

**Before the
Federal Communications Commission
Washington, D.C. 20554**

Antenna Structure Registration	)	
Harmoni Towers, LP	)	NON-DOCKETED PROCEEDING
Condon, Missoula County, Montana	)	ASR APPLICATION A1280552

**U.S. Department of the Interior
Fish and Wildlife Service**

Proposed Telecommunications Facility –	)	
Condon, MT; Swan River	)	File: M.13 FCC (I), 2025-0111551
Telecommunications Facility Project	)	

STEWARDS OF THE SWAN VALLEY

REPLY IN SUPPORT OF OBJECTIONS TO ENVIRONMENTAL ASSESSMENT

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Executive Summary

Decades of research tells us clearly and unequivocally that communication towers pose two major risks to wildlife: Collisions and Electromagnetic Radiation. They also present other significant environmental effects that have not been satisfactorily recognized or addressed in the Environmental Assessment (“EA”). The Opposition by Harmoni Towers (“Harmoni” or “Applicant”) to the Objections raised by those who will be directly affected by the project is mostly evasion and misdirection. It does not meaningfully address the arguments or evidence.

The Wireless Telecommunications Bureau (“Bureau” or “WTB”) cannot issue a NEPA Finding of No Significant Impact (“FONSI”) on this record; an Environmental Impact Statement (“EIS”) is therefore required. Nor can the Bureau make a “May Affect Not Likely to Adversely Affect” (“MANLAA”) finding. Formal consultation with the U.S. Fish and Wildlife Service (“FWS” or “Service”) must be initiated.

1. Communication Towers Cause Significant Bird Mortality, Even After Recent Regulatory Steps.

FWS, the Audubon Society and the American Bird Conservancy all admit that flashing tower lights can still disorient birds and increase collision risk. Each acknowledges that non-guyed physical tower structures remain a hazard. The most current estimate of bird mortality from collisions with cell towers (communication towers) is approximately 7 million birds annually in the U.S. There is still significant mortality despite mitigation measures. Flashing lights, while somewhat helpful in relation to collision risk, do not entirely eliminate it. Similarly, monopole towers pose collision risks even though they lack guy wires. There is still the physical hazard of the tower structure itself. Birds collide with the tower’s vertical structure, especially during poor visibility conditions such as fog, rain, or night migration. Bird migration behavior,

weather conditions, and disorientation caused by tower lights (even flashing) contribute to ongoing collision risks.

2. Electromagnetic Radiation (Non-Ionizing) Adversely Affects Birds and Other Wildlife.

Laboratory and field studies consistently reveal harmful effects from low-level, non-thermal electromagnetic radiation emitted by communication towers. A wide and numerous collection of the science is contained in Attachment – Agency Statements and Studies.

3. Potential Impacts on Pollinators (Bees)

Science (*see* Attachment - Agency Statements and Studies) also shows electromagnetic radiation adversely affects honeybees and other pollinators, giving rise to significant risks for food security. Given the role of pollinators in agriculture, these findings raise broader ecological and economic concerns.

4. Agency Statements.

U.S. Fish & Wildlife Service (FWS) and the Interior Department have noted these effects, and both have called for independent, third-party field studies and recognition of the effects by regulatory agencies. FWS proposed a national study and the Department of the Interior called for a programmatic Environmental Impact Statement (EIS) to evaluate cumulative impacts on 241 protected bird species. Interior also recommended updates to NEPA procedures, especially in relation to the Migratory Bird Treaty Act (“MBTA”) and Bald and Golden Eagle Protection Act (“BGEPA”).

5. FCC ignoring appeals court order.

The Commission was ordered to “address the impacts of RF radiation on the environment” more than four years ago, *Environmental Health Trust, et al v. Federal Communications Commission, et al*, 9 F.4th 893, 914 (D.C. Cir. 2021), but it has not made any

effort to comply with the court mandate. The facts and science are clear, but projects like this one continue to be approved, in defiance of law, science and even court orders.

6. “Just one more” rationale fails.

The rationale is that one more tower will not have a significant impact. But it will, especially on a cumulative basis. Project proponents – like Harmoni here – also broadly assert that radiofrequency radiation concerns are misplaced, unproven and even irrelevant to NEPA and other environmental laws like ESA §7, MBTA and BGEPA. But Applicant provides no scientific support for its position. Nor can it. The “best scientific and commercial data available” – including that provided in Attachment – Agency Statements and Studies – plainly shows significant adverse effects to all *flora* and *fauna* that can no longer be ignored or swept under the regulatory rug. Their legal arguments that radiofrequency radiation effects are irrelevant are simply wrong. NEPA, ESA Section 7, MBTA and BGEPA all apply and adverse effects of any kind are central to their operation. The analysis under each must at least recognize and make every effort to avoid collision risks and – finally – deal with the clear adverse effects to wildlife from RF emissions and exposure.

