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Mr. Eric V. Rickerson, State Supervisor
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[DHH FWS Concurrence Response-AMM Final.docx]

Re: Response on behalf of Dungeness Heights Homeowners ("DHH") to September 21, 2017, Concurrence Letter 01EWFW00-2017-I-1104 ("FWS Concurrence Letter") from the Washington Fish and Wildlife Office to Dr. Joelle Gehring, Competition and Infrastructure Policy Division, Federal Communications Commission (FCC), pertaining to the Radio Pacific, Inc., cellular and KZQM FM communications tower near Sequim, WA

Dear Supervisor Rickerson:

As you may recall, I was the U.S. Fish and Wildlife Service's (hereafter FWS or Service) national, agency lead on all things structural that impacted migratory birds, including collisions with communication towers and impacts from the tower radiation on migratory birds and other wildlife. I served in that capacity as agency lead from 1997 to 2014, when I retired from the Service. In 2000 I co-authored the then first version of the *Interim Voluntary Communication Tower Guidelines*, which I revised and authored in 2013 (cited on page 1, paragraph 3 of your letter). Those 2013 guidelines were shared with Dr. Joelle Gehring of the FCC based on the then best available science, and they were shared with industry, individual communication tower companies, the public, and Federal and State authorities, among others. In my role as agency lead, I served: as project officer for 2 tower research lighting/height/guy wire studies performed by Dr. Gehring as the Principal Investigator before she was hired by FCC; as a colleague beginning in 2000 working with Dr. T. Litovitz and his team at Catholic University on impacts of extremely low levels of cell phone radiation on chicken embryos; as a colleague working with renowned radiation expert Dr. H. Lai (Emeritus, Univ. Washington) on non-thermal radiation effects; and as a colleague working with European scientists, especially Dr. A. Balmori and Dr. J. Everaert, documenting impacts of cell towers on wild nesting migratory birds. I also served as Chairman of the Communication Tower Working Group ("CTWG") whose stakeholders included the FCC, Federal Aviation Administration, FWS, other Federal agencies, all major broadcast and cellular (cell) phone trade associations, individual companies, academicians, consultants, and conservationists, among others. The function of the CTWG was to assess, use and recommend the latest science dealing with avian impacts from tower collisions and radiation. Once retiring from Federal service, I have remained extremely active regarding tower impacts to migratory birds from collisions and radiation.

When I retired, FWS Washington DC HQ Office did not replace my position, especially those components dealing with impacts of cell and other broadcast towers on migratory birds. While that was unfortunate, it provides absolutely no excuse to FWS for failing to recognize and failing to continue to address growing impacts from collisions and radiation on migratory birds. I have documented those scientific issues in considerable published detail in a number of peer-reviewed and refereed papers both while

working for FWS and more recently as a consultant, as previously referenced in our Dungeness Heights Homeowners (DHH) filings to FWS and FCC.

The FCC Staff possibly will rely on this FWS Concurrence Letter as the principal basis for no further requirement for any NEPA review. This is scientifically and legally indefensible, fails to address the many points DHH raised in previous submissions, and does not preclude the need for further NEPA review. Specific concerns include the following:

- This FWS Concurrence Letter is cursory at best, misleading, incorrect in one specific study interpretation, and completely fails to represent most of the ongoing scientific developments as we know and understand them today especially regarding impacts to migratory birds. For example, in your reference to the *2013 USFWS Revised Voluntary Guidelines* (which as the principal author I am quite familiar), you mention that the proposed Radio Pacific tower will be a 150-ft [AGL] tall monopole. This design does indeed follow recommended FWS best practices — i.e., unguyed and unlit. However, what is **not** addressed are the likely impacts to Bald Eagles, and other nesting and roosting migratory birds, of the proposed "faux" fiberglass fir tree branches — possibly causing impalement on the sharp fiberglass branches, injury and death to birds which attempt to both use or avoid them at the last minute, not to mention impacts from both thermal and non-thermal radiation from the antennas. Bald Eagles tend to use the tallest objects available for roosting, and roosting will likely occur on the "faux" fiberglass branches since the antennas will extend more than 60 ft above the current tree line. A NEPA review, ideally through a nationwide EIS (or the very least an EA) is strongly recommended. DHH previously raised these collision, impalement and radiation likely environmental impacts to migratory birds and especially to the locally important Bald Eagle population to FWS and FCC before. These issues were brought to the attention of FCC in: DHH 3-17-16 Request for Environmental Review Brief and Appendices; DHH 4-6-16 Reply and Appendices; DHH 4-27-16 Opposition which includes the 4-25-16 Manville Declaration, all in FCC File No. A0985196. Similar documents are filed in FCC File No. BMPH-20150922ACS. The FWS was provided with the relevant materials in those FCC files, plus with additional materials, all emailed in a series of 12 emails first sent on 7-28-16 to Mark Miller of the Washington Fish and Wildlife Office (along with hand delivery of a paper copy) and sent again on 6-19-17 by forwarding the same series of 12 emails to Michael Green and Emily Teachout of the FWS. The FWS Concurrence Letter is an inadequate response to the best available science provided by DHH.

