STATE OF CONNECTICUT CONNECTICUT SITING COUNCIL

IN RE:

:

APPLICATION OF CELLCO PARTNERSHIP : DOCKET NO. 491

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

110 YANTIC LANE, NORWICH,

CONNECTICUT : SEPTEMBER 23, 2020

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

On September 11, 2020, the Connecticut Siting Council ("Council") issued Pre-Hearing Interrogatories to Cellco Partnership d/b/a Verizon Wireless ("Cellco"), relating to Docket No. 491. 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 from all abutter notices sent on July 2, 2020.

Question No. 2

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.

Question No. 3

Application page 3, "Notice of Cellco's intent to submit this Application was published on July 2 and July 3, 2020 by Cellco in the *Norwich Bulletin* pursuant to C.G.S. 16-50l(b). A copy of an Affidavit of Publication will be forthcoming to the Council as soon as its available." Please provide the affidavit.

Response

Following the Publication of the legal notices, Cellco did not receive an Affidavit of Publication as requested. Cellco inquired again recently and was told that the Norwich Bulletin offices are closed due to COVID 19 and that they cannot fulfill affidavit requests because the affiant would need to appear, in person, before a notary. The Bulletin did, however, provide Cellco with electronic copies of the notice publication through its "Tear Sheet Department". Copies of the legal notices as they appeared in the Norwich Bulletin are included in Attachment 1.

Site/Tower

Question No. 4

Provide the status of the alternative access drive from Philanne Drive.

Response

After the filing of the Norwich 4 application, Cellco was successful in acquiring an easement to cross property of Ronald P. and Nora Brine that would allow vehicular and utility access to extend from Philanne Drive to the proposed tower compound.

Question No. 5

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

Response

The compound was designed in a generally flat area, where grade drops only 2 feet across a 50-foot compound depth from east-to-west. There are no proposed changes to this grading and will allow for natural stormwater runoff. Any required cut and fill, if needed, will be minimal, less than 25 cubic yards.

Question No. 6

Would any blasting be required to develop the site?

Response

Cellco does not anticipate the need for blasting. If the Council approves the Docket No. 491 application, Cellco will prepare a Geotechnical Survey of the tower site to determine the nature of sub-surface conditions.

Question No. 7

Would the tower and foundation be designed to accommodate an increase in tower height?

Response

Yes. Typically, Cellco's towers are designed to accommodate an extension of 20 feet in height.

Question No. 8

What measures are proposed for the site to ensure security and deter vandalism? (Including alarms, gates, locks, anti-climb fence design, etc.)

Response

The wireless facility compound will be surrounded by an eight (8) foot tall chain link security fence and gate. The gate will be locked with access limited to the wireless carriers sharing the facility. Cellco's wireless equipment will maintain separate silent intrusion alarms systems which are monitored remotely.

Question No. 9

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. 10

What type of antenna mount will be used for the proposed antennas? What is the structural design standard applicable to such antenna mount?

Response

Cellco intends to utilize a low-profile antenna platform (with handrail) at the Norwich 4 Facility. The structural design standards for the proposed antenna mounting platform are

ANSI/TIA -222-G-4; TIA-222-G-2 and Verizon NTSD 445.

Question No. 11

Would the tower have a galvanized gray finish?

Response

Yes.

Question No. 12

Pursuant to CGS §16-50p(a)(3)(G), 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-4 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures".
- Occupational Safety and Health Administration (OSHA).

Coverage Capacity

Question No. 13

Identify the approximate center and radius of Cellco's search area in the vicinity of the proposed site?

Response

The approximate center of the Norwich 4 search ring is point located at 41.554877, - 72.123198 with a radius of half a mile. *See* Attachment 2.

Question No. 14

Provide existing coverage gaps in miles for the 700, 1900, and 2100 MHz (the 850 MHz frequency is not on-air in this area as noted on page 7 of the application) for Route 2, Route 32, Route 87, Interstate 395 and the overall existing coverage footprint in square miles similar to the proposed coverage mileage and square miles represented on page 8 of the Application.

