

Cultural Impact Assessment for the Kaukonahua Solar Project

TMK: (1) 6-5-002:005 (por.)

Kamananui Ahupua'a
Waialua District
Island of O'ahu



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1. INTRODUCTION

At the request of Jeremy Chapman of Melink Solar Development, ASM Affiliates (ASM), has prepared this Cultural Impact Assessment (CIA) for the proposed Kaukonahua Solar Project located in Kamananui Ahupua‘a, Waialua District, Island of O‘ahu on Tax Map Key (TMK) (1) 6-5-002:005 (Figures 1, 2, 3).

This CIA is intended to inform a Hawai‘i Revised Statutes (HRS) Chapter 343 Environmental Assessment conducted in compliance with HRS Chapter 343; pursuant to Act 50 and in accordance with the Office of Environmental Quality Control (OEQC) *Guidelines for Assessing Cultural Impacts*, adopted by the Environmental Environmental Council, State of Hawai‘i, on November 19, 1997. As stated in Act 50, which was proposed and passed as Hawai‘i State House of Representatives Bill No. 2895 and signed into law by the Governor on April 26, 2000, specifically acknowledges that State’s responsibility to protect native Hawaiian cultural practices. Act 50 further states that “environmental assessments . . . should identify and address effects on Hawaii’s culture, and traditional and customary rights” and that “native Hawaiian culture plays a vital role in preserving and advancing the unique quality of life and the ‘aloha spirit’ in Hawai‘i. Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on governmental agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.”

This report is divided into four main sections, beginning with an introduction and a general description of the proposed project area. To provide a physical and cultural context of the proposed project area, the second section of this report includes a detailed cultural and historical background for the general study area, including background information for Kamananui Ahupua‘a and the greater district of Waialua. This section also includes a presentation of prior studies conducted within the vicinity of the proposed development activity. The results of the consultation process are presented in the third section of this report and the last section concludes with a discussion of potential cultural impacts as well as appropriate actions and strategies that may help to mitigate any such impacts.

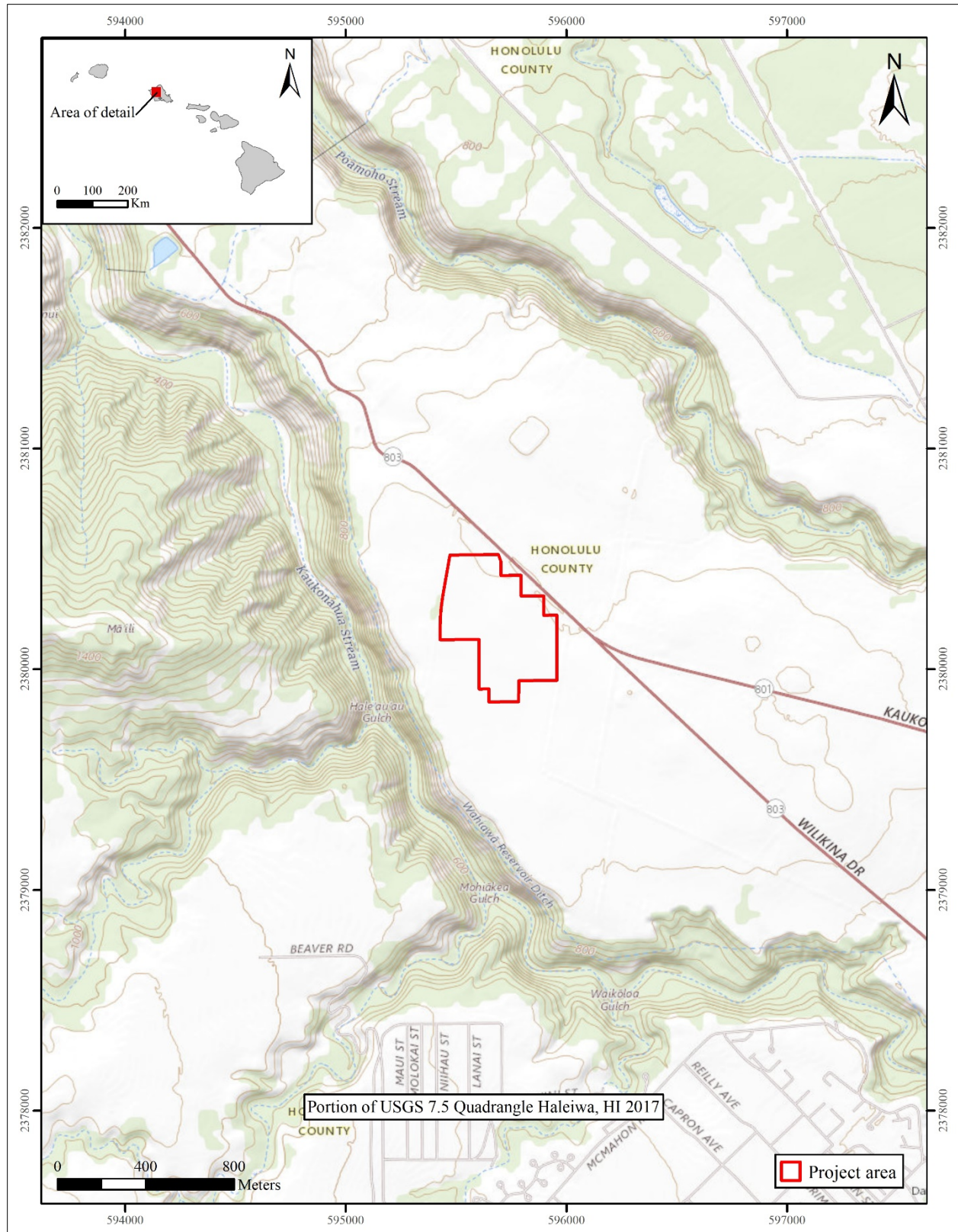


Figure 1. Portion of USGS 7.5 Haleiwa Quadrangle with project area outlined in red.



Figure 3. Google Earth™ satellite image showing project area location (outlined in red).

PROJECT AREA DESCRIPTION

The current 60-acre project area is situated within a portion of TMK (1) 6-5-002:005 located in Kamananui Ahupua‘a, Waialua District, Island of O‘ahu. The proposed project area location has historically been considered part of both Kamananui Ahupua‘a and Wahiawā Ahupua‘a, and at different moments in time associated with three *moku* (districts): Wai‘anae, Waialua, and Wahiawā. The northern portion of the project area is adjacent to Kaukonahua Road while the southwestern corner is perched above Hale‘au‘au Gulch and overlooks Kaukonahua Stream. The project area is comprised of former plantation lands formerly leased to Dole Food Company Inc. at an elevation of approximately 920 feet above sea level between the eastern flank of the Wai‘anae Range and the western flank of the Ko‘olau Range. The proposed project area was once cultivated in sugarcane and pineapple with the surrounding areas consisting of fountain grass (*Cenchrus setaceus*) with the occasional *kiawe* (*Prosopis pallida*). The entire project area is comprised of Wahiawa silty clay with 0 to 3 percent slopes and mapped in Figure 4 as “WaA” (Soil Survey Staff 2020). This soil type consists of well-drained silty clay and is considered prime farmland if irrigated. The mean annual rainfall within the project area averages 978 millimeters, with the majority of the rainfall occurring between November to March, and the least occurring in July (Giambelluca et al. 2013). The climate is generally cool, with a mean annual temperature ranging from 67 to 74 degrees Fahrenheit (Giambelluca et al. 2014).

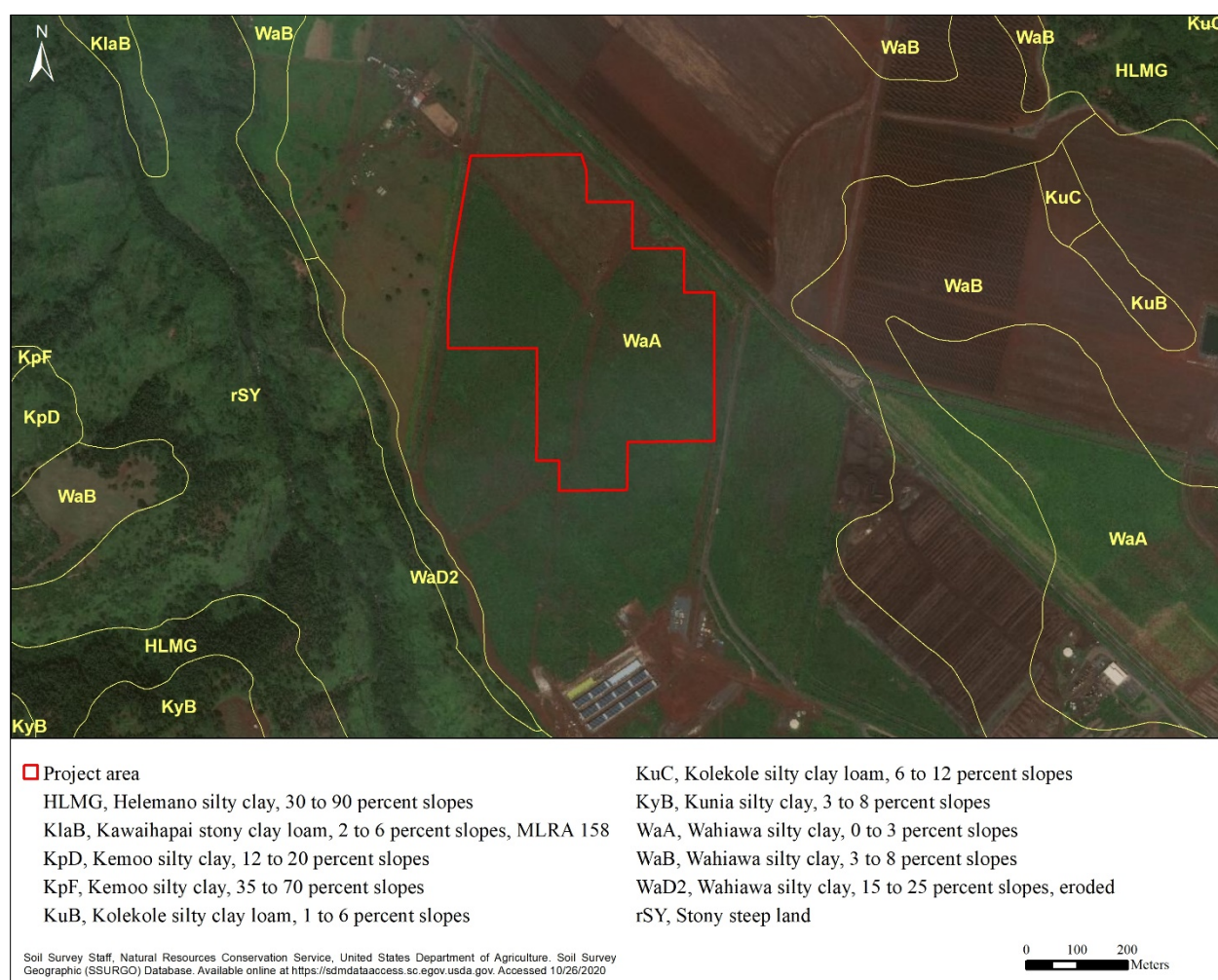


Figure 4. Geology in the vicinity of the project area (outlined in red).

PROPOSED DEVELOPMENT ACTIVITY

The proposed 60-acre project area would be fenced and contain a continuous set of ground mounted solar panels and a Battery Energy Storage System (BESS) facility, with an overhead power grid connection (Figure 5). This area is surrounded by former pineapple fields. Kaukonahua Road extends near the northwestern boundary of the project area. Hale'au'au Gulch and Kaukonahua Stream are located 180 to 440 meters to the west and southwest of the project area.

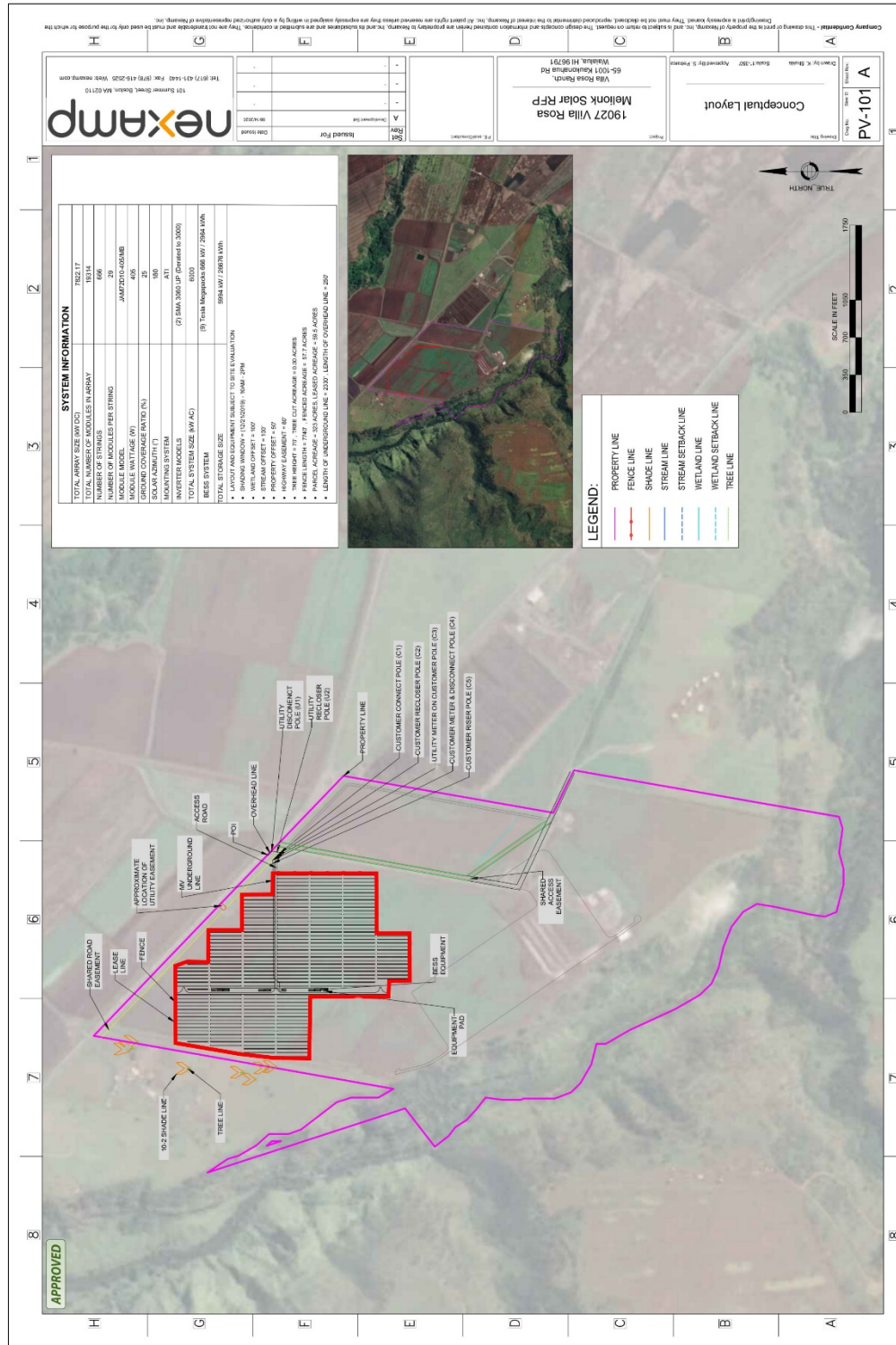


Figure 5. Conceptual site plan layout.

2. BACKGROUND

This section of the report includes a discussion of the culture-historical background for the current study area and a synthesis of relevant prior archaeological and cultural studies for Kamananui Ahupua‘a and the neighboring land of Wahiawā. This information is intended to provide a comprehensive understanding of the cultural significance of the project area and general vicinity, and to establish an analytical basis from which to assess any potential cultural impacts. The ability to assess the cultural significance of the project area is contingent upon developing (at a minimum), a comprehensive understanding of the *ahupua‘a* (traditional land division spanning from the mountains to the sea) in which the project area is located; and as will be demonstrated, a consideration of the broader region and island landscape is at times also required.

CULTURE-HISTORICAL CONTEXT

The chronological summary presented below begins with the peopling of the Hawaiian Islands and includes a presentation of a generalized model of Hawaiian Prehistory containing specific legendary references to Kamananui and a discussion of the general settlement patterns for Waialua. The discussion of Prehistory is followed by a summary of historical events in the district that begins with the arrival of foreigners in the islands and continues with the history of land use in Kamananui and at times greater Waialua after contact. The summary includes a discussion of the changing lifeways and population decline during the Early Historic Period, a review of land tenure in the project area *ahupua‘a* during the *Māhele ‘Āina* of 1848, and the subsequent transition into large scale commercial agriculture during the last quarter of the nineteenth century and the first three-quarters of the twentieth century. The background section concludes with a review of relevant archaeological and cultural studies conducted in the project area and nearby vicinity.

A Generalized Model of Early Hawaiian Settlement

While the question of the timing of the first settlement of Hawai‘i by Polynesians remains unanswered, several theories have been offered that derive from various sources of information (i.e., archaeological, genealogical, mythological, oral-historical, radiometric). With advances in palynology and radiocarbon dating techniques, Kirch (2011) and others (Athens et al. 2014; Wilmshurst et al. 2011) have argued that Polynesians arrived in the Hawaiian Islands, sometime between A.D. 1000 and A.D. 1200 and expanded rapidly thereafter (c.f., Kirch 2011). However, these theories are not universally accepted. What is more widely accepted is the answer to the question of where Hawaiian populations came from and the transformations they went through on their way to establishing a uniquely Hawaiian culture. The initial migration to Hawai‘i is believed to have occurred from Kahiki (the ancestral homelands of Hawaiian gods and people) with long-distance voyages occurring fairly regularly through at least the 13th century. It has been generally reported that the sources of the early Hawaiian populations originated from the southern Marquesas Islands (Emory in Tatar 1982). In these early times, Hawai‘i’s inhabitants were primarily engaged in subsistence-level agriculture and fishing (Handy et al. 1991). This was a period of widespread environmental modification when early Hawaiian farmers developed new subsistence strategies by adapting their familiar patterns and traditional tools to their new environment (Kirch 1985; Pogue 1978).

For generations following initial settlement, communities were clustered along the watered, windward (*Ko‘olau*) shores of the Hawaiian Islands. Along the *Ko‘olau* shores, streams flowed and rainfall was abundant, and agricultural production became established. The *Ko‘olau* region also offered sheltered bays from which deep-sea fisheries could be easily accessed, and nearshore fisheries, enriched by nutrients carried in the freshwater, could be maintained in fishponds and coastal waters. It was around these bays that clusters of houses where families lived could be found (McEldowney 1979). In these early times, Hawai‘i’s inhabitants were primarily engaged in subsistence-level agriculture and fishing (Handy et al. 1991). Following the initial settlement period, areas with the richest natural resources became populated and perhaps crowded, and it has been hypothesized that by A.D. 1300, the population began expanding to the *Kona* (leeward side) and more remote areas of the island (Cordy 2002). By this time, most of the ecological favorable zones of the windward and coastal regions of all major islands were settled and the more marginal leeward areas were being developed.

As the population continued to expand so to did social stratification, which was accompanied by major socioeconomic changes, intensive land modification, and the emergence of district-sized polities. During this expansion period, additional migrations to Hawai‘i occurred from Tahiti in the Society Islands which resulted in the introduction and enhancement of certain Polynesian customs and beliefs: the major gods Kāne, Kū, Lono, and Kanaloa; the *kapu* system of law and order; royal mating practices; and the concepts of *pu‘uhonua* (places of refuge), *‘aumakua* (ancestral deity), and *mana* (divine power).

Rosendahl (1972) has proposed that settlement at this time was related to the seasonal, recurrent occupation in which coastal sites were occupied in the summer to exploit marine resources, and upland sites were occupied during the winter months, with a focus on agriculture. An increasing reliance on agricultural products may have caused a shift in social networks as well; as Hommon (1976) argues, kinship links between coastal settlements disintegrated as those links within the *mauka-makai* (upland-coastal) settlements expanded to accommodate the exchange of agricultural products for marine resources. This shift is believed to have resulted in the establishment of the *ahupua'a* system sometime during the A.D. 1400s (Kirch 1985), which added another component to an already well-stratified society. For the island of O'ahu, Kamakau (1991) attributes the creation of the *ahupua'a* system of land management to the chief Mā'ilikūhāhi, who was born at Kūkaniloko in Waialua. The implications of this model include a shift in residential patterns from seasonal, temporary habitation, to the permanent dispersed habitation of both coastal and upland areas.

From the time of Mā'ilikūhāhi until the era of Kākuhihewa (A.D. 1640-1660), O'ahu remained an independent chiefdom, however, over the next three generations, the island ruler gradually lost power to the district chiefs (Fornander 1880). When Kualii came to power (A.D. 1720-1740), he had defeated the island's district chiefs and acquired influence over windward Kaua'i and initiated war on the windward parts of Moloka'i and Hawai'i Island, thus marking the expansion of O'ahu's independent chiefdom (Cordy 2002). As political expansion continued, kinship links were forged with outer islands polities as intermarriage among Hawaiian nobility of different island chiefdoms occurred frequently (Cordy 2002). The shift from intra-island to inter-island warfare continued throughout the 18th century and persisted until the time of European contact in 1778. By this time, royal residences' had been enlarged and certain *heiau* were expanded, rebuilt, and rededicated. Population continued to expand and permanent residences were established in the upper and lower valleys of O'ahu (Green 1980). At the time of European contact, O'ahu's was under the rule of Peleihōlani and the island's population has been estimated between 43,000-60,000 people (Schmitt 1971). After the death of Peleihōlani about 1779, O'ahu's kingdom began to collapse and control of the island waivered as the Maui chiefs attempted to seize control. By 1795, the Maui forces had gained control of O'ahu but were ultimately defeated in the battle of Kaleleka'ānae in Nu'uānu, by the forces of Kamehameha, a Hawai'i Island chief.

KAMANANUI AHUPUA'A AND THE GREATER WAIALUA DISTRICT

The current project area is located within *'ili* of Kemo'o, a subdivision of Kamananui Ahupua'a translated as "the large branch," a relatively large *ahupua'a* situated within the Leilehua Plateau, a high area located between the Ko'olau and Wai'anae mountain ranges (Pukui et al. 1974:80). Mary Kawena Pukui documented the following *'ōlelo no 'eau* (Hawaiian proverbial saying), which provides an alternate translation of this *ahupua'a* name:

Pili pono ka lā i Kamananui.

