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 OF A WIRELESS TELECOMMUNICATIONS FACILITY AT 15 GREAT PASTURE ROAD, DANBURY, CONNECTICUT	:	DOCKET NO. 462
	:	SEPTEMBER 3, 2015

RESPONSES OF CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS TO CONNECTICUT SITING COUNCIL PRE-HEARING QUESTIONS, SET ONE

On August 21, 2015, the Connecticut Siting Council ("Council") issued Pre-Hearing Questions to Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to the above-captioned docket. Below are Cellco's responses.

Question No. 1

When was Cellco Partnership d/b/a Verizon Wireless' (Cellco) search ring first initiated? Provide the approximate diameter and longitude/latitude coordinates of the center of the search ring. Would any existing structures within a four-mile radius of the center of the search ring meet Cellco's coverage objectives?

Response

Cellco established its Bethel West 2 search ring in March of 2014. The search ring has an approximate diameter of approximately 0.75 miles and is centered at Lat 41°-22'-41.75" Long 73°-25'-32.30". None of Cellco's existing cell sites surrounding the area can satisfy the coverage objectives of the Bethel West 2 facility.

Question No. 2

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

Response

Cellco received all but one return receipt from abutters. The one receipt still outstanding is from Stamford Cove Partners LLC for property at 104 Wooster Street in Bethel. A copy of the notice letter was sent to Stamford Cove Partners LLC a second time by regular mail on August 24, 2015.

Question No. 3

Has Cellco received any comments from the Town of Bethel to date regarding the proposed facility?

Response

Yes. Town of Bethel comments, were included behind Tab 13 of the Cellco Application. On Monday, August 24, 2015, counsel for Cellco contacted Robin Edwards, Assistant Corporation Counsel in Danbury by e-mail seeking any additional comments regarding the proposal or issues raised in the April 7, 2015 memorandum. In her response, Ms. Edwards notes that according to the City's Zoning Enforcement Officer, there are "no active violations on the site". (*See* Attachment 1 to these Responses).

Question No. 4

Characterize the land uses to the north, south, east and west of the subject property.

Response

Land use surrounding the subject parcel is predominately industrial. Four residential uses, however, exist to the north of the property along Great Pasture Road. Two of these residential parcels appear on the list of abutting landowners at 13 and 18 Great Pasture Road.

Question No. 5

At the pre-hearing conference held on August 19, 2015, it was noted that abutter Gloria B. Putnam at 13 Great Pasture Road has expressed an interest in offering her property as a potential tower site. Has Cellco evaluated such site? Provide the approximate lot size in acres and comment on the feasibility of such site from radio frequency, lot size and access, and environmental perspectives.

Response

Cellco did not evaluate the Gloria B. Putnam property at 13 Great Pasture Road. This parcel is a 0.45-acre residential lot maintaining a ground elevation of approximately three (3) feet below that at the proposed tower site (384±' AMSL). A tower of 120 feet at this location would, in all likelihood, provide service comparable to that at the proposed cell site. Cellco has not investigated any environmental conditions at the Putnam property.

Question No. 6

Would the tower be designed for EIA/TIA-222 structural standards version F, G, or both? What is the tower design wind speed for Fairfield County?

Response

The tower will be designed to satisfy both Rev. F and Rev. G EIA/TIA-222 structural standards. The design wind speeds are 85 mph for Rev. F and 95 mph for Rev. G.

Question No. 7

Provide the approximate width of the monopole at the top and at the bottom.

Response

The 120' tower would maintain a diameter of approximately 54 inches at the base and 24 inches at the top.

Question No. 8

What color of the monopole is being proposed, i.e. galvanized gray? If requested by the Council, could the monopole have a brown finish instead?

Response

Cellco intends to maintain the galvanized gray color for the tower which will ultimately weather to a dull-gray finish. Cellco could, but prefers not, to paint the tower due to the continuous appearance and maintenance problems.

Question No. 9

Is any landscaping around the outside of the fenced compound proposed?

Response

No landscaping has been proposed at this site because any views of the compound and lower portions of the monopole would be limited to locations on the subject property. These areas are generally inaccessible to the public. Locations along Great Pasture Road are screened effectively by a combination of existing topography, vegetation and structures. (*See* Photo locations 1, 2, 3 in the Visibility Analysis behind Tab 9 of the Application). Accessible viewpoints to the north and south are substantially set back from the property and screened by trees. Residential locations to the west are also set back and screened sufficiently such that no direct views of the compound area are available. Industrial development and an active rail line

separate residential properties from the subject property. Photo location 10 in the Visibility Analysis depicts the nearest visible location to the west from an industrially developed site.

Question No. 10

Sheet C-2 notes that utility service would run underground from the existing pole #1979. Is this Eversource pole located on the same side of Great Pasture Road as the subject property, or is it located on the opposite side? If the pole is located on the opposite side of the road, would Cellco trench under the road rather than run overhead to cross Great Pasture Road?

Response

Yes, Eversource pole #1979 is located on the west side of Great Pasture Road, the same side of the road as the subject property. It should be noted that a formal design visit with the Eversource engineer has not yet been performed and the final demarcation point is for utility access, therefore, "tentative". If the demarcation point ultimately selected were located on the opposite side of the street, Cellco could trench under Great Pasture Road.

Question No. 11

What type of antenna mounts would be used for Cellco's proposed antennas, e.g. low-profile platform mount?

Response

Cellco intends to use a low profile antenna platform.

Question No. 12

Would flush-mounted antennas or antennas attached to the tower at the proposed height via T- arms provide the required coverage? Would either configuration result in reduced coverage and/or necessitate greater antenna height with multiple levels of antennas? Explain.

Response

Cellco could utilize T-Arm antenna support structures but could not use flush-mounted antennas. Use of flush-mounted antennas would result in a reduction in size of the coverage footprint, would require the use of multiple antenna levels on the tower and an increase of at least ten (10) feet in tower height.

Question No. 13

Could the required coverage and capacity upgrade needs be met by a series of small cell facilities or a distributed antenna system instead of the proposed macro tower facility?

Response

It is technically possible that a series of small cells or Distributed Antenna Systems (DAS) could provide wireless service to the area around the Bethel West 2 cell site. The actual number of small cell facilities or DAS nodes that would be needed to provide coverage comparable to that from the proposed Bethel West 2 tower site is not known but would be significant given the overall size of the area that Cellco is attempting to serve. Also, it would be difficult to penetrate some of the dense residential areas to the west and northwest of the Bethel West 2 Facility using DAS or small cells as it would require the installation of nodes and antenna on private residential lots and/or apartment complexes. The use of a macro-cell tower site, as proposed in this Application, presents the most efficient and cost effective means of enhancing wireless service in this area.

Question No. 14

Would there be any modifications or improvements to existing access or would existing access remain essentially the same?

Response

Currently, Cellco does not anticipate the need for any improvements to the access way.

Question No. 15

Quantify the amounts of cut and fill that would be required to develop the proposed facility.

Response

The total cut for the proposed facility will be approximately 80 Cubic Yards and the total fill will be approximately 34 Cubic Yards.

Question No. 16

Would all of the proposed frequencies (i.e. 700 MHz, 850 MHz, 1900 MHz, and 2100 MHz) be provided initially, or would some be provided initially and others deployed in the future at this particular site? Explain.

Response

Initially, Cellco will deploy is LTE services (700 MHz and 2100 MHz) only at the Bethel West 2 cell site. Cellco's 1900 MHz frequencies would be added as necessary to meet future network capacity demands.

Question No. 17

Provide an estimate of the residential population living within the area that would be covered by the proposed facility.

Response

According to 2010 U.S. census track data, there are 21,549 people living in the 700 MHz coverage footprint; 19,786 people living in the 850 MHz coverage footprint; 12,727 people living in the 1900 MHz coverage footprint; and 13,623 people living in the 2100 MHz coverage

footprint. This count does not take into consideration the number of people that work and/or travel through the area on any given day.

Question No. 18

Provide an estimated traffic count for those portions of Route 53 and Route 302 that would be covered by the proposed facility.

