STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
APPLICATION OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF A TELECOMMUNICATIONS FACILITY AT 445 PROSPECT STREET, WOODSTOCK, CONNECTICUT	:	DOCKET NO. 397
	:	FEBRUARY 24, 2010

RESPONSES OF CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS TO CONNECTICUT SITING COUNCIL PRE-HEARING INTERROGATORIES

On February 5, 2010, the Connecticut Siting Council ("Council") issued Pre-Hearing Interrogatories to Intervenor, Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to the above-captioned docket. Below are Cellco's responses.

Question No. 1

Did Cellco receive return receipts for all adjacent landowners listed in Application Attachment 5? If not, list the abutters that did not receive notice and describe any additional effort to serve notice.

Response

Yes.

Question No. 2

The following properties were not shown on the abutters map in the application; 5703/4/16A, 5703/5/08A, 5703/5/5, 5703/10/25A, 5703/10/25C. Please submit a diagram that depicts their location.

Response

The diagram requested is attached behind Tab 1. These properties, while not direct abutters to the 44-acre Rich family parcel; the parcel on which the tower is proposed to be located, these parcels do abut other contiguous Fredrick Rich et. al. properties. Because so much property in the area is owned by Mr. Rich, Cellco took a very conservative approach in its notice of abutting landowners.

Question No. 3

Has the Town of Woodstock updated their information regarding property 5703/5/08? If so, provide notice to the property owner.

Response

Cellco assumes the Council is referring to the parcel for which ownership information is not available. Cellco had included an incorrect parcel reference Map/Block/Lot number in its list of abutting property owners included in the Application (Attachment 5). That said, the Town of Woodstock Assessor's office still has no information on the ownership of this parcel.

Question No. 4

Would blasting be required for the construction of the proposed site? Provide estimates of cut and fill.

Response

Cellco does not anticipate a need for blasting to construct the proposed facility. A complete geo-technical survey will be completed and submitted to the Council as a part of the D&M Plan, if the East Woodstock cell site is approved. The East Woodstock Cellco would require a "cut" of approximately 290 cubic yards of material and a "fill" of approximately 130

cubic yards of material.

Question No. 5

What is Cellco's minimum signal level threshold for in-building and in-vehicle use? Do the cellular, PCS and LTE frequencies have different thresholds?

Response

Cellco's coverage thresholds are -75 dBm for reliable in-building service and -85 dBm for reliable in-vehicle service. Cellco's reliable service threshold of -85 dBm is consistent within each of its three licensed operating frequencies.

Question No. 6

How do the cellular and PCS systems interact in Cellco's network?

Response

As its technology evolves over the next several years, Cellco expects that its current cellular and PCS systems together with its new LTE (700 MHz) system will provide its customers with advanced wireless services throughout its network in Connecticut and nationwide. Each of these wireless systems will provide customers with advanced voice and data services including but not limited to high speed wireless internet access, video downloads and mobile television in addition to the more traditional voice and data (text and e-mail) services Cellco customers enjoy today. Cellco expects that all three wireless systems will interact as one integrated unit providing a broad range of advanced wireless services.

As has been discussed in prior Council dockets, customers seeking to use the Cellco network will be directed to a particular channel from a particular cell site in the coverage area where the customer is located. Depending upon the availability of a channel, a wireless call

would, in all likelihood, be directed to an available cellular channel first. If no cellular channel is available at a particular cell site the call would search for and initiate on a PCS channel in the same area. If a customer is traveling while making a call, a call in progress would be "handed-off" from one cell to the next. Again, depending upon availability of channels on the adjacent cells, a call that starts on Cellco's cellular network would first attempt to hand-off to another cellular channel, if one is available. If not, the system is designed to hand-off that call to either a PCS or, in the future, an LTE (700 MHz) channel. Provided Cellco maintains reliable signal strength in a particular area, the network will allow for the hand-off of call between cell sites at all of the available wireless frequencies deployed at those cell sites, without interruption.

Question No. 7

Did Cellco perform a site drive test or base line drive test for the area? If yes, please provide.

Response

Cellco did not perform a drive test at the proposed Prospect Street cell site. Base line drive data is collected throughout Cellco's network. This information is, however, considered to be confidential, market-sensitive and proprietary.

Question No. 8

Provide coverage plots (PCS and cellular), using the scale and thresholds in Application Attachment 7, that depicts coverage from existing/approved Cellco sites and the proposed at antenna heights of 120 and 110 feet.

Response

The coverage plots requested are included behind Tab 2. For ease of reference the maps

are labeled:

Map 1 – Existing and Proposed at 120' – PCS

Map 2 – Existing and Proposed at 120' – Cellular

Map 3 – Existing and Proposed at 110' – PCS

Map 4 – Existing and Proposed at 110' – Cellular

Question No. 9

What is the interruption of service percentage in the proposed service area? What percentage is acceptable in Verizon's network?

Response

Cellco's network experiences dropped calls at a rate of 2.63 % and ineffective attempts at a rate of 2.41 % in the East Woodstock area. Cellco's network standard for dropped calls and ineffective attempts is less than 1%.

Question No. 10

What is the existing signal level in the proposed service area?

Response

Cellco's signal strength in the area to be covered by the proposed facility ranges from -91 dBm to -108 dBm.

Question No. 11

Why was an elevation of 594 AMSL used in the visibility analysis? Was another location for the tower considered before filing of the application with the Council?