The sun is very close to Kamananui.

A play on Ka-mana-nui (The-great-power). When the person in power becomes angry, everyone around him feels uncomfortable, as in the scorching, blistering sun. (Pukui 1983:291).

Kamananui is one of many land divisions that make up the traditional *moku* (district) of Waialua and according to Hawaiian Historian Samuel Kamakau (1964:3), Waialua is known as the birthplace of the first Hawaiian chief: "Kapawa was the first chief to be set up as a ruling chief. This was at Waialua, Oahu; and from then on, the group of Hawaiian Islands became established as chief-ruled kingdoms." According to legend, Kapawa was born at Kūkaniloko, one of O'ahu's most sacred places and approximately two miles from the proposed project area (Fornander 1880; Thrum 1911). Over the twenty-five generations between Wakea and Kapawa, "the parents were masters over their own family groups" and Kamakau (1964:3) suggests that "perhaps because there were not many people, family quarrels did not grow up." In addition to Waialua's importance in O'ahu's rising chiefdom, it was also a place beloved by its people as recited in the following *'ōlelo no 'eau*:

I Waialua ka po'ina a ke kai, o ka leo ka 'Ewa e ho'olono nei.

The dashing of the waves is at Waialua but the sound is being heard at 'Ewa.

Sounds of fighting in one locality are quickly heard in another. (Pukui 1983:137).

Waialua, 'āina ku pālūa i ka la'i.

Waialua, land that stands doubly becalmed.

Said in admiration for Waialua, O'ahu, where the weather was usually pleasant and the life of the people tranquil. (ibid.:318).

According to Sahlins (1992), Waialua is comprised of six traditional *ahupuaʻa* (from west to east): Kaʻena, Kawaihapai, Mokulēiʻa, Kamananui, Paʻalaʻa, and Kawaihoa. However, some historical and modern maps and sources list as many as fourteen *ahupuaʻa* within Waialua District. For example, the subject *ahupuaʻa* of Kamananui appears as “Mananui” on an 1833 map, reproduced as Figure 6 below, and is clearly situated within Waialua Moku along with the following *ahupuaʻa* (from West to East): Kaʻena, Keālia, Kawaihapai, Mokulēiʻa, Kamananui, Paʻalaʻa, and Kawaihoa as well as the following *ʻili* (land division within an *ahupuaʻa*): Aukuʻu, Anahulu, ʻUkoʻa, Kukuilolo, Punanui, Kaʻaleae, and Kapaeloa. Each of these land division names are depicted along the coast and the various drainages. Also, worth noting, the *ahupuaʻa* of Waimea appears clearly within Koʻolauloa District to the north of Waialua, rather than within Waialua District as it is today. Such discrepancies between land divisions from the early Historic Period with those of present-day are proof of the convoluted history of the subject *ahupuaʻa* and district.

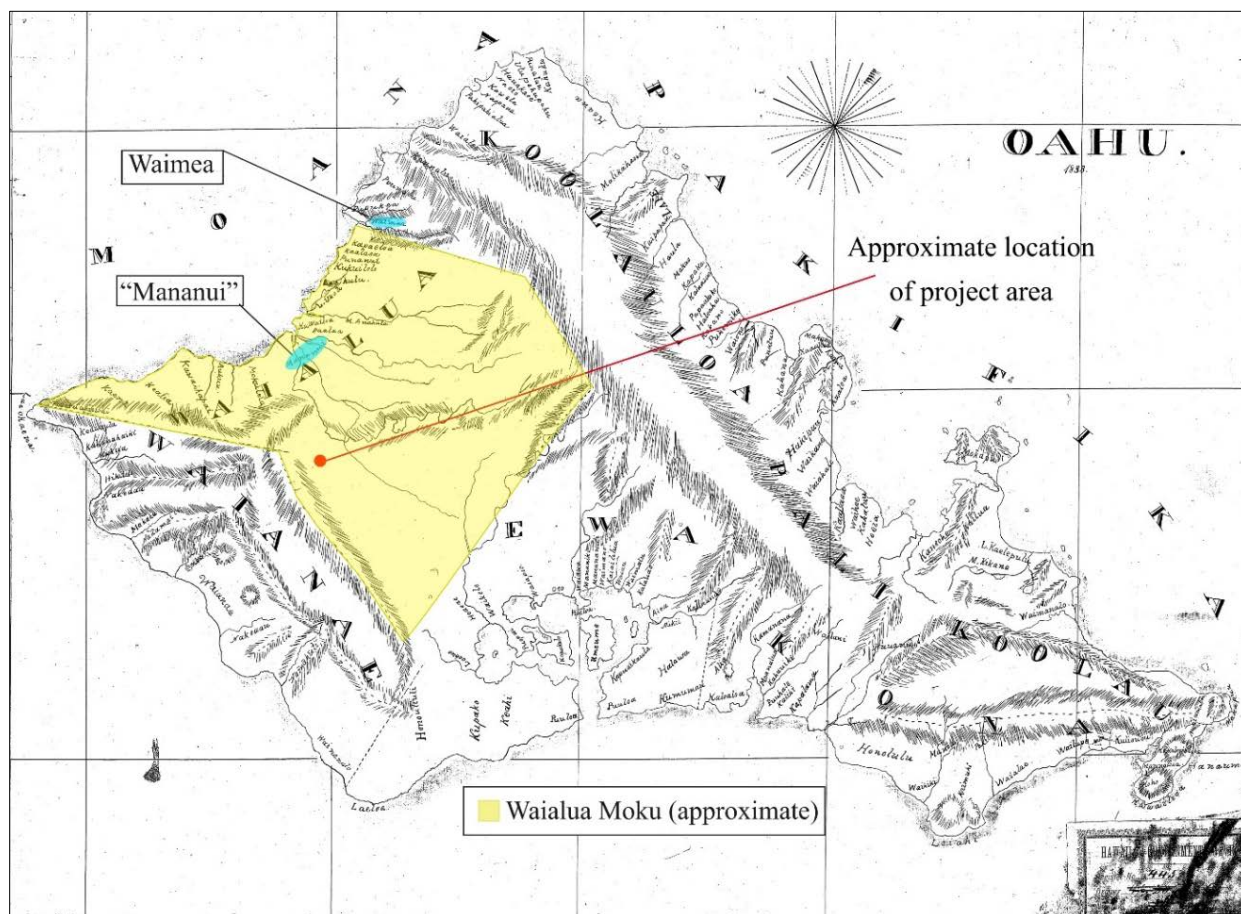


Figure 6. 1833 Map of Oʻahu by Ursula Emerson referring to Kamananui as “Mananui.”

The Shifting Political Boundaries of Waialua District

The beginning of the complicated evolution of the Waialua District boundaries can be traced to the Precontact Period—before the arrival of Western explorers. According to Sahlins (1992) the chiefly system of Waialua District increased in complexity during the early years of the occupation of Oʻahu (ca. 1795) by the conquerors from Hawaiʻi Island. “At the conquest of Oʻahu, Waialua became the spoils of the powerful Hawaiʻi and Maui chief, the senior Keʻeaumoku” (Sahlins 1992:45). However, Keʻeaumoku “left Oʻahu with Kamehameha in 1796, shortly after the conquest, and as he died (of the *ʻōkuʻu*) in 1804 or shortly after the return, it is unlikely that Keʻeaumoku occupied himself directly with Waialua” and his eldest child Kaʻahumanu “effectively controlled and heavily taxed Waialua for decades thereafter” (Sahlins 1992:45). Kaʻahumanu, along with her siblings, including Kahekili Keʻeaumoku, also known as Governor George Cox, retained possession of Waialua District until 1866, and “also maintained de facto rule of the Hawaiian kingdom, at least until the 1850s” (Sahlins 1992:45). Sahlins (1992:45-46) further describes the chiefly system of Waialua during the first half of the nineteenth century with Kaʻahumanu as the “‘owner of the house’ (*mea hale*) and Cox the ‘occupant of the house’ (*noho hale*); she held the *mana* [power] of the land, he the *mālama* (care) of it” as follows:

The tenure of Waialua by the Ka'ahumanu people was organized in a specific and customary way, an arrangement in all likelihood put into place soon after Ke'eaumoku's death in 1804, that would last until the Māhele of midcentury. Land rights of the group were organized by seniority in the early period, and the holdings so established thereafter tended to pass by direct inheritance. Beginning with Ka'ahumanu. . . the head of this family was the greater 'lord of the land' (*haku 'āina*) in Waialua. . . except for a brief period, Ka'ahumanu did not actively concern herself with the land, its products, or the people, nor did she ever reside there. Instead Waialua formally devolved upon her junior siblings: first Ke'eaumoku the younger, alias George Cox, until his death in 1824; afterward, her younger sister Pi'ia Namahana. These people maintained residences in Waialua and at least sometimes lived there. Interestingly, Ka'ahumanu appears in Waialua land accounts as successor to Cox and grantor to Pi'ia, for the land reverted to her upon the demise of the first, and she then gave it to the second.

At the time that Western explorers first made contact with O'ahu, Kamananui "was the ritual and political center of Waialua" (Sahlins 1992:20). However, by the late 1820s, the political center of Waialua had shifted over to the Anahulu Valley in Kawailoa Ahupua'a; "corresponding to a change in the residence of the ruling chief, this political development entailed a redrawing of *ahupua'a* boundaries" (Sahlins 1992:20). Sahlins (1992:20-21) explains the subsequent re-assignment of Waialua lands and the lasting impact of the shift in the location of political power as follows:

Until 1824, the two royal fish ponds of Lokoea and 'Uko'a [Figure 7], although spatially separated from Kamananui (by the intervening *ahupua'a* of Pa'ala'a and Kawailoa), were nonetheless controlled directly from there, by stewards (*konohiki*) of Kamananui proper. Likewise the remote fishing community of Kapaeloa at the eastern border of Waialua: it was considered part of Kamananui until the late 1840s; the local people held their lands from and "under" a lesser chieftain of Kamananui. The ruling *ahupua'a* of Kamananui thus encompassed certain detached lands—which gave it privileged access to important piscine resources. However, in the early nineteenth century, when the Waialua chiefship gravitated to Kawailoa, these outlying sections were taken into the latter land. . .

The historic shift in political domination from Kamananui to Kawailoa was paralleled by a transfer of the ceremonial center of the *moku*. In effect the Protestant mission of Waialua, founded in Kawailoa in 1832, usurped the ritual hegemony from the temples of human sacrifice (*po'okanaka*) that not long before had sanctified the landscape of Kamananui. The *ahupua'a* of Kamananui was the site of two temples (*heiau*) of the royal or *luakini* class (cf. Valeri 1985). These *heiau* were probably presided over by an O'ahu form of the god Kū, the god of conquests and human sacrifice specially associated with kingship (Sterling and Summers 1978:103-4; Thrum 1906a:47, 1906b:52; cf. Valeri 1985). The shift of dominance from Kamananui to Kawailoa corresponded to a change in tabu systems.



Figure 7. 'Uko'a Fishpond.

The continuation of the convoluted history of Waialua District is linked to “the advent of Hawai‘i’s legislative government, or from about 1846” (King 1935:214). Robert D. King (1935:214), Principal Cadastral Engineer for the Survey Department of the Territory of Hawai‘i, explained some of the reasons for the changing boundaries thusly:

Some of these changes were made for political reasons and others for convenience, but the principal changes in boundaries were caused by movements in population reflecting new uses of the land areas. These new district boundaries did not always conform to the *ahupuaa* boundary and there are examples today of an *ahupuaa* being situated in more than one district where no such condition existed in ancient times.

King (1935:224) continues his discussion of the twentieth-century understanding of ancient *moku* and their boundaries:

In investigating the ancient district and its boundaries we observe that in the era before the conquest of the islands it performed a definite function in the grouping of a series of *ahupuaas* comprising the domain of a district chieftain, and that during the reign of Kamehameha I, when he broke the power of the district chiefs by appointing his own governors of the principal islands, it formed a logical subdivision of government under the King’s viceroy.

With the coming of constitutional government it continued to perform a useful service for administrative purposes in defining the jurisdiction of peace officers, police magistrates, tax collectors, school agents and other local officers, and in the *Mahele of 1848* it was particularly valuable in designating the location of the thousands of *ahupuaas* and *ili ainas*, many of them, with similar names, included in that great division.

Today [ca. 1935] its chief value is historical and in the study of Hawaiian land tenure, as the modern district has in so many instances paid little or no attention to the old district name or boundary. Even the importance of the modern district has waned in these days of rapid transportation and decentralized but closely knit county government, so that almost its only use today is a conveniently established block of land for the assessing of real property for taxation purposes.

Celebrated Landscape and Agricultural Practices of the Waialua District

Sahlins (1992) states that Waialua characteristically comprised centrally located richer lands with ecologically marginal land along the periphery. In the case of Waialua, the fertile lands of Pa‘ala‘a, Kamananui, and Kawailoa Ahupua‘a comprised the ecological center of Waialua, which is eloquently described by Sahlins (1992:20):

Geographically this heartland of Waialua consisted of the area around the neighboring bays—they are about a mile apart—of Kaiaka and Waialua. Into these bays, from their origins in narrow gorges deep in the mountains flowed four major streams. Dense settlements of people and large complexes

of irrigated taro fields were situated on the floodplains of these streams. At Kamananui, the lowland fields were watered by means of a ditch some two miles long, the longest such waterway on O‘ahu (McAllister 1933:133; Handy and Handy 1972:466). Irrigation on a smaller scale extended for a considerable distance up the river valleys, while rainfall agriculture was practiced on the adjoining slopes, upland plains (*kula*), and forest clearings in the higher gulches. Around Waialua Bay were two large and famous brackish water fish ponds ‘Uko‘a and Lokoea. Fish were also raised in the many smaller ponds of the same area as well as in taro pondfields (*lo‘i*). Given such intensive production, the core region must have supported the substantial majority of the Waialua population, which was probably on the order of 6,000 to 8,000 people just before the coming of the Haoles.

Discussions about such rich cultivated valleys were included in E.S. Handy’s 1931 ethnographic study of traditional Hawaiian agricultural activities related to native plants, which were extant on the island prior to European contact (Handy 1940). In his chapter on Taro plantings in a section titled “Planting Localities,” Handy mentions Kamananui and other nearby *ahupua‘a* of Waialua:

TARO. Terraces: high terracing in interior valleys rare; broad terraces in valley bottoms, on lower slopes, and in lowlands, irrigated from streams and springs from Waialae to Ewa, Waianae-kai and Waianae-uka. . . Kaena, Kawaihapai, Mokuleia to Waimea, Helemano, Wahiawa, and throughout Koolau. . . **Kula lands:** developed only where water could be diverted for irrigation as at Wahiawa; little if any dry taro planted. . . **Swamp Planting:**. . . Waialua and Paalaa. . . (Handy 1940:75)

Upland *kula* were planted with sweet potatoes in Kamananui, Paalaa, Helemano, and Wahiawa, where the sweet potato was the main staple although some taro was grown. (1940:156)

Handy (1940:85-86) also relates the following details about Kamananui Ahupua‘a specifically, which mention the streams that demarcate the boundaries of Wahiawā, located near the current project area:

Kamananui. Formerly there were large terrace areas along the flatlands between the junction of Helemano and Poamoho Streams and the flatland west of Poamoho. There were also small terrace areas up in the lower flats of Poamoho and Kaukonahua Valleys. There were small flats in the bottom of Kaukonahua Canyon for several miles above its junction with Manawai Stream. Poamoho is probably too narrow for taro terraces. It is likely that in these gulches, as at Waimea, sweet potatoes and bananas were planted around home sites along the ridge and near taro patches at the bottom of the gulch. Wild taro and bananas grow in Manawai Valley and presumably also in the other five valleys that run up towards Puu Kane.

Some early historical accounts refer to the proposed project area vicinity as “rich cultivated valleys” (King 1784:115). An extensive *lo‘i* (irrigated terrace) system could be found northwest of present-day Wahiawā town in addition to sweet potato and yams (Handy 1940:464). This area was one of the few places where sweet potatoes were known to be irrigated via Helemano Stream. In addition to taro and sweet potato, sandalwood harvesting was carried out in Waialua during the late eighteenth and early nineteenth century. Historical descriptions of sandalwood harvesting often stress the sheer number of people who were ordered off their agricultural plots and into the forests to collect the wood. Sandalwood harvesting lasted until 1830, when the supply in Hawai‘i and the value became too low to sustain the trade (Sahlins 1992).

Selected Traditional Accounts of Kamananui Ahupua‘a and the Greater Waialua District

Traditional *mo‘olelo* (stories) were passed down orally through the generations and many tales focus on *wahi pana* (legendary places). Many myths and legends associated with *wahi pana* of the greater Waialua District including Kamananui have been recorded, some of which are discussed below.

Hi‘iakaikapoliopole

In the version of the legend of Hi‘iaka and her sister Pele as recorded by Nathaniel Emerson, Waialua is also mentioned although not in association with the despicable chief Waia. Rather, during their journey between the islands, Hi‘iaka stops at the summit of Kahuoha Pu‘u in Waialua and “describes the scene before her” (Emerson 1915:97), including her view of Wahiawā as follows:

From the same vantage ground—that of Kahu-o-hapu‘u—Hiiaka not only saw the dash of the ocean against the buttresses of the near-by coast, her ears also were filled with a murmurous ocean-roar that gave to the air a tremor like that of a deep organ-tone:

<i>O Wai-alua, kai leo nui:</i>	Wai-alua, land of the sounding sea,
<i>Ua lono ka uka o Lihu'e;</i>	With audience in upland Lihu'e—
<i>Ke wa la Wahi-awá, e.</i>	A voice that reaches Wahi-awá:
<i>Kuli wale, kuli wale i ka leo;</i>	Our ears ae stunned by this voice—
<i>He leo no ke kai, e.</i>	The voice, I say, of old Ocean!

The landscape still held her and she continued:

<i>O Wai-alua, la'i ehá, e!</i>	Wai-alua has a fourfold calm,
<i>Ehá ka malino lalo o Wai-alua.</i>	That enfolds and broods o'er the land.

(Emerson 1915:99)

In the Ho'oulu māhiehie version of the epic saga, Hi'iaka and her travel companions reach Waialua from the eastside of the district before traversing the land towards Mokulē'ia to head to their destination of Kaua'i (Ho'oulu māhiehie 2006a:158-162). Similar to the Emerson version, Hi'iaka chants about the landscape of Waialua and makes reference to the area of Kamaoha, which is located to the southwest of the current project area below the summit of Ka'ala in the Wai'anae Mountains. According to McAllister (1933:133), Kamaoha was a *luakini* (traditional temple where human sacrifices were offered) fishpond and that Kamaoha was the *mo'o* (reptile-like) or goddess of the pond. That portion of the chant making reference to Waialua and Kamaoha is transcribed and translated below:

<i>Maika'i ihola 'o Waialua ē, i laila</i>	Splendid is Waialua, there
<i>'O Līhu'e kekahi, aloha wale</i>	As is Līhu'e, beloved indeed
<i>'O ka luna wale o Kamaoha</i>	The highlands of Kamaoha

(Ho'oulu māhiehie 2006b:173) (Ho'oulu māhiehie 2006a:162)

Later in the saga, Hi'iaka battles with a female *manō* (shark), a *kupua* (supernatural being) from Wai'anae and defeats her. As the *manō* sank to the bottom of Kīlauea Cove she turned to stone and Hi'iaka reached beneath and the stone flew into the air and landed on the shore. Hi'iaka tossed the stone, which eventually lands at Ka'ena on the Waialua side and this long stone became known as Pōhakuloa (Ho'oulu māhiehie 2006a).

Kākuhihewa and the Lō Ali'i

The central plateau of O'ahu, which is traditionally referred to as Līhu'e, Wahiawā, Halemano, and revered as the home of the Lō Ali'i, as presented in Kamakau's *Ka Po'e Kahiko* as follows:

LO.—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 kuahivī*); 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. (1964:5)

Also known as the La-Ali'i or Lau-Ali'i, these chiefly families lived in seclusion and never intermarried with less noble families or commoners. Author Sammy Amalu, also known as Kapi'ikauinamoku, wrote a daily column from September to December in 1955 that detailed the *ali'i* of Hawai'i. He described the reclusive group as being the bulk of warriorhood and "it was the Lo-Alii who were the main support and arms of the sanctified chieftains" (Amalu 1955:1). Lo chiefs included Kauakahi'ailani, Ma'ilikukahi, Kalona, Piliwale, Kukaniloko, Pa'akakanilea [Pa'akanilea], Ka'akauualani, Ka'au, Lale, Paoakalani, Pakapakauaua, Nononui, Kokoloea, amongst others (Kamakau 1991:61).

In the *mo'olelo* of Kākuhihewa, Ka'ilikapu-a-Manuia was married to Ka'ū-nui-a-Kānehoalani, who also held the status as a "Kumuhonua, a *wohi*, and a *lō*" and to them was born Kākuhihewa (Kamakau 1991:61). After the death of Ka'ilikapu-a-Manuia, his son Kākuhihewa, inherited his kingdom as well as the status of *ali'i kapu* (Kamakau 1991). Born at Kūkaniloko, Kākuhihewa was ushered into his royal status following all the customs and ceremonies of the *ali'i* born at the sacred royal birth center. He was later taken to the 'Ewa District and raised by his *kahu* (attendant) in the lands of Waipi'o, Waiawa, and Mānana. Kamakau (1991:68) goes on to describe Kākuhihewa's love for his lands stating that:

'Ewa was a land much loved by Kākuhihewa. The warmth of Wai'anae and Wai'alua; the thickness of the *poi* of Wai'anae; the sweetness of the *poi* of Kamaile; the soft mullet of Lualualei; the two

calm places of Wai‘alua, ‘Uko‘a and Loko Ea, the centers of choice fish; the delicious *poi* of Ke-awāwa-ihe-all these were loved by the chief.

Kākuhihewa’s reign mirrored those of his predecessors as he restored peace by populating the lands with loyal supporters who cultivated it to an extent previously unseen. Kamakau (1991:69) opines that during Kākuhihewa’s reign, “O‘ahu became known for its productiveness; its smell reached Kaua‘i there was so much cultivation.” Accordingly, Kamakau (1991:70) reports that O‘ahu was so abundant that it attracted chiefs from Hawai‘i Island and Maui which resulted in a mixing of the genealogies and was “one of the things that bound the chiefs together in ancient times.” Skilled in the art of spear throwing, combat, and shooting rats with bows and arrows (*pana ‘iole*), Kākuhihewa established Pāmoa, his massive royal center at ‘Ālele, Kailua. Because of his great benevolence and many deeds, O‘ahu became known as “*ke one o Kākuhihewa*” (the sands of Kākuhihewa) and “O‘ahu-a-Kākuhihewa” (O‘ahu of Kākuhihewa) (Kamakau 1991:69, 70).