Response

According to the Average Daily Traffic mapping information available from the Connecticut Department of Transportation, there are approximately 12,300 Average Daily Trips (ADT) along Route 53 (South Street, in Danbury); 12,500 ADT Route 53 (Grassy Plain Street in Bethel); and 11,200 ADT along Route 302.

Question No. 19

Provide the worst-case power density analysis table (i.e. identical to what is provided in a Cellco exempt modification filing) to provide a breakdown of the percent maximum permissible exposure. Include the watts ERP per channel and number of channels for each frequency, as well as frequencies and antenna centerline heights. Are such power density analyses typically based on one sector of antennas or all three?

Response

See Attachment 2. This worst-case calculation is based on exposure to emissions from one sector of antennas. At no time can an individual be exposed to emissions from all three sectors of antennas.

Question No. 20

Of the existing sites (within a two-mile radius) noted on pages 8 and 9 of the Application, indicate which ones that the proposed site would interact with to hand off signals. If Cellco's

proposed antennas would interact with any other sites not listed, include those also. Also include the tower/structure heights and antenna centerline heights of such facilities if not already provided.

Response

The proposed Bethel West 2 Facility will interact with each of the surrounding cell sites listed on pages 8 and 9 in the Application narrative. Structure heights and Cellco's antenna height are provided in the Application.

Question No. 21

Would any blasting be required to develop the site?

Response

Cellco does not anticipate the need for any blasting at the proposed cell site. A complete geotechnical survey will be completed if the site receives Council approval.

Question No. 22

Does the proposed project avoid any impacts to the existing DEEP Dig Restricted Area?

Response

Yes. All of Cellco's improvements will avoid the DEEP Dig Restricted Area, which encompasses an area beneath the southwest corner of the building and extends approximately 25 feet beyond the building to the west and south. The southern edge of the Dig Restricted Area reaches the northern edge of the existing paved driveway that Cellco proposes to use for access. Underground utilities will be routed around the north side of the building before turning to the west and then south to the tower location, thereby avoiding the Dig Restricted Area.

Question No. 23

Would the proposed project comply with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control?*

Response

Yes, the project plans submitted for the Application generally comply with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*. Should the project be approved by the Council, additional erosion and sediment control measures and details would be included as part of the Development and Management Plan to ensure the project is fully compliant with the Connecticut guidelines.

Question No. 24

Would Cellco's equipment shelter have a light fixture installed on the outside wall? What type of lighting would be utilized? When would the light be on?

Response

Yes. The security light above the shelter door is a standard 100 watt porch light. The light is motion-activated.

Question No. 25

Would the proposed compound fence have barbed wire? If requested by the Council, could Cellco install a chain link fence with a mesh size of less than two inches as an anti-climbing measure?

Response

Cellco does not intend to install barbed wire on top of the compound fence. Cellco intends to use a fence with a mesh size of 1-1/4 inches.

Question No. 26

Would the proposed compound security fence have a locked gate for security purposes?

Response

Yes.

Question No. 27

Would Cellco's proposed facility comply with federal E911 requirements?

Response

Yes.

Question No. 28

Will the proposed facility support text-to-911 service? Is additional equipment required for this purpose?

Response

Yes, the proposed facility will support text-to-911 service 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 text-to-911 service.

Question No. 29

Are you aware of any Public Safety Answering Points in the area of the proposed site that are able to accept text-to-911?

Response

Not at this time.

Question No. 30

Are all frequencies used to transmit voice and data?

Response

Until recently, Cellco was generally utilizing its 850 MHz and 1900 MHz frequencies to transmit CDMA voice services and data services and its 700 MHz and 2100 MHz frequencies to transmit long-term evolution (LTE) data services only. Earlier this year, Cellco launched LTE voice services to those customers who may have purchased new wireless equipment and devises. Ultimately, Cellco hopes to transition all of its voice and data services to its LTE platform.

Question No. 31

What is the lowest height at which Cellco's antennas could achieve its coverage objectives from the proposed tower?

Response

The proposed antenna centerline height of 120 feet above ground level is the lowest height at which Cellco can achieve its wireless service objectives.

Question No. 32

What is the signal strength for which Cellco designs its system? For in-vehicle coverage? For in- building coverage?

Response

Cellco designs its LTE network using a 120 dB Reverse Link Operational Path Loss ("RLOPL") standard. For its CDMA service, Cellco's minimum design threshold signal strength is -85 dBm for in-vehicle service and -75 dBm for in-building service.

Question No. 33

What is the existing signal strength within the area Cellco is seeking to cover from this site?

Response

Cellco's existing signal strength in the area ranges from 110 dB RLOPL to 120 dB RLOPL on 700 MHz LTE.

Question No. 34

Does Cellco have any statistics on dropped calls and/or ineffective attempts in the vicinity of the proposed facility? If so, what do they indicate? Does Cellco have any other indicators of substandard service in this area?

Response

For Cellco's LTE data network, dropped calls and ineffective attempts are no longer the best way to measure quality of service in a particular area. In LTE we now use statistics that measure Maximum Active Connections, which measures the maximum number of subscribers that are simultaneously making data connections in a specific busy hour; Forward Data Volume which measures the total megabytes of data that were downloaded by all subscribers on a particular sector of a particular cell site during a specific busy hour; and User Perceived Throughput, which measures the actual speed a subscriber experiences when he or she is downloading data on the network.

Question No. 35

In the Application, Cellco included an existing coverage plot and an existing and proposed coverage plot for each of the following frequencies: 700 MHz, 850 MHz, 1900 MHz and 2100 MHz. Provide similar proposed coverage plots for those frequencies assuming that the tower (and thus the antenna centerline height) is ten feet shorter/lower.

Response

See Attachment 3.

Question No. 36

Cellco provided the lengths of the coverage that it would provide along primary roads from the proposed site at the proposed frequencies, e.g. 700 MHz, 850 MHz, 1900 MHz, and 2100 MHz on page 7 of the Application. If Cellco would provide coverage to any other primary roads not included, provide such coverage lengths also. Also provide individual coverage lengths for primary roads assuming that the tower is ten feet shorter. (Cellco may consider "primary roads" to be State of Connecticut routes i.e. roads that have a route number.)

Response

Route 53 and 302 are the only "major roads" in the coverage footprint of the proposed Bethel West facility.

ROAD NAME	700 MHz		850 MHz		1900 MHz		2100 MHz	
	120 ft.	110 ft.	120 ft.	110 ft.	120 ft.	110 ft.	120 ft.	110 ft.
Route 53	1.55 miles	1.35 miles	1.40 miles	1.25 miles	0.9 miles	0.8 miles	0.75 miles	0.7 miles
Route 302	0.4 miles	0.3 miles	0.3 miles	0.2 miles	0.2 miles	0 miles	0.6 miles	0.2 miles

Question No. 37

Provide the lengths of the coverage that Cellco would provide along secondary roads (or Town roads) from the proposed site at the proposed frequencies, e.g. 700 MHz, 850 MHz, 1900 MHz, and 2100 MHz, or as applicable. Also provide such data assuming that the tower is ten feet shorter.

Response

ROAD NAME	700 MHz		850 MHz		1900 MHz		2100 MHz	
	120 ft.	110 ft.	120 ft.	110 ft.	120 ft.	110 ft.	120 ft.	110 ft.
Shelter Rock Rd/Shelter Rock Ln	1.8 miles	1.7 miles	1.8 miles	1.7 miles	1.5 miles	1.4 miles	1.5 miles	1.4 miles
Coalpit Hill Rd/Mansfield St	1.0 miles	1.0 miles	1.0 miles	1.0 miles	0.6 miles	0.6 miles	0.6 miles	0.6 miles
Great Pasture Rd	0.9 miles	0.9 miles	0.9 miles	0.9 miles	0.9 miles	0.9 miles	0.9 miles	0.9 miles
Durant Ave	0.5 miles	0.5 miles	0.5 miles	0.5 miles	0.5 miles	0.5 miles	0.5 miles	0.5 miles
Reservoir St	0.8 miles	0.4 miles	0.8 miles	0.4 miles	0.4 miles	0.2 miles	0.4 miles	0.2 miles
Mountainville Rd	0.8 miles	0.6 miles	0.8 miles	0.6 miles	0.3 miles	0.2 miles	0.3 miles	0.2 miles

Question No. 38

Cellco provided the proposed coverage areas (in square miles) for each applicable frequency on page 7 of the Application. Provide similar data assuming that the tower is ten feet shorter.

