

Albert M. Manville, II, Ph.D.
P.O. Box 252
Greenville Junction, ME 04442
amanville634@gmail.com

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Connecticut Siting Council
10 Franklin Square, New Britain, CT 06051

Re: DOCKET NO. 543 – The Towers, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility and associated equipment located at 17 Warren Road, Washington (New Preston), Connecticut.

Dear Members of the Connecticut Siting Council:

I am a professional wildlife biologist by training, commenting on behalf of the Steep Rock Association located in Washington, CT.

My concerns regarding Docket #543 include impacts primarily from tower collisions, radiation (including as an attractant to the tower site), and habitat fragmentation, but concerns also include disturbance, wire entanglement, and electrocution if this tower is permitted, built and becomes operational. I will briefly focus on the impacts of (1) tower collisions, (2) habitat fragmentation and disturbance, and (3) radiation.

The proposed tower would be built, operated, maintained, and perhaps ultimately decommissioned on a steep hill site located at 17 Warren Road, Washington, CT, on the Warren town line. While there are several existing cell towers in the surrounding area (e.g., in the New Preston area of Washington, and in Washington Depot, as well as in neighboring Bantam in the town of Litchfield (2025 Online Cell Tower Finder), the distance between these sites and the hilly topography makes colocation unlikely. The applicant notes there are dead reception/transmission zones within a 7-mile area although people who travel this route state they only lose reception in a much smaller area. Is it possible that strategically placed small cells could fill in this corridor between towers well enough with in-vehicle coverage to satisfy any E-911 safety concerns and thus avoid the proposed macro-site with its accompanying potential environmental damage?

It is also important for siting authorities to understand that there is no provision in the Federal Communication Commission's (FCC) regulations that require 100% cell phone coverage of this, or any area (Manville 2007). There is therefore some local and state discretion regarding the degree of coverage that is granted, especially in environmentally sensitive regions such as this proposed site. In addition, regarding allowable radiation exposures, since the 2021 Environmental Health Trust (*EHT v. FCC 2021*) federal court ruling, FCC has been under a

court remand mandate to meaningfully revise its outmoded 1996 wireless exposure limits which FCC re-adopted virtually unchanged in 2020 (FCC 2020). Today's standards only control for human exposures at high-intensity, short-term exposures and do not take nonhuman species into consideration, nor long-term chronic environmental exposures. The FCC has yet to comply with the court order, thereby leaving serious doubt as to whether FCC standards accurately reflect today's exposures from infrastructure and devices alike, thus calling into question the actual safety of Maximum Permissible Exposures (MPE) typically found in all cell tower siting applications today, no matter how "low" an applicant's comparison percentage is to what is allowed.

My Background Pertinent to Wildlife

By way of brief introduction, many of my wildlife experiences related to cell tower placement, operation and maintenance occurred while I worked for the U.S. Fish & Wildlife Service (hereafter USFWS) as a Supervisory and then Senior Wildlife Biologist (17 yrs). After I retired, I then worked as the sole proprietor of the consulting firm, Wildlife and Habitat Conservation Solutions LLC (6 yrs). I am a Certified Wildlife Biologist (CWB) by the Wildlife Society (42 yrs), thus very aware — in some cases intimately — with human impacts to wildlife, including from cell towers which I have previously investigated. I also continue to serve as a Senior Lecturer and Adjunct Conservation Biology and Wildlife Management Professor, Krieger School of Arts and Sciences, Advanced Academic Programs, Johns Hopkins University, Washington DC Campus (25 yrs). This includes talking to my graduate students about wildlife impacts from cell towers, especially collision and radiation impacts on migratory birds. I was also a former Wildlife Instructor for the USDA Graduate School (14 yrs); am a Life Member of the American Society of Mammalogists (35 yrs); and was former Senior Wildlife Biologist and Director/Vice President of the Wildlife Policy Division, Defenders of Wildlife (DOW; 12 yrs)— witnessing many wildlife disasters while working for DOW. I also worked for the Boone and Crockett Club (B&C) as their Big Game Records Coordinator (2 yrs), and served as an Official Measurer for B&C (10 yrs), so I also understand the consumptive side (i.e., hunting, trapping and fishing) of wildlife management. As a result of my involvement with electromagnetic fields (EMF), I currently am a Scientific Advisor to the International Commission on the Biological Effects of Electromagnetic Radiation (ICBE-EMF; 3 yrs).

