Mahana series soils are described as follows:

This series consists of well-drained soils on uplands on the islands of Kauai and Oahu. These soils developed in volcanic ash. They are gently sloping to very steep. Elevations range from 1,000 to 3,000 feet. The annual rainfall amounts to 30 to 45 inches. [...] These soils are used for pasture, woodland, wildlife habitat, irrigated sugarcane, and water supply. The natural vegetation consists of puakeawe, aalii, ricegrass, molassesgrass, silver oak, yellow foxtail, lantana, joee, Japanese tea, passion flower, and associated plants. [Foote et al. 1972:85]

Mahana silty clay loam, 6 to 12% slopes, eroded (McC2) soils are described as follows:

This soil occurs on ridgetops and moderately sloping uplands [...] Permeability is moderately rapid. Runoff is slow, and the erosion hazard is slight. [...] In places roots penetrate to a depth of 5 feet or more. [...] This soil is used for pasture, woodland, wildlife habitat, pineapple, and sugarcane. [Foote et al. 1972:85–86]

Mahana silty clay loam, 12 to 20% slopes, eroded (McD2) soils, are described as having medium runoff and a moderate erosion hazard, used for pasture, woodland, wildlife habitat, and sugarcane (Foote et al. 1972).

Mahana silty clay loam, 20 to 35% slopes, eroded (McE2) soils are further described as follows:

Most of the surface layer has been removed by erosion. Runoff is very rapid, and the erosion hazard is very severe. Included in mapping were areas where all of the surface layer and part of the subsoil have been removed by erosion. Also included were small, stony areas and reddish-colored upland soils that are underlain by a panlike layer at a depth of 15 to 50 inches. This soil is used for pasture, pineapple, and irrigated sugarcane. [Foote et al. 1972:86]

Molokai series soils are described as follows:

This series consists of well-drained soils on uplands on the islands of Maui, Lanai, Molokai, and Oahu. These soils formed in material weathered from basic igneous rock. They are nearly level to moderately steep. Elevations range mainly from nearly sea level to 1,000 feet but are as much as 1,500 feet on Lanai. The annual rainfall amounts to 20 to 25 inches, most of which occurs between November and April. [...] These soils are used for sugarcane, pineapple, pasture, wildlife habitat, and homesites. The natural vegetation consists of kiawe, ilima, uhaloa, feather fingergrass, and buffelgrass. [Foote et al. 1972:96]

Molokai silty clay loam, 7 to 15% slopes (MUC) soils, are described as occurring on knoll slope breaks, with medium runoff and a moderate erosion hazard (Foote et al. 1972). This material is used for sugarcane, pineapple, pasture, wildlife habitat, and home sites (Foote et al. 1972).

Molokai silty clay loam, 15 to 25% slopes (MUD) soils are further described as follows:

This soil occurs on Oahu. In most places the slope does not exceed 20 percent. Runoff is medium, and the erosion hazard is severe. Workability is slightly difficult because of the slope. Included in mapping were small areas where boulder cores are exposed. This soil is used for sugarcane and pineapple. [Foote et al. 1972:97]

1.4.2 Ka Makani (Winds)

Makani is the general Hawaiian term for wind. Each land division was given a name for a specific wind. Names of wind were assigned based on but not limited to its direction of flow, strength, and geographic location. The four commonly known winds associated with the *moku* of 'Ewa are Māunuunu of Pu'uloa, Moa'e kū of Ewaloa, Waikōloa of Līhu'e, and Kona of Pu'ukapolei (Alameida 1997). Māunuunu is a strong blistering sea breeze at Pu'uloa (Andrews 1865; Pukui and Elbert 1986). Moa'e kū is a northeasterly wind which means to resist, or a foreign wind (Andrews 1865; Pukui and Elbert 1986). Waikōloa is a cold northwest wind (Pukui and Elbert 1986). Kona is a name of the southwest wind (Andrews 1865). Another mentionable wind found in most chants associated with the *moku* of 'Ewa is Wai'ōpua. Its literal translation means the water of cloud banks (Pukui and Elbert 1986). Below are clips of chants that emphasize the importance of these winds.

In the traditional story *The Wind Gourd of La'amaomao*, Pāka'a and his son Kūapāka'a are descendants of the wind goddess La'amaomao whose traditional home was in a gourd that also contained all of the sacred winds of Hawai'i. La'amaomao controlled and called forth the winds by chanting their names (Nakuina 1992). Pāka'a's chant traces the winds from the *moku* of 'Ewa. The winds of the region Moa'e kū and Kona are poetically recalled:

He Moae-ku ko Ewaloa	Moa'e-ku is of Ewaloa
He Kehau ko Waiopua	Kēhau is of Waiopua
He Waikoloa ko Lihue	Waikōloa is of Līhuʻe
He Kona ko Puuokapolei	Kona is of Pu'uokapolei.

[Ke Au Okoa, Volume III, Number 30, 14 November 1867; Nakuina 1992:51]

In *The Epic Tale of Hi'iakaikapoliopele*, the goddess Hi'iaka, the youngest sister of the fire goddess Pele, born an egg and carefully warmed and nourished by Pele herself (Westervelt 1916:69), embarks on a quest to retrieve her older sister's lover, Lohi'au. While traversing the island chain, Hi'iaka encounters various gods and demi-gods, spirits and shapeshifters, as well as chiefs and commoners. According to the *mo'olelo* (story), Hi'iaka watches as her beloved friend Hōpoe is killed by the embers of her sister Pele. She chants atop of Pōhākea and tells of the cold harsh wind of Waikōloa, Maunauna and Wai'ōpua.

KAU HOʻOKAHI HANERI A	CHANT ONE HUNDRED
ME KANALIMAKUMAMĀKOLU	AND FIFTY-THREE
Aloha kuʻu hoa i ka pūʻali lā	Alas my friend of the rugged mountain pass
A luna i Pōhākea, he luna o Kamaoha	On high at Pōhākea, above Kamaoha
He lae 'ino 'o Maunauna 'O Līhu 'e ke hele 'ia	Maunauna is a dangerous escarpment Līhuʻe's high plain yet to be traversed
Honi i ke 'ala mau'u	Inhaling the scent of the grasses
I keʻala o ke kupukupu	The fragrance of kupukupu fern

E linoa ala e ka Waikōloa	Entwined by the Waikoloa breeze
E ka makani he Waiʻōpua	By the wind called Wai'opua
Kuʻu pua, me he pua lā i kuʻu maka	My blossom, like a flower in my sight
Ka 'oni i ka haku 'ōnohi, kā ka wai lā i li'u	Moving before my eyes, washed salty by tears
I kuʻu maka lā, e uē au lā.	There in my sight, I weep.

[Ho'oulumahiehie 2008a:280; Ho'oulumahiehie 2008b:262]

1.4.3 Ka Ua (Rains)

Precipitation is a major component of the water cycle and is responsible for depositing *wai* (fresh water) on local flora. Pre-Contact *kānaka* (Native Hawaiians) recognized two distinct annual seasons. The first, known as *kau* (period of time, especially summer) lasts typically from May to October and is a season marked by a high-sun period corresponding to warmer temperatures and steady trade winds. The second season, *ho 'oilo* (winter, rainy season) continues through the end of the year from November to April and is a much cooler period when trade winds are less frequent, and widespread storms and rainfall become more common (Giambelluca et al. 1986:17). Being on the leeward side of O'ahu, 'Ewa is typically very hot and dry. Honouliuli receives an annual rainfall of about 550 mm (22 inches) on the coastal and inland region of the *ahupua 'a* and about 1,200 mm (39 inches) in the northern region up into the Wai 'anae Mountain Range (Giambelluca 2013). Each small geographic area on O'ahu had a Hawaiian name for its own rains. According to Akana and Gonzalez (2015),

Our kupuna had an intimate relationship with the elements. They were keen observers of their environment, with all of its life-giving and life-taking forces. They had a nuanced understanding of the rains of their home. They knew that one place could have several different rains, and that each rain was distinguishingable from another. They knew when a particular rain would fall, its color, duration, intensity, the path it would take, the sound it made on the trees, the scent it carried, and the effect it had on people. [Akana and Gonzalez 2015:XV]

Honouliuli was no exception to this naming practice. Despite the relative lack of rainfall in this area, the Nāulu rain is known to be associated with the *ahupua* 'a of Honouliuli. This rain is generally understood as a sudden shower, and more commonly associated with Kawaihae, Hawai'i and Ni'ihau (notoriously dry locations as well) (Akana and Gonzalez 2015:187). The Nāulu rain is mentioned in a *oli* (chant) offered by Hi'iakaikapoliopele. During Hi'iaka's travel through 'Ewa she recites this affectionate *oli* as she recalls the Kai'okia edict placed on her and Lohi'au by Pele:

'A'ole au e hele i ke kaha o Kaupe'a	I shall not tread Kaupe'a's expanse
Kēlā kaha kūpā koili a ka lā i ke kula	That stretch where the sun beats down on the plain
Ua kūpono a'ela ka lā i ka piko o Wākea	The sun is right overhead, at the navel of Wākea
Ola i ke ahe a ka makani Māunuunu	I am spared by the Māunuunu wind

I ka hapahapai mai a ka makani 'Ao'aoa Ke koi lā i ke ao o ka Nāulu e hanini i ka wai Ola ihola nā kupa kama 'āina i ka wai from the clouds a ka 'ōpua Ke halihali a'ela nā 'ōpua i ke awa lau E koi mai ana iā Hi'iaka e kūo'e hele i ke kula open stretch I kuleana i lāhui ai ka moe i laila I laila au lohe i ke kani leo le'a a ka 'ō'ō i ke kula Hoʻāikāne ana lāua me ke kai o Wāwaemoku Wāwaemoku Mokumokuāhua loko, kupākupā koili i ka 'ino I 'ino ho'i au i kēia kanaka i ka hiki 'ana mai arrival I kāhela a'ela ka 'ai a ka manu I ka pua o ka wiliwili Wili a'ela nā 'ōpua i luna No luna wau I am from above Wili a'ela nā 'ōpua i lalo Lalo ē! Below indeed! Lilo i lalo ka hele 'ana a ke kanaka down Kalakala ke ao no Hawai'i I ka pā 'ia mai e kēia makani 'A 'ole a 'u makana i ka lā o ka hilahila shame E hili hewa paha auane'i au Wilia i na'e, wilia i lalo Wilia i kai, wilia i uka highlands

'O kauhale a ka 'ōlelo

By the uplifting 'Ao'aoa breeze

Urging the Nāulu storm clouds to pour down their waters

The natives here survive on water

Which billowing clouds carry along to the branching lochs

Compelling Hi'iaka to trudge that

Duty making rest forbidden there

There I heard the happy trill of the \overline{o} \overline{o} bird on the plain

Befriending the sea of

My heart grieves, thrashed by harm

I may be harmed by this person upon

Leaving the birds to feed expansively

On the blossoms of the wiliwili trees

The clouds spin above

The clouds spin below

The movement of mankind is cast

Craggy are the clouds from Hawai'i

Blown here by this wind

I have no gift to offer on this day of

I shall perhaps end up astray

Spiraling windward, or to the lee

Spinning toward the sea, toward the

O house made of words

Hoʻohiki ihola i kānāwai	Utter as an edict
Kau ihola i kānāwai	Place as a law
He kānāwai 'okia	An order of separation
'Ālina ihola kā 'o Pu'uloa	Thus Pu'uloa is branded by epithet
He 'āina kauā.	A land of outcasts and slaves.

[Ho'oulumāhiehie 2008a:294–295; Ho'oulumāhiehie 2008b:275–276]

The general lack of rain names is indicative of historic environmental conditions within the *ahupua'a*; these conditions, in turn, shaped agricultural practices in the area. Environmental limitations forced ingenuity and innovation. McAllister provides written evidence of the innovative ways in which Honouliuli's *kama'āina* approached agricultural activities:

[...] It is probable that the holes and pits in the coral were formerly used by Hawaiians. Frequently the soil on the floor of the larger pits was used for cultivation, and even today one comes upon bananas and Hawaiian sugar cane still growing in them. They afford shelter and protection, but I doubt if previous to the time of Cook there was ever a large population here. [McAllister 1933:109]

1.4.4 Nā Kahawai (Streams)

Honouliuli Ahupua'a, and the encompassing 'Ewa District, are notoriously dry. Agricultural sinkholes were especially important on the 'Ewa plain. In traditional Hawaiian times, the areas of exposed coral (Pleistocene limestone) outcrop were undoubtedly more extensive. Limestone outcrop, composed of detritus, calcareous sand, reef dwelling organisms, and coralline algae, is subject to dissolution from water. This dissolution has formed a series of connected and isolated caves under the 'Ewa Plains. Although invisible to human eyes, streams flow under the surface of Honouliuli via the karsic system. "Sink holes" would accumulate water within them via a subterranean water or karst system; this water also contained nutrient-rich sediment that allowed plants such as *kalo* (taro; *Calocasia esculenta*), $k\bar{i}$ (ti; *Cordyline fruticosa*), and *noni* (Indian mulberry; *Morinda citrifolia*) to survive.

Proceeding *mauka* from this limestone plain is a series of gulches draining the Wai'anae Mountains. The largest of these is Honouliuli Gulch toward the east side of the plain that drains into West Loch. The gulch is bisected by the Honouliuli Stream, the primary water body of the Honouliuli Watershed. The "perennial/intermittent" Honouliuli Stream and its tributaries "have a total stream length of 32.5 miles" (O'ahu Resource Conservation and Development Council 2013:16).

To the west are fairly steep gradient gulches forming a more linear than dendritic drainage pattern. The major gulches from east to west are Kalo'i, Hunehune, Makalapa, Makakilo, Awanui, Pālailai, Makaīwa, Waimānalo, and Limaloa. These gulches are steep-sided in the uplands and generally of a high gradient until they emerge onto the flat 'Ewa plain. The alluvium they have carried has spread out in delta fashion over the *mauka* portions of the plain, which comprises a dramatic depositional environment at the stream gradient change. These gulches are generally dry, but during seasonal Kona storms they carry immense quantities of runoff onto the plain and into the ocean. As typical drainages in arid slopes, they are either raging uncontrollably or are dry, and

do not form stable water sources for traditional agriculture in their upper reaches. The western Honouliuli gulches, in contrast to those draining into Pearl Harbor to the east, do not have valleys suitable for extensive irrigated agriculture. However, this lack is more than compensated by the rich watered lowlands at the base of Honouliuli Gulch.

Topography of the area is moderately sloping. In terms of hydrology, the area is drained by two deeply dissected gulches, Kalo'i Gulch 300 m to the southwest and Honouliuli Gulch 700 m to the northeast. These gulches at a comparable elevation are believed to rarely run with water. Historic maps indicate a spring located approximately 2.2 km to the north. Such infrequent springs may have been key to the early human activity on the southeast Wai'anae slope.

The lowlands fronting the west loch of Pearl Harbor (Kaihuopala'ai) were suitable for the cultivation of the traditional Hawaiian staple crop, *kalo*. For spiritual and dietary reasons, *kalo* was a sacred staple in the Hawaiian diet. According to Hawaiian mythology, man was born from the taro plant.

The *Kumulipo* ("origin, genesis") details this kinship. Hāloa, "he of the long breath," is the second son of Wākea and Papa. Wākea and Papa's first born, Hāloa-naka was born premature and died shortly after his birth (Kanahele 1995:17). After burying Hāloa-naka, a *kalo* plant sprouted at his grave. Shortly after, a second son (Hāloa) was born. A human child, Hāloa symbolizes *kalo* and man. *Kalo* is a metaphor for life, Kanahele explains as follows:

In the mythologies of many cultures, plants have been used to symbolize human spiritual growth. Hawaiians made taro a metaphor for life because, like the taro plant, it needs to be rooted in good soil and to be constantly nourished with the waters of $K\bar{a}ne$. As the stalk grows taller with its leaves reaching toward the light of the sun, symbolized by $W\bar{a}kea$, so Hawaiians grow aspiring to be closer to their heavenly spirit. Just as every young shoot can become a full-grown plant, so can they become gods as descendants of Hāloa. As every plant must die, however, they too must die. And from the remains a new plant lives again. In this continuity of life, both plant and man repeat the mystery of the unending cycle. [Kanahele 1995:18]

However, by the mid-nineteenth century traditional agriculture was becoming quickly supplanted by large-scale commercial ventures. The focus of agricultural production soon shifted toward sugarcane and pineapple, with concerted efforts made to turn open space into plantations. The drilling for artesian wells began in 1879 with cattle rancher James Campbell on the 'Ewa Plains (Board of Water Supply, City and County of Honolulu 2017). Utilizing a well driller, Campbell drilled several hundred feet down until reaching a large supply of pure, fresh water (Board of Water Supply, City and County of Honolulu 2017). According to the Board of Water Supply (2017):

This discovery led to a water boom on the island, as ranchers and plantation developers began drilling furiously for more of the precious resource. Within 20 years, the boom came to a bust. Artesian wells, abandoned and neglected, wasted millions of gallons of water. By the turn of the century, Oahu suffered a water panic. Wells were salting up. Water levels were dropping. The problem was that the system had grown too much, too fast and too haphazardly. [Board of Water Supply 2017]

Campbell's first well was named Waianiani ("crystal waters") by the *kama 'āina* of Honouliuli (Nellist 1925). By 1930, Ewa Plantation had drilled 70 artesian wells to irrigate cane lands; artesian wells provided fresh water to Honouliuli for nearly 60 years (Ho'okuleana 2014). Campbell's original Honouliuli well was finally sealed by the City and County of Honolulu in 1939 (Ho'okuleana 2014).

1.4.5 Lihikai a me ka Moana (Seashore and Ocean)

There exist several naming traditions for Honouliuli. Invaraibly, there are several explanations for Honouliuli's name. One tradition notes that Honouliuli means "dark water," "dark bay," or "blue harbor," and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the *ahupua*'a. The Hawaiians called Pearl Harbor, Pu'uloa ("long hill"). According to *mo*'olelo, this location was a storied place, due to the presence of Ka'ahupāhau. Ka'ahupāhau, queen of all sharks of O'ahu, dwelled in a large cavern on the Honouliuli side of Pearl Harbor (Clark 1977:69).

The Hawaiians knew Pearl Harbor as Pu'uloa, and they believed that there, dwelling in a large cavern on the Honouliuli side of the harbor, Ka'ahupāhau, the queen of all sharks on O'ahu, made her home. Her chief guard was a brother shark, who lived in a pit at the entrance to the lochs. The Hawaiian people said the drydock was built over the cavern of Ka'ahupāhau's son, who also lived in Pu'uloa. Angered by the violation of his home, the shark prince destroyed the imposing structure. The engineers in charge of the project attributed the collapse of the foundation to hydrostatic pressure. Whatever the cause, several years' work was wrecked within minutes [...] this time, before starting to rebuild, they asked the Hawaiians to bless the site. After that the work continued without further trouble. [Clark 1977:69–70]

Both seashore and ocean provided physical and spiritual sustenance (NOAA 2017) for the people of Honouliuli. According to Malo, the ocean was divided into smaller divisions, stretching from '*ae kai* (water's edge) to *moana* (pelagic zone) (Malo 1951:25–26). Outside the coastal areas was the belt known as *kua-au*, where the shoal water ended (Malo 1951:26). Further out was the *kai-au*, deeper waters designated for surfing, swimming, or spearing squid (Malo 1951:26). For Honouliuli Ahupua'a, specifically between Kalaeloa and Kūalaka'i, the sea of this region was identified as Hilo-one. It appears the name is drawn from an on-shore locality known as Hilo-one. According to Maly and Maly (2012),

That place, Hilo-one, [...] is situated on the northern side of Kualakai, towards Kalaeloa. And the name of the spring in which Hiiaka looked and saw her reflection was Hoakalei (Reflection of a lei). It was at this place that Hiiaka saw the two lehua trees growing, from which she picked the blossoms too make her four garlands. [Maly and Maly 2012:125]

While walking the coastline between Kalaeloa and Kūalaka'i, the goddess sang out the following,

O Hiiaka ka wahine,	Hiiaka is the woman
Ke ako la i ka pua o Hoakalei,	Who picked the flowers of Hoakalei,

Ke kui la, ke uo la i ka manai	And with a needle strung and made them into
Eha ka lei, ka apana lei lehua	four garlands, the sectioned lei of the
a ka wahine la,	woman
Kuu pokii.	O my younger sibling.
Kuu pokii mai ke ehu makani o lalo.	My younger sibling who came from the place where the dusty wind rises from below
Lulumi aku la i ke kai o Hilo-one.	Overturned in the sea of Hilo-one.
No Hilo ke aloha, Aloha wale ka lei—e.	The <i>aloha</i> is for Hilo, Love for the <i>lei</i> .
[Ka Na'i Aupuni, Volume II, Number 6, 7.]	June 1906, Ka Moolelo o Hiiaka-i-ka-

poli-o=Pele; Maly and Maly 2012:125] Moving westward from Pu'uloa are Iroquis Beach, Pu'uloa Beach Park (formerly 'Ewa Beach Park), One'ula Beach Park, in addition to Keahi Point. These beaches comprise the coastal portion of Honouliuli; use of these beaches increased during the plantation era, when employees of the

Traditionally, the seashore and ocean areas were vitally important for resource extraction in the early days of settlement. Fishermen along the coast maintained a respected status within traditional Hawaiian society; Kanahele asserts that "early Hawaiians regarded fishing as the oldest, and hence the most prestigious, of professions" (Kanahele 1995:17).

nearby sugar plantations utilized the coastal areas for subsistence and recreation.

According to Charles Howard Edmondson (1946:5), the coastal waters of Pearl Harbor were "a natural aquarium for many varieties of marine animals." Titcomb (1952:7) identifies the Pearl Harbor area as the only large natural inland lagoon, famous for its fish and fishponds. The *nehu* (anchovy; *Anchoviella purpurea*) was said to fill the lochs of Pearl Harbor. Citing Kamakau, Margaret Titcomb writes that the *nehu*, "filled the lochs from the channel of Pu'uloa (Pearl Harbor) inland to the Ewas" (Titcomb 1952:97). Due to the presence of the *nehu*, the *kama 'āina* of Honouliuli and 'Ewa developed this saying,

He kai puhi nehu, puhi lala ke kai o 'Ewa e, e noho i ka la'i o 'Ewa nui a La'akona ("A sea that blows up *nehu*, blows them up in rows, is 'Ewa, until they rest in the calm of great 'Ewa-a-La'akona"). [Kamakau 1991a:84]

1.4.6 Built Environment

The project area was utilized for commercial sugarcane from the early twentieth century into the late 1970s. Some of the sugarcane plantation infrastructure in the vicinity was relatively elaborate with the Waiahole Ditch (partially within the project area) transporting irrigation water from windward O'ahu into the foothills of the southern Wai'anae Range. The sugarcane fields have remained fallow for decades. Some plantation infrastructure is still present in the form of cane haul roads and remnant irrigation features (see Figure 3). The project area is otherwise undeveloped. The H-1 Freeway is approximately 800 m south of the project area.

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Section 2 Methods

2.1 Archival Research

Research centers on Hawaiian activities including *ka* '*ao* (legends), *wahi pana* (storied places), '*ōlelo no* '*eau* (proverbs), *oli* (chants), *mele* (songs), traditional *mo* '*olelo*, traditional subsistence and gathering methods, ritual and ceremonial practices, and more. Background research focuses on land transformation, development, and population changes beginning with the early post-Contact era to the present day.

Cultural documents, primary and secondary cultural and historical sources, historic maps, and photographs were reviewed for information pertaining to the study area. Research was primarily conducted at the CSH library. Other archives and libraries including the Hawai'i State Archives, the Bishop Museum Archives, the University of Hawai'i at Mānoa's Hamilton Library, Ulukau, The Hawaiian Electronic Library (Ulukau 2014), the State Historic Preservation Division (SHPD) Library, the State of Hawai'i Land Survey Division, the Hawaiian Historical Society, and the Hawaiian Mission Houses Historic Site and Archives are also repositories where CSH cultural researchers gather information. Information on Land Commission Awards (LCAs) were accessed via Waihona 'Aina Corporation's Māhele database (Waihona 'Aina 2000), the Office of Hawaiian Affairs (OHA) Papakilo Database (Office of Hawaiian Affairs 2015), and the Ava Konohiki Ancestral Visions of 'Āina website (Ava Konohiki 2015).

2.2 Community Consultation

2.2.1 Scoping for Participants

We begin our consultation efforts with utilizing our previous contact list to facilitate the interview process. We then review an in-house database of *kūpuna* (elders), *kama 'āina*, cultural practitioners, lineal and cultural descendants, Native Hawaiian Organizations (NHOs; includes Hawaiian Civic Clubs and those listed on the Department of Interior's NHO list), and community groups. We also contact agencies such as SHPD, OHA, and the appropriate Island Burial Council where the proposed project is located for their response on the project and to identify lineal and cultural descendants, individuals and/or NHO with cultural expertise and/or knowledge of the study area. CSH is also open to referrals and new contacts.

2.2.2 "Talk Story" Sessions

Prior to the interview, CSH cultural researchers explain the role of a CIA, how the consent process works, the project purpose, the intent of the study, and how their '*ike* (knowledge) and *mana*'o (thought, opinion) will be used in the report. The interviewee is given an Authorization and Release Form to read and sign.

"Talk Story" sessions range from the formal (e.g., sit down and $k\bar{u}k\bar{a}k\bar{u}k\bar{a}$ [consultation, discussion] in participants choice of place over set interview questions) to the informal (e.g., hiking to cultural sites near the study area and asking questions based on findings during the field outing). In some cases, interviews are recorded and transcribed later.

CSH also conducts group interviews, which ranges in size. Group interviews usually begin with set, formal questions. As the group interview progresses, questions are based on interviewee's

answers. Group interviews are always transcribed and notes are taken. Recorded interviews assist the cultural researcher in 1) conveying accurate information for interview summaries, 2) reducing misinterpretation, and 3) missing details to *mo olelo*.

CSH seeks $k\bar{o}kua$ (assistance) and guidance on identifying past and current traditional cultural practices of the study area. Those aspects include general history of the *ahupua* '*a*; past and present land use of the study area; knowledge of cultural sites (for example, *wahi pana*, archaeological sites, and burials); knowledge of traditional gathering practices (past and present) within the study area; cultural associations (*ka* '*ao* and *mo* '*olelo*); referrals; and any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the study area.

2.2.3 Completion of Interview

After an interview, CSH cultural researchers transcribe and create an interview summary based on information provided by the interviewee. Cultural researchers give a copy of the transcription and interview summary to the interviewee for review and ask to make any necessary edits. Once the interviewee has made those edits, we incorporate their *'ike* and *mana'o* into the report. When the draft report is submitted to the client, cultural researchers then prepare a finalized packet of the participant's transcription, interview summary, and any photos that were taken during the interview. We also include a thank you card and honoraria. This is for the interviewee's records.

It is important to CSH cultural researchers to cultivate and maintain community relationships. The CIA report may be completed, but CSH researchers continuously keep in touch with the community and interviewees throughout the year—such as checking in to say hello via email or by phone, volunteering with past interviewees on community service projects, and sending holiday cards to them and their 'ohana (family). CSH researchers feel this is an important component to building relationships and being part of an 'ohana and community.

"I ulu no ka lālā i ke kumu—the branches grow because of the trunk," an ' \bar{o} lelo no 'eau (#1261) shared by Mary Kawena Pukui with the simple explanation: "Without our ancestors we would not be here" (Pukui 1983:137). As cultural researchers, we often lose our $k\bar{u}puna$ but we did not lose their wisdom and words. We routinely check obituaries and gather information from other informants if we have lost our $k\bar{u}puna$. CSH makes it a point to reach out to the 'ohana of our fallen $k\bar{u}puna$ and pay our respects including sending all past transcriptions, interview summaries, and photos for families to have on file for genealogical and historical reference.

Section 3 Ka'ao and Mo'olelo

Hawaiian storytellers of old were greatly honored; they were a major source of entertainment and their stories contained lessons while interweaving elements of Hawaiian lifestyles, genealogy, history, relationships, arts, and the natural environment (Pukui and Green 1995:IX). According to Pukui and Green (1995), storytelling is better heard than read for much becomes lost in the transfer from the spoken to the written word and *ka* '*ao* are often full of *kaona* or "double meanings."

Ka'ao are defined by Pukui and Elbert (1986:108) as a "legend, tale [...], romance, [and/or], fiction." *Ka'ao* may be thought of as oral literature or legends, often fictional or mythic in origin, and have been "consciously composed to tickle the fancy rather than to inform the mind as to supposed events" (Beckwith 1970:1). Conversely, Pukui and Elbert (1986:254) define *mo'olelo* as a "story, tale, myth, history, [and/or] tradition." The *mo'olelo* are generally traditional stories about the gods, historic figures or stories which cover historic events and locate the events with known places. *Mo'olelo* are often intimately connected to a tangible place or space (*wahi pana*).

In differentiating *ka* '*ao* and *mo* '*olelo* it may be useful to think of *ka* '*ao* as expressly delving into the *wao akua* (realm of the gods), discussing the exploits of *akua* (gods) in a primordial time. *Mo* '*olelo* on the other hand, reference a host of characters from *ali*'i (royalty) to *akua*; *kupua* (supernatural beings) to *maka* '*āinana* (commoners); and discuss their varied and complex interactions within the *wao kānaka* (realm of man). Beckwith elaborates, "In reality, the distinction between *ka* '*ao* as fiction and *mo* '*olelo* as fact cannot be pressed too closely. It is rather in the intention than in the fact" (Beckwith 1970:1). Thus a so-called *mo* '*olelo*, which may be enlivened by fantastic adventures of *kupua*, "nevertheless corresponds with the Hawaiian view of the relation between nature and man" (Beckwith 1970:1).

Both *ka* '*ao* and *mo* '*olelo* provide important insight into a specific geographical area, adding to a rich fabric of traditional knowledge. The preservation and passing on of these stories through oration remains a highly valued tradition. Additionally, oral traditions associated with the study area communicate the intrinsic value and meaning of a place, specifically its meaning to both *kama* '*āina* as well as others who also value that place.

The following section presents traditional accounts of ancient Hawaiians living in the vicinity of the project area. Many relate an age of mythical characters whose epic adventures inadvertently lead to the Hawaiian race of *ali*'i and *maka*' \bar{a} *inana*. The *ka*'*ao* in and around the project area shared below are some of the oldest Hawaiian stories that have survived; they still speak to the characteristics and environment of the area and its people.

3.1 Ka'ao

3.1.1 The Naming of Honouliuli

Honouliuli is the largest *ahupua* 'a in the *moku* of 'Ewa. One translation of the name for this district is given as "unequal" (*Saturday Press*, 11 August 1883). Others translate the word as "strayed" and associate it with the legends of the gods Kāne and Kanaloa:

When Kane and Kanaloa were surveying the islands they came to Oahu and when they reached Red Hill saw below them the broad plains of what is now Ewa. To mark boundaries of land they would throw a stone and where the stone fell would be the boundary line. When they saw the beautiful land lying below them, it was their thought to include as much of the flat level land as possible. They hurled the stone as far as the Waianae range and it landed somewhere, in the Waianalo section. When they went to find it, they could not locate the spot where it fell. So Ewa (strayed) became known by the name. The stone that strayed. [Told to E.S. by Simeon Nawaa, 22 March 1954 in Sterling and Summers 1978:1]

Honouliuli means "dark water," "dark bay," or "blue harbor," and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the *ahupua*'a. Another source translates Honouliuli as "The blue bays or inlets" (Saturday Press, 11 August 1883). Another explanation for the name comes from the "Legend of Lepeamoa," the chicken-girl of Pālama. In this legend, Honouliuli is the name of the husband of the chiefess Kapālama and grandfather of Lepeamoa. The land of Honouliuli was named for the grandfather of Lepeamoa (Thrum 1923:164–184).

It is likely that the boundaries of the westernmost *ahupua* 'a of 'Ewa were often contested with people of the neighboring Wai'anae District. The 'Ewa people could cite divine sanction that the dividing point was between two hills at Pili o Kahe:

This is a spot where two small hills of the Waianae range come down parallel on the boundary between Honouliuli and Nanakuli (Ewa and Waianae). The ancient Hawaiians said the hill on the Ewa side was the male and the hill on the Waianae side was female. The stone was found on the Waianae side hill and the place is known as Pili o Kahe (*Pili* = to cling to, *Kahe* = to flow). The name refers, therefore, to the female or Waianae side hill. And that is where the boundary between the two districts runs. [Told to E.S. by Simeon Nawaa, 22 March 1954 in Sterling and Summers 1978:1]

3.1.2 Kāne and Kanaloa and the Loko I'a (Fishpond) of Pu'uloa

According to an account in the Hawaiian newspaper *Ka Loea Kālai* 'āina (10 June 1899), several of the fishponds in the Pu'uloa area were made by the brother gods, Kāne and Kanaloa. A fisherman living in Pu'uloa, named Hanakahi, prayed to unknown gods until one day two men came to his house. They revealed to him that they were the gods to whom he should pray. Kāne and Kanaloa then built fishponds at Ke'anapua'a, but were not satisfied. Then they built the fishpond Kepo'okala, but were still not satisfied. Finally, they made the pond Kapākule, which they stocked with all manner of fish. They gifted all of these fishponds to Hanakahi and his descendants (Handy and Handy 1972:473; *Ka Loea Kālai* 'āina, 8 July 1899, Volume III, Number 26).

Mary Pukui (1943:56–57), who visited Kapākule Fishpond when she was young, writes that the pond was built by the *menehune* (legendary race of small people who worked at night, building fishponds, roads, temples) under the direction of the gods Kāne and Kanaloa. Pukui describes several unique aspects of this pond:

On the left side of the pond stood the stone called Hina, which represented a goddess of the sea by that name. Each time the sea ebbed, the rock became gradually visible, vanishing again under water at high tide. Ku, another stone on the right, was never seen above sea level. This stone represented Ku'ula, Red Ku,

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a god for fish and fishermen. From one side of the pond a long wall composed of driven stakes of hard wood, ran toward the island [Laulaunui] in the lochs. When fish swam up the channel and then inside of this wall, they invariably found themselves in the pond. A short distance from the spot where the pond touched the shore was a small ko'a or altar composed of coral rock. It was here that the first fish caught in the pond was laid as an offering to the gods. [Pukui 1943:56]

The fishpond contained many fish, especially the *akule* (bigeye scad; *Selar crumenophthalmus*), thus its name, "the enclosure for *akule* fish" (Pukui 1943:56–57). The pond was destroyed when the channel to Pearl Harbor was dredged in the early twentieth century. The caretaker of the pond took the stones Kū and Hina to a deep place in the ocean and sunk them so "none would harm or defile them." Cobb (1905:733) writes that the pond was used to catch the larger *akule* (goggler), '*ōpelu* (mackerel scad; *Decapterus macarellus*), *weke* (goat fish; *Mullidae*), *kawakawa* (bonito; *Euthynnus affinis*), and sharks. It was unusual for having walls made of coral. This contradicts much of the *mo* '*olelo* saying that sharks were not killed in Pearl Harbor. However, Kamakau does relate that Kekuamanoha and Kauhiwawaeono, two conspirators against Kamehameha I, lived at Pu'uloa. The chief Kauhiwawaeono was known to murder people and use their bodies as shark bait (Kamakau 1992:182, 232).

Samuel Kamakau adds more information on the pond Kapākule, and a second pond called Kepo'okala.

At Pu'uloa on Oahu were two unusual ponds [fish traps]—Kapakule and Kepo'okala. Kapakule was the better one. The rocks of its walls, *kuapa*, could be seen protruding at high tide, but the interlocking stone walls (*pae niho pohaku*) of the other pond were still under water at high tide [...] It [Kapakule] was said to have been built by the '*e*'*epa* people [mysterious people] at the command of Kane *ma* [ma=and others, company] [...]

This is how the fish entered the pond. At high tide many fish would go past the *mauka* side of the pond, and when they returned they would reach the row of tree trunks seaward [of them]. The would become frightened by the projecting shadows of the trunks, and would go into the opening. The fish that went along the edge of the sand reached the seaward wall, then turned back toward the middle and entered the *anapuni* (the arced portion of the trap) A man ran out and placed a "cut-off" seine net (*'omuku lau*) in the opening, and the fish shoved and crowded into it. The fish that were caught in the net were dumped out, and those not caught in the net were attacked with sharp sticks and tossed out, or were seized by those who were strong. [Kamakau 1976:88]

3.1.3 Pu'okapolei, Astronomical Marker and Heiau

Pu'uokapolei was the primary landmark for travelers on the cross-*ahupua* 'a trail that ran from Pearl Harbor in the east to Wai 'anae in the West (' \overline{I} ' \overline{I} 1959:27, 29; Nakuina 1992:54; E.M. Nakuina 1904 in Sterling and Summers 1978:34). *Pu'u* means "hill" and Kapolei means "beloved Kapo," a reference to the sister of the goddess, Pele. Kamakau says ancient Hawaiians used Pu'uokapolei as an astronomical marker to designate the seasons: [...] the Oahu people who reckoned the time (Oahu *po'e helu*) called the season Kau for the setting of the sun from Pu'uokapolei, a hill in Honouliuli, 'Ewa, to the opening of Mahinaona (*i ke kawaha o Mahinaona*). When the sun moved south from Pu'uokapolei—and during the season of the sun in the south—for the coming of coolness and for the sprouting of new buds on growing things—the season was called Ho'oilo [winter, rainy season]. [Kamakau 1976:14]

A ceremony commemorating the changing of the seasons is still observed each year in the beginning of May at Waikīkī and Honouliuli. This ceremony was documented in a previous cultural impact assessment conducted by CSH (Genz et al. 2012). Sam 'Ohukani'ōhi'a Gon III, Na Wa'a Lalani Kahuna O Pu'u Koholā, and the late Kumu Hula John Keola Lake's *hula hālau* (*hula* instruction) perform *oli* and *hula* (dance), explaining that the *kilo hōkū* (astronomers) of O'ahu observed how, from the perspective of Waikīkī, the sun sets in a southerly direction over the ocean during the winter solstice and in a northerly direction behind the 'Ewa ridgeline during the summer solstice. During the springtime, the position of the setting sun marches steadily northward each day, and at the beginning of May, the sun sets behind Pu'uokapolei, perfectly centered within its depression from the vantage point of Kūpalaha Heiau just west of the Waikīkī Aquarium. A coinciding ceremony at a *heiau* on Pu'uokapolei similarly views the setting of the sun behind Pu'ula'ila'i farther west, and a line of sight extending eastward from Pu'ula'ila'i, Pu'uokapolei, and the former site of Kūpalaha Heiau ends at the closely associated Papa'ena'ena Heiau. Mr. Gon suggests Papa'ena'ena Heiau may have been part of the ceremonies of this astronomical event.

3.1.4 Kamapua'a and Kamaunuaniho at Pu'uokapolei

Pu'uokapolei was known to be the home of Kamapua'a's grandmother, Kamaunuaniho, one of the three migrants from Kahiki that were ancestors to the people of O'ahu (Legend of Kamapuaa, Fornander 1919a:5[2]:318; Kahiolo 1978:81, 107). Kamapua'a, the Hawaiian pig god, once lived in Kaluanui on the windward side of O'ahu, but he escaped to 'Ewa when he was pursued by the chief Olopana.

Kamapuaa subsequently conquered most of the island of Oahu, and, installing his grandmother [Kamaunuaniho] as queen, took her to Puuokapolei, the lesser of the two hillocks forming the southeastern spur of the Waianae Mountain Range, and made her establish her court there. This was to compel the people who were to pay tribute to bring all the necessities of life from a distance, to show his absolute power over all. [Nakuina 1904:50–51]

Emma Nakuina goes on to note, "A very short time ago [prior to 1904] the foundations of Kamaunuaniho's house could still be seen at Puuokapolei" (Nakuina 1904:51). Another account (*Ka Loea Kālai ʿāina*, 13 January 1900 in Sterling and Summers 1978:34) speaks of Kekele'aikū, the older brother of Kamapua'a, who also lived on Pu'uokapolei.

In Lilikalā Kame'eleihiwa's version of the *mo'olelo* of Kamapua'a, Pele and Kamapua'a meet and a battle ensues on Hawai'i Island between the two. Kamapua'a tells Kekele'aikū,

'Listen to me, elder brother. You wait here. When you smell the stench of burning bristles, then you must assume I am dead. However, if indeed you do not smell the

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stench of the bristles, you will know that your younger brother has not been harmed and that he has "eaten of the cooked taro." ' [Kame'eleihiwa 1996:62]

Kamapua'a travels to Hawai'i Island where Pele chases him with fire out of the *lehua* (*Metrosideros macropus, M. collina subsp. polymorpha*) forest. Kamapua'a ran from Pele but could only cling to an '*ama'uma'u* (*Sadleria cyatheoides*) fern (Kame'eleihiwa 1996:95). The fire continued to burn around Kamapua'a as he clung on for his life. His bristles began to burn as well, sending a stench of burning pig bristles around the Hawaiian Islands. Kekele'aikū smelled the stench of burning pig bristles and began to cry, thinking that his brother perished in battle with Pele (Kame'eleihiwa 1996:95). Kekele'aikū then hung himself, deeply saddened for the loss of his beloved brother, Kamapua'a. Kekele'aikū's body was left at Pu'uokapolei with his grandmother.

3.1.5 Kahalaopuna at Pōhākea Pass

One of the most popular legends of O'ahu is that of Kahalaopuna (or Kaha), a young woman of Mānoa who was slandered by others and then killed by her betrothed, Kauhi, a chief from Ko'olau, O'ahu. While the numerous accounts (e.g., Day 1906:1-11; Fornander 1919b:5:188–192; Kalākaua 1990:511–522; Nakuina 1904:41–45; Patton 1932:41–49; Skinner 1971:220–223; Thrum 1907:118–132) vary in details they typically have Kahalaopuna slain and then revived repeatedly with the aid of a protective owl spirit. Kauhi forces her to hike west from Mānoa through the uplands until they get to Pōhākea Pass through the southern Wai'anae Range in north Honouliuli. At Pōhākea Pass, Kauhi beats her with a stick until she is very dead ("*Ia hahau ana a Kauhi i ka lā'au, make loa o Kahalaopuna*"). Her spirit (*'uhane*) flies up into a *lehua* tree and chants for someone to go notify her parents of her fate. Upon hearing the news, her parents fetched Kahalaopuna back to Mānoa and she was restored to life.