Response

Street Name	700 MHz Coverage Gap	1900 MHz Coverage Gap	2100 MHz Coverage Gap
Route 2	2.5 miles	5 miles	4.5 miles
Route 32	1.0 mile	3 miles	2 miles
Route 87	0.5 mile	2.5 miles	1 mile
Interstate 395	2.5 miles	2.5 miles	2.5 miles
State Road Total	6.5 miles	13 miles	10 miles

Overall Coverage	49 square miles	6 square miles	7.5 square miles
Footprint			

Question No. 15

Do all frequencies provide both voice and data? Please explain.

Response

Initially, all frequencies would be deployed as LTE carriers and would support both voice and data traffic.

Question No. 16

Page 7 of the Application states that the existing Franklin macro-cell beta sector is nearing capacity limits. At what frequencies? Please include a projected exhaustion date for this sector. Would the deployment of the proposed facility be sufficient to address these capacity

concerns, or would an additional facility be required in the near term to off-load traffic?

Response

The existing Franklin (macro-cell) site's Beta sector is currently past exhaust in the 700MHz frequency range and has very high utilization in the 2100MHz frequency range. The proposed Norwich 4 Facility would be sufficient to address these utilization (capacity) concerns for the next several years.

Question No. 17

Are any of the frequencies planned for installation at this facility considered 5G for Verizon's network?

Response

The initial deployment plan for the Norwich 4 Facility does not include the installation of 5G technology, however certain frequencies may be reused for 5G services in the future.

Backup Power

Question No. 18

What measures would the applicant implement or employ to ensure an adequate supply of backup power for the site in the event of a propane fuel shortage?

Response

Cellco is not aware of any impending propane fuel shortage that could affect the provision of backup power to the cell site. If, however, Cellco was unable to maintain an adequate supply of propane fuel when needed, it would likely rely on one or more of its fleet of portable/mobile diesel generators for back-up power.

Question No. 19

Could the proposed generator be shared by other carriers that may locate at the proposed

facility? What effect would a shared generator have on the run time of the generator if at full load?

Response

A 25-kW generator would not be capable of supporting the operational needs of Cellco and a second wireless carrier at the proposed cell site. The 25-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 the proposed generator if a need exists in the future.

Question No. 20

Would a battery backup (if applicable) be used to provide uninterrupted power and prevent a reboot condition? How long could the battery backup alone supply power to the facility in the event that the generator fails to start?

Response

Yes, battery backup would provide uninterrupted power to the facility and prevent a "reboot" condition. The backup battery system is designed to keep the cell site operating for up to eight (8) hours.

Public Safety

Question No. 21

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

Response

Yes, the proposed Facility will be capable of supporting text-to-911. No additional cell site equipment is necessary to support this service.

Question No. 22

Would Cellco's antennas comply with federal E911 requirements?

Response

Yes.

Question No. 23

Would Cellco's installation comply with the intent of the Warning, Alert and Response Network Act of 2006?

Response

Yes.

Environment

Question No. 24

Identify the nearest "Important Bird Area" as designated by the National Audubon Society?

Response

The closest Important Bird Area ("IBA") to the Property is The Lyme Forest Block in Colchester, located approximately 5.8 miles to the west. The Lyme Forest Block IBA includes land in several towns within Middlesex and New London Counties and encompasses a number of State lands, including Devil's Hopyard State Park, Babcock Pond Wildlife Management Area, Zemko Pond Wildlife Management Area, Eightmile River Wildlife Management Area, Nehantic State Forest, Selden Neck State Park, and Beckett Hill State Park. Due to its distance from the Property, this IBA would not experience an adverse impact from the proposed development of the Norwich 4 Facility.

An evaluation of the proposed Norwich 4 Facility's proximity to avian resource areas was performed to determine compliance with recommended guidelines of the United States Fish and

Wildlife Service ("USFWS") for minimizing the potential for telecommunications towers to impact bird species. The proposed Norwich 4 Facility would comply with the USFWS guidelines for minimizing the potential impacts to bird species. Details of this analysis are provided in the Avian Resources Evaluation report prepared by All-Points Technology Corp., P.C., dated June 4, 2020 in Attachment 3.