7. Adoption of other submissions.

Stewards of the Swan Valley otherwise join in the submissions by counsel for Peter Guynn and rely on evidence and argument presented by the other objectors.

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Attachment – Agency Statements and Studies

I. Stewards of the Swan Valley.

Stewards of the Swan Valley (<https://www.preserveswanvalley>) is a charitable 501(c)(3) nonprofit organization dedicated to preserving the community, culture, and environment in the Swan Valley and adjacent areas in western Montana. Our mission is to reflect local community values while facilitating efforts that sustain, enhance, conserve, and protect the natural and cultural resources and rural lifestyle of the Swan Valley for present and future generations.

Stewards of the Swan Valley submit this Reply in Support of Objections to Environmental Assessment, because it – like those who have already commented, all of whom oppose – believes the proposed tower is not justified: it will destroy pristine views, have significant environmental impacts on the land and wildlife and is not needed since other nearby structures are available that can support any necessary additional coverage or densification. The record and evidence, including that supplied with this filing, clearly demonstrates that the Bureau cannot enter either a FONSI or MANLAA.

Consistent with the Bureau’s instructions in its December 17, 2025 email adjusting the pleading cycle, this Reply will address only those issues raised in the Applicant’s Opposition.

II. The evidence does not support a FONSI or MANLAA; incidental take permits are clearly required.

Harmoni Opposition (“Oppos.”) page 1 says the FCC should “grant the EA.” That is not how these things work. Harmoni comes a bit closer on Oppos. p. 8, when it recognizes one issue is whether the Commission (through the Division on delegated authority, subject to review) – can or should issue a NEPA FONSI.

What Harmoni fails to acknowledge, however, is that the Commission must also independently, as the “action agency,” assess whether an ESA MANLAA should be adopted. The

Service does not enter a MANLAA;¹ it merely indicates whether it would concur in one if the action agency chooses to take that action. But FWS concurrences are expressly based entirely and only on the information provided by the applicant² and it is virtually certain that it has not reviewed the materials provided by the commentors in this case. There is no evidence the Applicant provided any of the objectors' 2024-2025 filings to FWS,³ and more evidence and argument has been submitted after the concurrence letter. The action agency – here the FCC – is the one charged with reviewing the record and applying any scientific and commercial data, whether or not provided to FWS. Since FWS did not have the benefit of the entire record, especially that submitted after the date of concurrence, its concurrence cannot be binding or the sole source of reliance. That is especially so on the issue of RF emissions and exposures addressed below.

The applicable Commission ASR rule is 17.4(b)(8). It states, in pertinent part that “[u]pon filing the completed antenna structure registration application, the applicant shall certify that the construction will not have a significant environmental impact, unless an Environmental Impact Statement is prepared pursuant to § 1.1314 of this chapter.” The ASR application, however, did not contain the certification required by the rule that is carried through via the “Environmental Compliance” portion of the form. That part is empty, as is the line calling for the “Basis for Certification.” Applicant claimed it was submitting an environmental assessment, but that is

¹ The Harmoni Oppos. repeatedly refers to the FWS concurrence (pp. 2, 4, 8) and acts like the MANLAA issue is resolved because of it. That is incorrect.

² The FWS concurrence letters so note: “The Service bases its concurrence on the information and analysis you provided and information in our files.”

³ Harmoni Oppos p. 5 & n. 27 takes pains to note that objectors' concerns were made available to and considered by the SHPO, but nowhere does it represent that any were provided to FWS.

incorrect. Harmoni filed a “Screening Checklist” in July 2024, after the Commission received requests for further environmental processing. The EA did not come until late 2025.

Section 17.48(b)(8) also incorporates the Commission’s “environmental regulations (47 CFR 1.1301 through 1.1319)...”) by reference and requires resolution of all environmental issues in accordance with them. Section 1.1311 contains the required contents of an EA. Section 1.1311(a)(6) speaks to ESA Sec. 7 and requires that the applicant provide an analysis that “utilize[s] the best scientific and commercial data available,” something the EA and all of Harmoni’s other environmental documents lack in several respects.

