

#### REFERENCES

Palmer, D. D. 2003. Hawai`i's Ferns and Fern Allies. University of Hawai`i Press, Honolulu.

USFWS (United States Fish and Wildlife Service). 1999a. U.S. Fish and Wildlife Service species list, plants. March 23, 1999. Pacific Islands Office, Honolulu, HI.

USFWS (United States Fish and Wildlife Service). 1999b. Endangered and threatened wildlife and plants. 50 CFR 17.11 and 17.12. December 31, 1999.

USFWS (United States Fish and Wildlife Service). 2004. Hawaiian Islands Plants: Updated June 15, 2004, Listed and Candidate Species, as Designated under the U.S. Endangered Species Act. 17pp.

USFWS (United States Fish and Wildlife Service). 2010. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for 48 Species on Kaua'i and Designation of Critical Habitat. Federal Register Vol. 75, No. 70, April 13, 2010, pages 1895919008

Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. Manual of the flowering plants of Hawaii. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu. Bishop Museum Special Publication 83.

## Exhibit K

### Biological Surveys Conducted on the Kapa`a Highlands Phase II Project Site TMK: (4)-3-003:001, Island of Kaua`i, Hawai`i

---

**Biological Surveys Conducted on the Kapa‘a Highlands  
Phase II Project Site, TMK: (4)-3-003:001,  
Island of Kaua‘i, Hawai‘i**

---

Prepared by:

Reginald E. David  
Rana Biological Consulting, Inc.  
P.O. Box 1371  
Kailua-Kona, Hawai‘i 96745

&

Prepared for:  
Greg Allen  
Kapa‘a Highlands

May 24, 2012

---

**Table of Contents**

<b>EXECUTIVE SUMMARY</b> .....	<b>3</b>
<b>INTRODUCTION AND BACKGROUND</b> .....	<b>5</b>
<b>GENERAL SITE DESCRIPTION</b> .....	<b>5</b>
<b>METHODS</b> .....	<b>8</b>
BOTANICAL SURVEY METHODS .....	8
AVIAN SURVEY METHODS .....	8
MAMMALIAN SURVEY METHODS .....	8
<b>RESULTS</b> .....	<b>9</b>
BOTANICAL SURVEY .....	9
AVIAN SURVEY RESULTS .....	9
MAMMALIAN SURVEY RESULTS .....	9
<b>DISCUSSION</b> .....	<b>11</b>
AVIAN RESOURCES .....	11
MAMMALIAN RESOURCES .....	12
<b>POTENTIAL IMPACTS TO PROTECTED SPECIES</b> .....	<b>12</b>
BOTANICAL .....	12
SEABIRDS .....	12
HAWAIIAN HOARY BAT.....	12
<b>CRITICAL HABITAT</b> .....	<b>13</b>
<b>RECOMMENDATIONS</b> .....	<b>13</b>
<b>GLOSSARY</b> .....	<b>14</b>
<b>LITERATURE CITED</b> .....	<b>15</b>
<b>APPENDIX A</b> .....	<b>19</b>

---

### ***Executive Summary***

Biological field surveys were conducted on an approximately 97-acre parcel of land identified as Tax Map Key (4) 3-8-003:001 located in Kapa'a, Island of Kaua'i. The owners are proposing to develop these lands as Phase II of the Kapa'a Highlands subdivision

The primary purpose of the surveys was to determine if there are any botanical, avian and terrestrial mammalian species currently listed, or proposed for listing under either federal or State of Hawai'i endangered species statutes within or adjacent to the study area. The avian and mammalian surveys were conducted May 21, 2012, and the botanical survey was conducted on April 19 and May 7, 2012.

No species currently proposed or listed as threatened or endangered under either the federal or state of Hawaii endangered species statutes was documented during the course of the biological surveys conducted on the subject property in April and May, 2012.

There is no federally delineated Critical Habitat for any species present on or adjacent to the project area. Thus the development and operation of the proposed project will not result in impacts to federally designated Critical Habitat. There is no equivalent statute under State law.

#### ***Potential Impacts to Protected Species***

##### ***Botanical***

As all of the plant species recorded are either naturalized species or common indigenous species it is not expected that the development and operation of the proposed subdivision will result in deleterious impacts to any botanical species currently listed or proposed for listing under either federal or State of Hawai'i endangered species statutes.

##### ***Seabirds***

The principal potential impact that construction and operation of the Kapa'a Highlands Phase II project poses to protected seabirds is the increased threat that birds will be downed after becoming disoriented by lights associated with the project during the nesting season. The two main ways that outdoor lighting could pose a threat to these nocturnally flying seabirds is if, 1) during construction it is deemed expedient, or necessary to conduct nighttime construction activities, and 2) following build-out, the potential operation of streetlights and exterior safety and security lighting.

##### ***Hawaiian hoary bat***

The principal potential impact that the development of the Kapa'a Highlands Phase II project poses to bats is during the clearing and grubbing phases of construction as vegetation is removed. The removal of vegetation within the project site may temporarily displace individual bats, which may use the vegetation as a roosting location. As bats use multiple roosts within their home territories, the potential disturbance resulting from the removal of the vegetation is likely to be minimal. During the pupping season, females

---

carrying their pups may be less able to rapidly vacate a roost site as the vegetation is cleared. Additionally, adult female bats sometimes leave their pups in the roost tree while they forage. Very small pups may be unable to flee a tree that is being felled. Potential adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 meters (15-feet), between June 15 and September 15, the period in which bats are potentially at risk from vegetation clearing.

## Introduction and Background

An avian and mammalian survey was conducted on an approximately 97-acre parcel of land identified as Tax Map Key (4) 3-8-003:001 located in Kapa'a, Island of Kaua'i (Figure 1). The owners are proposing to develop these lands as Phase II of the Kapa'a Highlands subdivision.

This report describes the methods used and the results of the avian and terrestrial mammalian surveys conducted on the project site by this author and a summary of the results of the botanical surveys conducted on the site by Wood and Kirkpatrick (2012)<sup>1</sup>. Both surveys were conducted as part of the environmental disclosure process associated with the proposed project.

The primary purpose of the surveys was to determine if there are any botanical, avian and terrestrial mammalian species currently listed, or proposed for listing under either federal or State of Hawai'i endangered species statutes within or adjacent to the study area. The federal and State of Hawai'i listed species status follows species identified in the following referenced documents, (Department of Land and Natural Resources (DLNR) 1998; U. S. Fish & Wildlife Service (USFWS) 2005, 2012). The avian and mammalian surveys were conducted May 21, 2012, and the botanical survey was conducted on April 19 and May 7, 2012.

Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text.

## General Site Description

The approximately 97 acre project site is bound to the north by Olohena Road (SR 581) and Kapa'a Middle School, to the east and south by the Kapa'a Bypass Road and to the west by undeveloped land and a new solar power generating facility (Figure 1). The site is made up of gently rolling hills that attain a maximum elevation of ~ 45 meters above mean sea level in the northwestern corner, sloping *makai* in an east-southeast direction down to an elevation of approximately ~ 6 meters ASL at the intersection of Olohena Road and the Kapa'a Bypass Road.

The site has a long history of sugar cultivation, followed by use as cattle pasturage. The vegetation currently on the site is dominated almost to the exclusion of native species by Guinea grass (*Panicum maximum*), koa haole (*Leucaena leucocephala*), lantana (*Lantana camara*), with Java plum trees (*Syzygium cumini*), dotted across the landscape (Figure 2). The southwestern boundary of the site has fairly dense stands of *hau* (*Hibiscus tiliaceus*) along the boundary (Figure 3).

<sup>1</sup> Wood, K.R., and M. Kirkpatrick. 2012. Botanical Survey Kapa'a Highlands Phase II TMK (4) 4-3-003:001 Kaua'i, Hawai'i April-May 2012, is appended to this document as Appendix A.