Question No. 25

What, if any, stealth tower design options would be feasible to employ at this site? Please provide costs related to each stealth tower design.

Response

Cellco maintains that the proposed monopole design is appropriate for this area.

Employing a stealth design would be feasible from a constructability standpoint but does not appear to be necessary or appropriate in this instance. Possible alternative designs include a monopine, observation tower or a unipole. A monopine design would not be suitable due to the surrounding woods being composed primarily of deciduous trees. This design, as well as an observation tower, would increase the mass of the structure above the tree line and provide a more prominent focal point to an observer. A unipole, with internal antennas and appurtenances, would require a substantially taller structure to accommodate Cellco's and future carriers' equipment. The proposed facility will be constructed near an existing water tank that is significantly taller than the proposed tower's 110-foot height. In addition, the water tank's base and reservoir have a far greater diameter than that of the proposed tower. Further, several large utility transmission towers are also located in the adjacent Eversource right-of-way. These structures rise to heights similar to that of the proposed Norwich 4 tower. (It is Cellco's understanding that many of the nearby transmission line structures are scheduled to be replaced

with dual poles of greater height in the near future). Where visible, the proposed Norwich 4 tower would be seen among other existing infrastructure. Its presence, therefore, would not be out of context with existing conditions.

Question No. 26

Please submit photographic site documentation with notations linked to the site plans or a detailed aerial image that identifies locations of site-specific and representative site features. The submission should include photographs of the site from public road(s) or publicly accessible area(s) as well as Site-specific locations depicting site features including, but not necessarily limited to, the following locations as applicable:

For each photo, please indicate the photo viewpoint direction and stake or flag the locations of site-specific and representative site features. Site-specific and representative site features include, but are not limited to, as applicable:

- 1. wetlands, watercourses and vernal pools;
- 2. forest/forest edge areas;
- 3. agricultural soil areas;
- 4. sloping terrain;
- 5. proposed stormwater control features;
- 6 nearest residences;
- 7. site access and interior access road(s);
- 8. utility pads/electrical interconnection(s);
- 9. clearing limits/property lines;
- 10. mitigation areas; and
- 11. any other noteworthy features relative to the Project.

A photolog graphic must accompany the submission, using a site plan or a detailed aerial image, depicting each numbered photograph for reference. For each photo, indicate the photo location number and viewpoint direction, and clearly identify the locations of site specific and representative site features shown (e.g., physical staking/flagging or other means of marking the subject area).

The submission shall be delivered electronically in a legible portable document format (PDF) with a maximum file size of <20MB. If necessary, multiple files may be submitted and clearly marked in terms of sequence.

Response

The Remote Field Review for the Norwich 4 Facility is in-process and will be filed with the Council as soon as it is completed but in no case later than October 1, 2020.



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3C6UR6CJ4G6Z53120
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1J4GR48KXSC571237

LEGALS

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LEGAL MILES

Discussion is hereby given, pursuant to Section 16-50(0) of this Connecticut Ganssel State (Regulations persiance) thereby discussion is persianced thereby discussion persiance thereby discussion in the submitted to the Connecticut Ganssel Council or on a submitted out of 2002. Or delice Parinselsing dirties Visited Section of the "Applicant". The Applicant proposes the institution releast selectorium/crispins tower and related facility in the asserted portion of sproximately 115 acre pancel att 110 Yarde Lane in Norwich, Connecticut. Coposes to constitute a 100-total memograbil tower within a 50° x50 facined cornecticut.

provisions of Connecticul General Statutes \$ 16-50g at 6eq.

On the day of the String Council public hearing on this proposal, Celto may be seked it
by a bellion at the height of the proposed tower described above. Interested parises an
residents of the CSy of Norwich are invited to review the Application electronically a
wave of povices or during normal business house at any of the following officer.