On the tower-bird collision front, I was invited by FCC to author a detailed paper, approved by USFWS officials, on the then known impacts from tower collisions to migratory birds (Manville 2007). Collision impacts from monopole cell towers like the proposed Cellco model, were included in my report to the FCC. I also published estimates of tower collision mortality at two Partners in Flight international conferences and symposia (Manville 2005, 2009), and I published an estimated tower collision mortality document for public release while with USFWS (Manville 2011).

Regarding EMF, I coauthored a cutting-edge, three-part, peer-reviewed paper on impacts from EMF on plants and wildlife, with over 1,000 cited references (Levitt et al. 2021a, b, and c); was coauthor on a paper looking at EMF effects on plants and animals at the ecosystem level (Levitt et al. 2022); was senior author of a paper on the concerns and impacts of radiation from the use of radio tracking devices (Manville et al. 2024); and was coauthor of a paper summarizing the

concerns and legislative needs for better managing EMF on plants and animals, details presented last year at an invited Yale University School of Medicine conference (Levitt et al. 2025).

Federal Preemptions and Wildlife: Radiation Effects to Migratory Birds and Insects

Section 704 of the Telecommunications Act of 1996 (TCA 1996) states: “No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions *to the extent that such facilities comply with the Commission's regulations concerning such emissions.*” (Emphasis added.) The FCC regulations are for human exposures only. Humans are part of the environment, but wildlife, while clearly part of the environment too, reacts very differently to EMF/RF because of unique physiologies and environmentally driven sensitivities that are well documented (Levitt et al. 2021b, 2022, 2025.) It has been assumed that what protects humans also protects nonhumans but that assumption is patently false (ICBE-EMF 2022). There are no regulations pertaining to wildlife of any kind.

Thus, Section 704 does not apply to prohibiting the Connecticut Siting Council from considering the effects of radiofrequency emissions on wildlife. The radiation from antenna arrays -- even at vanishingly low far-field intensities -- has been shown to attract migratory birds and insects, as well as severely disorient them (Levitt et al. 2022). RF acts as both an attractant and causes potential secondary adverse effects to migrating and permanent avian/bat/insect populations alike. Congress cannot have intended to exclude such important environmental effects at the time of TCA 1996 passage because it would have been in direct conflict with the National Environmental Policy Act and several other federal laws (see below). FCC has not taken this obvious regulatory gap seriously (Rosenberg 2022).

In addition, when it comes to airborne wildlife, FCC limits may very well be exceeded for those species that reach near-field proximities to transmitters with which humans would never come in contact. Energized antenna arrays mounted on towers and/or buildings create warmth that can encourage nesting sites for some birds and insects, causing adverse effects from both thermal and nonthermal effects. Even short term exposure at such near-field high intensities to migratory species can be devastating. Insects in particular are inefficient thermoregulators and can quickly reach peak resonant levels based on frequency alone, thereby absorbing far more radiation than humans (Levitt et al. 2025; Thielens 2018; Thielens et al. 2020; Torbino et al. 2022; Jeladze et al. 2023, 2025). The frequencies in the above studies match the ranges of this applicant's proposal.