Figure 2 – Typical Guinea grass/koa haole shrub vegetation looking northwest



Figure 3 – Hau bushes along southwestern boundary

---

## Methods

Plant names mostly follow *Manual of the Flowering Plants of Hawai'i* (Wagner et al., 1990, 1999). The avian phylogenetic order and nomenclature used in this report follows the *AOU Check-List of North American Birds* (American Ornithologists' Union, 1998), and the 42nd through the 52nd supplements to the Check-List (American Ornithologists' Union, 2000; Banks et al., 2002, 2003, 2004, 2005, 2006, 2007, 2008; Chesser et al., 2009, 2010, 2011). Mammalian species scientific names follow (Tomich, 1986). Place names follow (Pukui et al., 1974).

### Botanical Survey Methods

The botanical survey was conducted using a pedestrian (walking) transect methodology to cover the project area. Wood and Kirkpatrick's methodologies are detailed in Appendix A.

### Avian Survey Methods

A total of six avian point count stations were sited roughly equidistant from each other within the project site. Six-minute point counts were made at each of the count stations. Each station was counted once. Field observations were made with the aid of Leica 8 X 42 binoculars and by listening for vocalizations. Point counts were concentrated during the early morning hours, the peak of daily bird activity. Time not spent counting was used to search the remainder of the project site for species and habitats that were not detected during count sessions.

### Mammalian Survey Methods

With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or 'ōpe'ape'a as it is known locally, all terrestrial mammals currently found on the Island of Kaua'i are alien species, and most are ubiquitous. The survey for terrestrial mammalian species was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. No trapping program or heterodyne bat detection survey methods were used during the course of this survey. A running tally was kept of all terrestrial vertebrate mammalian species detected within the project area during time spent within the project site.

---

## Results

### Botanical Survey

A total of 44 species of vascular plants were identified from the survey area. Three of the species detected *moa* (*Psilotum nudum*), *hau* (*Hibiscus tiliaceus*) and '*uhaloa* (*Waltheria indica*) are common indigenous species in the Islands. One species *kukui* (*Aleurites moluccana*) is a Polynesian introduction (Wood and Kirkpatrick, 2012).

Wood and Kirkpatrick did not detect any botanical species currently listed as endangered or threatened under either federal or State of Hawai'i endangered species statutes. For a detailed description of their findings please see Appendix A.

### Avian Survey Results

A total of 193 individual birds of 17 species, representing 13 separate families, were recorded during station counts (Table 1). All 17 species recorded are alien to the Hawaiian Islands (Table 1).

Avian diversity and densities were in keeping with the location of the property and the habitat presently on the site. Four species, House Finch (*Carpodacus mexicanus*), Nutmeg Mannikin (*Lonchura punctulata*), Japanese White-eye (*Zosterops japonicus*) and Zebra Dove (*Geopelia striata*) accounted for slightly more than 45 percent of all birds recorded during station counts. The most commonly recorded species was House Finch, which accounted for 14 percent of the total number of individual birds recorded. An average of 32 individual birds was recorded per station count; a number that is about average for point counts in this area on the Island of Kaua'i.

No avian species currently proposed or listed under either the State of Hawai'i or federal endangered species statutes was detected during the course of this survey, nor would they be expected given the habitat currently present on the site.

### Mammalian Survey Results

Four terrestrial mammalian species were detected while on the site. Numerous dogs (*Canis f. familiaris*) were heard barking from areas adjacent to the site. Tracks and scat of pig (*Sus s. scrofa*) were encountered within the site. Tracks, and scat of both horse (*Equus c. caballus*) and cow (*Bos taurus*), were also encountered within the site.

Table 1 – Avian Species Kapa'a Highlands Phase II Point Counts

Common Name	Scientific Name	ST	RA
	GALLIFORMES		
	PHASIANIDAE – Pheasants & Partridges		
	Phasianinae – Pheasants & Allies		
Red Junglefowl	<i>Gallus gallus</i>	A	1.50
	PELECANIFORMES		
	ARDEIDAE - Herons, Bitterns & Allies		
Cattle Egret	<i>Bubulcus ibis</i>	A	0.83
	COLUMBIDAE - Pigeons & Doves		
Spotted Dove	<i>Streptopelia chinensis</i>	A	2.00
Zebra Dove	<i>Geopelia striata</i>	A	2.67
	PASSERIFORMES		
	CETTIDAE - Cettia Warblers & Allies		
Japanese Bush-Warbler	<i>Cettia diphone</i>	A	1.17
	ZOSTEROPIDAE - White-eyes		
Japanese White-eye	<i>Zosterops japonicus</i>	A	1.17
	TIMALIIDAE - Babblers		
Chinese Hwamei	<i>Garrulax canorus</i>	A	0.50
	TURDIDAE - Thrushes		
White-rumped Shama	<i>Copsychus malabaricus</i>	A	1.17
	STURNIDAE - Starlings		
Common Myna	<i>Acridotheres tristis</i>	A	2.50
	EMBERIZIDAE - Emberizids		
Red-crested Cardinal	<i>Paroaria coronata</i>	A	1.00
	CARDINALIDAE - Cardinals Saltators & Allies		
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	1.67
	ICTERIDAE - Blackbirds		
Western Meadowlark	<i>Sturnella neglecta</i>	A	0.67
	FRINGILLIDAE - Fringilline and Cardueline Finches & Allies		
	Carduelinae - Cardueline Finches		
House Finch	<i>Carpodacus mexicanus</i>	A	4.50
	ESTRILDIDAE - Estrildid Finches		
	Estrildinae - Estrildine Finches		
Red Avadavat	<i>Amandava amandava</i>	A	0.56
Nutmeg Mannikin	<i>Lonchura punctulata</i>	A	4.33
Chestnut Munia	<i>Lonchura atricapilla</i>	A	2.17
Java Sparrow	<i>Padda oryzivora</i>	A	1.33

#### Key to Table 1

ST Status

A Alien - Introduced to the Hawaiian Islands by humans

RA Relative Abundance - Number of birds detected divided by the number of count stations (6)



---

## Discussion

### Botanical Resources

Only nine percent of the plant species (~4/~44) detected on the subject property were either indigenous or early Polynesian introductions. This proportion is remarkably low for lowland areas on Kaua'i, and graphically illustrates the highly disturbed and depauperate nature of the native vegetation present on this site. Please see Appendix A for a more detailed discussion of the botanical resources present on the site.

### Avian Resources

The findings of the avian survey are consistent with the location of the property, and the habitat present on the site. As previously stated all of the avian species detected during the course of this survey are alien to the Hawaiian Islands.

Although not detected during this survey, the endangered Hawaiian Petrel (*Pterodroma sandwichensis*), and the threatened endemic sub-species of the Newell's Shearwater (*Puffinus auricularis newelli*) have been recorded over-flying the project site between April and the end of November each year (David, 1995; Morgan *et al.*, 2003, 2004; David and Planning Solutions 2008). Additionally, the Save Our Shearwaters Program has recovered both species from the general project area on an annual basis over the past three decades (Morgan *et al.*, 2003, 2004; David and Planning Solutions, 2008; Save our Shearwater Program, 2012).

The petrel is listed as endangered, and the shearwater as threatened under both Federal and State of Hawai'i endangered species statutes. The primary cause of mortality in both Hawaiian Petrels and Newell's Shearwaters is thought to be predation by alien mammalian species at the nesting colonies (USFWS 1983, Simons and Hodges 1998, Ainley *et al.*, 2001). Collision with man-made structures is considered to be the second most significant cause of mortality of these seabird species in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds can collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets of opportunity for feral mammals (Hadley 1961; Telfer 1979; Sincock 1981; Reed *et al.*, 1985; Telfer *et al.*, 1987; Cooper and Day, 1998; Podolsky *et al.* 1998; Ainley *et al.*, 2001; Hue *et al.*, 2001; Day *et al.* 2003). There are no nesting colonies nor appropriate nesting habitat for either of these listed seabird species within the current study site.

Following build out it is probable that cleared areas, especially those that are landscaped as lawns, and or parking lots will provide loafing habitat for Pacific Golden-Plover (*Pluvialis fulva*). The plover is an indigenous migratory shorebird species which nests in the high Arctic during the late spring and summer months, returning to Hawai'i and the Tropical Pacific to spend the fall and winter months each year. They usually leave Hawai'i for their

---

trip back to the Arctic in late April or the very early part of May each year. This species is a common site around the state during the late fall and winter months.