Thus, despite the historical impacts that have physically altered the site for the people who *mālama* (to care for) Kūkaniloko the sacred place represents their genealogical ties to their ancestors and to O‘ahu (Lenchanko 2015). Such sentiments demonstrate that the cultural significance of Kūkaniloko rests in the layers of history that reinforce their deeply rooted genealogical connections to it, rather than the current physical condition of this sacred site.

The Legend of Aikanaka

Folklorist William D. Westervelt (1915:203) briefly mentions Waialua in *Legends of Honolulu* regarding the legendary tale of Ke-alii-ai Kanaka (Aikanaka for short) or the man eating chief. The account by Westervelt (1915:193) is but one of the many versions of the cannibal chief legend and “tells of the sudden appearance on the island of Kaua‘i, in the indefinite past, of a stranger chief from a foreign land, with a small band of followers” and proceeds thusly:

The king of Kauai made them welcome. Feasts and games were enjoyed, then came the discovery that secret feasts of a horrible nature were eaten by the strangers. They were driven from the island. They crossed the channel to Oahu. They knew their reputation would soon follow them, so they went inland to the lofty range of the Waianae Mountains. Here they established their home, cultivated food and captured human victims, until finally driven out. Then they launched their boats and sailed away toward Kahiki, a foreign land.

Westervelt (1915:194) also presents an alternate version of the cannibal chef legend in which “the Oahu chief, Ke-alii-ai Kanaka [Chief man-eater], lived some time about the middle of the eighteenth century, as nearly as can be estimated.” Per Westervelt (1915), the cannibal chief settled on the plateau called Halemanu, although he is most likely referring to Helemano, a land division located within Waialua, which is also often referred to as Halemano. Westervelt (1915:196-200) refers to the cannibal chief as Kokoa and provides the following description of his chosen home surrounded by tall peaks and precipices so steep his lair was inaccessible:

. . . It could be entered only along a narrow ridge. The pandanus drooped its long leaves and aerial rootlets along the edges. The uluhi, or tangle-fern, massed and matted itself into a thick disguise for the cannibals’ secret paths through the valleys below. Native flowers bordered the paths and crowned the plateau, as if man’s worst nature could never wither the appeal of things beautiful. A magnificent koa, or native mahogany, tree spread its protecting branches by the spot chosen by Kokoa for his grass house. Kukui-trees furnished their oily nuts for his torches. The ohia, or native apple, and the bread-fruit and wild sugar-cane gave generously of their wealth to the support of the cannibal band. They easily cultivated taro, the universal native food, and captured birds and sometimes unwary hunters who penetrated the forest recesses in search of the birds with the rare yellow feathers. It was a beautiful den into which, spider-like, he dragged his victims.

. . . As they entered the valley below the plateau, one of his followers said to another: “Our chief has found a true hiding-place for us. Let us hope that it may not prove a trap. If our presence here should be known to the people of Waialua, they could easily close the entrance to this valley with a strong guard and drive us against the steep walls up which we cannot climb.” . .

. . . From this place raids could be easily made upon the surrounding country. To this place they brought their captives for their inhuman feasts.

After the grass houses were built for permanent shelter, Kokoa, or “Ke-alii-ai Kanaka,” caused a great hole to be made. This was the imu, or oven, in which the bodies of animals and men were to be baked.

. . . After a time Kokoa and his companions took a huge outcropping block of lava and smoothed away the top, making a hollow ipukai, or table dish. . . upon which their ghastly repasts were served.

This stone table was finally rounded and its sides ornamented by rudely carved figures. This stone was five or six feet in circumference. . .

Westervelt (1915:202) goes on to recount how a young man named Hoahanau defeated Aikanaka and hurled him over the mountains to his death; thus, “this was the beginning and ending of cannibalism in the Hawaiian Islands so far as history and definite legend are concerned.” In 1822, Gilbert Mathison visited the cannibal chief’s former abode in Helemano. The gruesome nature of Aikanaka’s misdeeds hold similarities with those of another chief associated with Waialua named Waia.

The Reign of Waia

The following synopsis is based on a Hawaiian Language newspaper installment of the series titled “*Moolelo Kahiko no Hawaii*” (Ancient History of Hawaii) written by J. M. Poepoe and published in *Ka Hoku o Hawaii* on April 16, 1929. Waia’s kingdom was considered a dishonorable kingdom because he abandoned the righteous path and teachings of his father in the pursuit of worldly pleasures and increased personal wealth (Poepoe 1929). Thus, he stopped seeking the things that were good for his people, neglected prayer, and did not seek the counsel of oracles and never looked out for the welfare of the people. Waia abused beautiful men and women and tortured them to death. For instance, if he saw a beautiful woman, he would sever her legs at the calves and let her die. Upon the deaths of these men and women, for Waia did not discriminate when he chose his victims, he would take their bones and fashion them into fishhooks or tips for the darts he used to shoot rats for sport (Poepoe 1929).

Waia’s gruesome acts were recorded in several *mele* (songs) that were composed during the reign of Kuali‘i. This oral historical record served as a means of not allowing people to forget his cruelty and to inspire resilience—never again would people allow an *ali‘i* (chief) to rule them in such a way. Because of his wicked ways of managing his kingdom, his subjects conspired and drowned Waia, and beat him until he died; then they rolled up his body in a mat and put it on a canoe that they sent into the open ocean and let sink (Poepoe 1929). According to Poepoe (1929), the word “Waia” was considered “*pelapela*,” “filthy, dirty, nasty, indecent, unclean, vulgar, lewd, obscene” (Pukui and Elbert 1986:323). Because the Hawaiian word “*lua*” is used to represent the number two, people have interpreted the place name Waialua as doubly wicked in reference to Waia’s countless wicked deeds.

Another possible interpretation of Waialua can be inferred from separating “Waia” and “lua” based on an alternate meaning of the word “lua,” that which refers to the art of *lua*, a type of hand-to-hand combative fighting. The gruesome acts carried out by Waia against his own people included torture, disfigurement, and dismemberment, much like *lua* fighting, which placed an emphasis on causing pain, and causing partially survivable trauma localized at the victims’ joints. Furthermore, men traveled to the Leilehua Plain from across the archipelago to learn this ancient fighting style. Thus, based on the regional/geographical association with *lua* fighting in the Waialua area combined with the similarities between Waia’s heinous acts and *lua* fighting, the place name Waialua may refer to this correlation.

Kūkaniloko, O‘ahu’s Sacred Center

As mentioned, Waialua is home of Kūkaniloko (Figure 8), a sacred birthing center for O‘ahu’s most revered *ali‘i*, which is described by some as being “...a focal point of a much larger network of sacred sites...” (Coleman 2013:1) in the Wahiawā-Līhu‘e area (Kamakau 1991; Lenchanko 2015). Kūkaniloko, whose name has been interpreted as “an inland area from which great events are heralded” (Gutmanis 1986:16) and “to anchor the cry from within” (Lenchanko 2015:49), is also the name given to a stone at the site that was used by *ali‘i wahine kapu* during the birthing process. A description of the origin of Kūkaniloko and details regarding how the site was used as a royal birthplace appears in an article published in the Hawaiian language newspaper *Ka Nupepa Kuokoa* in 1865 (Kamakau 1865) as part of the series titled “Ka Mo‘ōlelo o Hawaii Nei.” Translator Mary Kawena Pukui and editor Dorothy Barrère later compiled and published some of Kamakau’s articles in a book titled *Tales and Traditions of the People of Old, Nā Mo‘olelo a ka Po‘e Kahiko* (Kamakau 1991). The accounts of Kūkaniloko provided by Kamakau in the 1860s and 1870s are among the earliest such accounts and served as the basis for later accounts penned by Abraham Fornander, and Thomas Thrum, among others. Kamakau (1991:38) explicitly references Kūkaniloko as one of two royal birthing centers in the Hawaiian Islands:

There were two places set aside for the birth of chiefs as signs to make clear that they were high chiefs, *ali‘i nui*, or chiefs, *ali‘i*. These were Kūkaniloko in Wai‘alua, O‘ahu, and Holoholokū at Wailua, Kaua‘i.



Figure 8. Kūkaniloko ca. 1972 (Hawai‘i State Archives, George Bacon Collection PP 37-10-020).

Pukui (1983:286), also relates the significance of Kūkaniloko as one of two royal birthing centers in the following ‘ōlelo no ‘eau and accompanying literal translation:

*Papani ka uka o Kapela; pua‘i hānono wai ‘ole o Kukaniloko; pakī hunahuna ‘ole o Holoholokū;
‘ae mea nana e ‘a‘e paepae kapu o Līloa.*

Close the upland of Kapela; no red water gushes from Kukaniloko; not a particle issues from Holoholokū; there is none to step over the sacred platform of Līloa.

Pukui (1983:286) adds the following:

The old chiefs and their sacredness are gone; the descendants are no longer laid to rest at Ka-pela-kapu-o-Kaka‘e at ‘Īao; the descendants no longer point to Kukaniloko on O‘ahu and Holoholokū on Kaua‘i as the sacred birthplaces; there is no one to tread on the sacred places in Waipi‘o, Hawai‘i, where Līloa once dwelt.

While nearly all written accounts of Kūkaniloko honor it as the sacred birth center for O‘ahu *ali‘i*, more recent research suggests that in traditional times, the site was associated with the deity Kāne, and also used to study, from an indigenous perspective, disciplines such as astronomy, meteorology, chronometry, and cosmology (Lenchanko 2015). Regarding its association with Kāne, Beckwith states that “Kāne was the leading god among the great gods named by the Hawaiians...” and that Kāne “...represented the god of procreation and worshipped as ancestor of the chiefs and commoners” (Beckwith 1970:40). Handy (1991:15) relates similar thoughts stating that Kāne’s “...primordial role in the creation mythology, his pantheistic character, and his role as life-giver, it is logical to say that the first colonizers were worshippers of Kane.” Lenchanko (2015:27-28) goes on to point out that there are “...hundreds of names that are associated with Kāne” and that “the enumeration of Kāne and other *akua* like him are not “gods” per se, but rather they are names of elemental forms observed within the natural environment.”

Lenchanko (2015) and others have also argued that the *piko* stone at Kūkaniloko, characterized by its ribbed edge (see Figure 8) was used to track the yearly movement of the sun, which is considered a physical manifestation of the deity Kāne. Noyes (2018) also suggest the geographical placement of Kūkaniloko at the center of O‘ahu made for a choice location from which celestial observations to track the sun and other important constellations could be made. In referencing Kamakau (1964), Lenchanko (2015) explains that traditions and practices for tracking the movement

of the sun and its associated seasons and rituals varied on each island and that when Kamehameha, a Hawai‘i Island *ali‘i* conquered O‘ahu and the other islands, his traditions and practices replaced those that were practiced by the previous chiefdoms.

Regarding the creation of Kūkaniloko, Kamakau (1991:38) states that “Kūkaniloko was made by Nanakāoko and his wife Ka-hihi-o-ka-lani as a place for the birth of their child Kapawa,” who were descendants of the famed ‘Ulu genealogy. Kamakau (1991:136-137) adds that from the time of Kapawa, *ka po‘e kahiko* (the ancient people) began the tradition of memorializing “the place where each chief was born” and thus the following *oli* (chant) was recorded for Kapawa and the various places associated with his life including Kūkaniloko and the surrounding areas:

<i>‘O Kapawa, ‘o ke ali‘i o Wai‘alua,</i>	Kapawa, the chief of Wai‘alua,
<i>I hanau i Kūkaniloko;</i>	Was born at Kūkaniloko;
<i>‘O Wahiawā ke kahua;</i>	Wahiawā the site;
<i>‘O Līhu‘e ke ēwe,</i>	At Līhu‘e the placenta,
<i>‘O Ka‘ala ka piko,</i>	At Ka‘ala the naval cord.
<i>‘O Kapukapuākea ka a‘a,</i>	At Kapukapuākea [heiau] the caul,
<i>O Kaiaka i Māeaea;</i>	[Heiau] of Kaiaka at Māeaea;
<i>Ha‘ule i Nukea i Wainakia.</i>	He died at Nukea at Wainakia.
<i>I ‘A‘aka i Hāleu,</i>	Through [the surf of] ‘A‘aka at Hāleu,
<i>I ka la‘i malino o Hauola,</i>	Through the calm stillness of Hauola,
<i>Ke ‘li‘i o Kapawa ho‘i no,</i>	The chief Kapawa was taken,
<i>Ho‘i no i uka ka waihona,</i>	Taken upland [in ‘Īao] for laying away,
<i>Ho‘i no i ka pali kapu o nā ‘li‘i...</i>	Taken to the sacred pali of the chiefs...
<i>He kia‘i Kalāhiki no Kaka‘e.</i>	Kalāhiki is the “watchman” of [the burial cave called Ka-pela-kapu-o] Kaka‘e.
<i>‘O Haleipawa ke keiki a Kapawa,</i>	Heleipawa was the son of Kapawa,
<i>He keiki ali‘i no Wai‘alua i O‘ahu...</i>	A chiefly child of Wai‘alua, O‘ahu...

According to Fornander (1880:20), Nanakāoko and Kahikiokalani were acknowledged “by the oldest, and by all the legends” as having established Kūkaniloko. At the time of his writing ca. 1879, the remains of Kūkaniloko were “still pointed out about three-fourths of a mile inland from the bridge now crossing the Kaukonahua stream.” Fornander (1880) goes on to say that the distinction and privileges conferred upon the *ali‘i* born at Kūkaniloko were so sought after that despite the decayed state of the sacred site in the late eighteenth century, Kamehameha I had wanted Liholiho to be born there; however, Keōpuolani was unable to travel there for their son’s birth due to illness.

The various physical and socio-religious components of Kūkaniloko and the birth ritual were recounted by Kamakau (1991:38) as follows:

A line of stones was set up on the right hand and another on the left hand, facing north. There sat thirty-six chiefs. There was a backrest, a *kuapu‘u*, on the upper side, this was the rock Kūkaniloko, which was the rock to lean against. If a chiefess entered and leaned against Kūkaniloko and rested on the supports to hold up the thighs in observance of the *Līloē kapu* [the prescribed regulations for birthing], the child born in the presence of the chiefs was called an *ali‘i*, an *akua*, a *wela*—a chief, a god, a blaze of heat.

When the child was born, it was immediately taken into the *waihau heiau* Ho‘olono-pahu. There forty-eight chiefs ministered to the child and cut the naval cord. Ho‘olono-pahu was a furlong and a half south of Kūkaniloko. Two furlongs to the west of Kūkaniloko was where the sacred drum Hāwea was beaten; it indicated the birth of a chief. On the east of the stream on that side of Kua‘ikua were the *maka‘āinana*—a great many of them—and to the south, three furlongs distant, were the *kauwā*.

However, chiefs who were born outside of Kūkaniloko or at the backrest [but not in the presence of the chiefs] were chiefs too. And if they were “born on the highway” (*ā i hanau i ke alanui*), they were chiefs also—“outside” chiefs (*he ali‘i no; no waho*).

Kamehameha greatly desired to have Keōpuolani give birth inside of Kūkaniloko. However, when she went there, the child did not come, and she went back.

Only one chief of Maui ever entered Kūkaniloko—Ka‘ulahea, the husband of Kapo-hānau-puni.

Gutmanis (1986:16-17) provided further insight into the birth rituals of Kūkaniloko thusly,

When a child was to be born at Kūkaniloko many people accompanied the expectant parents. It is said that a thousand *maka'ainana* (commoners) would be assembled on the east side of Kuakikua stream, which flows near the *heiau*, while personal servants of the chief waited on the south side of the stream. Facing the stone on which the mother-to-be would deliver were two rows of eighteen stones each. Tradition has it that the stones were inhabited by *'aumakua* (guardian spirits) who had the power to absorb pain. A chief stood in front of each stone.

When the child was born two large *kapu* drums Hawea and Opuke were sounded to announce the birth. Then the child was quickly taken inside the *waihou* (inner temple) of Hoolonopahu where the drums were kept. There the ceremony of cutting the umbilical cord was performed. Forty-eight chiefs took part in the accompanying rituals.

In an article titled “Kukaniloko: Birthplace of Aliis,” published in the *Hawaiian Almanac and Annual for 1912* Thrum (1911), states that, “the tradition of its recognized eminent virtue has come down by various native authorities which traces it back to about the opening of the twelfth century” (Thrum 1911:102); at the time of his writing ca. 1911, Kūkaniloko appeared as follows:

We look in vain today for the prominent boulder which in tradition, if not in fact held the magic power and marked the locality on the plains of Helemanu [Halemano], and against which chiefesses of the highest rank were aligned to lie during childbirth. . . Instead, the searcher will find a scattered lot of large stones, most of which are deeply embedded in the earth, and several of which are flat surfaced, even with the ground. These are in an area of about one hundred square feet and within the past few years have been protected by a wire-fenced enclosure of perhaps twice the size, for preservation as the historic landmark that it is. Credit for this action is said to belong to Mr. W. W. Goodale, manager of the Waialua Agricultural Company.

Amid a group of three or four of the most prominent of these stones is one standing, tongue-shaped, measuring a little over five feet in height by two and one-third feet in width, that has been supposed by many was the famous stone in question from its weather-worn condition, but an aged native familiar with the locality and its traditions, says, it was brought from elsewhere by the late George Galbraith and set up there. It is clearly a different quality of lava rock than predominates in the vicinity. Facing the stone, westward, is one of the largest, deeply imbedded in the ground, the upper surface of which has rudely-shaped depressions fitting the human form the primitive mind in ages past coupled with a cause and a purpose familiar to the savage idea, which subsequent generations, through superstition and tradition, have magnified.

Martha Beckwith mentions the sacred birthing stones of Kūkaniloko in her introduction to the “Hawaiian Romance of Laiekawai,” (Beckwith 1919:285-341), which recounts the wooing of a chiefess and her deification. Beckwith provides the Hawaiian language version of the legend as recorded by Haleole along with detailed supporting information and annotated translation of the text. Beckwith (1919:339) describes Kūkaniloko ca. 1911 thusly:

Kukaniloko in the uplands of Wahiawa, where Laielohelohe is concealed by her foster father, is one of the most sacred places on Oahu. Its fame is coupled with that of Holoholoku in Wailua, Kauai, as one of the places set apart for the birthplace of chiefs. . . Situated as it is upon the breast of the bare uplands between the Koolau and Waianae Ranges, the place commands a view of surprising breadth and beauty. Though the stones have been removed, through the courtesy of the management of the Waialua plantation a fence still marks this site of ancient interest.

Brief History After Western Contact

The arrival of Western explorers in Hawai'i signified the end of the Precontact Period ca. 1778, and the beginning of the Historic Period. With the arrival of foreigners such as British explorer Captain James Cook, in command of the ships *H.M.S. Resolution* and *H.M.S. Discovery*, Hawaiian culture and economy underwent drastic changes. Demographic trends during the late Precontact and early Historic Periods indicate population reduction in some areas, due to war and disease, yet increase in others, with relatively little change in material culture. At first there was a continued trend toward craft and status specialization, intensification of agriculture, *ali'i* controlled aquaculture, the establishment of upland residential sites, and the enhancement of traditional oral history (Kent 1983; Kirch 1985). The Kū cult, *luakini heiau* (sacrificial pre-Contact place of worship), and the *kapu* (taboo) system were at their peaks, although Western influence was already altering the cultural fabric of the Islands (Kent 1983; Kirch 1985). Foreigners very quickly introduced the concept of trade for profit, and by the time Kamehameha I had conquered O'ahu, Maui and Moloka'i, in 1795, Hawai'i had seen the beginnings of a market system economy (Kent 1983). Some of the work

of the commoners shifted from subsistence agriculture to the production of foods and goods that they could trade with early visitors. Introduced foods often grown for trade with Westerners included yams, coffee, melons, Irish potatoes, Indian corn, beans, figs, oranges, guavas, and grapes (Wilkes 1845). Later, as the Historic Period progressed, Kamehameha I died, the *kapu* system was abolished, Christianity established a firm foothold in the islands, and introduced diseases and global economic forces began to have a devastating impact on traditional life-ways in the Hawaiian Islands. This marked the end of an era of uniquely Hawaiian culture.

Historical Accounts of Waialua and Wahiawā (1779-1848)

Written accounts left by early visitors to the Island of O‘ahu, such as those presented below, offer valuable insight into what life may have been like for the earliest residents of Waialua. Many of these historical accounts were penned by seafaring men who dropped anchor at or near what they refer to as Waialua Bay. However, according to Sahlins because Kamananui Ahupua‘a, which encompasses Kaiaka Bay “was the political center of the *moku* of Waialua, and the settlement there was thus known as Waialua, at least to Haole, as it still is” these unwitting visitors mistakenly called it Waialua Bay rather than Kaiaka Bay. In late February of 1779, the remaining crew of Cook’s ship *Resolution* under the command of Captain Clerke and *Discovery* under the command of Captain James King sailed from Maui to O‘ahu and made an unsuccessful attempt to water the ship. King (1821:81-82) recorded the following observations:

Between the north point [Kahuku] and a distant headland, which we saw to the south-west the land bends inward considerably, and appeared likely to afford a good road. . . At a quarter past two, the sight of a fine river, running through a deep valley, induced us to come to an anchor in thirteen fathoms water, with a sandy bottom [Kaiaka Bay]. . . In the afternoon, I attended the two captains on shore, where we found but few of the natives, and those mostly women; the men, they told us, were gone to Morotoi [Moloka‘i] to fight Tahyterree [Kahekili]; but that their chief Perreeorane [Pele‘ioholani; *ali‘i nui* of O‘ahu], who had stayed behind, would certainly visit us, as soon as he heard of our arrival.

We were much disappointed to find the water had a brackish taste for two hundred yards up the river, owing to the marshy ground through which it empties itself into the sea. Beyond this, it was perfectly fresh, and formed a fine running stream, along the side of which I walked, till I came to the conflux of two small rivulets, that branched off to the right and left of a remarkably steep and romantic mountain. The banks of this river, and indeed the whole we saw of the north-west part of Woahoo [O‘ahu] are well-cultivated, and full of villages; and the face of the country is uncommonly beautiful and picturesque.

In a later entry within the chapter that provides a “general account of the sandwich islands,” King (1821:106-107) made the following statement about the northern shores of O‘ahu:

As far as we could judge, from the appearance of the north-east and north-west parts (for we saw nothing of the southern side), it is by far the finest island of the whole group. Nothing can exceed the verdure of the hills, the variety of wood and lawn, and rich cultivated valleys, which the whole face of the country displayed.

