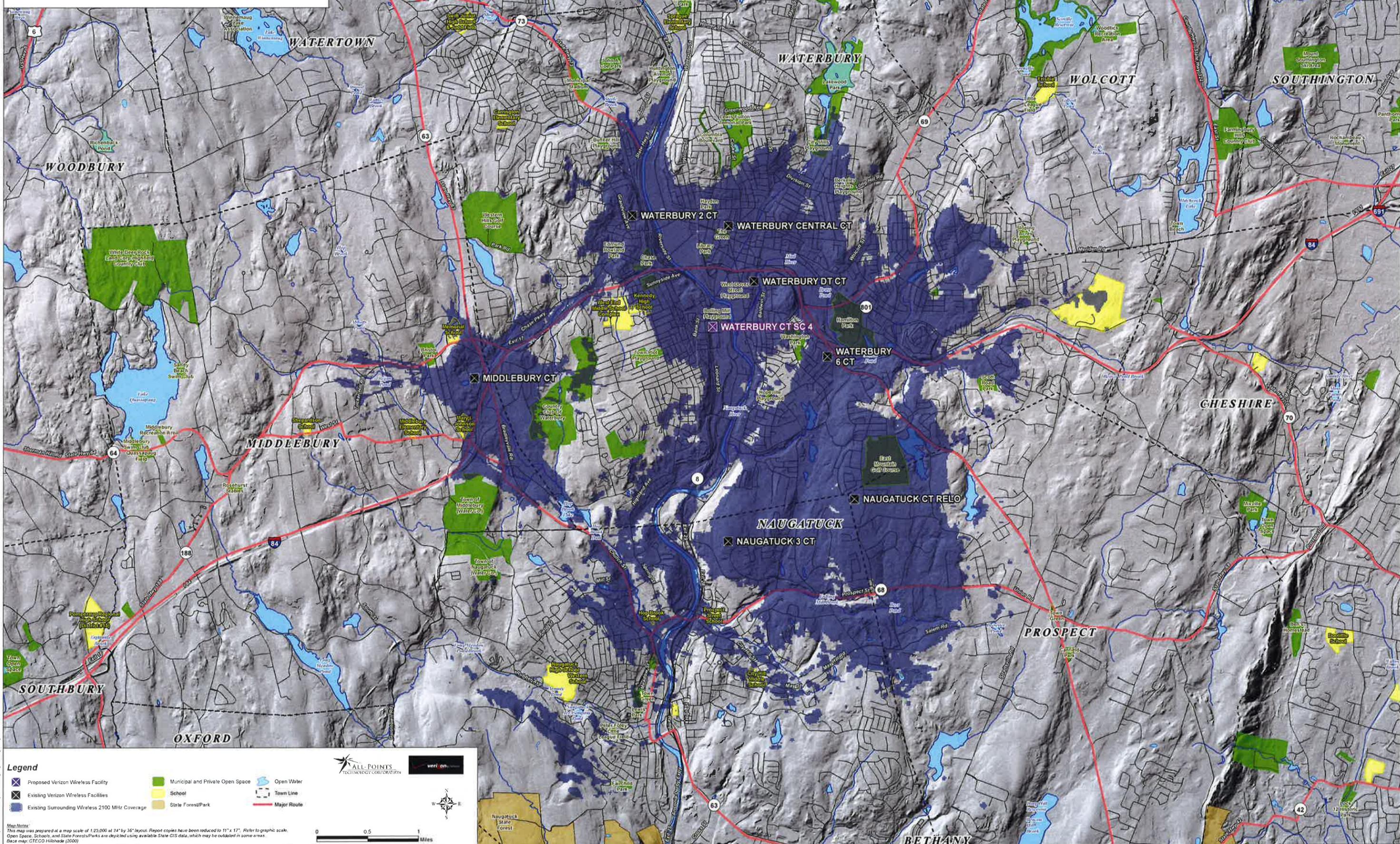
Map Notes:
This map was prepared at a map scale of 1:25,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillsdale (2000)

0 0.5 1 Miles

Copyright © 2008 Verizon Wireless. All rights reserved. This map is a service mark of Verizon Wireless. All other marks are the property of their respective owners.

**Existing Verizon Wireless 2100 MHz Coverage
Waterbury, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



- Legend**
- X Proposed Verizon Wireless Facility
 - X Existing Verizon Wireless Facilities
 - Existing Surrounding Wireless 2100 MHz Coverage
 - Municipal and Private Open Space
 - School
 - State Forest/Park
 - Open Water
 - Town Line
 - Major Route

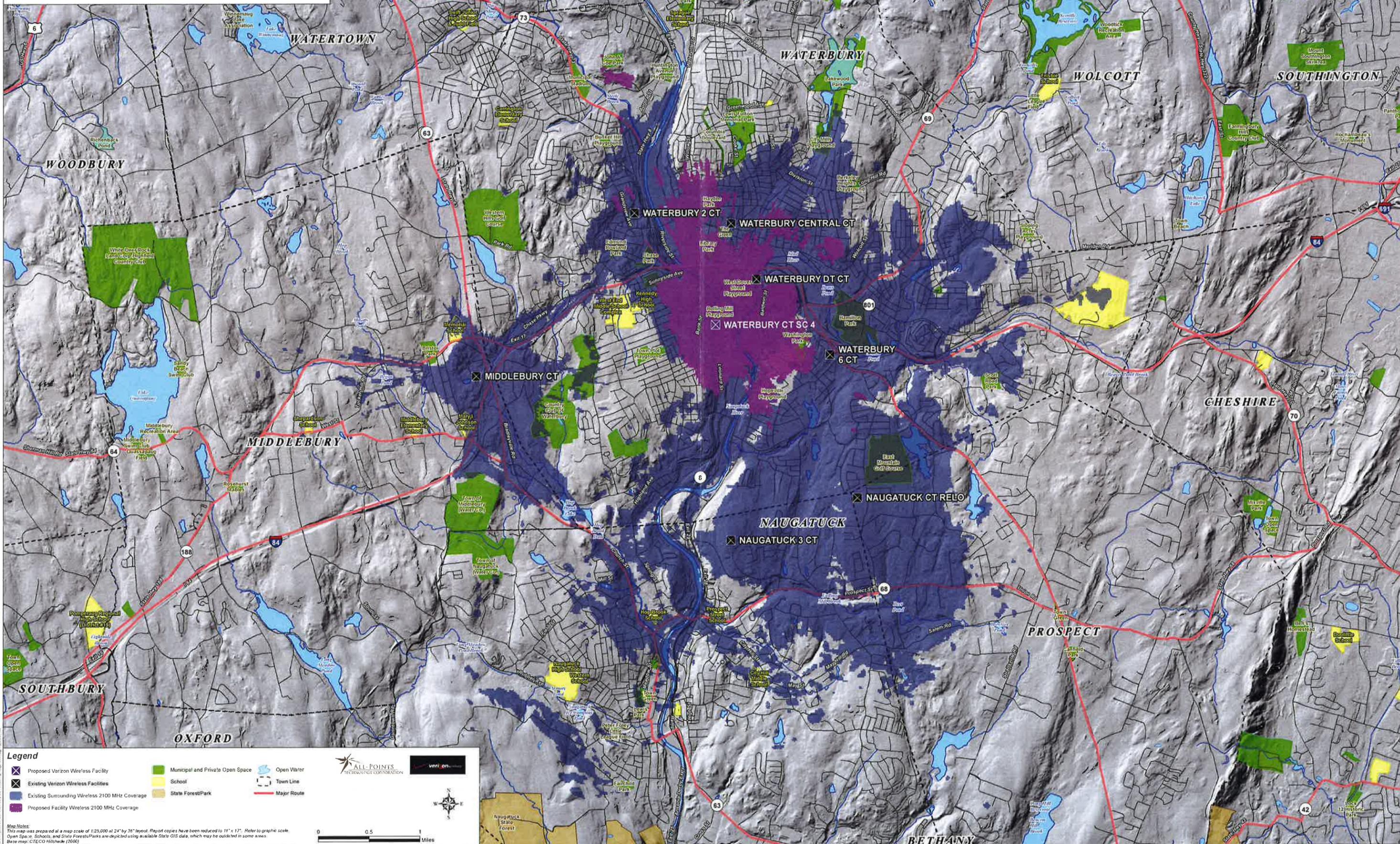


Map Notes:
This map was prepared at a map scale of 1:25,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2000)



