STATE OF CONNECTICUT CONNECTICUT SITING COUNCIL

IN RE:

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APPLICATION OF CELLCO PARTNERSHIP : DOCKET NO. 484

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 AT

72 RAGGED HILL ROAD, POMFRET,

CONNECTICUT : AUGUST 21, 2018

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

On August 7, 2018, the Connecticut Siting Council ("Council") issued Pre-Hearing Interrogatories to Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to Docket No. 484. Below are Cellco's responses.

General

Question No. 1

Of the letters sent to abutting property owners, how many certified mail receipts were received? If any receipts were not returned, which owners did not receive their notice? Were any additional attempts made to contact those property owners?

Response

Cellco received return receipts for all but two (2) abutter notices sent on July 5, 2018. The notice letters addressed to Quiet Corner Property Acquisitions LLC and John Cartier were returned by the Post Office. Notice was resent, by first class mail on to Quiet Corner Property Acquisitions LLC on July 30, 2018 and to John Cartier on August 1, 2018.

How is the cost of facility construction recovered?

Response

The costs associated with providing Cellco customers with the nation's most reliable wireless service network, including the cost for development of network infrastructure (small cells and macro-cells), are paid for by the individuals, corporations and government entities that purchase Cellco's service.

Site/Tower

Question No. 3

What is the distance and direction from the each proposed tower site to the Town boundaries of Eastford and Woodstock?

Response

	Approximate Distance to Town Line	
	<u>Eastford</u>	Woodstock
Site A	1,938 feet	3,014 feet
Site B	2,252 feet	2,714 feet
Site C	2,860 feet	3,670 feet

Question No. 4

Would the tower be designed for EIA/TIA-222 structural standards version G, H, or both?

Response

The tower would be designed to comply with the current Rev G standard, or the most current standard in place at the time of construction. While TIA-222 Rev H has been released by

the TIA Committee, it has not yet been adopted in Connecticut.

Question No. 5

What is the structural design standard applicable to antenna mounts?

Response

TIA-222-G-4 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".

Question No. 6

Identify the safety standards and/or codes by which equipment, machinery, or technology would be used or operated at the proposed facility.

Response

- 2012 International Building Code with the 2016 CT Building Code Amendments.
- National Electric Code (NFPA70).
- 2005 CT State Fire Safety Code with the 2009 Amendments.
- TIA-222-G-1 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".
- Occupational Safety and Health Administration (OSHA).

Question No. 7

Has the State of Connecticut Department of Agriculture purchased any development rights for any portion of the proposed sites as part of the State Farmland Preservation Program?

Response

According to the title report and search prepared for the subject site, the Connecticut Department of Agriculture has not purchased the development rights to any portion of the 627 acre Raynham Inc. parcel (the "Property").

Is the site parcel part of the Public Act 490 program? If so, how does the land use code classify the parcel. Would use of a portion of the parcel for telecommunications use affect its status under the PA 490 program?

Response

According to the Pomfret Assessor's Records, in 1996 the Property was classified under the Act 490 program as Tillable D farm land (57.44 acres); forest land (562.0 acres); and swamp land (7.60 acres). The Town records do not indicate exactly where the farm, forest and swamp lands are located. The Act 490 designation for the Property remains in place, however, because the designation was established more than ten years ago, the Property owner would not be subject to any property tax penalties under the program for changes in use. The Act 490 designation does not restrict the use of the Property for the development of a telecommunications facility described in the application.

Question No. 9

Referring to Application p. 21, the Town's order of preference for a new tower location is mentioned. Were there any higher ranked Town preference categories within the site search area?

Response

No. All of the alternative sites considered (and shown on the Site Search Summary Map in Attachment 8 of the Application) are located in the Town's Rural Residential zone, and would remain in the same preference category as the proposed alternative cell sites.

Referring to Application p. 24, what were the concerns expressed by the residents regarding Site A?

Response

Generally, the concerns focused on Site A's proximity to residences along Swedetown Road and Ragged Hill Road, visual effects; impact of the cell site on property values and concerns for health effects associated with RF emissions.

Coverage Capacity

Question No. 11

For the frequencies that will be initially deployed (700 MHz and 2100 MHz), what is Cellco's service design threshold for each frequency? Are both frequencies used to transmit voice and data services? How do they interact?

Response

Cellco's minimum design threshold for its LTE service is -105 dB Receive Signal

Reference Power (RSRP) for in-vehicle service, -95 dB RSRP for in-vehicle service and -85 dB

RSRP for in-building service.

Question No. 12

What is the determining factor for the deployment of additional frequencies within the proposed service area?

Response

Radio equipment supporting the additional frequencies would be added if and when at least one (1) of the three (3) operating antenna sectors at the Facility is projected to reach its capacity limit (exhaust).

The Application states the site is designed for coverage needs. Would the site also provide capacity relief at adjacent sectors? If so, are any of these adjacent sectors nearing exhaustion? If yes, identify the sectors, frequencies and estimated exhaustion dates.

Response

The Facility is primarily a "coverage" site. This site would also provide capacity relief to many of the adjacent sites, including but not limited to, Woodstock Valley, Woodstock CT Relo, Pomfret East CT and Ashford CT. At this time however, the proposed Pomfret Center Facility would not provide capacity relief to any adjacent "exhausting" antenna sectors.

Question No. 14

Application page 7 describes "gaps" in wireless service in the area of the proposed site. Provide information regarding the size of the existing wireless coverage gaps (700 MHz and 2100 MHz) that will be served by the proposed facility.

Response

At 700 MHz, Cellco's service gaps are 1.5 miles along Route 44; 1.87 miles along Route 244; and 2.1 miles along Route 198. As depicted on the coverage plots included behind <u>Tab 6</u> of the Application and in <u>Attachment 1</u> of these responses, Cellco provides very limited service, from only five (5) of its surrounding cell sites at 2100 MHz.

Question No. 15

Besides propagation modeling, were other indicators of substandard service used to identify a need in this area? If so, please describe.

Response

Yes. There are numerous parameters that Cellco considers in its effort to improve

network performance. Two of the more critical parameters are the Voice over LTE (VoLTE) Ineffective Attempts and VoLTE Dropped calls. Dropped calls and Ineffective Attempts data in the area around the proposed Pomfret Center Facility indicate that several surrounding facilities are operating below Cellco's system performance standard. In addition to the DC and IA system performance data, Cellco completed drive tests for the area around the proposed Facility. This data was used to develop the coverage plots included in the Application (Tab 6) which accurately reflect the level of reliable wireless service in the area surrounding the Property.

Question No. 16

Could the target service area be adequately served by a series of small cell facilities or a distributed antenna system instead of the proposed macro-tower facility?

Response

It may be theoretically and technically possible to install a large number of small cell facilities in the area that could match or closely match the coverage footprint of the proposed Facility (macro cell). Such an approach, however, is not economically feasible and is not consistent with good RF Engineering practice. Typically, small cell facilities utilize existing infrastructure (i.e. electric distribution poles) along public rights of way in areas where coverage and/or capacity problems exist. In areas where this existing infrastructure is not available, for example, along private roads or on private and municipal property, property rights would need to be acquired and new poles would need to be installed.

The actual number of small cell facilities that would be needed to provide a service comparable to that from the proposed Facility is not known but would be significant given the overall size of the area that Cellco is attempting to serve.

Referring to Application Tab 6 - 700 MHz coverage plots, the coverage plots do not appear to show any 700 MHz service from the "Eastford CT" site. Is this Cellco site active? What services is it providing?

Response

Yes, the Eastford CT site is currently active. Coverage from Cellco's Eastford CT and its newly constructed Woodstock Valley cell sites was inadvertently excluded from the coverage plots that Cellco included in the Application. Revised coverage plots, showing 700 MHz and 2100 MHz service from the all of the adjacent cell sites, including Eastford and Woodstock Valley, are included in Attachment 1 of these responses.

Question No. 18

Once the proposed site is on-line, what would be the effective service area for the 700 MHz frequency from this site? Would parts of overlapping service shown on the plots be handled by surrounding existing sites (for example, overlapping coverage to the northwest) so that the effective coverage footprint from this site, listed as 16-21 square mile in the application, is smaller? Please explain.

Response

The effective service area (a.k.a. coverage footprint) for each of the alternative cell sites is provided in Section III.B.2 of the Application narrative. Some overlapping service may be handled by the existing cell sites that surround the proposed Pomfret Center Facility. When a new site is activated, the new site is optimized, if necessary. The coverage areas of the existing, surrounding sites are also optimized to incorporate the new site in the network.

Referring to Application pp. 10-11, provide the Cellco antenna heights for the listed facilities.

Response

Pomfret East – 157' AGL Brooklyn West – 117' AGL

Ashford CT Relo – 240' and 248' AGL Ashford North – 120' AGL

Eastford – 190' AGL Westford – 180' AGL

Union West – 150' AGL Woodstock NW – 137' AGL

Coatney Hill – 167' AGL Woodstock Relo – 149' AGL

Question No. 20

Referring to Application p. 11, the Woodstock NW facility is identified at 40 Sherman Road in Ashford. Is this location correct?

Response

No. The Woodstock NW Facility is located at 40 Sherman Road in Woodstock, Connecticut.

Question No. 21

Referring to Application pp. 8-9, it appears proposed 2100 MHz wireless service from any of the three sites is limited. What is the intended purpose of the 2100 MHz service?

