

FINAL
SUPPLEMENTAL CULTURAL IMPACT ASSESSMENT
FOR THE
PROPOSED PULELEHUA COMMUNITY PROJECT

Kahana and Māhinahina 1-4 Ahupuaʻa, Kāʻanapali Moku, Lāhainā Tax District, Maui Island

TMK: (2) 4-03-001:031 por.



Ko Koā Uka, Ko Koā Kai
Those of the Upland, Those of the Shore
ʻŌlelo Noʻeau 1821 (Pukui 1983:196)

COVER PHOTO: LANDS OF THE PULELEHUA COMMUNITY PROJECT AREA, KAHANA AND MĀHINAHINA UPLANDS, PAILOLO CHANNEL AND MOLOKAʻI IN THE BACKGROUND. MANAʻO (MEANING) BEHIND ʻŌLELO NOʻEAU 1821

In olden days relatives and friends exchanged products. The upland dwellers brought poi, taro, and other foods to the shore to give to kinsmen there. The shore dweller gave fish and other seafoods. Visits were never made empty-handed but always with something from one's home to give. (*Pukui 1983:197*)

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November 2017

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Executive Summary

Date	November 2017 -- FINAL
Project	Supplemental Cultural Impact Assessment for the Proposed Pulelehua Community Project
Reviewing Agencies	Hawai'i Department of Land and Natural Resources/State Historic Preservation Division (DLNR/SHPD)
Project Area and Region of Influence	<p>The direct area of potential effect, or project area, is considered the 310-acre development footprint of the proposed Pulelehua Community Project which excludes Kahana and Māhinahina Gulch. When assessing the presence or absence of direct and indirect effects of the proposed project on the traditional cultural practices of a region, traditional use and access to resources from the mountains to ocean, or mauka to makai, must be taken into consideration. As such, the region of influence, or study area for this undertaking is defined as the geographic area encompassed by the known traditional boundaries of Kahana and Māhinahina 1-4 Ahupua'a.</p>
Results	<p>Based on the land commission award distribution in the <i>makai</i> reaches of Kahana and Māhinahina and near the gulches of the study area; in addition to stories and information gathered during the background research and consultation completed for this study, it is apparent that settlement and land use within Kahana and Māhinahina 1-4 Ahupua'a functioned in the typical traditional sense, with a <i>makai</i> residence that could be near marine resources along with inland claims on the alluvial plain and within in the gulch environment for <i>kula 'uala</i> (potato land) and other agricultural pursuits. Historic agricultural pursuits in the higher elevations near the pump station above the current project area, as well, as pig hunting have also been documented.</p> <p>With regard to the current project area t, there are no specific traditional cultural practices or cultural sensitivity concerns within the development footprint. Additionally, there are no known historically significant archaeological sites requiring additional mitigation work within the development footprint. This factor notwithstanding, access through the project area is necessary to get to the <i>mauka</i> reaches. To this end, those consulted for both this study and the original study have expressed concerns about the ability to maintain this access during and following development. The project proponent has indicated that access through the project area will not be cut-off and intends for the current field roads to</p>

remain and in some cases improved. Therefore, and in so long as access to the *mauka* region and upper reaches of the gulches are maintained, no direct adverse effects of from proposed project on traditional cultural practices are anticipated.

With regard to potential direct effects on the gulch environment and historic properties within the gulch bottoms, the development footprint does not extend to the gulch edge and therefore no direct adverse effects to gulch areas are anticipated. The existing field roads along both Kahana and Māhinahina Gulches are situated approximately 80 ft. from the edge of either gulch with no development plans for the space between these field roads and edges of the gulches. Additionally, building construction is anticipated to be a minimum of 150 ft. from the edges of both gulches thus creating a construction buffer between the proposed project and the edge of the gulches.

With regard to potential indirect and/or cumulative effects, according to those consulted for this study, the most prominent and significant cultural practice within the vicinity of the current project revolves around the coastal marine resources of Kahana and Māhinahina. This finding is consistent with the findings of the initial cultural impact assessment completed by Maria Orr (2005). Fishing, diving, and resource gathering continues to play a large role in the livelihood of those consulted for this study, as well as the previous study. Siltation and construction run off from project development and cumulative effects of storm water run-off from the life-span of the development itself was a concern expressed by those who participated in both studies. Current development plans, as indicated by the project proponent, calls for use of the current drainage infrastructure and desilting basins and no increase in runoff from existing conditions. Those consulted for this study remain cautious, and advocate for some balance to allow for some nutrients to come through the *muliwai* in order to have thriving *limu* beds, but only in so far as what might naturally occur. Finally, some apprehension was also expressed about population increase as a result of the project and the potential for increased pressure on marine resources and thus the traditional *lawai'a* practices that are currently being carried out by those with generational ties to the area. The foremost concern is that the integrity of the marine resources would be compromised as more people would be present to observe the both the locations of, and nature of resources gathered, within the generational fishing grounds.

Acknowledgments

Many thanks go out to the various individuals who shared their personal life experiences and traditional knowledge for this study. Information shared helps tremendously in reconstructing the traditional way of life at different times in history and shows how lifestyles, particularly relating to Hawaiian traditions and cultural practices, have evolved.

Most important it is with sincerest gratitude and fondest aloha that I thank the following *kūpuna* and individuals who have contributed greatly to our understanding of traditional cultural practices related to the lands and waters of Kahana and Māhinahina Ahupua'a: Mr. Junya Nakoa, Uncle Clayton Smith, Kahu Glenn Kamaka, Uncle Felimone Sadang, Mr. Keoki Kekoni Kawika, Mr. Cade Clark, Mr. Mark Maliko Pamat, Mr. Irvin Delatori, and Mr. Jacinth Lum Lung. Mahalo a nui for taking time out of your day to share your *mana'o* (input) and concerns.

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1.0 INTRODUCTION

At the request of Maui Oceanview LP, Āina Archaeology assisted with updating the cultural impact assessment for the proposed development of the Pulelehua Community Project. Given the time lapse between the development and publication of the cultural impact assessment for the project as originally proposed (Orr 2005), this supplemental cultural impact assessment sought to update outreach to the community in order to understand any concerns regarding potential impacts of the proposed project as currently planned to traditional cultural practices; as well as, include any additional cultural historical information that may have been generated or gathered for the area over the past 10 years.

1.1 PROJECT DESCRIPTION

Topographically, the proposed Pulelehua Community Project (project) extends from 40 ft. to approximately 260 ft. in elevation between Kahanaiki Gulch on the north boundary to just past Māhinahina Gulch to the south and is located at Māhinahina 1-4 and Kahana Ahupuaʻa, Kāʻanapali Moku, Lāhainā Tax District, Maui Island (TMK [2] 4-3-001:083) (Figure 1-1 and Figure 1-2). The overall proposed project footprint covers approximately 310-acres (project area) situated *mauka* of Honoapiʻilani Highway and the Kahana Hui and Kahana Ridge Subdivisions, and directly adjacent to and *makai* of the Kapalua-West Airport.

In contrast to the initial development concept for proposed project, which incorporated street grid patterns, Maui Oceanview LP is shifting the proposed community layout to use the existing contours of the property and preserve more open space within the project area (Figure 1-3). Currently, the initial phase of development will include the construction of 240 multi-family rental units, split between affordable and market priced rental units, with some retail. At full build-out, the Pulelehua community will consist of 900 units of affordable and market priced workforce rental and fee units (with potentially an additional 300 accessory units), retail space, and a new school. To accommodate the location of the school Maui Oceanview LP anticipates future changes to Honoapiʻilani Highway in terms of stacking lanes and turns when a new elementary school is opened (Figure 1-4).

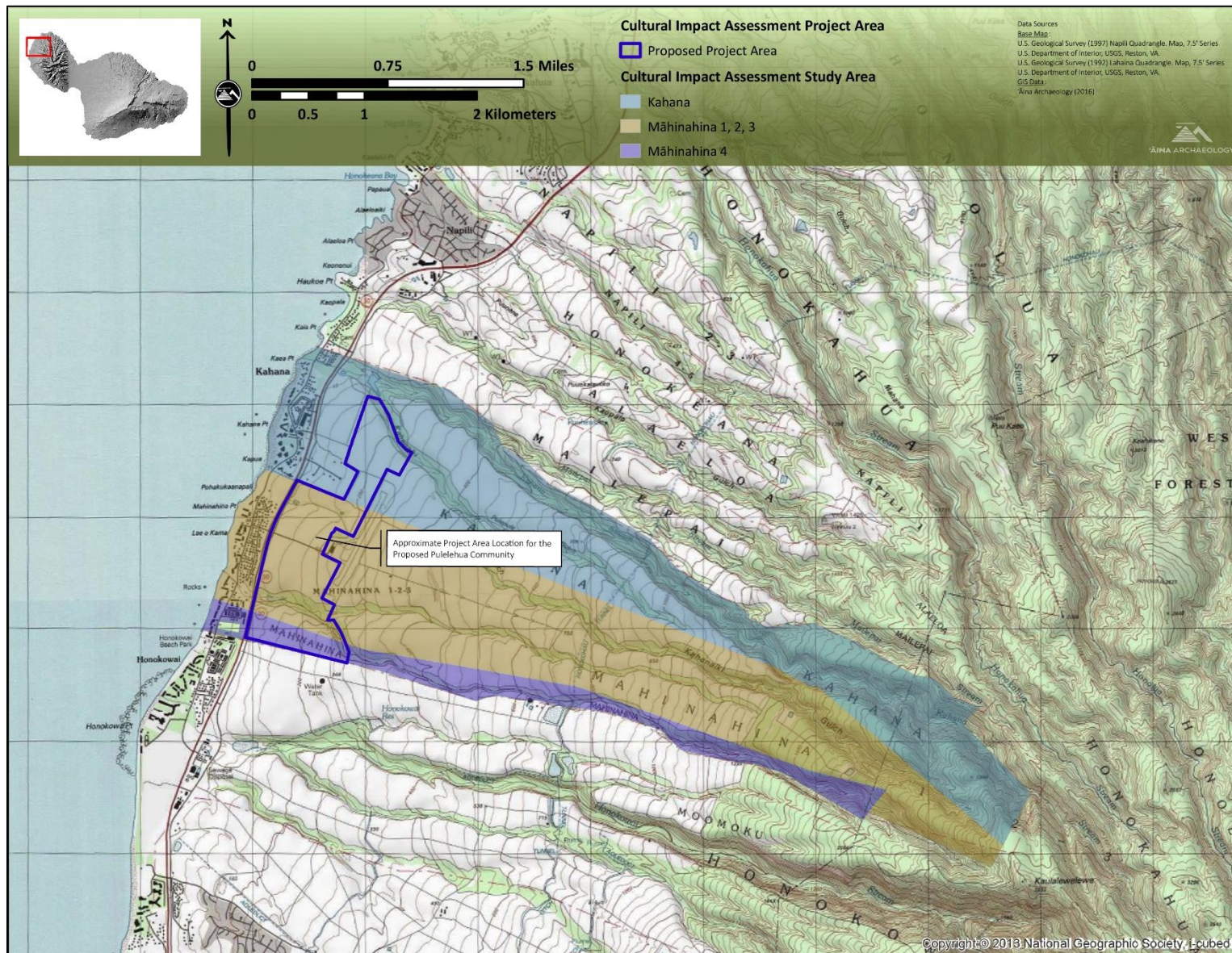


Figure 1-1. Portions of the Lahaina (1992) and Napili (1997) USGS 7.5 minute Topographic Quadrangles showing the current project area, or area of potential effect (APE) (outlined in blue), in relation to the study area which includes the ahupua'a of Kahana and Māhinahina 1-4.

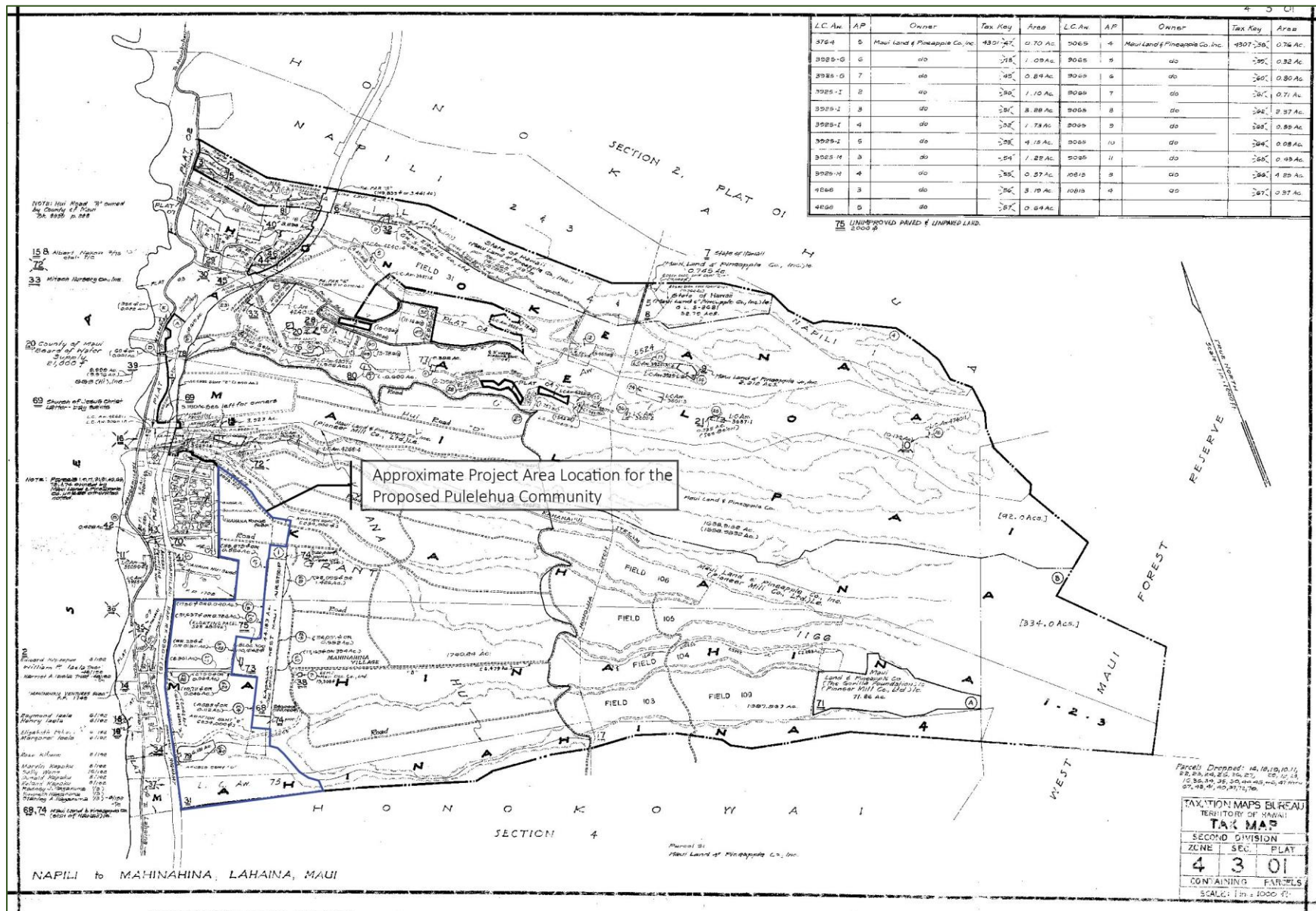


Figure 1-2. Tax Map Key (2) 4-3-01 showing the location of the project parcel outlined in blue.



Figure 1-3. Overall conceptual plan for the proposed Pulelehua Community Project (courtesy of Maui Oceanview LP).



1.2 PROJECT AREA OF POTENTIAL EFFECT AND REGION OF INFLUENCE

The Guidelines for Assessing Cultural Impacts, adopted on November 19, 1997 by the Environmental Council, State of Hawai'i states:

(For) the cultural portion of an environmental assessment, the geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place (proposed project area). This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment.... An ahupua'a is usually the appropriate geographical unit to begin an assessment of cultural impacts of a proposed action, particularly if it includes all of the types of cultural practices associated with the project area. In some cases, cultural practices are likely to extend beyond the ahupua'a and the geographical extent of the study area should take into account those cultural practices. (State of Hawaii Office of Environmental Quality Control 2012:11)

For this supplemental cultural impact assessment, the *ahupua'a* of Kahana and Māhinahina 1-4 is considered the study area while the development footprint of the proposed project is identified as the direct area of potential effect (hereinafter referred to as project area) (see also Figure 1-1). The purpose of this document is an attempt to identify traditional cultural practices within the study area that may occur during or as a result of development of the proposed project area.

1.3 SCOPE OF WORK

The following outlines the scope of work carried out to complete the supplemental community outreach and research for this Supplemental CIA:

- **Background Research** to supplement existing information contained within the 2015 Cultural Impact Assessment
 - Review of Hawaiian language newspapers and other primary resources (documents of the Māhele 'Āina, maps, historic survey notes, etc.) that have become more readily accessible over the last 11 years; and,
- **Review of Archaeological and Cultural Impact Assessments** conducted between 2005 and 2016 in areas adjacent to the propose project area.
- **Expansion of Community Consultation and Outreach** to include consultation with individuals and community groups with cultural and generational ties to the area as a means of identifying and understanding potential past and active present cultural practices within and adjacent to the proposed project area. This outreach would also gather individual and community concerns regarding any potential effects that the proposed project may have on cultural resources and traditional cultural practices, as well as, ascertain whether or not there have been any changes or increasing concern over the health of these resources between 2005 and 2016.
- **Synthesis of the Results of Community Consultation and Outreach** to include:
 - a discussion on the cultural resources, practices and beliefs identified through consultation and background research;

- for identified resources and practices, their location within the broad geographical area in which the proposed action is located when known or shared; and,
 - their direct or indirect significance or connection to the project site.
- **Analysis and Discussion** concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within and adjacent to the current project area that may be affected directly or indirectly by the proposed project.
- **Analysis and Discussion** of the following:
 - potential effect of the proposed project on cultural resources, practices or beliefs;
 - the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and
 - the potential of the proposed action to introduce elements which may alter the setting in which cultural practice is taking place.

2.0 ENVIRONMENTAL SETTING

2.1 NATURAL ENVIRONMENT

The most prominent geologic feature of the study area is the West Maui Mountain Range with the broad ridges, deep gulches, and alluvial fans that had built out the shoreline as a result of the once perennial streams depositing debris in greater volume than is removed by waves and ocean currents (Macdonald et al. 1983:387) (Figure 2-1 and Figure 2-2). The average annual rainfall accumulation within the entire project area averages from 25 to 35 inches (Giambelluca et al. 2013) per year, with the heaviest rainfall occurring during the winter months (December through February) and little to no rainfall during the summer months (June through August) (Pratt and Gon III 1998:56). The resulting soils of the area are of the Waiakoa-Keahua-Molokai Association which are moderately deep and deep, nearly level to moderately steep, well drained soils (Foote et al. 1972:Maui General Soils Map). The specific soil units within the project area consists primarily of Lahaina silty clays of varying slopes (LaB and LaC) on the broad ridges, followed by rough broken and stony land (rRS) within Kahana Gulch on the northern boundary and Mahinahina Gulches along southern extent of the proposed project area with Ewa silty clay (EaA) loam near the mouths of Kahana and Mahinahina Gulches (Figure 2-3).

The above described geology, pattern of rainfall, and underlying soils once sustained a lowland dry and mesic forest, woodland, and shrubland native ecosystem (Pratt and Gon III 1998:122). Vegetation along the lower elevation plains, dry ridge tops like that of the current project area, and cliffs would have supported grasslands of *pili* (*Heteropogon contortus*) or *kāwelu* (*Eragrostis variabilis*). The dry or mesic shrubs that may have occurred in the project area could have included *a'ali'i* (*Dodonaea viscosa*), *ākia* (*Wikstroemia* sp.), *ko'oko'olau* (*Bidens* sp.), *ūlei* (*Osteomeles anthyllidifolia*), and others. Mesic forest environments of the upper elevations would have included native plants and trees such as *ōhi'a* (*Metrosideros polymorpha*), *koa* (*Acacia koa*), or *lama* (*Diospyros hillebrandii*) (Pratt and Gon III 1998:127).

At the time of the 1972 soil survey, the Lahaina series units within the project area used for sugar and pineapple with small acreages used for truck crops, pasture, and home sites (Foote et al. 1972:78-79), while the Ewa series units were used for sugarcane and home sites (Foote et al. 1972:30). The rough, broken and stony lands generally characterize steep and stony gulches with rapid runoff and active geologic erosion with some areas of colluvium and alluvium accumulation in the gulch bottoms (Foote et al. 1972:119). Historically, the lands of the project area were heavily used for sugarcane and pineapple, and while the majority of the fields were fallow during the initial study conducted for the project under Maui Land and Pineapple, a small patch of pineapple within Mahinahina Gulch section of the current project area was still being cultivated (Orr 2005:2).



Figure 2-1. Overview of southern section of the project area lands located in Māhinahina. Māhinahina Gulch in the fore ground, Kapalua Airport in the to the left of frame, Auau Channel and Lānaʻi Island in the background. View to south-southwest (photo credit: Kimley-Horn & Associates, provided courtesy of Maui Oceanview, LP.)



Figure 2-2. Overview of northern section of the project area lands located in Kahana. Kahana Gulch in the fore ground, Kapalua Airport in middle ground, Auau Channel and Lānaʻi Island in the background and right of frame. View to south. (photo credit: Kimley-Horn & Associates, provided courtesy of Maui Oceanview, LP.)

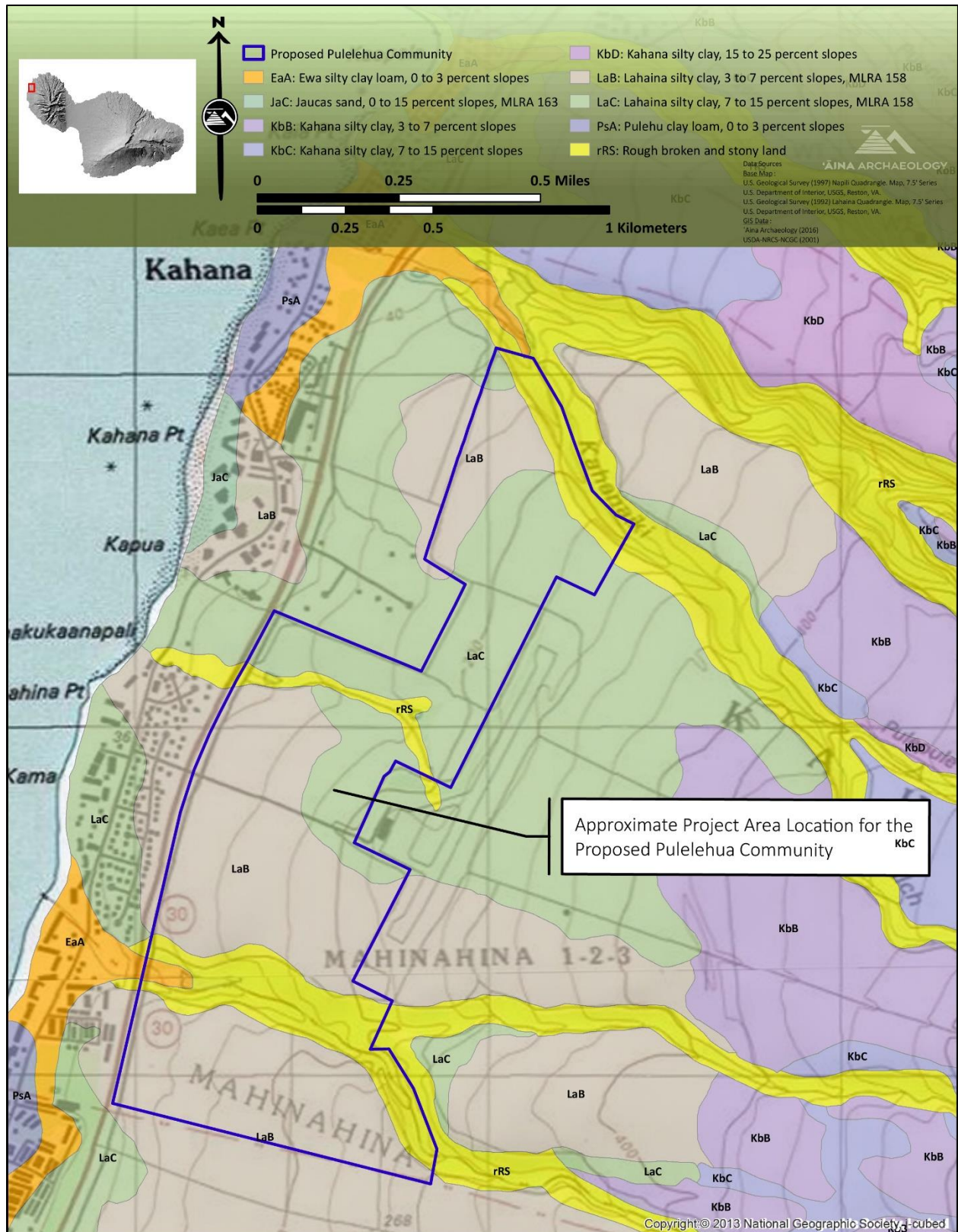


Figure 2-3. Portions of the Lahaina (1992) and Napili (1997) USGS 7.5 minute Topographic Quadrangles showing the current project area in relation to the underlying soil series (USDA-NRCS-NCGC 2001).

Currently, the vegetation within the project area includes buffel grass (*Pennisetum ciliare*) and other species of introduced grasses (Figure 2-6, see also Figure 2-1), as well as, non-native plants that include low stands of *haole koa* (*Leucaena leucocephala*) and silk oak (colloquially known as yellow oak or golden oak *Grevillea robusta*). Also present were patches of *a'ali'i* (*Dodonaea viscosa*) along the edges of the gulches adjacent roads (Figure 2-4).



Figure 2-4. Stands of *a'ali'i* observed along the southern ridge edge of Kahana Gulch (northern portion of the project area), flowering *a'ali'i* left of frame, *a'ali'i* shrubs center of frame, *haole koa* left of frame. View to south.

2.2 BUILT ENVIRONMENT

As the entire project parcel is undeveloped and currently consists of fallow agricultural lands, the most prominent feature representing a modern built environment is the presence of rough, unimproved field roads along the gulch edges, an unimproved hauler road along the western most boundary, and Akahale Street, a two-lane road that bisects the 310-acre property and provides access to the Kapalua Airport. The features of the modern built environment are situated outside and adjacent to the current project area and includes the two-lane Honoapi'ilani Highway and Kahana Ridge residential subdivision to the west of the project area and the Kapalua Airport to the east of the project area (Figure 2-5 and Figure 2-6).



Figure 2-5. Google Earth aerial imagery 3/4/2013 showing the location of the current project area (outlined in blue) in relation to the overall built environment.



Figure 2-6. Overview of the project area landscape in relation to the built environment. Māhinahina Gulch and Kapalua Airport in the middle ground with Honoapiʻilani Highway, built shoreline, Pailolo Channel, and Molokaʻi Island to the left of frame and background. View to north-northwest northeast (photo credit: Kimley-Horn & Associates, provided courtesy of Maui Oceanview, LP.).

3.0 BACKGROUND RESEARCH

Background research for Ka'anapali Moku and the *ahupua'a* of this *moku* in general along with comprehensive chiefly genealogies and related *mo'olelo* (stories); as well as, a detailed description of historic era commercial agriculture in the region and the formation and operation of Baldwin Packers and Maui Land and Pineapple is available in the cultural impact assessment (Orr 2005) prepared for the original Pulelehua development concept. The following sections will summarize the above and supplement the previously developed background study with a specific focus on the culture history, traditions, places, and resources of Kahana and Māhinahina.

Documentary research for this supplemental study included a review of published historical accounts, academic volumes, land survey notes and reports, as well as, historic maps and photographs in public and private collections pertaining to Kahana and Māhinahina. English language historical documents, maps, anthropological compilations, and archaeological studies were researched at the library of the Department of Land and Natural Resources' State Historic Preservation Division (DLNR/SHPD) on Maui, the Survey Office of the Department of Accounting and General Services (DAGS), along with the print and digital resources of 'Āina Archaeology; in addition to eVols, the digital institutional repository for the University of Hawaii and other online resources. Land Commission Award Claims were studied using both historic and TMK maps and cross referenced with the Papakilo Database (Office of Hawaiian Affairs 2011) and Kipuka Geographic Database (Office of Hawaiian Affairs 2014). Hawaiian language newspaper resources and other Hawaiian language documents were researched using both Ulukau: The Hawaiian Electronic Library (www.ulukau.org) and the Papakilo Database with verbatim Hawaiian language newspaper translations provided by Richard Keao Nesmith, Ph.D.

3.1 HE MO'OLELO NO KAHANA A ME MĀHINAHINA I KA WA KAHIKO – TRADITIONS OF KAHANA AND MĀHINAHINA

The division of Maui's lands into political districts occurred during the rule of Kaka'alaneo, under the direction of his *kahuna*, Kalaiha'ōhi'a (Beckwith 1970:383). This division resulted in the creation of twelve districts or *moku* during traditional times: Kula, Honua'ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko'olau, Hāmākua Loa, Hāmākua Poko, Na Poko or Na Wai Eha (Wailuku), Kā'anapali, and Lāhainā (Alexander 1882; Sterling 1998:3). The *moku o loko*, or *moku* as it is most commonly called, literally means "to cut across, divide, separate" (Lucas 1995:77). When used as a term of traditional land tenure, a *moku* is similar to a modern political district. Within these *moku* are smaller units of land termed the *ahupua'a*, the name of which is derived from the Hawaiian term *ahu* (altar), which was erected at the point where the boundary of land was intersected by the *alaloa* (main road encircling the island), upon which a carved *pua'a* (hog) image, made of kukui wood and stained with red ochre was placed along with the tax of food items from that particular land unit as payment to the *ali'i* (chief) during the annual progression of the *akua makahiki*, (Alexander 1882:4). The typical configuration of the *ahupua'a* extends from

the sea to the mountain so that the *ali'i* (chiefs), as well as the *maka'āinana* (common people) could have access to products of the *uka* (mountain region), the cultivated land, and the *kai* (sea) (Alexander 1882:4). While the boundary generally followed prominent landforms (i.e. ridge lines, the bottom of a ravine, or defined by a depression) there were times where a stone or rock that was notable from a tradition or sacred use would mark a corner or determine a line (Alexander 1890:105-106). Along similar lines, the growth of a certain kind of tree, herb or grass, or the habitat of a certain kind of bird would sometimes define a division (Alexander 1890:105-106).

The present study area includes the *ahupua'a* of Kahana and Māhinahina 1-4, a land division located on the leeward slopes of Mauna Kahalawai (West Maui Mountains) in the traditional *moku* of Kā'anapali (Figure 3-1 and Figure 3-2).

In the preface of *Place Names of Hawaii* (Pukui et al. 1976:x), Samuel Elbert states that:

Hawaiians named taro patches, rocks and trees that represented deities and ancestors, sites of houses and heiau, canoe landings, fishing stations in the sea, resting places in the forests, and the tiniest spots where miraculous or interesting events are believed to have taken place.