3.1.6 *Mo'o* at Maunauna

Moses Manu in recounting the Legend of Keaomelemele makes a reference to a *mo* 'o (lizard or water spirit) named Maunauna who lived above Līhu'e (presumably at the landform of that name in extreme northern Honouliuli) and who was regarded as a bad lizard (*Kuokoa* 25 April 1885 in Sterling and Summers 1978:37).

3.1.7 Coastal Village of Kūalaka'i

"Legend of the Children" is a tale that foretold the breaking of the eating *kapu* (taboo) by the *ali*'i. A young brother and sister always fished at Kūalaka'i, a beach area on the southern coast of Honouliuli. On this day, they laid out their nets, but all they caught was one *palani* (surgeonfish; *Acanthurus dussumieri*), a fish that was *kapu* for men; only women could eat it.

[...] They fished again and again until the afternoon and nothing was caught. The children were weary and went home without fish. When they came as far as Puuo-o-Kapolei where the blossoms of the ma'o looked golden in the sunlight, the sister sat down to make ma'o leis for themselves. When the leis were made they went across the breadth of Kaupe'a to Waipio. [*Ka Loea Kālai'āina*, 22 July 1899:15; translation in Sterling and Summers 1978:7]

They stopped at the stream of Ka'aimalu on the way to their home and the sister convinced her brother to share the fish between the two, thus breaking the *kapu*. "Because these children ate fish secretly, the spot is called Kaai-malu (Secret eating) to this day" (Sterling and Summers 1978:7).

3.1.4 The First Breadfruit Brought from Kahiki

The chief Kaha'i left from Kalaeloa, a coastal area in Honouliuli, for a trip to Kahiki. On his return to the Hawaiian Islands, he brought back the first breadfruit (Kamakau 1991b:110) and planted it near the waters of Pu'uloa or "long hill," now known as Pearl Harbor (Beckwith 1940:97).

3.1.5 The Traveling Mullet of Honouliuli

The story of (Ka) Ihuopala'ai is largely associated with the tradition of the '*anae-holo* or traveling mullet (Thrum 1907:270–272):

The home of the anae-holo is at Honouliuli, Pearl Harbor, at a place called Ihuopalaai. They make periodical journeys around to the opposite side of the island, starting from Puuloa and going to windward, passing successively Kumumanu, Kalihi, Kou, Kalia, Waikiki, Kaalawai, and so on, around to the Koolau side, ending at Laie, and then returning by the same course to their starting-point. [Thrum 1907:271]

In Thrum's account, Ihuopala'ai is a male who possesses a $k\bar{u}$ 'ula, or fish god, which supplied the large mullet known as 'anae (also 'ama'ama; Mugil cephalus; when 12 inches or more, they are referred to as 'anae). His sister lived in Lā'ie and there came a time when there were no fish. She sent her husband to visit Ihuopala'ai who was kind enough to send the fish following his brother-in-law on his trip back to Lā'ie.

This story is associated with a poetical saying documented by Mary Kawena Pukui about Honouliuli:

'Ōlelo No'eau #1330

Ka iʻa hali a ka makani

The fish fetched by the wind. [Pukui 1983:145]

Pukui (1983:145) explains, "The '*anaeholo*, a fish that travels from Honouliuli, where it breeds, to Kaipāpa'u on the windward side of O'ahu. It then turns about and returns to its original home. It is driven closer to shore when the wind is strong."

McAllister offers a variation of the *mo'olelo*:

The site is named for Kaihuopalaai, said to be a daughter of Konikonia and his wife Hinaaimalama. Fornander (37, vol. 5, p. 270) writes: '. . . on Oahu, Kaihuopalaai saw a godly man by the name of Kapapaapuhi [see Site 139] who was living at Honouliuli, Ewa; she fell in love with him and they were united, so Kaihuopalaai has remained in Ewa to this day. She was changed into that fishpond in which mullet are kept and fattened, and this fish is used for that purpose to this day.' [McAllister 1933:108]

Kaihuopala'ai, which means "the nose of Pala'ai" (Pukui et al. 1974:68) is also the name the Hawaiians used for the west loch of Pearl Harbor. McAllister recorded that other Hawaiians say there never was a fishpond by that name.

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According to old Hawaiians, there never was a fishpond by this name. In another version (77, p. 270), Ihuopalaai is the brother of a woman living in Laie. As the fish were scarce in Laie, this woman sent her husband to Ihuopalaai, who had the mullet follow her husband on his return trip which was made along the shore around Makapuu Point with the mullet following in the water. Makea tells me that Kaihuopalaai's sister was named Malaekahana. Another story tells of a man who lured the mullet around the island by tossing sweet potatoes into the sea (68, p. 38). [McAllister 1933:108]

Beckwith (1918) says that Kaihuopala'ai changed into the fishpond near Kapapapuhi Point, which means "the eel flats."

There is also a famous *pōhaku*, or rock, associated with the traveling mullet of Pearl Harbor.

I [...] asked the person sitting on my left, 'What place is this?' Answer – 'This is Pearl City.' It was here that mullets were bred in the ancient times and that flat stone there was called Mullet Rock or Pōhaku Anae. It lies near the beach by Ewa mill. [*Ka Nūpepa Kū* 'oko 'a, 2 October 1908 in Sterling and Summers 1978:53]

3.1.6 Ka-lua-ōlohe Caves of Honouliuli

'Ewa was famous for the many limestone caves formed in the uplifted coral, called the "Ewa Karst." This Pleistocene limestone outcrop, where not covered by alluvium or stockpiled material, has characteristic dissolution "pit caves" (Mylroie and Carew 1995), which are nearly universally, but erroneously, referred to as "sink holes" (Halliday 2005). These pit caves, or sinkholes, vary widely in areal extent and depth, with some of the more modest features comparable in volume to 5-gallon buckets, while some of the larger features, although usually irregularly shaped, are several meters wide and several meters deep. In traditional Hawaiian times, the areas of exposed coral outcrop were undoubtedly more extensive.

Some of these caves, called *ka-lua-'ōlohe* were inhabited by the '*ōlohe*, a type of people that looked like other humans but had tails like dogs (Beckwith 1940:343). These people were skilled in wrestling and bone-breaking and often hid along narrow passes to rob travelers; they were also reputed to be cannibals. One famous cannibal king, Kaupe, who lived in Līhu'e in upland Honouliuli, was an '*ōlohe*.

The caves of Pu'uloa were sometimes also used as burial caves. In 1849, Keali'iahonui, son of Kaua'i's last king, Kaumuali'i, died. He had once been married to the chiefess Kekau'ōnohi, who had stayed with him until 1849. She wanted to bury her deceased-husband at sea.

It seems that by Kekauonohi's orders, the coffin containing her late husband's remains was removed to Puuloa, Ewa, with the view of having it afterwards taken out to sea and there sunk. It was temporarily deposited in a cavern in the coral limestone back of Puuloa, which has long been used for a burial place, and has lately been closed up. [Alexander 1907:27]

After some initial objections by the niece of Keali'iahonui, the body was removed from the outer coffin, the rest was sunk, and the coffin was later buried somewhere in Pu'uloa.

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3.1.7 Kanekua'ana

Kanekua'ana is a *kia'i* (guardian) in the form of a *mo'o* that took care of the people that lived from Honouliuli to Hālawa. Even those who were not her descendants were cared for in times of need. When *i'a* (marine food) became scarce they would build a *waihau heiau* (a *heiau* for *mo'o*) and pray for Kanekua'ana's blessing. She blessed them with an abundance of *i'a*.

The *pipi* (pearl oyster)—strung along from Namakaohalawa to the cliffs of Honouliuli, from the *kuapa* fishponds of inland 'Ewa clear out to Kapakule. That was the oyster that came in from deep water to the mussel beds near shore, from the channel entrance of Pu'uloa to the rocks along the edges of the fishponds. They grew right on the *nahawele* mussels, and thus was this *i*'a obtained. Not six months after the *hau* branches [that placed a *kapu* on these waters until the *pipi* should come in] were set up, the *pipi* were found in abundance—enough for all 'Ewa—and fat with flesh. Within the oyster was a jewel (*daimana*) called a pearl (*momi*), beautiful as the eyeball of a fish, white and shining; white as the cuttlefish, and shining with the colors of the rainbow—reds and yellows and blues, and some pinkish white, ranging in size from small to large. They were of great bargaining value (*he waiwai kumuku'ai nui*) in the ancient days, but were just 'rubbish' (*'opala*) in 'Ewa. [Kamakau 1991b:83]

The people were also blessed with many other *i*'a including '*ōpae huna*, transparent shrimp (*pariambus typicus*), '*ōpae kākala*, spiked shrimp (*caridina gracilirostris*), *nehu maoli, nehu pala*, types of anchovy, *mahamoe*, and '*ōkupe*, types of bivalves. Some of these marine resources are no longer seen today (Maly and Maly 2003:60).

A clarification of the story of Kanekua'ana and the pearl oysters of Pearl Harbor is given, in which it seems an overseer had set a ban on the *pipi* for several months a year so that they could increase. A poor widow, a relation of the *mo'o*, took some of the *pipi* and hid them in a basket. The *konohiki* (overseer) found the hidden shells, and took them from her, emptying them back into the sea, which was proper. However, after this he followed the woman home and also demanded that she pay a stiff fine in cash, which she did not have. The *mo'o* thought this was unjust and the next night she took possession of a neighbor who was a medium.

[...] After the overseer had gone back to Palea the lizard goddess possessed her aged keeper [a woman of 'Ewa] and said to those in the house, 'I am taking the pipi back to Kahiki and they will not return until all the descendants of this man are dead. Then shall the pearl oysters be returned. I go to sleep. Do not awaken my medium until she wakes up of her own accord.' The command was obeyed and she slept four days and four nights before she awoke. During the time that she slept the pearl oysters vanished from the places where they were found in great numbers, as far as the shore [...] The few found today are merely nothing [...] [*Ka Loea Kālai'āina*, 3 June 1899, translation in Sterling and Summers 1978:49–50]

3.1.8 Palila

In the *mo'olelo* of the hero Palila, the famous warrior had a supernatural war club. He could throw the club a long distance, hang on to the end of it, and fly along the club's path. Using this power, he touched down in several places in Honouliuli, Waipi'o, and Waikele. One day he used

his supernatural war club to carry himself to Ka'ena Point at Wai'anae, and from there east across the district of 'Ewa. Fornander writes:

Haalele keia ia Kaena, hele mai la a Kalena, a Pohakea, Maunauna, Kanehoa, a ke kula o Keahumoa, nana ia Ewa. Ku keia i laila nana i ke ku a ka ea o ka lepo i na kanaka, e pahu aku ana keia i ka laau palau aia nei i kai o Honouliuli, ku ka ea o ka lepo, nu lalo o ka honua, me he olai la, makau na kanaka holo a hiki i Waikele. A hiki o Palila i laila, e paapu ana na kanaka i ka nana lealea a ke 'lii o Oahu nei, oai o Ahuapau. [Fornander 1918:143]

After leaving Kaena he came to Kalena, then on to Pohakea, then to Manuauna [a peak in Honouliuli], then to Kanehoa [a peak in Honouliuli], then to the plain of Keahumoa [upland plain from Honouliuli to Waipio] and looking toward Ewa. At this place he stood and looked at the dust as it ascended into the sky caused by the people who had gathered there; he then pushed his war club toward Honouliuli. When the people heard something roar like an earthquake they were afraid and they all ran to Waikele. When Palila arrived at Waikele he saw the people gathered there to witness the athletic games that were being given by the king of Oahu, Ahupau by name. [Fornander 1918:142]

3.1.9 Kākuhihewa

The Hawaiian *ali*'*i* were also attracted to the region of the project area. One historical account of particular interest, appearing in the newspaper *Ke Au Hou*, refers to an *ali*'*i* residing in Ko'olina, southwest of the project area:

Koolina is in Waimanalo near the boundary of Ewa and Waianae. This was a vacationing place for chief Kakuhihewa and the priest Napuaikamao was the caretaker of the place. Remember reader, this Koolina is not situated in the Waimanalo side of the Koolau side of the island but the Waimanalo in Ewa. It is a lovely and delightful place and the chief, Kakuhihewa loved this home of his. [*Ke Au Hou*, 13 July 1910, Volume I, Number II, Sterling and Summers 1978:41]

3.2 Wahi Pana

Wahi pana are legendary or storied places of an area. These legendary or storied places may include a variety of natural or human-made structures. Oftentimes dating to the pre-Contact period, most *wahi pana* are in some way connected to a particular *mo'olelo*, however, a *wahi pana* may exist without a connection to any particular story. Davianna McGregor outlines the types of natural and human-made structures that may constitute *wahi pana*:

Natural places have *mana* or spiritual power, and are sacred because of the presence of the gods, the *akua*, and the ancestral guardian spirits, the *'aumakua*. Humanmade structures for the Hawaiian religion and family religious practices are also sacred. These structures and places include temples, and shrines, or *heiau*, for war, peace, agriculture, fishing, healing, and the like; *pu'uhonua*, places of refuge and sanctuaries for healing and rebirth; agricultural sites and sites of food production such as the *lo'i* pond fields and terraces slopes, *'auwai* irrigation ditches, and the fishponds; and special function sites such as trails, salt pans, *hōlua* slides, quarries, petroglyphs, gaming sites, and canoe landings. [McGregor 1996:22]

As McGregor makes clear, *wahi pana* can refer to natural geographic locations such as streams, peaks, rock formations, ridges, offshore islands and reefs, or they can refer to Hawaiian land divisions such as *ahupua'a* or *'ili*, and man-made structures such as fishponds. In this way, the *wahi pana* of Honouliuli tangibly link the *kama'āina* of Honouliuli to their past. It is common for places and landscape features to have multiple names, some of which may only be known to certain *'ohana* or even certain individuals within an *'ohana*, and many have been lost, forgotten or kept secret through time. Place names also convey *kaona* and *huna* (secret) information that may even have political or subversive undertones. Before the introduction of writing to the Hawaiian Islands, cultural information was exclusively preserved and perpetuated orally. Hawaiians gave names to literally everything in their environment, including individual garden plots and *'auwai* (water courses), house sites, intangible phenomena such as meteorological and atmospheric effects, *põhaku, pūnāwai* (freshwater springs), and many others. According to Landgraf (1994), Hawaiian *wahi pana* "physically and poetically describes an area while revealing its historical or legendary significance" (Landgraf 1994:v). Place names and *wahi pana* of Honouliuli are identified on Figure 5.

3.2.1 Heiau (Pre-Christian Place of Worship)

Heiau were pre-Christian places of worship. Construction of some *heiau* was elaborate, consisting of large communal structures, while others were simple earth terraces or shrines (McAllister 1933:8). *Heiau* are most commonly associated with important religious ceremony; large structures with platforms or altars of one or more terraces were indicative of such function (McAllister 1933:8). Archaeologist Gilbert McAllister reports on two known *heiau* in the *ahupua'a* of Honouliuli, as well as two other sites that could have possibly been *heiau*. These *heiau* were located on Pu'u o Kapolei, on Pu'u Ku'ua, at the foot of Pu'u Kanehoa, and at the foot of Mauna Kapu (McAllister 1933).

3.2.1.1 Pu'u o Kapolei

A *heiau* was once located on Pu'u o Kapolei, but it had been destroyed by the time of McAllister's (1933:108) survey of the island in the early 1930s. The hill was used as a point of solar reference or as a place for such observations (Fornander 1919c:6[2]:297). Pu'uokapolei may have been regarded as the gate of the setting sun, just as the eastern gate of Kumukahi in Puna is regarded as the gate of the rising sun; both places are associated with the Hawaiian goddess Kapō (Emerson 1915:41). This somewhat contradicts some Hawaiian cosmologies, in which Kū was the god of the rising sun, and Hina, the mother of Kamapua'a, was associated with the setting of the sun. Fornander (1919:6[2]:292) states that Pu'uokapolei may have been a *leina*, jumping off point associated with the wandering souls who roamed the plains of Kaupe'a and Kānehili, *makai* (toward the sea) of the hill.

McAllister writes that the stones from the *heiau* supplied the rock crusher located on the side of this elevation, about 100 ft away on the sea side. There was once a large rock shelter on the *makai* side where it is said to have been the residence of Kamapua'a and his grandmother. (McAllister 1933:108). After conquering the majority of O'ahu, he established his grandmother as queen of this *wahi* (Pukui et al. 1974:203).



Figure 5. Portion of a 2011 USGS Orthoimagery aerial photograph showing place names, trails and streams of Honouliuli Ahupua'a and the location of the project area

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3.2.1.2 Pu'u Ku'ua

Pu'u Ku'ua Heiau located in Palikea, Honouliuli, overlooks both Honouliuli and Nānākuli, and is at the height of approximately 1,800 feet (ft). Most of the stones from the *heiau* were used for a cattle pen located on the *makai* side of the site. The part of the *heiau* that hadn't been cleared for pineapples has been planted in ironwoods (McAllister 1933:108).

3.2.1.3 Unidentified heiau at the foot of Pu'u Kanehoa

Located at the foot of Pu'u Kanehoa is a small enclosure thought to have possibly been a *heiau*. McAllister writes:

My informant, Reiney, recalls the respect the old Hawaiians had for the place when he was punching cattle with them in his youth. It is a walled inclosure 25 by 35 feet. On the inside the walls are between 2 and 3 feet high, and on the outside they range from 2 to 5 feet, depending upon the slope of the land. On three sides the walls are 2 feet wide, but the fourth is 3 feet wide. The walls are evenly faced with a fill of smaller stones. At present the site is surrounded with a heavy growth of *Lantana*; but only a thick growth of grass and two small guava bushes are in the interior, which is most unusual unless human hands keep the interior clear. Possibly this is not a *heiau* but a small inclosure considered sacred for some reason. [McAllister 1933:107]

3.2.1.4 Unidentified heiau at the foot of Pu'u Kuina

Located in Aikukai, Honouliuli, at the foot of Pu'u Kuina what looked to be a terrace is all that remained when McAllister cataloged Site 134. He notes of the inability to determine the size of the *heiau* or the number of terraces that once stood (McAllister 1933:107).

3.2.2 Plains of 'Ewa

3.2.2.1 The Plains of Kaupe'a

Several places on the 'Ewa coastal plain are associated with *ao kuewa*, the realm of the homeless souls. Samuel Kamakau explains Hawaiian beliefs in the afterlife:

There were three realms (*ao*) for the spirits of the dead [...] There were, first, the realm of the homeless souls, the *ao kuewa*; second, the realm of the ancestral spirits, the *ao 'aumakua*; and third, the realm of Milu, *ke ao o Milu*.

The *ao kuewa*, the realm of homeless souls, was also called the *ao 'auwana*, the realm of wandering souls. When a man who had no rightful place in the '*aumakua* [family or personal gods] realm (*kanaka kuleana 'ole*) died, his soul would wander about and stray amongst the underbrush on the plain of Kama'oma'o on Maui, or in the *wiliwili* grove of Kaupe'a on Oahu. If his soul came to Leilono [in Hālawa, 'Ewa near Red Hill], there it would find the breadfruit tree of Leiwalo, *ka'ulu o Leiwalo*. If it was not found by an '*aumakua* soul who knew it (*i ma'a mau iaia*), or one who would help it, the soul would leap upon the decayed branch of the breadfruit tree and fall down into endless night, the *po pau 'ole o Milu*. Or, a soul that had no rightful place in the '*aumakua* realm, or who had no relative or friend

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(*makamaka*) there who would watch out for it and welcome it, would slip over the flat lands like a wind, until it came to a leaping place of souls, *a leina a ka 'uhane*.

On the plain of Kaupe'a beside Pu'uloa [Pearl Harbor], wandering souls could go to catch moths (*pulelehua*) and spiders (*nanana*). However, wandering souls could not go far in the places mentioned earlier before they would be found catching spiders by '*aumakua* souls, and be helped to escape. [Kamakau 1991a:47, 49]

This association of Pu'uokapolei and Kānehili with wandering souls is also illustrated in a lament on the death of Kahahana, the paramount chief of O'ahu, who was killed by his father, Kahekili, after Kahahana became treacherous and killed the high priest Ka'opulupulu.

E newa ai o hea make i ka lā,	Go carefully lest you fall dead in the sun,
Akua noho la i Puʻuokapolei.	The god that dwells on Kapolei hill.
E hanehane mai ana ka lā i nā	The sun is wailing on account of the
wahine o Kamao,	women of Kamao,
Akua peʻe, pua ʻohai o ke kaha,	A hiding god, blossoming ohai of the banks
I walea wale i ke a-	Contented among the stones
I ka ulu kanu a Kahai.	Among the breadfruit planted by Kahai.
Haina 'oe e ka oo-	Thou hast spoken of by the oo-
E ka manu o Kānehili.	By the bird of Kānehili.

[*Ka Nupepa Kuokoa*, Volume VII, Number 23, 6 June 1868, He Mele Kanikau no Walia Kahaha na ka moi o Oahu; Fornander 1919c:6[2]:297]

Fornander provides some notes on this lament. The god dwelling at Kapolei is the god Kahahana, stating that this is where his soul has gone. Kamao is one of the names to the door of the underworld. This lament draws an association with wandering souls and the place where the first breadfruit tree was planted by Kaha'i at Pu'uloa (Fornander 1919c:6[2]304).

Pukui (1983) offers this Hawaiian saying, which places the wandering souls in a *wiliwili* (*Erythrina sandwicensis*) grove at Kaupe'a:

Ka wiliwili o Kaupe'a.

The wiliwili grove of Kaupe'a

In 'Ewa, O'ahu said to be where homeless ghosts wander among the trees.

[Pukui 1983:180]

Pukui also shared her personal experience with the wandering spirits on the plain of Kaupe'a.

A wide plain lies back of Keahi and Pu'uloa where the homeless, friendless ghosts were said to wander about. These were the ghosts of people who were not found by their family *'aumakua* or gods and taken home with them, or had not found the leaping places where they could leap into the nether world. Here [on the plain of Honouliuli] they wandered, living on the moths and spiders they caught. They were often very hungry for it was not easy to find moths or to catch them when found.

Perhaps I would never have been told of the plain of homeless ghosts if my cousin's dog had not fainted there one day. My cousin, my aunt and I were walking to Kalaeloa, Barber's Point, from Pu'uloa accompanied by Teto, the dog. She was a native dog, not the so-called poi dog of today, with upright ears and body the size of a fox terrier. For no accountable reason, Teto fell into a faint and lay still. My aunt exclaimed and sent me to fetch sea water at once which she sprinkled over the dog saying, '*Mai hana ino wale 'oukou i ka holoholona a ke kaikamahine. U oki ko 'oukou makemake 'ilio.*' 'Do not harm the girl's dog. Stop your desire to have it.' Then with a prayer to her '*aumakua* for help she rubbed the dog. It revived quickly and, after being carried a short way, was as frisky and lively as ever.

Then it was that my aunt told me of the homeless ghosts and declared that some of them must have wanted Teto that day because she was a real native dog, the kind that were roasted and eaten long before foreigners ever came to our shores. [Pukui 1943:60–61]

Beckwith (1970:154) has stressed that "the worst fate that could befall a soul was to be abandoned by its 'aumakua (ancestral spirit) and left to stray, a wandering spirit (kuewa) in some barren and desolate place." These wandering spirits were often malicious, so the places where they wandered were avoided.

3.2.2.2 The Plains of Pukaua

The Hawaiian language newspaper *Ka Loea Kālai 'āina* (13 January 1900) relates that near Pu'uokapolei, on the plain of Pukaua, on the *mauka* side of the road, there was a large rock. This *mo 'olelo* suggests the plain around Pu'uokapolei was called Pukaua. The *mo 'olelo* is as follows:

If a traveler should go by the government road to Waianae, after leaving the village of gold, Honouliuli, he will first come to the plain of Puu-ainako and when that is passed, Ke-one-ae. Then there is a straight climb up to Puu-o-Kapolei and there look seaward from the government road to a small hill. That is Puu-Kapolei [...] You go down some small inclines, then to a plain. This plain is Pukaua and on the mauka side of the road, you will see a large rock standing on the plain [...] There were two supernatural old women or rather peculiar women with strange powers and Puukaua belonged to them. While they were down fishing at Kualakai [near Barbers Point] in the evening, they caught these things, aama crabs (Grapsus tenuicrustatus), pipipi shellfish (Nerita picea), and whatever they could get with their hands. As they were returning to the plain from the shore and thinking of getting home while it was yet dark, they failed for they met a one-eyed person [bad omen]. It became light as they came near to the plain, so that passing people were distinguishable. They were still below the road and became frightened lest they be seen by men. They began to run—running, leaping, falling, sprawling, rising up and running on, without a thought of the aama crabs and seaweeds that dropped on the way, so long as they would reach the upper side of the road. They did not go far for by then it was broad daylight. One woman said to the other, 'Let us hide lest people see us,' and so they hid. Their bodies turned into stone and that is one of the famous things on this plain to this day, the stone body. This is the end of these strange women. When one visits the plain, it will do no harm to glance on the upper

side of the road and see them standing on the plain. [*Ka Loea Kālai'āina*, 13 January 1900, translation in Sterling and Summers 1978:39]

In another version of this story, the two women met Hi'iaka as she journeyed toward the 'Ewa coast. The women were *mo*'o and were afraid that Hi'iaka would kill them, so they changed into their lizard form. One of the lizards hid in a little space on a stone beside the coastal trail, and the other hid nearby (*Ka Hōkū o Hawai'i*, 15 February 1927, translated in Maly 1997:19). From that time on the stone was known as "Pe'e-kāua," meaning "we two hidden." Hi'iaka greeted the two women but did not harm them, and passed on.

When she reached Pu'uokapolei, she also greeted two old women who lived at an 'ohai (Sesbania tomentosa) grove on the hill. These women were named Pu'uokapolei and Nāwahineokama'oma'o (Ka Hōkū o Hawai'i, 22 February 1927, translated in Maly 1997:19). As she continued her travels, she looked to the ocean and saw the canoe carrying Lohi'au:

Kuu kane i ke awa lau o Puuloa	My man on the many harbored sea of Pu'uloa
Mai ke kula o Peekaua ke noho	As seen from the plain of Pe'ekāua
E noho kaua i ke kaha o ka ohai	Let us dwell upon the ' <i>ōhai</i> covered shore
I ka wiliwili i ka pua o ka lau noni	Where the <i>noni</i> blossoms are twisted together
O ka ihona i Kanehili la	Descending along Kānehili
Ua hili hoi au-e	I am winding along.
[Ka Hōkū o Hawai 'i, 22 February 1927, tra	nslated in Maly 1997:20]

3.2.2.3 The Inland Plain of Keahumoa

In several legends of 'Ewa, mention is made of the "plain of Keahumoa." John Papa ' \overline{I} 'ī (1959:96) has this plain opposite the trail to Pōhakea Pass, stretching across the *ahupua*'a of Honouliuli and Hō'ae'ae. McAllister (1933:107) states that the plain was west of Kīpapa Gulch in Waikele. It is also mentioned in legends of Waipi'o. Thus, this is probably a general name for the flat plain *mauka* of the productive floodplain area directly adjacent to Pearl Harbor. This plain would have been east of the present corridor alignment.

3.2.2.3.1 Legend of Nāmakaokapao 'o

Nāmakaokapao'o was a Hawaiian hero of legendary strength. Nāmakaokapao'o's mother was Pokai and his father was Kaulukahai, a great chief of Kahiki, the ancestral home of the Hawaiians. The two met in Hō'ae'ae and conceived their child there. The father returned to his home in Kahiki before the birth of his son, leaving his O'ahu family destitute. A man named Puali'i saw Pokai and married her. The couple then resided on the plains of Keahumoa, planting sweet potatoes. Nāmakaokapao'o was a small, brave child who took a dislike to his stepfather, and pulled up the sweet potatoes Puali'i had planted at their home in Keahumoa. When Puali'i came after Nāmakaokapao'o with an axe, Nāmakaokapao'o delivered a death prayer against him, and slew Puali'i, hurling his head into a cave in Waipouli, near the beach at Honouliuli (Fornander 1919d:5[2]:274–276).

3.2.2.3.2 Legend of Pikoi

Pikoi was a legendary hero, the son of a crow (*'alalā*) and brother to five god-sisters in the form of rats. He was famous for his ability to shoot arrows, and often made bets that he could hit rats from a long distance (Fornander 1917a:4[3]:450–463). Pikoi's skill was commemorated in a saying (Pukui 1983:200):

Ku aku la i ka pana a	Shot by the arrow of Pikoi-[son]
Pikoi-a-ka-ʻalalā, keiki pana	of-the-crow, the expert rat-shooter
ʻiole o ke kula o Keahumoa.	Of the plain of Keahumoa.

3.2.2.3.3 The Demi-god Māui

In the stories of the demi-god Māui, Keahumoa is the home of Māui's grandfather, Kūolokele (Kū-honeycreeper). One day, Māui's wife, Kumulama, was stolen by the chief Pe'ape'amakawalu, called the eight-eyed-bat, who is identified in the creation chant, *Kumulipo*, as the octopus god (Beckwith 1951:136). The chief disappeared with Kumulama in the sky beyond the sea, and escaped so quickly that Māui could not catch him. To recover his wife, Māui's mother advised him to visit the hut of his grandfather at Keahumoa:

Maui went as directed until he arrived at the hut; he peeped in but there was no one inside. He looked at the potato field on the other side of Poha-kea, toward Honouli-uli, but could see no one. He then ascended a hill, and while he stood there looking, he saw a man coming toward Waipahu with a load of potato leaves, one pack of which, it is said, would cover the whole land of Keahumoa. [Thrum 1923:253–254]

Kūolokele made a *moku-manu* ("bird-ship") for Māui, who entered the body of the bird and flew to Moanaliha, the land of the chief Pe'ape'amakawalu. This chief claimed the bird as his own when it landed on a sacred box, and took it with him into the house he shared with Māui's wife. When Peapeamakawalu fell asleep, Māui killed him, cut off his head, and flew away back to O'ahu with his wife and the chief's head (Thrum 1923:252–259).

3.2.3 Paupauwela and Līhu'e

Paupauwela, also spelled Popouwela (derivation unknown), is the name of the land area in the extreme *mauka* section of Honouliuli Ahupua'a. The land area of Līhu'e is just *makai* of this land, and extends into the *ahupua'a* of Waipi'o (adjacent to the eastern border of Honouliuli). Both place names are mentioned in a chant recorded by Abraham Fornander, which was composed as a *mele* for the O'ahu king, Kūali'i, as he was preparing to battle Kuiaia, the chief of Wai'anae:

Ihea, ihea la ke kahua, Where?	Where is the battle field
Paio ai o ke koa-a?	Where the warrior is to fight?
I kai i kahua i Kalena,	On the field of Kalena,
I Manini, i Hanini	At Manini, at Hanini,
I ninia i ka wai akua,	Where was poured the water of the god
I ko hana i Malamanui	By your work at Malamanui;
Ka luna o Kapapa, i Paupauwela,	On the heights of Kapapa, at
_	Paupauwela,

I ka hilinai i ke kalele,	Where they lean and rest;
Ka hala o Halahalanui maauea,	At the hala trees of indolent
	Halahalanui,
E kula ohia ke Pule-e,	At the ohia grove of Pule-e
Ke 'kua o Lono o Makalii	The god of Lono, of Makalii
Ka lala aalao Ukulonoku,	The fragrant branch of the
	Ukulonoku,
No Kona paha, no Lihue.	Mayhap from Kona, from Lihue,
No ka la i Maunauna,	For the day at Maunauna
No ka wai i Paupauwela.	For the water at Paupauwela.
Ula ka wai i Paupauwela,	Red is the water of Paupauwela,
Ke kilau o Malamani	,From the slain at Malamani,
Ka moo kilau I Kapapa.	The slain on the ridge at Kapapa.
[Fornander 1917b:4[2]:384–386]	

3.2.4 Maunauna

The hill Maunauna lies between the lands Paupauwela and Līhu'e. One translation of Maunauna is "mountain sent [on errands]." Two servant *mo* 'o who lived here had no keepers to supply their needs" (Pukui et al. 1974:149). It was at Maunauna, according to one tradition, that the forces of the chiefs Kūali'i and Kuiaia of Wai'anae met to do battle, which was averted when a *mele* honoring the god Kū was chanted (see Section 3.5.1). (Fornander 1917b:4[2]:348). In the Legend of Ke-ao-melemele, a woman named Paliuli traveled in this area.

In a very short time she [Paliuli] walked over the plain of Ewa; Ewa that is known as the land of the silent fish (pearl oysters) [...] She went on to the plain of Punalu'u and turned to gaze at Maunauna point and the plain of Lihue. [Manu 1885, translation in Sterling and Summers 1978:21]

Certain place names in the uplands, including Maunauna, are also mentioned in the story of Lolale's Lament. The place of Lolale's residence is given in King Kalākaua's version of this story (Kalākaua 1990:232): "There lived there at that time in Lihue, in the district of Ewa, on the island of O'ahu, a chief named Lo-Lale, son of Kalona-iki, and brother of Piliwale, the *alii-nui*, or nominal sovereign, of the island, whose court was established at Waialua."

In this story, Lolale was a chief of O'ahu who asked his friend Kalamakua to find him a bride (Kalākaua 1990:228–246; Skinner 1971:217–219). Kalamakua traveled to Maui and chose Kelea, the chief's sister, and returned with her to O'ahu; during this time the two grew close. Kelea lived with Lolale for a while, but he was a silent type who was often away from home playing sports and walking in the woodlands. Longing for Kalamakua, Kelea decided to leave her husband, Lolale voiced no "spoken bitterness;" however, after she left, he sang this lament:

Farewell, my partner of the lowland plains,

On the waters of Pohakeo,

Above Kanehoa,

On the dark mountain spur of Mauna-una!

O, Lihue, she is gone!

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Sniff the sweet scent of the grass, The sweet scent of the wild vines That are twisted by Waikoloa, By the winds of Waiopua, My flower! As if a mote were in my eye. The pupil of my eye is troubled; Dimness covers my eyes. Woe is me! [Kalākaua 1990:228–246]

3.2.5 Kūalaka'i

Kūalaka'i is the name of an area near Barbers Point, located on the southwestern side of Honouliuli Ahupua'a. Clark (1977:74) says it is named for a type of sea cucumber that squirts a purple fluid when squeezed. Pukui identifies the sea creature as *Tethys* a member of the invertebrate family *Aplysiidae* commonly called sea hares (Pukui et al. 1974:119). Pukui adds this area was once the site of a spring called Hoaka-lei ("lei reflection") "because Hi'iaka picked *lehua* flowers here to make a *lei* (garland) and saw her reflection in the water" (Pukui et al. 1974:119).

3.2.6 Kalaeloa

Kalaeloa literally means "the long point" (Pukui et al. 1974:72). Kalaeloa Point was the home of Uhu Makaikai, a *kupua* who could take the form of a man or a giant parrotfish (*uhu*). He is mentioned in several legends concerning the hero Kawelo and with Kawelo's struggles with the ruling chief of Kaua'i, 'Aikanaka.

This friend was Kauahoa also an alii of Wailua (Kauai). Their king, Aikanaka, in the time of Kakuhihewa of Oahu and Lonoikamakahiki of Hawaii. Aikanaka got offended with Kawelo and sent him to live at Waikiki. Cause. The king at a surf bathing told Kawelo to get a calabash of water for him to wash off with, but on Kawelo's failing to do it, he took a calabash of soft poi and threw it over Kawelo and sent him off as already stated. At Waikiki, Kawelo studied the art of fighting to be revenged on Aikanaka. A kupua, Uhu makaikai, a fish was his teacher. Makuakeke was his helper in the canoe. The fish lived at Pohaku o Kawai near Kalailoa (Kalaeloa), Oahu (Barber's Point) . . . [Hawaiian Ethnological Notes, Bishop Museum Vol. II:114, translation in Sterling and Summers 1978:41]

3.2.7 Ala Hele (Trails)

John Papa 'Ī'ī describes a network of Leeward O'ahu trails (Figure 6 through Figure 8) which in later historic times encircled and crossed the Wai'anae Range, allowing passage from West Loch to the Honouliuli lowlands, past Pu'uokapolei and Waimānalo Gulch to the Wai'anae coast and onward circumscribing the shoreline of O'ahu ('Ī'ī 1959:96–98). The main trail along the south shore of O'ahu would have been approximately 1.5 km to the southeast. A main trail extending up the central valley of O'ahu would have been approximately 3 km to the east. The



Figure 6. Portion of the 1810 Rockwood map of trails of Leeward O'ahu with overlay of project area (Ī'ī 1959:96)

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Figure 7. Portion of 1825 Malden map of the South Coast of Oahu showing the location of the project area (note: a trail into the southern Wai'anae Mountain Range is shown as passing just south of the project area)

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Figure 8. Portion of 1873 Alexander map of Honouliuli showing trail network in vicinity of project area

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1825 Malden map (see Figure 7) shows a trail extending from the main trail along the south shore of O'ahu into the uplands in the Pālehua area as passing just a couple hundred meters to the southwest of the project area. The 1873 Alexander map (see Figure 8), one of the earliest detailed maps of the vicinity, shows no development near the project area.

3.2.7.1 Põhākea Pass

Pōhākea Pass, on the Wai'anae Mountain Range, has an elevation of 671 m (2,200 ft) amsl. Pōhākea literally translates to "white stone" (Pukui et al. 1974:185). Pōhākea serves as a passage between *ahupua'a* of Honouliuli and Lualualei. This is also the location where Hi'iaka saw cloud omens that her *lehua* (flower of the '*ōhia* tree [*Metrosideros polymorpha*]) groves had been burned by her sister Pele, and her friend Hōpoe had been turned into stone.

In *The Epic Tale of Hi*'*iakaikapoliopele*, Hi'iaka watches as her beloved friend Hōpoe is killed by the embers of her sister Pele. She chants atop Pōhākea and tells of the winds of Waikōloa and Wai'ōpua:

KAU HOʻOKAHI HANERI A	CHANT ONE HUNDRED
ME KANALIMAKUMAMĀKOLU	AND FIFTY-THREE
Aloha kuʻu hoa i ka pūʻali lā	Alas my friend of the rugged mountain pass
A luna i Pōhākea, he luna o Kamaoha	On high at Pōhākea, above Kamaoha
He lae 'ino 'o Maunauna	Maunauna is a dangerous escarpment
'O Līhu'e ke hele 'ia	Lihu'e's high plain yet to be traversed
Honi i ke 'ala mau'u	Inhaling the scent of the grasses
I keʻala o ke kupukupu	The fragrance of kupukupu fern
E linoa ala e ka Waikōloa	Entwined by the Waikoloa breeze
E ka makani he Waiʻōpua	By the wind called Wai'opua
Kuʻu pua, me he pua lā i kuʻu maka	My blossom, like a flower in my sight
Ka'oni i ka haku'ōnohi, kā ka wai lā i li'u	Moving before my eyes, washed salty by tears
I kuʻu maka lā, e uē au lā.	There in my sight, I weep.

[Ho'oulumahiehie 2008a:262; Ho'oulumahiehie 2008b:262]

3.3 'Ōlelo No'eau

Hawaiian knowledge was shared by way of oral histories. Indeed, one's *leo* (voice) is oftentimes presented as *ho'okupu* ("a tribute or gift" given to convey appreciation, to strengthen bonds, and to show honor and respect); the high valuation of the spoken word underscores the importance of the oral tradition (in this case, Hawaiian sayings or expressions), and its ability to impart traditional Hawaiian "aesthetic, historic, and educational values" (Pukui 1983:vii). Thus, in many ways these expressions may be understood as inspiring growth within reader or between speaker and listener:

They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawai'i and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawai'i, they bring us closer to the everyday thoughts and lives of the Hawaiians who created them. Taken together, the sayings offer a basis for an understanding of the essence and origins of traditional Hawaiian values. The sayings may be categorized, in Western terms, as proverbs, aphorisms, didactic adages, jokes, riddles, epithets, lines from chants, etc., and they present a variety of literary techniques such as metaphor, analogy, allegory, personification, irony, pun, and repetition. It is worth noting, however, that the sayings were spoken, and that their meanings and purposes should not be assessed by the Western concepts of literary types and techniques. [Pukui 1983:vii]

Simply, '*ōlelo no* '*eau* may be understood as proverbs. The Webster dictionary notes it as "a phrase which is often repeated; especially, a sentence which briefly and forcibly expresses some practical truth, or the result of experience and observation." It is a pithy or short form of folk wisdom. Pukui equates proverbs as a treasury of Hawaiian expressions (Pukui 1995:xii). Oftentimes within these Hawaiian expressions or proverbs are references to places. This section draws from the collection of author and historian Mary Kawena Pukui and her knowledge of Hawaiian proverbs describing '*āina* (land), chiefs, plants, and places.

3.3.1 Concerning Sharks

The eastern coast of Honouliuli lies adjacent to Pu'uloa which has many *mo 'olelo* about sharks, particularly Ka'ahupāhau, the queen shark of O'ahu and the most famous guardian shark who lived in Pu'uloa. Thus, Honouliuli is closely associated with shark *'aumakua* and *mo 'olelo* which say the people of 'Ewa were protected by sharks. The following *'olelo no 'eau* are associated with sharks.

3.3.1.1 'Ōlelo No'eau #105

Alahula Pu'uloa, he alahele na Ka'ahupāhau.

Everywhere in Pu'uloa is the trail of Ka'ahupāhau.

