

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE: :
 :
 :
 APPLICATION OF MCF COMMUNICATIONS : DOCKET NO. 358
 bg, INC. AND CELLCO PARTNERSHIP D/B/A :
 VERIZON WIRELESS FOR A CERTIFICATE :
 OF ENVIRONMENTAL COMPATIBILITY :
 AND PUBLIC NEED FOR THE :
 CONSTRUCTION, MAINTENANCE AND :
 OPERATION OF A WIRELESS :
 TELECOMMUNICATIONS FACILITY IN THE :
 TOWN OF THOMPSON, CONNECTICUT : MAY 20, 2008

RESPONSES OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS
TO CONNECTICUT SITING COUNCIL PRE-HEARING INTERROGATORIES

On May 2, 2008, the Connecticut Siting Council (“Council”) issued Pre-Hearing Interrogatories to the applicants, MCF Communications bg, Inc. (“MCF”) and Cellco Partnership d/b/a Verizon Wireless (“Cellco”) (collectively the “Applicants”), relating to the above-captioned docket. Below are the Applicant’s responses.

Question No. 1

Did the Applicants receive return receipts for all adjacent landowners listed behind Tab 5 of the application? If not, was any additional effort made to make sure that notice was received by these property owners?

Response

Cellco received return receipts from all of the Site A abutters and from all but five of the Site B abutters. Notices to the five Site B abutters were resent by regular mail.

Question No. 2

Discuss the Wireless Communications and Public Safety Act of 1999 (the 911 Act) and the Enhanced 911 Act. How does the proposed site comply with these Acts?

Response

The Wireless Communications and Public Safety Act of 1999 (the “WCPS Act”) was enacted to promote and enhance public safety by making 911 the universal emergency assistance number, by furthering deployment of wireless 911 capabilities and related functions, and by encouraging construction and operation of seamless, ubiquitous and reliable networks for wireless services.

The Enhanced 911 Act of 2004 (the “E-911 Act”) was enacted to facilitate the reallocation of spectrum from the government to commercial users; improve, enhance and promote Homeland Security, public safety, and citizen activated emergency response capabilities through enhanced 911 services; upgrade Public Safety Answering Point (PSAP) capabilities and related functions in receiving E-911 calls; and support the construction of a ubiquitous and reliable citizen activated system.

The FCC has divided the implementation of the E-911 program into two parts. Under Phase 1, carriers had to provide a local PSAP with the telephone number of the originator of a 911 call and the location of the cell site or base station transmitting the call. Under Phase 2, carriers had to begin to provide PSAP’s with more precise information including the latitude and longitude of the caller. The FCC requires the technology used for E-911 services to meet certain accuracy standards, the development of new technologies to support E-911 services, as well as coordination among public safety agencies, wireless carriers, technology vendors, equipment manufacturers and wireline carriers.

Technology satisfying the Phase 1 and Phase 2 requirements has been incorporated into all existing Cellco facilities in Connecticut and will be installed in the proposed Thompson 2 facility.

Question No. 3

When did Cellco first establish a search ring in the area of the proposed sites?

Response

The Thompson 2 search area was established on June 30, 2005.

Question No. 4

Provide a map with a scale including size (area), shape and location of Cellco's search ring for the proposed sites.

Response

The Thompson 2 search area map is included as Attachment 1.

Question No. 5

Has Cellco investigated the potential use of microcells, repeaters or distributed antenna systems to provide coverage to the existing gaps in Thompson? Please describe the reason each of these technologies were rejected.

Response

No. The area Cellco intends to cover from the Thompson 2 facility, including significant portions of I-395 and Routes 12, 200 and 193, is too large to reliably serve with micro-cells, repeaters or a distributed antenna system, especially at PCS frequencies.

Question No. 6

Could the proposed Site A compound be moved farther east or west to avoid the need for significant grading in the apparent steep slope area of the parcel?

Response

Since the filing of the application, the owner of the Site A property has excavated material from the slope in the area of the proposed cell site. Grading shown on Plan Sheet A02, behind Tab 1 of the Application is no longer necessary to construct the proposed facility compound.

Question No. 7

Would MCF design the proposed Site A tower with a yield point to allow the tower to remain on the host property in the event of a tower failure? If so, at what height above ground level would the yield point be located?

Response

Yes. MCF is willing to design a yield point into the Site A tower at 80 feet above ground level.

Question No. 8

Would the Applicants be willing to reexamine the potential use of the Thompson Hills West Condominium as an additional proposed site in this application?

Response

As the Council is aware, the process to site a telecommunications tower in Connecticut starts long before an application is filed. The site search and leasing phase of this process is often the most time consuming. MCF first contacted the Thompson Hill Condominium Association (“THCA”) in October of 2000 to discuss the possibility of leasing a portion of the THCA property. In October 2002, the THCA agreed to enter into a lease with MCF. That lease terminated in December of 2005 by its terms, because MCF failed to obtain all of its required permits and approvals. Before the expiration of the 2002 lease the THCA Board of Directors

informed MCF that it would not extend the lease term and was no longer interested in having a tower on its property. MCF then focused its attention on other alternative sites it was pursuing, in particular the Site A and Site B tower locations. MCF entered into lease agreements with both the Site A and B property owners and commenced the Council's application process. To require MCF to start lease negotiations at this late stage of the siting process would unfairly delay the project further.

Question No. 9

What would be the height of the proposed poles used for the overhead power supply to proposed Site A? Why is the power supply to the site not proposed to be underground?

Response

The proposed poles providing overhead power would be approximately 40 feet tall. Power to Site A would extend overhead from existing overhead service along Riverside Drive to a new pole installed to the south of the Site A compound, then underground to the cell site. (See Plan Sheet A02 behind Tab 1 of the Application).

Question No. 10

What distance of overhead utilities would be required for connection to the Site B facility? What distance of underground utilities would be installed?

Response

Utility service to Site B will extend overhead a distance of approximately 300 feet and underground a distance of approximately 230 feet.

Question No. 11

What is the number of utility poles required for the utility connection to the Site B facility? At what height?

Response

MCF would need to install two 40-foot utility poles to provide service to Site B.

Question No. 12

Did the Applicants request a determination of species from DEP? If yes, provide a copy of correspondence.

Response

According to the Connecticut DEP Resource Map of State and Federal Listed Species and Significant Natural Communities included behind Tab 12 of the Application, there are no shaded areas in the vicinity of either the Site A or Site B tower locations. Therefore, a request for DEP review is not required.

Question No. 13

Is the condominium complex on West Side Drive included in the “Visual Comparison Chart” in the Visual Analysis Report as one of the residences that would have a year-round view of the proposed Site B structure? Approximately how many of the condominium units would have a view of the Site B structure?

Response

Yes. As listed on the Visual Comparison Chart, there are three residential complexes with year-round views and two residential complexes with seasonal views of the Site B tower. Without gaining access to each of the individual condominium units it is impossible to determine which of the units would have views of the tower.

Question No. 14

Would the construction of the proposed Site A or Site B facility require blasting?

Response

It is unlikely that blasting would be required at either site. A complete geotechnical survey will be completed following Council approval of one of the two sites proposed.

Question No. 15

How many trees with diameters of six inches or greater would be removed for the construction of each proposed facility?

Response

Site A – 0 Trees

Site B – 4 Trees

Question No. 16

What is the dominant vegetation at each proposed site? What is the height of the dominant vegetation at each proposed site?

Response

At or near Site A, 50 to 60-foot deciduous trees dominate the landscape. At or near Site B, 50 to 60-foot deciduous and coniferous trees dominate the landscape.

Question No. 17

Provide vegetation type in the surrounding area of both proposed Site A and proposed Site B.

Response

There is currently little or no vegetation at all on the parcel where Site A is proposed to be located. The vegetation in the vicinity of Site A and on the Site B parcel consists of a mix of pine, oak, maple and hickory trees.

Question No. 18

Provide the “2 Mile Viewshed Analysis Map” for proposed Site A and Site B in 11-inch by 17-inch format.

Response

See Attachment 2.

Question No. 19

What is the name, distance and direction to the closest public airfield from the proposed Site A and proposed Site B?

Response

The closest public airfield is located in Danielson, Connecticut, approximately eight miles to the south.

