

FINAL
CULTURAL IMPACT ASSESSMENT
OF HO'OHANA SOLAR ENERGY FACILITY
WAIKELE AND HŌ'AE'AE AHUPUA'A, EWA DISTRICT
O'AHU ISLAND, HAWAI'I
TMK (1) 9-4-002:052

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"Cutting Cane on the Oahu Sugar Plantation," 1935
(UH-Mānoa Library Digital Image Collections, <https://digital.library.manoa.hawaii.edu/collections/browse>)

PETITIONER'S EXHIBIT 12

EXHIBIT "10"

Waikakalaua Gulch

“... According to Fornander Waikakalaua [i.e., upper Waikele Stream, immediately adjacent to the current CIA project area] is the place where the invading chiefs from Hawaii met Mailikukahi, moi of Oahu, in battle:

The fight continued from there to Kipapa Gulch [to the east of Waikele in Waipi'o]. The invaders were thoroughly defeated and the gulch is said to have been literally paved with the corpses of the slain, and received its name Kipapa¹ from this circumstance.” (McAllister 1933)

[This mo'olelo celebrates O'ahu's successful defense by its 14th-century high chief Ma'ilikūkahi (or possibly Mailikūkahi); this legendary ruler was said to be a "good" chief because he eventually ceded power to the maka'āinana, or commoners]

Oahu Sugar Company Recollections of Jack Vorfeld (1912–2004)²

“One of the most outgoing, happy people I knew at Oahu Sugar Co. was Raymond Moniz. A locomotive driver, Raymond reflected good cheer to everyone on the plantation. Very large, and well over six feet tall, he'd burst into the mill, and head right for me, saying, ‘Hey, Boy, give me change!’ I had the key for the cash box. He'd always get five Coca Cola bottles from the soda pop machine, line them up, then drink them without stopping.

People loved to play jokes on Raymond, who was a very good worker. One day some of the brakemen and firemen found a bunch of large, lush bananas. When they got back to the plant, they bet Raymond he couldn't eat a hand (about 20 bananas—whatever was on the tree in a bunch) at one time.

‘No problem,’ laughed Raymond.

We waited for the hand to ripen, and finally the day came when Raymond had to prove his eating capacity. He didn't show up at the appointed time, but fifteen minutes later he sauntered into the room.

‘Raymond, where you been?’ we asked.

‘I went get a bowl of saimin. You think I want eat those bananas on an empty stomach?’

With that, Raymond strode over to the table, pulled off, peeled and ate every last one of them!”

¹ According to Pukui et al. (1974:113), Kīpapa translates literally as “... placed prone (referring to corpses slain in the victory of O'ahu forces over those of Hawai'i in the fourteenth century. . .)”

² Source: <http://www.judyvorfeld.com/index.html>, a charming website full of oral-historical information including the life and times of Jack Vorfeld, kama'āina, born and raised on O'ahu, and a 41-year employee of O'ahu Sugar Company.

ACKNOWLEDGMENTS



Project area is in the center-right, middle ground of the photograph, which was taken from the lower flanks of the Wai'anae Range, in an area traditionally known as Kupehau (today, part of Kunia)

This report has been written to honor the wahi kūpuna (ancestral places) and families of Waikele (Waipahu) and Hō'ae'ae, past, present and future. From the ancient times and Na Poe Kahiko (the people of old) who first cared for these kula lands, to the historic-period ranchers and commercial plantation workers whose sweat and toil built the modern cultural landscape of greater Kunia, this report is dedicated.

ABSTRACT—EXECUTIVE SUMMARY

TCP Hawai'i conducted a Cultural Impact Assessment (CIA) of a 161-acre project area in support of the Ho'ohana Solar Energy Facility in Waikele and Hō'ae'ae Ahupua'a at TMK (1) 9-4-002:052, owned by Robinson Kunia Land, LLC, and located just north of the Royal Kunia golf course and residential subdivision. In 2018, Ho'ohana Solar was awarded a Hawaiian Electric Company Request for Proposals for Variable Renewable Dispatchable Generation project. The solar facility is sized at 52 megawatts (MWac) with battery storage. The design of this CIA satisfies the Guidelines for Assessing Cultural Impacts, adopted by the Environmental Council, State of Hawaii, November 19, 1997. The scope and extent of effort to reach out to the community, including Native Hawaiian organizations and individuals, as well as other ethnic groups, organizations and individuals, is described in detail in the Methods portion of this CIA. In 2015, Scientific Consultant Services (SCS) completed an Archaeological Inventory Survey (AIS) for a Conditional Use Permit for the same project area as the subject CIA. This 2015 AIS report, which was accepted by the State Historic Preservation Division, identified one significant historic property (State Inventory of Historic Places [SIHP] # 50-80-08-7671), a historic-period plantation road complex. A bullet point list of 13 substantive Results (see "Cultural Resources, Practices and Beliefs Associated with the Project Area") are included in the final section of this report (see "Conclusion—Cultural Impact Analysis"). The major findings and recommendations can be summarized as follows: (1) In general, other than being part of a much larger, traditional Hawaiian landscape, there are no specific, extant cultural or historical resources of significance in the CIA project area; nor are there any ongoing traditional and customary practices in the CIA project area. The main reasons for this are: (a) The Hawaiian sense of place was essentially erased from the project area more than a century ago when it was transformed, and literally plowed under repeatedly, by the introduction of mechanized sugar-cane agriculture by the Oahu Sugar Company (this began in 1897, and shut down for good around 1995); and (b) The plantation-era "feel" or sense of place has also been essentially erased from the landscape following the circa 1995 closure of sugar cane operations. Prior to 1995, there was not a lot of plantation infrastructure, which would have been mostly limited to irrigation ditches and associated water-storage, -retention and -distribution infrastructure, as well as earthen, "cane haul" roads. The 2015 Archaeological Inventory Survey (AIS) by SCS (Wong and Spear 2015) demonstrated very little intact evidence of these plantation structures or infrastructures; and, in general, dirt roads and degraded/broken irrigation lines and culverts do not engender much cultural or historical nostalgia. Regarding the *past* (not the present day): (1) The CIA project area's most tangible cultural resource and/or traditional and customary practices relevance is not so much its traditional Hawaiian sense of land use or history—which is overwhelmingly focused on the makai areas about two miles to the south, at, or very close to, the shoreline of Pu'uloa (Pearl Harbor) and the mouths of Kapakahī (the name for the lower reaches of Waikele Stream) and Hō'ae'ae streams, where the prime lo'i kalo (irrigated taro) gardens, fishponds, major heiau, and village settlements once were concentrated. (2) Rather, the project area's "past glories" are mostly related to its plantation days. Currently, there are at least two organizations and museums that exist to preserve and tell the stories of the plantation lifestyle in 'Ewa, including: (a) Waipahu Cultural Garden Park and Hawai'i's Plantation Village, and (b) Kapolei Heritage Center. In summary, and as documented in extensive detail in this report, we have determined that the proposed solar project will have no negative impacts on traditional and customary practices associated with the project area; cultural resources that support these practices; and/or other beliefs about the project area that relate to these resources and practices. That is because, consistent with the decision of the Hawaii Supreme Court in *Ka Pa'akai O Ka 'Āina v. Land Use Commission*, 94 Hawai'i 31, 74, 7 P.3d 1068, 1084 (2000), there are no valued cultural, historical or natural resources in the project area and therefore no such resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed solar farm.

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INTRODUCTION

On behalf of the project owner, Ho'ohana Solar I, LLC (Ho'ohana Solar), and its planning consultant, Group 70 International, Inc. (G70), TCP Hawai'i conducted a Cultural Impact Assessment (CIA) of an approximately 161-acre project area in support of the Ho'ohana Solar Energy Facility in Waikele and Hō'ae'ae Ahupua'a (Figure 1, Figure 2 and Figure 3). The project area, which comprises TMK (1) 9-4-002:052 and is owned by Robinson Kunia Land, LLC, is located just north of the Royal Kunia golf course and residential subdivision, in an area traditionally known as the 'ili of Pouhala (or Lower Pouhala). Current land use in the project area is commercial agriculture.

Solar Project Background

In 2018, Ho'ohana Solar was awarded a Hawaiian Electric Company (HECO) Request for Proposals for Variable Renewable Dispatchable Generation project. The solar facility is sized at 52 megawatts (MWac) with battery storage. In late 2019/early 2020, the proposed project area was twice as large as its current size, and originally included an additional 160-acre portion of TMK (1) 9-4-003:001, a parcel that is designated in the State Agricultural District, which has since been removed from the project. The current project site is entirely within a parcel (TMK [1] 9-4-002:052) that is designed as Urban by the State Land Use Commission. In any case, regardless of the specific acreage or overall size of the proposed solar project, CIA work involves documenting and interpreting cultural connections and associations that go far beyond the immediate, physical ("project area") boundaries.

The subject CIA was developed in collaboration with G70 and the community to learn more about the traditional and customary practices and beliefs relating to the project area, and the cultural and historical resources that once or currently support them, which may be impacted by this proposed solar project.

The scope and extent of effort to reach out to the community, including Native Hawaiian organizations and individuals, as well as other ethnic groups, organizations and individuals, is described in detail in the Methods portion of this CIA (below).

Regulatory Context

The information in this document has been gathered to support permitting approvals for the proposed solar project.

As described in more detail below (see "Purpose and Content of Cultural Impact Assessments"), the subject report satisfies the state Guidelines for Assessing Cultural Impacts, adopted by the Environmental Council, State of Hawaii, November 19, 1997; and is designed to provide decision-makers, planners, land managers, and other stakeholders with sufficient information on (1) the identity and scope of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary native Hawaiian rights are exercised in the project area; (2) the extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist (see *Ka Pa'akai O Ka 'Āina v. Land Use Commission*, 94 Hawai'i 31, 74, 7 P.3d 1068, 1084 [2000]).

In 2015, Scientific Consultant Services (SCS) completed an Archaeological Inventory Survey (AIS) for a Conditional Use Permit for the same project area as the subject CIA. This 2015 AIS report, which was accepted by the State Historic Preservation Division (SHPD) (see Appendix A), identified one significant historic property (State Inventory of Historic Places [SIHP] # 50-80-08-7671), a historic-period plantation road complex, the specifics of which are discussed at length below (see "Archaeological Context").