Place names are far from static ... names are constantly being given to new houses and buildings, land holdings, airstrips, streets, and towns and old names are replaced by new ones ... it is all the more essential, then to record the names and the lore associated with them (the ancient names) now.

Intrinsic in these statements of Elbert is the knowledge that the oldest place names held meaning and could tell the story of an area, or recorded the resources of a particular place, prior to European contact. A study of the place name meanings for the study area may yield some insight into the stories, patterns of life and land use within Kahana and Māhinahina Ahupua'a. The place names listed below are for land areas, fisheries, land divisions, markers, and other resources specific to Kahana and Māhinahina. These areas were identified through research of the Māhele 'Āina documents and other available historic literary resources which include the Hawaiian Government and Territorial Survey Maps (Dodge 1885; Ho 1940), the USGS Topographic 7-Minute and 15-Minute Series Maps (U.S. Geological Survey 1992, 1997), as well as, consultation with *kama'āina* and *kūpuna* of the region. Unless indicated otherwise, the spelling, orthography, and translations presented below are taken from Pukui and others (1976).



Figure 3-1. A portion of the F.S. Dodge map of Maui (1885) showing the proposed project area in relation to the traditional moku of Kā'anapali and ahupua'a of Kahana and Māhinahina 1-4.

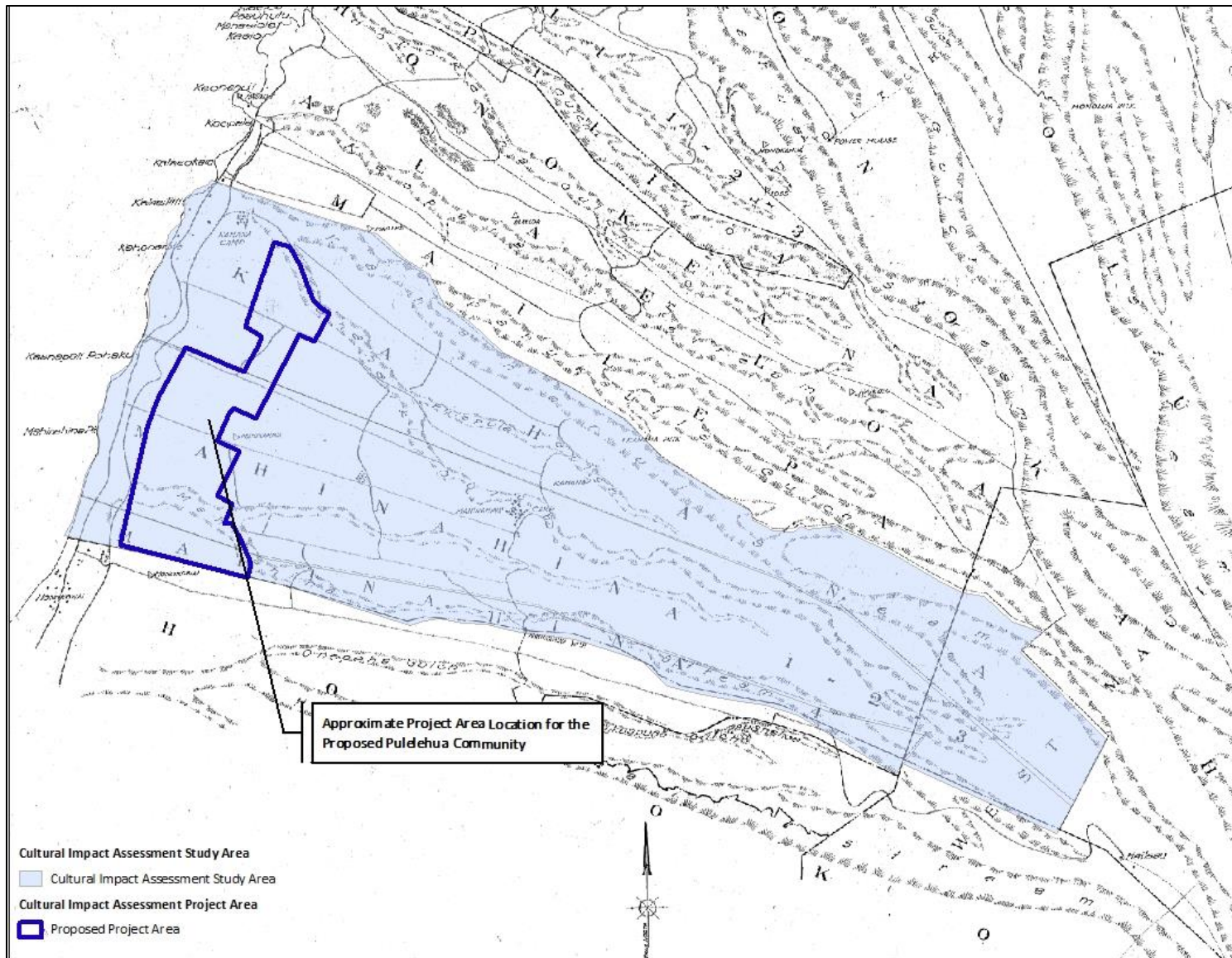


Figure 3-2. A portion of the map showing the land holdings of the Baldwin Packers (Ho 1940) showing the configuration as known at the time of mapping of Kahana and Māhinahina 1-4 Ahupua'a (study area) in relation to the project area.

‘Ōhi’a (‘ili)	Two kinds of trees, ‘ōhi’a’ai (<i>Eugenia malaccensis</i> mountain apple) (Pukui and Elbert 1986:277) and ‘ōhi’a lehua (<i>Metrosideros macropus</i> , <i>M. collina polymorpha</i>) (Pukui and Elbert 1986:199). Found in the forested regions, the fruit of the ‘ōhi’a’ai was prepared by splitting and drying it in the sun (Pukui and Elbert 1986:277). An ‘ili name associated with LCA 4698 to Koiku and LCA 3764 to Alaala.
Kā’anapali (moku)	<i>Lit.</i> Kā’ana (the division) cliff
Ka’ape (‘ili)	Perhaps related to the ‘ape (<i>Alocasia macrorrhiza</i> , <i>Xanthosoma robustum</i>) plant which holds its leaves upright; also means headstrong, willful, obstinate (Pukui and Elbert 1986:108)
Kahana ‘Iki (kahawai [stream])	<i>Lit.</i> , small Kahana
Kahana Nui (ahupua’a, kahawai)	<i>Lit.</i> , the great work
Kahana (ahupua’a, kahawai, point, village, plantation camp)	<i>Lit.</i> , the cutting
Kahanaiole (‘ili or ahupua’a)	Place name associated with LCA 3925D to Hualii and 3925I to Pala
Kalae‘ili‘ili	Possibly descriptive where <i>lae</i> refers to a headland or point (Pukui and Elbert 1986:189) and ‘ili‘ili refers to small stones or pebbles (Pukui and Elbert 1986:98)
Kalaeokaea	A point or cape near Kaopala Bay, Mailepai, no translation given
Kaluilio (‘ili)	An ‘ili name associated with LCA 10813 to Palina
Kamaele (‘ili)	An ‘ili name associated with LCA 3764 to Alaala
Kaopala (bay)	<i>Lit.</i> , the rubbish
Kapua	<i>Lit.</i> , strike spawn; <i>lai</i> (<i>Scomberoides lysan</i>) and <i>manini</i> (<i>Acanthurus triostegus sandvicensis</i>) fish spawned here; people kicked them ashore with their feet.
Ke’one	<i>Lit.</i> , the sand; traditional name for S-Turns Beach
Lae o Kama	<i>Lit.</i> , point of Kama; possibly a reference to Kamalalawalu, for whom the name Maui Nui a Kama, “The great Maui of Kama”, is named.
Likipu (‘ili)	An ‘ili associated with LCA 9065 to Kuoioi
Maeleloaiki (‘ili)	An ‘ili name associated with LCA 10813 to Palina

Māhinahina (<i>ahupuaʻa</i> , stream, plantation camp)	<i>Lit.</i> , silvery haze (as of moonlight)
Piʻilua (<i>ʻili</i>)	An <i>ʻili</i> name associated with LCA 4268 to Koiku
Pōhakukāʻanapali (gulch)	Also the name large <i>pōhaku</i> near the sea at the border of Māhinahina and Kahana.
Popolohuaamea (gulch)	Possible a reference to the <i>pōpolo</i> (<i>Soanum</i> sp.) plant and berry; name of the ravine and upper tributary to Māhinahina Stream noted in the metes and bounds description for Land Grant 1166 to D. Baldwin, J.F. Pogue, and S.E. Bishop "... thence N76 1/2°W 63.00 chs. (chains) along border of Honokowai; thence N36 1/3°W 40 chs. across ravine called Popolohuaamea; thence along the Mahinahina of C. Cockett..."
Pulepule (gulch)	<i>Lit.</i> , spotted with variegated colors
Uhali (<i>ʻili</i>)	An <i>ʻili</i> name associated with LCA 4268 to Koiku

Handy et al. (1991) summarize the relationship between Hawaiians and the natural environment best in the following passage:

The sky, sea, and earth, and all in and on them are alive with meaning indelibly impressed upon every fiber of the unconscious as well as the conscious psyche. Hawaiian poetry and folklore reveal this intimate rapport with the elements, (Handy et al. 1991:23-24)

(T)he relationship which existed from very early times between the Hawaiian people ... is abundantly exemplified in traditional mele (songs), in pule (prayer chants), and in genealogical records which associate the ancestors, primordial and more recent, with their individual homelands, celebrating always the outstanding qualities and features of those lands. (Handy et al. 1991:42)

The *moʻolelo* (traditional knowledge) of Kahana and Māhinahina revolves around the elemental characteristics of the *ʻāina* (land) where the names of the *ahupuaʻa* are noted in name chants and the winds and rains of the region are recounted in legends and poems. In the story of Lonoikamakahiki, son of Keawenuiaumi, as retold by Fornander, an *oli* is recited by Kaikilani in honor of Lonoikamakahiki (Fornander 1917). Within this *oli* is a recounting of the *ahupuaʻa* of Maui where the lands of the study area are named:

...
O ka eke ia ku i ka ieie;
O ka eke ia, Kaeke-a
Elu-a—
Elua ia Honokeana Keana,
Elua ana Opihi,
Ekolu Kahana,
Elua Mailepai,

...
That is the bag that will bring fame,
That is the bag, the bag of—
Two—
There are two of Honokeana Keana;
There are two caves of Opihi;
There are three Kahana;
Two Mailepai;

Elua Honokawai,
 O Kawaiiua,
 I kolu ia Kekaa.
 Eha la Mahinahina,
 O ka luna i Alaeloa.
 Eha la aina hono,
 O Honokahua,
 O Honolua:
 Honokōhau, Honokawai
 O Honopou,
 Aha la aina hono
 ...

Two Honokawai;
 Kawaiiua;
 Kekaa making the third.
 There are four Mahinahina
 On the top of Alaeloa.
 There are four lands containing Hono:
 Honokahua,
 Honolua,
 Honokōhau,
 Honopou;
 That makes four lands containing
 Hono.
 ...
 (Fornander 1917:302-303)

The winds of Maui are recounted in the Legend of Kuapakaa of Molokai as retold by Fornander (Fornander 1918), where Kuapakaa prepares to meet Keawenuiaumi in search of his father Pakaa. The chiefs accompanying Keawenuiaumi and Keawenuiaumi himself turn away from Pakaa upon finding him and Pakaa tells Kuapakaa to call out for the winds of Maui and Moloka'i to prevent them from leaving. Included in the winds recited in the *oli* (chant) is the wind name of Māhinahina:

...
 He pohakea ko Mahinahina
 He maaa ko Lahaina
 ...

...
 The pohakea is of Mahinahina,
 The maaa is of Lahaina
 ...
 (Fornander 1918:100-101)

Along with the winds, the *kūpuna* (ancestors and elders) also had a highly nuanced understanding of the different rains of their *onehānau* (native-born place). As Akana and Gonzalez (2015:xv) point out in their phenomenal collection of Hawaiian rain names:

They knew that one place could have several different rains, and that each rain was distinguishable from another. They knew when a particular rain would fall, its color, duration, intensity, the path it would take, the sound it made on the trees, the scent it carried, and the effect it had on people.

Some rain terms have recognizable Polynesian counterparts and are probably ancient, connecting us to our 'ohana across the oceans and across time... Some rains are named after people.... Rain names may be used for their literal or figurative meaning... Many rain names refer to native vegetation.... Some describe the rain's interaction with these plants.... Some rains may act different at certain times or may indicate a certain season.... Rains represent many things to our people. First and foremost, rains are integral to our survival.

While there rains names specific to Mahinahina are yet to be found, through extensive research of Hawaiian language sources Akana and Gonzalez (2015) have identified and compiled the following names for the rains of Kahana:

The Leinahua Rain (Akana and Gonzalez 2015:151)

Ka ua Leinahua o Kā'anapali. The [Leinahua] rain of Kā'anapali that leaps and produces fruit.

Rain on the Kahana side of this island, "Ka ua Leinahua" or "the rain that leaps and produces fruit."

The Līlīlehua Rain (Akana and Gonzalez 2015:156)

From a mele ho'oilina (legacy song) for 'Emalani Kaleleonālani:

*Hopu Kahana i ka ua Līlīlehua
Palahe'a nō i ke pili o Honokōwai
'Uku li'i ka pua onaona, nonoho i ka mau'u
Nonohe Nō, me he līlīlehua ala
Ka 'poa e ka Nahua o nā pali*

Kahana seized the Līlīlehua rain
Stained by the pili grass of Honokōwai
The fragrant blossoms are tiny,
dwelling upon the grass
Attractive like the līlīlehua flower
Caught by the Nahua of the cliffs

From a kanikau (mourning lament), for S. Lono:

*Mai ka ua Līlīlehua lā o Kahana
Aloha ia wahi a kāua i hele ai
Ho'omaha aku i ka malu o ka 'ulu o Lele*

From the Līlīlehua rain of Kahana
Affection for this place where we traveled
Resting in the shade of the 'ulu (breadfruit) trees of Lele

The Līlīlehua and Pa'ūpili Rain (Akana and Gonzalez 2015:156-157)

From a mele kapa, or kapa chant, for Lili'uokalani, who was also known as Kamaka'eha:

*'A'ahu 'o Kamaka'eha i ke kapa kūkai
He kapa no ka po'e 'akuku o Lele
.....
Pua ma'o o ke kapa, he moe 'ao'ao kilohana
Kaula'i ana i ka ua Līlīlehua
I ka ua Pa'ūpili o Kahana*

Kamaka'eha wears the kapa dipped frequently in the sea
A kapa of the kapa-beating people of Lele
.....
Kapa dyed with ma'o blossoms, the kilohana layer for a bed
Hanging in the Līlīlehua rain
In the Pa'ūpili rain of Kahana

The Nahua Rain (Akana and Gonzalez 2015:180-181)

Nahua – “to pelt, sting”

From a mele (song) by C. Kana’ina:

*‘O au kahi, e ka Nahua
E ua nei i ka uka o Kahana*

*Include me too, o Nahua rain
Showering upon the upland of Kahana*

The Pōpō’aha’ula Rain (Akana and Gonzalez 2015:240)

From the mele inoa ho’oilina (inherited name chant) for the Kamehameha line of rulers:

*Anu Kahana i ka ua Pōpō’ahu’ula
Wena ‘ula i ka ua Līlīlehua
Līlīlehua ‘oē nā pali
A lehua-lehua-lehua ‘ula i ke kula
Kanu pō’aha ‘ula i kan nāhele
I ku’iku’i a ‘eha ka lā’au
Ke koko o ka ua ke kahe lā i ke pili*

*Cold is Kahana in the Pōpō’ahu’ula
Glowing red in the Līlīlehua rain
Līlīlehua, the cliffs murmur
Blossoms of lehua, lehua, lehua, red
on the plains
Planting red clusters of flowers in the
forest
The rees are hit and beaten until
pained
The blood of the rain flowing onto the
pili grass*

The ‘Ōninipua’i’a Rain (Akana and Gonzalez 2015:215)

A sea rain associated with Kahananui, Maui

From a kanikau (mourning lament) for Halohaehua:

*Ku’u mo’opuna mai ka ua
‘Ōninipua’i’a i ke kai
Ke kiola a’ela i uka o Kahananui*

*My dear grandchild from the
‘Ōninipua’i’a rain over the sea
Tossed upon the shore of Kahananui*

3.1.1 He Mo’olelo no Pōhakukā’anapali and the Connection Between Kahana and Moloka’i

Barbara Lyons retold and published a story relayed to her by John Kapaku, a longtime resident of West Maui, in the Honolulu Star-Advertiser about a meeting and contest that took place between young chiefs of Moloka’i and Maui. Part of this contest took place at Pōhakukā’anapali, near the border of Mahinahina and Kahana:

A very long time ago, an interesting meeting took place between young chiefs of Molokai and of Maui.

The Molokai chief had sailed in his canoe across the narrow channels that separated his island from Kaanapali [sic] (Pailolo Channel). On meeting a young alii of this vicinity, he remarked that he had heard that there were on Maui some high cliffs.

“But I see nothing here to with the cliffs of Molokai,” he went on. “The steepness, great height and spectacular beauty of our pali can hardly be imagined by one who has not seen them. They rise above the sea like towering battlements, or like the way to Heaven,

depending on one's mood. If you have anything like them on Maui, I should certainly like to see it.: He smiled in a confident manner secure in his belief that Maui's cliffs were inferior to those of his island.

Although at first meeting the Maui chief had been strangely attracted to this young man, he was angered and his island pride was hurt to hear the cliffs of Maui slighted. It might be true that the pali of Molokai were higher and steeper – he had no proof that they were not – but he resented the superior way in which it had been said. And surely Maui's cliffs were as beautiful as those of any island in the sea.

I won't allow this fellow to think he can come to Maui and speak in such a way, he thought.

"I dare you then to try to climb one of our cliffs," he said heatedly. "And our wager will be – a bone."

Now, as the Molokai man knew, this meant death for him if he should fail, and death for the other if he succeeded. But he was agile and strong, and well skilled in climbing cliffs on Molokai that almost defied scaling. Besides, it would be cowardly to refuse a challenge.

The Maui chief led him to a boulder that stood near the shore at Kaanapali.

"Is this your cliff?" He was unable to believe his eyes.

"Come to this side," said the other.

A depression in the great rock was revealed. "You must stand with your heels together, and moving both feet at the same time see if you can ascend this rock."

It looked hopeless, as the unlucky man saw at once. But for the honor of his island, as well as the sake of his own life, he made a desperate attempt. The rock slanted outwards above the depression in such a way, however, that it was impossible.

Again and again he tried to gain a foothold from which he could leap. At last he turned to the Maui man. "You have won," he said simply. "Our wager was a bone. My life is yours."

The Maui chief had been deeply impressed by the efforts of his rival, and couldn't help admiring him for the sportsmanship which had not let him complain when he saw the "cliff." After all, it had been a trick.

"I call our wager off," he said. "Just remember that it is not a good thing to boast. And now, we will be friends."

The "Kaanapali Pohaku" still stands at the spot where this event took place. (Lyons 1957a)

3.1.2 Ka 'Oihana Mahi 'Ai no Kahana a me Māhinahina – Traditional Agriculture within Kahana and Mahinahina

Kahana is noted as one of the five main valleys watered by streams that drain the West Maui watershed on the western slopes of Maui (Handy et al. 1991:494). Inherent in the rains previously described is the association of certain rains of Kahana with agriculture and traditional resources, such as the fruit bearing Leinahua Rain, the gentle Pa'ūpili Rain across the pili grasslands, and the Līlīehua Rain of the 'ōhi'a lehua. In response to inquiries by E.S.C. Handy about the agriculture of Kā'anapali Moku, D.T. Fleming writes:

In all three valleys which you mention – Honokowai, Honokohua, and Honolua, as well as Kahana, there was considerable taro raised in the olden times; as a matter of fact, a great

deal was raised in Honokowai, where there must have been 30 or 40 acres under cultivation at one time. (in Sterling 1998:46)

Claims for traditional resources and agricultural areas at the time of the Māhele also offer insight into the traditional agricultural and resource gathering practices of Kahana and Māhinahina (see also section 3.2.1 1840-1851 – The Great Māhele). While *kalo* (taro) was most certainly a part of the agricultural systems of Kahana and Mahinahina, *kuleana* claims and awards also show that *kula* 'uala (potato lands) was likely an important crop of the area. *Moku mau'u* (grasslands), *kula* (pasture), *mai'a* (banana), *olonā* (a native shrub *Touchardia latifolia*, the bark from which was valued as fiber for cordage and nets), *kō* (sugar cane) and *lauhala* were also noted in *kuleana* testimony for land claims. Along with agricultural pursuits, Kahana has been particularly noted as a salt gathering place for people of Lāhainā. It was said that they carried the sea water to the depressions and then let it settle and dry out, gathering the salt on dry days (Rebecca Nuuhiwa in Sterling 1998:50). Testimony for Helu 3925D to Hualii and 3925I to Pala, makes specific references to 'āina pa'akai or pakai (salt land) at Kahanaiole near the shore (Figure 3-3 and Figure 3-4). *Pahale* (house lots), or long-term residency appears to have been focused nearer to the coastline where salt gathering and marine resources also figured prominently in the livelihood and traditions of Kahana and Māhinahina (Figure 3-5).

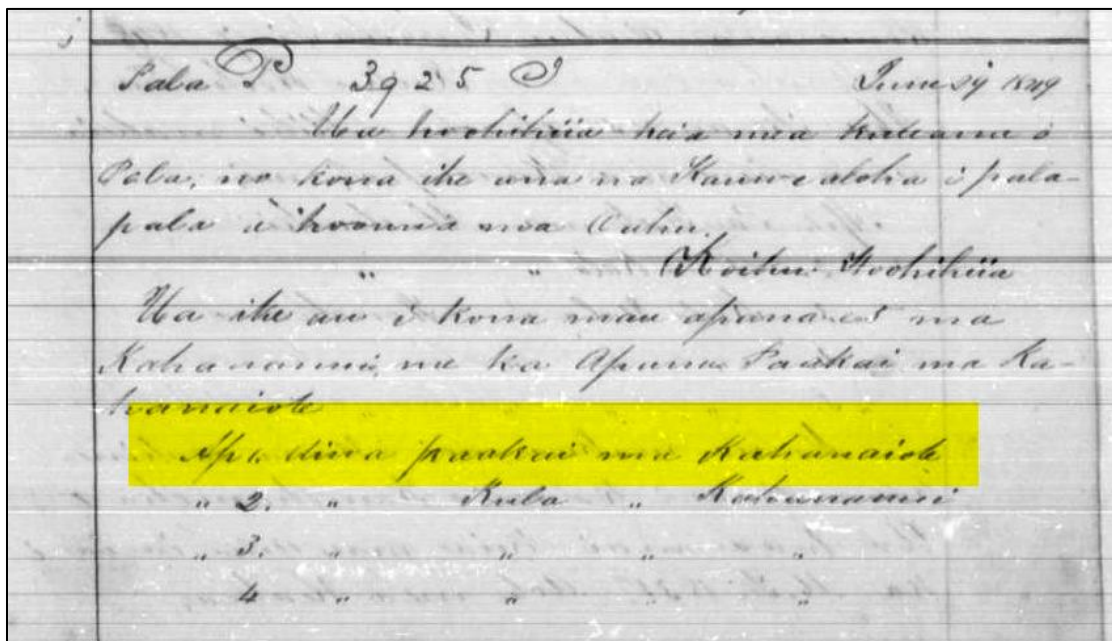
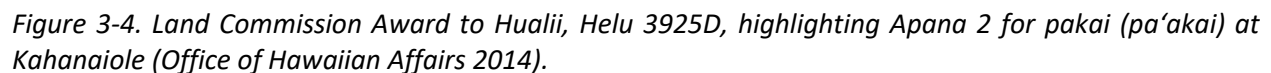


Figure 3-3. Native Testimony given by Koiku in support of Pala (Helu 3925I) highlighting knowledge of an *apana* (piece) of 'āina pa'akai (salt land) at Kahanaiole (Office of Hawaiian Affairs 2014).



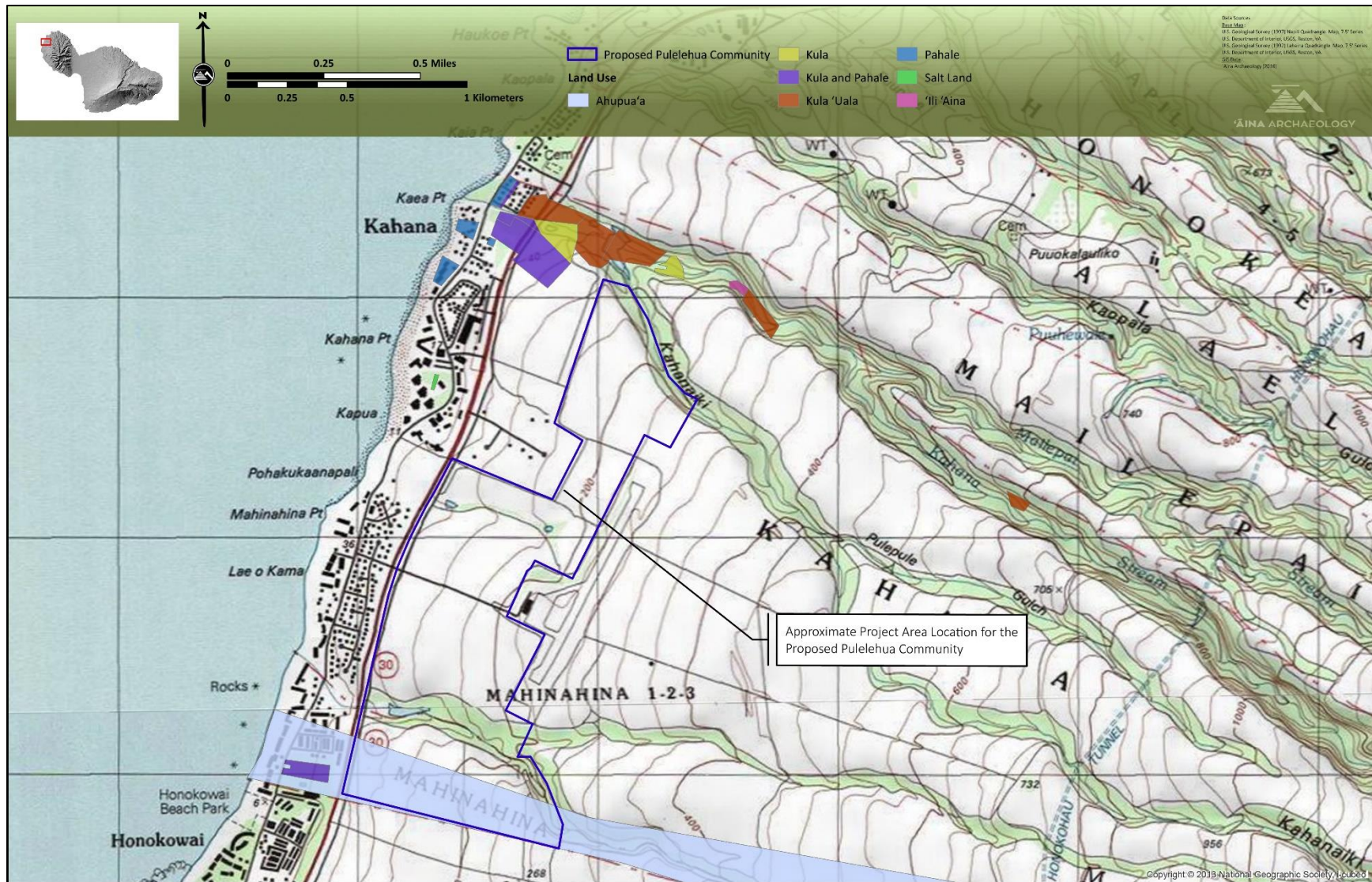


Figure 3-5. Portions of the Lahaina (1992) and Napili (1997) USGS 7.5 minute Topographic Quadrangles showing the current project area in relation to known land uses as understood through the documents of the Māhele in relation the project area.

3.1.3 Ka 'Oihana Lawai'a no Kahana a me Māhinahina – Traditional Fishing at Kahana and Mahinahina

One of the fishing grounds of Kā'anapali is described as being very shallow, from twenty to thirty fathoms in depth and extending from Hāwea Point at Kā'anapali to the eastern point of Lāna'i (Kahā'ulelio 2006:59) with Kahana and Māhinahina having excellent bays and sea floors for thriving marine fauna and plant life. Like the mo'olelo of Pōhakukā'anapali, John Kapaku also shared the following fishing story with Barbara Lyons about fishing partners who lived near each other Kahana and would fish together at night:

Long ago, two men who lived near each other at Kahana beach near Kaanapali were in the habit of fishing together at night. During the day both worked at other vocations, but in the evenings they would swim out through the cool, dark water, holding between them a long net.

When the net was placed, they swam toward shore, then returned, beating the water with their hand to chase the fish into their net. Then they would dive down and haul the net up and swim with it to the beach.

They took it to a nearby cave to empty it, and there in the deep gloom the owner of the net divided the fish by sense of touch. Meanwhile his friend took the net to stretch it out on the beach to dry. Then each would take home his pile of fish.

One morning while the wife of the man who did the dividing was stringing up her fish on a line, her neighbor's wife chanced to see her and was struck by the size of the fish. They were twice as big as any her husband brought home! She brooded over this until she saw him again.

"What does it mean?" she demanded. "Why do our neighbors have such large fish, when you bring only small ones home?"

The husband grew very thoughtful.

That night as he and his friend swam out to the net he pulled ahead and was the first to dive down. The net was loaded with fish. Quickly rising to the surface, he shouted, "Go and tell my wife that I am at the point of the fish!"

His friend, taking this to mean that a shark was attacking him, swam to shore in terror. He hurried to his friend's house to take the bad news to his wife.

"Your husband is being eaten by a shark!" he cried.

The poor wife was distraught and ran along the beach, weeping and calling her husband's name, stumbling in her haste.

The other man walked home with the sound of her wailing in his ears. He wondered if he might, after all, have been able to help his fellow fisherman. But it was too late now. Across the vast expanse of water the island of Lanai rose darkly. The ocean between lay calm and undisturbed, seen dimly by the light of the stars.

As the distraught wife passed the entrance to the cave, a ghostly sound issued from within. Trembling, she stood still and listened.

"Here I am," a voice called sepulchrally as it echoed against the walls of the caver. "I'm here, in this cave."

Her husband's ghost! She stood poised for flight, yet wanting to remain. As she hesitated, her husband came from the cave and took her arm. It was he, alive!

He explained to her what he had done, deliberately misleading the other so that he could see the night's catch for himself. He took his wife into the cave and together they divided the fish, and this time carried home all of the biggest ones.