Response

As identified on the site plan drawings contained within the Application, the surveyed

ground elevation for the proposed facility is 612 feet AMSL. The 594-foot AMSL ground elevation presented in VHB's *Visual Resource Evaluation Report* was an approximate elevation figure obtained from preliminary site drawings for the proposed facility dated July 30, 2009 (based on USGS topographic data). These drawings and the visual report were prepared prior to the completion of a 2C site survey. However, the topographic discrepancy has no impact on our computer-based viewshed analysis since the topographic data utilized by VHB is derived from a digital elevation model ("DEM"), a three dimensional topographic representation of the earth's surface, and does not rely on either ground survey data or approximate ground elevations depicted on the USGS 7.5-minute quadrangle maps. The ground elevation presented in VHB's report is provided for general reference purposes only and is not manually entered into the computer program used to generate the viewshed analysis. The proposed location of the facility, as determined by the site's coordinates (latitude and longitude points), is the most critical feature for placement onto VHB's viewshed map. That location is overlaid on the DEM which has assigned topographic values specific to the designated coordinates. Although the "true" ground elevation at a given coordinate point may not be quite as accurate as a surveyed elevation, it has been our experience that the elevation values of the DEMs utilized in VHB's analyses are typically within three to ten feet of the actual surveyed elevations at a given location. In this particular instance, the DEM used in VHB's model indicates an approximate ground elevation of 605 feet AMSL for the proposed site location. Most importantly, the DEM is relative to itself; that is, any discrepancies of ground elevations are consistent throughout the DEM. As a result, the information presented in the visibility analysis is consistent and reflects an accurate depiction of the potential visibility associated with the proposed facility at that location.

Question No. 12

Were other areas of the various Rich parcels considered for a tower site? If so, why was this location selected over the others?

Response

The principle reason for selecting the northwest portion of the 44 acre Rich family parcel is because this area maintains the highest ground elevation on the parcel and would allow for the construction of the shortest tower. As shown on the Environmental Resources Screen map included behind Tab 3, the ground elevation at the Rich property drops off to the south and to the east. For example, Cellco explored a tower site to the south of the proposed location closer to the barn buildings on the Rich property. The ground elevation in this area is approximately 565 feet AMSL, nearly 50 feet lower than the proposed tower location. Cellco would need a tower, taller than 130' at this location to satisfy its coverage objectives. Cellco's landlord would agree to relocate the tower to this area, if the Council asks that it be moved.

As discussed in the Application, a large wetland corridor encompasses the central portion of the Rich property making in the central and eastern portions of the parcel unsuitable for an alternative tower location. The northwestern portion of this wetland corridor was field delineated, as detailed in the Wetlands Delineation Report found behind Attachment 12 of the Application. The full extent of the large wetland corridor is depicted on the Environmental Resources Screen Map.

Cellco also explored an additional alternative tower location on Rich property, as discussed further in Response No. 14 below.

Question No. 13

Indicate the location of the Dowd property on a map. What is the elevation range of the property? Why wouldn't the Dowd property be acceptable an alternative to the proposed site?

Response

The Dowd property referred to is located south of Route 197 and west of the intersection of Routes 169 and 197. Attached behind Tab 4 is a map showing the location of the Dowd property. The ground elevation for this parcel ranges between 428 feet and 512 feet AMSL. This parcel is located in an area that is currently served, to a significant extent by Cellco's existing Coatney Hill and Woodstock North cell sites. An additional site in this area would provide too much redundant coverage to the area. In addition, given the topography in the area, a cell site on the Dowd property, west of the Route 169/197 intersection would not connect with service from Cellco existing Quinebaug cell site in Thompson Connecticut.

Question No. 14

Would a tower site in the area of 42° 0' 55.65" north latitude and 71° 59' 07" west longitude or the area of 42° 0' 57.34" north latitude and 71° 59' 7.10" west longitude be acceptable to Cellco? What is the ground elevation in these areas? What tower height in each area would be required to meet Cellco's coverage needs? Provide an aerial photograph depicting these locations.

Response

The two sets of coordinates referenced in Question No. 14 are fairly close to one another on an approximately 7.75 acre parcel owned by Fredrick Rich et. al. on the west side of Prospect Street, north of Green Road. These locations maintain ground elevations between 530 and 540