In November of 1815, when a Russian warship attempted to take over O‘ahu, Kamehameha called for people across the island to come to Honolulu and help build a fort to defend the island from invaders (Kamakau 1992). However, “the district chief of Waialua, Ka-hekili Ke‘e-au-moku [George Cox] was so busy collecting sandalwood that his district alone failed to respond to the call” (Kamakau 1992:206). Kamakau (1992:207) goes on to say that after the fort was complete, “Ka-lani-moku and all the chiefs went to work cutting sandalwood at Wahiawa, Halemano, Pu‘ukapu, Kanewai, and the two Ko‘olau’s.” Apparently, “the largest trees were at Wahiawa, and it was hard work dragging them to the beach.” Because of its lasting impact on the inhabitants, economy, and environment across the Hawaiian Islands, a brief discussion of the sandalwood trade is presented in the following paragraph.

Before Europeans arrived in Hawai‘i, the several species of sandalwood (*‘iliahi*; *Santalum spp.*) were used in a limited way, primarily for medicinal applications, perfume, and firewood (Krauss 1993). Sometimes sandalwood was also used to make bows for the stringed mouth instrument called *‘ukēke* (Buck 1957). In the early 1790s, a period of intense sandalwood exploitation and attendant social and environmental changes began when early foreign merchants began trading the fragrant wood with merchants in Canton (Cottrell 2002). A shortage in the supply of “white sandalwood” (*Santalum album*) from India and the East Indies, which was used to make ornate cabinets and chests, incense, perfumes, and medicines, caused European, American, and Cantonese traders to turn to Hawai‘i and other sources (Merlin and VanRavenswaay 1990). The first shipment of *‘iliahi* to Canton occurred sometime around 1790, and the earliest supplies of sandalwood to foreign merchants were controlled by the *ali‘i* (Merlin and VanRavenswaay 1990). Before long, however, Kamehameha I had wrested exclusive control of sandalwood from the *ali‘i* and used the

commodity to acquire luxury goods on credit with foreign merchants (Cottrell 2002). The debts that he and other *ali'i* accrued engulfed Hawaiians in a boom-and-bust industry that nearly eradicated the prized *'iliahi* (Rock 1916).

Historical descriptions of sandalwood harvesting often stress the sheer number of people who were ordered off their agricultural plots and into the forests to collect the wood. The following such account of the weighing of sandalwood in preparation for export was recorded by Mathison (1825:407), ca. 1822, upon his return to Cox's residence at Kaiaka Bay in coastal Waialua where he observed the following:

... At a little distance from his own hut was a large store-house, not less than fifty feet in length by thirty in breadth, and about thirty feet high, where the sandal-wood was piled up, and kept ready for embarkation; work-people of both sexes and all ages were employed in carrying it down to the beach. The Chief and his attendants directed their operations and one confidential man, whose duty it was to see fair play, stood over the weighing-machine, with the American Captain for whose ship the freight was destined.

In the latter years of sandalwood harvesting, stands of forest were burned so that harvesters could detect the fragrant wood by its smoke; if found quickly the trees could be felled before the valuable heartwood burned and subsequently stripped of the charred (undesired) bark and sapwood (Cottrell 2002). Sandalwood harvesting lasted until 1830, when the supply in Hawai'i and the value became too low to sustain the trade (Sahlins 1992).

Following the death of Kamehameha I in 1819, the Hawaiian religious and political systems began a radical transformation; Ka'ahumanu proclaimed herself "*Kuhina nui*" (Prime Minister), and within six months the ancient *kapu* system was overthrown. Within a year, Protestant missionaries arrived from America (Fornander 1969; Ii 1993; Kamakau 1992). In 1820, American missionary Hiram Bingham and members of the American Board of Commissioners for Foreign Missions (ABCFM) toured the island of O'ahu seeking out communities in which to establish church centers for the growing Calvinist mission. Bingham recorded observations made during his twenty-one-year residence in the Hawaiian Islands in a journal (Bingham 1848), which offers a rare glimpse at the project area vicinity during the early 1800s. Of Waialua, Bingham (1848:295-296) wrote that "a very large concourse of people assembled on the Lord's day, for public worship in the open air." Bingham (1848:296) continues his account as follows:

After the Sabbath we examined and encouraged, and partially supplied with books, the incipient schools established there under the particular patronage of Lydia Namahana and Gideon Laanui, to whom the district belonged. There were found under Maiao and his assistant teachers, four hundred and ninety-five male and female pupils, and under Kaoo, one hundred and sixty-four, amounting together to six hundred and fifty-nine pupils, chiefly men and women.

In July of 1832, the second missionary station on O'ahu, located at Waialua was started by Emerson (1848:468). Of the population served by this station at that time, Bingham (1848:468) states, "The districts of Waianae, Waialua, and Koolauloa, extending coastwise about fifty miles, and embracing a population of 7300, were connected with the station, among whom about 1600 could read." Another visitor to O'ahu during the 1820s, Mathison (1825:392-395), made the following observations of Waialua at that time:

July 11.—Having enjoyed a most agreeable sail by moonlight, we this morning entered a small bay called Why-arouah, on the N.E. side of the island, formed by two reefs of rocks, which run out parallel a considerable way into the sea, and between which two small rivers discharge themselves, Hence the name Why-arouah; *Whye* in the country language signifying water, and *arouah* the numeral two. Here a chief named Cox [Kahekili Ke'eaumoku/George Cox], who is one of the richest and most powerful in the island, resides; and as he was the person from who our Captain was to obtain the sandalwood, our first visit was of course paid to him. He bears the name and office, if it can be so called, of Governor. His hut stands on the seashore, and was sufficiently large to accommodate the whole of our party, consisting of several Americans, besides myself.

... he speaks English better than any other native I had yet conversed with. ... His hut might be about twenty feet square, and proportionably high, with an entrance aperture on two sides, and one above. It was fitted up as usual with mats; in the midst of it he himself sat on the ground, having no other covering than the *maro*, and was surrounded by attendants. By his side sat an intelligent-looking American sailor, who had been upwards of twenty years on these islands, and attached himself particularly to Cox, as his patron and protector. ...

In the cool of the evening I took a walk along the banks of the river, and was delighted with the beauty and fertility of the whole district. Plantations of taro, maize, tobacco, sweet potatoes, yams, melons, and water-melons, everywhere met the eye, all neatly arranged, and enclosed, some

by stone walls, others by fences. Of trees, the cocoa-nut, bread-fruit, banana, cotton, castor, *cōey*, and *teē* species, were most plentiful. The latter is a shrub peculiar, I believe, to these islands, but quite distinct from the Chinese tea-tree. The river, in most places about one hundred feet wide and not very deep, winds its still limpid way through this cheerful scene of cultivation, where the huts rising at intervals from among small groves of bananas and bread-fruit trees, vary in a picturesque and lively manner the soft harmonious touches of nature.

July 12.—I slept at Coxe's, who entertained us hospitably. We had several kinds of excellent fish baked for breakfast, and among the rest some uncommonly large flying fish. I took another and longer walk up the country, and met with the same abundant cultivation which I had before observed elsewhere. The natives here took little notice of us, which I attributed to their constant intercourse with the crews of ships coming for sandalwood. In less frequented places, they showed greater curiosity, and, I may add, greater kindness; for it was not unusual to receive little presents of fruit, particularly of melons, gratuitously offered as we passed their grounds.

Mathison (1825:402) wished to travel to the countryside where the sandalwood grows and to see "some ancient monuments of which a curious traditionary history had been related" to him. Thus, he secured a guide and an American travel companion and walked twelve miles until they reached a "vast natural amphitheatre, begirt with woods and gigantic masses of stone from the summit downwards" (Mathison 1825:403); there they spent the night and "having walked three or four miles farther, over the same uncultivated uninhabited plain, the country all at once changed its aspect, and presented a bold outline of hills, with alternate and thickly-wooded valleys." It was here that their guide pointed out a flat stone "about five feet broad by six or seven in length" upon whose surface were "many rude representations of men and animals" (Mathison 1825:403-404). Mathison (1825:404) continues his description thusly,

Many were defaced, and in others I could trace no resemblance to any known objects, either animate or inanimate: the stone itself was very imperfect, pieces of it having evidently been broken off on different sides. . . in order to convert the materials into knives, mirrors, pots, and other domestic utensils, which were always fabricated from stone in former times, previous to the introduction of iron by foreign traders.

Mathison goes on to recount the story of Chief Herimino as told to him by Cox. As previously mentioned, Helemanō is associated with the legendary cannibal chief who lured his victims to the mountains. Mathison (1825:405) states that the stone relic was the altar upon which the cannibal chief Herimino sacrificed his victims; "near it a large round hole, about twenty feet in circumference, and still clearly discernable, was pointed out as the place where the kanakas, or men, were cooked and devoured by the Chief and his adherents." His account of the cannibal chief's demise differs from that told in the prior section on legendary accounts. Per Mathison (1825:405), Herimino's brother-in-law killed him; but some of his followers continued to stalk and kill their human prey occasionally; "they were not finally extirpated till about forty years ago, when the principal Chief of the island, previous to King Tama-hama-hah [Kamehameha], pursued and killed them all, except one man, whose life accidentally was spared" a child of this man was at the time of Mathison's writing "a menial dependant [*sic*] upon the present King, and in no respect distinguishable from any of the other natives."

Between 1838 and 1842, the United States Exploring Expedition, under the direction of Commander Charles Wilkes, visited O'ahu. In 1840, Wilkes (1845:74-75) made the following observation of the terrain and flora of Waialua:

The coast here forms a small bay, and has a dreary aspect on first landing. . . A short distance from the coast an agreeable change is met with, in extensive taro-patches, fish-ponds, and fine fields of sugar-cane. The habitations in this part, are neat and comfortable, and the natives cheerful and clean.

. . . The district of Waialua stretches from the most westerly cape, called Kaena, to Waimea, in the district of Koolaulo [Ko'olauloa], on the northeast, and to Waianae on the southwest, a distance along the coast of above twenty miles. Within this district are a few bays for vessels not exceeding one hundred and fifty tons burden the best of these is Rawailoa [Kawailoa]. Those to the northeast are Waimea, Haula [Hau'ula], Kakua, Moluili, and Makua. Like all the rest of the places, they are dependent on Honolulu, which is thirty miles distant for a market. A good road might very easily be constructed, and very nearly level, on the plain that lies between the two high mountain ranges which traverse the island from east to west. One of these ranges is called Konahaunui, the other Kaala; the former occupies the eastern end of the island, the latter the western. Both are basaltic. It is remarked of these two ranges, that the soil and growth of the plants are dissimilar; for instance, the kauwila, the wiliwili, the haw [*hao*], and the uhiuhi are found on the Kaala, and are either not

found, or only in a dwarfish state, on the Konahaunui; whilst the acacia (koa), and the lehua, do not exist on the former, though growing luxuriantly on the latter.

. . . Part of the Waialua district is cultivated by irrigation, and produces abundantly. Five considerable streams water it from the Konahaunui range, passing down fertile valleys. The largest of these is quite sufficient to supply motive power to the whole year round. . . From sources that are to be depended upon, I was informed that there are upwards of thirty square miles in the Waialua district that can be cultivated without irrigation.

Of the Native Hawaiians of Waialua, “having but few wants, and those easily supplied” Wilkes (1845:75) states: “they cannot yet be induced to change their ancient dwellings for better habitations, and still adhere with pertinacity to their thatched grass huts, without floors or windows, and destitute of ventilation.” Wilkes (1845:77) also reports on births and deaths in Waialua district: in 1836, there were thirty-four births and ninety deaths recorded; in 1839, there were fifty-six births and one hundred and eighty-five deaths. In addition, over four hundred marriages were entered into between 1832 and 1839; and the population declined from 2,640 in 1832 to 2,415 in 1836, which he attributed to sterility and abortion.

Regarding resources and trade across the Hawaiian Islands, Wilkes (1845:261) mentions the ongoing pursuits of the Hawaiians in supplying visiting whaling fleets and that sugar cultivation had begun to take over the for the failed sandalwood trade; and stated the following:

The islands produce but little, and their consumption of foreign products is necessarily small. The capabilities of the islands have generally been underrated, for their soil and climate are suitable for raising all tropical productions in considerable quantities, and at a moderate cost. But very little investment of capital has yet taken place, and the business that has induced the establishment of several commercial houses has been more that of transit than for the purpose of supplying the consumption of the islands, or obtaining their exports.

In his discussion of the life and death of Kamehameha III (b. August 17, 1813; d. December 16, 1854) in *Ruling Chiefs of Hawaii*, Kamakau (1992:422-423) tells of the young king’s proclamation for his government to be one of learning, “in which chiefs should teach commoners and each one teach another.” His poetic description goes on to mention Waialua as follows:

. . . The concert exercises by which they were taught delighted the people. The rhythmical sound of the voices in unison as they rose and fell was like that of the breakers that rise and fall at Waialua or like the beat of the stick hula in the time of Pepe-io-holani and Ka-lani-‘opu‘u.

<i>A ea mai ke kai o Waialua,</i>	Let the sea of Waialua rise,
<i>Wawa no ‘olelo ‘oko‘a i pali,</i>	Let the roar echo over the hills,
<i>Nunu me he ihu o ka pua‘a hae la,</i>	Rumble like the grunt of the wild pig.
<i>‘Ako ka lau o ka nalu pi‘i i ka pali,</i>	Let the rising wave break the leaf from the cliff.
<i>Ku pali Kaiaka i ka‘ino,</i>	Kaiaka cliff stands above the storm,
<i>‘Ino ka lae o Kukuilau‘ania,</i>	Stormy is the cape of Kukuilau‘ania,
<i>He Maka-nui.</i>	Windy indeed it is!
<i>Makani me he ao la ka leo o ke kai,</i>	The voice of the sea rises upon the wind
<i>Kuli pa‘ia wawa ka uka a Lihu‘e,</i>	Deafening those in the uplands of Lihu‘e,
<i>O me he ‘oka‘a la i ke kula,</i>	As it is borne over the plain,
<i>Ke kula hahi a ke kai e halulu nei,</i>	The rumbling of the sea treading upon the plain,
<i>Halulu ma ke Ko‘olau,</i>	Rumbling over Ko‘olau,
<i>Ho‘olono ‘Ewa,</i>	‘Ewa hearkens,
<i>‘A‘ole i‘ike i ka po ana a ka nalu,</i>	She has not seen the rising of the waves
<i>Kuhihewa wale no Wahiawa – e.</i>	And mistakes it for Wahiawa. (Kamakau 1992:423)

Kamakau (1992:424) continues by saying “schools were built in the mountains and in the crowded settlements” and mentions Wahiawā and Halemano specifically. Kamakau (1992:424) reports that between fifty and two-hundred pupils attended each school under Kamehameha III’s rule and that “Oahu was then thickly populated.” He goes on to lament the drastic population decline thusly, “It is sad to see how in so short a time whole villages have vanished

leaving not a man. . . And as the kingdom of letters moved quickly so also moved the kingdom of God. . .” (Kamakau 1992:424-425). This significant decline in the native population was already felt a mere fifty years after Hawaii’s first contact with Europeans and Americans. Meanwhile, the Western population kept increasing. Maly (1998:36) summarizes the reasons for the rapid decline of native populations:

Overall, historic records document the significant effect that western settlement practices had on Hawaiians throughout the islands. Drawing people from isolated native communities into selected village parishes and Hawaiian ports-of-call, had a dramatic, and perhaps unforeseen impact on native residency patterns, health, and social and political affairs. In single epidemics hundreds, and even thousands of Hawaiians died in short periods of time.

The *Māhele* ‘Āina of 1848

By the mid-19th century, the ever-growing population of Westerners in the Hawaiian Islands forced socioeconomic and demographic changes that promoted the establishment of a Euro-American style of land ownership. By 1840 the first Hawaiian constitution had been drafted and the Hawaiian Kingdom shifted from an absolute monarchy into a constitutional government. Convinced that the feudal system of land tenure previously practiced was not compatible with a constitutional government, the King (Kauikeouli a.k.a Kamehameha III) and his high-ranking chiefs decided to separate and define the ownership of all lands in the Kingdom (King n.d.). This change was further promoted by missionaries and Western businessmen in the islands who were generally hesitant to enter business deals on leasehold lands that could be revoked from them at any time. After much consideration, it was decided that three classes of people each had one-third vested rights to the lands of Hawai‘i: the King, the chiefs and *konohiki*, and their tenants (the *maka‘āinana* or common people). In 1845 the legislature created the Board of Commissioners to Quiet Land Titles (more commonly known as the Land Commission), first to adopt guiding principles and procedures for dividing the lands and granting land titles, and then to act as a court of record to investigate and ultimately award or reject all claims brought before them. All land claims, whether by chiefs for entire *ahupua‘a* or by tenants for their house lots and gardens, had to be filed with the Land Commission within two years of the effective date of the Act (February 14, 1846) to be considered (this deadline was extended several times for chiefs and *konohiki*, but not for commoners) (Soehren 2005).

The King and some 245 chiefs (Kuykendall 1938) spent nearly two years trying unsuccessfully to divide all the lands of Hawai‘i amongst themselves before the whole matter was referred to the Privy Council on December 18, 1847 (King n.d.). Once the King and his chiefs accepted the principles of the Privy Council, the *Māhele* ‘Āina (Land Division) was completed in just forty days (on March 7, 1848), and the names of all of the *ahupua‘a* and ‘*ili kūpono*’ (nearly independent ‘*ili*’ land division within an *ahupua‘a*, that paid tribute to the ruling chief and not to the chief of the *ahupua‘a*) of the Hawaiian Islands and the chiefs who claimed them, were recorded in the *Māhele* Book (Soehren 2005). As this process unfolded King Kamehameha III, who received roughly one-third of the lands of Hawai‘i, realized the importance of setting aside public lands that could be sold to raise money for the government and also purchased by his subjects to live on. Accordingly, the day after the division with the last chief was recorded in the *Buke Māhele* (*Māhele* Book), the King commuted about two-thirds of the lands awarded to him to the government (King n.d.). Unlike the King, the chiefs and *konohiki* were required to present their claims to the Land Commission to receive their awards (LCAw.). The chiefs who participated in the *Māhele* were also required to provide to the government commutations of a portion of their lands in order to receive a Royal Patent giving them title to their remaining lands. The lands surrendered to the government by the King and chiefs became known as “Government Land,” while the lands retained by Kamehameha III became known as “Crown Land,” and the lands received by the chiefs became known as “*Konohiki* Land” (Chinen 1958:vii; 1961:13). All lands awarded during the *Māhele* were identified by name only, with the understanding that the ancient boundaries would prevail until the land could be surveyed. This process expedited the work of the Land Commission.

During the *Māhele*, native tenants residing on lands that were divided up among the Crown, *Konohiki*, and Government could claim, and acquire title to, *kuleana* parcels that they actively lived on or farmed. The Board of Commissioners oversaw the program and administered the *kuleana* as Land Commission Awards (LCAw.). Claims for *kuleana* had to be submitted during a two-year period that expired on February 14, 1848, to be considered. All of the land claimants were required to provide proof of land use and occupation, which took the form of volumes of native registry and testimony. The claims and awards were numbered, and the LCAw. numbers, in conjunction with the volumes of documentation, remain in use today to identify the original owners and their use of the *kuleana* lands. The work of hearing, adjudicating, and surveying the claims required more than the two-year term, and the deadline was extended several times for the Land Commission to finish its work (Maly and Maly 2002). In the meantime, as the new owners of the lands on which the *kuleana* were located began selling parcels to foreigners, questions arose

concerning the rights of the native tenants and their ability to access and collect the resources necessary for sustaining life. The “Enabling” or “*Kuleana* Act,” passed by the King and Privy Council on December 21, 1849, clarified the native tenants’ rights to the land and resources, and the process by which they could apply for fee-simple interest in their *kuleana*.

The work of the Land Commission was completed on March 31, 1855. A total of 13,514 *kuleana* were claimed by native tenants throughout the islands, of which 9,337 were awarded (Maly and Maly 2002). The history of the *kuleana* claim and award process is summarized in an 1856 report by the Minister of Interior:

...During the ten months that elapsed between the constitution of the Board and the end of the year 1846, only 371 claims were received at the office; during the year 1847 only 2,460, while 8,478 came in after the first day of January 1848. To these are to be added 2,100 claims, bearing supplementary numbers, chiefly consisting of claims which had been forwarded to the Board, but lost or destroyed on the way. In the year 1851, 105 new claims were admitted, for *Kuleanas* in the Fort Lands of Honolulu, by order of the Legislature. The total number of claims therefore, amounts to 13,514, of which 209 belonged to foreigners and their descendants. The original papers, as they were received at the office, were numbered and copied into the Registers of the Commission, which highly necessary part of the work entailed no small amount of labor...

...The whole number of Awards perfected by the Board up to its dissolution is 9,337, leaving an apparent balance of claims not awarded of say 4,200. Of these, at least 1,500 may be ranked as duplicates, and of the remaining 2,700 perhaps 1,500 have been rejected as bad, while of the balance some have not been prosecuted by the parties interested; many have been relinquished and given up to the *Konohikis*, even after surveys were procured by the Board, and hundreds of claimants have died, leaving no legal representatives. It is probable also that on account of the dilatoriness of some claimants in prosecuting their rights before the Commission, there are even now, after the great length of time which has been afforded, some perfectly good claims on the Registers of the Board, the owners of which have never taken the trouble to prove them. If there are any such, they deserve no commiseration, for every pains has been taken by the Commissioners and their agents, by means of repeated public notices and renewed visits to the different districts of the Islands, to afford all and every of the claimants an opportunity of securing their rights... (in Maly 2002:7)

Regarding the disposition of Kamananui shortly before the 1848 *Māhele*, after the death of Elizabeth Kīna‘u (ca. 1839), the daughter of Kamehameha I, her lands were inherited by the young Victoria Kamāmalu who thereby became the third largest landholder of the Hawaiian Kingdom. Kamāmalu had controlled portions of 163 *ahupua‘a* on nearly every island, including 79 of the 86 *ahupua‘a* on O‘ahu (Alameida 1994; Kame‘eleihiwa 1992). Kamāmalu held half of Waialua and shared significant portions with the reigning *Mō‘ī* (Kauikeaouli) and other chiefs, thus suggesting that her custodians (Ka‘ahumanu, wife of Kamehameha I and Kīna‘u) had already distributed large portions of the district. At the time of the 1848 *Māhele*, like many other *ali‘i*, Kamāmalu had relinquished close to 71% of her original land holdings, including six of her eight lands in Waialua, among them her portion of Kamananui to the *Mō‘ī* who then placed them into the inventory of Government lands (Kame‘eleihiwa 1992). Concerning land awarded granted under the *Kuleana* Act of 1850, only one *kuleana* parcel—Land Commission Award No. 248 to Mr. Joseph Thomas—was awarded in Kamananui. It was located near modern-day Waialua Town, northwest of the current project area. No *kuleana* awards were granted in the current project area.