Response

At 110 feet, the overall coverage area of the proposed Bethel West Facility would be 7.28 square miles at 700 MHz; 6.58 square miles at 850 MHz; 4.08 square miles at 1900 MHz, and 4.35 square miles at 2100 MHz.

Question No. 39

Is Cellco proposing to install a backup generator only large enough for Cellco's needs at this time? If yes, and if requested by the Council, could Cellco reserve space in the fenced compound for a future shared generator should additional carriers co-locate on the tower?

Response

Yes, the proposed generator is designed for use by Cellco only. No other carrier has expressed any interest, at this time, to share the proposed Great Pasture Road tower. There is adequate space available within the compound area for additional carriers' equipment including a shared generator.

Question No. 40

Barring any necessary repairs or maintenance work, do natural gas-fueled generators have, for all intents and purposes, an unlimited run time? Would the generator have an exerciser where it would start-up on a regular basis (such as weekly) to maintain it in operating condition?

Response

As long as natural gas supply remains available, yes, a natural gas generator can run for extended, uninterrupted periods. The proposed generator would be exercised on a weekly basis.

Question No. 41

Would the generator or equipment shelter floor have any sort of containment for any potential engine oil or coolant leakage?

Response

Yes. The generator room floor is designed to maintain all generator fluids if all generator systems were to fail.

Question No. 42

Would there be any interruption in service between the time power goes out and the generator comes online? For example, would Cellco provide battery backup to prevent a reboot condition and provide seamless power until the generator starts? If Cellco has a battery backup system, how many hours could it supply power in the event that the generator fails to start?

Response

No. During the short delay between the time commercial power to the site is interrupted and back-up power is brought on line, Cellco's batteries provide back-up power to the cell site. The batteries could provide between 4 and 8 hours of back-up power depending upon cell site activity.

Question No. 43

Has Cellco considered using a fuel cell as a backup power source for the proposed site? Explain.

Response

No. Cellco continues to explore options of back-up power supply at cell sites but fuel cells are not currently a reliable or cost effective means of doing so.

Question No. 44

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

Response

- 2005 Connecticut State Building Code, inclusive of the 2005 Connecticut Supplement to the 2005 CSBC and the 2009, 2011 & 2013 amendments.
- TIA/EIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".
- TIA-222-G-1 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".

Question No. 45

Is the proposed site near an "Important Bird Area" as designated by the National Audubon Society?

Response

No. The closest Important Bird Area to the site is The Nature Conservancy's Devil's Den Preserve in Weston and Redding, Connecticut, located approximately 7.5 miles to the south. Please see the Avian Resources Evaluation report included as Attachment 4 of these Responses.

Question No. 46

Would Cellco's proposed facility comply with recommended guidelines of the United States Fish and Wildlife Service for minimizing the potential for telecommunications towers to impact bird species?

Response

Yes. The proposed facility would comply with these recommendations to minimize impact to bird species. Please see the Avian Resources Evaluation report provided as Attachment 4 for additional details.

Question No. 47

The Preliminary USFWS & CTDEEP Compliance Determination dated June 24, 2015 noted that, "A response from U.S. Fish and Wildlife Services (USFWS) is forthcoming and will be provided to the Connecticut Siting Council upon receipt." Did Cellco receive any further response or correspondence from USFWS? If yes, provide such information.

Response

A recent inquire was made as to the status of the USFWS Section 7 consultation request that was submitted on June 5, 2015. No correspondence from USFWS has been received to date.

Question No. 48

Are any construction activities proposed within a 0.25 mile radius of a known, occupied bat hibernacula?

Response

Based on confidential information provided by CTDEEP, the nearest bat hibernacula is located over 10 miles from the site.

Question No. 49

What, if any, stealth tower design options would be feasible to employ at this site?

Response

Overall, the visibility of the proposed tower is fairly minimal, so concealment design options were not considered necessary. The industrial setting of the site and predominance of deciduous trees in the vicinity do not provide the proper context for a monopine design. Implementing some form of interior-mounted antenna design, even if technically feasible, would result in a substantially wider monopole and limit collocation opportunities as Cellco would require multiple centerline heights to achieve its wireless service objectives. Although an industrial silo might represent a compatible design, the facility would be a minimum of 20 feet in diameter creating a much more visible structure. Consideration of alternative tower designs is not warranted at this site.

Question No. 50

Are there any state or locally-designed scenic roads within the two-mile visual analysis study area? Are any hiking trails located within the same study area?

Response

There are no state or locally-designated scenic roads within the two-mile radius study area. Similarly, no Connecticut blue-blaze or other substantive hiking trails are located within the two-mile study area.

Question No. 51

Approximately how many residences would have seasonal and year-round visibility of the proposed tower? Provide the streets names if available.

Response

Seasonally, up to as many as 12 residential properties have the potential to see at least a portion of the proposed tower through intervening trees. (*See* Visibility Analysis Photo location 6 in the Application – Tab 9). These properties are located on Apollo Road, Gemini Road, Lawrence Avenue, Tucker Street, Shelter Rock Road and possibly Skyline Drive. On a year-round basis, approximately 25 residential properties could have some view of the upper portions of the tower. Several representative year-round views are provided in the Visibility Analysis. These properties are located on the west side of South Street, Tucker Street, Lawrence Avenue, Penny Lane, Willow Street, Bainbridge Boulevard, Apollo Road, Kingswood Drive and Great Hill Drive.

Question No. 52

What is the cumulative noise level that the Applicant expects at the nearest property line from the proposed facility taking into account Cellco's two air conditioning units attached to its equipment shelter? Would the expected noise levels comply with applicable standards? If no, indicate which noise mitigation measure (s) may be employed to ensure compliance.

Response

The cumulative noise level at the closest property line to the west, with both HVAC units running simultaneously, would be 39 dBA, which is below the most-restrictive night time noise limit of 45 dBm.

ATTACHMENT 1

Baldwin, Kenneth

From: Robin Edwards <r.edwards@danbury-ct.gov>
Sent: Monday, August 31, 2015 11:29 AM
To: Baldwin, Kenneth
Cc: Mark Boughton; Wayne Shepperd; Sharon Calitro; Les Pinter; Sean Hearty
Subject: Re: Cellco Partnership d/b/a Verizon Wireless Proposed Wireless Telecommunications Tower Facility -15 Great Pasture Road Danbury, Connecticut

Ken:
With respect to to your recent inquiry regarding the NOV mentioned in the City's comment memorandum, the City's ZEO, Sean Hearty, advises me that there are "no active violations on the site". Please do not hesitate to contact me if you should need any additional information. Thank you.

Robin

On Mon, Aug 24, 2015 at 1:30 PM, Baldwin, Kenneth <KBALDWIN@rc.com> wrote:

Robin – Are there any updates to the actions/issues/NOV referenced in the Town's April 7, 2015 memorandum? Have any of those issues with the owner been resolved?

As you probably know, the Siting Council hearing on the tower application is set for September 15, 2015. If there is anything new to report now would be a good time to alert the Council.

Thank you.