Response

The intended purposes of the 2100 MHz service are to provide relief to the 700 MHz service, to provide maximum bandwidth and to provide increased throughput. The deployment of additional frequencies allows us to utilize carrier aggregation. The 2100 MHz frequency

currently has the largest bandwidth out of all our frequencies making it an ideal candidate for carrier aggregation.

Question No. 22

Referring to Application pp. 8-10, rank the three proposed sites in order of preference based on wireless service performance only. What specific customer target is most important for Cellco?

Response

The three proposed sites in order of preference based on wireless system perfomance for Cellco are C, A then B. The specific target is the Cellco customer base that lives, works and commutes in and around northwest Pomfret, southwest Woodstock and northeast Eastford.

Public Safety

Question No. 23

Can the proposed facility support text-to-911 service? Is additional equipment required for this purpose? Is Cellco aware of any Public Safety Answering Points in the area of the proposed site that are able to accept text-to-911?

Response

Yes, the proposed Facility will be capable of supporting text-to-911 as soon as the Public Safety Answering Point (PSAP) is capable of receiving text-to-911. No additional cell site equipment is necessary to support this service. Cellco is not aware of any Public Safety Answering Points in the area of the proposed Facility that are about to accept text-to-911 at this time.

Question No. 24

Would Cellco's installation comply with the intent of the Warning, Alert and Response

Network Act of 2006?

Response

Yes.

Backup Power

Question No. 25

What is the estimated run time for the emergency power generator before it would need to be refueled, assuming it is running at under normal loading conditions? How long could the battery backup alone supply power to the facility in the event that the generator fails to start?

Response

Under normal loading conditions, the proposed 20 kW diesel generator could operate for approximately 90 hours (3.75 days) before refueling of the 92 gallon diesel fuel tank would be necessary. If the generator were to fail, the backup battery system is designed to keep the cell site operating for up to eight (8) hours.

Question No. 26

Would the backup generator run periodically for maintenance purposes? If so, at what frequency and duration? Would this be scheduled for daytime hours?

Response

Yes. Cellco cycles its generators, for maintenance purposes, generally once every two weeks, for approximately 30 minutes. Unless directed otherwise by the Council, the generator would be cycled during daytime hours.

Could the proposed generator be shared by other carriers that may locate at the proposed facility in the future? What effect would a shared generator have on the run time of the generator if at full load?

Response

A 20 kW generator would not be capable of supporting the operational needs of Cellco and a second wireless carrier at the proposed cell site. The 20 kW generator would need to be replaced with a larger capacity generator (50-60 kW) if a second wireless carrier wanted to share this back-up power supply. Cellco would be amenable to letting a second carrier upgrade its generator if a need exists in the future.

Ouestion No. 28

Identify the containment measures to protect against possible fluid leakage from the backup generator.

Response

The generator's fuel tank is double-walled and maintains leak detection alarms. The generator itself also maintains secondary containment for engine oil and coolant within the generator's weather enclosure.

Environmental/Cultural

Question No. 29

Has there been any outreach to Tribal Nations? Are there features at any of the three sites that may indicate archeological/cultural deposits?

Response

Cellco has not yet initiated consultations under Section 106 of the National Historic

Preservation Act. A preliminary screening of publicly available information does not reveal any known or recorded archeological/cultural sites located on the Property.

Question No. 30

Is the proposed facility within a Department of Energy and Environmental Protectiondesignated Aquifer Protection Area ("APA")?

Response

No. The nearest APA is nearly 7 miles to the east. None of the alternative site locations presented in the Application are located within a public water supply watershed. The Willimantic Reservoir Public Water Supply Watershed abuts Swedetown Road and Ragged Hill Road immediately west of the Property. *See* Attachment 2.

Ouestion No. 31

Would the proposed facility comply with Department of Energy and Environmental Protection noise control standards at the property boundaries?

Response

The only noise generating equipment at any of the proposed alternative cell site locations will be the back-up generator. Back-up generators, used in emergency situations are exempt from the State's noise standards. Notwithstanding the applicability of the State's noise standards, the proposed generator at Site A, located approximately 260 feet from the nearest property boundary to the west, would operate well within (approximately 37-39 dBA) the State's noise standards (55 dBA daytime standard and 45 dBA nighttime standard). The generator units located at Site B and Site C are all more than 260 feet from the nearest property boundary.

Question No. 32

Referring to Application Tab 9, p. 4, "... Sites (A, B, C) were only all visible from this

area..." provide more information as to what will be visible from this location.

Response

At this location, Site A would rise substantially above the tree canopy (approximately 60 feet of the monopole may be visible). Site B would have ±10 feet of monopole above the trees and Site C would generally top out at the tree line, minimizing its appearance on the horizon. View 12 in Application Tab 9 provides a comparison of the three sites from this area. Similar views may be achieved from select locations over the open fields. However, from the road, views are limited to the immediate area of View 12.

Question No. 33

Referring to Application Tab 9, the Photo-log shows open field areas within a 0.5 mile radius of the proposed sites. Provide predictive visibility mapping, using a 0.5 radius around each site, that depicts potential year-round and seasonal visibility of the proposed towers. How many residences are within these areas?

Response

Predictive visibility maps depicting seasonal and year-round visibility of a tower at each of the three optional sites are provided in <u>Attachment 3</u>. The requested 0.5-mile radius includes a total of 502 acres. In total, less than 7% of the acreage may have views of a tower at any of the alternative locations, the vast majority being seasonal views (through the trees) from undeveloped land on the Property. The dense, mature tree cover in the area would effectively screen a tower from eclipsing the tree canopy within this radius. The predictive model suggests one residential property to the west may have a very limited view of the tower from a portion of the side yard. A summary of the visibility mapping results is provided below.

SITE A

Year-Round Visibility = 1.1 Acre

Seasonal Visibility = 23.9 Acres

Total Residences within 0.5 mile = 9

Year-Round Views = 1 (limited to portion of side yard)

Seasonal Views = 1 (through trees; similar to Views #22 and #23 in Application <u>Tab 9</u>)

SITE B

Year-Round Visibility = 1.5 Acre

Seasonal Visibility = 25.3 Acres

Total Residences within 0.5 mile = 9

Year-Round Views = 1 (limited to portion of side yard; same property as Site A)