Question No. 20

Please clarify the distance of the Site B property owner’s residence from the proposed site. Page 15 of the application states that the residence is located approximately 209 feet from the proposed site and behind Tab 11 of the application it states that the residence is located approximately 170 feet from the site.

Response

Both distances are correct. The 209-foot distance is from the center of the site compound. The 170-foot distance is from the closest compound corner.

Question No. 21

Does Cellco use -75 dBm as a minimum signal level threshold for in-building coverage?
Is -85 dBm Cello’s threshold for in-vehicle coverage?

Response

Yes. Cellco's coverage thresholds are -75 dBm for reliable in-building service and -85 dBm for reliable in-vehicle service.

Question No. 22

What is the minimum signal level threshold that Cellco would accept for the North Grosvenordale area of Thompson?

Response

Negative 85 dBm.

Question No. 23

What is the existing signal level in the area of the proposed sites?

Response

Existing signal strength in this area ranges from -86 dBm to -104 dBm at cellular frequencies and -86 dBm to -112 dBm at PCS frequencies.

Question No. 24

Provide the structure types, antenna heights, addresses, direction and distances of all Cellco facilities that would directly interact with each of the proposed sites?

Response

Cellco Site Name	Structure Type	Antenna Height	Address	Direction	Distance (Miles, Site A/B)
Putnam	Monopole	146'	154 Sayle Avenue Putnam, CT	South	1.63/2.08
Thompson	Guyed Tower	237', 227'	61 Lowell Davis Road Thompson, CT	Northeast	2.42/1.99
Killingly	Lattice	267'	1375 North Road Killingly, CT	Southeast	6.55/6.82

Question No. 25

Would the proposed Site A and Site B towers adequately fill the PCS coverage gap along Interstate 395? If not, how would Cellco propose to fulfill coverage in this area?

Response

Yes. Cellco can satisfy its PCS coverage objective along I-395 from either the Site A or Site B tower locations as proposed in the Application.

Question No. 26

Provide clearer aerial photographs of the area surrounding each proposed site.

Response

See Attachment 3.

Question No. 27

Would Cellco require a diesel storage tank to provide fuel for the proposed back-up generator? How would the storage tank be monitored for leaks? Describe containment for the storage tank in the event of failure.

Response

The fuel storage tank is located beneath the generator unit itself. It is a double-walled tank with built-in leak detection alarms that are monitored remotely at the Cellco Mobile Telephone Switching Office in Wallingford, CT. In addition, the floor of the generator room is designed to contain 120% of the capacity of all generator fluids. The generator room floor is also equipped with leak detection alarms.

Question No. 28

What is the height of the existing CL&P structures located near the proposed sites?

Response

The CL&P structures are 40 to 60-foot wood poles.

Question No. 29

Could Cellco provide coverage to the target area by locating antennas on the existing CL&P structures or increasing the height of the existing CL&P structures and locating antennas on them? Identify the circuit line number and voltage level or the transmission line.

Response

Based on a preliminary review of the existing transmission line wood pole locations, it appears as though one or more of the existing poles might be able to satisfy Cellco's objectives in the area. In each case, however, the existing wood transmission line pole would need to be replaced with a steel structure and extended to a height twice that of the existing wood structure.

Question No. 30

Page 20 of the application states that proposed Site A and Site B would not be located in flood zone C as designated by the Federal Emergency Management Agency (FEMA), please clarify in what FEMA zone each proposed site would be located.

Response

Both Site A and Site B are located in Flood Zone C. The reference on page 20 of the Application is a typographical error.

Question No. 31

Did the Applicants meet with Town of Thompson Officials? Provide the date and names of any officials that attended those meetings.

Response

Yes. On December 7, 2007, MCF and Cellco representatives met with the Thompson First Selectman to discuss the three alternative cell sites under consideration, including Sites A and B and a site at the Marianapolis School in Thompson. Following the filing of the Application, MCF and Cellco were also invited to attend the March 24, 2008 meeting of the Thompson Planning and Zoning Commission (“PZC”) and speak on the tower proposal.

Question No. 32

What was the Town of Thompson’s response to the proposed project during the municipal consultation period?

Response

During the December 7, 2007 meeting, the First Selectman expressed concerns for the tower site at the Marianapolis School and encouraged Cellco to proceed with either the Site A or Site B locations leased by MCF. As described in its March 24, 2008 meeting minutes, the PZC reviewed both of the Site A and Site B tower locations and expressed a preference for Site A.

Question No. 33

Would any landscaping be installed at proposed Site A?

Response

The property owner intends to use much of the area around the compound for masonry material storage and prefers MCF not install additional landscaping.

Questions No. 34

Could MCF construct a smaller compound at the proposed sites to minimize environmental impact?

Response

Yes, if requested by the Council.

Question No. 35

For the proposed cellular system, provide a forecast of when maximum capacity would be reached for each proposed site.

Response

Cellco's best estimate would be the end of 2009 for exhaustion of its available spectrum in this area.

Question No. 36

Provide the distance and direction of each existing site listed behind Tab 10 of the application, to each proposed site.

Response

	<u>Site A</u>		<u>Site B</u>	
	Distance	Direction	Distance	Direction
1. Telemedia	2.42 miles	Northeast	1.99 miles	Northeast
2. Omnipoint	2.62 miles	Northeast	2.21 miles	Northeast
3. DPS	3.2 miles	Northwest	2.8 miles	Northwest
4. SBA	1.63 miles	South	2.08 miles	South
5. MCF	4.28 miles	Northeast	3.79 miles	Northeast

Question No. 37

Provide the data and formula used in the calculation of the power density for Cellco antennas at the proposed sites.

Response

The formula used to calculate power density is included in Attachment 4.

Question No. 38

Would Cellco be willing to use a fuel cell at the proposed site?

Response

No.

Question No. 39

Does Cellco have any plans to install fuel cells at any existing or future sites in Connecticut?

Response

Not at this time.

Question No. 40

Provide a multi-signal level propagation plot (including the signal levels Cellco designs for), at a scale of 1:30,000, depicting coverage from the following:

- a) existing sites and proposed Site A at an antenna height of 130 feet above ground level.
- b) existing sites and proposed Site A at an antenna height of 120 feet above ground level.
- c) existing sites and proposed Site B at an antenna height of 130 feet above ground level.
- d) existing sites and proposed Site B at an antennas height of 120 feet above ground level.

Response

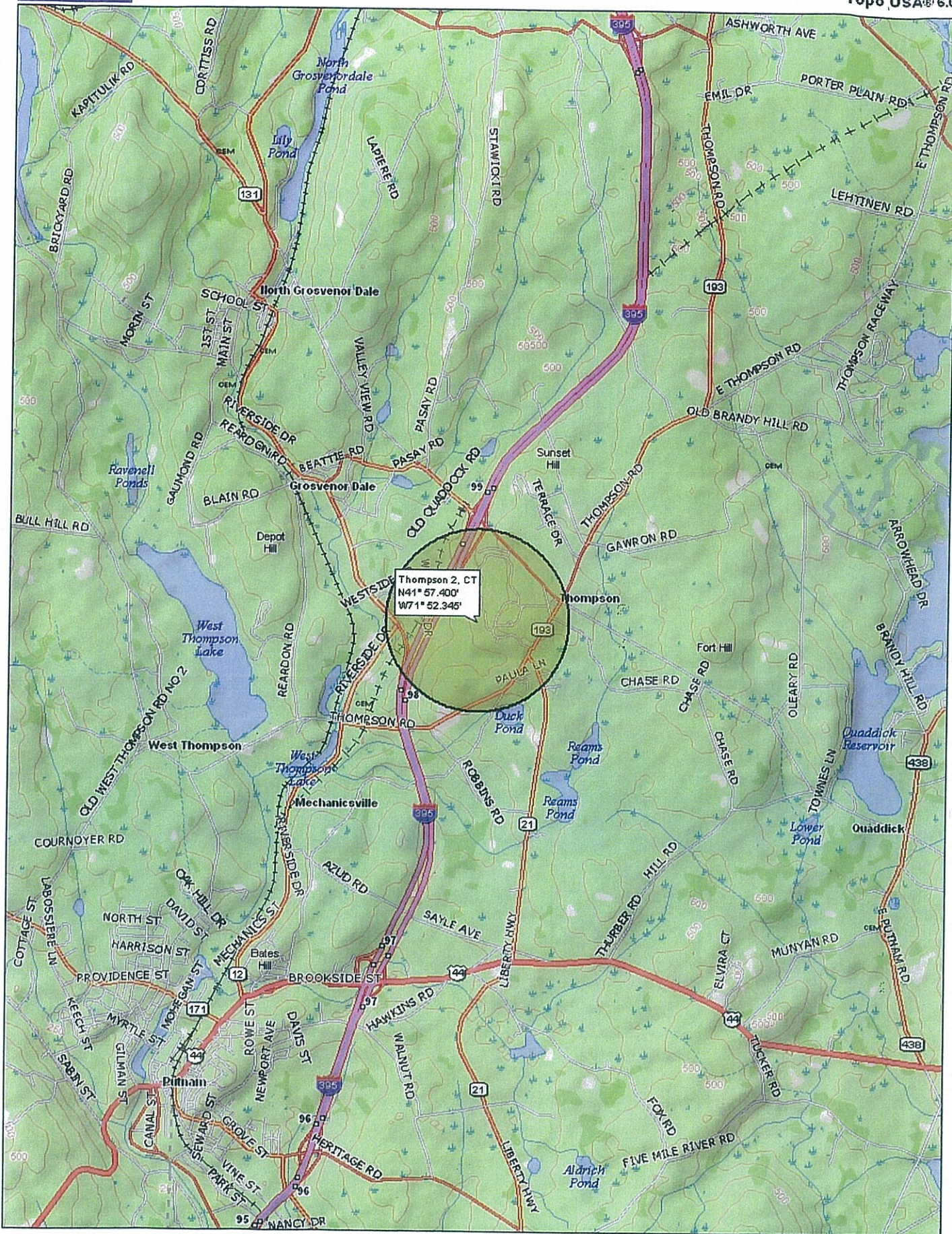
The coverage plots requested are included in Attachment 5.