Said of a person who goes everywhere, looking, peering, seeing all, or of a person familiar with every nook and corner of a place. Ka'ahupāhau is the shark goddess of Pu'uloa (Pearl Harbor) who guarded the people from being molested by sharks. She moved about, constantly watching. [Pukui 1983:14]

3.3.1.2 'Ōlelo No'eau #1014

Hoʻahewa na niuhi ia Kaʻahupāhau

The man-eating sharks blamed Ka'ahupāhau

Evil-doers blame the person who safeguards the rights of others. Ka'ahupāhau was the guardian shark goddess of Pu'uloa (Pearl Harbor) who drove out or destroyed all the man-eating sharks. [Pukui 1983:108]

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3.3.1.3 'Ōlelo No'eau #2152

Mehameha wale no o Pu'uloa, i ka hele a Ka'ahupāhau

Pu'uloa became lonely when Ka'ahupāhau went away

The home is lonely when a loved one has gone. Ka'ahupāhau, guardian shark of Pu'uloa (Pearl Harbor), was dearly loved by the people. [Pukui 1983:234]

3.3.1.4 'Ōlelo No'eau #2111

Make o Mikololou a ola i ke alelo

Mikololou died and came to life again through his tongue

Said of one who talks himself out of a predicament. [Pukui 1983:229-230]

3.3.2 Concerning the Pipi or Pearl Oyster of Pu'uloa

Pearl Harbor or Pu'uloa, derived from the name Waimomi, or "water of the pearl," an alternate name for the Pearl River. The harbor was thus named after pearl oysters of the family Pteriidae (mainly *Pinctada radiata*), which were once abundant on the harbor reefs and after which many *'ōlelo no 'eau* were generated.

3.3.2.1 'Ōlelo No'eau #1331

Ka i 'a hāmau leo o 'Ewa

The fish of 'Ewa that silences the voice

The pearl oyster, which has to be gathered in silence. [Pukui 1983:145]

Handy and Handy (1972:471) offer a different interpretation: "The pipi was sometimes called 'the silent fish,' or, '*i*'a hamau leo o 'Ewa,' 'Ewa's silent sea creature since the collectors were supposed to stay quiet while harvesting the shells."

3.3.2.2 'Ōlelo No'eau #493

Haunāele 'Ewa i ka Moa 'e

'Ewa is disturbed by the Moa'e wind

Used about something disturbing, like a violent argument. When the people of 'Ewa went to gather the *pipi* (pearl oyster), they did so in silence, for if they spoke, a Moa'e breeze would suddenly blow across the water, rippling it, and the oysters would disappear. [Pukui 1983:59]

3.3.2.3 'Ōlelo No'eau #274

E hāmau o makani mai auane'i

Hush, lest the wind rise

Hold your silence or trouble will come to us. When the people went to gather pearl oysters at Pu'uloa, they did so in silence, for they believed that if they spoke, a gust of wind would ripple the water and the oysters would vanish. [Pukui 1983:34]

3.3.2.4 'Ōlelo No'eau #1357

Ka iʻa kuhi lima oʻEwa

The gesturing fish of 'Ewa

The pipi, or pearl oyster. Fishermen did not speak when fishing for them but gestured to each other like deaf-mutes. [Pukui 1983:148]

3.3.3 Concerning the 'Anae-holo of Honouliuli

The migration of the '*anae-holo* of Honouliuli is described in the following excerpt from which the '*ōlelo no* '*eau* below derives:

The home of the '*anae-holo* is at Honouliuli, Pearl Harbor, at a place called Ihuopala'ai. They make periodical journeys around to the opposite side of the island, starting from Pu'uloa and going to windward, passing successively Kumumanu, Kalihi, Kou, Kālia, Waikīkī, Ka'alāwai, and so on, around to the Ko'olau side, ending at Lā'ie, and then returning by the same course to their starting point. [Nakuina 1998:271]

3.3.3.1 'Ōlelo No'eau #1330

Ka iʻa hali a ka makani

The fish fetched by the wind

The 'anaeholo, a fish that travels from Honouliuli, where it breeds, to Kaipāpa'u, on the windward side of O'ahu. It then turns about and returns to its original home. It is driven closer to shore when the wind is strong. [Pukui 1983:145]

3.3.4 Concerning Kalo

A rare taro called the " $k\bar{a}\bar{i} o$ '*Ewa*," was grown in mounds in marshy locations in 'Ewa (Handy and Handy 1972:471). The cultivation of this prized and delicious taro led to the following saying:

3.3.4.1 'Ōlelo No'eau #2770

Ua 'ai i ke kāī-koi o 'Ewa

He has eaten the kaī-koi taro of 'Ewa

 $K\overline{a}\overline{i}$ is O'ahu's best eating taro; one who has eaten it will always like it. Said of a youth of a maiden of 'Ewa, who, like the $k\overline{a}\overline{i}$ taro, is not easily forgotten. [Pukui 1983:305]

3.3.5 Concerning the Ao Kuewa, Realm of the Homeless Souls

3.3.5.1 'Ōlelo No'eau #1666

Ka wiliwili o Kaupe'a

The wiliwili grove of Kaupe'a

In 'Ewa, O'ahu. Said to be where homeless ghosts wander among the trees. [Pukui 1983:180]

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Pukui (1983:180) offers this Hawaiian saying, which places the wandering souls in a "*wiliwili*" grove at Kaupe'a, a place in Honouliuli where homeless ghosts wandered among the trees.

3.3.6 Concerning the landscape of 'Ewa

3.3.6.1 'Ōlelo No'eau #80

The following proverb describes the red landscape of the 'Ewa plain.

'Āina koi 'ula i ka lepo.

Land reddened by the rising dust.

Said of 'Ewa, O'ahu. [Pukui 1983:11]

3.3.6.2 'Ōlelo No'eau #2542

The expression below describes the residents of Kaupe'a 'Ili.

 $(\bar{O})^{\dagger}\bar{u} \bar{o} \log na manu o Kaupe^{\dagger}a.$

The birds of Kaupe'a trill and warble.

Said of the chatter of happy people. [Pukui 1983:278]

3.3.6.3 'Ōlelo No'eau #1855

The expression below discusses the boundaries between *ali'i* and *maka'āinana* lands in 'Ewa.

Ku a'e 'Ewa; Noho iho 'Ewa.

Stand-up 'Ewa; Sit-down 'Ewa.

The names of two stones, now destroyed, that once marked the boundary between the chiefs' land (Kua'e 'Ewa) and that of the commoners (Noho iho 'Ewa) in 'Ewa, O'ahu. [Pukui 1983:200]

3.4 Oli (Chants)

Oli, according to Mary Kawena Pukui (Pukui 1995:xvi–xvii) are often grouped according to content. Chants often were imbued with *mana* (divine power); such *mana* was made manifest through the use of themes and *kaona*. According to Pukui, chants for the gods (*pule*; prayers) came first, and chants for the *ali'i*, "the descendants of the gods," came second in significance. Chants "concerning the activities of the earth peopled by common humans," were last in this hierarchy (Pukui 1995:xvi–xvii). Emerson conversely states:

In its most familiar form the Hawaiians–many of whom [were lyrical masters]– used the oli not only for the songful expression of joy and affection, but as the vehicle of humorous or sarcastic narrative in the entertainment of their comrades. The dividing line, then, between the oli and those other weightier forms of the mele, the inoa, the kanikau (threnody), the pule, and that unnamed variety of mele in which the poet dealt with historic or mythologic subjects, is to be found almost wholly in the mood of the singer. [Emerson 1965:254]

While *oli* may vary thematically, subject to the perspective of the *ho'opa'a* (chanter), it was undoubtedly a valued art form used to preserve oral histories, genealogies, and traditions, to recall
special places and events, and to offer prayers to *akua* and *'aumākua* alike. Perhaps most importantly, as Alameida (1993:26) writes, "chants [...] created a mystic beauty [...] confirming the special feeling for the environment among Hawaiians: their *one hānau* (birthplace), their *kula iwi* (land of their ancestors)."

3.4.1 Oli for Kūali'i

A chant for the chief Kūali'i, an ancient chief of O'ahu, mentions the *ahupua'a* names of the 'Ewa District including Honouliuli Ahupua'a. Each phrase usually contains a play on words, as the place name and one meaning of the word, or portion of the word, appears on each line, for example, *kele* in Waikele means "slippery." However, these word plays are not necessarily related to the actual place name meanings of the *ahupua'a*.

Uliuli ka poi e piha nei—o Honouliuli;	Blue is the <i>poi</i> [pounded taro] which appeases [the hunger] of Honouliuli;
Aeae ka paakai o Kahuaiki—Hoaeae;	Fine the salt of Kahuaike—Hoaeae;
Pikele ka ia e waikele—o Waikele;	Slippery the fish of Waikele— of Waikele;
Ka hale pio i Kauamoa—o Waipio;	The arched house at Kauamoa— of Waipio;
E kuu kaua i ka loko awa—o Waiawa;	Let us cast the net in the <i>awa</i> -pond— of Waiawa;
Mai hoomanana ia oe—o Manana.	Do not stretch yourself at—Manana.
He kini kahawai,	Many are the ravines,
He lau kamano—o Waimano;	Numerous the sharks, at Waimano;
Ko ia kaua e ke au—o Waiau;	We are drawn by the current— of Waiau;
Kukui malumalu kaua—Waimalu;	In the <i>kukui</i> grove we are sheltered— in Waimalu;
E ala kaua ua ao-e—o Kalauao;	Let us arise, it is daylight— at Kalauao;
E kipi kaua e ai—o Aiea,	Let us enter and dine—at Aiea;
Mai hoohalawa ia oe—o Halawa.	Do not pass by—Halawa.

[*Ka Nupepa Kuokoa*, Book 7, Number 21, 23 May 1868, He mele no Kualii, Kulanipipili, Kulanioka, Kunuiakea; Fornander 1917b:4[2]:400–401]

A chant for the Kaua'i chief of Kaumuali'i, a rival of Kamehameha I, also mentions place names of the 'Ewa District. In a portion of this chant, the wind that blows from one end of 'Ewa to the other is compared to love.

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3.4.2 Hi'iaka and the Plains of Keahumoa

While passing through 'Ewa, Hi'iaka, sister of the goddess Pele, met women stringing *lei* with *ma*'o flowers. Desiring a *lei* of her own, Hi'iaka offered a chant:

E lei ana ke kula o Keehumoa i ka ma'o	The plains of Ke'ehumoa are
	garlanded with ma'o
Ohuohu wale na wahine kui lei o	The lei-stringing women of the forest
ka nahele	are festively adorned

[Ho'oumāhiehiemalie 2008a:287; 2008b:268]

In the chant, Hi'iaka mentions the plains of Ke'ehumoa which according to McAllister (1933:107) are located west of Kīpapa Gulch in Waikele. Ke'ehumoa was also possibly a general name for the flat plain *mauka* of the productive floodplain area directly adjacent to Pearl Harbor.

3.4.3 Hi'iaka and the Plains of Kaupe'a

Hi'iaka sang this bitter chant addressed to Lohi'au and Wahine'ōma'o, which uses the association of the Plains of Kaupe'a as a place for the wandering of lost souls:

Ku'u aikana i ke awa lau o Pu'uloa, Mai ke kula o Pe'e-kaua, ke noho oe, E noho kaua e kui, e lei i ka pua o ke kauno'a, I ka pua o ke akuli-kuli, o ka wili-wili; O ka iho'na o Kau-pe'e i Kane-hili, Ua hili au; akahi no ka hili o ka la pomaika'i; E Lohiau ipo, e Wahine-oma'o, Hoe 'a mai ka wa'a i a'e aku au.

We meet at Ewa's leaf-shaped lagoon, friends; Let us sit, if you will on this lea And bedeck us with wreaths of Kauno'a, Of *akuli-kuli* and *wili-wili*, My soul went astray in this solitude; It lost the track for once, in spite of luck, As I came down the road to Kau-pe'a. No nightmare dream was that which tricked my soul. This way, dear friends; turn the canoe this way; Paddle hither and let me embark. [Emerson 1915:167–168]

Several other Honouliuli places are mentioned in this chant, including Pe'ekaua, which may be a variation of Ka-pe'e or Kaupe'a, and the plains of Kānehili, the last of which again refers to wandering, as the word *hili* means "to go astray" (Emerson 1993:162). In the chant, Hi'iaka is moving downhill from Kaupe'a, probably the plains adjacent to Pu'uokapolei, toward the coast, the plain of Kānehili.

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3.4.1 Ka'ao no Halemano

In the Legend of Halemano, the romantic O'ahu anti-hero, he chants a love song with a reference to Honouliuli:

Huli a'e la Ka'ala kau i luna, Waiho wale kai o Pōka'ī, Nānā wale ke aloha i Honouliuli, Kokolo kēhau he makani no Līhu'e [...]

Search is made to the top of Ka'ala, the lower end of Pōka'ī is plainly seen. Love looks in from Honouliuli, The dew comes creeping, it is like the wind of Līhu'e [...] [Fornander 1919e:5(2):252]

3.5 Mele (Songs)

The following section draws from the Hawaiian art of *mele*, poetic song intended to create two styles of meaning.

Words and word combinations were studied to see whether they were auspicious or not. There were always two things to consider the literal meaning and the *kaona*, or 'inner meaning.' The inner meaning was sometimes so veiled that only the people to whom the chant belonged understood it, and sometimes so obvious that anyone who knew the figurative speech of old Hawai'i could see it very plainly. There are but two meanings: the literal and the *kaona*, or inner meaning. The literal is like the body and the inner meaning is like the spirit of the poem. [Pukui 1949:247]

The Hawaiians were lovers of poetry and keen observers of nature. Every phase of nature was noted and expressions of this love and observation woven into poems of praise, of satire, of resentment, of love and of celebration for any occasion that might arise. The ancient poets carefully selected men worthy of carrying on their art. These young men were taught the old *meles* and the technique of fashioning new ones. [Pukui 1949:247]

There exist a few *mele* that concern or mention Honouliuli. These particular *mele* may also be classified as *mele wahi pana* (songs for legendary or historic places). *Mele wahi pana* such as those presented here may or may not be accompanied by *hula* or *hula wahi pana* (dance for legendary or historic places). As the Hula Preservation Society notes:

Hula Wahi Pana comprise a large class of dances that honor places of such emotional, spiritual, historical, or cultural significance that chants were composed for them. Only the composers of the chants could know the deepest meanings, as they would be reflections of their feelings and experiences [...] Since the subjects of *Wahi Pana* compositions are extremely varied, their implementation through hula are as well. Coupled with the differences from one *hula* style and tradition to the next, *Hula Wahi Pana* can be exceptionally diverse. They can be done sitting or standing, with limited body movement or wide free movement; with or without the use of implements or instruments; with the dancers themselves chanting and/or playing an implement or being accompanied by the *ho'opa'a* [drummer and *hula* chanter (memorizer)]. Beyond the particular *hula* tradition, what ultimately determines the manner in which a *Hula Wahi Pana* is performed are the specific

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3.5.1 Mele no Kūali'i

The celebrated chief, Kūali'i, is said to have led an army of twelve thousand against the chiefs of Ko'olauloa with an army of twelve hundred upon the plains of Keahumoa (Fornander 1917b:4[2]:364-401) which according to McAllister (1933:107) are located west of Kīpapa Gulch in Waikele. Perhaps because the odds were so skewed, the battle was called off and the *ali'i* of Ko'olau ceded the districts of Ko'olauloa, Ko'olaupoko, Waialua, and Wai'anae to Kūali'i. When the *ali'i* of Kaua'i heard of this victory at Honouliuli they gave Kaua'i to Kūali'i as well and thus he became possessed of all the islands. The strife at Honouliuli was the occasion of the recitation of a song for Kūali'i by a certain Kapa'ahulani. This *mele* compares the king to certain places and objects in the islands, in this instance to the first breadfruit planted by Kaha'i at Pu'uloa, and a pig and a woman on Pu'uokapolei, possibly a reference to Kamapua'a and his grandmother.

In this *mele*, the cold winds of Kumomoku and Leleiwe, near Pu'uloa in Honouliuli are compared unfavorably to the god $K\bar{u}$:

Aole i like Ku.	Not like these are thou, Ku
Ia ua hoohali kehau,	[Nor] the rain that brings the land breeze,
Mehe ipu wai ninia la,	Like a vessel of water poured out.
Na hau o Kumomoku;	Nor to the mountain breeze of Kumomoku,
Kekee na hau o Leleiwi,	[The] land breeze coming round to Leleiwi.
Oi ole ka oe i ike	Truly, have you not known?
I ka hau kuapuu,	The mountain breezes, that double up your back,
Kekee noho kee, o Kaimohala,	[That make you] sit crooked and cramped at Kaimohala,
O Kanehili i Kaupea-la	The Kanehili at Kaupea?
Aole i like Ku.	Not like these are thou, Ku
[Fornander 1917b:4[2]:390–391]	

A later section of this *mele* also refers to Pu'uokapolei and makes mention of the famous blue *poi* of Honouliuli.

O Kawelo-e, e Kawelo-e,	O Kawelo! Say, Kawelo!
O Kaweloiki puu oioi,	Kawelokiki, the sharp-ponted hill,
Рии o Kapolei-e-	Hill of Kapolei.
Uliuli ka poi e piha nei-o Honouliuli.	Blue is the poi which appeases

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[the hunger] of Honouliuli.

[Fornander 1917b:4[2]:400–401]

3.5.2 Eia Mai Au 'o Makalapua

This particular *mele* pays homage to the royal train called *Lanakila*. In paying homage to this train, the *mele* also pays homage to its most honored and well-known passenger, Queen Lili'uokalani. This *mele* may also be understood as a protest song.

In analyzing this *mele*, cultural historian Kīhei de Silva notes that "Eia mai Au 'o Makalapua" is the second of three chants that make up $h\bar{o}$ 'alo i ka ihu o ka Lanakila (Three Train Chants for Lili 'uokalani). He adds that these songs, "when considered in chronological succession [...] add a Hawaiian dimension to the story of Benjamin Franklin (B.F.) Dillingham's Oahu Railway and Land Company (OR&L), a story that otherwise reads far too much like an early script of *How the West was Won*" (de Silva 2003). De Silva provides a chronology of B.F. Dillingham's rise to influence within Hawaiian political spheres, and his eventual founding and construction of the OR&L line. Dillingham also figures prominently within Honouliuli Ahupua'a (see Section 4.3.2). Dillingham's personal history is described by de Silva as follows:

- Arrived in Honolulu in 1865 as first mate of the *Whistler*.
- He promptly fell off a horse and broke his leg. When his ship left without him, he took a job as a clerk in a hardware store.
- 20 years later, in 1885, he had become Hawai'i's first big-time land speculator, buying and leasing vast tracts of property in West O'ahu in hopes of reselling it to housing and ag. interests.
- When no one, in fact, took interest in his largely inaccessible property, he decided to build a railroad through it.
- In 1888, Dillingham convinced Kalākaua to sign a franchise giving him three years to build a line running from Honolulu to the far end of Pearl River Lagoon. His critics called it 'Dillingham's Folly,' but Dillingham boasted that he would put his railroad into operation by Sept. 4, 1889, his 45th birthday.
- Things did not go well in the early months of construction, and in order to fulfill this boast, Dillingham had to fire up a miniscule saddle-tank engine named *Kauila*, hitch it to a flatcar that carried his passengers on jury-rigged seats, and send it bucking, wheezing, and spewing greasy foam down a mile-and-a-half of track that ended in the rice paddies of Pālama.
- Despite this farcical beginning, the construction of Dillingham's railroad then proceeded in rather impressive fashion: the line was opened to 'Aiea in November 1889, to Mānana in January 1890, to Honouliuli and 'Ewa Mill in June and July 1890, to Wai'anae in July 1895, to Waialua in June, 1898, and to Kahuku in January 1899. [de Silva 2003]

In 1890, as construction of the railway moved forward, B.F. Dillingham bought and shipped to Hawai'i a passenger coach named *The Pearl* and a locomotive named *General Valleho*. According to de Silva (2003), the *Pearl* was built in San Francisco and was "paneled in rich woods and

outfitted with plush chairs, velvet drapes, electric lights, a kitchen, a lānai with a striped canvas awning, and a new-fangled contraption called a flush toilet." The *General Valleho* was renamed the *Lanakila* by Dillingham:

[...] [He] gave it the number 45, a tribute to his 45th birthday boast and erstwhile victory in the rice paddies of Pālama. The Lanakila became Dillingham's 4th locomotive—after the Kauila, Leahi, and Ka'ala—and for many years it was regarded as the most attractive engine in the OR&L stable. Dillingham apparently wasted no time in hitching the Pearl to the Lanakila and using the pair as his wine-'em and dine-'em celebrity train, the vehicle in which he wooed financial and political support for his business ventures. [de Silva 2003]

As part of Dillingham's plans to woo the influential, he invited King Kalākaua on the inaugural ride on the *Lanakila*. Dillingham also insisted the luxury coach *Pearl* serve as the king's own royal car. De Silva (2003) notes it is "safe for us to assume that Queen Lili'u[okalani] rode in the Pearl when the *Lanakila* took her on the train rides." With the opening of the 'Ewa Mill station, Queen Lili'uokalani once again embarked on a journey on the *Lanakila*; this particular journey took her through "the lowlands of Honouliuli, and finally to the exposed coral plain of Pōlea on which the 'Ewa Mill Station was located" (de Silva 2003).

Eia mai au 'o Makalapua	Here I am, Makalapua
Hōʻalo i ka ihu o ka Lanakila.	Traveling where the Lanakila goes.
'O ke ku'e a ka hao a i Kūwili	The piston works at Kūwili
Ka hiona 'olu a'o Hālawa.	And down the pleasant descent of Hālawa.
Ua lawa ka 'ikena i ke awalau	Satisfying is the view of the lochs
Iā 'Ewa ka i'a hāmau leo.	Of 'Ewa, "land of the silent fish."
Ua piha ka uahi a i Mānana	The smoke rises at Mānana
Aweawe i ke kula o Waipi'o.	And streams along at Waipi'o.
I kai hoʻi au a Honouliuli	Then I reached the lowlands of Honouliuli
Ahuwale ke koʻa o Pōlea.	Where the corals of Polea lie exposed.
Haʻina ʻia mai ana ka puana	This is the conclusion of the song
Hōʻalo i ka ihu a ka Lanakila.	Of traveling where the Lanakila goes.
[de Silva 2003]	

De Silva (2003) provides a remarkable breakdown of this *mele*, delving into the subtext to reveal another layer of understanding, of *kaona*:

'Makalapua' shares [...] the sense of awesome efficiency and harmony [...] These are apparent in 'Makalapua's' description of the working of the train's piston at Kūwili, in the rising and billowing of steam at Mānana and Waipi'o, and especially in the sense of speed with which the mele whisks us from Honolulu to Pōlea in the space of its six, two-line verses. Efficiency and harmony, however, are not at the heart of 'Makalapua;' it is inspired and driven, instead, by *aloha 'āina*—love for

the land—and by $k\bar{u}\dot{e}$ ho ohui ' $\bar{a}ina$ —resistance to annexation. In my reading of the mele, the dominant imagery is that of flower-stringing. The train and track serve as the contemporary equivalent of lei needle and thread; with them, Lili'u sews a series of beloved place-names and place-associations into a lei of adornment and protection for Ke-awalau-o-Pu'uloa. Keawalauopu'uloa, the many-harbored sea of Pu'uloa, is the old name for Pearl Harbor. The cession of Pearl Harbor to America in return for sugar reciprocity was one of the hottest political issues of 'Makalapua's' day. Lili'u was absolutely opposed to any Keawalau deals; her brother, on the other hand, had regularly waved this bait at the American nose; he was even rumored, on his Nov. 1890 departure to San Francisco, to have harbored a hidden Pearl Harbor agenda. The key lines of 'Makalapua' are 'Ua lawa ka 'ikena i ke awalau / Iā 'Ewa ka i'ā hāmau leo [...] I kai ho'i au a Honouliuli / Ahuwale ke ko'a o Polea.' In my reading, these lines say: 'We hold to our knowledge of Keawalau, we are like its closed-mouthed pipi, its oysters; we will never give up the pearl that we contain; here at the shoreline of Honouliuli we normally silent fish reveal this deeply held conviction.' [de Silva 2003]

Section 4 Traditional and Historical Background

4.1 Pre-Contact to Early Post-Contact Period

4.1.1 Traditional Agricultural Resources

Various Hawaiian legends and early historical accounts indicate the *ahupua'a* of Honouliuli was once widely inhabited by pre-Contact populations, including the Hawaiian *ali'i*. This would be attributable for the most part to the plentiful marine and estuarine resources available at the coast, along which several sites interpreted as permanent habitations and fishing shrines have been located. Other attractive subsistence-related features of the *ahupua'a* include irrigated lowlands suitable for wetland taro cultivation, as well as the lower forest area of the mountain slopes for the procurement of forest resources. Handy and Handy (1972) report:

The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko'olau range. Between the valleys were ridges, with steep sides, but a very gradual increase of altitude. The lower parts of the valley sides were excellent for the culture of yams and bananas. Farther inland grew the '*awa* for which the area was famous. [Handy and Handy 1972:429]

In addition, breadfruit, coconuts, *wauke* (paper mulberry; *Broussonetia papyrifera*), bananas, and *olonā* (*Touchardia latifolia*) and other plants were grown in the interior. 'Ewa was known as one of the best areas to grow gourds and was famous for its *māmaki* (*Pipturus*). It was also famous for a rare taro called the $k\bar{a}\bar{i}$ o 'Ewa, which was grown in mounds in marshy locations (Handy and Handy 1972:471). The cultivation of this prized and delicious taro led to the saying:

Ua 'ai i ke kāī-koi o 'Ewa.

He has eaten the kaī-koi taro of 'Ewa.

 $K\overline{a}\overline{i}$ is O'ahu's best eating taro; one who has eaten it will always like it. Said of a youth of a maiden of 'Ewa, who, like the $k\overline{a}\overline{i}$ taro, is not easily forgotten.

[Pukui 1983:305].

Exploitation of the forest resources along the slopes of the Wai'anae Range—as suggested by E.S. and E.G. Handy—probably acted as a viable subsistence alternative during times of famine:

The length or depth of the valleys and the gradual slope of the ridges made the inhabited lowlands much more distant from the *wao*, or upland jungle, than was the case on the windward coast. Yet the *wao* here was more extensive, giving greater opportunity to forage for wild foods in famine time. [Handy and Handy 1972:469]

These upper valley slopes may have also been a significant resource for opportunistic quarrying of basalt for the manufacturing of stone tools. This is evidenced in part by the existence of a probable quarrying site (State Inventory of Historic Places [SIHP] # 50-80-12-4322) in Makaīwa Gulch at 152 m (500 ft) above mean sea level, west of the current project area (Hammatt et al. 1991).

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007

Subsequent to Western Contact in the area, the landscape of the 'Ewa Plain and Wai'anae slopes was adversely affected by the removal of the sandalwood and other trees, and the introduction of domesticated animals and new vegetation. Goats, sheep, and cattle were brought to the Hawaiian Islands by Vancouver in the early 1790s and allowed to graze freely about the land for some time after. L.A. Henke reports the existence of a longhorn cattle ranch in Wai'anae by at least 1840 (Frierson 1972:10). During this time, perhaps as early as 1790, exotic vegetation species were introduced to the area. These typically included vegetation best suited to a terrain disturbed by the logging of sandalwood forest and eroded by animal grazing. The following dates for the introduction of exotic vegetation are given by R. Smith and outlined by Frierson (1972:10–11):

- 1. 'early,' c. 1790: for the establishment of Prickly pear cactus, (*Opuntia tuna*), *Haole koa*, (*Leucaena leucocephala*) and Guava (*Psidium guajava*)
- 2. 1835-1840: Burmuda [sic] grass (Cynodon dactylon) and Wire grass (Eleusine indica)
- 3. 1858: Lantana (Lantana camara)

The *kiawe* tree (*Prosopis pallida*) was also introduced during this period, either in 1828 or 1837 (Frierson 1972:11).

4.1.2 Traditional Settlement Patterns

Early historical accounts of the general region typically refer to the more populated areas of the 'Ewa district, where missions and schools were established and subsistence resources were perceived to be greater. However, the presence of archaeological sites along the barren coral plains and coast of southwest Honouliuli Ahupua'a indicates pre-Contact and early historic populations also adapted to less inviting areas, despite the environmental hardships.

Oral traditions related to the 'Ewa line of chiefs recall battles and chiefly claims upon valuable territories. The rich resources of Pu'uloa—the fisheries in the lochs, the shoreline fishponds, the numerous springs, and the irrigated lands along the streams—made 'Ewa a prize for competing chiefs. Battles were fought for the 'Ewa lands, sometimes by competing O'ahu chiefs and invading chiefs from other islands.

'Ewa was a political center and home to many chiefs in its day. Oral accounts of *ali*'*i* recorded by Hawaiian historian Samuel Kamakau date back to at least the twelfth century:

The chiefs of Līhu'e [upland area in 'Ewa], Wahiawā, and Halemano on O'ahu were called $l\bar{o} \ ali'i$. Because the chiefs at these places lived there continually and guarded their *kapu*, they were called $l\bar{o} \ ali'i$ [from whom a 'guaranteed' chief might be obtained, *loa'a*]. They were like gods, unseen, resembling men. [Kamakau 1991b:40]

In the mid-eleventh century, Māweke, a direct lineal descendant of the illustrious Nanaulu, ancestor of Hawaiian royalty, was a chief of O'ahu (Fornander 1996:47). Keaunui, the second of his three sons, became the head of the powerful 'Ewa chiefs. Tradition tells of him cutting a navigable channel through the Pearl River using his canoe. Keaunui's son, Lakona, became the progenitor of the 'Ewa chiefs around 1400 (Fornander 1996:224–226). Chiefs within his line, the Māweke-Kumuhonua line, reigned until about 1520-1540, with their major royal center in Līhu'e in 'Ewa (Cordy 2002:24). Haka was the last chief of the Māweke-Kumuhonua line. He was slain by his men at the fortress of Waewae near Līhu'e (Fornander 1996:88; Kamakau 1991b:54).

Mā'ilikūkahi was born *ali'i kapu* (sacred chief) at the birthing stones of Kūkaniloko (Kamakau 1991b:53) and became $m\bar{o}'\bar{i}$ (king) of O'ahu between 1520-1540 (Cordy 2002:19). Mā'ilikūkahi was popular during his reign and was remembered for initiating land reforms that brought about peace, and for encouraging agricultural production, which brought about prosperity. He also prohibited the chiefs from plundering the *maka'āinana*, a prohibition that was punishable by death (Kamakau 1991b:55).

Upon consenting to become $m\bar{o}$ i at the age of 29, Mā'ilikūkahi was taken to Kapukapuākea Heiau at Pa'ala'akai in Waialua to be consecrated. Soon after becoming king, Mā'ilikūkahi was taken by the chiefs to live at Waikīkī. He was probably one of the first chiefs to live there, as the chiefs had previously always lived at Waialua and 'Ewa. Under his reign, the land divisions were reorganized and redefined (Pukui et al. 1974:113).

In reference to the productivity of the land and the population during Māʻilikūkahi's reign, Kamakau writes,

In the time of Mā'ili-kūkahi, the land was full of people. From the brow, lae, of Kulihemo to the brow of Maunauna in 'Ewa, from the brow of Maunauna to the brow of Pu'ukua [Pu'u Ku'ua] the land was full of chiefs and people. From Kānewai to Halemano in Wai'alua, from Halemano to Paupali, from Paupali to Hālawa in 'Ewa the land was filled with chiefs and people. [Kamakau 1991b:55]

Mā'ilikūkahi's peaceful reign was interrupted by an invasion which would change 'Ewa forever. Fornander describes the Battle of Kīpapa (to be paved [with the corpses of the slain]) at Kīpapa Gulch in Waipi'o Ahupua'a:

I have before referred to the expedition by some Hawaii chiefs, *Hilo-a-Lakapu*, *Hilo-a-Hilo-Kapuhi*, and *Punaluu*, joined by *Luakoa* of Maui, which invaded Oahu during the reign of *Mailikukahi*. It cannot be considered as a war between the two islands, but rather as a raid by some restless and turbulent Hawaii chiefs [...] The invading force landed at first at Waikiki, but, for reasons not stated in the legend, altered their mind, and proceeded up the Ewa lagoon and marched inland. At Waikakalaua they met *Mailikukahi* with his forces, and a sanguinary battle ensued. The fight continued from there to the Kipapa gulch. The invaders were thoroughly defeated, and the gulch is said to have been literally paved with the corpses of the slain, and received its name 'Kipapa,' from this circumstance. *Punaluu* was slain on the plain which bears his name, the fugitives were pursued as far as Waimano, and the head of *Hilo* was cut off and carried in triumph to Honouliuli, and stuck up at a place still called *Poo-Hilo*. [Fornander 1996:89–90]

Power shifted between the chiefs of different districts from the 1500s until the early 1700s, when Kūali'i achieved control of all of O'ahu by defeating the Kona chiefs. He then defeated the 'Ewa chiefs and expanded his control on windward Kaua'i. Peleihōlani, the heir of Kūali'i, gained control of O'ahu about 1740, and later conquered parts of Moloka'i. He ruled O'ahu until his death in about 1778 when Kahahana, of the 'Ewa line of chiefs, was selected as the ruler of O'ahu (Cordy 2002:24–41). Somewhere between 1883 and 1885, Kahahana was killed by Kahekili of Maui. The subsequent rebellion amongst the chiefs resulted in a near genocide of the monarchy line on O'ahu. Oral reports also tell of the stream of Hō'ai'ai (Hō'ae'ae) in the *ahupua'a* immediately east of Honouliuli, choked with the bodies of the slain (Fornander 1996:224–226). Kahekili and the Maui

chiefs retained control of O'ahu until the 1790s. Kahekili died at Waikīkī in 1794. His son, Kalanikūpule, was defeated the following year at the Battle of Nu'uanu by Kamehameha (Kamakau 1992:376–377). Thus, the supremacy of the 'Ewa chiefs came to a final end.

4.2 Early Historic Period

4.2.1 Observations of Early Explorers and Visitors

Captain James Cook arrived in the Hawaiian Islands in 1778, and ten years later the first published description of Pearl Harbor appeared. Captain Nathaniel Portlock, observing the coast of Honolulu for Great Britain, recorded the investigation of a "fine, deep bay running well to the northward" around the west point of "King George's Bay" in his journal (Portlock 1789:74). Portlock's description matches the entire crescent-shaped shoreline from Barbers Point to Diamond Head.

Captain George Vancouver made three voyages to the Hawaiian Islands between 1792 and 1794. In 1793, the British captain recorded the name of the harbor opening as "O-poo-ro-ah" (Pu'uloa) and sent several boats across the sand bar to venture into the harbor proper (Vancouver 1798:884). The area known as "Pu'u-loa" was comprised of the eastern bank at the entrance to Pearl River. George Vancouver anchored off the entrance to West Loch in 1793, and the Hawaiians told him of the area at "a little distance from the sea, [where] the soil is rich, and all the necessaries of life are abundantly produced" (Vancouver 1798 in Sterling and Summers 1978:36). Mr. Whitbey, one of Vancouver's crew, observed, "from the number of houses within the harbor it should seem to be very populous; but the very few inhabitants who made their appearance were an indication of the contrary" (Vancouver 1798 in Sterling and Summers 1978:36).

Captain Vancouver sailed by Kalaeloa (Barbers Point) in 1792, and recorded his impression of the small coastal village of Kūalaka'i and the arid Honouliuli coast:

The point is low flat land, with a reef round it [...] Not far from the S.W. point is a small grove of shabby cocoa-nut trees, and along these shores are a few fishermen's huts. [Vancouver 1798:1:167]

[...] from the commencement of the high land to the westward of Opooroah [Pu'uloa], was composed of one barren rocky waste, nearly destitute of verdure, cultivation or inhabitants, with little variation all the way to the west point of the island. [Vancouver 1798:2:217]

This tract of land was of some extent but did not seem to be populous, nor to possess any great degree of fertility; although we were told that at a little distance from the sea, the soil is rich, and all necessaries of life are abundantly produced. [Vancouver 1798:3:361–363]

Henry Barber was an English sea captain who traveled around the Hawaiian Islands during 1794 to 1807. Barber is the namesake for the common place name known today as Barbers Point, traditionally Kalaeloa.

In 1795 he left China in the ship Arthur for the northwest going again by way of Australia. In the following summer he was trading along the Alaskan and British Columbian coast. In Sept. 1796, he left Nootka Sound for Canton via 'the Island.' The Arthur called in at Honolulu at the end of October for provisions and re-fittings.

At 6 p.m. on October 31, 1796, Barber sailed the Arthur out of Honolulu harbor for Kauai to get a supply of yams. Two hours later the brig hit a shoal about an acre in extent with 12 feet of water over it, and close to the breakers. The shoal was probably a little to the westward of Pearl Harbor. But as Judge Howay says, how the skipper steered his brig into such a position is a mystery. [Sterling and Summers 1978:40]

Kamakau recalls the same incident as follows:

In October, 1796, a ship [*Arthur*, under Henry Barber] went aground at Kalaeloa, Oahu. This ship had visited the island on several occasions during the rule of Kalani-ku-pule. This was the first time a foreign ship had grounded on these shores, Kamehameha was on Hawaii, but Young had remained on Oahu. All the men on the ship came ashore at night in their boats. At daylight when the ship was seen ashore Ku-i-helani placed a ban on the property of the ship and took care of the foreigners. Hawaiian divers recovered the valuables, and they were given over to the care of Ku-i-helani, but part were given by Captain Barber to the men who had recovered them. [Kamakau 1992:174]

During the first decades of the nineteenth century, several western visitors described the 'Ewa landscape near Pearl Harbor. Archibald Campbell, an English sailor, spent some time in Hawai'i during 1809-1810. He had endured a shipwreck off the Island of Sannack on the northwest coast of America. As a result, both his feet became frostbitten and were amputated. He spent over a year recuperating in the Hawaiian Islands. His narrative is considered noteworthy because it describes life in the 'Ewa District before the missionaries arrived. During part of his stay, he resided with King Kamehameha I, who granted him 60 acres in Waimano Ahupua'a in 1809. Campbell described his land:

In the month of November the king was pleased to grant me about sixty acres of land, situated upon the Wymummee [traditional Hawaiian name for Pearl River], or Pearl-water, an inlet of the sea about twelve miles to the west of Hanaroora [Honolulu]. I immediately removed thither; and it being Macaheite time [Makahiki], during which canoes are tabooed, I was carried on men's shoulders. We passed by footpaths winding through an extensive and fertile plain, the whole of which is in the highest state of cultivation. Every stream was carefully embanked, to supply water for taro beds. Where there was no water, the land was under crops of yams and sweet potatoes. The roads and numerous houses are shaded by cocoanut trees, and the sides of the mountains are covered with wood to a great height. We halted two or three times, and were treated by the natives with the utmost hospitality. My farm, called Wymannoo [Waimano], was upon the east side of the river, four or five miles from its mouth. Fifteen people with their families resided upon it, who cultivated the ground as my servants. There were three houses upon the property; but I found it most agreeable to live with one of my neighbours, and get what I wanted from my own land. This person's name was William Stevenson a native of Borrowstouness. [Campbell 1967:103–104]

Of the Pearl River area, Campbell wrote,

Wymumme, or Pearl River, lies about seven miles farther to the westward. This inlet extends ten or twelve miles up the country. The entrance is not more than a quarter of a mile wide, and is only navigable for small craft; the depth of water on the bar, at the highest tides, not exceeding seven feet; farther up it is nearly two miles across. There is an isle in it, belonging to Manina, the king's interpreter, in which he keeps a numerous flock of sheep and goats. [Campbell 1967:114]

The flat land along shore is highly cultivated; taro root, yams, and sweet potatoes, are the most common crops; but taro forms the chief object of their husbandry, being the principal article of food amongst every class of inhabitants. [Campbell 1967:115]

Botanist F.J.F. Meyen visited Hawai'i in 1831 and writes of the abundant vegetation described by Campbell in the vicinity of Pearl Harbor. His account of large stretches of cultivated land surrounding Pearl Harbor suggests the presence of a viable population settlement in the area.

At the mouth of the Pearl River the ground has such a slight elevation that at high tide the ocean encroaches far into the river, helping to form small lakes which are so deep, that the long boats from the ocean can penetrate far upstream. All around these water basins the land is extraordinarily low but also exceedingly fertile and nowhere else on the whole island of Oahu are such large and continuous stretches of land cultivated. The taro fields, the banana plantations, the plantations of sugar cane are immeasurable. [Meyen 1981:63]

However, a contrasting picture of 'Ewa is recorded by the missionary William Ellis in 1823-1824, of the 'Ewa lands away from the coast:

The plain of Eva is nearly twenty miles in length, from the Pearl River to Waiarua [Wailua], and in some parts nine or ten miles across. The soil is fertile, and watered by a number of rivulets, which wind their way along the deep water-courses that intersect its surface, and empty themselves into the sea. Though capable of a high state of improvement, a very small portion of it is enclosed or under any kind of culture, and in travelling across it, scarce a habitation is to be seen. [Ellis 1963:7]

4.2.2 Missionaries

The first company of Protestant missionaries from America, part of the American Board of Commissioners of Foreign Missions (ABCFM), arrived in Honolulu in 1820. They quickly established churches in Kona on Hawai'i, Waimea on Kaua'i, and Honolulu on O'ahu. Although the missionaries were based in Honolulu, they traveled around the islands intermittently to preach to rural Native Hawaiians and to check on the progress of English and Bible instruction schools set up by local converts.

