RECORD OF DECISION

for

Proposed Issuance of an Endangered Species Act

Section 10(a)(1)(B) Incidental Take Permit

to

Na Pua Makani Power Partners, LLC

for the

Na Pua Makani Wind Energy Project

U.S. Fish and Wildlife Service

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Introduction

This Record of Decision (ROD) was prepared by the U.S. Fish and Wildlife Service (USFWS) in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA), as amended. The purpose of this ROD is to document the decision of the USFWS in response to an application submitted by Na Pua Makani Power Partners, LLC (NPMPP) for an Incidental Take Permit (ITP) addressing species listed under the Endangered Species Act of 1973 (ESA), as amended. The information contained in this ROD is based on the ITP application and the submission of a supporting Habitat Conservation Plan (HCP) (Tetra Tech 2016a), the Final and Supplemental Environmental Impact Statements (FEIS and SEIS) addressing this action, and other information in the administrative record. The USFWS decision to issue the ITP follows a determination that the ITP issuance criteria under section 10(a)(2)(B) of the ESA have been met. The ITP allows for the construction and operation of the Na Pua Makani Wind Energy Project (Project) on Oahu, Hawaii to occur in compliance with the ESA. The ITP and its associated HCP provide protection for and promote the conservation of the affected listed species while enabling NPMPP to conduct otherwise lawful activities associated with the construction and operation of the Project and other activities covered by the HCP.

This ROD presents the USFWS' permit decision and the rationale supporting the decision, identifies the reasonable range of alternatives considered in the FEIS and SEIS, and discusses whether all means to avoid or minimize environmental harm from implementation of the selected alternative have been adopted (40 CFR 1505.2).

Proposed Action

The USFWS proposes to issue an ITP to NPMPP under the authority of section 10(a)(1)(B) of the ESA for a period of 21 years. Documents used in the preparation of this ROD include the following, all herein incorporated by reference:

- Draft Na Pua Makani Wind Energy Project Habitat Conservation Plan (Tetra Tech 2015a);
- Final Na Pua Makani Wind Energy Project Habitat Conservation Plan (Tetra Tech 2016a);
- Draft Environmental Impact Statement for the Na Pua Makani Wind Energy Project and Habitat Conservation Plan (Tetra Tech 2015b);
- Final Environmental Impact Statement for the Na Pua Makani Wind Energy Project and Habitat Conservation Plan (Tetra Tech 2016b);
- Supplemental Final Environmental Impact Statement for the Na Pua Makani Wind Energy Project and Habitat Conservation Plan (Tetra Tech 2016c);
- USFWS Biological Opinion on the Na Pua Makani Wind Energy Project Habitat Conservation Plan and Incidental Take Permit Application (USFWS 2016); and

- USFWS Findings and Recommendations for the Proposed Issuance of an Endangered Species Act Section 10(a)(1)(B) Incidental Take Permit for the Na Pua Makani Wind Energy Project Habitat Conservation Plan for the Construction and Operation of the Na Pua Makani Wind Energy Generation Facility, Oahu, Honolulu County, Hawaii (USFWS 2018).

Purpose and Need

The purpose of the USFWS' proposed ITP action is to fulfill our legal and conservation obligations under section 10(a)(1)(B) of the ESA in response to NPMPP's HCP and request for an ITP addressing the Project. Any permit issued by the Service must meet all applicable issuance criteria and implementation should be technically and economically feasible. *See* 16 U.S.C. 1539(a)(2)(B); 43 CFR 46.420(b). Issuance criteria include requirements that the applicant will minimize and mitigate the impacts of the taking on covered species to the maximum extent practicable and the taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild.

Project Description

NPMPP proposes to construct, operate, and maintain the Project to provide clean, renewable, wind-generated energy for the island of Oahu, and thereby assist the Hawaii Electric Company (HECO) in meeting Hawaii's Renewable Portfolio Standard (RPS) requirements and the State's goal to reduce electricity costs. Hawaii's Clean Energy Initiative sets goals for the state to achieve 100 percent clean energy by 2045, with the energy coming from locally generated renewable sources (HCEI 2014). The cost of electricity from renewable energy is currently about one-half the cost of electricity generated by burning oil and from other non-renewable sources (DBEDT 2013). The power generated by the Project would be sold to HECO pursuant to a Purchase Power Agreement under a long-term, fixed-price contract with a fixed annual escalation providing long-term price stability for consumers.

The Project would consist of up to 9 wind turbines with a generating capacity of up to approximately 25 megawatts (MW). The Project site encompasses about 707 acres (286 hectares) and is located on the Island of Oahu, near the town of Kahuku, in the Koolauloa District of the City and County of Honolulu. The site includes portions of two parcels leased from the Hawaii Department of Land and Natural Resources (DLNR), State-owned access areas, and privately-owned lands. The site is located almost entirely within a State agricultural land use district.

Permanent Project facilities would consist of the wind turbines, internal access roads, overhead and underground transmission and collector lines, an onsite substation, and an operations and maintenance (O&M) building and associated storage yard and parking area. Temporary wind turbine assembly and lay down areas would also be used during construction. The Project includes implementing the activities covered under the proposed HCP, inclusive of construction and operation of the Project and conservation measures for the covered species (see below), in accordance with the terms and conditions of the ITP.

Plan Area

The ITP area boundary, and the corresponding area for implementation of the HCP, cover the 707-acre Project site. The plan area includes the permit area and also includes three areas within which offsite mitigation measures would be implemented. The three mitigation areas and their corresponding acreages are: (1) Hamakua Marsh, a DLNR-owned waterbird sanctuary near the town of Kailua, 714 acres (289 hectares); (2) Poamoho Ridge, a DLNR-owned forested habitat along the leeward summit of the central Koolau Mountains, with two units encompassing 655 acres (265 hectares) and 618 acres (250 hectares), respectively; and (3) James Campbell National Wildlife Refuge (NWR), part of the Oahu NWR complex located north of Kahuku.