### Mammalian Resources

The findings of the mammalian survey are consistent with the location of the property and the habitat currently present on the site. We did not record Hawaiian hoary bats overflying the site. Hawaiian hoary bats are widely distributed in the lowland areas on the Island of Kaua'i, and have been documented in and around almost all areas that still have some dense vegetation (Tomich, 1986; USFWS 1998, David, 2012).

Although no rodents were detected during the course of this survey, it is virtually certain one or more of the four established alien muridae found on Kaua'i, roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), European house mouse (*Mus musculus domesticus*) and possibly Polynesian rats (*Rattus exulans hawaiiensis*) use various resources found within the general project area. All of these introduced rodents are deleterious to native ecosystems and the native faunal species dependant on them.

### Potential Impacts to Protected Species

#### Botanical

As all of the plant species recorded are either naturalized species or common indigenous species it is not expected that the development and operation of the proposed subdivision will result in deleterious impacts to any botanical species currently listed or proposed for listing under either federal or State of Hawai'i endangered species statutes.

#### Seabirds

The principal potential impact that construction and operation of the Kapa'a Highlands Phase II project poses to protected seabirds is the increased threat that birds will be downed after becoming disoriented by lights associated with the project during the nesting season. The two main ways that outdoor lighting could pose a threat to these nocturnally flying seabirds is if, 1) during construction it is deemed expedient, or necessary to conduct nighttime construction activities, and 2) following build-out, the potential operation of streetlights and exterior safety and security lighting.

#### Hawaiian hoary bat

The principal potential impact that the development of the Kapa'a Highlands Phase II project poses to bats is during the clearing and grubbing phases of construction as vegetation is removed. The removal of vegetation within the project site may temporarily displace individual bats, which may use the vegetation as a roosting location. As bats use multiple roosts within their home territories, the potential disturbance resulting from the removal of the vegetation is likely to be minimal. During the pupping season, females carrying their pups may be less able to rapidly vacate a roost site as the vegetation is cleared. Additionally, adult female bats sometimes leave their pups in the roost tree while they forage. Very small pups may be unable to flee a tree that is being felled. Potential

---

adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 meters (15-feet), between June 15 and September 15, the period in which bats are potentially at risk from vegetation clearing.

#### **Critical Habitat**

There is no federally delineated Critical Habitat for any species present on or adjacent to the project area. Thus the development and operation of the proposed project will not result in impacts to federally designated Critical Habitat. There is no equivalent statute under State law.

#### **Recommendations**

- All exterior lights installed in conjunction with the proposed project should be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights and man-made structures (Reed *et al.*, 1985; Telfer *et al.*, 1987). Any lighting fixtures that meet the "Dark Skies" guidelines are appropriate.
- It is recommended that woody vegetation taller than 4.6 meters (15-feet), not be cleared between June 1 and September 15, the period in which bats are potentially at risk from vegetation clearing.
- It is recommended that, where appropriate and practicable, native plant species be used in landscaping efforts. Not only is this ecologically prudent, but also if the appropriate plants are used, it will also likely save maintenance and water costs over the long term.

---

### **Glossary**

Alien – Introduced to Hawai'i by humans  
Commensal – Animals that share human food and lodgings, such as rats, mice cats and dogs.  
Crepuscular – Twilight hours  
Endangered – Listed and protected under the Endangered Species Act of 1973, as amended (ESA) as an endangered species  
Endemic – Native to the Hawaiian Islands and unique to Hawai'i  
Indigenous – Native to the Hawaiian Islands, but also found elsewhere naturally  
*makai* – Down-slope, towards the ocean  
Muridae – Rodents, including rats, mice and voles, one of the most diverse families of mammals  
Naturalized – A plant or animal that has become established in an area that it is not indigenous to  
Nocturnal – Night-time, after dark  
*Ōpe'ape'a* – Endemic endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*)  
Pelagic – An animal that spends its life at sea – in this case seabirds that only return to land to nest and rear their young  
Phylogenetic – The evolutionary order that organisms are arranged by  
Ruderal – Disturbed, rocky, rubbishy areas, such as old agricultural fields and rock piles  
Sign – Biological term referring to tracks, scat, rubbing, odor, marks, nests, and other signs created by animals by which their presence may be detected  
Threatened – Listed and protected under the ESA as a threatened species.

ASL – Above mean sea level  
DLNR – Hawai'i State Department of Land & Natural Resources  
DOFAW – Division of Forestry and Wildlife  
ESA – Endangered Species Act of 1973, as amended  
TMK – Tax Map Key  
USFWS – United State Fish & Wildlife Service



---

### Literature Cited

- Ainley, D. G., R. Podolsky, L. Deforest, G. Spencer, and N. Nur. 2001. The Status and Population Trends of the Newell's Shearwater on Kaua'i: Insights from Modeling, in: Scott, J. M., S. Conant, and C. Van Riper III (editors) *Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna*. Studies in Avian Biology No. 22: Cooper's Ornithological Society, Allen Press, Lawrence, Kansas. (Pg. 108-123).
- American Ornithologist's Union. 1998. *Check-list of North American Birds*. 7th edition. AOU. Washington D.C. 829pp.
- \_\_\_\_\_. 2000. Forty-second supplement to the American Ornithologist's Union *Check-list of North American Birds*. Auk 117:847-858.
- Banks, R. C., C. Cicero, J. L. Dunn, A. W. Kratter, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz. 2002. Forty-third supplement to the American Ornithologist's Union *Check-list of North American Birds*. Auk 119:897-906.
- \_\_\_\_\_. 2003. Forty-fourth supplement to the American Ornithologist's Union *Check-list of North American Birds*. Auk 120:923-931.
- \_\_\_\_\_. 2004. Forty-fifth supplement to the American Ornithologist's Union *Check-list of North American Birds*. Auk 121:985-995.
- \_\_\_\_\_. 2005. Forty-sixth supplement to the American Ornithologist's Union *Check-list of North American Birds*. Auk 122:1031-1031.
- \_\_\_\_\_. 2006. Forty-seventh supplement to the American Ornithologist's Union *Check-list of North American Birds*. Auk 123:926-936.
- Banks, R. C., C. R. Terry Chesser, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz. 2007. Forty-eighth supplement to the American Ornithologist Union *Check-list of North American Birds*. Auk 124:1109-1115.
- Banks, R. C., C. R. Terry Chesser, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz, and K. Winker. 2009. Fiftieth supplement to the American Ornithologist Union *Check-list of North American Birds*. Auk 125:758-768.
- Chesser, R. T., R. C. Banks, F. K. Barker, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz, and K. Winker. 2011. Fifty-second supplement to the American Ornithologist Union *Check-list of North American Birds*. Auk 128:600-613.
- Cooper, B. A and R. H. Day. 1994. Kauai endangered seabird study. Volume 1: Interactions of Dark-rumped Petrels and Newell's Shearwaters with utility structures on Kauai, Hawaii: Final Report, TR-105847-V1, Electric Power Research Institute, Palo Alto, California.
- Cooper, B. A and R. H. Day. 1998. Summer Behavior and Mortality of Dark-rumped Petrels and Newell's Shearwaters at Power Lines on Kauai. *Colonial Waterbirds*, 21 (1): 11-19.
- Day, R. H., B. Cooper, and T. C. Telfer. 2003. Decline of Townsend's (Newell's Shearwaters (*Puffinus auricularis newelli*) on Kauai, Hawaii. *The Auk* 120: 669-679.
- David, R. E. 2012. Unpublished field notes – Kaua'i 1980 - 2012.
- David, R. E., R. H. Day, and B. A. Cooper 2002. Results of Newell's Shearwater Surveys at the Kaluahonu, Moalepe and Anahola Memorial Colonies, Island of Kaua'i, Hawaii, July 2002. Prepared for Planning Solutions, Inc., and Kaua'i Electric.
- David, R. E., and Planning Solutions 2008. 2007 Save Our Shearwaters Program End of Year Report: Prepared for: Kaua'i Island Utility Cooperative & The Hawai'i Department of Land and Natural Resources, Division of Forestry and Wildlife.
- Department of Land and Natural Resources (DLNR). 1998. Indigenous Wildlife, Endangered And Threatened Wildlife And Plants, And Introduced Wild Birds. Department of Land and Natural Resources. State of Hawaii. Administrative Rule §13-134-1 through §13-134-10, dated March 02, 1998.
- Hadley, T. H. 1961. Shearwater calamity on Kauai. *Elepaio* 21:60.
- Hawai'i Department of Land and Natural Resources (HDLNR). 1998. Indigenous Wildlife, Endangered and Threatened Wildlife and Plants, and Introduced Wild Birds. State of Hawai'i. Administrative Rule §13-134-1 through §13-134-10.
- Hue, D., C. Glidden, J. Lippert, L. Schnell, J. MacIvor and J. Meisler. 2001. Habitat Use and Limiting Factors in a Population of Hawaiian Dark-rumped Petrels on Mauna Loa, Hawai'i, in: : Scott, J. M., S. Conant, and C. Van Riper III (editors) *Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna*. Studies in Avian Biology No. 22. Cooper's Ornithological Society, Allen Press, Lawrence, Kansas (Pg. 234-242).
- Morgan, C., P. White, and R. E. David. 2003. Habitat Conservation Plan: Kaua'i Island Utility Cooperative: Working Paper No. 2 - Data Analysis: Interpreting the Save Our Shearwaters Bird Recovery Database (1979-2002) for Habitat Conservation Planning. Prepared for: Kaua'i Island Utility Cooperative.
- \_\_\_\_\_. 2004. Habitat Conservation Plan: Kaua'i Island Utility Cooperative: Data Report and