As noted in Levitt et al. (2021a, b, and c, 2022, 2025), many non-human species have highly specific vulnerabilities to anthropogenic EMF due to unique physiologies that depend upon, and constantly use, the Earth's static geomagnetic fields for life-sustaining information, including seasonal migration/orientation, nest/den building, mating, reproduction, offspring care, food finding, territorial defense, simple daily/seasonal circadian rhythms, and even longevity and survivorship. Electromagnetic perceptual factors include multi-system environmental species-specific mechanisms. Many species have specialized electroreceptor cells and/or magnetoreception abilities pertinent to their environments that far surpass human sensitivity (Kobayashi and Kirschvink 1995; Johnsen and Lohmann 2008). For instance, many species can

sense natural DC magnetic fields in diverse ways including: migratory bird species (Mouritsen and Ritz 2005; Ritz et al. 2000; Moller et al. 2004; Heyers et al. 2007); numerous insect species including honey bees and Monarch butterflies (Fleishmann et al. 2020; Collett and Barron 1994; Lambinet et al. 2017; Kyriacou 2009; Jones and Mac Fadden 1992); fish (Putman et al. 2014a, b); mammals (Malweski et al. 2018); bats (Holland 2008); mollusks (Ratner 1976); and bacteria (Blakemore 1975). Some bird species may actually ‘see’ the Earth’s magnetic fields via complex magnetoception capabilities (Yong 2010) located in their eye and beak areas (Ritz et al. 2010). All the above literature citations are listed in Levitt et al. (2021a, b, and c, 2022, 2025) along with many others.

There are three primary physical mechanisms of action that are very different in nonhuman species and include:

1. An induction process in which weak electrical signals are induced by magnetic stimulation in specialized sensory receptors (Kalmijin 1982).
2. A magneto-mechanical method in which localized deposits of single-domain magnetite crystals create signal information interactions (Tenford 1989a, b; Kobayashi and Kirschvink 1995).
3. A specialized-cell model in which radical-pair photoreceptor molecules create dedicated information pathways (Lai 2019; Barnes and Freeman, 2022; Ritz et al. 2000, 2004, 2009, 2010).

Some of these mechanisms are environment specific, e.g. aquatic versus land-based, while others can function via extremely complex synergies with each other, particularly in birds (Heyers et al. 2017; Hiscock et al. 2017).

Some of the examples above, e.g. aquatic species, are not explored in this report for Docket #543. They are merely included here for the Siting Council’s background understanding of the kind of science that exists regarding potential effects to myriad wildlife species. The studies that do apply to this application involve insects, bats, and migratory species that move in large north/south seasonal patterns through this region, as well as in both permanent and seasonal local wildlife populations that can have an east/west pattern between the two large reservoir bodies of water located in Warren northeast of the tower site, Lake Waramaug to the northwest of the tower site, and Steep Rock’s Macricostas Reserve located due west at about 1 1/2 miles from the site. These large and diverse water bodies attract a stunning array of migratory and permanent wildlife species that this area of Connecticut is known for and which draws thousands of visitors per year. (See Levitt et al. 2022 for studies that are capable of interfering with magnetoreception/orientation in insects and terrestrials too.)

There are studies of RF/EMF severely disorienting airborne species, especially during nighttime flight, resulting in possible secondary impacts from collisions with both tower structures and with the ground, e.g. not the direct effect of RF itself, but its disorientation factor (Schwartz et al. 2016; Engles et al. 2014; Beasom and Semm 2002; Everaert and Bauwens 2007; Ritz et al. 2004, 2009; Wiltshko and Wiltshko 2014; Wiltshko et al. 2015) – all listed in Levitt et al. (2021a, b, and c, 2022, 2025).

Manmade nonionizing radiation differs greatly from natural EMF and is capable of disturbing the natural life-processes of nonhuman species. It is, unfortunately, not uncommon for the base of towers to be littered with dead birds, often undercounted as the result of nighttime predation.