More recently, TCP Hawai'i completed an AIS of what used to be the northern portion of the proposed solar project area (part of TMK [1] 9-4-003:001), but which has now been removed from development

consideration. This AIS (Monahan and LaChance 2020) identified three significant historic properties—all of which were created by plantation workers in the early to middle twentieth century: SIHP # 50-80-08-8850 (place where basalt boulders were shaped into blocks for building irrigation ditches and other such structures), SIHP # 50-80-08-8851 (dirt road), and SIHP # 50-80-08-8852 (another dirt road). The AIS report by Monahan and LaChance (2020) was submitted to the SHPD in early February, 2020, and is currently in review.

Purpose and Content of Cultural Impact Assessments

This CIA is designed to satisfy the Guidelines for Assessing Cultural Impacts, adopted by the Environmental Council, State of Hawaii, November 19, 1997 (see Appendix B for a relevant excerpt) and any applicable requirements under Hawaii Revised Statutes Chapter 343 and the related Hawaii Administrative Rules (“Environmental Impact Statement Rules”) under HAR Chapter 11-200.1.

Interestingly, cultural resources valued by individuals and communities with historical and genealogical ties to a given project area, or by recent arrivals to an area, may be different than those deemed significant by “outsiders,” including scientists, anthropologists, and other researchers not from the area.³ Likewise, the same resource may be valued in different ways by “insiders” and “outsiders,” or by Native Hawaiians versus other ethnic groups with different historical experiences and connections to the land. A pertinent example in the subject CIA is the history, recollections and memories associated with the “plantation days” of the late nineteenth to early/middle twentieth centuries. For some communities and individuals (e.g., those who worked for the Oahu Sugar Company and lived on its lands), these remembrances may harken back to fondly-embraced and culturally-valued times; to others, the “plantation days” may be a painful reminder of the illegal overthrow of the Hawaiian Kingdom (1893) and annexation of the (then) Territory of Hawai'i (1898) by the United States. In CIA work, we are interested in *both* of these perspectives. Our objectives are to identify *all* the various types of cultural resources in and near the project area, to explain why they are important to different individuals or groups, and to recommend ways they can be preserved or protected, if appropriate. We are also interested in expressing the intangible values people attribute to specific places and times. Maly and Maly (2005), citing Kent et al. (1995), use the term “cultural attachment” to describe this important class of phenomenon:

“Cultural Attachment” embodies the tangible and intangible values of a culture—how a people identify with, and personify the environment around them. It is the intimate relationship (developed over generations of experiences) that people of a particular culture feel for the sites, features, phenomena, and natural resources etc., that surround them—their sense of place. This attachment is deeply rooted in the beliefs, practices, cultural evolution, and identity of a people. The significance of cultural attachment in a given culture is often overlooked by others whose beliefs and values evolved under a different set of circumstances. (Maly and Maly 2005:3)

In Hawai'i, commonly identified cultural resources include archaeological sites; burial sites and cemeteries; wahi pana (legendary places associated with oral history); natural landscape features⁴ such as pu'u (e.g., hills, outcrops and other promontories), ridges, and water sources and courses; natural phenomena such as characteristic weather patterns, winds and rain (many of which have place-specific names); and other place names and landscape features that are important to local families. Such resources need not necessarily refer to Hawaiian culture but may also include other ethnic groups. In the current CIA project area, there are important cultural connections with numerous different ethnic groups and

³ Anthropologists have long recognized the value in studying both “insider” and “outsider” perspectives, called “emic” and “etic,” respectively, when trying to understand cultural values and significance.

⁴ In Hawaiian culture, there is no hard and fast distinction between cultural and natural resources; thus, for example, a clean and healthy kahawai (stream) is just as much a cultural resource—because its existence is crucial to carrying out traditional and customary practices such as irrigated (pond-field) agriculture—as a natural one.

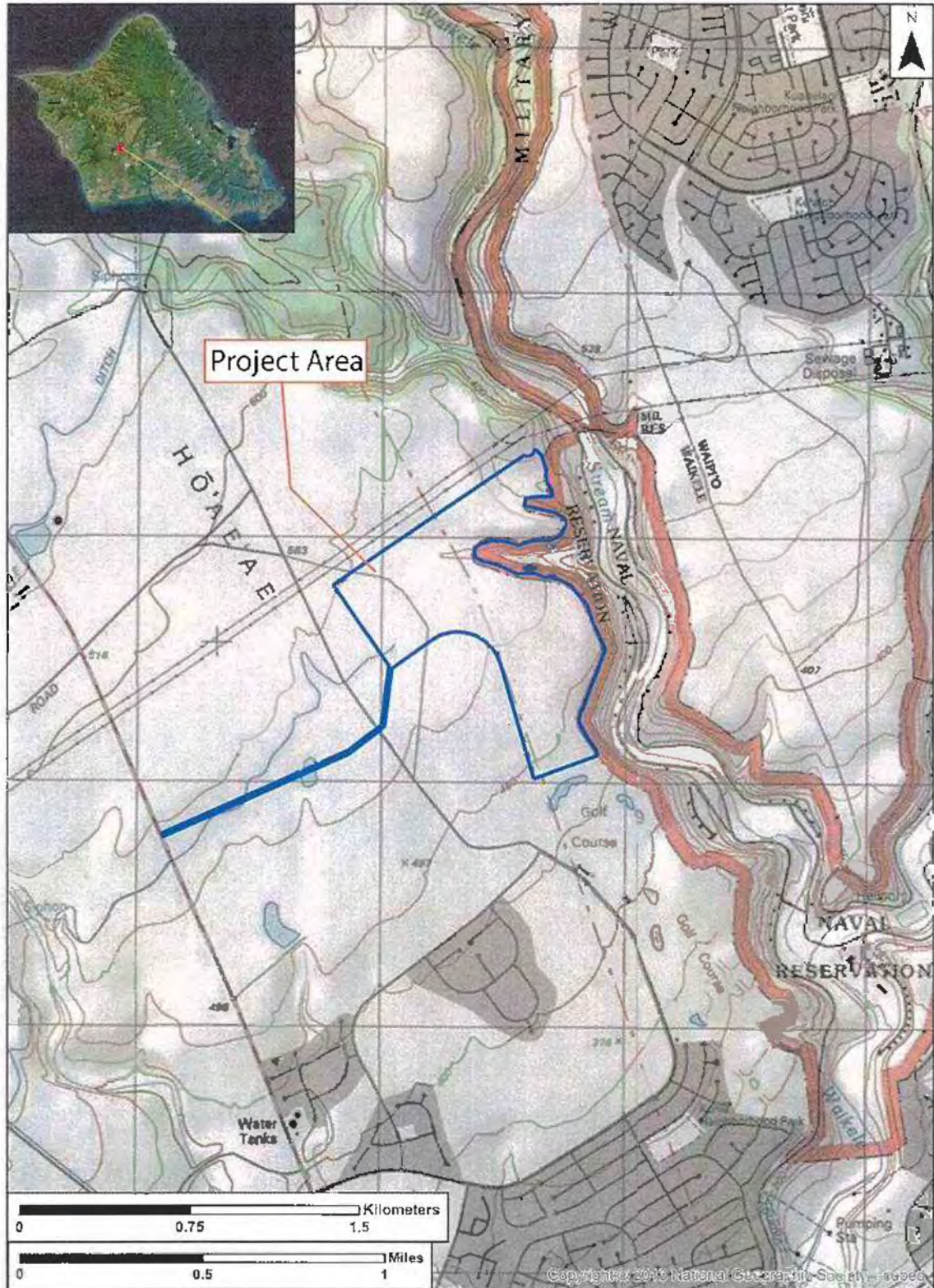


Figure 1. Project area location on a portion of USGS topographic map (1:24,000 scale) (graphic produced by TCP Hawai'i using ESRI's ArcMap 10.2.2)



Figure 2. Project area location on an aerial image (1:15,000 scale) (graphic produced by TCP Hawai'i using ESRI's ArcMap 10.2.2)