Never again did the man who owned the net have his neighbor's help in fishing. Through his own selfishness, he had lost not only a helper but a friend. (Lyons 1957b)

The fishing practice described in the above mo'olelo may be a type of fishing called *lauahi*, where on a good dark night with no waves the *lauahi* would be cast and the net subsequently drawn in from the breakers in sheltered bays (Kahā'ulelio 2006:11). Kahā'ulelio goes on to say that in a half a night of *lauahi* fishing, three to four gunny sacks could be filled with *kūmū*, *pā'ū'ū*, *nanue*, *weke*, and other kinds of fish. In 1839, clarity of the fishing grounds and fish of the *maka'āinana* (common people) and that of the *konohiki* (land lord) and *ali'i* were written down as a part of the Kingdom laws, a pattern which may be an extension of a traditional management system. The King declared that the fishing grounds without the coral reef, the *lūhe'e* ground, the *malolo* ground, together with the ocean beyond was for the people (Maly and Maly 2003:244). But the fishing grounds from the coral reefs to the sea beach are for the landlords, and for the tenants of their several lands, but not for others. If a species of fish which the landlord claims as his own should go onto the grounds of the common people then that specific fish is *kapu* (tabu). At Kahana, the *kapu* fish was recorded as *nehu* while the *kapu* fish at Māhinahina was *he'e* (Maly and Maly 2003:306).

Finally, within the documents of the Māhele 'Āina, a reference to a fishpond was made as a boundary reference during Makamaikai's testimony in support of Kaaha at Kahananui (Helu 3925H). Makamaikai describes *Apana* 3 of Kaaha's claim as a house lot in Kahananui which is bound *mauka* (toward the upland) by the government road (alignment of Lower Honapi'ilani Road), *Lāhainā* by the fishpond of Apolo, *makai* (toward the sea) by the seashore (Figure 3-6). Inez Ashdown also notes that a fishpond was present at the *muliwai* (river mouth) of Honokōwai Gulch (in Orr 2005:46).

Kamooaleha Sr. I think I wrote out Kuahe's Claim in January 1813, and sent it to Calver. I am almost sure that I did, but I can not swear to it positively for I wrote several hundreds and in great haste.

Makamaitau &c. I know the lands of the Co. They consists
of six pieces in Amokawai, and Kabana, and Muliwai.

It is a kule land & is in Nauranaukuly.

" 2, " " *Amia* *lanceolata* " *Shade, New Guinea*,

"3. . . House lit" "Kikunaru"

4. " " " " " "

" 5 " " " "
 " 6 " " " " *Knit/rae*

Mr. Ott. rec^d the first 5 pieces from his parents in an-
cient times, and the 6th from Maria in 1828, after his Cousin was
sent in. The 6th little was never disputed up to his death in January
1849. His son Mahinalua is his heir. This Ott. was an old man, and
spent his days in telling the five first pieces.

N^o 4 is bounded Shukoo, by Pahi's land. Lohaina, by
Ka'aa's land. Kaka'i, by Kalai'ikin's land. Kaka'akuloo, by the Pahi.
N^o 5 is bounded Mooka, by the Govt Lot. Lohaina,
by Ka'aa's land. Shukoo, by the creek. Kaka'akuloo, by Kalai'ikin's
land.

D. 3. bounded Maunaloa, by the Cart Road. Lahanian, by the Fish Pond of Apelo. Makai, by the sea shore. Kakaikulu, by Apelo's land.

N^o 4. is bounded. Mookia, by Pila's land. Lahaina, by the
Creek, Makai, by Muiwa's land. Kahukoula, by the Pali

Figure 3-6. Foreign Testimony by Makamaikai in support of Kahaa (Helu 3925H) highlighting boundary description for Apana 3 and reference to the fish pond fishpof Apolo (Office of Hawaiian Affairs 2011).

Loʻi agriculture within the watered areas of Kahana and Māhinahina along with *kula ʻuala* (potato agriculture) or dry land crop staples as well as coastal resources may have supported a significant population. This picture is somewhat tempered by an attempt at population calculations by early missionaries in the initial decades following 1778, or contact with European and American trade ships. While early missionary census records do not give population estimates specific to each *ahupuaʻa*, these records do provide the earliest documentation of the size of the native population (Hill et al. 2006:14). During the first census of Maui Island, between 1831-1832, the Kaʻanapali district total comprised 8.5% of the entire island population of 35,062 (Schmitt 1973:18). By the census of 1836 however, the Kaʻanapali population would experience a population drop to 1,341, thus comprising 5.5% of the Maui island population of 24,199 (Schmitt 1973:38).

3.2 WESTERN CONTACT AND 19TH CENTURY CULTURE CHANGE

The nineteenth century brought a multitude of commercial, demographic, social, and religious changes to nearby Lāhainā, and the surrounding lands which include the study area, encouraged by the burgeoning foreign influx on Maui. During the year 1819 the first whaling ships arrived in Hawaiian waters and Lāhainā Harbor became a primary port of call for provisioning ships in the islands. Closely following the arrival of the first whaling ships, the first Protestant missionaries and their families arrived in Lāhainā in 1823. With an increasing population of foreigners entering nearby Lāhainā, there was a need to increase the traditional agricultural surplus that fell primarily under the control of the *aliʻi* class, for economic trade. Henry Whitney, editor for The Pacific Commercial Advertiser, implies that western vegetables became a common and abundant constituent of the Hawaiian gardens in the following excerpt about Maui Island:

...Fruits are generally abundant. The grape seems to luxuriate in the rich soil, and the sunny, clear weather of Lāhainā is, par excellence, the fruit of this place or Islands. Figs, bananas and melons are produced in abundance, and pumpkins enough for all New England to make pies for a general Thanksgiving (Whitney 1858)

After the consolidation of the rulership of the Hawaiian Islands by Kamehameha I early in the nineteenth century, nearby Lāhainā became the “capital” of the kingdom until the 1840’s when the government moved to Honolulu. The sugar cane Ellis observed in the environs of Lāhainā in the 1820’s, along with the introduction and mass cultivation of pineapple, would become the bases for commercial ventures that would reshape the landscape along the broad ridges of the present study area and the alluvial plains below.

3.2.1 1840-1851 – The Great Māhele

In 1848, King Kamehameha III and 245 *aliʻi* (royalty) and *konohiki* (landlord) came together to divide the lands of the kingdom into three classifications. The Crown and the *aliʻi* received their land titles and awards for both whole *ahupuaʻa* and individual parcels within an *ahupuaʻa* which were then subsequently formally granted in 1850 (Alexander 1890:114). The lands given to the *aliʻi* and *konohiki* were referred to as Konohiki Lands and lands retained by the King as Crown Lands. The distinction of Crown land is important and defined as:

... private lands of His Majesty Kamehameha III., to have and to hold for himself, his heirs and successors forever; and said lands shall be regulated and disposed of according to his royal will and pleasure subject only to the rights of tenants. (Kingdom of Hawaii 1848)

At the death of Kamehameha IV and with lack of a clear heir some confusion as to the inheritance of Crown lands and whether or not it followed the family line or the throne. It was decided by the Supreme Court that under the confirmatory Act of June 7th, 1848, "the inheritance is limited to the successors to the throne," "the wearers of the crown which the conqueror had won," and that at the same time "each successive possessor may regulate and dispose of the same according to his will and pleasure as private property, in the manner as was done by Kamehameha III" (Alexander 1890:121).

The third classification of lands partitioned out was termed Government lands that were defined and set aside for management in the following manner:

... those lands to be set apart as the lands of the Hawaiian Government, subject always to the rights of tenants. And we do hereby appoint the Minister of the Interior and his successors in office, to direct, superintend, and dispose of said lands, as provided in the Act ... (p)rovided, however, that the Minister ... shall have the power, upon the approval of the King in Privy Council, to dispose of the government lands to Hawaiian subject, upon such other terms and conditions as to him and the King in Privy Council, may seem best for the promotion of agriculture, and the best interests for the Hawaiian Kingdom ... (Kingdom of Hawaii 1848)

In 1850, most of the chiefs ceded a third of their lands to Kamehameha III in order to obtain an allodia title for the remainder. The majority of these lands were then placed into the Government land base (Alexander 1890:114). The designation of lands to be set aside as Government lands, paved the way for land sales to foreigners and in 1850 the legislature granted resident aliens the right to acquire fee simple land rights (Moffat and Fitzpatrick 1995:41-51). The *ahupua'a* of Kahana 1 and 2 along with Māhinahina 1-3 were received by L. Konia and subsequently ceded back to the government (Figure 3-7), while Lunalilo received and subsequently ceded Kahana 3 back to the government (Figure 3-8).

Ho Kamehameha III.				Ho L. Konia.			
Na Pina	Ahupua'a	Kalana	Mokupuni	Na Pina	Ahupua'a	Kalana	Mokupuni
Waiakare	"	Volau Piko	Maui	Luanahoa	"	Halea	Hawaii
Kawakapu	"	"	Maui	Kalanao	Kapoi Kona	Eoa	Maui
2 Kahana 1, 2	"	Kaanapali	Maui	3 Napili 1, 2, 3	"	Kaanapali	Maui
3 Mahinahina	"	"	"	2 Honokahana 1, 2	"	"	"
Kanawana	"	Honokahana	"	2 Maaloa	"	"	"
Mokuhouma	"	Hilo	Hawaii	Mailepae	"	"	"
Honouliuli	"	Kaua	"	Hei	"	Kona	Hawaii
Kahe	"	Honokahana	"				
He ae aku nei au i keia mahalo, ua maikai. A e ka Mo'i na uina i ka kaa i maluna, a he ou kula ana maloko. L. Konia				He ae aku nei au i keia mahalo, ua maikai. A e ka Mo'i na uina i ka kaa i maluna i ua ae ia ka e hiki ka laue aku imua o ka Pe. Hana Kuleana. Kamehameha			
Hale Hei August 28, 1848				Hale Hei August 28, 1848			

Figure 3-7. Māhele record highlighting Kahana 1 and 2 and Māhinahina 1-3 being transferred from L. Konia to Kamehameha III (Kamehameha III 1848).

Figure 3-8. Māhele record highlighting Kahana 3 being transferred from William Lunalilo to Kamehameha III (Kamehameha III 1848).

In designations of lands as either Crown or Government, and through all awards of whole *ahupua'a*, *ili*, and later land sales to foreigners classified as Land Grants, the rights of the native tenants were expressly reserved, "*Koe na Kuleana o Kanaka*" (Reserving the Rights of Native Tenants) (Alexander 1890:114). In an Act ratified on August 6th, 1850, the gathering rights of the common people for personal use, which included the gathering of both terrestrial and marine resources, in addition to the right to water and the right of way on the lands of the Konohiki, were guaranteed and embodied in Section 10477 of the Civil Code (Alexander 1890:114-115). By this same Act, resolutions passed by the Privy Council granted fee simple titles, free of all commutation, with the exception of awards granted within the towns of Honolulu, Lāhainā, and Hilo, to all native tenants for their cultivated lands and house lots (hereafter referred to as *kuleana* land) (Alexander 1890:115). Claims of the native tenants, or *kuleana* land claims, were presented to and heard by the Land Commission whose duty was to:

...ascertain the nature and extent to each claimant's rights in land, and to issue an Award for the same which is prima facie evidence of title "and shall furnish as good and sufficient a ground upon which to maintain an action for trespass, ejectment or other real action against any other person or persons whatsoever, as if the claimant, his heirs or assigns had received a Royal Patent for the same." (Alexander 1890:110)

Testimony for *kuleana* lands often included claims for multiple *'ili*, or *apana*, located both *mauka* and *makai*. These claims were recorded under a single *helu*, or case number, and brought before the Land Commission for consideration. *Kuleana* land awards, or *kuleana* claims that were approved by the Land Commission, were granted to tenants of the land, native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners, who could prove occupancy on the parcels prior to 1845 (hereafter referred to as Land Commission Awards [LCA]). Despite the effort to allocate lands to the *maka'āinana*, much of these lands would ultimately be obtained by foreigners in payment for services rendered to the Kingdom, like Charles Cockett LCA 75, or sold as land grants for commercial agriculture enterprises.

3.2.1.1 Land Commission Awards within Kahana (Kahananui, Kahanaiole) Ahupua'a and Māhinahina

A total of 16 claims were presented to the Land Commission, of which 12 were fully awarded, 4 were partially awarded. In one case, the lands surveyed for LCA 6539 to Hoohonoho within the larger LCA 75 to Cockett at Māhinahina was greatly reduced as indicated in the following survey note from E. Bailey:

Many lots were exchanged to bring them (Hoonoho) together. Only one of his lots lies in C. Cocketts land and that I have reduced according to a forced agreement made through the agency of Kekulahao to 1/4 acres that throws out his (Hoonoho's) well and a lot on which he has had a house [Filed in Survey Notes for LCA 3925N to Nika(Office of Hawaiian Affairs 2014)]

The following table summarizes information and testimony for *kuleana* claims recorded in the Native Register, volumes of Native and Foreign Testimonies, and final LCA documents and survey notes for Kahana (Kahananui) Ahupua'a and Māhinahina Ahupua'a (Table 3-2) with locations of awarded claims graphically presented Figure 3-9.

Table 3-1. Summary of Land Commission Awards for Kahana (Kahananui and Kahanaiole) Ahupua'a and Māhinahina Ahupua'a (Office of Hawaiian Affairs 2011, 2014)

LCA	Royal Patent	Claimant	Ahupua'a	'Ili	Land Claim	Award Acreage
75	415	Cockett	Māhinahina		<p>Foreign Testimony (FT) Auwae Sworn: I know respecting the land of Cockett in Kanapali [sic], named Māhinahina. Previous to the death of Nahienaena, Cockett worked as a Blacksmith for Hoapili, and subsequently Hoapili gave him that land. Hoapili told me to go and beg that land of Puniai who assented to giving him that land. Hoapili then sent for Cockett and told him: I have promised a land for you near your father-in-law if you die before me then the land will return to its previous owner (Puniai), but if I die first then I do not know what the previous owners will do to which Cockett assented...</p> <p>FT Caswell Sworn: I know the lands Māhinahina and Niula claimed by Cockett on Maui. We worked together as Blacksmiths in 1837 and in Autumn of that year Hoapili Kane gave these lands to Cockett who took possession of them...and held them quietly until 1840; when Namaau came up and took away Niula; and Paki appropriated Mahinahina to himself.</p> <p>FR: On my arrival in Maui I commenced working for Hoopili [sic] Kane and continued doing so until his death. About two years previous to that occurrence, Hoapili gave me to lands as remuneration for my services -- one situated at Kaanapali known by the name of Māhinahina, the other in Honokohua by the name of Niula...</p> <p>Māhele Award: Claim for a tract of land in the district of Ka'anapali Island of Maui known as "Māhinahina 4" The claimant received this land in or before 1839 from Hoapili</p>	Ahupua'a award: 149 acres

LCA	Royal Patent	Claimant	Ahupua'a	'Ili	Land Claim	Award Acreage
					Kane, then Governor of Maui, and has possessed it in piece ever since, with the exception of the counter claim of Paki. Upon the earnest request of the Board Paki has consented to withdraw his claim. And we do therefore award the same to Charles Cocket in a freehold estate less than allodial, which he may commute for a fee simple title as prescribed by law. <i>The rights of tenants are to be respected in accordance with the law.</i>	
3925D	4177	Hualii	Kahanaiole		Māhele Award: Apana 2 -- Aina Pakai (pa'akai-salt land) ma Kahanaiole FT Kahanaumaikai Sworn: Apana 4 Aina Pa'akai ma Kahanaiole Māhele Aina documentation notes the ahupua'a as Honokowai, TMK map shows in Kahana	Apana 2: 0.19 acres
3925G	4587	Apolo	Kahananui Kahanaiole	Pakii, Kolekole	FT Kahimalama Sworn: Ap. 1 -- pahale (house lot) in 'ili of Pakii; Ap. 2-5 -- kula land in Pakii; Ap. 6-7 -- kula land at Kolekole; Ap. 8 -- kula land in Kahanaiole Māhele Award: Ap. 1 -- Pahale ma Kahananui; Ap. 2 -- Pahale a kula (pasture land) ma Kahananui; Ap. 3 -- Kula ma Kahananui; Ap. 4. Kula 'uala (potato land) ma Kahananui; Ap. 5. Kula 'uala ma Kahananui; Ap. Kula 'uala ma Kahananui; Ap. 7 -- Kula 'uala ma Kahananui Claimant let go of Apana 1, 2, 3, 4 Fleming (1905:11) notes that an old road near Kahananui Stream had been staked out by A.C. Alexander Aug 27, 1910	Apana 1 (pahale): 0.76 acres Apana 2 (pahale a kula): 11.3 acres Apana 3 (kula): 4.42 acres Apana 4 (kula 'uala): 0.42 acres Apana 5 (kula 'uala): 1.07 acres Apana 6 (kula 'uala): 1.09 acres Apana 7 (kula 'uala): 0.84 acres

LCA	Royal Patent	Claimant	Ahupua'a	'Ili	Land Claim	Award Acreage
3925H	7945	Kaaha	Kahananui		<p>FT Makamaikai Sworn: Ap. 3 house lot in Kahananui (bound mauka by the government road, Lahaina by the fish pond of Apolo, makai by the sea shore); Ap. 4-5 -- kula land in Kahananui</p> <p>Māhele Award: Ap. 3 -- Pahale ma Kahananui; Ap. 4 Kula 'uala ma Kahananui; Ap. 5 -- Kula 'uala ma Kahananui</p> <p>Received Royal Patent on December 1890 by Liliuokalani Regent for the King</p>	<p>Apana 3 (pahale): 1 0.12 acres;</p> <p>Apana 4 (kula 'uala): 0.54 acres;</p> <p>Apana 5 (kula 'uala): 0.55 acres</p>
3925I	6231	Pala	Kahanaiole, Kahananui		<p>Koiku Sworn: Ap. 1 -- 'āina pa'akai ma Kahanaiole; Ap. 2-6 -- 'āina kula ma Kahananui</p> <p>Māhele Award: Ap. 1 -- Kula 'uala ma Kahanaiole; Ap. 2-6 -- Kula 'uala ma Kahananui</p>	<p>Apana 1 (kula uala): 0.97 acres</p> <p>Apana 2 (kula uala): 1.01 acres</p> <p>Apana 3 (kula uala): 2.28</p> <p>Apana 4 (kula uala): 1.73</p> <p>Apana 5 (kula uala): 4.15 acres</p> <p>Apana 6 (kula uala): 7.15</p>
3925M	4919	Lili	Kahananui		<p>FT Koiku Sworn: Ap. 1 -- pahale; Ap. 2-6 -- kula 'uala</p> <p>He received these lands from his parents who had them from the days of Kamehameha I. He is a son of the land, and has lived on these lands all his life.</p> <p>Māhele Award: Ap. 1 --Pahale ma Kahananui; Ap. 2 -- Kula ma Kahananui; Ap. 3 Kula 'uala ma Kahananui; Ap. 4 Kula 'uala ma Kahananui; Ap. 5 Kula 'uala ma Kahananui; Ap. 6 Kula 'uala ma Kahananui</p>	<p>Apana 1 (pahale): 1.65 acres</p> <p>Apana 2 (kula): 4.31 acres</p> <p>Apana 3 (kula 'uala): 1.22 acres</p> <p>Apana 4: (kula 'uala): 0.57acres</p> <p>Apana 5 (kula 'uala): 16.8 acres</p>

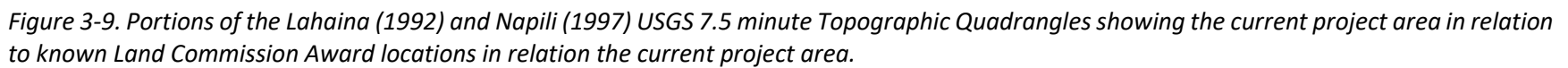
LCA	Royal Patent	Claimant	Ahupua'a	'Ili	Land Claim	Award Acreage
					Claimant let go of Apana 5,6 (Hooleia keia apana [LCA Award] Hemo no Konohiki [RP Survey Notes])	Apana 6 (kula 'uala): 4.55acres
3925N		Nika	Kahana, Kahananui		FT Pahanui Sworn: Ap. 1-5 -- kula uala ma Kahana Māhele Award: Ap. 1 -- Kula 'uala ma Kahananui; Ap. 3 -- Kula 'uala ma Kahana; Ap. 4 -- Kula 'uala a Kahana; Ap. 5 Pahale ma Kahana Apana 6 is located in Mailepai	Apana 1 (kula 'uala): 0.91 acres Apana 3 (kula 'uala): 1.01 Apana 4 (kula 'uala): 4 68/100 Apana 5 (pahale): 1 1/4 acres Apana 6 (kula 'uala): 1.47
3764		Alaala	Kahananui	Ohia, Kamaele	Claimant Testimony: This is my claim 'Ili of Kaholua in Mailepai, Ili of Kamaele, Ili of Ohia FT Kamakele Sworn: I know the lands of the claimant they are in Mailepai ... No. 1 is a kula 'uala in Holua; No. 2 is a kula 'uala in Kamaele; No. 3 is a kula 'uala in Ohia; No. 4 is a kula 'uala in Kahananui Māhele Award: Ap. 5 -- Kula 'uala in ma Kahananui	Apana 5 (kula 'uala): 0.7 acres
3989		Hoohono	Mahinahina	--	Identical to Claim 6539	
4239	4203	Kaukau	Mahinahina4		FT Kahanaumaikai Sworn: No. 1 is a house lot and kula in the ahupua'a of Māhinahina 1 Māhele Award: Apana 1 -- Pahale and kula	Apana 1 (pahale and kula): 2.95 acres

LCA	Royal Patent	Claimant	Ahupua'a	'Ili	Land Claim	Award Acreage
					<p>Survey Notes: Claim mixed up with konohiki lots and when the survey was made several small lots were thrown into one by exchange with the konohiki at the time. Kahina has tried hard to make a fuss about Kaukaus claims, as well as two or three others but often through inquiry I became fully satisfied that he had no business whatever in their lots. The konohiki himself under whom he .. to have acquired a right denied that that he has any right, or ever had had. Ap. 1 was the only piece of (illegible0 in C Cocketts dominions, and was amicably settled on the spot. Mr. Cockett being himself present and fully agreeing to the survey as I made it. I therefore give the survey of this claim as free of all further dispute.</p> <p>Metes and bound description shows that a portion of the lot shares a boundary with the Kiowai but does not include it.</p> <p>E. Bailey</p>	
4248	4443	Kekalohe	Mahinahina		<p>FT Kaukau Sworn: I know the lands of the claimant. They are in the ahupua'a of Honokōwai and Māhinahina. The first three pieces being in Māhinahina -- No. 1 is a house lot (bound makai by the seashore) and kula; No. 2 is a kula land; No. 3 is a kula lands (bound by Cocketts land)</p> <p>Survey Notes: The only lot in dispute is Ap. 1 which I have surveyed as a house lot. Kekalohe's case was not overlooked as you seem to suppose. Kekaloe is dead, L Kaiama married his widow. Kaiama never entered a claim in his own name in that land, he stated the Kekuulahao - - which meant nothing at all. Kekalohe entered the claim on which I took testimony as you will find enclosed. The land in dispute with Kaiama was this identical piece of</p>	Apana 1 (pahale) 1/4 acres

LCA	Royal Patent	Claimant	Ahupua'a	'Ili	Land Claim	Award Acreage
					Kekalohe's therefore you have the testimony under No. 4248 as above. I gave Cockett three weeks to bring counter testimony if he could, he has brought it and the time is out. E. Bailey	
4268	4698	Koiku	Kahana, Kahananui	Uhali, Pulepule, Kauaouhau, Piilua, Kaholo, Ohia, Pahoa, Hawaii,	<p>Claimant Testimony: The names of my moku mau'u (grasslands or kula): Kauaouhau 1, Piilua 2, Uhali 3, Hawaii 4, Kaholo 5, Pahoa 6, Opeelua 7, 'Ohia.</p> <p>FT Upai Sworn: I know the lands of the claimant it is in Kahana The are as follows -- No.1 three mo'o of kula in Uhali; No. 2 one mo'o of kula in Uhali; No. 3 12 mo'o of kula in Uhali; No. 4 one mo'o of kula in Uhali; No. 5 one mo'o of kula in Uhali; No. 5 2 mo'o of kula in Pulepule.</p> <p>Māhele Award: Apana 1 Pahale and Kula in Kahananui; Apana 2 Kula 'uala in Kahananui; Apana 3 Kula 'uala in Kahananui; Apana 4 Kula 'uala in Kahananui; Apana 5 Kula 'uala in Kahananui; Apana 6 Kula 'uala in Kahananui</p>	<p>Apana 1 (pahale and kula): 1.37 acres</p> <p>Apana 2 (kula 'uala): 1.37</p> <p>Apana 3 (kula 'uala): 3.19</p> <p>Apana 4 (kula 'uala): 7.08</p> <p>Apana 5 (kula 'uala): 0.64</p> <p>Apana 6 (kula 'uala): 4.47 acres</p>
6399		Kaukau			<p>Claimant Testimony: At Mahinahina I have a kula 'uala and kula kanu kupapau (cemetery), my house is away from the cemetery 90 fathoms long</p> <p>Identical to Claim 4239</p>	See 4239

LCA	Royal Patent	Claimant	Ahupua'a	'Ili	Land Claim	Award Acreage
6539	4130	Honoho, Hoonoho	Mahinahina		<p>Claimant Testimony: Here is my claim kula mahi 'uala (potato farm land), he Kahawai mai'a (banana near the stream), he olonā (fiber plant <i>Touchardia latifolia</i>), he kō (sugar cane), he kulana hale (house claim)</p> <p>FT Kaukau Sowrn: I know the land of Hoonoho -- No. is a house lot and kula within the ahupua'a of Māhinahina 1; No. 2 is kula land in the ahupua'a of Māhinahina 2; No. 3 is potato ground in the 'ili of Kopili; No. 4 is 4 lo'i in the 'ili of Palena; No. 5 is 2 lo'i in the 'ili of Kapili; No. 6 is 4 lo'i in the 'ili of Kapili.</p> <p>Survey Notes: Many lots were exchanged to bring them together. Only one of his lots lies in C. Cockett's land and that I have reduced according to a <u>forced</u> agreement made through the agency of Kekulahao to 1/4 acres that throws out his well and a lot on which he has had a house. E. Bailey</p> <p>Apana 2-4 are in Honokōwai, piece in Māhinahina 2 not awarded</p>	<p>Apana 1 (pahale): 1/4 acres</p>
9065		Kuoioi	Kahananui	Uhali, Likipu	<p>Claimant Testimony: Here is my claim 'ili 'āina (land piece) in Kahana Ahupua'a, it is a lele from the sea to the mountain side this is kula</p> <p>FT Kahinalua Sworn: The claimant has 11 pieces in the ahupua'a of Kanananui -- No. 1 is a house lot in the 'ili of Uhali; No 2 is kula land in the 'ili of Uhali; No. 3 is kula land in the 'ili of Uhali; No. 4 is kula land in the 'ili of Uhali; No. 5 is kula land in the 'ili of Ohia; No. 6 is kula land in the 'ili of Hinapikau; No. 7 is kula land in the 'ili of Uhali; No. 8 is kula land in the 'ili of Kapuna; No 9 is kula land in the 'ili of Hinapikau; No. 10 is kula land in the ahupua'a</p>	<p>Apana 1 (kula 'uala): 5.12 acres</p> <p>Apana 2 (pahale): 1.04 acres</p> <p>Apana 3 Likipu ('ili 'āina): 0.71 acres</p> <p>Apana 4 (kula): 0.76 acres</p> <p>Apana 5 (kula 'uala): 0.32 acres</p> <p>Apana 6 (kula uala): 0.8 acres</p>

LCA	Royal Patent	Claimant	Ahupua'a	'Ili	Land Claim	Award Acreage
					of Mailepai and the 'ili of (illegible); No. 11 is a kula land in 'Ohia.	Apana 7 Likipu ('ili 'āina): 0.71 acres Apana 8 (kula 'uala): 2.37 acres
					Māhele Award: Apana 1 kula uala in Kahananui; Apana 2 pahale in Kahananui; Apana 3 Likipu (ili aina); Apana 4 kula in Kahananui; Apana 5 kula 'uala in Kahananui; Apana 6 kula 'uala in Kahananui; Apana 7 Likipu (ili aina); Apana 8 kula 'uala in Kahananui; Apana 9 kula 'uala in Kahananui; Apana 10 kula 'uala in Kahananui; Apana 11 kula 'uala in Kahananui.	Apana 9 (kula 'uala): 0.55 acres Apana 10 (kula 'uala): 6.08 acres Apana 11 (kula 'uala): 0.43 acres
10813		Palina	Kahananui	Kaape, Kaluilio, Maeleloaiki	<p>Claimant Testimony: This is my claim, wahi mahi 'uala (potato farm land) in Kahananui, five mo'o (pieces or gardens), I have pali (cliff) mahi 'uala (potato patch), I have two mo'o by the sea and my kahuahale (house) and upland he wahi mahi kalo (taro farm land).</p> <p>FT Pala Sworn: I know the lands of Palina ... No 1. is a kula 'uala in the ili of Kaape; No. 2 is a house lot in Kaluailie; No. 3 is kula 'uala in Kaape; No. 4 is kula (iuka loa [far inland]); No. 5 is kula land in Maeleloaiki.</p> <p>Māhele Award: Apana 1 kula in Kahananui; Apana 2 Pahale and kula in Kahananui; Apana 3 Kula 'uala in Kahananui; Apana 4 Kula 'uala in Kahananui; Apana 5 Kula 'uala in Kahananui</p>	<p>Apana 1 (kula): 1.16 acres</p> <p>Apana 2 (pahale and kula): 1.26 acres</p> <p>Apana 3 (kula 'uala): 4 1/4 acres</p> <p>Apana 4 (kula 'uala): 0.37 acres</p> <p>Apana 5 (kula 'uala): 0.31 acres</p>



3.2.1.2 Land Grant 1166 to D. Baldwin, J.F. Pogue, and S.E. Bishop

The land documents of the Māhele shows one government sale for the lands within the project (Land Grant 1166) to D. Baldwin, J.F. Pogue, and S.E. Bishop on August 30, 1853 (see Figure 3-9). A total of 2675 acres covering the lands of Kahana and Māhinahina, exclusive of LCA 75, were included in the grant with D. Baldwin receiving one undivided half, and J.F. Pogue and S.E. Bishop to partition out the remaining half evenly (Office of Hawaiian Affairs 2014). As in all large land transactions where a sale or an award covered entire *ahupuaʻa*, the sale was made while “Reserving the rights of native tenants” (Figure 3-10). The lands of the Grant 1166 would eventually become the basis for western styled agricultural enterprises expanding across West Maui by the son of D. Baldwin, Henry Perrine, as a part of the land holdings of Honolua Ranch (Hill et al. 2006:16).

3.2.2 1850-1900 – Foreign Influence and Changing Economies

As noted in the introduction to this section, the history of western enterprise and the rise of the pineapple and sugar industry is extensively detailed in the initial cultural impact assessment, *Cultural Impact Study/Assessment Pulelehua Community Ahupuaʻa of Māhinahina, District of Kāʻanapali Maui Island, Hawaiʻi*, prepared for Maui Land and Pineapple (Orr 2005:sections D-4 through D-8). For detailed information, the reader is referred to the above document. What follows is a summary of events and late 19th century to 20th century historic era land use to provide context for the outreach and consultation section (4.0 Consultation Methods and Results) and the memories and *manaʻo* (input) shared by those who participated in this supplemental study.