- 
- Analysis: Save Our Shearwaters Bird Program 2003 Update. Prepared for: Kaua'i Island Utility Cooperative.
- Podolsky, R., D.G. Ainley, G. Spencer, L. de Forest, and N. Nur. 1998. "Mortality of Newell's Shearwaters Caused by Collisions with Urban Structures on Kaua'i". Colonial Waterbirds 21:20-34.
- Pukui, M. K., S. H. Elbert, and E. T. Mookini 1976. *Place Names of Hawaii*. University of Hawaii Press. Honolulu, Hawai'i. 289 pp.
- Reed, J. R., J. L. Sincock, and J. P. Hailman 1985. Light Attraction in Endangered Procellariiform Birds: Reduction by Shielding Upward Radiation. *Auk* 102: 377-383.
- Save our Shearwaters 2012. Unpublished SOS data 1979 – 2011.
- Simons, T. R., and C. N. Hodges. 1998. Dark-rumped Petrel (*Pterodroma phaeopygia*). In A. Poole and F. Gill (editors). *The Birds of North America*, No. 345. The Academy of Natural Sciences, Philadelphia, PA. and the American Ornithologists Union, Washington, D.C.
- Sincock, J. L. 1981. Saving the Newell's Shearwater. Pages 76-78 in Proceedings of the Hawaii Forestry and Wildlife Conference, 2-4 October 1980. Department of Land and Natural Resources, State of Hawaii, Honolulu.
- Telfer, T. C. 1979. Successful Newell's Shearwater Salvage on Kauai. *'Elepaio* 39:71
- Telfer, T. C., J. L. Sincock, G. V. Byrd, and J. R. Reed. 1987. Attraction of Hawaiian seabirds to lights: Conservation efforts and effects of moon phase. *Wildlife Society Bulletin* 15:406-413.
- Tomich, P.Q. 1986. *Mammals in Hawaii*. Bishop Museum Press. Honolulu, Hawaii. 37 pp.
- U.S. Fish & Wildlife Service (USFWS) 1983. Hawaiian Dark-Rumped Petrel & Newell's Manx Shearwater Recovery Plan. USFWS, Portland, Oregon. February 1983.
- \_\_\_\_\_. Recovery Plan for the Hawaiian Hoary Bat. U.S. Fish & Wildlife Service, Portland, Oregon.
- \_\_\_\_\_. 2005. Endangered and Threatened Wildlife and Plants. 50CFR 17:11 and 17:12 (Tuesday, November 1, 2005).
- \_\_\_\_\_. 2012. USFWS Threatened and Endangered Species System (TESS), online at [http://ecos.fws.gov/tess\\_public/StartTESS.do](http://ecos.fws.gov/tess_public/StartTESS.do) Last accessed on May22, 2012.
- Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. *Manual of the Flowering Plants of Hawai'i*. University of Hawaii Press, Honolulu, Hawaii 1854 pp.
- Wagner, W.L. and D.R. Herbst. 1999. *Supplement to the Manual of the Flowering Plants of Hawai'i*, pp. 1855-1918. In: Wagner, W.L., D.R. Herbst, and S.H. Sohmer, *Manual of*

- 
- the flowering plants of Hawai'i. Revised edition. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu.
- Wood, K.R., and M. Kirkpatrick. 2012. Botanical Survey Kapa'a Highlands Phase II TMK (4) 4-3-003:001 Kaua'i, Hawai'i April-May 2012. Prepared for Greg Allen.

---

***Appendix A***

Wood, K.R., and M. Kirkpatrick. 2012.  
Botanical Survey Kapa'a Highlands Phase II  
TMK (4) 4-3-003:001  
Kaua'i, Hawai'i April-May 2012.

**Exhibit L**

**An Archaeological Assessment for the Proposed Kapa`a  
Highlands Phase II Project  
Kapa`a Ahupua`a, Kawaihau, Kaua`i**



# An Archaeological Assessment With Subsurface Testing for the Proposed Kapa`a Highlands Phase II Project, Kapa`a Ahupua`a, Kawaihau, Kaua`i TMK (4) 4-3-3: 1

By

Nancy McMahon, M.A. and Wendy Tolleson, M.A.

Prepared for:  
Three Stooges LLC

Exploration Associates, Ltd

Revised September 2013

<b>INTRODUCTION</b>	<b>1</b>
Project Background	1
Scope of Work	1
Methods	5
Natural Setting	5
<b>HISTORICAL BACKGROUND</b>	<b>6</b>
From Puna District to Kawaihau District	6
Heiau of Kapa`a	9
The Mahele: Kapa`a Land Commission Awards	10
Early Historic Accounts of Kapa`a (1830's-1900's)	11
20th Century History of Kapa`a (1900 - Present)	13
<b>PREVIOUS ARCHAEOLOGICAL RESEARCH</b>	<b>15</b>
Archaeological Studies and Sites in Kapa`a Ahupua`a	15
Pattern of Archaeological Sites in Kapa`a	21
<b>RESULTS OF FIELD WORK</b>	<b>23</b>
Pedestrian Survey	23
Subsurface Testing	23
<b>RECOMMENDATIONS</b>	<b>29</b>
<b>REFERENCES</b>	<b>30</b>
<b>APPENDIX A</b>	<b>35</b>
Photos of the Area Surveyed with Figure Numbers	36
<b>APPENDIX B</b>	<b>40</b>
State Historic Preservation Letters Pertinent to this Project	41
<b>APPENDIX C</b>	<b>42</b>
Soil Survey for Solar Farm on Phase I Property	43

## LIST OF FIGURES

Figure 1. USGS Map of the Project Area.	2
Figure 2. Project location and surveyed area outlined in purple.	3
Figure 3. Project development map.	3
Figure 4. Aerial View of the Kapa`a Highlands Phase II Looking West.	4
Figure 5. Aerial View of the Kapa`a Highlands Phase II Looking <i>Mauka</i> .	4
Figure 6. Map showing previous archaeological studies in Kapa`a.	17
Figure 7. Map of previously documented archaeological sites in Kapa`a.	21
Figure 8. Trench locations.	23
Figure 9. Profile Test Trench 2 on left and Trench 3 on right	24
Figure 10. Entrance off Olohena Road looking <i>Makai</i> the Solar Farm in the Distance	24
Figure 11. Remnant Road with Cattle Grazing in the Distance.	25
Figure 12. Lower Elevation Outside Area from the Access Road.	26
Figure 13. View Across the Project Area, Facing <i>Makai</i> and Northeast.	27
Figure 14. Looking at the Roof of Kapa`a Middle School.	28
<b>APPENDIX A</b>	<b>35</b>
Figure 1. View of Project Area from the gate at the top of Olohena Road.	36
Figure 2. Solar Farm and Equipment Buildings	37
Figure 3. Cattle Grazing in the Project Area	37
Figure 4. Fence in the left side of photo indicating property boundary	38
Figure 5. Goats Grazing in the Project Area.	39