100 Bloadwa wich, CT 06360 20 Alexander Drive Wallingford, CT 06492

Norwich City Clark Norwich City Hall 100 Broadway Norwich, CT 06360

or the offices of the undersigned. All Inquiries should be address.

d/b/a VERIZON WIRELESS Kenneth C. Baldwin, Esq. Robinson & Cole LUI 280 Trumbull Stir

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Notice is hereby given, pusuant to Seaton te Solity of the Connecticut General Statutes are Requisitions settlining thereto, of an Application to be submitted to the Connecticut Stang Gouncil Chouncil') on or about July 4, Socio, by Cellico Partinesky dulik Vernou Werenses T Cellico' es the "Application". The Application proposes the installation of a servicess telecommunications to lower and related tocility in the assertin portion of an approximately 115 acro paticel at 110 Tartic Lane in Normich, Connecticut. Cellico proposes to Connecticut and Tolkout of the Connecticut. Cellico the Connecticut Cellico of an asstrang driveway to the cell of the Cellico will also install equipment cebinets, a propare-build generater and a propose to cellico the cellico of an asstrang driveway to the cell of the proposed facility are subject to change under provisions of Connecticut General Statutes 15 450 get and Crist the day of the Seleg Council public histering on this proposed, Cellico may be asked to the proposed cellicol to the cellicol of the proposed Cellicol of the Cellic

Norwich City Hall 100 Broadway Wich CT 06360 Cellco Partnership d/b/a Verizon Wireles 20 Alexander Drive Wallingford, CT 06492

Norwich City Clerk Norwich City Hall 100 Broadway Norwich, CT 06360

CELLCO PARTNERSHIP CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS Kenneth C. Baldwin, Esq. Robinson & Cole LLP

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Legend

Center Point of Verizon Wireless Search Area

Verizon Wireless Search Area (0.5-Mile Radius)

Approximate Parcel Boundary

Municipal Boundary

<u>Map Notes:</u>
Base Map Source: CT ECO 2019 Imagery
Map Scale:1 inch = 800 feet
Map Date: September 2020



Connecticut Siting Council Docket No. 491 Response to Interrogatory Question #13 Verizon Wireless Search Area Map

Proposed Wireless Telecommunications Facility Norwich 4 CT 110 Yantic Lane Norwich, Connecticut







AVIAN RESOURCES EVALUATION

June 4, 2020

To: Verizon Wireless 20 Alexander Drive Wallingford, CT 06492

Re: Proposed Norwich 4 CT, 110 Yantic Lane, Norwich, CT

APT Project No. CT1418630

Verizon Wireless proposes to construct a new wireless telecommunications facility ("Facility") at 110 Yantic Lane in Norwich, Connecticut (the "Host Property"). The Host Property consists of an approximately 115-acre wooded parcel with a house and water tank on the property. The proposed Facility would be located in the central portion of the Host Property ("Site"). The Facility would include a 110-foot tall steel monopole within an approximate 50-foot by 50-foot fenced equipment compound.

The purpose of this evaluation is to document the proposed Facility's proximity to avian resource areas and evaluate its compliance with recommended guidelines of the United States Fish and Wildlife Service ("USFWS") 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 Host Property and are therefore not visible on the referenced map due to its scale. 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. To achieve this designation, an 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 behavior¹. The closest IBA to the Host Property is The Lyme Forest Block in Colchester, located approximately 5.8 miles to the west. The Lyme Forest Block IBA includes land in several towns within Middlesex and New London Counties and encompasses a number of State lands, including Devil's Hopyard State Park, Babcock Pond Wildlife

 $^{^{1}}$ http://web4.audubon.org/bird/iba/iba_intro.html

Management Area, Zemko Pond Wildlife Management Area, Eightmile River Wildlife Management Area, Nehantic State Forest, Selden Neck State Park, and Beckett Hill State Park. Due to its distance from the Site, this IBA would not experience an adverse impact from the proposed development of the Facility.