**Proposed Verizon Wireless 2100 MHz Coverage
Waterbury, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)**

Coverage is depicted at a signal threshold of 120 dB Operational Path Loss



Legend

- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 2100 MHz Coverage
- Proposed Facility Wireless 2100 MHz Coverage
- Municipal and Private Open Space
- School
- Open Water
- State Forest/Park
- Town Line
- Major Route

Map Notes:
This map was prepared at a map scale of 1:25,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale. Open Space, Schools, and State Forest/Parks are depicted using available State GIS data, which may be outdated in some areas. Base map: CTECO Hillshade (2000)

Scale: 0 0.5 1 Miles

Logos: ALL-POINTS TECHNOLOGY CORPORATION, verizon

ATTACHMENT 3

Cellco Partnership

d.b.a. **verizon** wireless

WIRELESS COMMUNICATIONS FACILITY

WATERBURY CT SC4

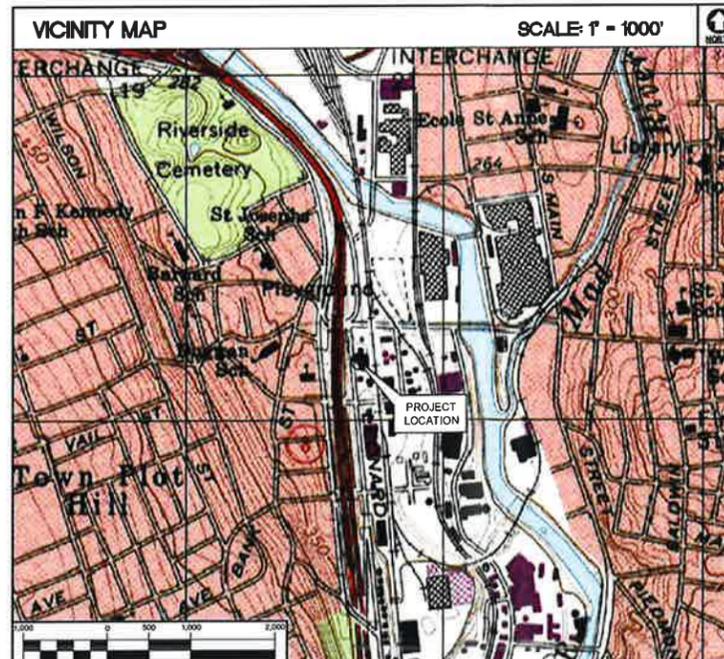
85-91 SOUTH LEONARD STREET

WATERBURY, CT 06708

SITE DIRECTIONS		
FROM:	TO:	
99 EAST RIVER DRIVE EAST HARTFORD, CONNECTICUT	85-91 SOUTH LEONARD STREET WATERBURY, CT 06708	
1. GET ON US-5 S		1.3 MI
2. HEAD SOUTH ON E RIVER DR TOWARD HARTLAND ST		0.7 MI
3. CONTINUE ONTO E RIVER DRIVE EXTENSION		0.3 MI
4. MERGE ONTO US-5 S		0.8 MI
5. TAKE EXIT 86 TO MERGE ONTO I-91 S TOWARD NEW HAVEN/NEW YORK CITY		16.6 MI
6. TAKE EXIT 18 FOR I-891 W TOWARD MERIDEN/WATERBURY		0.2 MI
7. CONTINUE ONTO I-891 W		7.7 MI
8. TAKE EXIT 1 ON THE LEFT FOR I-84 W TOWARD WATERBURY/DANBURY		1.0 MI
9. MERGE ONTO I-84		7.6 MI
10. TAKE EXIT 19 ON THE LEFT FOR CONNECTICUT 8 S TOWARD NAUGATUCK/BRIDGEPORT		0.2 MI
11. MERGE ONTO CT-8 S		0.3 MI
12. TAKE EXIT 30 FOR WASHINGTON AVENUE		0.2 MI
13. TAKE CHARLES ST TO S LEONARD ST		0.3 MI
14. CONTINUE ONTO WASHINGTON AVE		174 FT
15. CONTINUE ONTO CHARLES ST		0.1 MI
16. TURN LEFT ONTO PORTER ST		262 FT
17. TURN LEFT AT THE 1ST CROSS STREET ONTO S LEONARD ST DESTINATION WILL BE ON THE RIGHT		341 FT

GENERAL NOTES
1. PROPOSED ANTENNA LOCATIONS AND HEIGHTS PROVIDED BY CELCO PARTNERSHIP.

PROJECT SCOPE
1. THE PROPOSED SCOPE OF WORK GENERALLY INCLUDES THE INSTALLATION OF A PROPOSED CELCO PARTNERSHIP EQUIPMENT CABINET AT GRADE.
2. A TOTAL OF ONE (1) ANTENNA AND ASSOCIATED APPURTENANCES MOUNTED WITH A PIPE MAST ATTACHED TO EXISTING EXTERIOR OF CHIMNEY WITH AN ANTENNA CENTERLINE ELEVATION OF 62.2' A.G.L.
3. ELECTRIC AND TELCO UTILITIES SHALL BE ROUTED FROM EXISTING DEMARCS UP TO PROPOSED EQUIPMENT CABINET LOCATION.
4. FINAL DESIGN FOR ANTENNA MOUNT SHALL BE INCLUDED IN THE CONSTRUCTION DRAWINGS.
5. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2009 CONNECTICUT SUPPLEMENT.



PROJECT SUMMARY	
SITE NAME:	WATERBURY CT SC4
SITE ADDRESS:	85-91 SOUTH LEONARD STREET WATERBURY, CT 06708
LESSEE/TENANT:	CELCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
VERIZON SITE ACQUISITION CONTACT:	STEVE SCHADLER CELCO PARTNERSHIP (508) 887-0357
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN, ESQ. ROBINSON & COLE LLP (860) 257-8345
SITE COORDINATES:	LATITUDE: 41°-32'-35.409" N LONGITUDE: 73°-02'-37.712" W GROUND ELEVATION: ±286.4' AMSL
COORDINATES AND GROUND ELEVATION REFERENCED FROM FAA 1-A SURVEY CERTIFICATION AS PREPARED FOR VERIZON WIRELESS, BY MARTINEZ COUCH AND ASSOCIATES L.L.C., DATED MARCH 4, 2015. REVISED DATE MARCH 24, 2015.	