## LIST OF TABLES

Table 1. Heiau of Kapa`a	9
Table 2. Mahele Land Claims in Kapa`a Ahupua`a	10
Table 3. Previous Archaeological Studies in Kapa`a	15
Table 4. Historic Properties in Kapa`a Ahupua`a	18

# INTRODUCTION

## Project Background

At the request of Three Stooges LLC., Exploration Associates Ltd. (EAL) conducted an archaeological assessment of a parcel of land (referred to hereafter as Kapa`a Highlands Phase II) in Kapa`a (in TMK 4-3-3:1) (Figures 1 & 2). The survey was performed to address any historic preservation or cultural impact issues that might affect the proposed development.

The proposed development, Kapa`a Highlands Phase II, project involves the development of a residential subdivision on a 97 acre parcel. Approximately 69 acres will be subdivided into residential lots both single family and multi-family units. In addition the breakdown of Phase II will include: roads - 9.4 acres; church - 0.8 acres; general commercial - 0.4 acres; parks - 3.1 acres and open space - 14.3 acres.

## Scope of Work

The purpose of this archaeological investigation is to address any archaeological and/or historical concerns. The proposed work includes a surface survey, subsurface testing, and a report detailing methods and any finds. This archaeological work meets the requirements of an inventory-level survey per the rules and regulations of (State Historic Preservation Division/Department of Land and Natural Resources) SHPD/DLNR. The level of work is sufficient to address site types, locations, and allow for future mitigation recommendations if appropriate. Any property over 50 years of age must be evaluated for historic Significance on the National Register of Historic places, and include remnant pre-contact and historic period site.

The scope of work includes:

- Historical research includes study of archival sources, historic maps, Land Commission Awards and previous archaeological reports to construct a history of land use and to determine if archaeological sites have been recorded on or near this property.
- Pedestrian survey of 100% of the subject parcel to identify any surface archaeological features and investigate and assess the potential for impact to such sites, and limited subsurface testing to identify any subsurface sensitive areas that may require further investigation or mitigation before the project proceeds.
- Preparation of a report which will include the results of the historical research and the fieldwork with an assessment of archaeological potential based on that research with recommendations for further archaeological work, if appropriate. It also will provide mitigation recommendations if there are archaeologically sensitive areas that require further consideration.

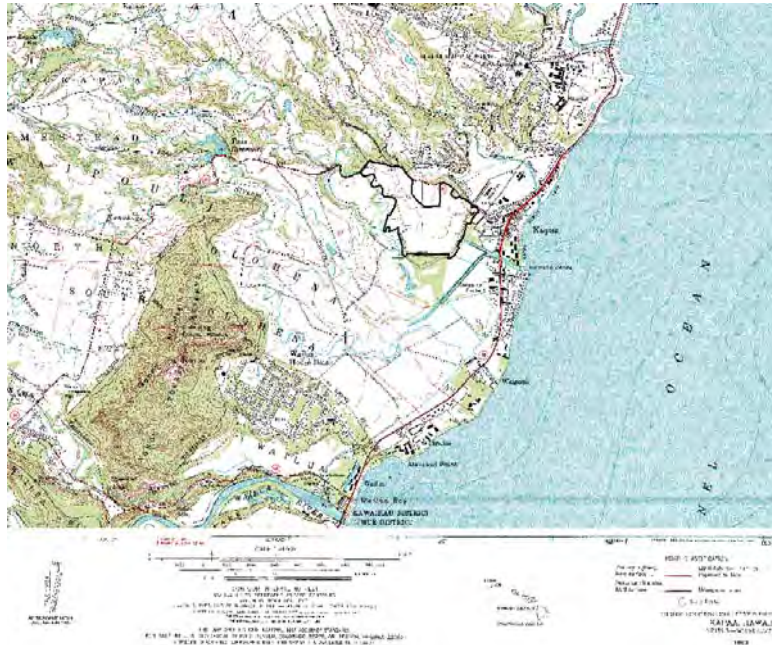


Figure 1. USGS Map Showing Project Area



Figure 2. Project location and surveyed area outlined in purple.



Figure 3. Project development map.





Figure 4 Aerial View of the Kapa'a Highlands Phase II Looking West.



Figure 5. Aerial View of Kapa'a Highlands Phase II Looking Mauka.

## Methods

On January 3, 2012 and April 25, 2012 and November 11, 2012 a survey of the Kapa'a Highlands Phase II project area was conducted by Exploration Associates Ltd. by archaeologist Nancy McMahon, M.A. Survey transects oriented north-south were spaced 10 m. apart where possible through thick guinea grass. Field observations were recorded and photographs were taken of the project area, the surrounding area, and the backhoe trenches. Three test trenches were machine excavated to examine the soils and determine if any stratigraphy or buried cultural deposits was present. Soils were classified using a Munsell color chart, then photographed.

Historical research includes a review of previous archaeological studies on file at the State Historic Preservation Division of the Department of Land and Natural Resources; studies of documents at Hamilton Library UH Manoa, the Kapa'a and Lihue Public Libraries, the Kaua'i Museum, the Kaua'i Historical Society and from the study of maps at the Survey Office of the Department of Land and Natural Resources. Nineteenth-century Land Commission Award claim records were accessed via the Internet from the *Mahele* Database prepared by Wai'hona `Aina Corp.

## Natural Setting/Project Area

The subject parcel is located north of Kapa'a town on former cane lands situated on a bluff adjacent to the coastal plain. It is bordered by Olohena Road to the north and the Kapa'a Bypass Road on the south and east. Kapaa Intermediate School is located on state land near the middle of the northern portion of the property. A Phase I parcel has an existing solar farm and equipment building.

The southern border of the project area is adjacent to the by-pass road within an elevation of approximately 55 feet above msl. The topography of the project area rises in elevation to the northern border approximately 130 feet above msl or an average increase of less than 5%. There are particular areas of the property with 20% slopes. The project area is currently fallow and is vegetated with Guinea Grass (*Panicum maximum*), Koa Haole (*Leucaena leucocephala*), and Java Plum (*Syzygium cumini*). The last cultivation of sugar cane on the project area was 15 years ago, but due to the poor soil, strong trade winds from the ocean, the viability of agricultural crops is limited. Solar farming, goat and cattle grazing are the current utilization of the property.

Foote et al (1972) described the soil in this area as Lihue-Puhi association, deep, nearly level to steep, well drained soils with fine texture and moderately fine texture subsoil. Permeability is moderately rapid, run-off is slow and erosion hazard is slight. The mean annual rainfall throughout the study area is about 22 inches per year. Average temperatures in the region range from the 60s to the low 90s, Fahrenheit. Temperature differences between day and night are about 15 degrees. The consistent direction of the tradewinds is from the northeast at between 10 and 15 miles per hour.

# HISTORICAL BACKGROUND

## From Puna District to Kawaihau District

The *ahupua'a* of Kapa'a belongs in the ancient district of Puna, one of five ancient districts on Kaua'i (King 1935: 228). Puna was the second largest district on Kaua'i, behind Kona, and extended from Kipu, south of Lihue to Kama'oma'o'o, just north of Kealia. For taxation, educational and judicial reasons, new districts were created in the 1840s. The Puna District, with the same boundaries became the Lihu'e District, named for an important town in that district. In 1878, King Kalakau'a in securing a future name for the new *Hu'i* Kawaihau, created the new district of Kawaihau. This new district encompassed the *ahupua'a* ranging from Olohena on the south to Kilauea on the north. Subsequent alterations to district boundaries in the 1920s left Kawaihau with Olohena as its southernmost boundary and Moloa'a as its northernmost boundary (King 1935:222).