Ken

Kenneth C. Baldwin

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Bio | Contact Card

From: Robin Edwards [mailto:r.edwards@danbury-ct.gov]
Sent: Tuesday, April 07, 2015 2:58 PM
To: Baldwin, Kenneth
Cc: Mark Boughton; Wayne Shepperd; Sharon Calitro; Les Pinter
Subject: Cellco Partnership d/b/a Verizon Wireless Proposed Wireless Telecommunications Tower Facility -15 Great Pasture Road Danbury, Connecticut

Re: Cellco Partnership d/b/a Verizon Wireless

Proposed Wireless Telecommunications Tower Facility

15 Great Pasture Road

Danbury, Connecticut

Dear Attorney Baldwin:

Pursuant to Section 16-50l(e) of the Connecticut General Statues, attached please find a copy of a memorandum containing the pre-application recommendations recommended by the City of Danbury Department of Planning & Zoning regarding the above- mentioned proposed wireless telecommunications facility. If I receive any additional comments from other departments I will also forward them to your attention.

Thank you for your consideration of these comments.

Sincerely,

Robin Edwards

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Robin L. Edwards
Assistant Corporation Counsel
155 Deer Hill Avenue
Danbury, CT 06810
(203)797-4518

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ATTACHMENT 2

Site Name: BETHEL WEST 2, 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	1	1694	1694	120	0.0423	1.0	4.23%
VZW Cellular	869	9	354	3186	120	0.0796	0.579333333	13.73%
VZW AWS	2145	1	1750	1750	120	0.0437	1.0	4.37%
VZW 700	746	1	602	602	120	0.0150	0.497333333	3.02%
Total Percentage of Maximum Permissible Exposure								25.36%

*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.

ATTACHMENT 3

Proposed Verizon Wireless 700 MHz Coverage
at a 110-foot Antenna Centerline Height
Danbury, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)

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

BROOKFIELD
NEWTOWN
SOUTHEAST
DANBURY
RIDGEFIELD
NORTH SALEM
BETHEL
REDDING
EASTON
MONROE

DANBURY CT
GERMANTOWN CT
DANBURY 3 CT
BETHEL WEST 2 CT
BETHEL WEST CT
BETHEL CT

Legend

- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 700 MHz Coverage
- Proposed Facility Wireless 700 MHz Coverage
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line
- Major Route

ALL-POINTS TECHNOLOGY CORPORATION

verizon

0 0.5 1 Miles

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 850 MHz Coverage
at a 110-foot Antenna Centerline Height
Danbury, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)

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

DANBURY CT
GERMANTOWN CT
DANBURY 3 CT
BETHEL WEST 2 CT
BETHEL WEST CT
BETHEL CT
DANBURY
BROOKFIELD
NEWTOWN
SOUTHEAST
RIDGEFIELD
NORTH SALEM
BETHEL
REDDING
MONROE
EASTON

Legend

- Proposed Verizon Wireless Facility
- Existing Verizon Wireless Facilities
- Existing Surrounding Wireless 850 MHz Coverage
- Proposed Facility Wireless 850 MHz Coverage
- Municipal and Private Open Space
- School
- State Forest/Park
- Open Water
- Town Line
- Major Route

ALL-POINTS TECHNOLOGY CORPORATION

verizon

0 0.5 1 Miles

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 1900 MHz Coverage
at a 110-foot Antenna Centerline Height
Danbury, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)

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

BROOKFIELD
NEWTOWN
SOUTHEAST
DANBURY
DANBURY CT
GERMANTOWN CT
DANBURY 3 CT
BETHEL WEST 2 CT
BETHEL WEST CT
BETHEL CT
RIDGEFIELD
NORTH SALEM
BETHEL
REDDING
EASTON
MONROE

Legend

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

ALL-POINTS TECHNOLOGY CORPORATION

verizon wireless

0 0.5 1 Miles

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
at a 110-foot Antenna Centerline Height
Danbury, Connecticut and Surrounding Area
(*Map Scale is 1:25,000)

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

BROOKFIELD
NEWTOWN
SOUTHEAST
DANBURY
RIDGEFIELD
NORTH SALEM
BETHEL
REDDING
EASTON
MONROE
DANBURY CT
GERMANTOWN CT
DANBURY 3 CT
BETHEL WEST 2CT
BETHEL WEST CT
BETHEL CT

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
- State Forest/Park
- Open Water
- Town Line
- Major Route

ALL-POINTS TECHNOLOGY CORPORATION

verizon

0 0.5 1 Miles

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 all available State GIS data, which may be outdated in some areas.
Base map: CTECO Hillshade (2000)

ATTACHMENT 4

ALL-POINTS TECHNOLOGY CORPORATION

AVIAN RESOURCES EVALUATION

Date: September 1, 2015

Verizon Wireless
99 East River Drive
East Hartford CT 06108

APT Project No.: CT1412760

Re: Proposed Bethel West 2 Facility
15 Great Pasture Road
Danbury, Connecticut

Cellco Partnership d/b/a Verizon Wireless ("Verizon") proposes to construct a new wireless telecommunications Facility ("Facility") at 15 Great Pasture Road in Danbury, Connecticut (the "host Property"). The host Property consists of approximately 12.63-acre industrially developed parcel consisting of a multi-tenant 83,734 square foot industrial building built in 1958. The majority of the host Property is dominated by the large industrial building, paved parking, loading and storage areas and a 2,912 square foot warehouse building. A large emergent marsh wetland system associated with Sympaug Brook and Chestnut Brook is located along the west side of the host Property. The proposed Verizon Facility is located in the southwestern portion of the host Property in a cleared gravel surfaced area currently used as a storage yard by one of the industrial tenants. Verizon proposes to install a 123-foot tall unguyed monopole tower and ground equipment enclosure within a 50-foot by 50-foot gravel compound area surrounded with an 8-foot tall chain link fence. A proposed ±20-foot wide access and utility easement would follow the existing paved drive off of Great Pasture Road in order to gain access and provide electric and telco services to the proposed facility. A second utility easement will extend from the north side of the large building around its west side in a southerly direction to the proposed compound area to facilitate natural gas interconnections for a back-up, emergency generator.

This evaluation is provided in response to *Pre-hearing Questions Set One,* dated September 8, 2015 submitted by the Connecticut Siting Council (the "Council") for Docket No. 462, specifically:

- Question #45 – *Is the proposed site near an "Important Bird Area" as designated by the National Audubon Society?*

- Question #46 – *Would Cellco's proposed facility comply with recommended guidelines of the United States Fish and Wildlife Service for minimizing the potential for telecommunications towers to impact bird species?*

All-Points Technology Corporation, P.C. ("APT") reviewed several publicly-available sources of avian data for the state of Connecticut to provide the following information with respect to potential impacts on

migratory birds associated with the proposed development. This desktop analysis and attached graphics identify avian resources and their proximities to the host Property. Information within an approximate 3-mile radius of the host Property is graphically depicted on the attached Avian Resources Map. Some of the avian data referenced herein are not located in proximity to the project area and are therefore not visible on the referenced map due to its scale. However, in those cases the distances separating the host Property from the resources are identified in the discussions below.

Proximity to Important Bird Areas

The National Audubon Society has identified 27 Important Bird Areas ("IBAs") in the state of Connecticut. IBAs are sites that provide essential habitat for breeding, wintering, and/or migrating birds. The IBA must support species of conservation concern, restricted-range species, species vulnerable due to concentration in one general habitat type or biome, or species vulnerable due to their occurrence at high densities as a result of their congregatory behavior[1]. The closest IBA to the host Property is The Nature Conservancy's Devil's Den Preserve in Weston and Redding located approximately 7.5 miles to the south. This preserve is The Nature Conservancy's largest contiguous preserve in Connecticut, and is part of the largest tract of protected land in densely developed Fairfield County. Devil's Den supports large populations of all of Connecticut's forest interior nesting bird species. Due to its distance from the host Property, this IBA would not experience an adverse impact resulting from the proposed development of the Facility.

Supporting Migratory Bird Data

Beyond Audubon's IBAs, the following analysis and attached graphics also identify several additional avian resources and their proximities to the host Property. Although these data sources may not represent habitat indicative of important bird areas, they may indicate possible bird concentrations[2] or migratory pathways.