A. ESA Sec. 7, MBTA and BGEPA.

Rule 1.1311(a)(6) adopts the FWS consultation rules by reference, including 50 C.F.R. 402.14(c). This part of the rule specifically references subsection (c), which relates to formal consultation. Formal consultation has not yet been requested, although as shown below it must be. Instead, the consultation has to date proceeded under informal consultation under subsection (b). The applicant has successfully persuaded FWS to state that it concurs in a MANLAA finding, should the FCC make one for those species and habitats identified in the biological assessment and other communications. This makes clear that under the FWS rules the Service does not make the MANLAA finding, the action agency does. FWS merely states whether it would concur in such a finding. If the action agency makes the MANLAA finding, then formal consultation is not required. If it does not make that finding, then formal consultation under subsection (c) is required. 50 C.F.R. 402.13(c); 402.14(b); see also 402.12(k).

The MANLAA finding turns on whether the proposed action will “jeopardize the continued existence of listed species” as a whole. FWS (again, based only on what applicant provided them) has indicated potential concurrence with any Commission finding of no jeopardy,

but even if there is a no jeopardy finding that is not the end of it. “Jeopardy” is a species-level issue, but this project still requires attention to any “incidental take” of individual species members that will occur. Even though this matter is at the “informal consultation” stage under 50 C.F.R. 402.13, subsection (c)(1) requires “information similar to the types of information described for formal consultation at § 402.14(c)(1)” and the basic rules for formal consultation, and especially the requirement relating to use of the “best available scientific and commercial data” still apply. 50 C.F.R. 402.11(c), (d). Under 50 C.F.R. 402.14, “[t]he Federal agency [FCC] ... shall provide the Service with the best scientific and commercial data available.” Yet here it is clear that the FCC and applicant did not do so because the information provided by objectors prior to the concurrence was not transmitted to FWS.

FWS has tentatively accepted certain mitigating steps. *Harmoni Oppos.* p. 4. But even if all of them are taken *there will still be incidental take* through collisions and death/injury resulting from radiofrequency exposure, as explained below in parts III and IV. FWS rules require an “incidental take” statement that (1) specifies the impact of the incidental taking on the species; (2) specifies the “reasonable and prudent measures” necessary or appropriate to minimize such impact; (3) sets forth “terms and conditions” the applicant must implement, including reasonable and prudent measures such as reporting requirements; and (4) specifies the procedures to be used to handle or dispose of any animals actually taken. 50 C.F.R. § 402.14(i).

The FWS concurrence extensively addresses the “take” requirements flowing from MBTA and BGEPA. The relevant distance for “non-eagle raptor nests” is 0.5 miles, or 2,640 feet. The concurrence accepts Applicant’s representation that there is no known eagle nesting activity “adjacent” to the project area. But the evidence in this case belies that claim. There is direct witness testimony by Kirsten Frazer, who asserts she is personally aware of an “eagle nest that is

located close to the proposed cell tower site. This is an active eagle nest with a pair of eagles that raise their offspring there year after year. Last year they had one offspring that fledged in early July. As I sit here and write this letter, it is mating season, and you can see the eagle pair is sitting in a snag near the nest.” Frazer January 8, 2026 letter (entered January 29, 2026).⁴ Harmoni Oppos. p. 4 tries to brush this off as “anecdotal” but a direct statement based on personal knowledge and direct perception is not “anecdotal”; this is a very recent “present recollection recorded” and therefore admissible and reliable.

The FWS concurrence also notes that “[i]ncidental take of eagles from actions such as electrocutions from power lines or wind turbine strikes are prohibited unless specifically authorized via an eagle incidental take permit from the Service.” There *will be* strikes even after minimization efforts, so this tower requires an incidental take permit. Further, as will be explained below, while the radiofrequency radiation is not exactly “electrocution” the best scientific information available (especially that provided with this submission in Attachment – Agency Statements and Studies) proves there will likely be injuries from excessive heating and other non-thermal exposures. That meets the definition of “disturb” under Service regulations.⁵ So, once again, an incidental take permit is required. There is no evidence that Harmoni has sought and received an incidental take permit. Indeed, the EA does not even contain the incidental take statement required by 50 C.F.R. § 402.14(i).

⁴ Although Frazer could not determine the distance between this nest and the site, it appears that this is probably the “large stick nest” Harmoni Oppos. p. 4, n. 24 says is “approximately 720 feet northwest of the project site.” That is far less than one-half mile.

⁵ The concurrence letters each provide the meaning of “disturb.” “...the Service defined the term disturb which means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

Counsel for Peter Guynn has placed a considerable amount of scientific information into the record. Stewards of the Swan Valley will not repeat that evidence and will defer to their reply in support in the interest of reducing repetition for all issues other than collisions and radiofrequency emissions/exposures. Suffice it to say that the Commission is required to adequately consider all that evidence and reasonably explain why any MANLAA can issue despite that evidence.