In 1828, the missionary Levi Chamberlain (1956:39–40) made a circuit of O'ahu, stopping wherever there was a large enough population to warrant a sermon or a school visit. In his trek through the 'Ewa District from Wai'anae, he stopped at Waimānalo, an '*ili* in Honouliuli, on the western border of 'Ewa. At around 11 o'clock the next day, on a Saturday, Chamberlain and his companions set out toward the east, reaching Waikele at three or four o'clock. The group did not

stop in Hō'ae'ae, suggesting that the population was too small for a school, but Waikele had two schools, an obviously larger population than Hō'ae'ae. In fact, Chamberlain decided to stay in Waikele until the next day, the Sabbath, and preach to the Native Hawaiians who lived there. A crowd of 150 to 200 gathered for the sermon. The next day at six o'clock they set out for the village of Waipi'o, which had one school. They left Waipi'o at about 8:30, and walked to Waiawa, where there were two schools. Around ten o'clock, they began their circuit again, stopping only in the *ahupua'a* of Kalauao in the 'Ewa District before they reached Moanalua Ahupua'a in the Kona District. The account does not give much information on the surroundings, but does indicate the relatively populated areas of 'Ewa, in western Honouliuli, Waikele, Waipi'o, Waiawa, and Kalauao, and the time it took to travel by foot along the trails across the 'Ewa District.

The first mission station in 'Ewa was established in 1834 at Kalua'aha near Pearl Harbor. Charles Wilkes, of the U.S. Exploring Expedition visited the missionary enclave at Honouliuli town in 1840.

At Ewa, Mr. Bishop has a large congregation. The village comprises about fifty houses, and the country around is dotted with them [...] The natives have made some advance in the arts of civilized life; there is a sugar-mill which, in the season, makes two hundred pounds of sugar a day [...] In 1840, the church contained nine hundred members, seven hundred and sixty of whom belonged to Ewa, the remainder to Waianae; but the Catholics have now established themselves at both these places, and it is understood are drawing off many from their attendance on Mr. Bishop's church. [Wilkes 1970:80–81]

4.2.3 Honouliuli Taro Lands

In early historic times, the population of Honouliuli was concentrated at the western edge of West Loch in the vicinity of Kapapapuhi Point in the "Honouliuli Taro Lands." This area was clearly a major focus of population due to the abundance of fish and shellfish resources in close proximity to a wide expanse of well-irrigated bottomland suitable for wetland taro cultivation. Dicks et al. (1987:78–79) concludes, on the basis of 19 radiocarbon dates and three volcanic glass dates that "Agricultural use of the area spans over 1,000 years."

Undoubtedly, Honouliuli was a locus of habitation for thousands of Hawaiians. Prehistoric population estimates are a matter of some debate but it is worth pointing out that in the earliest mission census (1831-1832) the land of Honouliuli contained 1,026 men, women, and children (Schmitt 1973:19). It is not clear whether this population relates to Honouliuli Village or district but the village probably contained the vast majority of the district's population. The nature of the reported population structure for Honouliuli (less than 20% children under 12 years of age) and the fact that the population decreased more than 15% in the next four years (Schmitt 1973:22) suggests the pre-Contact population of Honouliuli Village may well have been significantly greater than it was in the 1830s.

4.2.4 The Māhele and the Kuleana Act

During the Māhele of 1848, 99 individual land claims in the *ahupua* 'a of Honouliuli were registered and awarded by King Kamehameha III. No *kuleana* land claims were made for land within the current project area or vicinity. The vast majority of the Land Commission Awards (LCA) were located in Honouliuli near the taro lands of the '*ili* of Pu'uloa and the Pu'uloa Salt

Works. The largest award (Royal Patent 6071, LCA 11216, ' $\bar{A}pana$ [parcel] 8) in Honouliuli Ahupua'a was granted to Miriam Ke'ahi-Kuni Kekau'onohi on January 1848 (Native Register 1848). Kekau'onohi acquired a deed to all unclaimed land within the *ahupua'a*, including a total of 43,250 acres encompassing the present project area.

Samuel Kamakau relates the following about Kekau'onohi as a child:

Kamehameha's granddaughter, Ke-ahi-Kuni Ke-kau-'onohi [...] was also a tabu chiefess in whose presence the other chiefesses had to prostrate and uncover themselves, and Kamehameha would lie face upward while she sat on his chest. [Kamakau 1992:208–209]

Kekau'onohi was one of Liholiho's (Kamehameha II's) wives, and after his death, she lived with her half-brother, Luanu'u Kahala'i'a, who was governor of Kaua'i (Kamakau 1992:346). Subsequently, Kekau'onohi ran away with Queen Ka'ahumanu's stepson, Keli'i-ahonui, and then became the wife of Chief Levi Ha'alelea (Kamakau 1992:280). Upon her death on 2 June 1851, all her property passed to her husband and his heirs. When Levi Ha'alelea died, the property went to his surviving wife, who in turn leased it to James Dowsett and John Meek in 1871 for stock running and grazing.

4.2.5 Population Decline

At Contact, the most populous *ahupua a* on the island of O'ahu was Honouliuli, with the majority of the population centered on Pearl Harbor. In 1832, a missionary census of Honouliuli recorded the population as 1,026, which represented 25% of the total 'Ewa district population of 4,015 (Schmitt 1973:19).

Beginning with the time of Western Contact, however, Hawaiian populations were introduced to many virulent western diseases which began to decimate the native populations. Thus, four years following the 1832 census, the 'Ewa population had dropped to 3,423 (Schmitt 1973:9, 36), "a decrease of 592 in 4 years" (Ewa Station Reports 1836). Reverend Lowell Smith noted,

The people of Ewa are a dying people. I have not been able to obtain an exact count of all the deaths & births since the last general meeting. But my impression is that there have been as many as 8 or 10 deaths to one birth. I have heard of but 4 births on Waiawa during the year, & all of these children are dead. I have attended about 20 funerals on that one land, & 16 of these were adults. [Ewa Station Reports 1836]

Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. In 1853, the population of 'Ewa and Wai'anae combined was 2,451 people. In 1872, it was 1,671 (Schmitt 1968:71). The inland area of 'Ewa was probably abandoned by the mid-nineteenth century due to population decline and consolidation of the remaining people in town.

4.3 Mid- to Late 1800s

4.3.1 Ranching in Lower Honouliuli

In 1871, John Coney rented the lands of Honouliuli to James Dowsett and John Meek, who used the land for cattle grazing. In 1877, James Campbell purchased most of Honouliuli Ahupua'a, except the *'ili* of Pu'uloa, for a total of \$95,000. He then drove off 32,347 head of cattle belonging

to Dowsett, Meek, and James Robinson, and constructed a fence around the outer boundary of his property (Bordner and Silva 1983:C-12), as shown in Figure 9. He let the land rest for one year and then began to restock the ranch, so that he had 5,500 head after a few years (Dillingham 1885 in Frierson 1972:14).

In 1881, a medical student providing smallpox vaccinations around the island wrote about Campbell's property which was called the Honouliuli Ranch.

I took a ride over the Honouliuli Ranch which is quite romantic. The soil is a deep, reddish loam, up to the highest peaks, and the country is well-grassed. Springs of water abound. The 'ilima, which grows in endless quantities on the plains of this ranch, is considered excellent for feeding cattle; beside it grows the indigo plant, whose young shoots are also good fodder, of which the cattle are fond. Beneath these grows the manieizie grass, and Spanish clover and native grasses grow in the open; so there is abundant pasturage of various kinds here. As I rode, to the left were towering mountains and gaping gorges; ahead, undulating plains, and to the right, creeks and indentations from the sea. A wide valley of fertile land extends between the Nuuanu Range and the Waianae Mountains and thence to the coast of Waialua. There are many wild goats in this valley, which are left more or less undisturbed because they kill the growth of mimosa bushes, which would otherwise overrun the country and destroy the pasturage for cattle. [Briggs 1926:62-63]

The following excerpts were also written in 1880-1881, describing Honouliuli Ranch:

Acreage, 43,250, all in pasture, but possessing fertile soils suitable for agriculture; affords grazing for such valuable stock. The length of this estate is no less than 18 miles. It extends to within less than a mile of the sea coast, to the westward of the Pearl River inlet [...] There are valuable fisheries attached to this estate [...] [Bowser 1880:489]

From Mr. Campbell's veranda, looking eastward, you have one of the most splendid sights imaginable. Below the house there are two lochs, or lagoons, covered with water fowl, and celebrated for their plentiful supply of fish, chiefly mullet [...] Besides Mr. Campbell's residence, which is pleasantly situated and surrounded with ornamental and shade trees, there are at Honouliuli two churches and a school house, with a little village of native huts. [Bowser 1880:495]

Most of Campbell's lands in Honouliuli were used exclusively for cattle ranching. At that time, one planter remarked that "the country was so dry and full of bottomless cracks and fissures that water would all be lost and irrigation impracticable" (Ewa Plantation Company 1923:6–7). In 1879, Campbell brought in a well-driller from California to search the 'Ewa plains for water, and the well, drilled to a depth of 240 ft near Campbell's home in 'Ewa, resulted in "a sheet of pure water flowing like a dome of glass from all sides of the well casing" (*The Legacy of James Campbell* n.d. in Pagliaro 1987:3). Following this discovery, plantation developers and ranchers drilled numerous wells in search of the valuable resource.





Figure 9. 1880s photograph of James Campbell's residence on the 'Ewa Plain (Hawai'i State Archives)

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu

4.3.2 Oahu Railway and Land Company (OR&L)

In 1886, Campbell and B.F. Dillingham put together the "Great Land Colonization Scheme," which was an attempt to sell Honouliuli land to homesteaders (Thrum 1887:74). This homestead idea failed. The failure was attributed to the lack of water and the distance from 'Ewa to Honolulu. The water problem was solved by the drilling of artesian wells, and Dillingham decided the area could be used instead for large-scale cultivation (Pagliaro 1987:4). The transportation problem was to be solved by the construction of a railroad, which Dillingham soon began to finance under the company name Oahu Railway and Land Company (OR&L).

During the last decade of the nineteenth century, the railroad reached from Honolulu to Pearl City in 1890, Wai'ānae in 1895, Waialua Plantation in 1898, and Kahuku in 1899 (Kuykendall 1967:III, 100). This railroad line eventually ran across the center of the 'Ewa Plain at the lower boundary of the sugar fields (Figure 10). To attract business to his new railroad system, Dillingham subleased all land below 200 ft to William Castle, who in turn sublet the area to the newly formed Ewa Plantation Company (Frierson 1972:15). Dillingham's Honouliuli lands above 200 ft that were suitable for sugarcane cultivation were sublet to the Oahu Sugar Company. Throughout this time, and continuing into modern times, cattle ranching continued in the area, and Honouliuli Ranch, established by Dillingham, was the "fattening" area for the other ranches (Frierson 1972:15).

Operations at the OR&L began to slow down in the 1920s, when electric streetcars were built for public transportation within the city of Honolulu and automobiles began to be used by families for transportation outside the city (Chiddix and Simpson 2004:185). The build-up to World War II turned this decline around, as the U.S. military utilized the OR&L lines to transport materials to build defense projects around the island. Historians have noted that one of the most serious mistakes made by the Japanese in their 1941 attack on Pearl Harbor was their decision not to bomb the railway infrastructure. Soon after the attack, the OR&L operated 24 hours a day, transporting war materials and troops from Honolulu to the new and expanded army, naval, and air bases. The huge navy base at Pearl Harbor had its own rail lines that connected to the OR&L rail lines.

In August 1945 the war ended, and so did OR&L's heyday as a military transport line.

She had served her country well and proudly during the war, but operating roundthe-clock on what little maintenance could be squeezed in, had taken a prodigious hit on the locomotives and track. Traffic stayed steady for a short time, but soon dropped precipitously as soldiers and sailors went home, military posts were shrunk or razed, and civilians could again get tires, gasoline and new cars. [Chiddix and Simpson 2004:257]

There was no choice but to abandon the OR&L main line, and in 1946 Walter F. Dillingham, son of B.F. Dillingham, wrote,

The sudden termination of the war with Japan changed not only the character of our transportation, but cut the freight tonnage to a third and the passenger business to a little above the pre-war level. With the increased cost of labor and material and the shrinkage in freight tonnage and passenger travel, it was definite that the road could not be operated as a common carrier. With no prospect of increased tonnage, and the impossibility of increasing rates against truck competition, your management



Figure 10. 1890 photograph of Pearl Harbor with OR&L railroad tracks along the coast (Honolulu Advertiser Archives)

has applied to the Interstate Commerce for authority to abandon its mainline. [Chiddix and Simpson 2004:257]

After the war, most of the 150 miles or more of OR&L track were pried up, locomotives were sold to businesses on the U.S. mainland, and railway cars were scrapped. In 1947, the U.S. Navy took over a section of the OR&L track for their own use, to transport bombs, ammunition, and torpedoes from the ammunition magazines at Lualualei, West Loch in Pearl Harbor, and Waikele on OR&L's Wahiawā Branch to Pearl Harbor Naval Base (Treiber 2005:25–26). The track to Waipahu was abandoned in the 1950s, but the line from the magazines in Lualualei to the wharves in West Loch at Pearl Harbor remained open until 1968. Additionally, the still- existing OR&L rail line through Honouliuli has been placed on the National Register of Historic Places (Site 50-80-12-9714).

4.3.3 The Sugar Plantations of 'Ewa

Although sugarcane was already being grown as long ago as the early 1800s, the industry revealed its economic potential in 1879 when the first artesian well was drilled in 'Ewa (Ellis 1995:22). The availability of subsurface water resources enabled greater irrigation possibilities for expanding plantations besides the use of water diversions from the surrounding stream systems. This prompted the drilling of many other wells throughout the Hawaiian Islands, thereby commencing the Hawai'i sugar plantation era. By the early 1900s, all of the main Hawaiian Islands had land devoted to sugarcane production.

Agricultural field systems, railroads, and residential areas in 'Ewa were developed by three sugarcane companies, the Ewa Plantation Company, located largely in the *ahupua* 'a of Honouliuli and Hō'ae'ae in the western section of 'Ewa; the Oahu Sugar Company, extending in the areas upland of the Ewa Plantation Company in central 'Ewa, including a portion of the uplands of Waiawa; and the Honolulu Plantation Company, with fields extending through Mānana to Hālawa in the eastern section of 'Ewa.

4.3.3.1 The Ewa Plantation Company

The Ewa Plantation Company was incorporated in 1890 for sugarcane cultivation (Figure 11). The first crop, 2,849 tons of sugar, was harvested in 1892. The Ewa Plantation Company was the first all-artesian plantation, and it gave an impressive demonstration of the part artesian wells were to play in the later history of the Hawaiian sugar industry (Kuykendall 1967:III, 69). As a means to generate soil deposition on the coral plain and increase arable land in the lowlands, the Ewa Plantation Company installed ditches running from the lower slopes of the mountain range to the lowlands. When the rainy season began, they plowed ground perpendicular to the slope so that soil would be carried down the drainage ditches into the lower coral plain. After a few years, about 373 acres of coral wasteland were reclaimed in this manner (Immisch 1964:3). By the 1920s, Ewa Plantation Company was generating large profits and was the "richest sugar plantation in the world" (*Paradise of the Pacific*, December 1902:19–22 in Kelly 1985:171). Figure 11 is an aerial shot taken ca. 1925.

During the twentieth century, the Ewa Plantation Company continued to grow and, by the 1930s, encompassed much of the eastern half of Honouliuli Ahupua'a. This growth impelled the creation of plantation villages to house the growing immigrant labor force working the fields. After the outbreak of World War II, which siphoned off much of the plantation's manpower, along with



Figure 11. Ewa Plantation Company sugar cane fields, Filipino Camp area, cs. 1925 (University of Hawai'i at Mānoa)

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the changeover to almost complete reliance on mechanical harvesting in 1938, there was little need for the large multi-racial (Japanese, Chinese, Okinawan, Korean, Portuguese, Spanish, Hawaiian, Filipino, European) labor force that had characterized most of the early history of the plantation. The Oahu Sugar Company took control over the Ewa Plantation lands in 1970 and continued operations until 1995, when they decided to shut down sugarcane production in the combined plantation areas (Dorrance and Morgan 2000:45, 50).

During the subsequent decades of the twentieth century, sugarcane operations in 'Ewa phased out and, more recently, former cane lands have been rezoned for residential development. Structures in the area of the former plantation villages have fallen into disrepair or have been demolished. However, portions of the area including Varona Village, Tenney Village, and Renton Village have been designated the 'Ewa Villages Historic District (SIHP # 50-80-12-9786), which has been nominated for National Historic Landmark status. The Oahu Sugar Company took control over the Ewa Plantation lands in 1970 and continued operations into the 1990s.

4.3.3.2 The Oahu Sugar Company and the Waiahole Ditch

In 1889, Benjamin Dillingham organized the OR&L Company which connected the outlying areas of O'ahu to Honolulu. By 1890, the railroad reached from Honolulu to Pearl City and continued on to Wai'anae in 1895, to Waialua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:100).

In 1897, B.F. Dillingham established the Oahu Sugar Company (OSC) on 12,000 acres leased from the estates of John Papa 'Ī'ī, Bishop, and Robinson. The Oahu Sugar Company had over 900 field workers, composed of 44 Hawaiians, 473 Japanese, 399 Chinese, and 57 Portuguese. The first sugar crop was harvested in 1899, ushering in the sugar plantation era in Waipahu (Ohira 1997).

Prior to commercial sugar cultivation, these lands were described as being "of near desert proportion until water was supplied from drilled artesian wells and the Waiahole Water project" (Condé and Best 1973:313). Dillingham had successfully promoted the Ewa Plantation Company in 1890; the sprawling sugar company was just south of and adjacent to the OSC. Artesian wells had converted those arid 'Ewa lands into a thriving plantation, and Dillingham recognized the same potential in the northern area.

Water to irrigate the upper cane fields was initially pumped to levels of 500 ft by some of the "largest steam pumps ever manufactured" (Dorrance and Morgan 2000:49). The expense of pumping water to the high elevations of the plantation led to the proposal to transport water from the windward side of the Ko'olau Mountains. The Waiahole Water Company was formally incorporated in 1913 and was originally a subsidiary of the Oahu Sugar Company. The Waiahole Ditch was designed by engineer Jorgen Jorgensen, with recommendations by engineer J.B. Lippencott and assisted by W.A. Wall. The original system, when completed, included 27 tunnels connecting with 37 stream intakes on the north side of the Ko'olau, with the main bore through Waiāhole Valley, then connecting it to the 14 tunnels on the southern side of the Ko'olau at Waiawa, and thence by ditch westward to Honouliuli, covering a total of 13.6 km (Condé and Best 1973:37). Upon its completion in 1916, the Waiahole Ditch was 35 km (21.9 miles) long and cost \$2.3 million. The 32 million gallons of daily water enabled the Oahu Sugar Company to grow to "some 20 square miles [...] ranging in elevation from 10 ft at the Waipio Peninsula [...] to 700 ft

at the Waiahole Ditch" (Condé and Best 1973:313). The ditch system, with some modifications, is still in use. It is included on the state inventory of historic places as SIHP # 50-80-09-2268.

This ditch complex first passed through Hō'ae'ae, bringing much needed water to the area. Kluegel describes the area:

West of Waikakalaua Gulch, through Hoaeae and to the upper boundary of Oahu Plantation in Honouliuli, the conduit consists of 12,650 feet of cement-lined ditches, and three redwood pipes 5 feet in diameter, having an aggregate length of 2,830 feet. [Kluegel 1917:96]

The Waiahole Water Co. has taken over from the Oahu Sugar Co. the Ahrens Ditch in Waiawa, the Kipapa Ditch, the Waikakalaua Ditch in Waipio, and the Hoaeae Ditch. Two redwood pipes having a total length of 1,223 feet have been laid across two gulches on the line of Hoaeae Ditch, cutting out 21/4 miles of ditch. The water delivered by the Waiahole System is chiefly used on newly planted cane on land above the lift of the pumps. [Kluegel 1917:107]

The Waiahole Ditch System crossed through the western portion of the present project area.

Dillingham's *mauka* lands in western Honouliuli that were unsuitable for commercial sugar production remained pasture for grazing livestock. From 1890 to 1892, the Ranch Department of the OR&L Company desperately sought water for their herds of cattle, tapping plantation flumes and searching for alternative sources of water. Ida von Holt shared this account of her husband Harry's (Superintendent of the OR&L Ranch Department) search for water in the foothills of the Wai'anae Range:

One of those places is on the old trail to Pālehua, and had evidently been a place of which the Hawaiians had known, for its name is Kalo'i (the taro patch), and even in dry weather water would be standing in the holes made by the cattle, as they tried to get a drop or two. [von Holt 1985:136]

The spring was located along the upper slopes of the southern face of Kalo'i Gulch. A second account is given of the discovery of spring water in an area over the ridge on the north side of Kalo'i Gulch:

Shouting to the men to come over with their picks and shovels, he [Harry von Holt] soon got them busy clearing away lots of small stones and earth. Almost at once they could see that there were evidences of a paved well, and at about three feet down they came upon a huge flat rock, as large around as two men could span with their arms. Digging the rock loose and lifting it to one side, what was their astonishment to find a clear bubbling spring! [von Holt 1985:138]

Following the discovery, two old Hawaiians began to explain to Von Holt about the spring:

Finally he [Harry von Holt] got them to explain that the spring, called 'Waihuna' (Hidden Spring) had been one of the principal sources of water for all that country, which was quite heavily populated before the smallpox epidemic of 1840 [...] A powerful Kahuna living at the spring had hidden it before he died of the smallpox, and had put a curse on the one who disturbed the stone, that he or she would surely die before a year was out. [von Holt 1985:138–140]

4.4 1900s

4.4.1 The U.S Military Development of Pearl Harbor

In 1876, the Reciprocity Treaty between the United States and the Kingdom of Hawai'i concluded with the provision that Hawai'i would not "lease or relinquish sovereignty to another country or any harbor, etc." In 1887, the treaty was renewed and amended and allowed the United States the "exclusive right to enter the harbor of Pearl River, in the Island of Oahu, and to establish and to maintain there a coaling and repair station for the use of vessels of the United States" (Judd 1971:128).

After Hawai'i became a territory of the United States in 1899, a Pacific base that could be used as a staging area for the Spanish-American war began to be developed. Early in the twentieth century, the U.S. Government began acquiring the coastal lands of 'Ewa for development of a naval base at Pearl Harbor. In 1901, the U.S. Congress formally ratified annexation of the Territory of Hawai'i, and the first 1,356.01 acres of Pearl Harbor land were transferred to U.S. ownership. The U.S. Navy began a preliminary dredging program in 1901, which created a 30-ft-deep entrance channel measuring 200 ft wide and 3,085 ft long. In 1908, money was appropriated for 5 miles of entrance channel dredged to an additional 35 ft down (Downes 1953) (Figure 12). Funding for the construction of dry docks and other support facilities was also approved in 1908. In 1909, the government appropriated the entire Waipi'o peninsula from the 'Ī'ī estate for the Pearl Harbor Naval Station and Shipyard.

Additional dredging to deepen and widen the channel was conducted in the 1920s. In 1931, the Navy built an ammunition depot at West Loch on a 213-acre parcel it had bought from the Campbell Estate. Construction of a new depot in Lualualei Valley and at West Loch Harbor began in 1931.

In the early 1930s, the U.S. Navy leased 700 acres of the Campbell Estate to build Ewa Field in Honouliuli, a base with a mooring mast for Navy dirigibles. Although the mast was completed, the program was abandoned before the *Akron*, the airship designated for the mast, was built. In 1937, 18 miles of roads were built in the coastal Honouliuli area, and in 1939-1940 the U.S. bought 3,500 acres of land in this area (Landrum et al 1997:62–67), to build several other military camps and installations, including Barbers Point Naval Air Station, at the site of the old mooring mast.

4.4.2 History of Camp Malakole

The wartime history of Camp Malakole (1940–1946) has been well described by Robert H. Albert (1980). The Camp Malakole Military Reservation, also known as the Honouliuli Military Reservation (Malakole Campsite), included 30 ha (75.01 acres) acquired by the Secretary of War in the late 1930s. In 1939, the area was chosen as a firing range for the Sixty-Fourth Coast Artillery (AA) Regiment, stationed out of Fort Shafter (Albert 1980:303). Under the command of Colonel Charles W. Wing, the regiment cleared the land and set up six batteries along the coast (Bennett 2003:50).

The camp was selected to be the base of the 251st Coast Artillery (Anti-Aircraft) Regiment on 16 September 1940. This camp was to function as a defensive gun and firing position sector for the regiment. Based out of California, this unit was the first National Guard Unit to be ordered outside the continental United States during peace time (Albert 1980:303). By the end of 1940, the



Figure 12. Dredging in Pearl Harbor ca. 1908 (Hawai'i State Archives)

soldiers stationed at Camp Malakole spent half the day setting up the field defensive gun and half the day building the camp (Albert 1980:304) (Figure 13 and Figure 14). The camp construction was officially finished in February 1941 (Bennett 2003:55).

The camp was meant to house approximately 2,000 men and included 48 barracks buildings, 12 mess halls, nine magazines and storage houses, five officers' quarters, seven showers, latrines, dispensary, officers' mess, headquarters buildings, fire house, post office, regimental day room, movie theater, laundry, car repair shop, gas station, guard houses, and photo lab (Bennett 2003:55).

By 1941, the imminent threat of war was becoming more apparent. During the first half of 1941, the population of the camp grew from 1,200 to 2,400. On 7 December 1941, the soldiers stationed at Camp Malakole had just come back from a week-long island alert and had placed the guns and ammunition in storage bunkers (Albert 1980:304). Nevertheless, a hasty defense effort was able to defend against Japanese dive bombers attacking the camp and the unit is credited with shooting down two Japanese bombers. Three soldiers stationed at Camp Malakole—Sargent Henry Blackwell, Sargent Warren Rassmusen, and Corporal Clyde Brown—were the first American soldiers killed in the attack. They were taking private flying lessons that morning out of John Rodgers Airport (Harding 2013).

In 1942, the Regiment deployed to the Fiji Islands to establish anti-aircraft defense for the airfield there. From there, they participated in campaigns in Guadalcanal, Bougainville, and Luzon in the Philippines (Albert 1980:305).

After the Regiment left in 1942, Camp Malakole became a weapons training school for livefiring ranges of anti-aircraft and anti-tank training. By 1943, the camp became an important staging area for cargo coming into and out of O'ahu, as well as solider replacement for personnel entering oversea theaters. Service reports from the camp report that over 43,000 troops were billeted and staged through the camp in the final 32 months of war, averaging over 1,100 troops a month (Albert 1980:306). The camp was a strategic tool during the United States' involvement in the war. It served as an important area for the logistical effort in the war and the main anti-aircraft gunnery school on O'ahu. After the end of World War II, the camp was abandoned. There is little information available about exactly when or why the camp was abandoned. Due to the construction of the adjacent industrial park and Chevron Oil Refinery, little remains of the camp.

4.4.3 Honouliuli National Monument (Honouliuli Internment Camp)

Following the Japanese Navy's attack on Pearl Harbor on 7 December 1941, Lieutenant General Walter C. Short of the Army and Joseph Poindexter, Governor of Hawai'i, issued a proclamation declaring the Territory of Hawai'i under martial law and suspending the writ of *habeas corpus* (the requirement for a person under arrest to be brought before a judge or into court) (U.S. Department of the Interior 2014:6-7). Civilian courts were closed and the military established its own courts with authority over civilians (Kashima 2003:69). While under martial law, the territory of Hawai'i was governed by Army generals Walter Short, Delos Emmons, and Robert C. Richardson, Jr. (U.S. Department of the Interior 2014:6–7).

The military conducted some 50,000 trials of civilians throughout the islands during the war, with a 99 percent conviction rate in the 22,000 cases on the island of O'ahu in 1942 and 1943. The average trial lasted five minutes, and legal counsel was seldom at hand once it became common knowledge that the presence of a defense



Figure 13. Camp Malakole soldiers raising the barracks roof (Bandel in Albert 1980:336)



Figure 14. Camp Malakole soldiers wiring the barracks (Bandel in Albert 1980:336)

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007 lawyer would ensure a harsh sentence (Scheiber and Scheiber 2003). [U.S. Department of the Interior 2014:6-7]

Persons of Japanese and European ancestry in Hawai'i suspected of disloyalty to the United States were rounded up and imprisoned by the U.S. military and the Federal Bureau of Investigations (FBI) (U.S. Department of the Interior 2014:xii). Most internees were held at the U.S. Immigration Station on O'ahu prior to being transferred to internment camps on the U.S. mainland (U.S. Department of the Interior 2014:xii).

The War Department ordered the internment of all individuals who had been identified on the custodial detention list (Kashima 2003, 69). These included leaders in the Japanese community who had significant community influence, were educated, were teachers, or had access to transportation or communications. They included members of the Japanese consulate, and community members who served in an unofficial consular capacity for those wanting to communicate officially with Japan on legal issues of births, deaths, marriage, and other business. They also included Shinto and Buddhist priests, Japanese language teachers, those with radios, and farmers and fishermen with access to boats and other transport. Martial arts instructors, travel agents, those with access to the press, and Kibei (American citizens of Japanese ancestry who had been educated in Japan) were also targeted. In some cases, those arrested were considered 'guilty by association' or were identified by informants, some without just cause. [U.S. Department of the Interior 2014:6–7]

In 1943, the Honouliuli Internment Camp was constructed to intern citizens, resident aliens, and prisoners of war. Located in Honouliuli Gulch, east of the project area, the camp was the "last, largest, and longest-used World War II confinement site in Hawai'i," holding approximately 320 internees and nearly 4,000 prisoners of war (U.S. Department of the Interior 2014:xiv).

4.4.4 Development in the Vicinity of the Project Area

Much of the *mauka* lands in western Honouliuli, including ridges and deep gulches, were unsuitable for commercial sugar cultivation and remained pasture land for grazing livestock. The Donn 1906 map suggests the present project area was at the edge of sugarcane cultivation at that time (Figure 15). By 1920, however, much of the lands of Honouliuli were used for commercial sugarcane cultivation (Frierson 1972:18).

A 1919 map (Figure 16) shows ditches, reservoirs, roads, and railroad lines downslope of the project area. This map shows an unimproved road alignment just south of the project area, understood as the Pālehua Road, approximating a traditional Hawaiian footpath into the uplands.

A 1922 map (Figure 17 and Figure 18 showing annotations), however, shows the called out Pālehua trail as jogging into the southwest portion of the project area. This 1922 map shows pineapple fields in at least 13 locations among the foothills of the southeast Wai'anae Range. The nearest of these pineapple fields wrapped around Pu'u Kapua'i some 500 m to the northwest. At least six (typically quite small) plantation camps were scattered along the bottom of these foothills with the nearest being about 500 m to the north of the project area. The Kupihau Ranch Station is shown about 2.6 km to the north. The water troughs and tanks shown upslope of the ranch station attest to the cattle operations in the vicinity at that time.



Figure 15. Portion of the 1906 Donn Hawaii Territory Survey map showing breakdown of land use in southwest O'ahu

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Figure 16. Portion of 1919 U.S. Army War Department fire control map, Nanakuli quadrangle showing the project area

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Figure 17. Portion of 1922 Wall map of Honouliuli Forest Reserve showing the location of the project area

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu



Figure 18. 1922 Wall map of Honouliuli Forest Reserve showing the location of the project area with annotations

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu

By 1925 (Figure 19) most of the project area is depicted as within Oahu Sugar Company plantation Field 30. The extreme upslope end of the project area still appears to be outside the area of sugarcane cultivation, in keeping with the depiction on the 1906 Donn map (compare with Figure 15).

In the late 1920s, the main residential communities were at the northeast edge of the 'Ewa Plain and the largest community was still located at Honouliuli Village. 'Ewa was primarily a plantation town, focused around the sugar mill, with a public school as well as a Japanese school. Additional settlement, in Waipahu, centered around the Waipahu sugar mill operated by the Oahu Sugar Company. However, small plantation camps were scattered within the extensive sugarcane fields (as indicated in Figure 18).

By 1936, however, "Pump Camp 5" had been established on either side of a pipeline that bisected the present project area (Figure 20). The 1936 map indicates approximately seven houses on the northeast side of the pipeline and 17 houses on the southwest side of the pipeline within the present project area at that time. The central pipeline extended downslope from the Waiahole Ditch to a large pump house structure that still exits just southeast (outside) of the project area. The alignment of the Waiahole Ditch crossing the western portion of the project area, and a roughly parallel road just upslope, are clearly depicted. It appears that a spur plantation railroad serviced Pump Camp 5 connecting to the northeast and continued a short distance to the southeast.

The 1943 map (Figure 21) shows much the same scene, though the unimproved road crossing the west portion of the project area now wraps around Pu'u Kapua'i. Additional new, unimproved roads suggest the expansion of sugarcane fields. The extensive system of fences depicted upslope indicate cattle ranching was still a significant enterprise.

Historic maps of the Makakilo area indicate a lack of any other significant development in the area into the 1940s. Major land use changes came to western Honouliuli when the U.S. military began development in the area. Military installations were constructed near the coast as well as in the foothills and upland areas. Barbers Point Military Reservation (a.k.a. Battery Barbers Point from 1937–1944), located at Barbers Point Beach, was used beginning in 1921 as a training area for firing 155 mm guns (Payette 2003). Also in the vicinity were Camp Malakole Military Reservation (a.k.a. Honouliuli Military Reservation), used from 1939, and Gilbert Military Reservation, used from 1922–1944. Barbers Point Naval Air Station (NAS), in operation from 1942 into the 1990s, was the largest and most significant base built in the area. It housed numerous naval and defense organizations, including maritime surveillance and anti-submarine warfare aircraft squadrons, a U.S. Coast Guard Air Station, and components of the U.S. Pacific Fleet.

Fort Barrette (a.k.a. Kapolei Military Reservation and Battery Hatch), located atop Pu'uokapolei to the southwest, was in use from 1931 to 1948 for housing four 3-inch anti-aircraft batteries (Payette 2003). In the 1950s, the site was used as a NIKE missile base. Palailai Military Reservation, located atop Pu'u Pālailai in Makakilo to the west, was in service from 1921, housing Battery Palailai and Fire Control Station B (Payette 2003). Fire Control Station A was located atop Pu'u Makakilo approximately 1.4 km to the southwest of the project area. From 1942 to 1945 the Pu'u Makakilo Training Area, including lands in and around Pu'u Makakilo, was used for military training during World War II (Environment Hawai'i 1992).



Figure 19. 1925 Oahu Sugar Company plantation map showing project area (red) as largely within former Field 30 (Condé and Best 1973:317)

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Figure 20. Portion of the 1936 U.S. Army War Department terrain map, Waianae quadrangle showing the location of the project area

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Figure 21. Portion of the 1943 U.S. Army War Department terrain map, Waipahu quadrangle showing the project area

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The 1951 aerial photograph (Figure 22) clearly shows the two neighboring housing areas of Pump Camp 5 within the central portion of the project area (just northwest and southwest of the pump house building or pumping station which remains just outside the project area). While the majority of the project area was under sugarcane cultivation, it appears the southwest portion of the project area, west or upslope of the Waiahole Ditch, was not under cultivation at that time, instead used as grazing lands. The west portion of the project area appears to have been previously cultivated but appears fallow. Extensive areas north of Pu'u Kapua'i appear to be under pineapple cultivation.

The 1953 USGS map (Figure 23) shows much the same landscape as the 1943 map (see Figure 21) except the railroads have now all disappeared—quickly replaced by trucking after World War II. A naval reservation is shown on the southeast base of Pu'u Makakilo. An access road is now depicted running up the mouth of Kalo'i Gulch, parallel to and just north of the Kalo'i Stream channel, understood to have been developed to service the present quarry. The initial date of construction of an industrial quarry within Kalo'i Gulch—depicted to the south (outside) of the current project area—is uncertain, though historic maps indicate a construction window between 1943 and 1952. In 2004, CSH conducted an archaeological inventory survey whereby the quarry was documented and designated an historic property: SIHP # 50-80-12-6680.

The 1968/1969 USGS map (Figure 24) no longer shows Pump Camp 5, which had been prominent at least as early as 1936 (see Figure 20) and lasted until at least 1953 (see Figure 23). The "Pumping Station" immediately southeast of the project area is still labeled and in general the plantation infrastructure (other than the train lines) appears active. The road up Kalo'i Gulch, depicted as improved in 1953, is now shown as unimproved suggesting abandonment of some quarrying operations.

4.5 Contemporary Land Use

Modern maps of the Makakilo area indicate vast changes to the project area and surrounding lands, including the retreat of the sugarcane fields, the construction of the H-1 Freeway, and the partial construction of the Pu'u Makakilo Golf Course and Grace Pacific Makakilo Quarry.

The 1968 aerial photograph (Figure 25) shows virtually the entire project area still utilized for sugarcane, though there is no trace of the former Pump Camp 5 residential areas that appear to now be entirely covered with cane. Many of these plantation homes are understood to have been slightly raised on "tofu-block" foundations that allowed for relatively complete demolition leaving only the remnants of privies and trash pits. The 1968 USGS aerial photograph also shows new fields to the northwest (Figure 25).

In 1969 and 1970, Pacific Concrete and Rock Company, Ltd. began subsurface drilling on the southward facing slopes of Pu'u Makakilo for a new quarry location. The company's previous quarry in Pu'u Pala'ila'i that had been in operation for the past 22 years was nearly exhausted. The newly proposed Makakilo Quarry would "encompass 72 acres of actual total quarry area and 188 acres of green belt buffer. Of the 72 acres of actual quarry area, only a maximum of 18 acres will be under active quarrying at any given time" (Cerny 1972:1).



Figure 22. 1951 USGS aerial photograph (UH MAGIS) showing the project area

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007



Figure 23. Portion of the 1953 Ewa and Schofield Barracks USGS topographic quadrangles showing the project area

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007



Figure 24. Portion of the 1968 Ewa and 1969 Schofield Barracks USGS topographic quadrangles showing the project area

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007



Figure 25. 1968 USGS aerial photograph (UH MAGIS) showing the project area

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007

A 1977 USGS aerial photograph (Figure 26) appears to display decreased sugarcane cultivation in the Wai'anae foothills. It is not clear if the project area is in active cultivation or not. Clearly by 1993 (Figure 27) sugarcane cultivation within the project area is finished, although it remains active immediately southeast of the project area.

Sometime in the early 1990s, a group of Japanese investors poured \$70 million into the development of the Pu'u Makakilo Golf Course. The golf course's exact date of construction is unclear; however, the proposed area was surveyed by Sinoto in 1988 (Sinoto 1988). The golf course was situated on the slopes of Pu'u Makakilo just north of the rock quarry. During a burst bubble in the Japanese investment market the project foundered, and the course and buildings were purchased by Grace Pacific in 1994 (*Honolulu Advertiser*, May 2004:31). Construction of the golf course resulted in grading and terracing of a large area just south of the present project area for fairway construction.



Figure 26. 1977 USGS Orthophotoquad aerial photograph, Ewa and Schofield Barracks quadrangles showing the project area

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007



Figure 27. 1993 NOAA aerial photograph (UH MAGIS) showing the project area

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007

Section 5 Previous Archaeological Research

Several archaeological studies have been conducted in the vicinity of the project area. This section discusses previous archaeological studies in the area (Figure 28 and Table 1) and identifies the types and locations of previously identified historic properties (Figure 29 and Table 2). There are no sites documented by McAllister (1933) in his early archaeological reconnaissance study of O'ahu in the vicinity of the project area.

5.1 Archaeological Investigations in the Vicinity of the Project Area

5.1.1 Bordner 1977

In 1977, the Archaeological Research Center Hawaii, Inc. (Bordner 1977) conducted an archaeological reconnaissance survey of a then proposed Kalo'i Gulch landfill location, 500 m west of the present project area. The study concluded the lower section of the gulch had been extensively modified through quarrying operations and cattle ranching. Foundations of both crushing and loading facilities were noted. In the upper reaches of the property, three walls of possible pre-Contact origin were documented between 1,250 and 1,300 ft elevation and were designated as SIHP #s 50-80-12-2600, -2601 and -2602. These three historic properties were in the extreme, upslope end of the large property more than 1.5 km from the present project area. SIHP # -2600 was a low (only 0.61 m or 2.0 ft high) wall of poorly stacked pāhoehoe (smooth, unbroken type of lava), approximately 7.62 m (25.00 ft) long set on top of a small knoll jutting out from the slope. SIHP # -2600 is described as a wall built on the stream terrace cut following the course of the stream, and constructed of stacked *pāhoehoe* with a total length of 67.70 m (222.1 ft), an average height of 0.91 m (3.0 ft) and incorporating in situ boulders into the wall. The wall appeared to have been constructed to protect a stream terrace from erosion. It also retained a terrace measuring approximately 12.0 m (39.4 ft) by 31.0 m (101.7 ft). SIHP # 50-80-12-2602 was a freestanding 18.2-m (59.7-ft) wall of stacked pāhoehoe that had the appearance of being a boundary wall. The historic properties were regarded as of "a marginal status" and no further archaeological work was recommended for the area covered in the reconnaissance survey.

5.1.2 Sinoto 1988

In 1988, the Bishop Museum Applied Research Group conducted a surface survey for a then proposed Makakilo Golf Course just southwest of the current project area (Sinoto 1988). The study concluded the majority of the project area had been damaged by severe erosion. No surface remains were documented within the project area and subsurface testing was deemed unnecessary. Just west (outside) of the golf course property, one deteriorated wall segment was documented on the northeast slope of Pu'u Makakilo. The wall, designated SIHP # 50-80-12-1975, may have served as an "historic erosional control feature" (Sinoto 1988:1). Due to the deteriorated condition of the wall remnant, no further work was recommended.

5.1.3 Spear 1996

Scientific Consultant Services, Inc. conducted an archaeological reconnaissance survey of a large area extending from south of the H-1 freeway to the north side of Renton Road (Spear 1996). No historic properties were identified.



