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BEFORE THE FEDERAL AVIATION ADMINISTRATION

ASN 2019-WTW-4517-OE through ASN 2019-WTW-4580-OE, inclusive and ASN 2019-WTW-4585-OE through ASN 2019-WTW-4592-OE, inclusive	**Petition for Review by Backcountry Against Dumps, Donna Tisdale, and Joe "Ed" Tisdale Regarding No Hazard to Air Navigation Determinations for 72 Turbines Associated with the Campo Wind Project**

INTRODUCTION

Pursuant to 49 U.S.C. section 44718 and 14 C.F.R. section 77.39(b), we respectfully submit the following Petition for Review on behalf of Backcountry Against Dumps, Donna Tisdale, and Joe "Ed" Tisdale (collectively, "Backcountry"), objecting to and seeking review of the Federal Aviation Administration's ("FAA's") July 16, 2020 Determinations of No Hazard to Air Navigation for 72 wind turbines associated with the Campo Wind Project with Boulder Brush Facilities ("Campo Wind" or the "Project"). This Petition addresses the identical determination letters issued by the FAA for each of the Project's turbines, identified as ASN 2019-WTW-4517-OE through ASN 2019-WTW-4580-OE, inclusive, and ASN 2019-WTW-4585-OE through ASN 2019-WTW-4592-OE, inclusive.[1]

[1] The 72 determinations relate to ASN 2019-WTW-4517-OE, ASN 2019-WTW-4518-OE, ASN 2019-WTW-4519-OE, ASN 2019-WTW-4520-OE, ASN 2019-WTW-4521-OE, ASN 2019-WTW-4522-OE, ASN 2019-WTW-4523-OE, ASN 2019-WTW-4524-OE, ASN 2019-WTW-4525-OE, ASN 2019-WTW-4526-OE, ASN 2019-WTW-4527-OE, ASN 2019-WTW-4528-OE, ASN 2019-WTW-4529-OE, ASN 2019-WTW-4530-OE, ASN 2019-WTW-4531-OE, ASN 2019-WTW-4532-OE, ASN 2019-WTW-4533-OE, ASN 2019-WTW-4534-OE, ASN 2019-WTW-4535-OE, ASN 2019-WTW-4536-OE,

Each determination letter states that the turbines will not constitute a hazard to navigation in reliance upon identical analyses and responses to comments. Yet the evidence before the FAA shows that each of the Project's wind turbines will create significant hazards to air navigation. Thus the determination letters fail to present a reasoned explanation, supported by the facts and applicable law, for the FAA's conclusions as required by law. Backcountry's January 29, 2020 comments raised several valid concerns regarding the Project's air navigation hazards that have not been appropriately resolved in the July 16, 2020 determination letters. Instead, those concerns remain unaddressed and preclude approval of this dangerous Project. For the reasons detailed below in Parts I and II, this Petition for Review should be granted to resolve these outstanding and serious safety concerns.

This Petition also addresses, in Part III, the grave deficiencies of the Bureau of Indian Affairs' Final Environmental Impact Statement for the Project. As a cooperating agency under the NEPA Guidelines, 40 C.F.R. section 1508.5, the FAA must assure that the EIS conforms to NEPA.

FULL STATEMENT OF THE AERONAUTICAL BASIS ON WHICH THE PETITION IS MADE

I. THE PROJECT SITE CURRENTLY SUPPORTS NAVIGABLE AIRSPACE

ASN 2019-WTW-4537-OE, ASN 2019-WTW-4538-OE, ASN 2019-WTW-4539-OE, ASN 2019-WTW-4540-OE, ASN 2019-WTW-4541-OE, ASN 2019-WTW-4542-OE, ASN 2019-WTW-4543-OE, ASN 2019-WTW-4544-OE, ASN 2019-WTW-4545-OE, ASN 2019-WTW-4546-OE, ASN 2019-WTW-4547-OE, ASN 2019-WTW-4548-OE, ASN 2019-WTW-4549-OE, ASN 2019-WTW-4550-OE, ASN 2019-WTW-4551-OE, ASN 2019-WTW-4552-OE, ASN 2019-WTW-4553-OE, ASN 2019-WTW-4554-OE, ASN 2019-WTW-4555-OE, ASN 2019-WTW-4556-OE, ASN 2019-WTW-4557-OE, ASN 2019-WTW-4558-OE, ASN 2019-WTW-4559-OE, ASN 2019-WTW-4560-OE, ASN 2019-WTW-4561-OE, ASN 2019-WTW-4562-OE, ASN 2019-WTW-4563-OE, ASN 2019-WTW-4564-OE, ASN 2019-WTW-4565-OE, ASN 2019-WTW-4566-OE, ASN 2019-WTW-4567-OE, ASN 2019-WTW-4568-OE, ASN 2019-WTW-4569-OE, ASN 2019-WTW-4570-OE, ASN 2019-WTW-4571-OE, ASN 2019-WTW-4572-OE, ASN 2019-WTW-4573-OE, ASN 2019-WTW-4574-OE, ASN 2019-WTW-4575-OE, ASN 2019-WTW-4576-OE, ASN 2019-WTW-4577-OE, ASN 2019-WTW-4578-OE, ASN 2019-WTW-4579-OE, ASN 2019-WTW-4580-OE, ASN 2019-WTW-4585-OE, ASN 2019-WTW-4586-OE, ASN 2019-WTW-4587-OE, ASN 2019-WTW-4588-OE, ASN 2019-WTW-4589-OE, ASN 2019-WTW-4590-OE, ASN 2019-WTW-4591-OE, and ASN 2019-WTW-4592-OE

The Project site lies directly beneath, and the Project will directly obstruct, navigable airspace that is actively utilized for military, commercial and private flights. The site is located in the Border Zone (FAA Notice at 7) and is situated between and in proximity to numerous military bases and air stations in California vital to the nation's defense, including the Naval Base in San Diego, the Naval Air Facility in El Centro, the Naval Special Forces Training Facility in nearby Campo, and the Marine Corps Air Station in San Diego. This same airspace is also in use by the Marine Corps Air Station in Yuma, Arizona.[1] The Project site is located within an active route between these military bases and air stations, and is regularly frequented by their low flying aircraft.

Our client Donna Tisdale and her family own 267 acres on Tierra Real Road near Boulevard that share a half mile-long boundary with the Campo Reservation and the Project site on the Reservation's southeastern border along BIA Road 10. Ms. Tisdale regularly observes homeland security and military aircraft, as well as commercial and private aircraft, flying over the Project site. These aircraft often pass directly over the Project site at very low altitudes. We attach as Exhibit 2 illustrative photographs taken by Ms. Tisdale that show examples of the many low-flying aircraft she routinely observes over the Project site.[2]

II. THE PROJECT WILL IMPEDE AIRCRAFT SAFETY AND OPERATIONS

A. Low Flying Aircraft

The Project location is situated directly between several airports used by general aviation pilots flying under visual flight rules ("VFR"), including Montgomery Field, Gillespie Field, and Lindbergh Field in San Diego County, Imperial County Airport, and Yuma, in Arizona. The FAA's Determination Letters acknowledge that "the proposed wind farm would extend upwards into airspace used normally for en route VFR traffic." Determination Letters, p. 6. Indeed, flights from Montgomery or Lindbergh fields to Yuma would likely pass directly over the Project. Yet the Determination Letters state, erroneously, that "no data was available or received during the aeronautical study to indicate the wind farm would be located near a regularly and continuously used VFR en route flyway." *Id.*

[1] Military Base List, available at: https://www.military.com/base-guide, last accessed January 8, 2020.

[2] Photographs of the airspace above the Project site taken by Donna Tisdale, attached hereto as **Exhibit 2**.