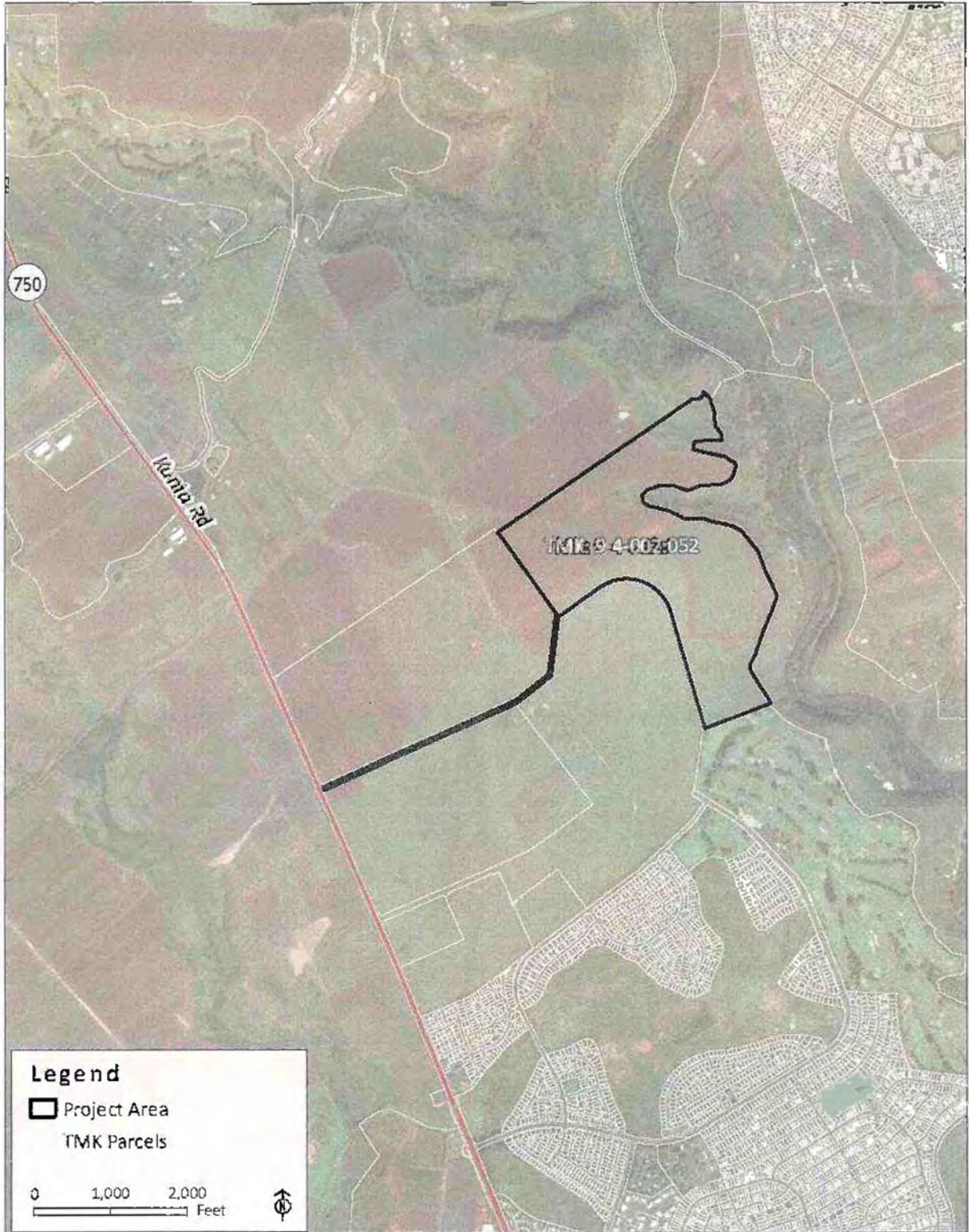


Figure 3. TMK map of the project area (provided by Group 70)

communities, including Chinese, Japanese, haole (American and/or Euroamerican) and Filipino, to name but a few. Traditional and customary practices can include activities conducted in or near the project area such as gathering of plants for lei making, lā'au lapa'au (medicinal use) or subsistence; hunting and fishing; ceremonial or religious uses (e.g., visiting and caring for burial sites); hula, and so on. Access rights to carry out these practices—even if they do not necessarily take place in a given project area (but which must be traversed to reach a valued site or location)—can also be recognized, evaluated and recommended for protection in CIA documents.

Natural Setting

This section describes the environmental and physiographic conditions in the project area. Some observations on historic patterns of change are described where applicable. In addition to direct observations made during our survey, the information in this subsection is derived from well-known sources including Foote et al. (1972), Macdonald et al. (1983) and Juvik and Juvik (1998); and from Wong and Spear (2015), who recently completed an archaeological survey of the project area.

The project area consists of plateau/ridge lands, gently sloping down to the south, between Waikakalaua Gulch (another name for upper Waikele Stream) to the east and agricultural lands to the north and west; the project area's southern boundary is the Royal Kunia Golf Course. Other major drainages (gulches), including 'Ēkahanui and Huliwai (sometimes also called Poliwai Gulch), join the main Waikele/Waikakalaua stream just north of the CIA parcel. The gulches and stream are not part of the current project area; since these major drainages are adjacent to portions of the current project area, there is no naturally-occurring, through-flowing water in the current project area, which has been repurposed (modified) in the Historic period for plantation-agricultural purposes and for current agricultural pursuits. The adjacent stream waters eventually drain into the ocean at Pu'uloa (Pearl Harbor).

With one or possibly two exceptions, the project area is devoid of native or Polynesian-introduced species. According to Wong and Spear (2015:6), the following plants varieties were identified in the project area: "koa haole (*Leucaena glauca*), broomweed (*Sida rhombifolia*), golden crown beard (*Verbesina encelioides*), ilima (*Sida fallax*), uhaloa (*Waltheria americana*), ko'oko'olau (*Bidens sp.*), liliko'i (*Passiflora edulis*), Flora's paintbrush (*Emilia fosbergii*), spiny amaranth (*Amaranthus spinosus*), Popping Amaranth (*Amaranthus sp.*), garden spurge (*Euphorbia sp.*), cactus (*Opuntia sp.*), pigweed (*Portulaca oleracea*), castor bean (*Ricinus communis*), cheeseweed (*Malva parviflora*), black wattle (*Acacia mearnsii*), tobacco plant (*Nicotiana sp.*), African tulip (*Spathodea campanulata*), albizia (*Albizia sp.*), cherry tomato (*Solanum lycopersicum*), hogweed (*Boerhavia sp.*), and camphorweed (*Pluchea sp.*)." Of these, 'ilima (*Sida fallax*) is the only definite native plant. There are numerous varieties of *Bidens sp.*, referred to in Hawaiian as ko'oko'olau, some of which are native and some of which are not.

Elevation varies from approximately 460 ft. (140.2 m) above mean sea level (amsl) in the southern portion of the project area to approximately 560 ft. (170.7 m) amsl in the north.

Average annual rainfall in the project area is only about 30 in. (762 mm); mean annual temperature is 82°F (28°C).

Built Environment

Other than some twentieth century remnants of old plantation infrastructure identified by Wong and Spear (2015), and modern irrigation systems, the project area is undeveloped. There are no other man-made structures. The entire project area consists of agricultural fields and unimproved (earthen) access roads.

Figure 4 to Figure 7 are representative views of the current conditions in the project area.



Figure 4. Representative overview of the project area, facing northwest (source: Wong and Spear 2015:23)



Figure 5. Representative overview of the project area, facing north-northwest (source: Wong and Spear 2015:30)



Figure 6. Representative overview of the project area, facing southeast (source: Wong and Spear 2015:31)



Figure 7. Representative overview of the project area, facing west (source: Wong and Spear 2015:32)

METHODS

This section describes the methods of archival research, consultation/community outreach, and conducting formal interviews for this project.

Archival Research

In general, archival research was conducted to systematically obtain relevant information for interpreting the project area's cultural, historical and archaeological context. This is important not only for predicting the types of historic properties and wahi pana (legendary places) a project area may contain—and that community members may deem significant, but also for understanding and interpreting cultural resources that are discovered and discussed during interviews and other data gathering activities.

In addition to conducting a records search at the State Historic Preservation Division's (SHPD) library in Kapolei specifically to identify previous archaeological studies and other cultural-resource assessments in and near the project area, we also utilized the following on-line databases to obtain relevant cultural, historical and archaeological information:

- OHA's Papakilo database (<http://papakilodatabase.com/main/main.php>)
- OHA's Kipuka database (<http://kipukadatabase.com/kipuka/>)
- Bernice P. Bishop Museum archaeological site database (<http://has.bishopmuseum.org/index.asp>)
- Bishop's Hawaii Ethnological Notes (<http://data.bishopmuseum.org/HEN/browse.php?stype=3>)
- University of Hawai'i-Mānoa's digital maps (<http://magis.manoa.hawaii.edu/maps/index.html>)
- DAGS' State Land Survey (<http://ags.hawaii.gov/survey/map-search/>)
- Waiihona 'Aina website (www.waiihona.com)
- Digital newspaper archive "Chronicling America, Historic American Newspapers" (<http://chroniclingamerica.loc.gov/lccn/sn82014681/>)
- Hawai'i State Archives digital collections (<http://archives1.dags.hawaii.gov/>)
- U.S. Library of Congress digital map collections (<https://www.loc.gov/maps/>)
- USGS Information Service, including digital map collections (<https://nationalmap.gov/historical/index.html>)
- AVA Konohiki's website (<http://www.avakonohiki.org/>)
- Office of Environmental Quality Control (OEQC) EA/EIS library (http://oeqc2.doh.hawaii.gov/_layouts/15/start.aspx#/EA_EIS_Library/Forms/AllItems.aspx)

Consultation/Community Outreach

On or about March 17, 2020, we sent out a notification letter with map attachments about the CIA project. This letter included background details of the proposed solar project, and invited recipients to contact us to participate in the study, to provide information they believe is relevant to cultural resources in the project area, and/or to sit for a formal interview about the project. Appendix C includes a copy of this letter with attachments.

On or about May 7, 2020, because the size and scope of the proposed solar project changed (as described in the Introduction, the project site was reduced and is now entirely within Urban District parcel at TMK [1] 9-4-002:052 and not also within the Agricultural District parcel at TMK [1] 9-4-003:001), we sent out another round of letters with attachments (see Appendix C for this letter with attachments).

On or about May 30, 2020, we sent out an additional batch of emails to various cultural organizations to request people they may know who would be interested in being interviewed for this CIA. This specific list was based on comments and recommendations received from staff at the History and Culture Branch, SHPD (Dr. Tamara Luthy, see below).

We also published a notification in the June, 2020, edition of the Office of Hawaiian Affairs's (OHA) newspaper, *Ka Wai Ola* (see Appendix D).

Table 1 is a summary of consulted parties to date, with some responses and feedback received.

There are many reasons why people may or may not agree to participate in CIA studies, or sit for interviews. Some people are busy with other projects, and many are called upon again and again to contribute to other cultural assessments, to consult on important burial treatment issues, and to offer their mana'o (thoughts, ideas, beliefs) and 'ike (wisdom) on other community obligations.

At TCP Hawai'i, we are sensitive to honoring peoples' process and reasons for participating, or not, and we reluctantly include the names of all those we contacted, or tried to contact, for interviews in the table below. Table 1 does *not* include reasons for those who choose not to participate or respond; we also do not include the number of times we tried to contact people, since this might also be construed as revealing sensitive information or being prejudicial. We have this information in our files if it is needed by the project sponsor, but we will not publicly release such information.

Regarding our approach to conducting interviews, TCP Hawai'i uses an informed consent process that is a bit different from other consultants. Rather than have interviewees review and sign a piece of paper, we simply explain the fact that the information they may share will appear in the CIA report, which is a public document, but that they will have full and complete editorial control over how their words are presented. In other words, we develop a level of trust and honesty and transparency, so that legal forms are not needed.

All shared information from community members has been approved for content by them.