3.2.2.1 Pioneer Mill Company

Based in Lāhainā, the Pioneer Mill Company (PiMCo) consolidated the several small sugar operations under a single company in 1865, beginning with 126 acres in sugar and eventually expanding south to Ukumehame and leasing lands to the north to include a portion of the lands of the current project area (Orr 2005:53). By 1882, PiMCo had obtained permission to build a railroad across plantation property the haul harvested cane between Kāʻanapali and Lāhainā (Orr 2005:54). This rail line expanded under Alexander Isenberg in 1901 and would be in use until the end of World War II with the introduction of hauler trucks. In the 60 years of operation, the train hauled tons of raw sugar from Kāʻanapali to the mill at Lāhainā for processing (Orr 2005:54, 57)

Beginning at the sea side on the border of Kahanawille and Maileprai, and running along the border of Maileprai, S. $75\frac{1}{4}^{\circ}$ E. 54.29 chs. - S. $84\frac{1}{4}^{\circ}$ E. 20.40 chs. - S. $42\frac{1}{4}^{\circ}$ E. 12.72 chs. - N. $72\frac{1}{2}^{\circ}$ E. 8.66 chs. - S. $65\frac{1}{2}^{\circ}$ E. 14.32 chs. - S. $24\frac{1}{4}^{\circ}$ E. 13.75 chs. - S. 46° E. 6.00 chs. - S. $65\frac{1}{2}^{\circ}$ E. 21.00 chs. - S. $67\frac{1}{2}^{\circ}$ E. 24.98 chs. - S. 46° E. 11.40 chs. - S. 69° E. 34.81 chs. - S. $67\frac{1}{2}^{\circ}$ E. 50.15 chs. - S. $87\frac{1}{4}^{\circ}$ E. 18.64 chs. - S. $86\frac{1}{2}^{\circ}$ E. 9.98 chs. - S. $82\frac{1}{2}^{\circ}$ E. 16.00 chs. and S. $42\frac{1}{2}^{\circ}$ E. 61. chs. thence S. 30° W. 36.00 chs. along the brow of the mountains, thence N. $76\frac{1}{2}^{\circ}$ W. 63.00 chs. along border of Honokahai, thence N. $36\frac{1}{2}^{\circ}$ E. 40 chs. across ravine called Popolohuaamea, thence along the Mahinahina of C. Cockett, N. $82\frac{3}{4}^{\circ}$ W. 23.84 chs. - N. $68\frac{1}{2}^{\circ}$ W. 25.44 chs. - N. $79\frac{1}{2}^{\circ}$ W. 36.23 chs. - N. $87\frac{1}{4}^{\circ}$ W. 41.15 chs. - N. $86\frac{3}{4}^{\circ}$ W. 61.00 chs. and N. 81° W. 62.00 chs. to the sea, thence along the sea side, N. $82\frac{1}{2}^{\circ}$ E. 8.12 chs. - N. 8° E. 31.77 chs. - N. $24\frac{1}{4}^{\circ}$ E. 20.00 chs. - N. $3\frac{1}{2}^{\circ}$ W. 15.75 chs. - N. $16\frac{1}{4}^{\circ}$ E. 19.30 chs. - N. $19\frac{1}{2}^{\circ}$ E. 15.40 chs. and N. $36\frac{1}{2}^{\circ}$ E. 12.77 chs. to the place of commencement

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3.2.2.2 *Honolua Ranch*

In the latter years of the 19th century, H.P. Baldwin began leasing and purchasing tracts of land in West Maui with the intention of setting up a cattle ranching operation. Headquartered at Honolua Bay, and including the lands of the project area, the ranching operation involved the sale of livestock (polled Angus cattle and some horses), wood, coffee, watermelons, onions, corn, alfalfa, potatoes and pineapple as well as running a store (Hill et al. 2006:17; Wilcox 1996:126). As the water needs of the sugar cane fields under PiMCo expanded, H.P. Baldwin entered into an agreement with the sugar plantation in 1901 to construct Honokōhau Ditch. By 1904, the Honokōhau Ditch system delivered approximately 20 million gallons of water per day to the Pioneer Mill fields (Hill et al. 2006:19). H.P. Baldwin then appointed D.T. Fleming of Scotland to manager of Honolua Ranch and named his son, H.A. Baldwin as president and his successor, the former of whom would experiment with planting 20 acres of pineapple at Honolua Ranch in 1912 and a replacement of the Honokōhau Ditch system with Honolua Ditch (Orr 2005:56).

3.3 KAHANA AND MĀHINAHINA AHUPUA‘A AND THE CURRENT STUDY AREA IN THE 20TH CENTURY

The experimental pineapple acreage planted by Fleming would result in pineapple becoming the second largest cash crop, next to sugar, in the Maui Island economy and the additional water availability through Honolua Ditch would allow for the sustainability of the sugar industry in West Maui.

3.3.1 1900-1950

Under the guidance of Fleming, who had considerable experience with pineapple cultivation at Ha‘ikū, the cattle ranch was converted to a pineapple plantation and by 1919 production figures of the plantation showed that the number of pineapple cases packed had double from the previous year’s 41,702 to 83,223 (Hill et al. 2006:17; Wilcox 1996:65). In 1920, the ranch changed its name to Baldwin Packers, which was later incorporated as Baldwin Packers, Ltd., a new cannery was constructed at Māla in Lāhainā, the old Honokahua Cannery was shuttered and the Honokōhau/Honolua water system was put into use for both pineapple and sugar cultivation (Hill et al. 2006:17; Orr 2005:56). PiMCo continued to lease lands and purchase water from Baldwin Packers, Lt. and by 1957, aerial photographs show that the *ahupua‘a* of Kahana and Māhinahina 1-4 were cultivated in sugar cane from the lands behind the wetland and village area of Kahana to the 700 ft. contour while the lands from the 700 ft. contour to the forest reserve was cultivated in pineapple (Figure 3-11).



Figure 3-11. A portion of the 1957 Pioneer Mill Company aerial map showing sugar and pineapple operations from Honokōwai and Keka'a to Kahana inclusive of the lands of the study and project area.

3.3.2 1950-Present – Mid-20th Century to the Modern Era

Following the end of the lease agreement between Maui Land & Pineapple and PiMCo, the lands of the study area reverted back to pineapple production. Pineapple operations continued under Baldwin Packers, Ltd until 1962 when the company merged with the Maui Pineapple Company to become Maui Land & Pineapple Company, which would later become the parent company of Kapalua Land Co., Ltd. (Hill et al. 2006:20). In the mid to latter half of the 20th century rapid changes to both the economic and residential structure occurred across West Maui:

In 1965 565 acres of West Maui land was reclassified from agriculture to urban use. In 1969 the Cameron family, descendants of H. P. Baldwin, in an agreement with the parent company Alexander & Baldwin, acquired Maui Pineapple Company, Ltd., and changed the company name to Maui Land & Pineapple Company, Inc. (ML&P), now the parent company of Maui Pineapple Company, Ltd., and ML&P went public. The 1970s saw a lot more company activity as 317 more acres of West Maui lands were reclassified from agriculture to urban use, and Honolua Plantation Land Company, Inc., a wholly owned subsidiary of ML&P, was incorporated for the purpose of land management and development. This was followed by the construction of Napili Hau, a 174-unit employee housing, as families were relocated from plantation homes in Honolua and plantation homes demolished to make way for resort development. The resort development, which included an 18-hole golf course, the 141-unit Bay Villas, the Bay Club restaurant, the Bay hotel and the Golf Villas. The resort project name was changed to Kapalua because "Honolua" was often confused with "Honolulu." (Orr 2005:57)

In and around the same time, hotels and condotels began to take over the Kahana/Māhinahina shoreline with the sugar cane lands above Lower Honoapiʻilani Road being converted to retail and residential areas.

3.4 PREVIOUS ARCHAEOLOGICAL STUDIES WITHIN AND DIRECTLY ADJACENT TO KAHANA AND MĀHINAHINA AHUPUAʻA

The first systematic archaeological survey of Maui Island occurred between 1928 and 1929 by Winslow Walker of the Bishop Museum. The primary focus of the Walker Survey, was on the identification of monumental architecture and ceremonial structures in the form of heiau (temples) and koʻa (shrines). For Kahana and Māhinahina, Walker was told of two heiau, one in each area. Kahana Heiau (Site 32) was said to have been located along the Māhinahina shore at Kahana Point, while Hihio Heiau (Site 34) was located along the County Road near Kalaeokaea (Kaea) (MHS Archive, AR7 2-15, Winslow Walker Papers Archaeological Survey of West Maui Lahaina and Wailuku Districts). Walker notes that the former had been totally destroyed and the latter destroyed in order to build the road. Following the shift of lands from agricultural use to urban, the region saw a surge in archaeological studies associated with infrastructure projects and residential subdivisions and development. All of the known archaeological studies conducted in the vicinity of the project and study area are briefly summarized and presented in Table 3-2 and graphically presented in Figure 3-12. Where archaeological finds were present in a given project area, a detailed and summary of the study and findings has been included herein and graphically shown in Figure 3-13.

Table 3-2. Summary of Previous Archaeological Studies in the Vicinity of the Current Project Area (see also Figure 3-12)

Reference	Location	Type of Study and Summary of Findings
Kaschko 1974	Honolua Watershed	<p>Archaeological Investigation: Pedestrian survey of the Wailuku flood prevention project area and 8 gulch basins within the Honolua Watershed. The following summaries are within or adjacent to the project area and are as follows</p> <p>Ka'opala -- archaeological features consisting of retaining wall sections along the north slope of the gulch.</p> <p>Kahana -- Probable historic house site, stone alignments possibly representing structural foundations, rock walls, stone-lined stream channel, retaining walls, and a historic midden area. Postulated to all be related to post-contact use and occupation or modified in the historic era.</p> <p>Pōhakukā'anapali -- No archaeological features identified.</p> <p>Māhinahina -- Identified Sites 4 (SIHP -00218) and 5 (SIHP -00219) consisting of two exposed cultural deposits observed in the north bank of the primary stream channel. Cultural material content included fire cracked rock, charcoal, coral, marine snails, cowrie, <i>pipipi</i>, sea urchin spines, and small mussel shells. a small fire pit and <i>imu</i>, or earth oven, was also visible in the layer.</p> <p>Honokōwai -- Site 6 (SIHP 50-50-03-1208) includes a complex of several low stone alignments and platforms located on the north slope of the gulch and previously recorded in the 1973 Statewide survey.</p>
Griffin et al. 1976	Honokōwai to 'Alaeloa	<p>Archaeological Survey and Salvage: Salvage excavations on a previously identified cultural deposit documented as SIHP -217 and -218 at Māhinahina Gulch by Kaschko (1974). During the course of excavation, it was determined that the two historic properties were extension of the same deposit and consolidated under a single number, SIHP -225. Fieldwork resulted in the identification of hearths scattered throughout with recovery of marine fauna to include shell and fish remains. Recovered charcoal returned radiocarbon dates ranging from A.D. 1000 to A.D. 1778.</p>

Reference	Location	Type of Study and Summary of Findings
Hommon and Ahlo 1982	Kapalua Airport Māhinahina	Archaeological Reconnaissance: Surface field inspection of an approximate 58-acre area of then active sugar cane lands. Results of the walk through noted that the entire project area was covered in sugar cane with no non-cultivated areas and anticipated that the nearly 50 years of mechanized commercial agriculture cultivation would have resulted in intensive ground disturbance. No significant historic properties were observed on the surface, no subsurface testing was undertaken.
Komori 1983	Kahana Gulch	Archaeological Investigation: Pedestrian survey, recordation, and mapping of seven historic properties consisting of an unmodified overhang-shelter and terrace segment (50-50-01-1741), a series of terraces and a platform (SIHP -1742), a wall segment, parallel stone alignments, and rectangular enclosure (SIHP -1743), wall segments and terraces along the stream cut (SIHP -1744), a partially enclosed alluvial flat with terraces and other natural features (SIHP -1745), two stone walls (SIHP -1746), and a small overhang shelter and stone terrace (SIHP -1741).
Walker and Rosendahl 1985	Kahana Gulch	Archaeological Testing: Subsurface testing of multi-component site complexes identified within Kahana Gulch (SIHP 50-50-01-1742 through -1744) initially recorded by Komori (1983) and interpreted as historic era sites related to ranching. While limited surface collections supported historic occupation of these sites, results of both mechanical and manual subsurface testing resulted in a re-interpretation of the historic properties as temporary or extended habitation sites associated with pre-contact to proto-historic era agricultural activities.
Tourtellote 1988	‘Alaeloa	Archaeological Inspection: Surface inspection noted that the property had undergone considerable surface and subsurface disturbance and modification evidence by the presence of numerous plow scars on surface rocks and exposed profiles containing several buried layers of black plastic associated with pineapple cultivation.

Reference	Location	Type of Study and Summary of Findings
Kennedy 1989	Napili	Archaeological Reconnaissance: Preliminary walk-through of an approximate one-acre area within a portion of a fallow pineapple field. The results of the walk-through noted that the condition of the parcel showed extensive disturbance due to years of commercial agriculture. No significant historic properties were observed on the surface, no subsurface testing was undertaken.
Fredericksen et al. 1990	Kahana, Mailepai, 'Alaeloa	Archaeological Inventory Survey: Inventory survey of an approximate 10-acre area. While an old railroad easement was located within the study area, pedestrian survey of the easement and ground examination did not identify construction or material associated with railroad operation. Disturbance associated with commercial agriculture activities was also noted on the surface. Examination of geotechnical tests noted the presence of modern trash debris and fill. No surface indications of either intact or previously disturbed historically significant cultural material remains or historic properties identified within the project area. No subsurface testing undertaken as a part of the study.
D.L. Fredericksen et al. 1990	Kahana, Mailepai, Alaeloa	Archaeological Inventory Survey: Inventory survey of an approximate 10-acre area. While an old railroad easement (SIHP 50-50-01-4103) was one located within the study area, pedestrian survey of the easement and ground examination did not identify construction or material associated with railroad operation.
Kennedy 1990	Kahana	Archaeological Inventory Survey: Pedestrian survey resulting in the identification of a two tiered platform (50-50-03-2878) interpreted as a ceremonial structure or burial, as well as a petroglyph pecked into a boulder (SIHP -2879).
Kennedy and Denham 1992	Kahana	Archaeological Inventory Survey: Follow up survey of an approximate 50-acre parcel, the majority of which was covered in covered in sugar cane, initially covered and reported by Kennedy in 1990. Two historic properties, originally identified by Kennedy, were re-identified and further documented. SIHP 50-50-01-2878 was confirmed as a two-tiered platform identified as a burial and -2879 is a pecked petroglyph on a single basalt boulder.

Reference	Location	Type of Study and Summary of Findings
W.M. Fredericksen 1995	Kahana	GPR Survey: Remote sensing survey of an area directly adjacent to Mailepai cemetery utilizing the Ground Penetrating Locator (GPL) III. Did not identify Fe (iron) signatures outside of the cemetery as defined on the surface indicating a low probability of the presence of historic graves outside of the cemetery boundary.
McGerty and Spear 1996	Māhinahina 4	Archeological Inventory Survey: Pedestrian survey and subsurface testing of an approximate 3.3 acre project area. Seven historic properties were identified and included a historic era agricultural alignment (SIHP 50-50-03-4215); a low wall dry-stacked wall (SIHP -4216) related to historic era agriculture; a well-constructed terrace, alignment, low wall, rock mound, sub-surface ash deposit, and irregularly shaped well (SIHP -4217) related to historic era agriculture; a historic cemetery (SIHP -4218); a multi-component platform with a soil interior and two terraces (SIHP -4219) interpreted as burial markers; a rock-faced terrace and three alignments (SIHP -4220), and a ki'owai (SIHP -4221).
E.M. Fredericksen and Fredericksen 1999	Alaeloa to Kahana	Archaeological Inventory Survey: Inventory survey of an approximate 1.4 mile long corridor in which three historic properties which include precontact habitation area (SIHP 50-50-03-4797), as well as a historic retaining wall and shoulder barrier area (SIHP -4798) and a second retaining wall (SIHP -4799) both of which are associated with the Lower Honoapi'ilani Road.
Monahan 2003	Māhinahina 4 Honokōwai	Archaeological Assessment: Pedestrian survey and backhoe testing comprised of eight trenches completed. Subsurface excavation showed the presence of modern refuse and fill, along with sand that had likely been introduced. No historic properties identified.
Tulchin and Hammatt 2003	Māhinahina 4	Archaeological Assessment: Pedestrian survey and subsurface testing consisting of four 40 cm x 40 cm shovel tests within a 0.2-acre parcel. No historic properties identified.
E.M. Fredericksen 2004b	Napili 4-5	Archaeological Site Inspection: A systematic field inspection of approximately one-acre and noted that the area had been impacted by previous activities potentially associated with park construction and the installation of the electrical power lines. No significant historic properties were identified on the surface.

Reference	Location	Type of Study and Summary of Findings
Pantaleo and Titchenal 2004	Māhinahina 1-4 Kahana	Archaeological Inventory Survey: Pedestrian survey and subsurface testing of approximately 360-acres. Systematic pedestrian survey and mechanical excavation of 20 linear trenches resulted in the identification of two historic properties. SIHP 50-50-03-5553 is an abandoned flume located within Mahinahina 1-3 Gulch and SIHP -5641 which consists of a historic bottle scatter. Additionally, an isolated hammerstone or <i>'ulu maika</i> was identified on a pineapple road in the southeastern portion of their project area. No intact subsurface cultural material deposits were identified during the course of mechanical testing.
Conte 2005a	Mailepai	Archaeological Assessment: Archaeological inventory survey of a 0.77-acre area. Pedestrian survey did not result in the identification of any new or previously recorded historic properties within the project area. Sub-surface investigation completed with five backhoe trenches across the undeveloped sections of the project area. No historic properties identified.
Conte 2005b	Kahana	Archaeological Assessment: Archaeological inventory survey of a 0.482-acre area. Pedestrian survey did not result in the identification of any new or previously recorded historic properties within the project area. Sub-surface investigation completed with four backhoe trenches across the undeveloped sections of the project area. No historic properties identified.
Hill et al. 2006	'Alaeloa Honokeana	Archaeological Assessment: Inventory survey investigation of an approximate 12.26-acre area. Pedestrian survey resulted in no surface indications of either intact or previously disturbed historically significant cultural material remains or historic properties identified within the project area. Evidence of extensive ground disturbance associated with commercial pineapple agriculture. No subsurface testing undertaken as a part of the study.
Pantaleo and Rotunno-Hazuka 2006	Coastal Māhinahina 1-3	Archaeological Assessment: Pedestrian survey and backhoe testing consisting of five trenches completed across a 0.879-acre area. Testing revealed the presence of previously disturbed and cultural sterile fill and silty clay. No historic properties identified.
Pestana and Dega 2007	Kahana	Archaeological Inventory Survey: Pedestrian survey and subsurface testing of approximately five acres. A section of the Old Pioneer Mill Railroad (SIHP 50-50-03-4997) was identified, as well as the historic cemetery known as Mailepai Cemetery. No historically significant cultural material deposits or features identified in a subsurface context.

Reference	Location	Type of Study and Summary of Findings
Dega 2005	Honokōwai, Mahinahina 4	Archaeological Assessment: Pedestrian survey and subsurface testing consisting of 8 backhoe trenches within a 0.11-acre area (23 m x 23 m). No historic properties identified.
Dockall et al. 2005	‘Alaeloa	Archaeological Assessment: Archaeological inventory survey of a 1.5-acre area. Pedestrian survey did not result in the identification of any new or previously recorded historic properties within the project area. Evidence of extensive ground disturbance associated with commercial pineapple agriculture. No subsurface testing carried out during this study.
Dagher and Dega 2014	Honokahua, Honokeana, and Honokōwai	Archaeological Inventory Survey: Pedestrian and subsurface survey of six areas within Honokahua (Area 1); Honokeana (Area 2 and 3); and Honokowai (Areas 4-6). Nearest to the study area of Kahana and Māhinahina were the studies conducted in Honokōwai. Area 5 contained a historic terrace related to commercial agriculture (SIHP -7175) while survey of Areas 4 and 6 resulted in no historic properties identified.
Perzinski and Dega 2014	Kahana	Archaeological Assessment: Inventory survey investigation of an approximate 1-acre area. Pedestrian survey resulted in no surface indications of either intact or previously disturbed historically significant cultural material remains or historic properties identified within the project area. Evidence of extensive ground disturbance associated with commercial pineapple agriculture. No subsurface testing undertaken as a part of the study.
Dagher and Dega 2015	Māhinahina	Archaeological Field Inspection: Land use history of the project area consisted of commercial sugar cane and pineapple cultivation. Discussions with employees of the water treatment plant indicated no culturally significant cultural materials had been observed during previous excavation in the area. Inspection resulted in no historic properties identified or subsurface deposits anticipated.

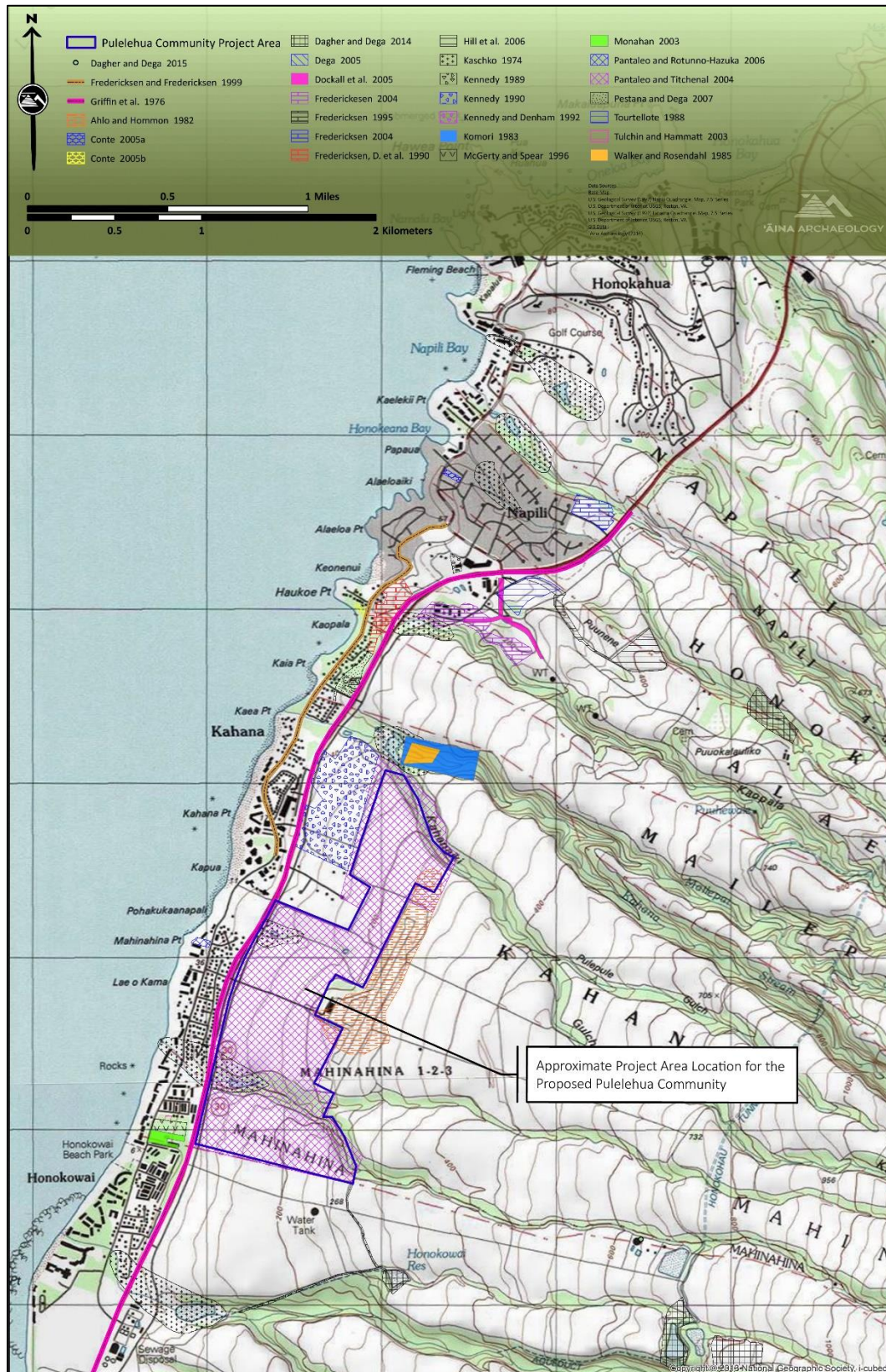


Figure 3-12. Portions of the Lahaina (1992) and Napili (1997) USGS 7.5 minute Topographic Quadrangles showing the current project area (outlined in blue), in relation previous archaeological studies in the region.

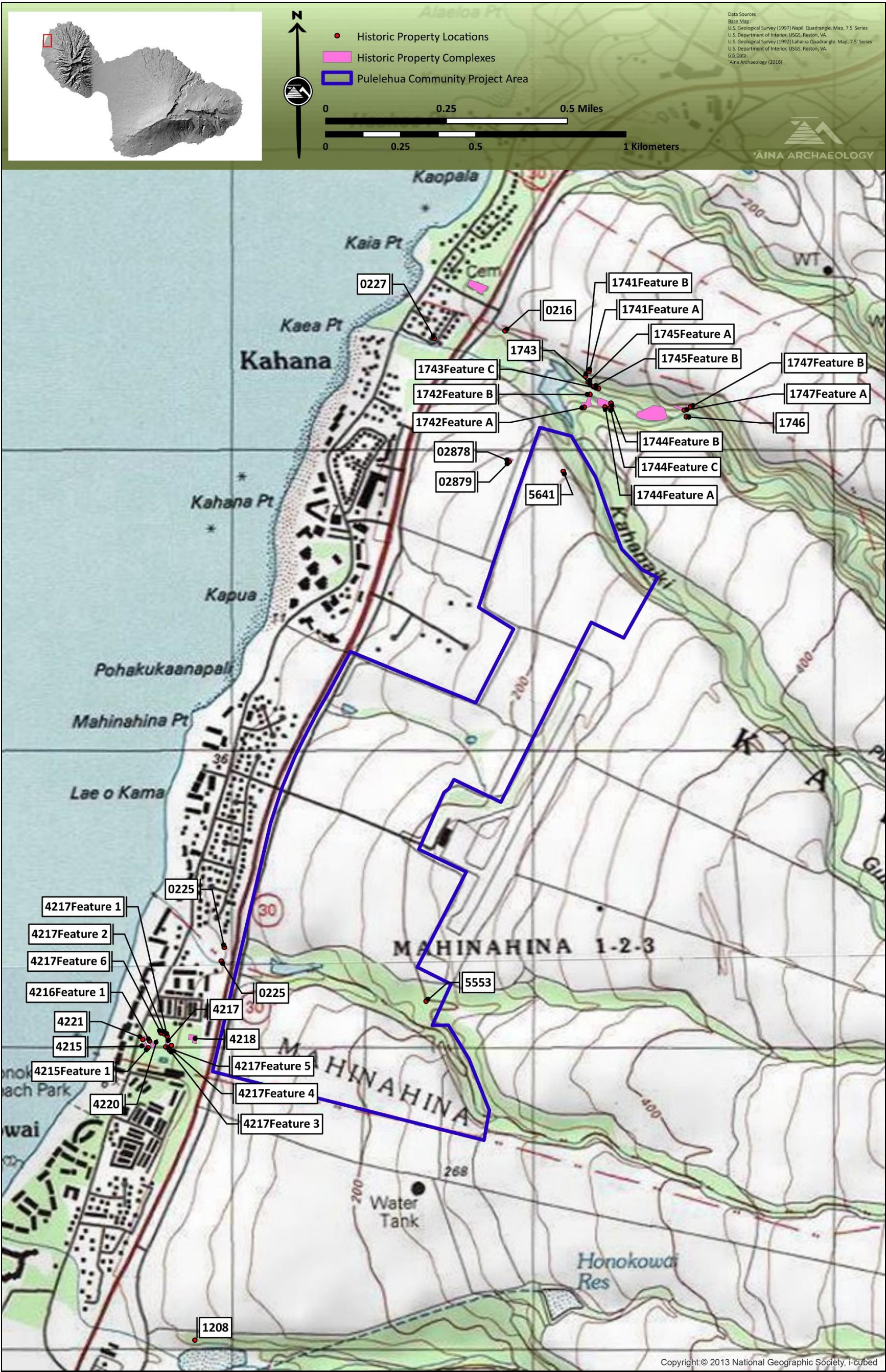


Figure 3-13. Portions of the Lahaina (1992) and Napili (1997) USGS 7.5 minute Topographic Quadrangles showing previously identified historic properties within and adjacent to the current project area (outlined in blue).

In the fall of 1974, the Department of Anthropology from the Bernice P. Bishop Museum conducted a pedestrian survey of the Wailuku Flood Prevention project area and 8 gulch basins within the Honolulu Watershed (Kaschko 1974). Survey areas within the Honolulu Watershed included the basins within the stream gulches of Napili 2-3, Napili 4-5, Honokeana, Kahana, Pōhakukā'anapali, Mahinahina, and Honokōwai. Of the areas surveyed, no historic properties or archaeological features were observed Napili 2-3 and Pōhakukā'anapali (Kaschko 1974:2,3). Within Kaopala and Kahana Gulches, archaeological features consisting of retaining wall sections in the former and a probable historic house site with associated structural features in the latter, were also noted but not formally documented (Kaschko 1974:3). Within Mahinahina Gulch, two cultural deposits, Sites 4 (SIHP -00217) and 5 (SIHP -00218), were observed in the north bank of the primary stream channel. SIHP -00217 consisted of a 20 cm thick exposure of ashy soil approximately 50 cm below the ground surface and extending for a minimum of 6 m along the gully bank. Cultural material observed with this deposit consisted of charcoal and marine shell midden (Kaschko 1974:4). SIHP -00218 consisted of a more extensive deposit observed within the north bank of the north branch of Mahinahina Gulch. This deposit was characterized by an ashy, gray soil layer, measuring 30-50 cm thick and extending for a minimum of 15 m along the bank and underlying a 60-100 cm thick layer of alluvium. Cultural material observed within this deposit included fire-cracked rocks, charcoal fragments, coral, marine snails, cowrie, pipipi, sea-urchin spines, and small mussel shells. A small firepit and an *imu*, or earth oven, was visible in the cultural layer which Kaschko argued was indicative of a primary deposit (Kaschko 1974:4-5). Finally, the Bishop Museum team was able to re-identify SIHP 50-50-03-1208, a complex of low stone alignments and platforms on the north slope of Honokōwai Gulch that was initially recorded by the State Historic Sites Inventory in 1973 (Kaschko 1974:5).