Further Communication Tower Collision and Radiation Involvement

Notably, I was USFWS's national lead on all things structural impacting wildlife — primarily migratory birds and bats — including those related to impacts from cell towers through collisions, radiation, electrocutions, strangulation, habitat fragmentation, and disturbance. I coauthored USFWS's voluntary 2000 communication tower guidelines (Willis and Manville 2000) dealing primarily with bird-tower collisions, and how to avoid them, and authored the updated USFWS tower guidelines in 2013 (Manville 2013), again designed to avoid or minimize collisions, sharing them with the FCC, among many other agencies and conservation nongovernmental organizations (NGOs). On behalf of USFWS, I co-founded and chaired the Communication Tower Working Group — a multi-State, Federal and NGO conservation collaborative (6 yrs) trying to address wildlife-tower research needs. I also served as USFWS's lead and go-to contact on impacts from electric power line collisions and electrocutions (i.e., at transmission and distribution lines, and their infrastructures) as lead representative on the Avian Power Line Interaction Committee (APLIC; 17 yrs), supported by the Edison Electric Institute and numerous members of the electric utility industry. I was bestowed the Conservation Service Award in 1999 by former Interior Secretary Bruce Babbitt for my work with the electric utility industry trying to reduce bird impacts, and was honored by APLIC in 2016 as the recipient of the Morley Nelson Conservation Service Award for my efforts as a federal wildlife biologist working with the electric utility industry.

Electrocution and strangulation can also be issues for birds, bats and insects at cell towers, especially if short cuts are taken (e.g., improper wiring, shoddy design, and inappropriate location) which increase the potential for electrocutions, particularly if weather is frequently inclement, fog is present, and winds are high. Of note is the fact that RF power density can be increased from antennas in rainy, foggy, misty weather. In addition to the tower radiation attracting migratory birds, tower radiation also attracts insects (Levitt et al. 2021a, 2025; Guerra et al. 2014; Lazaro et al. 2016; Sutton et al. 2016; Treder et al. 2025; Wang et al. 2025) resulting in collisions, creating instances where birds and bats are killed when trying to feed on insects.

I was also involved in 2014 helping convince the Department of Interior (DOI) to write a letter to the National Telecommunications Information Administration (NTIA), a branch of the Department of Commerce (DOC), requesting DOC begin a National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) review of the radiation effects of NTIA's antennas on migratory birds. I was the author of Enclosure A in Taylor (2014) of this letter, among other responsibilities, including the initiation of the EIS. The EIS was begun in 2014, but languished under President Obama, then was terminated under President Trump. It needs to be reinstated (Levitt et al. 2021c, 2025). This effort by the DOI is unprecedented because it acknowledges that one Federal Department (DOI) has convinced another Federal Department (DOC) to examine the impacts of radiation on migratory birds in considerable detail. This had never previously been undertaken. While the review was never completed, the FCC, Verizon, Cellco and others continue to deny that impacts from radiation are an issue. This is preposterous

since the published, peer-reviewed scientific record is huge and growing, and in many cases, the evidence is clear (e.g., Balmori 2005, 2009, 2010, 2014, 2015, 2021; Cucurachi 2013; Levitt et al. 2021a, b, and c, 2022, 2025).

Migratory Birds and Impacts from Tower Collisions

Migratory birds, of which there are over 1,000 species in the U.S., are protected by the federal Migratory Bird Treaty Act (MBTA) and its implementing regulations. Any un-permitted “taking” (defined as the killing, injuring or crippling loss) of a protected migratory bird is against the law, and as explained in Congressional report language, can become a criminal violation under MBTA if the Justice Department decides to prosecute. Fines can be extensive, in some cases in the millions of dollars, and corporate executives have been restrained (Manville 2016). “Taking” would include the un-permitted injury or killing of migratory birds at the proposed Cellco tower site if the tower is built. USFWS — it is important to note — does not currently issue “takings permits” under MBTA for accidentally tower-killed or injured migratory birds (Manville 2007, 2016; USFWS 2021b).

All migratory birds are protected by the MBTA, with an emphasis on reversing declining bird populations listed on the Endangered Species Act (ESA) and the list of Birds of Conservation Concern (BCC) — both lists designated and maintained by USFWS (USFWS 2021a). BCC are inevitably headed for proposed ESA designation if population declines are not reversed. For example, some of these BCC species documented at Steep Rock include the Pine Warbler and Eastern Towhee, Pileated Woodpecker and Black-throated Green Warbler, as well as the Carolina Wren, and Northern Harrier, among others witnessed and recorded in the *Birds of Steep Rock Field Checklist* (Steep Rock Association 2025).