- There are numerous other issues in the *2013 USFWS Revised Voluntary Guidelines* which DHH raised — e.g., build towers in degraded habitats, avoid citing towers near wetlands (several in the immediate area), and implement at least 1-mi minimum distance buffers between active Bald Eagle nests and towers based on previous FWS scientific studies in Wyoming (FWS Portland Office instead argued for a 600-ft Eagle buffer and only during construction of the tower although there currently are several active nests within 1 mile of the proposed tower site — the 600 ft buffer is **not** recommended in the *2013 Guidelines*). Absolutely no mention was made about concerns from the pulsed radio waves that will extend, line-of-sight blanketing the area, from the FM radio antennas affecting especially Bald Eagles and humans. Additionally, no mention is made of the power levels for FM transmission (6,000 Watts for this commercial station), far higher than the UHF antennas, exacerbating effects of thermal heating. Further, no mention is made of thermal heating effects from the FM antenna which will be coupled with the UHFs from the proposed cellular antennas. As we previously stated, this creates a very dangerous frequency potential for Bald Eagles since the length of the FM signal is about 6 ft, creating a full-body resonant effect for both humans and Bald Eagles (wingspans also about 6 ft). The FWS Concurrence Letter does not address these issues.

- Under the Section titled Migratory Birds and Bald Eagles (p. 3 of the FWS Concurrence Letter), FWS mentions precluding "take" under MBTA, *"unless authorized by permit"* but concludes in this paragraph that *"there is no permit available for incidental take."* However, FWS does acknowledge that

permits for "take of Bald Eagles" are available under 50 CFR 22.26 ("take resulting in mortality" and "take resulting in disturbance"), but fails to mention that the permit process sets allowable levels of take over a certain time period and permit applications are open to public NEPA review and comment. These details were not included in FWS Concurrence Letter failing to provide full disclosure about the facts.

- In the FWS Concurrence Letter on p. 4 (opening paragraph), FWS indicates that *"we reviewed the information supplied by Albert Manville regarding the potential effects to these species from construction of this tower and conclude that negative effects are unlikely."* Upon what rationale, scientific information, studies and published papers is this conclusion reached? We provided detailed studies on the record quite to the contrary. FWS then states that *"the collision risk by this tower to swans, eagles, and other species, is remote because the proposed tower is a monopole design, precluding need for guy wires."* Sadly, FWS has cherry-picked here, using only a small portion of the *2013 Guidelines* to reach what we feel is a flawed conclusion. Surrounding freshwater wetlands will attract myriad species of migratory birds. Swans have already been documented to fly directly over the proposed tower site. Bald Eagles have been photo-documented using the trees both on and next to the proposed tower site as a roost. (*See* Manville Report (App. R) Attachments R1 to R3) The tower is to be placed on a hill where the effects of fog, inclement weather, and storms may enhance collision mortality, especially impalement on the "faux" branches. The "noise effect" (Engels et al. 2014, referenced in my Manville 2016 radiation briefing memo provided to FWS) has been documented and shows that migratory birds are unable to use their magnetic compass in the presence of urban electromagnetic noise during movement and migration. How will enhanced microwave and FM signals exacerbate this "noise" effect? This issue was simply not addressed.

- FWS did leave open the door to further NEPA review. *"The body of science examining the effects of radiation emitted by communication towers on animals is growing, and developmental effects on bird embryos have been noted in some lab studies under* ***high*** [note: they actually were conducted under incredibly **low doses** of 0.0001 the amounts of radiation normally emitted from the standard 900 HZ cell phone over 2 hour daily periods] *doses; additional studies are needed to evaluate the effects of this radiation on birds in controlled situations in the field, mimicking levels of radiation typically used by industry."* To clarify, these low dose studies were intended to assess impacts from very low levels of non-thermal non-ionizing radiation. As I stated in my 2016 radiation briefing memo (Manville 2016; "A Briefing Memorandum: What We Know, Can Infer, and Don't Yet Know about Impacts from Thermal and Non-thermal Non-ionizing Radiation on Birds and Other Wildlife — for Public Release," 12 pp peer-reviewed), **thermal effects** are generally pretty clear and already have been well documented.

- The FWS Concurrence Letter does not foreclose the need for further NEPA review. For example, 2 of the factors in the implementing regulations for NEPA help determine whether an impact is sufficiently significant to necessitate an EIS (or at least an EA). One includes *"the degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risk."* The other concludes *"the degree to which the effects on the quality of the human environment are likely to be highly controversial"* (40 CFR 1508.27(b)(4) and (5)). The FWS Concurrence Letter essentially concedes (p. 4) that the impacts to Bald Eagles and other birds from radiation emitted from the tower are at least *"highly uncertain"* and entail *"unknown risks."* Effects are "*highly controversial*" under NEPA when there is a "*substantial dispute*" regarding the nature and extent of the impact. (*Middle Rio Grande Conservancy Dist v Norton*, 294 F.3d 1220, 1229 (10th Cir. 2002)) Clearly a **scientific dispute** which I have raised as has been acknowledged by FWS has been held to be the clearest example of when such controversy exists for purposes of NEPA. The fact that I was invited as the Service's lead scientist on the collision and radiation issues to provide Enclosure A (Background, and Discussion on Collision Deaths and Categorical Exclusions, and Discussion on Radiation Impacts and Categorical Ex-

clusion) to the letter sent to the National Telecommunications and Information Administration, U.S. Department of Commerce, is telling. The letter (previously provided for the record) was signed on February 7, 2014, by the then Director, Office of Environmental Policy and Compliance, Department of Interior (letters ER 14/0001, ER 14/0004) recommending that NTIA not categorically exclude impacts from non-thermal radiation on migratory birds, and clearly acknowledges that FWS and DOI have already acknowledged the need to address impacts on non-thermal radiation on migratory birds under NEPA.

We respectfully request that FWS re-evaluate its position on NEPA and request that FCC conduct an EIS (or at least an EA) to begin addressing these very troubling issues regarding impacts from radiation and collisions on migratory birds. Respectfully submitted.

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