In 1976, Archaeological Research Center Hawai'i returned to the mouth of Māhinahina Gulch to conduct salvage excavations on SIHP 50-50-01-0217 and -0218 (Griffin et al. 1976). During the course of excavation, it was determined that the two historic properties were extension of the same deposit and consolidated under a single number, SIHP -0225 (Griffin et al. 1976:2). SIHP 50-50-01-0228 is an extensive cultural deposit extending across and approximate 120 m by 80 m area at the base of Māhinahina Gulch approximately 1,000 ft. from the shoreline (Griffin et al. 1976:31-32). Covered by an overburden of red alluvium, ranging in thickness from less than one-half meter to over one meter, the thin 20 cm thick deposit overlies a sterile deposit of a mixture of brown sandy soil and stream deposits (Griffin et al. 1976:32). Based on stratigraphic profiles and the result of excavation, Griffin and others proposed that following sequence of habitation and land use (Griffin et al. 1976:63, 146, 156, 183):

1. The original gulch present in a natural condition (Layer III)
2. Pre-contact occupation begins at the locality, continuing intermittently over time based on the cultural material density and vertical provenience of documented fire hearth features.
3. The area is abandoned for an indeterminate period of time.

4. Plantation or modification of the surround area results in erosion over parts of the cultural deposit and deposition of red alluvium comprising the overburden over a series of events.
5. Desilting basins *mauka* of the SIHP -0225 results in erosion of deep gullies in the site area.

Finally, recovered charcoal returned radiocarbon dates ranging from A.D. 1000 to A.D. 1778 (Griffin et al. 1976:183), potentially indicating rather significant time depth of use and re-use of the area for marine resource gathering and short-term, intermittent habitation.

The Anthropology Department of the Bernice P. Bishop Museum completed archaeological site mapping and recordation of seven multi-feature historic properties within Kahana Gulch (Komori 1983) following the initial reconnaissance completed by Kaschko (1974) for the Honolulu Watershed. SIHP 50-50-01-1741 (50-Ma-D10-3) consists of a shallow, unmodified overhang shelter (Feature A) and a 10-m long segment of terracing (Feature B). Interpreted as features associated with pre-contact activities, sparse amounts of marine shell and some waterworn stones were noted within the shelter while no cultural material was observed on the surface of the terrace feature (Komori 1983:6). SIHP - 1742 (50-Ma-D10-4) was situated near a modern well and consisted of three terraces (Feature A) constructed amongst naturally occurring boulders and bedrock outcrops and a disturbed rectangular platform (Feature B). While no cultural material was observed at Feature B, an extensive deposit of indigenous and early historic material was noted at Feature A, which had been affected by erosional processes that scattered the deposit across an approximate 50 m² area (Komori 1983:6). SIHP -1743 (50-Ma-D10-5) consisted of a small wall segment (Feature A), two parallel stone alignments interpreted as a possible stone wall foundation (Feature B), and a roughly constructed rectangular enclosure abutting a stone outcrop (Feature C). According to Komori (1983:7), local informants attributed the rectangular enclosure to "hippies" who had once resided within the gulch. In addition to the constructed features, two modern dog burials, "OLY-O" and "MAKA DOG" were located 3 m east of Feature A. SIHP -1744 (50-Ma-D10-6) consists of wall segments and terraces constructed of stacked stone. Barbed wire fences constructed along the features, along with the lack of surface cultural material and interior features resulted contributed to the interpretation of this complex as a historic era site associated with cattle ranching (Komori 1983:7). SIHP -1745 (50-Ma-D10-7) consisted of a partially enclosed alluvial flat, terraces, and other natural features. No interior features or cultural deposits were observed in association with this site. The length for the wall feature (55 m) along with the paucity of cultural material informed the initial interpretation of the site as historic in age and associated with cattle ranching (Komori 1983:7). SIHP -1746 (50-Ma-D10-8) consists of two stacked stone walls constructed amongst other natural features to form an enclosure. Like SIHP -1746 and -1745, construction style and paucity of cultural materials resulted in an initial interpretation of the site as historic era cattle ranching (Komori 1983:8). Finally, SIHP -1747 (50-Ma-D10-9), consisted of a small unmodified overhang shelter (Feature A) and stone terrace (Feature B). Only one portable artifact was observed on the surface of Feature A included a hammer stone or unfinished *'ulumai*, no additional cultural materials were identified within this complex of features (Komori 1983:8).

PHRI (Walker and Rosendahl 1985) completed archaeological testing at three multi-component archaeological complexes, 50-50-01-1742 through -1744, located within Kahana Gulch and previously documented by the Department of Anthropology at the Bernice P. Bishop Museum as 50-Ma-D10-4 through -6 respectively (Komori 1983). Both surface collection and subsurface testing were completed to refine the interpretation of these historic properties. Surface collection at Feature A of SIHP -1742, a series of five terraces, consisted entirely of post-contact portable artifacts which include ceramic sherds, bottle glass fragments, leather shoe fragments, metal fragments, and a whetstone fragment. Food refuse remains collected from the surface consisted almost entirely of marine shell with some *kukui* (*Aleurites moluccana*) and charcoal fragments (Walker and Rosendahl 1985:8). Three manually excavated test units (TU-3 through 5) completed, two of which yielded sparse amounts of cultural material but no substantial cultural deposit (Walker and Rosendahl 1985:10-11). Cultural materials collected from a subsurface context consisted primarily of post-contact materials with one volcanic glass flake from TU-5 that may indicate traditional Hawaiian use of the terrace features thus resulting in a tentative age interpretation of late pre-contact to early post-contact (Walker and Rosendahl 1985:11). Feature B of SIHP -1742, a heavily disturbed platform, was tested via backhoe where a 4.5 m x 0.9 m trench (BT-1) was excavated through the feature. The profile shows that the boulders which formed the platform was situated no more than 10 cm into the alluvial unit below the platform (Walker and Rosendahl 1985:11). Several large metal fragments were noted at a depth of 1.2 m below the surface of the platform but not recovered. Considering the presence of the metal fragments, as well as the depth at which they were identified, Walker and Rosendahl concluded that Feature B was constructed during the latter portions of the historic era (Walker and Rosendahl 1985:11). While SIHP -1743 Feature A, a wall segment, was not tested, the parallel boulder alignments (Feature B), and overhang shelter (Feature C), were subject to subsurface testing. Testing of Feature B was accomplished via a manually excavated 1 m x 2.5 m test unit (TU-2) and a 7 m x 0.9 m backhoe trench (BT-2) (Walker and Rosendahl 1985:12-13). Initially thought to be the top of an *‘auwai*, or irrigation ditch, the results of TU-2 showed that the rock alignments consisted of a single course of boulders resting on the upper layer of a thick colluvial unit (Unit A). Portable remains recovered from TU-2 consisted of waterworn basalt cobbles, glass and ceramic fragments, and a possible hammer stone, along with *kukui* and charcoal flecks (Walker and Rosendahl 1985:13). Excavation of BT-2 to a maximum depth of 2.5 meters showed the presence of Unit A, as well as an alluvial unit (Unit B) along with a thin scatter of fragment charcoal at their interface (Walker and Rosendahl 1985:13-14). Based on the vertical provenience of the boulder alignment, along with the overall nature of portable remains, Feature B was interpreted as a remnant historic wall (Walker and Rosendahl 1985:14). A single 1 m x 0.5 m test unit was excavated within the level interior of the overhang shelter (Feature C). Two sediment layers were documented, along with a lens of ash and small charcoal fragments. Portable remains were confined to Layer I and consisted of charcoal flecking, *kukui*, rodent bone, and two shards of historic glass. A sample of the lens matrix was collected though not submitted for analysis. A backhoe trench (BT-3), measuring 5 m x 0.9 m was placed approximately 3 m south of the Feature C in order to test for the presence of a possible irrigation ditch (Walker and Rosendahl 1985:15).

Though the excavation of the trench resulted in a negative finding for the irrigation ditch, and lacked the presence of a substantial cultural material deposit, stratigraphic units consistent with the units observed within BT-2, where a colluvial unit overlies an alluvial unit, were identified, along with a primary context burn feature within the upper layers of the colluvial unit at roughly 35 cmbs. The terrace that constitutes SIHP -1744 Feature A was tested via a manually excavated unit measuring 1 m x 0.5 m situated on the level soil and cobble surface (Walker and Rosendahl 1985:16). Three stratigraphic layers were documented with portable remains only present with Layer II 1 (5-35 cmbs). Recovered materials included marine shell (*Cypraea* sp.), *kukui*, and charcoal flecking. Testing of the alluvial bench terrace and supporting retaining wall was accomplished through the excavation of a backhoe trench (BT-4) roughly measuring 15 m x 0.9 m, from the stream channel, through the retaining wall, and into the interior of the alluvial bench extending to a depth of 2 m (Walker and Rosendahl 1985:16). Five layers were documented (Layer I-V) where Layer I appeared to be the recent colluvial unit (Unit A) observed in other excavations overlying several alluvial deposition events (Unit B). While no cultural material remains, or deposits were noted, charcoal flecking noted in Layer III was interpreted as a derivative of agricultural use of the sediment matrix (Walker and Rosendahl 1985:17). Overall, testing results and analysis of the surface collection led to a reinterpretation of the site complexes as likely associated with late pre-contact or proto-historic temporary to extended habitation sites associated with agricultural activities, followed by historic era re-use for small scale ranching at SIHP -1744 with semi-permanent habitation at -1744A (Walker and Rosendahl 1985:21-22). Walker and Rosendahl further suggest that the charcoal flecking in BT-2 and -3 at the interface of Units A and B is a result of historic land clearing and cultivation practices on the ridges for commercial agriculture (Walker and Rosendahl 1985:22).

An archaeological inventory survey of a coastal parcel, which is a part of Land Commission Award 5524, Part 3 and 4, to L. Konia and a portion of allotment 4 and 6, a partition of Mailepai Hui was conducted by Xamanek Researches (D. L. Fredericksen et al. 1990). Survey of their project area consisted of a systematic pedestrian survey across the entire parcel, during which extensive ground disturbance associated with commercial agriculture activities was also observed on the surface. While formal archaeological subsurface testing was not performed, an examination of geotechnical test pits noted the presence of modern trash debris and fill. No surface indications of either intact or previously disturbed historically significant cultural material remains or historic properties identified within the project area. While the location of the old railroad easement (SIHP 50-50-01-4103) was identified within the study area, pedestrian survey of the easement showed that portions of the features still retained a black-top surface that was applied for use as a cane-haul road (D. L. Fredericksen et al. 1990:7). The study concluded that the immediate project area had been completely overrun with modern trash and ground examination did not identify construction or material associated with railroad operation (D. L. Fredericksen et al. 1990:7-8).

An archaeological inventory survey of approximately 50 acres of lands that consisted of active sugar cane lands at the time of the survey was conducted by Archaeological Consultants of Hawaii and reported in a letter report to the project engineer (Kennedy 1990). While the majority of their project area was covered in sugar cane, an approximate .00495-acre area was noted as clear and uncultivated within which two historic properties and an isolated coral abrader was identified. Historic properties consisting of a two-tiered platform (50-50-03-2878) interpreted as a ceremonial structure or burial, as well as a petroglyph pecked into a boulder (SIHP -2879).

Archaeological Consultants of Hawaii revisited the Kennedy 1990 project area and completed an intensive inventory survey of the approximate 50-acre parcel, the majority of which was covered in covered in sugarcane (Kennedy and Denham 1992). SIHP 50-50-01-2878, a two-tiered platform, and SIHP -2879, a pecked petroglyph on a single basalt boulder, had been previously identified within a cleared, uncultivated area within the sugar cane fields consisting of an approximate 0.00495 acre area (Kennedy 1990). As a part of the 1992 field work, deconstruction and testing of the platform to verify the possibility of the feature representing a burial was undertaken, the completion of which resulted in confirmation of the presence of human skeletal remains within an interior cavity (Kennedy and Denham 1992:16-21). Upon verification, excavation of the test unit was discontinued and the platform reconstructed (Kennedy and Denham 1992:16). Based on the level of bone decomposition and characteristics of platform construction, Kennedy and Denham postulate that interment likely occurred prior to European contact and clearly known by sugar laborers prior to land clearing for cultivation as the area had been marked and protected by the installation of a circular alignment of large boulders (Kennedy and Denham 1992:21). SIHP -2879 is an anthropomorphic petroglyph pecked into a single large basalt boulder (Kennedy and Denham 1992:14). A small basalt abrader was also noted on the surface next to the boulder. Kennedy and Denham indicate that there is a high likelihood that the presence of the boulder within the cleared area is secondary and postulate that the boulder was placed in this location when the field was cleared (Kennedy and Denham 1992:21).

Scientific Consultant Services completed an archeological inventory survey which consisted of a pedestrian survey and subsurface testing of an approximate 3.3-acre project area. A total of seven historic properties, related to habitation, burial practices, and agricultural activities ranging in age from pre-contact to historic era, were identified and documented (McGerty and Spear 1996). SIHP 50-50-03-4215 consisted included a historic era agricultural alignment constructed of limestone and waterworn basalt cobbles and boulders with evidence of previous looting activity in the area of the feature (McGerty and Spear 1996:17-18). Subsurface testing near SIHP -4215 showed that the area had been previously disturbed by shallow pot-hunter pits, as well as previous mechanical earth moving activity. Cultural material consisting of mid-twentieth century refuse characterized by whole and partial bottles and jars, fragmented ceramic bowls and shards, and rusted metal fragments was recovered from the upper stratigraphic layer (McGerty and Spear 1996:19, 22). A low wall dry-stacked wall (SIHP -4216) related to historic era agriculture and constructed of limestone and waterworn basalt cobbles and boulders was documented in a

level, partially dozed area (McGerty and Spear 1996:23). Three pits related to looting or bottle hunting were also noted near SIHP -4216. Subsurface testing documented the presence of scattered historic era cultural materials comprised of basalt cobbles, glass fragments, *‘opihi* shells, and herbivore teeth along with modern trash debris consisting of fragmented garden hose, beer and soda cans, old bedding and chicken coop (McGerty and Spear 1996:24). SIHP -4217 is a multi-component complex related to historic era agricultural activities consisting of six features across a 54 m x 18 m area (McGerty and Spear 1996:26). SIHP -4217 Feature 1 is a well-constructed terrace consisting of a soil interior retained by up to four courses of faced waterworn coral, limestone, and basalt cobbles and boulders. In an effort to understand construction methods and function, two mechanically assisted stratigraphic trenches, ST-3 and -4 along with one manually excavated test unit (TU-3), were excavated. ST-3 bisected the northern end of the terrace while ST-4 and TU-3 were placed on the southern end. Cultural materials with ST-3 were limited to the upper layer (0-32 cmbs) while construction extended approximately 20 cm into Layer II. Cultural materials consisted of a mixture of historic debris (e.g. glass fragments and metal) along with marine shell fragments (McGerty and Spear 1996:32). The excavation of ST-4 exposed a buried segment of Feature 1 and an ash deposit (-4217 Feature 5) (McGerty and Spear 1996:32). TU-3 was excavated off this trench to further understand the nature of the ash deposit, which was determined to be contained within Layer II and contain historic era cultural materials (glass and metal fragments) as well as marine shell, charcoal, and non-human bone. SIHP -4217 Feature consisted of an alignment of seven cobbles and boulders with other boulders and cobbles in close proximity indicating that the feature had potentially been previously disturbed (McGerty and Spear 1996:28). The remaining features consisted of a low wall with a rock mound (Feature 3), an additional rock mound located to the north of Feature 3 (Feature 4), and an irregularly shaped well (McGerty and Spear 1996:28-29). SIHP -4218 is a historic cemetery that encompasses a 27 m x 16 m area enclosed by a hollow tile wall located in the northeast corner of their study area (McGerty and Spear 1996:35, 37). SIHP -4219 is a multi-component feature consisting of a platform with a soil interior (Feature 1) and two terraces (Feature 2) interpreted. Construction style and size, as well as subsurface testing confirmed the site as historic burials. Within SIHP -4219 Feature 1, testing resulted in the identification of a minimum of two coffin burials while testing within Feature 2 resulted in the identification of a minimum of one coffin burial (McGerty and Spear 1996:40-41). Subsurface testing, consisting of an additional nine trenches, located adjacent to the features did not result in the identification of additional burial features (McGerty and Spear 1996:40). A rock-faced terrace with associated alignments three alignments were documented as SIHP -4220 (McGerty and Spear 1996:44). Test excavations resulted in the recovery of marine shell and decomposing waterworn coral; as well as artifacts consisting of glass, ceramic, metal, and slate fragments (McGerty and Spear 1996:44, 48). A body fragment with a portion of a painted “Lahaina Ice Co. Ltd.” Label indicated a minimum date of 1946 for this deposit (McGerty and Spear 1996:48). Finally, a *ki’owai* (SIHP -4221), or formalized water holding area, likely associated with pre-contact to early historic agricultural practices, was formally documented as a historic property during the course of the study (McGerty and Spear 1996:48).

Xamanek Researches carried out an archaeological inventory survey of approximately 1.4 miles along the Lower Honoapi'ilani Road which consisted of a pedestrian survey of the entire corridor (E. M. Fredericksen and Fredericksen 1999). One precontact habitation site and two historic era retaining walls associated with the construction of the road were identified (E. M. Fredericksen and Fredericksen 1999:8). SIHP 50-50-03-4797 consists of deposit of cultural material initially identified within a cut bank along the shoreline approximately 3 m west of the highway and extends south from a road culvert for approximately 60 m with a small section also visible approximately 30 m north of the culvert. Features identified with the cultural deposit included three basin shaped pits (Features 2.1 through 2.3) with Features 2.1 and 2.3 containing sparse amounts of charcoal flecking and Feature 2.2 containing fire-cracked rocks, scattered shellfish remains, and moderate quantities of charcoal. The recovered charcoal sample yielded a 95% probable date range of AD 1420 to 1660 with an intercept at AD 1490 (E. M. Fredericksen and Fredericksen 1999:11-12). The authors note that while the general material character of the deposit could be documented by what was visible in the cut bank, the inland extent of the deposit could not be determined (E. M. Fredericksen and Fredericksen 1999:14). SIHPs -4798 and -4799 consisted of a historic retaining wall and shoulder wall roughly constructed of sub angular basalt boulders, as well as, a relatively well constructed retaining wall respectively, both of which were associated with the construction and maintenance of Lower Honoapi'ilani Highway (E. M. Fredericksen and Fredericksen 1999:13).

Scientific Consultant Services completed an archaeological inventory survey of approximately five acres (Pestana and Dega 2007). While no historic properties related to the use of the area prior to Western contact were identified, the overall findings of the study established clear historic era use of the project parcel (Pestana and Dega 2007:21). Two historic properties were identified on the surface and include a portion of the Pioneer Mill Railroad easement (SIHP 50-50-03-4997) and the historic Mailepai Cemetery. SIHP -4997 consisted of rail remnants along the western section of their project area and bordered by a linear earthen berm. The berm was interpreted as a retaining feature for the railway easement that separated the railroad from the exterior lands (Pestana and Dega 2007:18). Mailepai Cemetery included over 12 modern to historic era graves marked by headstones, concrete slabs, and stone arrangements (Pestana and Dega 2007:17). With regard to subsurface testing, a total of seven mechanically assisted stratigraphic trenches were excavated to identify the presence or absence of historically significant cultural deposits or subsurface features (Pestana and Dega 2007:18 and Table 11). Testing results showed relatively homogenous stratigraphy across the project area with a thin O-Horizon followed layers of silty clay overlying bedrock (Pestana and Dega 2007:21). No historically significant cultural material deposits or other features were identified during the course of testing (Pestana and Dega 2007:21).

Scientific Consultant Services completed an archeological inventory survey of a total of six areas located in Honokahua (Area 1), Honokeana (Areas 2 and 3), and Honokōwai (Areas 4 through 6) Ahupua'a (Dagher and Dega 2014). While no significant historic properties were identified in

either their Honokahua project area, or Areas 4 and 5 within their Honokōwai projects areas, five historic properties were identified across Areas 2 and 3 within Honokeana (SIHP 50-50-01-7170 through -7174) (Dagher and Dega 2014:12-14) and within Area 5 at Honokōwai (SIHP -7175) (Dagher and Dega 2014:16-18). Within Honokeana, a historic era agricultural complex (SIHP -7170) consisting of seven terraces (Features A through G) was documented at the base of a steep slope within Area 2 (Dagher and Dega 2014:40). SIHP -7171 consisted of a single terrace within Area 2 with a collapsed barbed wire fence line transecting the terrace (Dagher and Dega 2014:48). Based on the proximity of the terrace to the streambed, this site was interpreted as a feature associated with water diversion likely associated with historic era agriculture given the location of terrace and reasoning that an earlier, or pre-contact era feature, would have been destroyed by seasonal flooding (Dagher and Dega 2014:48). SIHP -7172 and -7173 are wall features within Area 3 situated in Honokeana Gulch and interpreted as historic era ranch or boundary features (Dagher and Dega 2014:51-56). The remaining historic property with Honokeana was identified with Area 3 and consisted of a rock shelter (SIHP -7174A) and associated agricultural terrace (SIHP -7174B) which was documented on the east side of Honokeana Gulch (Dagher and Dega 2014:58). Testing within the rock shelter (Feature A) yielded midden material consisting of marine invertebrate and vertebrate remains, charcoal, and five pieces of volcanic glass debitage, all of which was recovered from a fire pit feature (SSFe-1) encountered at approximately 22 cmbs (Dagher and Dega 2014:58-61). Radiocarbon analysis of the recovered charcoal samples returned a conventional age of 110 ± 30 yrs. before present (B.P.) (Dagher and Dega 2014:78). When calibrated using Ox Cal 4.5 and the updated IntCal13 calibration curve, the results with 95% confidence (2-sigma) came back with a range of calAD 1802 to 1938 (65.5% probability) followed by calAD 1681 to 1739 (27.1%). This is in keeping with the late pre-contact to early post-contact time frame presented by Dagher and Dega (Dagher and Dega 2014:61) with a higher likelihood of the use of this shelter and associated terrace occurring just after Western contact. Finally, the remaining historic property documented during this study consisted of a reservoir and associated water infrastructure originally constructed for commercial pineapple agriculture that was documented within Area 5 at Honokōwai (Dagher and Dega 2014:68).

3.4.1 Previous Archaeological Work Specific to the Current Project Area

An archaeological inventory survey of the lands within the proposed Pulelehua Community project area was conducted by Archaeological Services Hawaii, LLC. (Pantaleo and Titchenal 2004). The project lands were covered by a systematic pedestrian inspection followed by a subsurface testing program comprised of 20 backhoe trenches throughout the project area. The pedestrian survey resulted in the identification of two historic properties, both of which were associated with historic era plantation use of the area, and an isolated basalt hammer stone documented in the southeastern portion of the project area. SIHP 50-50-03-5553 is a flume located in Māhinahina Gulch that was constructed in 1898 by PiMCo for water transport to facilitate irrigation of the sugar cane fields (Pantaleo and Titchenal 2004:26 and Figure 12). Constructed of galvanized iron with wooden braces and trestles, the condition of the flume was

highly deteriorated and at the time of the survey no longer in used. SIHP 50-50-03-5641 is a surface scatter of historic bottles consisting of a sparse amount of fragmented beer bottles, two intact medicine bottles with makers marks and seams consistent with manufacture between 1938 and 1969 (Pantaleo and Titchenal 2004:26).

With regard to the subsurface testing program, as previously mentioned, a total of 20 backhoe trenches were excavated across the cultivated portions of the project area. One trench was situated next to the location of the hammer stone find (T-5), one trench was situated near the boundary of SIHP -5641, with the remaining trenches were placed along the field roads and between the fallow and cultivated pineapple fields (Pantaleo and Titchenal 2004:30). In general, two to three sediment layers, stratigraphic column for which can be described as a 20 cm to 1 m thick plow zone, followed by 22 cm to 1.1 m thick homogeneous dark red clay loam overlying saprolitic rock (Pantaleo and Titchenal 2004:30). No historically significant cultural material deposits were identified during the course of subsurface testing.

The State Department of Land and Natural Resources (DLNR) Chapter 13-284, Hawai'i Administrative Rules (HAR), entitled "Rules Governing Procedures for Historic Preservation Review to Comment on Section 6E-42, Hawai'i Revised Statutes (HRS), Projects," Chapter 13-284-6, entitled "Evaluation of Significance", states that once a historic property is identified, an assessment of significance shall occur. To be significant, a historic property shall possess integrity of location, design, setting, materials, workmanship, feeling, and association and shall meet one or more of the following criteria:

- 1. Criterion "a". Be associated with events that have made a significant contribution to broad patterns of our history;*
- 2. Criterion "b". Be associated with the lives of persons significant in our past;*
- 3. Criterion "c". Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possesses high artistic values;*
- 4. Criterion "d". Have yielded, or is likely to yield, information important for research on prehistory or history; or*
- 5. Criterion "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 groups' history and cultural identity.*

For the historic properties that were identified and documented during the inventory survey for the Puleluhua Community project area, SIHP 50-50-03-5553 and -5641 were both recommended as significant under criterion "d" (Pantaleo and Titchenal 2004:43). As the flume, SIHP -5553 was located within Māhinahina Gulch and therefore outside of the development area, Pantaleo and Titchenal determined that there would be no adverse effect to the historic property. With regard to SIHP -5641, the study gathered and recorded sufficient information to document the bottle scatter and therefore no further archaeological work was recommended.

4.0 CONSULTATION METHODS AND RESULTS

4.1 SCOPING AND COMMUNITY OUTREACH

In order to expand the community outreach of the traditional cultural practices of the area of potential effect for the proposed project as it relates to this study, contact was initiated with government agencies, advisory councils, and local community organizations. Follow up attempts were then made to contacts on the initial mailing list in a good-faith effort to make contact. Letters and project area maps showing the location of the proposed Pulelehua Community project with an explanation of the updates and changes from the original development concept was mailed out with the following accompanying text:

Āina Archaeology is assisting Maui Oceanview LP with updating the cultural impact assessment for the proposed development of the Pulelehua Project (Pulelehua) located at Māhinahina and Kahana Ahupuaʻa, Kāʻanapali Moku, Maui Island (TMK [2] 4-3-001:083). Given the time lapse between the development and publication of the cultural impact assessment for the project as originally proposed (Orr 2005), Maui Oceanview LP seeks to expand their outreach to the community in order to update and understand any concerns regarding potential impacts of the proposed project as currently planned to traditional cultural practices.

Located mauka of Honoapiʻilani Highway and Kahana Hui and Kahana Ridge Subdivisions and directly adjacent to and makai of the Kapalua-West Airport, the overall project footprint covers approximately 150-acres (project area). Topographically, the proposed project area extends from 40 ft. to approximately 260 ft. in elevation between Kahanaiki Gulch on the north boundary to just past Māhinahina Gulch to the south. Unlike the original development concept for Pulelehua, which incorporated street grid patterns and a new urbanism approach, Maui Oceanview LP is shifting the proposed community layout to use the existing contours of the property and preserve more open space on the property. Currently, the initial phase of development will include the construction of 240 multi-family rental units, split between affordable and market priced rental units, with some retail. At full build, the Pulelehua community will consist of 1200 units of affordable and market priced workforce rentals, retail space, and a new school. To accommodate the location of the school Maui Oceanview LP is also proposing some changes to Honoapiʻilani Highway in terms of stacking lanes and turns.

The Guidelines for Assessing Cultural Impacts adopted on November 19, 1997 by the Environmental Council, State of Hawaiʻi states:

(For) the cultural portion of an environmental assessment, the geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place (proposed project area). This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment.... An ahupuaʻa is usually the appropriate geographical unit to begin an assessment of cultural impacts of a proposed action, particularly if it includes all of the types of cultural practices associated with the project area. (State of Hawaii Office of Environmental Quality Control 2012:11)

For this supplemental cultural impact assessment, the ahupuaʻa of Kahana and Māhinahina is considered the overall “study area” while the footprint of the proposed project is identified as the “project area.” The purpose of this study is to evaluate potential impacts to traditional cultural practices identified within the study area as a result of the proposed project.

We are seeking your kōkua or help and guidance regarding the following aspects of our study:

- *General history and present and past land use of the lands of Kahana and Māhinahina Ahupuaʻa.*
- *Knowledge of cultural resources which may be impacted by the proposed project - for example, traditional plant gathering sites, shoreline traditions, historic sites, archaeological sites, and burials.*
- *Knowledge of traditional gathering practices in Kahana and Māhinahina Ahupuaʻa – both past and ongoing.*
- *Cultural associations of the proposed project area, such as legends and traditional uses.*
- *Referrals of kūpuna or elders who may be willing to share their cultural knowledge of the Pulelehua project area and the surrounding ahupuaʻa lands.*
- *Any other cultural concerns the community might have related to Hawaiian or other cultural practices within or in the vicinity of the proposed Pulelehua project area.*

Please find the proposed Pulelehua conceptual plans, as well as current and historic maps illustrating the location of the proposed project area in relation to the landscape enclosed for your information and review. I invite you to contact me, Tanya Lee-Greig, at 1-808-593-3020. You may also contact me by e-mail at tanya@ainaarch.com if you have any questions about the project or manaʻo or concerns that you would like to share. Mahalo for your time and I look forward to hearing from you.

To clarify, while the total number of units allowed in the previous plans for the project were 1200, approximately 300 of those allowable units were Accessory Units (i.e. ohana units associated with single-family lots) which the current owner and project proponent will not be building unless the County changes the nature of those units. Therefore, as the proposed project is focused on the development of multi-family units, current conceptual plans include the construction of approximately 900 of the 1200 allowable units on a 150-acre development footprint over the proposed 10 year build-out.



Figure 4-1. Preliminary phasing plan for the development of the proposed Pulelehua Residential Community.

Table 4-1 presents the community consultation effort conducted with *kamaʻāina*, Hawaiian cultural advisors and Hawaiian organizations. Individuals who expressed personal knowledge of the study area and gave their consent to share their *manaʻo* for this study, are presented in subsequent sections.