In fact, a long list of BCC has been designated by the USFWS (consolidated by the Steep Rock Association for the Steep Rock area), additionally including, for example, the American Bittern (State Endangered [E]), American Kestrel (State Special Concern [SC]), Bald Eagle (State Threatened [T]), Bobolink (SC), Brown Thrasher (SC), Broad-winged Hawk (SC), Cerulean Warbler (SC), Common Nighthawk (E), Eastern Meadowlark (T), Grasshopper Sparrow (E), Least Bittern (T), Northern Harrier (E), Northern Parula (SC), Northern Saw-whet Owl (SC), Savannah Sparrow (SC), and the Sharp-shinned Hawk (E). A host of other bird species are also listed as State Birds of Conservation Concern, and are designated as “most important,” “very important,” or “important” (Steep Rock Association 2025 spread sheet).

Recapping, all ESA- and BCC-listed birds need additional protections to prevent their extirpation or even extinction. Macricostas Preserve has also been designated by the National Audubon Society as an Important Bird Area (IBA), indicating the area’s significance for bird conservation. Having a cell tower nearby is contrary to the conservation objectives of Steep Rock, Macricostas, and enlightened members of the public.

Staff and volunteers from the Steep Rock Association and Connecticut Chapter of the National Audubon Society have also compiled detailed lists of plants and animals — in addition to migratory birds — that include imperiled species. All of the following State and Federally listed wildlife, as well as imperiled plants, have been documented in Washington, CT (Steep Rock

Association 2015) and were also listed as present at the Macricostas Preserve. For bat species, the Northern Long-eared Bat is Federally and State-listed as E., while the Tri-colored Bat is proposed for Federal E. status, and listed as State-E. The Little Brown, Hoary, Red, and Silver-haired bats are all SC, while the Big Brown Bat is designated as Most Important. My observation: bats are in serious trouble, and it's not simply from the impacts of white nose syndrome, pesticides and loss of habitat. Cell towers are of growing concern as the cumulative impacts from tower collisions, radiation, disturbance and fragmentation are also affecting bats, and impacts continue to grow.

Other [State] Mammals of Conservation Concern include the Muskrat, Mink, Long-tailed Weasel, Meadow Jumping Mouse, and New England Cottontail (Steep Rock Association 2025). From a large variety of butterfly species documented at or near the project site, these include the Bronze Cooper (SC) and the Monarch (Important).

Herpetofauna of Conservation Concern include the Wood Turtle (SC), Spotted Turtle (SC), Eastern Ribbon Snake (SC), and Jefferson Salamander (SC), as well as the Spotted Salamander (Important), Marbled Salamander (Important), and the Wood Frog (Important; Steep Rock Association 2025).

Plants of Conservation Concern included the Dioecious Sedge (SC), the Violet Wood-Sorrel (SC), as well as the following Plants of Conservation Concern, all listed as Important. They include the Butterfly Milkweed, Common Milkweed, Common Serviceberry, Common Yarrow, Highbush Blueberry, Hillside Blueberry, Pignut Hickory, Scrub Oak, Sugar Maple, Swamp Milkweed, and the White Meadowsweet (Steep Rock Association 2025). My observation: plant biodiversity is also extensive, but some species are clearly at risk from human impacts — including cell towers, their roads, and forest cutting.

My take away here: this large variety of migratory birds, bats, other mammals, insects and plants likely use/grow in/on the proposed project site, as well as the adjacent hilly and surrounding wetland habitats, which creates an overwhelming realization: This proposed site is absolutely *inappropriate* for a 140-ft AGL cell tower, let alone all the disturbances and fragmentation that will result from developing and maintaining it.

Many of these aforementioned species are already struggling to survive, trying to deal with the impacts of climate change, habitat loss, fragmentation, contaminants, pesticides, stress and diseases — among others. We don't need to add yet another perturbation that affects them negatively, risking their loss. Since we're already in the sixth major extinction epoch — witnessing the extinction of plant and animal species on a global scale, in some cases, at unprecedented rates — we need to do everything we can to reverse negative impacts to wildlife and their habitats before they are gone (Levitt et al. 2021a, b). The Siting Council has a golden opportunity here to do their part and make a positive difference by rejecting this Cellco application.