It is apparent that the Determination Letters' conclusions are not supported by, and instead conflict directly with, the evidence. The documentation in the FAA's files shows, contrary to the Determination Letters, that the Project is located directly within a regularly, and continuously, used VFR en-route flyway. The FAA's Handbook definitively states that "[a] structure would have an adverse effect upon VFR air navigation if its height is greater than 499 feet above the surface at its site, and within 2 statute miles of any regularly used VFR route." Procedures for Handling Airspace Matters, FAA Order JO 7400.2M ("Handbook") (February 28, 2019), 6-3-8(c)(1); *Town of Barnstable, Mass. v. FAA*, 659 F.3d 28, 34-35 (D.C.Cir. 2011). The Project meets both of these criteria. The wind turbines are all well over 499 feet tall, and the Project site is located within a well known and frequently used VFR route.

The Determination Letters next dismiss any hazards to firefighting and agricultural operations on the grounds that they operate below the minimum safe altitudes specified in 14 CFR part 91, "are not regular and continuous flight operations and therefore are not considered in determining the extent of adverse effect." Determination Letters, pp. 5, 6. But this fact does not mean these indisputable impacts can be ignored. It is true that 14 CFR section 137.49 permits these pilots to operate aircraft "over other than congested areas below 500 feet above the surface and closer than 500 feet to persons, vessels, vehicles, and structures, if the operations are conducted without creating a hazard to persons or property on the surface." 14 C.F.R. § 137.49. But nothing in the FAA's regulations regarding hazards (14 CFR part 77) excuses the FAA's out-of-hand dismissal of this potential hazard simply because such operations are "not considered regular and continuing." Indeed, the law is clear that the FAA must consider in its navigational study "other factors relevant to the efficient and effective use of navigable airspace" in making its determination. 49 U.S.C. § 44718 (b)(1)(A)(vii). Impacts to aerial firefighting and agricultural operations in the remote, fire prone Campo community are just the sort of "other factors" that should be considered in the FAA's analysis.

The FAA relies upon its internal policy guidance's definition of "significant volume" in order to limit its consideration of these significant adverse effects. Determination Letters, p. 6 (citing JO

7400.2L, par. 6-3-5).[3] JO 7400.2M, Policy 6-3-4 indicates that a structure would impact "regular and continuing" operations if the structure affected "one or more operations" a day. But this policy also notes that if the impacted procedure is the primary procedure, it may need to be used on average only once per week for a structure that affects it to cause a significant impact on aeronautical activities. The local Jacumba Airport, which is less than 10 nautical miles from the Project location, is primarily used for agricultural purposes and recreation including sailplanes and gliders, whose use is not subject to the minimum altitudes.[4] The Determination Letters ignore this primary use in evaluating the Project's significant impacts.

The Determination Letters also claim that aerial firefighting is beyond the scope of an aeronautical study because of "the many possible situations and unique operating characteristics." Determination Letters, p. 6. But the unique nature of aerial firefighting does not mean it should be ignored. To the contrary, because aerial firefighting is so important, the FAA should consider how the Project will create hazards to those operations. The Project itself will introduce myriad new wildfire ignition sources. High voltage wind turbines—which have a documented history of erupting in flame when their motors burn or short out or their bearings wear out—together with a high voltage substation and gen-tie line, and other electrified Project facilities will dramatically increase the risk of wildfire ignition in the area. This greatly increased risk of ignition, in turn, exponentially increases the likelihood that firefighting resources will be needed at this location in the first place.

Wind turbines and meteorological towers present a direct risk of collision with aircraft. Between 2003 and 2016 ten individuals were killed in the United States as a result of aircraft collisions with wind energy turbines and their towers.[5] This well-documented risk is multiplied in an area like the Project site

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[3] Backcountry notes that the Determination Letters rely upon JO 7400.2L, which was withdrawn in February 2019. JO 7400.2M, the applicable current verison, contains the same policies as they relate to this issue.

[4] *See, e.g.*, FAA Notice to Airmen "Frq Gld Act Drg Wkends, Pwrd Acft be Alert for Gld Tfc Launching Frm Field and Operg on and in Vcnty of Ap, Sfc to 18000 Ft MSL.," *see also* Aircraft Owners and Pilots Association webpage for Jacumba Airport: available at https://www.aopa.org/destinations/airports/L78/details; New Desert Times, Towns of Yesteryear, available at: http://newdeserttimes.com/the-towns-of-yesteryear/)

[5] Linowes, Lisa, *Wind Energy and Aviation Safety, Fatalities,* WindAction.org, April 4, 2017, attached hereto as **Exhibit 4**.

where, despite the mountainous terrain, low flying aircraft are a regular occurrence. The determination letters dismiss this concern without a word, instead focusing on the review provided by each branch of service. Determination Letters, p. 5. But these low flying aircraft are essential to effective firefighting in this wildfire-prone area. The Project will add to the risk of wildfire, and worse, impede wildfire suppression, particularly by aircraft. Therefore the FAA must consider this risk as part of its examination of the hazards this Project poses to public, including aviation, safety.

B. Radar

Radar systems may be impaired or disrupted by wind energy facilities. Radar systems are designed to filter out false information, or "clutter."[6] Where wind energy turbines create dense centers of stationary clutter, radar may be tricked into increasing the clutter threshold, effectively causing radar systems to miss other, actual obstacles that would normally appear on the radar. Exhibit 3, at 20-21; Exhibit 6, at 57.

The Determination Letters indicate that four of the Project's turbines are expected to interfere with radar quality at the San Clemente ARSR-4 radar facility, and could present clutter and target drops in the immediate area of the turbines. Determination Letters pp. 4-5. Despite this impact, the Determination Letters indicate that this will not be a navigation hazard because "this would not cause an unacceptable adverse impact on [air traffic control] or military operations in the area at this time." Determination Letters 6. But the FAA does not present any reasoning or underlying facts to support its conclusion that these radar impacts would not pose serious hazards to aviation safety.

Degradation of radar function is extremely dangerous to aircraft operations because radar is one of the main tools on which instrumented pilots rely to navigate, particularly when visibility is reduced due to rain, snow, cloud cover or darkness. Because the Project site is located in mountainous terrain where storm activity is more frequent and severe winds, including sudden up- and down-drafts associated with the steep eastern escarpment of the coast range, are more common, impaired visibility combined with degraded radar function pose particularly severe aviation hazards. Indeed, because of the area's high risk of severe winds, the east-bound (down-gradient) lanes of the adjacent Interstate 8

[6] Novak, Andrej, *Wind Farms and Aviation*, Aviation, 2009, 13:2, 56-59, p. 57, attached hereto as **Exhibit 6**.

freeway are often unsafe for, and occasionally closed to, truck traffic. These risks cannot be ignored. Yet in dismissing the Project's degradation of radar function as inconsequential, the Determination Letters do exactly that.

C. Lighting

While the turbines and their towers are required to have lights indicating their location, those lights do not eliminate the aviation risk entirely. The turbines' blade sweep would extend 230 feet above the highest light, which would be located on the nacelle. The determination letters note that "current guidance recommends placing the obstruction lighting as high as possible on the turbine's nacelle so they are visible to pilots approaching the turbine from any direction," but they fail to address the atypically large size of these turbines. The 230-foot blade sweep is gigantic. It is equivalent to having a 20-story building rotating a fast speeds around the nacelle. A small light at the bottom of a 20 story building would give a pilot very little idea of where the top of that building would be, particularly if the building were spinning as these huge rotor blades will be. The lighting will be similarly ineffective here. Therefore this additional hazard to aviation should be recognized and addressed, rather than swept aside as insignificant.