SHEET INDEX		
SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
C-1	ABUTTERS MAP	0
C-2	PARTIAL ROOF/SITE PLAN, ELEVATION AND ANTENNA CONFIG.	0

REV.	DATE	BY	CHK'D BY	DESCRIPTION
0	05/27/15	DIA	DMD	ISSUED FOR CSC-CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

d.b.a. **verizon** wireless

CENITEK engineering

2031 488-4580
2031 488-4897 Fax
63-2 North Branford Road
Branford, CT 06405
www.CenitekEng.com

Cellco Partnership d/b/a Verizon Wireless

WIRELESS COMMUNICATIONS FACILITY

WATERBURY CT SC4

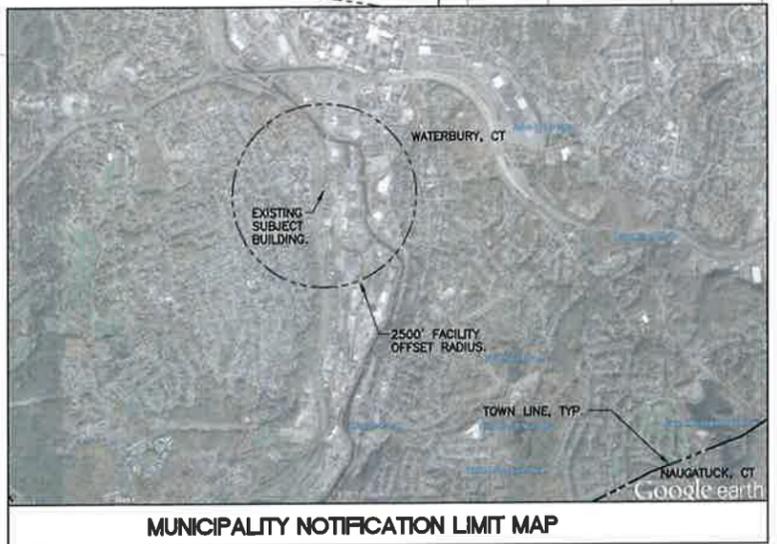
85-91 SOUTH LEONARD STREET
WATERBURY, CT 06708

DATE:	05/26/15
SCALE:	AS NOTED
JOB NO.	15010.000

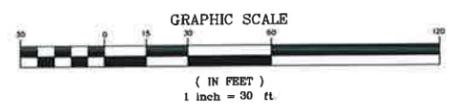
TITLE SHEET

T-1

Sheet No. 1 of 3

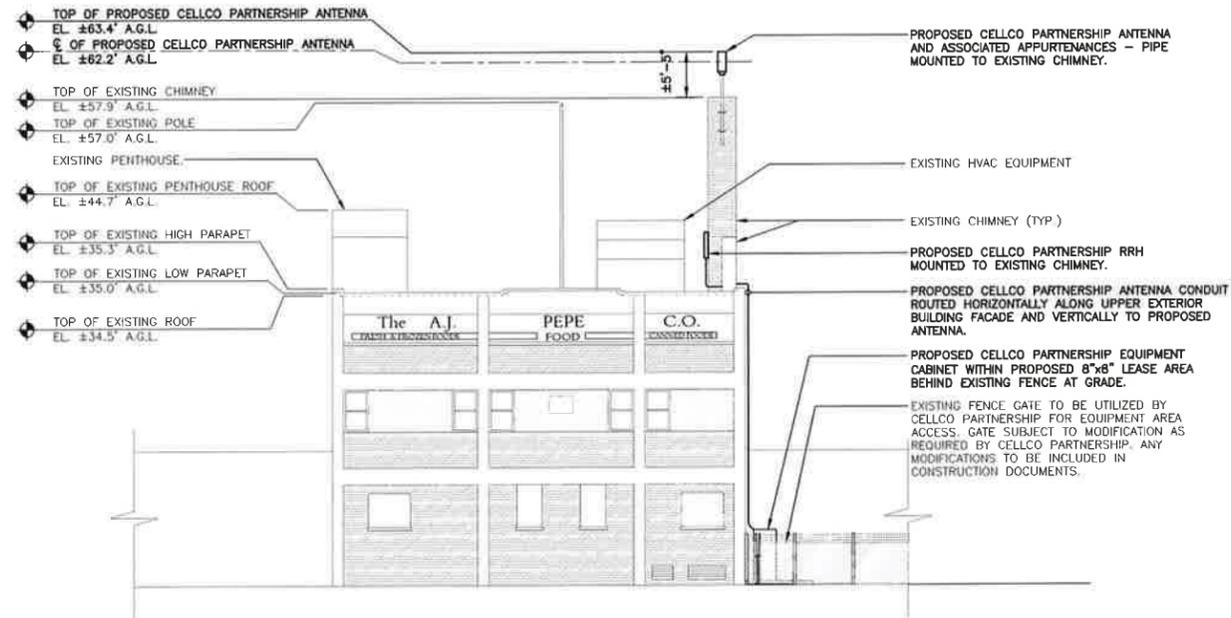


1
C-1
ABUTTERS MAP
SCALE: 1" = 30'

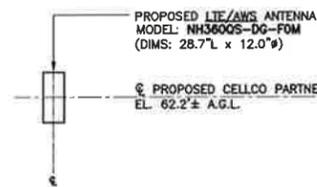
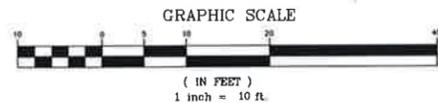


Cellco Partnership d/b/a Verizon Wireless WIRELESS COMMUNICATIONS FACILITY WATERBURY CT SC4 85-91 SOUTH LEONARD STREET WATERBURY, CT 06708		CEN TEK engineering Central on solutions (203) 488-0590 (203) 488-8387 Fax 432 North Branford Road Branford, CT 06405 www.CentekEng.com	Cellco Partnership d.b.a. Verizon Wireless	PROFESSIONAL ENGINEER SEAL	<table border="1"> <thead> <tr> <th>REV.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>05/27/15</td> <td>ISSUED FOR CSC-CLIENT REVIEW</td> </tr> <tr> <td></td> <td></td> <td>DRAWN BY CHK'D BY</td> </tr> </tbody> </table>	REV.	DATE	DESCRIPTION	0	05/27/15	ISSUED FOR CSC-CLIENT REVIEW			DRAWN BY CHK'D BY
REV.	DATE	DESCRIPTION												
0	05/27/15	ISSUED FOR CSC-CLIENT REVIEW												
		DRAWN BY CHK'D BY												
DATE: 05/28/15 SCALE: AS NOTED JOB NO. 15010.000		ABUTTERS MAP												
C-1 Sheet No. 2 of 3														

HEIGHTS SHOWN HEREIN ARE REFERENCED FROM
 FAA 1-A SURVEY CERTIFICATION AS PREPARED
 FOR VERIZON WIRELESS, BY MARTINEZ COUCH AND
 ASSOCIATES L.L.C., DATED MARCH 4, 2015.
 REVISED DATE MARCH 24, 2015