CERTIFICATE OF SERVICE

I hereby certify that on the 20th day of May, 2008, a copy of the foregoing was mailed,
postage prepaid, to:

Richard W. Thunberg, Jr.
Board President
Thompson Hills West Condominium Association
Board of Trustee's
13 Westside Drive, Suite 92
North Grosvenordale, CT 06255


Kenneth C. Baldwin



Thompson 2, CT
 N41° 57.400'
 W71° 52.345'

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 www.delorme.com



Data Zoom 12-0

NOTES:

1. Contour lines are shown on the map utilizing the process described in note 2. The remainder of the map has been estimated to be consistent utilizing the process described in note 3.
2. Seasonal and year round areas of visibility were estimated from a field visual analysis within public R.O.W. and public properties. Areas shown on private property were interpolated from the field visual analysis.
3. Non-visible areas were estimated from a computer generated topography & vegetation analysis and field verification of vegetation & building screening within public R.O.W. and public properties. Vegetation limits were determined from 2004 aerial photos and is assumed to be 65' high. Verification of vegetation height, coverage, and type within private areas not visible from public R.O.W. or public properties was not field verified.
4. Historical areas were determined from national and state historical registers.
5. Parks, schools, cemeteries, and churches were determined from street maps and field observations.
6. Scenic roads, if any, were determined from the CTRDOT list of designated scenic roads and field observations.

Legend

APPROXIMATE LOCATION OF PROPOSED MONOPOLE

COMPUTER SIMULATION PHOTOGRAPH LOCATION

APPROXIMATE LIMIT OF SEASONAL TOWER VISIBILITY

APPROXIMATE LIMIT OF YEAR ROUND TOWER VISIBILITY

CHURCH/CEMETERY

HISTORICAL SITE

PARK

SCHOOL

TRAIL OR SCENIC ROAD

Visibility by Acreage

ITEM	APPROXIMATE ACRES	% OF TOTAL AREA
2 MILE RADIUS AREA	8,053	100%
NOT VISIBLE DUE TO TOPOGRAPHY	4,747	59%
NOT VISIBLE DUE TO VEGETATION	3,277.50	40.65%
VISIBLE YEAR ROUND	22.50	0.28%
POTENTIAL SEASONAL VISIBILITY	5.00	0.07%

Distances from Photo Locations to Tower

PHOTO	DIST. (FT)	PHOTO	DIST. (FT)
01	2,165	10	8,150
02	2,270	11	9,900
03	1,940	12	12,500
04	430	13	10,700
05	4,300	14	10,900
06	2,100	15	1,700
07	6,000		
08	7,650		
09	3,200		

Visibility by Residence

STREET	RESIDENCES
RIVERSIDE DRIVE	3(Y) 5(S)

(S) = SEASONAL VIEW
(Y) = YEAR ROUND VIEW

2 MILE VIEWSHED ANALYSIS MAP

THOMPSON 98A

VISUAL IMPACT ASSESSMENT

PREPARED FOR:

MCF Communications, Inc.

7303 TURNPIKE STREET, SUITE 105
NORTH ANDOVER, MA 01854
OFFICE: (978) 687-2636
FAX: (978) 268-8860

PREPARED BY:

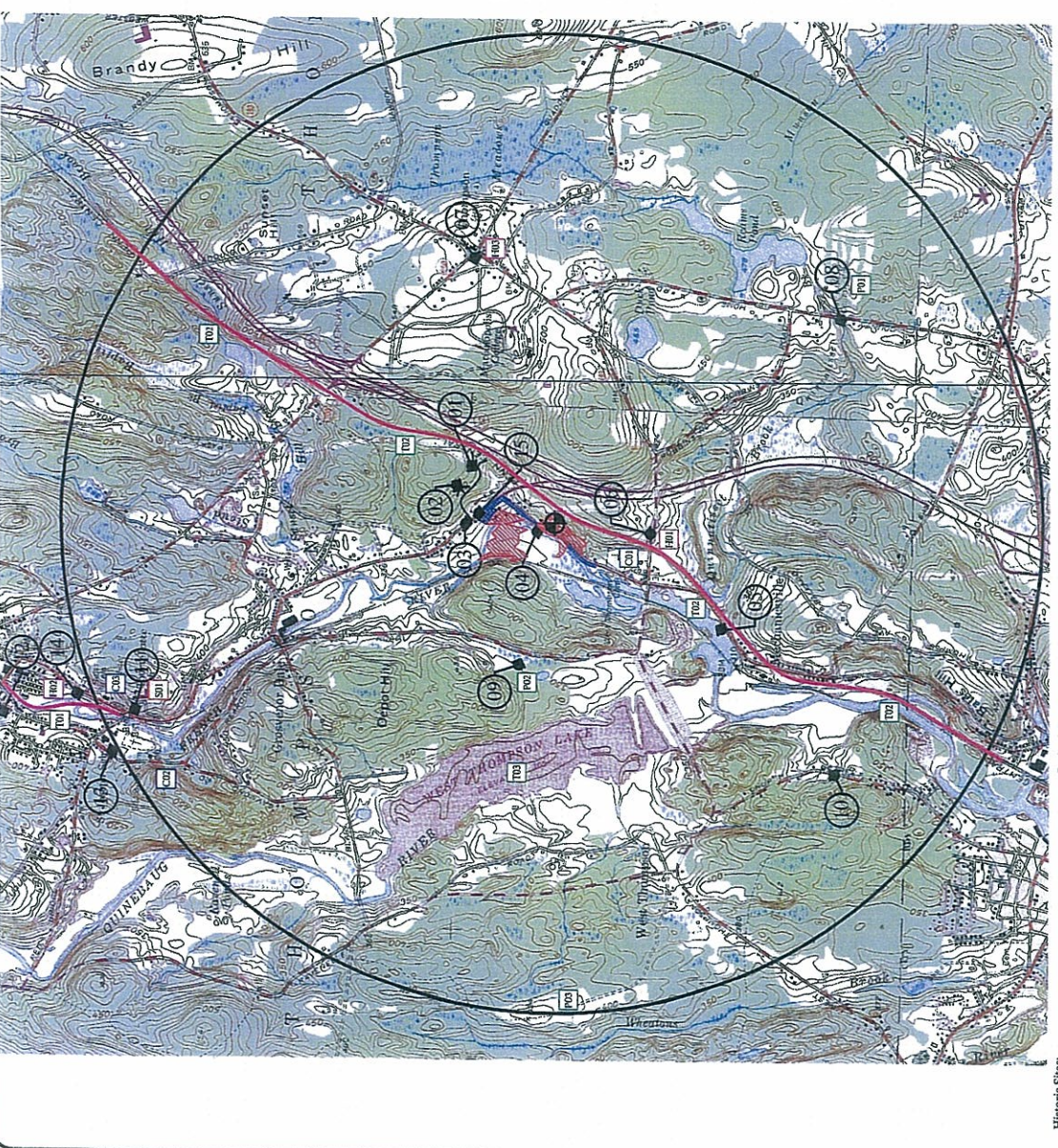
CIA

CLOUGH HANBROOK & ASSOCIATES LLP
218 Main Street, Suite 212, North Andover, MA 01854
Tel: (978) 687-2636
Fax: (978) 268-8860

AUGUST 2007

0 625' 1250' 2500' 5000'

FIGURE VS-98A



Scenic Roads:

1. No roads within the 2 mile CTRDOT list of scenic roads.
2. No scenic road sign designations were observed during the field visual analysis.