The Determination Letters imply that the Project's turbines will not cause a hazard to navigation for pilots flying with night vision goggles. But the Determination Letters contain no requirement that the Project utilize night vision goggle-compatible lighting. Instead, the FAA's response indicates only that such lighting "is available for pilots operating under [night vision goggles] in the area of the wind farm." Determination Letters, p. 5. Other wind farms have had conditions imposed that mandate that wind turbine lighting emit infrared energy within 675–900 nanometers in order to be visible to pilots using night vision goggles. *See, e.g.* U.S. Department of the Interior, Bureau of Ocean Energy Management, 2015 Revised Environmental Assessment for Commercial Wind Lease Issuance and Site Assessment Activities on the Atlantic Outer Continental Shelf Offshore North Carolina, p. 4-25 available at https://www.boem.gov/sites/default/files/renewable-energy-program/State-Activities/NC/NC-EA-Camera-FONSI.pdf. Here however, neither the FAA's conditions included in its no-hazard determinations, nor

the Bureau of Indian Affair's Record of Decision for the Project, impose this essential requirement. Absent such a condition here, the FAA's no-hazard determination is an abuse of discretion.

D. Turbulence

Turbulence from wind turbines can impact aeronautic operations.[7] Exhibit 3, at 31-34. "[W]ind turbines produce wakes of similar, but not identical, characteristics to aircraft" and for this reason "aircraft wake vortices can be hazardous to other aircraft." Exhibit 3, at 31. The Determination Letters dismiss the Project-caused turbulence in a single line, equating it to "severe weather phenomenon" and declaring that it is beyond the scope of the aeronautical study. Determination Letters, p. 6. But this is not a weather phenomenon. This is not unexpected turbulence caused by meteorological events. This is man-made, human-caused turbulence that can be entirely avoided is appropriate safeguards are required. Ignoring the problem rather than recognizing and addressing it is an abuse of discretion.

E. Cumulative Impacts

The FAA is also required to determine whether the Project's turbines would have a cumulatively significant adverse impact. The Determination Letters conclude that they would not have such an impact because the "Study did not disclose any significant adverse effect on existing or proposed public-use or military airports or navigational facilities, nor would the proposal affect the capacity of any known existing or planned public-use or military airport." Determination Letters, p. 7. But as shown above, each turbine will indeed have an impact on navigable airspace and the Project as a whole will significantly impact numerous resources. This failure to identify the Project's cumulative impacts is especially egregious here because there are now many wind turbine projects situated throughout this windy mountainous region, creating a maze of hazards for pilots. As with every impact discussed herein, the Project's cumulative impacts must not be ignored.

III. THE APPROVAL OF THIS PROJECT VIOLATES NEPA

A. The FEIS Unlawfully Segments the Analysis of Connected Actions

The National Environmental Policy Act ("NEPA"), 42 U.S.C. sections 4321, et seq., forbids "segmented" environmental review. 40 C.F.R. § 1508.25(a)(1). Connected actions must be considered

[7] Mulinazzi, Thomas E., Zheng, Zhingquan Charlie, *Wind Farm Turbulence Impacts on General Aviation Airports in Kansas*, Kansas Department of Transportation, Report No. K-TRAN: KU-13-6, January 2014, attached hereto as **Exhibit 5**.

together in a single environmental impact statement. *Thomas v. Peterson*, 753 F.2d 754, 759 (9th Cir. 1985) (overruled on other grounds by *Cottonwood Environmental Law Center v. U.S. Forest Service*, 789 F.3d 1075, 1088-1092 (9th Cir. 2015)). Connected actions are those that (1) "[a]utomatically trigger" other actions, (2) "cannot or will not proceed unless other actions are taken previously or simultaneously," or (3) are "interdependent parts of a larger action and depend on the larger action for their justification." 40 C.F.R. § 1508.25(a)(1). Actions do not lose their "connected" status just because they are proposed by a different project applicant. *Alpine Lakes Protection Society v. U.S. Forest Service*, 838 F.Supp. 478, 482 (W.D. Wash. 1993).

Here, the Bureau of Indian Affairs' ("BIA's") Final Environmental Impact Statement ("FEIS") – for which the FAA is a cooperating agency – improperly segments the analysis of connected actions in at least two ways. First, the FEIS fails to analyze the impacts of the connected Torrey Wind project, instead considering it only a cumulative action. FEIS at RTC-10. The Torrey Wind project is a proposed 30-turbine126-MW wind energy generation facility that the Boulder Brush facilities would enable. The FEIS acknowledges that the Boulder Brush project and the Torrey Wind project "do propose to share a high-voltage substation and switchyard on private lands that would be used to interconnect both projects to the existing Sunrise Powerlink transmission line." FEIS at RTC-9. However, the FEIS claims that "the Torrey Wind Project is not a connected action because it would not be triggered by the Project and because the Project is not dependent on the Torrey Wind Project to proceed." FEIS at RTC-9. But it simultaneously admits that the Boulder Brush "high-voltage substation would allow for the receiving and stepping up of electric energy from 230 kV to 500 kV for the Torrey Wind Project." FEIS at B-12. Because the Torrey Wind project would not proceed as planned without the approval and construction of the Boulder Brush facilities, it is connected to the Campo Wind Project, and its impacts must be analyzed together in the same document.

Second, while the FEIS acknowledges that the Project "consists of both the Campo Wind Facilities on land within the Reservation and the Boulder Brush Facilities which are located on adjacent private lands within the Boulder Brush Boundary," it fails to fully analyze the impacts from and alternatives to the Boulder Brush transmission, substation and switchyard facilities being considered for approval by San Diego County (PDS2018-MPA-18-016). The FEIS admits that "the Boulder Brush

Facilities include an approximately 3.5-mile Off-Reservation portion of the gen-tie line, a high-voltage substation, a 500 kV switchyard and connection," as well as other components, yet it does not rectify the FEIS' failure to analyze the impacts of those components. FEIS at RTC-8. The FEIS states that "the term "Project Site" refers to the combined Campo Corridor and Boulder Brush Corridor, within which all Project facilities would be constructed and/or operated . . . [and]"Project Area" is used to describe a broader area potentially affected by the Project alternatives and is generally consistent with the Reservation Boundary and Boulder Brush Boundary," but the inclusion of these areas in the discussion does not by itself ensure that the impacts from the Boulder Brush components are actually analyzed. FEIS at RTC-8. Likewise, the FEIS still fails to consider alternatives to the Boulder Brush transmission facilities; instead, it just considers alternatives to the form, capacity and location of electrical generation. FEIS at 24-26. No new alternatives were added to the FEIS and the response to comments does not even address this omission. FEIS at 24-26, RTC-7 to RTC-9.

B. The FEIS Fails to Consider All Cumulative Projects

NEPA requires analysis of cumulative impacts. 40 C.F.R. § 1508.7. Yet the FEIS ignores numerous reasonably foreseeable projects that would contribute to the Project's cumulative impacts, including the Energia Sierra Juarez Phase II project in Mexico, the 90-MW Starlight Solar project near Boulevard and the 50-MW Tecate Solar Hybrid project also in the Boulevard area. FEIS at 140-142, N-1 to N-14. Without any supporting evidence, the FEIS baldly claims that these projects need not be considered because they are outside the specific geographic area that was considered and therefore will not create cumulative impacts. FEIS at RTC-14. But that conclusion is illogical. It ignores the fact that the artificial boundaries drawn around the geographic area that was considered are too small. Each of these projects has broad-ranging and long-reaching impacts that extend beyond the boundaries the FEIS arbitrarily selected. Their impacts include widespread effects on wildlife and its habitat, on wildfire risk, and on visual resources. The cumulative impacts analysis in Appendix N is likewise deficient because it does not even include a map of the cumulative projects, let alone their impact areas. FEIS at N-1 to N-14. The FEIS entirely fails to address it. FEIS at RTC-13 to RTC-14, RTC-174.