Supporting Migratory Bird Data

Beyond Audubon's IBAs, the following analysis and attached graphics identify several additional avian resources and their proximities to the Host Property. Although these data sources may not represent habitat indicative of IBAs, they may indicate possible bird concentrations² or migratory pathways.

Critical Habitat

Connecticut Critical Habitats depict the classification and distribution of 25 rare and specialized wildlife habitats in the state. They represent a compilation of ecological information collected over many years by state agencies, conservation organizations and individuals. These 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 highlight ecologically significant areas and target areas of species diversity for land conservation and protection, but are not necessarily indicative of habitat for bird species. The nearest Critical Habitat to the proposed Facility is a Palustrine Forested area associated with Shetucket River Island, which is located approximately 3.8 miles to the southwest. Due to its distance from the Site, this Critical Habitat would not experience an adverse impact from the proposed development of the Facility.

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 and do not necessarily represent concentrations of avifauna or identification of critical avian habitats. 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 Uncasville Breeding Bird Survey Route (Route #18004) located approximately 1.9 miles to the west. This ±26-mile long bird survey route begins near the Waterford/Montville town line and generally winds its way north through Montville, Bozrah, Franklin, and Lebanon before terminating in Windham. In this case, its distance from the Site would negate any potential adverse impact resulting from development of the Facility.

Hawk Watch Site

² "Bird concentrations" is related to the USFWS *Revised Voluntary Guidelines for communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning* (September 27, 2013) analysis provided at the end of this document.

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. The nearest Hawk Watch Site, Beelzebub Street, is located in Manchester, approximately 27 miles to the northwest of the proposed Facility.

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.

Based on the distance separating this Hawk Watch Site and hawk migration behavior occurring during the daytime under favorable weather conditions when thermals form, no adverse impacts to migrating hawks are anticipated from development of the Facility.

Bald Eagle Survey Route

Bald Eagle Survey Routes consist of locations of midwinter bald eagle counts from 1986 to 2005 with an update provided in 2008. The associated database includes information on statewide, regional and national trends. Survey routes are included in the database only if they were surveyed in at least four consecutive years and where at least four eagles were counted in a single year. The nearest Bald Eagle Survey Route is the Thames River Survey Route, located approximately 17.6 miles southeast of the Site.

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 the day (10:30–17:00) as thermals provide opportunities to soar up with limited energy expense; Bald Eagle migration altitudes are estimated by ground observers to average 1,500 to 3,050 meters.⁴ Four adults tracked by fixed-wing aircraft in Montana averaged 98 km/d during spring migration and migrated at 200 to 600 meters above the ground (McClelland et al. 1996).⁵

The USFWS's National Bald Eagle Management Guidelines (May 2007) recommend a 660-foot buffer to bald eagle nests if the activity will be visible from the nest with an additional management practice recommendation of retaining mature trees and old growth stands, particularly within 0.5 mile from water. No known bald eagle nests occur in the vicinity of the Host Property so the 660-foot bald eagle nest buffer would not apply. The Yantic River is located ± 0.4 mile to the north; however, no mature or

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.

old growth trees that may provide bald eagle roosting or nesting habitat would be removed to accommodate construction of the Facility.

No adverse impacts to migrating bald eagle are anticipated from development of the Facility. This conclusion is based on the relatively short (110-foot) height of the Facility, eagle migration patterns during the daytime under favorable weather conditions when thermals form and compliance with USFWS bald eagle management guidelines.

Flyways

The Host Property is located in New London County, approximately 13.2 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 a 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 & Wildlife Refuge (Neotropical Migrant Bird Stopover Habitat Survey⁷), 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 Eightmile Rivers. Of these potential flyways, the nearest to the Host Property is the Thames River, located approximately 3.2 miles to the southeast. 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. The Yantic River riparian corridor, located 0.6 miles northeast of the Host Property, is not identified as a potential flyway but potentially forms a secondary flyway as birds move northward from the Thames River corridor during the spring migration.