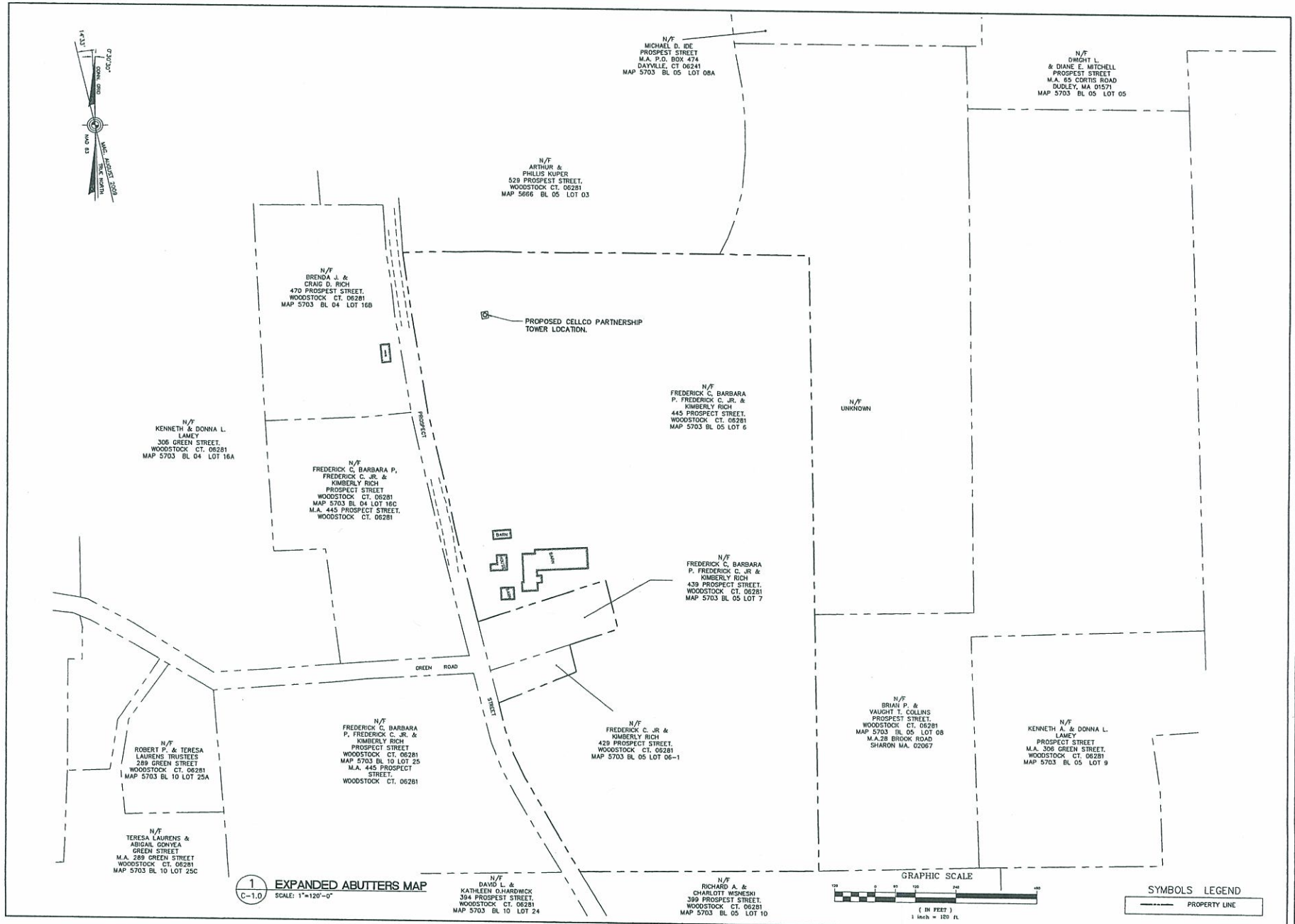
feet above mean sea level (AMSL). Cellco could satisfy its coverage objectives in this area but would have to increase its antenna centerline height to 150 feet above ground level ("AGL"). The aerial photograph showing the location of these two sets of coordinates is attached to these responses behind Tab 5. Cellco's landlord, however, is unwilling to relocate the proposed tower to this parcel.

Question No. 15

Provide the power density worksheet that includes the methodology and input parameters (EIRP, # of channels, etc) used to obtain the power density figure presented on page 16 of the Application.

Response

The worksheet requested is included in included behind Tab 6.



1 C-1.0 EXPANDED ABUTTERS MAP
SCALE: 1"=120'-0"

DESIGNED BY:			CFC
DRAWN BY:			TSP
CHK'D BY:			DMD
REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	02/23/10	DAD	CFC	ISSUED FOR CEC INTERROGATORY RESPONSE

PROFESSIONAL ENGINEER SEAL

Cellco Partnership d.b.a. Verizon Wireless

NATCOMM

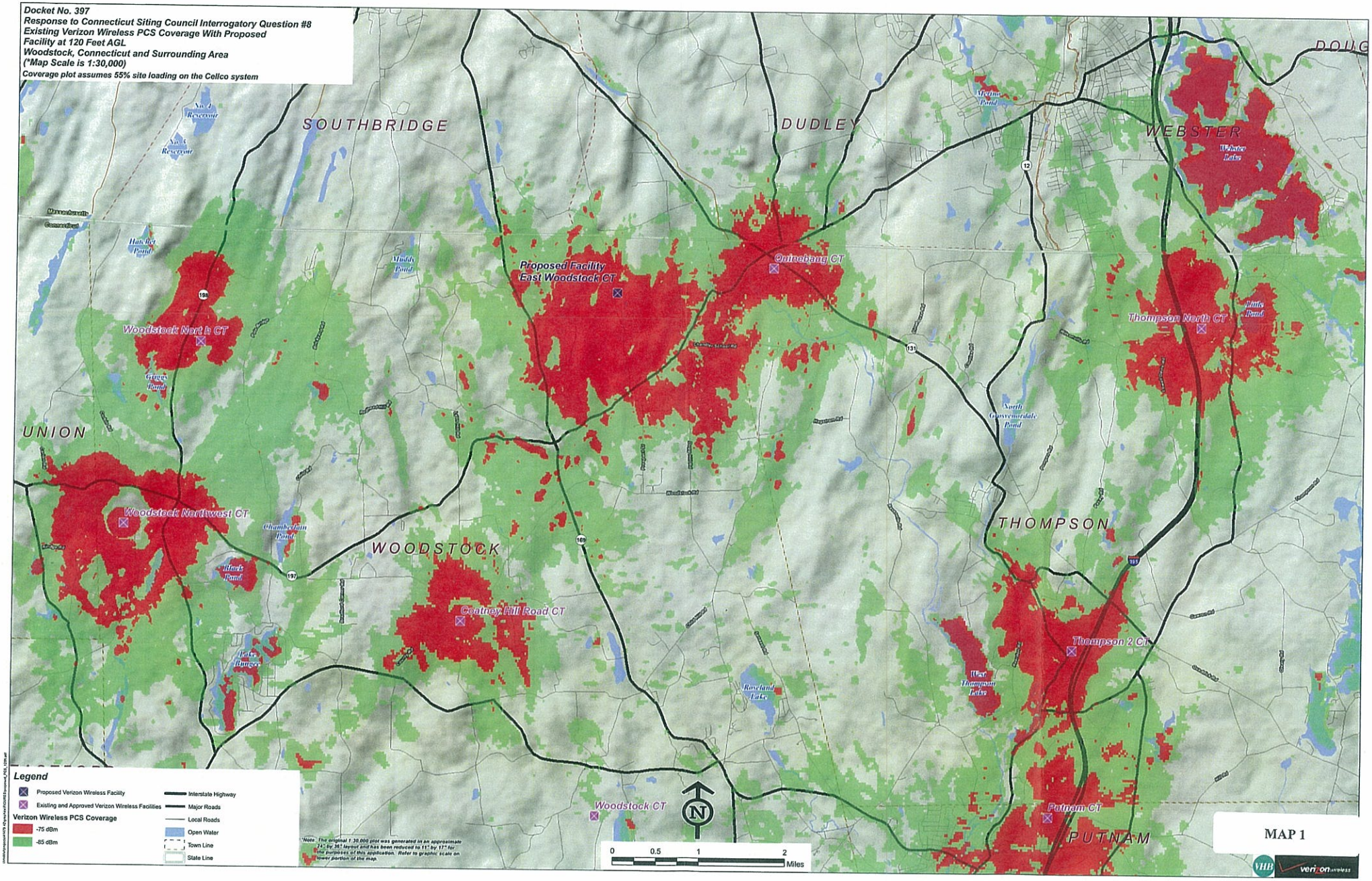
VERIZON WIRELESS
WIRELESS COMMUNICATIONS FACILITY
EAST WOODSTOCK
445 PROSPECT STREET
WOODSTOCK, CT 06281