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C. The FEIS Fails to Evaluate a Reasonable Range of Project Alternatives

NEPA requires that an EIS "[r]igorously explore and objectively evaluate all reasonable alternatives" so that "reviewers may evaluate their comparative merits." 42 U.S.C. §4332; 40 C.F.R. § 1502.14. Alternatives should be wide-ranging and not exclude options just because they require other agency approvals. *Sierra Club v. Lynn*, 502 F.2d 43, 62 (5th Cir. 1974). Agencies may decline to study an alternative in detail on the grounds that it is "similar to alternatives actually considered, or . . . infeasible, ineffective, or inconsistent with the basic policy objectives for the management area," but only after providing a "reasoned explanation *in the EIS* for its rejection." *Northern Alaska Environmental Center v. Kempthorne*, 457 F.3d 969, 978 (9th Cir. 2006) (first quote; internal quotations and citation omitted); *Southeast Alaska Conservation Council v. Federal Highway Administration* ("*SEACC*"), 649 F.3d 1050, 1059 (9th Cir. 2011) (second quote; emphasis added). The existence of a viable but unexamined alternative renders an environmental impact statement inadequate." *Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1038 (9th Cir. 2008).

Here, the FEIS evaluates an artificially and unduly limited range of alternatives. It only evaluates two action alternatives: (1) a 252-MW capacity wind energy facility with 60 4.2-MW, 586-foot (ground to blade tip) tall wind turbines, and (2) a 202-MW capacity wind energy facility with 48 4.2-MW turbines. FEIS at 24. The FEIS eliminated from detailed consideration a mixed renewable generation (wind and solar) alternative, a minimal build-out (63-MW capacity) alternative, an off-Reservation location alternative, a reduced-capacity turbine (2.5-MW turbine) alternative, and a distributed generation alternative. FEIS at 25-26. As the FEIS acknowledges, it is required to "describe any alternative eliminated from further analysis *along with the rationale for elimination*." FEIS at RTC-12 (citing BIA NEPA Guidebook, § 8.4.6, emphasis added). But BIA failed to provide a "reasoned explanation *in the EIS* for its rejection" of those additional alternatives. *SEACC*, 649 F.3d at 1059 (emphasis added).

For example, the FEIS fails to list any "scientific [or] other sources relied upon" for its conclusion that the "distance and cost of connecting the scaled down [minimal build-out] project to the planned switchyard would be cost prohibitive and the delivered cost of energy from 15 turbines would be too expensive for a potential buyer to enter into a contract for such a scaled-down project based on

current energy market conditions." 40 C.F.R. § 1502.24 (first quote); FEIS at 25 (second quote). And BIA's reference to the Draft EIS' ("DEIS'") statement that "the minimal buildout alternative would be economically infeasible because . . . the costs" would outweigh the "revenue in current market conditions . . . and would not support the purpose of economic benefit to the Tribe," is likewise devoid of any scientific or other source material to support that conclusion. FEIS at RTC-174. The FEIS cannot remedy the DEIS' failures by simply referring back to statements made in the DEIS. The FEIS must provide facts and figures to support its conclusion before eliminating a viable, and more environmentally friendly alternative.

The FEIS similarly fails to support its rationale for rejecting the reduced-capacity turbines alternative: that the "[i]mpacts to the environment would have been similar to those of the larger capacity turbines considered in Alternative 1." FEIS at 25. Rather, the FEIS again makes a circular argument: It refers back to its unsupported statement in the DEIS as support for that same unsupported statement in the FEIS. FEIS at RTC-175. But neither the DEIS nor the FEIS provides proof "that the reduced capacity turbines would not appreciably reduce impacts." FEIS at RTC-175. The fact that reduced-capacity turbines would also require the "same number of turbine pads," while relevant to certain types of impacts, is irrelevant to others. For example, noise would likely be reduced with lower-capacity turbines.[8] As would public health and safety impacts, avian impacts, and visual impacts.

D. The FEIS Failed to Take a Hard Look at the Project's Impacts

NEPA requires that agencies take a "hard look" at the environmental impacts of proposed major federal actions and provide a "full and fair discussion" of those impacts in an EIS. 40 C.F.R. § 1502.1; *National Parks and Conservation Association v. BLM*, 606 F.3d 1058, 1072-1073 (9th Cir. 2010); CEQA Guidelines § 15126.2(a) ("Direct and indirect significant effects of the project on the environment shall be clearly identified and described"); *National Parks & Conservation Association v. Babbitt*, 241 F.3d 722, 733 (9th Cir. 2001). That includes "insur[ing] the professional integrity,

[8] *See*, *e.g.*, Walker, Bruce, George F. and David M. Hessler, Rob Rand & Paul Schomer, December 24, 2012, "A Cooperative Measurement Survey and Analysis of Low Frequency and Infrasound at the Shirley Wind Farm in Brown County, Wisconsin," Public Service Commission of Wisconsin Report #122412-1 (attached as Exhibit 1 to Backcountry's July 8, 2019 DEIS Comments) (noting that the "Navy's prediction of the nausogenic region . . . indicates a 6 dB decrease in the criterion level for a doubling of power such as from 1.25 MW to 2.5 MW).

including scientific integrity, of the discussions and analyses in environmental impact statements" by "identify[ing] any methodologies used and . . . mak[ing] explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement." 40 C.F.R. § 1502.24. Here, the FEIS failed to take a hard look at numerous Project impacts.

1. Impacts on Aviation and Aerial Firefighting

The Project's turbines and meteorological towers would create aviation hazards, including hazards to aerial firefighting as discussed above. The FEIS claims that the Project "would comply with any applicable Federal Aviation Administration (FAA) requirements to ensure that FAA, military, and emergency responders navigate the area safely." FEIS at RTC-206. But it does not examine or discuss how the Project could impact the extensive military aviation in the area, nor how it would impair aerial firefighting and other emergency response. The FEIS' reliance upon its vague and facile claims of compliance with "any applicable" FAA requirements cannot substitute for analysis of the impacts. Without more the agency cannot take the hard look that NEPA requires.

2. Impacts to Biological Resources

The FEIS significantly downplays the Project's biological impacts on numerous species. By understating these impacts, the FEIS fails to accurately inform the public and decisionmakers of the Project's environmental harm, in violation of NEPA.

a. Golden Eagles and Other Avian Species

Wind turbines kill birds.[9] The Campo Wind Project's 60 turbines will be no different. A wealth of bird species has been documented inhabiting or otherwise using the Project area, including sensitive species like golden eagles. FEIS Appendix F. The risk to golden eagles is particularly concerning because they are "currently known to be at risk of *population-level* effects from [wind turbine] collisions," and must be afforded every possible protection. July 8, 2019 Comments Exhibit 2 at 306. Yet the FEIS brushes aside the risk to golden eagles because "[e]agle use on site is infrequent and the chance for collisions is low." FEIS at 88. It also dismisses collision impacts to other migratory birds (protected under the Migratory Bird Treaty Act, 16 U.S.C. section 703 *et seq.*) because the Project would

[9] Dwyer, J.F., M.A. Landon, and E.K. Mojica, 2018, "Impact of Renewable Energy Sources on Birds of Prey," in J.H. Sarasola *et al.* (eds.), 2018, *Birds of Prey*, Springer International Publishing AG (attached as Exhibit 2 to Backcountry's July 8, 2019 DEIS Comments).

implement a "Bird and Bat Conservation Strategy ("BBCS")" to monitor, report and notify a Project biologist about dead or injured birds and bats. FEIS at 88; FEIS Appendix P at P-5 to P-6. But the updated BBCS fails to actually mitigate the impact of bird collisions. Yet the FEIS still dismisses the impact as less than significant with mitigation. FEIS at RTC-21. But if the impact is significant before mitigation, and the mitigation does not lessen the impact, as here, then the impact is still significant after mitigation. FEIS at 88 (admitting that "Absent mitigation, these direct impacts would be adverse" but simultaneously claiming that with mitigation, "the Project would not result in adverse effects to migratory birds"). Those conclusion are unsupported and insufficient to reasonably inform decisionmakers and the public for at least four reasons.