Substantive Email Responses to Consultation/Community Outreach Request

Tamara Luthy, Ph.D., State Historic Preservation Division-History & Culture Branch

As summarized in the table below, Dr. Luthy provided a detailed email response to our outreach for information or assistance on conducting the subject CIA. The following is her (unedited) verbatim email response:

Thank you for reaching out to me about your CIA on behalf of Hoohana Solar I, LLC for the Hoohana Solar Energy Facility in Waialeale and Hoaeae Ahupuaa, TMK (1) 9-4-002:052. Your consultation letter states that the 2014 AIS report by SCS, accepted by SHPD, identified one significant historic property, SIHP # 50-80-08-7671, a historic-period plantation road complex. The more recent AIS currently under review by SHPD by your company TCP Hawaii, LLC identified three potentially significant historic properties in the northern portion of the original CIA area, which has now been removed. These sites are SIHP # 50-80-08-8850 (place where basalt boulders were shaped into blocks for building irrigation ditches and others such structures), SIHP # 50-80-08-8851 (dirt road), and SIHP # 50-80-08-8852 (dirt road).

If you could send me a copy of the AIS currently under review by my colleagues in archaeology, I may be able to provide more specific and useful comments.

You most likely already know the ins and outs of the 1997 Guidelines for Assessing Cultural Impacts, but I have attached it for you to review as per best practices. I have also attached a list of NHOs from the Department of the Interior, compiled by my colleague cultural historian Sheleigh Kaahiki Solis. In addition, please note that the CIA guidelines recommend that you consult members from all local ethnic groups regarding any historic properties that they may know about. Please also note that consultation for the purposes of the CIA do not fulfill Section 106/6E consultation requirements for SHPD as these are two separate legal processes.

In addition to looking for NHOs and individuals who are cultural or lineal descendants of iwi kupuna found in the same ahupuaa as the revised APE, the CIA guidelines specify that members of all local ethnic groups should be consulted. Considering that the previously conducted AISs identified several plantation-era historic properties in and around the project area, I recommend trying to find community members who were alive during the plantation era and may have knowledge of historic properties and cultural practices

pertaining to this area that were not captured by the AIS. I also recommend looking into the UH Manoa Ethnic Studies Center for Oral History to search for oral history interviews with folks from the Kunia area. UH West Oahu also has lots of resources for the cultural history of the surrounding area.

Here are some local cultural organizations that I recommend that you reach out to for the Kunia area, in no particular order:

Chuuk Language and Cultural
Lanikuhonua Cultural Institute
Kapolei Heritage Center
Lualualei Hawaiian Civic Club
Hawaii United Okinawa Association
'Ahahui Siwila Hawai'i O Kapolei
Hawaiian Civic Club of Wahiawa
Historic Hawaii Foundation
State Council on Hawaiian Heritage
Japanese Cultural Center of Hawai'i (JCCH)
Filipino Cultural Center

Thank you again for reaching out! I hope this information may be helpful.

Dr. Tamara Luthy

Lauren Morawski, Staff, Office of Hawaiian Affairs, Compliance

As summarized in the table below, in addition to making a request for a copy of a previous report, Ms. Morawski also provided the following statement:

Based on a cursory review I don't believe OHA will offer any comments on archaeological/cultural sites. I didn't review the AIS in its entirety yet but based on its acceptance in 2015 seems moot. Good luck with outreach for the CIA and I'll ask team at today's meeting if we are aware of any additional consulting parties for the CIA. Get back to you shortly with that info.

Take Care, Malama Pono,

Lauren

Table 1. Summary of Community Consultation/Outreach Efforts

Individual	Organization/affiliation	Contact Method/s & Date/s	Responses/Comments
Michi Lacar	Friends of Waipahu Cultural Garden Park and Hawai'i's Plantation Village	Hardcopy mailed and email sent on 3/17/20 & 5/11/20	--
Deanna Espinas	Friends of Waipahu Cultural Garden Park and Hawai'i's Plantation Village	Hardcopy mailed and email sent on 3/17/20 & 5/11/20	--
Rito Sanjatan, Chair	Waipahu Neighborhood Board No. 22,	Hardcopy only mailed on 3/17/20 & 5/11/20 (no suitable email address could be found)	--
Corrina Moefu, President	'Ewa-Pu'uloa Hawaiian Civic Club	Hardcopy mailed and email sent on 3/17/20; hardcopy letter "returned to sender/not at this address"; On 5/11/20, electronic message was sent to her LinkedIn account; also sent email to laulani@aol.com in search of Corrina Moefu contact information	--
Marleen Kau'ionalani Serrao, Pelekikena (President)	'Ewa-Pu'uloa Hawaiian Civic Club	Hardcopy mailed and email sent on 5/11/20	--
Shad Kane	Kupuna, cultural practitioner	Hardcopy mailed and email sent on 3/17/20 & 5/11/20	Uncle Shad responded via email on 6/6/20 His thoughts are included in the Results section of this report
McD Philpotts	Kama'āina, local historian of Honouliuli, parts of 'Ewa	Hardcopy mailed and email sent on 3/17/20	He responded via email the same day saying he had no relevant information, and did not wish to be included in CIA effort
Ka'āhiki Solis, Cultural Historian	SHPD-History & Culture Branch	Hardcopy mailed and email sent on 3/17/20 & 5/11/20	--
Tamara Luthy, Ethnographer	SHPD-History & Culture Branch	Hardcopy mailed and email sent on 3/17/20 & 5/11/20	On 5/15/20, she responded with a long and detailed email response that is reproduced in the main text (above)
Regina Hilo, Burial Sites Specialist	SHPD-History & Culture Branch	Hardcopy mailed and email sent on 3/17/20 & 5/11/20	--

TCP Hawaii, LLC
Ho'ohana Solar CIA

Individual	Organization/affiliation	Contact Method/s & Date/s	Comments
Lauren Morawski	OHA-Compliance	Hardcopy mailed and email sent on 3/17/20 & 5/11/20	She requested a copy of the SCS 2015 AIS report from the current project area on 5/19/20, and we sent it to her, along with SHPD's review (acceptance) letter; she also provided comments in another email on 5/20/20 (reproduced in the text above)
General Inquiry	OHA-Compliance	HC mailed and email sent on 3/17/20	See responses from Lauren Morawski (above)
Keola Lindsey, Compliance Enforcement	OHA-Compliance	HC mailed and email sent on 5/11/20	See responses from Lauren Morawski (above)
<i>Ka Wai Ola</i> – Pubic Notice	<i>Ka Wai Ola</i> – Pubic Notice	Sent public notice via email on 5/16/20, requesting it be published in the next <i>Ka Wai Ola</i>	Notice was published in <i>Ka Wai Ola</i> in the June, 2020 issue (Vol. 37, no. 6) (see Appendix D)
Chuuk Me Nessor – Chuuk Language and Cultural School	Chuuk Me Nessor – Chuuk Language and Cultural School	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--
Lanikuhonua Cultural Institute	Lanikuhonua Cultural Institute	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--
Hawaii United Okinawa Association	Hawaii United Okinawa Association	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--
'Ahahui Siwila Hawai'i O Kapolei	'Ahahui Siwila Hawai'i O Kapolei	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--
Hawaiian Civic Club of Wahiawa	Hawaiian Civic Club of Wahiawa	On 5/30/20, emailed request for any potential interviewee w. connection to project area	Uncle Tom responded via email, and we had a brief phone conversation about the project on 6/5/20. His thoughts are included in the Results section of this report
Historic Hawaii Foundation	Historic Hawaii Foundation	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--

Individual	Organization/affiliation	Contact Method/s & Date/s	Comments
State Council on Hawaiian Heritage	State Council on Hawaiian Heritage	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--
Japanese Cultural Center of Hawaii (JCCH)	Japanese Cultural Center of Hawaii (JCCH)	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--
Filipino Cultural Center	Filipino Cultural Center	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--
Kapolei Heritage Center	Kapolei Heritage Center	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--
Lualualei Hawaiian Civic Club	Lualualei Hawaiian Civic Club	On 5/30/20, emailed request for any potential interviewee w. connection to project area	--

CULTURAL AND HISTORICAL CONTEXT

This section describes and documents the traditional, Hawaiian cultural landscape in and around the project area, mo'olelo (legendary and mythical accounts) associated with Waikele and Hō'ae'ae Ahupua'a, and the dramatic changes to land use, including nineteenth-century ranching and the subsequent introduction of commercial agricultural industry (e.g., Oahu Sugar Co.) in the Historic Period. Finally, some general comments are offered on more recent (modern and contemporary) developments in and around the project area.

Some information in this section is derived from a recent study (Uyeoka et al. 2018) of the cultural, historical and archaeological resources of the entire moku of 'Ewa, a publicly-available document.⁵ All quoted material used below was written by the current author (Monahan). Maly and Maly's (2012) compendium of traditional Hawaiian cultural and historical information about 'Ewa Moku was also useful in writing this section, as was a Cultural Impact Assessment (CIA) of seven ahupua'a in 'Ewa Moku by Cruz et al. (2012). Archaeological Inventory Survey (AIS) reports from in or near the current project area by Wong and Spear (2015) and by Shideler et al. (2014) were also useful sources.

Hawaiian Cultural Landscape

Most of the project area is in Waikele Ahupua'a with some of the western part in Hō'ae'ae.⁶ These ahupua'a, or traditional Hawaiian land units, are part of the district, or moku, of 'Ewa. This large district, including all of the ahupua'a that include some shoreline of Pu'uoloa (Pearl Harbor), was once the political center of O'ahu, and both Līhu'e in the uplands of Honouliuli as well as the Waipi'o peninsula were once royal seats of power.

From the sixteenth to eighteenth centuries A.D., there were several political power shifts on O'ahu, including the defeat of the ruling 'Ewa chief by Peleioholani, a son of Kualii, around A.D. 1740 (Kamakau 1992).

Prior to the late 1880s to early 1900s, following a series of political redistricting actions by the kingdom and then territorial governments, 'Ewa Moku was somewhat larger in size compared with its current boundaries, and included more extensive upland portions of the current-day district of Wahiawā (which was once, in turn, Wai'anae Uka) (Uyeoka et al. 2018).