Critical Habitat

Connecticut Critical Habitats depict the classification and distribution of 25 rare and specialized wildlife habitats in the state. It represents a compilation of ecological information collected over many years by state agencies, conservation organizations and individuals. Critical habitats range in size from areas less than one acre to areas that are tens of acres in extent. The Connecticut Critical Habitats information can serve to highlight ecologically significant areas and to target areas of species diversity for land conservation and protection but may not necessarily be indicative of habitat for bird species. The nearest Critical Habitat to the proposed Facility is a palustrine floodplain forest associated with Limekiln Brook, approximately 1.1 miles to the northeast. Based on the distance separating this resource from the proposed Facility, no adverse impacts are anticipated.

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[1] http://web4.audubon.org/bird/iba/iba_intro.html

[2] "bird concentrations" is related to the USFWS *Interim Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers* (September 14, 2000) analysis provided at the end of this document

Avian Survey Routes and Points

Breeding Bird Survey Route

The North American Breeding Bird Survey is a cooperative effort between various agencies and volunteer groups to monitor the status and trends of North American bird populations. Routes are randomly located to sample habitats that are representative of an entire region. Each year during the height of the avian breeding season (June for most of the United States) participants skilled in avian identification collect bird population data along roadside survey routes. Each survey route is approximately 24.5 miles long and contains 50 stops located at 0.5-mile intervals. At each stop, a three-minute count is conducted. During each count, every bird seen or heard within a 0.25-mile radius is recorded. The resulting data is used by conservation managers, scientists, and the general public to estimate population trends and relative abundances and to assess bird conservation priorities. The nearest survey route to the host Property is the Danbury Breeding Bird Survey Route (Route #18011) located approximately 3.5 miles to the west. This ±23-mile long bird survey route begins on Ridgebury Road in Ridgefield and generally winds its way north through Danbury before terminating in New Fairfield on the west bank of Candlewood Lake. Since bird survey routes represent randomly selected data collection areas, they do not necessarily represent a potential restriction to development projects, including the proposed Facility.

Hawk Watch Site

The Hawk Migration Association of North America ("HMANA") is a membership-based organization committed to the conservation of raptors through the scientific study, enjoyment and appreciation of raptor migration. HMANA collects hawk count data from almost 200 affiliated raptor monitoring sites throughout the United States, Canada and Mexico, identified as "Hawk Watch Sites." In Connecticut, Hawk Watch Sites are typically situated on prominent hills and mountains that tend to concentrate migrating raptors and may be an indicator of secondary migratory routes that connect to the Atlantic Flyway. The nearest Hawk Watch Site, Huntington State Park, is located in Redding, approximately 4.8 miles to the southeast of the proposed Facility. Based on the distance separating this possible raptor migratory route from the proposed Facility, no adverse impacts are anticipated.

Most hawks migrate during the day (diurnal) to take advantage of two theorized benefits: (1) diurnal migration allows for the use of updrafts or rising columns of air called thermals to gain lift without flapping thereby reducing energy loss; and, (2) day migrants can search for prey and forage as they migrate. Therefore, no adverse impacts to migrating hawks are anticipated with development of the Facility, based on the 4.8± mile separation distance to a migrating raptor concentration (Huntington State Park) and hawk migration behavior occurring during the daytime under favorable weather conditions when thermals form.

Bald Eagle Site

Bald Eagle Sites consist of locations of midwinter Bald Eagle counts from 1986 to 2005 with an update provided in 2008. This survey was initiated in 1979 by the National Wildlife Federation. This database includes information on statewide, regional and national trends. Survey routes are included in the database only if they were surveyed consistently in at least four years and where at least four eagles were counted in a single year. The Candlewood Lake Survey Route #8 generally follows the banks of the lake, which is located approximately 3.5 miles northwest of the host Property.

Bald Eagle migration patterns are complex, dependent on age of the individual, climate (particularly during the winter) and availability of food.[3] Adult birds typically migrate alone and generally as needed when food becomes unavailable, although concentrations of migrants can occur at communal feeding and roost sites. Migration typically occurs during the middle of day (10:30–17:00) as thermals provide for opportunities to soar up with limited energetic expense; Bald Eagle migration altitudes are estimated to average 1,500–3,050 m by ground observers.[4] Four adults tracked by fixed-wing aircraft in Montana averaged 98 km/d during spring migration and migrated at 200–600 m above ground (McClelland et al. 1996).[5]

Therefore, no adverse impacts to migrating Bald Eagle are anticipated with development of the Facility, based on the relatively short (123-foot) height of the Facility, separation distance and eagle migratory patterns during the daytime under favorable weather conditions when thermals form.

Flyways

The project area is located in Fairfield County, approximately 19 miles north of Long Island Sound. The Connecticut coast lies within the Atlantic Flyway, one of four generally recognized regional primary migratory bird flyways (Mississippi, Central and Pacific being the others). This regional flyway is used by migratory birds travelling to and from summering and wintering grounds. The Atlantic Flyway is particularly important for many species of migratory waterfowl and shorebirds, and Connecticut's coast serves as vital stopover habitat. Migratory land birds also stop along coastal habitats before making their way inland. Smaller inland migratory flyways ("secondary flyways") are often concentrated along major riparian areas as birds use these valuable stopover habitats to rest and refuel as they make their way further inland to their preferred breeding habitats. The Connecticut Migratory Bird Stopover Habitat Project (Stokowski, 2002)[6] identified potential flyways along the Housatonic, Naugatuck, Thames, and Connecticut Rivers. This study paralleled a similar earlier study conducted by the Silvio O. Conte National Fish &

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[3] Buehler, David A. 2000. Bald Eagle (*Haliaeetus leucocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/506 [Accessed 09/09/13].

[4] Harmata, A. R. 1984. Bald Eagles of the San Luis valley, Colorado: their winter ecology and spring migration. Ph.D. Thesis. Montana State Univ. Bozeman.

[5] Mcclelland, B. R., P. T. McClelland, R. E. Yates, E. L. Caton, and M. E. McFadden. 1996. Fledging and migration of juvenile Bald Eagles from Glacier National Park, Montana. J. Raptor Res. 30:79-89.

[6] Stokowski, J.T. 2002. Migratory Bird Stopover Habitat Project Finishes First Year. Connecticut Wildlife, November/December 2002. P.4.

Wildlife Refuge (Neotropical Migrant Bird Stopover Habitat Survey[7]), which consisted of collection of migratory bird data along the Connecticut River and the following major Connecticut River tributaries: Farmington, Hockanum, Scantic, Park, Mattabesset, Salmon, and Eight Mile Rivers. These major riparian corridors may provide secondary flyways as they likely offer more food and protection than more exposed upland sites, particularly during the spring migration[8].

Of these potential flyways, the nearest to the host Property is the Housatonic River, located approximately 7.4 miles to the east. Although Sympaug Brook is not identified as a potential flyway, it potentially forms a tertiary flyway as birds disperse inland during the spring migration from Long Island Sound through the Saugatuck River corridor, considered a potential secondary flyway. The confluence of Sympaug Brook and Redding Brook, located approximately 4 miles south of the host Property, flows into the Saugatuck River.

Siting of tower structures within flyways can be a concern, particularly for tall towers and even more particularly for tall towers with guy wires and lighting. The majority of studies on bird mortality due to towers focuses on very tall towers (greater than 1000 feet), illuminated with non-flashing lights, and guyed. These types of towers, particularly if sited in major migratory pathways, do result in significant bird mortality (Manville, 2005)[9]. The proposed Facility is not this type of tower, being an unlit, unguyed monopole structure only 123 feet in height. More recent studies of short communication towers (<300 feet) reveal that they rarely kill migratory birds[10]. Studies of mean flight altitude of migrating birds reveal flight altitudes of 410 meters (1350 feet), with flight altitudes on nights with bad weather between 200 and 300 meters above ground level (656 to 984 feet)[11].

No adverse impacts to migrating bird species are anticipated with the Project, based on the design (unlit and unguyed) of the Facility, its relatively short (123-foot) height, and the distances separating the host Property from the potential Housatonic River flyway. The design and height of the proposed Facility would also mitigate the potential for migratory bird impacts should Sympaug Brook be used as a tertiary flyway.