First, the FEIS fails to *quantify* the number of expected wind turbine collisions with golden eagles or any other bird species. It is impossible to know how significant the Project's impacts to birds will be without a collision quantification. While BIA did complete additional avian surveys to determine the presence of species in the area, it still failed to quantify potential impacts. The significance of that failure is underscored by the FEIS' admission that "wind turbines were considered to present a potential risk to avian species for collision." FEIS at RTC-27. Yet, despite this clear risk and the lack of concrete information, the FEIS nonetheless claims that "there would be no additional impacts anticipated" to avian species. FEIS at RTC-27. But the FEIS cannot draw that conclusion without facts to support it. And that conclusion does not follow from the facts that *are* available. For example, because the golden eagle *population* is at risk from wind turbines and other causes, as discussed, the loss of one golden eagle could have population-level consequences. But the FEIS ignores that potentially devastating impact and erroneously declares that "there would be no adverse effects on eagles." FEIS at 88.

Second, after-the-fact monitoring of bird collisions and removal of bird carcasses (as proposed as part of MM-BIO-4) merely documents the harm. It does nothing to mitigate, let alone prevent, the collision impacts. FEIS Appendix P at P-5 to P-6. Monitoring cannot bring birds back from the dead. The revision of MM-BIO-4 does nothing to lessen the ineffectiveness of that mitigation measure. Adding more post-mortem monitoring and notification does not stop the impact from happening in the

first place. To the contrary, it just habituates the public to the growing death toll, compounding the unfolding tragedy.

Third, the FEIS fails to analyze the *landscape*-scale avoidance impacts that the Project's turbines would likely cause.[10] A recent longitudinal study of bird densities at 12 wind farms in Ireland and their paired control sites found that "densities of open-habitat species were lower at wind farms" than at the control sites "independent of distance to turbines." July 8, 2019 Comments Exhibit 3 at 7. This "suggests that for open-habitat birds, effects were operating at a landscape scale." July 8, 2019 Comments Exhibit 3 at 8. The Campo Wind Project could well have similar effects. While the bird species may be different near the Campo Wind Project site than at the study sites in Ireland, the terrain is more "open-habitat" than "forested" (the other type of habitat present at some of the Ireland study sites, and for which the authors found gradient rather than landscape effects).

Fourth, the avian surveys that were completed did not comply with Land-Based Wind and Eagle Conservation Plan Guidelines which call for a minimum of two years of surveys, across all seasons, and 20 hours of survey per turbine per year–which would total 2,400 hours for this Project. Yet here, these protocols were not met. The FEIS admits that the developer and USFWS agreed that the Land-Based Wind Energy Guidelines and the Eagle Conservation Plan Guidance were the appropriate methods to be used, and it does not deny that the surveys that were completed failed to reach 2,400 hours, across all seasons, for two years. Instead, the FEIS now claims that the "guidelines referenced . . . are not required . . . under federal law or regulation" and "the methods are flexible." FEIS at RTC-81 (first quote), RTC-92 (second quote), RTC-176. But no amount of flexibility changes the fact that the surveys do not meet the requirements that the developer and USFWS originally said were the best practice and therefore necessary. Furthermore, no eagle nest searches *at all* have been performed since 2011, and the FEIS does not provide any information on the status of eagle breeding territories in the region. Finally, even if the surveys had been performed, the survey methods cannot be evaluated because survey reports are not included in the FEIS.

[10] Fernández-Bellon, D., M.W. Wilson, S. Irwin, and J. O'Halloran, 2018, "Effects of Development of Wind Energy and Associated Changes in Land Use on Bird Densities in Upland Areas," *Conservation Biology* 0(0):1-10 (attached as Exhibit 3 to Backcountry's July 8, 2019 DEIS Comments).

In sum, the FEIS' analysis of the Project's impacts to birds fails to reasonably inform decisionmakers and the public as NEPA requires. The biological resources impact analysis must accordingly be revised and recirculated.

b. Quino Checkerspot Butterfly

The FEIS admits that "Alternative 1 would permanently remove 242.1 acres of suitable Quino checkerspot habitat," and Alternative 2 would remove "approximately 191.58 acres of potentially occupied Quino checkerspot butterfly habitat." FEIS at 87 (first quote), 88 (second quote). But even these significant, plainly adverse impacts grievously understate the Project's effects on this special-status species, as explained below.

First, the information provided in the FEIS lacks detail and information necessary to provide the public and decisionmakers with the "hard look" that NEPA requires. The approximately one-page discussion of the Project's effects on the Quino checkerspot butterfly directs the reader to FEIS Appendix H for more information, but that Appendix does little to elucidate the issue. FEIS at 87; FEIS Appendix H at 133-136, 139-141. Rather, Appendix H makes more vague statements. For example, Appendix H confirms that "[c]onstruction activities increase the number of humans within the area, which can deter wildlife from using an area," but entirely fails to consider how that would impact Quino checkerspot butterfly survival. FEIS Appendix H at 139. Indeed, human presence in the area will increase collisions and noise, and increased construction equipment and vehicles can introduce nitrogen which could alter vegetation and the presence of Quino checkerspot host plants. Likewise, Appendix H admits that operation and maintenance activities would cause "fugitive dust from vehicles, habitat fragmentation, accidental additional clearing of adjacent habitat, chemical pollutants if used for operation-related activities, non-native invasive species, and alteration of the natural fire regime," but again fails to consider, let alone explain, how that would negatively impact Quino checkerspot survival. FEIS Appendix H at 141.

Appendix H also claims that "[a]pproximately 1,216 acres were considered potential suitable habitat within the Project Site," and that "[n]o Quino checkerspot butterfly or their host plants were observed during the 2018 focused surveys." FEIS Appendix H at 77. Yet those figures are understated in the FEIS, which claims that the 2018 surveys found only "699 acres within the Project Area were

considered suitable habit." FEIS at 38. The public and decisionmakers are left wondering what impacts the Project will have on the Quino checkerspot butterfly, and unable to even determine how potential habitat was identified. The FEIS claims that it followed U.S. Fish and Wildlife Service guidelines to identify potential habitat, but it does not cite any source for those guidelines, or provide any definition for the terms used therein. BIA implores the public to just take its word that "[a]ll survey methods and protocols, species modeling and impact analysis methodologies were conducted in coordination and consultation with the USFWS to ensure adequacy and accuracy." FEIS at RTC-14. But without any guidelines to independently judge these methods and protocols, the public and decisionmakers are left in the dark. This is not the "hard look" that NEPA requires. Accordingly, the FEIS must provide more information.

Furthermore, the FEIS admits that it does not provide all the information needed to determine what impacts the Project will have, despite the additional Quino Checkerspot surveys completed in 2019. FEIS at RTC-16; FEIS Appendix H at 77. The FEIS concedes it still does not have this essential information, and it is still collecting data after publication of the FEIS: "[a]n additional set of Quino checkerspot butterfly surveys are being conducted within the Off-Reservation portion of the Project." FEIS at 87. Without this survey information, an agency cannot accurately determine the Project's impacts and how that would affect the FEIS' analysis and conclusions. And even if no surveys remained to be completed, and this admission in the FEIS is false, the analysis still fails. There were five Quino checkerspot butterflies identified in the 2019 off-reservation surveys. Therefore, the conclusion that "the Project would not adversely affect any federally listed plants or wildlife, *because none are present*," is patently incorrect. FEIS at 87 (emphasis added).

