

**SUCCESSOR PETITIONER KAMEHAMEHA SCHOOLS – MOTION FOR
MODIFICATION AND TIME EXTENSION LUC DOCKET NO. A87-610**

WRITTEN DIRECT TESTIMONY OF ERIC B. GUINThER

1. **Please state your name and business address for the record.**

Eric B. Guinther
AECOS, Inc.
45-939 Kamehameha Highway, suite 104
Kane'ohe, HI 96744

2. **What is your current occupation?**

I am the Senior Ecologist and CEO of AECOS Inc. ("AECOS").

3. **How long have you specialized in ecology?**

Over 46 years.

4. **Did you provide a copy of your resume for these proceedings?**

Yes, my resume was provided as Successor Petitioner Kamehameha Schools ("KS") Exhibit 40.

5. **Please briefly describe your educational background.**

My educational background emphasized ecology, encompassing zoology, botany, geology, and water quality. I attended University of the Pacific and obtained a B.A. degree in Biology in 1965. I did post graduate studies at University of the Pacific from 1965 to 1967 and at the University of Hawai'i from 1967 to 1973.

6. **Do you specialize in any particular areas?**

I am an ecologist with an emphasis in botany and aquatic biology.

I specialize in conducting environmental studies, including field surveys, producing environmental survey reports, and making plant and animal identifications, and water quality assessments. My work is focused in the areas of ecology, encompassing zoology, botany, geology, and water quality, in marine, freshwater, and terrestrial environments. In the last 25 years, my work has involved of mostly surveys assessing the distribution of terrestrial plants to document the presence or absence of sensitive species (i.e., rare native species or those that are listed as threatened or endangered) as well as invasive or potentially invasive species. Also conducting aquatic resource surveys and preparing submittals for wetland inventories and delineations of jurisdictional waters.

I am also chief editor for *AECOS* Inc. and as such perform quality control on all biologists' reports.

7. **Have you even been qualified as an expert witness in ecology before the Land Use Commission?**

Yes. The last time that I was qualified as an expert in ecology, natural resources, and environmental survey reports before the Land Use Commission was in 2014 for a solar farm project.

8. **Are you familiar with the solar farm project currently proposed within a portion of the Petition Area?**

Yes. The solar farm project consists of a 36 megawatt/144 megawatt-hour battery energy storage solar farm with related electrical improvements and overhead utility tie-ins ("**Project**"). The Project is proposed to be installed within an approximately 200-acre area in the eastern-central portion of the 1,395-acre KS property that is within the State Urban District Property at Waiawa, Ewa, O'ahu ("**KS Property**" or "**Petition Area**"), with the utility tie-in, or gen-tie, route running from the Project site west and within the Petition Area, across the gulch near the Ka Uka Boulevard exit of the H-2 Freeway, to reach the point of interconnection on the existing HECO 46kV Waiau-Mililani line.

9. **Please identify what reports you prepared for the Project.**

AECOS prepared two reports.

(1) *Biological surveys for a solar electrical generating facility in Waiawa, central Oahu* ("**Project Survey**") dated July 22, 2019, a copy of which was filed as KS Exhibit 21; and

(2) *Biological surveys for the gen-tie route from a solar electrical generating facility in Waiawa, central Oahu* dated September 24, 2019 ("**Gen-tie Survey**"), a copy of which was filed as KS Exhibit 29.

I will collectively refer to the Project Survey and Gen-tie Survey as the "**Surveys**." I was lead author of the Surveys.

10. **Please describe the scope of the Surveys?**

The scope of the Surveys included analyzing the Project's potential biological impacts within the Project site and along the gen-tie route extending approximately 2.1 miles from the northwest side of the Project site connecting with the HECO 46kV Waiau-Mililani electrical grid near Ka Uka Boulevard exit of the H-2 Freeway.

11. **How did you conduct the Surveys?**

Biological surveys of the Project site were conducted on March 12 and March 13, 2019 and for the gen-tie route on September 10 and 11, 2019.