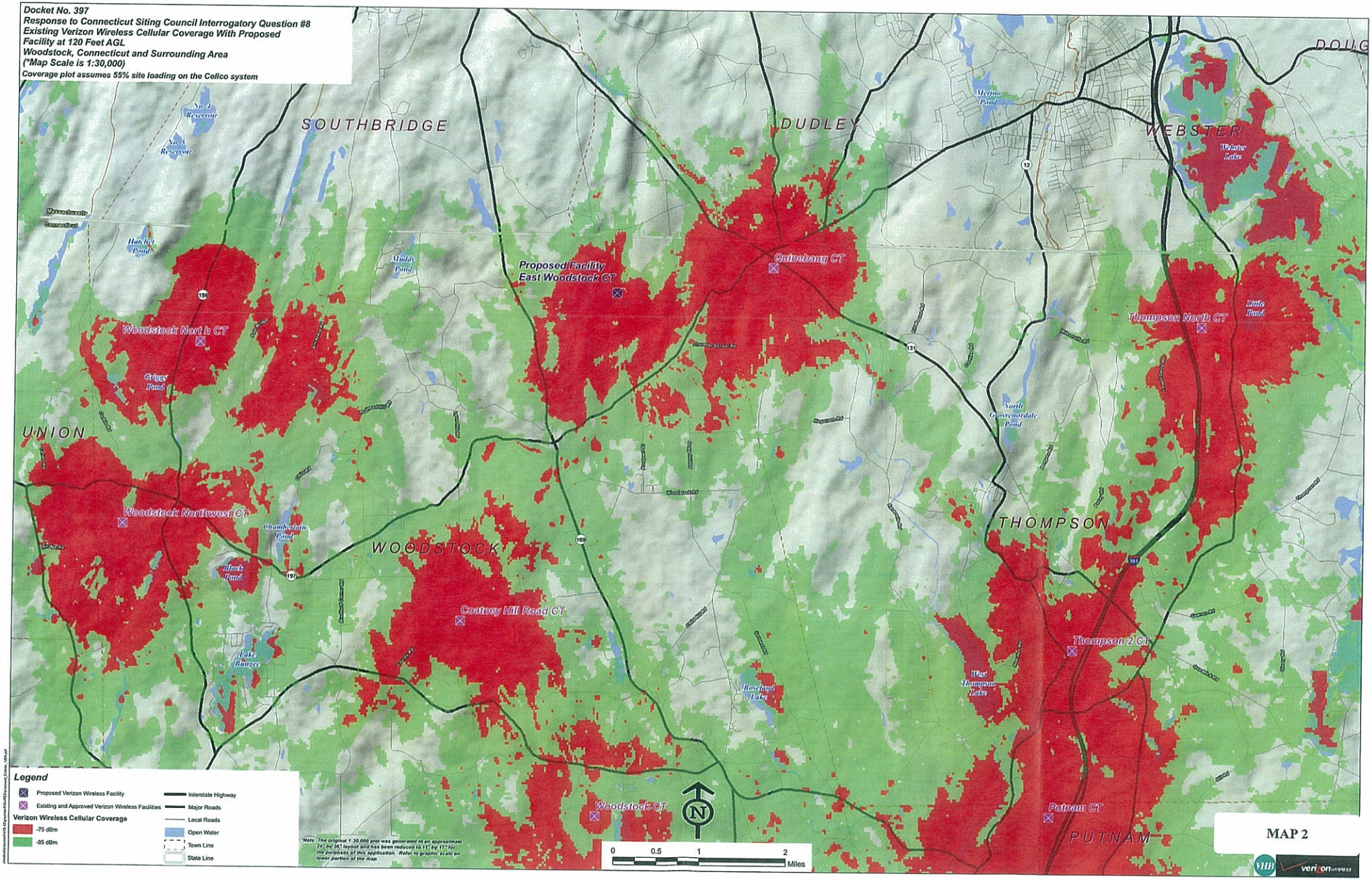
DATE: 02/23/10
SCALE: AS NOTED
JOB NO. 09066