The FEIS also claims that "[b]ecause decommissioning would include restoration of the area to pre-Project conditions, it would ultimately not result in adverse effects on Quino checkerspot butterfly." FEIS at 87. But restoration to pre-Project conditions – which is not even possible – does not negate adverse effects. Yet BIA ignores this pivotal and dispositive fact, instead relying on the specious argument that "restoration of habitat is often an approach used to reduce the effects on species." FEIS at RTC-177. But another agency's use of this approach does not make it right, or effective. The FEIS acknowledges that decommissioning activities will "result in temporary direct and indirect adverse

effects on Quino checkerspot butterfly," including collisions with equipment and vehicles, human disturbance, and noise impacts. FEIS at 87. Those adverse impacts are significant and cannot be ignored simply because the FEIS claims–without any supporting evidence– that the area will be restored to pre-Project conditions. Even with an updated decommissioning plan, revegetation cannot heal dead or injured Quino checkerspot butterflies. FEIS at RTC-177; FEIS Appendix P at P-3.

All of these failures are exacerbated by the importance of the project area to the Quino checkerspot butterfly. The Project falls within the La Posta/Campo Core Occurrence Complex for the Quino checkerspot butterfly, on the eastern edge of the species' range. 74 FR 28776- 28862. The U.S. Fish and Wildlife Service has concluded that preservation of these core occurrence complexes is essential for recovery and survival of the Quino checkerspot butterfly in San Diego County. *Id.* Furthermore, the La Posta/Campo and Jacumba core occurrence complex habitats are warmer and drier than the Otay Mountain Core Occurrence Complex and differ substantially in other habitat characteristics, and contribute significantly to reducing the subspecies' extinction probability. *Id.* "The eastern edge of Quino checkerspot's range supports large and robust butterfly populations, abundant and diverse larval host plants and nectar sources, and relatively low levels of development and intensive agriculture. These areas may provide climate refugia that Quino checkerspot will require under future predicted scenarios of climate change."[11] Therefore, the Project area is not only important because it is a core occurrence area, but because it is imperative to species survival with the ongoing perils of climate change.

The FEIS erroneously claims that any adverse impacts "would be reduced to less than adverse with implementation of recommended MM-BIO-1 and MM-BIO-3." FEIS at 87. And BIA does not deny that this conclusion is inaccurate. FEIS at RTC-177. Rather, BIA claims "NEPA does not require a fully developed plan that will mitigate all environmental harm before an agency can act." FEIS at RTC-177. But whether or not all environmental harm must be mitigated does not address the fact that the FEIS' conclusions do not follow from the facts. As the FEIS states, it is essential that "mitigation be discussed in sufficient detail to ensure that environmental consequences have been fully evaluated."

[11] Preston, Kristine L., et al, 2012, "Changing distribution patterns of an endangered butterfly: Linking local extinction patterns and variable habitat relationships," *Biological Conservation* 152:280–290, 289 (attached to July 8, 2019 Comments as Exhibit 4).

FEIS at RTC-177. That informational goal cannot be met where, as here, the conclusions that the FEIS draws are incorrect. Indeed, the FEIS has not demonstrated that these significant impacts can be mitigated at all, let alone by the deficient mitigation measures that are proposed. MM-BIO-1 calls for development of a number of plans that it claims will protect biological resources in general, and the designation of a Project biologist to oversee construction efforts. FEIS Appendix P at P-1 to P-3. But the implementation of those plans, even if perfectly executed, would not reduce the Project's impacts to less than significant. The nature of the Project is such that there will be significant adverse impacts to the Quino checkerspot butterfly and no amount of avoidance, short of denying the Project, could protect this imperiled species.

MM-BIO-3, which is more specifically directed toward the Quino checkerspot butterfly, is vague and unenforceable. That measure simply defers the development of any Quino checkerspot specific mitigations until after Section 7 consultation is complete. FEIS Appendix P at P-4. The FEIS makes vague statements such as "[r]atios for habitat-based mitigation (if any) shall be determined during the Section 7 consultation process," and "mitigation shall focus on habitat preservation and creation for long-term conservation of metapopulation dynamics." FEIS Appendix P at P-4. But the FEIS does not provide any specific information on what those measures may be, what they may apply to, or how they would be implemented. Indeed, the FEIS even admits that there may not be *any* habitat-based mitigation at all. FEIS Appendix P at P-4. Without any detail, the FEIS cannot accurately conclude these unknown mitigation measures will reduce the Project's impacts. And the FEIS' failure to acknowledge this lack of information is just another example in a long line of insufficient analysis. NEPA requires more.

The FEIS' analysis of the Project's impacts to the Quino Checkerspot butterfly fails to reasonably inform decisionmakers and the public as NEPA requires. The biological resources impact analysis must accordingly be revised prior to any Project approval.

3. Noise Impacts

The FEIS continues the DEIS's failure to accurately and reasonably inform the public and decisionmakers of the Project's noise impacts, including audible noise, low-frequency sound and infrasound impacts. This is true, even as the FEIS acknowledges that the Project will have significant and unavoidable noise impacts. The FEIS's noise-impact discussion is wholly inadequate. It relies upon

improper baseline data, and incomplete and flawed assumptions. For these reasons the FEIS fails to adequately disclose and discuss the significant impacts of the Project.

First, the FEIS continues to present improper baseline information. The deficiencies of the baseline assumptions contained in FEIS Appendix K-2 are detailed in the March 2020 Campo Wind Noise/Acoustical Review prepared by dBF Associates for Backcountry Against Dumps, and the December 16, 2019 Wind Turbine Infrasound and Low-Frequency Noise Survey in Boulevard, CA, both of which are incorporated by reference and attached hereto as **Exhibits 6 and 7**. In particular, the updated baseline ambient noise measurements were taken at locations that were not representative of the residences and other noise-sensitive land uses ("NSLUs") that will be impacted by the Project's turbines. Instead, the baseline measurements were taken in locations that are not consistent with normal setbacks for most residences. Exhibit 6, pp. 4-5, Item 14 (meters placed from less than 5 feet to approximately 55 feet from roadways in areas where most setbacks are normally at least 100 feet and sometimes over 500 feet from roadways), Item 15. Thus, Appendix K-2's baseline noise readings overstate the ambient noise surrounding NSLUs that will be impacted by the Project.

This inaccurate and exaggerated baseline ambient noise information taints the analysis of noise impacts in the FEIS. In areas with inaccurately high baseline noise readings, the Project's impacts are discounted as less than they otherwise would be, as the FEIS improperly underestimates the amount of change between the existing condition and the Project.

Second, the FEIS continues to present improper and incomplete information regarding the Project's impacts. Indeed, BIA does not deny many of the objective critiques raised by acoustics expert Dr. Richard Carman in his July 7, 2019 Review of Campo Wind Project and Boulder Brush Facilities DEIS Noise Analysis ("Noise Impact Review," attached as Exhibit 5 to Backcountry's July 8, 2019 DEIS Comments). Backcountry incorporates Dr. Carman's cogent criticism by reference as it remains highly relevant to the FEIS.

In particular, the FEIS continues to improperly discount the impacts of low frequency sound and infrasound on sensitive noise receptors, including residences that are within 0.25 and 0.5 miles of Project turbines. The FEIS downplays the findings reached by Salt, Alec, and James Kaltenbach, 2011, in "Infrasound from Wind Turbines Could Affect Humans," *Bulletin of Science, Technology and Society*,

31(4):296-302 (attached as Exhibit 9 to Backcountry's July 8, 2019 DEIS Comments). Salt and Kaltenbach demonstrated that human ears' outer hair cells respond to infrasound and low-frequency noise, and do so at levels as low as 60 dBG. In the Response to Comments, BIA concedes that the Project's operation will expose numerous residents to infrasound levels greater than 60 dBG. However, BIA quibbles over the practical effect of this exposure. BIA acknowledges that outer ear stimulation may occur as documented by Salt and Kaltenbach, but fails to recognize that this stimulation is evidence of harm. FEIS RTC-179.