Table 4-1. Outreach Summary

Name	Affiliation	Contacted (Y/N)	Personal Knowledge (Y/N)	Comments
Ms. Thelma Shimaoka	Office of Hawaiian Affairs – Maui Office	N	--	--
Mr. Kai Markell	Office of Hawaiian Affairs – Native Hawaiian Historic Preservation Council	N	--	--
Mr. Chris Nakahashi	State Historic Preservation Division – Culture and History Branch	Y	N	Referral to Aha Moku o Maui
Mr. Hinano Rodrigues	State Historic Preservation Division – Cultural and History Branch Chief	Y	N	Referral to Aha Moku o Maui
Mr. Andrew Phillips	State Historic Preservation Division – Maui/Lānaʻi Islands Burial Council Staff	Y	--	Presentation made to the Maui/Lānaʻi Islands burial council on April 19, 2017 no additional concerns, comments, or recommendations.
Mrs. Uʻilani Kapu	Nā ʻAikane o Maui	N	--	--
Mr. Keʻeumoku Kapu	Aha Moku o Maui – Poʻo	Y	--	Referral to the Kāʻanapali Moku representative, Mr. Felimon Sadang
Maui County Cultural Resources Commission		Y	--	Referrals to Maui wide organizations
Mr. Junya Nakoa	Kamaʻāina of Kāʻanapali, cultural and lineal connections to Kahana and Māhinahina	Y	Y	See section 4.2.1

Name	Affiliation	Contacted (Y/N)	Personal Knowledge (Y/N)	Comments
Mr. Clayton Aie (A'i) Smith	Kūpuna with cultural and lineal connections to Kahana and Māhinahina	Y	Y	See section 4.2.2 and 4.2.3
Kahu Glenn Kamaka	Kūpuna with cultural and lineal connections to Kahana and Māhinahina	Y	Y	See section 4.2.3 and 4.2.4
Uncle Felimon Sadang	Kā'anapali Moku representative; cultural and lineal connections to Kahana and Māhinahina	Y	Y	See section 4.2.5
Mr. Mark Maliko Pamat	From Pu'ukoli'i at Honokōwai, fisherman of the waters of Kahana	Y	Y	See section 4.2.3
Mr. Irvin Delatori	Lāhainā born and raised	Y	Y	See section 4.2.3
Mr. Cade Clark	Lāhainā born and raised	Y	Y	See section 4.2.3
Mr. Jacinth Lum Lung	Lāhainā born and raised	Y	Y	See section 4.2.3

4.2 INFORMAL INTERVIEWS

4.2.1 Mr. Junya Nakoa – June 9, 2017

Mr. Junya Nakoa was born on Maui in 1970 and has generational ties to Kahana and Napili. With the exception of spending the first five years of his life in Kahakuloa, he has lived in neighboring Napili for 42 years. The Nakoa Ohana (family) has maintained generational ties specifically to Kahana Ahupua`a where they *malama*, or take care of, their family cemetery along *the makai* reaches. As such, Mr. Nakoa has long viewed the area as his backyard and childhood playground where he and friends would ride dirt bikes on the *mauka* field roads. He knows the lands of Kahana well, remembers the plantation operations and presence of the cane fields across the project area before they went fallow, and continues to run the roads in the area.

According to Mr. Nakoa, with regard to traditional cultural practices, he does not recall anyone accessing the specific lands within the project area for traditional cultural practices. He has some reservations about potential runoff issues that may affect ocean resources because of the

development, citing recent heavy rainfall and runoff from a development project near DT Fleming Beach which has caused brown water issues. In this case, while project proponents of that particular development had indicated that there would be no run-off, during the heavy rains of the past year Mr. Nakoa observed increased silt and rain water runoff flowing into the ocean in comparison to previous years. As for the proposed Pulelehua Community, while he does think that the existing drainage infrastructure and existing catch basin may be able to handle the run-off from the final build out of the Pulelehua Community project, Mr. Nakoa maintains some reservations about a zero run-off assertion.

From a strictly traditional cultural practices perspective, with the exception of potential run-off issues, and based on the time that he has spent in the area, Mr. Nakoa does not think that the proposed project will not have an adverse effect on cultural practices occurring adjacent to the proposed project area as long as access through the proposed project location to the *mauka* regions is maintained and the capacity of the existing drainage infrastructure is utilized and not exceeded. That being said, Mr. Nakoa made clear that he is neither for nor against the development of the proposed Pulelehua Community as he notes there is a need for workforce housing on the west side. However, Mr. Nakoa points out that there is mistrust here that began with the project predecessor and as a result there is a mistrust of anyone looking to develop the project. He would like to see specific reassurances that the housing will truly be built and priced for the local community and that the project is completed in a *pono*, or correct manner, that is in-line with community *mana'o* or input. For Mr. Nakoa, meaningful community engagement and outreach as the project progresses and during planning for future phases would go a long way toward easing anxiety and any concerns that the community may have.

4.2.2 Mr. Clayton Aie (A'i) Smith, Sr. – June 9, 2017

Uncle Clayton Aie (A'i) Smith, Sr. was born in Kahana in 1955, living his entire life in the area with *ohana* ties that extend back to his father, George A'i who was born and raised in Kahana Village, and his grandfather who put down roots in Kahana after moving to Maui from Moloka'i. Uncle Clayton also has generational ties to Kahana through his grandmother and his Nakoa lineage, an *ohana* line with ties specifically to Kahana where they *malama*, or take care of, their family cemetery along *the makai* reaches of the ahupua'a and have family connections to lands within Kahana Gulch. Uncle Clayton remembers when Lower Honoapi'ilani Road was an unpaved, dirt road and the only road to Lahaina from Kahana/Kapalua and only three families besides his own the lived between the bridge that crosses Kahana Stream and Alaeloa. These families included the Aluli, Robinson, and Farden Ohana with the home of legendary *kumu hula* and musician Emma Farden Sharpe still standing. Uncle Clayton still resides on lands next to the original location of Kahana Village and birthplace of his father.

When asked about the area in general, as well as traditional use of the gulches, he shared that his family raised cattle and maintained a small hale in Kahana Gulch throughout the 1960s. He recalled that he would help his father build fences and run cattle until he took time to help at

home. According Uncle Clayton, the family continued to raise cattle within the gulch and his brother stayed at a small hale, or house site on the valley floor up until the construction of the Kahana Ridge subdivision when the development cut off their longtime vehicle access.

With regard to potential *mauka* - *makai* traditional cultural practices and resources, Uncle Clayton pointed out there is a family that has undeveloped lands *mauka* of the proposed Pulelehua Community that they take care of and access via the cane haul road that runs parallel to and *mauka* of Honoapiʻilani Highway and the existing unimproved *mauka* to *makai* field roads. He also pointed out that the field roads provide primary access to both the reservoir above the Kapalua Airport, as well as, and a lateral road that runs parallel to the slope that provides access to the upper reaches of the gulches within the project area and to the north of Kahana. He further indicated that some of the valleys, or lands within the valleys, are owned by specific families of the area. Regarding *makai* practices and maintaining the health of the marine resources, Uncle Clayton notes that there are concerns about the effects of runoff; however, if the project developer intends to use the existing drainage infrastructure and catch basin then it should be okay.

With regard to the lands and area specifically located within the proposed Pulelehua Community project area, Uncle Clayton shared that the lands had been in sugar cane for many years and does not know of anyone specifically engaging in traditional cultural practices within the project area. Even with the current fallow condition of the fields, Uncle Clayton says that he is often in the area and, with the exception of utilizing the roads that extend through and adjacent to the project area to get to the *mauka* reaches, does not know of or has not observed anyone accessing the lands within the project area. Uncle Clayton notes that the proposed project should not have an adverse effect on cultural practices within and adjacent to the proposed project area as long as access through the proposed project location to the *mauka* regions is maintained and existing drainage infrastructure is utilized.

4.2.3 Mauka Huakaʻi and Talk Story – June 12, 2017

Uncle Clayton Aie (Aʻi) Smith, Sr., along with his cousin Kahu Glenn Kamaka, his son Keoki Keoni Kawika, Mr. Cade Clark, guided a *huakaʻi* (trip) above the airport for this study to generously share the locations of the roads used to access the *mauka* region, their knowledge of the upland resources, as well as, their family connection and long-lived history of the lands between Kahana and Mahinahina Valley. Driving along Lower Honoapiʻilani Road, Uncle Clayton, Kahu Glenn and Kalani all pointed out that the lands between the current alignment of Honoapiʻilani Highway and the lower road was cultivated in sugar cane up until the 1970s when the current housing and subdivisions were developed (see also Figure 3-11). They further point out that *makai*, or below the lower road, the lands between the Royal Kahana and Kahana Sands were previously swamp lands.

The Kahana access to lands above the Kapalua Airport and the *mauka* road that parallels Honolua Ditch and provides access to the upper reaches of the gulches from Honokowai through Napili is

currently gained through a key pad entry gate off of Akahele Road that secures the cane haul road, or track road, that parallels the highway. The track road is the former railroad bed for the plantation train that ran from Kapalua to Lahaina which, following the replacement of the train with the use of Turner Haulers, was paved over and used as a cane haul road. From the track road, Uncle Clayton and Kahu Glenn point out that there are two old, unimproved field roads that are used to travel *mauka*, as well as an old field road above the airport that is used to get to Kahana Gulch. While on the road that follows the northern edge of Mahinahina, they pointed out the large silt basin that is situated within the valley floor and located *mauka* of the highway (Figure 4-2). Everyone noted that after the installation of the silt basins at Mahinahina and Kahana, the ocean resources had changed drastically as the water that entered the ocean at the *muliwai* was clear and no longer carried the nutrients that fed the *limu* beds and allowed the smaller fish to thrive. It was also noted that the ocean floor at the *muliwai* had also changed as a result. This, together with the pressures of increasing *honu* (turtle) numbers in the area have resulted in the disappearance of many *limu* varieties along the shoreline.



Figure 4-2. Māhinahina silt basin, view to west-southwest.

At the Kahana pump station and entry tunnel at Kahana 'Iki, both Uncle Clayton and Kahu Glenn shared how their grandparents would travel and stay in the housing that was located around the pump stations to take care of and maintain the ditches and pump stations (Figure 4-3 through Figure 4-6), first for Baldwin Packers and then for Maui Land and Pineapple. During our visit, the streambed of Kahana 'Iki was dry and Uncle Clayton expressed some disbelief at the state of the stream as he remembered that when he would come up to help his grandparents, and then his

father, the streambed had always had some water flow in it (Figure 4-7). Both Uncle Clayton and Kahu Glenn shared a common memory of their grandparents growing watercress next to both the Kahana and Māhinahina pump stations and ditch. At the large monkey pod tree, across from the Māhinahina pump station, both Kahu Glenn and Uncle Clayton remember that tree had been large even during their childhood (Figure 4-8). Kahu Glenn shared fond memories of Dr. Fleming and his forestry and plant knowledge further noting that during the plantation days, there used to be a Japanese single-man camp right next to the tree, and that every pump station would have a single-man camp for workers who took care of the ditches and pump stations.



Figure 4-3. Pump station at Kahana'iki Gulch and Streambed.



Figure 4-4. Honolulu Ditch tunnel at the pump station off of Kahana'iki Gulch and Streambed.



Figure 4-5. Māhinahina pump station.



Figure 4-6. Honolulu Ditch to Honokōwai at Māhinahina pump station.



Figure 4-7. Kahanaiki Streambed at the time of the huaka'i.



Figure 4-8. Monkey Pod tree at Māhinahina Pump Station noted by Uncle Clayton and Kahu Glenn.

During the drive along the field road that follows the northern edge of Kahana Gulch, small stands of ‘*a’ali’i* were observed (see also Figure 2-4), and while Uncle Clayton and Kahu Glenn stated that they did not know of any traditional Hawaiian cultural practices occurring within the lands of the Pulelehua Community project area, as the area had been in sugar cane for many years, they both made it clear that native vegetation like ‘*a’ali’i* that has returned and is thriving should be saved, or at least transplanted to other areas during development and construction and used within the project area. At the edge of Kahana Gulch (Figure 4-9), overlooking the location of where Uncle Clayton's brother once had a small hale on the valley floor Kahu Glenn noted that there were *lo’i kalo*, or agricultural terraces for taro cultivation, along the streambed with even greater numbers of *lo’i* further back into the valley. He went on to say that the presence of these *lo’i* are no surprise because Hawaiians would settle along the stream and utilize that water for agriculture. Later, Uncle Clayton would recall seeing ‘*ōhi’a* in the gulches when he would help his father with the cattle. Finally, while overlooking the project lands from the airport, both Kahu Glenn and Keoki shared that the *muliwai* for the Pōhakukā’anapali Gulch, a small gulch between Kahana and Mahinahina, empties at Keone beach park, also known as S-Turns (Figure 4-10).



Figure 4-9. Overview of Kahana'iki Gulch, view to northeast.



Figure 4-10. Overview of lands of the proposed project area highlighting location of Pōhakukā'anapali Gulch, view to west-northwest.

Following the *huaka'i*, the group returned to the boat ramp and bay at the *muliwai* of Kahana Gulch across from Uncle Clayton's residence to discuss the proposed project in the context of all of the observations. Also present were Mr. Mark Maliko Pamat, Mr. Irvin Delatori, Mr. Cade Clark, and Mr. Jacinth Lum Lung, all of whom were born and raised in the Lāhainā area, are graduates of Lahainaluna High School, and have fished the waters off of Kahana and Māhinahina for years. Mr. Delatori and Uncle Clayton remembered that the *limu* varieties that were once thrived along the shoreline but no longer present included *wawaeole*, *'ele'ele*, and *ogo*. *'Opae* and other small fish were also abundant as far as they all can remember, Uncle Clayton notes that there is still *limu kohu*; however, it is not like before when the stream water flowed. The *limu* was naturally cleaned by the flowing water, now it is full of sand. Overall, the bay fronting his home is different from his youth, from a change in water temperature to differences in the ocean bottom.

The group noted that these days, everyone pictures and wants clear Hawaiian waters, the visitors want clear Hawaiian waters. Uncle Clayton and Mr. Delatori note that the murky water was not necessarily a bad thing and Hawaiians would know not to go in the water because the murky water would attract the shark who fed on the fish that came in during this time. The nutrients that came through the *muliwai* were necessary in order to have thriving *limu* beds, but only in so far what would naturally occur. All pointed out that there needed to be a balance, where there was not too much silt accumulation from development in storm water run-off, but allowed for some nutrients to make it to the ocean. Everyone present was concerned about where the potable water for the full build out would ultimately come from, with Uncle Clayton recalling the now dry streambed of Kahana 'Iki. While any excessive run off would be caught by the existing drainage infrastructure, questions about sewage and the capacity of the current sewage infrastructure to handle the sewage of a full build out remain. Uncle Clayton noted that there are, at times, issues with sewage and overflow into the hotels along Lower Honoapi'ilani Road. Overall, there was an understanding and acknowledgement that there is a need for housing and that growth is inevitable, however, the development needs to be responsible so that we can take care of what we have and, in the context of the current project proposal, preserve access routes to the *mauka* reaches of Kahana and Mahinahina.

4.2.4 Kahu Glenn Kamaka – June 13, 2017

Kahu Glenn Kamaka was born in 1950 at the Pioneer Mill Hospital, which was once located off the corner of Front Street and Papalaua Street in Lahaina where the Hard Rock Café and Outlets of Maui are currently situated. For its time, Kahu Glenn recalled that the hospital was a state of the art facility. Kahu Glenn has generational ties to Kahana through his Nakoa lineage on his mother's side, an ohana line with ties specifically to Kahana where they *malama*, or take care of, their family cemetery along the *makai* reaches of the ahupua'a and have family connections to lands within Kahana Gulch. He notes that the lands beneath and behind the Kahana Reef Condominium, as well as the lands of the current location of the Door of Faith Church are all lands of the Nakoa Ohana. Kahu Glenn also shared that there were at least 15 graves within the Nakoa family cemetery and can recall when the cemetery was surrounded by sugar cane. On his father's

side, Kahu Glenn shared that his grandfather, Kaaihue, came to Kahana from Kaupo as a paniolo (cowboy) to work the heavy equipment for the plantation and take care of the ranch operations for Dr. Fleming. Kahu Glenn maintains a strong connection to the lands from Kahana to Honokōhau, from *mauka* to *makai*. As an avid runner, Kahu Glenn has traversed across the mountain side, through the gulches, and into the forest reserve, and is as familiar with this landscape as he is with the back of his hand. A water man as well, to this day Kahu Glenn can be found surfing in Lahaina.

Kahu Glenn shared that they lived in the camps from Honokōhau to Kahana and can remember when *kalo* (taro) plots within Honokōhau were plentiful and has memories of his Auntie Vicki Andrews and her husband running the poi factory and raising *kalo*. He points out that when the company was under Baldwin Packers the water still flowed in the stream beds which was enough to maintain the *kalo* lands. He recalls that the work was hard but wonderful and worth the effort. Kahu Glenn fondly remembers that Dr. Fleming allowed the *ohana* to fish when they needed to fish and plant where they needed to plant in order to maintain their culture and households. During the plantation life, Kahu Glenn remembered the nearly each camp and ethnic group had a fishing gang (e.g. Hawaiian Fishing Gang or Japanese Fishing Gang), and each fishing gang respected each other. His family was a fishing family and Kahu Glenn can recall that as children they would help with *hukilau*, a communal fishing method which consisted of surrounding a school of fish with the *lau* (ropes) and *huki* (pull) the *lau* toward the shore. It was the job of the children and others to remove sections of the *lau*, weights, and floaters to get the nets filled with in; however, before all of that, the first job was to learn how to swim. Kahu Glenn shared that Uncle Jack would take them to the private pool and toss them in one by one so they could learn how to swim. Keone Bay, which is commonly referred to as S-Turns, was one of the main bays for *hukilau*. *Honu* (turtle) harvesting was done at Kaopala Bay, which is the bay fronting the Sharpe residence, and Keone Bay. Kahu Glenn also notes that *o'opu* also once thrived at the *muliwai* of the gulches where the fresh water from streams would mix with the ocean water. In addition to fishing, his family also raised pigs, had gardens, and lived off of what they would grow and resources they would gather. Kahu Glenn's fear that has become somewhat realized, is that as development expands there will be more people that will learn of the different resource gathering spots that were once family secrets and thus jeopardize the health and integrity of the resource. He shared one instance where they were visiting a *moi* fishing hole where a development had come up and when they went back to it they found that it had been bleached. Kahu Glenn points out that once someone bleaches the hole, the fish do not return because the coral and everything else is dead.

Along with Dr. Fleming's recognition of community needs, Kahu Glenn recalls his forestry knowledge and explains that the Cook Pines that we see from Kahana to Honolua were brought to Maui in order to catch the rain. Kahu Glenn attributes much of his *ʻāina* education to his father and Uncle Itsumi Hirata, further noting that Mr. Hirata was very knowledgeable and helped with the blasting for the highway tunnel on the Lahaina pali. His family also ran cattle in Kahana Gulch

and he recalled that as a young boy he had always wanted to be a cowboy. Kahu Glenn shared a memory of Dr. Fleming's daughter, Denise Fleming, once keeping horses at Makalapuna Point where he and his cousin as young boys would run the horses to the beach where the sand used to be deep. The sand would slow the horses down just enough to allow them to jump on the horses backs and ride them. His love of horses continued into adulthood when he acquired a Pertron horse, named Webster (Webbie), that he kept up at Ironwood Ranch and rode in the gulches and fields above the current alignment of Honoapiʻilani Highway.

Finally, Kahu Glenn summed up the way he grew up and was raised as “camp life” where there was true community and your neighbors were all family and close friends. Everyone shared. When there was a *hukilau*, or the fishing gang would come in, the families in the community would come and pick up their share. There was also a spirituality in the community and connections to the land that you might be able to feel the presence of the old Hawaiians and warriors. He shared his memories of picking up Kahu David Kaalakea from Paukukalo and bring him to Kahana to take care of Hawaiian things. During the ride to and from Kahana, Kahu Glenn shared that Kahu Kaalakea would only *‘olelo hawai‘i* (speak only in Hawaiian language) knowing that Kahu Glenn could only *maopopo* (understand). The purpose for this was to have Kahu Glenn hear the language even though he could only *‘olelo li‘ili‘i* (speak a little).

With regard to traditional cultural practices within Kahana and Mahinahina, Kahu Glenn noted that the practices being carried out are both *mauka* and *makai* of the proposed Pulelehua Community Project location with old taro and house sites within the valleys of Kahana and Māhinahina. While Kahu Glenn pointed out that there is a Hawaiian shrine within the Koa Ridge subdivision just below the Pulelehua project area, as far as he could recall, the lands of the project area had long been in sugar cane. Kahu Glenn reasserted the statement that he shared during the *mauka huaka‘i*, that as long as access to the *mauka* lands remain open through the development in order to maintain connections and family *kuleana* toward the *mauka* lands, construction does not push sediment into the gulches, and runoff is taken care of, there should be no affect to traditional cultural resources and gathering practices as currently known. That being said, Kahu Glenn wanted to make sure that the project proponents consider utilizing the native plants that have come back to the fields, like *a‘ali‘i*, either as a part of their landscaping plans or to border the airport. Such plants are low water plants that are suited to the area. Remembering camp life, Kahu Glenn advocates for the development of a community where everyone knows their neighbors and wants to be sure that the housing that is proposed will truly be for the local workforce and not acquired by realtors and turned over for profit leaving the local people out of the housing market. For community health and safety Kahu Glenn wanted to make sure that the soils had been properly tested as he remembers that his father moved the large plantation machines, and from time to time agricultural chemicals, across the island. Kahu Glenn is very aware that the agricultural soils had been heavily fertilized and chemicals had been used for crops and pest control. For community building and cohesion, he wants to be sure that the community comes together in this as it is a very large project. With regard to the parks and

development of a healthy community, Kahu Glenn refers back to “camp life” and advocates for community park development that includes a barbecue area with comfort stations that have bathrooms and showers; as well as, community gardens that have food trees (e.g. banana, avocado, mango, citrus, soursop, starfruit, etc.) and an interconnecting bike path for the safety of children and health of the community. Walking through the lands during the *mauka huakaʻi* and our talk-story discussions made an impact on Kahu Glenn as he says it renewed his understanding that we need to take care of the land and the community and allowed him to reflect on his childhood and growing up in camp life. He asserts that people and developers really need to think about what was once on the land and encourages developers to work with the terrain instead of drastically change it and flatten it out, much in the way that the plantation worked with the terrain. In all things, and at every step of the way, Kahu Glenn states that there must be respect for the home culture, the Hawaiian culture, first and foremost.

4.2.5 Uncle Felimon Sadang, Kāʻanapali Moku Representative (Aha Moku o Maui) – June 14, 2017

Uncle Felimon Sadang is the *moku* representative for Kaanapali Moku. Born at Puʻu Koliʻi Camp in Honokōwai in 1942, Uncle Felimon has generational ties to Kahana Ahupuaʻa through his mother and the Naleieha Ohana. As a part of a fishing family, Uncle Felimon has spent at least 50 years as an *akule* fisherman. At 74 years young, Uncle Felimon continues to dive and run his fishing gang as a part of his livelihood. His family property is located along the Kahana and Mahinahina shoreline, and he continues to use and maintain his fishing equipment at his family lot between the Kahana Reef and the Kahana Outrigger. At Kahana, Uncle Felimon has witnessed the changes across the area over the years from pig pens and chicken coops to concrete and steel. As a part of a fishing family, he shared that there are resources, such as *honu* (turtle) or *heʻe* (octopus), that were once a part of their livelihood and culture are now not common or no longer harvested. Uncle Felimon shared that Kahana was well known for *honu* hunting and a part of traditional subsistence. Since the regulations and protections were put in place, the *honu* numbers have risen but, when asked if the younger generations know how to properly harvest and prepare *honu*, Uncle Felimon said no. He points out that if you cannot harvest the turtle, then you lose the culture (cultural knowledge). Uncle Felimon also shared that 60 years ago you could collect *tako* (squid) at the *muliwai* after a storm because the plantation would open the ditch gates to the streambed and the cold water would rush down and cause the *tako* to float to the top. In the 1960s, the shore line changed with the development of the *makai* lands. With the removal of the kiawe trees and the shade that it provided the *nehu* disappeared. Uncle Felimon notes that *akule* fishing with net is a dying art. In the old days, he says they would use t-shirts, one red and one green, and walkie talkies to communicate on where to position the net. Now they have cellphones, photo texting, and airplanes and he says that it is hard to go back, technology has changed and it is hard to go back; however, Uncle Felimon stresses that even if you don't go back you must always know where you came from. Skills like sewing net is becoming a lost art. It is one that he does hope to pass on to the younger generation and shared a memory of his father sewing yards and yards of net all day with a toscane (hand rolled cigarette) in his mouth.

Uncle Felimon also worked for Pioneer Mill for 32 years in an agricultural position. He knew the land within and surrounding the current project area, where it was good to plant, where it was not good. As one who would take care of the ditches for Pioneer Mill as well, he is also very familiar with the *mauka* lands. He recalls that there were families who also had lands in the mauka area and believes that there may be a cemetery, or family grave site, located in the upper elevations of Mahinahina above the proposed Pulelehua Community project area. Uncle Felimon also spoke about the gulches and remembered that there were caves and petroglyphs present near the kahawai (stream alignment) in Kahana Gulch in addition to *ʻohia* and *koa* trees. When putting out the *kahea* (call) to the community for this project, he was also reminded about the presence of a Hawaiian shrine within the Kahana Ridge Subdivision which shares a western/*makai* boundary with the current project area.

With regard to the specific lands of the proposed Pulelehua Community project, both personally and as currently understood from others that he has reached out to in the *moku*, there are no known traditional cultural practices being carried out within the boundaries of the proposed project area. From a broader traditional land management perspective, as long as access through the project area to the *mauka* lands is maintained, a set back from the gulch edges for construction and development is created, run-off is managed, and storm water is diverted the way it should go naturally then it should be okay. Shoreline pollution because of development is a critical concern for the *moku* and for the fishing families of the area. To this end, Uncle Felimon encourages scheduling for ground work or construction according to the season and not breaking ground during the winter rains when the dangers of construction related storm water runoff into the ocean may be greater. He also advocates for immediately planting ground cover in landscape areas to prevent runoff. Finally, from a community perspective, Uncle Felimon wants to see reassurance that this development is truly for the working people and that realtors will not be able to purchase and flip the homes or apartments for an inflated price.

5.0 TRADITIONAL CULTURAL PRACTICES

The arrangement of a typical Hawaiian *ahupuaʻa* extended from several fathoms out from the coastline to the upland forested areas. Depending on the location within this broad *makai* to *mauka* context, and guided by knowledge of the natural environment, a wide variety of cultural practices and resources within the *ahupuaʻa* could be found. Such resources and rights would include marine resources and fishing rights in the coastal area, arable lands for crop cultivation, as well as, water rights in the planting zones, and valuable bird catching along with plant and timber harvesting privileges at the higher elevations and toward the valley headwater (Handy et al. 1991:48). Based on the land commission award distribution in the *makai* reaches of Kahana and Māhinahina and near the gulches of the study area; in addition to the stories and information gathered during the background research and consultation completed for this study, it is apparent that settlement and land use within Kahana and Māhinahina 1-4 Ahupuaʻa functioned in the typical traditional sense, with a *makai* residence that could be near marine resources along with inland claims on the alluvial plain and within in the gulch for *kula ʻuala* (potato land) for agricultural pursuits. Discussions on specific aspects of traditional Hawaiian cultural resources and practices, as identified through background research and community consultation, that may relate to the current study area, are presented below.

5.1 MAUKA RESOURCES -- TRADITIONAL HAWAIIAN AGRICULTURAL AND GATHERING PRACTICES

Based on the testimony for *kuleana* claims during the Great Māhele, the writings of Handy and others (1991), and observations made by D.T. Fleming (in Sterling 1998:46); as well as findings of the archaeological inventory surveys conducted in Kahana Gulch (Komori 1983; Walker and Rosendahl 1985), it is apparent that traditional Hawaiian agricultural practices occurred within the gulches and on the lower alluvial plain of Kahana and Māhinahina Ahupuaʻa.

An 1850 letter from Kauwealoha describes the arability of the lands just back from the coastline versus the *mauka* region as follows:

These lands are only kula, and is not suitable for cultivation, it is dry in summer, and a little better in winter. --- I know it is only kula, and not fit for cultivation, it is good mauka, but, makai it is not very good. (inGriffin et al. 1976:56)

Testimony of the Māhele ʻĀina and L.C.A awards within Kahana and Māhinahina is consistent with this assertion and shows that by the mid-19th Century, *mahi ʻuala* (potato agriculture) was the main agricultural pursuit with land awarded to claimants for *kula ʻuala* from the coast to the just above the 80 ft. contour (see also Table 3-1 and Figure 3-5). *Loʻi kalo* (pond-field taro) within Kahana is known through historic sources and as well as *kūpuna* memories of Kahana ʻIki and Kahana Gulches as pointed out by Kahu Glenn Kamaka:

...there were loʻi kalo, or agricultural terraces for taro cultivation, along the streambed with even greater numbers of loʻi further back into the valley. He went on to say that the presence

of these lo'i are no surprise because Hawaiians would settle along the stream and utilize that water for agriculture (see section 4.2.4).

Other traditional resources noted in land claims and testimonies include *mai'a* (banana), *olonā* (*Touchardia latifolia*), *kō* (sugar cane) and *hala* (*Pandanus species*). In the place names of the region, names of 'ili and gulches may also be reflective of a particular resource in the general area. 'Ōhi'a is noted as and 'ili name in testimony provided for L.C.A 4268 to Koiku and 3764 to Alaala with Uncle Clayton Smith and Uncle Felimon Sadang also having a recollection of 'ōhi'a *lehua* within Kahana Gulch (see section 4.2.3). Other place names with a *mahi 'ai* (farming) or *lā'au* (plant) reference includes the 'ili name of Ka'ape (L.C.A. 10813 to Palina), a possible reference to the 'ape plant (*Alocasia macrorrhiza*, *Xanthosoma robustum*), and *Popolohuaamea* (a gulch/ravine noted in Land Grant 1166) which may be a possible reference to the *pōpolo* (*Soanum* sp.) plant and berry. Finally, Uncle Felimon also recalled seeing *koa* trees higher in Kahana Gulch when he would check on the ditches for Pioneer Mill Co. Finally, new growth of 'a'ali'i, both flowering and not, were observed along the northern edge of the proposed project area adjacent to Kahana Gulch. While *mai'a*, *kō*, and 'ape were food or dietary items, *olonā*, *lauhala*, 'ōhi'a, *koa*, 'a'ali'i, and *pōpolo* were gathered for adornment, collected for medicinal use, gathered for ceremonial purposes, or modified for utilitarian purposes.

Hala was a versatile plant whose parts were useful in a variety of ways, from making household items with the *lau* or leaves (i.e. cordage mats, baskets, and sleeping pillows) (Abbott 1992:63, 71-74), for use in personal adornment (i.e. paint brushes for *kapa* and *lei* making) (Abbott 1992:54-55, 128), and as thatch finish (Abbott 1992:69); as well as serving medicinal and minor dietary needs (Abbott 1992:43, 99). While there were no specific claims for *hala*, the presence of stands of *lauhala* is noted in the testimony of J.F. Cowell given the contested claim of Charles Cockett (L.C.A 75) at Māhinahina:

75 Charles Cockett Oct. 3, 1848

J. F. Cowell Hoohikiia

Ua ike no wau i kona mau aina o Niuula, a me Mahinahina, ma Honokōhau, Mokupuni o Maui.

Ua loa keia aina na Hoapili Kane mai i ka M.H. 1837, aole nae i maopopo ia'u ka malama. O Okatoba paha, Nowemaba paha, i ka haawi ana o Hoapili i keia aina ia ia nei, hoouna mai la oia ia Hoolulu i kona kanaka nui i ka aina no Cockett, a olelo mai la e hele e nana i ka aina, a hele pu me Auwae.

J. F. Cowell Promised

I know of his lands in Niu'ula and Māhinahina, in Honokōhau, Island of Maui.

This land was obtained by Mr. Hoapili in 1837, but I do not know the month. Maybe October or perhaps November, when Hoapili gave this land to him/her, he dispatched Ho'olulu to his main person on the property of Cockett, and [he] said to go and survey the land and go along with 'Auwae.

It was Pākī, however, who first took Fridays and cut down lau hala on the land of Māhinahina and made [sugar cane?].