Government Land Grants in Kamananui

Section 4 of the 1850 the *Kuleana* Act (Enabling Act), required that segments of Government land (allocated during the *Māhele*) on each island be made available for purchase by the native tenants. Unlike the parcels awarded by the Land Commission, which averaged 2.57 acres each, the land grant parcels were often substantially larger (Van Dyke 2008). The Act resolved that portions of the Government Lands should be set aside and sold as grants ranging in size from one to fifty acres at a cost of fifty cents per acre. The stated goal of this program was to enable native tenants, many of whom were insufficiently awarded, failed to file a claim or were not awarded land through the *Kuleana* Act to purchase lands of their own (Van Dyke 2008). Despite the stated goal of the land grant program, this provided the mechanism that allowed many foreigners to acquire large tracts of the Government Lands and was a direct result of the passing of the heavily debated Alien Land Ownership Act of July 10, 1850. As noted by Van Dyke (2008), although most of the individual purchasers were Hawaiians, foreigners had managed to acquire nearly two-thirds of the total land area.

As such Kamananui Ahupua'a was parceled out into roughly 245 land grants that were clustered into tracts and subsequently sold to various natives, foreigners, and businesses (OHA 2018). In an 1881 map by C. J. Lyons, the project area is shown in the tract called the "Kemo'o Grants", which was comprised of approximately a dozen long rectangular parcels that were situated between Kaukonahua Gulch (south of the project area) and Poamoho Gulch (north of the project area) (Figure 9). Additional research into Kemo'o revealed that the name is in reference to a large 'ili (a subdivision of an *ahupua'a*) and that during the creation of the government grants, this name was carried over. With respect to other built features in the project area, Lyons' 1881 map also shows the "Main Government Road," passing along the southwest corner of the project area (see Figure 9). The "Main Government Road" connected coastal Waialua to other areas such as Wai'anae District via Kolekole as well as 'Ewa and Ko'olauloa districts.

The current project area occupies a portion of four land grants spanning across the 'ili of Kemo'o. Table 2 below provides additional details about each of the four land grants within the project area and Hawai'i Registered Map No. 74 (Figure 10) dated 1852 by government surveyor J. S. Emerson shows a close up of the grant parcels and the awardee names. These grants appear to have been used primarily as pasture for grazing until about the 1920s. Note that on Emerson's 1852 map, the "Main Government Road" (shown in Lyons' 1881 map) is not present, suggesting that the construction of road occurred sometime between the late 1850s and 1881.

Table 1. Government land grants in the project area

<i>Land Grant No.</i>	<i>Awardee</i>	<i>Year Awarded</i>	<i>Acres</i>
845	Polu	1852	88.0
849	Kekela	1852	98.0
850	Lauhulu and Keuwai	1852	92.5
1127	Kuemanu	1853	88.0

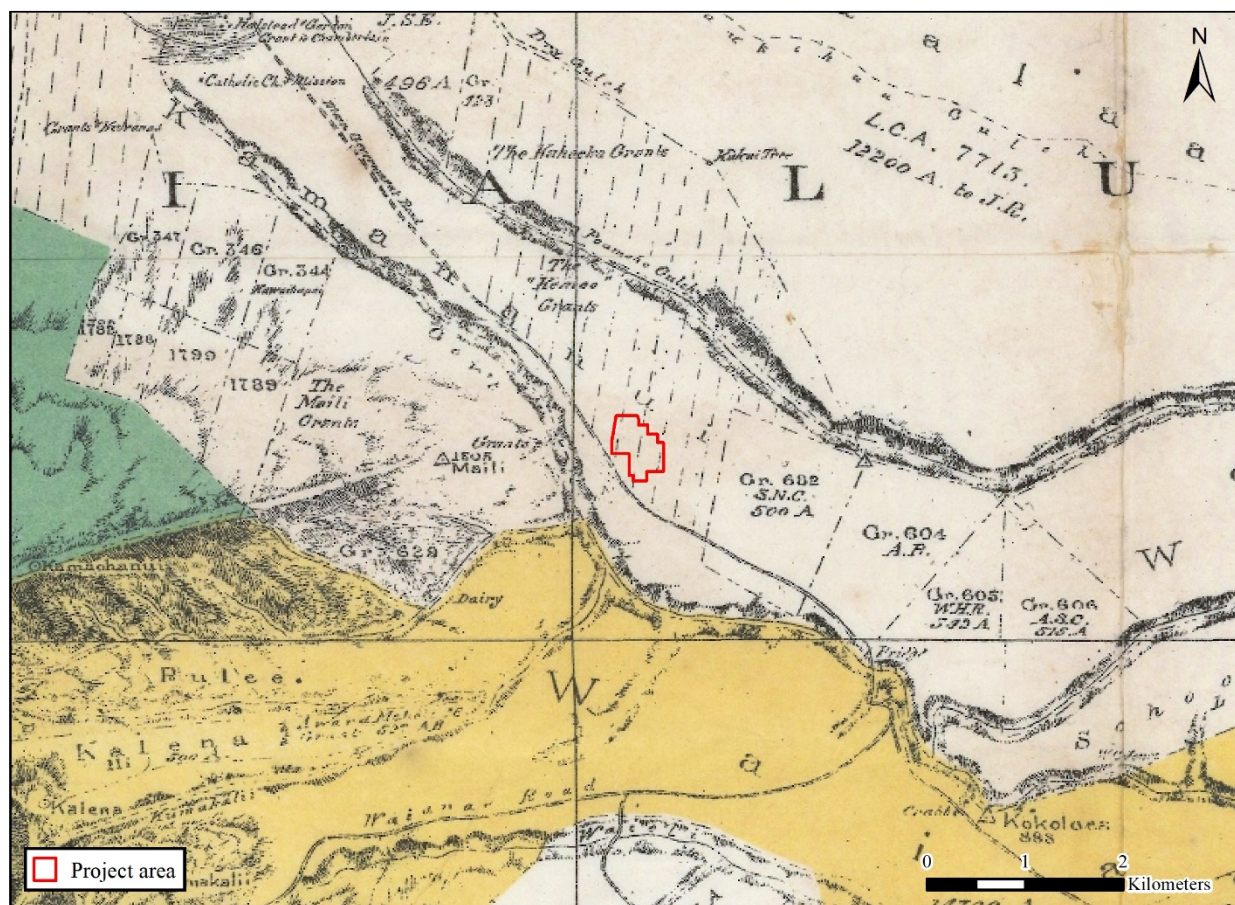


Figure 9. A portion of an 1881 map by C. J. Lyons with project area (outlined in red).

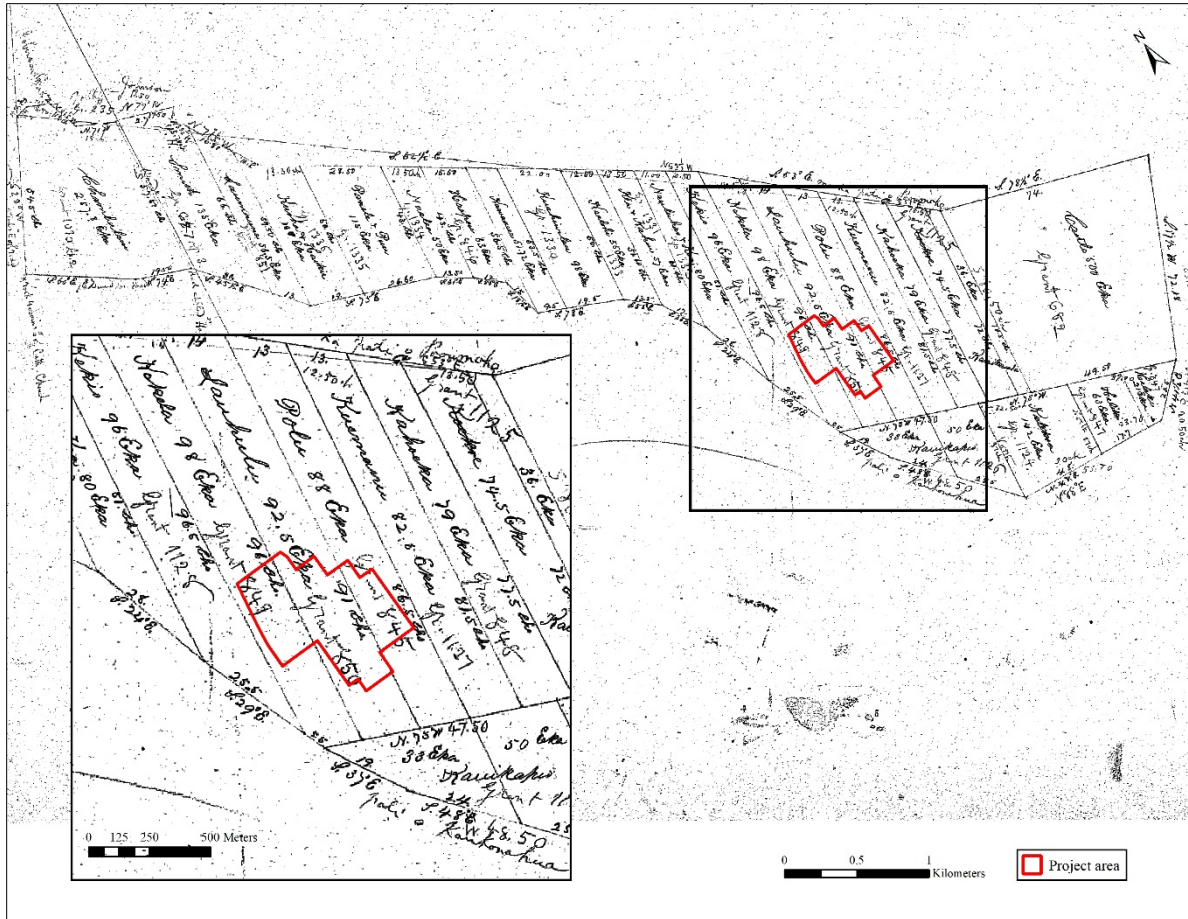


Figure 10. A portion of Hawai'i Registered Map No. 74 from 1852 with Land Grant awardees and project area (outlined in red). **Descriptions of Kamananui and Waialua During the Mid to Late 19th Century**

In the decades following the 1848 *Māhele 'Āina*, more visitors and foreigners who settled in Hawai'i, as well as Native Hawaiian Historians began recording their observations of daily life in the Hawaiian Islands. For instance, in *Fragments of Hawaiian History*, Historian John Papa 'Ī'ī (1800-1870) recounts details of the extensive trail networks throughout leeward O'ahu as he had experienced them in the early 19th century. 'Ī'ī (1993:98) described a major trail, generally following the current alignments of several state and federal highways; portions of this trail connected coastal Waialua with inland Kamananui and Wahiawā and is adjacent to the current project area (Figure 11):

From the stream of Anahulu and from Kamani, above the houses and taro patches, a trail stretched along in front of Kuokoa's house lot and the church. This trail went on to meet the creeks of Opaepala and Halemano, the sources of the stream of Paalaa, on down to the stream of Poo a Moho, and on to the junction where the Mokuleia trail branched off to Kamananui and Keawawahie, to Kukaniloko, the birthplace of chiefs.

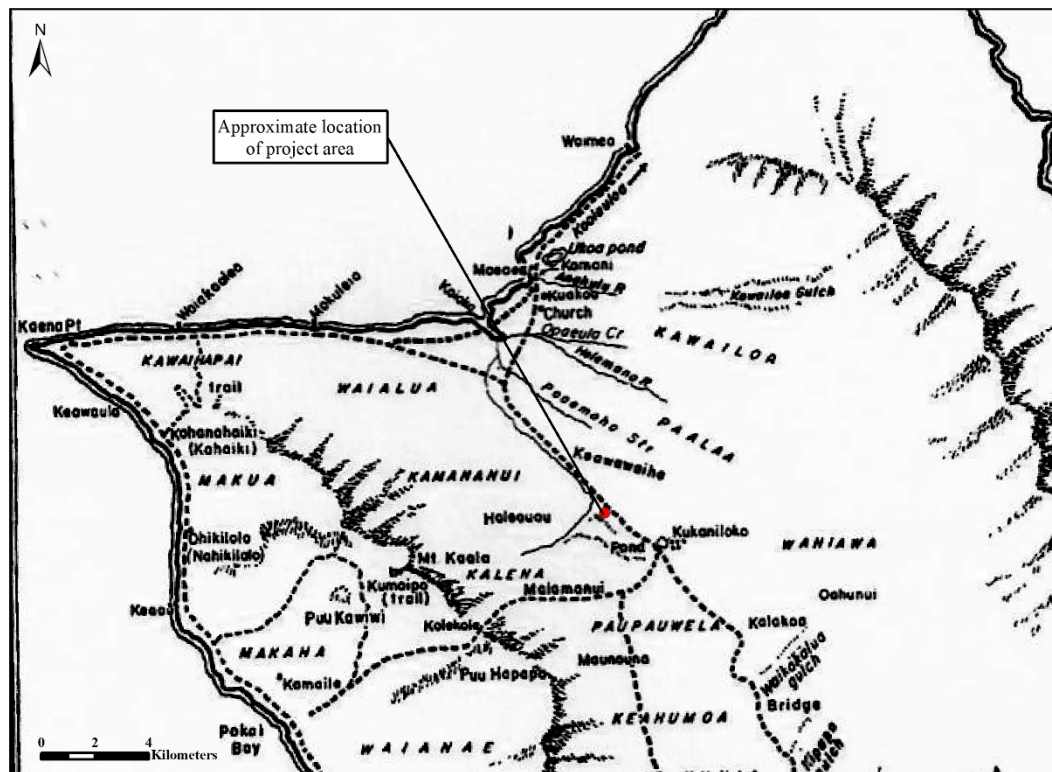


Figure 11. A portion of a map by Paul Rockwood based on narratives by John Papa ʻĪʻī (1959:96).

Another brief account composed by Thrum (1901:9) speaks of the history and of travel upon the road connecting Honolulu with Waialua, which was published in the *Hawaiian Almanac and Annual for 1902*, as follows:

The road to Waialua, Oahu, was completed about 1850, but a local paper of August, 1852, records the fact “that a lady performed the trip recently from Honolulu to Waialua in a wagon in one day. This is the first time, we believe, a wagon has ever passed over this [*sic*] 30 miles of road.

During the early 1870s, American journalist Charles Nordhoff visited the Hawaiian Islands and documented his travels in a book entitled *Northern California, Oregon, and the Sandwich Islands* originally published in 1874. He made the following recommendations to his readers to indulge themselves with a ride around the island of Oʻahu. Per Nordhoff (1874:32), all you needed were four days, the ability to sit in the saddle, and a pack-mule; he continues as follows:

. . . you will sleep every night at a plantation or farm. The roads are excellent for riding, and carriages have made the journey. . . If you are accustomed to ride, and can do thirty miles a day, you should sleep the first night at or near Waialua, the next at or near what is called the Mormon Settlement [Laie], and on the third day ride into Honolulu. If ladies are of your party, and the stages must be shorter, you can ride the first day to Ewa, which is but ten miles; the next, to Waialua, eighteen miles further. . . Any one [*sic*] who can sit on a horse at all will enjoy this excursion, and receive benefit from it; the different stages of it are so short that each day's work is only a pleasure. On the way you will see. . . near Waialua an interesting boarding school for Hawaiian girls, in which they are taught not only in the usual school studies, but in sewing, and the various arts of the housewife. If you are curious to see the high valleys in which the famous Waialua oranges are grown, you must take a day for that purpose.

In a chapter devoted to his travels on O'ahu during the first half of 1880, George Bowser (1880:489) made the following observations of neighboring Kamananui and the greater Waialua District and mentions the commercial sugar plantation of Halstead and Gordon, which was the precursor to Waialua Agricultural Company—further discussed in the next section:

Leaving this spot [Waimea Valley], which must hereafter become the seat of a considerable population, I followed the Waialua road, which follows the sea beach for about a mile and a half. At this place, between the beach and the cultivable land, there lies a strip about half a mile wide composed of nothing but boulders. . .

2. Background

Again I passed on to another fertile valley, the Kamananui. At the head of this, closeup to the mountains, is the sugar plantation of Messrs. Halstead & Gordon, one of the most extensive and valuable on the island of Oahu. Mr. Halstead is a thoroughly experienced manager, and everything on the place has thrift and industry written on the face of it. I was made right at his hospitable house, where he resides with Mrs. Halstead and his family. A lovely view of the ocean is to be had from the front of the house, and when I was there the scene was further enlivened by the presence of a fine schooner in full sail on her way to Honolulu. There is plenty of good fishing in this valley; both fresh and salt water fish being abundant. Excellent shooting, too, is available for the sportsman.

At Waialua I found no less than three native churches, a female seminary, three native schools and St. Stephen's Episcopal Mission School.

Collectively these accounts describe the transformation of trails to wagon roads, which were in use during the latter half of the 19th century. The old government road, which is shown in Lyon's 1881 map (see Figure 9) as passing along the southwest corner of the current project area, appears to have fallen into disuse after the construction of what is referred to today as Kaukonahua Road. Such changes are shown in a 1913 map (Figure 12) and a 1928 map (Figure 19), both of which depict the road alignment along the project area's northeast boundary. The 1928 map however, labeled the road as "Kamehameha Highway" and no longer show the "Main Government Road" alignment. The 1928 map also shows buildings, fields, and infrastructure associated with Kemoo Farms, which after the 1940s, Kemoo Farm appears to have been dismantled and plowed for commercial pineapple.

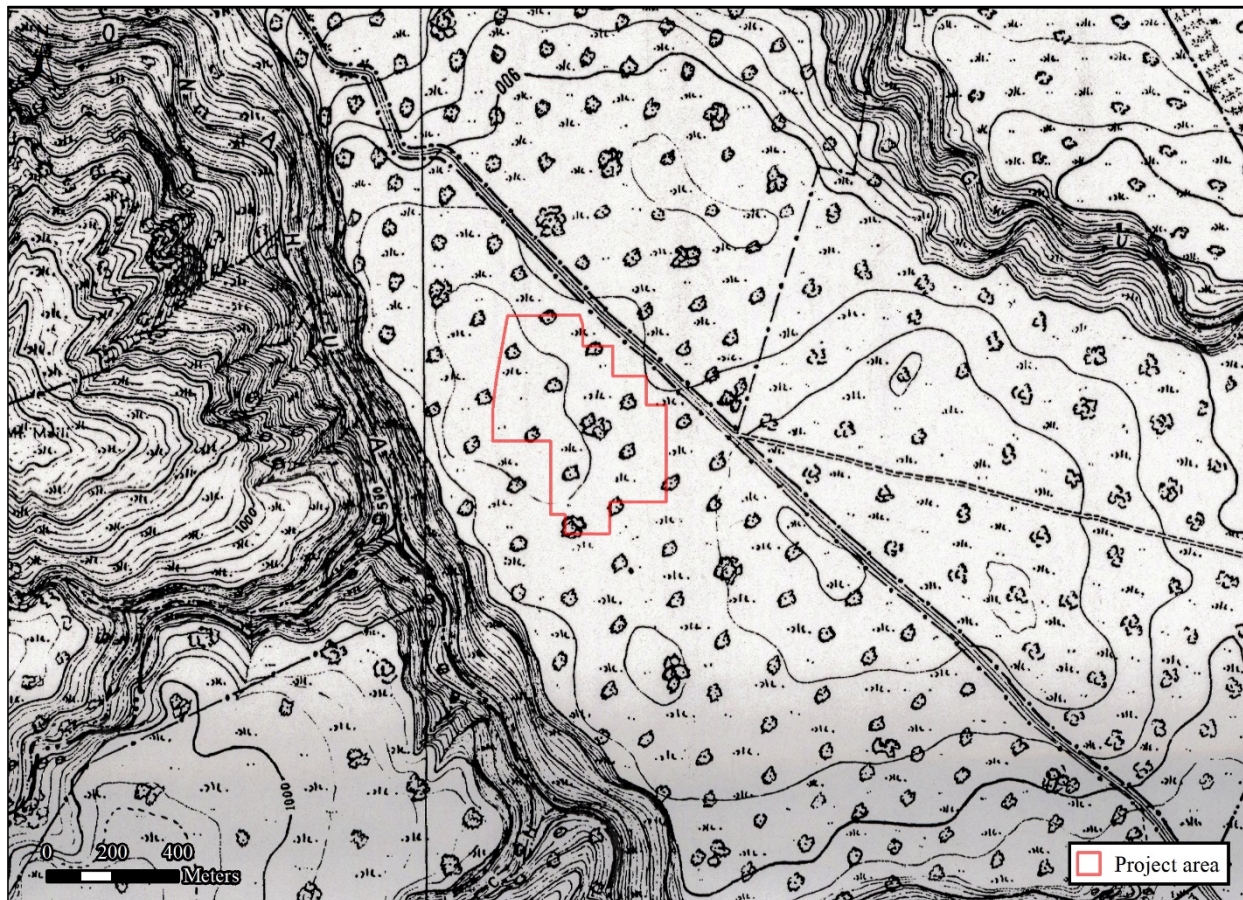


Figure 12. A portion of a 1913 U.S. Army Schofield Quadrangle map showing uncultivated lands and surrounding land use with project area (outlined red).