Efforts to Address Communication Tower Collisions and Radiation Impacts

Collisions

While working for USFWS, I had to deal with Verizon's (and other's) denial of impacts from tower collisions on migratory birds. I was asked by the FCC to provide them with a detailed overview of the impacts of tower collisions on migratory birds, which — as stated before — I provided in detail on behalf of USFWS (Manville 2007: 32 pages).

Meanwhile, I attempted to estimate levels of annual tower collision mortality in the U.S. — i.e., 4-5 million birds per year in the U.S., with 6.8 million birds/yr in the U.S. and Canada, the vast majority being in the U.S. — presenting the estimates at two invited symposia and international conference reports (Manville 2005, 2009), among others. At the time, up to 350 species of songbirds and birds from other suites of avifauna had been documented as killed at communication towers in the U.S. These include BCCs, species whose populations are in decline, some precipitously, but not yet ready for proposed listing under the ESA. Some of these species present in Litchfield County are residents, migrants, or both. Currently, USFWS estimates 4-5 million bird deaths/yr in the U.S., but acknowledge it could be as high as 40 million (2025 Online review).

Radiation Effects

This issue has been briefly discussed above because radiation has been shown to attract and disorient birds and insects at communication towers. The disorienting effects are secondary to RF exposure and can therefore be taken into consideration regarding tower siting in sensitive areas. There is also a growing published record on nonionizing radiation effects now available to the public, which is expanding every day. For example, bi-weekly blogs from Dr. J. M. Moskowitz, School of Public Health, U.C. Berkeley, <https://www.saferemr.com>, provide details on hundreds of new peer-reviewed papers on radiation and its impacts. The website has previously included the notice of publication release — by Levitt, Lai and Manville — of our peer-reviewed, published three-part paper in 2021 on radiation impacts to flora and fauna (Levitt et al. 2021a, b, c), as well as other more recent papers. While the 1996 Telecommunications Act does not favor discussions of radiation on the record, there needs to be acknowledgement from FCC, Verizon and other telecommunications companies that radiation is a real problem and must be addressed including from radiation attraction and disorientation to birds, bats, and insects. The FCC continues to be silent on the radiation issue, and in contempt of court for refusing to explain the impacts of radiation on children and the environment in a former rulemaking that rubber stamped 1996 exposure standards rather than upgrade according to current science — *EHT v. FCC*: a 2022 court order that FCC lost on appeal (Environmental Health Trust, 2025 Online review).

Other Issues Facing Wildlife and The Local Residents

The proposed 140-ft above ground level (AGL) tower will be some 40-ft above the tree line on a ridge, making it highly vulnerable to increased lightning strikes with greater power surges/ground currents (Zipse 2003) capable of causing adverse effects to land-based species, in addition to collisions to birds, bats and insects. With attraction, disorientation, and inclement weather issues, this tall monopole tower could be extremely problematic for wildlife and their habitats. Flora can also be adversely affected near telecommunications installations. Trees, for

instance, can suffer dieback on the sides facing transmitters with eventual whole tree dieback as trees become weakened (Waldmann-Selsam 2021). This will only increase as more service providers are added to the tower in the future.

The proposed tower site, if it is approved, will have a construction/maintenance road cut and bulldozed off of Warren Road to a hilltop to its west. Sensitive wooded habitat and the forested ecosystem will be degraded and fragmented, with permanent damage to wetlands as noted in the application, and a recently identified vernal pool, altering habitats both for resident birds and mammals, and for migrating birds in the spring and fall. The roadway and clearcut will also provide opportunities for invasive plants to colonize, and the disturbance from construction, follow-up tower checks, and periodic tower maintenance will negatively impact resident birds, mammals, amphibians, and reptiles.