B. NEPA.

Harmoni mischaracterizes the focus of any NEPA evaluation when it says “the FCC’s NEPA rules apply to Commission actions that “may or will have a significant impact on the quality of the *human environment*.” (emphasis in original) The obvious implication is that NEPA is about human impacts only, not all environmental including *flora* and *fauna*. That is incorrect. “Human environment” is the totality of the environment as it affects man, including the *flora* and *fauna*. The recently repealed CEQ rules defined “(r) Human environment or environment means comprehensively the natural and physical environment and the relationship of present and future generations with that environment.” 40 C.F.R. 1508.1(r) (repealed Apr. 11, 2025, 90 FR 10610, 10616).⁶ NEPA therefore does apply to *flora* and *fauna*, not just humans.

⁶ The CEQ rules, including this definition, were repealed last year, as the Harmoni Opposition notes in several places. But they are still relevant. For one thing the *Commission’s rules* still expressly adopt the CEQ rules. See 47 C.F.R. 1.1302. The most recent CEQ [NEPA Procedures Guidance](#) (Sept. 29, 2024) addressing its rules repeal encourages agencies to update their NEPA procedures (Guidance p. 3). The Commission is addressing that to some extent, as Harmoni emphasizes on Oppos. p. 3. But the current rules remain in effect at this time. The CEQ Guidance says on page 3 that “[w]hile these revisions are ongoing, agencies should continue to follow their existing practices and procedures for implementing NEPA to the extent consistent with the text of NEPA, E.O. 14154, case law, and this guidance.” It goes on to provide that “[m]oreover, although CEQ rescinded its NEPA implementing regulations at 40 C.F.R. parts 1500–1508, agencies should consider voluntarily relying on those regulations in completing ongoing NEPA reviews.” The CEQ definition of “human environment” as extending to *flora* and *fauna* as well as humans is therefore still good law.

The Guidance also directly speaks to several matters directly related to this proceeding on page 4 where it addresses the 2023 amendments to NEPA (footnotes omitted):

Congress revised Section 102 of NEPA to clarify the requirements for environmental impact statements (EISs). Agencies must analyze and disclose the “reasonably foreseeable environmental effects of the proposed agency action;” “any reasonably foreseeable adverse environmental effects which cannot be avoided should the proposal be implemented;” “a reasonable range of alternatives to the proposed agency action, including an analysis of any negative environmental impacts of not implementing the proposed agency action in the case of a no action alternative, that are technically and economically feasible, and meet the purpose and need of the proposal;” “the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity;” and “any irreversible and irretrievable commitments of Federal resources that would be involved in the proposed agency action should it be implemented.” The amendments to section 102 of NEPA also require that agencies ensure the professional integrity, including scientific integrity, of the discussion and analysis in environmental documents; make use of reliable data and resources in NEPA reviews; and study, develop, and describe technically and economically feasible alternatives.

Harmoni’s Opposition makes a lot of loud noises intended to persuade that NEPA is a dead letter and the outcome in this case is preordained. It insists the objectors should be silenced and ignored. But all of that is misdirection. As the Guidance makes clear, scientific and professional integrity is key, reasonably foreseeable effects must be recognized and eliminated or at least mitigated insofar as possible, and – most important – despite all of Harmoni’s insistence to the contrary on Opposition page 6, it does have an obligation to prove need and truly investigate alternatives, including the obvious “no action”/“no build” option.

47 C.F.R. 1.1311(a)(4) specifically calls for alternatives analysis. Harmoni Oppos. p. 7 argues that NEPA does not concern itself with demonstrated need for the project, but that is not true. There is always the “no build” alternative. *See N.C. Wildlife Fed’n v. N.C. DOT*, 677 F.3d 596, 603 (4th Cir. 2012) (“NEPA requires that an agency’s alternatives analysis include a ‘no build’ alternative. Without accurate baseline data, an agency cannot carefully consider information about significant environmental impacts resulting in an arbitrary and capricious

decision. Accordingly, courts not infrequently find NEPA violations when an agency miscalculates the ‘no build’ baseline or when the baseline assumes the existence of a proposed project.”) (internal quotations, citations and ellipses cleaned up). The EA here does not meaningfully consider “no build.” Its alternatives analysis is inadequate.

Harmoni Oppos. p. 6 & n. 42 rely on three cases in support of their claim the alternatives analysis is sufficient. Those are all distinguishable. In *AT&T Wireless PCS Inc.*, 14 FCC Rcd 9489, 9496 ¶ 12 (WTB/ECID 1999), for example, the applicants analyzed 18 potential alternatives. The applicants shared technical information that demonstrated none were viable. Here, Harmoni has only looked at two, according to EA § 4.3. The table has only conclusory statements about their infeasibility. Harmoni references signal strength modeling, but it has not been provided for independent evaluation, in stark contrast to *AT&T Wireless PCS*.