Trails:

- TR1 NORTH GROVE/VENORDALE RIVER WALK
- TR2 AIRLINE TRAIL
- TR3 ARMY CORPS OF ENGINEERS WEST THOMPSON LAKE TRAILS

Church/Cemetery:

- CU1 WEST THOMPSON CEMETERY
- CU2 ST JOSEPH CEMETERY
- CU3 SWISS CEMETERY

Schools:

- SH1 ELEMENTARY/MIDDLE/HIGH SCHOOL

Parks & Recreational Areas:

- PA1 QUINNATSET COUNTRY CLUB
- PA2 WEST THOMPSON DAM RECREATIONAL AREA
- PA3 BELL HILL RECREATIONAL AREA
- PA4 THOMPSON HILL HISTORIC DISTRICT (CHASE & QUADDICK RDS)
- PA5 PICKERING HOUSE
- PA6 THOMPSON ROAD
- PA7 MILL HISTORIC DISTRICT
- PA8 INVERSIDE DRIVE
- PA9 MARKET LANE AND MARSHALL CENTRAL, RIVER, AND HOLLAMER STS.

NOTES:

1. Only visible areas are shown on the map utilizing the process described in note 2. The remainder of the map has been estimated to be nonvisible utilizing the process described in note 3.
2. Seasonal and year round areas of visibility were estimated from a field visual analysis within public R.O.W. and public properties. Areas shown on private property were interpolated from the field visual analysis.
3. Nonvisible areas were estimated from a computer generated topography & vegetation analysis and field verification of vegetation & building screening within public R.O.W. and public properties. Vegetation limits were determined from 2004 aerial photos and is assumed to be 65' high. Verification of vegetation height, coverage, and type within private areas not visible from public R.O.W. or public properties was not field verified.
4. Historical areas were determined from national and state historical registers.
5. Parks, schools, cemeteries, and churches were determined from street maps and field observations.
6. Scenic roads, if any, were determined from the CTDOT list of designated scenic roads and field observations.

Legend

APPROXIMATE LOCATION OF PROPOSED MONOPOLE
 APPROXIMATE LIMIT OF SEASONAL TOWER VISIBILITY
 CHURCH/CEMETERY
 HISTORICAL SITE
 TRAIL OR SCENIC ROAD
 COMPUTER SIMULATION PHOTOGRAPH LOCATION
 APPROXIMATE LIMIT OF YEAR ROUND TOWER VISIBILITY
 PARK
 SCHOOL

Visibility by Acreage

ITEM	APPROXIMATE ACRES	% OF TOTAL AREA
2 MILE RADIUS AREA	8,053	100%
NOT VISIBLE DUE TO TOPOGRAPHY	4,564	56.7%
NOT VISIBLE DUE TO VEGETATION	3,450	42.8%
VISIBLE YEAR ROUND	33	0.41%
POTENTIAL SEASONAL VISIBILITY	6	0.07%

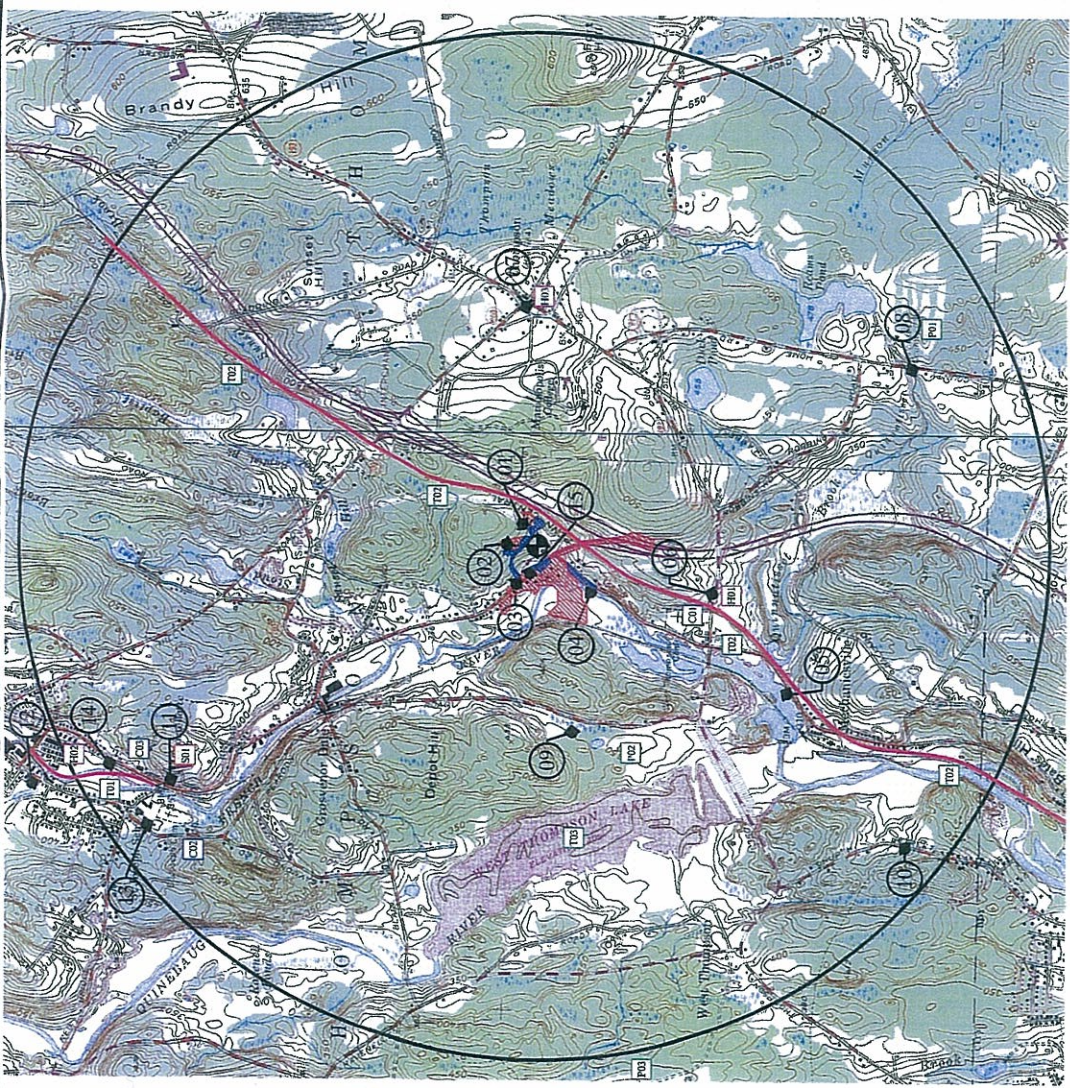
Distances from Photo Locations to Tower

PHOTO	DIST. (FT)	PHOTO	DIST. (FT)
01	540	10	9,800
02	640	11	8,900
03	900	12	11,400
04	1,450	13	9,800
05	6,000	14	9,800
06	3,700	15	580
07	5,000		
08	8,500		
09	3,900		

Visibility by Residence

STREET	RESIDENCES
RIVERSIDE DRIVE	13(Y) 1(S)
WESTSIDE DRIVE	3(Y) 2(S)

(S) = SEASONAL VIEW
(Y) = YEAR ROUND VIEW



- Historic Sites:**
- GEORGE NICHOLS PICKERING HOUSE
 - QUINNANSETT COUNTRY CLUB
 - NORTH GROSVENORDALE RIVER WALK
 - HILL HISTORIC DISTRICT
 - RIVERSIDE DRIVE
 - MARKET LANE, AND MARSHALL, CENTRAL, RIVER, AND HOLMES STS.
 - THOMPSON HILL
 - CHASE & QUADICK RD
- Parks & Recreational Areas:**
- QUINNANSETT COUNTRY CLUB
 - WEST THOMPSON DAM RECREATIONAL AREA
 - BULL HILL RECREATIONAL AREA
- Schools:**
- ELEMENTARY MIDDLEHIGH SCHOOL
- Church/Cemeteries:**
- WEST THOMPSON CEMETERY
 - ST JOSEPH CEMETERY
 - SWISS CEMETERY
- Trails:**
- NORTH GROSVENORDALE RIVER WALK
 - AIRLINE TRAIL
 - ARMY CORPS OF ENGINEERS WEST THOMPSON LAKE TRAILS
- Scenic Roads:**
1. No roads within the 2 mile CTDOT list of scenic roads.
 2. No scenic road sign designations were observed during the field visual analysis.