According to Handy and Handy (1972:469), 'Ewa's formal, more traditional, name was once Ke-Āpana-o-'Ewa. There are several variant interpretations of the name 'Ewa, including "crooked," referring to mo'olelo about Kāne and Kanaloa's marking of the district's boundaries by throwing a stone that was lost and later found at Pili o Kahe (Pukui et al. 1974:28). Another interpretation of the meaning of 'Ewa, based on this same legend, is "strayed" (as recorded by Bishop Museum staff in the 1950s from 'Ewa native, Simeon Nawaa). According to an 1883 newspaper series in the *Saturday Press* (published in Honolulu), another possible meaning of 'Ewa is "unequal." (Uyeoka et al. 2018:20).

The general area including the current project area is also known as Kunia (literally, "burned"), and this place name appears in (and is depicted on a map by Paul Rockwood) in John Papa 'Ī'i's (1959) well-known volume.

Table 2 and Figure 8 provide a summary of traditional Hawaiian cultural and natural resources in Waikele and Hō'ae'ae Ahupua'a; many of these are wahi pana, or wahi kūpuna, which means they are legendary places associated with various types of mo'olelo (i.e., stories, mythological or cosmological accounts

⁵ Uyeoka, K.L., C.M. Monahan, K. Ka'aikaula, K. Kupihea, M. Wheeler, and K. Kikilio (2018). *Hālanu o Pu'uoloa, The Many Breaths of Pu'uoloa, 'Ewa 'Āina Inventory*. Prepared for Kamehameha Schools by Nohopapa Hawai'i, Kailua, Hawai'i.

⁶ All place name translations and interpretations in this report are from Pukui et al. (1974), unless stated otherwise.

and/or historic events). The table lists some examples of mo'olelo associated with some of these resources.

With a couple exceptions, it is worth pointing out that nearly all of the 18 named cultural and natural resources in Figure 8 are more than two miles makai (seaward) of the project area, at, or very close to, the shoreline of Pu'uloa (Pearl Harbor) and the mouths of Kapakahi (the name for the lower reaches of Waikele Stream) and Hō'ae'ae streams, where the prime lo'i kalo (irrigated taro) gardens, fishponds, major heiau, and village settlements once were concentrated.

Documented wahi pana in the upland areas, in which the current CIA project area is located, are limited to a well-known, traditional mauka-makai trail—once following more or less the current alignment of Kunia Road (Figure 9 and Figure 10), and a series of rockshelters and caves in the cliffs and side slopes of the Waikele (also known as Waikakalaua) Stream drainage, immediately east of the project area. These rockshelters and caves, which contain evidence of traditional Hawaiian use as temporary shelters and associated small gardens, largely escaped the destructive forces of the plantation-era, mechanized agriculture up on the adjacent plateaus.

Waikele Ahupua'a and the Project Area Environs

Describing the physiographic character of the ahupua'a, Uyeoka et al. (2018:233) observe that,

Compared with most other ahupua'a in . . . [ʻEwa Moku] . . . and on O'ahu, in general, Waikele's shape and configuration is atypical. Its contours and upper reaches do not include ridge lines, mountain tops or prominent pu'u, as with most other ahupua'a; instead, the upper reaches of Waikele generally follow plateau lands above deep drainages and terminate (in its mauka areas) on the broad, elevated uplands between the Wai'anae and Ko'olau ranges. In keeping with the unusual configuration of Waikele Ahupua'a, its several stream drainages all originate in other, neighboring ahupua'a.

Regarding Waikele's traditional cultural landscape, Uyeoka et al. (2018:234) continue, .

. . . Its [Waikele's] naming, as well, is somewhat unusual because most people are more familiar with the name Waipahu, which describes Waikele's best known pūnāwai (fresh water spring) and its historic and current population center. According to Pukui et al. (1974:223), Waikele can be translated as "muddy water," but another meaning of the word "kele" is also lush, greasy or fat (Pukui and Elbert 1986:143). Waipahu translates as "bursting water," as in water bursting forth from underground (Pukui et al. 1974:227), or "exploding water" (Handy and Handy 1972:470). A (translated) description of this spring in a Hawaiian language newspaper (Ku'okoa) said that it "leaped out with the force of a river" (ibid.:472).

Handy (1940:82), describing his direct observations in the 1930s, had this to say about the main lo'i kalo (irrigated taro gardens) and settlement area of Waikele:

In the flatland, where the Kamehameha Highway crosses the lower valley of Waikele Stream, there are the remains of terraces on both sides of the road, now planted to bananas, beans, cane, and small gardens. For at least 2 miles upstream there were small terrace areas.

And also,

The area between the West Loch of Pearly Harbor and Loko Eo (the fishpond at the north end of Waipi'o peninsula) was terraced throughout, continuing for more than a mile up into Waikele Stream. The lower terraces were watered from the great spring at Waipahu . . . No area [in Hawai'i or on O'ahu] better exemplifies the industry and skills of the Hawaiian chiefs and their people than do the terraced plantation areas and numerous fishponds of ʻEwa. (Handy and Handy 1972:471–2) (brackets added)

Table 2. Cultural and Natural Resources of Waikele and Hō'ae'ae Ahupua'a¹

Formal Type/Name	Ahupua'a	Location	Associated Mo'olelo/ Other Oral History	Current Disposition	Comments
Loko Ka'auku'u Fishpond (kuapā type)	Waikele	Between mouths of Waikele & Kapakahi streams; possibly Pouhala 'Ili	--	Filled in; currently part of Pouhala Marsh Wildlife Sanctuary	Described in early 1930s as adjoined with Pouhala fishpond; and in 1957 as overgrown
Loko Ma'aha Fishpond (kuapā type)	Waikele	Between mouths of Waikele & Kapakahi streams; possibly Pouhala 'Ili	--	Filled in; currently part of Pouhala Marsh Wildlife Sanctuary	--
Loko Pouhala Fishpond (kuapā type)	Waikele	Between mouths of Waikele & Kapakahi streams; possibly Pouhala 'Ili	In 1939, Pukui described a visit here w. resident Lahilahi Webb, who called it a good place to go crabbing & to catch "oama" (young goatfish)	Filled in; currently part of Pouhala Marsh Wildlife Sanctuary	Described in early 1930s as adjoined with Ka'auku'u fishpond; and in 1957 as overgrown; literally "pandanus post" fishpond
Loko Mokuola Fishpond (pu'uone type)	Waikele	Between mouths of Waikele & Kapakahi streams; possibly Pouhala 'Ili	--	Filled in; currently part of Pouhala Marsh Wildlife Sanctuary	Pukui et al. (1974:156) say that Mokuola literally means "healing island," but this is in reference to an island in Hilo Bay
Lower Waikele & Kapakahi Stream Lo'i kalo (irrigated taro) & Settlement area	Waikele	Waipahu 'Ili (includes current Waipahu Cultural Garden Park & Hawai'i's Plantation Village)	--	Mostly filled in by urban development – some open park land remains	One of the names of this lo'i kalo—near Loko Pouhala— was Kapalaha; this lo'i kalo was watered by 2 streams: Waikele & Kapakahi
Hanohano Wahi pana (storied place) where wild 'ilima (shrubs w. colorful flowers) once grew	Waikele	Approx. location of current Waipahu Intermediate School	In 1939, Pukui stated that "from its height above the shore [Hanohano] had an excellent view of the blue waters of the lochs below it, and the dark green hills in the distance beyond"	Long since developed over for school construction	Literally "majestic"
Moko'ula Heiau	Waikele	Waipahu 'Ili (close to Waikele Stream, near current Wainui Rd.)	--	Destroyed prior to 1930s for neighborhood construction	Originally located in Waipahu Village

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Formal Type/Name	Ahupua'a	Location	Associated Mo'olelo/ Other Oral History	Current Disposition	Comments
Kahāpu'upu'u Pūnāwai (fresh water spring)	Waikele	Waipahu 'Ili	--	Destroyed prior to 1930s for neighborhood construction	--
Keonekuilimalaulāo'ewa Wahi pana (storied place)	Waikele	Ahualii 'Ili (near current Filipino Cultural Center)	Story of 2 high chiefs/brothers who feuded over political control; another story of same place is of a woman from Kahuku retrieving her lost kapa beater	Developed over for residential/ commercial	Literally "The land of holding hands over the breadth of 'Ewa"; in historic times, site was located at the sugar mill
Waipahu Spring/ Kapukanawaiokahuku (pūnāwai, or fresh water spring)	Waikele	Waipahu 'Ili (Adjacent to Waikele Stream—near current Wainui Road)	Associated w. a shark goddess (Ka'ahupāhau) who bathed here; also story of woman from Kahuku retrieving her lost kapa beater	Spring was modified long ago for plantation purposes	Kapukanawaiokahuku literally is "outlet of water from Kahuku"
Hapupu Heiau (possibly po'o kanaka, or sacrificial, type)	Waikele	Waipahu 'Ili (Adjacent to Waikele Stream)	Possibly associated w. human sacrifice at some point in its history; Thrum claimed a chief named Hao was slain here by high chief of O'ahu circa 1650	Destroyed by the 1930s	--
Petroglyphs (~12 images)	Waikele	Waipahu 'Ili (north side of Waikele Stream)	--	Preservation plan was completed for these around 2000	These images—human figures w. triangular bodies—first recorded in 1964 (State site # 530)
5 Rockshelters & Caves (with traditional pre- Contact Hawaiian artifacts)	Waikele	Along cliff faces and steep palis of Waikele (Waikakalaua) Stream (between Mitilani and H-1)	--	Indeterminate—these are in undeveloped, cliff face and pali-type settings, so they are likely still present	Includes State site #s 2919, 2920, 2921, 4935 & 4936