Siting of tower structures within flyways can be a concern, particularly for towers much taller than that proposed, and even more particularly for taller towers with guy wires and lighting. The majority of studies on bird mortality associated with towers focuses on very tall towers (greater than 1000 feet above grade), illuminated with non-flashing lights, and guyed. These types of towers, particularly if sited in major migratory pathways, can result in significant bird mortality (Manville, 2005)⁹. The proposed Facility is not this type of tower, being an unlit and unguyed monopole structure only 110 feet in height. More recent

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

⁷The 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.

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 development of the Facility, based on its design (unlit and unguyed), relatively short (110-foot) height, and the distances separating the Host Property from the potential Thames and Yantic River flyways. The design and height of the proposed Facility would also mitigate the potential for migratory bird impacts should either river be used as a secondary 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 Property is the Lower Thames River System area, located approximately 3 miles to the southeast. Please refer to the attached Connecticut Waterfowl Focus Areas Map. Based on the distance of this waterfowl focus area to the Host Property, no impact to migratory waterfowl would result from development of the proposed Facility.

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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.

DEEP Migratory Waterfowl Data

The Connecticut Department of Energy and Environmental Protection ("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.

The nearest migratory waterfowl area, Thames River in Montville to Preston, is located approximately 4.5 miles to the south of the Host Property. The associated species are identified as American black duck, bufflehead, goldeneye, and mallard. Based on the distance of this migratory waterfowl area to the Host Property, no impact to migratory waterfowl would result from development of the proposed Facility.

DEEP Natural Diversity Data Base

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 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 landowners' rights whenever species occur on private property.

No known areas of state-listed species are currently depicted on the most recent DEEP NDDB Maps (December 2019) at or within a 0.25 mile of the location of the Site. Therefore, in accordance with the DEEP's and Connecticut Siting Council's NDDB review policy, consultation with DEEP is not required. As a result, the proposed development is not anticipated to adversely impact any state threatened, endangered or species of special concern.

USFWS Communications Towers Compliance

In April 2018, the USFWS prepared its *Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning*. These suggested best practices were developed to assist tower companies in developing their communication systems in a way that minimizes the risk to migratory birds and threatened and endangered species. The following avoidance and minimization measures, when used comprehensively, are recommended by USFWS to reduce the risk of bird

mortality at communication towers. 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. This recommendation is intended to reduce the number of towers across the landscape.

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

2. Contact with USFWS Field Office. Communicate project plans to nearest USFWS Field Office.

APT completed consultation protocols in accordance with Federal Communications Commission ("FCC") rules implementing the National Environmental Policy Act ("NEPA") and Section 7 of the Endangered Species Act through the USFWS Information, Planning, and Conservation System ("IPaC"). Based on the results of the IPaC review, no federally-listed bird species were identified. However, one federally-listed threatened species is known to occur in the vicinity of the host property: northern long-eared bat ("NLEB"; *Myotis septentrionalis*). As a result of this preliminary finding, APT performed an evaluation to determine if development of the proposed Facility would result in a likely adverse effect to NLEB.

The Host Property is not within 150 feet of a known occupied maternity roost tree and is not within 0.25 mile of a known NLEB hibernaculum. 12 The nearest NLEB habitat resource to the proposed activity is located in North Branford, approximately 34.5 miles to the southwest. Therefore, this project would not adversely affect NLEB.

- 3. Placement. All new towers should be sited to minimize environmental impacts to the maximum extent practicable.
 - a. Place new towers within existing "antenna farms" (i.e., clusters of towers) when possible.

There are no existing "antenna farms" in the Site vicinity that would satisfy the RF coverage objectives.

b. Select already degraded areas for tower placement.

The Site already has an existing water tank and gravel access road.

c. Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state or federal refuges, staging areas, rookeries, and Important Bird Areas), or in known migratory bird movement routes, daily movement flyways, areas of breeding concentration, in habitat of threatened or endangered species, or key habitats for Birds of Conservation Concern.

The Site is not within wetlands, a known bird concentration area, migratory or daily movement flyway, or habitat of threatened/endangered species; nor would the development result in fragmentation of a core forest habitat that could potentially provide habitat for Birds of Conservation Concern.