Figure 28. Portion of the 1998 Ewa and Schofield Barracks USGS topographic quadrangles showing the locations of previous archaeological studies in the vicinity (within approximately 1.5 km) of the project area

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007

Author	Type of Investigation	Location	Report Description and Results
Bordner 1977	Archaeological reconnaissance survey	Proposed Kaloʻi Gulch landfill location	Three walls designated as SIHP #s 50-80- 12-2600, -2601 and -2602 in extreme west, upslope end of large project area, more than 1.5 km from present project area (and hence are not depicted in Figure 29)
Sinoto 1988	Archaeological reconnaissance survey	Makakilo Golf Course	Low stacked boulder wall, SIHP # 50-80- 09-1975
Spear 1996	Archaeological reconnaissance survey	East Kapolei, TMK: [1] 9-1-016:017	No historic properties identified
Dega et al. 1998	Archaeological inventory survey	UH West Oʻahu, TMK: [1] 9-2- 002:001	Two historic property complexes: historic irrigation and plantation infrastructure system (SIHP # 50-80-08-5593) and Waiahole Ditch System (SIHP # 50-80- 09-2268)
Magnuson 1999	Archaeological reconnaissance survey	'Ewa Plain	Identified six concrete bridges, a railroad track, and a set of unidentified concrete features; no SIHP #s assigned
Tulchin et al. 2001	Archaeological inventory survey	Proposed 'Ewa Shaft Renovation project, Honouliuli Gulch, adjacent to west- bound lanes of H-1, TMK: [1] 9-2-001	SIHP # 50-80-08-6370, stone wall alignment; also documented large pumping station and shaft building
Tulchin and Hammatt 2004	Archaeological inventory survey	86-acre proposed Pālehua Community Association, TMKs: [1] 9-2-003:078 por. and 079	Four historic properties identified: a complex of concrete and iron structures associated with industrial rock quarry operations (SIHP # 50-80-12-6680); three boulder mounds believed to be related to land clearing or ditch construction by Oahu Sugar Co. (SIHP # 50-80-12-6681); a small terrace believed to function as a historic water diversion feature (SIHP # 50-80-12-6682); and a remnant portion of Waiahole Ditch (SIHP # 50-80-09-2268)

Table 1. Previous archaeological studies within the vicinity (within approximately 1.5 km) of the project area

Author	Type of Investigation	Location	Report Description and Results
Tulchin and Hammatt 2005	Archaeological inventory survey	71-acre proposed Pālehua East B project, Makakilo, TMKs: [1] 9-2- 003:076 and 078	Three historic properties identified: pre- Contact agricultural alignment and mound (SIHP # 50-80-12-6666), plantation-era stacked basalt boulder walls and a ditch (SIHP # 50-80-12-6667), and single alignment of upright basalt boulders and a small, low terrace (SIHP # 50-80-12-6668)
O'Hare et al. 2006	Archaeological inventory survey	Hoʻopili East Kapolei	Documented six previously identified historic properties: plantation infrastructure (SIHP # 50-80-12-4344); railroad berm (SIHP # 50-80-12-4345); northern pumping station (SIHP # 50-80- 12-4346); central pumping station (SIHP # 50-80-12-4347); southern pumping station (SIHP # 50-80-12-4348); and documented four newly identified features of SIHP # 50-80-12-4344: a linear wall, stone-faced berm, concrete ditch, and concrete catchment
Rasmussen and Tomonari- Tuggle 2006	Archaeological monitoring	Waiau Fuel Pipeline corridor	No historic properties identified
Tulchin and Hammatt 2007	Archaeological literature review and field inspection	Approx. 790-acre parcel, TMKs: [1] 9- 2-003:002 por. and 005 por.	Documented features interpreted as related to pre-Contact indigenous Hawaiian habitation (SIHP #s 50-80-08-2316 and 50-80-12-2602); historic ranching and related features (SIHP # 50-80-12-2601); and historic quarrying and related features (SIHP # 50-80-12-6680) and various pre- and post-Contact features (designated with temporary #s CSH1–CSH22)
Mooney and Cleghorn 2008	Archaeological reconnaissance survey	TMK: [1] 9-2- 003:018	No historic properties identified
Groza et al. 2009	Archaeological inventory survey	TMKs: [1] 9-2- 001:001 por., 004, 005, 006, 007 por.; 9- 2-002:002	No historic properties identified

Author	Type of Investigation	Location	Report Description and Results
Hunkin and Archaeological Hammatt inventory 2009 survey		TMKs: [1] 9-2- 002:006; 9-2-003:079	Documented two newly identified historic properties: irrigation ditches (SIHP #s 50- 80-12-6950 and -6951); and one previously identified historic property, Waiahole Ditch (SIHP # 50-80-09-2268)
Runyon et al. 2010	Archaeological monitoring	TMKs: [1] 9-2- 002:006; 9-2-003:079	No historic properties identified
Runyon et al. 2011	Archaeological monitoring	TMKs: [1] 9-1- 018:001, 003, 004, 005; 9-2-002:001, 006	Documented two historic properties: a water diversion and a trash deposit (SIHP #s 50-80-12-4664 and -7128)
Pacheco and Rieth 2014	Archaeological inventory survey	East Kapolei Solar Farm, TMK: [1] 9-2- 002:006 por.	Documented SIHP # 50-80-12-7433, an unpaved early twentieth century agricultural (ranching and/or sugarcane cultivation) road, understood as created between 1918 and 1928



Figure 29. Portion of the 1998 Ewa and Schofield Barracks USGS topographic quadrangles showing the locations of previously identified historic properties in the immediate vicinity of the project area

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu TMK: [1] 9-2-002:007

SIHP #	Description	Report Author(s)	
50-80-08- 5593	Plantation-era "flumes, aqueducts, ditches, pumps, and other irrigation features"	Dega et al. 1998	
50-80-08- 6370	Stone wall alignment, likely associated with cattle ranching or pumping station	Tulchin et al. 2001	
50-80-09- 2268	Waiahole Ditch System	Goodman and Nees 1991; Hammatt et al. 1996; Dega et al. 1998; Tulchin and Hammatt 2005; Hunkin and Hammatt 2009; Zapor et al. 2018; Shideler and Hammatt 2018	
50-80-08- 9068	Honouliuli National Monument (Internment Camp)	National Register	
50-80-12- 1975	Low-stacked boulder wall segment	Sinoto 1988	
50-80-12- 4664	Historic water diversion structure	Nakamura et al. 1993; Runyon et al. 2011	
50-80-12- 6666	Alignment and mound	Tulchin and Hammatt 2005	
50-80-12- 6667	Two walls	Tulchin and Hammatt 2005	
50-80-12- 6668	Alignment and terrace	Tulchin and Hammatt 2005	
50-80-12- 6680	Complex of concrete and iron structures associated with industrial rock quarry operations	Tulchin and Hammatt 2005	
50-80-12- 6681	Three boulder mounds believed to be related to land clearing or ditch construction by the Oahu Sugar Company	Tulchin and Hammatt 2005	
50-80-12- 6682	Terrace believed to function as an historic water diversion feature	Tulchin and Hammatt 2005	
50-80-12- 6950	Portion of a plantation-era irrigation ditch	Hunkin and Hammatt 2009	
50-80-12- 6951	Portion of a plantation-era irrigation ditch	Hunkin and Hammatt 2009	
50-80-12- 7128	Burned trash fill layer	Runyon et al. 2011	

Table 2. Previously identified historic properties in the vicinity of the project area

SIHP #	Description	Report Author(s)
50-80-12- 7433	Unpaved early twentieth century agricultural (ranching and/or sugarcane cultivation) road, understood as created between 1918 and 1928	Pacheco and Rieth 2014
50-80-12- 7484	Post-Contact irrigation ditch portion	Pacheco and Rieth 2014
50-80-12- 7485	Post-Contact irrigation ditch portion	Pacheco and Rieth 2014
Historic Bridges	No SIHP #s assigned, no further documentation or mitigation recommended	Magnuson 1999
Military Bunker	WWII-era bunker	Mooney and Cleghorn 2008
CSH 1	Post-Contact wall related to historic ranching	Tulchin and Hammatt 2007
CSH 2 (Mounds)	Two basalt mounds interpreted as possible trail markers	Tulchin and Hammatt 2007

5.1.4 Dega et al. 1998

In 1998, Scientific Consultant Services, Inc. (SCS) conducted an archaeological inventory survey (AIS) for the University of Hawai'i, West O'ahu Campus project area (Dega et al. 1998). The project encompassed the entirety of the current project area. Several plantation-era "flumes, aqueducts, ditches, pumps, and other irrigation features occurring within the heavily modified landscape of the project area" were noted (Dega et al. 1998:i). The features represented an extensive complex of sugarcane irrigation features used from the 1920s through more recent times. The irrigation complex was designated SIHP # 50-80-08-5593. A portion of the Waiahole Ditch System (SIHP # 50-80-09-2268) (previously recorded by Goodman and Nees 1991) was also documented crossing through the northwest section of the subject parcel and continuing southwest through the lower agricultural fields. No artifacts were recovered from the project area. No further work was recommended for SIHP # 50-80-08-5593.

An overlay of the present project area on the Dega et al. (1998) plan map (Figure 30) indicates that it lies entirely within the south/central portion of that 1998 AIS project. While the Dega et al. (1998) plan map should probably be understood as a sketch, it does indicate certain remnants of plantation infrastructure (designated as SIHP # 50-80-08-5593) were present in the present project area in 1998.

5.1.5 Magnuson 1999

In 1999, an archaeological reconnaissance survey was completed by International Archaeological Research Institute, Inc. (IARII) for a Farrington Highway Expansion project extending along 5.3 km (3.3 miles) of Farrington Highway between Golf Course Road and Fort Weaver Road with a roughly 61-m (200-ft) wide corridor on each side (Magnuson 1999). The project identified six concrete bridges, one railroad track, and "a set of unidentified concrete features" (Magnuson 1999:17). The study concluded the following:

The sites observed in the Farrington Highway Expansion project are neither exemplary sites of their kind nor unique. Therefore these sites have been adequately recorded during the investigations and no further work is necessary should preservation not be possible. [Magnuson 1999:25]

5.1.6 Tulchin et al. 2001

CSH archaeologists completed an AIS in support of a proposed 'Ewa Shaft Renovation project. The 'Ewa Shaft project is within Honouliuli Gulch, adjacent to the west-bound lanes of the H-1 Interstate Highway, approximately 1.7 km east of the present project area. That property included a pumping station enclosure and the surrounding area of approximately 1 acre. One historic property was documented, a stone wall alignment designated SIHP # 50-80-08-6370. Subsurface testing was conducted adjacent to the wall. The wall alignment was interpreted as constructed in association with cattle ranching or the pumping station. The study also documented a portion of the large pumping station and shaft building on the property.

5.1.7 Tulchin and Hammatt 2004

In 2004, CSH conducted an AIS to the west of the current project area for the Pālehua Community Association (PCA) in Makakilo (Tulchin and Hammatt 2004). Three overhang shelters were observed and tested, however, no cultural material was identified during excavation.



Figure 30. Plan map of the AIS for the University of Hawai'i, West O'ahu Campus project area showing historic properties (as of 1998) with an overlay of the current project area (adapted from Dega et al. 1998:3). This overlay suggests "Pump Station 12 and Mill" and a ditch were documented as within the present project area and another ditch and road and "Stone stack" were adjacent to the north side of the present project area.

The study documented several historic properties, including a complex of concrete and iron structures associated with industrial rock quarry operations (SIHP # 50-80-12-6680); three boulder mounds believed to be related to land clearing or ditch construction by the Oahu Sugar Company (SIHP # 50-80-12-6681); a small terrace believed to function as an historic water diversion feature (SIHP # 50-80-12-6682); and a remnant portion of the Waiahole Ditch (SIHP # 50-80-09-2268).

5.1.8 Tulchin and Hammatt 2005

In 2005, CSH conducted an AIS west of the current project area for the proposed Pālehua East B project in Makakilo (Tulchin and Hammatt 2005). The study identified three historic properties, including an alignment and a mound (SIHP #s 50-80-12-6666A and B), two walls (SIHP #s 50-80-12-6667A and B), and an alignment and terrace (SIHP #s 50-80-12-6668A and B). SIHP # 50-80-12-6667 is thought to contain remnants of plantation infrastructure. The historic properties were documented in an unnamed gully south of Kalo'i Gulch.

5.1.9 O'Hare et al. 2006

In 2006, CSH conducted an AIS of approximately 1,600 acres for the East Kapolei project (subsequently known as the Ho'opili project) (O'Hare et al. 2006) to the southeast of the present project area. The Ho'opili project was bounded on the east by Fort Weaver Road, *makai* by Mango Tree Road, and *mauka* by the H-1 Freeway.

Several historic properties documented by the O'Hare et al. (2006) study were previously identified during an archaeological survey in 1990 (Hammatt and Shideler 1990). These previously identified historic properties included SIHP # 50-80-12-4344, plantation infrastructure; SIHP # 50-80-12-4345, railroad berm; SIHP # 50-80-12-4346, northern pumping station; SIHP # 50-80-12-4347, central pumping station; and SIHP # 50-80-12-4348, southern pumping station. Four additional archaeological features were documented by the O'Hare et al. (2006) study. These additional features, grouped under SIHP # 50-80-14-4344, include Feature D, a linear wall along the east bank of Honouliuli Stream; Feature E, a linear wall along the west bank of Honouliuli Stream; Feature G, a concrete ditch and concrete masonry catchment basement on the west bank of Honouliuli Gulch. None of the historic properties identified in the O'Hare et al. study (2006) were near the present project area.

5.1.10 Rasmussen and Tomonari-Tuggle 2006

In 2006, IARII conducted archaeological monitoring along the Waiau Fuel Pipeline corridor, extending from the Hawaiian Electric Company's Barbers Point Tank Farm to the Waiau Generating Station (Rasmussen and Tomonari-Tuggle 2006). The Waiau Fuel Pipeline corridor follows Farrington Highway to Kunia Road, angles *makai* near Kunia Road, then continues east along the OR&L right-of-way near the Pearl Harbor coast. It appears no archaeological monitoring was conducted west of Waipi'o Peninsula, as the corridor to the west had been determined to not be archaeologically sensitive. No historic properties were identified during archaeological monitoring.

5.1.11 Tulchin and Hammatt 2007

In 2007, an archaeological literature review and field inspection (Tulchin and Hammatt 2007) was done of an approximately 790-acre parcel at Pālehua, Makakilo. The inspection covered

portions of Makaīwa Gulch, Awanui Gulch, and Kalo'i Gulch. Overall, 26 archaeological historic properties were identified during the field inspection. Four of these historic properties were identified during previous archaeological studies. SIHP # 50-80-08-2316 consists of a *ku'ula* stone documented by the Bishop Museum (Kelly 1959). SIHP # 50-80-12-2601, a pre-Contact wall utilized as a water control feature, and SIHP # 50-80-12-2602, a pre-Contact wall possibly utilized for agriculture, were originally documented by Bordner in 1977 (Bordner 1977). SIHP # 50-80-12-6680, a complex of concrete and iron structures associated with industrial rock quarry operations was identified by CSH in 2004 (Tulchin and Hammatt 2004).

Newly identified historic features (designated with temporary CSH site #s) included CSH 1, wall; CSH 2, mounds; CSH 3, large enclosure; CSH 4, platform; CSH 5, mounds; CSH 6, adze; CSH 7, platform; CSH 8, terraces; CSH 9, enclosure and two small caves; CSH 10, enclosure; CSH 11, mound; CSH 12, platform; CSH 13, enclosure; CSH 14 terrace; CSH 15, wall remnant, hearth, and military "foxhole"; CSH 16, terrace and *hau* thicket; CSH 17, level soil along ridge; CSH 18, enclosure; CSH 19, trail; CSH 20 water tunnel; CSH 21, large boulder with petroglyphs; and CSH 22, enclosure with stone uprights. These potential historic properties were not assigned SIHP #s.

Other than the previously reported SIHP # -6680 complex of structures associated with industrial rock quarry operations, none of the identified historic properties were in the vicinity of the present project area.

5.1.12 Mooney and Cleghorn 2008

In 2008, Pacific Legacy, Inc. conducted an AIS (recorded as an archaeological assessment due to lack of finds) for the proposed Makakilo Quarry expansion (Mooney and Cleghorn 2008). No historic properties were identified; however, the remnants of a modern, abandoned golf course were noted.

5.1.13 Groza et al. 2009

In 2009, CSH conducted an AIS (recorded as an archaeological assessment) for the Ho'opili project 440-Ft Elevation Reservoir and Water Line project (Groza et al. 2009). No historic properties were identified.

5.1.14 Hunkin and Hammatt 2009

In 2009, CSH completed an archaeological inventory survey for an approximately 62-acre Makakilo Drive extension project (Hunkin and Hammatt 2009). The project documented two newly identified historic properties (SIHP #s 50-80-12-6950 and -6951). Both historic properties are portions of plantation irrigation ditches. The ditches functioned to transport water for irrigation of the sugarcane fields.

In addition to the newly identified historic properties, a portion of the previously identified SIHP # 50-80-09-2268 alignment was documented. A meeting was held on site within the project area with CSH staff, SHPD staff, and Mr. Shad Kāne on 10 February 2009 to discuss the alignment within the project area. Mr. Kāne led the group along the graded alignment of SIHP # 50-80-09-2268, indicating the ditch had been constructed over the alignment of an ancient Hawaiian trail. SHPD staff observed the plantation irrigation ditch and associated infrastructure and concurred the alignment was a portion of the Waiahole Ditch System. SHPD staff also concluded the ditch was

most likely constructed over the alignment of a pre-Contact Hawaiian trail. SHPD staff expressed a concern that documentation make it clear the pre-Contact Hawaiian trail function was the dominant function of this designated site in the vicinity (which was then developed as the Waiahole Ditch in the early twentieth century).

Two new features (SIHP # 50-80-09-2268 Features B and C) associated with the main ditch were also documented. These features are drainage-related, with the function of preventing storm water and sediment from entering the main Waiahole Ditch.

5.1.15 Runyon et al. 2010

In 2010, CSH conducted archaeological monitoring for Phase 1B of the North-South Road project (Runyon et al. 2010). No historic properties were identified.

5.1.16 Runyon et al. 2011

In 2011, CSH completed archaeological monitoring for phase 1C of the North-South Road project (Runyon et al. 2011). Two historic properties were observed. A previously identified historic water diversion structure (SIHP # 50-80-12-4664), originally documented by Nakamura et al. (1993), was observed on the southwest edge of Ramp C. A newly identified burnt trash fill layer (SIHP # 50-80-12-7128) was documented directly under Pālehua Road on the west edge of Ramp A.

5.1.17 Pacheco and Rieth 2014

In 2014, IARII conducted an AIS (Pacheco and Rieth 2014) for an East Kapolei Solar Farm project (on approximately 19 acres of TMK: [1] 9-2-002:006). The study documented one historic property: SIHP # 50-80-12-7433, an unpaved early twentieth century road related to ranching and/or sugarcane cultivation in the area, understood as created between 1918 and 1928.

5.1.18 Zapor et al. 2018

CSH conducted a supplemental AIS for the Makakilo Drive Extension project. The survey identified two historic properties: portions of the Waiahole Ditch (SIHP # 50-80-09-2268) and irrigation ditches (SIHP # 50-80-12-6951). The project documented an additional feature of the Waiahole Ditch, an earthen mound and stacked stone wall, interpreted as likely remnants of a reservoir. SIHP # 50-80-12-6951 was observed as an irrigation ditch and associated retaining wall, pipe, valve, and sluice gate remnants.

Section 6 Community Consultation

6.1 Introduction

Throughout the course of this assessment, an effort was made to contact and consult with Native Hawaiian Organizations (NHO), agencies, and community members including descendants of the area, in order to identify individuals with cultural expertise and/or knowledge of the *ahupua*'a of Honouliuli. CSH initiated its outreach effort in May 2019 through letters, email, telephone calls, and in-person contact.

6.2 Community Contact Letter

Letters (Figure 31 and Figure 32) along with a map and an aerial photograph of the project were mailed with the following text:

On behalf of AES Distributed Energy, Inc. (AES), Cultural Surveys Hawai'i Inc. (CSH) is conducting a cultural impact assessment (CIA) for the AES West O'ahu Solar Plus Storage Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island. AES is proposing a solar photovoltaic (PV) and battery energy storage system (BESS) project to be located approximately 3 miles northeast of Kapolei in West O'ahu. The project area includes approximately 80 acres and is within a portion of tax map key (TMK) 9-2-002:007, which is owned by the University of Hawai'i (UH) in an area commonly referred to as the UH West O'ahu Mauka property. The project area is depicted on a portion of the 2013 Ewa and Schofield Barracks U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles, and 2018 Google Earth aerial photograph.

The proposed project will involve construction and operation of an approximately 12.5-megawatt (MW) ground-mounted solar PV system, coupled with a 50 MWhour BESS and related interconnection and ancillary facilities. The solar PV panels will be arranged in a series of evenly-spaced rows across the project area. The BESS will consist of containerized lithium-ion battery units and inverters distributed across the project area. This equipment will connect with a project substation via underground electrical conduit. The substation will be constructed adjacent to an existing Hawaiian Electric Company (HECO) 46kV transmission line that traverses the project area and will facilitate interconnection of the project to the HECO grid; an overhead electrical connection between the substation and existing transmission line may be required for interconnection. The project will be accessed via the existing gated entry off Kualakai Parkway and will utilize a network of existing and new onsite access roads. Some site grading will be needed to accommodate the project facilities and to comply with stormwater and civil engineering requirements and some of the existing access roads may need to be improved to support access to the project site. The project area will be secured for use by AES through a longterm lease (or similar agreement) with UH. The Project will be owned and operated by AES, and the power generated by the Project will be sold to HECO under a new 25-year power purchase agreement (PPA). It is anticipated that construction will

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			May 2019
Aloha,			
conducting a cultur Honouliuli Ahupi and battery energy of Kapolei in Wess of tax map key (T commonly referred portion of the 20 topographic quad The proposed pro- (MW) ground-m interconnection and spaced rows acro- units and inverter substation via un- existing Hawaiian area and will fac connection betw interconnection. The and will utilize a ra- to accommodate requirements and the project site. The similar agreement generated by the (PPA). It is ant commercial opera The purpose of the through research to assess potentia proposed project. study:	aral impact assessment (C ua'a, 'Ewa District, O'ah y storage system (BESS) st O'ahu. The project area 'MK) 9-2-002:007, which ed to as the UH West O'a 013 Ewa and Schofield I rangles, and 2018 Google ject will involve construct ounted solar PV system nd ancillary facilities. The iss the project area. The I is distributed across the pr derground electrical cond n Electric Company (HE- ilitate interconnection of een the substation and The project will be access network of existing and ne the project facilities an some of the existing acce (The project area will be so it) with UH. The Project Project will be sold to H ticipated that construction ations commencing in 202 his CIA is to gather inform and interviews with indivi- il impacts to cultural reso We are seeking your kōk.	IA) for the AES West O'al u Island. AES is proposin project to be located app includes approximately 80 is owned by the Universite hu Mauka property. The Barracks U.S. Geological Earth aerial photograph (tion and operation of an a h, coupled with a 50 M e solar PV panels will be a BESS will consist of controject area. This equipmer buit. The substation will b CO) 46kV transmission lifthe project to the HECO existing transmission sed via the existing gated wonsite access roads. Som d to comply with storm rest roads may need to be in ecured for use by AES th will be owned and opera ECO under a new 25-yea on will require approxin et or 2022.	hu Solar Plus Storage Project, ng a solar photovoltaic (PV) roximately 3 miles northeast 0 acres and is within a portion ty of Hawai'i (UH) in an area project area is depicted on a Survey (USGS) 7.5-minute Figure 1 and Figure 2). pproximately 12.5-megawatt fW-hour BESS and related rranged in a series of evenly- ainerized lithium-ion battery at will connect with a project be constructed adjacent to an ine that traverses the project grid; an overhead electrical line may be required for entry off Kualakai Parkway ne site grading will be needed water and civil engineering mproved to support access to brough a long-term lease (or ated by AES, and the power ar power purchase agreement nately 12-15 months, with rea and the surrounding area eable about this area in order and beliefs as a result of the g the following aspects of our

Figure 31. Community consultation letter page one

HON	DULIULI 172 - CIA for AES West O'ahu Solar Project
	Page 2
	General history as well as present and past land use of the project area
•	Knowledge of cultural sites which may be impacted by future development of the project area—for example, historic and archaeological sites, as well as burials
1	Knowledge of traditional gathering practices in the project area, both past and ongoing
	Cultural associations of the project area, such as mo'olelo and traditional uses
•	Referrals of <i>kūpuna</i> or elders and <i>kamaʿāina</i> who might be willing to share their cultural knowledge of the project area and the surrounding <i>ahupuaʿa</i> lands
2	Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area
In adv partici also av	vance, we appreciate your assistance in our research effort. If you are interested in pating in this study, please contact Kellen Tanaka at <u>ktanaka@culturalsurveys.com</u> . I am vailable by phone at (808) 262-9972.
Mahal	o nui loa
Cultur	al Researcher

Figure 32. Community consultation letter page two

require approximately 12-15 months, with commercial operations commencing in 2021 or 2022.

The purpose of this CIA is to gather information about the project area and the surrounding area through research and interviews with individuals that are knowledgeable about this area in order to assess potential impacts to cultural resources, cultural practices, and beliefs as a result of the proposed project. We are seeking your $k\bar{o}kua$ and guidance regarding the following aspects of our study:

- General history as well as present and past land use of the project area
- Knowledge of cultural sites which may be impacted by future development of the project area—for example, historic and archaeological sites, as well as burials
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Cultural associations of the project area, such as *mo'olelo* and traditional uses
- Referrals of *kūpuna* or elders and *kamaʿāina* who might be willing to share their cultural knowledge of the project area and the surrounding ahupuaʿa lands
- Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area

In December 2019, CSH was notified of a slight modification to the project area to include additional areas along the perimeter of the project area, as well as maintenance of the existing roadways approaching the project area from the southeast. Revised letters (Figure 33 and Figure 34) along with a map and aerial photograph of the project area were mailed with the following revised text.

In May and June 2019, Cultural Surveys Hawai'i (CSH), on behalf of AES Distributed Energy, Inc., reached out to the Honouliuli community regarding a cultural impact assessment (CIA) for the West O'ahu Solar Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island TMK: [1] 9-002:007. As the project area has changed slightly, we are seeking additional input as part of the CIA consultation process.

As described in the previous consultation letter, the proposed West O'ahu Solar project will involve construction and operation of an approximately 12.5-megawatt (MW) ground-mounted solar PV system, coupled with a 50 MW-hour BESS and related interconnection and ancillary facilities. The solar PV panels will be arranged in a series of evenly-spaced rows across the project area. The BESS will consist of containerized lithium-ion battery units and inverters distributed across the project area. This equipment will connect with a project substation via underground electrical conduit. The substation will be constructed adjacent to an existing Hawaiian Electric Company (HECO) 46kV transmission line that traverses the project area and will facilitate interconnection of the project to the HECO grid; an

Cultural Survey Archaeological and Hallett H. Hammat	/s Hawai'i, Inc. l Cultural Impact Studio t, Ph.D., President	s	() best
P.O. Box 1114	Kailua, Hawai'i 967	34 Ph: (808) 262-9972	Fax: (808) 262-4950
Job code: HONOUI	LIULI 172 k	anaka@culturalsurveys.com	www.culturalsurveys.com
			January 2020
Aloha,			
Inc., reached out Inc., reached out the West O'ahu & 002:007. As the p CIA consultation As described in involve construct solar PV system, facilities. The sola area. The BESS across the project electrical conduit Company (HECC interconnection o substation and ex accessed via the e and new onsite a facilities and to a existing access ro area will be secur The Project will b sold to HECO u construction will in 2021 or 2022. Recently, CSH w	to the Honouliuli cor Solar Project, Honou project area has chang process. the previous consulta- ion and operation of coupled with a 50 M ar PV panels will be a will consist of contai t area. This equipment . The substation will D) 46kV transmission of the project to the H isting transmission life existing gated entry of access roads. Some a comply with stormw bads may need to be in red for use by AES the be owned and operate inder a new 25-year require approximately as notified of a slight eter of the project a	ation letter, the proposed V an approximately 12.5-me; <i>IW</i> -hour BESS and related ranged in a series of evenly nerized lithium-ion battery it will connect with a proje be constructed adjacent to n line that traverses the p ECO grid; an overhead ele may be required for intervative f Kualaka'i Parkway and w site grading will be needed ater and civil engineering mproved to support access trough a long-term lease (of d by AES, and the power g power purchase agreement y 12-15 months, with comm	al impact assessment (CIA) for ict, O'ahu Island TMK: [1] 9- g additional input as part of the West O'ahu Solar project will gawatt (MW) ground-mounted d interconnection and ancillary -spaced rows across the project units and inverters distributed ect substation via underground o an existing Hawaiian Electric project area and will facilitate extrical connection between the connection. The project will be vill utilize a network of existing d to accommodate the project requirements and some of the to the project site. The project or similar agreement) with UH. generated by the Project will be t (PPA). It is anticipated that nercial operations commencing area to include additional areas nce of the existing roadways
along the perime approaching the p project area are o "Original Project The purpose of th	eter of the project a project area from the depicted in the attack Area" and Figure 3 a his CIA is to eather in	rea, as well as maintenan southeast. Both the origin: ed figures (please refer to nd Figure 4 noting "Revised formation about the project	nce of the existing roadways al project area and the revised Figure 1 and Figure 2 noting d Project Area").
through research	and interviews with i	ndividuals that are knowled	Igeable about this area in order

Figure 33. Revised community consultation letter page one

-	Posteri 112 - Cirtar Harto and Solar Froject
	rage.
	General history as well as present and past land use of the project area
•	Knowledge of cultural sites which may be impacted by future development of the project area—for example, historic and archaeological sites, as well as burials
۰.	Knowledge of traditional gathering practices in the project area, both past and ongoing
	Cultural associations of the project area, such as mo'olelo and traditional uses
•	Referrals of <i>kūpuna</i> or elders and <i>kama'āina</i> who might be willing to share their cultural knowledge of the project area and the surrounding <i>ahupua'a</i> lands
•	Any other cultural concerns the community might have related to Hawaiian cultura practices within or in the vicinity of the project area
In adv email not he 9972 •	ance, we appreciate your assistance in our research effort. Please contact us by telephone of if your <i>mana</i> o has changed or been affected by the changes to the project area. Please do sitate to contact Kellen Tanaka at <u>ktanaka@culturalsurveys.com</u> or by phone at (808) 262 with any questions or additional <i>mana</i> o.
Maha	lo nui loa,
Keller Cultur	ı Tanaka ral Researcher

Figure 34. Revised community consultation letter page two

overhead electrical connection between the substation and existing transmission line may be required for interconnection. The project will be accessed via the existing gated entry off Kualaka'i Parkway and will utilize a network of existing and new onsite access roads. Some site grading will be needed to accommodate the project facilities and to comply with stormwater and civil engineering requirements and some of the existing access roads may need to be improved to support access to the project site. The project area will be secured for use by AES through a longterm lease (or similar agreement) with UH. The Project will be owned and operated by AES, and the power generated by the Project will be sold to HECO under a new 25-year power purchase agreement (PPA). It is anticipated that construction will require approximately 12-15 months, with commercial operations commencing in 2021 or 2022.

Recently, CSH was notified of a slight modification to the project area to include additional areas along the perimeter of the project area, as well as maintenance of the existing roadways approaching the project area from the southeast. Both the original project area and the revised project area are depicted in the attached figures (please refer to Figure 1 and Figure 2 noting "Original Project Area" and Figure 3 and Figure 4 noting "Revised Project Area").

The purpose of this CIA is to gather information about the project area and the surrounding area through research and interviews with individuals that are knowledgeable about this area in order to assess potential impacts to cultural resources, cultural practices, and beliefs as a result of the proposed project. Specifically, the input sought through the CIA process includes the following aspects:

- General history as well as present and past land use of the project area
- Knowledge of cultural sites which may be impacted by future development of the project area—for example, historic and archaeological sites, as well as burials
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Cultural associations of the project area, such as *mo'olelo* and traditional uses
- Referrals of *kūpuna* or elders and *kama 'āina* who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua 'a* lands
- Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area

In most cases, two or three attempts were made to contact individuals, organizations, and agencies. Community outreach letters were sent to a total of 70 individuals or groups, 12 responded, one provided written testimony, and three of these *kama `āina* and/or *kupuna* met with

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu

CSH for more in-depth interviews. The results of the community consultation process are presented in Table 3.

6.3 Community Contact Table

Below in Table 3 are names, affiliations, dates of contact, and comments from NHOs, individuals, organizations, and agencies contacted for this project. Results are presented below in alphabetical order.

Name	Affiliation	Comment
Alakaʻi, Robert	Cultural practitioner	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Barbieto, Leda	Raised in Ewa Plantation (Banana / Varona Camp)	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Barbieto, Pio	Raised in Ewa Plantation (Banana / Varona Camp)	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Basham, Leilani	Associate Professor of Hawaiian-Pacific Studies, University of Hawai'i (UHWO)	Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Berg, Tom	Former Councilman, District 1	Mr. Berg contacted CSH via email 19 August 2019. His comments are provided below verbatim: <i>Please accept my</i> <i>comments for the Cultural Impact Assessment – AES West</i> <i>Oahu Solar and Storage Project-</i> <i>Please see attached</i> [Tom Berg's letter is provided in full in Appendix A]. In brief- I captured hundreds of sightings of pueo on camera- many are on youtubes- these pueo are along the Hunehune and <i>Kaloi and Honouliuli Gulch Corridor which is served by the</i> <i>hill/slope where you favor the development.</i> But with all this evidence of pueo right there on youtubes- to this day, UHWO / Attorney General / UH BOR / DLNR / USFWS / and OEQC claim in concert the videos are "fake" -

Table 3. Community contact table

Name	Affiliation	Comment
Berg, Tom	Former	How did they do thatcome to the conclusion my videos of
(cont.)	Councilman,	pueo are fake?
	District 1	The answer is- the proof- smoking gun if you will- whereby the
		Hawaii State Attorney General Claire Connors wrote a letter
		to State Representatives Bob McDermott and Rida Cabanilla
		on February 26, 2019 that reads- paraphrasing [following
		bold text is in the original]:
		"No pueo use the property at UHWO- for no habitat is
		present on the property for the pueo to use- and thus, no pueo
		and their habitat existed or is on the property- per scientific
		research, surveys, and the Environmental Impact Statement
		done for the property."
		Result? Entire pueo habitat destroyed. Pueo wrongfully
		extirpated from the property due to faulty protocol to
		inventory for these species from the onset.
		But alas- everyone can see with their own eyes two pueo
		engaged in courtship behavior at UHWO in these opening
		scenes [following bold text is in the original] -see video link
		pasted below- and it's a travesty our Attorney General would
		lie like this (and Chair DLNR Suzanne Case) and refute these
		scenes as rather being "fake and manufactured" and actually
		promote a faulty and deceptive representation of the property.
		The research/surveys that the Attorney General referenced in
		her letter covered up the fact the survey and research failed to
		include /physically go to the property for five months during
		the period/season when the pueo use and occupy UHWO:
		Link to Chant for Pueo @ UHWO by Michael Kumukauona
		Lee J
		The pued (and Hoary Bai) have been wrongjully exirpated
		proven "transformed" their coordination (neligned from UHWO
		Makai Sogment to the hill/LIHWO Mauka Sogment that you
		makai Segmeni to the niti/011 WO maaka Segmeni that you
		want to develop and place solar punets on. Remember now DREDT is bent on allowing what I have
		deduced to be possible illegal illumination of lighting on the
		Monsanto farm fields right next to your proposed solar project
		The glare from these lights will most likely blind many avian
		species when reflected from your solar nanels- at least
		contribute to their peril
		Ouestion is- are you going to adequately look for the bats and
		pueo or not at the solar project site before you blitz the area-
		what will be your protocol be to look for the endangered
		species on the property?
		r · · · · · · · · · · · · · · · · · · ·

Name	Affiliation	Comment
Berg, Tom	Former	CSH replied via email 6 September 2019: Mahalo for your
Name Berg, Tom (cont.)	Affiliation Former Councilman, District 1	Comment CSH replied via email 6 September 2019: Mahalo for your response. We appreciate your input and acknowledge your concerns regarding the pueo and 'ōpe'ape'a habitat within the project area and the importance of these species in Hawaiian culture. Your comments and concerns will be incorporated and addressed in the cultural impact assessment. Other due diligence studies that are being conducted for the project include an assessment of biological resources; your input regarding survey protocols for the two species will be shared with the biologists. The results of both the cultural and biological due diligence studies and impact analyses for the project will be included in an environmental assessment (EA) which will be published for public review. Mr. Berg replied via email 6 September 2019: With the assistance of Senator Mike Gabbard, we are now astute as to what the illumination of the night sky is all about near the proposed solar project @ Monsanto. Thank you for responding and please do include the lighting information- provided with and by Senator Gabbard's Office/and DBEDTLights are used for soy bean growth and lighting are able to violate State Illumination Law as farmers were given waivers to blind migratory species. Please do inquire with Project Pueo Biologist Team- Dr. Melissa Price- and Dr. Javier Cotin and USFWS Jenny Hoskins- and DOFAW Biologist Afsheen Siddiqi- about pueo protocol. Mind you- this Pueo team approved of the FEIS (2005) for 500-acres of property known as UHWO - saying no pueo are
		there I should say rather - these pueo experts had no objections to the FEIS protocol used at UHWOwhereby in the biological survey for pueo at UHWO- get this the observer only looked for a few hours TOTAL over a period of two days within a week during the month of April when the pueo are not thereand to cover 500-acresand the DLNR stated in writing in the FEIS for UHWO "That was a thorough inventory process to search for pueo- satisfactory." DLNR went on to state "That's good enough of a look for us- only 3-4 hours of observation need take place to determine on 500-acres if pueo are on the property or not."And – in the FEIS for UHWO-
		they looked mid-morning hour- not before sunrise or at sunset when pueo are activebut mid morning when that bird ain't to be seen.

Name	Affiliation	Comment
Berg, Tom	Former	DLNR has proven they are corrupt and very dishonest indeed
(cont.)	Councilman,	
	District 1	These Project Pueo experts know that pueo do not have a
		defined breeding season- and are plot hoppers- and will deploy
		a foraging ecology- a breeding ecology- at different times of
		the seasons- and hence, these experts have stated that it is
		prudent to have the biological survey for pueo be conducted
		year round.
		These same pueo experts will also state the observation needs
		to take place at sunset and sunrise- if to be a proper protocol
		deployed.
		Can you answer if that will be done on this solar property?
		Year round observation?
		I have CC'd the Project Pueo experts in this email to have
		them confirm what a proper protocol of a duration of time
		should be deployed in which to observe a property / conduct
		the inventory/survey.
		I hope a three to four hour look on one day, then another
		couple of hours of a look on another day is not the protocol
		you will be using- and to do it while sitting in a car eating a
		burger and sipping on a milk shake like the protocol they
		used for UHWO.
		CSH sent summary of written testimony to Mr. Berg for
		approval via email on 2 October 2019
		Mr. Berg replied via email 3 October 2019:
		Wow- it's beautiful- your work- my verbiage was a bit sloppy-
		So-I found two places where I made a mistake- and two areas I
		lacked the supporting documentation- four points total
		1. On page 2-1 stated it was the UHWO Mauka Segement-
		oops- I meant the Makai Segment-
		And - the date the FEIS was executed- accepted and signed by
		the Governor was in February of 2007, and not executed in
		2005 or 2000 where referencea. Maybe the inventory exercise
		2 Date was 2007 date it was accented
		2. Date was 2007 - date it was accepted.
		S. I Should have included the video links to justify the claim of Willful Indifference, Institutional Projudice, Administrative
		Pias I am making a sorious alaim here, and this two part
		video is my evidence to defend and substantiate my elaim it
		would be appreciated if you would attach it somehow
		[link to Mike Lee. The Willful Indifference /Pueo Habitat @
		IIHWO n 1. Mike Lee Willful Indifference @ IIHWO n 21
		This is relevant for the purpose that puep extirpated from
		IIII III IIII IIII IIII IIII IIIIIIIII
		On wo manenune and Kano Guiches - neudea maaka jor

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu

Name Affi	liation	Comment
Berg, Tom (cont.) Form Cound Distribution	ner ncilman, rict 1	refuge- they can't go east- can't go west- can't go south- so they went north up the gulches as this was their only option- and they need the slopes where these solar farm(s) are to be placed to have habitat for the pueo to forage- of course, only if the pueo has been determined as present via an adequate survey performed for the property 4. And finally- the lights that blind the bats and owls- and others- these grow lights- may have been the cause of this barn owl to lose its eye- this owl was found dead one -half mile from the solar site- and this video is relevant as evidence - for I captured it flying back and forth under the grow lights- I have a youtube on it- not included below- and just a few weeks later- it died with this eye injuryDLNR refused to accept the carcass for a necropsy. I would appreciate if this evidence in the video- were too added- to support and substantiate my claim - for since no necropsy was performed, my claim in the video may be wrong- and the owl did not suffer from rat bait poison- but from the grow lights- so the evidence in the video is all we have to make a deduction- could be relevant if found to be a pattern latter on- best to include it even though my assessment may be pure conjecture- I can't prove what killed this owl your call: [link to Brought to you by RAT Bait Poison/DEAD BARN OWL 7.22.19] Mahalo! My sentence structure is not great- plenty of errors on my end- but that's fine - you captured my points- well done. Your work is appreciated. Mr. Berg approved interview summary via email 3 October 2019: There is one change DOFAW is: Division of Forestry and Wildlife- under DLNR. This concludes my review of the submission- however, omitted from it- is that nearby - is the Honouliul Internment Camp US National Park Service development- "Who conducted the survey for pueo and bats for that project- if executed already?" I can't find status on that to then include that subject for comment- Revised Letter and Figures sent via email 3 January 2020 Mr. Berg

Name	Affiliation	Comment
Berg, Tom	Former	How long do I have until the deadline to get you comments on
(cont.)	Councilman,	this notice?
	District 1	Why is it necessary to encroach upon the gulch?
		Is there an explanation?
		Who did the biological survey for this project- or will there be
		one in the future before development?
		CSH replied via email 7 January 2020: The client has provided
		answers to your questions regarding the gulch area and the
		biological survey for the proposed project.
		AES does not intend to build any project facilities within the
		gulch along the southern boundary; however, the project area
		boundary has been adjusted to provide flexibility for natural
		features such as landscaping if warranted (either for visual
		screening purposes or in response to specific comments
		received as part of the cultural impact assessment). The
		preliminary project plans include maintenance of a natural
		vegetative buffer along the gulch.
		As part of the due diligence studies for the project, a general
		biological survey was conducted by Tetra Tech. In addition,
		surveys have been conducted specifically for pueo based on the
		protocol defined for The Pueo Project. Consistent with your
		previous input, the team has consulted with the State of Hawaii
		Department of Land and Natural Resources Division of
		Forestry and Wildlife (DOFAW) as well as researchers with
		The Pueo Project. This information will be detailed in the Draft
		Environmental Assessment, which is expected to be published
		In early 2020. Mr. Para raplied via amail 8 January 2020: I don't see any
		reference to any studies from Project Puez being conducted on
		the property in question do you?
		Plage take a gander, see files attached [Mr. Porg ottoched
		ndfs of The Pueo Project Final Report April 2017 March 2018:
		The Pueo Project Annual Report 2018: yeal file of LIHWO
		nueo survey datal if can- what do you conclude?
		Was there a separate commissioned exercise conducted for the
		solar area not in these reports- ?
		CSH replied via email 10 January 2020: Thank you for
		forwarding the attachments - we agree that the Pueo Project
		data do not appear to include surveys within the project area.
		The pueo surveys conducted within the project area. as
		referenced in our previous response. were not conducted by
		Pueo Project researchers as part of their research project.
		Rather, these were conducted as part of the due diligence
		efforts for the proposed solar project. These surveys were

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu

Name	Affiliation	Comment
Berg, Tom (cont.)	Former Councilman, District 1	conducted by qualified biologists according to the protocol that was established for the Pueo Project (see Appendix 1 of the Final Report); DOFAW specifically references this protocol as the best methodology for pueo surveys. The results of these surveys will be included in the Draft Environmental Assessment, which is expected to be published in early 2020. Mr. Berg replied via email 10 January 2020: Ok- mahalo-
Bond, John	Kanehili Cultural Hui	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Mr. Bond replied via telephone on 28 June 2019 requesting letter and figures via email CSH followed up with Mr. Bond via email 6 August 2019 Revised Letter and Figures sent via USPS 3 January 2020
Caceras, Mana Kaleilani	OIBC Representative for 'Ewa	Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Mr. Caceras replied via email on 13 August 2019: <i>E kala mai</i> for not responding to your earlier request, been in the field quite a bit lately. I do not personally know of any mo'olelo or cultural sites within the proposed project area but here is a short list of people who might. A few months ago I sat in a section 106 consultation for the Makakilo Drive Extension Project and these three gentlemen have so much knowledge of the area. <i>Mr. Joseph Kūhiō Lewis, President, Kapolei Community Development Corporation</i> <i>Mr. Shad Kane, President, Kalaeloa Heritage and Legacy</i> <i>Foundation and Aha Moku Representative</i> <i>Mr. Douglas "McD" Philpotts, Hawaiian Cultural</i> <i>Practitioner</i> <i>Have a great evening.</i> CSH replied via email 14 August 2019 Revised Letter and Figures sent via email 3 January 2020 Mr. Caceras replied via email 15 January 2020: Mahalo Kellen. Will look through the document and let you know if we have any information that could be useful to your CIA. <i>Have a great weekend</i> CSH replied via email 23 January 2020
Cayan, Phyllis	Intake Specialist, SHPD	Letter and Figures sent via email 15 May 2019 DLNR.Intake.SHPD replied via email on 20 May 2019: Aloha, your submittal is in the queue for review by the History & Culture Branch and is assigned log 2019.01148 for reference. Direct all inquiries on this matter to Regina Hilo and Hinano Rodrigues at their emails above.