Formal Type/Name	Ahupua'a	Location	Associated Mo'ololo/ Other Oral History	Current Disposition	Comments
Ka'ulu (ahupua'a boundary marker)	Hō'ae'ae	Boundary w. Honouliuli at shoreline (near Kapapalahui Point in Honouliuli)	Named for a Puna chief, Ka'uluhuaikahāpapa ("the breadfruit bearing fruit on the flats") (Pukui et al. 1974:93).	This wahi pana only described as a place, not a stone or pile of stone, as is typical	Place named in Boundary Commission testimony as ahupua'a boundary marker
Kalahina (ahupua'a boundary marker)	Hō'ae'ae	Boundary w. Waikele at shoreline	—	Presumably this pile of stones was removed long ago	"Pile of stones" named in Boundary Commission testimony as ahupua'a boundary marker
Lower Hō'ae'ae Stream Lo'i kalo (irrigated taro) & Settlement area	Hō'ae'ae	Lower reaches (mouth) of Hō'ae'ae Stream	—	Mostly filled in by urban development	1930s (see Handy 1940) accounts (e.g., Handy 1940) stated there were springs associated w. these lo'i kalo
Pōhaku Pālahalaha (or Pālahā)	Hō'ae'ae	Above Honouliuli taro lands on boundary w. Hō'ae'ae	—	Presumably destroyed by construction of Kunia Road	—
Ala Pi'i Uka Trail (portion of mauka-makai trail)	Hō'ae'ae	Boundary between Hō'ae'ae & Honouliuli (currently Kunia Road)	First-hand recollections by John Papa 'Ī'i (1959) of this trail in early 1800s	Destroyed by construction of Kunia Road	This mauka-makai trail once extended mauka beyond Hō'ae'ae to Wai'anae (via Pōhākea Pass) and to central O'ahu; trail also linked to trail system in Honouliuli

¹ Table adapted from a recent study of the cultural, historical and archaeological resources of 'Ewa Moku (Uyeoka et al. 2018), a publicly-available document produced for Kamehameha Schools (see https://www.ksbe.edu/cwa/#ewa_aina_inventory) by Nohopapa Hawai'i LLC. The original tables in the publicly-available document were conceived of, researched, and completed by Chris Monahan. General references used in compiling information for this table include commonly-available sources such as McAllister (1933), Pukui et al. (1974) and Sterling and Summers (1978).

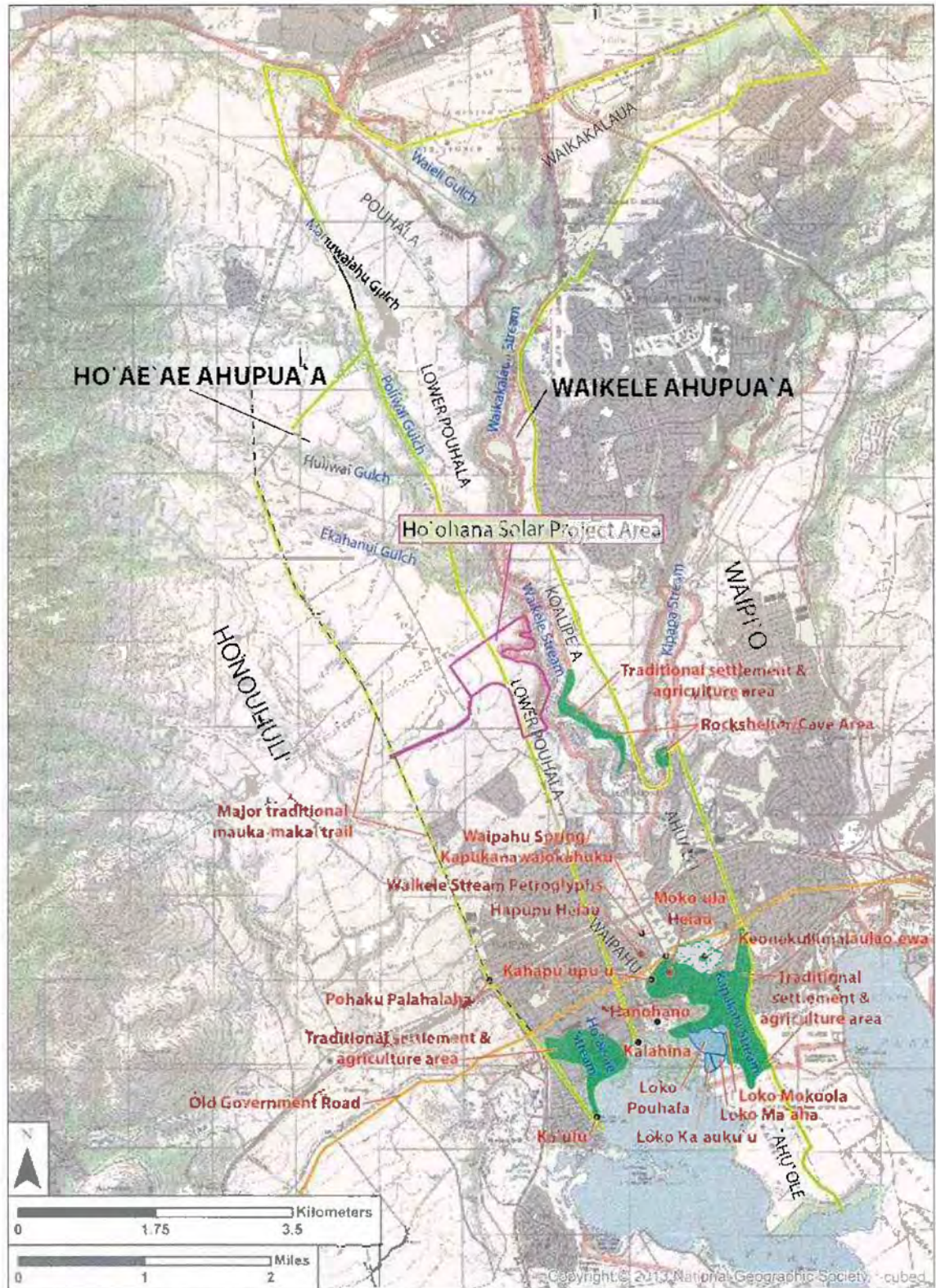


Figure 8. Traditional Hawaiian cultural and natural resources in Waikele and Ho'ae'ae Ahupua'a showing location of current project area; adapted from Uyeoka et al. 2018 (see notes to Table 2 [above])



Figure 9. Portion of map described by John Papa ‘Īi (1959) showing major, traditional Hawaiian trails from around 1800, in relation to current project area; note, the old trail with which the access road into the proposed project area connects is more or less the current alignment of Kunia Road

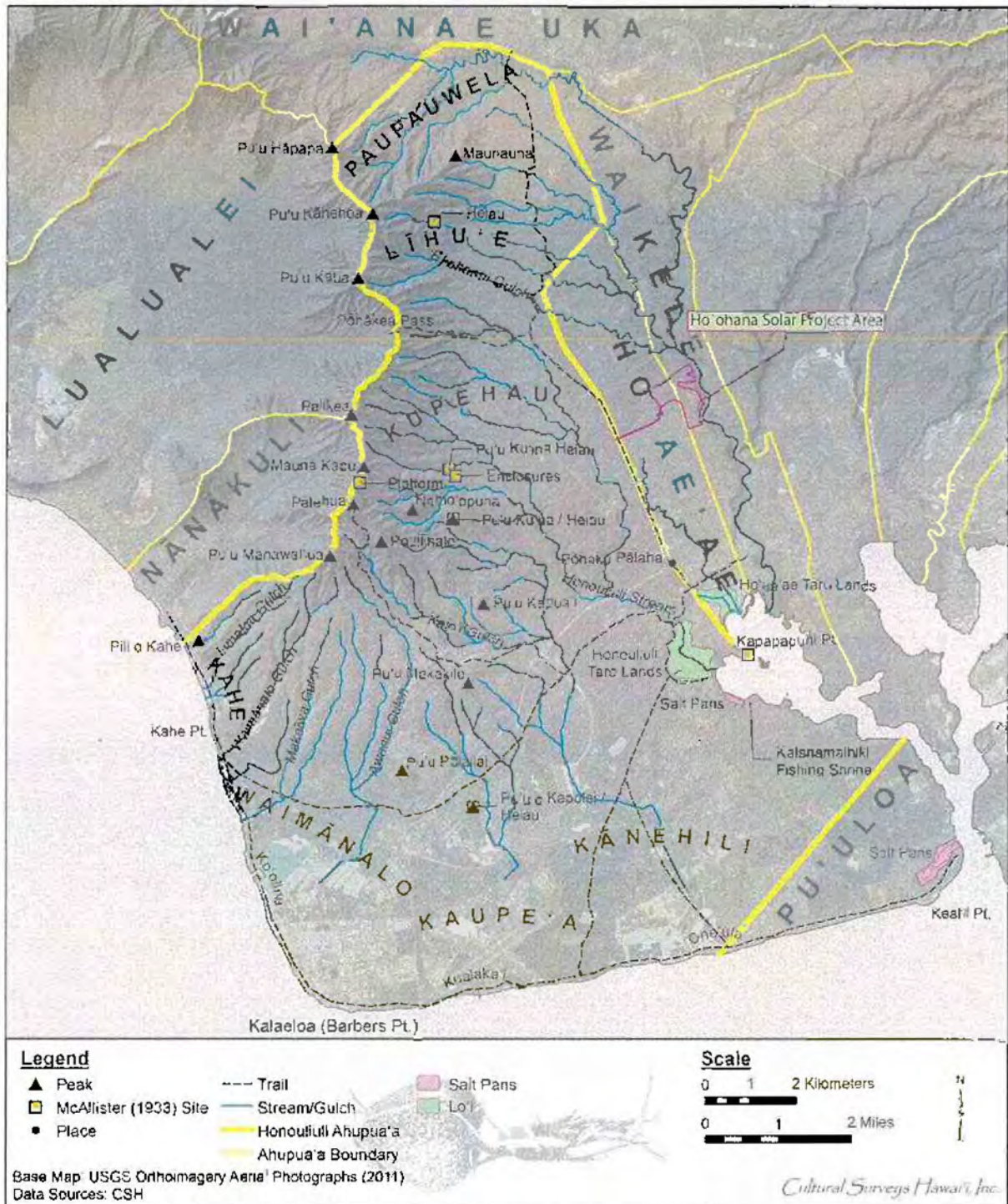


Figure 10. Cultural resource map of Honouliuli Ahupua'a and the adjacent lands of the current project area show the old trail along today's Kunia Road (map courtesy of Cultural Surveys Hawai'i GIS Department)

Handy and Handy (1972) also described the lower valley reaches of Waikele as a favored place to grow wauke (used to make kapa):

On O'ahu, early voyagers describe wauke planted on the coastal plains, on kula land, and in the lower reaches of valleys such as Manoa, Maunaloa, or Waikele on the southern coast. (Handy and Handy 1972:210).