Seasonal Views = 0

SITE C

Year-Round Visibility = 4.1 Acres; extends to open field immediately south

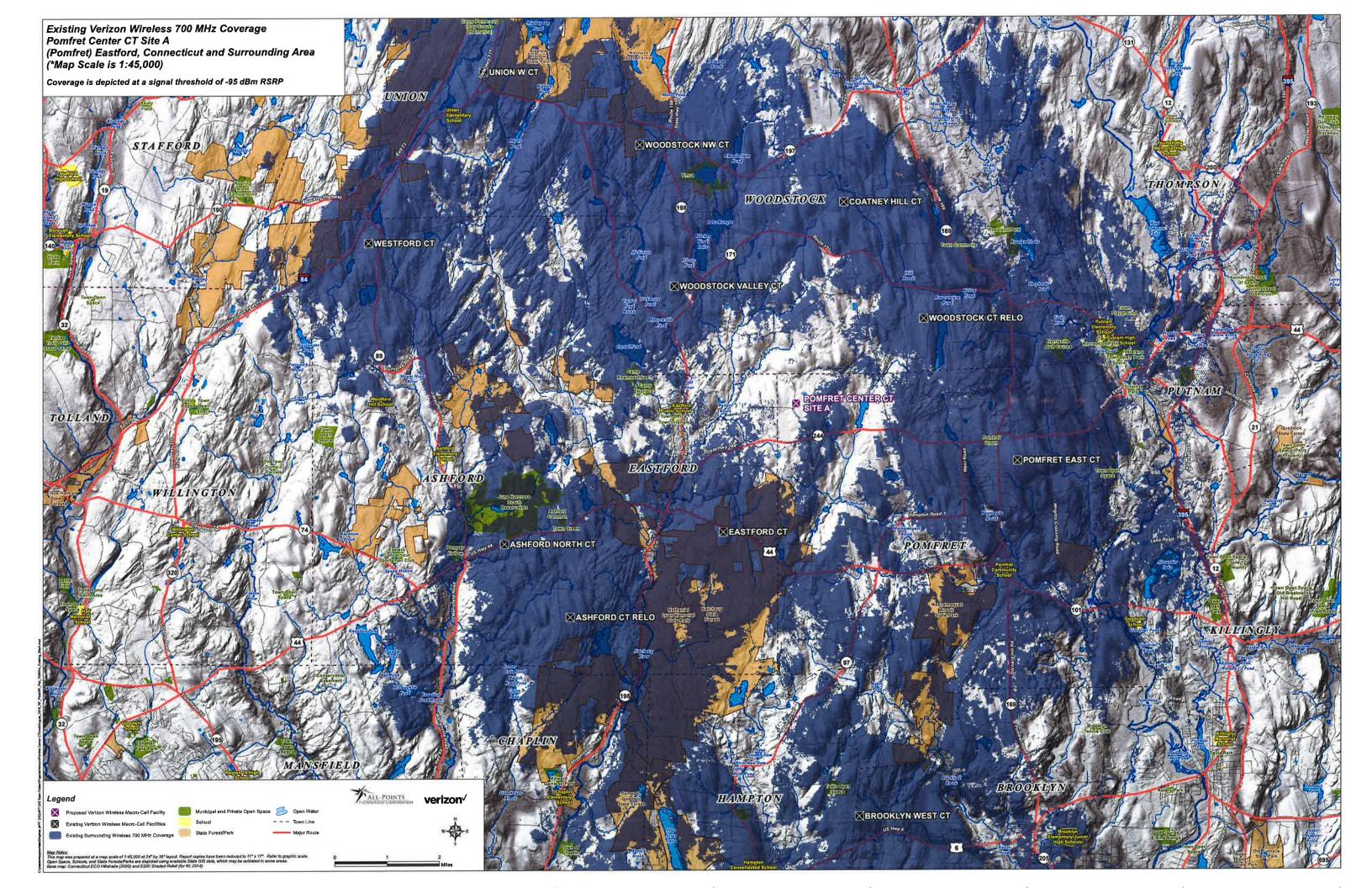
Seasonal Visibility = 29.8 Acres

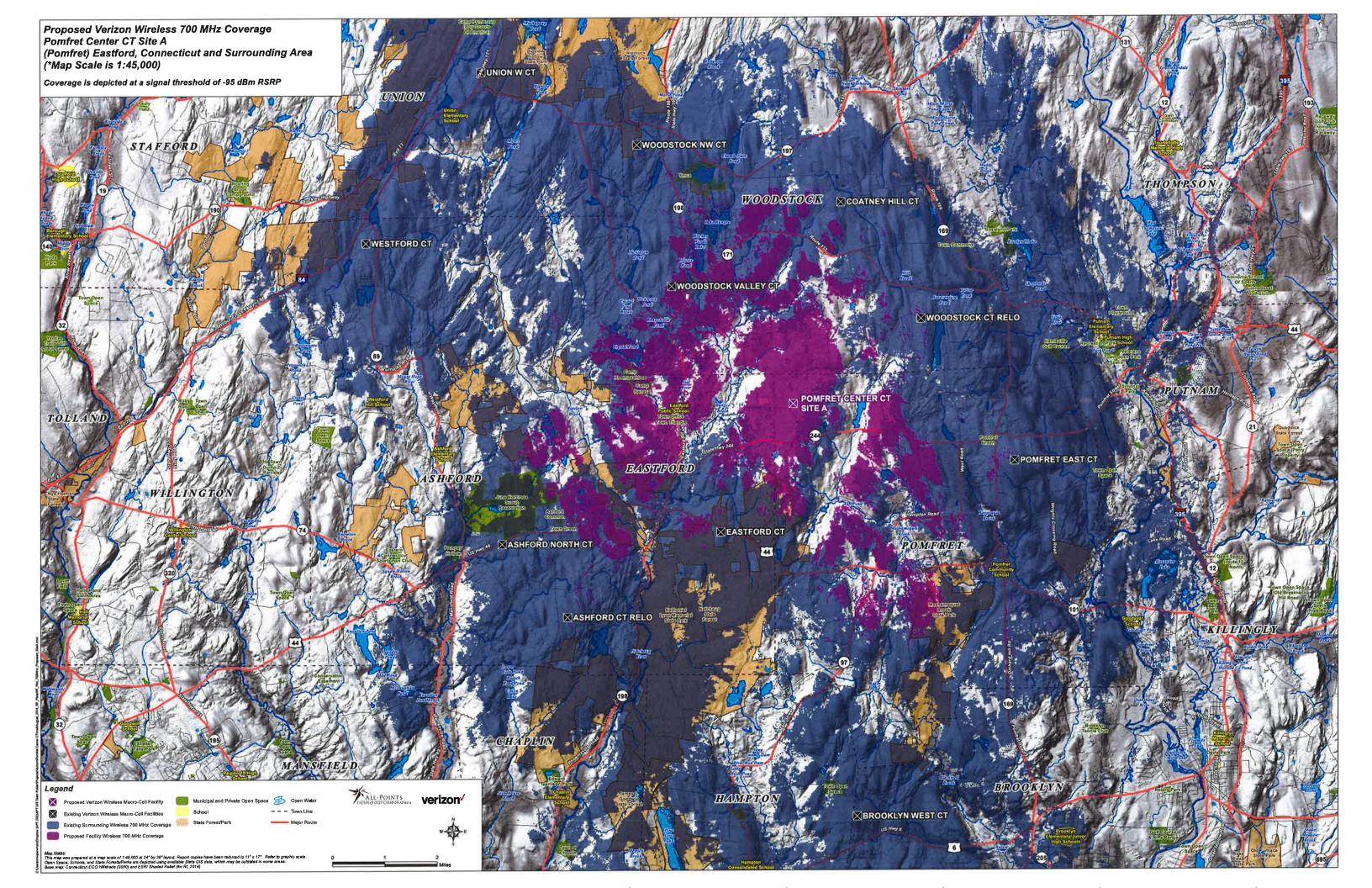
Total Residences within 0.5 mile = 12

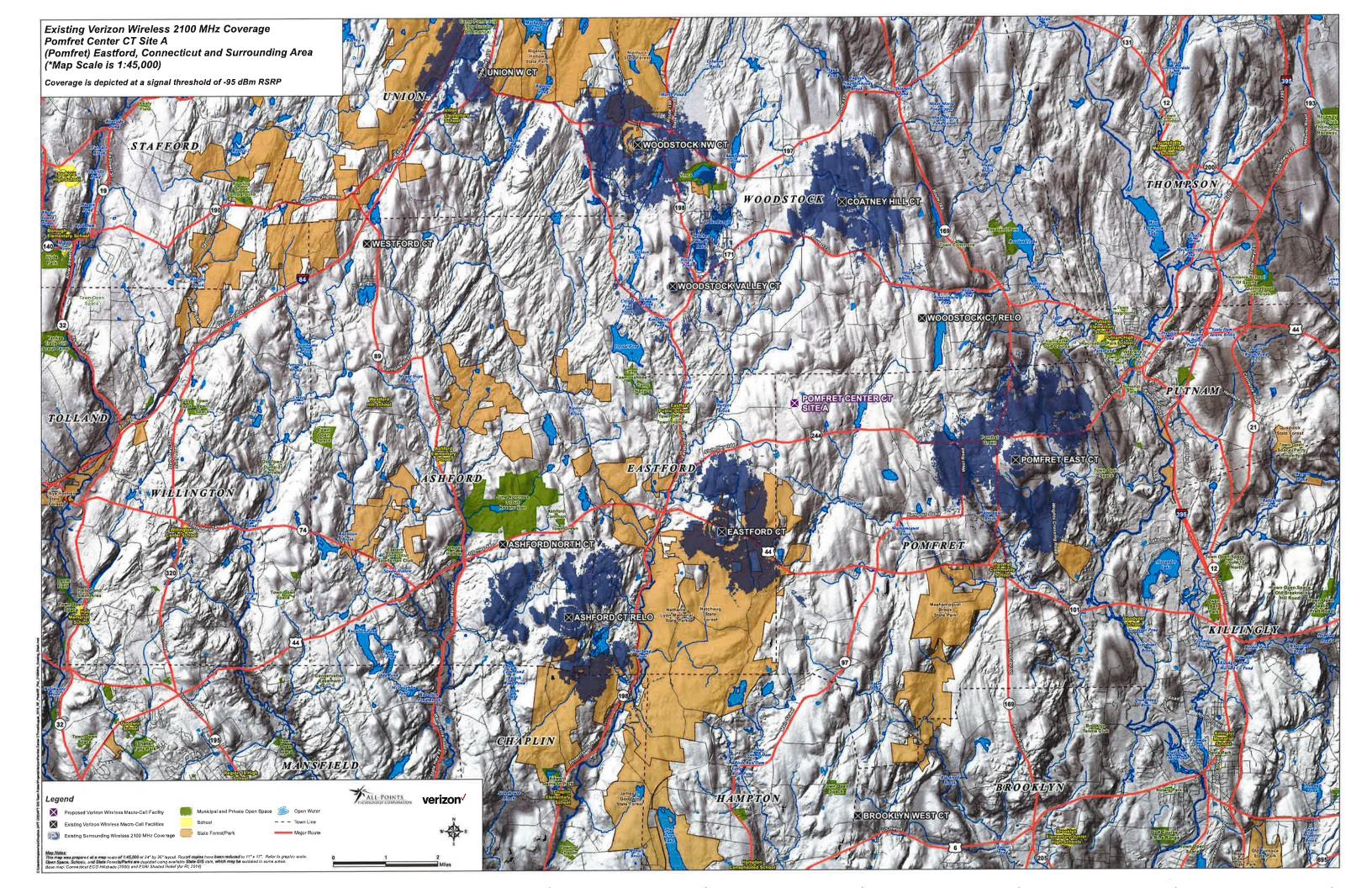
Year-Round Views = 1 (limited to portion of side yard; same property as Site A and B)