The proposed tower site and the adjacent ecosystems contain a labyrinth of important and unique habitats. For example, there are adjoining wetlands from varying distant sites which include Mount Tom Pond, Rumford Pond, Anderson Dam, Mount Rat Pond, Gunther Dam, Wyantenock Wildlife Pond, Wetlands 1 and 2, the Shepaug River, Lake Waramaug, and a variety of stream habitats. Birds use these wetland habitats for a variety of purposes, from feeding, breeding, and nesting, to maintaining territories and making daily movements to feed and then roost between different sites — morning and evening — and during spring and fall migrations during the day (e.g., raptors, bitterns, ducks, geese, and swans) and at night (e.g., songbirds). Putting a cell tower structure some 40-ft above the tree line certainly adds a huge risk for bird attraction, let alone collisions especially in foggy, windy, inclement weather conditions when migratory species use both visual cues and magnetoreception with the Earth's natural fields.

Raptors of a number of species (e.g., Red-tailed and Broad-winged Hawks, and Bald and Golden Eagles) use the existing raptor flyway twice yearly which transects this immediate proposed site, putting them especially at collision risk when they land to feed and/or roost for the night, and may collide with the proposed tower. There also is the Atlantic Flyway (also called the North-South Flyway) which sees a variety of migratory birds migrating through this immediate area, twice yearly. Collision risk would create the same problem for these species.

Wildlife Standards

Long-term chronic low-level EMF exposure standards, which do not now even exist for humans, should be set accordingly for wildlife with far greater physiological sensitivities, and environmental laws should be strictly enforced. Adding another cell tower to this location will do nothing to address these concerns.

Any existing exposure standards are for humans only; wildlife remain unprotected, including within the safety margins of existing human guidelines, which are inappropriate for different species sensitivities and different nonhuman physiologies (Levitt et al. 2022). We discuss some of these necessary standards in Levitt et al. (2021c, and 2025) such as the use of tower barriers, reduced transmissions, warning devices, and directional antennas — all creating challenges with the Cellco tower. Not building the tower, however, still remains the best option.

USFWS 2021 Communication Tower Guidelines, Including Collision Issues

Much of the current USFWS cell tower guidance (USFWS 2021b) — admittedly based only on avoiding or minimizing collision mortality — is founded on work Robert Willis and I, and other USFWS members conducted. Based on my inability to find any information in the public record, Cellco appears to have ignored several of the USFWS’s key recommendations in that guidance in the placing of this proposed cell tower. I could find no reference on record in Cellco’s documentation nor the All-Points Technology Corporation report (Cellco’s consultant) suggesting use of the USFWS’s 2021 guidance — a fact that is very troubling.

While voluntary, USFWS guidance on towers, commercial wind turbines, power lines, and building windows is based on best management practice conservation measures for each particular entity. Where USFWS recommends that a conservation measure (e.g., for a cell tower, ‘don’t build near wetlands, on an Important Bird Area, preserve, daily bird movement route, rookery,’ etc.) is available to a company but the company refuses to use it, Verizon and Cellco could be held legally liable with the resultant consequences. Enforcing violations is at the discretion of the USFWS’s Special Agents with the Office of Law Enforcement, and up to environmental attorneys at the Justice Department to criminally enforce implementation of the conservation measures. Failure to follow conservation measures has previously resulted in significant fines and corporate restrictions (Manville 2016).

USFWS guidance — currently in practice — describes in detail how to site and construct a new cell tower. How much of this guidance is/will be used by Cellco is uncertain if the Siting Commission approves this permit. One significant provision of USFWS’s most recent tower siting guidance, which applies to the proposed Cellco tower, is colocation, which may not be possible with this proposal regarding macro sites but an alternative approach like small cells on distribution powerline poles is possible.

I could not find any mention of tower placement within the administrative record regarding the applicant’s adherence to USFWS’s guidelines about not placing the Cellco tower “... *on 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...*” (USFWS 2021b). This guidance was ignored and could result in bird “takings” with the possible resultant legal consequences, not to mention negative impacts on other Federal and State-listed wildlife and plants.