Waikele also had several loko i'a (fishponds) along its shoreline and near shoreline areas. . . . [H]istoric maps show a great deal of variation in terms of exactly how many named loko were present in Waikele at a given time, how large each was, and what their names were. . . . Regardless of the exact details, the most important conclusion is that the makai area of Waikele along Pu'uloa was a rich source of cultivated and wild marine resources.

Documented (but long ago destroyed) heiau in Waikele Ahupua'a (see Sterling and Summers 1978:25) include Mokoula (or Moko'ula) and Hapupu, both once located near the famous pūnāwai (spring) of Waipahu—a couple miles makai (south) of the current project area near the present-day H-1 highway.

Referring specifically to the current project area, based on historic maps from 1881 and 1902 (Figure 11 and Figure 12), the Waikele Ahupua'a portion of the project area is located in an area traditionally known as Pouhala, which is described in Māhele documents as an 'ili. The historic maps label the area in and around the project area as part of "Lower Pouhala." This place name also refers to a famous fishpond at Pu'uloa, well makai (seaward) of the project area. Pouhala translates literally to "pandanus post."

Based on its physiographic setting on plateau lands above deeply-dissected drainages, and prior to being completely plowed under many times by mechanized, sugar cane plantation activities, the Waikele portion of the current project area would have been used by Hawaiians in traditional times for dryland (rain-fed) cultivation and possibly scattered temporary house sites and work areas associated with visiting and maintaining their upland gardens. Prior to around 1800, the project area would have consisted of lowland forest with "slash and burn" type (also known as swidden) cultivation areas created by Hawaiian subsistence farmers.

Hō'ae'ae Ahupua'a and the Project Area Environs

Describing the physiographic character of the ahupua'a, Uyeoka et al. (2018:254) observe that,

Compared with most other ahupua'a in . . . [Ewa Moku] . . . and on O'ahu, in general, Hō'ae'ae's shape and configuration is atypical. Like neighboring Waikele to the east, its contours and upper reaches do not include ridge lines, mountain tops or prominent pu'u, as with most other ahupua'a: instead, the upper reaches of Hō'ae'ae generally are defined by plateau lands above drainages and terminate (in its mauka areas) on the broad, elevated uplands between the Wai'anāe and Kō'olau ranges. Two major gulches in uppermost Hō'ae'ae Ahupua'a (Ēkahanui and Huliwai) originate in Honouliuli, cut across Hō'ae'ae from west to east, and empty into neighboring Waikele Stream. The main stream (Hō'ae'ae) has been significantly altered in historic times by plantation activities upslope.

Regarding Hō'ae'ae's traditional cultural landscape, Uyeoka et al. (2018:254–5) continue,

. . . Its upper reaches are "cut off" by Honouliuli to the north-northwest and by Waikele to the northeast. Hō'ae'ae is also atypical in Ewa for not having any documented loko i'a (fishponds) along its shoreline, although it is bounded by fishponds on both sides by neighboring ahupua'a (Honouliuli and Waikele).

Hō'ae'ae can be translated "to make soft or fine" (Pukui et al. 1974:47). Thrum (1922:632) believed that Hō'ae'ae meant "to pulverize." Taken together, these interpretations may refer to food processing (e.g., pounding or grinding taro or breadfruit). Handy (1940:82) described

Hō'ae'ae as having "a moderate-sized area of terraces watered by springs inland from West Loch."

As documented in Boundary Commission testimony, Hō'ae'ae's boundary with Honouliuli at the shoreline was a place called Ka'ulu. This place was named after a Big Island (Puna) chief named Ka'uluhuaikahāpapa. Along nearly the entire length of its western boundary with Honouliuli, a famous mauka-makai trail (discussed by John Papa 'Ī'ī 1959:95–6) once traversed what is now Kunia Road (and Fort Weaver Road below the H-1). Another ahupua'a marker on the Waikele side, described in Boundary Commission documents as a "pile of stones," was known as Kalahina. There were at least seven named 'ili 'āina in Hō'ae'ae: Ka'ai'iole, Kahui, Kaloko'eli, Kamolokala, Koipu (also called Koipuiki), Waihi and Hō'ae'ae.

The conspicuous absence of documented heiau in Hō'ae'ae is most certainly a reflection of the intensive urban development of the lower reaches of this land; and does not imply temples or shrines were absent.

Referring specifically to the current project area, based on historic maps from 1881 and 1902 (see Figure 11 and Figure 12), the Hō'ae'ae Ahupua'a portion of the project area is located on the plateau flats just south of where two drainages entering from the northwest (Honouliuli and Wai'anae Range) side: Huliwai (literally, "water search") and 'Ēkahanui (literally, "large bird's-nest fern").

Based on its physiographic setting on plateau lands above deeply-dissected drainages, and prior to being completely plowed under many times by mechanized, sugar cane plantation activities, the Hō'ae'ae portion of the current project area would have been used by Hawaiians in traditional times for dryland (rain-fed) cultivation and possibly scattered temporary house sites and work areas associated with visiting and maintaining their upland gardens. Prior to around 1800, the project area would have consisted of lowland forest with "slash and burn" type (also known as swidden) cultivation areas created by Hawaiian subsistence farmers.

Hō'ae'ae means "to make soft or fine," according to Place Names of Hawaii (Pukui et al. 1974:47). Pukui et al. (1974) do not explain why the ahupua'a was given this name but do mention there was a famous pōhaku (stone) called Pōhaku-Pili on the boundary between Hō'ae'ae and Waikele. Another source (Thrum 1922:632) reports that Hō'ae'ae means "to pulverize." Pukui and Elbert's Hawaiian Dictionary (1986) records the possible meanings of Hō'ae'ae as "to rise the tide, to make fine, to pulverize, to refine, to soften. 'Ae can also mean to lend, to say yes, to consent, to approve or to denote fine mash or sap from seaweed or leaves of plants such as taro.

Shideler et al. (2017:13) provide some additional ('Ewa Moku-wide) context to the major trail running along Kunia Road in Hō'ae'ae:

There were several traditional Hawaiian/historic trails across 'Ewa: a cross-ahupua'a trail that traversed 'Ewa and connected Honolulu to Wai'anae; a mauka-makai trail that branched off from the cross-ahupua'a trail and followed the boundary between Honouliuli and Hō'ae'ae to the Pōhākea Pass and Kolekole Pass to Wai'anae; and a second, branching mauka-makai trail that generally followed the path of Waikele Stream in Waikele Ahupua'a to Wahiawā in central O'ahu [note, this is depicted in Figure 9 above]. 'Ī'ī (1959:97) noted the following regarding the first mauka-makai trail: "From Kunia the trail went to the plain of Keahumoa, on to Maunauna, and along Paupauwela, which met with the trails from Wahiawā and Waialua." 'Ī'ī places the area called Kunia east of Pōhākea Pass in the ahupua'a of Honouliuli and Hō'ae'ae, makai of the modern town of Kunia, and places the plain of Keahumoa between Kunia and Paupauwela, in the most mauka portion of Honouliuli. The trail passed near the peak called Maunauna in upper Honouliuli. To the east of Honouliuli, this trail was just mauka of the floodplains near Pearl Harbor, skirting the inland edges of the productive taro fields. . .

Selected Mo'olelo (Oral-Historical Accounts) associated with the Project Area

Like many of 'Ewa's ahupua'a, the mo'olelo of Waikele include numerous references to Pu'uloa (today known as Pearl Harbor) and its rich abundance of marine and estuary resources. References to the famous pūnāwai (fresh-water spring) of Waipahu (literally "bursting water," as in bursting forth from underground) are also important.⁷ Mo'olelo dealing with various incarnations and kino lau ("other bodies" or forms) of manō (sharks), including Ka'ahupāhau (manō goddess), Kahi'ukā (manō god), and Mikololou (man-eating manō) are also integral to Waikele's traditions and oral history. References to the major gods, Kāne and Kanaloa, as well as other gods such as Kamapua'a (pig god), are also important to Waikele.

Makanike'oe is a mythical traveler associated with subterranean and underwater pathways and connections between land (including Kahuku on the other side of the island) and sea, which is a common theme around Pu'uloa. The following translation by Kepā Maly describes a site Makanike'oe visited in Waikele:

There is also at this place, Kaihuopalaai, where the anae (mullet) begin their journey from Honouliuli to Kaihukuuna at Laiemaloo, Koolauloa.

Seeing this pit, Makanikeoe swiftly ran back to Waipahu, where he looked at the source of the water, where it came out of the earth, and flowed to the estuary of Waikele. Makanikeoe dove into the water to determine its hidden source. (Maly and Maly 2012:105)

The following is an example from J.S. Emerson of a version of a manō (shark) story at Waikele, involving a battle between Mikololou, a Maui shark, and considered the "outsider" or antagonist, visiting the local, protagonist sharks of 'Ewa, Ka'ahupāhau and her brother Kahi'ukā:

After a time the man-eating shark, *Mikololou*, from the coast of the island of Maui, paid them a visit and enjoyed their hospitality until he reproached them for not providing him with his favorite human flesh. This they indignantly refused to give, whereupon, in spite of their protest, he made a raid on his own account upon the natives, and secured one or more of their number to satisfy his appetite. *Kaahupahau* and her brother promptly gave warning to their friends on shore of the character of this monster that had invaded their waters. To ensure his destruction they invited their unsuspecting guest to a feast made in his honor at their favorite resort up the Waipahu river. Here they fed him sumptuously, and at length stupified him with the unusual amount of *awa* with which they supplied him. While he was in this condition, their friends, who had come in great numbers from the surrounding country, were directed to close up the Waipahu river, which empties into the Ewa Lagoon, with their fish nets, brought for the purpose, while they attacked him in the rear. In his attempt to escape to the open sea he broke through one net after another, but was finally entangled and secured. His body was then dragged by the victorious people on shore and burned to ashes, but a certain dog got hold of his tongue, and, after eating a portion, dropped the remainder in the river. The spirit of the man-eater revived again, and as a tongue, now restored and alive, made its way to the coasts of Maui and Hawaii, pleading with the sharks of those waters for vengeance upon the sharks of the Ewa Lagoon. (J.S. Emerson 1892:10-11)