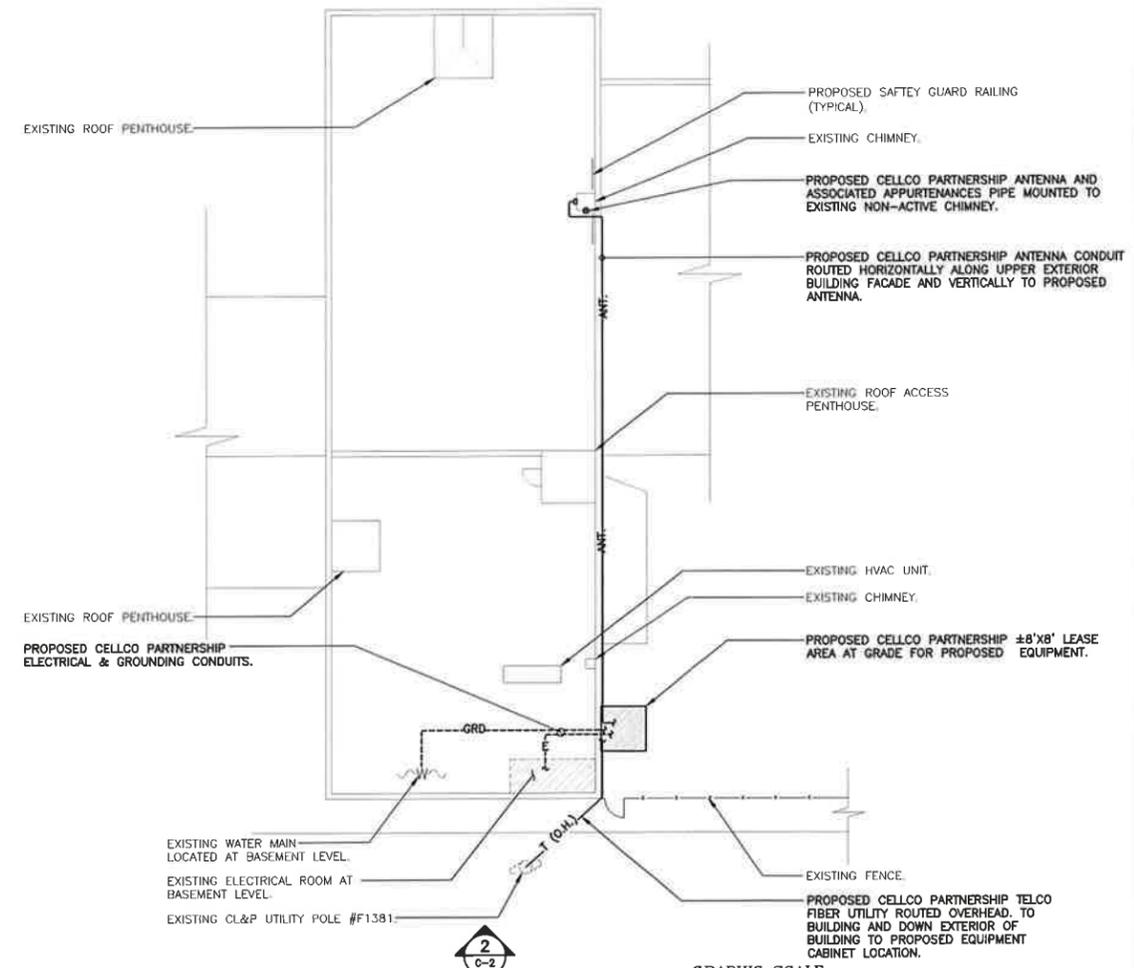
2 WEST ELEVATION
 C-2 SCALE: 1" = 10'



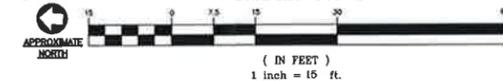
RRH/DISTRIBUTION BOX MOUNTING NOTE

• AWS RRH (MODEL: ALJ RRH2x60-AWS)
 (DIMS: 36.7" L x 10.6" W x 5.8" D) (TYP. OF 1)
 ANTENNA AND RRH MOUNTED TO EXISTING CHIMNEY. SEE
 PLAN/ELEVATION FOR LOCATIONS.

3 TYP. ANTENNA MOUNTING CONFIGURATION
 C-2 NOT TO SCALE



1 PARTIAL ROOF/SITE PLAN
 C-2 SCALE: 1" = 15'



REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	05/27/15	DRA	DMO	ISSUED FOR CSC-CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

Cellco Partnership
 d.b.a. Verizon Wireless

CENITEK engineering
 Centitek Solutions
 (203) 468-0380
 (203) 468-8397 Fax
 43-2 North Branford Road
 Branford, CT 06405
 www.CentitekEng.com

Cellco Partnership d/b/a Verizon Wireless
 WIRELESS COMMUNICATIONS FACILITY
WATERBURY CT SC4
 85-91 SOUTH LEONARD STREET
 WATERBURY, CT 06708

DATE: 05/26/15
 SCALE: AS NOTED
 JOB NO. 15010.000

PARTIAL ROOF/SITE
 PLAN, ELEVATION &
 ANTENNA CONFIG.

C-2
 Sheet No. 3 of 3

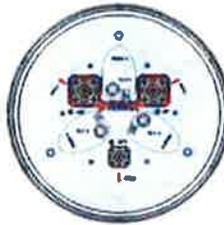
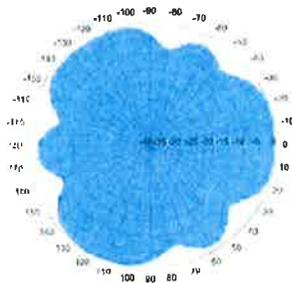
ATTACHMENT 4

Metro Cell Antennas with Internal Diplexer and GPS Antenna

Dualband Quasi-Omni (360°), Metro Cell Antenna

NH360QS-DG-F0M

NH360QT-DG-F0



ELECTRICAL SPECIFICATIONS

Operating Frequency Range	698 - 896 and 1710 - 2170 MHz					698 - 896 and 1710 - 2170 MHz				
	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170	698 - 806	806 - 896	1710 - 1880	1850 - 1990	1920 - 2170
Frequency Bands, MHz										
Polarization	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°
Gain, dBi	4.3	5.3	8.0	8.1	8.5	1.3	2.3	4.0	4.2	4.5
Beamwidth, Horizontal, degrees	360	360	360	360	360	360	360	360	360	360
Beamwidth, Vertical, degrees	30.0	24.0	16.0	15.0	14.0	60.0	55.0	32.5	30.0	28.5
USLS, dB	12	12	14	13	13	-	-	14	12	11
Beam Tilt, degrees	0	0	0-16	0-16	0-16	0	0	0	0	0
Isolation, dB	25	25	25	25	25	25	25	25	25	25
VSWR (Return Loss, dB)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)	1.5 (14.0)
PIM, 3rd Order, 2 x 20 W, dBc	-150	-150	-150	-150	-150	-150	-150	-150	-150	-150
Input Power per Port, maximum, watts	250	250	250	250	250	250	250	250	250	250

MECHANICAL SPECIFICATIONS

Connector Interface	7 - 16 DIN Female	7 - 16 DIN Female
Connector Quantity, Location	2, Bottom	2, Bottom
GPS Connector Interface	4.1/9.5 DIN Female	4.1/9.5 DIN Female
GPS Connector Quantity, Location	1, Bottom	1, Bottom
Length, mm (inch)	730 (28.7)	360 (14.2)
Outer Diameter, mm (inch)	305 (12.0)	305 (12.0)
Wind Speed, maximum, km/h (mph)	241.4 (150)	241.4 (150)
Net Weight, kg (lb)	20.0 (44.1)	12.0 (26.5)

AVAILABILITY

Expected Ready Date for Manufacturing

March 2014

June 2014

ALCATEL-LUCENT WIRELESS PRODUCT DATASHEET RRH2x60-AWS FOR BAND 4 APPLICATION

The Alcatel-Lucent RRH2x60-AWS is a high power, small form factor Remote Radio Head operating in the AWS frequency band (3GPP Band 4) for LTE technology. It is designed with an eco-efficient approach, providing operators with the means to achieve high quality and high capacity coverage with minimum site requirements and efficient operation.