¹² Based on review of DEEP's publicly-available *Northern long-eared bat areas of concern in Connecticut to assist with Federal Endangered Species Act Compliance* mapping (dated 2/1/16) and correspondence with NDDB.

d. Towers should avoid ridgelines, coastal areas, wetlands or other known bird concentration areas.

The Site is not located within ridgeline areas, coastal areas, wetlands or other known bird concentration areas.

e. Towers and associated facilities should be designed, sited, and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint". In addition, several shorter, un-guyed towers may be preferable to one, tall guyed, lit tower.

The proposed Facility will be sited, designed, and constructed to accommodate proposed equipment and to allow for future collocations within the smallest footprint possible, thus minimizing habitat fragmentation or the creation of barriers or excessive disturbance. The proposed Facility would consist of a 110-foot tall monopole structure, which requires neither guy wires nor lighting and is therefore consistent with USFWS' environmentally preferred "gold standard".

- 4. Construction. During construction, the following considerations can reduce the risk of take of birds:
 - a. Schedule all vegetation removal and maintenance (e.g., general landscaping activities, trimming, grubbing) activities outside of the peak bird breeding season to reduce the risk of bird take.

Development of the Site will require removal of ± 0.1 acre of trees within an existing forested area. Although vegetation removal will be minimal, avoidance of removal during peak breeding season will be observed if feasible. However, due to the duration and ambiguity of this window, it may not be possible.

- b. When vegetation removal activities cannot avoid the bird breeding season, conduct nest clearance surveys:
 - i. Surveys should be conducted no more than five days prior to the scheduled activity to ensure recently constructed nests are identified;
 - ii. Timing and dimensions of the area to be surveyed vary and will depend on the nature of the project, location, and expected level of vegetation disturbance; and
 - iii. If active nests are identified within or in the vicinity of the project site, avoid the site until nestlings have fledged or the nest fails. If the activity must occur, establish a buffer zone around the nest and no activities will occur within that zone until nestlings have fledged.

All guidelines will be followed if tree removal activities cannot be performed outside of the bird breeding season.

- c. Prevent the introduction of invasive plants during construction to minimize vegetation community degradation by:
 - i. Use only native and local (when possible) seed stock for all temporary and permanent vegetation establishment; and
 - ii. Use vehicle wash stations prior to entering sensitive habitat areas to prevent accidental introduction of non-native plants.

No plants identified by the Connecticut Invasive Species Council as invasive plant species will be used for either temporary or permanent vegetation establishment. No vehicle wash stations are required since no sensitive habitat areas are located at the Site.

5. Tower Design. Tower design should consider the following attributes:

- a. Tower Height. It is recommended that new towers should be not more than 199 ft. above ground level (AGL). This height increases the mean free airspace between the top of the tower and average bird flight height, even in weather conditions with reduced cloud ceiling;
- b. Guy Wires. We recommend using free standing towers such as lattice towers or monopole structures.
- c. Lighting System. Lights are a primary source of bird aggregation around towers, thus minimizing all light is recommended, including:
 - i. No tower lighting is the preferred option if Federal Aviation Administration (FAA) regulations and lighting standards (FAA 2015, Patterson 2012) permit.
 - ii. If taller (> 199 ft. 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.
 - iii. Security lighting for on-ground facilities, equipment, and infrastructure should be motion or heatsensitive, down-shielded, and of a minimum intensity to reduce nighttime bird attraction and eliminate constant nighttime illumination while still allowing safe nighttime access to the site.