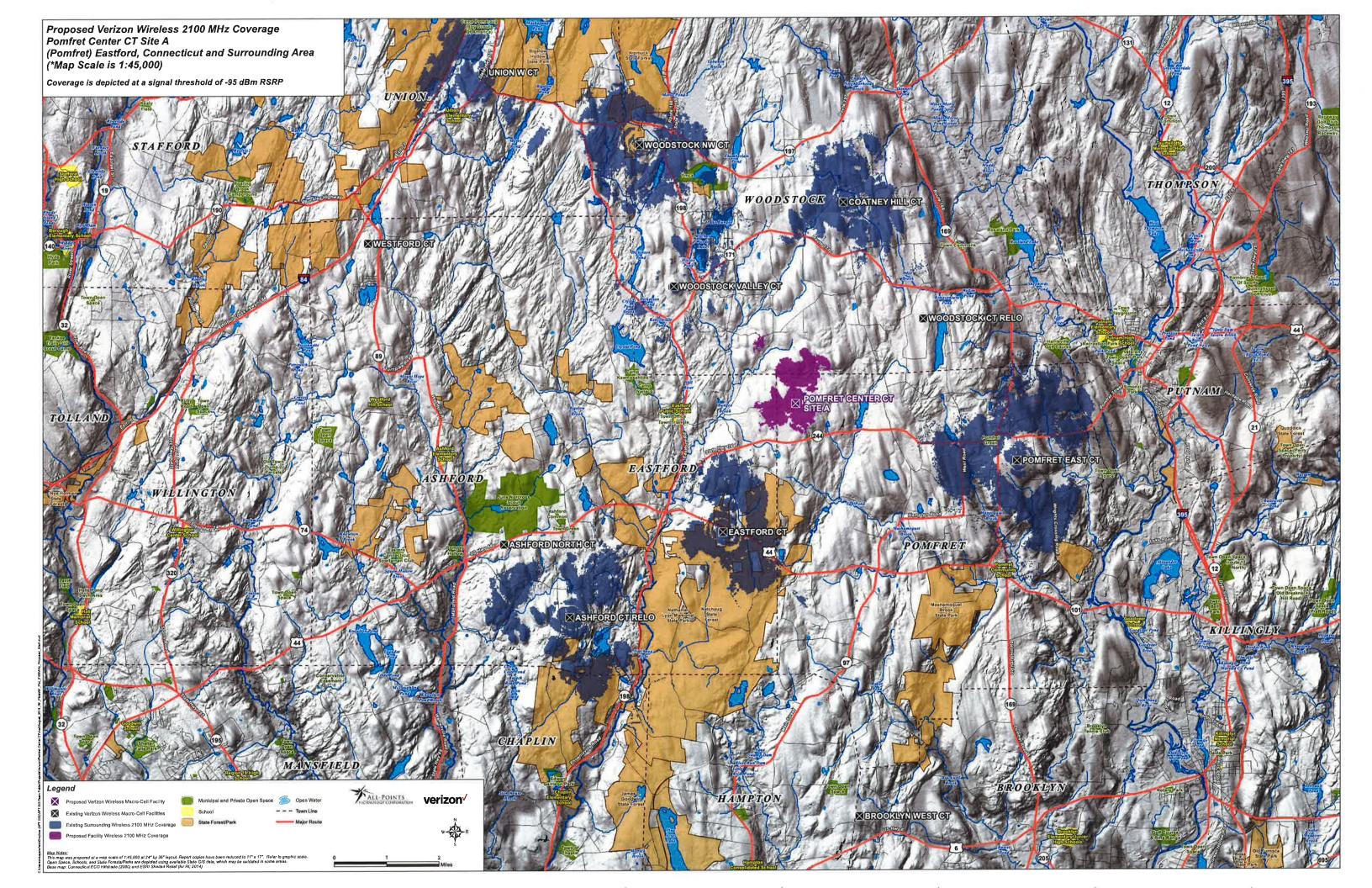
Seasonal Views = 0

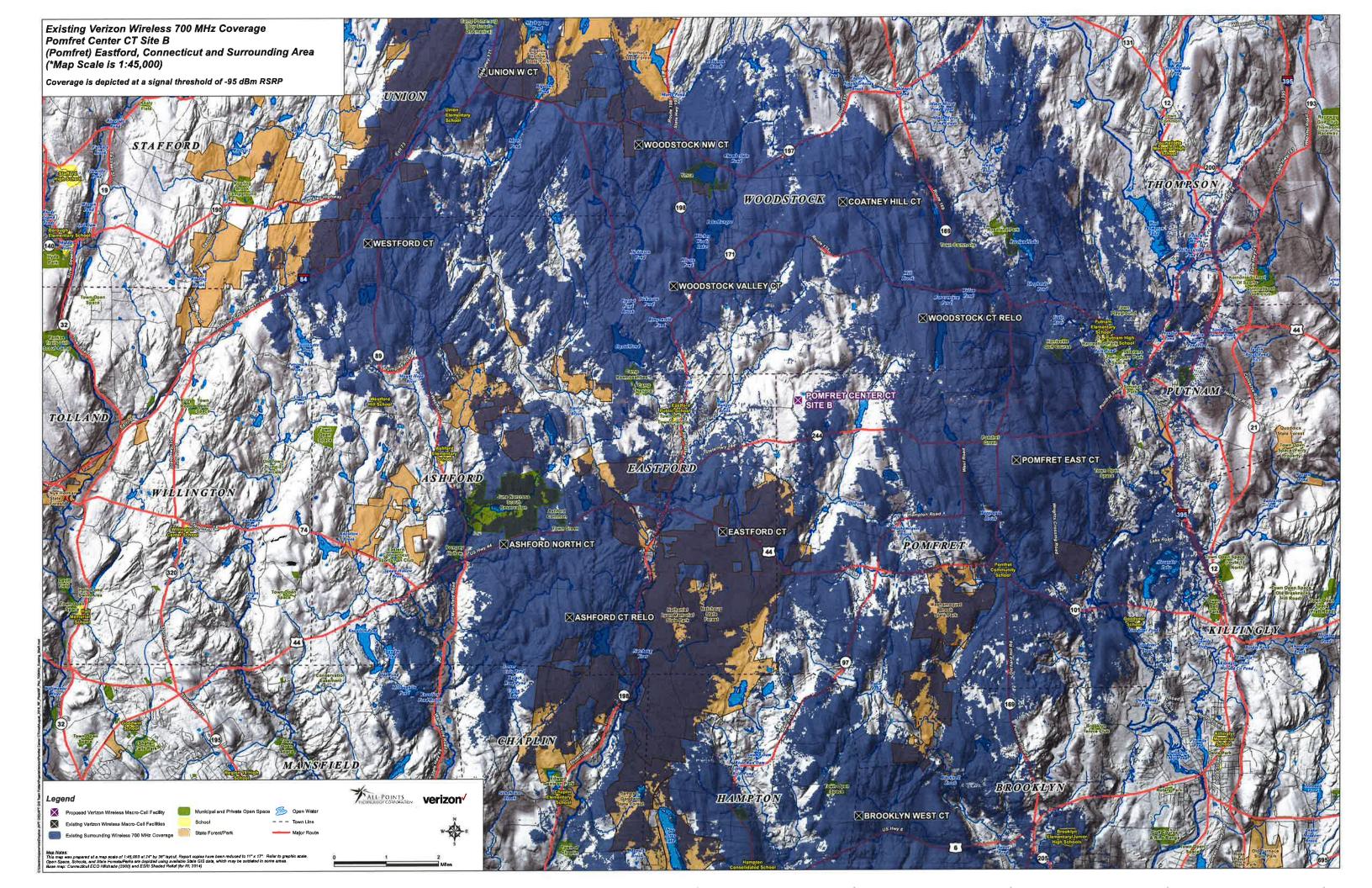
ATTACHMENT 1

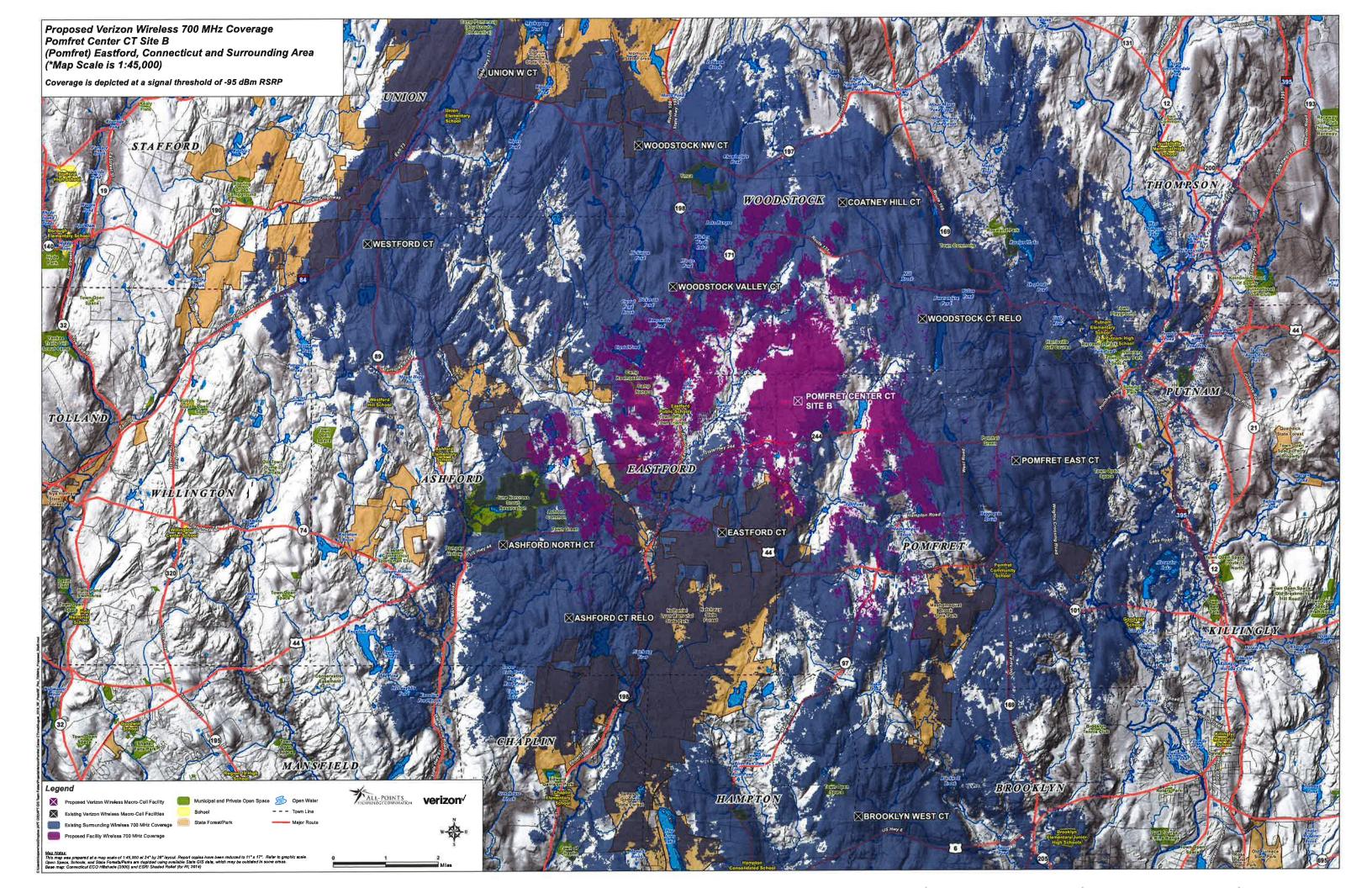


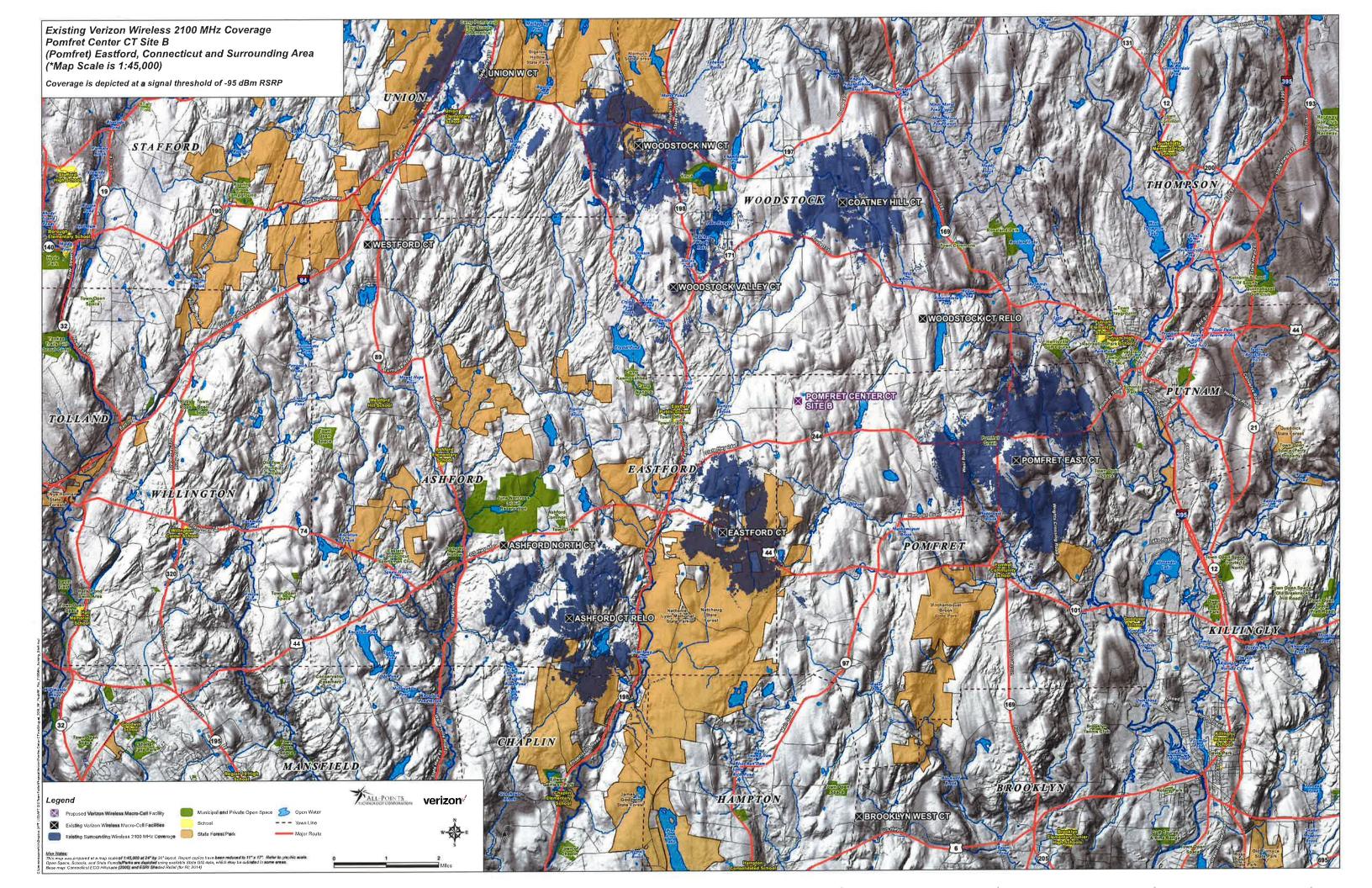


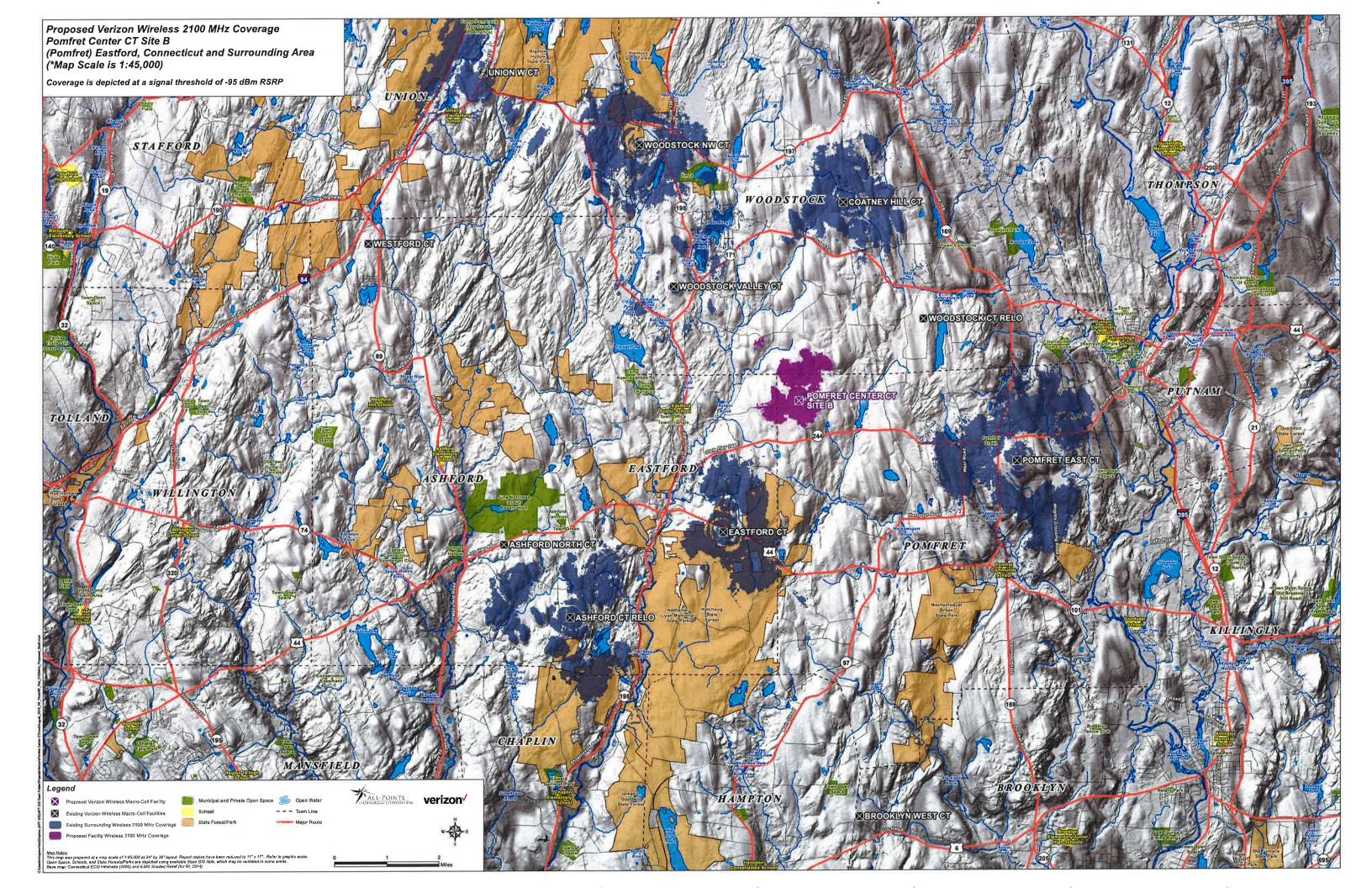


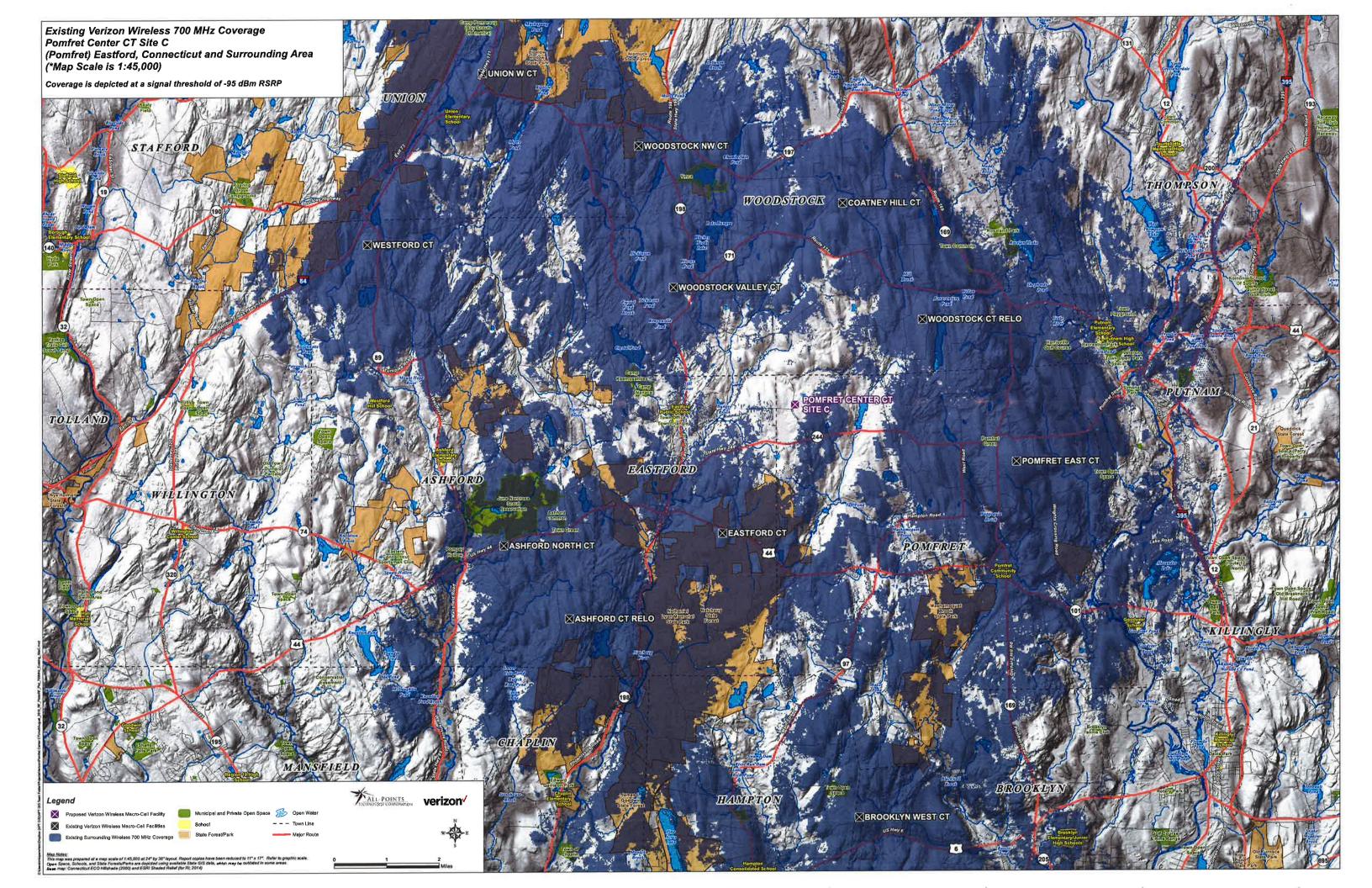


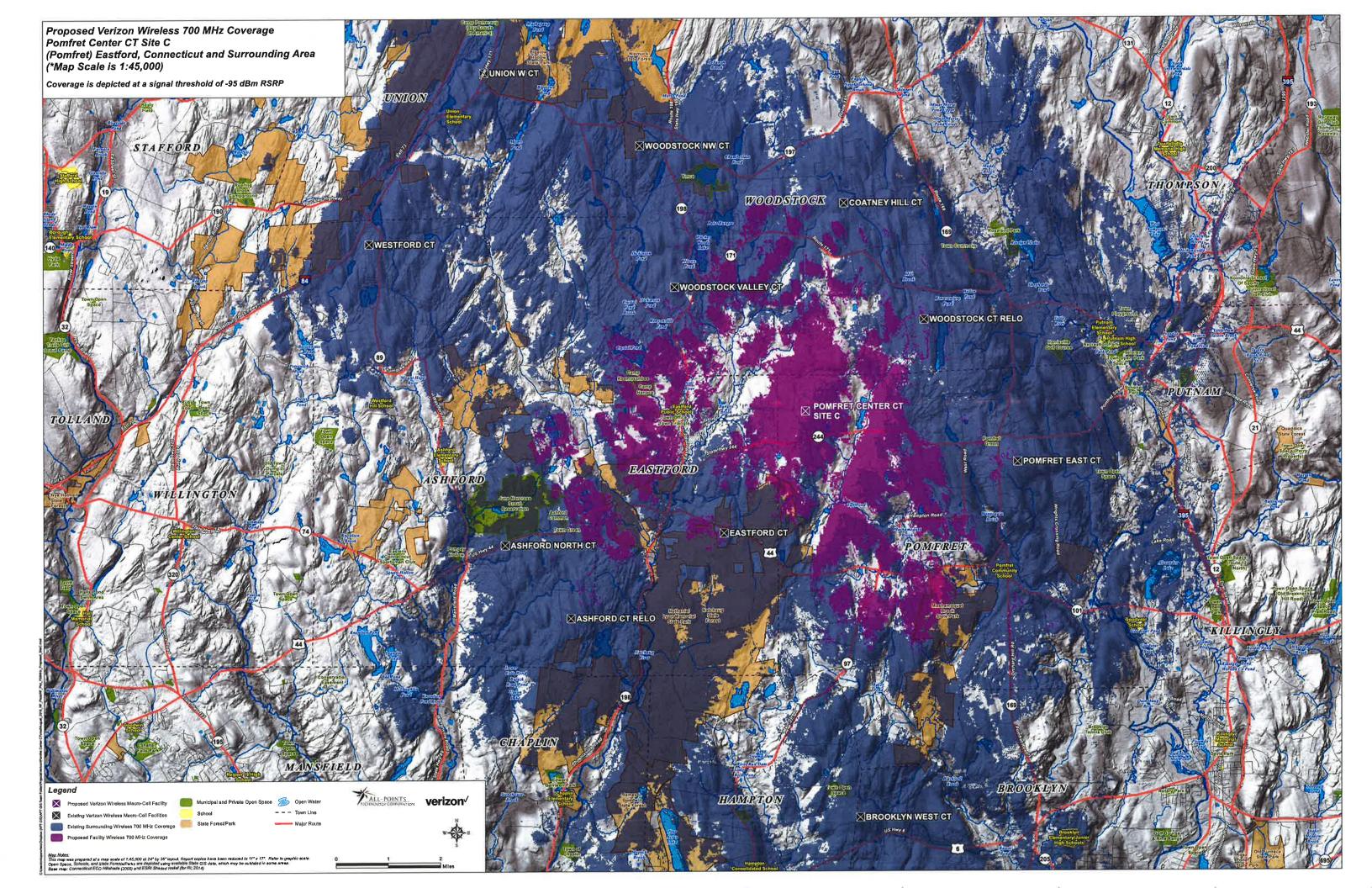


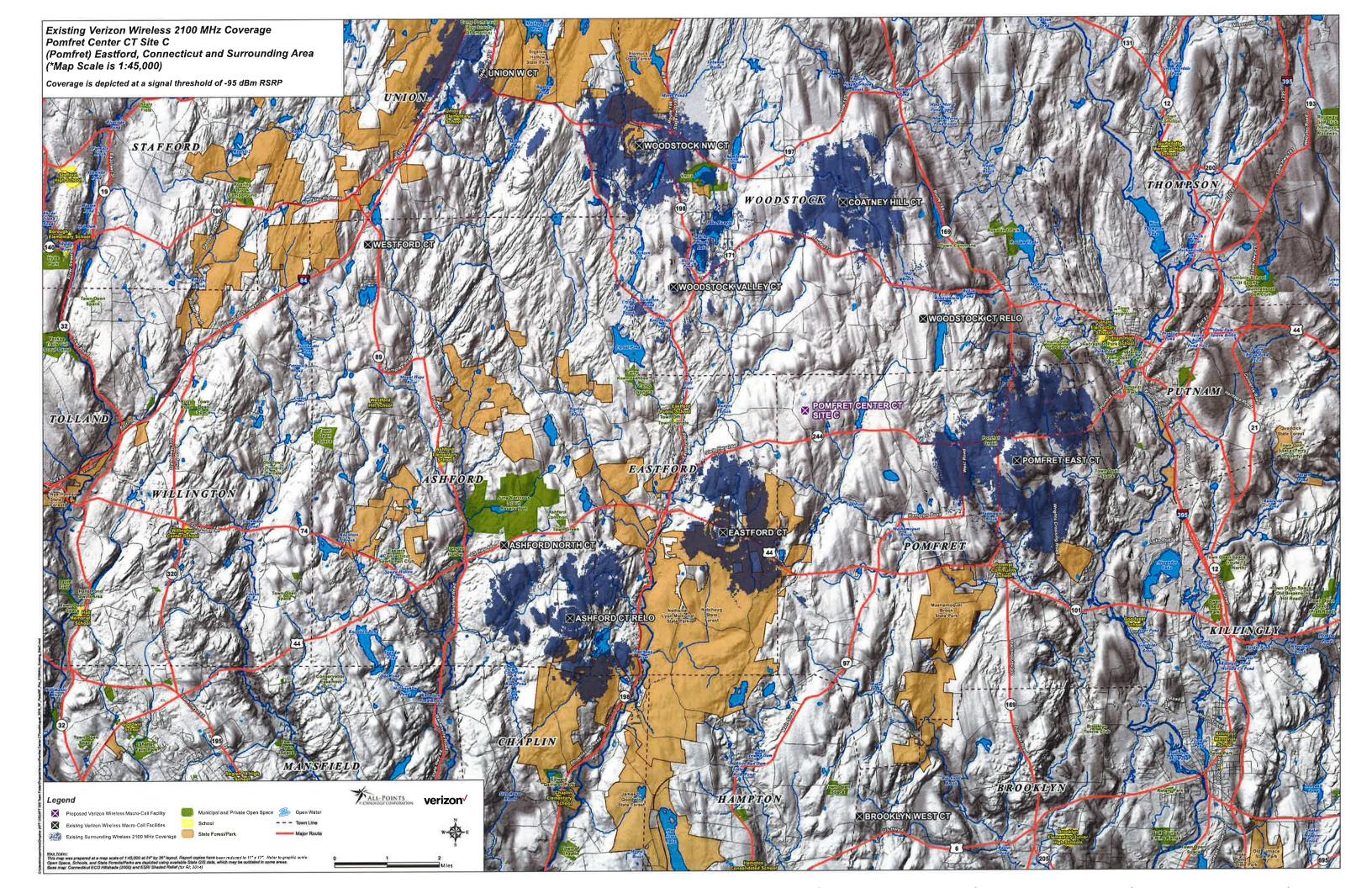


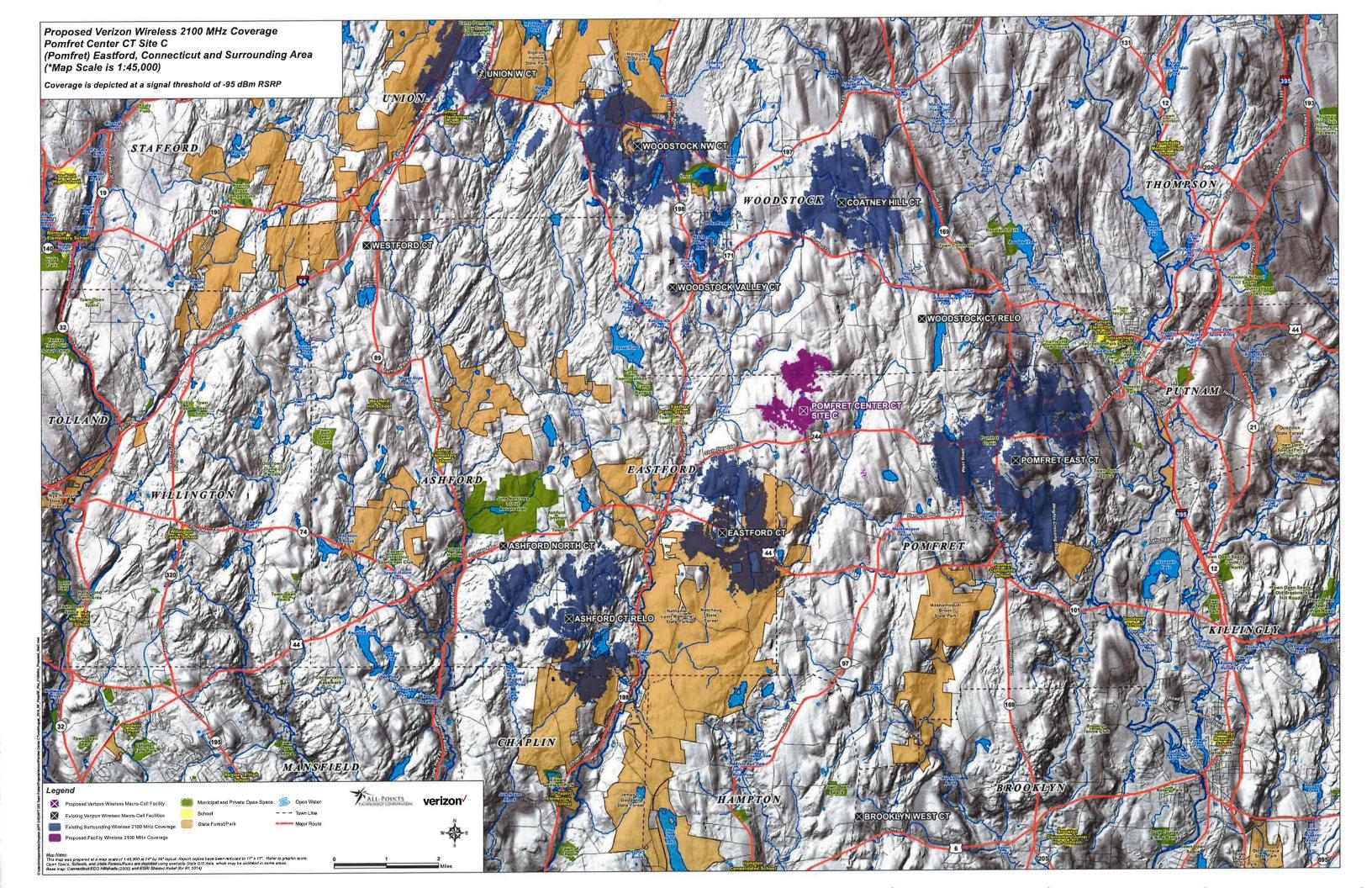




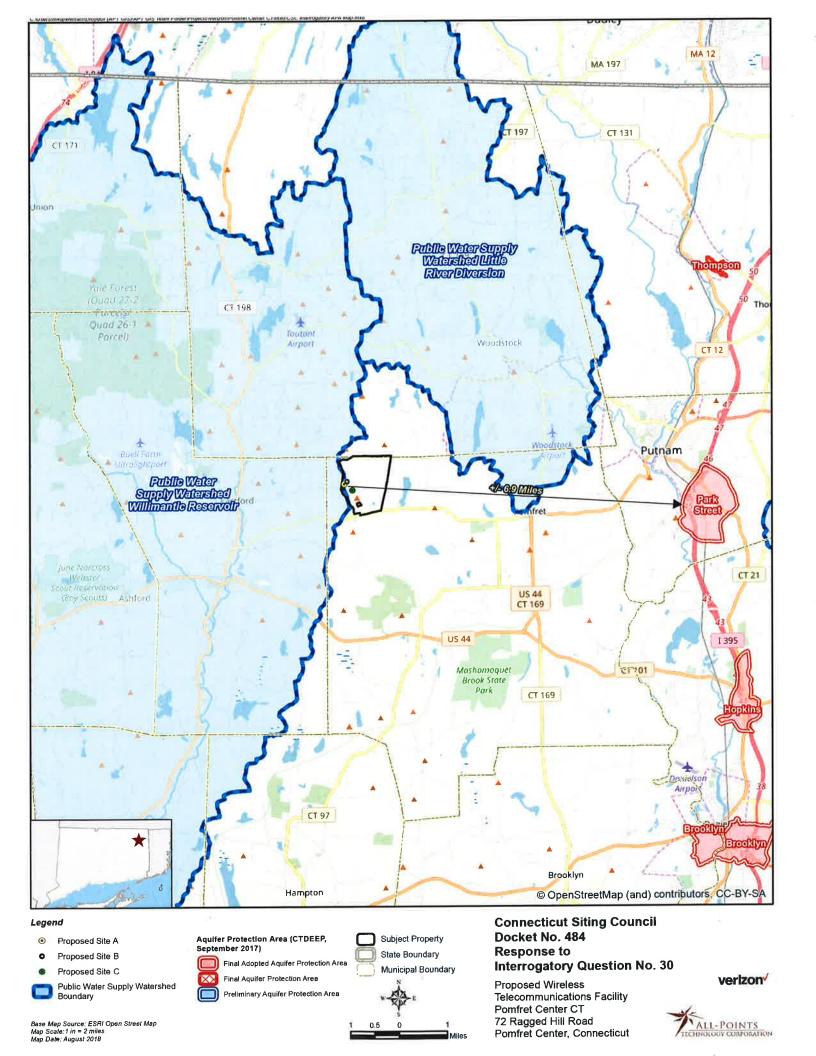




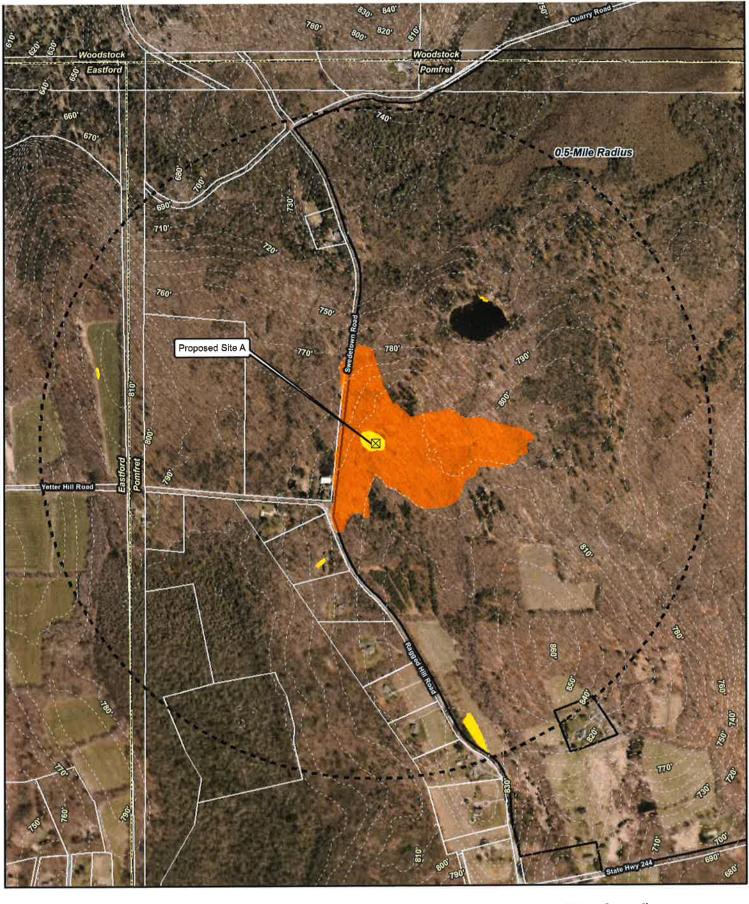




ATTACHMENT 2



ATTACHMENT 3



Legend