Covered Species

The ITP would authorize incidental take of seven species (Table 1). The HCP includes measures to minimize and mitigate for take of all Covered Species, to the maximum extent practicable, and that otherwise comply with the permitting criteria of 16 U.S.C. § 1539(a).

Table 1. Covered Species under the Na Pua Makani Wind Energy Project Habitat Conservation Plan.

Common Name	Scientific Name	Status[1]	Year Federally Listed
Hawaiian hoary bat	*Lasiurus cinereus semotus*	FE, SE	1970
Newell's shearwater	*Puffinus newelli*	FT, ST	1975
Hawaiian goose	*Branta sandvicensis*	FE, SE	1967
Hawaiian duck	*Anas wyvilliana*	FE, SE	1967
Hawaiian stilt	*Himantopus mexicanus knudseni*	FE, SE	1970
Hawaiian coot	*Fulica alai*	FE, SE	1970
Hawaiian moorhen	*Gallinula chloropus sandvicensis*	FE, SE	1967

[1]/State Threatened = ST, State Endangered = SE, Federal Threatened = FT, Federal Endangered = FE.

Covered Activities

NPMPP seeks take authorization for construction, operation and maintenance activities occurring within the Project site, and those activities necessary to carry out all mitigation and other conservation measures identified in the HCP and/or the ITP. The Covered Activities are described in greater detail in the HCP and include activities associated with: site clearing and preparation; construction of turbines, access roads and other support facilities; operation of the electrical generation facilities (primarily the turbines), collector lines, and substation; ongoing

maintenance of all Project facilities; implementation of mitigation and other conservation measures. All covered activities will be implemented in accordance with the terms of the HCP and ITP.

Protection Measures and Conservation Strategies

The ITP is conditioned on implementation of the HCP. NPMPP has developed its HCP with technical assistance from the USFWS and the Hawaii Department of Land and Natural Resources/Division of Forestry and Wildlife (DOFAW). Impact avoidance and minimization measures associated with the construction and operation of the wind farm are described in Section 2.5.1 of the FEIS and in Chapter 4 of the HCP. The duration of the proposed ITP is 21 years. The conservation strategy of the HCP is intended to provide a net conservation benefit to the Covered Species through a combination of on-site and off-site measures including habitat protection, restoration and management, and funding for implementation of high priority measures in adopted recovery plans. These proposed measures are in line with the recovery plan objectives identified for the Covered Species (see Chapter 4 of the HCP).

Monitoring and Adaptive Management

Chapter 7 of the HCP addresses the monitoring and reporting program to be implemented as part of the proposed action. Section 9.5 of the HCP addresses the adaptive management approach that will be used to evaluate and respond to potential changed circumstances within the plan area, and thereby ensure that the conservation measures identified in the HCP are being implemented adequately and meeting the goals and objectives outlined in the HCP.

Decision

The USFWS's decision is to approve the FEIS and the SEIS, including the selection of Alternative 2a (described below) as the approved Project alternative; approve the Final Na Pua Makani Wind Project HCP; and, issue an ITP to NPMPP pursuant to section 10(a)(1)(B) of the ESA. The ITP would authorize the take of the species listed in Table 1, incidental to the construction, operation, and maintenance of the Project and other activities covered under the HCP during the 21-yr term of the ITP. The USFWS's No Surprises Rule (50 CFR §§ 17.22 and 17.32) would apply to the ITP.

Alternatives

The USFWS evaluated a broad range of alternatives to the proposed action. Three alternatives were analyzed in the EIS, including a no-action alternative (Alternative 1) and two action alternatives. Additional alternatives were also evaluated by the USFWS in the preparation of the FEIS and SEIS and consideration of the HCP, but were eliminated from detailed study. The alternatives eliminated from detailed study included: (1) a larger project size; (2) a smaller project size; (3) greater setback distances; (4) an alternate project location; (5) a reduced ITP/ITL permit term; and (6) different types of renewable energy generation. Descriptions of these alternatives and why they were not considered for detailed study are provided in the FEIS. The

following provides brief summaries of the no-action alternative as well as the two action alternatives:

Alternative 1 (No Action)

Under Alternative 1, the USFWS would not issue an ITP, and the Project would not be constructed. Alternative 1 would avoid the potential take of Covered Species, but would not provide a clean source of electricity, offset carbon emissions, or contribute to the achievement of the State's renewable energy goals and achievement of the State's RPS law. Under Alternative 1, the HCP would not be implemented and beneficial activities resulting from the HCP would not occur, including protection, restoration, research, and monitoring of Covered Species.

Alternative 2/2a (Proposed Action/Modified Proposed Action) – Wind Project of up to 10 Turbines (up to 9 Turbines under Alternative 2a; Selected Alternative)

The Proposed Action involves implementation of the Final HCP and issuance of an ITP for construction and operation of a wind energy project with a generation capacity of up to approximately 25 MW. The Project as originally described as Alternative 2 of the Draft EIS, would consist of between 8 and 10 wind turbines. In response to public comments on the Draft EIS related to visual impacts and consideration of fewer turbines with larger generating capacities, a Modified Proposed Action option (Alternative 2a) with a reduced maximum number of only 9 turbines with larger generating capacities and taller dimensions was added to the FEIS. The Final HCP was updated to incorporate Alternative 2a. Subsequent to publication of the FEIS, based on input from the community, the USFWS published a SEIS to provide an additional opportunity for public review and comment on Alternative 2a to further the purposes of NEPA and the ESA. Under the authority of NEPA, the USFWS can identify and select an alternative that includes all or portions of several proposed alternatives. In this case, the USFWS's selected alternative consists of Alternative 2a of the FEIS and SEIS.

To comply with permitting criteria in 16 U.S.C. § 1539(a), the HCP incorporates a range of minimization and mitigation measures. Those related to Project siting, construction and operation include:

<u>Project Components and Siting Considerations</u>

- The three temporary guyed met towers will be fitted with bird flight diverters and/or white poly tape (1 inch [2.5 centimeter]) to increase visibility and, as a result, increase the likelihood of collision avoidance by the Covered Species.
- The Project includes the installation of an un-guyed, free-standing permanent met tower to maximize the detectability of all features of the structure for birds and bats to minimize the risk of collision. This permanent tower would replace one temporary guyed met tower, and the remaining temporary met towers would be removed before initiation of commercial operations.
- The majority of the wind farm site is located in disturbed agricultural habitat, which minimizes impacts to most native species.