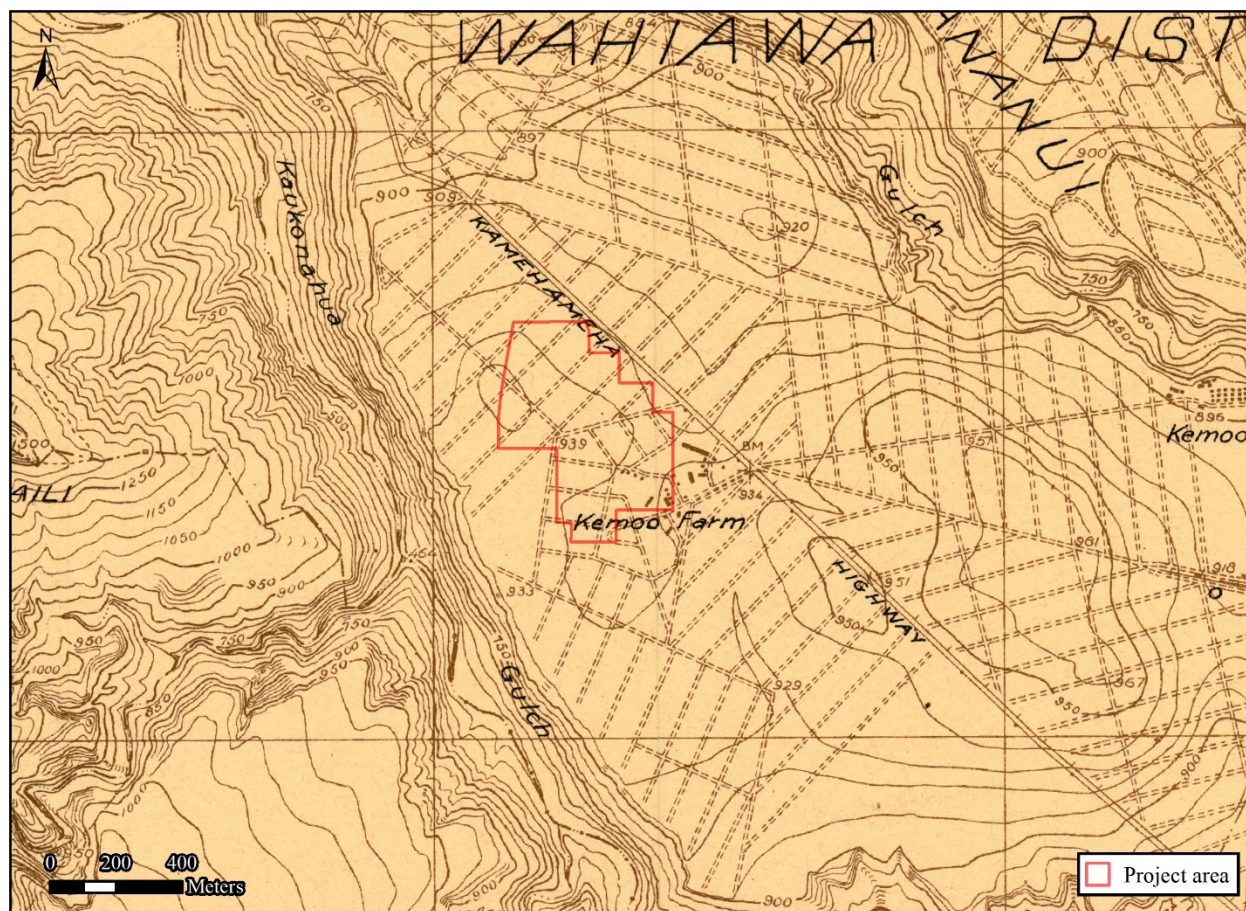


Figure 13. A portion of a 1928 USGS Schofield Quadrangle Advance Sheet.

Commercial Agriculture in Waialua

In the late 1800s, entrepreneurs B.F. Dillingham of the Oahu Railway and Land Company (O. R. and L.) and Samuel Northrup Castle and Amos Starr Cooke of Castle & Cooke undertook the expansion of commercial sugar cultivation across Waialua. In October of 1898, shortly after the annexation of the Hawaiian Kingdom, at the behest of Dillingham, Castle & Cooke acquired 10,000 acres of land for sugar cultivation and 12,000 acres at higher elevations that would prove more suited for pineapple cultivation to form Waialua Agricultural Company, Ltd. (WAC) (Taylor et al. 1976). WAC acreage comprised Halstead Brothers Plantation, lands sublet from Dillingham, and lands leased from Bishop Estate, in addition to lands leased and purchased from private owners (Dorrance and Morgan 2000).

James Drummond Dole (Figure 14) who would become known as “the Pineapple King” arrived in O‘ahu in November of 1899. When a 61-acre tract of Wahiawā homestead land went up for public auction in 1900 he acquired the land and planted pineapple and vegetables; by 1901, when pineapple flourished, he organized the Hawaiian Pineapple Company (Taylor et al. 1976). The initial pineapple harvests had been intended for sale in the fresh market, but fresh pineapples could not be shipped over long distances without spoiling. As a result, Dole concentrated on canning as a means of making pineapple available and profitable year-round. Thus, Hawaiian Pineapple Company (HAPCo) became dedicated to the production and canning of the fruit for export (Coulter 1933).

In the early 1900s, WAC leased “3,000 acres of land not suitable for sugar to Dole’s Hawaiian Pineapple Company (HAPCo) and other pineapple operators” for commercial pineapple cultivation, including the proposed project area; and by 1913, planters had more than 6,000 acres of Waialua land planted in pineapple (Taylor et al. 1976:165). In 1922, Dole gave WAC one-third ownership of Hawaiian Pineapple Company Dole in exchange for another 12,000 acres of WAC lands (Taylor et al. 1976:165). Beginning in 1927, HAPCo started to focus on the Dole name in their advertisements and stamped “DOLE” on the top of each can (Dole and Porteus 1990). In their 1931 annual report, HAPCo reported a record output of 4.9 million cases (Dole and Porteus 1990:93). In 1932, Castle & Cooke invested in Hawaiian Pineapple Company “to save Jim Dole’s depression-plagued firm from going bankrupt

and to keep controlling ownership in island hands” (Dole and Porteus 1990:161); subsequently, WAC owned thirty-seven percent of Hawaiian Pineapple. Within a few years, Castle & Cooke staff were running the company and handling the insurance and shipping needs. During the same year, a survey was conducted to understand areas of cultivation. It was determined that of all the Hawaiian Islands, O’ahu had the largest percentage of land area in cultivation: 21.63 percent; of which, 42.45 percent was dedicated to pineapple, while 51.86 percent was planted in sugarcane, and 5.69 in other crops (Coulter 1933:53).



Figure 14. John Whitmore (left) and Jim Dole (right) in pineapple fields, n.d. (Butler 2001).

In the 1960s, Hawaiian pineapple growers supplied more than 80 percent of the world’s output of canned pineapple; however, pineapple production had begun to decline by 1966 and many of the fields formerly dedicated to pineapple production were retired (Gomes 2009). Aerial photographs taken of the project area in 1953 (Figure 15) and 1965 (Figure 16) shows the area under active pineapple cultivation, however, by 1977 (Figure 17) pineapple cultivation appears to have ceased. During the 1970s, Dole reduced pineapple production in Wahiawā as the canned produce became less profitable and a shift to fresh fruit production was underway (Bartholomew et al. 2012). Dole continued to grow fresh pineapple on O’ahu, “primarily for the Oahu and tourist markets. . .” and “to keep lands owned by Maui Land Pineapple Company and Dole Food Company in agriculture to take advantage of the favorable tax base such lands enjoy” (Bartholomew et al. 2012:1397).

In 1992, Dole Packaged Foods Company closed its Lāna’i Plantation and its Iwilei Cannery (HDAO 1999). However, since 1989, a former fruit stand on Kamehameha Highway, to the north of the current project area, has been operating as a tourist destination known as Dole Plantation (Dole and Porteus 1990). Dole continues to grow fresh pineapples in the vicinity of this tourist attraction primarily for the tourist and local O’ahu markets with a small percentage of the harvest shipped to the mainland when shortages occur in Dole’s Central American supply (Bartholomew et al. 2012). Today, Dole Food Company is one of the last vestiges of the Hawaiian pineapple industry, which suffered a sharp decline since the 1970s. By 2007, foreign-based canneries out-competed Hawaiian production and all the pineapple grown on O’ahu was grown for the fresh market (Bartholomew et al. 2012). According to the report titled Development of a Master Plan for the Whitmore Agricultural Project prepared by the University of Arkansas (UARC 2017), the Dole Food Company was no longer utilizing approximately 280 acres of the Dole plantation.

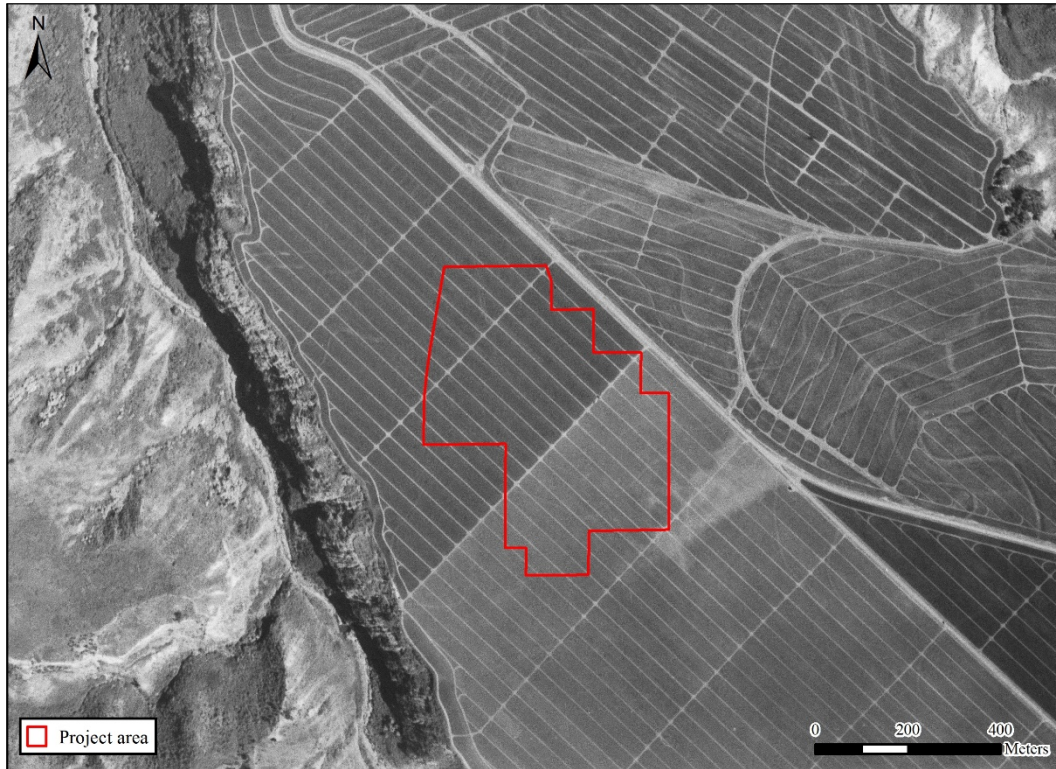


Figure 15. 1953 USGS aerial with project area (outlined in red); note the project area under pineapple cultivation (University of Hawai'i at Mānoa MAGIS).

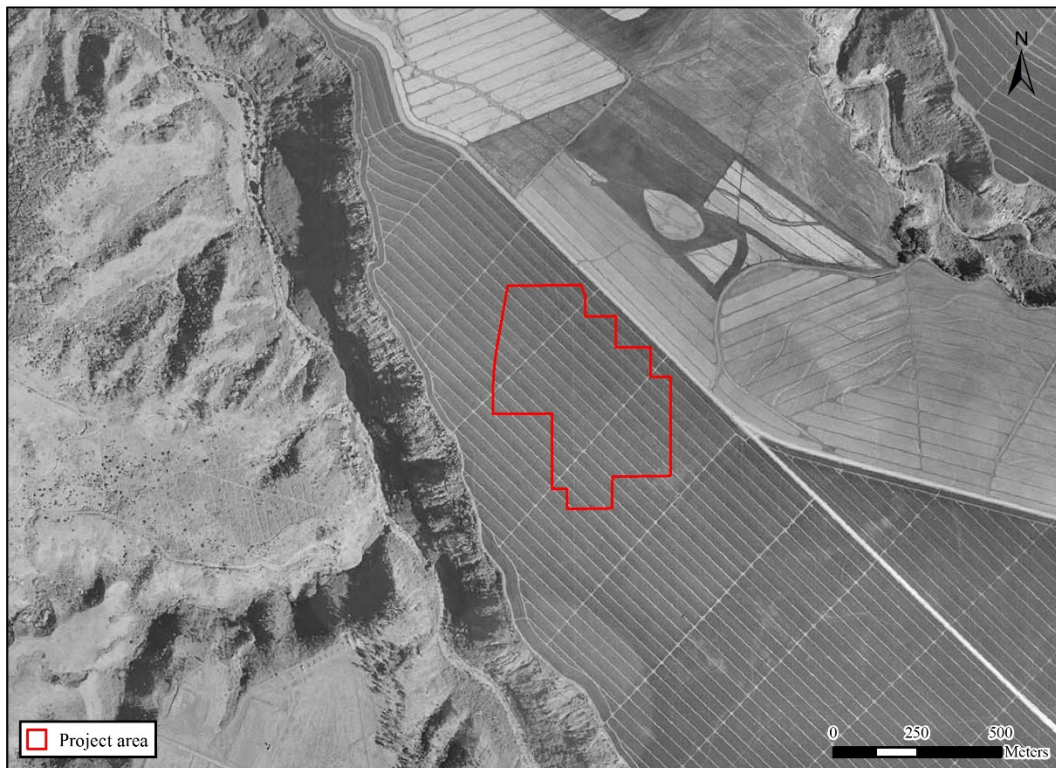


Figure 16. 1965 USDA aerial photo of the project area (outlined in red) continuing to be under pineapple cultivation (University of Hawai'i at Mānoa MAGIS).

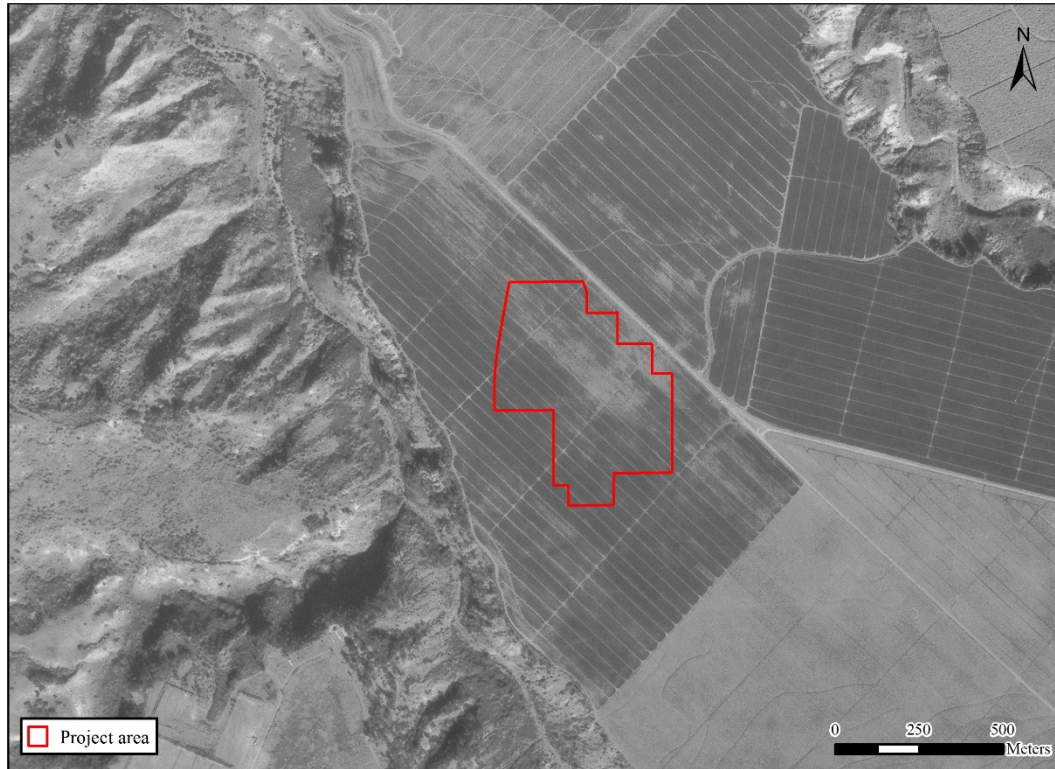


Figure 17. 1977 USGS aerial photo of project area (in red) with a portion of (south) no longer being used for pineapple cultivation (University of Hawai‘i at Mānoa MAGIS).

PREVIOUS STUDIES

The earliest archaeological study conducted in the vicinity of the current study area is that of Thomas G. Thrum, who conducted an inventory of the *heiau* of ancient Hawai‘i in the early 1900s. Thrum (1906a) published his list of *heiau* in a series of entries in the *Hawaiian Almanac and Annual*, beginning with the 1907 edition. Thrum (1906b:49-50) made the following remarks about his investigations in a preliminary paper titled “Tales from the Temples” published in the 1907 annual:

This much is being realized, and expressions of regret have been freely made, that we are at least fifty years too late in entering upon these investigations for a complete knowledge of the matter, for there are no natives now living that have more than hear-say information on the subject, not a little of which proves conflicting if not contradictory . . . While these difficulties may delay the result of our study of the subject, there is nevertheless much material of deep interest attending the search and listing of the temples of these islands that warrants a record thereof for reference and preservation.

Despite the challenges faced by Thrum, he and his associates compiled information on over seventy *heiau* located throughout O‘ahu (Thrum 1906a). One must take into consideration that Thrum listed *heiau* that had already been destroyed prior to his data collection efforts in the early 1900s. Thrum (1906a:47-48) listed the following *heiau*, located in Waialua within five miles of the study area:

- Onehana.....On slope at rear of Waialua Agr. Co.’s mill: a partly walled and platform *heiau* about 60x100 feet in size; of pookanaka class.
- Kalakiki.....On ridge north of Onehana, of pookanaka class; its walls covered in a tangle of hau and lantana.
- Hekili.....At Palaa-uka [Pa‘ala‘a], near the twin bridge, below the road; of luakini class and place of refuge; long since destroyed.
- Lonoakeahu.....Keehu.—A *heiau* of small size destroyed years ago; site now planted to cane.

Kapukapuakea.....Palaa-kai [Pa‘ala‘a].—A medium sized heiau of traditional Menehune construction of kauila wood, long since destroyed, said to have worked in connection with Lonoakeahu. Luuau its kahuna.

Onehana and Kalakiki were both located along the slopes of Ka‘ala and Thrum (1906b:52, 54) further reports

Not only is the beating of drums and sound of the conch shell and gourd rattles heard in the nights of Kane in its precincts, but its influence extends to the shore and sea at its front, for torch-lights at times suddenly appear and dance about within its range, or vanish at one’s approach. . . A still further superstition is that a house built within the range from the temple to its deity must not have its doorway face the hills, else trouble, sickness and death to the household is sure to follow.

The earliest formal archaeological survey of O‘ahu was conducted by J. Gilbert McAllister on behalf of the Bishop Museum for nine months in 1930. McAllister’s purpose was “to collect information regarding the archaeology of Oahu” (McAllister 1933:3) and he made it clear that his investigation was a beginning rather than a complete account of all the cultural resources on O‘ahu. McAllister (1933:3) also made the following statement regarding the state of cultural resources on Oahu at the time, in the introduction to his resultant publication *Archaeology of Oahu*:

As the archaeological remains are those of the people found in Hawaii by the early voyagers, contact with Hawaiians was an indispensable part of the work. Not only are the sites being destroyed by the changes wrought by European culture, but with the introduction of exotic vegetation many sites have been completely hidden. Such remains would be as good as lost, were it not for the knowledge of them still treasured by old residents (*kamaaina*) of Oahu. With the passing of these old people most of this information will disappear.

McAllister described the Kūkaniloko birthstones (Site 218), which is approximately three-miles from the project area as being “the only ancient site on Oahu that is being officially preserved” (McAllister 1933:135). McAllister (1933:135) described the site as “an enclosed area about one-half acre in size, with many large stones, some just visible, others protruding to a height of 3 to 4 feet, scattered about on a well-kept lawn.” Kūkaniloko (SIHP Site 50-80-04-218) was listed in the National Register of Historic Places in 1973.

Previous Archaeological Studies (1987-Present-day)

With the advent of Cultural Resource Management (CRM) in the 1970s, as a response to newly-established historic preservation laws and increased modern development, archaeologists began recording more discrete sites and performing test excavations throughout the state. Since the late 1980s, the archaeological and cultural studies have focused more on the area east of the project area and in Wahiawā, the locations of which are shown in Figure 18 below and listed in Table 2. A summary of previous archaeological studies is provided below which is followed by a summary of cultural studies conducted within the project area vicinity.