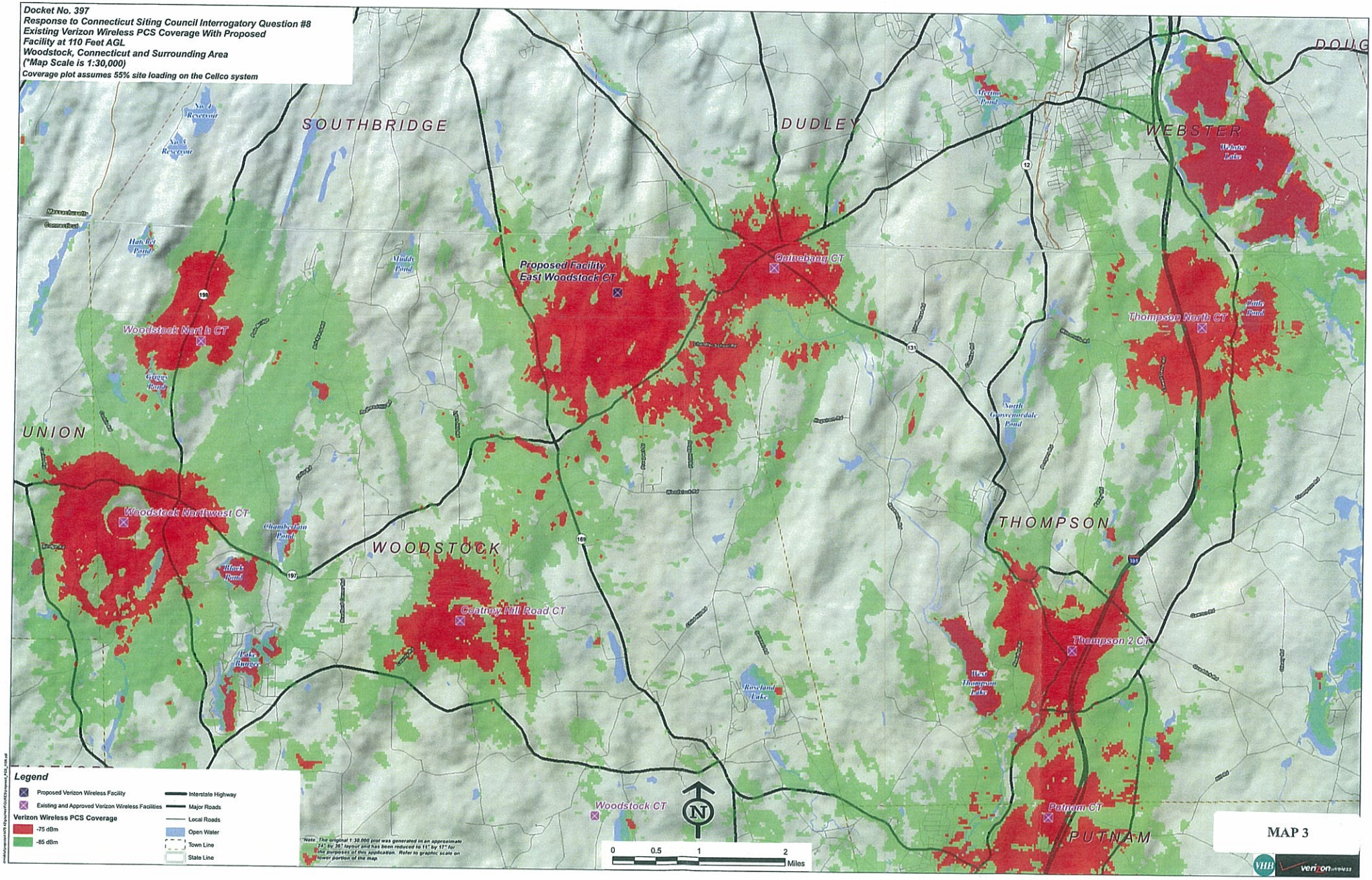
EXPANDED ABUTTERS MAP

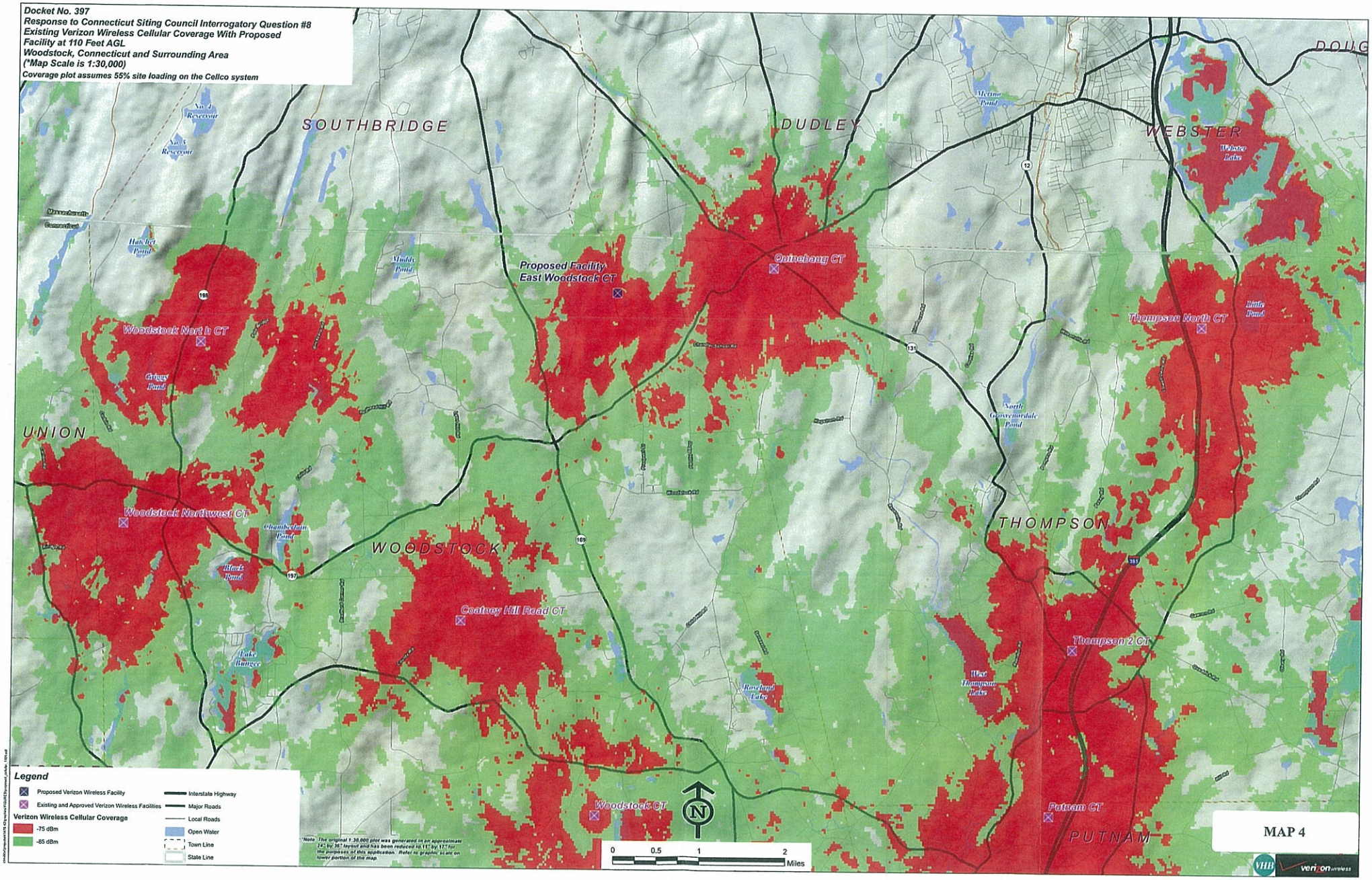
C-1.0

Sheet No. 1 of 1

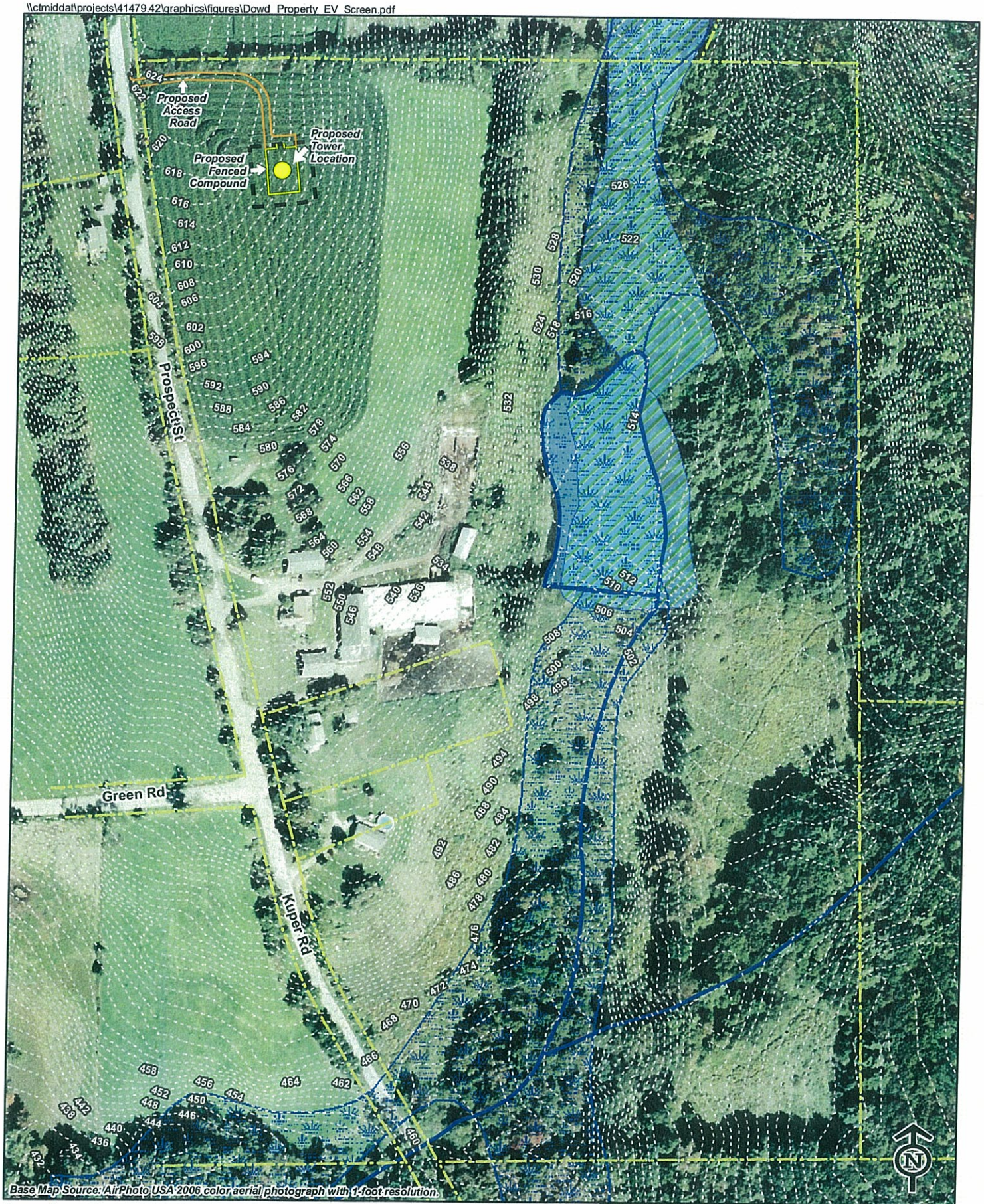

Docket No. 397
Response to Connecticut Siting Council Interrogatory Question #8
Existing Verizon Wireless PCS Coverage With Proposed
Facility at 120 Feet AGL
Woodstock, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)
Coverage plot assumes 55% site loading on the Cellco system
SOUTHBRIDGE
DUDLEY
WEBSTER
UNION
WOODSTOCK
THOMPSON
PUTNAM
Proposed Facility
East Woodstock CT
Woodstock North CT
Woodstock Northwest CT
Quinebaug CT
Thompson North CT
Thompson 2 CT
Coatney Hill Road CT
Woodstock CT
Putnam CT
Legend
Proposed Verizon Wireless Facility
Existing and Approved Verizon Wireless Facilities
Verizon Wireless PCS Coverage
-75 dBm
-85 dBm
Interstate Highway
Major Roads
Local Roads
Open Water
Town Line
State Line
0 0.5 1 2 Miles
MAP 1


Docket No. 397
Response to Connecticut Siting Council Interrogatory Question #8
Existing Verizon Wireless Cellular Coverage With Proposed
Facility at 120 Feet AGL