## Traditional and Legendary Accounts of Kapa'a

A more in depth study of the legends and mythology of Kapa'a can be found in the Cultural Impact Assessment for the Proposed Kapa'a Highlands Phase II [EAL 2012]. Just a few of some of the legends of the area are included in this report.

Pallia and Ka'ea

High in the *mauka* region of Kapa'a in the Makaleha mountains at a place called Ka'ea, is reported to be the supernatural banana grove of the Kaua'i kupua or demigod Pallia, grandson of Hina (Handy and Handy 1972:424). In a 1913 edition of the newspaper Ka'oko'a Joseph Akina describes Pahla's banana grove:

The stalk could hardly be surrounded by two men, and was about 35 feet high from the soil to the lowest petiole. The length of the cluster from stem to lowest end of the bunch of bananas was about 1 3/4 fathoms long (one anana and one muku). There were only two bananas on each about 4 inches around the middle. There were just two bananas, one on the east side and one on the west, each about a foot or more in length. The one on the east side was tartish, like a *waiwai* (Spanish guava) in taste and the one on the west was practically tasteless. The diameter of the end of the fruit stem of this banana seemed to be about 10 feet. This kind of banana plant and its fruit seemed almost supernatural... (Akina, 1913:5).

Ka Lulu o Mo'ikeha

Kapa'a was the home of the legendary Mo'ikeha. Born at Waipi'o on the island of Hawai'i, Mo'ikeha sailed to Kahiki (Tahiti), the home of his grandfather Maweke, after a disastrous flood. On his return to Hawai'i, he settled at Kapa'a, Kaua'i. Kila, Mo'ikeha's favorite of three sons by the Kaua'i chiefess Ho'oiokamalani, was born at Kapa'a and was said

to be the handsomest man on the island. It was Kila who was sent by his father back to Kahiki to slay his old enemies and retrieve a foster son, the high chief La'amaikahiki (Handy and Handy 1972:424; Beckwith 1970:352-358; Kalakaua 1888:130-135; Fornander 1916, vol.4 pt.1:160). Mo'ikeha's love for Kapa'a is related in the *'olelo no'eau*: Ka lulu o Mo'ikeha i ka laula o Kapa'a. "The calm of Moikeha in the breadth of Kapa'a" (Pukui, 1983: 157).

"Lulu-o-Mo'ikeha" is described as being situated "near the landing and the school of Waimahanalua" (Akina, 1913: 5). The landing in Kapa'a was known as the Makee Landing and was probably constructed in the late 1870s, along with the Makee sugar mill. Today, in place of the old Makee Landing is part of a breakwater located on the north side of Mo'ikeha Canal near the present day Coral Reef Hotel, and approximately half-a-mile north of Waikaea Bridge.

Akina (1913) tells the story of how Mo'ikeha's son, Kila stocks the islands with the fish *akule*, *kawakawa* and *'opelu*. When Kila travels to Kahiki, he seeks out his grandfather Maweke and explains that he is the child of Mo'ikeha. When Maweke asks Kila if Mo'ikeha is enjoying himself, Kila answers with the following chant:

My father enjoys the billowing clouds over Pohaku-pili,

The sticky and delicious poi,

With the fish brought from Puna,

The broad-backed shrimp of Kapalua,

The dark-backed shrimp of Pohakuhapai,

The potent awa root of Maiaki'i,

The breadfruit laid in the embers at Makialo,

The large heavy taros of Keahapana

The crooked surf of Makalwa too

The bending hither and thither of the reed and rush blossoms,

The swaying of the kalukalu grasses of Puna The large, plump, private parts of my mothers,

Of Ho'oiokamalani and Hinau'u, The sun that rises and sets,

He enjoys himself on Kaua'i,

All of Kaua'i is Mo'ikeha's. (Akina, 1913: 6)

Maweke was delighted and when the boy is questioned as to his purpose, Kila tells his grandfather he is seeking fish for his family. Maweke tells Kila to lead the fish back to his homeland. This is how Kila led the *akule*, *kawakawa* and *opelu* to Hawai'i.

Paka'a and the wind gourd of La'amaomao (Keahiahia)

Kapa'a also figures prominently in the famous story of Paka'a, and the wind gourd of La'amaomao. Paka'a was the son of Kuanu'uano, a high-ranking retainer of the Big Island ruling chief Keawenuie'umi (the son and heir to the legendary

Chief, Umi), and La'amaomao, the most beautiful girl of Kapa'a and member of a family of high status *kahuna*. Kuanu'uau left the island of Hawai'i, traveled throughout the other islands and finally settled on Kaua'i, at Kapa'a. It was there that he met and married La'amaomao, although he never revealed his background or high rank to her until the day a messenger arrived, calling Kuanu'uau back to the court of Keawenuia`umi.

Intent on seeking out his real father and making himself known to him, Paka'a prepared for the journey to the Big Island. His mother presented to him a tightly covered gourd containing the bones of her grandmother, also named La'amaomao, the goddess of the winds. With the gourd and chants taught to him by his mother, Paka'a could command the forces of all the winds in Hawai'i. While this story continues on at length about Paka'a and his exploits on the Big Island and later on Moloka'i, it will not be dwelt upon further here. It is important to note that several versions of this story do include the chants which give the traditional names of all of the winds at all the districts on all the islands, preserving them for this and future generations (Nakuina 1990; Rice 1923:69-89; Beckwith 1970:86-87; Thrum 1923:53-67; Fomander 1918-19 vol. 5 pt.1:78- 128).

Frederick Wichman (1998:84) writes that Paka'a grew up on a headland named Keahiahi. Here, Paka'a learned to catch *malolo*, his favorite fish. After studying the ocean and devising his plan to fabricate a sail, Paka'a wove a sail in the shape of a crab claw and tried it out on his uncle's canoe. One day, after going out to catch *malolo*, he challenged the other fishermen to race to shore. He convinced them to fill his canoe with fish suggesting it was the only way he could truly claim the prize if he won:

The fishermen began paddling toward shore. They watched as Paka'a paddled farther out to sea and began to fumble with a pole that had a mat tied to it. It looked so funny that they began to laugh, and soon they lost the rhythm of their own paddling. Suddenly Paka'a's mast was up and the sail filled with wind. Paka'a turned toward shore and shot past the astonished fishermen, landing on the beach far ahead of them. That night, Paka'a, his mother, and his uncle had all the *ma'o'o* they could eat (Wichman 1998:85).

#### Kaweloleimakua

Kapa'a is also mentioned in traditions concerning Kawelo (Kaweloleimakua), Ka'ililauokekoa (Mo'ikeha's daughter, or granddaughter, dependent on differing versions of the tale), the mo'o Kalamainu'u and the origins of the *hina'i hinalea* or the fish trap used to catch the hinalea fish, and the story of Lonoikamakahiki (Fomander 1917, vol.4 pt.2:318, vol.4 pt. 3:704- 705; Rice 1923:106-108; Thrum 1923:123-135; Kamakau 1976:80).

#### Kalukalu grass of Kapa'a

"Kiimoena kalukalu Kapa'a" or "Kapa'a is like the *kalukalu* mats" is a line from a chant recited by Lonoikamakahiki. Kalukalu is a sedge grass, apparently used for weaving mats (Fomander 1917, Vol. IV, Pt. 2, pp. 318-19). Pukui (1983: 187) associates the kalukalu with lovers in "ke kalukalu moe ipo o Kapa'a; the *kalukalu* of Kapa'a that sleeps with the lover". According to Wichman (1998:84), "a kalukalu mat was laid on the ground under a tree, covered with a thick pile of grass, and a second mat was thrown over that for a comfortable bed", thus the association with lovers. Kaua'i was famous for this peculiar grass, and it probably grew around the marshlands of Kapa'a. It is thought to be extinct now, but an old-time resident of the area recalled that it had edible roots, "somewhat like peanuts." Perhaps it was a famine food source (Kapa'a Elementary School 1933:VI).