The Surveys entailed searches for natural resources of interest or concern in or near the Project site and the gen-tie route, with particular attention paid to native plants and animals, and especially those native species protected by statutory authority (i.e., threatened or endangered species).

Based on the literature review conducted prior to the field work, and the scientific expectations for former sugarcane lands at a low elevation, we did not anticipate that any species of concern would be found at the Project site or along the gen-tie route.

For both Surveys, we conducted three different biological surveys -- a plant/biological survey, an avian survey, and a mammalian survey.

For the botanical/plant surveys, we uploaded boundary maps for the Project site and the gen-tie route onto handheld Trimble GNSS units. The GNSS units recorded the progress tracks of the surveyors, thereby providing real time feedback on location and adequacy of coverage. Plant species were identified as they were encountered. Any plants not immediately identified during the biological/plant surveys were photographed and/or a representative feature collected for later identification at the laboratory.

For the avian surveys, 12 avian point-count stations were sited within the Project site and 16 avian point-count stations were sited along the gen-tie route, all stations roughly equidistant from each other. A single eight-minute avian point count was made at each of the count stations. Field observations were made by binoculars and by listening for vocalizations.

The surveys of mammals were limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all terrestrial mammalian species detected during the surveys.

We did not survey for the Hawaiian hoary bat, detection of which would require night surveys deploying special detection equipment. Currently, no technology exists to appropriately survey for this species, and the population of this bat on O'ahu is sparse. Conducting a survey over multiple nights cannot guarantee that bats would be detected or preclude the possibility that the Hawaiian hoary bat utilizes resources in the area on occasion. Therefore we assumed that the species habitat was present and provided appropriate recommendations to minimize impacts to this species to the maximum extent practicable.

12. **Are the methodologies described in your answer to question 11 above consistent with generally accepted industry standards?**

Yes. This is the manner in which we regularly perform all such surveys.

13. **Please describe the findings of the Surveys as to plants.**

The Project site and the area along the gen-tie route are composed of land formerly used for agricultural purposes.

None of the plant species found on the Project site or along the gen-tie route are considered important from a natural resource perspective and none of the species found are currently protected, or proposed for protection, under either federal or State of

Hawai'i endangered species programs. No portion of the Project site or the entire KS Property is within an area designated as critical habitat. The vegetation on the Project site and along the gen-tie route are mainly covered with a weedy growth of grasses (Guinea grass), scattered trees (koa haole) and shrubs.

The Project Survey identified thirty-nine species of plants within the Project site, although only two are species native to Hawai'i. These are common native plants: 'uhaloa and 'a'ali'i plants. No early Polynesian introduced or Hawaiian Islands endemics were identified at the Project site.

The Gen-tie Survey identified forty-nine species of plants along the gen-tie route. The observations included one species native to Hawai'i -- the common 'uhaloa plant. Two of the plant species identified along the gen-tie route were early Polynesian introductions: wauke and kukui, both only seen in the riparian forest along Pānakauahi Gulch. No Hawaiian Islands endemics were encountered. The flora in Pānakauahi Gulch is distinctive from that seen elsewhere along the Gen-tie Survey route. Much of the gulch is forested with trees, such as satin leaf, silk oak, Christmasberry, kukui, allspice, and Macaranga tanarius. An abundant understory shrub is the Mickey Mouse plant. Higher up the sides of the gulch and along the rim where the line descends from the east, the slopes are covered mostly by ironwood, Formosan koa, paperbark, Java plum, Chinaberry, albizia, and satin leaf. An extensive ironwood forest marks much of the east-facing slope; an open field of Guinea grass characterizes much of this slope along the gen-tie route.

14. **Please describe the findings of the Surveys as to mammals.**

Four mammalian species were detected on the Project site when conducting the Project Survey: domestic dog, mongoose, mouse, and pig. Three mammalian species were detected along the gen-tie route when conducting the Gen-tie Survey: mongoose, pig, and cat. All of these species are alien to the Hawaiian Islands.