A distributed Node B expands the deployment options by using two components, a Base Band Unit (BBU) containing the digital assets and a separate RRH containing the radio-frequency (RF) elements. This modular design optimizes available space and allows the main components of a Node B to be installed separately, within the same site or several kilometers apart.

The Alcatel-Lucent RRH2x60-AWS is linked to the BBU by an optical-fiber connection carrying downlink and uplink digital radio signals

along with operations, administration and maintenance (OA&M) information.

The Alcatel-Lucent RRH2x60-AWS integrates all the latest technologies. This allows to offer best-in-class characteristics.

It delivers an outstanding 120 watts of total RF power thanks to its two transmit RF paths of 60 W each.

It is ideally suited to support multiple-input multiple-output (MIMO) 2x2 operation.

It includes four RF receivers to natively support 4-way uplink reception diversity. This improves the radio uplink coverage and this can be used to extend the cell radius commensurate with 2x2MIMO 2x60 W for the downlink.

It supports multiple discontinuous LTE carriers within an instantaneous bandwidth of 45 MHz corresponding to the entire AWS B4 spectrum.

The latest generation power amplifiers (PA) used in this product achieve high efficiency (>40%), resulting in improved power consumption figures.

The Alcatel-Lucent RRH2x60-AWS is designed to make available all the benefits of a distributed Node B, with excellent RF characteristics, with low capital expenditures (CAPEX) and low operating expenditures (OPEX).

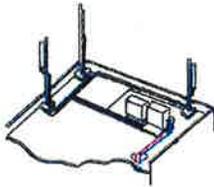
The Alcatel-Lucent RRH2x60-AWS is a very cost-effective solution to deploy LTE MIMO.

The RRH2x60-AWS includes a reversible mounting bracket which allows for ease of installation behind an antenna, or on a rooftop knee wall while providing easy access to the mid body RF connectors.

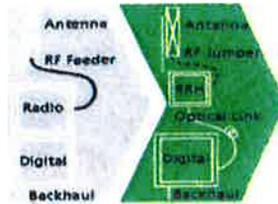
The limited space available in some sites may prevent the installation of traditional single-cabinet BTS equipment. However, many of these sites can host an Alcatel-Lucent RRH2x60-AWS installation, providing more flexible site selection and improved network quality along with greatly reduced installation time and costs.

The Alcatel-Lucent RRH2x60-AWS is a zero-footprint solution and is convection cooled without fans for silent operation, simplifying negotiations with site property owners and minimizing environmental impacts.

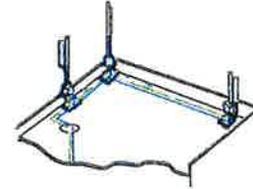
Installation can easily be done by a single person as the Alcatel-Lucent RRH2x60-AWS is compact and weighs about 20 kg, eliminating the need for a crane to hoist the BTS cabinet to the rooftop. A site can be in operation in less than one day.



Macro



RRH for space-constrained cell sites



Distributed

- RRH2x60-AWS integrates two power amplifiers of 60W rating (at each antenna connector)
- Support multiple carriers over the entire 3GPP band 4
- RRH2x60-AWS is optimized for LTE operation
- RRH2x60-AWS is a very compact and lightweight product
- Advanced power management techniques are embedded to provide power savings, such as PA bias control

- MIMO LTE operation with only one single unit per sector
- Improved uplink coverage with built-in 4-way receive diversity capability
- RRH can be mounted close to the antenna, eliminating nearly all losses in RF cables and thus reducing power consumption by 50% compared to conventional solutions
- Distributed configurations provide easily deployable and cost-effective solutions, near zero footprint and

- silent solutions, with minimum impact on the neighborhood, which ease the deployment
- RETA and TMA support without additional hardware thanks to the AISG v2.0 port and the integrated Bias-Tees. Bias-Tees support AISG DC supply and signaling.

Specifications listed are hardware capabilities. Some capabilities depend on support in a specific software release or future release.

Dimensions and weights

- HxWxD : 510x285x186mm (27 l with solar shield)
- Weight : 20 kg (44 lbs)

Electrical Data

- Power Supply : -48V DC (-40.5 to -57V)
- Power Consumption (ETSI average traffic load reference) : 250W @2x60W

RF Characteristics

- Frequency band: 1710-1755, UL / 2110-2155 MHz, DL (3GPP band 4)
- Output power: 2x60W at antenna connectors
- Technology supported: LTE
- Instantaneous bandwidth: 45 MHz
- Rx diversity: 2-way and 4-way uplink reception
- Typical sensitivity without Rx diversity: -105 dBm for LTE

Connectivity

- Two CPRI optical ports for daisy chaining and up to six RRHs per fiber
- Type of optical fiber: Single-Mode (SM) and Multi-Mode (MM) SFPs
- Optical fiber length: up to 500m using MM fiber, up to 20km using SM fiber
- TMA/RETA : AISG 2.0 (RS485 connector and internal Bias-Tee)
- Six external alarms
- Surge protection for all external ports (DC and RF)

Environmental specifications

- Operating temperature: -40°C to 55°C including solar load
- Operating relative humidity: 8% to 100%
- Environmental Conditions : ETS 300 019-1-4 class 4.1E
- Ingress Protection : IEC 60529 IP65
- Acoustic Noise : Noiseless (natural convection cooling)

Safety and Regulatory Data

- EMC : 3GPP 25113, EN 301 489-1, EN 301 489-23, GR 1089, GR 3108, OET-65
- Safety : IEC60950-1, EN 60825-1, UL, ANSI/NFPA 70, CAN/CSA-C22.2
- Regulatory : FCC Part 15 Class B, CE Mark – European Directive : 2002/95/EC (ROHS); 2002/96/EC (WEEE); 1999/5/EC (R&TTE)
- Health : EN 50385