*Na Paki nae i lawe mua i na la
poolima a me ke kua i ka lauhala, ma
ka aina o Mahinahina, a hana iko.*

*A i ka lilo ana o Honokōhau ia M.
Kekuanāʻa, hele o Namanu i ka M.H.
1846, hookuke ia na mea kahiko e
noho ana, a nele no hoi o Cocket, aka,
aole au i hele hou aku e nana i ua aina
la.*

See 664 1.0

*And when Honokōhau was transferred
to M. Kekuanāʻa, Nāman went in
1846 and the old [tenants] who were
living there were evicted, and Cocket
was left without, but I did not return
to look at the land. See 664 1.0*

*(Translation by Richard Keao Nesmith,
Ph.D.)*

Pōpolo (Solanum americanum), a member of the nightshade family, has been noted as possibly the most important of Hawaiian medicinal plants and sometimes referred to as the foundation, or *ke kumu*, of *laʻau lapaʻau* (Hawaiian healing) (Handy and Pukui 1972). Abbott notes that this plant was regarded as one of the embodiments of Kāne, and when gathering it the prayer was often directed to this god. The raw juice of the leaf and ripe berries were used along and in compounds for disorders of the respiratory tract, for skin eruptions, and as a healing agent for cuts and wounds when mixed with salt. Young leaves would also be steeped with a little salt and used to tone up the digestive tract (Abbott 1992:99).

The wood of *ʻōhiʻa lehua (Metrosideros polymorpha)* was used for house building; construction of decking, spreaders, seats, and gunwales for canoes; *ʻumeke lāʻau* (wooden calabashes); carved *kiʻi* (sacred images); and as *hālau hula* altar plants to the god Kūkāʻōhiʻa Laka (Abbott 1992:68, 81, 87, 117, 114). The flowers would also be used in *lei* making (Abbott 1992:127).

Koa (Acacia koa), provided the preferred wood for surfboards, canoe hulls, *hoe* (canoe paddles), poles of the *kahili* (chiefly standard), and spears for weaponry (Abbott 1992:81, 83, and 110).

Like *ʻōhiʻa lehua*, the wood of mature *ʻaʻaliʻi (Dodonaea viscosa)* was used for posts in *hale* (house) framework (Abbott 1992:68) while the seed pods and leaves continue to be gathered for *lei poʻo* or foliage woven around a base to worn around the head (*poʻo*).

Finally, the bark of the *ʻolonā (Touchardia latifolia)* is most valued for making cordage due to its durability and strength, a characteristic that was appreciated and sought after by the first Western voyagers to Hawaiʻi (Abbott 1992:61). *ʻOlonā* was the cordage of choice for *lei*, fine meshed nets for feather work, *kōkō puʻupuʻu* (carrying net) for *ʻumeke* (gourd container) which belonged only to the *aliʻi*, and the finest fishnets (Abbott 1992:61, 83, 92, 105, 124). With regard to fishnets, and according to Abbott, the time-consuming manufacture and mending of fishnets once fell to the growers of the plant and sometimes to other upland men but never the fishermen themselves (Abbott 1992:83). Exchange of *olonā* cordage or finished nets for supplies of fish was a central feature of the flow of materials between the uplands and coast, a social pattern that made *ahupuaʻa* life run smoothly.

5.2 MAKAI RESOURCES AND THE TRADITIONAL CULTURAL RESOURCES OF THE SHORELINE AND OFFSHORE AREA

Use of the shoreline resources and preference for residency along the coastline from a time period prior to Western contact to the present is evident in the *mo'olelo* of Kahana and Māhinahina (section 3.1.3), the findings of archaeological studies (Kaschko 1974; Pestana and Dega 2007; Walker and Rosendahl 1985), locations of house lots awarded during the Māhele (Figure 3-5), and the continuation of fishing traditions practiced by families and *kupuna* consulted for both this study (see section 4.0) and the study completed by Maria Orr in 2005. The nearshore and offshore marine environment provides excellent opportunities for fishing and *limu* (seaweed) gathering, *honu* (turtle) harvesting, and *pa'akai* (salt) collection (L.C.A. 3925D Hualii).

With regard to *limu* Mr. Delatori and Uncle Clayton remembered that the *limu* varieties that once thrived along the shoreline but are no longer present include *wawae'ole* (*Huperzia mannii*), *'ele'ele* (*Enteromorpha prolifera*), and *ogo* or *manaua* (*Gracilaria parvisipora*). Uncle Clayton does note that there is still *limu kohu* (*Asparagopsis taxiformis*) to be found; however, it is not like before when the stream water flowed. The *limu* was naturally cleaned by the flowing water, but now is full of sand, difficult to clean, and different.

Regarding fishing practices, Kahu Glenn recalls participating as a child in the communal fishing traditions of *hukilau* in the bay and describes as being carried out in the following manner:

...(hukilau) consisted of surrounding a school of fish with the lau (ropes) and huki (pull) the lau toward the shore. It was the job of the children and others to remove sections of the lau, weights, and floaters to get the nets in... When there was a hukilau, or the fishing gang would come in, the families in the community would come and pick up their share.

Another communal fishing tradition consisted of *akule* (big-eyed or goggle eyed scad-*Selar crumenophthalmus*) surrounds in the bay, both historically and into the present day. *Akule* runs in large schools and catching this type of fish could only be accomplished through the combined efforts of the community. Prior to Western contact and into the historic era, *akule* fishing would require at least two manned canoes and a *kilo* (spotter), who was either stationed on the prominent headland or in a canoe, to guide the fishermen toward the grounds where they would surround the fish with curtain nets and draw them toward the shore to those who waited to help with the catch (Kahā'ulelio 2006:201). Uncle Felimon, who has spent at least 50 years as an *akule* fisherman, notes that *akule* fishing with net in this manner is a dying art. In the old days, he says they would use t-shirts, one red and one green, and walkie talkies to communicate on where to position the large surround net to catch a school of *akule*. Now they have cellphones, photo texting, and airplanes and he says that it is hard to go back, technology has changed and it is hard to go back; however, Uncle Felimon stresses that even if you don't go back you must always know where you came from. To this day, Uncle Felimon still runs his *akule* fishing gang from his family parcel located along the Kahana and Mahinahina shoreline (see section 4.2.5).

Kahu Glenn notes that *honu* (turtle) harvesting was done at Kaopala Bay and Keone Bay and Uncle Felimon shared that Kahana overall was well known for *honu* hunting and a part of traditional subsistence in his lifetime. Those who participated in this study shared that since the regulations against *honu* harvesting and protections were put in place (<http://dlnr.hawaii.gov/dar/species/sea-turtles/>), the *honu* numbers have risen to a point of imbalance with the *honu* putting pressure on *limu* resources leaving next to nothing for the fish to thrive (see section 4.2.3 to 4.2.5). When asked if the younger generations know how to properly harvest and prepare *honu*, Uncle Felimon said no. He points out that if you cannot harvest the turtle, then you lose the culture (cultural knowledge).

Other types of marine fauna that were once abundant in the area included *he'e* (*Octopus cyanea*, *O. ornatus*), *moi* (*Polydactylus sexfilis*), *nehu* (*Encrasichdina purpurea*), *'opae* (*Halocaridina rubra*), and *o'opu* (*Awaous guamensis*). The participants noted that these once abundant resources are now scarce. Uncle Felimon had this to say regard the increasing scarcity of resources that may be linked to changes due to land development in the region:

... 60 years ago you could collect tako (squid) at the muliwai after a storm because the plantation would open the ditch gates to the streambed and the cold water would rush down and cause the tako (he'e) to float to the top. In the 1960s, the shore line changed with the development of the makai lands. With the removal of the kiawe trees and the shade that it provided the nehu disappeared.

Mr. Wesley Nohara, a participant of the initial cultural impact assessment for the proposed project, also noted that there was once salt water *'opae* and *nehu* from Kahana to S-turns, however since the desilting basins went in and the water cleared up those resources were difficult to find (Orr 2005:91).

In addition to harvesting marine resources, references to traditional Hawaiian fishponds (*loko i'a*), or enclosed bodies of water often located at or near the *muliwai* of a stream, at Kahana and near the boundary of Māhinahina and Honokōwai were noted in the literature. The invention of fishponds in Hawai'i is said to have occurred around the 13th or 14th century, an innovation in aquaculture that may be unique to pre-contact Hawai'i (Kikuchi 1973; Summers 1964) and allowed Hawaiian subsistence practices to move beyond fish harvesting to fish production and husbandry (National Oceanic Atmospheric Administration 1997). At Kahana, the records of the Māhele contains a reference to the fishpond of Apolo, while Inez Ashdown (in Orr 2005:46) records the presence of a fishpond at the mouth of Honokōwai Valley near the boundary of Māhinahina. Integral to maintaining the health and productivity of the fishpond was the supply of nutrients that would be brought in with the stream flow.

5.3 NĀ KAHAWAI O KAHANA A ME MĀHINAHINA – THE STREAMS OF KAHANA AND MĀHINAHINA: LIFELINE FROM MAUKA TO MAKAI

Orr (2005:86) points out that the Hawaiian word for wealth is *waiwai*, which a reduplication of the *wai*, the Hawaiian word for water. Freshwater is a central resource in traditional Hawai'i and

access to flowing water essential for traditional agriculture, shoreline health, and thriving nearshore marine environment. The State of Hawai'i's Department of Land and Natural Resources' Division of Aquatic Resources (DLNR/DAR) best described the importance of stream flow connectivity to the Hawaiian ecosystem as follows:

Maintaining the natural patterns of water flow in streams is the single most important requirement for protection of native Hawaiian stream animals. These natural flows will keep the river mouth open and provide the gateway for our precious native stream animals to complete their life cycle. Hawaiian native stream life, like the native Hawaiian people who depended on the streams, embody the connection of Mauka (mountain) to Makai (ocean) that defines the Hawaiian ecosystem.

[\(http://dlnr.hawaii.gov/dar/habitat/streams/about-streams/\)](http://dlnr.hawaii.gov/dar/habitat/streams/about-streams/)

As noted in preceding sections, traditional agricultural terracing was observed along the *kahawai* (stream) of Kahana with Kahu Glenn noting that Hawaiians would settle along the stream in order to utilize the water for agriculture. At the *muliwai* of the gulches, Kahu Glenn and Uncle Clayton recall being able to find *o'opu* and *'opae* in the lower parts of the stream and at the *muliwai* (stream mouth) where the fresh stream water met the ocean, while Uncle Felimone shared the following strategy for collecting *he'e* or *tako* (octopus, squid) within the bay at the *muliwai*:

60 years ago you could collect tako (squid) at the muliwai after a storm because the plantation would open the ditch gates to the streambed and the cold water would rush down and cause the tako to float to the top.

In this regard, Uncle Clayton Smith, as well as Kahu Glenn Kamaka, expressed shock and surprise that the *kahawai* off of the Kahana pump station was dry and shared that when he was growing up there was always at least some water in the streams (see also 4.2.3 and 4.2.4). Mr. Kenneth Sadang, brother of Uncle Felimon Sadang and a participant of the initial cultural impact assessment for the Pulelehua Community project, also remarked on the seemingly recent lack of water in the stream bed:

...there was always water flowing through the kahawai. It played a very important role in the area where we grew up because it brought in all the mullet, the seaweed, the octopus, and believe it or not, lobsters were on the shore.... We played a lot in the kahawai. Because it's there's always water in there. (in Orr 2005:88)

Uncle Clayton has noticed temperature changes in the water of the bay and during the *huaka'i* to the *mauka* region (see also section 4.2.3), those present expressed concern about the changes to the ocean floor at the *muliwai* (stream mouth) of Kahana and Māhinahina Streams due to changes in stream flow and water quality (see also section 4.2.3):

... after the installation of the silt basins at Mahinahina and Kahana, the ocean resources had changed drastically as the water that entered the ocean at the muliwai was clear and no longer carried the nutrients that fed the limu beds and allowed the smaller fish to thrive.

...prior to the installation of the silt basins was almost always brown or murky with the silt nutrients that would come down through the gulches during the rainy season, only clearing

during calm water after the silt had settled ... The nutrients that came through the muliwai were necessary in order to have thriving limu beds, but only in so far what would naturally occur.

Uncle Clayton and Mr. Delatori also shared that murky water was not necessarily a bad thing and Hawaiians would know not to go in the water since the murky water would attract the shark who fed on the fish that came in. Participants in the study noted that there needed to be a balance that allowed for some nutrients carried by the streams that can make it to the ocean.

5.4 MAUKA ACCESS AND TRAILS/ROADS

Trails served to connect the various settlements within and between the *ahupua'a* and districts of the Hawaiian Islands in traditional times. While the Alaloa, or foot trail that circumnavigated the island, along the Kahana and Māhinahina coastline was likely replaced by the government road, no documentation of traditional trails on the broad ridges could be found at this time. This factor notwithstanding, it is possible that traditional *mauka-makai* transit route followed the streambeds of the gulches. It has been noted that petroglyphs have been commonly found in association with trail routes (Lee-Greig and Hammatt 2006). To this end, and with regard to Kahana Ahupua'a, Uncle Felimon Sadang recalled seeing petroglyphs and caves near the *kahawai*, while Archaeological Consultants Hawai'i recorded an isolated pecked petroglyph on a boulder (Kennedy 1990; Kennedy and Denham 1992:14) within the area that is now the Kahana Ridge subdivision.

Historic access points have been through both the area that is now the Kahana Ridge subdivision and the current project area. With regard to the former, Uncle Clayton Smith noted that he and his family once raised cattle in Kahana Gulch, with his brother staying at a small house situated at the valley floor. With the construction of the Kahana Ridge subdivision however, their vehicular access was cut off and the small-scale family cattle ranching endeavor became inviable (see section 4.2.2). It is likely that the ranching structures documented during the archaeological work conducted for the Kahana desilting basin (Kaschko 1974; Komori 1983; Sinoto 1975) is related to the Smith family operation.

With regard to access to the *mauka* region of Kahana and Māhinahina in general, this has been primarily vehicular and gained through the use of the old cane haul road that parallels the alignment of the Honoapi'ilani Highway and unimproved *mauka-makai* field roads along gulch edges and through the proposed project area (Figure 5-1). Uncle Clayton pointed out that the field roads provide primary access to both the reservoir above the Kapalua Airport and a lateral road that connects the pump stations and provides access to the upper reaches of the gulches.

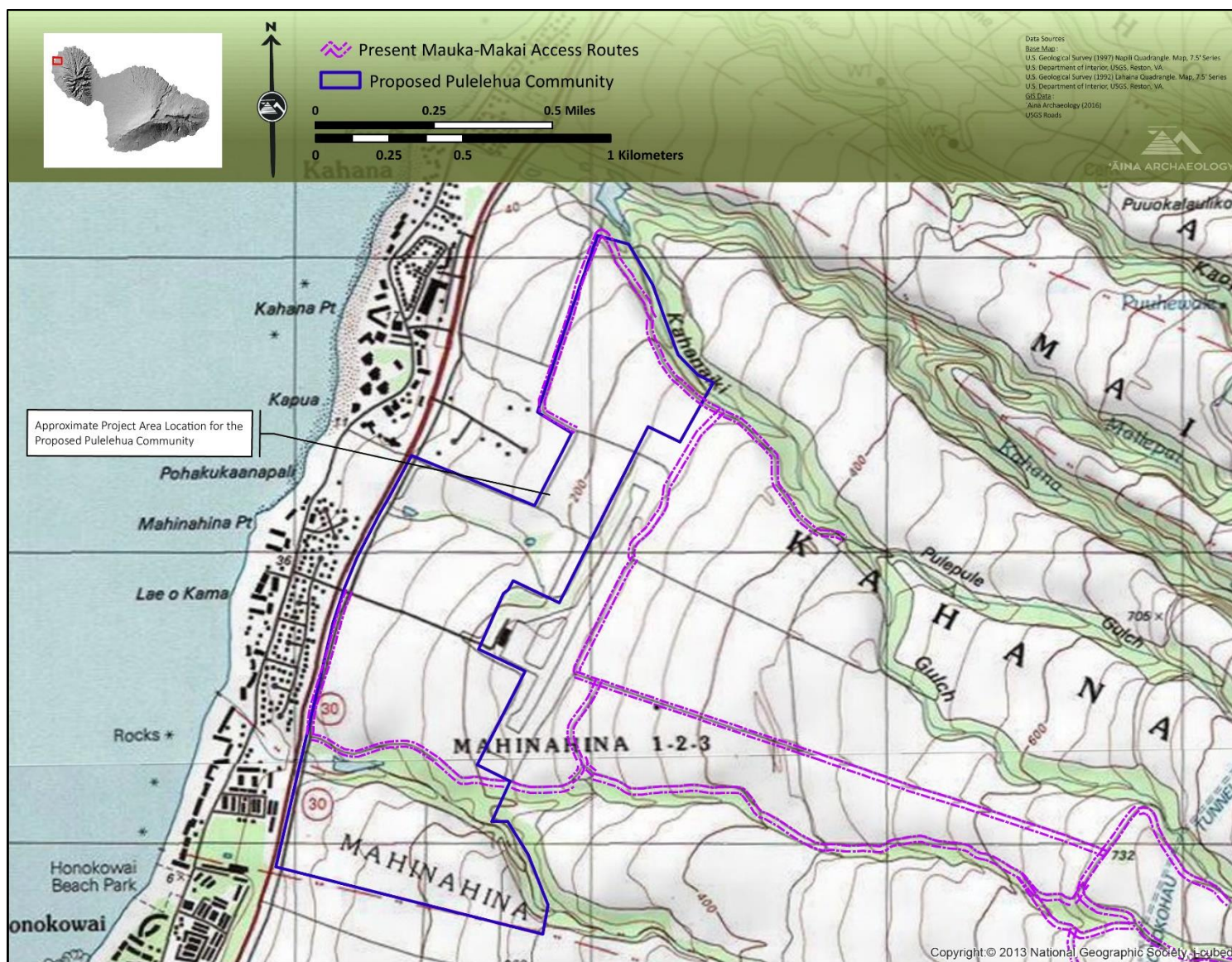


Figure 5-1. Portions of the Lahaina (1992) and Napili (1997) USGS 7.5 minute Topographic Quadrangles showing the current project area (outlined in blue), in relation present mauka-makai access roads as shared by those consulted for this study.

5.5 TRADITIONAL HAWAIIAN BURIALS AND HISTORIC CEMETERIES

The presence of traditional Hawaiian burial interments and historic family cemeteries along coastal reaches of Kahana and Māhinahina 1-4 Ahupua'a have been noted in at least one land commission award claim, shared by the participants of this study (see also section 4.2), and documented during archaeological studies conducted in the area (see also section 3.4). Historic Mailepai cemetery along with the Nakoa family cemetery and Kaukau family cemetery are known along the coastal reaches of Kahana and Māhinahina 1-4 Ahupua'a.

Testimony provided by Kaukau for a claim in Māhinahina 4, located *makai* Honoapi'ilani Highway and within Cockett's overall L.C.A. 75 (see also Figure 3-9), noted that in addition to a *kula 'uala* on his claim there was also a *kula kanu kupapau*, or cemetery, with his house being at least 500 ft. from the cemetery (figure, see also Table 3-1).

A subsequent archaeological study of the parcel resulted in the identification of habitation structures and deposits, as well as two historic cemeteries (McGerty and Spear 1996). The first, SIHP -4218, is a known family cemetery with burial plots marked with headstones surrounded by a hollow tile wall, and the second, SIHP -4219, consisting of stone platform and two stone terraces containing a minimum of three coffin burials (McGerty and Spear 1996:40-41). The findings of this study is consistent with the testimony given by Kaukau and it is possible that enclosed cemetery (SIHP -4218) represents continued use of the area as the Kaukau family cemetery which includes the likely 19th century platform burial features (SIHP -4219).

Finally, one marked burial was identified during an archaeological inventory survey by Archaeological Consultants Hawaii of the lands currently developed as the Koa Ridge Subdivision (see also Figure 3-13). While the majority of the project area had been cultivated in mature cane, a small section of uncultivated land within the field, surrounded and protected by large boulders, was observed and surveyed. A two-tiered platform, initially thought to be either a ceremonial structure or a burial (Kennedy 1990). Subsequent deconstruction and testing of the platform to verify the function of the feature was undertaken, the completion of which resulted in confirmation of the presence of human skeletal remains within an interior cavity (Kennedy and Denham 1992:16-21). Based on the level of bone decomposition and characteristics of platform construction, Kennedy and Denham postulate that interment likely occurred prior to European contact. Based on the presence of the protective boulders surrounding the burial feature, it is clear that the early field workers knew of the site prior to preparing the land for cultivation and took measures to protect it. Both Uncle Felimon and Kahu Glenn mentioned the presence of shrine within the Kahana Ridge subdivision and it is likely that this in reference to SIHP -2878.

6399 Kaukau Kaanapali Feb. 3rd 1868

He hoopii aku nei au ia nākou
 i hōi kuleana kahiko mai na māhina
 mai a iāi i ke hiki, ia na aina nei.
 He kuleana hale, aole nae he pa
 o ka pa aia ka pa, o na mea ma waho
 o kuu hale, he lauhala, he ulu Nāio
 kekahi; a he kula uala kekahi.

*Heia i Māhinahina heia mau
 kula uala a me na kula kanu kupapau
 mai kuu hale aku a kupapau, 90 Anana
 ka loa.*

Heia heia, he 14 lo'i kalo ma ke
 Ahupua'a o Honohowai, a me na kula
 uala malaila.

Heia ma Kapili kekahi mai
 lo'i, he 18 lo'i malaila, a me na kula
 uala malaila, a me na kula
 aina Me ka Mahalo

Ma Kaukau

Figure 5-2. Native Register testimony for L.C.A. 6399 to Kaukau highlighting Māhinahina claim and reference to kula kanu kupapau.¹

5.6 TRADITIONAL HAWAIIAN SITES AND PLANTATION ERA HISTORIC PROPERTIES IN RELATION TO THE CURRENT PROJECT AREA

Past cultural resource management investigations have documented archaeological resources within the general area (see section 3.4 Previous Archaeological Studies Within and Directly Adjacent to Kahana and Māhinahina Ahupua'a). Relative to the current project area, while sites have been documented within Kahana Gulch on the northern periphery of the current project area, the Kahana Ridge subdivision directly to the west of the current project area, and Māhinahina Gulches in the southern portion of the current project area (see also Figure 3-13), activities associated with historic and modern era sugar cane cultivation, as well as modern era pineapple cultivation, have greatly modified the traditional landscape across the broad ridges of the current project area that comprise the development footprint. Such activities have largely removed any surface sites that may have represented traditional Hawaiian habitation or

¹ L.C.A. claim awarded under *helu* (number) 4239 to Kaukau.

agricultural practices that existed prior to Western contact within the current project area (Pantaleo and Titchenal 2004) (see also Figure 3-11 and Figure 3-13). The only historic property identified within the project development foot print consisted of a discrete surface scatter of whole and fragmented glass bottle SIHP associated with historic era plantation use of the area which was recommended for no additional archaeological mitigation measures (Pantaleo and Titchenal 2004:26).

6.0 SUMMARY AND ANALYSIS OF EFFECT

As previously stated, based on the land commission award distribution in the *makai* reaches of Kahana and Māhinahina and near the gulches of the study area; in addition to the stories and information gathered during the background research and consultation completed for both this study and the initial cultural impact assessment (Orr 2005), it is apparent that settlement and land use within Kahana and Māhinahina 1-4 Ahupua'a functioned in the typical traditional sense, with a *makai* residence that could be near marine resources along with inland agriculture on the alluvial plain and within in the gulch for *kula 'uala* (potato land) and *lo'i kalo*. In addition to traditional Hawaiian agriculture, and though a relatively recent cultural practice in Hawai'i, historic and modern era pig hunting practices in the forested areas and higher sections of the gulches for both subsistence and sport have been documented by Maria Orr (Orr 2005:83-88, 104-105).

As a part of the cultural impact assessment process, an analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place (State of Hawaii Office of Environmental Quality Control 2012:13) is required.

6.1 POTENTIAL DIRECT EFFECTS

Uncle Felimon Sadang has stated that in regard to the specific lands of the proposed Pulelehua Community project, both personally and as the Kā'anapali Moku representative, and per those in the *moku* that he has reached to, there are no known traditional cultural practices being carried out within the boundaries of the proposed project area. This assertion is also shared by all who have participated in this study (see also section 4.2) which is also consistent with the documentation of the initial cultural impact assessment (Orr 2005:106). Uncle Clayton Smith and Kahu Glenn Kamaka, along with Mr. Junya Nakoa all recall the lands of the proposed project area being covered in sugar cane. The return of the native '*a'ali'i*' shrub to the project area was noted during the *huaka'i* to the *mauka* region (see also section 4.2.3), and while there were no known current gathering practices related to collection of '*a'ali'i*' foliage, all those who were present advocated for keeping the plant within the project area, and if need be, transplanted to landscape areas. Kahu Glenn also advocated for the use of '*a'ali'i*' to border the airport fencing and as a part of the landscaping palette.

While no specific cultural gathering, agricultural, or ceremonial practices were noted as being carried out within the proposed development footprint, access through the project area is necessary to get to the *mauka* reaches (see also section 4.2.3 and Figure 5-1). Kahu Glenn Kamaka specifically states that the traditional cultural practices that are being carried out are both *mauka* and *makai* of the proposed Pulelehua Community project. To this end, those consulted for both

this study and the original study have expressed concerns about the ability to maintain this access during and following development. The project proponent has indicated that access through the project area will not be cut-off and intends for the current field roads to remain and in some cases improved.

With regard to potential direct effects on the adjacent gulch environments and historic properties within the gulch bottoms, the development footprint does not extend to the gulch edge and therefore no direct adverse effects to gulch areas are anticipated. The existing field roads along both Kahana and Māhinahina Gulches are situated approximately 80 ft. from the gulch edges with no development plans for the space between these field roads and the gulches. Additionally, building construction is anticipated to be a minimum of 150 ft. from the edges of the gulches thus creating a construction buffer between the proposed project and the gulch edges.

Therefore, and in so long as access to the *mauka* region and upper reaches of the gulches are maintained (see Figure 5-1), no direct adverse effects from proposed project on traditional cultural practices are anticipated.

6.2 POTENTIAL INDIRECT AFFECTS

With regard to potential indirect effects, according to those consulted for this study, the most prominent and significant cultural practice within the vicinity of the current project revolves around the coastal marine resources of Kahana and Māhinahina. This finding is consistent with the findings of the initial cultural impact assessment completed by Maria Orr (2005). Fishing, diving, and resource gathering continues to play a large role in the livelihood of those consulted for this study, as well as the previous study. Siltation and construction run off from project development and cumulative effects of storm water run-off from the life-span of the development itself was a concern expressed by those who participated in both studies. Current development plans, as indicated by the project proponent, calls for use of the current drainage infrastructure and desilting basins and zero runoff. Those consulted for this study remain cautious, and advocate for some balance to allow for some nutrients to come through the *muliwai* in order to have thriving *limu* beds, but only in so far as what might naturally occur. Some concern was also expressed about the increase in population affecting the integrity of the marine resources as more people are present to observe the locations of the generational fishing grounds which may result in the loss of the resource to over fishing or destruction. With regard to construction run-off, Uncle Felimon advocated for a seasonal approach to construction, stating that groundwork be completed before or after the winter rain season and ground cover and landscaping be installed immediately to avoid heavy sediment run-off.

Kahu Glenn asserts that people and developers need to think about what was once on the land and encourages developers to work with the terrain instead of drastically change it and flatten it out, much in the way that the plantation worked with the terrain to avoid problems. To this end, the project proponent notes that current development plans will work with the existing contours

of the property and preserve more open space within the project area thus allowing for more seepage and percolation and lessen run-off concerns. It is also understood that there will be additional avenues of community input as the development progresses to full build out which would create opportunities for engagement and development of mitigation measures from lessons learned and observations gained from completion of the preceding construction phases.

6.3 PROJECT CONSIDERATIONS AND RECOMMENDATIONS

Finally, Mr. Nakoa points out that while he recognizes the need for workforce housing, he notes a feeling of a mistrust here that began with the project predecessor, and is a sentiment that continues in relation to anyone proposing to develop the project. Those consulted for this study shared *mana'o* regarding the general development of the project within their community. Though not necessarily specifically related to traditional cultural practices, they are nonetheless as important, as the *kūpuna* and *kanaka maoli* (native Hawaiians) of Kahana and Māhinahina see constant change in their community and traditional lifeways.

A recurring theme throughout the consultation process was a reminiscing of “camp life.” Uncle Felimone Sadang states that he has witnessed the changes across the area over the years from pig pens and chicken coops to concrete and steel. Kahu Glenn recalls the feeling of community from those days where you neighbors were all family and close friends and everyone shared, a quality of life that seems to be disappearing. Regarding the proposed Pulelehua Community, Kahu Glenn advocates for the development of a community where everyone knows their neighbors and he, along with others consulted for this study, wants to be sure that the housing that is proposed will truly be for the local workforce and not acquired by realtors and turned over for profit leaving the local people out of the housing market. To this end, the project proponent is proposing to develop work-force rentals, both affordable and market priced rentals, which should deter real estate speculation concerns.

For community health and safety Kahu Glenn also wanted to make sure that the soils had been properly tested as he remembers that his father moved the large plantation machines, and from time to time agricultural chemicals, across the island. Kahu Glenn is very aware that the agricultural soils had been heavily fertilized, and chemicals had been used for crops and pest control. With regard to the parks and development of a healthy community, Kahu Glenn refers back to “camp life” and advocates for community park development that includes a barbecue area with comfort stations that have bathrooms and showers; as well as, community gardens with food trees (e.g. banana, avocado, mango, citrus, soursop, starfruit, etc.) and an interconnecting bike path for the safety of children and health of the community.

Walking through the lands during the *mauka huaka'i* and reflections made during talk-story discussions made an impact on both Kahu Glenn and Uncle Clayton as it renewed their understanding that we need to take care of the land and the community and allowed them to reflect on their childhood and growing up in “camp life.” For community building and cohesion, Kahu Glenn wants to be sure that the community comes together in this as it is a very large

project which has the potential to drastically change the currently quiet area of Kahana and Māhinahina. The following *kahea* to the island community of Maui is an excellent example of the request for a community to come together to join the community at Queen Kapiʻolani's church of Kahana that is steeped in the Hawaiian oratory tradition of poetry and lyric, heavily laden in *kaona* or veiled meanings, and rich in knowledge and references to the natural wonders of each region mentioned. Kahu Glenn adamantly states, and the results of the consultation for this study infers, that there must be respect for the home culture, the Hawaiian culture, first and foremost.

"He leo Poloai."

He leo poloi keia i na manu hulu like a pau, i hoopunana ia e na lokomaikai me ke aloha. E ku, e eu ka manu o Lihau, ka manu kiai i ka lai o Hauoli la-e. "Hoolono mai."

E makaukau ana ka ahaaina komo halepule o Kahana i ka pali Hinahina o Kaanapali, Maui i ka Poaha alua o Aperila e hiki mai ana oia ka la 11. Mamuli o ka hapai ana a ka Moiwahine Kapiolani, a me na hoahanau kakaikahi o laila, ua paa iho la ua halepule la i na dala elua haneri kanawalu kumamakolu me umi kumamalua keneta (\$283.12) me ka aie ole. Huro! no ko lakou eleu.