Woodstock, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)
Coverage plot assumes 55% site loading on the Cellco system
SOUTHBRIDGE
DUDLEY
WEBSTER
UNION
WOODSTOCK
THOMPSON
PUTNAM
Proposed Facility
East Woodstock CT
Quinebaug CT
Woodstock North CT
Woodstock Northwest CT
Coatney Hill Road CT
Thompson North CT
Thompson 2 CT
Woodstock CT
Putnam CT
Legend
Proposed Verizon Wireless Facility
Existing and Approved Verizon Wireless Facilities
Verizon Wireless Cellular Coverage
-75 dBm
-85 dBm
Interstate Highway
Major Roads
Local Roads
Open Water
Town Line
State Line
0 0.5 1 2 Miles
MAP 2


Docket No. 397
Response to Connecticut Siting Council Interrogatory Question #8
Existing Verizon Wireless PCS Coverage With Proposed
Facility at 110 Feet AGL
Woodstock, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)
Coverage plot assumes 55% site loading on the Cellco system
SOUTHBRIDGE
DUDLEY
WEBSTER
UNION
WOODSTOCK
THOMPSON
PUTNAM
Proposed Facility
East Woodstock CT
Quinebaug CT
Woodstock North CT
Woodstock Northwest CT
Thompson North CT
Thompson 2 CT
Coatney Hill Road CT
Woodstock CT
Putnam CT
Legend
Proposed Verizon Wireless Facility