The applicant in *SBA Towers III, LLC*, 31 FCC Rcd 1755, 1767-1769 ¶¶43-54 (WTB/CIPD 2016) (“*SBA Towers*”) considered 5 alternative sites. Again, there was extensive technical information placed in the record, including coverage data and coverage prediction maps. The Bureau noted that “determining reasonable alternatives thus involves a balancing test of environmental and other factors, including but not limited to cost, feasibility, technological requirements, the need for service, and the public interest.” 31 FCC Rcd at 1768, ¶ 48. But here Harmoni produced virtually no objective evidence on cost, feasibility, technological requirements or “need for service.”

This part of the *SBA Towers III* decision also directly refutes Harmoni’s assertion on Oppos. p. 7 that it does not have to show need. It’s discussion on “coverage gaps” misses the point. Harmoni has not presented any evidence at all indicating that it “needs” this tower at this

specific location and configured exactly as proposed in order to avoid even a “material inhibition.”

Druid Hills Civic Association v. FAA, 772 F.2d. 700, 713 (11th Cir. 1985) does not support Harmoni’s arguments. The court there noted that the draft EIS was patently inadequate, but the final EIS, in contrast contained a “detailed account of the no-build alternative.”

Harmoni’s never truly, not even with “two sentences” (which the *Druid Hills* court agreed is “patently inadequate”) addresses the “no build” alternative. It just asserts (without proving) the tower is needed, so “no build” is not an option.

III. Collision Mortality.

Communication towers cause significant bird mortality, even after recent regulatory steps. FWS, the Audubon Society and the American Bird Conservancy all admit that flashing towers can still disorient birds and increase collision risk. Each acknowledges that non-guyed physical tower structures remain a hazard. The most current estimate of bird mortality from collisions with cell towers (communication towers) is approximately 7 million birds annually in the U.S. There is still significant mortality despite mitigation measures. Flashing lights, while somewhat helpful in relation to collision risk, do not entirely eliminate it. Similarly, monopole towers pose collision risks even though they lack guy wires. There is still the physical hazard of the tower structure itself. Birds collide with the tower’s vertical structure, especially during poor visibility conditions such as fog, rain, or night migration. Bird migration behavior, weather conditions, and disorientation caused by tower lights (even flashing) contribute to ongoing collision risks.

Up to 350 species have been recorded as tower-collision victims, including many Birds of Conservation Concern (BCC). At least 13 BCC species experience mortality levels high enough

(1–9% of their total population annually) to raise concerns about population-level impacts. Each new tower adds to cumulative mortality. Mitigation efforts like non-guyed structures employing flashing lights may slow the decline, but deaths still occur. The Commission cannot just continue to pretend this is not so.

IV. Radiofrequency radiation issues.

The “environmental regulations” also, of course contain the Commission’s “human exposure” limits. That specific topic cuts across NEPA, ESA Sec. 7, BGEPA and MBTA, so it is addressed here on a stand-alone basis.

A. The human exposure limits provide no safe harbor; Harmoni has not carried its burden of proving no significant impact or not likely to adversely affect.

Harmoni Oppos. p. 6 addresses RF exposure. It claims that “[t]he proposed facility will comply with applicable FCC radiofrequency (“RF”) exposure limits, and therefore will not cause human exposure to levels of radiation in excess of the FCC’s prescribed limits, as documented in the EA.” Footnote 38 cites to EA § 5.2.9 and Appendix B. There are several significant problems with this presentation. EA § 5.2.9 asserts that [w]hile one commenter asked about the impact of electromagnetic radiation on flora and fauna, any such non-human impacts are beyond the scope of the FCC’s NEPA review.” Oppos. p. 6 similarly asserts that “[o]ne letter raises concerns about the impact of non-ionizing electromagnetic radiation on flora and fauna, but the FCC’s NEPA rules apply to Commission actions that ‘may or will have a significant impact on the quality of the *human* environment.’”