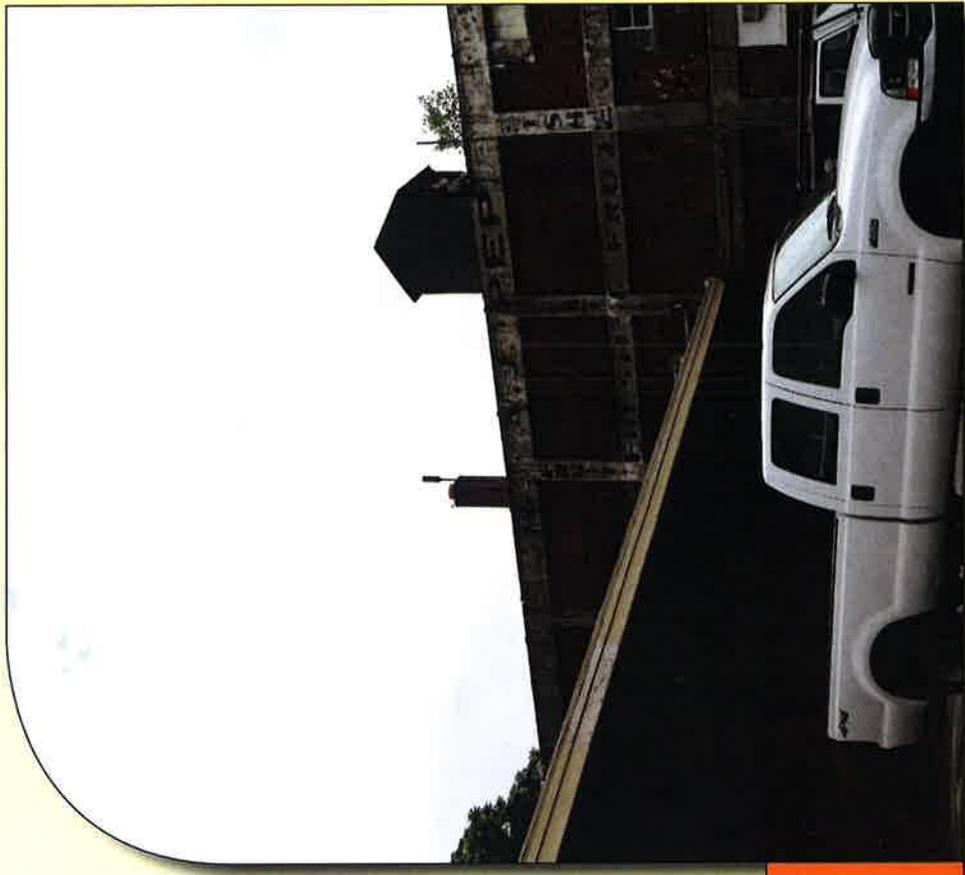
www.alcatel-lucent.com Alcatel, Lucent, Alcatel-Lucent and the Alcatel-Lucent logo are trademarks of Alcatel-Lucent. All other trademarks are the property of their respective owners. The information presented is subject to change without notice. Alcatel-Lucent assumes no responsibility for inaccuracies contained herein.

Copyright © 2012 Alcatel-Lucent. All rights reserved, M2012XXXXXX (March)

ATTACHMENT 5

Limited Visual Assessment and Photo-Simulations

WATERBURY CT SC4
85-91 SOUTH LEONARD STREET
WATERBURY, CT 06708



Prepared in June 2015 by:
All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, CT 06141

Prepared for Verizon Wireless



LIMITED VISUAL ASSESSMENT & PHOTO-SIMULATIONS

At the request of Celco partnership LLC d/b/a Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") completed a limited visual assessment and prepared computer-generated photo-simulations depicting the proposed installation of a small cell wireless telecommunications Facility at 55-91 South Leonard Street in Waterbury, Connecticut (the "Property").

Project Setting

The Property is located east of South Leonard Street and Route 8 in an industrial area of Waterbury. The Property is currently improved with a three-story brick and masonry building. The proposed Facility would include the installation of a single canister omni-directional antenna pipe-mounted to an existing chimney. The top of the antenna would extend approximately 63 feet above ground level. A remote radio head ("RRH") would be affixed to the north face of the chimney near its base at the roofline. Supporting equipment would be housed in a ground level exterior cabinet against the southwest corner of the building, behind a gated entrance. Electrical and telco service cables would extend via conduit up the exterior side of the building from the equipment cabinet and then horizontally across the upper building façade to the RRH.

Methodology

On June 18, 2015, APT personnel conducted a field reconnaissance to photo-document existing conditions. Three (3) nearby locations were selected to represent where the chimney is visible and depict proposed conditions with the proposed installation. At each photo location, the geographic coordinates of the camera's position were logged using global positioning system ("GPS") technology. Photographs were taken with a Canon EOS 6D digital camera body and Canon EF 24 to 105 millimeter ("mm") zoom lens, with the lens set to 24mm, 50 mm, and 35mm, respectively. The varied focal lengths were used in order to provide a greater depth of field for presentation in two of the photographs. Focal lengths ranging from 24 mm to 50 mm approximate views similar to that achieved by the human eye. However, two key aspects of an image can be directly affected by the specific focal length that is selected: field of view and relation of sizes between objects in the frame. Both 24mm and 35 mm focal lengths provide a wider field of view, representative of the extent the human eyes may see (including some peripheral vision), but the relation of sizes between objects at the edges of the photos can become minimally skewed. A 50 mm focal length has a narrower field of view than the human eye but the relation of sizes between objects is represented similar to what the human eye might perceive.

"The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm."¹

¹ Warren, Bruce. Photography, West Publishing Company, Eagan, MN, c. 1993, (page 70).

When taking photographs for these analyses, APT prefers a focal length of 50 mm; however there are times when wider views (requiring the use of alternate lens settings, as in this case) can better reflect "real world" viewing conditions by providing greater context to the scene. Regardless of the lens setting, the scale of the subject in the photograph and corresponding simulation remains proportional to its surroundings.

Three-dimensional computer models were developed for the building and proposed small cell components from AutoCAD information. Photographic simulations were then generated to portray scaled renderings of the proposed installation. Using field data, site plan information and image editing software, the proposed Facility was scaled to the correct location and height, relative to the existing structure and surrounding area. For presentation purposes in this report, all of the photographs were produced in an approximate 7-inch by 10.5-inch format². A photolog map and copies of the existing conditions and photo-simulations are attached.

Conclusions

The visibility of the proposed installation would be limited primarily to locations on the Property and within the immediately surrounding area. Publicly accessible areas where the chimney and antenna would be seen are limited to locations within approximately 200 feet of the Property along South Leonard Street. The area is heavily developed with industry and the Route 8 transportation corridor, with substantial utility infrastructure present today. Based on the results of this assessment, it is APT's opinion that the proposed installation of Verizon Wireless equipment at the Property would not be highly visible nor have a significant impact on aesthetics in the area.

Limitations

This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen. The photo-simulations provide a representation of the Facility under similar settings as those encountered during the field reconnaissance. Views of the Facility can change throughout the seasons and the time of day, and are dependent on weather and other atmospheric conditions (e.g., haze, fog, clouds); the location, angle and intensity of the sun; and the specific viewer location. Weather conditions on the day of the reconnaissance included mostly sunny skies and the photo-simulations presented in this report provide an accurate portrayal of the Facility during comparable conditions.

² When viewing in this format size, we believe it is important to provide the largest representational image while maintaining an accurate relation of sizes between objects within the frame of the photograph and depicting the subject in a way similar to what an observer might see, to the greatest extent possible.