I’ve already noted the nearby Macricostas Preserve is also designated as an Important Bird Area (IBA). This includes possible staging areas, daily movement routes, numerous State and Federally listed bird and other wildlife species, Birds of Conservation Concern, and a number of imperiled plants.

Facility lighting at the Cellco maintenance shed remains an issue. The good news: Cellco has kept the proposed tower height under 199 ft AGL (USFWS Guideline 5a), it does not plan to use guy wires (USFWS Guideline 5b), and lighting will not be used on the monopole (USFWS

Guideline 5c). However, the tower (140 ft AGL) will be well above tree height, increasing the risk of collision mortality, especially in inclement weather, or when winds are strong, and birds and bats are flying. Tower radiation can attract migratory birds and insects (Levitt et al. 2021a, b, 2022, 2025) which raises a further concern.

In the USFWS guidance, concerns over lighting are raised in just the second paragraph, page 1, of their best practices manual. Lights of various types have a well-documented history of attracting and killing migratory birds (Manville 2014). Lighting, even downward-facing, can be problematic. For example, in the peer-reviewed document (Manville 2014), I stated, *“From an avian perspective, when asked ‘what is the best structural lighting for birds,’ the answer is ‘none.’”* The Federal Aviation Administration, under Guideline 5ci, concurs (USFWS 2021b). No mention is raised by Cellco about lighting impacts from their utility shed, including attraction to the proposed monopole tower which could result in collisions, or plans to use only heat- or motion-sensor security lighting at minimum brightnesses and intensity as I suggested for similar types of lights in my lighting paper. Lights, even down-facing lighting, can attract migratory birds at night, especially in inclement weather, including the well-documented annual spring and fall migrations of most species of songbirds flying at night in North America. Lighting should be avoided if possible.

Take Aways and Summary

The overall concerns regarding Docket #543 can be summarized as: (1) too many documented and present plant and animal species already in trouble, some facing extirpation or possibly even extinction; (2) concerns over cumulative impacts to each of these organisms — the so-called “death by a thousand cuts”— from collision and radiation impacts, and (3) concerns over the impacts of habitat fragmentation, disturbance, and destruction (permanent and temporary). While monopole cell tower bird and bat mortality may be small compared to the guyed, lighted tall broadcast towers (some previously numbering over 10,000/incident in Kansas in 1998 [Manville 2007]), impacts from shorter towers, as well as primary and secondary effects from radiation, are a growing concern. The documented evidence supporting this conclusion is overwhelming.

A cell tower in this particular place is totally inappropriate, unneeded (Cellco should consider small cell placement), and will likely kill and injure more wildlife through impacts from tower collisions and radiation, and disrupt them through disturbance and habitat fragmentation. Simply reducing the tower height will not address the most important concerns.

We have much work yet to perform, but the Siting Council can help make a difference by acknowledging that there is a collision and significant radiation problem, and that wildlife habitats will be negatively impacted, and address these concerns by rejecting Cello’s application to the Connecticut Siting Council. We hope you will concur.

Thank you for the opportunity to present my comments on behalf of the Steep Rock Association.

Respectfully submitted,

/s/

Albert M. Manville II, Ph.D.

Acronyms

APLIC= Avian Power Line Interaction Committee
 BBC = USFWS Birds of Conservation Concern
 B&C = Boone and Crockett Club
 Cellco = Cellco Partnership
 Cell = Cellular telephone
 CT = Connecticut
 CWB = Certified Wildlife Biologist
 DOC = Department of Commerce
 DOI = Department of Interior
 DOW = Defenders of Wildlife
 E = Endangered
 EMF = Electromagnetic fields
 EMR = Electromagnetic radiation
 FAA = Federal Aviation Administration
 FCC = Federal Communications Commission
 IBA = Important Bird Area
 MBTA = Migratory Bird Treaty Act
 MPE = Maximum Permissible Exposure
 NTIA = National Communications Information Administration
 SC = Species of concern
 Service= U.S. Fish & Wildlife Service
 T = Threatened
 USFWS= U.S. Fish & Wildlife Service

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