Migratory birds, eagles and listed species are obviously non-human. Contrary to Harmoni’s claims NEPA does require assessment of the impact of electromagnetic radiation on *flora* and *fauna* if that radiation may affect wildlife. On the other hand, Harmoni is right when it states that the FCC’s exposure rules are limited to human exposures, so they do not address non-

human exposures. But what Harmoni fails to recognize is that this regulatory gap hurts Harmoni's case because it means that no one, and especially the Commission, can just assume that exposures within the human limits will not adversely affect non-human species. In other words, the current limits provide no safe harbor for Harmoni. So Harmoni has the burden, in this case, of proving that exposure to the many non-human species in and around the site will not have a significant adverse effect and impact. It has not even tried to make that showing.⁷

The Commission was ordered to “address the impacts of RF radiation on the environment” more than four years ago, *Environmental Health Trust, et al v. Federal Communications Commission, et al*, 9 F.4th 893, 914 (D.C. Cir. 2021), but it has not made any effort to comply with the court mandate. The *EHT* court remanded for a reasoned explanation regarding “the impacts of RF radiation on the environment.” 9 F.4th at 914. The opinion explains at 9 F.4th at 908-909:

... the Commission also completely failed even to acknowledge, let alone respond to, comments concerning the impact of RF radiation on the environment. That utter lack of a response does not meet the Commission's obligation to provide a reasoned explanation for terminating the notice of inquiry. The record contains substantive evidence of potential environmental harms. Most relevantly, the record included a letter from the Department of the Interior voicing concern about the impact of RF radiation from communication towers on migratory birds, *see* J.A. 8,379, 8,383-86. In the Department of the Interior's expert view, the Commission's RF radiation limits “continue to be based on thermal heating, a criterion now nearly 30 years out of date and inapplicable today.” J.A. 8,383. “The [current environmental] problem,” according to the Department of the Interior, “appears to focus on very low-level, non-thermal electromagnetic radiation.” *Id.* Although the Commission has repeatedly

⁷ Stewards of the Swan Valley is providing extensive evidence of harm in this submission, but we note that some already exists in the record. Friends of the Wild Swan's August 2, 2025 filing on page 1 referenced and extensively quotes from a November 2020 the Frontiers in Public Health paper “Low-level EMF effects on wildlife and plants: What research tells us about an ecosystem approach” by B. Black Levitt, Henry C. Lai and Albert M. Manville II. (That full study and several others are contained in Attachment – Agency Statements and Studies to Stewards of the Swan Valley's instant submission.) Harmoni was therefore on notice this was an issue and had to address this scientific data. It did not and instead chose to wrongly argue it is not relevant.

claimed that it considered “inputs from [its] sister federal agencies[,]” *2019 Order*, 34 *FCC Rcd.* at 11,689, the Commission entirely failed to address the environmental harm concerns raised by the Department of the Interior. ...

The Commission recently opened an NPRM to “update” its NEPA rules. Note 153 states that “we do not propose changes to [the radiofrequency radiation exposure limit] rule sections as part of this proceeding.” *In re Modernizing the Commission’s Nat’l Env’tl. Policy Act Rules*, FCC 25-47, 40 *FCC Rcd* 6377, ¶51, n. 153 (Aug. 2025). So this matter cannot be avoided by any contention it is currently being resolved in some other proceedings.

There is simply no basis to assume the human exposure limits provide any excuse to not take exposures to non-human species into account as part of the further environmental processing in this proceeding. That is especially so since the Interior Department and FWS materials in Attachment – Agency Statements and Studies reveal that existing guidelines are based on “thermal heating” and therefore do not address the other well-demonstrated biological responses to RF radiation that occur in animals and plants.

The human exposure limits address human exposures. They do not expressly or impliedly apply to non-human species. The Commission has never directly held that the human exposure limits logically, legally or in any other way apply to anything other than human exposures. There are no guidelines for non-human species, and one cannot just assume the human exposure limits apply or are properly applied to anything other than human exposures. Humans, non-human *fauna* and then *flora* all respond to exposure at the biological level and many of the underlying mechanisms of harm are that same. But that does not mean the same limits make sense for all three.

This issue has only been addressed once in the entire history of the Commission’s NEPA-related rulemakings. *See Responsibility of the Federal Communications Commission to consider biological effects of radiofrequency radiation when authorizing the use of radiofrequency*

devices; Potential effects of a reduction in the allowable level of radiofrequency radiation on FCC authorized communications services and equipment, FCC 82-47, Notice of Proposed Rulemaking, 89 FCC 2d 214, 245, ¶¶147-149 (1982). The previous Notice of Inquiry sought comments in Question 19: “Does a health risk to animals have to be considered? What if the species being threatened is on the endangered species list?” The EPA opined that health risks to animals should be considered, but that issue “would not be expected to be a controlling factor in the development of a standard.” SBS contended in that proceeding that it is “probably impossible to impose a single standard applicable to all living creatures.” Paragraph 149 went on to note that “Raytheon pointed out that a health risk to animals would be a secondary consideration to health effects in humans. They were of the opinion that a decision as to whether a species would be threatened by a particular operation should be handled on a case-by-case basis and should not be used in the development of a standard.”