2 MILE VIEWSHED ANALYSIS MAP
THOMPSON 98B
VISUAL IMPACT ASSESSMENT

PREPARED FOR:
MCF Communications, Inc.
793 TURNPIKE STREET, SUITE 06
NORTH ANDOVER, MA 01861
OFFICE: (978) 688-2580
FAX: (978) 268-8850

PREPARED BY:
Copyright © 2007 Design Harbor & Associates LLP
CHWA
CLOUGH HAZOURE & ASSOCIATES LLP
1715 Shaw Drive Highway, Suite 211, Andover, MA 01820-2208
Phone: (978) 682-4427 • www.chwha.com
(978) 268-8101





1 **2004 AERIAL PHOTO**
 SCALE: 1" = 1000'
 0 500 1000
 SCALE IN FEET



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CHA PROJ. NO. - 14057-1007

MCF Communications, Inc.

733 TURNPIKE STREET, SUITE 105
 NORTH ANDOVER, MA 01845
 OFFICE: (978) 687-2536
 FAX: (978) 258-8850

SITE NAME:
THOMPSON 98 A
 SITE ADDRESS:
**347 RIVERSIDE DRIVE
 NORTH GROSVENORDALE, CT
 06255
 WINDHAM COUNTY**

SHEET TITLE:
AERIAL PHOTO

DATE:
07/06/07

REVISION:
0



**PROJECT
LOCATION**

1 2004 AERIAL PHOTO
 SCALE: 1" = 1000'
 0 500 1000
 SCALE IN FEET



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MCF Communications, Inc.
 733 TURNPIKE STREET, SUITE 105
 NORTH ANDOVER, MA 01845
 OFFICE: (978) 687-2536
 FAX: (978) 258-8850

SITE NAME:
THOMPSON 98 B
 SITE ADDRESS:
**407 RIVERSIDE DRIVE
 NORTH GROSVENORDALE, CT
 06255
 WINDHAM COUNTY**

SHEET TITLE:
AERIAL PHOTO

DATE:
07/06/07

REVISION:
0

CHA PROJ. NO. - 14057-1008

Verizon Wireless: Power Density Evaluation

What were the numbers and formula used to calculate the radio frequency power density?

The following predicts the RF power density in the absolute worst case at ground level directly under the antenna. From the FCC Office of Engineering and Technology (OET) Bulletin #65 dated August 1997, the power density (S) can be predicted as follows:

$$S = \frac{2.56 \text{ EIRP}}{4\pi R^2} = \frac{0.64 \text{ EIRP}}{\pi R^2} \quad (7)$$

(Reference Isotropic Radiation)

Where R is the distance from the centerline of radiation to the potential exposure area. A worst-case calculation assumes the point of maximum power density. The factor of 2.56 accounts for a maximum of 1.6-fold increase of field strength from ground reflections (1.6x1.6). Operating power may be expressed in terms of "effective radiated power" or "ERP" instead of EIRP. ERP is power referenced to a half-wave dipole radiator instead of to an isotropic radiator. Therefore, if ERP is given it is necessary to convert ERP into EIRP. This is done by multiplying the ERP by a factor of 1.64, which is the gain of a half-wave dipole relative to an isotropic radiator. The equation now becomes:

$$S = \frac{0.64 \text{ EIRP}}{\pi R^2} = \frac{(0.64)(1.64) \text{ ERP}}{\pi R^2} = \frac{1.05 \text{ ERP}}{\pi R^2} \quad (8)$$

Care must be taken to use the **correct units** for all variables. Power density in units of mW/cm² is desired so power should be expressed in milliwatts and distance in cm. A factor of 1000 will be used to convert watts to milliwatts (1watt=1000 milliwatts) and a factor of 30.48 will be used to convert feet to centimeters (1 foot=30.48 cm). The final equation now becomes:

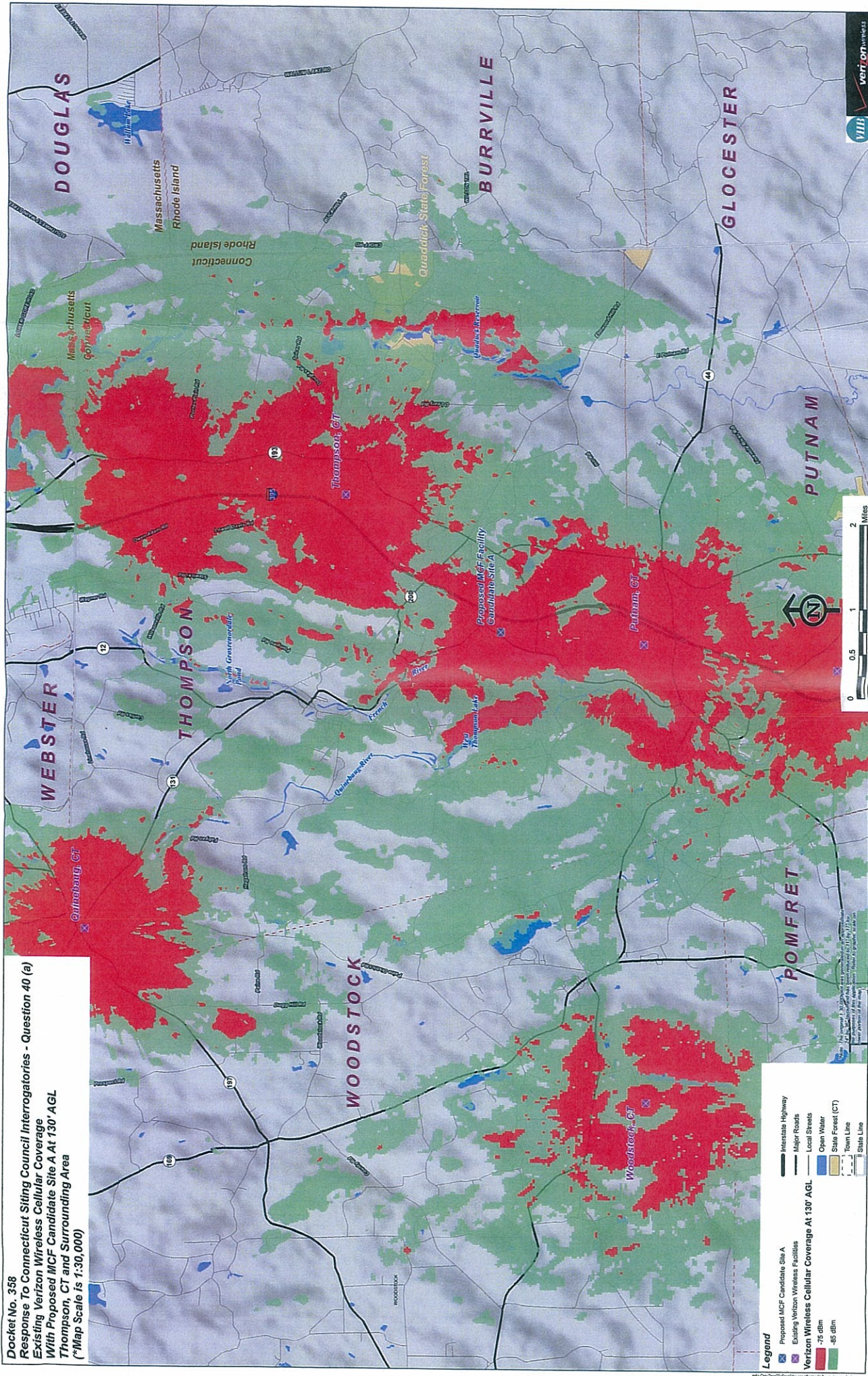
$$S = \frac{(0.64)(1.64)(1000 \text{ mW/W}) \text{ ERP}}{\pi(30.48 \text{ cm/ft})^2 R^2}$$

$$S = \frac{(.35962) \text{ ERP}}{R^2}$$

This final equation is the formula programmed in the field titled "Calculated Power Density" on the excel sheet submitted. It allows for the input values of effective radiated power and distance to be entered in units of watts and feet respectively. The formula takes into account all conversion factors.