- The Project site does not contain suitable listed waterbird breeding or foraging habitat, thereby minimizing Hawaiian stilt, Hawaiian coot, and Hawaiian moorhen use of the site and minimizing potential impacts to these species.
- To minimize potential impacts to wildlife, onsite lighting at the O&M building and substation will be shielded and/or directed downward, triggered by a motion detector, and fitted with non-white light bulbs. Lighting is only expected to be used when workers are at the site at night. Most O&M activities are expected to occur during daylight hours. Nighttime activities during construction are addressed in the General Project Development Measures below.
- Barbed wire will not be used on perimeter fences required to secure infrastructure to avoid the risk of entangling bats.
- Flashing red lights on the nacelle have been shown to not be attractive to birds and will be used in accordance with FAA requirements.
- The collection line will be placed below ground to the maximum extent practicable, thereby reducing the risk of collision by the Covered Species.
- New above-ground portions of the power lines associated with the Project will use line marking devices to improve visibility to birds and follow Avian Protection Plan Guidelines (APLIC 2012).

General Project Development Measures

- Hawaiian hoary bats roost in non-native and native woody vegetation that is 15 feet (4.5 meters) or taller. To minimize potential impacts to the Hawaiian hoary bat, woody plants greater than 15 feet (4.5 meters) tall will not be removed or trimmed between June 1 and September 15 during the installation and ongoing maintenance of the Project structures.
- NPMPP will implement low wind speed curtailment to reduce potential impacts to Hawaiian hoary bats. Proposed implementation will include increasing manufacturer's recommended cut-in speeds from 10 feet/ per second (ft/s; 3 meters/ per second [m/s]) to 16 ft/s (5 m/s), and feathering turbine blades into the wind below 16 ft/s (5 m/s). Low wind speed curtailment will be instituted from March – November between sunset and sunrise.
- NPMPP will deploy bat acoustic monitors at the Project to document bat acoustic activity for a period during operations. Results from this monitoring may potentially be used to adaptively manage implementation of low wind speed curtailment to reduce observed and unobserved bat fatalities.
- A daytime speed limit of 25 miles per hour (mph; 40 kilometers per hour [kph]) and a nighttime speed limit of 10 mph (16 kph) will be observed on the Project site roads to minimize the potential for vehicle collisions with Covered Species.
- Should the Hawaiian goose begin to use the Project site for foraging or nesting, NPMPP will reduce daytime speed limits to 10 mph (16 kph) to minimize the potential for vehicle collisions.
- Stormwater management on the Project site, including the turbine pads and roads, will be designed to avoid the potential for accumulating standing water, which could serve as an attractant to waterbird species.
- As appropriate to control erosion or other site-specific concerns, disturbed areas will be replanted with non-invasive resident plant species that are compatible with Project

operations, such as being suitable for post-construction mortality monitoring for covered species within designated search plot areas. To the extent practicable, NPMPP will minimize the creation of suitable Hawaiian goose nesting habitat (shrubs adjacent to low-growing grass) in developing post-construction monitoring search plots.

- Trash will be collected in lidded receptacles and removed from the construction area on a weekly basis to avoid attraction of ants and other animals such as mongooses, cats, and rats that may negatively affect the Covered Species or NPMPP's ability to detect fatalities of the Covered Species.
- NPMPP will maximize the amount of construction activity that can occur in daylight during the seabird breeding season including the peak fledging period (approximately October 15- November 23).
- Should nighttime construction be required, NPMPP will use shielded lights and maximize the use of non-white lights if construction safety is not compromised, to minimize the attractiveness of construction lights to wildlife. NPMPP will also have a biological monitor in the construction area to watch for the presence of Covered Species at all times during nighttime construction. Should a Covered Species be observed, the monitor will stop construction activities and shut down construction lighting until the individual(s) move out of the area.
- When not in use, construction cranes will be lowered at night, when practicable, to minimize the risk of bird collisions.
- To address concerns about fire safety, NPMPP will establish fire safety-related construction and O&M requirements (including landscaping considerations), response protocols, and responsibilities. A Fire Management Plan is included in Appendix C of the FEIS.
- Chromolaena (*Chromolaena odorata*), an invasive plant species, occurs on the nearby Kahuku training area. NPMPP will coordinate with the Oahu Invasive Species Committee to identify and implement measures to minimize the risk of introducing chromolaena to the Project site. Approaches to minimize risk may include periodic site inspections by qualified personnel to search for the presence of plants and cleaning of equipment used at the site.

Off-site Mitigation Measures

Off-site mitigation measures on Oahu that will be implemented under the HCP conservation strategy to offset the impacts of anticipated take of the Covered Species include: (1) funding research to support effective management of Newell's shearwaters; (2) fencing and predator control to conserve the Hawaiian goose at James Campbell NWR; (3) a combination of bat research and native forest restoration and management to increase Hawaiian hoary bat habitat; (4) acoustic surveys to document occupancy of the affected area by the Hawaiian hoary bat; and (5) fencing and public outreach at Hamakua Marsh to benefit the conservation of the Hawaiian stilt, Hawaiian coot, Hawaiian moorhen and the Hawaiian duck.

Alternative 3 – Wind Project of up to 12 Turbines

Alternative 3 involves the construction and operation of a larger wind energy generation facility with a capacity of up to approximately 42 MW. Alternative 3 would consist of up to 12 turbines

total (2 to 4 additional turbines compared to the Proposed Action; see Figure 2-1 and Section 2.4 of the EIS). Due to HECO transmission line upgrades required for additional turbines and associated generating capacity beyond those identified in the Proposed Action, there would be a lag of at least 3 years before the construction of the additional 2 to 4 turbines. At this time, there is no specific engineering information from HECO indicating the extent or specific location of the transmission line upgrades that would be needed.