The subsequent Report and Order, FCC 85-90, 100 FCC 2d 543 (1985) did not resolve the question and the topic has not come up again in any Commission decision or order.⁸ There has never been an agency decision on the question, but the text of the guidelines themselves are clear and unambiguous. The exposure guidelines are only about human exposures. There is no

⁸ The difference between humans and other living things also played into the 1992 ANSI/IEEE deliberations over exposure limits. There was a frog study looking at responses to exposure. The ANSI/IEEE committee majority concluded “not only is there an uncertainty inherent in measurements of the responses of animals, but extrapolation of these measurements to human beings may be difficult.” *See* Respondents Brief, *Cell Phone Task Force*, No. 97-4328 (and consolidated cases), before the Second Circuit (1998) at p. 28, discussing the ANSI/IEEE 1992 Report at 27. Similarly, an April 2019 letter from FDA CDRH Director Dr. Shuren to the Commission’s OET Chief suggesting that “no changes to the current standards are warranted at this time” contended that an NTP cancer study analyzed rodents and the results and “should not be applied to human cell phone usage.” If animal studies cannot be carried over to human beings, then logic demands that human exposure limits cannot be carried over to animals. The industry irrationally and unreasonably wants it both ways.

agency promulgated regulation that applies to non-human species exposures. The human exposure guidelines are flawed and must be reassessed and changed, but the complete lack of any limits for non-human species means Harmoni has failed to justify, and the Commission cannot enter, a FONSI or MANLAA based on Harmoni's proof.

B. The record in this matter affirmatively precludes any possibility of a FONSI or MANLAA.

1. There is no RF compliance report; if one were produced it would show that flying birds, insects and bats will be exposed at levels higher than the human exposure limits.

Harmoni Oppos. p. 6 asserts the proposed facility will not cause "human exposure to levels of radiation in excess of the FCC's prescribed limits." That may well be true as to humans at ground level. But this statement misses the point. There will be animal, insect and bird exposures far above the human limits up and around the transmitters. There is no RF compliance report that shows energy levels at any point in 3-dimensional space but if one were produced it would clearly reveal levels many multiples above the human limits going quite some distance outward from the transmitters. Birds, insects and bats that go up there will get hit and will undoubtedly experience significant tissue heating. They will be harmed or at least (in FWS parlance) "disturbed."

The FCC's exposure rules do not address this circumstance since, again, they deal with human exposures. The rules require an exclusion zone and signs for any area where levels are excessive. They also include a network monitoring center number for calls or inquiries. 47 C.F.R. 1.1307(b)(4). That is irrational and completely ineffective for non-human species since – at least so far – flying animals, birds and insects do not have or use mobile phones. There is no evidence they can read signs and thereby be in position to know to avoid the spaces where exposure levels are extremely high. They will go up there and land on the top of the tower or

antennas, circle about or merely fly through the high-energy zone. Birds often build nests on cell towers as well, which means they and any offspring that survive will suffer long exposures to excessive radiation. They will surely be injured by exposures that far exceed the human exposure limits. Applicant wholly fails to recognize this and certainly proposes no mitigation steps to address this significant problem.

2. The science is clear: radiofrequency radiation exposure – even below human exposure limits – harms all *flora and fauna*.

Laboratory and field studies consistently reveal harmful effects from low-level, non-thermal electromagnetic radiation emitted by communication towers. A wide and numerous collection of the science is contained in Attachment – Agency Statements and Studies.

Partial List of Studies on Wildlife Electromagnetic Radiation Effects

Study/Source	Species/Subjects	Observed Effects	Key Takeaways
Balmori (2005, 2009)	White Storks, House Sparrows	Nest abandonment, plumage deterioration, reduced breeding, mortality	Strong field evidence of chronic non-thermal effects on wild birds.
Balmori & Hallberg (2007)	House Sparrows	Declines in sparrow abundance correlated with RF intensity	Suggests ecosystem-level impacts in high-exposure urban zones.
Everaert & Bauwens (2007)	House Sparrows	Fewer males in high-exposure areas	Indicates a dose-response relationship between RF levels and bird abundance.
Beason & Semm (2002)	Zebra Finches	Altered neuronal firing (3.5× increase)	RF disrupts magnetoreception and neural processing.
DiCarlo et al. (2002–2010)	Chicken embryos	DNA damage, embryo death, deformities	Demonstrates non-thermal developmental impacts at very low exposure.
Grigoriev (2003)	Chick embryos	Increased embryo mortality, abnormalities	Confirms sensitivity of developing embryos to non-thermal RF.
Favre (2011)	Honeybees	Worker disorientation, hive disruption	RF interference with bee navigation.