The major gods, Kāne and Kanaloa, were instrumental in laying out the boundaries or divisions of the 'āina (land) in ancient times. One such land surveying episode occurred at a stone named Pohakupili (or Pōhakupili) put there by these gods to denote the division between Waikele and Hō'ae'ae:

Pohaku-pili is a stone that belonged to Kane and Kanaloa, gods. It was they who divided the lands of Ewa when they came to earth. The divisions of the boundaries they made remained the

⁷ According to Pukui et al. (1974:227), Waipahu may have originally been spelled Waipahū

same to this day. This stone is said to be a supernatural one and lies on the boundary of Waikele and Hoaeae and is on the edge of the cliff. There is nothing to hold it in place for it is on a sheer precipice but it has remained unmoved to this day. The spot in which it was placed is on the other side of Waipahu, mauka of Waiahu'alele (Water-of-flying-sprays). (Sterling and Summers 1978:29)

The pig-god, Kamapua'a, associated with legends all over the island of O'ahu, traveled through Waikele and visited some of its famous places. The following mo'olelo excerpt—written down by G.W. Kahiolo and published in the Hawaiian language newspaper *Ka Hae Hawaii* (August 27, 1861)—concerns a supernatural pōhaku (rock or stone) in Waikele known as Kuolohele (or Kuolo-kele, according to Mary Pukui):

...Kamapuaa returned and meeting Kuolohele, he asked "Is that you?" He said, "Yes." "Let us go together." They went together as far as Waiawa and from thence to Waipahu. Kamapuaa stood on this side of the stream while Kuolohele bathed below. He had put down his bundle and Kamapuaa spied a lump on his back. He picked up a stone and threw it on Kuolohele's back. He cried aloud that he was being killed and Kamapuaa said, "You are not being killed. You are healed." He took up the stone and stuck it on the cliff and there it is to this day, a stone visited by strangers. (Sterling and Summers 1978:26-27)

Another of Waikele's wahi pana (legendary or storied place) known as Kapukanawaiokahuku, and highlighting a common traditional belief in underground connections with Kahuku (on the other side of the island of O'ahu), is located in the present-day town of Waipahu. The following description was first published in the Hawaiian language newspaper *Ka Loea Kalaiaina* (June 10, 1899):

In Waipahu is also another noted spot. Ka-puka-na-wai-o-kahuku (outlet-of-water-from-Kahuku). From that hole came a tapa anvil from Kahuku and found by a woman of Waikele. The woman who owned the anvil came from Kahuku to seek it and found it here. This is the story of her seeking and finding it here. She went from Kahuku on the Koolau side to Kaneohe where she spent the night. There was no sign of the anvil in Koolau, because the sign she sought was the sound it made. All anvils did not make the same sound as the one she sought. When a tapa anvil was used, it gave out a sound and was recognizable by its ring for all anvils had certain sounds of its own, sharp or deep. She went on and spent the night at Wailupe but did not find hers. She heard other anvils but they were not hers. The night turned into day and she went on to Kapalama where she slept but did not hear what she sought till she came to Waipahu. There she listened to the anvils and as she listened a gentle Mauunene breeze wafted down from Lihue. It brought the sound of her anvil down from the valley because the wind that bore the sound came from the upland. The woman who was using it lived up at Ke-ana-pueo (Owl's-cave). When the woman who was seeking the anvil heard it, she walked up by the stream to the place where she noticed the sound and found it. She returned home to Kahuku by way of Moanalua with the article she had sought patiently, that is, her tapa anvil. This is a brief tale about her. (Sterling and Summers 1978:25-26)

A famous 'ōlelo no'eau, or poetical saying, of Waikele is, "Ke one kuilima laula o 'Ewa," meaning "the sand on which there was a linking of arms on the breadth of 'Ewa." Mary Kawena Pukui explains:

The chiefs of Waikīkī and Waikele were brothers. The former wished to destroy the latter and laid his plot. He went fishing and caught a large niuhi, whose skin he stretched over a framework. Then he sent a messenger to ask his brother if he would keep a fish for him. Having gained his consent, the chief left Waikīkī, hidden with his best warriors in the "fish." Other warriors joined them along the way until there was a large army. They surrounded the residence of the chief of Waikele and linked arms to form a wall, while the Waikīkī warriors poured out of the "fish" and destroyed those of Waikele. (Pukui 1983:191)

Compared with Waikēle and most other ahupua'a in 'Ewa Moku, there are relatively few wahi pana or associated mo'olelo about Hō'ae'ae that have survived down to the present time. Documented examples of legends and storied places in Hō'ae'ae include references to Pu'uloa and its many resources and harbors, manō (shark) stories, including Ka'ahupāhau (manō goddess), a mythical traveler from Kahiki named Ka'uluakaha'i and his son Namakaokapā'o, the famous historical figure and paramount Maui chief Kahekili, and the stream of Kahoa'ai'ai.

One important visitor to Hō'ae'ae was Ka'uluakaha'i. He also had a son with a woman there and this son was named, Namakaokapā'o. The following is a description of Ka'uluakaha'i and his son, and includes information about their time at Hō'ae'ae (Fornander 1918:274):

Namakaokapao was a very brave little boy, and very strong for his young years. He had no peer in these Islands from Hawaii to Niihau, according to his size for bravery. His father was Kauluakahai of Kahikipapaialewa, a land in great Kahiki. Pokai was his mother. His father was a great chief and had a godly relationship. Hoaeae, in Ewa, was the place where they met as man and wife and begat Namakaokapao. When Pokai was enceinte [sic, assume "pregnant"?] of Namakaokapao, Kauluakahai went back to his own land, leaving Pokai in that condition until childbirth. When the child was born Pokai and her child Namakaokapao were quite destitute, and while they were in that condition of life a good man named Pualii came from Lihue to fish at Honouliuli. He turned in at the home of Pokai. He looked at her and had a yearning for her. He said: "I desire you to be my wife."... Pokai then assented and went with her husband Pualii, and resided at the plans [sic, assume "place"?] of Keahumoa (Kula-o-Keahumoa) [this is a short distance north of the current project area on the upland plateau lands]. (brackets added)

During the time of Kahekili, in the late 1790s, Hō'ae'ae was associated with political intrigue related to military struggles between O'ahu and Maui. At this time, O'ahu leaders conspired to kill all the Maui chiefs on the same night across different parts of the island. The paramount Maui warrior-chief, Kahekili, was warned of the plan, and thwarted it. Other Maui chiefs, however, did not receive the message, and were killed, including Hueu. The following describes how Kahekili avenged Hueu's death:

Fearfully did Kahekili avenge the death of Hueu on the revolted Oahu chiefs. Gathering his forces together, he overran the districts of Kona and Ewa, and a war of extermination ensued. Men, women, and children were killed without discrimination and without mercy. The streams of Makaho and Nuihelewai in Kona, and that of Hoaeae in Ewa, are said to have been literally choked with the corpses of the slain. The native Oahu aristocracy were almost entirely extirpated. (Fornander 1919-20:290)

The famous Hawaiian historian, Samuel Kamakau, presents another version of this historical event:

But the plot came out, and when Ka-hekili learned that Elani of 'Ewa was one of the plotters, the districts of Kona and 'Ewa were attacked, and men, women, and children were massacred, until the streams of Makaho and Nuihelewai in Kona and of Kahoa'ai'ai in 'Ewa were choked with the bodies of the dead, and their waters became bitter to the taste, as eyewitnesses say, from the brains that turned the water bitter. All the Oahu chiefs were killed and the chiefesses tortured. (Kamakau 1961:138)

Historic Period

Early European visitors to Pu'uloa (Pearl Harbor) and the Waikele shoreline noted the abundance of the land and settlement at West Loch. Referring to Waikele in 1793, for example, Vancouver noted that "... the soil is rich and all the necessities of life are abundantly produced. . ." (Sterling and Summers 1978:36). Other members of his party remarked that the area just inland seemed to be "very populous" (ibid.). It is important to remember, however, that the current project area is located a couple miles mauka (inland) from West Loch.

Shideler et al. (2017:19–20) discuss the major alterations to the native landscape and natural resource base as a result of the arrival of Europeans in the late eighteenth century:

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

- (1) 'early,' ca. 1790: prickly pear cactus (*Opuntia tuna*), kou haole (*Leucaena leucocephala*) and guava (*Psidium guajava*)
- (2) 1828 or 1837: kiawe tree (*Prosopis pallida*)
- (3) 1835–1840: bermuda grass (*Cynodon dactylon*), wire grass (*Eleusine indica*)
- (4) 1858: Lantana (*Lantana camara*)

In the 1820s,

. . . Protestant missionaries began developing schools in Hawai'i. Levi Chamberlain visited Waikele [makai section near the current location of the H-1] in 1828 in a tour of O'ahu schools and an estimated 450 to 600 people gathered in two sessions to hear him. (Wong and Spear 2015).

Regarding demographic and population changes to the general area in the nineteenth century, Shideler et al. (2017:20) summarize:

At Contact, the most populous *ahupua'a* on the island was Honouliuli in 'Ewa District, with the majority of the population centered on Pearl Harbor. In 1832, a missionary census of Honouliuli recorded the population as 1,026. Within four years, the population was down to 870 . . . In 1835, there were eight to ten deaths for every birth . . . Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. In 1853, the population of 'Ewa and Wai'anae combined was 2,451 people. In 1872, it was 1,671 . . . The inland area of 'Ewa was probably abandoned by the mid-nineteenth century due to population decline and consolidation of the remaining people in the town of Honouliuli, near Kapapāhi Point.

As discussed in a previous subsection (see "Hawaiian Cultural Landscape"), the main settlement areas of Waikele and Hō'ae'ae in traditional (pre-Contact) times were along the main stream mouths of the coastal plain at Pu'uloa; this pattern continued into the middle 1800s, when abundant records associated with the Māhele (starting in the 1840s), which introduced the western concept of private land ownership to the islands, document a continuation of this settlement pattern.