## Heiau of Kapa'a

During their expeditions around Hawai'i in the 1880's, collecting stories from *ka po'e kahiko*, Lahainaluna students stopped in Kapa'a and Kealia and gathered information regarding *heiau* of the region. Altogether, fourteen *heiau* were named in Kapa'a and Kealia, suggesting the two *ahupua'a* were probably more politically significant in ancient times. Table 1 lists the names of the ten *heiau* identified in the *ahupua'a* of Kapa'a, their location if known, their type, and associated chief and priest.

Table 1. *Heiau* of Kapa'a

Name	Location	Type	Associated
Maiehuna	Kapa'a (Maiehuna is the area of the present day Kapa'a School)	Unknown	Kiha, Kaumuali'i/ Lukahakona
Pueo	Kapa'a	Unknown	Kiha, Kaumuali'i
Pahua	Kapa'a/Kealia	Unknown	Kiha/ Lukahakona
Kumalae	Kapa'a/Kealia	Unknown	Kiha/ Lukahakona
Waiehumalama	Kapa'a/Kealia	Unknown	Kiha/ Lukahakona
Napu'upa'akai	Kapa'a/Kealia	Unknown	Kiha/ Lukahakona
Noeamakali'i	Kapa'a/Kedlia	Heiau for birth of Kaua'ii Chiefs, like Holoholoku	Unknown
Pu'ukoa	Kapa'a/Kealia	Unu type heiau	Unknown
Piouka	Kapa'a/Kealia	Unu type heiau	Unknown
Una	Kapa'a/Kealia	Unknown	Kiha/ Lukahakona
Mano	Kapa'a/Kealia	Unknown	Kiha/ Lukahakona
Kuahiahi	Kapa'a (govmt) school stands on site now)	Unknown	Kaumuali'i/ Lukahakona
Makanalimu	Upland of Kawaihau	Unknown	Kaumuali'i
Kaluluomoikeha	Kapa'a	Unknown	Moikeha

The exact locations of these *heiau* are unknown. The locations of two of the *heiau* correlate with the locations of *wahi pana* which are known to be close to Kuahiahi and Kaluluomo'ikeha. Kuahiahi (also spelled Kaahiahi and Keahiahi) is the rocky headland at the north end of Kapa'a where the first Kapa'a School was once located. Kaluluomo'ikeha is thought to be the general area near the Mo'ikeha Canal and the present day Coral Reef Hotel.

## The Mahele: Kapa'a Land Commission Awards

The Organic Acts of 1845 and 1846 initiated the process of the *Mahele*, the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848 the crown and the *ali'i* received their lands. The common people received their *kuleana* in 1850. It is through records for Land Commission Awards (LCAs) generated during the Mahele that specific documentation of traditional life in Kapa'a Ahupua'a comes to light. During the *Mahele*, Kapa'a was taken as Crown Lands (Office of the Commissioner of Public Lands of the Territory of Hawaii, 1929). The *i'i* of *Paikahawai* and *Ulakui* in Kapa'a Ahupua'a were retained as Government Lands.

Table 2. Mahele Land Claims in Kapa'a Ahupua'a

LCA Number	Ahupua'a	Claimant	'Ili of the Ahupua'a	Village/Farm	Land Use	Number of Āpana
3971	Kapa'a	Honolii,	Kapana	Kupanihi Village	6 <i>lo'i</i> (uncult), house lot	2 (2 acres, 1 rod, 1 rod)
3554	Kapa'a	Keo	Kahanui	Puhi Village	15 <i>lo'i</i> , house lot	2 (7 acres, 1 rod, 17 rods)
3638	Kapa'a	Hululii	Maeleele	Kaloko Village	12-15 <i>lo'i</i> , house lot	2 (5 acres, 1 rod, 19 rods)
8247	Kapa'a	Ehu	Moalepe/Noalepe		20 <i>lo'i</i> ,	1 (3 rods)
8837	Kapa'a	Kamapaa	Ulukiu lalo Awawaloa Ulukiu		3 <i>lo'i</i> , 2 <i>lo'i</i> , house lot	1 (2 acres, 2 rods, 27 rods)
8843	Kapa'a	Kiau	Apopo	Kalolo Village	6 (5) <i>lo'i</i> and <i>kula</i> , house lot	2 (2.75 acres 3 rods)
10564	Kapa'a	Oleloa Daniel		Hikinui Farm	Fishpond, 10 <i>lo'i</i>	

The land claims during this period show that only five individuals were awarded land parcels in the relatively large *ahupua'a* of Kapa'a. The five awardees were Kiau (#08843), Kamapaa (#08837), Mane Honolii (#03971) Hulilii (#03638) and Ehu (#08247). All four had *lo'i* or irrigated *kalo* fields on the *mauka* side of the lowland swampy area, sometimes extending a short distance up into small, shallow gulches and valleys. Many of these *lo'i* parcels name *pali* or hills/cliffs as boundaries. Each LCA also had a separate house lot located on the *makai* side of the swamp, near the beach. Three of the land claims name ponds on their lands, including Puhi Pond (LCA #03554), and fishponds in Kupanihi 'Ili (LCA #03971) and Hahanui 'Ili (LCA #10564). *Loko* Kihapai may be the same as the fishpond in the same land claim. The other two *loko* are associated with house lots, situated on the *makai* edge of the Kapa'a swamplands suggesting modification of the natural swamplands.

Other natural and cultural resources mentioned in the LCAs include freshwater springs, pig pens, *hau* bushes, *hala* clumps, streams, *'auwai*, and *kula* or pasturelands.

Interestingly, the residential "village" of Kapa'a did not exist as a single entity, but was likely a series of small settlements or compounds, perhaps even individual house lots which stretched along the shoreline of the *ahupua'a* and included (south to north) Kupanihi (Makahaikupanihi), Kalolo (Kaulolo), Puhi, and Uluki.

The fifth individual, Ehu (LCA #08247), was the only person to be awarded a single parcel in the upland area of Kapa'a, Moalepe Valley, approximately five miles one mile southwest of the project area. In 1848, when Ehu made his claim, he was the only one living there. A few years later, according to Honolii's testimony to support Ehu's claim, "There are no houses and no people now living on the land. Ehu found himself lonely there, all his neighbors having either died or left the land. Ehu now lives in Wailua." Evidently Ehu may have been the last person to live at and cultivate in the traditional way, the far *mauka* region of Kapa'a (Van Ryzin and Hammat 2004).

## Early Historic Accounts of Kapaa (1830s-1900s)

Although most of the historic record documents for Kapa'a in this period revolve around missionary activities and the missions themselves, there was indication that the Kapaa area was being considered for new sugar cane experiments, similar to those occurring in Kōloa In 1835 Ladd and Company received a 50 year lease on land in Kōloa from Kamehameha III and Kapa'a Governor Kaikio'ewa of Kapa'a. The terms of the lease allowed the new sugar company "the right of someone other than a chief to control land" and had profound effects on "traditional notions of land tenure dominated by the chiefly hierarchy" (Donohugh, 2001: 88). In 1837, a very similar lease with similar terms was granted to Wilama Ferani, a merchant and U.S. citizen based in Honolulu (Hawai'i State Archives, Interior Dept., Letters, Aug. 1837). The lease was granted by Kauikeaouli for the lands of Kapaa, Kealia and Waipouli for twenty years for the following purpose:

...for the cultivation of sugar cane and anything else that may grow on said land, with all of the right for some place to graze animals, and the forest land above to the top of the mountains and the people who are living on said lands, it is to them whether they stay or not, and if they stay, it shall be as follows: They may cultivate the land according to the instructions of Wilama Ferani and his heirs and those he may designate under him... (Hawai'i State Archives, Interior Dept. Letters, Aug. 1837).

Unlike Ladd & Company which eventually became the Kōloa Sugar Company, there is no further reference to Wilama Ferani and his lease for lands in Kapaa, Kealia and Waipouli. In a brief search for information on Honolulu merchant, Wilama Ferani, nothing was found. It is thought that perhaps Wilama Ferani may be another name for William French, a well-known Honolulu merchant who is documented as having experimented with grinding sugar cane in Waimea, Kapa'a at about the same time the 1837 lease for lands in Kapaa, Kealia and Waipouli was signed (Joesting 1984: 152).