As stated in the FCC rules and regulations (47 CFR 1.1301-1.1310), the Maximum Permissible Exposure (MPE) for the general public is dependent on the frequency range. It is defined as f/1500. For the mid-band cellular frequency range of 850 MHz, MPE=.56733 mW/cm². For the 880 MHz cellular frequency, MPE=.5866 mW/cm². The mid-band frequency range value for MPE is used for comparison as a more conservative reference of Maximum Permissible Exposure levels. The fraction of MPE is defined as the calculated power density divided by MPE and expressed as a percentage. This is the formula programmed into the field titled "Fraction of MPE."

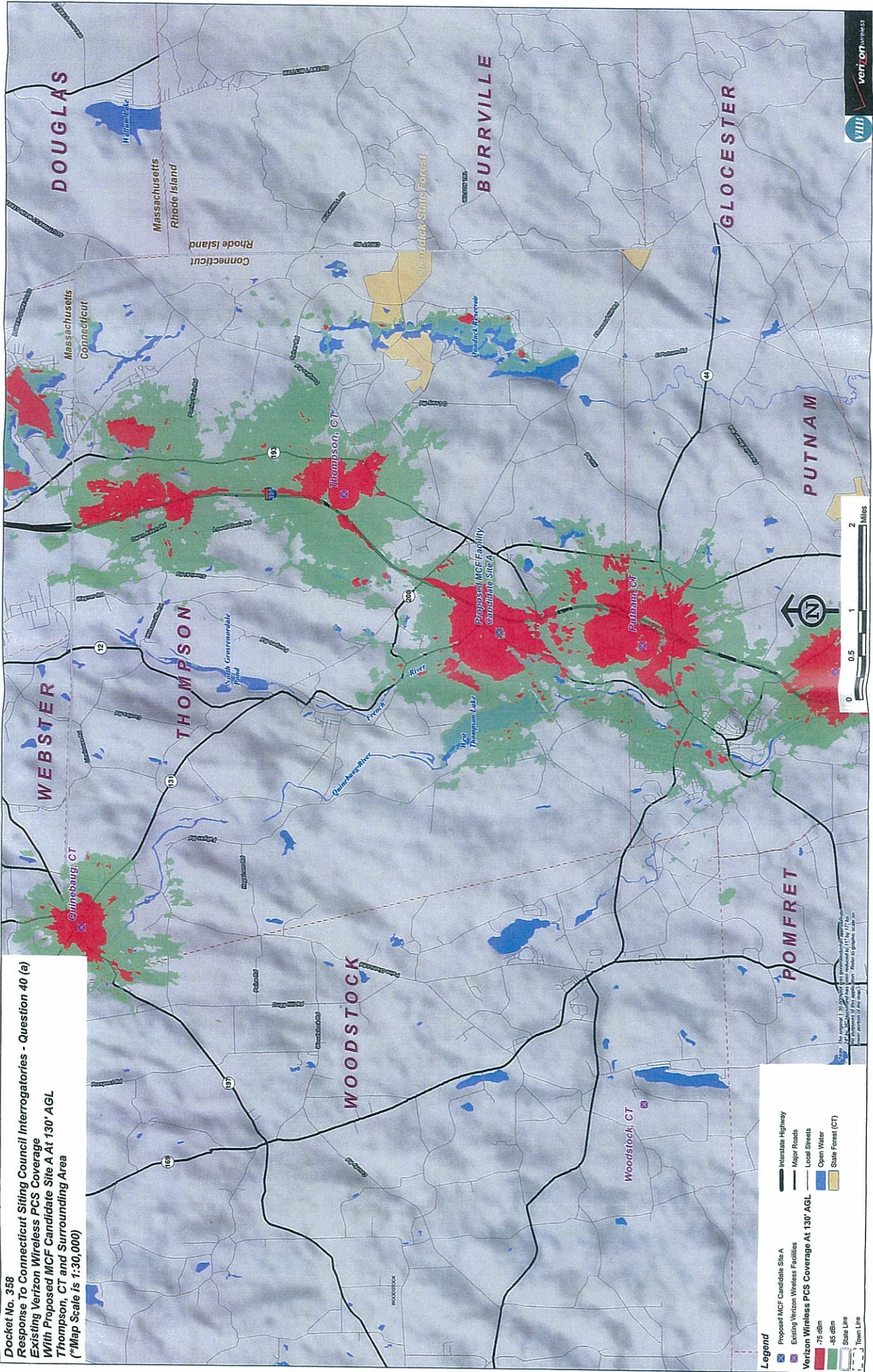
Docket No. 358
 Response To Connecticut Siting Council Interrogatories - Question 40 (a)
 Existing Verizon Wireless Cellular Coverage
 With Proposed MCF Candidate Site A At 130' AGL
 Thompson, CT and Surrounding Area
 (Map Scale Is 1:30,000)



- Legend**
- Proposed MCF Candidate Site A
 - Existing Verizon Wireless Facilities
 - Local Streets
 - Open Water
 - State Forest (CT)
 - Town Line
 - State Line
 - Interstate Highway
 - Major Roads
 - Verizon Wireless Cellular Coverage At 130' AGL
 - 15 dbm
 - 85 dbm



Docket No. 358
 Response To Connecticut Siting Council Interrogatories - Question 40 (a)
 Existing Verizon Wireless PCS Coverage
 With Proposed MCF Candidate Site A At 130' AGL
 Thompson, CT and Surrounding Area
 (*Map Scale is 1:30,000)