Proposed Site A (150' AGL) Areas of Anticipated Year- Round Visibility (Approx, 1.1 Acre) Subject Property Areas of Potential Seasonal Visibility (Approx. 23.9 Acres) 0.5-Mile Radius (Approx. 502 Acre Area)

Approximate Parcel Boundary (CTDEEP) Map Notes:
Areas of Anticipated Year-Round Visibility Calculted Using ESRI's Viewshed Tool with 2016 CT ECO LIDAR LAS Data Converted to a Digital aurtiace model (DSM). Potential Areas of Seasonal Visibility Estimated Based on Forest Density and Type, Topography, and Comperative Field Observations During "Leaf-Off" Conditions.

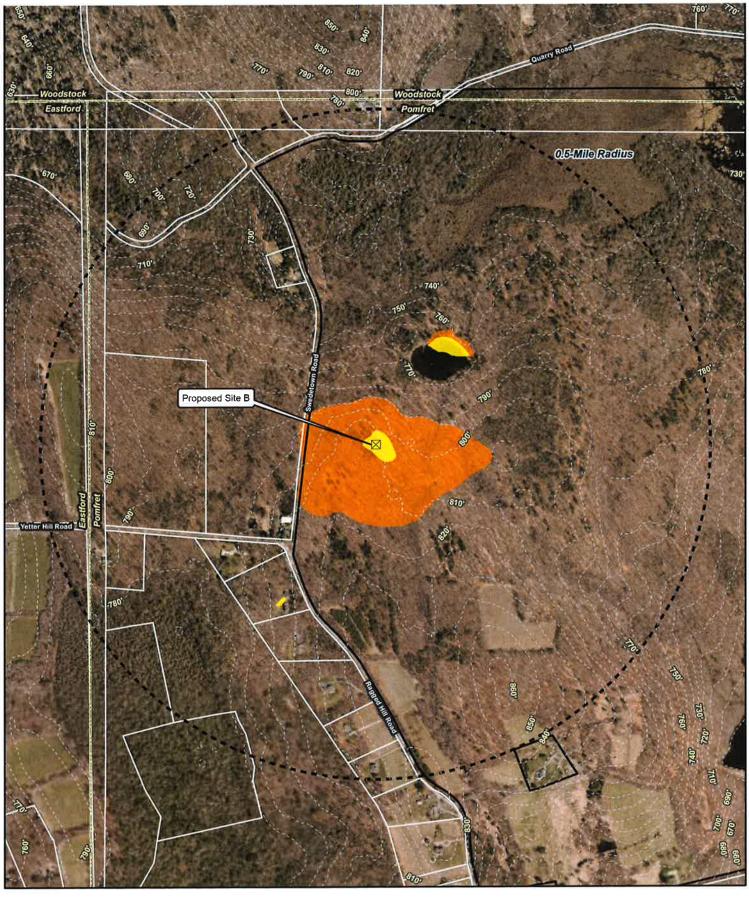
Base Map Source: 2016 CT ECO Aerial Photo
Map Date: August 2018

10-foot Contour Line

Connecticut Siting Council Docket No. 484 Response to Interrogatory Question No. 33 - SITE A

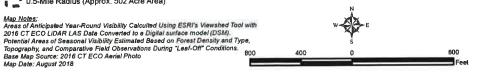
Proposed Wireless Telecommunications Facility Pomfret Center CT 72 Ragged Hill Road Pomfret Center, Connecticut verizon^v





Proposed Site B (150' AGL) Areas of Anticipated Year- Round VIsibility (Approx. 1.5 Acre) Subject Property Areas of Potential Seasonal Visibility (Approx. 25.3 Acres) 0.5-Mile Radius (Approx. 502 Acre Area)