Alternative 3 includes the issuance of an ITP to authorize incidental take of the Covered Species in association with construction and operation of the up to approximately 25-MW Project and implementation of the Project HCP. Thus, avoidance, minimization, and mitigation measures identified for Covered Species would occur at levels described above for the Proposed Action. Due to the uncertainty related to the timing of construction of the additional turbines under this alternative, NPMPP would re-initiate coordination with the USFWS prior to their construction to address potential impacts of the larger generation facility to the Covered Species. If appropriate, an amendment to the HCP and ITP would be prepared to address these impacts.

Decision and Rationale

The USFWS' decision is to select the Proposed Action (Alternative 2a) and to issue an ITP based on the measures described in the HCP, which are incorporated as terms and conditions of the ITP. Issuance of the ITP authorizes the incidental take of the seven Covered Species identified above, subject to incidental take limits and other requirements of the HCP. Based on the findings in the FEIS, SEIS, our Biological Opinion (USFWS 2016), our ESA section 10 Findings and Recommendations (USFWS 2018), this ROD, and other information in the administrative record, the Proposed Action is not likely to appreciably reduce the likelihood of the survival and recovery of the Covered Species in the wild, and the HCP complies with the permitting standards of 16 U.S.C. § 1539(a)(1)(B). NPMPP's proposed HCP is approved because it meets the statutory criteria for issuance of an ITP under section 10 of the ESA, inclusive of providing assurances that the final HCP will be implemented. Implementation of the final HCP and issuance of the ITP best fulfills the USFWS' statutory mission and responsibilities while meeting the agency purpose and need to conserve listed species. The decision is based on the following:

- Issuance of the ITP by the USFWS is likely to contribute to the conservation of the Covered Species due to the implementation of the minimization, mitigation and other conservation measures in the HCP. The final HCP is also likely to minimize impacts to birds protected under the Migratory Bird Treaty Act.

  The analysis and findings in the FEIS and SEIS demonstrate that, based on a review of alternatives and their environmental consequences, and after consideration of public comments, the Proposed Action is likely to minimize and mitigate the impacts of the permitted take of Covered Species and contribute to the conservation of the Covered Species.

- The USFWS has concluded that implementation of the proposed ITP action would not be in conflict with any ongoing conservation programs, and the terms of its implementation

are consistent with applicable recovery plans, and applicable Federal and State laws and regulations.

- The renewable energy generated by the Project would provide a dependable source of electrical energy and eliminate the need for an equivalent amount of fossil-fuel derived energy and capacity. The offset of fossil-fuel energy would correspondingly reduce use of nonrenewable resources and limit atmospheric pollution, which would provide incremental benefits to listed and unlisted species.

Conditions

As required by section 10(a)(1)(B) of the ESA, the ITP requires implementation of the HCP to insure that the impacts of take of the Covered Species caused by Covered Activities will be minimized and mitigated to the maximum extent practicable. These conditions for implementation of the HCP are also incorporated into the findings of the USFWS's Biological Opinion and ESA section 10 Findings for the Proposed Action. Any changes to the HCP shall be subject to the provisions of the final HCP, as described in Section 9.6 on Revisions and Amendments. The USFWS has concluded it is not necessary to further condition the ITP using features of the other feasible alternatives because the NPMPP's final HCP was found to meet the statutory criteria for issuance of an ITP under section 10 of the ESA.

Environmentally Preferable Alternative

The NEPA implementing regulations at 40 CFR 1505.2(b) require that the ROD identify the alternative or alternatives that is/are considered to be "environmentally preferable," i.e., the alternative that causes the least damage to the biological and physical environment and best protects, preserves, and enhances historical, cultural, and natural resources, as expressed in Section 101(b) of NEPA (43 CFR 46.30). The USFWS identified the No Action Alternative (no approval of the HCP/no issuance of the ITP) as the environmentally preferable alternative. Under this alternative, the Project would not be constructed or operated. Therefore, there would be no ground disturbance during construction and associated effects to the environment including historic, cultural, and natural resources (e.g., soil, water resources, and vegetation). There would also be no operational effects associated with noise or visual impacts, and no take of listed species. Through complete avoidance of new impacts associated with the proposed Project, the No Action Alternative would cause the least damage to the biological and physical environment. The No Action Alternative would not result in the implementation of conservation measures that would benefit the Covered Species addressed in the HCP. The No Action Alternative would also produce no renewable energy, and therefore would not contribute to reductions in greenhouse gas emissions or to meeting the State's RPS goals.

Public Involvement

Scoping

The USFWS formally initiated an environmental review of the proposed HCP permit action through a Federal Register notice on November 5, 2013 (78 FR 66377-66379). That notice

stated that an EIS would be prepared. The notice also announced a 30-day public scoping period during which other agencies, Native Hawaiian organizations, and the public were invited to provide comments and suggestions regarding the issues and alternatives to be considered in the EIS. A scoping report was prepared and is included as Appendix A of the FEIS.

Draft EIS

A Draft EIS (Tetra Tech 2015b) was subsequently produced and made available for a 60-day public comment period beginning on June 12, 2015 (80 FR 33535-33537). Ninety comment letters were received pertaining to the Draft EIS and Draft HCP (Tetra Tech 2015a) including two from Federal agencies, six from State agencies, six from local agencies, seven from non-governmental organizations, and 69 from individuals. An additional 12 individuals provided testimony during the public meeting on the Draft EIS held on June 23, 2015, in Kahuku, HI. Appendix M of the FEIS includes a copy of all comment letters and public testimony received and associated responses. Comments received were incorporated into and resulted in some modifications to the FEIS. A summary of major changes made to the Draft EIS is included in Chapter 2 of the FEIS.