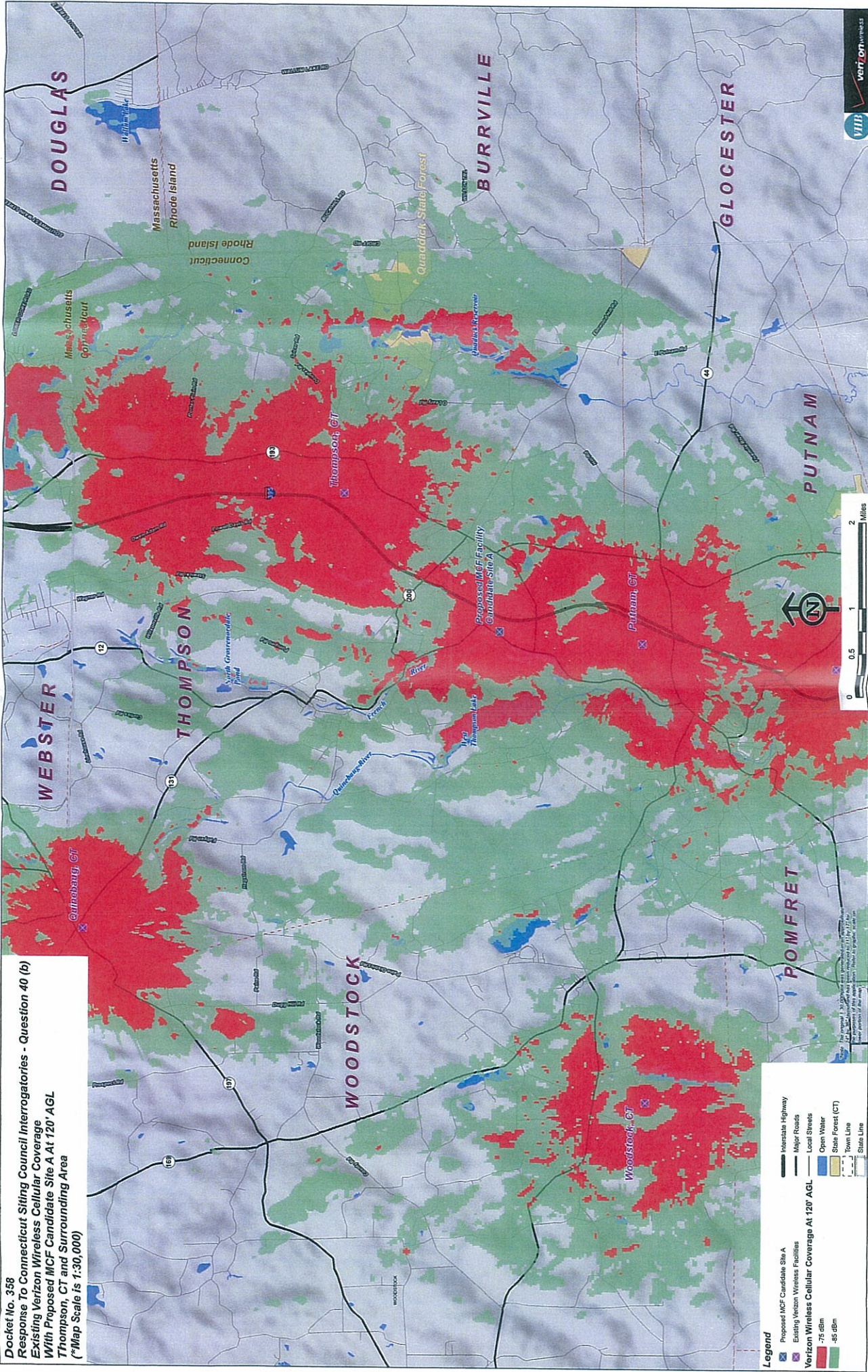
Legend

- Interstate Highway
- Major Roads
- Local Streets
- Open Water
- State Forest (CT)
- State Lake
- Town Line
- Proposed MCF Candidate Site A
- Existing Verizon Wireless Facilities
- Verizon Wireless PCS Coverage At 130' AGL
 - 75 dBm
 - 85 dBm

Scale: 0 0.5 1 2 Miles



Docket No. 358
 Response To Connecticut Siting Council Interrogatories - Question 40 (b)
 Existing Verizon Wireless Cellular Coverage
 With Proposed MCF Candidate Site A At 120' AGL
 Thompson, CT and Surrounding Area
 (*Map Scale is 1:30,000)



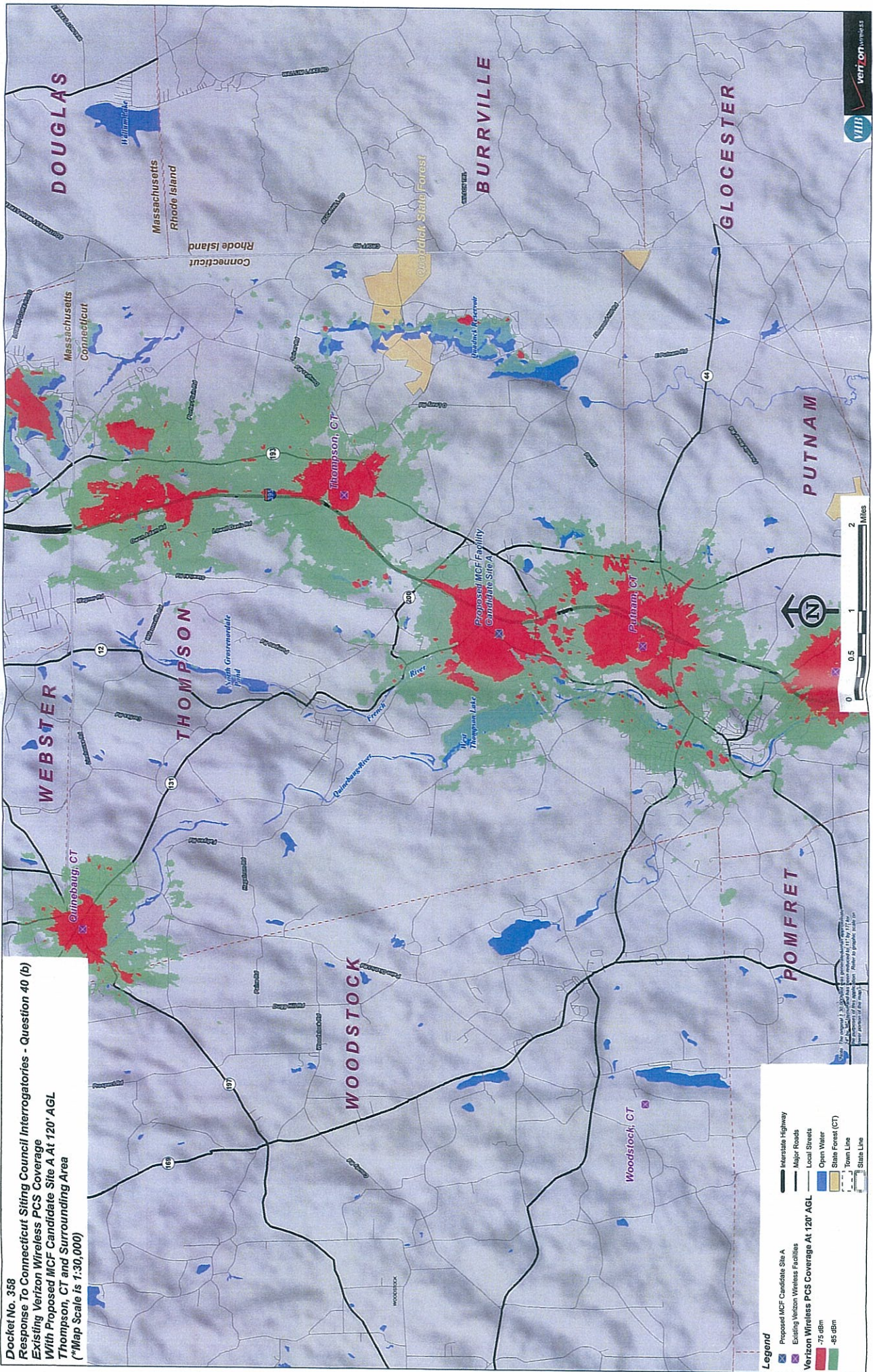
Legend

- Proposed MCF Candidate Site A
- Existing Verizon Wireless Facilities
- Verizon Wireless Cellular Coverage At 120' AGL
- 76 dbm
- 85 dbm
- Interstate Highway
- Major Roads
- Local Streets
- Open Water
- State Forest (CT)
- Town Line
- State Line



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Docket No. 358
 Response To Connecticut Siting Council Interrogatories - Question 40 (b)
 Existing Verizon Wireless PCS Coverage
 With Proposed MCF Candidate Site A At 120' AGL
 Thompson, CT and Surrounding Area
 (*Map Scale is 1:30,000)