BIA also appears to concede that the Project's 4.2 MW turbines will produce greater infrasound than the turbines examined in the Epsilon Associates, Inc's ("Epsilon's") 2009 noise impact study on which the BIA relies to claim no significant impact. FEIS RTC-179. Yet BIA continues to cite this study to discount the Project's ILFN impacts – solely because the Epsilon study showed a "generous" compliance margin. *Id.* BIA's continued reliance upon a flawed and inapplicable study to claim that the Project's infrasound and low frequency sound impacts will be minimal renders the FEIS' conclusions improper.

In sum, the FEIS' noise impact analysis fails to reasonably inform decisionmakers and the public as NEPA requires.

4. Impacts to Water Resources

The FEIS fails in many ways to accurately and reasonably inform the public and decisionmakers of the Project's impacts to water resources, including impacts to the underlying Campo/Cottonwood Creek Aquifer. Understanding the effects on the aquifer is particularly crucial to an informed understanding of the Project's impacts because the aquifer was designated as a sole source aquifer pursuant to section 1424(e) of the federal Safe Drinking Water Act on May 28, 1993, with the Environmental Protection Agency ("EPA") making the determination that "contamination of [the] aquifer would create a significant hazard to public health." 58 Fed. Reg. 31025 (May 28, 1993).

Hydrogeology expert Scott Snyder details many of the FEIS' deficiencies in his July 5, 2019 Draft EIS Review and Opinion (attached as Exhibit 10 to Backcountry's July 8, 2019 DEIS Comments) and his March 9, 2020 Final EIS Review and Opinion (attached as **Exhibit 8** hereto). His review and the critiques and recommendations therein are incorporated herein by reference. In addition to the

deficiencies identified in Mr. Snyder's July 5, 2019 and March 9, 2020 reviews, the FEIS' analysis of the Project's impacts to water resources is deficient in at least two other ways.

First, the FEIS concludes that the Project would not violate water quality standards during construction and decommissioning because it would conform to the stormwater pollution prevention plan ("SWPPP"). FEIS at 71. But as BIA admits, the FEIS never specifies what best management practices would be adopted as part of the SWPPP because it has not yet even determined what those BMPs would be. FEIS at RTC-180. Instead, it merely provides a list of the stormwater control measures that "*could*" be included, without any analysis of the relative efficacy of the listed measures. FEIS at 15 (emphasis added). Indeed, the FEIS acknowledges that many of the sample BMPs "may not be appropriate" here. FEIS at RTC-180. That violates NEPA, which requires that EISs describe mitigation measures with sufficient detail to assess how well they "will serve to mitigate the potential harm" they target. *Foundation for North American Wild Sheep v. U.S. Department of Agriculture* ("*Wild Sheep*"), 681 F.2d 1172, 1181 (9th Cir. 1982) (quote); *South Fork Band Council v. U.S. Department of Interior* ("*South Fork*"), 588 F.3d 718, 727 (9th Cir. 2009). The FEIS improperly defers the creation of this mitigation measure without providing the appropriate and necessary information to inform the public and decisionmakers about the effectiveness of that mitigation. Without more information on what stormwater control measures would be adopted, and the relative efficacy of each one, BIA cannot possibly "supply a convincing statement of reasons why [the] project's impacts are insignificant." *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (internal quotations and citation omitted).

Second, the FEIS claims that "hazardous materials would not be allowed to enter the septic system," and that creation of a Hazardous Materials Management Plan ("HMMP") would reduce all impacts of use, storage, and disposal of hazardous materials to less than adverse. FEIS at 128, RTC-180 to RTC-181. But preparation of the HMMP is impermissibly deferred. Without information about how these materials will be properly and effectively used, stored and disposed, the public and decisionmakers cannot ensure that the area's vulnerable water resources will be protected. This is a critical omission because, as discussed above, the Project is located over a sole source aquifer, contamination of which "would create a significant hazard to public health." 58 Fed. Reg. 31025 (May 28, 1993).

The FEIS' analysis of impacts to water resources fails to reasonably inform decisionmakers and the public as NEPA requires. The water resources impact analysis must accordingly be revised.

5. Global Warming Impacts

The FEIS paints a rosy picture of the Project's global warming impacts, but it is based on an incomplete analysis. FEIS Appendix G at 29-44. The FEIS admits that it fails to calculate the Project's entire life cycle greenhouse gas ("GHG") emissions. FEIS at RTC-46 (modeling tools used "did not account for the full life-cycle of GHG emissions from construction activities"). Instead, the FEIS focuses on the GHG emissions from on-site Project construction and operation. FEIS 4.5-1 to 3. BIA claims that this failure should be overlooked because it did consider some "directly related GHG impacts." FEIS at RTC-47. But consideration of those impacts does not make up for failure to consider others.

Myriad published life cycle analyses demonstrate that wind energy projects have many more sources of GHG emissions than just on-site construction and operation. As one recent study states, "due to GHG emissions produced during equipment manufacture, transportation, on-site construction, maintenance, and decommissioning, wind and solar technologies are not GHG emission free."[12] July 8, 2019 Comments Exhibit 11 at SI36. That same study concluded, based on a "systematic review and harmonization of life cycle assessment (LCA) literature of utility-scale wind power systems," that industrial-scale wind turbines produce 11 g CO2-eq/kWh (median value, with a range of 3 g CO2-eq/kWh to 45 g CO2-eq/kWh). July 8, 2019 Comments Exhibit 11 at SI36, SI46. To fully analyze the Project's global warming impact in compliance with NEPA, BIA must conduct a life cycle assessment of the Project's GHG emissions.

BIA asserts that a life-cycle analysis would be speculative "because a turbine model has not been selected for the Project and the location of manufacturing for turbine components is unknown." FEIS at RTC-47. But uncertainty about a turbine model is irrelevant because NEPA requires a hard look at the potential impacts. Therefore, the FEIS should include analysis of what those potential impacts could be, and acknowledge any gaps in the available information. Without this information, the FEIS does not

[12] Dolan, Stacey L. & Garvin A. Heath, 2012, "Life Cycle Greenhouse Gas Emissions of Utility-Scale Wind Power: Systematic Review and Harmonization," *Journal of Industrial Ecology*, 16(SI) (attached to July 8, 2019 Comments as Exhibit 11).

provide an accurate assessment of the potential impacts. The FEIS' assertion that these impacts would be considered in other NEPA analyses likewise fails. Because the production of wind turbines is often project-dependent, the components for the Project may not be built absent the Project, rendering their manufacturing impacts unreviewed unless they are examined as indirect impacts of the Project that require analysis in the FEIS. And even if the impacts had been analyzed in a prior NEPA document, BIA must still disclose that analysis in the FEIS here.

6. Shadow Flicker Impacts

As discussed in Backcountry's December 21, 2018 Scoping Comments on the Campo Wind Project and the July 8, 2019 DEIS comments, spinning wind turbines can produce harmful and annoying "shadow flicker." While the FEIS does significantly expand the shadow flicker analysis, it fails to properly mitigate the impacts of shadow flicker. The FEIS admits that "receptors both On- and Off-Reservations may experience nuisance-level shadow flicker effects for more than 30 hours in a given year," and on-reservation receptors may also "experience shadow flicker for more than 30 minutes in a given day." FEIS at RTC-39 (first quote), 63 (second quote). These effects exceed the guidance and recommendations adopted for shadow flicker in multiple jurisdictions and for this FEIS. FEIS at 137. Yet despite admitting that shadow flicker will exceed established thresholds, the FEIS claims that "the modern wind turbines that will be utilized for the Project will rotate well below any frequency of health concern." FEIS at RTC-38.

The FEIS asserts that Project Design Features would be implemented to minimize the impacts of shadow flicker, including "coordinat[ion] with the relevant tribe to assess shadow flicker complaints made within one year from the initial operations date of the Project by the resident of any existing" and "with the resident of any existing (existing as of the date of Record of Decision approval) Off-Reservations receptor located within a distance of 15 x Rotor Diameter (i.e. approximately 6,750 feet) of a Project turbine to assess their shadow flicker complaints made within one year from the initial operations date of the Project." FEIS at RTC-40. But this after-the-fact assessment fails to address the impact before it happens.