Final EIS

The FEIS was noticed in the Federal Register on July 12, 2016 (81 FR 45174). During the 30-day wait period on the FEIS, one comment letter was received from the U.S. Environmental Protection Agency (EPA). The EPA requested that mitigation measures for all resources evaluated be carried forward into the ROD. Mitigation measures for threatened and endangered species, which also apply to other wildlife, identified in the EIS were incorporated into the Na Pua Makani HCP. These measures, proposed by the Applicant and evaluated in the EIS, were developed in collaboration with the USFWS and DOFAW and have therefore been thoroughly considered in USFWS's decision-making process. Other mitigation measures, such as those relating to noise, shadow flicker, and other topics, are identified in Chapter 4 of the FEIS, and will be incorporated as appropriate into the numerous State of Hawaii and City and County of Honolulu permits and approvals required for the Project. A list of these permits and approvals is included in Chapter 5 of the FEIS.

EPA also recommended that post-construction noise monitoring be conducted to verify predicted noise levels and to ensure compliance with Hawaii noise regulations. The Noise Control Act of 1972, along with its subsequent amendments (Quiet Communities Act of 1978 [42 USC 4901-4918]), delegates the authority to regulate environmental noise to each state. The State of Hawaii regulates noise through the Hawaii Administrative Rule (HAR), Title 11, Chapter 46, "Community Noise Control", promulgated on September 11, 1996, and limits sound generated by new or expanded developments. The Hawaii Community Noise Regulations (HAR 11-46) provide for the prevention, control, and abatement of noise pollution in the State. The purpose of these rules is to "provide for the prevention, control, and abatement of noise pollution in the State from the following noise sources: stationary noise sources; and equipment related to agricultural, construction, and industrial activities." The State Department of Health (DOH) is responsible for the implementation, administration, and enforcement of these statutes. The Project will be constructed in compliance with HAR 11-46 once a noise permit is obtained from

DOH. Factors considered in granting of such permits include whether the activity is in the public interest and whether the best available noise control technology is being employed.

There are no Federal, State, or local regulations for LFN (low frequency noise) and IS (infrasound) effects. The Project is required to demonstrate compliance with HAR 11-46. In response to public comments, NPMPP elected to conduct a baseline LFN/IS sound survey. This survey provided statistically relevant data, covering the full range of wind speeds and future operational scenarios. Results indicate that even the highest increase of LFN/IS would not result in an impact at the nearest residence (approximately 814 feet from the turbine location). At this distance, the LFN/IS would not exceed the threshold of human hearing and not predicted to result in any impacts.

To respond to potential future public concerns regarding noise, NPMPP will implement a noise complaint resolution process. Predicted operational noise impacts include several levels of conservative assumptions that were incorporated into the modeling analysis. Based on these assumptions, predicted operational noise impacts are expected to be in compliance with DOH noise limits. For that reason, monitoring of operational noise is not proposed (see Section 4.6.3.3 of the Final EIS).

Finally, EPA requested that more detailed information regarding the time and duration of "shadow flicker" be provided to affected parties, upon request. Shadow flicker impacts are not regulated in applicable State or Federal law; however, a threshold of 30 hours per year has been widely used in the industry as a target value in the absence of formal guidelines. To mitigate for any nuisance impacts associated with shadow flicker, NPMPP has committed to offer home owners for which shadow flicker is predicted to be greater than 30 hours per year reimbursement for costs up to $800 for adding awnings or blinds to windows facing the wind farm and/or landscaping/trees to block shadow flicker (Section 4.18.3.3 of the FEIS). To make a determination on eligibility for funding, a determination of predicted shadow flicker impacts would be made specific to, and shared with, the home owner making the request.

Supplemental EIS

CEQ regulations require agencies to prepare supplements to either draft or final EISs if there are substantial changes in the proposed action that are relevant to environmental concerns or there are significant new circumstances or information relevant to environmental concerns that bear on the proposed action or its impacts; SEISs may also be prepared if the lead agency determines that the purposes of NEPA will be furthered by doing so. Accordingly, the USFWS determined that publishing an SEIS and providing an additional opportunity for public review of the Proposed Action Option (Alternative 2a) would further the purposes of NEPA and the ESA.
The SEIS was noticed in the Federal Register on November 17, 2016 (81 FR 81151). During the 30-day public comment period on the SEIS, 13 comment letters were received from 10 individuals, two agencies (State of Hawaii Department of Education; City and County of Honolulu Department of Facility Maintenance), and one organization (Center for Biological Diversity). Copies of comment letters are included in the Administrative Record, and responses to substantive issues brought up by commenters are included in Attachment 1.

References

Tetra Tech, Inc. 2015a. Draft Habitat Conservation Plan for the Na Pua Makani Wind Project, Kahuku, Hawaii. Prepared for Champlin Oahu Wind Holdings, LLC.

Tetra Tech, Inc. 2015b. Draft Environmental Impact Statement for the Na Pua Makani Wind Project and Habitat Conservation Plan, Kahuku, Hawaii. Prepared for Champlin Oahu Wind Holdings, LLC, and the U.S. Fish and Wildlife Service.

Tetra Tech, Inc. 2016a. Final Habitat Conservation Plan for the Na Pua Makani Wind Project, Kahuku, Hawaii. Prepared for Champlin Oahu Wind Holdings, LLC.

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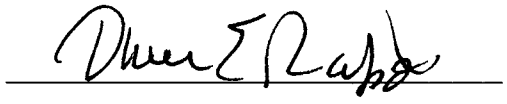
U.S. Fish and Wildlife Service. 2016. Biological Opinion on Na Pua Makani Wind Energy Project Habitat Conservation Plan and Incidental Take Permit Application. U.S. Fish and Wildlife Service Pacific Islands Fish and Wildlife Office.

U.S. Fish and Wildlife Service. 2018. Findings and Recommendations for the Proposed Issuance of an Endangered Species Act Section 10(a)(1)(B) Incidental Take Permit for the Na Pua Makani Wind Energy Project Habitat Conservation Plan for the Construction and Operation of the Na Pua Makani Wind Energy Generation Facility, Oahu, Honolulu County, Hawaii. U.S. Fish and Wildlife Service Pacific Islands Fish and Wildlife Office.