Name	Affiliation	Comment
		Revised Letter and Figures sent via email 3 January 2020
Cordy, Ross	Professor of Hawaiian-Pacific Studies, University of Hawai'i (UHWO)	Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Cox, Malia	DHHL	CSH contacted Ms. Cox via email 16 September 2019: My name is Kellen Tanaka. I am a cultural researcher with Cultural Surveys Hawaii (CSH) and have been assisting with the cultural impact assessment for the AES West O'ahu Solar Plus Storage Project. We were forwarded DHHL's comments for the pre-assessment for the Environmental Assessment for the AES West O'ahu Solar Project. We would like to follow up with DHHL's recommendations of consulting with Hawaiian Homestead community associations and Native Hawaiian Organizations. In the letter, it states there are six Hawaiian Homestead communities less than three miles from the proposed project. We have reached out to the Kanehili Hawaiian Homestead Association, Kapolei Community Development Corporation, Kaupea Homestead Association, and the Malu'ohia Residents Association which were mentioned in the letter. Could you assist us in identifying the other two Hawaiian Homestead communities and contact information so we may reach out to them? Ms. Cox replied via email 17 September 2019: Kauluokahai Is the newest community. I don't know that they have stood up a association at this time. KCDC might be able to help with identifying appropriate individuals in that community. Ill get back to you tomorrow on the remaining organization. I believe it is the undivided interests group, but will have to check my notes when I get back into the office tomorrow. Ms. Cox replied via email 18 September 2019: Attached, please find a copy of a portion of the latest lease report submitted to the HHC commission on 9/16/19. I've highlighted the communities identified on the report. Hoolimalima lessees are part of Maluohai resident community. If you need more information about the communities, please contact homestead services division (HSD) Revised Letter and Figures sent via email 3 January 2020
Crabbe, Kamana'o- pono	<i>Ka Pouhana</i> of OHA	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu
Name	Affiliation	Comment
Cullen, Ty J.K.	Representative, House District 39	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
DaMate, Leimana	Executive Director, DLNR- Aha Moku	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020 Ms. DaMate replied via email 8 January 2020: Mahalo for contacting the Hawaii State Aha Moku and I would be happy to forward your request to our Aha Moku Representative Shad Kane, to whom I am encouraging a response to your email. Aside from being a historian of Ewa, and Honouliuli Ahupua'a, Shad is also in contact with generational cultural practitioners from the ahupua'a, including Kehaulani Lum (to whom I have also copied this email). I have also included Rocky Kaluhiwa, the Aha Moku Advisory Committee (AMAC) Chairperson for the State of Hawaii so she is aware of the activities on O'ahu. Rocky is also the AMAC rep for the Island of O'ahu. I am confident that between the three of these practitioners, you will be able to get answers and guidance for your project. Please feel free to contact me should you have any questions or concerns. CSH replied via email 9 January 2020
De Santos, Kahulu	Cultural Advisor, Aulani, A Disney Resort and Spa	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Eaton, Kuʻuwainani	Hoakalei Cultural Foundation	Letter and Figures sent via USPS 14 May 2019 Mail returned 17 May 2019
Farden, Hailama	President, Association of Hawaiian Civic Clubs	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Faulker, Kirsten	Executive Director, Historic Hawai'i Foundation	Letter and Figures sent via USPS 28 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Hanohano, Anolani	Kānehili Hawaiian Homestead	Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020

Name	Affiliation	Comment
Hilo, Regina	Burial Sites Specialist, SHPD	Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Ms. Hilo replied via email 28 June 2019: <i>Mahalo nui for</i> <i>sharing this. I'll forward to my colleagues</i> . CSH replied via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Holt Takamine, Victoria	Executive Director, PA'I Foundation	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Gabbard, Mike	Senatorial District 20	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Senator Gabbard replied via email 15 May 2019: <i>Mahalo for</i> <i>the information</i> . CSH replied via email 9 July 2019 Revised Letter and Figures sent via email 3 January 2020
Ito, Wallace K.	KUA Ewa Limu Project	Letter and Figures sent via email 22 May 2019 CSH followed up with Mr. Ito via email 6 August 2019 Mr. Ito replied via email 21 August 2019: Sorry for not following through sooner. I just forwarded your request to other organizations doing malama 'aina work in the Ewa Moku. You are cc'd on that so you should have received it a few minutes ago. CSH replied via email 21 August 2019 Revised Letter and Figures sent via email 3 January 2020
Kai, G. Umi	President, 'Aha Kāne	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Kaleikini, Aliʻikaua	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Kaleikini, Hāloa	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Kaleikini, Kala	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Kaleikini, Mahiamoku	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020

Name	Affiliation	Comment
Kaleikini, Moehonua	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Kaleikini, Noʻeau	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Kaleikini, Paulette Kaʻanohi	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via USPS 27 June 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via USPS 3 January 2020 Revised Letter and Figures sent via email 3 January 2020
Kaleikini, Tuahine	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Kane, Shad	'Ewa Moku Representative, Aha Moku; Kalaeloa Heritage and Legacy Foundation	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 CSH spoke with Mr. Kane via telephone 13 August 2019: <i>Mr.</i> <i>Kane stated that he is not in opposition to the proposed project.</i> <i>He noted the project area has been previously disturbed by sugar</i> <i>cane production.</i> Revised Letter and Figures sent via email 3 January 2020
Kanekoa, Mikiala	Hālau 'o Kaululaua'e	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Kauahi, R. Kaiulani Vincent	Culture and Arts Coordinator, Dept. Parks and Recreation	Letter and Figures sent via USPS 14 May 2019 Mail returned 17 May 2019
Keala, Jalna	Association of Hawaiian Civic Clubs	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Keaulana, Haʻa	Cultural Advisor at Four Seasons Resort at Koolina	Letter and Figures sent via USPS 14 May 2019 Mail returned 17 May 2019
Keliʻinoi, Kalahikiola	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020

Name	Affiliation	Comment
Keliʻinoi, Kilinahe	Cultural descendant	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Kruse, Kehaulani	Outrigger Enterprises, Cultural Advisor	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Lee, Mike Kumukauoh a	Kanehili Cultural Hui	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019
Legal, Jack	Chair, Makakilo/ Kapolei/Honokai Hale Neighborhood Board No. 34	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Lewis, Joseph Kūhiō	President, Kapolei Community Development Corporation	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Lidstone, Mikiʻala	Executive Director, Ulu A'e Learning Center	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Lilomaiava- Doktor, Saʻiliemanu	Associate Professor of Hawaiian-Pacific Studies, University of Hawai'i (UHWO)	Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Lopez, Kealii	Imua Hawaii	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020

Name	Affiliation	Comment
Luthy,	Ethnographer,	Letter and Figures sent via email 28 June 2019
Tamara	DLNK	Ms. Luthy responded via email 1 July 2019: Good to hear from you! Thank you for letting me know about the project. I am
		cc'ing Kaahiki Solis and Hinano Rodrigues on this email. We
		request that when you finish your CIA that we may receive a
		copy as a professional courtesy so that we can keep it for our
		records in case any other archaeological, architectural, or
		ethnographic work in the same or adjourning regions comes
		through our office for review. I have also attached a few
		reports which may be of interest from the Ewa/Honouliouli
		area, though I didn't see anything from the exact TMK your
		project is in.
		sin D poincy alciales that we can only recommend ways to find research participants rather than pointing you to specific
		individuals I would recommend putting out a notice in the
		Honolulu Star Advertiser, notifying OHA as well to see if
		anyone there can send out the information to relevant parties.
		It would be useful to follow up with any Hawaiian civic clubs
		in the area. It may be worthwhile to contact folks involved with
		the Ewa Limu Project, as they may know local resource users
		both mauka and makai. There is also an interview with Julia
		Powell and also one with Louis Aila Junior through the UH
		Oral History Project which discuss life in Ewa in the past,
		including some information on gathering plants. If you want to
		know more about ongoing gainering practices in the area, it would be worthwhile to reach out to local hula halaus and
		lā 'au lapa 'au practitioners Hawaijan Studies and/or
		professors at UH Manoa and Leeward Community College
		may be good resources as well.
		CSH replied via email 3 July 2019: Mahalo for your quick
		response and all the information you provided. Those pdfs are
		very helpful. We will continue our outreach with those mentioned
		below
		Revised Letter and Figures sent via email 3 January 2020
		Ms. Luthy replied via email 3 January 2020: <i>Hi there Kellen, I</i>
		just got your email. I will look into it on Monday and get back
		to you soon. CSH raplied via amail 6 January 2020
	TZ 1 1	CSH lephed via eman o January 2020
Lyman,	Kalaeloa	Letter and Figures sent via USPS 14 May 2019
ivienssa	Legeov	Letter and Figures sent via email 15 May 2019
	Foundation	Revised Letter and Figures sent via email 3 January 2020
	President	Revised Letter and Figures sent via email 5 January 2020
	1 100100111	

Name	Affiliation	Comment
Malama, Tesha	'Ewa Villages Association	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
McKeague, Kawika	Cultural practitioner, Honouliuli historian and longtime resident	Letter and Figures sent via USPS 9 August 2019 Revised Letter and Figures sent via email 3 January 2020
Medeiros, Pōhai	PIKO Program Advisor, University of Hawai'i West Oʻahu	Letter and Figures sent via USPS 9 August 2019 Revised Letter and Figures sent via email 3 January 2020
Nahulu- Mahelona, Moani	Hawaiian Studies Department, Kapolei HS	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
National Park Service Honouliuli National Monument		Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 CSH reached out the Ms. Jacqueline Ashwell via email 30 July 2019 Ms. Ashwell replied via email 30 July 2019: <i>I am away on</i> <i>detail to another agency, returning to the NPS in November of</i> 2019. While I am away, please direct all matters related to Pearl Harbor National Memorial and Honouliuli National Monuments to Steve Mietz CSH reached out to Mr. Steven Mietz via email 30 July 2019 Revised Letter and Figures sent via email 3 January 2020 Hanako Wakatsuki-Chong replied on behalf of the PWR Honouliuli on 14 January 2020: Thank you for reaching out to us about the cultural impact assessment for the West O 'ahu solar panel project. I have cc'd Katie Bojakowski, the Chief of Cultural and Natural Resources; Jacqueline Ashwell, Superintendent; and Melia Lane-Kamahele, NPS Regional Office Manager. When do you need comments by? CSH replied via email 14 January 2020: Mahalo for your response and for forwarding our request to those mentioned below. We look forward to hearing from them. We kindly ask for your response by February 3, 2020. Feel free to contact me if you any questions.

Name	Affiliation	Comment
Paglinawan, Lynette	Cultural practitioner; Educator, teaches a course on Native Hawaiian Healing at University of Hawai'i West Oʻahu	CSH met with Ms. Palignawan 14 October 2019 Interview summary sent to Ms. Palignawan via USPS 22 October 2019 Revised summary sent for review and approval via USPS 19 November 2019 CSH followed up with Ms. Paglinawan via email 27 December 2019 Revised Letter and Figures sent via USPS 3 January 2020 Revised summary sent for review and approval 14 January 2020 Ms. Paglinawan approved summary 15 January 2020
Paik, Linda Kaleo	Cultural practitioner/ Secretary/Treasur er for Koa Ike Cultural Specialist; Former History and Culture, SHPD 'Aha Wahine Aha Moku Committee, Kona District, Oahu	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Paishon, Jr., Frank	Raised in Tenney Village	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Patterson, Kaleo	Native Hawaiian Church; Pacific Justice & Reconciliation Center	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Puahala, Roth	President, Ke One O Kakuhihewa	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Ramos, Rodolfo	President, Ewa Villages Community Association; Chair of 'Ewa Task Force	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020

Name	Affiliation	Comment
Rodenhurst, Roda	President, 'Ahahui Siwila Hawai'i o Kapolei Hawai'i O Kapolei (Kapolei Hawaiian Civic Club)	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Rodrigues, Hinano	SHPD, Interim History and Cultural Branch Chief (Oʻahu and Maui)	Mr. Rodrigues forwarded email to Ms. Regina Hilo 14 June 2019 Revised Letter and Figures sent via email 3 January 2020
Saul, Melissa	Associate Specialist, Title III PIKO Project Director, University of Hawai'i West O'ahu	Letter and Figures sent via USPS 9 August 2019 Revised Letter and Figures sent via email 3 January 2020
Schaedel, Homelani	President, Malu'ōhai Residents Association	Letter and Figures sent via email 17 September 2019 Revised Letter and Figures sent via email 3 January 2020
Serrao, Marleen Kauʻi	Pelekikena, 'Ewa-Pu'uloa Hawaiian Civic Club	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Shibuya, Barbara	<i>Kama ʿāina</i> of 'Ewa, member of the Shibuya Dayanan Family	Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Silva, Adrian Nakea	Chariman, Hui Huliau Inc.	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Solis, Kaʻāhiki	SHPD, Cultural Historian (Oʻahu)	Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020 Ms. Solis replied via email 6 January 2020: <i>Mahalo and good</i> <i>luck with your project</i> . CSH replied via email 9 January 2020

CIA for the West Oahu Solar Project, Honouliuli, 'Ewa, O'ahu

Name	Affiliation	Comment
Suganuma, La'akea	President, Royal Hawaiian Academy of Traditional Arts and Nā Lei Ali'i Kawananakoa	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Swinney, Shirley S.	Vice President, Kapolei Community Development Corporation; Hawaii Community Development Authority	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Uyeoka, Kelly	Nohopapa	Letter and Figures sent via email 22 August 2019 Revised Letter and Figures sent via email 3 January 2020
Ward, Sandy	Executive Director, Mālama Puʻuloa	Ms. Ward was forwarded letter and figures by Mr. Wally Ito on 21 August 2019 Ms. Ward replied via email 21 August 2019: <i>did you follow up</i> <i>on the Nohopapa `Ewa Inventory I suggested? - that is the best</i> <i>research on cultural significance and wahi pana I have seen -</i> . It's organized by ahupua`a so it's easy to find information and I suggest you contact them directly to assist you if you don't find the information you are looking for in their <i>publication</i> . CSH replied via email 22 August 2019 Revised Letter and Figures sent via email 3 January 2020
Wong-Kalu, Hinaleimoan a	OIBC Chair	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Woode Jr., Lawrence A.	Pelekikena, Hawaiian Civic Club of 'Ewa- Pu'uloa	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via USPS 27 June 2019 Revised Letter and Figures sent via USPS 3 January 2020
Woode, Napali	Native Hawaiian Economic Alliance	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020

Name	Affiliation	Comment
Wond, Kanani	Vice President, Kaupe'a Homestead Association	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 Letter and Figures sent via email 28 June 2019 Revised Letter and Figures sent via email 3 January 2020
Yee, Christian	Kamaʻāina, familiar with wahi pana and moʻolelo	Letter and Figures sent via USPS 14 May 2019 Letter and Figures sent via email 15 May 2019 CSH spoke with Mr. Yee briefly on 18 May 2019: Mr. Yee expressed interest in visiting the Honouliuli Internment Camp. Letter and Figures sent via email 28 June 2019 CSH followed up with Mr. Yee via telephone on 9 August 2019 CSH met with Mr. Yee on 9 August 2019 CSH sent summary for approval 24 September 2019 Mr. Yee approved summary 3 October 2019 Revised Letter and Figures sent via email 3 January 2020

6.4 Written Testimony from Tom Berg

Tom Berg, former City Councilman, provided CSH with written testimony on 19 August 2019 regarding the AES West O'ahu Solar Plus Storage Project. Mr. Berg's entire testimony is included in Appendix A.

Mr. Berg stated that the project has been "proposed on a pueo (owl) foraging and breeding ecosystem." The *pueo* (Hawaiian short-eared owl, *Asio flammeus sandwichensis*) are found on all of the main Hawaiian islands and are listed by the State of Hawai'i as endangered on the island of O'ahu (DLNR 2005). The Department of Land and Natural Resources (DLNR) states that *pueo* are most commonly found in "open habitats such as grasslands, shrublands, and montane parklands, including urban areas and those actively managed for conservation" (DLNR 2005).

Mr. Berg noted that records indicate that per earliest colonial contact, the *pueo* is most abundant on the slopes from Pu'ukapuai to West Loch, in the area where the project is slated. He added that "Hunehune Gulch, Kaloi Gulch, and Honouliuli Gulch are migratory routes used by the pueo to go from mountain to sea to court, mate, forage, and raise their brood." He noted tat *pueo* are not forest dwellers, preferring "scrub, open fields/dirt landscapes with some grass." He stated that the proposed project will "encroach on prime pueo habitat-considered to be graded A+—"a ten (10)"—when it comes to the degree of pueo habitat in use on this project site."

Mr. Berg added that the *pueo* has "a direct connection to Native Hawaiian family lineage in Ewa Beach;" the *pueo* is the *'aumakua* for the Michael Lee family and their accounts, which go back over seven generations, are documented at the State Archives Building in Honolulu.

Mr. Berg also stated that the project site is "inhabited by the $\bar{o}pe'ape'a$ [Hawaiian hoary bat, *Lasiurus cinereus semotus*] at various times of the seasons," noting that in 1910, the State of Hawai'i documented ' $\bar{o}pe'ape'a$ within a half-mile of the project area. ' $\bar{O}pe'ape'a$ is "the only land mammal native to the Hawaiian archipelago" and is found on all of the main Hawaiian islands except for Ni'ihau (DLNR 2005:3-13). DLNR states ' $\bar{o}pe'ape'a$ have been "found roosting in

'ōhi'a (*Metrosideros polymorpha*), pu hala (*Pandanus tectorius*), coconut palms (*Cocos nucifera*), kukui (*Aleurites moluccana*), kiawe (*Proscopis pallida*), avocado (*Persea americana*), shower trees (*Cassie javanica*), pūkiawe (*Styphelia tameiameiae*), and fern clumps; they are suspected to roost in Eucalyptus (*Eucalyptus* spp.) and Sugi pine (*Cyrptomeria japonica*) stands" (DLNR 2005).

Mr. Berg stated his concern that the "property in question will not receive the proper protocol to conclude no endangered species inhabit the area." He asked "what protocol will be deployed to determine if the population of both the pueo and 'ōpe'ape'a are served by habitat on the property?" He discussed five points which he felt need to be addressed:

- 1. Who will look for the *pueo* and '*ope'ape'a* on the land? What is their expertise and qualifications as observers?
- 2. Did the observation to inventory for the species transpire before sunrise and after the sunset periods when the '*ope* '*ape* '*a* and *pueo* are most active and can be recorded?
- 3. Did the observer conduct the biological survey whereby the inventory for the species was repeated year-round over the wet and dry seasons?
- 4. What tools were used—visual aids in the field—techniques to identify the species while observing/conducting the inventory?
- 5. Was the inventory to assess and survey for *pueo* and '*ōpe*'ape'a done completely on foot or was a vehicle used?

Mr. Berg stated that to properly account for the *pueo* and '*ōpe*'ape'a, the DLNR and United States Fish and Wildlife Service (USFWS) have developed a protocol which states inventory surveys should "be executed over the changing seasons year-round." However, Mr. Berg noted that "this practice, to deploy the protocol year-round, is not being done in either the EA [Environmental Assessment] and or EIS [Environmental Impact Statement] review processes." He added his opinion that surveys must be "undertaken after sunset and before the sunrise periods."

Mr. Berg discussed the recent population distribution survey for *pueo* on the island of O'ahu that included the University of Hawai'i West O'ahu (UHWO) Makai Segment. The survey, conducted between 31 December 2017 and early August 2018, concluded no *pueo* or its habitat existed on the UHWO property, however, Mr. Berg notes that *pueo* inhabit the property "throughout the months of late August, through September, October, November, and vacate late December." He added that had the survey been conducted year-round, the survey would have "reported a pueo ecosystem thriving on the property and many Native Hawaiians' 'aumakua would be protected rather than purged from the property."

In his statement, Mr. Berg provided links to videos of *pueo* observed on the UHWO property. He noted that despite these videos, UHWO, University of Hawai'i (UH) Board of Regents, DLNR, and the Attorney General have stated the *pueo* "did not and have not ever existed there." He stated that this claim is "a violation of the law- HRS [Hawai'i Revised Statutes] Ch. 343 that protects endangered species and their habitat."

He added that Governor Ige's Administration's claim that "absolutely no pueo used UHWO property," is in his opinion, "not only patently false–but a deliberate act of Administrative Bias, Institutional Prejudice—and a willful act of Malice—to cause direct harm to an endangered specie-a 100% violation of Article XII, Section VII of Hawaii's State Constitution that protects Native Hawaiian Religious and Cultural Practices and their 'aumakua." To justify his claims, Mr. Berg

provided the links to the following videos hosted on YouTube: Mike Lee: The Willful Indifference / Pueo Habitat @ UHWO p.1 [https://www.youtube.com/watch?v=7z8-7u3Q0Bo] and Mike Lee: Willful Indifference @ UHWO p.2 [https://www.youtube.com/watch?v=Db46xPfazVQ]. He added that "pueo extirpated from UHWO Hunehune and Kaloi Gulches – headed mauka for refuge – they can't go east- can't go west- can't go south- so they went north up the gulches as this was their only option- and they need the slopes where these solar farm(s) are to be placed to have habitat for the pueo to forage- of course, only of the pueo has been determined as present via an adequate survey performed for the property ----."

Mr. Berg also expressed his concern for the possible negative aspects of light at an adjacent parcel. He expressed concern that a solar panel may reflect neighboring lighting operations into "the flight patterns of migrating birds and the ' $\bar{o}pe$ 'ape 'a and pueo in particular need to be addressed."

On 6 September 2019, a corresponding email was sent by Mr. Berg. He noted that information provided by Senator Mike Gabbard and the Department of Business, Economic Development, & Tourism (DBEDT) indicates the lighting at the nearby property are used for soy bean growth. Mr. Berg asserted his opinion that the lighting violates State Illumination Law. Mr. Berg expressed his opinion that "farmers were given waivers to blind migratory species." To support his claim, Mr. Berg provided a link to a video (https://www.youtube.com/watch?v=rmVw04oWr6E&t=26s) he filmed of the carcass of a barn owl which was "found dead one -half mile from the solar site-." He believes the owl may have died from eating vermin laced with rat bait poison. The owl was also missing an eye. Mr. Berg stated his opinion that the "grow lights- may have been the cause of this barn owl to lose its eye." He stated that "DLNR refused to accept the carcass for a necropsy." He also acknowledged that he "can't prove what killed this owl," noting that "since no necropsy was performed, my claim in the video may be wrong- and the owl did not suffer from rat bait poison- but from the grow lights- the evidence in the video is all we have to make a deduction- could be relevant if found to be a pattern later on-."

Mr. Berg also recommended inquiring with Dr. Melissa Price and Dr. Javier Cotin of the Project Pueo Biologist Team and DLNR's Division of Forestry and Wildlife (DOFAW) Biologist Afsheen Siddiqi regarding *pueo* protocol. He made note that "this Pueo team approved of the FEIS [Final Environmental Impact Statement] (2007) for 500-acres of property known as UHWO – saying no pueo are there—." He added that "these pueo experts had no objections to the FEIS protocol used at UHWO" in which, according to Mr. Berg, the "observer only looked for a few hours TOTAL over a period of two days within a week during the month of April when the pueo are not here.....and to cover 500-acres-..........."

He noted that in the FEIS for UHWO (PBR Hawaii 2006), DLNR stated in writing "that was a thorough inventory process to search for pueo- satisfactory." He also characterized the DLNR evaluation as, "That's good enough of a look for us- only 3-4 hours of observation need take place to determine on 500-acres if pueo are on the property or not."

Mr. Berg added that surveyors for the FEIS "looked mid-morning hour- not before sunrise or at sunset when pueo are active----but mid morning when that bird ain't to be seen." He noted,

These Project Pueo experts know that pueo do not have a defined breeding seasonand are plot hoppers- and will deploy a foraging ecology-a breeding ecology- at different times of the seasons- and hence, these experts have stated that it is prudent to have the biological survey for pueo be conducted year round. [...] These same pueo experts will also state observation needs to take place at sunset and sunrise- if to be a proper protocol deployed.

Mr. Berg questions "if that will be done on this solar property? Year round observation?" He recommends that "a thorough and complete protocol is adopted to repeat the inventory exercise for pueo and 'ōpe'ape'a over the course of a calendar year would be in order so the project does not inadvertently contribute to more endangered species habitat loss."

6.5 Kama'āina Interviews

The authors and researchers of this report extend our deep appreciation to everyone who took the time to speak and share their *mana* o and '*ike* with CSH whether in interviews or brief consultations. We request that if these interviews are used in future documents, the words of contributors are reproduced accurately and in no way altered, and that if large excerpts from interviews are used, report preparers obtain the express written consent of the interviewee/s.

6.5.1 Shad Kāne

CSH spoke with Mr. Shad Kāne, member of the Kapolei Hawaiian Civic Club, Chair of the O'ahu Council of Hawaiian Civic Clubs Committee on the Preservation of Historic Sites and Cultural Properties, Ali'i Ai Moku of the Kapuāiwa Chapter of the Royal Order of Kamehameha Ekahi, President of Kalaeloa Heritage and Legacy Foundation, and 'Ewa Moku Representative on the State Aha Moku Advisory Committee, via telephone on 13 August 2019. Mr. Kane stated that he is not in opposition to the proposed project. He noted the project area has been previously disturbed by sugarcane production.

6.5.2 Christian Kaimanu Yee

On 9 August 2019, CSH met with Mr. Christian Kaimanu Yee at Keaīwa Heiau State Recreation Area to discuss the AES West O'ahu Solar Plus Storage project and to share his '*ike* regarding *mo'olelo* and *wahi pana* associated with the *ahupua'a* of Honouliuli.

Mr. Yee was "made in 'Ewa Beach, [but] born in England." His father was a fireman for the United States Air Force and was stationed at Lakenheath Air Force Base (AFB) in England when Mr. Yee was born in 1980. His mother is a second-generation Filipina from 'Ewa Beach. Mr. Yee lived in England until 1983 when his father got stationed at Nelles AFB in Las Vegas. In 1985, his family returned to Hawai'i and moved to 'Ewa Beach where he lived until 1986, when his parents "separated for a little while" and his father moved to Waimalu in 'Aiea. After being honorably discharged from the military, Mr. Yee's father worked for a trucking company. His father would take him on "drives" where they would visit cultural sites including *heiau* and Kūkaniloko, the sacred birthstones where the highest ranking *ali'i* were born (Sterling and Summers 1978:139).

Kukaniloko is considered to be the very center of the Hawaiian culture. As a person and a nation, one can come here and directly be in contact with the past, present, and future of Hawaii. Only royalty were allowed in the area of Lihue. High ranking Ali'i were born here, and the privileged were brought here to learn aspects of Hawaiian culture such as navigation. [Yee 2013]

Mr. Yee's father continued to share numerous *mo'olelo* regarding the mythical and ancient past of O'ahu. Mr. Yee began studying Hawaiian history and culture and in 2013, equipped with the

knowledge that he had inherited from his father and his *kumu* (teacher) Kaipo'i, Mr. Yee began a blog, *Pohukaina Cave*. In this blog he shares, "Hawaiian history and places from a bicycle":

I am a resident of Waimalu in the moku [district] of Ewa with a fascination of history, and being a Hawaiian it's gotta be Hawaiian history for now! [...] I just want to share something that might appeal to you and hopefully things from the past will not be lost and covered by the fast present day life style! [Yee 2013]

Mr. Yee began the interview by discussing the importance of trails to the *ahupua'a* of Honouliuli noting that trails leading to Wai'anae and the North Shore pass through Honouliuli. He pointed out that the "north shore trail" traverses a portion of the eastern boundary of the *ahupua'a* between Honouliuli and Hō'ae'ae Ahupua'a before branching off and leading to Pōhākea Pass and traversing through the Wai'anae Mountain Range to Lualualei Ahupua'a in the *moku* of Wai'anae.

Mr. Yee added that Pōhākea Pass is associated with the goddess Hi'iakaikapoliopele, sister of volcano goddess Pele, and her epic journey across the Hawaiian Islands. Mr. Yee noted that from Pōhākea Pass, Hi'iaka could see the entire *moku* of 'Ewa.

Hi'iaka actually stands there and sees the whole *moku* of 'Ewa and pointed it out cause she stood there and seen Leilono from there. She stands at $P\bar{o}h\bar{a}kea$ Pass and defines the entire *moku* of 'Ewa at that moment.

He also stated that from Pōhākea Pass, Hi'iaka could see her traveling companions, Lohi'au and Wahine'ōma'o, as they traveled by canoe to the harbor of Kou (Honolulu) (Ho'oulumahiehie 2008b:260): "I think Hi'iaka went this way and the guy's in the canoe went this way, Lohi'au and Wahine'ōma'o, that's when they first started falling for each other. She's like 'eh, no talk to my husband [...] No talking over there,' from the mountains, eh."

Pōhākea Pass is also the location where Hi'iaka chanted as she "gazed toward Hawai'i, and saw that her aikāne [friend], Hōpoe, had died in the fires of her elder sister Pele" (Ho'oulumahiehie 2008b:262).

Mr. Yee also noted that Pōhākea Pass is associated with the famous warrior, Palila. Mr. Yee referred to Palila as the "Hawaiian Thor," due to his supernatural war club which he could throw a long distance and fly along the club's path as he held on to the end of it. According to *mo'olelo*, Palila used his supernatural war club to carry himself from Ka'ena Point at Wai'anae, east across the *moku* of 'Ewa, landing in a number of places in Honouliuli including Pōhākea Pass, the peaks of Manuauna and Kānehoa, and the plain of Keahumoa (Fornander 1918:5[1]:142–143).

Mr. Yee stated the *'ili* of Līhue which is located in the northern region of Honouliuli Ahupua'a was associated with a class of chiefs known as the *lo ali'i*. Mr. Yee noted, "The *lo ali'i* were the highest ranking chiefs but then they were hidden so they were like the poorest at the same time. In the rain, eating ferns and stuff cause they were so sacred. It's a curse, blessing and a curse at the same time."

Samuel Kamakau discussed the *lo ali'i*:

The chiefs of Lihue, Wahiawa, and Halemano on Oahu were called *Lo* chiefs, *po'e Lo Ali'i* ["people from whom to obtain a chief"], because they preserved their chiefly kapus. The men had kapus, and the women had kapus, and when they joined their kapus and children were born, the children preserved their kapus. They lived

in the mountains (*i kuahiu'i*); and if the kingdom was without a chief, there in the mountains could be found a high chief (*ali'i nui*) for the kingdom. Or if a chief was without a wife, there one could be found-one from chiefly ancestors. [Kamakau 1991a:6]

He also discussed the *mo olelo* of Kelea, a chiefess of Maui, who was kidnapped and brought to O'ahu to marry Lō Lale, a *lo ali i* from Līhue in Honouliuli (Kamakau 1991b:46).

There's a story about that one Maui chiefess, the one who got kidnapped by the canoe guys and took to live over there. But she ends up being the female progenitor of most chiefs, like in Hawai'i, cause they had like the highest *mana* [spiritual power], cause she mated with the *lo ali'i* and the *ali'i nui* [high chief] of Waikīkī [...] She was like a surfer, but she lived up in the mountains, that's why they kidnapped her. [...] She wanted to go surf again, she asked him if she could go but then he knew that she was gonna leave forever cause she was gonna be out of his watch. And it says something like, 'she washes the red dirt of Līhue off' when she enters Waikīkī.

A version of the *mo* 'olelo, which appears in Samuel Kamakau's *Tales & Traditions of the People of Old*, states that Kelea lived with Lō Lale for ten years in the uplands of Līhue. They had three children, Kaholi-a-Lale, Luli-wahine, and Luli-kāne, who were among "the ancestral chiefs of O'ahu" (Kamakau 1991b:46–47). Kelea was unhappy living in Līhue, longing for the ocean and her favorite pastime of surfing (Kamakau 1991b:47). She left Līhue to "go down to the seashore of 'Ewa to go sightseeing," traveling through the plain of Keahumoa, to Waipahu, 'Ewa-uli, and Hālawa before reaching Waikīkī.

When Kelea and her companions reached the coconut grove of Kawehewehe in Waikīkī, they were welcomed by the *kama 'āina* of Waikīkī who stated "this is a place for enjoyment. Over there is the *kou* [Cordian subcordata] grove of Kahaloa where one may view the surfing of the chiefs and the *ali 'i nui* Kalamakua" (Kamakau 1991b:48). Kamakau describes Kalamakua:

KALAMAKUA-A-KAIPŪHŌLUA was a good chief. He was noted for cultivating, and it was he who constructed the large pond fields Ke'okea, Kualulua, Kalamanamana, and the other *lo*'*i* [irrigated terrace] in Waikīkī. He traveled about his chiefdom with his chiefs and household companions to cultivate the land and gave the produce to the commoners, the *maka*'ainana. They loved him. [Kamakau 1991b:45]

Kelea proceeded to borrow a surfboard and before entering the ocean she "rubbed the red dirt of 'Ewa from her feet so as to look fresh" (Kamakau 1991b:48). She jumped on her board and paddled out past the "place where the surf broke" and waited for a wave to rise.

When Kelea reached the place where the surf broke, she left that place to the *kama 'āina* and paddled on out to wait for a wave to rise. As she floated there, the first wave rose up but she did not take it, nor did she take the second or third wave, but when the fourth wave swelled up, she caught it and rode it to shore. As she caught the wave, she showed herself unsurpassed in skill and grace. The chiefs and people who were watching burst out in cheering the cheering rising and falling, rising and falling. [Kamakau 1991b:48–49]

Kalamakua was working in his fields when he was startled by loud shouts coming from the shoreline. He asked his men, "What is that shouting reverberating from the seashore?" They replied, "It is probably because of a skilled woman surfer." Kalamakua realized that the "skilled woman surfer" was Kelea, a chiefess of Maui, and left his work to stand on the shore and watch. When Kelea came ashore, Kalamakua wrapped his $k\bar{i}hei$ (cape) around her and made her his wife (Kamakau 1991b:49).

As Kelea rode in on a wave, the $m\bar{o}$ ' \bar{i} ran to the edge of the sea and stood there. When the chiefess reached the sand, he took hold of her board and asked, 'Are you Kelea?' 'Yes,' she answered. She stood up, naked. The $m\bar{o}$ ' \bar{i} removed his *kihei* shoulder covering and wrapped it around her as a $p\bar{a}$ ' \bar{u} [skirt] and took her to a *kapu* place. That was the beginning of her life as the *ali* '*i wahine mo* '*i* [queen] and she married (*ho* '*iio mal-e*) the $m\bar{o}$ ' \bar{i} Kalamakua. [Kamakau 1991b:49]

In another version of the *mo'olelo*, which appears in David Kalākaua's *The Legends and Myths* of Hawaii, Kalamakua is described as "Lo-Lale's cousin [...] a noble of high rank whose lands were on the coast of the Ewa district" (Kalākaua 1990:233). In this version, Kalamakua is sent on the mission to find Lō Lale a wife. On the voyage returning to O'ahu, Kalamakua had "become very much interested in Kelea" (Kalākaua 1990:240). Kelea lived with Lō Lale for a while, however, she longed for Kalamakua. When Kelea decided to leave Lō Lale, he voiced no "spoken bitterness;" however, after she left, he sang this lament:

Farewell, my partner of the lowland plains, On the waters of Pohakeo, above Kanehoa, On the dark mountain spur of Mauna-una! O, Lihue, she is gone! Sniff the sweet scent of the grass, The sweet scent of the wild vines That are twisted by Waikoloa, By the winds of Waiopua, My flower! As if a mote were in my eye. The pupil of my eye is troubled. Dimness covers my eyes. Woe is me! [Kalākaua 1990:224–245] en Kelea left Līhue, she traveled to 'Ewa wh

When Kelea left Līhue, she traveled to 'Ewa where she "found a large number of nobles and retainers of Kalamakua, the high chief of the district, amusing themselves in the surf' (Kalākaua 1990:245). Kelea borrowed a surfboard and "joined the party of surf-riders beyond the breakers" (Kalākaua 1990:245). Upon hearing that "a beautiful woman from Lihue had beaten all the chiefs at surf-riding," Kalamakua realizes that the woman is Kelea and proceeds to the beach, greeting Kelea by placing his *kihei* over her shoulders (Kalakaua 1990:245). Kalakaua notes that Kelea and

Kalamakua "lived happily together, and were blessed with a daughter Laielohelohe, who inherited her mother's beauty, and became the wife of her cousin Piilani, son and successor of Kawao, moi of Maui [...]" (Kalākaua 1990:246).

Mr. Yee also discussed Kūali'i, a "celebrated chief [...] noted for his strength and bravery" who defeated the chiefs of Ko'olauloa on the plains of Keahumoa (Fornander 1917b:4[2]:364). When the chiefs of Ko'olauloa and their army of twelve hundred arrived in Honouliuli, they were outnumbered by Kūali'i's army of twelve thousand, however, the battle was averted when a *mele* in honor of Kūali'i was chanted and the chief of Ko'olauloa ceded the districts of Ko'olauloa, Ko'olaupoko, Waialua and Wai'anae to Kūali'i (Fornander 1917b:4[2]:400).

Mr. Yee stressed the importance of two brothers, Kapa'ahulani and Kamaka'aulani, who were on opposing sides of the battle. According to the *mo'olelo*, Kapa'ahulani and Kamaka'aulani composed the *mele* in honor of Kūali'i and devised a plan in which Kapa'ahulani would go to Waialua where the chief of Ko'olauloa was residing and urge him to make war on Kūali'i, and Kamaka'aulani would take Kūali'i and "conceal yourselves in the bushes" at the place where the battle is to be fought (Fornander 1917b:4[2]:366). When the forces of Ko'olauloa arrived in Honouliuli at the location which the brothers have agreed upon, Kapa'ahulani tells the chief of Ko'olauloa that their army is surrounded, and states that "I will chant my prayer, and if it should be acceptable this morning, we will be saved" (Fornander 1917b:4[2]:368). As Kapa'ahulani chanted the *mele* which he had composed in honor of Kūali'i, Kamaka'aulani convinces Kūali'i to delay the battle (Fornander 1917b:4[2]:380). When the chant was finished the "two armies came together and the battle was declared off" (Fornander 1917b:4[2]:400).