Waterfowl Focus Areas

The Atlantic Coast Joint Venture ("ACJV") is an affiliation of federal, state, regional and local partners working together to address bird conservation planning along the Atlantic Flyway. The ACJV has identified waterfowl focus areas recognizing the most important habitats for waterfowl along the Atlantic Flyway. Connecticut contains several of these waterfowl focus areas. The nearest waterfowl focus area to the host

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[7] The Silvio O. Conte National Fish & Wildlife Refuge Neotropical Migrant Bird Stopover Habitat Survey http://www.science.smith.edu/stopoverbirds/index.html

[8] The Silvio O. Conte National Fish & Wildlife Refuge Neotropical Migrant Bird Stopover Habitat Survey. http://www.science.smith.edu/stopoverbirds/Chapter5_Conclusions&Recommendations.html

[9] Manville, A.M. II. 2005. Bird strikes and electrocutions at power lines, communications towers, and wind turbines: state of the art and state of the science - next steps toward mitigation. Bird Conservation Implementation in the Americas: Proceedings 3rd International Partners in Flight Conference 2002. C.J. Ralph and T.D. Rich, editors. USDA Forest Service General Technical Report PSW-GTR-191. Pacific Southwest Research Station, Albany CA. pp. 1-51-1064.

[10] Kerlinger, P. 2000. Avian Mortality at Communication Towers: A Review of Recent Literature, Research, and Methodology. Prepared for U.S. Fish and Wildlife Service Office of Migratory Bird Management.

[11] Mabee, T.J., B.A. Cooper, J.H. Plissner, D.P. Young. 2006. Nocturnal bird migration over an Appalachian ridge at a proposed wind power project. Wildlife Society Bulletin 34:682-690.

Property is the Norwalk Islands area, located approximately 12.4 miles to the south. Please refer to the attached Connecticut Waterfowl Focus Areas Map. Based on the distance of these resources to the project area, no direct impacts would occur from development of the proposed Facility.

CT DEEP Migratory Waterfowl Data

The Connecticut Department of Energy and Environmental Protection ("CT DEEP") created a Geographic Information System ("GIS") data layer in 1999 identifying concentration areas of migratory waterfowl at specific locations in Connecticut. The intent of this data layer is to assist in the identification of migratory waterfowl resource areas in the event of an oil spill or other condition that might be a threat to waterfowl species. This data layer identifies conditions at a particular point in time and has not been updated since 1999.

No migratory waterfowl areas are located within the City of Danbury. The nearest migratory waterfowl area, Sherwood Millpond to Compo Cover in Westport is located approximately 18.4 miles to the south of the proposed Facility. The associated duck species are identified as American black, gadwall, mallard and green wing teal. Based on its distance to the host Property, no impacts to migratory waterfowl habitat are anticipated to result from development of the proposed Facility.

CT DEEP Natural Diversity Data Base

CT DEEP's Natural Diversity Data Base ("NDDB") program performs hundreds of environmental reviews each year to determine the impact of proposed development projects on state listed species and to help landowners conserve the state's biodiversity. State agencies are required to ensure that any activity authorized, funded or performed by a state agency does not threaten the continued existence of endangered or threatened species. Maps have been developed to serve as a pre-screening tool to help applicants determine if there is a potential impact to state listed species.

The NDDB maps represent approximate locations of endangered, threatened and special concern species and significant natural communities in Connecticut. The locations of species and natural communities depicted on the maps are based on data collected over the years by CT DEEP staff, scientists, conservation groups, and landowners. In some cases an occurrence represents a location derived from literature, museum records and/or specimens. These data are compiled and maintained in the NDDB. The general locations of species and communities are symbolized as shaded areas on the maps. Exact locations have been masked to protect sensitive species from collection and disturbance and to protect landowner's rights whenever species occur on private property.

According to the available NDDB maps, the proposed Project is not located within any shaded NDDB areas. The nearest buffered shaded area is located approximately 500 feet to the south and appears to be associated with Sympaug Brook. APT has consulted with the CT DEEP NDDB regarding Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife and no records exist in the vicinity of the proposed Facility for any avian species. The CT DEEP did identify the potential for two State-listed Special Concern Species to be present in the area, including: *Terrapene carolina carolina* (eastern box turtle) and *Glyptemys*

insculpta (wood turtle)[12]. Verizon has committed to implementing protective measures during construction as recommended by APT and approved by CT DEEP to avoid potential encounters and impacts to these non-avian species.

USFWS Communications Towers Compliance

In 2013, the U.S Fish and Wildlife Service ("USFWS") prepared its *Revised Voluntary Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning*[13], which recommends the 13 voluntary guidelines below. These voluntary guidelines are designed to assist tower companies in developing their communication systems in a way which minimizes the risk to migratory birds and threatened and endangered species. APT offers the following responses to each of the USFWS recommendations which are abridged from the original document.

1. *Collocation of the communications equipment on an existing communication tower or other structure (e.g., billboard, water and transmission tower, distribution pole, or building mount) is strongly recommended. Depending on tower load factors and communication needs, from 6 to 10 providers should collocate on an existing tower or structure.*

   Collocation opportunities on existing towers, buildings or non-tower structures are not available in the area while achieving the required radio frequency ("RF") objectives of Verizon.

2. *If collocation is not feasible and a new tower or towers are to be constructed, it is strongly recommended that the new tower(s) should be not more than 199 feet above ground level ("AGL"), and that construction techniques should not require wires. Such towers should be unlighted if Federal Administration ("FAA") regulations and lighting standards permit. If lighting is required, no red-steady lights should be used. USFWS considers towers that are unlit, unguyed, monopole or lattice, and less than 200 feet AGL to be the environmentally preferred "gold standard".*

   The proposed Facility would consist of a 123-foot tall monopole structure which requires neither guy wires nor lighting and is therefore consistent with USFWS' environmentally preferred "gold standard".

3. *If constructing multiple towers, the cumulative impacts of all the towers to migratory birds – especially to Birds of Conservation Concern[14] and threatened and endangered species, as well as the impacts of each individual tower, should be considered during development of a project.*

   Multiple towers are not proposed as part of this project.

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[12] CT DEEP NDDB letter, June 19, 2015, NDDB #201504295

[13] Manville, A.M., Ph.D., C.W.B. Suggestions Based on Previous USFWS Recommendations to FCC Regarding WT Docket No. 03-187, FCC 06-164, Notice of Proposed Rulemaking, "Effects of Communication Towers on Migratory Birds" (2007), Docket No. 08-61, FCC's Antenna Structure Registration Program (2011), Service 2012 Wind Energy Guidelines, and Service 2013 Eagle Conservation Plan Guidance. September 27, 2013.

[14] U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA. 85 pp. http://www.fws.gov/migratorybirds/>

4. *The topography of the proposed tower site and surrounding habitat should be clearly noted, especially in regard to surrounding hills, mountains, mountain passes, ridge lines, rivers, lakes, wetlands, and other habitat types used by raptors, Birds of Conservation Concern, and state and federally listed species, and other birds of concern. Active raptor nests, especially those of Bald Eagles, should be noted, including known or suspected distances from proposed tower sites to nest locations.*

   The topography of the proposed tower site and surrounding habitat is provided in the attached Avian Resources Map. No Bald Eagle nests, foraging areas or roost sites are known to be located at or within close proximity to the proposed tower site.[15] A Bald Eagle survey route associated with Candlewood Lake, which likely provides foraging and roosting habitat and potential nesting habitat, is located approximately 3.5 miles northwest of the proposed Facility site.