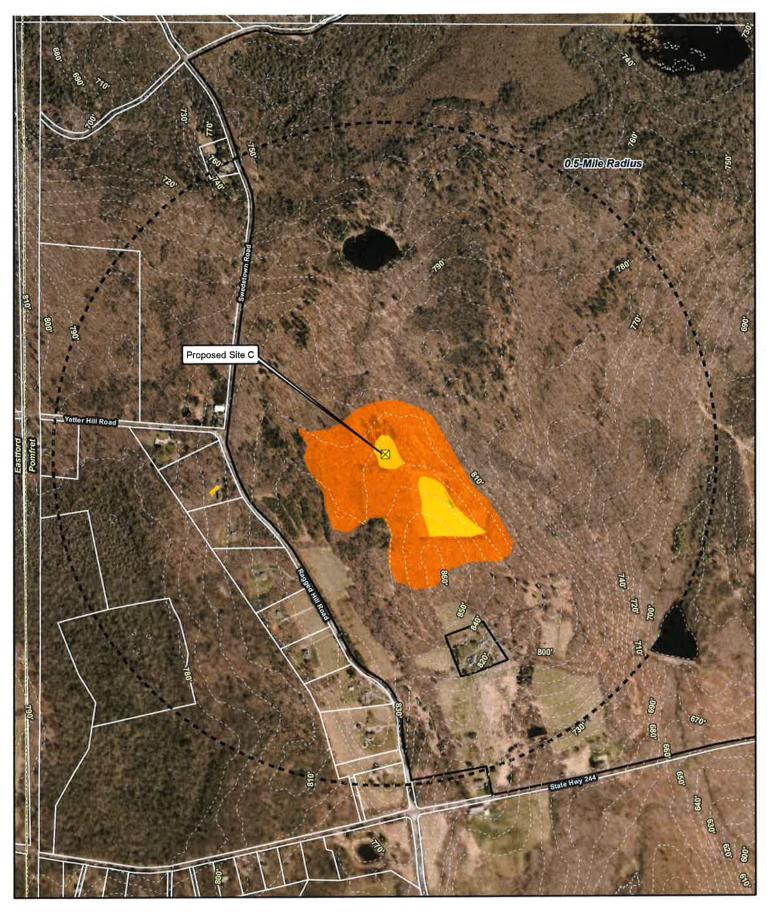
10-foot Contour Line Approximate Parcel Boundary (CTDEEP)



Connecticut Siting Council Docket No. 484 Response to Interrogatory Question No. 33 - SITE B

Proposed Wireless Telecommunications Facility Pomfret Center CT 72 Ragged Hill Road Pomfret Center, Connecticut verizon/





Legend

Proposed Site B (130' AGL)

Areas of Anticipated Year- Round Visibility (Approx. 4.1 Acres)

Areas of Potential Seasonal Visibility (Approx. 29.8 Acres)

0.5-Mile Radius (Approx. 502 Acre Area)

Map Notes:
Areas of Anticipated Year-Round Visibility Calculted Using ESRI's Viewshed Tool with 2016 CT ECO LiDAR LAS Date Converted to a Digital surface model (DSM).
Polential Areas of Seasonal Visibility Estimated Based on Forest Density and Type, Topography, and Comparative Field Observations During "Leaf-Off" Conditions.
Base Map Source: 2016 CT ECO Aerial Photo
Map Date: August 2018





Connecticut Siting Council Docket No. 484 Response to Interrogatory Question No. 33 - SITE C

Proposed Wireless Telecommunications Facility Pomfret Center CT 72 Ragged Hill Road Pomfret Center, Connecticut