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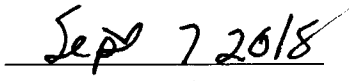

Date

ATTACHMENT 1

RESPONSES TO COMMENTS ON THE SUPPLEMENTAL EIS

FOR THE

NA PUA MAKANI WIND ENERGY PROJECT AND HCP

OAHU, HAWAII

Responses to Public Comments on the Supplemental EIS for the Na Pua Makani Wind Energy Project

Responses to key issues identified during the public comment period on the SEIS are provided below. Individual comments that were similar are summarized as issue statements, followed by the corresponding responses. Copies of comment letters are included in the USFWS's decision record for this ITP action.

Issue 1. Assumed Benefits of Low Wind Speed Curtailment (LWSC) in Reducing Bat Fatalities. One commenter was concerned that the Project HCP inappropriately applies the potential benefits of LWSC in reducing fatalities to the estimation of take for the Hawaiian hoary bat. The commenter stated that the studies referenced in the HCP were selectively chosen by the Applicant to minimize their mitigation requirements, and suggest that the assumed benefit of LWSC should be based on an average reduction in bat mortality observed across four separate, recent studies (no more than a 58 percent reduction in fatalities compared to the maximum of 65 percent assumed in the HCP). The commenter pointed to the fact that the HCP proposes initial implementation of LWSC at 5.0 meters per second for 9 months of the year, rather than 6.5 meters per second year-round which at some sites has been shown to increase the effectiveness in reducing bat fatalities (Good et al. 2011, 2012). **(Letter ORG-1, Comments # 3 and #8)**

Response: The Hawaiian hoary bat take estimate in the HCP is based on the best available scientific data. It was calculated using the per turbine fatality rate observed at the adjacent Kahuku Wind Farm and a conservatively high assumed value of unobserved take (based on Kahuku Wind Farm data), adjusted for the potential effectiveness of LWSC in reducing collision risk. The level of effectiveness used (65 percent) was based on the lower end of the range of the estimated effectiveness of LWSC from mainland studies to account for the uncertainty associated with the effectiveness of this measure in Hawaii (ranging from 60 to 82 percent; see **Final HCP p. 43** [Arnett et al. 2009, 2010; Baerwald et al. 2009; Good et al. 2012; Young et al. 2011]). The calculations did not assume a certain level of LWSC implementation, either in terms of wind turbine cut-in speed or period of the year. Although there are a limited number of other studies not specifically cited in the HCP (e.g., Arnett et al. 2011) that have shown potentially greater or lower effectiveness of LWSC, the assumptions in the HCP remain appropriate. The commenter is correct in that the Tier 1 bat take level assumed a LWSC effectiveness of 65 percent; however, the Tier 2 bat take level is 150 percent of that take amount so in effect assumes a much lower benefit of LWSC. **(Final HCP p. 41)**

The ESA requires an HCP to specify the impacts of taking endangered or threatened species (16 U.S.C § 1539). In order to ensure that full disclosure and evaluation of the potential impacts of the Project on the Hawaiian hoary bat, the HCP used an appropriately conservative estimate of the level of potential incidental take. When an Applicant is preparing a HCP, the USFWS recommends that conservative estimates of take (i.e., greater than anticipated take levels) be developed, as appropriate, to account for uncertainty related to species biology, potential impacts, and the effectiveness of avoidance and minimization measures. This ensures that take levels authorized under the ITP are adequate to cover the Applicant's proposed actions and provide confidence that a major amendment to the HCP will not be needed during the permit term. It also ensures that the effect of the potential impacts are fully disclosed and evaluated in

accordance with NEPA and that the incidental take permitting requirements of section 10 of the ESA are satisfied.

The minimization and mitigation measures included in the Project HCP were developed to address an estimated level of incidental take and are required to be implemented even if the actual level of incidental take is less than estimated in the HCP. Throughout the term of the Project ITP, post-construction monitoring will be conducted to ensure that the Project complies with authorized take limits under the ITP. The post-construction monitoring program also is designed to assess the validity of assumptions incorporated into the estimate of take and accuracy of the take estimate based on observed fatality rates during operation.

Key components of the Project HCP include monitoring to document impacts to the covered species and the effectiveness of mitigation actions, and adaptive management. This combination of measures allows the Applicant and the USFWS to track compliance with the ITP and react to conditions that suggest take or mitigation are not consistent with expectations based on assumptions in the HCP. The LWSC regime proposed as an avoidance and minimization measure in the Project HCP may be modified over time as Project-specific fatality data are collected as a result of the adaptive management mechanism incorporated into the HCP. The use of adaptive management to continually evaluate the effectiveness of the HCP avoidance and minimization measures represents the best scientific data available for minimizing impacts to listed species over the life of the permit. Based on data from the adjacent Kahuku wind farm, it is expected that the majority of bat activity at the Project will occur during a 9-month period, and the Applicant proposed their initial approach to LWSC accordingly. This level of LWSC is consistent with requirements established by the USFWS for other wind farms in Hawaii. The implementation of LWSC on the adjacent Kahuku project resulted in only 1 bat fatality in the last 4 years and that was in the month the LWSC was implemented. The Project HCP identifies potential changes in the application of LWSC, should assumptions not be met. **(Final HCP p. 85-86)** As a result of the adaptive management mechanism incorporated into the HCP, the HCP has built in flexibility that allows changes to be made over time.