ATTACHMENTS

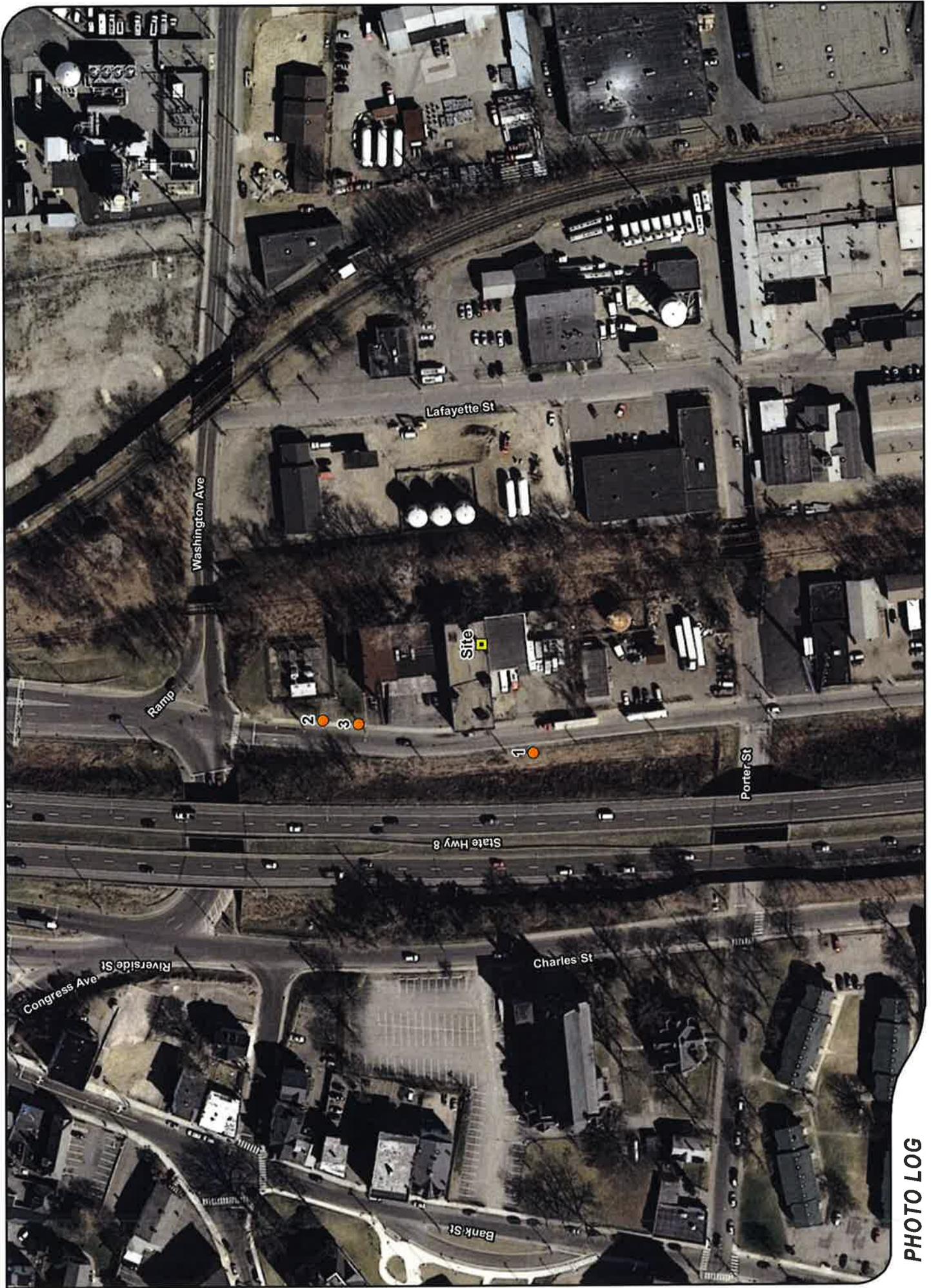


PHOTO LOG

Legend

-  Site
-  Points





EXISTING

PHOTO

1

LOCATION

SOUTH LEONARD STREET (24mm Focal Length)

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 139 FEET



APPROXIMATE LOCATION OF PROPOSED EQUIPMENT CABINET

PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE
1	SOUTH LEONARD STREET (24mm Focal Length)	NORTHEAST	+/- 139 FEET



EXISTING

PHOTO

2

LOCATION

SOUTH LEONARD STREET

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 217 FEET



PROPOSED

PHOTO

2

LOCATION

SOUTH LEONARD STREET

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 217 FEET



ALL-POINTS
TECHNOLOGY CORPORATION





EXISTING

PHOTO

3

LOCATION

SOUTH LEONARD STREET (35mm Focal Length)

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 175 FEET



PROPOSED

PHOTO

3

LOCATION

SOUTH LEONARD STREET (35mm Focal Length)

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 175 FEET

ATTACHMENT 6

Site Name: **WATERBURY CT SC4**
 Cumulative Power Density

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure* (mW/cm ²)	Fraction of MPE (%)
VZW PCS	1970	1	174	174	62.2	0.0162	1.0000	1.62%
VZW AWS	2145	1	276	276	62.2	0.0256	1.0000	2.56%
Total Percentage of Maximum Permissible Exposure								4.18%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz

mW/cm² = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

ATTACHMENT 7

* Federal Airways & Airspace *
* Summary Report: Alteration Of Existing Structure *
* Antenna Structure *

*

Airspace User: Jaime Laredo

File: WATERBURY_CT_SC4

Location: Waterbury, CT

Latitude: 41°-32'-35.41" Longitude:
73°-2'-37.71"

SITE ELEVATION AMSL.....286.4 ft.
STRUCTURE HEIGHT.....60 ft.
OVERALL HEIGHT AMSL.....346 ft.

NOTICE CRITERIA

- FAR 77.9(a): NNR (DNE 200 ft AGL)
- FAR 77.9(b): NNR (DNE Notice Slope)
- FAR 77.9(c): NNR (Not a Traverse Way)
- FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for N41
- FAR 77.9: NNR FAR 77.9 IFR Straight-In Notice Criteria for OXC
- FAR 77.9(d): NNR (Off Airport Construction)

- NR = Notice Required
- NNR = Notice Not Required
- PNR = Possible Notice Required (depends upon actual IFR procedure)

bottom

For new construction review Air Navigation Facilities at
of this report.

If the proposed construction is an alteration to an existing structure, notice requirements may be superceded by the item exemptions listed below.

The location and analysis were based upon an existing structure. However, no existing aeronautical study number was identified. If the 'existing' structure penetrates an obstruction surface defined by CFR 77.17, 77.19, 77.21 or 77.23 (see below) it is strongly recommended the FAA be notified of the 'existing' structure to determine obstruction marking or lighting

requirements. It is not uncommon for the FAA to issue a Determination of No Hazard (DNH) for an existing structure and modify the airspace to accommodate the structure, should that be required. If the FAA issues a DNH enter the aeronautical study number (ASN) in the space provided on the Airspace Analysis Window Form and re-run Airspace.

No frequencies were identified in this alteration are included in the FAA's Co-Location Policy published in the Federal Register November 15, 2007. Therefore, application of the Co-Location Policy notice exemption rule can not be applied.

Title 14 CFR Part 77.9(e), Notice Criteria Exception:
The location and analysis were based upon an existing antenna structure with the alteration limited to the addition of an antenna with a height increase of more than one (1) foot. Title 14 CFR Part 77.9(e) (4) specifically prohibits application of this rule when adding an antenna to an existing antenna structure. If the increase in height of the existing antenna structure exceeds notice requirements, notice to the FAA is mandatory.

OBSTRUCTION STANDARDS

FAR 77.17(a) (1): DNE 499 ft AGL
FAR 77.17(a) (2): DNE - Airport Surface
FAR 77.19(a): DNE - Horizontal Surface
FAR 77.19(b): DNE - Conical Surface
FAR 77.19(c): DNE - Primary Surface
FAR 77.19(d): DNE - Approach Surface
FAR 77.19(e): DNE - Transitional Surface

VFR TRAFFIC PATTERN AIRSPACE FOR: N41: WATERBURY

Type: A RD: 31713.84 RE: 853.4
FAR 77.17(a) (1): DNE
FAR 77.17(a) (2): Does Not Apply.
VFR Horizontal Surface: DNE
VFR Conical Surface: DNE
VFR Approach Slope: DNE
VFR Transitional Slope: DNE

VFR TRAFFIC PATTERN AIRSPACE FOR: OXC: WATERBURY-OXFORD

Type: A RD: 32888.54 RE: 724.8
FAR 77.17(a) (1): DNE

FAR 77.17(a)(2): DNE - Height No Greater Than 200 feet AGL.
 VFR Horizontal Surface: DNE
 VFR Conical Surface: DNE
 VFR Approach Slope: DNE
 VFR Transitional Slope: DNE