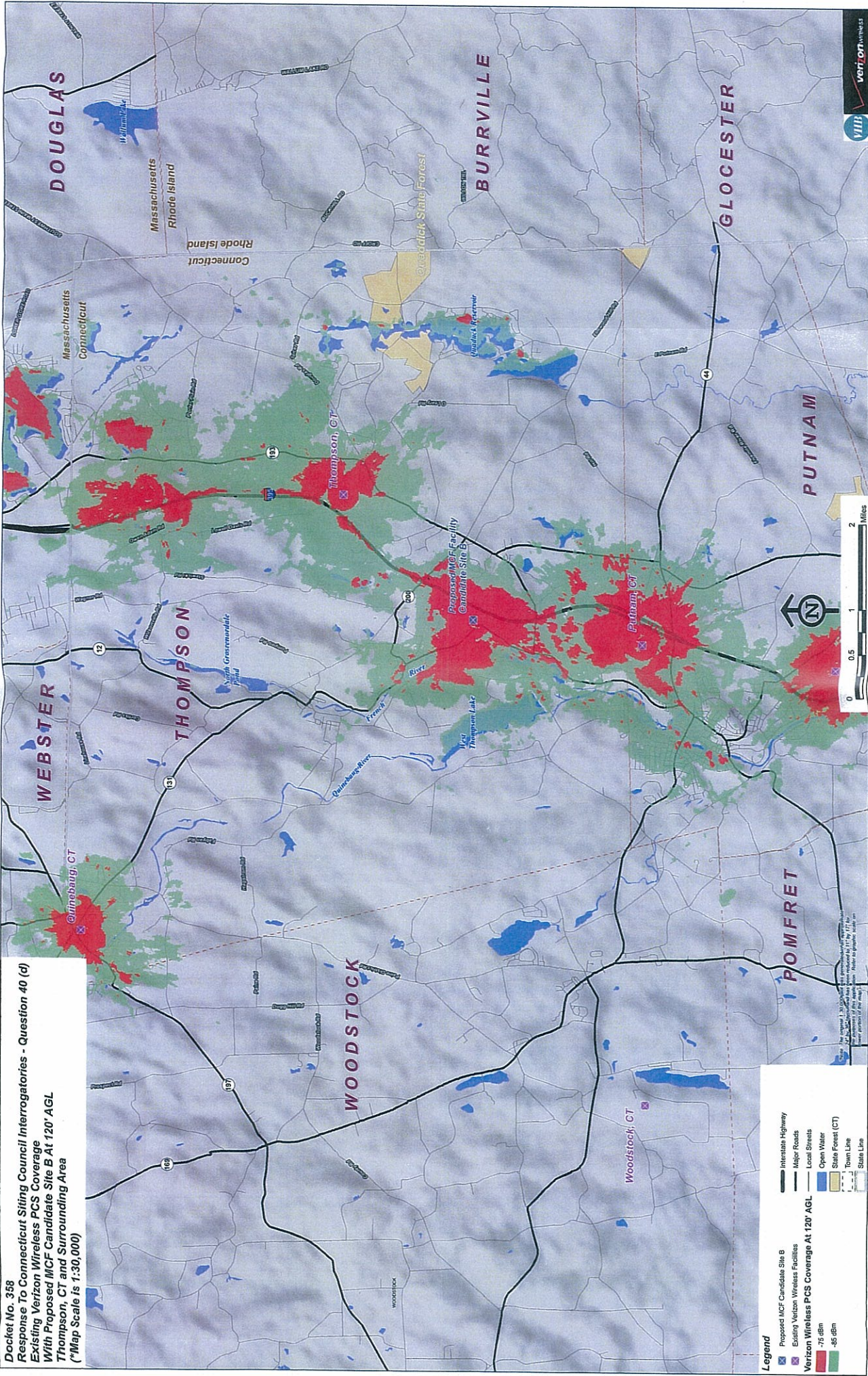
Legend

- Interstate Highway
- Major Roads
- Local Streets
- Open Water
- State Forest (CT)
- Town Line
- State Line
- Proposed MCF Candidate Site A
- Existing Verizon Wireless Facilities
- Verizon Wireless PCS Coverage At 120' AGL
 - 75 dBm
 - 85 dBm

0 0.5 1 2 Miles



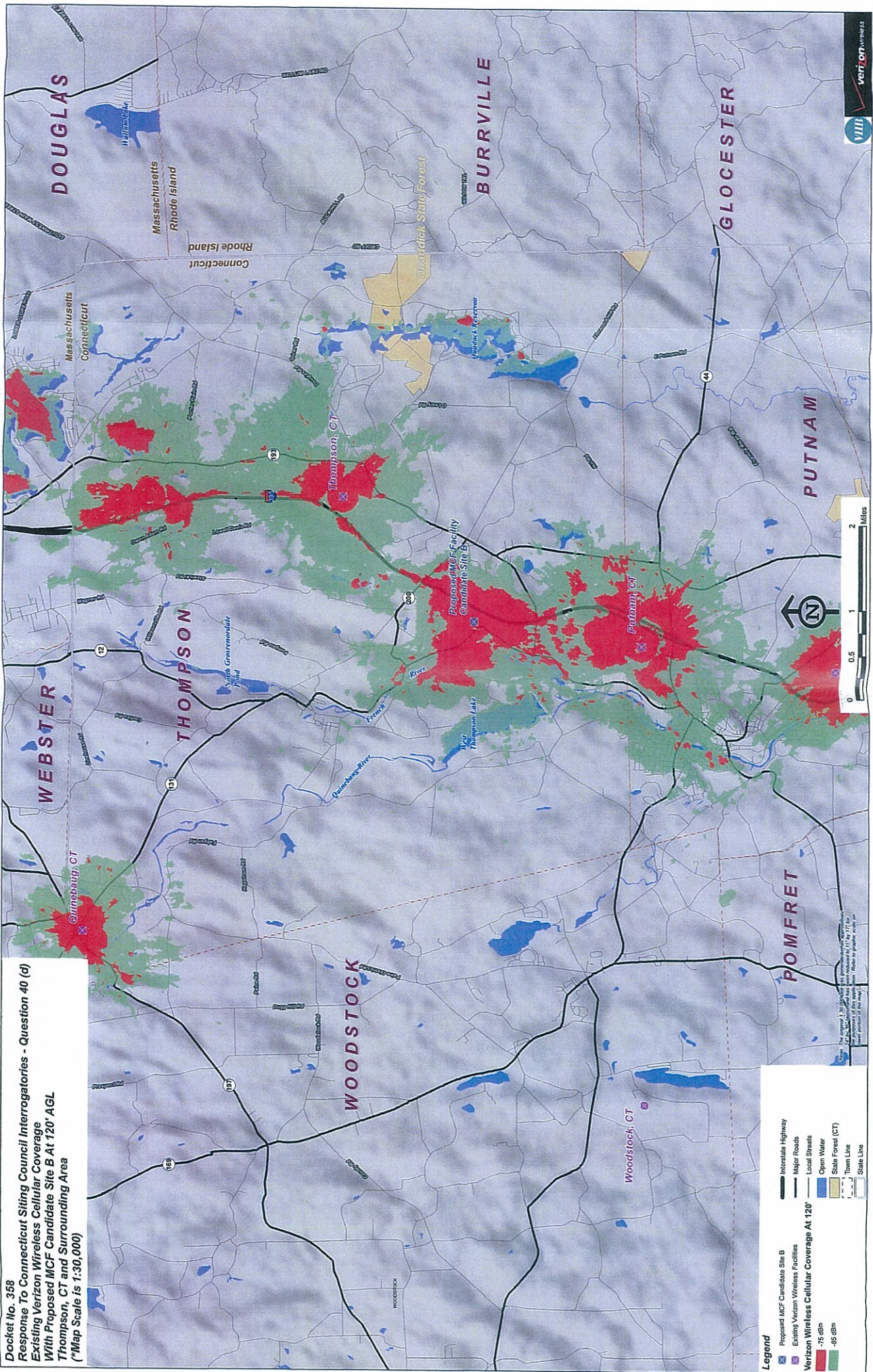
Docket No. 358
 Response To Connecticut Siting Council Interrogatories - Question 40 (d)
 Existing Verizon Wireless PCS Coverage
 With Proposed MCF Candidate Site B At 120' AGL
 Thompson, CT and Surrounding Area
 (*Map Scale is 1:30,000)



- Legend**
- Proposed MCF Candidate Site B
 - Existing Verizon Wireless Facilities
 - Verizon Wireless PCS Coverage At 120' AGL
 - 75 dBm
 - 85 dBm
 - Interstate Highway
 - Major Roads
 - Local Streets
 - Open Water
 - State Forest (CT)
 - Town Line
 - State Line

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Docket No. 368
 Response To Connecticut Siting Council Interrogatories - Question 40 (d)
 Existing Verizon Wireless Cellular Coverage
 With Proposed MCF Candidate Site B At 120' AGL
 Thompson, CT and Surrounding Area
 (*Map Scale is 1:30,000)



- Legend**
- Proposed MCF Candidate Site B
 - Existing Verizon Wireless Facilities
 - Verizon Wireless Cellular Coverage At 120'
 - 75 dBm
 - 85 dBm
 - Interstate Highway
 - Major Roads
 - Local Streets
 - Open Water
 - State Forest (CT)
 - Town Line
 - State Line

Map Scale: 1:30,000
 North Arrow