The endangered Hawaiian hoary bat was not detected during the course of these Surveys. Nevertheless, it is possible that the Hawaiian hoary bat overflies the surveyed areas on a seasonal basis or utilizes the Project site or the area along the gen-tie route for resources on occasion. Even though we do not foresee any impacts to the Hawaiian hoary bat from operations from the Project, there is potential for impacts during the clearing and grubbing phase of construction when taller vegetation is being removed, which may temporarily displace individual bats that use trees in the area for roosting. The risk is increased during pupping season (June 1 to September 15). Additionally, on the area covered by the Project Survey, barbed wire along the top of security fences is a potential threat to flying bats.

15. **Please describe the findings of the Surveys as to avian species.**

None of the vertebrate species currently protected or proposed for protection under either

federal or State of Hawai'i endangered species programs were detected during the course of these Surveys. During the Surveys, a total of 408 birds representing 23 species were observed on the Project site and 725 birds representing 19 species were observed along the gen-tie route. The Project Survey and the Gen-tie Survey only recorded one indigenous species - the Pacific Golden Plover. The remaining species are alien to the Hawaiian Islands. The Pacific Golden Plover is a migratory shorebird species that nests in the high Arctic during late spring and summer and returns to Hawai'i and the tropical Pacific for fall and winter. They are commonly encountered in open areas throughout the Hawaiian Islands from late summer to midspring.

No seabirds were detected during the Surveys. There is a possibility that the endangered Hawaiian Petrel and the threatened Newell's Shearwater over-fly the Project site and the gen-tie line between April and middle of December each year in very small numbers.

16. **Please describe the findings of the Surveys as to jurisdictional waters.**

The Project site does not contain waters that would be considered jurisdictional under the Clean Water Act -- all of the site is located on an interfluvium with no perennial or intermittent streams present. However, the proposed route for the gen-tie line will cross two gulches and a feature identified by U.S. Fish and Wildlife Service as a type of "wetland." If a feature is determined by the U.S. Army Corps of Engineers to be jurisdictional, certain activities, such as dredging, placing of fill, and placement of structures within the boundaries of the jurisdictional waters, would require a permit. An electrical line suspended above the "wetland" feature would not be subject to a permit requirement, whereas the placement of support towers within the jurisdictional boundary would be.

17. **Did you rely on any other studies or consultations in drawing your conclusions and making your assessment of the Project?**

No, but we relied on numerous texts and published papers as integral to our identifying flora and fauna present, and what might be rare or otherwise of natural resource value. Also, we compared the findings of these Surveys to a survey AECOS conducted for a proposed solar facility on 387 acres in the north-west portion of the KS Property in 2014 and a survey AECOS conducted on the flora on an adjacent parcel owned by the U.S. Navy in 2016.

18. **What, if any, mitigation measures do you recommend?**

To avoid impacts on any potentially roosting Hawaiian hoary bats, we recommend that no woody vegetation taller than 15 feet be removed between June 1 and September 15 of any year. Also, any fencing erected around the Project site should not utilize barbed wire.

To mitigate any risks to seabirds that might that can become disoriented by lights during fledging season, if night-time construction activity or equipment maintenance is

conducted during construction of the Project, all associated lighting should be shielded. Additionally, if large work lights are used, these must be placed on poles that are high enough to allow the lights to be pointed directly towards the ground.

If exterior facility lighting is installed, it is recommended that the lights be manual, timed, or motion sensor configured and downward shielded to reduce the potential for causing interactions between nocturnally flying seabirds and man-made structures.

19. **In your professional opinion, will the Project adversely impact any natural resources in or around the Project site?**

No. Due to the historical agricultural uses of the KS Property, including the Project site and the area along the gen-tie route, the lack of threatened or endangered species, and the lack of significant plants or animals on the KS Property, development of the Project will not have an adverse effect on any such resources. However, the recommended mitigation measures should be followed by the Project developer.

DATED: Honolulu, Hawai'i, November ___, 2019.

Respectfully submitted,

ERIC B. GUINThER

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