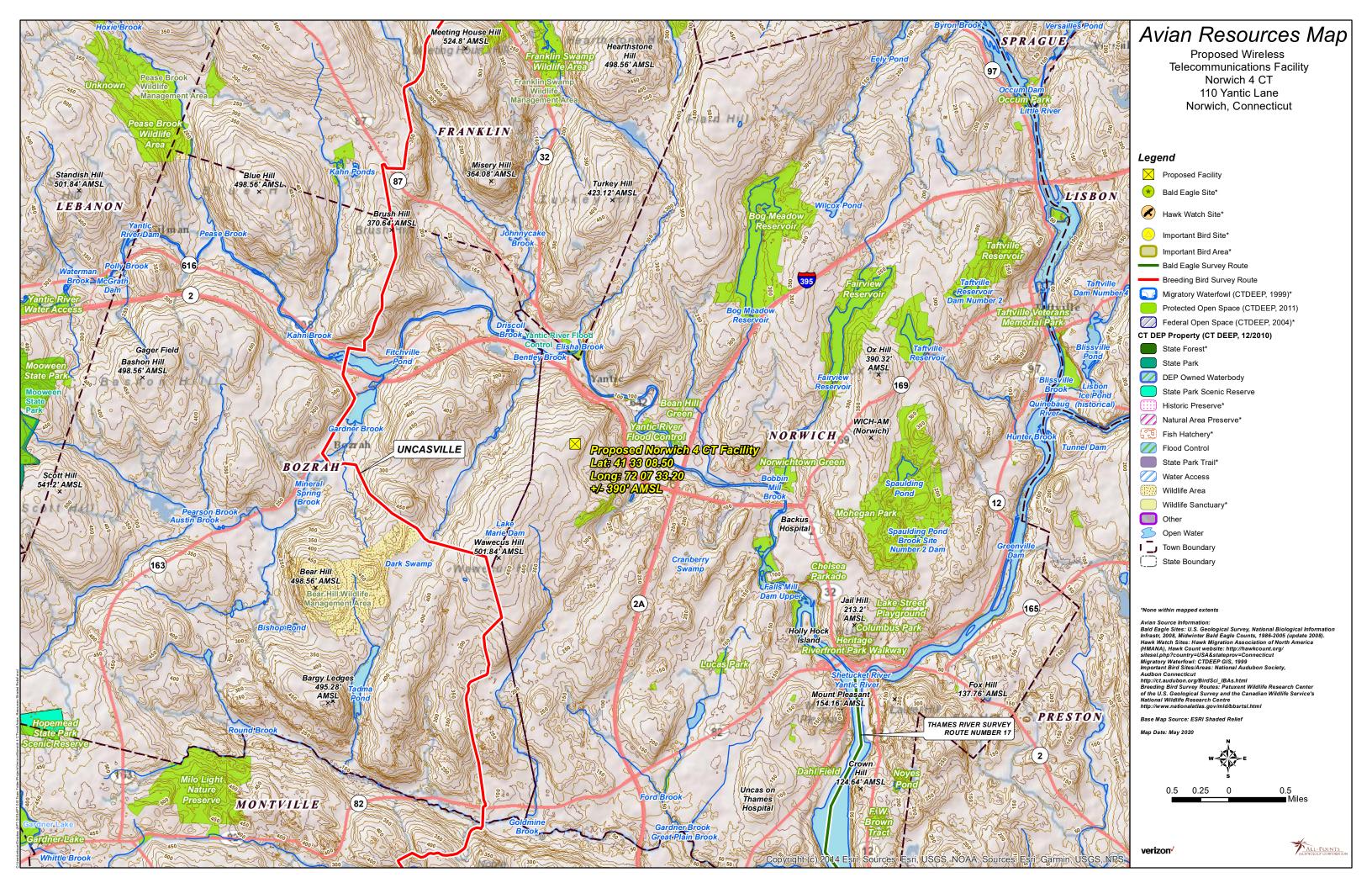
The proposed Facility would consist of a 110-foot tall monopole structure, which requires neither guy wires nor lighting and is therefore consistent with USFWS' environmentally preferred "gold standard". Security lighting for on-ground facilities would be down-shielded using Dark Sky compliant fixtures set on motion sensor with timer to eliminate constant nighttime illumination.

Summary and Conclusions

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

Figures

- > Avian Resources Map
- > Connecticut Waterfowl Focus Areas Map



Waterfowl Data Source: Atlantic Coast Joint Venture Partnership

Map Date: May 2020



verizon/