5. *If at all possible, new towers should be sited within existing "antenna farms" (i.e., clusters of towers), in degraded areas (e.g., strip mines or other heavily industrialized areas), in commercial agricultural lands, in Superfund sites, or other areas where bird habitat is poor or marginal. Towers should not be sited in or near wetlands, or other known bird concentration areas (e.g., state or Federal refuges, staging areas, rookeries, and Important Bird Areas), in known migratory or daily movement flyways, areas of breeding concentration, in habitat of threatened or endangered species, or key habitats for Birds of Conservation Concern. Additionally, towers should not be sited in areas with a high incidence of fog, mist, and low ceilings.*

   The proposed tower site is located within a cleared, developed storage yard area on an industrially-developed property where bird habitat is limited due to the lack of habitat with the exception of the far western end of the host Property which consists of Sympaug Brook and bordering wetlands. There are no existing "antenna farms", degraded or other commercial areas in the vicinity of the proposed tower site that would better satisfy the RF objectives. The proposed Facility is not within wetlands, known bird concentration area, migratory or daily movement flyway, threatened/endangered species habitat or key habitats for Birds of Conservation Concern. According to the available NDDB maps, the proposed Project is not located within any shaded NDDB areas. APT submitted a review request to the CT DEEP NDDB to determine what, if any, species occur on the host Property. The CT DEEP responded that NDDB records reveal two non-avian State-listed Special Concern Species occur in the vicinity of the host Property: *Terrapene carolina carolina* (eastern box turtle) and *Glyptemys insculpta* (wood turtle). Verizon has committed to implementing protective measures during construction to avoid potential impacts to these two non-avian species.

   In Connecticut, seasonal atmospheric conditions can occasionally produce fog, mist and/or low ceilings. However, high incidences of these meteorological conditions, relative to the region, are not known to exist in the vicinity of the host Property.

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[15] U.S. Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines. United States Department of Interior, Fish and Wildlife Service, 23 pp. http://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines.pdf

6. *If taller (>199 feet AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. The use of solid (non-flashing) warning lights at night should be avoided to minimize bird fatalities.*

   The proposed Facility height (123 feet AGL) is less than 199 feet and would not require any aviation safety lighting.

7. *Tower designs using guy wires for support, which are proposed to be located in known raptor or waterbird concentration areas, daily movement routes, major diurnal migratory bird movement routes, staging areas, or stopover sites, should have daytime visual markers or bird deterrent devices installed on the wires to prevent collisions by these diurnally moving species.*

   The proposed Facility would be free-standing and would not require guy wires or visual marking.

8. *Towers and appendant facilities should be sited, designed and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint." However, a larger tower footprint is preferable to the use of guy wires in construction. Road access and fencing should be minimized to reduce or prevent habitat fragmentation, disturbance, and the creation of barriers, and to reduce above ground obstacles to birds in flight.*

   The proposed Facility is sited, designed, and would be constructed to accommodate proposed equipment and to allow for future collocations within the smallest footprint possible. The Facility is located within the development footprint associated with the industrial use of the host Property and therefore would not result in habitat fragmentation or the creation of barriers or excessive disturbance.

9. *If, prior to tower design, siting and construction, it has been determined that a significant number of breeding, feeding, or roosting birds, especially of Birds of Conservation Concern, state or federally-listed bird species, and eagles are known to habitually use the proposed tower construction area, relocation to an alternate site is highly recommended. If this is not an option, seasonal; restrictions on construction may be advisable in order to avoid disturbance, site and nest abandonment, especially during breeding, rearing and other periods of high bird activity.*

   Significant numbers of breeding, feeding, or roosting Birds of Conservation Concern, state or federally-listed bird species, or eagles are not known to habitually use the proposed tower construction area at the host Property.

10. *Security lighting for on-ground facilities, equipment and infrastructure should be motion- or heat-sensitive, down-shielded, and of a minimum intensity to reduce nighttime bird attraction and eliminate constant nighttime illumination, but still allow for safe nighttime access to the site.*[16][17]

    Security lighting for on-ground facilities would be down-shielded using Dark Sky compliant fixtures set on motion sensor with timer to eliminate constant nighttime illumination.

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[16] Manville, A.M., II. 2011. Comments of the U.S. Fish and Wildlife Service's Division of Migratory Bird Management Filed Electronically on WT Docket No. 08-61 and WT Docket No. 03-187, Regarding the Environmental Effects of the Federal Communication's Antenna Structure Registration Program. January 14, 2011. 12 pp.

[17] U.S. Fish and Wildlife Service. 2012. U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines. March, 82 pp.

11. *Representatives from the USFWS or researchers from the Research Subcommittee of the Communication Tower Working Group ("CTWG") should be allowed access to the site to evaluate bird use; conduct dead-bird searches; place above ground net catchments below the towers; and to perform studies using radar, Global Positioning System, infrared, thermal imagery, and acoustical monitoring equipment, as necessary to assess and verify bird movements and to gain information on the impacts of various tower sizes, configurations, and lighting systems.*

    With prior written notification to and approval by Verizon, USFWS or CTWG research personnel would be allowed access to the proposed Facility to conduct evaluations.

12. *Towers no longer in use, not re-licensed by the FCC for use, or determined to be obsolete should be removed within 12 months of cessation of use.*

    If the proposed Facility was no longer in use, not re-licensed by the FCC for use, or determined to be obsolete, it would be removed within 12 months of cessation of use.

13. *In order to obtain information on the usefulness of these guidelines in preventing bird strikes and better understanding impacts from habitat fragmentation, please advise USFWS personnel of the final location and specifications of the proposed tower, and which measures recommended in these guidelines were implemented.*

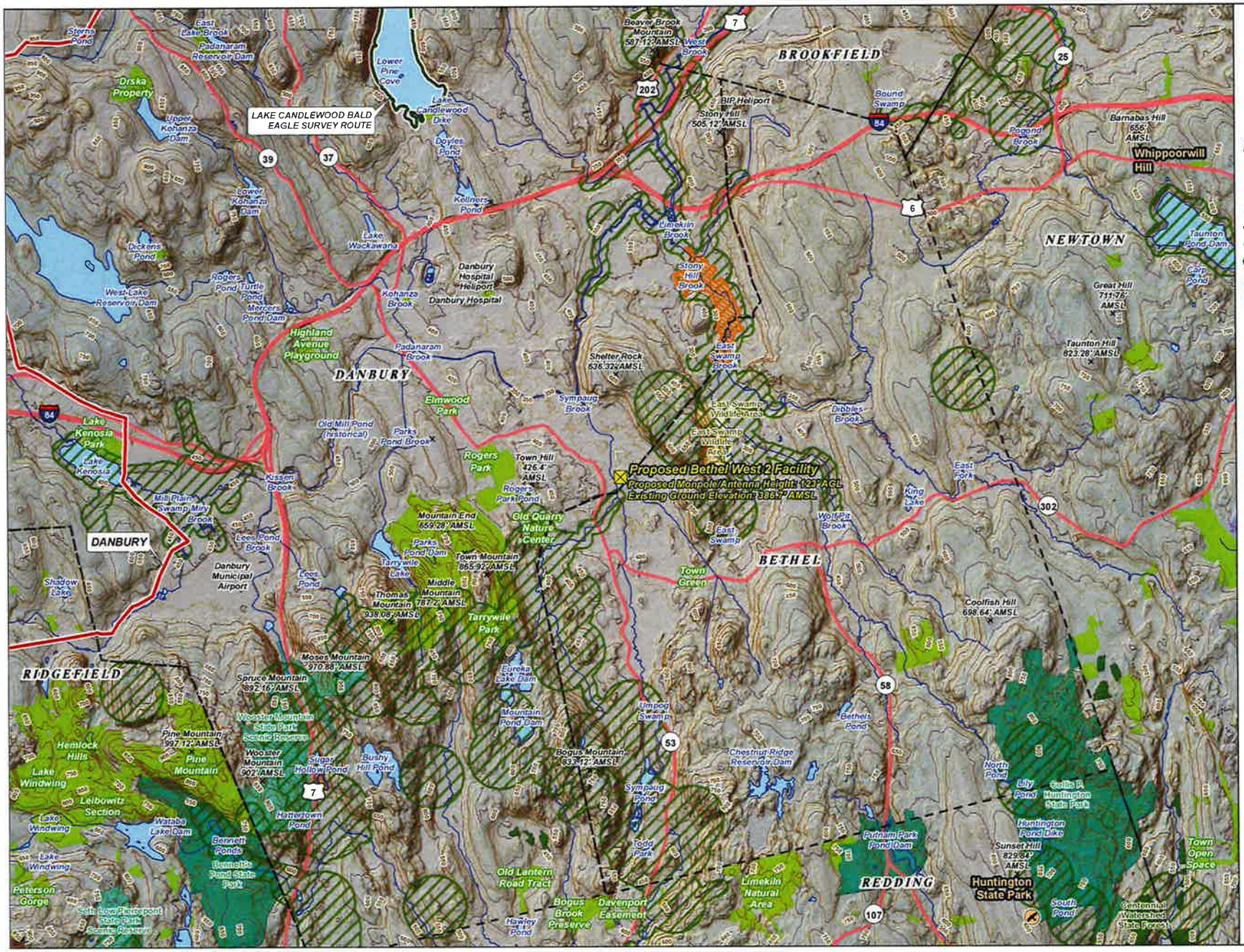
    The location and specification of the proposed tower have been provided in this report and accompanying maps. A detailed review of implemented measures recommended in the *Revised Voluntary Guidance for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning* (September 27, 2013) are provided herein. The proposed Facility is not proximate to an Important Bird Area and would comply with the USFWS guidelines for minimizing the potential impacts to birds being an unlit, unguyed monopole structure only 123 feet in height. APT recommends that a copy of this report be submitted to USFWS if the proposed Facility is constructed. Should the final location and specification of the proposed Facility be modified as part of the siting process, this report will be updated accordingly.