Furthermore, the FEIS removes what may have been a more effective mitigation measure. The DEIS stated that "'all turbine software would include programming to reduce or shut off turbines during

times of shadow flicker potential.'" FEIS at RTC-39. But the FEIS removes that technology because "it was determined that this design feature would significantly impact the economic benefits of the Project to the Tribe." FEIS at RTC-39. NEPA requires a full discussion of the potential impacts of the Project, and possibilities for mitigation. The FEIS must include this possible mitigation so that the public and decisionmakers can at least weigh the benefits of its inclusion against the costs to the Tribe.

7. Visual Impacts

The Tisdales' ranch shares a half-mile border with the Reservation. Because the Project includes numerous large industrial facilities sited along the border of the Tisdales' ranch, it will significantly degrade their beautiful view of the surrounding land. **Exhibit 9** attached hereto includes two photos that depict the view of the reservation from the Tisdales' ranch. The short white fence is along the border with the Reservation, and the land on the far side will be marred by an operations and maintenance facility, temporary construction/laydown yard, and temporary batch plant.

Additionally, there will be seven large towers that loom large over the Tisdales' ranch substantially degrading their use and enjoyment of this pristine and bucolic property. Indeed, the Project Description admits that the turbine hub height will be up to 374 ft (114 m) and the rotor diameter will be up to 460 feet, with approximately 230 foot long blades. FEIS Appendix B, B-2. These turbines are exponentially larger than any other structure in the area. Indeed, the turbines are twice the 301-foot height of the Statue of Liberty, and even larger than the enormous One American Plaza building in San Diego. *See* graphic attached hereto as **Exhibit 10**. The sheer size of these turbines would completely dominate and destroy the view from the Tisdales' ranch and surrounding viewpoints, and irretrievably degrade the existing natural beauty of this rural area. Vision Scape Imagery has prepared numerous simulations showing the impact of these gigantic turbines from both the Tisdale property and other viewpoints. Those simulations are attached hereto as **Exhibit 11**.

While the FEIS admits that the Project's visual impacts will be significant and unavoidable, it still understates those impacts significantly. FEIS 120-125. Rather than accurately analyze their impact, the FEIS used smaller allegedly 'representative turbines' for visual analysis that do not accurately or fairly represent the real world impacts from the 60 to 90 separate 4.2 MW wind turbines proposed for the Campo Wind and Torrey Wind projects. The FEIS claims that mitigation measures will help minimize

the impacts, but nothing can change the fact that the Project will decimate the Tisdales' view from the property where they have for decades built their lives, and where they plan to enjoy their retirement years with their children, grandchildren, and great-grandchildren.

8. Wildfire Impacts

There can be no dispute that wildfire risk in the Project area is dangerously high. This risk is exacerbated by the Project and is a risk that also threatens its operation. The FEIS acknowledges that the Project "would increase the potential for a wildfire and could impact the public and the environment by exposure to wildfire due to construction and decommissioning activities and ground disturbance with heavy construction equipment." FEIS 131, 132. Despite this admission, the FEIS fails to detail the increased risks of fire – and the increased risk to firefighting – posed by the Project's operation.

First, the FEIS fails to address the risk of wind-turbine fires that could occur during Project operation, despite several comments mentioning this operational risk. Instead of addressing the substantial risk of ignition from operation, the FEIS speculates that a non-existent Campo Fire Protection Plan that might be developed in the future to mitigate any risk. *E.g.* FEIS RTC-230.

Second, the FEIS fails to address the fact that the Project's wind turbines and meteorological towers would directly interfere with firefighting safety and effectiveness, as discussed above.

While the FEIS claims that mitigation measures "would reduce [the] adverse effects" of the Project's fire risks, these mitigation measures are wholly inadequate. FEIS 131, 132. Neither the non-existent, proposed future Campo Fire Protection Plan nor the Project's setbacks are sufficient to mitigate the increased risk of fire or the impairment to firefighting posed by the Project.

9. Socioeconomic Impacts

Ed Tisdale has lived and ranched at Morning Star Ranch for 55 years, and Donna Tisdale, a fourth generation California rancher and co-owner of Morning Star Ranch, has been there with him for 43 years. The Tisdales' home, ranch and rental property are *directly* adjacent to the Project.

The FEIS concludes that "the presence of wind turbines" is not a factor in changes in property values, and that the Project's impacts "would be insignificant." FEIS RTC-44. Yet, as discussed above, the Project will cause significant impacts on the Tisdales' property. The Project will replace the currently pristine view outside the Tisdales' home and seen through their windows with a gigantic, ugly,

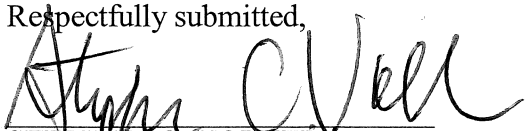
industrial nightmare of towering and whining wind turbines. Those turbines will dramatically increase audible and inaudible sound pressures, causing physical discomfort and annoyance for the Tisdales and others present on their property. It will replace their stunning dark night sky with its brilliant blaze of stars with annoying, incessantly blinking red lights and noisy, whirling 200-foot long turbine blades. While admitting that "environmental and physical changes may affect property values within an immediate distance of a wind project" the FEIS declines to attribute any significant to this effect, and instead dismisses these impacts as having only a speculative impact on property value. FEIS RTC-45. This conclusion completely ignores the overwhelming evidence of property value destruction before the agency.

CONCLUSION

The Project will indisputably have a significant adverse effect on aircraft safety and operation, by producing turbulence, degrading radar function, and impeding low flying aircraft, among other hazards. The Project will also pose an unacceptable risk of fatal aircraft collisions that cannot be eliminated by FAA-required lighting. This severe risk—exacerbated by the acknowledged fact that the area is frequently used by low flying military aircraft—is unacceptable. For these reasons, and because the environmental impacts of the Project are not adequately addressed as required by NEPA, the Determination Letters are an abuse of discretion and should be vacated.

Dated: August 17, 2020

Respectfully submitted,



STEPHAN C. VOLKER
Attorney for Backcountry Against Dumps, Donna Tisdale, and Joe "Ed" Tisdale

EXHIBIT LIST

Exhibit 1: Photographs taken by Donna Tisdale, at the Project site

Exhibit 2: Linowes, Lisa, *Wind Energy and Aviation Safety, Fatalities,* WindAction.org, April 4, 2017

Exhibit 3: Novak, Andrej, *Wind Farms and Aviation*, Aviation, 2009, 13:2, 56-59

Exhibit 4: Civil Aviation Authority, *CAA Policy and Guidelines on Wind Turbines, CAP 764*, Safety and Airspace Regulation Group, 6th Ed., February 2016

Exhibit 5: Mulinazzi, Thomas E., Zheng, Zhingquan Charlie, *Wind Farm Turbulence Impacts on General Aviation Airports in Kansas*, Kansas Department of Transportation, Report No. K-TRAN: KU-13-6, January 2014

Exhibit 6: Steven Fiedler, INCE, dBF Associates, Campo Wind Noise/Acoustical Review (March 10, 2020)

Exhibit 7: Steven Fiedler, INCE, dBF Associates, Wind Turbine Infrasound and Low-Frequency Noise Survey in Boulevard, CA (December 16, 2019)

Exhibit 8: Scott Snyder, PG, Snyder Geologic, Inc., Campo Wind Final Environmental Impact Statement (EIS) with Boulder Brush Facilities Final EIS Review and Opinion (March 9, 2020)

Exhibit 9: Photographs of Campo Reservation from Tisdales' Ranch

Exhibit 10: Graphic depicting relative height of Project turbines

Exhibit 11: Vision Scape Imagery turbine simulations (March 2020)