Study/Source	Species/Subjects	Observed Effects	Key Takeaways
Harst et al. (2006)	Honeybees	Reduced honeycomb building, lower survivorship	Early evidence of colony-level impacts.
Kimmel et al. (2006)	Honeybees	Dramatically reduced return flights	RF-related navigational impairment.
Leavitt & Morrow (2007)	Birds, bees, humans (review)	Neurological disruption, behavioral changes, immune effects, magnetoreception interference	Found biological effects at exposure levels thousands of times below FCC human exposure limits.
Levitt, Lai & Manville (2021–2023 Trilogy)	Birds, insects, plants, ecosystems	Documented mechanisms of harm including oxidative stress, calcium-channel disruption, magnetoreception interference, reproductive decline, and ecosystem-level effects	Most comprehensive modern synthesis showing that non-thermal RF impacts are real and ecologically significant.
FWS/DOI ⁹	Birds broadly	Potential behavioral, reproductive, and physiological effects	Calls for updated standards and U.S. field studies.

Biological mechanisms

The attached studies identify multiple pathways by which low-level RF can affect living organisms:

- Oxidative stress
- Voltage-gated calcium-channel disruption
- Melatonin suppression
- Magnetoreception interference
- DNA damage pathways

The studies also document ecosystem-level impacts and show that RF affects:

- Birds
- Insects (especially pollinators)
- Plants
- Soil biota
- Food webs

Effects occur extremely low exposure levels:

- Non-thermal intensities
- Below FCC human exposure limits

⁹ The Interior Department and FWS letters contained in Attachment – Agency Statements and Studies cite to several of the studies also provided in the Attachment or other prior work by the same authors.

- Below ICNIRP limits
- Below levels emitted by small cells and Wi-Fi routers

Consistently observed effects include:

- Increased mortality
- Reproductive impacts (embryo mortality, reduced breeding success through embryo deformities and death)
- Behavioral disruption (navigation, nest abandonment, altered neural activity)
- Population-level declines in high-exposure areas
- Plumage deterioration
- Locomotion problems
- Neurological responses (*e.g.*, increased neuron firing)
- Pollinator impairment (bee disorientation, reduced hive productivity)

Common Exposure Characteristics:

- Effects occur at non-thermal, low-intensity levels — far below FCC human exposure limits.
- Chronic exposure appears more harmful than short-term exposure.
- Species with magnetoreception (birds, bees) show heightened sensitivity.

Potential Impacts on Pollinators (Bees)

Science (*see* Attachment - Agency Statements and Studies) also shows electromagnetic radiation affects honeybees and other pollinators, giving rise to significant risks for food security.

Observed effects include, among other things:

- Disorientation and navigational failure
- Reduced hive productivity
- Lower survivorship
- Reduced honeycomb construction

Given the role of pollinators in agriculture, these findings raise broader ecological and economic concerns.

As shown in Attachment – Agency Statements and Studies, FWS and the Interior Department have noted these effects, and both have called for independent, third-party field studies and recognition of the effects by regulatory agencies. FWS proposed a national study examining 250 towers over 3 years. The Department of the Interior called for a programmatic

Environmental Impact Statement (EIS) to evaluate cumulative impacts on 241 protected bird species and updates to NEPA procedures, especially in relation to the Migratory Bird Treaty Act (“MBTA”) and Bald and Golden Eagle Protection Act.

The facts and science are known, but projects like this one continue to be approved. The rationale is that one more tower will not have a significant impact. But it will, especially on a cumulative basis. Project proponents – like Harmoni here – also broadly assert that radiofrequency radiation concerns are misplaced, unproven and even irrelevant to NEPA and other environmental laws like ESA §7, MBTA and the BGEPA. But Applicant provides no scientific support for its position. Nor can it. The “best scientific and commercial data available” – including that provided in Attachment – Agency Statements and Studies – plainly shows significant adverse effects to all *flora* and *fauna* that can no longer be ignored or swept under the regulatory rug. Their legal arguments are simply wrong. NEPA, ESA Section 7, MBTA and the Bald and Golden Eagle Protection Act all apply and the analysis under each must tend to both collision risks and the clear adverse effects to wildlife from RF emissions and exposure.

Conclusion

The “best scientific and commercial data available” compels a refusal to issue a FONSI. An EIS is required. Nor can the FCC adopt a MANLAA. The Commission must request formal consultation and obtain a Biological Opinion on the effects of radiofrequency radiation on the listed species known to be present in the area surrounding and on the site.

The Division must reject Harmoni’s request that it “grant the EA.”

Respectfully Submitted,

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Copied to FWS by email