Mr. Yee also pointed out Mauna Kapu, a peak located in the Wai'anae Mountain Range bordering the *ahupua'a* of Nānākuli. The name Mauna Kapu translates to "sacred mountain" (Pukui et al. 1974:148). He believes "Mauna Kapus" were "meeting places, or something like that, for the chiefs," noting that another Mauna Kapu is located in the *ahupua'a* of Moanalua. Sterling and Summers describe Pu'u Kapu (sacred hill) in Moanalua Ahupua'a, noting that "this was where the chiefs and commoners met to discuss matters of importance" (Sterling and Summers 1978:334). There is also a hill named Mauna Kapu located in Līhue on the island of Kaua'i (Pukui et al. 1974:148).

Mr. Yee discussed the hill of Pu'uokapolei, stating that during the summer solstice, the sun sets over Pu'uokapolei. He noted that the pathway of the sun aligns a *heiau* located on Pu'uokapolei with Papa'ena'ena Heiau located in the *ahupua'a* of Waikīkī.

Pu'uokapolei. Supposedly, that has an alignment with a *heiau* where, is it Papa'ena'ena Heiau, I think it lines up with that, or if there was another *heiau*. [...] 'Ōlelo Hawai'i class [...] they go there, that class goes there on one of the solstices or something like that and they chant for the sunset because the sun sets on Pu'uokapolei at a certain time, as viewed from Papa'ena'ena Heiau [...]

Sterling and Summers also stated that Pu'uokapolei was used by ancient Hawaiians as an astronomical marker to designate the seasons, noting that the annual season of Kau which is marked by a high-sun period and corresponds with warmer temperatures and steady trade winds begins when the sun sets over Pu'uokapolei.

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[...] the people of Oahu reckoned from the time when the sun set over Pu'uokapolei until it set in the hollow of Mahinaona and called this period Kau, and when it moved south again from Pu'uokapolei and it grew cold and the time came when young sprouts started, the season was called from their germination (oilo) the season of Ho-'oilo. [Sterling and Summers 1978:34]

Mr. Yee also noted the possibility of a burial cave located on Pu'uokapolei which contained a canoe inside of it: "Supposedly, what the guy told me is that there's a burial cave in Pu'uokapolei that has a canoe inside of it. But that's probably long gone cause if you look at it, it's all leveled already, on the *makai* side."

Mr. Yee also noted the area where the 'Ewa by Gentry subdivision is located was once the site of the largest grove of *wiliwili* trees on the island of O'ahu.

My most beloved thing ever, the *wiliwili* tree. There was a *wiliwili* grove over there cause that's 'Ewa [...] there was a *wiliwili* grove there, where 'Ewa by Gentry is now. The biggest one on the island, and that's why all the birds. The land birds lived over there. The extinct ones, the flightless birds.

Traditional accounts (Kamakau 1991a:47–49) associate the *ao kuewa* with a grove of *wiliwili* trees on the plains of Kaupe'a in Honouliuli.

When a man who had no rightful place in the '*aumakua* [family or personal gods] realm (*kanaka kuleana 'ole*) died, his soul would wander about and stray amongst the underbrush on the plain of Kama'oma'o on Maui, or in the *wiliwili* grove of Kaupe'a on Oahu.

On the plain of Kaupe'a beside Pu'uloa [Pearl Harbor], wandering souls could go to catch moths (*pulelehua*) and spiders (*nanana*). However, wandering souls could not go far in the places mentioned earlier before they would be found catching spiders by '*aumakua* souls, and be helped to escape [...] [Kamakau 1991a:47–49]

Mr. Yee also stated "there was those two ladies who were down by the archery, that's two $p\bar{o}haku$, the lizards in the Hi'iaka story." According to the *mo'olelo*, as Hi'iaka traveled toward the 'Ewa coast, two women, who were also *mo'o* (lizard or water spirit), saw Hi'aka coming. Fearing that Hi'iaka would kill them, the women changed into their lizard form and hid from her. One of the lizards hid in a little space on a stone along the coastal trail, and the other hid nearby. (*Ka Hōkū o Hawai'i*, 15 February 1927, translated in Maly 1997:19). This stone is known as Pe'ekāua which translates to "we two hidden." Hi'iaka greeted the two women and passed on without hurting them.

Mr. Yee discussed visiting Kalaeloa Heritage Park which is located in the coastal region of Honouliuli. He described observing a *heiau* that was partially underground and built using upright coral stones. He noted that Shad Kāne, *kahu* (caretaker) of Kalaeloa Heritage Park, believes the *heiau* is of Tahitian descent. He also noted the presence of a trail marked by upright coral slabs that "supposedly led all the way to another *heiau* that was by Laulaunui Island" near the West Loch of Pu'uloa (Pearl Harbor).

He also noted that Ko'olina is the site of one of the oldest fishing encampments on the island of O'ahu.

At Ko'olina is one of the oldest fishing encampments, or even oldest carbon dates, on Oahu. Cause there's like some fishing cave near Ko'olina or those cliffs by Tracks [Beach Park] before this side of the island was inhabited, people from the Ko'olau were going on fishing expeditions and coming all the way over here. Camping out.

In *The Rise and Fall of the O'ahu Kingdom*, Ross Cordy discussed evidence of early settlement at "sites on the arid western fringe of the 'Ewa Plain in today's Ko Olina Resort" (Cordy 2002:13–14).

Apparent human manipulation of the inland marsh's (site 3357) flora dates to at least A.D. 225-565. Backhoe trenches uncovered a buried habitation deposit (site 1446-1) at the base of the low limestone escarpment next to the marsh. This site has complex stratigraphy with overlapping firepits, midden deposits, and intervening non-cultural alluvium. Fishbone, shellfish, bird bone (flightless goose, etc.), early types of one-piece bone and pearlshell fishhooks, and basalt adze blanks of unusual and often early forms were found. This site yielded an initial use date of A.D. 145-600. Rockshelters (site 3355) in the escarpment across the marsh were also excavated, and deposits dated back to the A.D. 600s-1000s. Also, the coastal dune had subsurface deposits (site 1438-1) with one date of A.D. 410-660, but most post-1200s. The dune deposits contained food remains (fish, molluscs, sea birds and extinct geese), postholes, firepits and fishhooks of early type. The researchers concluded that these three sites reflected 'very dispersed' 'temporary encampments utilized by fishermen and bird collectors'. [Cordy 2002:13–14]

Mr. Yee stated that as a child his favorite beach, which he referred to as "Hamburgers," was located at Ko'olina. He believes the beach was "annihilated" during the development of Ko'olina.

I get my own *mo* 'olelo, brah, here we go, so my favorite beach as a child, try find out where this place is, it's this place called Hamburgers. I think the whole Ko'olina development or the harbor that they made, the fake harbor, just totally annihilated it. I didn't even know what road we took off, which led us there, but it was a beach that we could play as a kid cause the water would come around this rock, you couldn't jump off of it cause the rock was huge, brah, like two stories, as a child, I believe. And it looked like a hamburger, like of sand, sandstone, and the waves would hit it and come around and it would have this little pond. Kind of felt like Magic Island, but it was smaller than that, but you couldn't jump in cause it's like six inches deep, like and it's like super high.

The *wahi pana* and *mo'olelo* associated with Honouliuli which were shared by Mr. Yee demonstrate the importance of Honouliuli in traditional Hawaiian times. Honouliuli was the largest *ahupua'a* on O'ahu. *Kama'āina* travelling from the *moku* of Kona to the *moku* of Wai'anae and Waialua crossed through the *ahupua'a* of Honouliuli through a network of trails. Numerous *mo'olelo* and *wahi pana* associate Honouliuli with the *akua* including Hi'iaka and Pālila, as well as the *ali'i*, including a class of chiefs known as the *lo ali'i* who lived in the *'ili* of Līhue located in the northern region of Honouliuli and the *ali'i* Kūali'i who defeated the chiefs of Ko'olauloa on the plains of Keahuamoa when a *mele* honoring Kū'ali'i was chanted.

6.5.3 Lynette Paglinawan

On 14 October 2019, CSH met with Ms. Lynette K. Kaopuiki Paglinawan at her home to discuss the West Oahu Solar Project and to share her *'ike* of the traditional cultural practice of *ho'oponopono* (to correct) and the *ao kuewa* in the *ahupua'a* of Honouliuli.

Ms. Paglinawan is a social worker. For about eight years, she was on the Historic Sites Review Board. She is also an educator, teaching a class at the University of Hawai'i West O'ahu (UHWO) about Native Hawaiian healing which includes the traditional cultural practices of *ho* 'oponopono, *lomilomi* (massage), and $l\bar{a}$ 'au lapa 'au (herbal medicines). She discussed *ho* 'oponopono which is the process of setting things right within the context of a family. She explained:

In *ho* 'oponopono, which is what I practice, if you do transgressions and if I broke the glass pane in a picture window of a house, my going up to them and just apologizing and saying I'm sorry is not going to make them happy, I have to replace it or give them monetary value to have it replaced. When I do that, then the relationship becomes harmonious.

Since Ms. Paglinawan began working at UHWO, she has "come to learn about the area and the cultural impact that has happened in the *moku* of 'Ewa and [*ahupua'a* of] Honouliuli [...]" Through her research of the works of Mary Kawena Pukui, she has learned that "the area from Waimānalo Gulch over to Kapolei to the location of UHWO was known by very early residents there to be the place where "*ao kuewa*," wandering spirits, congregated from *makai* to *mauka* up Pālehua and especially near the cluster of *wiliwili* trees in Kaupe'a." She noted that "families in the Hawaiian definition includes the souls of these families." She added:

The souls of deceased individuals have three areas to go to, one to $p\bar{o}$ [the realm of the gods] which is like heaven, to be with ancestors, one to *milu* [underworld] which is like hell, the other one is to designated areas within a district and it happens to be in the area of Waimānalo Gulch on over as you go *mauka*.

Ms. Paglinawan's great-great-grandparents were "born and reared in Honouliuli." She added:

If my great-grandparents were born and reared there and my great-grandfather had inherited land and was reared in the area, I can surmise that my 'ohana [family], my relatives, the big branch of relatives, some of them when they died, they went to heaven, some of them when they died might have gone to hell, but possibly there were some who just were not good enough to go to heaven so they were relegated to roam in this area [...]

She stated that she has heard numerous stories of "strange happenings" which are "due to the presence of spirits." She noted that "this is their territory." She mentioned that "there are stories of them being known to go down to the oceanside and cause havoc with the living" and "even going up into the mountain of Pālehua beyond Makakilo," noting "the families who live there talk about ghosts and strange happenings [...]" She stated:

I've had discussions with some people who live up Makakilo and they finally had to leave because things happened and when I talk about it with my students, some of them are residents in the Hawaiian Homes subdivision, they have given me examples of their kids screaming because they see things in the house. She also recalled an experience Mary Kawena Pukui had when she was a teenager walking on the beach in 'Ewa with her dog. As she walked to visit her relatives in Kalaeloa, Ms. Pukui's dog was attacked by an '*uhane* (spirit) who wanted to eat the animal.

Tutu Pukui said, she was about a teenager, went to visit the relatives, they were walking on the beach, 'Ewa Beach, going to Kalaeloa, they had the dog with them, the dog suddenly started growling and jumped up and the next thing they saw was the dog fell down, frothing and the heart pounding. Her aunty said to her, "Take this, go get salt water, bring it back." The aunty sprinkled the salt water on the dog. She talked to the spirits and scolded the spirits, "This animal is not ready to die, you folks leave him alone, you go look for something else, he needs to live yet." And then she prayed. By the time she got finished, he could bring his body upright, but they had to walk slowly. Because this was an animal and in the old days, Hawaiians ate dog. So they used to what they ate in real life, but because her aunty lives that area, she knows how to deal with it. After that she asked the aunty, "Why the dog was like that?" The aunty explained to her about the *ao kuewa*.

Ms. Paglinawan expressed her concerns regarding the effects that the proposed project will have on the *ao kuewa*, noting her belief that ghosts are attracted at night to lights and to energy. She stated that "the building that has the most energy, electrical energy is our library, it is temperature and humidity controlled, it has all the electronic equipment for media and dispersal of information." She recalled speaking with staff at the UHWO library:

So, the stories that have been told to me is staff turned off the lights and everything in the library [when] they leave. When the guard make their round again, even before midnight, the huge monitor is lit up. Who turned it on? They have constant problems with the elevators on campus and the newest building on campus that was just completed about a year ago has had electrical difficulties "left and right."

She added that, "on top of the library we have this huge art piece that is highlighted at night and our chancellor says, "It's a beacon for the people, Nānākuli, Wai'anae," but hell, it's a beacon for the ghosts, too. Because they're energy, they seek the thrill of electricity."

She also noted that "we've had documentation of the double pane picture windows in the library for humidity control and temperature control, they had an incident where somebody from the inside was trying to break their way out. The inner panel was broken, they hadn't gotten to the outer panel. So, it was from the inside going out, and yet, staff will swear nobody was in the building."

She also stated that people "have seen lights coming from the second floor ground, lights from the carpet shining up and they're wondering, "What the hell is that?" They go down, there is nothing underneath."

She noted that these "strange happenings" are not limited to the library. She stated that:

[...] every single building, the workers, they work late, they feel it and we have in the back of [UH] West O'ahu towards this end, we have the housing of the electrical unit. The ones who work there during the day say it is spooky, so you know what they have, Hawaiian salt, if they feel a presence, they eat some Hawaiian salt and they sprinkle, so they have to contend with that.

She also expressed her concerns of the effect of the *'uhane* on the solar panels, noting "that's high energy. It will be like going to the game room." She also noted her concerns regarding the Honolulu Rail Transit System, stating that:

I hate to think what it's going to be like when the rail comes on. This thing lit up at night going zoom, zoom. They gonna be on it, but there's going to be a lot electrical outage cause the more power the faster the excitement.

She also stated that she expects to "see a lot of repair and maintenance on electrical parts." She stated that following exam periods when there is a "high utilization of night classes, night classrooms and study areas," they experience "things breaking down or burning out." She added that "in the long run, the cost for electrical repair and maintenance is a heavy burden for the contractor, but once that contract has finished the problem still remains [...]"

Ms. Paglinawan stated that "spirits travel on ancient trails" noting that "they go from *mauka* going down to *makai*" and that, "ancient trails were there to go up and down, and so, $l\bar{o}l\bar{o}$ [crazy] for them [ghosts] to just stay one place when they don't have to." She added that these "ancient trails are still in use," stating that:

The people who have residence in Kapolei area tell me the stories about somebody trying to enter the house and break the door down. And when they swear, and they go to the front door, they going fight with them, they open the door, no more nothing. And I asked them, "How often does this happen?" They said, "Not that often, once in a while." But that's the ghost who walked the trails on certain nights.

She also discussed an old home on Hawaiian Home Lands in the *ahupua'a* of Waimānalo, Ko'olaupoko. She noted that this house has "never ever been completed" because the residents built the home on the ancient pathway to the beach and they were getting "bothered all the time."

[...] you know down Waimānalo [Ahupua'a], [...] across from the beach is Hawaiian Home Lands, there's one old house that has never ever been completed. It's because the residents built that house right on the beach pathway and they get bothered all the time, so they've given it up.

She also recalled that while her husband, the late Richard K. Paglinawan, was a student at the University of Hawai'i, he heard spirits travelling on the ancient pathways "coming from the ocean going up Waiāhole Road into the mountains."

My husband lived in Waiāhole and when he studied for the University it would be like 2-3 o'clock in the morning, as soon as he hears the drums, he turn off all the lights, he put his head under the pillow and he will himself to go sleep because he can hear it coming from the oceanside going up Waiāhole Road into the mountains.

She added that "this area where the University [of Hawai'i West O'ahu] is located has a lot of trails that go from *mauka-makai*, come from Honolulu going towards Nānākuli." She asked, "Is this going to be built on ancient trails?" She added that the project proponents should be "mindful of the ancient trails because when the ghosts march, they begin from the mountain, but they also begin from the oceanside and they go into the valley."

Ms. Paglinawan stated that the development of the *moku* of 'Ewa including the *ahupua*'a of Honouliuli resulted in the displacement of the *ao kuewa*. She noted that "we destroyed the habitat

of the *ao kuewa* which is the *wiliwili* trees." She added that "if we destroy the habitat of the ghosts, they have no place to go but into the facilities."

[...] if we recognize we destroyed their habitat, we are making restitution cause we know we did that. It is reciprocal *aloha* [love]. So we do this with the right intentions, righting the wrong that we have done and they will respond in right ways. We have the saying, "When *aloha* is given unconditionally, you never know when, but it comes back to you." So, I really believe in that and because I believe that these may be the spirits of my ancestors, I lay my genealogy on the line to reach out to them. That with *aloha* we want to rectify our sins, our transgressions.

To illustrate reciprocal *aloha*, Ms. Paglinawan shared a *mo'olelo* of the goddess Hi'iakaikapoliopele who passed through the 'Ewa District. She stated:

[...] Hi'iakaikapoliopele, who traveled through from Ka'ena Point across the west side and then from Pu'u Kapu and descended down into the 'Ewa District. She as a goddess can see if you're human or you're a ghost. She saw in the distance, two women, they were stringing *leis* [garlands]. She thought in her mind, "I wonder if they still remember *aloha*?" Now for a Hawaiian, *aloha* is your behavior that is hospitable, it is welcome. And the practices during that time, if you were a stranger coming through that desolate area, you're invited to partake in whatever water you have and whatever limited food you have. So she said, "I wonder if they still remember *aloha*?" So she did an *oli* [chant], *oli aloha*, and as soon as they heard it, they looked up and they saw that's a *malihini* [stranger] and the smile just graced their faces. Hi'iaka said, "they still know *aloha*." They stopped everything, the *leis* that they had, they rushed to her and said, "Welcome," and bedecked her with the *leis*. So, the lesson for us, the living, if our intentions is good, if it is *pono* [proper], it increases the opportunity for *aloha* to be reciprocal.

Ms. Paglinawan recommended planting "a wall of trees" surrounding the proposed project area which would provide a home for the displaced spirits. She asked, "Can we entice them to go there?" She went on to state that:

I'm also very mindful that any kind of tree that we put there, that produces food, not just for the living but for the ghosts cause you know if you get '*ulu* [breadfruit, *Artocarpus altilis*], you get coconut, not everybody picks up everything, some go on the ground. Coconut leaves, if you leave it on the ground, it begins to be a cover that bugs begin to cluster, the bugs are also the things the ghosts ate. They also ate whatever foods fell down, but they were Hawaiian so they went *makai* and they go catch crab and they eat crab, they eat the seaweed.

She added that:

I'm thinking we're gonna have a conference in January and Kūkaniloko, the birthing stones, were promised a donation of 10,000 Hawaiian plants. They've offered as many of the *wiliwili* trees as I want, so I want to start a campaign that, like Hawaiian Home Lands, they allow their residents to plant a tree and maybe it might be a border of the road, plant a whole row of trees and that way they have their own houses, man have their own houses. And Hawaiian's have rituals that can

clear them [ghosts] out of the house and prevent them from entering again with bamboo.

She added that, "I'd like to see us repair the habitat, so in our rituals and in our belief in the gods listening to our plea, our needs, they would consider that these souls want to live with *aloha*, with man, the living man, cause for me it's family. I want them to live with *aloha*, so if they sacrifice and having to move outside so that man is comfortable in his area, let's set aside a wall of trees."

Ms. Paglinawan discussed the types of plants that were previously found in the area which include *noni* (Indian mulberry, *Morinda citrifolia*) plants, coconut trees, *lauhala* (*Pandanus tectorius*) trees, and '*ulu* trees. She noted that these plants were "very plentiful but sparse not like a big grove where it's like a park of trees, it was interspersed throughout." She also noted that the destruction of the foliage has also "affected the number of Hawaiian birds who no longer come around." She noted:

There used to be *noni* trees in the area and it was known that the birds sought the nectar from the *noni* flower, now they don't have this around. As a result, the count of the Hawaiian birds has really diminished.

Ms. Paglinawan stated that she would like to "reverse the negative impact and do restitution." She noted that "if you have a border of trees that's long, it meets the needs for life, you have physical food, you have supplies that you use for making crafts and getting along, and you create habitat, not just for the *ao kuewa*, but for birds, as well, who used to be a larger number of them there like the *pueo* (Hawaiian short-eared owl; *Asio flammeus sandwichensis*) and '*i*'*iwi* (Scarlet Hawaiian honey creeper; *Vestiaria coccinea*)."

She also mentioned that she wanted to do plantings in the gulch which is located near the UHWO campus, noting that "we wanted to do plantings, keep the ravine clear, but on the sides we do the plantings, so that they [ghosts] leave [UH] West O'ahu and they go to the plants [...]"

She also noted that planting of "a wall of trees" around the proposed project area would have other benefits including the production of oxygen. She stated that "we need to create this area to have an opportunity to equalize the airspace that's going to reduce carbon dioxide but can we replace it with oxygen." She noted that,

[Solar] Energy is a replacement of carbon dioxide emission but what are we promoting to occupy the space carbon dioxide had because trees produce oxygen, we need oxygen for living.

Ms. Paglinawan also noted that,

For me, it's *ho'oponopono*. If you destroy a part of an ecosystem, how do you bring it back to retain balance? Otherwise it will always be uneven, you remove the oxygen from fossil fuel emission, what are you gonna replace with it? Other chemicals, well, what about oxygen that we need to live and survive on.

Ms. Paglinawan also expressed her concerns about the psychological impacts on the people who encounter these spirits, asking, "What kind of psychological impact is being created when we occupy certain space and then the spirits have to cluster?" She noted her belief that "children who are more pure and more innocent, they see many more things than we do." She added that:

Mary Kawena Pukui says, "if you talk to the ghosts and they know what's happening, if they know they're not wanted there cause they're making people scared. You ask them to go back where they belong, they will go." But, that is an act of *aloha* because they making life good for the living. The children not going get scared.

Ms. Paglinawan also noted that each island has areas which are home to the *ao kuewa*. She stated:

[...] like on Maui, you know where the sand dunes are, lot of bones yeah, Hawaiian Home Lands had land right at the edge of the sand dunes, they built a subdivision, the grandchildren see ghosts. Kaua'i has Manā (sands of Manā) by Polihale, the cliffs of Polihale. That is where the good spirits are judged to leap off and to join their ancestors and they go, but there's also some that never make that jump. So, it happens over there. So, Hawaiians have the leaping off place to get to $p\bar{o}$, so that area means there are pathways that you shouldn't build houses on because it's gonna happen with Hawaiian deaths.

Ms. Paglinawan would like to use the traditional cultural practice of *ho* '*oponopono* to make things right with the '*uhane* who have been displaced by the development of the *moku* of 'Ewa and in the *ahupua* 'a of Honouliuli. She recommends planting "a wall of trees" around the proposed project area as restitution to the '*uhane* who may be displaced by the proposed project. She expressed concerns regarding the effects that the '*uhane* will have on the solar panels, noting the numerous electrical problems experienced by the UHWO due to the presence of the '*uhane*. She stated that planting of "a wall of trees" around the proposed project area would provide a home for the '*uhane* who may be attracted to the energy being generated by the proposed solar farm, as well as, providing a habitat for Native Hawaiian birds and producing oxygen.

She would also like the project proponents to be mindful of the locations of ancient trails which she noted are still in use by the '*uhane* to travel from *mauka* to *makai* in Honouliuli Ahupua'a with less worry about money.

Ms. Paglinawan also expressed her concerns for the people that encounter the '*uhane*. She noted the psychological trauma on workers at the UHWO, as well as, families who live in the area. She was particularly concerned for the children who encounter these spirits, noting her belief that children "see many more things than adults do."

6.6 Summary of Kama'āina Interviews

Based on reviewed and approved interview summaries of Tom Berg, Shad Kāne, Christian Kaimanu Yee, and Lynette Paglinawan, the following is a synthesis of findings within Honouliuli Ahupua'a.

CSH met with Mr. Christian Kaimanu Yee on 9 August 2019 to share his extensive '*ike* of *wahi* pana and mo'olelo associated with the *ahupua*'a of Honouliuli. Mr. Yee discussed several *wahi* pana in the *ahupua*'a of Honouliuli including Pōhakea Pass, Mauna Kapu, Pu'uokapolei, a *wiliwili* grove and a pōhaku known as Pe'ekāua on the plains of Kaupe'a, and a *heiau* and trail located at Kalaeloa Heritage Park. He also noted that one of the oldest fishing encampments on the island of O'ahu was found at Ko'olina.

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Mr. Yee noted the importance of trails to the *ahupua'a* of Honouliuli pointing out that trails leading to Wai'anae and the North Shore pass through Honouliuli. He stated that the "north shore trail" travels along the boundary between Honouliuli and Hō'ae'ae Ahupua'a before branching off and leading to Pōhākea Pass where it continues through the Wai'anae Mountain Range to Lualualei Ahupua'a in the *moku* of Wai'anae. Mr. Yee added that Pōhākea Pass is associated with the goddess Hi'iakaikapoliopele and her epic journey across the Hawaiian Islands, as well as the famous warrior, Palila, who Mr. Yee referred to as the "Hawaiian Thor."

Mr. Yee also discussed the *'ili* of Līhue which was associated with a class of chiefs known as the *lo ali'i*. He shared the *mo'olelo* of Kelea, a chiefess of Maui, who was kidnapped and brought to O'ahu to marry Lō Lale, a *lo ali'i* from Līhue in Honouliuli (Kamakau 1991b:46).

He also discussed Kūali'i, a chief who defeated the chiefs of Ko'olauloa on the plains of Keahumoa (Fornander 1917:364) when a *mele* in honor of Kūali'i was chanted and the chief of Ko'olauloa ceded the districts of Ko'olauloa, Ko'olaupoko, Waialua, and Wai'anae to Kūali'i (Fornander 1917:400). He noted that the *mele* in honor of Kūali'i was composed by Kapa'ahulani and Kamaka'aulani, two brothers who were on opposing sides of the battle.

On 13 August 2019, CSH spoke with Mr. Shad Kāne via telephone. Mr. Kane stated he is not in opposition to the proposed project, noting that the project area has been previously disturbed by sugarcane production.

In written testimony provided to CSH on 19 August 2019, Mr. Berg stated that the project has been "proposed on a pueo (owl) foraging and breeding ecosystem." He noted that records indicate that per earliest colonial contact, the *pueo* is most abundant on the slopes from Pu'u Kapua'i to West Loch, adding that "Hunehune Gulch, Kaloi Gulch, and Honouliuli Gulch are migratory routes used by the pueo to go from mountain to sea to court, mate, forage, and raise their brood." He stated the proposed project will "encroach on prime pueo habitat-considered to be graded A+— "a ten (10)"—when it comes to the degree of pueo habitat in use on this project site." Mr. Berg also stated the project site is also "inhabited by the ōpe'ape'a at various times of the seasons," noting that in 1910, the State of Hawai'i documented '*ōpe'ape'a* within a half-mile of the project area.

Mr. Berg also stated that the *pueo* has "a direct connection to Native Hawaiian family lineage in Ewa Beach," noting the *pueo* is the '*aumakua* for the Michael Lee family and their accounts, which go back over seven generations, are documented at the State Archives Building in Honolulu.

Mr. Berg stated his concern that the "property in question will not receive the proper protocol to conclude no endangered species inhabit the area." He recommended that "a thorough and complete protocol is adopted to repeat the inventory exercise for pueo and 'ōpe'ape'a over the course of a calendar year would be in order so the project does not inadvertently contribute to more endangered species habitat loss." He added that "this practice, to deploy the protocol year-round, is not being done in either the EA and or EIS review processes." Mr. Berg also recommended consulting with Dr. Melissa Price and Dr. Javier Cotin of the Project Pueo Biologist Team and DOFAW Biologist Afsheen Siddiqi regarding *pueo* protocol.

Mr. Berg also expressed his concern for the possible negative aspects of neighboring lighting operations at an adjacent parcel which may reflect off a solar panel into "the flight patterns of migrating birds and the ' $\bar{o}pe$ 'ape 'a and pueo in particular need to be addressed."

Ms. Lynette Paglinawan stated that "whole area in Honouliuli going *mauka* is the space that was occupied by the *ao kuewa*" which she defined as the "ghosts or spirits of the deceased relatives that belong in a family." She expressed her concerns regarding the effects that the proposed project will have on the *ao kuewa*, which she believes are attracted to energy. She also expressed her concerns of the effect of the spirits on the solar panels, noting "that's high energy. It will be like going to the game room." She also noted that UHWO experiences numerous electrical problems due to the presence of these spirits.

Ms. Paglinawan noted that "this area where the University [of Hawai'i West O'ahu] is located has a lot of trails that come from *mauka-makai*, come from Honolulu going towards Nānākuli." She stated that project proponents should be mindful of the locations of ancient trails, noting that the ancient trails are still used by spirits to travel from *mauka* to *makai* within Honuliuli Ahupua'a.

Ms. Paglinawan recommended planting "a wall of trees" surrounding the proposed project area as restitution to the spirits who may be displaced by the proposed project. She also noted that planting of "a wall of trees" around the proposed project area would have other benefits including the production of oxygen and providing a habitat for Native Hawaiian birds.

Ms. Paglinawan also expressed her concerns regarding the psychological impacts for the people that encounter the spirits, noting trauma on workers at the UHWO, as well as, families who live in the area. She was particularly concerned for the children who encounter these spirits, noting her belief that children "see many more things than we do."

Section 7 Traditional Cultural Practices

Timothy R. Pauketat succinctly describes the importance of traditions, especially in regards to the active manifestation of one's culture or aspects thereof. According to Pauketat,

People have always had traditions, practiced traditions, resisted traditions, or created traditions [...] Power, plurality, and human agency are all a part of how traditions come about. Traditions do not simply exist without people and their struggles involved every step of the way. [Pauketat 2001:1]

It is understood that traditional practices are developed within the group, in this case, within the Hawaiian culture. These traditions are meant to mark or represent aspects of Hawaiian culture that have been practiced since ancient times. As with most human constructs, traditions are evolving and prone to change resulting from multiple influences, including modernization as well as other cultures. It is well known that within Hawai'i, a "broader 'local' multicultural perspective exists" (Kawelu 2015:3). While this "local" multicultural culture is deservedly celebrated, it must be noted that it has often come into contact with "traditional Hawaiian culture." This contact between cultures and traditions has undoubtedly resulted in numerous cultural entanglements. These cultural entanglements have prompted questions regarding the legitimacy of newly evolved traditional practices. The influences of "local" culture are well noted throughout this section and understood to represent survivance or "the active sense of presence, the continuance of native stories, not a mere reaction, or a survivable name. Native survivance stories are renunciations of dominance, tragedy and victimry" (Vizenor 1999:vii). Acknowledgement of these "local" influences help to inform nuanced understandings of entanglement and of a "living [Hawaiian] contemporary culture" (Kawelu 2015:3). This section strives to articulate traditional Hawaiian cultural practices as were practiced within the *ahupua'a* in ancient times, and the aspects of these traditional practices that continue to be practiced today; however, this section also challenges "tropes of authenticity," (Cipolla 2013) and acknowledges the multicultural influences and entanglements that may "change" or "create" a tradition.

This section integrates information from Sections 3–6 in examining cultural resources and practices identified within or in proximity of the project area in the broader context of the encompassing Honouliuli landscape. Excerpts from interviews are incorporated throughout this section where applicable.

7.1 Gathering of Plant and Aquatic Resources

Lying in the lee of the Wai'anae Mountain Range, Honouliuli is one of the driest areas of O'ahu with most of the area averaging about 550 mm (22 inches) of rain on the coastal and inland region of the *ahupua'a* and about 1,200 mm (39 inches) in the northern region up into the Wai'anae Mountain Range (Giambelluca 2013). Despite the relative lack of rainfall in this area, there exists a traditional rain name associated with the *ahupua'a* of Honouliuli. This rain, known as the Nāulu, is described as a sudden shower and is more commonly associated with other notoriously dry locations, such as Kawaihae, Hawai'i and Ni'ihau (Akana and Gonzalez 2015:187). The general lack of distinctive, traditional rain names is indicative of historic environmental conditions within the *ahupua'a*. Due to these conditions, *maka'āinana* living within the *ahupua'a* were forced to modify or utilize freshwater resources in innovative ways.

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No natural streams are located in the vicinity of the project area. However, fresh water remains available below the surface of Honouliuli. Dissolution "pit caves" (Mylroie and Carew 1995) or "sink holes" would accumulate water within them via a subterranean water or karst system; this water also contained nutrient-rich sediment that allowed for the cultivation of significant plant resources such as *kalo*, $k\bar{i}$, and *noni*. McAllister (1933) documented examples of traditional agricultural activity in Honouliuli, writing that the *kama* '*āina* of the *ahupua* '*a* utilized the soil on the floor of caves for cultivation. At the time of his survey in 1930 both *mai* '*a* (bananas) and $k\bar{o}$ (sugarcane) were still being cultivated within these pits.

The lowlands fronting the west loch of Pearl Harbor (Kaihuopala'ai) were suitable for the cultivation of the traditional Hawaiian staple crop, *kalo*. The production (and consumption) of *kalo* was vitally important to many communities of Native Hawaiians living in 'Ewa. Captain James King, visiting Hawai'i in 1779, noted that "the natives of these islands are, in general, above the middle size and well made; they walk very gracefully, run nimbly and are capable of bearing great fatigue" (Shintani 1993:10). Accordingly, the high level of physical activity and physical fitness described by Captain King was a normal part of Hawaiian life and was largely attributable to the availability of plant and food resources such as *kalo*, '*uala* (sweet potato; *Ipomoea batatas*), *niu*, *mai'a*, *limu* (seaweed), and *i'a* (fish). Besides the observed contributions to stamina and health, *kalo* was also a revered staple food, believed to have derived from the first-born son of Wakea and Papa.

[...] the supreme god Kane 'in the form of Wakea (a form associated with the earth) produced two sequential offspring: the first became kalo (taro) plant, the second became Hāloa, the ancestor of man [...] thus, in kinship terms, the taro is the elder brother and the senior branch of the family tree, mankind belongs to the junior branch, stemming from the younger brother.' [Trask 2012:75]

'Ewa was also famous for a rare taro called the " $k\bar{a}\bar{i}$ o 'Ewa," which was grown in mounds in marshy locations (Handy and Handy 1972:471). The cultivation of this prized and delicious taro led to the saying, "Ua 'ai i ke $k\bar{a}\bar{i}$ -koi o 'Ewa, He has eaten the K $\bar{a}\bar{i}$ -koi taro of 'Ewa" (Pukui 1983:305).

Traditional Hawaiian diets were also supplemented with ocean-based proteins. Native Hawaiians historically fished the reefs, farmed fishponds, and utilized the freshwater springs in the *ahupua* 'a of Honouliuli. The lochs of Pearl Harbor were ideal for the construction of fishponds and fish traps. References to the abundance of ocean resources can be found within *mo* 'olelo, wahi pana, and 'olelo no 'eau associated with Honouliuli Ahupua'a.

The *mo* 'olelo "Legend of the Children" describes the coastal area of Kūalaka'i as being plentiful in fish. Clark (1977:74) and Pukui et al. (1974:119) describe Kūalaka'i as a type of sea cucumber (*Tethys*) that squirts purple fluid when squeezed. The '*ōlelo no*'eau, "Kai a hali a ka makani," translates to "the fish fetched by the wind" which describes the migration of the 'anae that travels from the leeward coast to the windward coast of O'ahu.

Interviewee Christian Kaimanu Yee noted that the site of one of the oldest fishing encampments on the island of O'ahu was discovered at Ko'olina. Ross Cordy (2002:13–14) discussed evidence of early settlement at "sites on the arid western fringe of the 'Ewa Plain in today's Ko Olina Resort," which included "fishbone, shellfish, bird bone (flightless goose, etc.), early types of one-piece bone and pearlshell fishhooks, and basalt adze blanks" which date back to AD 145-600.

7.2 Faunal Resources

The *pueo* (*Asio flammeus sandwichensis* or short-eared owl), which is endemic to Hawai'i, are found on all of the main Hawaiian islands and are listed by the State of Hawai'i as endangered on the island of O'ahu (DLNR 2005). The DLNR states that *pueo* are most commonly found in "open habitats such as grasslands, shrublands, and montane parklands, including urban areas and those actively managed for conservation" (DLNR 2005).

In written testimony provided to CSH via email on 19 August 2019, Mr. Tom Berg stated that the project has been "proposed on a pueo (owl) foraging and breeding ecosystem." He noted that historic records indicate the *pueo* is most abundant on the slopes from Pu'u Kapua'i to West Loch. He added that "Hunehune Gulch, Kaloi Gulch, and Honouliuli Gulch are migratory routes used by the pueo to go from mountain to sea to court, mate, forage, and raise their brood." He also stated the proposed project will "encroach on prime pueo habitat-considered to be graded A+—"a ten (10)"—when it comes to the degree of pueo habitat in use on this project site."

The *pueo* is one of the most important *'aumākua* gods and ancestral deities of the family (Valeri 1985:19, 21). Mr. Berg noted the *pueo* has "a direct connection to Native Hawaiian family lineage in Ewa Beach," noting that the *pueo* is the *'aumakua* for the Michael Lee family and their accounts, which go back over seven generations, are documented at the State Archives Building in Honolulu.

Mr. Berg also stated that the project site is "inhabited by the ōpe'ape'a [Hawaiian hoary bat, *Lasiurus cinereus semotus*] at various times of the seasons," noting that in 1910, the State of Hawai'i documented 'ōpe'ape'a within a half-mile of the project area. "The only land mammal native to the Hawaiian archipelago," 'ōpe'ape'a are found on all of the main Hawaiian islands except for Ni'ihau (DLNR 2005:3-13) and have been "found roosting in 'ōhi'a (*Metrosideros polymorpha*), pu hala (*Pandanus tectorius*), coconut palms (*Cocos nucifera*), kukui (*Aleurites moluccana*), kiawe (*Proscopis pallida*), avocado (*Persea americana*), shower trees (*Cassie javanica*), pūkiawe (*Styphelia tameiameiae*), and fern clumps; they are suspected to roost in Eucalyptus (*Eucalyptus* spp.) and Sugi pine (*Cyrptomeria japonica*) stands" (DLNR 2005). The 'ōpe 'ape 'a was listed as an endangered species under the Endangered Species Conservation Act of 1969.

7.3 Wahi Pana

There exist a myriad of cultural sites or *wahi pana* for 'Ewa Moku, however, for the *ahupua*'a of Honouliuli trails, plains, and temples were of particular importance.

Trails were and continue to be valuable resources for Native Hawaiian culture and life ways. In the past, trails were well used for travel within the *ahupua'a*, between *mauka* and *makai* and laterally between *ahupua'a*. A historical trail system existed in O'ahu extending from Honolulu to Wai'anae. A cross-*ahupua'a* (east-west) trail that bordered Pearl Harbor passed through Honouliuli north of Pu'uokapolei and continued along the coast to Wai'anae. Mr. Yee pointed out that the "north shore trail," which branches off the cross-*ahupua'a* trail, traverses a portion of the eastern boundary of the *ahupua'a* between Honouliuli and Hō'ae'ae Ahupua'a before branching off and leading to Pōhākea Pass and traversing through the Wai'anae Mountain Range to Lualualei Ahupua'a in the *moku* of Wai'anae.

Mr. Yee noted that Pōhākea Pass is associated with the goddess Hi'iakaikapoliopele, sister of volcano goddess Pele, and her epic journey across the Hawaiian Islands. He noted that from Pōhākea Pass, Hi'iaka could see the entire *moku* of 'Ewa. From Pōhākea Pass, Hi'iaka also saw her traveling companions, Lohi'au and Wahine'ōma'o, as they traveled by canoe to the harbor of Kou (Honolulu) (Ho'oulumahiehie 2008b:260). She also saw that her *aikāne*, Hōpoe, had "died in the fires of her elder sister Pele" as she "gazed towards Hawai'i" from Pōhākea Pass (Ho'oulumahiehie 2008b:260).

Mr. Yee also noted that Pōhākea Pass is associated with the famous warrior, Palila, who could throw his supernatural war club a long distance and fly along the club's path as he held on to the end of it. According to the *mo'olelo*, Palila used his supernatural war club to carry himself from Ka'ena Point at Wai'anae, before landing at Pōhākea Pass and continuing east across the *moku* of 'Ewa.

Ms. Paglinawan stated that "this area where the University [of Hawai'i West O'ahu] is located has a lot of trails that go from *mauka-makai*, come from Honolulu going towards Nānākuli." She noted that the ancient trails are still used by spirits to travel from *mauka* to *makai* within Honuliuli Ahupua'a. She mentioned that "there are stories of them being known to go down to the oceanside and cause havoc with the living" and "even going up into the mountain of Pālehua beyond Makakilo," noting "the families who live there talk about ghosts and strange happenings [...]" Ms. Paglinawan asked, "Is this going to be built on ancient trails?" She stated that the project proponents should be "mindful of the ancient trails because when the ghosts march, they begin from the mountain, but they also begin from the oceanside and they go into the valley."

Mr. Yee stated the *'ili* of Līhue, which is located in the northern region of Honouliuli Ahupua'a, was associated with a class of chiefs known as the *lo ali'i*. Mr. Yee noted the *"lo ali'i* were the highest ranking chiefs but then they were hidden so they were like the poorest at the same time." He also discussed the *mo'olelo* of Kelea, a chiefess of Maui, who was kidnapped and brought to O'ahu to marry Lō Lale, a *lo ali'i* from Līhue in Honouliuli (Kamakau 1991b:46).

Mr. Yee pointed out Mauna Kapu, a peak located in the Wai'anae Mountain Range bordering the *ahupua'a* of Nānākuli. He noted the existence of another Mauna Kapu in the *ahupua'a* of Moanalua, adding that he believes that Mauna Kapu were "meeting places, or something like that, for the chiefs."