O na hunahuna hana i koe, i manaoia e hapai; oia no na papa pale oluna, a me na puna o na paia o lalo, a me ka hale bele. Ma keia mau mea, ke kono ia'ku nei na Kristiano a pau. E pupukahi kakou i keia hana hou me ka lokahi. E na Hono a Piilani-e. Imua a lanakila. I haaheo mau hoi kou moto "Eo no ia Maui."

Eia ke kau leo i ko Hana i ku a lanakila ka makani ua "Lauawa." Me he moa lawa-kea la ka ua i ke kai. Ka ulupa i ke kai o Nanulele. Hanu a ea i uka o

"A Request"²

This is a [request] to all varieties of birds³ settled by the graciousness of love. Stand, let the bird of Lihau⁴ stir to action, the bird that guards the calm of Hau'oli⁵. "Give heed."

The inaugural feast of the church of Kahana at the cliff of Hinahina in Kā'anapali, Maui will be ready the second Tuesday of next April, which is the 11th. At the suggestion of Queen Kapiʻolani and a few members of that location, the church has secured the sum of two hundred eighty-three dollars and twelve cents (\$283.12) without obtaining a loan. Hurray! for their efforts.

The few other items that remain that were thought to pursue were the ceiling boards, the mortar for the interior walls, and the bellfry. In these things, all Christians are being invited to participate. Let us come together to perform this work in unity. This goes out to all of Hono a Pi'ilani. Let us move forward together until we achieve success. So that your slogan, "Maui wins", is realized.

² Translators note: Despite the language of the original Hawaiian text being translated into English, there are many culturally embedded references in the original text that require background knowledge in order for Anglophone readers to understand the rationale and actual message of the text. The background information that facilitate understanding is included in footnotes below.

³ "Manu" [bird/s] is a poetic euphemism for "person/people".

⁴ "Lihau" is "peaceful/calm", therefore, the poetic reference here is a person at ease should stir to action.

⁵ "Hau'oli" here is used as a place name. The poetic reference is a person enjoying tranquility.

Honokalani la “Ka lala i ka wai la kuu’a mai.”

Eia mai ka “Anoai” i ko Makawao mau manu hulu like, aina ua ukiukiu, i pili ia me ka ua ula o “Kokomo” “E komo oukou i ka hale ua launa.”

Eia ka ualo ia Moekokolo ka uahi o Kula he hau; alualu hele a ke kula noho mai. A ke kula o Waiohuli i Kamaole. Hoole ka waha luna, e puhau o lalo. “Elima la”

Eia ka mahalo i ko Maunahuihui a me ko Palauea, manuahi wale mai hoi ko Koolau he pakika he pahee ka pali o “Kaliae,” he nenelu poho ka naela o “Oopuola,” he laula ke kula o Kamaomao, mea ole nae i ka ihu o na lio. “Ho iho ko kapuahi.”

Eia ka poloai i ko na Waieha, kuu paulia mai na lio e ko Waikapu i ka makani kololio, a loa’ku ko ka malu kuawa e anapau ana. Lea ka hulei i ka hoeha ili; hookahi ka umauma i ka makani Kilioopu. “Hoohiolo ia iho na pali o Leinaha.”

Eia ka welina i ko “Kahakuloa. He mau pali mamua, he puu kinikini he kahawai lehulehu, he alu he kapekepeke; hihia mai palaha ia

We urge the residents of Hāna to take a stand so that the Lau’awa⁶ wind becomes victorious. The rain is like a white cock⁷ over the sea. The sea crashes at Nānūlele⁸. Life thrives inland of Honokalani⁹, where “the waters are released angling downward.”

Here comes the greeting of aloha to the birds of a feather of Makawao, land of the ‘Ūkiukiu rain joined together with the Ua’ula rain of Kokomo¹⁰. “Enter the home where all meet.”

This is a plea for help to Moekokolo¹¹, the smoke of Kula, the dews, which go around chasing on the plains to live. To the plains of Waiohuli in Kama’ole. The mouth above denies the cool springs below. “Five days.”

This is the expression of gratitude to the people of Maunahu’ihu’i and Palauea, the people of Ko’olau give generously, as if slipping and sliding down the cliffs of “Kalia’e,”¹² the fishing net of ‘O’opuloa sinks easily¹³, the plains of Kama’oma’o are wide and well known to the snouts of horses¹⁴. “Give of your fireplaces.”

Here is the request to those of the Four Waters¹⁵, the horses of the

⁶ The name of a wind well known for Hāna. Using the name of a wind or rain of a place is a common reference to the people of the place.

⁷ “Lawa-kea” is used here as a play on words and a substitute for Lau’awa, the wind name of Hāna.

⁸ Nānūlele is a place name in Hāna, but “nā nū lele” can also be interpreted as “news that spreads”, alluding to the message of this article, “spread the word and stir to action.”

⁹ A poetic reference based on the place name, Honokalani, which can be interpreted as “hono ka lani” (“the point where the heavens are bound together”), alluding to a rain cloud that releases large amounts of rain, needed for life to thrive.

¹⁰ A play on the word, “komo” (“to enter”).

¹¹ A play on the wind name of Kula, Maui, “Moekokolo”, which can be understood in this context as “moe kokolo” (“to wander around in one’s sleep”).

¹² A play on the word “kali” (“to wait”).

¹³ A euphemism for “deep pockets”, encouraging readers to be generous with donations.

¹⁴ A reference to the gathering place of multitudes of people.

¹⁵ A common poetic reference to Maui in generally, but more specifically, the four places of the central plains of the island with names beginning with “Wai-” (“water”): Waihe’e, Waiehu, Wailuku, and Waikapū.

Hononana” e maliu i ka leo. “E naue like mai.”

Eia ka lawe’na o ke oki i ko Honokōhau, Me he ku na ka ahu pea maikai la, “ka maloeloe o ke alo o ka pali”, “Kulu wai liilii la.”

Eia ka alana e ko Molokai nui a Hina. E na eueu o ke kai o Pailolo, na oukou i hehihehi na a’e, ua kamaaina ka moana, eia mai ka papa aina o ke aloha mamua o ka ihu o na waa. E kipa e kamau ai a piha ka lua o ka anaina. “Eia iho ka uku la o ka leo.”

E molia aku ana i ko Lanai a Kaululāu. Aole i kahi moku puakala iki, eia iho i ka moku puakala nui ka mole “uau” “Pa iho ia Kināu. Waiolu wale ka manawa.”

Pa kahea a ke kini o lalo, e aha ana ko Kaukaweli mau lwa? E walea ana i ka wai hui a “Wao,” i ke kilihune mai a ka ua Paupili i ke kula. Ae, he kau aoao wale no a hiki i kahana. “Aia paha ia Hana’ike ia wahi.” “He kiu ka pua kuikui na ka makani, he alele na ka ua ula o Napili i ko ka Malu Ulu o Lele.” e uhau ka uepa o na kaa lio, e hawele na kepa o Lihue i ka poe hololio, e kainepe ma ke kua o Kekaa, i ike i ke ala kikeekee a Maui, e lulu lima pu me ka ua “Lililehua.” e wehe i ka umauma i akea, i kaawale ka houpo kahi i waiho ai ke aloha, e lalau ma ka lima hema, i ohi hapuku ka makapehu, o Kaunu. Ia lakou ia mai hoi ka wale, a ia oukou aku hoi ka Pe. “E kikikoele apau i Kahane.”

Konohiki lua ka la ia Olowalu i ka la, i ka makani kahi aoao. Na Ukumehame

people of Waikapū in the Kololio¹⁶ wind give until they realize the shade of the guava trees shaking. We enjoy the feel of the wind blowing the skin; we all enjoy the Kili’o’opu wind. “The cliffs of Leinahā¹⁷ are brought down.”

This is a greeting to the people of “Kahakuloa. There are cliffs at the front, a multitude of hills and streams meandering up and down and side to side, entangled on the flats of Hononana”; heed the call. “Let us all stir to action¹⁸.”

Here is the final action directed at the people of Honokōhau, like a good kite, “the taughtness in the face of the cliff”, “the waters flow.”

This is an offering to the people of Moloka’i Nui a Hina. To the activists of the Pailolo Channel, it is you who tread the way, you know the ocean; here comes the table laden with love ahead of the canoe. Join us in the pursuit of satisfying our hunger. “This is the payoff, our voice.”

Laying an offering before those of Lāna’i of Kaululā’au. This is not for a little, red island, but for the layers of ‘ua’u birds of the large, red island. “Touched by the ship, Kīna’u. The heart is stirred warmly.”

This is a call out to all those residing in the lowlands, what are the ‘iwa birds of Kaukaweli¹⁹ up to? They relax in the cool waters of the “Wao”²⁰, in the mists of the Pā’ūpili rain on the plains. Yes, it is only a season of instruction all the way to Kahana. “The place belongs to Hana’ike.”²¹ “The kukui flower is a

¹⁶ A play on the word “lio” (“horse”).

¹⁷ Likely a reference to the four waters.

¹⁸ A play on the word “nana” (“to become animated”), as in the place name, Hononana.

¹⁹ A reference to the omen of ‘iwa birds seen high in the sky indicating the approach of a storm or more figuratively, danger. This is also a play on the place name, Kaukaweli (“to be fearful”).

²⁰ “The forest”, alluding to being in a state of relaxation.

²¹ A play on the words, “hana” (“to do”) and “ike” (“knowledgibly”).

*ka nau a ka makani. E lauhoe mai na
waa, he mau keiki no ka aina makani,
i ka hoe i ke ka, i ka hoe i ke ka, pae
ana i Kahana. "Haawi na eo" Huro!
Huro!! e wiki kakou.*

"E hui mai apau me Haiku

E alu ka pule i Hakalau

E kui mama i loa o Kaahele

E loa ana no i Kahana."

W.L. MOEHONUA.

Komite Poloi.

Hauola, Lahaina, Maraki 16, 1878.

Ka Nupepa Kuokoa

March 23, 1878, p. 3

spy on the wind, a messenger of the Ua'ula rain of Nāpili²² to the people of Ka Malu o Lele." The seal of the horse-drawn carriages make their stamp, the laborers of Līhu'e bind the horseriders together, who trot their way inland of Keka'a to see the crooked pathway of the people of Maui, shaking hands with the Lililehua rain. Open your hearts wide so that we may see where love resides, put it in the left hand for the collector, Kaunu, can take it. They do the enticing and you do the paying. "Let everything be done thoroughly by enticement."

A konohiki presides over Olowalu²³ in the sun, with the wind on one side. Ukumehame²⁴ digs in in the billowing wind²⁵. Let the canoes²⁶ be gathered in with the boys of the windy place, dipping in the paddle and pulling, dipping and pulling, until they reach Kahana²⁷. "Give the victory" Hurray! Hurray!! Let's get a move on.

"Let's all come together with Ha'ikū²⁸

Let's all pray together at Hakalau²⁹

Let's combine our speed and go the distance from Ka'ahele³⁰

Kahana³¹ will get it."

W.L. MOEHONUA.

Request Committee.

Hauola, Lāhaina, March 16, 1878.

(Translation by Richard Keao Nesmith, Ph.D.)

²² Likely a play on the word "pili" ("to come together").

²³ A play on the word "olowalu" ("to come together to action").

²⁴ Likely a play on the word "uku" ("to pay").

²⁵ Likely inferring that it is honorable to donate despite hard times.

²⁶ A euphemism to people.

²⁷ A play on the word "hana" ("action").

²⁸ Likely a play on the word "ha'ikū" ("to be proud").

²⁹ Likely a play on the word "haka" ("altar").

³⁰ A play on the word "hele" ("to go").

³¹ A play on the word "hana" ("action").

7.0 REFERENCES CITED

Abbott, Isabella Aiona

1992 *Lā'au Hawai'i : Traditional Hawaiian Uses of Plants*. Bishop Museum Press, Honolulu, HI.

Akana, Collette Leimomi and Kiele Gonzalez

2015 *Hānau ka Ua Hawaiian Rain Names*. Kamehameha Publishing, Honolulu, HI.

Alexander, W.D.

1882 *Interior Department, Appendix 1, to Surveyor Generals Report. A Brief History of Land Titles in the Hawaiian Kingdom*. P. C. Advertiser Company Steam Print, Honolulu, HI.

1890 *A Brief History of Land Titles in the Hawaiian Kingdom*. In *Hawaiian Almanac and Annual for 1891*, edited by T. G. Thrum. Press Publishing Company Print, Honolulu, HI.

Beckwith, Martha Warren

1970 *Hawaiian Mythology*. University of Hawaii Press, Honolulu, HI.

Conte, Patty J.

2005a *Archaeological Assessment Report for TMK (2) 4-3-03:043 Mailepai Ahupua'a, Lāhainā District, Island of Maui*. Prepared for Moffett Properties. CRM Solutions Hawai'i, Inc., Makawao, HI. On file at Hawai'i State Historic Preservation Division.

2005b *Archaeological Assessment Report for TMK (2) 4-3-015:008 Kahana Ahupua'a, Lāhainā District, Island of Maui*. Prepared for Jewel of Kahana LLC. CRM Solutions Hawai'i, Inc., Makawao, HI. On file at Hawai'i State Historic Preservation Division.

Dagher, Cathleen A. and Michael F. Dega

2015 *Archaeological Field Inspection Results and Recommendations for the Proposed Maui Police Department Communications Facility at Mahinahina Water Treatment Plant, Mahinahina Ahupua'a, Lahaina District, Maui Island, Hawai'i [TMK: (2) 4-3-001:084 por. [Formerly 4-3-001:031 por.]]*. Prepared for Munekiyo Hiraga, Wailuku, HI. Scientific Consultant Services, Inc., Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

Dagher, Cathleen A. and Michael F. Dega

2014 *An Archaeological Inventory Survey for Six Proposed Solar Voltaic Cell Sites Located in the Ahupua'a of Honokahua, Honokeana, and Honokōwai Lāhainā (Kā'anapali) District, Island of Maui, Hawai'i [TMK (2) 4-2-001:043 por.; 4-3-004:024 por.; 025 por.; 001 por.; 4-4-002:016, 019; and 4-4-004:008 por.]*. Prepared for CDF Engineering, Wailuku, HI. Scientific Consultant Services, Inc., Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

Dega, Michael

2005 *Addendum Archaeological Assessment Report on 0.13 Acres of Partially Developed Land in Honokowai, Mahinahina 4 Ahupuaʻa, Lahaina District, Maui Island, Hawaiʻi [TMK: 4-3-06:2 and 69].* Prepared for Maryl Pacific Construction, Inc., Honolulu, HI. Scientific Consultant Services, Inc., Honolulu, HI. On file at Hawaiʻi State Historic Preservation Division.

Dockall, John E., Tanya L. Lee-Greig and Hallett H. Hammatt

2005 *An Archaeological Assessment of a Proposed Road Corridor for Maui Preparatory Academy, Alaeloa Ahupuaʻa, Lahaina District, Maui Island.* Prepared for Kapalua Land Company, Ltd. Cultural Surveys Hawaiʻi, Inc., Wailuku, HI. On file at Hawaiʻi State Historic Preservation Division.

Dodge, F.S.

1885 *Maui, Hawaiian Islands* [map]. 1:90,000. Survey by W.D. Alexander, C.J. Lyons, M.D. Monsarrat, F.S. Dodge, S.E. Bishop, E.E. Baldwin, and W.R. Lawrence, Hawaiian Government Survey. Hawaiian Government Survey. On file at Department of Accounting and General Services, Land Survey Division.

Fleming, D.T.

1905 *Book 1: Copies of Land Commission Awards, Honolua to Kahana, inclusive, Kaʻanapali, Maui.* Fleming Honolua Ranch Journals 1905-1911.

Foote, Donald E., Elmer L. Hill, Sakuichi Nakamura, Floyd Stephens and United States. Soil Conservation Service

1972 *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii.* Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

Fornander, Abraham

1917 Story of Lonoikamakahiki. In *Fornander Collection of Hawaiian Antiquities and Folk-lore The Hawaiians' Account of the Formation of their Islands and Origin of their Race, with the Traditions of their Migrations, Etc., as Gathered from Original Sources*, Vol. IV, Part II, edited by T. G. Thrum, pp. 256-363. Bishop Museum Press, Honolulu, HI.

1918 Legend of Kuapakaa. In *Fornander Collection of Hawaiian Antiquities and Folk-lore The Hawaiians' Account of the Formation of their Islands and Origin of their Race, with the Traditions of their Migrations, Etc., as Gathered from Original Sources*, Vol. V, Part I, edited by T. G. Thrum, pp. 78-225. Bishop Museum Press, Honolulu, HI.

Fredericksen, Demaris L., Walter M. Fredericksen and Erik M. Fredericksen

1990 *An Archaeological Inventory Survey of a 9.976 Acre Parcel in the Kahana/Mailepai/Alaeloa District, Lahaina, Maui, Hawaii.* Prepared for GGS (HI), Inc.,

Honolulu, HI. Xamanek Researches, Pukalani, HI. On file at Hawai'i State Historic Preservation Division.

Fredericksen, Erik M.

2004 *Letter Report on an Archaeological Site Inspection of a c. 1 acre portion of Napili Park Subdivision, Napili 4 & 5 Ahupua'a, Lahaina District, Maui (TMK: 4-3-01:005).* Prepared for County of Maui -- Department of Parks and Recreation, Wailuku, HI. Xamek Researches, Pukalani, HI. On file at Hawai'i State Historic Preservation Division.

Fredericksen, Erik M. and Demaris L. Fredericksen

1999 *Draft Archaeological Inventory Survey of the Lower Honoapi'ilani Road Improvements Project Corridor.* Prepared for County of Maui -- Department of Public Works and Waste Management, Wailuku, HI. Xamek Researches, Pukalani, HI. On file at Hawai'i State Historic Preservation Division.

Fredericksen, Walter M.

1995 *Kahana Project -- GPR Survey of TMK 4-3-15:69.* Xamanek Researches, Pukalani, HI. On file at Hawai'i State Historic Preservation Division.

Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S Chu, J.K Eischeid and D.M. Delparte

2013 Online Rainfall Atlas of Hawai'i. *Bulletin of the American Meteorological Society* 94:313-316.

Griffin, Bion P., Richard E. Hughes, George W. Lovelace and Richard M. Bordner

1976 *Survey and Salvage - Honoapi'ilani Highway, The Archaeology of Kā'anapali from Honokōwai to 'Alaeloa ahupua'a.* Prepared for State of Hawaii Department of Transportation, Higways Division and U.S. Department of Transportation, Federal Highway Administration, Contract No. 5966, Project No. F-030-1(4), Honolulu, HI. Archaeological Research Center Hawaii, Inc., Lawa'i, HI. On file at Hawai'i State Historic Preservation Division.

Handy, E. S. Craighill, Elizabeth Green Handy and Mary Kawena Pukui

1991 *Native Planters in Old Hawaii : Their Life, Lore, and Environment.* Rev. ed. Bernice P Bishop Museum Bulletin 233. Bishop Museum Press, Honolulu, HI.

Handy, E. S. Craighill and Mary Kawena Pukui

1972 *The Polynesian Family System in Ka'u, Hawai'i.* C.E. Tuttle Co., Rutland, VT.

Hill, Robert R., Colleen P.M. Dagan and Hallett H. Hammatt

2006 *An Archaeological Assessment of a 12.26-Acre Proposed Rural Subdivision, located at 'Alaeloa and Honokeana Ahupua'a, Lahaina District, Maui Island.* Prepared for Mailepai, LLC. Cultural Surveys Hawai'i, Inc., Wailuku, HI. On file at Hawai'i State Historic Preservation Division.

Ho, Ah Leong

1940 *Map Showing the Land Holdings of Baldwin Packers, Ltd. in Kaanapali, Lahaina, Maui, T.H.* [Map]. Baldwin Packers, Ltd., Lahaina, Maui.

Hommon, Robert J. and Hamilton M. Ahlo

1982 *An Archaeological Reconnaissance Survey of the Site of a Proposed Airstrip at Mahinahina, West Maui.* Prepared for Royal Hawaiian Air Service. Science Management, Inc. On file at Hawai'i State Historic Preservation Division.

Kahā'ulelio, Daniel

2006 *Ka 'Oihana Lawai'a - Hawaiian Fishing Traditions*, edited by M. P. Nogelmeier. Translated by M. K. Pukui. Bishop Museum Press, Honolulu, HI.

Kamehameha III

1848 *Buke kakau paa no ka mahele aina i hooholoia iwaena o Kamehameha III a me na lii a me na konohiki ana Hale Alii, Honolulu, Ianuari, 1848.*

Kaschko, Michael W.

1974 *Archaeological Walk-Through Survey of Specified Areas in the Wailuku Flood Prevention Project and the Honolua Watershed, Maui.* Prepared for U.S. Department of Agriculture, Soil Conservation Service, Honolulu, HI. Department of Anthropology, Bernice P. Bishop Museum, Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

Kennedy, Joseph

1989 *Proposed Napili Fire Station: TMK: 4-3-04:01 (por).* Prepared for A.I.A. & Associates, Lahaina, HI. Archaeological Consultants of Hawaii, Inc., Haleiwa, HI. On file at Hawai'i State Historic Preservation Division.

1990 *Archaeological Inventory Survey Report for TMK: 4-3-01:31, Located at Kahana, Island of Maui.* Prepared for Tanaka Engineers, Inc., Wailuku, HI. Archaeological Consultants of Hawaii, Inc., Haleiwa, HI. On file at Hawai'i State Historic Preservation Division.

Kennedy, Joseph and Tim Denham

1992 *Archaeological Inventory Survey and Subsurface Testing Report for TMK: 4-3-01:31, Located at Kahana Ahupua'a, Island of Maui.* Prepared for Tanaka Engineers, Inc., Wailuku, HI. Archaeological Consultants of Hawaii, Inc., Haleiwa, HI. On file at Hawai'i State Historic Preservation Division.

Kikuchi, William K.

1973 *Hawaiian Aquacultural Systems*, PhD Dissertation, Department of Anthropology, The University of Arizona.

Kingdom of Hawaii

1848 *An Act Relating to the Lands of His Majesty the King and of the Government. In A Supplement to the Statute Laws of His Majesty, Kamehameha III., King of the Hawaiian Islands, Containing the Acts and Resolutions Passed by the Houses of Nobles and Representatives, During the Twenty-Third Year of His Reign and the Sixth Year of His Public Recognition, A.D. 1848*, pp. 22-43. Government Press, Honolulu, HI.

Komori, Eric

1983 *Archaeological Investigations at Kahana Gulch Lahaina District, Maui*. Prepared for U.S. Department of Agriculture, Soil Conservation Service, Honolulu, HI. Department of Anthropology, Bernice P. Bishop Museum, Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

Lee-Greig, Tanya L. and Hallett H. Hammatt

2006 *A Cultural Impact Assessment for the Proposed Pali to Puamana Parkway Polanui Ahupua'a to Ukumehame Ahupua'a, Lāhainā District Maui Island TMK: (2) 4-8-02: multiple parcels, 4-8-03: multiple parcels and 4-7-01: multiple parcels*. Cultural Surveys Hawai'i, Inc., Wailuku, HI.

Lucas, Paul F. Nahoa

1995 *A Dictionary of Hawaiian Legal Land-Terms*. Native Hawaiian Legal Corp. : University of Hawai'i Committee for the Preservation and Study of Hawaiian Language, Art, and Culture, Honolulu, HI.

Lyons, Barbara.

1957a "Cliff-Hanger: The Villain Turned Out to be a Hero." *Honolulu Star-Advertiser* [Honolulu, HI], Sunday, October 20, 1957, Main ed., p. 88.

1957b "In the Darkness One Partner Always Got the Bigger Fish." *Honolulu Star-Advertiser* [Honolulu, HI], October 6, 1957,

Macdonald, Gordon A., Agatin Townsend Abbott and Frank L. Peterson

1983 *Volcanoes in the Sea : The Geology of Hawaii*. 2nd ed. University of Hawaii Press, Honolulu, HI.

Maly, Kepa and Onaona Maly

2003 *Ka Hana Lawai'a a me Nā Ko'a o na Kai 'Ewalu : A History of Fishing Practices and Marine Fisheries of the Hawaiian Islands*. Prepared for The Nature Conservancy, Honolulu, HI. Kumu Pono Associates, Hilo, HI.

McGerty, Leann and Robert L. Spear

1996 *An Inventory Survey of a 3.3 Acre Parcel in Mahinahina 4 Ahupua'a, Lahaina District, Island of Maui, Hawai'i {TMK 4-3-06:3}*. Prepared for Smith Development.

Scientific Consultant Services, Inc., Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

Monahan, Christopher M.

2003 *An Archaeological Assessment Report on 3.054 Acres of Partially Developed Land in Honokowai, Mahinahina 4 Ahupua'a, Maui Island, Hawai'i [TMK: 4-3-06:2 and 69].* Prepared for Frampton & Ward, LLC., Kahului, HI. Scientific Consultant Services, Inc., Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

National Oceanic Atmospheric Administration

1997 *Hawaiian Islands Humpback Whale National Marine Sanctuary: A Federal/State Partnership for the Protection of Humpback Whales and Their Habitat Final Environmental Impact Statement/Management Plan.* Prepared for National Oceanic Atmospheric Administration, Silver Springs, MD.

Office of Hawaiian Affairs

2011 Papakilo Database: Kūkulu ka 'ike i ka 'ōpua [Online Database], Māhele 'Āina Index, DL Consulting, papakilodatabase.com.

2014 Kipuka Database [Online GIS Database], BEI Consulting and 'Āina Arts Photography, kipukadatabase.com.

Orr, Maria E. Ka'imipono

2005 *Cultural Impact Study/Assessment Pulelehua Community Ahupua'a of Māhinahina, District of Kā'anapali Maui Island, Hawai'i.* Maria E. Ka'imipono Orr, Honolulu, HI.

Pantaleo, Jeffrey and Lisa Rotunno-Hazuka

2006 *Archaeological Assessment Report of a 0.879-acre Coastal Parcel Mahinahina 1, 2, and 3 Ahupua'a, Kaanapali District Island of Maui TMK 4-3-09:03.* Prepared for Mr. Scott Shoemaker. Archaeological Services Hawaii, LLC., Wailuku, HI. On file at Hawai'i State Historic Preservation Division.

Pantaleo, Jeffrey and Paul Titchenal

2004 *Archaeological Inventory Survey Report for the Pulelehua Community Project TMK 4-3-01: 31 por. Mahinahina 1, 2, 3, Mahinahina 4, and Kahana Ahupua'a, Lahaina and Kā'anapali Districts Island of Maui.* Prepared for Maui Land and Pineapple, Inc. Archaeological Services Hawaii, LLC., Wailuku, HI. On file at Hawai'i State Historic Preservation Division.

Perzinski, David and Michael Dega

2014 *An Archaeological Assessment for the West Maui Well No. 2 Exploratory, DWS Job No. 11-06, Kahana Ahupua'a, Lahaina (Kā'anapali) District, Maui, Hawai'i [TMK (2)4-3-*

001:017]. Prepared for Fukumoto Engineering, Inc., Wailuku, HI. Scientific Consultant Services, Inc., Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

Pestana, Elizabeth and Michael Dega

2007 *Archaeological Inventory Survey of a 5.18 Acre Parcel in Kahana, Kahana Ahupua'a, Kaanapali District, Island of Maui, Hawai'i [TMK: (2)-4-3-15:069]*. Prepared for Chris Hart and Partners, Inc., Wailuku, HI. Scientific Consultant Services, Inc., Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

Pratt, Linda W. and Samuel M. Gon III

1998 Terrestrial Ecosystems. In *Atlas of Hawaii*, edited by S. P. Juvik and J. O. Juvik. Third ed. University of Hawaii Press, Honolulu, HI.

Pukui, Mary Kawena

1983 *Ōlelo No'eau: Hawaiian Proverbs & Poetical Sayings*. Bernice P Bishop Museum special publication. Bishop Museum Press, Honolulu, HI.

Pukui, Mary Kawena and Samuel H. Elbert

1986 *Hawaiian Dictionary : Hawaiian-English, English-Hawaiian*. Rev. and enl. ed. University of Hawaii Press, Honolulu, HI.

Pukui, Mary Kawena, Samuel H. Elbert and Esther T. Mookini

1976 *Place Names of Hawaii*. Revised and expanded edition. ed. University Press of Hawaii, Honolulu, HI.

R.M. Towill Corporation

1957 *Photo Contour Map of Pioneer Mill Company, Ltd. Lahaina, Maui, T.H.* [aerial photo]. 1:800. R.M. Towill Corporation, Honolulu, HI.

Schmitt, Robert C.

1973 *The Missionary Censuses of Hawaii*. Pacific Anthropological Records. Dept. of Anthropology, Bernice Pauahi Bishop Museum, Honolulu, HI.

Sinoto, Aki

1975 *Field Examination of Six Sites in the Honolua Watershed, Maui*. Prepared for U.S. Department of Agriculture Soil Conservation Service. Bishop Museum, Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

State of Hawaii Office of Environmental Quality Control

2012 *Guide to the Implementation and Practice of the Hawaii Environmental Policy Act. 2012 Edition*. Honolulu, HI.

Sterling, Elspeth P.

1998 *Sites of Maui*. Bishop Museum Press, Honolulu, HI.

Summers, C.C.

1964 *Hawaiian Fishponds*. Bishop Museum Special Publication, No. 52. Honolulu, HI.

Tourtellotte, Perry A.

1988 *Archaeological Inspection Report for Rainbow Ranch*. Prepared for Rainbow Ranch. Perry A. Tourtellotte On file at Hawai'i State Historic Preservation Division.

Tulchin, Jon and Hallett H. Hammatt

2003 *Archaeological Assessment of a 0.2-acre Parcel and Waterline, Mahinahina 4 Ahupua'a, Lahaina District, Island of Maui [TMK: 4-3-06:56 &58]*. Prepared for Mr. Keola Robinson, Lahaina, HI. Cultural Surveys Hawai'i, Inc., Honolulu, HI. On file at Hawai'i State Historic Preservation Division.

U.S. Geological Survey

1992 *Lahaina Quadrangle* [Map]. 7.5 Minute Series. U.S. Department of Interior, USGS, Reston, VA.

1997 *Napili Quadrangle* [Map]. U.S. Department of Interior, USGS, Reston, VA.

USDA-NRCS-NCGC

2001 Soil Survey Geographic (SSURGO II), U.S. Department of Agriculture, Service Center Agencies.

Walker, Alan T. and Paul H Rosendahl

1985 *Testing of Cultural Remains Associated with the Kahana Desilting Basin, Honolua Watershed, Land of Kahana, Lahaina District, County of Maui, Hawaii*. Prepared for U.S. Department of Agriculture Soil Conservation Service, Contract No. 53-9251-4-42, Honolulu, HI. Paul H. Rosendahl, Ph.D., Inc., Kurtistown, HI. On file at Hawai'i State Historic Preservation Division.

Whitney, Henry M.

1858 Ports of the Hawaiian or Sandwich Islands. In *Hunt's Merchants' Magazine and Commercial Review*. Vol. 38, No. 2:163-174. Geo. W. & JNO. A. Wood, New York, NY.

Wilcox, Carol

1996 *Sugar Water: Hawaii's Plantation Ditches*. University of Hawaii Press, Honolulu, HI.