Table 2. List of relevant archaeological studies

<i>Year</i>	<i>Author</i>	<i>Study Type</i>	<i>Location</i>
1987	Saifuku	Locaiton map	Kamananui
1992	Henry et al.	Inventory survey	Kamananui & Wahiawā
1994	Colin and Hammatt	Archaeological assessment	Wahiawā
1995	Yent	Site report	Kamananui
2000	Hammatt & Chiogioji	Archaeological assessment	Wahiawā
2004	West & Donaldson	Inventory survey	Wahiawā
2005	West	Addendum AIS	Wahiawā
2005	West & Desilets	Addendum AIS	Wahiawā
2006	Tulchin & Hammatt	Field Inspection	Kamananui
2008	Reith	Archaeological monitoring	Wahiawā
2010	Hammatt & Shideler	Inventory survey	Kamananui
2010	Stasack & Stasack	Site report	Kamananui
2010	Wilson and Spear	Inventory survey	Wahiawā
2011	Genz	Cultural landscape study	Kamananui
2011	Sims et al.	Archaeological monitoring	Kamananui
2015	McElroy et al.	Inventory survey	Wahiawā & Kamananui
2019	Nowell et al.	Historic properties inventory survey	Wahiawā

2. Background

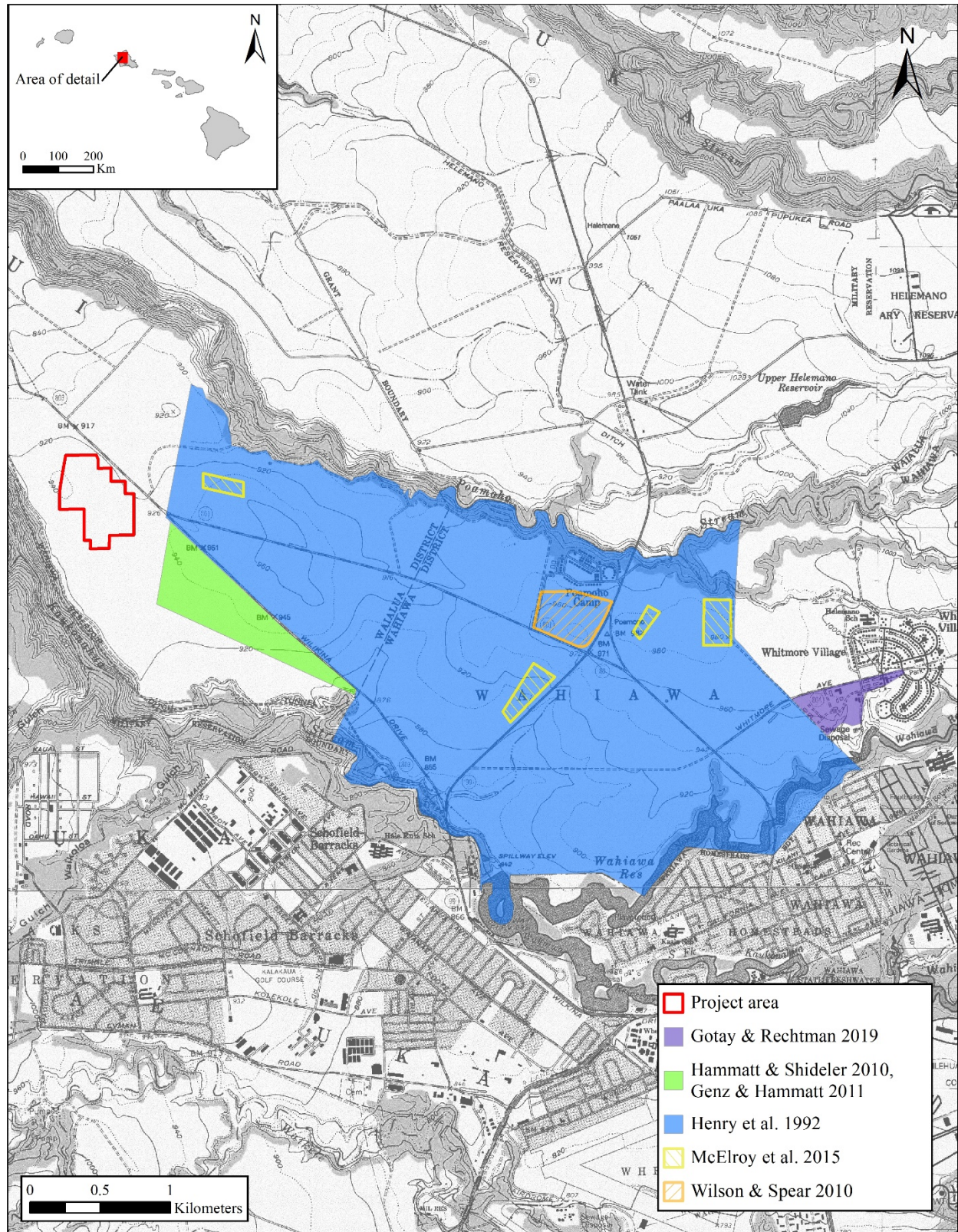


Figure 18. Previous archaeological and cultural studies conducted in the vicinity of the project area (outlined in red).

In 1987, James Saifuku submitted to the State Historic Preservation Division (SHPD) a map of the location of the Poamoho Heiau (SIHP Site 50-80-04-01605), drawn from his memory of the site as he observed it in the 1940s. Saifuku's map placed the *heiau* to the east of Kamehameha Highway and the "Pomoho [sic] Camp C.P.C.," (see Figure 18); a search of reports filed at the SHPD library produced his hand-drawn, unscaled map of a rectangular "heiau site" surrounded by pineapple fields (Saifuku 1987).

In 1992, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted an archaeological inventory survey (AIS) (Henry et al. 1992) of Galbraith Trust Lands (see Figure 18). As a result of their investigation, PHRI identified a single historic property—a stacked stone wall (SIHP 50-80-04-4571). They also carried out thorough recording of the previously identified Kūkaniloko Birthstones site (SIHP 50-80-04-218). Although reportedly within their study area, Poamoho Heiau (SIHP 50-80-04-01605) was not relocated during the PHRI study.

In 1994, Cultural Surveys Hawai'i (CSH) performed an archaeological assessment (Colin and Hammatt 1994) on the *mauka* side of Whitmore Avenue near the intersection with Saipan Drive (see Figure 18). No historic properties were identified as a result of their study.

In 1995, Martha Yent of Hawaii State Parks further documented the Kūkaniloko Birthstones (Yent 1995), following the 1992 acquisition of a 4.5-acre easement immediately surrounding the 0.5-acre historic property (see Figure 18). Yent recorded recent improvements to the site including the installation of a parking lot and didactic signage, grading and vegetation clearing to increase access and visibility from Kamehameha Highway, and the placement of physical barriers to deter vehicular traffic from entering the site. Yent also recorded modern petroglyphs, vandalism to boulders resulting from recent campfires, and subsequent repairs. In 2010, petroglyph specialists Edward and Diane Stasack revisited Kūkaniloko and made detailed maps and illustrations of the petroglyphs on the stones (Stasack and Stasack 2010); they also recorded modern graffiti (see Figure 18).

In 2000, CSH conducted an archaeological assessment (Hammatt and Chiogioji 2000) of a proposed water line between Whitmore Village and Wahiawā Town (see Figure 18). No historic properties were identified as a result of their study.

In 2004, an archaeological survey (West and Donaldson 2004) of an expanded study area for the Hawaii Regional Security Operations Center (HRSOC), Naval Computer and Telecommunications Area Master Station (NCTAMS) and an associated access road resulted in negative findings. Archaeological survey of additional locations for the proposed HRSOC NCTAMS resulted in the preparation of two addenda to the West and Donaldson (2004) report (West 2005; West and Desilets 2005), which reported no historic properties within the expanded study area (see Figure 18). In 2008, International Archaeological Research Institute, Inc. conducted archaeological monitoring (Reith 2008) for the construction of the access road at HRSOC (see Figure 18). During the monitoring, heavily-disturbed soils were observed as a result of decades of agricultural activities including tilling and plowing.

In 2006, CSH (Tulchin and Hammatt 2006) performed a literature review and field inspection of two separate parcels comprising 324 acres (see Figure 18). One historic property was identified, a historic railroad trestle (CSH-1) to the northeast of Whitmore Village. The authors recommended an inventory-level archaeological study be conducted to further document the railroad trestle, which to date, has not been designated with a SIHP number.

In 2010, Scientific Consultant Services conducted an archaeological assessment (Wilson and Spear 2010) of approximately 34 acres of former agricultural lands (see Figure 18). During that study, a field survey and twenty-four mechanically-excavated test trenches did not encounter any historic properties, but demonstrated disturbed soils (up to 2.45 meters below ground surface) present throughout their project area, interpreted to be a result of agricultural tilling.

Archaeological and cultural monitoring were conducted in 2011 for the construction of the Heleman Trail (see Figure 18), which extended from Schofield Barracks Military Reservation to Heleman Military Reservation (Sims et al. 2011). A subsurface feature identified as a charcoal lense (SIHP 50-80-04-7173), was identified near the north edge of the plateau above Kaukonahua Gulch. The lens was excavated and two radiocarbon dates were obtained. A sample of *'ulei* dated to 371±30 BP (1440–1530 and 1550–1640 cal AD), while a sample of *'ulu* dated to 393±31 BP (1430–1530 and 1550–1630 cal AD) (Sims et al. 2011:50). The lens was interpreted as a pre-contact combustion feature (Sims et al. 2011).

In 2015, Keala Pono Archaeological Consulting conducted an archaeological inventory survey (McElroy et al. 2015) of TMK: (1) 7-1-001:002 (por.) and :005(por.) (see Figure 18). Their study included a surface survey and subsurface archaeological testing in the form of eight mechanically-excavated trenches. Their study identified primarily culturally sterile soils beneath the former pineapple fields (Figure 19) adjacent to the current project area. The only cultural material identified was a deposit of Historic-period bottle glass and ceramics in recently disturbed

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soil approximately 4 kilometers west of the current project area in the Reservoir 3 portion of their project area (see Figure 18).

In 2018, CSH (Yucha et al. 2018) conducted an archaeological evaluation and drafted an Archaeological Monitoring Plan for the State DOD Emergency Siren Modernization Program at 14 locations throughout O‘ahu, including one proposed siren location in Whitmore Village, (see Figure 18). That study included background research, a review of previous archaeological studies and a surface survey of a 100-meter radius area from the proposed siren locations. No historic properties were identified during the study and no further archaeological work was recommended.

In 2018, ASM Affiliates conducted a Historic Properties Inventory Survey (Novell et al. 2019) and a cultural impact assessment (Gotay and Rechtman 2019, described in the ensuing section) for the Whitmore Community Food Hub Project. No archaeological sites were encountered as a result of the fieldwork. Extensive modifications of the land within the project area was noted during the survey, including prior mass grading and the presence of underground utilities, building footprints, paved and unpaved roads and parking areas, and active agricultural plots. ASM identified twenty-seven buildings, none of which are currently listed in either the National Register or the Hawai‘i Register of Historic Places, and none are currently recognized by the Historic Hawai‘i Foundation as historic properties. No previously designated local, state, or national historic districts are located within the boundaries of the property. Most of the buildings at the former Dole Company Operations Facility at Whitmore Village are utilitarian and served as machine shops, warehouses, storage, greenhouses, and other functions associated with a maintenance yard. Five buildings, located at the east end of the property, housed offices, meeting rooms, and clubhouses intended to serve the administrative, recreational, and research needs of employees and the company. Collectively, the buildings will be assigned a State Inventory of Historic Places (SIHP) Site designation. As the Novell et al. (2019) study sufficiently documented the site, no further mitigation work was the recommended treatment. Furthermore, because there were no archaeological resources identified as a result of the fieldwork, Novell et al. (2019) concluded that no further archaeological work need be conducted prior to, or during project implementation.

Schofield Barracks is located a mile and a half to the south and southwest of the project area, but is bounded by Hale‘au‘au Gulch, Waikōloa Gulch, and Kaukonahua Stream and is not shown in Figure 18. Several archaeological studies (Borthwick 1988; McAllister 1933; McIntosh 1996; Powell 1984; Robins and Spear 2002; Yeomans 2000) have been conducted within the Schofield Barracks area that has led to the identification of sites associated with the both the Precontact and Historic era.

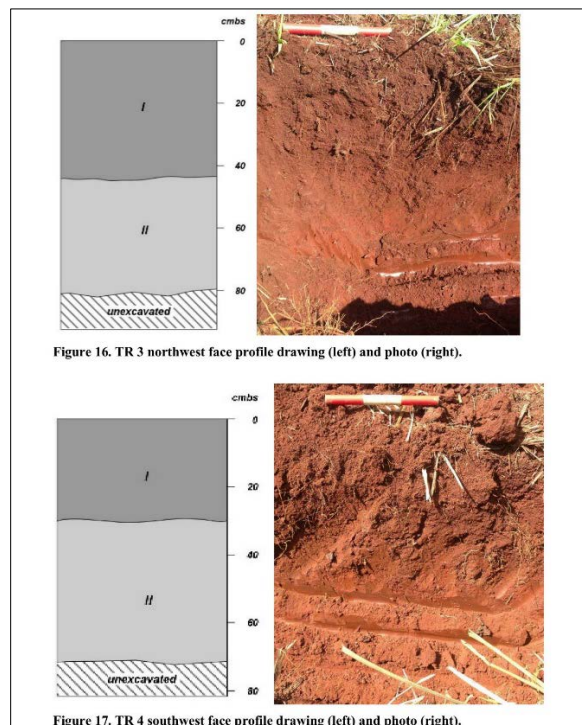


Figure 19. Profiles of Trenches 3 and 4 excavated northeast of the project area (McElroy et al. 2015:34).

Previous Cultural and Ethnographic Studies

In addition to the archaeological studies previously conducted in the vicinity of the project area, five (Desilets et al. 2011; Genz 2011; Genz and Hammatt 2011; Gotay and Rechtman 2019; McElroy et al. 2015b) prior cultural and ethnographic studies have been conducted within the broader study area over the last fifteen years (see Figure 18). Collectively these studies have provided a broader and more in-depth understanding of both the tangible and intangible cultural elements of the upper Kamananui and greater central O‘ahu plateau.

The first of these studies was conducted by Garcia and Associates (GANDA; Desilets et al. 2011) when they prepared an ethnographic study of O‘ahu’s central plateau (which included the project area) with an emphasis on the lands comprising the Schofield Barracks Military Reservation and Helemano Military Reservations. Due to the geographic scale of their research, Figure 18 above, which focuses on the immediate project area vicinity, does not reflect the entirety of their study area. The purpose of their study was to gather a diverse corpus of data which would provide guidance on a National Register of Historic Places (NHRP) eligibility determination for traditional cultural properties (TCP), ethnographic landscapes, or archaeological districts assessment for the Schofield Barracks Military Reservation and the Helemano Military Reservation—areas that were traditionally referred to as Līhu‘e, Wahiawā, and Helemano. Desilets et al. (2011) prepared a robust culture-historical background of the three aforementioned lands. Their cultural-historical background consisted of archival research which included a review of historic maps and photos, a literature review, a review of Hawaiian language newspapers, traditional accounts, genealogical research, a review of prior archaeological studies, an ethnobotanical review, and ethnographic interviews.

Between September 2006 and September 2007, Desilets et al. (2011) conducted interviews with four individuals: Helen Mark-Bajo, Elleb Burke Hyer, Poni Kamauu, and Keona Mark. In addition to the interviews, supplemental statements were obtained from four community members: Shad Kane, Lurline Lee, Maile Napoleon, and Maria Orr. The information gathered from the interviews were organized topically, which included information about past land resources and use, water and marine resources and use, and anecdotal stories.

Desilets et al (2011:i) concluded that the western portion of Schofield Barracks Military Reservation (traditionally known as the uplands of Līhu‘e) “...are eligible for NHRP listing under Criteria B and D within the historic context of Hawaiian Occupation and *Lō Ali‘i* Social Organization AD 1100-1778.” Desilets et al. (2011:i) adds that “Due to the density, condition, and variety of the cultural resources within the proposed Līhu‘e Uplands TCP, it qualifies as a contiguous district with both contributing and noncontributing resources.” In assessing the slightly larger region which included Kūkaniloko, Desilets et al. (2011:i) concluded, with provisions, that this area “may also qualify as an NHRP-eligible ethnographic landscape.” In assessing the Līhu‘e Uplands as an archaeological district, Desilets et al. (2011:i) concluded that this “...district is considered discontinuous since there are large interstitial areas that are not archaeologically significant...” and is “...eligible for NHRP listing under Criteria B and D within the historic context of Hawaiian Occupation and *Lō Ali‘i* Social Organization AD 1100-1778.” Regarding the Helemano Military Reservation, there was no evidence to support the presence of NHRP-eligible TCPs, ethnographic landscape, or archaeological districts.

In October of 2011, Cultural Surveys Hawai‘i (CHS; Genz 2011) undertook a cultural landscape study that focused specifically on the *ka‘ānani‘au* of Kūkaniloko (see Figure 18), a concentric alignment of religious and cultural landscape markers found throughout the island of O‘ahu that are cosmologically attached to Kūkaniloko and lends to its significance. In conducting background research and interviews with Mr. Tom Lenchanko, Genz (2011) asserts that Kūkaniloko extends well beyond the State of Hawai‘i’s current 5-acre designation. Genz (2011:5) emphasizes that:

The broad region of Kūkaniloko estimated at 36,000 acres and associated with regal births, instruction, and healing of the Lō Ali‘i, is linked to the divine power of I‘o, the first Hawaiian god, which is imbued within the *ali‘i*. While the *mana* of Kūkaniloko is concentrated at O‘ahu nui, Helemano, and the contemporary site of the Kūkaniloko Birthstones State Monument, the *mana* expands throughout this 36,000-acre region, connecting all components of the landscape. This includes cultural sites and subsurface *iwiaualoa* (ancestral burial places) quite distant from any particular development project.

Genz (2011:6) contends that an expanded view of the cultural landscape of Kūkaniloko is necessary and that “development projects will create an adverse impact upon the land of the project’s footprint, and, by extension, the *mana* of Kūkaniloko. Genz (2011:6) reminds archaeologist and cultural anthropologist working in cultural resource management to consider an “alternative conceptualization of land divisions and connectivity of cultural sites.”

Again in 2011, CSH (Genz and Hammatt 2011) prepared a Cultural Impact Assessment (CIA) for a proposed inn-vessel composing facility located to the south of Wilikina Drive (see Figure 18). While the CIA was for a 112-acre project area, their study focused on the entire *ahupuaʻa* of Kamananui. Culture-historical background information specific to Kamananui and the greater Waialua was compiled and interviews were conducted with two individuals, Tom Lenchanko and Velma Kekipi. In addition to the two interviews, written responses were also obtained from Shad Kane, Phyllis “Coochie” Cayan, Wiliam Aila, and Halealoha Ayau. As a result of the interviews and written responses, the interviewees discussed the route of an ancient trail (present-day Kunia Road) that linked Kūkaniloko to Puʻuloa in ʻEwa, the cultural significance of Līhuʻe as an area used by *koa* (warriors) as a training and battle ground. Most of the interviewees discussed the cultural and historic significance of Kūkaniloko noting it as the *piko* (naval, center) of Oʻahu. The consulted parties also noted that Kūkaniloko extends well beyond the current State-designated 5-acre area. Several of the consulted parties expressed concern for the possibility of disturbing this culturally valued site and the possibility of encountering subsurface *iwi kupuna*.

In 2019, ASM Affiliates (Gotay and Rechtman 2019) conducted a CIA for the proposed Whitmore community food hub located in the Wahiawā area (see Figure 18). A culture-historical context was developed for the Wahiawā and adjacent vicinity and three informal interviews were conducted via phone with Winona Aguero, John Francher, and one other individual who chose to remain anonymous. One in-person interview was completed with Tom Lenchanko and a written response was received from another individual, who also opted to remain anonymous. In summary, Gotay and Rechtman (2019) did not identify any traditional cultural practices or properties within the boundaries of the 37-acre subject property. However, as a result of the consultation process, Gotay and Rechtman (2019:54) described the inherent challenges of defining the boundaries of traditional cultural properties and noted that some of the consulted parties saw the “...project area as “*i loko*” or within the 36,000-acre traditional cultural property, *puʻuhonua* Kūkaniloko and the *kalana* of Wahiawa-Lihue-Helemanō.” Thus the belief is that any proposed redevelopment or continued use of the property will have an indirect impact to *puʻuhonua* Kūkaniloko. Gotay and Rechtman (2019) recommended that the developer take into consideration the thoughts and beliefs of these community members and that the developer seek to form a collaborative partnership with these individuals.

Keala Pono Archaeological Consulting, LLC (McElroy et al. 2015b) conducted a CIA for four proposed reservoirs in Kamananui and Wahiawā (see Figure 18). Culture-historical background information was gathered and interviews were undertaken with five individuals, Glen Kila, Tom Lenchanko, Christophor Oliveira, Kaleo Paik and Vicki Pakele, all of whom claimed to be knowledgeable about traditional cultural practices, resources, and beliefs about the area. While McElroy et al. (2015) provided brief background information for each of the interviewees, their consultation methodology included a review of the transcripts and organizing the information gathered into research themes or categories including: traditional land use and archaeological sites, connections to Wahiawā, changes in the area, effects to cultural resources and practices, and concerns and recommendations. In summary, the interviewees expressed at length the importance of the Kamananui and Wahiawā area with emphasis on the sacred site of Kūkaniloko. They expressed that Kūkaniloko was not limited to the 5-acre area established by the State of Hawaiʻi, but is part of a much larger geographical area. Several of the consulted parties shared that they have observed many changes over time, including stream flow and vegetation. The interviewees shared a wide range of concerns regarding the proposed construction and stated that the proposed “reservoirs will adversely affect places of cultural significance, and recommended that the reservoirs not be built or that archaeological and cultural monitoring is implemented during construction” (McElroy et al. 2015b:42)

3. CONSULTATION

Gathering input from community members with genealogical ties and long-standing residency or relationships to the study area is vital to the process of assessing potential cultural impacts to resources, practices, and beliefs. It is precisely these individuals that ascribe meaning and value to traditional resources and practices. Community members often possess traditional knowledge and in-depth understanding that are unavailable elsewhere in the historical or cultural record of a place. As stated in the OEQC Guidelines for Assessing Cultural Impacts, the goal of the oral interview process is to identify potential cultural resources, practices, and beliefs associated with the affected project area. It is the present authors’ further contention that the oral interviews should also be used to augment the process of assessing the significance of any identified traditional cultural properties. Thus, it is the researcher’s responsibility to use the gathered information to identify and describe potential cultural impacts and propose appropriate mitigation as necessary.

In an effort to identify individuals knowledgeable about traditional cultural practices and/or uses associated with the current subject property, a public notice was submitted to the Office of Hawaiian Affairs (OHA) for publication

in their newspaper, *Ka Wai Ola*. The notice was submitted via email on March 12 and was published in the April 2020 issue. A copy of the public notice is included in Appendix A. As of the date of the current report, no responses have been received from the public notice.

Although no responses were received as a result of the *Ka Wai Ola* publication, ASM staff attempted to contact three organizations, one agency, and six individuals via email and/or phone: Hawaiian Civic Club of Wahiawā, Hō Mai Ka Pono, Lauren and Shelley Muneoka of KAHEA Environmental Alliance, Shad Kāne, Glen Kila, Tom Lenchanko, Martha Noyes, Office of Hawaiian Affairs (OHA), Robert Rita, Robert “Bobby” Robinson. Of the individuals, organizations, and agencies contacted, responses were received from four individuals, three of which were brief email responses and one written testimony. While the written testimony submitted by Mr. Robert “Bobby” Robinson is included in its entirety below, the three brief email responses are quoted in Table 3.

Per the OEQC Guidelines for Assessing Cultural Impacts – Section III regarding ethnographic and oral history interview procedures, it states the inclusion of “any constraints or limitations which might have affected the quality of the information as obtained” (OEQC 1997). In December 2019, the World Health Organization (WHO) detected an unknown pneumonia in China and later declared a Public Health Emergency of International Concern the following month. The newly discovered coronavirus was later called COVID-19, which eventually impacted the United States including Hawai‘i. As of March 25, 2020, the State of Hawai‘i began a mandatory Stay-At-Home order effective until April 30, 2020, to prevent the spread of COVID-19. In lieu of in-person interviews due to the mandated orders and in an effort to keep our *kūpuna* and communities safe and healthy, ASM Affiliates opted to hold telephone and video-conferencing as alternative methods to the consultation process. It should be pointed out that some individuals and organizations prefer to meet in-person to share (but not limited to) personal photos, archaeological sites, trails, gathering areas, etc., however, due to COVID-19, that was not possible. Although the quality of information exchanged during the consultation for this project has been useful in identifying potential cultural impacts; not being able to meet in-person, which is the preferred method of consultation for a CIA, may have (although not apparent) affected the quality of the information obtained.