Issue 2. On-the-ground Mitigation for Hawaiian Hoary Bats is inadequate. One commenter stated that the proposed HCP mitigation for Hawaiian hoary bats is inadequate in that it does not provide for no net loss or a net conservation benefit. They recommended that a greater amount of acres should be included for on-the-ground mitigation, in the amount of 40 acres per bat. The commenter also had concerns that the proposed mitigation activities, which include fence maintenance, invasive plant species removal, and predator control do not constitute "new" mitigation. They felt that the mitigation as proposed is not additive and that the HCP failed to disclose that private lands are unavailable. **(Letter ORG-1, comments #1, #2, #4, #9, #11, #12)**

Response: USFWS and DOFAW assembled bat experts from across the country in April 2015 to discuss the state of knowledge regarding the Hawaiian hoary bat, and to develop priority actions to mitigate for take of this species using the best available science. The result of this meeting was the White Paper Guidance on Hawaiian Hoary Bat Mitigation (Interagency Bat Guidance; DLNR 2015). This document provides the USFWS and Department of Land and Natural Resources (DLNR) guidance on how to minimize and mitigate for Hawaiian hoary bat take using the best available science, and suggests three appropriate approaches to mitigation: (1) research;

(2) restoration activities; and (3) land acquisition. These priorities are consistent with recommendations in the Hawaiian Hoary Bat Recovery Plan (USFWS 1998). These priorities are also consistent with the recovery objectives and incidental take permitting standards of the ESA to implement Recovery Plan priorities through HCPs. Implementing Recovery Plan priorities serves to ensure that individual permit actions will contribute to the recovery and conservation of the species. The priorities identified in the Interagency Bat Guidance were also in-line with priorities developed based on priority habitat areas and conservation needs identified in early planning meetings between Na Pua Makani (the Applicant), the wildlife agencies, and conservation stakeholders on Oahu.

To meet the needs of the mitigation framework described in the Interagency Bat Guidance, and because the value of a particular research project may not be determined until the results can be understood in the broader context, a dollar value for mitigation research was developed based on the best available science for the cost of completing habitat restoration activities on a per acre basis (DLNR 2015). This valuation was deemed as an appropriate factor to value the mitigation achieved through research, and the value was based on the best available information. However, the measures of success go beyond providing the funds necessary to carry out the research or restoration at approximately $50,000 per bat. The Project HCP includes objective measures of success for restoration activities based on surrogate habitat measures, deemed by both the USFWS and DOFAW (and documented in the Interagency Bat Guidance) to appropriately gauge progress toward habitat improvements that will benefit the Hawaiian hoary bat. In addition, research measures of success include the development of an agency-approved research plan as well as the completion of reporting and analysis of results so that pertinent results can be leveraged for planning future management actions or adaptively managing current mitigation actions. As noted below (see Issue 3), research results will lead to improved management for the benefit of the Hawaiian hoary bat. **(Final HCP p. 65)**

The proposed Poamoho Ridge mitigation area was identified as a high priority area under threat of on-going habitat degradation that did not have secured funding to provide for long-term fence maintenance, habitat restoration, or ungulate removal. As the funding to carry out these efforts was not available, it is a new conservation action. Each of these actions will protect Hawaiian hoary bat habitat from on-going degradation and, therefore, are likely to benefit the Hawaiian hoary bat. Funding restoration efforts at this site will protect this area from degradation that may have occurred in the absence of the Applicant's mitigation. Therefore, it is additive to current conservation efforts for the bat on Oahu. Furthermore, by eliminating feral ungulates in the restoration area and restoring already degraded habitat, these restoration actions are expected to outlast the mitigation actions, resulting in a net benefit (no net loss). It should also be noted that Federal regulations do not restrict mitigation to public lands. **(Final HCP, p. 65)**

Finally, the inclusion of an adaptive management program in the HCP and the required monitoring of mitigation and take allow for an on-going assessment of the amount of take relative to the amount of mitigation. Should the balance sheet of take and mitigation suggest that take exceeds mitigation, the Applicant would be required to reinitiate consultation with the USFWS to identify appropriate actions to adjust mitigation and/or to reduce the rate of bat take. As a result of these actions and assumptions, the best available scientific information indicates that the Project HCP will provide a net benefit to the species.

Issue 3. Research is not appropriate mitigation. One commenter felt that research in and of itself does not provide a mitigation benefit, and based on the Interagency Bat Guidance, research should not extend beyond the 2020 time frame. **(Letter ORG-1, comment #10)**

Response: The Project HCP includes several measures to minimize and mitigate impacts to the Hawaiian hoary bat. Research is only one component of the HCP conservation strategy. Habitat restoration activities are proposed in tandem with priority research identified in the Recovery Plan with the intent of informing the future development of effective management tools to provide conservation benefits to bats. The Hawaiian Hoary Bat Recovery Plan identified research as priority number 1 (USFWS 1998), and targeted research priorities in alignment with USFWS mitigation goals were described in the Interagency Bat Guidance (DLNR 2015). As described in the Project HCP these priorities will be used to identify appropriate research goals for the Project. The USFWS will have approval authority over any research plan to be used for mitigation under the HCP.

While research is not typically considered compensatory mitigation because it does not directly offset adverse effects to species or their habitats, in rare circumstance research that is directly linked to reducing threats, or that provides a quantifiable benefit to the species, may be included as part of a mitigation package. For example, these circumstances may exist when the Service can reasonably expect the outcome of research to more than offset the impacts and the proponent commits to using the results/recommendations of the research to mitigate action impacts.

The Interagency Bat Guidance has targeted research priorities that will provide information relevant to identifying effective Hawaiian hoary bat mitigation. By adopting the "best scientific data available" standard in the ESA, Congress indicated it expected that the USFWS would make decisions on the basis of "available" information. The reinitiation of consultation provisions of section 7 of the ESA, and the adaptive management provisions of the Project HCP, provide a mechanism for the USFWS and the applicant to adjust the HCP's conservation strategy to reflect new scientific information. Although the Interagency Bat Guidance envisions the ability to leverage research results to improve mitigation approaches for this species in the next 3 – 5 years, the guidance provides flexibility for research needs that extend beyond the 2020 timeframe identified by the commenters. Furthermore, the Interagency Bat Guidance recognizes the potential value in some longer term research efforts. As with the Project HCP's plan for initial research, the HCP requires USFWS approval of research plans used for mitigation. If additional research at the time Tier 2 mitigation is triggered is determined to be inappropriate, this element of the Project HCP's mitigation plan would be adaptively managed in consultation with the USFWS.