TERPS DEPARTURE PROCEDURE (FAA Order 8260.3, Volume 4)
 FAR 77.17(a)(3) Departure Surface Criteria (40:1)
 DNE Departure Surface

MINIMUM OBSTACLE CLEARANCE ALTITUDE (MOCA)
 FAR 77.17(a)(4) MOCA Altitude Enroute Criteria
 The Maximum Height Permitted is 1500 ft AMSL

PRIVATE LANDING FACILITIES

ARP FAA	FACIL	BEARING	RANGE	DELTA
ELEVATION IFR	IDENT TYP NAME	To FACIL	IN NM	
-184	1CT3 HEL ST MARY'S No Impact to Private Landing Facility Below Notice Standards by: 90 feet.	31.25	.6	+46
	No Impact to Private Landing Facility No violation of Helicopter Approach Surface. Estimated safety margin is: 294 feet.			
-184	5CT1 HEL RONDO No Impact to Private Landing Facility Structure 0 ft below heliport.	171.92	2.11	
-382	CT25 HEL MIRY DAM No Impact to Private Landing Facility Structure 6 ft below heliport.	283.35	3.66	

AIR NAVIGATION ELECTRONIC FACILITIES

GRND	FAC	ST	DIST	DELTA	ST	LOCATION				
ANGLE BEAR	APCH	IDNT	TYPE	AT	FREQ	VECTOR	(ft)	ELEVA	ST	LOCATION
- .21	JWE	NDB	I	36	197.78	61542	-225	CT	CLERA	
.18	HVN	VOR/DME	R	109.8	157.01	111208	+340	CT	NEW HAVEN	
.06	MAD	VOR/DME	R	110.4	131.03	127603	+126	CT	MADISON	

- .21	HFD	VOR/DME	R	114.9	75.11	140399	-503	CT	HARTFORD
	BDR	VOR/DME	R	108.8	189.00	141119	+337	CT	BRIDGEPORT
.14	PWL	VOR/DME	I	114.3	298.67	173100	-904	NY	PAWLING
- .3	BDL	VORTAC	D	109.0	33.66	174400	+186	CT	BRADLEY
.06	BDL	RADAR	ON		34.27	174594	+110	CT	BRADLEY INTL
.04	CMK	VOR/DME	I	116.6	236.79	175866	-348	NY	CARMEL
- .11									

CFR Title 47, §1.30000-§1.30004

AM STUDY NOT REQUIRED: Structure is not near a FCC licensed AM station.

Movement Method Proof as specified in §73.151(c) is not required. Please review 'AM Station Report' for details.

Nearest AM Station: WATR @ 1321 meters.

Airspace® Summary Version 15.5.391

AIRSPACE® and TERPS® are registered ® trademarks of Federal Airways & Airspace®
Copyright © 1989 - 2015

05-29-2015
16:50:58

ATTACHMENT 8

June 30, 2015

Via Certificate of Mailing

Neil M. O’Leary, Mayor
City of Waterbury
235 Grand Street
Waterbury, CT 06702-1983

Re: Installation of a Small Cell Telecommunications Facility at 85-91 South Leonard Street, Waterbury, Connecticut

Dear Mayor O’Leary:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a “small cell” telecommunications facility on an industrial parcel at 85-91 South Leonard Street in Waterbury (the “Property”).

The proposed “small cell” would consist of a single canister antenna on a small tower mast attached to and extending above the existing chimney on the Property. Cellco will also install a remote radio head on a lower portion of the chimney. Equipment associated with the small cell facility will be maintained on an 8’ x 8’ concrete pad near the southwest corner of the building.

A copy of Cellco’s Petition is attached for your review. Landowners whose property abuts the Property were also sent a copy of the Petition.

Robinson + Cole

Neil M. O'Leary
June 30, 2015
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

KCB/kmd
Attachment

June 30, 2015

Via Certificate of Mailing

CASLU, LLC
91 South Leonard Street
Waterbury, CT 06708

Re: **Installation of a Small Cell Telecommunications Facility at 85-91 South Leonard Street, Waterbury, Connecticut**

Dear Sir or Madam:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a “small cell” telecommunications facility on an industrial parcel at 85-91 South Leonard Street in Waterbury (the “Property”).

The proposed “small cell” would consist of a single canister antenna on a small tower mast attached to and extending above the existing chimney on the Property. Cellco will also install a remote radio head on a lower portion of the chimney. Equipment associated with the small cell facility will be maintained on an 8’ x 8’ concrete pad near the southwest corner of the building.

A copy of Cellco’s Petition is attached for your review. Landowners whose property abuts the Property were also sent a copy of the Petition.

Robinson + Cole

CASLU, LLC
June 30, 2015
Page 2

Please contact me if you have any questions regarding this proposal.

Sincerely,



Kenneth C. Baldwin

KCB/kmd
Attachment

ATTACHMENT 9

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

June 30, 2015

Via Certificate of Mailing

«Name_and_Address»

Re: Notice of Intent to File a Petition for Declaratory Ruling with the Connecticut Siting Council for the Installation of a “Small Cell” Telecommunications Facility at 85-91 South Leonard Street, Waterbury, Connecticut

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Petition for Declaratory Ruling (“Petition”) with the Connecticut Siting Council (“Council”) seeking approval to install a “small cell” telecommunications facility on an industrial parcel at 85-91 South Leonard Street in Waterbury (the “Property”).

The proposed “small cell” would consist of a single canister antenna on a small tower mast attached to and extending above the existing chimney on the Property. Cellco will also install a remote radio head on a lower portion of the chimney. Equipment associated with the small cell facility will be maintained on an 8’ x 8’ concrete pad near the southwest corner of the building.

This notice is being sent to you because you are listed as an owner of land that abuts the Property. If you have any questions regarding the Petition, the Council’s process for reviewing the Petition or the details of the filing itself, please feel free to contact me at the number listed above. You may also contact the Council directly at 860-827-2935.

June 30, 2015
Page 2

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Attachment
Copy to:
Tim Parks

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS

**ABUTTERS LIST
MAP 0391/BLOCK 1033/LOT 0003**

**91 SOUTH LEONARD STREET
WATERBURY, CONNECTICUT**

	<u>Map/Block/Lot</u>	<u>Property Address</u>	<u>Owner and Mailing Address</u>
1.	0391/1033/0001	South Leonard Street	Connecticut Light & Power Co. P.O. Box 270 Hartford, CT 06141
2.	0391/1033/0004	99 South Leonard Street	Hamit Krasniqi 10 Riverview Circle Wolcott, CT 06716
3.	0391/1033/0005	Railroad ROW	State of Connecticut DOT Rail Division 2800 Berlin Turnpike Newington, CT 06111
4.	0390/1030/0034	50 Charles Street	St. Patricks Church Corporation 50 Charles Street Waterbury, CT 06708
5.	0390/1030/0028	Washington Avenue	Chris and Debra Champagne 18 Harrison Drive Wolcott, CT 06716
6.	0390/1033/11	205 Washington Avenue	Wesson Energy 165 Railroad Hill Waterbury, CT 06708
7.	0390/1033/10	58 Lafayette Street	58 Lafayette Street LLC 889 Mount Tobe Road Plymouth, CT 06782
8.	No Map/Block	Charles Street	State of Connecticut DOT Rail Division 2800 Berlin Turnpike Newington, CT 06111