The 'Ewa coastal plain was also a place of spiritual significance as it was associated with the *ao kuewa*, the realm of the homeless souls. According to Samuel Kamakau, there existed three spirit realms, the *ao kuewa*, *ao 'aumakua*, and *ke ao o milu*. Upon death, the spirit of the recently deceased was said to leave the body and then proceed toward a *leina* where they would leap into Pō, the world of the unseen (Handy and Pukui 1972:146). The spirit was guided to and over the *leina* and into Pō by their '*aumakua* (Handy and Pukui 1972:146), however, if the soul of the deceased had no place in the '*aumakua* realm, or was abandoned by an '*aumakua*, they were destined to wander the *wiliwili* grove of Kaupe'a until such time that they were rescued by their '*aumakua*. Mr. Yee also noted largest grove of *wiliwili* trees on the island of O'ahu was once located in the area where the 'Ewa by Gentry subdivision is now. Fornander (1919a:6[2]:292) states that Pu'uokapolei may have been a *leina*, jumping off point associated with the wandering souls who roamed the plains of Kaupe'a and Kānehili, *makai* of the hill.

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Pu'uokapolei was also known to be the home of Kamapua'a's grandmother, Kamaunuaniho, (Nakuina 1904:50). After conquering the majority of O'ahu, he established his grandmother as queen (Pukui 1974:203). There was once a large rock shelter on the *makai* side said to have been the residence of Kamapua'a and his grandmother (McAllister 1933:108). Another account (*Ka Loea Kālai 'āina*, 13 January 1900 in Sterling and Summers 1978:34) stated that Kekele 'aikū, the older brother of Kamapua'a, also lived on Pu'uokapolei.

The plain of Pukaua is also located near Pu'uokapolei, northwest of the project area. Two distinct *mo'olelo* are connected with this cultural site. The first of these two stories was presented within a 13 January 1900 edition of *Ka Loea Kālai'āina* which states that two old women with supernatural powers were heading to their home to Pukaua following an evening of fishing at the village of Kualaka'i. As the sun began to rise, the women hid to avoid being seen and their bodies turned to stone. The second *mo'olelo* involves Hi'iaka, and was spread across several daily editions of *Ka Hōkū o Hawai'i* from February 1927. According to the *mo'olelo*, the two women were *mo'o*. The women saw Hi'iaka as she journeyed toward the 'Ewa coast. They were afraid that Hi'iaka would kill them, so they transformed into their lizard form and hid from Hi'iaka (*Ka Hōkū o Hawai'i*, 15 February 1927, translated in Maly 1997:19). This stone was known as "Pe'e-kāua," which translates to "we two hidden." Mr. Yee also discussed the plain of Pukaua, mentioning that "there was those two ladies who were down by the archery, that's two *pōhaku*, the lizards in the Hi'iaka story."

Mr. Yee also discussed Kūali'i, a "celebrated chief [...] noted for his strength and bravery" who defeated the chiefs of Ko'olauloa on the plains of Keahumoa (Fornander 1917b:4[2]:364). Mr. Yee stressed the importance of two brothers, Kapa'ahulani and Kamaka'aulani, who were on opposing sides of the battle. According to the *mo'olelo*, Kapa'ahulani and Kamaka'aulani composed the *mele* in honor of Kūali'i and devised a plan in which Kapa'ahulani would urge the chief of Ko'olauloa to make war on Kūali'i, and Kamaka'aulani would take Kūali'i and "conceal yourselves in the bushes" at the place where the battle is to be fought (Fornander 1917b:4[2]:366). When the forces of Ko'olauloa arrived in Honouliuli, their army of twelve hundred were outnumbered by Kūali'i's army of twelve thousand, however, the battle was averted when the *mele*, which was composed by Kapa'ahulani and Kamaka'aulani in honor of Kūali'i was chanted and the chief of Ko'olauloa surrendered, ceding the districts of Ko'olauloa, Ko'olaupoko, Waialua and Wai'anae to Kūali'i (Fornander 1917b:4[2]:400).

Kūalaka'i is the name of an ancient fishing village located on the southwestern side of Honouliuli Ahupua'a, southwest of the project area. Kūalaka'i is mentioned in the "Legend of the Children" which foretells the breaking of the eating *kapu* by the *ali'i* (*Ka Loea Kālai'āina*, 22 July 1899:15; translation in Sterling and Summers 1978:7). This area was also once the site of a spring called Hoaka-lei ("lei reflection"), where according to *mo'olelo*, Hi'iaka picked *lehua* and saw her reflection in the water (Pukui et al. 1974:119).

Kalaeloa is an area located at the southwestern point of O'ahu. Kalaeloa Point was the home of Uhu Makaikai, a *kupua* who could take the form of a man or a giant parrotfish (*uhu*). He is mentioned in several legends concerning the hero Kawelo and with Kawelo's struggles with 'Aikanaka, the ruling chief of Kaua'i (Hawaiian Ethnological Notes, Bishop Museum Vol. II:114, translation in Sterling and Summers 1978:41).

Cultural practices within Honouliuli of late have been inspired by traditional understandings of caring for natural and cultural resources. The Kalaeloa Heritage and Legacy Foundation has adopted practices wherein the community can *mālama* (care for) cultural sites, and in turn benefit from the knowledge inherent in such sites. Previously documented cultural sites within the Kalaeloa Heritage Park are actively cared for while also the subject of numerous university-level studies. These sites have been established as important centers for an *'āina*-based education. Mr. Yee recalled visiting Kalaeloa Heritage Park where he observed a *heiau* which was partially underground and built using upright coral stones. He also observed a trail marked by upright coral slabs which "supposedly led all the way to another *heiau* that was by Laulaunui Island" near the West Loch of Pu'uloa (Pearl Harbor).

7.4 Religious Practice

Several *heiau* stood in Honouliuli Ahupua'a including Pu'uokapolei Heiau, Pu'u Ku'ua Heiau, and two unidentified *heiau* located at the foot of Pu'u Kanehoa and Pu'u Kuina, respectively. Each year, a ceremony commemorating the changing of the seasons is still observed in the beginning of May at Waikīkī and Honouliuli. Sam 'Ohukani'ōhi'a Gon III, Na Wa'a Lalani Kahuna O Pu'u Koholā, and the late Kumu Hula John Keola Lake's *hula hālau* perform *oli* and *hula* during the ceremony (Genz et al. 2012). The ceremony occurs at Pu'uokapolei Heiau which is oriented so that it views the setting of the sun behind Pu'ula'ila'i farther west, and maintains a line of sight extending eastward from Pu'ula'ila'i toward Papa'ena'ena Heiau located in Waikīkī. Mr. Yee also noted that during the summer solstice, the sun sets over Pu'uokapolei, adding that the pathway of the sun aligns a *heiau* located on Pu'uokapolei with Papa'ena'ena Heiau.

Interviewee Lynette Paglinawan stated that "the area from Waimānalo Gulch over to Kapolei to the location of UHWO was known by very early residents there to be the place where "*ao kuewa*," wandering spirits, congregated from *makai* to *mauka* up Pālehua and especially near the cluster of *wiliwili* trees in Kaupe'a." Ms. Paglinawan stated that the development of the *moku* of 'Ewa including the *ahupua'a* of Honouliuli resulted in the displacement of the *ao kuewa*. She noted that "we destroyed the habitat of the *ao kuewa* which is the *wiliwili* trees." She added that "if we destroy the habitat of the ghosts, they have no place to go but into the facilities." She would like to use the traditional cultural practice of *ho'oponopono* to make things right with the spirits who have been displaced. Ms. Paglinawan suggests planting "a wall of trees" surrounding the proposed project area which would provide a home for the displaced spirits.

7.5 Burials

'Ewa was famous for the many limestone caves formed in the uplifted coral, called the "Ewa Karst." In traditional Hawaiian times, the areas of exposed coral outcrop were undoubtedly more extensive. Where not covered by alluvium or stockpiled material, this Pleistocene limestone outcrop has characteristic dissolution "pit caves" (Mylroie and Carew 1995). The caves of Pu'uloa were sometimes also used as burial caves. Following the death of Keali'iahonui, son of Kaua'i's last king, Kaumuali'i, in 1849, his body was buried in Pu'uloa (Alexander 1907:27). Burials have been encountered in the coastal areas of the *ahupua'a*, however, no burials have been encountered within the project area nor within the vicinity of the project area.

Mr. Yee noted the possibility of a burial cave located on Pu'uokapolei which contained a canoe inside of it, however, he added that it's "probably long gone cause if you look at it, it's all leveled already, on the *makai* side."

Section 8 Results and Analysis

CSH undertook this CIA at the request of Tetra Tech, Inc., and on behalf of AES Distributed Energy. The research broadly covered the entire *ahupua* 'a of Honouliuli, including the current project area.

8.1 Results of Background Research

Background research for this study yielded the following results, presented in approximate chronological order:

- Honouliuli is the largest *ahupua* 'a in the *moku* of 'Ewa. Honouliuli translates literally as "dark water," "dark bay," or "blue harbor," and thus is named for the waters of Pearl Harbor which marks the eastern boundary of the *ahupua* 'a (Jarrett 1930:22). Another source translates Honouliuli as "The blue bays or inlets" (*Saturday Press*, 11 August 1883). Honouliuli appears in the "Mo'olelo of Lepeamoa," the chicken-girl of Pālama, where Honouliuli is the name of the husband of the chiefess Kapālama, and grandfather of Lepeamoa (Westervelt 1923:164–184).
- 2. Generally, Honouliuli was described as very hot and dry. Evidence for drought-like conditions are further supported by the relative lack of traditional rain names associated with Honouliuli Ahupua'a. The Nāulu rain is the only known associated rain name for Honouliuli. Due to the lack of rainwater, freshwater resources were accessed via a karstic system.
- 3. In traditional Hawaiian times, the areas of exposed coral (Pleistocene limestone) outcrop were undoubtedly more extensive. According to McAllister (1933), holes and pits in the coral were generally accessed for water while larger pits, often containing soil, were used for cultivation. McAllister additionally remarked that at the time of his 1930s survey *mai*'a (banana; *Musaceae*) and *kō* (sugarcane; *Saccharum officinarum*) were being cultivated within the pit caves (sinkholes) (McAllister 1933:109).
- 4. The traditional *ka'ao* associated with the area speak of the *akua* brothers, Kāne and Kanaloa. It was their supernatural feat of hurling *pōhaku* across the island that determined the boundaries of land divisions (Sterling and Summers 1987:1). Additional *mo'olelo* speak of Hi'iaka and her travels across the plains of 'Ewa. In particular, the *wahi pana* of Kaupe'a (located south of the current project area) is described. Kamakau describes Kaupe'a as a wide plain where a grove of *wiliwili (Erythrina sandwicensis)* stands (Kamakau 1991a:47). This plain is an *ao kuewa*, a realm belonging to homeless souls. In general, the *kama 'āina* of both Honouliuli Ahupua'a and 'Ewa District made a point to avoid this place.
- 5. Pu'uokapolei is a prominent hill located on the 'Ewa coastal plain that was the primary landmark for travelers on the trail running from Pearl Harbor to Wai'anae. A *heiau* was once on the summit of the hill, however, by the time of McAllister's survey of O'ahu it had been destroyed (McAllister 1933:108). The hill was also used as a point of solar

reference or as a place for celestial observations of the winter and summer solstice. A ceremony at a *heiau* on Pu'uokapolei provides a vantage point to capture the sun setting directly behind Pu'ula'ila'i, a peak farther west in the Wai'anae Range. A coinciding ceremony at Kūpalaha Heiau in Waikīkī captures the same essence as the sun sets behind Pu'uokapolei.

- 6. Additional *heiau* located within Honouliuli included Pu'u Ku'ua located at Palikea, in addition to two unidentified *heiau*. These two unidentified *heiau* are located at the foot of Pu'u Kanehoa and Pu'u Kuina, respectively.
- 7. In later historic times, a network of trails encircled and crossed the Wai'anae Range, allowing passage from West Loch to the Honouliuli lowlands, past Pu'uokapolei and Waimānalo Gulch to the Wai'anae coast and onward circumscribing the shoreline of O'ahu ('Ī'ī 1959:96–98). The main trail along the south shore of O'ahu would have been approximately 1.5 km to the southeast. A main trail extending up the central valley of O'ahu would have been approximately 3 km to the east. The 1825 Malden map shows a trail extending from the main trail along the south shore of O'ahu into the uplands in the Pālehua area as passing just a couple hundred meters to the southwest of the project area.
- 8. The rich resources of Pu'uloa—the fisheries in the lochs, the shoreline fishponds, the numerous springs, and the irrigated lands along the streams—made 'Ewa a prize for competing chiefs. 'Ewa Moku was also a political center and home to many chiefs in its day. Oral accounts of *ali'i* recorded by Hawaiian historian Samuel Kamakau date back to at least the twelfth century. *Ali'i* associated with Honouliuli and greater 'Ewa Moku included Kākuhihewa, Keaunui, Lakona, Mā'ilikūkahi, and Kahahana.
- 9. In early historic times, the population of Honouliuli was concentrated at the western edge of West Loch in the vicinity of Kapapapuhi Point in the "Honouliuli Taro Lands." This area was clearly a major focus of population due to the abundance of fish and shellfish resources in close proximity to a wide expanse of well-irrigated bottomland suitable for wetland taro cultivation.
- 10. Early foreign accounts describe the southwest coast of O'ahu, including Honouliuli Ahupua'a, as an area "a little distance from the sea, the soil is rich and all the necessaries of life are abundantly produced" (Vancouver 1798:215). A sailor among Vancouver's crew observed, however, that "from the number of houses within the harbour it should seem to be very populous; but the very few inhabitants who made their appearance were an indication of the contrary" (Vancouver 1798:216).
- 11. Following the Māhele of 1848, 99 individual land claims in the *ahupua* 'a of Honouliuli were registered and awarded by King Kamehameha III. No *kuleana* land claims were made for land within the current project area or vicinity. The vast majority of the LCA parcels were located in Honouliuli near the taro lands of the '*ili* of Pu'uloa and the Pu'uloa Salt Works. The largest award (Royal Patent 6071, LCA 11216, '*Āpana* 8) in Honouliuli Ahupua'a was granted to Miriam Ke'ahi-Kuni Kekau'onohi on January 1848 (Native Register 1848) who acquired a deed to all unclaimed land within the *ahupua'a*, including the present project area.
- 12. Beginning with the time of Western Contact, however, Hawaiian populations were introduced to many virulent western diseases which began to decimate the native populations. Thus, four years following the 1832 census, the 'Ewa population had dropped to 3,423 (Schmitt 1973:9, 36), "a decrease of 592 in 4 years" (Ewa Station Reports 1836). Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages.
- 13. With the increasing foreign interests on O'ahu Island during the last half of the nineteenth century, an array of agricultural enterprises were attempted. In 1871, John Coney rented the lands of Honouliuli to James Dowsett and John Meek, who used the land for cattle grazing. In 1877, James Campbell purchased most of Honouliuli Ahupua'a for a total of \$95,000.
- 14. By 1889, the Ewa Plantation Company was established and lands throughout Honouliuli were designated for sugarcane cultivation. Sugar production exploded with the successful drilling of an artesian well by James Campbell on the 'Ewa Plain. Campbell's first well was named Waianiani ("crystal waters") by the *kama 'āina* of Honouliuli (Nellist 1925). By 1930, Ewa Plantation had drilled 70 artesian wells to irrigate cane lands; artesian wells provided fresh water to Honouliuli for nearly 60 years (Ho'okuleana 2014).
- 15. In 1897, B.F. Dillingham established the Oahu Sugar Company (OSC) on 12,000 acres leased from the estates of John Papa 'Ī'ī, Bishop, and Robinson. The Oahu Sugar Company had over 900 field workers, composed of 44 Hawaiians, 473 Japanese, 399 Chinese, and 57 Portuguese. The first sugar crop was harvested in 1899, ushering in the sugar plantation era in Waipahu (Ohira 1997). Prior to commercial sugar cultivation, these lands were described as being "of near desert proportion until water was supplied from drilled artesian wells and the Waiahole Water project" (Condé and Best 1973:313).
- 16. The Waiahole Water Company was formally incorporated in 1913 and was originally a subsidiary of the Oahu Sugar Company. The Waiahole Ditch was designed by engineer Jorgen Jorgensen, with recommendations by engineer J.B. Lippencott and assisted by W.A. Wall. Upon its completion in 1916, the Waiahole Ditch was 35 km (21.9 miles) long and cost \$2.3 million. The 32 million gallons of daily water enabled the O'ahu Sugar Company to grow to "some 20 square miles [...] ranging in elevation from 10 ft at the Waipio Peninsula [...] to 700 ft at the Waiahole Ditch" (Condé and Best 1973:313). The ditch system is included on the state inventory of archaeological sites as SIHP # 50-80-09-2268. The Waiahole Ditch System crossed through the western portion of the present project area.
- 17. The early twentieth century saw the lands of Honouliuli heavily utilized by both civilians and the U.S. military for transportation. The U.S. Government began acquiring the coastal lands of 'Ewa for development of a naval base at Pearl Harbor. In 1901, the U.S. Congress formally ratified annexation of the Territory of Hawaii, and the first 1,356.01 acres of Pearl Harbor land were transferred to U.S. ownership.

- 18. In 1937, 18 miles of roads were built in the coastal Honouliuli area, and in 1939-1940 the U.S. bought 3,500 acres of land in this area (Landrum et al. 1997:62–67), to build several other military camps and installations, including Barbers Point Naval Air Station.
- 19. Following the Japanese Navy's attack on Pearl Harbor on 7 December 1941, the Territory of Hawaii was declared under martial law and the writ of *habeas corpus* (the requirement for a person under arrest to be brought before a judge or into court) was suspended (U.S. Department of the Interior 2014:6–7). Persons of Japanese and European ancestry in Hawai'i suspected of disloyalty to the United States were rounded up and imprisoned by the U.S. military and the FBI (U.S. Department of the Interior 2014:si). In 1943, the Honouliuli Internment Camp was constructed to intern citizens, resident aliens, and prisoners of war. Located in Honouliuli Gulch, east of the project area, the camp was the ''last, largest, and longest-used World War II confinement site in Hawai'i," holding approximately 320 internees and nearly 4,000 prisoners of war (U.S. Department of the Interior 2014:xiv).

8.2 Results of Community Consultations

CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to a total of 70 individuals or groups; 12 responded, one provided written testimony, and three of these *kama 'āina* and/or $k\bar{u}puna$ met with CSH for more in-depth interview. Consultation was received from community members as follows:

- 1. Christian Kaimanu Yee, kama 'āina and knowledgeable of mo 'olelo and wahi pana
- 2. Shad Kāne, member of Kapolei Hawaiian Civic Club, Chair of the Oʻahu Council of Hawaiian Civic Clubs Committee on the Preservation of Historic Sites and Cultural Properties, Aliʻi Ai Moku of the Kapuāiwa Chapter of the Royal Order of Kamehameha Ekahi, and 'Ewa Moku Representative on the State Aha Moku Advisory Committee.
- 3. Tom Berg, former Councilman, District 1
- 4. Lynette Paglinawan, cultural practitioner; educator, teaches a course on Native Hawaiian Healing at University of Hawai'i West O'ahu

On 24 January 2020, an *In-Progress Draft Cultural Impact Assessment for the West O'ahu Solar Project* was provided via email to two parties representing the Aha Moku Council, two parties at Nā Ala Hele, two parties at the SHPD History and Culture Branch, and OHA. The parties were invited to review and comment, or provide notification of their intent to comment, prior to the reports inclusion in the Draft Environmental Assessment. CSH followed up with the seven parties via email on 25 February 2020, and has not received any comments or notification of an intent to comment to date.

8.3 Impacts and Recommendations

Based on information gathered from the community consultation, participants voiced and framed their concerns in a cultural context.

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- 1. Mr. Shad Kāne stated he is not in opposition to the proposed project. He noted the project area has been previously disturbed by sugarcane production.
- 2. Mr. Tom Berg stated that the project has been "proposed on a pueo (owl) foraging and breeding ecosystem." He noted records indicate that per earliest colonial contact, the *pueo* is most abundant on the slopes from Pu'u Kapua'i to West Loch, in the area where the project is slated. He added that "Hunehune Gulch, Kaloi Gulch, and Honouliuli Gulch are migratory routes used by the pueo to go from mountain to sea to court, mate, forage, and raise their brood." He stated the proposed project will "encroach on prime pueo habitat-considered to be graded A+—"a ten (10)"—when it comes to the degree of pueo habitat in use on this project site."
- 3. Mr. Berg added that the *pueo* has "a direct connection to Native Hawaiian family lineage in Ewa Beach," noting the *pueo* is the '*aumakua* for the Michael Lee family and their accounts, which go back over seven generations, are documented at the State Archives Building in Honolulu.
- 4. Mr. Berg also stated that the project site is "inhabited by the ōpe'ape'a at various times of the seasons," noting that in 1910, the State of Hawai'i documented '*ōpe'ape'a* within a half-mile of the project area.
- 5. Mr. Berg stated his concern that the "property in question will not receive the proper protocol to conclude no endangered species inhabit the area." He recommended that "a thorough and complete protocol is adopted to repeat the inventory exercise for pueo and 'ōpe'ape'a over the course of a calendar year would be in order so the project does not inadvertently contribute to more endangered species habitat loss." He also recommended consulting with Dr. Melissa Price and Dr. Javier Cotin of the Project Pueo Biologist Team and DLNR's Division of Forestry and Wildlife (DOFAW) Biologist Afsheen Siddiqi regarding pueo protocol.
- 6. Mr. Berg also expressed his concern over the possible negative aspects of light at an adjacent parcel. He expressed concern that a solar panel may be reflecting neighboring lighting operations into "the flight patterns of migrating birds and the 'ōpe'ape'a and pueo in particular need to be addressed."
- 7. Ms. Lynette Paglinawan stated that "the area from Waimānalo Gulch over to Kapolei to the location of UHWO was known by very early residents there to be the place where "*ao kuewa*," wandering spirits, congregated from *makai* to *mauka* up Pālehua and especially near the cluster of *wiliwili* trees in Kaupe'a." She expressed her concerns regarding the effects that the proposed project will have on the *ao kuewa*, which she believes are attracted to energy. She also expressed her concerns of the effect of the spirits on the solar panels, noting "that's high energy. It will be like going to the game room." She also noted that UHWO experiences numerous electrical problems due to the presence of these spirits.
- 8. Ms. Paglinawan noted that "this area where the University [of Hawai'i West O'ahu] is located has a lot of trails that go from *mauka-makai*, come from Honolulu going towards Nānākuli." She stated that project proponents should be mindful of the locations of ancient

trails, noting that the ancient trails are still used by spirits to travel from *mauka* to *makai* within Honuliuli Ahupua'a.

- 9. Ms. Paglinawan recommended planting "a wall of trees" surrounding the proposed project area as restitution to the spirits who may be displaced by the proposed project. She also noted that planting of "a wall of trees" around the proposed project area would have other benefits including the production of oxygen and providing a habitat for Native Hawaiian birds.
- 10. Ms. Paglinawan also expressed her concerns regarding the psychological impacts for the people that encounter the spirits, noting trauma on workers at the UHWO, as well as, families who live in the area. She was particularly concerned for the children who encounter these spirits, noting her belief that children "see many more things than adults do."
- 11. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3. In the event that *iwi kūpuna* are identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended.
- 12. In the event that *iwi kūpuna* and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance

8.4 Ka Pa'akai Analysis

In <u>Ka Pa'akai vs Land Use Commission</u>, 94 Hawai'i (2000) the Court held the following analysis also be conducted:

- 1. The identity and scope of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary native Hawaiian rights are exercised in the project area;
- 2. The extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed action; and
- 3. The feasible action, if any, to be taken by the LUC to reasonably protect native Hawaiian Rights if they are found to exist.

Based on information gathered from the cultural and historical background, and community consultation of the CIA for this project, no culturally significant resources were identified within the project area. At present, there is no documentation or testimony indicating traditional or customary Native Hawaiian rights are currently being exercised "for subsistence, cultural and religious purposes and possessed by *ahupua*'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778" (Hawai'i State Constitution, Article XII, Section 7) within the project area. While no cultural resources, practices, or beliefs were identified as currently existing within the project area, Honouliuli Ahupua'a maintains a rich cultural history in the exercise of traditional or customary Native Hawaiian rights within the project *ahupua*'a.

Honouliuli Ahupua'a is the largest *ahupua'a* in the *moku* of 'Ewa (and on the island of O'ahu). The environment of Honouliuli is very hot and dry. These environmental limitations forced ingenuity and innovation. *Kama'āina* of Honouliuli used agricultural sinkholes that accumulated water within them via a subterranean water or karst system; this water also contained nutrient-rich sediment allowing plants such as *kalo, kī*, and *noni* to survive.

The post-Contact period brought numerous changes to the *ahupua* 'a of Honouliuli. Traditional agricultural was rapidly replaced by large-scale commercial ventures. The discovery of artesian water beneath the 'Ewa plains by James Campbell in 1879 led to the establishment of sugarcane plantations in Honouliuli including the Oahu Sugar Company. Extensive *mauka* lands in northern Honouliuli, including ridges and deep gulches, were unsuitable for commercial sugar cultivation and remained pasture land for grazing livestock. The Donn 1906 map suggests the present project area was at the *mauka* edge of sugarcane cultivation at that time (see Figure 15). By 1920, however, commercial sugarcane cultivation had expanded into the uplands including the present project area (Frierson 1972:18).

The project area is situated between Pu'u Kapua'i which is located 0.5 km to the northwest and Pu'u Makakilo located 1.2 km to the southwest. These are understood as "very late cones [of the Wai'anae volcano] [...] composed of a varied mixture of cinder, spatter and lava flows" (Macdonald et al. 1983:429). Pukui et al. (1974:199) translate "Pu'u Kapua'i" as "footprint hill," however, the association with that name is unknown. "Pu'u Makakilo" is translated as "observing eyes" (Pukui et al. 1974:201). The association of this name is also unknown.

The project area is also located between two deeply dissected gulches, Kalo'i Gulch which is located 300 m to the southwest and Honouliuli Gulch located 700 m to the northeast. These gulches are at a comparable elevation and are believed to rarely run with water. The name "Ka-lo'i"

translates to "the taro patch" (Pukui et al. 1974:77). Sterling and Summers (1978:35) associates Kalo'i Gulch with a number of vignettes regarding the "Waihuna" or "Punahuna" hidden spring. It was also noted that the hidden spring "had been one of the principal sources of water for all that country, which was quite heavily populated before the smallpox epidemic of 1840" (Ida E.K. von Holt in Sterling and Summers 1978:35).

8.4.1 A Summary of Cultural, Historical, or Natural Resources in the Project Area

8.4.1.1 Archaeological Resources

An AIS conducted for the University of Hawai'i West O'ahu Campus which encompassed the entirety of the project area (Dega et al. 1998) identified no surface Hawaiian features. Dega et al. (1998:i) noted several plantation-era "flumes, aqueducts, ditches, pumps, and other irrigation features occurring within the heavily modified landscape of the project area." The features represented an irrigation complex (SIHP # 50-80-08-5593) which was used for sugarcane cultivation from the 1920s through more recent times. A portion of the Waiahole Ditch System (SIHP # 50-80-09-2268) was also documented crossing through the northwest section of the project area and continuing southwest through the lower agricultural fields.

A companion Archaeological Inventory Survey Report for the AES West O'ahu Solar Project (Welser et al. 2019 draft) only identified the same two twentieth century historic properties associated with commercial sugarcane cultivation as were identified in the Dega et al. (1998) study. The historic properties previously identified in the general vicinity are virtually all post-Contact (Welser et al. 2019:42–44). Two basalt cobble and boulder mounds identified 800 m to the west of the project area (CSH2 described in Tulchin and Hammatt 2007) were thought to be possible trail markers but their age is unclear. The reader is referred to that archaeological study for further details of the archaeological resources in the vicinity.

8.4.1.2 Burials

The "Ewa Karst," which consists of limestone caves formed in the uplifted coral, was undoubtedly more extensive during traditional Hawaiian times than present exposures suggest. Where not covered by alluvium or stockpiled material, this Pleistocene limestone outcrop has characteristic dissolution "pit caves" (Mylroie and Carew 1995) which were sometimes also used as burial caves. Burials have been encountered frequently in coastal areas of Honouliuli Ahupua'a, however, previous archaeological studies (Dega et al. 1998) within the project area have not documented any burials within the project area nor within the vicinity of the project area. No *iwi kūpuna* have been identified within the project area or within a kilometer of the project area (Welser et al. 2019:42–44). No burials are believed to be present.

8.4.1.3 Faunal Resources

In written testimony provided to CSH via email on 19 August 2019, Mr. Tom Berg, former City Councilman, expressed concern for two '*aumākua* and celebrated species (*pueo* and '*ōpe*'*ape*'*a*). Mr. Berg stated the project has been "proposed on a pueo (owl) foraging and breeding ecosystem." The *pueo*, which are found on all of the main Hawaiian islands, are listed by the State of Hawai'i as endangered on the island of O'ahu (DLNR 2005). The DLNR states that *pueo* are most commonly found in "open habitats such as grasslands, shrublands, and montane parklands, including urban areas and those actively managed for conservation" (DLNR 2005).

Mr. Berg also noted records indicate that per earliest colonial contact, the *pueo* is most abundant on the slopes from Pu'u Kapua'i to West Loch, adding that "Hunehune Gulch, Kaloi Gulch, and Honouliuli Gulch are migratory routes used by the pueo to go from mountain to sea to court, mate, forage, and raise their brood." He also noted *pueo* are not forest dwellers, preferring "scrub, open fields/dirt landscapes with some grass." He stated that the proposed project will "encroach on prime pueo habitat-considered to be graded A+—"a ten (10)"—when it comes to the degree of pueo habitat in use on this project site."

Mr. Berg also stated that the project site is "inhabited by the $\bar{o}pe'ape'a$ at various times of the seasons." The ' $\bar{o}pe'ape'a$ or Hawaiian hoary bat was listed as an endangered species under the Endangered Species Conservation Act of 1969. Mr. Berg noted that in 1910, the State of Hawai'i documented ' $\bar{o}pe'ape'a$ within a half-mile of the project area. ' $\bar{O}pe'ape'a$ is "the only land mammal native to the Hawaiian archipelago" and is found on all of the main Hawaiian islands except for Ni'ihau (DLNR 2005:3-13).

Mr. Berg stated his concern that the "property in question will not receive the proper protocol to conclude no endangered species inhabit the area." He recommended that "a thorough and complete protocol is adopted to repeat the inventory exercise for pueo and 'ōpe'ape'a over the course of a calendar year would be in order so the project does not inadvertently contribute to more endangered species habitat loss." He also recommended consulting with Dr. Melissa Price and Dr. Javier Cotin of the Project Pueo Biologist Team and DOFAW Biologist Afsheen Siddiqi regarding *pueo* protocol.

Mr. Berg also expressed his concern for the possible negative aspects of lighting operations at an adjacent parcel which may reflect off of a solar panel into "the flight patterns of migrating birds and the '*ōpe* 'ape 'a and *pueo* in particular need to be addressed."

The cultural impact assessment acknowledges the role of *pueo* as one of the most important '*aumākua* gods and ancestral deities of the family (Valeri 1985:19, 21). While '*ōpe*'*ape*'*a* are rarely documented as '*aumakua*, they fit the intersection of classes of animals (mammal and bird) and intersection of two domains (air and land) that would make them an appropriate manifestation of the '*aumakua*. (Valeri 1985:23). Without question both *pueo and 'ōpe*'*ape*'*a* are greatly celebrated in the *mo*'*olelo* of Hawai'i's past.

No accounts of hunting have been identified in association with this project area.

8.4.1.4 Earth Resources

No traditional use of the stones (or soft sediments) within the project area has been documented.

8.4.1.5 Plant Resources

Vegetation composition within the project area has been significantly impacted by human activities with the result that the overwhelming majority of the vegetation is exotic. Today the project area is largely covered with *haole koa* (*Leucaena leucocephala*) and exotic grasses. Wiliwili (Erythrina sandwicensis), sweet acacia or klu (Acacia farnesiana), and kiawe (Prosopis pallida) were also observed within the project area. No evidence of traditional gathering practices in the project area or vicinity was encountered.

Ms. Paglinawan stated that as a result of the development of the *moku* of 'Ewa including the *ahupua*'a of Honouliuli, "we destroyed the habitat of the *ao kuewa* which is the *wiliwili* trees."

She recommended planting "a wall of trees" surrounding the proposed project area which would provide a home for the displaced spirits. She also discussed the types of plants that were previously found in the area which include *noni* plants, coconut trees, *lauhala* trees, and *'ulu* trees. She noted that these plants were "very plentiful but sparse not like a big grove where it's like a park of trees, it was interspersed throughout."

8.4.1.6 Trails

In traditional times, trails were well used for travel within the *ahupua'a* between mauka and makai and laterally between ahupua'a. A historical trail system existed on O'ahu extending from Honolulu to Wai'anae. A cross-ahupua'a (east-west) trail passed through Honouliuli north of Pu'uokapolei, and continued along the coast to Wai'anae following the route of the modern Farrington Highway. Early historic maps depict a trail that branches off the cross-ahupua'a trail into the uplands in the Palehua area. The 1825 Malden map (see Figure 7) shows a trail extending into the Palehua area a couple hundred meters to the southwest of the project area. A 1919 map (see Figure 16) shows an unimproved road alignment just south of the project area, understood as the Palehua Road, approximating a traditional Hawaiian footpath into the uplands, on the north slope of Pu'u Makakilo and a less formal trail into the uplands skirting the west side of Pu'u Kapua'i to the west of the project area. However, a 1922 map (see Figure 17 and Figure 18 showing annotations), shows the Palehua trail as arcing through the western portion of the project area before arcing north of Pu'u Makakilo. This trail may have always been somewhat braided. The trail appears to only be depicted on the 1922 map (see Figure 17 and Figure 18) and appears to have been largely under Sugar Cane Field 30 in the 1925 map (Figure 19). This trail was not identified on the ground in either of the AIS studies of this area (Dega et al. 1998 and Welser et al. 2019). Access into the southeastern Wai'anae Range today is facilitated by Makakilo Drive. Development of the present project area is suggested to have no adverse impact to traditional Hawaiian trails or access to upland resources.

Interviewee Lynette Paglinawan stated that "this area where the University [of Hawai'i West O'ahu] is located has a lot of trails that go from *mauka-makai*, come from Honolulu going towards Nānākuli." She noted that "spirits travel on ancient trails" which they use to "go from *mauka* going down to *makai*." She added that these "ancient trails are still in use," noting that people who live in homes that have been built on or near these ancient pathways have experienced "strange happenings" which she believes are due to the *'uhane* that still use these ancient trails to travel from *mauka* to *makai*.

8.4.1.7 Wahi Pana

While Pu'u Kapua'i (located 0.5 km to the northwest) and Pu'u Makakilo (located 1.2 km to the southwest) are certainly prominent, they are not particularly "storied" places. They are some distance away.

Kalo'i Gulch is arguably a more renowned *wahi pana* with a number of vignettes regarding a "Waihuna" or "Punahuna" hidden spring. It was also noted that the hidden spring "had been one of the principal sources of water for all that country, which was quite heavily populated [...]" Historic maps indicate a spring located approximately 2.2 km to the north. It is believed that a significant spring may have been identified during an inventory survey for a neighboring Pālehua East B project (Tulchin and Hammatt 2005). The project area per se would not appear to merit consideration as a *wahi pana*.

8.4.2 The Extent to which Traditional and Customary Native Hawaiian Resources will be Affected by the Proposed Action

While acknowledging Mr. Berg's concern for '*ope'ape'a* and *pueo* as a cultural concern, in addition to a concern for endangered species, the impact of the project on these natural populations, if any, is suggested as appropriately a matter for zoological analysis.

8.4.3 Feasible Action, if any, to be Taken by the LUC to Reasonably Protect Native Hawaiian Rights

In order to evaluate any possible adverse impact to cultural resources it is recommended that consideration of review of the biological study pertaining to populations of ' $\bar{o}pe$ 'ape'a and pueo be undertaken. With that possible exception, no adverse impact on cultural resources or practices is anticipated. No other customary resource has come to light in the historic background research or in the consultation outreach to 70+ individuals and NHOs and Mr. Berg was the only party to express concern for the ' $\bar{o}pe$ 'ape'a and pueo.

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Appendix A Written Testimony from Tom Berg



the wet an	server conduct the biological survey whereby the inventory d dry seasons?	for the species was repeated year-round ove
4. What tools inventory?	were used- visual aids in the field – techniques to identify	/ the species while observing/conducting th
5. Was the in	ventory to assess and survey for pueo and ${}^{\prime}\bar{0}$ pe'ape'a done of	completely on foot- or was a vehicle used?
The State of Hawaii has d the question: When was th	ocumented ' $\tilde{0}$ pe'ape'a (1910) sighted within a half-mile of the last population survey for ' $\tilde{0}$ pe'ape'a in the proposed proje	e project (State Office of Planning) which beg act area done?
Records illustrate the pue colonial contact. Huneh sea to court, mate, forage guiches.	being most abundant on the very slopes where this project i une Gulch, Kaloi Gulch, and Honouliuli Gulch are migratory re and raise their brood. This solar project- is slated in the l	is slated (Pu'ukapuai to West Loch) per earlies outes used by the pueo to go from mountain t heart, direct line of the pueo and use of these
Pueo love scrub, open fiel upon prime puen habitat- project site.	ds/dirt landscapes with some grass- and as such, they are not considered to be graded A+ - "a ten (10)" - when it come	forest dwelfers. This project site is to encroact as to the degree of puce habitat in use on thi
The pueo has a direct cor 'aumakua and these acc generations for the Lee fa	nection to Native Hawalian family lineage in Ewa Beach with ounts with the pueo are documented at the State Archives mily, https://www.youtube.com/watch?v=sfW8FGI1Xil	n the Michael Lee family - and the pueo is the Building in Honolulu going back over seve
To elaborate on my first or that a survey to inventory year-round, is not being i abserver is to be undertal	incern, the DLNR and USFWS developed a protocol to proper for them should be executed over the changing seasons yea done in either the EA and or EIS review processes. Furthern con after sunset and before the sunrise periods, otherwise:	ly account for 'Ope'ape'a and pueo and stated n-round. This practice, to deploy the protocol nore, the inventory exercise conducted by the
"The observer I plots with the cl Pueo.). <u>https:/</u>	s more apt to miss the species since the pueo and 'Ope'ape hanging seasons." (Wildlife Biologist Jenny Hoskins, USEWS; / www.youtube.com/watch?v=i1Tm98gpmcQ	'a are migratory- transient In nature and rotate August 18, 2016, UHWO Town Hall Meeting o
A population distribution s that included the area of where I and Mike Lee hav exercise December 31, 2 inhabited UHWO per my late August through Sep However, the survey didn	urvey for pueo was completed recently for the Island of Oahu UHWO (University of Hawaii West Oahu Mauka Segment) a relations with the pueo. The observer began their inventory 017, and terminated it early August of 2018. The pueo that experience came to the property throughout the months of tember. October, November, and vacate late December. t include those months for observation. /ugd/35ff1d 864845984aec47e58618e97ca46e578f.pdf	Dreading scalogy surveys: This shake advectors in the two strains scalars are the stated at 15 a scrape in the strain terms in series in the strain advector 12 min to the same the end of the scrape in the strain term the condition of the strain advector 12 min to the strain advector the strain terms in the strain advector 12 min to the strain advector the strain term and the strain advector term and the strain advector 12 min to the strain advector term and the strain advector term (1). The scraling terms applied by the strain control advector term and the strain advectors to the strain advector term advector term advector terms and the strain advectors to the strain advector term advector term advectors and the strain term advectors and the strain advectors advector term advectors advectors advectors and the strain advectors advector
https://docs.wixstatic.com		erty at UHWO- <u>because the observer simpl</u>

I have stipulated, that had the survey exercise at UHWO been conducted year-round as recommended as the proper protoco
inventory for pueo, the results of the survey would have reported a pueo ecosystem thriving on the property and many Native Hawaii
'aumakua would be protected rather than purged from the property.
Your assurances a thorough and complete protocol is adopted to repeat the inventory exercise for pueo and 'ope'ape'a over
course of a calendar year would be in order so the project does not inadvertently contribute to more andangered species habitat k
Here is a video of Mike Lee performing a chant to the pueo on January 1, 2018 at UHWO- note.
UHWO / UH Board of Regents / DLNR / Attorney General, have
stated that the puep you see in the video- all taken at UHWO-
"DID NOT and HAVE NOT EVER EXISTED THERE"- meaning,
that I and Mike Lee fabricated the pueo recordings
https://www.youtube.com/watch?v=d9yoxlGeNCA
This claim by government entities, that pueo never used the
property at UHWO and no habitat ever existed there to serve
pueo, is not only an affront to our State, its people, but also a
violation of the law- HRS Ch. 343 that protects endangered
species and their habitat.
Again, this claim by Hawail's governor- the Ige Administration, that absolutely no pueo used UHWO property, is not only patently fa
bul a deliberate act of Administrative Blas, Institutional Prejudice- and a willful act of Malice- to cause direct harm to an endange
specie-a. 100% violation of Article XII, Section VII of Hawaii's State Constitution that protects Native Hawaiian Religious and Guit
Practices and their aumakua https://www.voutube.com/watch?v=d9yoxIGeNCA
This is significant, in that UH to this day, denies the puec had any habitat on the UHWO Mauka Segment property when the evide
depicts otherwise. Will you too- be orchestrating another fake EIS or EA for this solar farm project that faisifies true characteristic
the property and misrepresents it's significance to sustain endangered species?
My other concern has to do with the illumination of property owned nearby by Monsanto that the AES West Oahu Solar Project r
interface with. The lights when activated by Monsanto on its fields may have a negative effect on many avian species. How a s
panel may be reflecting Monsanto's lighting operations into the flight patterns of migrating birds and the 'Õpe'ape'a and pue
particular needs to be addressed
Please reference the lights in operation next to your proposed solar farm operations: https://www.voutube.com/watch?v=S8Ba0zpS
Your favorable review of my concerns in the CIA and any answers to my
inquiries that you can provide are greatly appreciated.
Mahalo Nui,
Tom Berg
1 om Derg
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