Table 3. Person/organization/agency contacted for consultation

<i>Name</i>	<i>Initial Contact Date</i>	<i>Comments</i>
Hawaiian Civic Club of Wahiawā	5/18/20	No response.
Hō Mai Ka Pono	4/4/2020	No response.
KAHEA Environmental Alliance	4/4/2020	No response.
Kāne, Shad	4/4/2020	Responded via email on 5/5/20 with the following: “I am not aware of any cultural practices or people who assert traditional cultural practices in that area. There may have been at one time however that area has been previously disturbed.”
Kila, Glen	4/4/2020	No response.
Lenchanko, Tom	4/4/2020	Responded via email on 5/5/2020 with the following: “Aha Ula Puuhonua Kūkaniloko objects to the solar farm’s adverse effects, imminent harm, irreparable injury and insensitivity to our traditional cultural property.”
Noyes, Martha	3/19/2020	No response.
Office of Hawaiian Affairs	4/4/2020	No response.
Rita, Robert	5/29/2020	ASM called Mr. Rita, spoke about the proposed project, and the CIA process. He declined to be interviewed but will refer someone.
Robinson, Bobby	5/14/2020	Submitted written testimony and referred <i>kama’āina</i> of the area, Robert Rita and the Rita Family. See below.

ROBERT “BOBBY” ROBINSON

ASM Affiliates contacted Mr. Robert “Bobby” Robinson by phone on May 14, 2020, and subsequently sent a consultation letter and associated maps of the proposed project. He was invited to participate in the CIA consultation process but declined and opted to submit written testimony and have in-depth follow-up phone conversations. Mr. Robinson, *kama‘āina* (native-born) of Waialua and rancher, was asked about the history of Kamananui Ahupua‘a, which included knowledge of any archaeological sites, cultural sites, cultural resources, and/or *mo‘olelo*. He recalled the area always being under pineapple or sugar cane cultivation and if any archaeological and/or cultural sites existed within or in the vicinity of the project area, they have most likely been destroyed. Because the project area and the vicinity of the project area have been under cultivation for years, he stated that no cultural resources exist in those areas. Mr. Robinson described the current project area via phone and shared that there are several livestock farms in the vicinity. He suggested contacting Shad Kāne for his extensive knowledge in Hawaiian history and Robert Rita who is a *kama‘āina* (native born) of Kamananui Ahupua‘a. Below is a copy of Mr. Robinson’s written testimony (Figure 20 and 21). Please note that Mr. Robinson’s personal information has been blacked out by ASM staff.

Date: 5/17/2020

Different Look At Putting Up Solar Farms:

My thoughts on alternate energy/solar farms will take a different turn as to how we could better accept these solar farms and the importance of the need for alternate energy.

I am a staunch supporter of solar energy as I have/use solar panels for my electrical power at my home. With federal and state assistance it helped a lot in our decision to go solar. I believe that with state and federal assistance along with special or no interest loans that allow extended payment plans, and even possibly lowering the cost of the system will allow many more families and business to go solar.

I think we might want to think out of the box for a good part of these farms. Placing these solar farms on farm-usable agricultural lands will not sit well with many people and I would be included as one of them.

I would like to suggest or provide a different way or idea that I hope would be considered as to how this much needed alternate energy/solar farms could be built by being a partner with agriculture.

I will start by trying to build you a picture of what I think could possibly become or be a major/primary part of an industry of sort, that can wean us off of the tourist industry that is not part of a sustainable plan.

Vision this idea of building a structure that can be used for a variety or types of farming under a roof of solar panels. Farming ideas could include many different things. Possible hydroponics, aquaponics, and much much more to start. Combining solar with farming, can also play a big part in our economy, creating new jobs, workforce housing, building a sustainable future and meet alternate energy needs and so much more.

Think of placing solar safely on cattle shelters, working arenas and related ranch buildings that would benefit ranches as well as help us reach our energy goals with less fossil fuel use. This would be a win-win for farmers, ranchers and others involved in this endeavor. There is an example of how this can work in Kahuku on an arena.

Think of all the work and related needs of this type of industry. Think of the many different fields of occupation, employment, skills, trades and so on that will or could benefit from this collaboration between solar energy and farming. This would be the best use of our ag lands.

Figure 20. Page 1 of the written testimony submitted by Mr. Robert “Bobby” Robinson.

This new path/suggestion/idea, will also be of great educational value to all levels at our schools and colleges. Involving so many areas of education and training, providing so many different educational and job opportunities.

This suggestion would need the the state and city pulling in the same direction and wanting to make it work. Our state and city government would also need or want to move to sustainability plans and stop with developing possible ag lands. We don't need to continue to move our state toward a recreational site or playground for the rich of the world while we can't take care of our families and children. We can do this. As has been said so many times, lead follow or get out of the way.

As a state we could contribute much to our country if we just change our path from depending on tourism to sustainability plans. Tourism in Hawaii will always take care of its self. There will always be people from other parts of the country or the world that will come. Only now they will come to see how we do things to keep Hawaii as Hawaii should be, and be sustainable at the same time. They will see that we/Hawaii can also maintain and protect Hawaiian culture as it should be.

I can only hope that others, especially our elected leaders/officials etc., that are so important in this change or suggestion moving forward, feel the same as I do. We can approach our solar needs and make it a win-win for the ranchers, farmers, Hawaii and its people as a whole.

As per the question of cultural or historical sites in the area of discussion, I have no memory or information of any cultural or historical sites. It might be a good idea to call Shad Kane if he can help by reaching out to our cultural folks in the north shore area. I also spoke to Robert Rita who lives in the area and he might be able to help, given the specifics of the parcel etc.. When I spoke to him recently he didn't think there was anything cultural or historical in the area now, as we both know that this was part of I believe pineapple fields. I will put you in contact with Robert when I speak to you next.

Contact me as you need if I can be of any more assistance.

Bobby Robinson [REDACTED]

Figure 21. Page 2 of the written testimony submitted by Robert “Bobby” Robinson.

4. IDENTIFICATION AND MITIGATION OF POTENTIAL CULTURAL IMPACTS

The OEQC guidelines identify several possible types of cultural practices and beliefs that are subject to assessment. These include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs. The guidelines also identify the types of potential cultural resources, associated with cultural practices and beliefs that are subject to assessment. Essentially these are natural features of the landscape and historic sites, including traditional cultural properties. A detailed definition of traditional cultural properties is provided in the Department of the Interior *National Register Bulletin 38* (Parker and King 1998) and a summary definition is provided below:

“Traditional cultural property” means any historic property associated with the traditional practices and beliefs of an ethnic community or members of that community for more than fifty years. These traditions shall be founded in an ethnic community’s history and contribute to maintaining the ethnic community’s cultural identity. Traditional associations are those demonstrating a continuity of practice or belief until present or those documented in historical source materials, or both.

The origin of the concept of traditional cultural property is found in National Register Bulletin 38 published by the U.S. Department of Interior-National Park Service. “Traditional” as it is used, implies a time depth of at least 50 years, and a generalized mode of transmission of information from one generation to the next, either orally or by act. “Cultural” refers to the beliefs, practices, lifeways, and social institutions of a given community. The use of the term “Property” defines this category of resource as an identifiable place. Traditional cultural properties are not intangible, they must have some kind of boundary; and are subject to the same kind of evaluation as any other historic resource, with one very important exception. By definition, the significance of traditional cultural properties should be determined by the community that values them.

It is however with the definition of “Property” wherein there lies an inherent contradiction, and corresponding difficulty in the process of identification and evaluation of potential Hawaiian traditional cultural properties, because it is precisely the concept of boundaries that runs counter to the traditional Hawaiian belief system. The sacredness of a particular landscape feature is often cosmologically tied to the rest of the landscape as well as to other features on it. To limit a property to a specifically defined area may actually partition it from what makes it significant in the first place. However offensive the concept of boundaries may be, it is nonetheless the regulatory benchmark for defining and assessing traditional cultural properties. As the OEQC guidelines do not contain criteria for assessing the significance for traditional cultural properties, this study will adopt the state criteria for evaluating the significance of historic properties, of which traditional cultural properties are a subset. To be significant the potential historic property or traditional cultural property must possess integrity of location, design, setting, materials, workmanship, feeling, and association and meet one or more of the following criteria:

- a Be associated with events that have made an important contribution to the broad patterns of our history;
- b Be associated with the lives of persons important in our past;
- c Embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; or possess high artistic value;
- d Have yielded, or is likely to yield, information important for research on prehistory or history;
- e Have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity.

While it is the practice of the DLNR-SHPD to consider most historic properties significant under Criterion d at a minimum, it is clear that traditional cultural properties by definition would also be significant under Criterion e. A further analytical framework for addressing the preservation and protection of customary and traditional native practices specific to Hawaiian communities resulted from the *Ka Pa’akai O Ka ‘Āina v Land Use Commission* court case. The court decision established a three-part process relative to evaluating such potential impacts: first, to identify whether any valued cultural, historical, or natural resources are present; and identify the extent to which any traditional and customary native Hawaiian rights are exercised; second, to identify the extent to which those resources and rights

will be affected or impaired; and third, specify any mitigative actions to be taken to reasonably protect native Hawaiian rights if they are found to exist.

A Summary of Cultural Historical Background Information

An analysis of the culture-historical background reveals Kamananui is situated in Leilehua—a plateau between the Ko‘olau and Wai‘anae Mountain Ranges. The *moku* of Waialua is known as the birthplace of the first Hawaiian ruling chief, Kapawa, who was born at one of the most sacred places on O‘ahu, Kūkaniloko. From 1795, Hawai‘i and Maui *ali‘i*, Ke‘eaumoku, used the lands of Waialua as his spoils. He later traveled with Kamehameha and possibly died of cholera in 1804. After his passing, the Waialua lands passed to Ka‘ahumanu, the wife of Kamehameha who controlled and taxed the district thereafter. When foreigners first made contact with Kamananui Ahupua‘a, it was described as the religious and political epicenter of the district.

The fertile lands of Pa‘ala‘a, Kamananui, and Kawailoa comprised the heartland of Waialua with their sheltered bays and major tributaries. Habitation was dense on the floodplains, which consisted of large complexes of *lo‘i* and large *loko i‘a* (fishponds) including ‘Uko‘a and Lokoea in the vicinity of Waialua Bay. Along with smaller fishponds and *lo‘i* that were also utilized to raise fish, this production was estimated to feed approximately 6,000 to 8,000 people prior to the arrival of foreigners. The uplands of Kamananui had an extensive *lo‘i* system as its *makai* counterpart but was also known for the cultivation of sweet potatoes and yams. Sandalwood was harvested during the late eighteenth to early nineteenth century until the supply dwindled and the trade came to an end. Early historical accounts written by early visitors of O‘ahu describe “the variety of wood and lawn, and rich cultivated valleys” (King 1821).

According to *mo‘olelo*, the Leilehua plateau spanning from Kolekole Pass in the west to Halemano in the east were important political and religious sites. The legend of Aikanaka, the cannibal chief from Kaua‘i who traveled to O‘ahu and settled in the Wai‘anae Mountains, cultivating food, and capturing human victims until they were driven off the land. Westervelt presents an alternate version of the story placing Aikanaka on a plateau called Halemanu, which is most likely referring to Helemano also known as Halemano. The *mo‘olelo* of the dishonorable chief named Waia who has been described as a selfish leader who had no intention of helping his people often torturing them to death. His gruesome acts were recorded in *mele* and served as a means to never forget Waia’s cruelty and to inspire resilience. The word “waia” means “disgraced; shame, dishonor” while “lua” represents the number two. Another interpretation of Waialua is based on an alternate definition for the term “lua,” which refers to the dangerous hand-to-hand combative fighting where many traveled to Leilehua to learn.

One place of utmost importance on the Leilehua Plain is Kūkaniloko, a multi-use site whose name has been interpreted by Lenchanko (2015:49) as “to anchor the cry from within.” The site was used by *ali‘i wahine kapu* and was considered to be the choice birthplace for Hawaiian *ali‘i*. The chief Kapawa of the famed ‘Ulu genealogy was born at Kūkaniloko before he ruled over Waialua. Recent research suggests that the site was also associated with Kāne and used in the disciplines of astronomy, meteorology, and cosmology. Kāne was associated with the site as he is the god that represents procreation and is worshipped by chiefs and commoners alike.

By the mid-19th century, the lands of Waialua were inherited by a very young Victoria Kamāmalu. She then relinquished six of her eight lands in Waialua, among them, her portion of Kamananui to the reigning monarch, Kūikeyouli, who then placed Kamananui into the government landholdings. As a result, Kamananui, now considered government lands, was parceled out into government grants and sold to natives and foreigners. The current project area is within the grant tract historically referred to as Kemo‘o Grants and spans across four grants that were sold as: Grant No. 845 to Polu; Grant No. 849 to Kekela; Grant No. 850 to Lauhulu and Keuwai; and Grant No. 1127 to Kuemanu. These four grants were sold between 1852-1853 and ranged in size from 88-98 acres.

Historical accounts of the project area during the 19th century recounts the transformation of former trails into roads, which effectively connected the communities of Waialua to those of the adjacent districts of Ko‘olauloa, ‘Ewa, and Wai‘anae. ‘Ī‘i (1959) noted a trail near (and possibly within the southwest section of) the project area that connected coastal Waialua to inland Kamananui and Wahiawā (see Figure 11). The 1881 map by Lyons (see Figure 9) shows the “Main Government Road,” which was likely constructed sometime between the late 1850s and 1881, passing along the southwest corner of the project area. By the turn of the 20th century, the “Main Government Road” appears to have fallen into disuse following the construction of the road referred today as Kaukonahua Road. A review of maps from 1913 and 1928 (see Figures 12 and 19) shows the road labeled as “Kamehameha Highway” and the alignment of the “Main Government Road” is no longer depicted.

By 1880, George Bowser observed that Kamananui and the broader Waialua District was being cultivated for commercial sugar operations by Halstead and Gordon, a precursor to Waialua Agricultural Company, Ltd. (WAC). Later in the decade, B. F. Dillingham of the Oahu Railway and Land Company, Samuel Castle, and Amos Cooke of

Castle & Cooke expanded commercial sugar cultivation in Waialua. This included an estimated 12,000 acres in the *mauka* regions of Waialua for the cultivation of pineapple and the formation of WAC. In November 1899, James Drummond Dole who was later dubbed “the Pineapple King” arrived on O‘ahu. The following year, Dole was able to acquire a 61-acre tract of land in neighboring Wahiawā Ahupua‘a and planted pineapple and vegetables. When Dole’s pineapple crops flourished, he created the Hawaiian Pineapple Company. In the 1960s, Hawai‘i supplied more than 80 percent of the world’s pineapple, however, production began to decline, and fields were phasing out. Aerial photographs taken of the project area in 1953 (see Figure 15) and 1965 (see Figure 16) shows the area under active pineapple cultivation, however, by 1977 (Figure 17) pineapple cultivation appears to have ceased. By the 1970s, Dole’s canning yields were less profitable and there was a shift to fresh fruit, which was primarily for O‘ahu and tourist markets. Since 1989, a former fruit stand located on Kamehameha Highway was transformed into Dole Plantation—a tourist destination north of the current project area. Dole continues to cultivate pineapples in the vicinity of the tourist attraction for the fresh fruit market.

Although no prior archaeological or cultural studies have been conducted in the current project area, early archaeological studies conducted prior to the 1930s, have identified several *heiau* in the greater Waialua area as well as Kūkaniloko. Subsequent archaeological studies conducted in the project area vicinity suggest a very low likelihood of finding subsurface sites due to the deep plowing and disturbance from past commercial agricultural activities. There are two exceptions: a stacked stone wall (SIHP 50-80-04-4571) and the Kūkaniloko site (SIHP 50-80-04-218) (Henry et al. 1992). Oral histories indicate that the area between Helemano to Kolekole Pass is a culturally significant area. Several interviewees recalled *mo‘olelo* of the Helemano man-eaters and discussed the various native plants including *koa*, *‘iliahi*, and *lehua* that thrived in the area, which they associated with certain *akua*. Kūkaniloko was discussed at great length including its importance as a royal birthing center, connecting point to celestial bodies, *piko*, *ka‘anani‘au*, *pu‘uhonua*, and place of spiritual union. Another point made about Kūkaniloko was that the boundaries are today confined to a five-acre parcel, however, interviewees have disputed this and stated that the site extended beyond the current acreage and includes trails and view planes used for the observance of constellations and time tracking. Interviewees mentioned that artifacts and *iwi kūpuna* (ancestral bones) may still be present under Kūkaniloko today. The area of Līhu‘e was also described as a training and battlegrounds for *ali‘i*, warriors, and the *lō ali‘i*. The area known as Kolekole in the Wai‘anae mountains was an important place during precontact times as it was a strategic place used in warfare but also an enigma being home to the *‘e‘epa*, cannibals, and *Menehune*.

Identification of Potential Cultural Impacts and Recommendation for Mitigation

A review of the cultural-historical background information has led to the identification of the former “Main Government Road” in the vicinity of the southwest corner of the project area. This road appears to have been used throughout the latter half of the 1800s but by the turn of the century, the construction of Kaukonahua Road (Kamehameha Highway) had effectively replaced it as the main route in and out of Waialua. The “Main Government Road” is shown on aerials (albeit outside of the project area boundaries) taken between 1953-1977 and indicated that the road was used during pineapple cultivation in the area. While this road could be considered significant under Criterion a—as it effectively connected Waialua to the adjacent districts, eased important transportation needs, and facilitated economic development for the district—after close review, it is the current authors’ findings that this road is located outside of the proposed project area and would, therefore, not be impacted by the proposed solar project.

Concerning potential cultural impacts regarding the construction of the proposed Kaukonahua Solar Project, two respondents (Robert “Bobby” Robinson and Shad Kāne) did not foresee any cultural impacts as both parties stated that the project area has been under extensive sugarcane and pineapple cultivation for years. Mr. Kāne pointed out that the proposed project area may have been utilized for cultural practices at one point in time but he is not aware of any ongoing cultural practices. Mr. Robinson, a staunch supporter of renewable energy efforts and a rancher, believes that a new conceptualization is needed so that one industry (renewable energy) does not eliminate another (agriculture and ranching). While he did not identify any historic properties or past or ongoing cultural practices in the project area, he cautioned against the total conversion of prime and dwindling agricultural lands exclusively for low-lying solar fields. In light of this, he recommended that solar panels be mounted in a way that would allow for certain agricultural activities (such as aquaponics, and hydroponics) and ranching practices to occur under the panels or that the panels be mounted on structures such as cattle shelters, working arenas, ranch-related buildings. He believes that this collaborative effort will not only meet the State’s energy goals but can create more jobs and provide educational opportunities while promoting sustainability and maximizing prime agricultural lands.

Mr. Tom Lenchanko who responded via email on behalf of Aha Ula Pu‘uhonua Kūkaniloko stated that the organization objects to the proposed Kaukonahua Solar Project as it would cause “adverse effects, imminent harm, irreparable injury and insensitivity to our traditional cultural property [i.e Kūkaniloko].” While the proposed project

area is approximately three-miles from Kūkaniloko, Mr. Lenchanko has expressed the same concern over many years, which includes the deeply held belief that Kūkaniloko extends well beyond the 5-acre area and, by default, extends into the current project area. While it is anticipated that the proposed solar project would not have a direct physical impact to the five-acre area designated as part of the Kūkaniloko Birthstones Monument, as stated in the background section of this report and repeated in the summary of prior consultation efforts, the extent of the site is perceived by many to include O‘ahu’s entire central plateau, and any proposed development in that general area is a perceived cultural impact. Mr. Lenchanko and others have expressed that the only way to mitigate any potential cultural impacts is to not proceed with the construction of proposed projects anywhere within their perceived boundary of Kūkaniloko. Given the history and cultural traditions that have and continue to occur at Kūkaniloko, the site meets the defining elements of a traditional cultural property (making it significant under Criterion e) and it is, therefore, important to continue to acknowledge the cultural and historic significance of the site and to demonstrate respect for those who continue to care for and have cultural attachments to this site.

The authors of this study also want to point out that as the State of Hawai‘i strives to meet its renewable energy goals, consideration of the broader public input is a critical component and something that should be considered in the early planning stages. As previously observed, the push to achieve these goals has already impacted certain communities. It is understood that each renewable energy project is unique and that the benefits are promising, but the desire to meet goals should not be done at the expense of our already disenfranchised host culture and island communities.

Given the decades of intense pineapple and sugar cultivation, it is unlikely that subsurface historic properties will be identified as demonstrated by the previous archaeological studies conducted in the project area vicinity. However, to ensure the protection of any subsurface sites, artifacts, or burials that may be inadvertently discovered, it is recommended that an archaeological monitor be present during all subsurface development activities.

In summary, based on the information presented in the culture-historical background in conjunction with the knowledge obtained from prior and current consultations, it is the findings of this study that no direct adverse impacts on traditional cultural practices or valued cultural, historical, or natural resources are anticipated for the proposed Kaukonahua Solar project. While no direct adverse impacts on traditional cultural practices or valued cultural, historical, or natural resources are anticipated, the information and recommendation provided above are intended to ensure that the project developers understand the historical context of their project area as well as consider the thoughts and concerns shared by the consulted parties. Attention to and implementation of the above-described information and recommendation will help to ensure that no valued cultural, historical, or natural resources and customary practices will be adversely affected by the construction of the Kaukonahua Solar Project.

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APPENDIX A.
KA WAI OLA PUBLIC NOTICE

**CULTURAL IMPACT
ASSESSMENT - KAMANANUI
AHUPUA'A, WAIALUA DISTRICT**

ASM Affiliates is preparing a Cultural Impact Assessment (CIA) in compliance with HRS Chapter 343 for the proposed development of an 80-acre solar site on a portion of Tax Map Key (TMK) (1) 6-5-002:005, Kamananui Ahupua'a, Waialua District, Island of O'ahu. The proposed project area location has historically been considered part of both Kamananui Ahupua'a and Wahiawā Ahupua'a, and associated with three moku (districts): Wai'anac, Waialua, and Wahiawā at different moments in time. We are seeking consultation with community members that have knowledge of traditional cultural uses of the proposed project area; or who are involved in any ongoing cultural practices that may be occurring on or in the general vicinity of the subject property, that may be impacted by the proposed project. If you have and can share any such information please contact Nicole Ishihara (nishihara@asmaffiliates.com); phone (808) 969-6066, mailing address ASM Affiliates 507-A E. Lanikaula Street, Hilo, HI 96720.