Issue 4. A Tiered Approach to Take and Mitigation is Inappropriate. One commenter stated that the HCP requests authorization of "excess" incidental take, in that the total amount reflects a buffer surrounding the initial estimate. They disagreed with the use of a tiered structure for take and mitigation because they feel that mitigation beyond tier 1 will "lock up" potential mitigation areas which may be needed by other applicants and because tiers preclude the ability to require different conservation actions than outlined in the HCP, which may be available in the future at the time take occurs. **(Letter ORG-1, comments #5 and #13)**

Response: Hawaiian hoary bat fatalities are rare events and occur at varying frequency among wind farms and years. Therefore, the best available science was used to conservatively predict take. Additionally, there are fundamental uncertainties regarding the effectiveness of LWSC in reducing Hawaiian hoary bat fatality rates and it is likely that over the 20-year permit term new technologies and operational practices will become available which could be implemented to reduce take. The adaptive management mechanisms built into the Project HCP allow for incorporating the results of research as well as these new technologies over time as they become available. The requested level of authorized take included in the Project HCP comprises the best estimate of take over the life of the Project, taking into account fatality data from the adjacent Kahuku wind farm in the form of annual averages and the potential effectiveness of LWSC in reducing fatalities. It includes a buffer to ensure adequate legal coverage to account for the underlying uncertainties without resulting in "over permitting." **(Final HCP p.43-44)**

Tiers are a useful tool for dividing take and mitigation into discrete pieces when take is expected to occur periodically, but unpredictably, over a long period of time. This allows mitigation to occur in a timely manner, such that mitigation precedes the occurrence of take, and in like amount with take so the Applicant mitigates for the take that has occurred without significantly over mitigating. This approach helps ensure that at any time in the permit term, the HCP will provide a net benefit to the species. The HCP allows for flexibility in receiving agency input during each step of mitigation, such that each mitigation action outlined requires USFWS review and approval prior to implementation and enables adapting each mitigation action to incorporate new science and/or current conservation needs of the species. The Tier 2 mitigation proposed in the Project HCP would not "lock up" additional mitigation lands as it involves additional restoration activities at the Poamoho Ridge mitigation area where Tier 1 mitigation is proposed. Moreover, within the context of adaptive management which is built into the Project HCP, if there is no longer a need for the Tier 2 proposed restoration activities at the time they are triggered, there is flexibility for the Applicant to identify another appropriate mitigation action for Tier 2 in consultation with USFWS.

Issue 5. HCP Success Criteria are Inappropriate. One commenter was concerned that the HCP mitigation success criteria are vague and do not require demonstration that any birds or bats are actually produced to offset take. **(Letter ORG-1, comments #6 and #14)**

Response: There are currently no effective tools or techniques available to measure the increase in a population of solitary, tree-roosting bats with any degree of certainty. Therefore, measures of habitat quality were identified to act as appropriate surrogate measures to track and demonstrate improvements to habitat expected to benefit the Hawaiian hoary bat. These measures are identified in the annotated outline of the Poamoho Ridge Mitigation Area Management Plan included in Appendix E of the Project HCP, and will be refined with USFWS input and approval during development of the plan. Success criteria for research include design and implementation of an approved study and various reporting requirements. Over the course of the HCP term, the USFWS will have regular input through annual review and will also have approval authority over implementation of all key elements of the HCP. **(Final HCP p. 65-66; Appendix E)**

Issue 6. Restricting compensatory measures to a pre-determined cost-per-animal is not appropriate for Federal habitat conservation plans. One commenter felt that restricting compensatory mitigation to a pre-determined cost per animal is inappropriate because it is not outcome based, and that the $50K per bat approximate funding amount should include inflation. **(Letter ORG-1, comments #7 and #15)**

Response: An inherent limitation to all HCPs in Hawaii that include the Hawaiian hoary bat is that there are information gaps on the biology of this species, its limiting factors, and the effectiveness of certain mitigation measures. The ESA requires that the USFWS use the best scientific information available. However, in recognition of these uncertainties and in an effort to increase the effectiveness of HCP mitigation strategies, the USFWS currently recommends that applicants comply with the Interagency Bat Guidance for developing Hawaiian hoary bat mitigation strategies in collaboration with the DLNR and the USFWS (DLNR 2015).

The Interagency Bat Guidance directs project applicants to incorporate elements of habitat restoration (including habitat protection and/or enhancement) and research designed to increase the knowledge of the species, at an amount of $50,000 per bat. As described in the Interagency Bat Guidance, this funding amount is based in part on costs of conducting restoration at a mitigation ratio of approximately 40 acres per pair of bats. However, in recognizing the importance of a balanced mitigation strategy, the USFWS has recommended and agreed to a mitigation strategy that includes funding for research and restoration based on this recommended financial commitment of approximately $50,000 per bat. Furthermore, the funding provided by the Applicant will be sufficient to conduct identified research and HCP success criteria are not based on provision of funding. Nevertheless, the restoration actions identified in the Project HCP are expected to persist longer than the wind farm operation. Overall, the restoration will benefit the entire watershed as well as support the life history requirements of the Hawaiian hoary bat. This expected benefit beyond the completion of the restoration actions supports the conclusion that the mitigation actions provide a net benefit to the species (no net loss), and is therefore outcome-based. **(Final HCP p. 65)**

Issue 7. Distance to Kahuku Schools. One commenter provided corrected information on the description of the Kahuku schools and asked for clarification on the distances between the schools and the Project. **(Letter ST-1, comment #1)**

Response: Corrections to the description of the schools and the distance to the Project were made in the SEIS. **(SEIS p. 3-113)**

Issue 8. The Project should consider use of alternate wind turbine technology. One commenter claimed that the wind turbine models proposed for the Project are obsolete and that vertical axis wind turbines should be considered to reduce impacts to birds and bats. **(Letter IND-10, comment #1)**

Response: The wind turbine models being considered are those identified by NPMPP as the most appropriate for site-specific wind conditions and terrain as well as economic and energy production considerations. Bladeless technologies are still in the research and development stage and are not yet commercially viable or available. Therefore, they were not considered. This

topic was included as an alternative considered but not carried forward for further consideration in the SEIS. **(SEIS p. 2-8)**