Summary and Conclusions

Based on the results of this desk-top evaluation, no migratory bird species are anticipated to be impacted by Verizon's proposed development. The proposed Facility is not proximate to an Important Bird Area and would comply with the USFWS guidelines for minimizing the potential impacts to bird species.

Figures

- Avian Resources Map
- Connecticut Waterfowl Focus Areas Map



Avian Resources Map

Proposed Wireless
Telecommunications Facility
Bethel West 2
15 Great Pasture Road
Danbury, Connecticut

Legend

- Proposed Facility
- Hawk Watch Site
- Important Bird Area*
- Bald Eagle Survey Route
- Breeding Bird Survey Route
- Natural Diversity Database (CTDEEP, 12/2014)
- Critical Habitat (CTDEEP, 07/2009)
- Migratory Waterfowl (CTDEEP, 1999)*
- Preserved Open Space (CTDEEP, 1997)
- Federal Open Space (CTDEEP, 2004)*

CT DEP Property (CT DEEP, 12/2010)

- State Forest
- State Park
- DEP Owned Waterbody*
- State Park Scenic Reserve
- Historic Preserve*
- Natural Area Preserve*
- Fish Hatchery*
- Flood Control*
- State Park Trail*
- Water Access*
- Wildlife Area
- Wildlife Sanctuary*
- Other*
- Open Water
- Town Boundary

*None within mapped extents

Avian Source Information:
Bald Eagle Sites: U.S. Geological Survey, National Biological Information Infrastr, 2008, Midwinter Bald Eagle Counts, 1986-2005 (update 2008).
Hawk Watch Sites: Hawk Migration Association of North America (HMANA), Hawk Count website: http://hawkcount.org/sitesol.php?country=USA&stateprov=Connecticut
Migratory Waterfowl: CTDEEP GIS, 1999
Important Bird Sites/Areas: National Audubon Society, Audbon Connecticut
http://ct.audubon.org/BirdSci_IBAs.html
Breeding Bird Survey Routes: Patuxent Wildlife Research Center of the U.S. Geological Survey and the Canadian Wildlife Service's National Wildlife Research Centre
http://www.nationalatlas.gov/mld/bbsrtsl.html

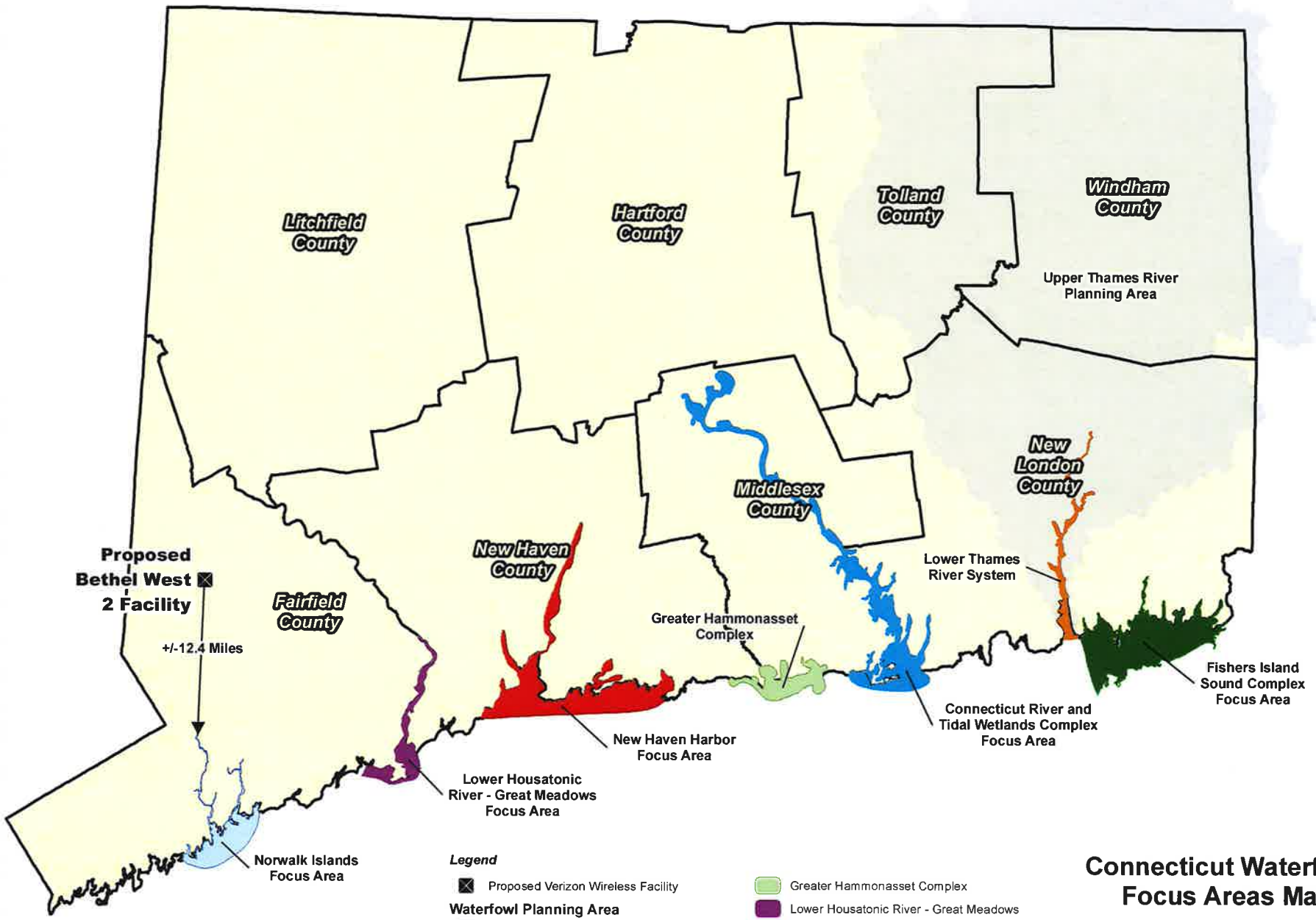
Base Map Source: 2012 aerial photograph (CTECO map service)

Map Date: August 2015

0.5 0.25 0 0.5 Miles

ALL-POINTS TECHNOLOGY CORPORATION

verizonwireless



Connecticut Waterfowl Focus Areas Map

Proposed Wireless
Telecommunications Facility
Bethel West 2
15 Great Pasture Road
Danbury, Connecticut

Waterfowl Data Source: Atlantic Coast Joint Venture Partnership
Map Date: August 2015

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