Existing and Approved Verizon Wireless Facilities
Verizon Wireless PCS Coverage
-75 dBm
-85 dBm
Interstate Highway
Major Roads
Local Roads
Open Water
Town Line
State Line
0 0.5 1 2 Miles
MAP 3


Docket No. 397
Response to Connecticut Siting Council Interrogatory Question #8
Existing Verizon Wireless Cellular Coverage With Proposed
Facility at 110 Feet AGL
Woodstock, Connecticut and Surrounding Area
(*Map Scale is 1:30,000)
Coverage plot assumes 55% site loading on the Cellco system
SOUTHBRIDGE
DUDLEY
WEBSTER
UNION
WOODSTOCK
THOMPSON
PUTNAM
Proposed Facility
East Woodstock CT
Quinebaug CT
Woodstock North CT
Woodstock Northwest CT
Thompson North CT
Thompson 2 CT
Coatney Hill Road CT
Woodstock CT
Putnam CT
Legend
Proposed Verizon Wireless Facility
Existing and Approved Verizon Wireless Facilities
Verizon Wireless Cellular Coverage
-75 dBm
-85 dBm
Interstate Highway
Major Roads
Local Roads
Open Water
Town Line
State Line
0 0.5 1 2 Miles
MAP 4

\\ctmiddat\projects\41479.42\graphics\figures\Dowd_Property_EV_Screen.pdf



Base Map Source: AirPhoto USA 2006 color aerial photograph with 1-foot resolution.

Legend

- Proposed Facility Location
- Proposed Access Drive
- Proposed Fenced Compound
- Proposed Lease Area
- Existing Property Line
- 2-foot Contour Line
- Natural Diversity Database Areas (buffered; last updated 12/09; none in project area)
- Wetlands
- National Wetland Inventory Wetlands
- Open Water

FEMA Flood Zone*

- 100 Year Flood Zone
- 500 Year Flood Zone
- Floodway in Zone AE
- Other Flood Areas

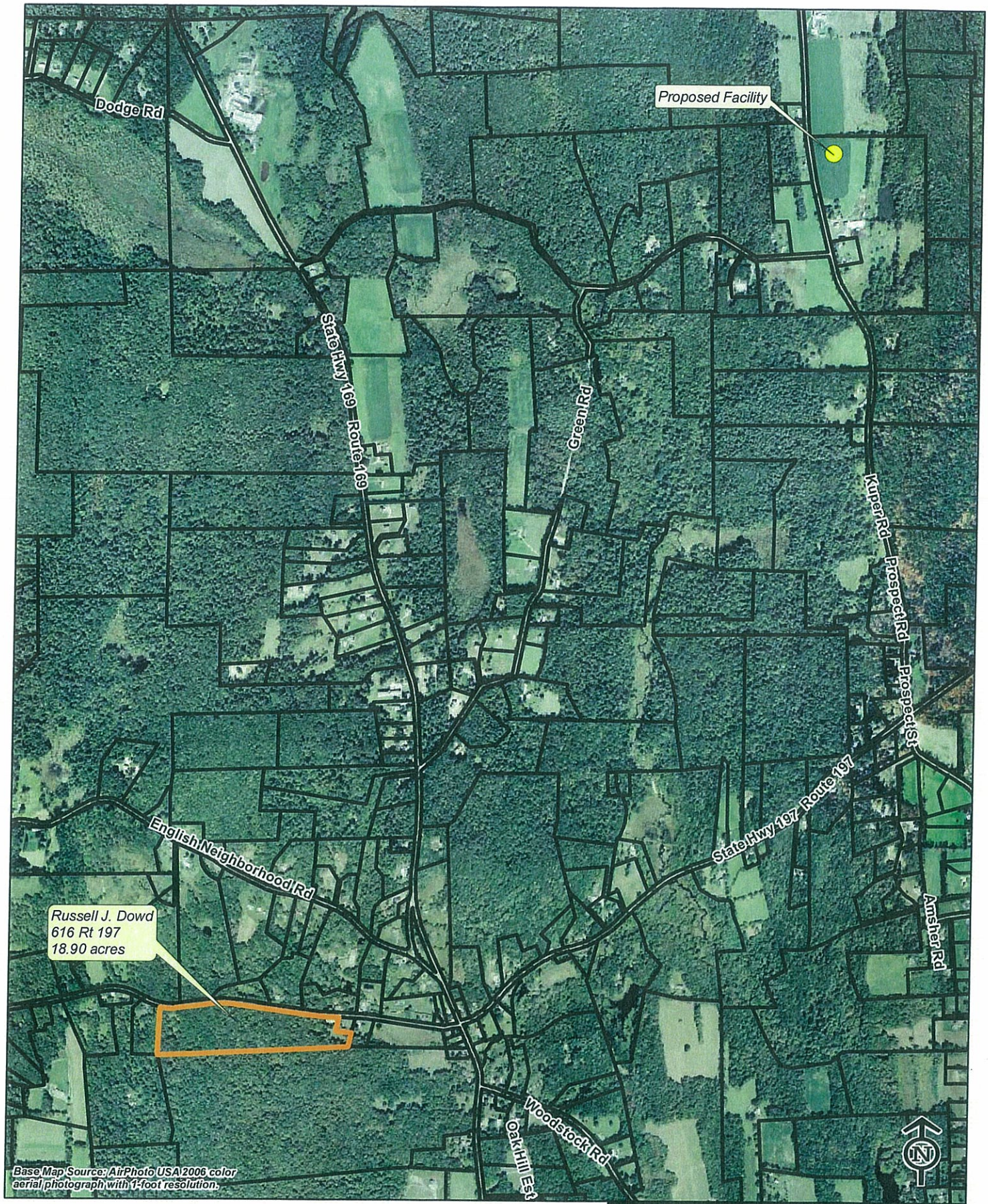
* FEMA Floodplain Data Not

100 50 0 100 Feet

Vanasse Hangen Brustlin, Inc.

Environmental Resources Screen
Proposed Verizon Wireless
Telecommunications Facility
East Woodstock
445 Prospect Street
Woodstock, Connecticut

verizon wireless



Legend

- Proposed Facility Location
- Dowd Property
- Woodstock Parcel Boundary

1,000 500 0 1,000 Feet

Vanasse Hangen Brustlin, Inc.

Russell J. Dowd Property
Proposed Verizon Wireless
Telecommunications Facility
East Woodstock
445 Prospect Street
Woodstock, Connecticut

verizon wireless

Base Map Source: AirPhoto USA 2006 color aerial photograph with 1-foot resolution.

Legend

- Proposed Facility Location
- Alternate Site Location
- Contour Line
- Woodstock Parcel Boundary
- Wetlands
- National Wetland Inventory Wetlands
- Open Water

FEMA Flood Zone*

- 100 Year Flood Zone
- 500 Year Flood Zone
- Floodway in Zone AE
- Other Flood Areas

* FEMA Floodplain Data Not

250 125 0 250 Feet

Vanasse Hangen Brustlin, Inc.

Alternate Site Location Map
Proposed Verizon Wireless
Telecommunications Facility
East Woodstock
445 Prospect Street
Woodstock, Connecticut

verizon wireless

General Power Density

Site Name: East Woodstock, CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	3	707	2121	130	0.0451	1.0	4.51%
VZW Cellular	869	9	593	5337	130	0.1136	0.579333	19.60%
VZW 700	757	1	828	762	130	0.0162	0.497333	3.26%

Total Percentage of Maximum Permissible Exposure 27.38%

*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/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used.