In 1849, son of Wai'oli missionary, William P. Alexander, recorded a trip he took around Kapa'a. Although, he focuses on the larger mission settlements like Kōloa and Hanalei, he does mention Kapa'a.

A few miles from Wailua, near Kapaa we passed the wreck of a schooner on the beach, which once belonged to Capt. Bernard. It was driven in a gale over the reef, and up on the beach, where it now lies. A few miles further we arrived at Kealia. We had some difficulty crossing the river at this place, owing to the restiveness of our horses. The country here near the shore was rather uninviting, except the valley which always contained streams of water (Alexander 1991: 123).

In later years, the notorious Kapaa reef was to become the location of many shipwrecks once a landing was built there in the 1880s.

The first large scale agricultural enterprise was begun in Kapaa in 1877 by the Makee Sugar Plantation and the *Hui Kawaihau* (Dole 1916: 8). Originally a choral society begun in Honolulu its membership consisted of many prominent names, both Hawaiian and *haole*. It was Kalakau'a's thought that the *Hui* members could join forces with Makee, who had previous sugar plantation experience on Maui, to establish a successful sugar corporation on the east side of Kaua'i. Captain Makee was given land in Kapaa to build a mill and he agreed to grind cane grown by *Hui* members. Kalakau'a declared the land between Wailua and Moloaa, the Kawaihau District, a fifth district and for four years the *Hui* attempted to grow sugar cane at Kapahi, on the plateau lands above Kapaa town. After a fire destroyed almost half of the *Hui*'s second crop and after the untimely death of one of their principal advocates, Captain James Makee, the *Hui* began to disperse and property and leasehold rights passed on to Makee's son-in-law and new Makee Plantation owner, Colonel Z.S. Spalding (Dole 1916: 14).

As part of the infrastructure of the new plantation, a sugar mill was erected and the Makee Landing was built in Kapaa during the early years of operation of the Makee Sugar Plantation. Following Captain Makee's death, Colonel Spalding took control of the plantation and in 1885 moved the mill to Kealia (Cook 1999: 51). The deteriorating stone smokestack and landing were still there well into the 1900s (Damon 1931:359). Conde´ and Best (1973:180) suggest that railroad construction for the Makee Plantation began just prior to the mid-1890s. There is one reference to a railroad line leading from the Kapaa landing to Kealia in 1891. During Queen Lili'uokalani's visit to Kaua'i in the summer of 1891, the royal party was treated to music by a band, probably shipped in from O'ahu. "The band came by ship to Kapaa and then by train to Kealia" (Joesting 1984:252). This railroad line is depicted on a 1910 USGS map which shows the line heading south from Kealia Mill and splitting near the present Coral Reef Hotel, another line going to the old Kapaa Landing (Makee Landing) and another line heading *mauka*, crossing the present Moikeha Canal, traveling southwest up Lehua Street and through what is now goat pasture, along a plateau and into the *mauka* area behind Kapaa swamplands. This railroad line was part of a twenty mile network of plantation railroad with some portable track and included a portion of Kealia Valley and in the *mauka* regions of the plateau lands north of Kealia (Conde´ and Best 1973:180).

By the late 1800s hundreds of Portuguese and Japanese immigrants found work on Makee Plantation and the new influx of immigrants required more infrastructure (Cook 1999:51). In 1883, a lease for a school lot was signed between Makee Sugar Company and the Board of Education (Kapaa School 1983: 9). Stipulations in the Portuguese immigrant contracts with Makee Sugar Company stated that "children shall be properly instructed in the public schools" (Garden Island April 1, 1983). The original Kapaa School was constructed in 1883 on a rocky point adjacent to the Makee Sugar Company railroad. Traditionally, this point was known as Kaahiahi (Kapaa School 1983: 10). In 1908, Kapaa School was moved to its present site directly *mauka* and up the hill at Mailehune.

Narrow wagon roads gave way to macadamized roads in the early part of the 20th century. One of these new roads was called the Kaua'i Belt Road and parts of it are thought to have followed along the "Old Government Road" (Cook, 1999). In Kapaa, the present day Kuhio Highway likely follows the same route as the original Government Road and subsequent Kaua'i Belt Road. In fact, the locations of the *kuleana* awards in Kapaa indicate that the majority of the house lots were situated along the Government Road. LCA 3243 names a "road" as one of its boundaries.

In the latter half of the 1800s, following Makee's death, Chinese rice farmers began cultivating the lowlands of Kapaa with increasing success. Several Hawaiian *kuleana* owners leased or sold their parcels *mauka* of the swamp land to Chinese rice cultivators. Other Chinese rice cultivators appealed to the government for swamplands, first leasing and later buying the land. The economic activity displaced the house lot *kuleana* on the *makai* side of the marsh for increasing commercial and residential development (Lai 1985:148-161).

## 20th Century History of Kapa'a (1900 - Present)

In the early 1900s, to help with the burgeoning plantation population, government lands were auctioned off as town lots in Kapaa. One *kama'aina* mentioned that in the 1930s and 1940s, the area north of Moikeha Canal in Kapaa was mostly settled by Portuguese families (Bushnell et al 2002). The Japanese were also very prominent in the 1920s and 1930s largely replacing the Chinese merchants in the Kapaa business sector (Bushnell et al. 2002). Starting in 1926, the territorial Board of Health ran a dispensary in Kapaa, which was located at the *makai* edge of Niu Street, near the extant Kapaa Beach Park parking lot and bike path. The location of the former dispensary currently is a vacant lot. Elsewhere in the vicinity, a fire station occupies the location of the former Coral Reef Hotel, and a courthouse and a jail once stood where the present Kapaa Neighborhood Center is located. It is not known when these structures were abandoned or removed.

In 1913, Hawaiian Canneries opened in Kapaa at the site now occupied by Pono Kai Resort (Cook, 1999: 56). Through the Hawaiian Organic Act, Hawaiian Canneries Company, Ltd. purchased land they were leasing, approximately 8.75 acres, in 1923 (Bureau of Land Conveyances, Grant 8248). A 1923 sketch of the cannery shows only four structures, one very large structure assumed to be the actual cannery and three small structures *makai* of the cannery. By 1956, the cannery was producing 1.5 million cases of pineapple. By 1960, 3400 acres were in pineapple and there were 250 full time employees and 1000 seasonal employees (Honolulu Advertiser, March 20, 1960). In 1962, Hawaiian Canneries went out of business due to competition from third world countries.

The Ahukini Terminal & Railway Company was formed in 1920 to establish a railroad to connect Anahola, Kealia, Kapaa to Ahukini Landing and "provide relatively cheap freight rates for the carriage of plantation sugar to a terminal outlet" (Conde´ and Best, 1973: 185). This company was responsible for extending the railroad line from the Makee Landing, which was no longer in use, to Ahukini Landing, and for constructing the original Waikaea Railroad Bridge and the Moikeha Makai Railroad Bridge.

In 1934, the Lihue Plantation Company absorbed the Ahukini Terminal & Railway Company and Makee Sugar Company (Conde´ and Best, 1973: 167). The railway and rolling stock owned by Makee Sugar Company became the Makee Division of the Lihue Plantation. At this time, besides hauling sugar cane, the railroad was used to haul plantation freight including "fertilizer, etc... canned pineapple from Hawaiian Canneries to Ahukini and Nawiliwili, pineapple refuse from Hawaiian Canneries to a dump near Anahola and fuel oil from Ahukini to Hawaiian Canneries Co., Ltd." (Hawaiian Territorial Planning Board, 1940: 11). Former plantation workers and *kama'aina* growing up in Kapaa remember when the cannery would send their waste to the pineapple dump, a concrete pier just north of Kumukumu Stream (State Site No. 50- 30-08-789) by railroad. The structure is built over the water where the rail cars would dump the pineapple waste. The current would carry the waste to Kapaa which would attract fish and sharks (Bushnell et al. 2002).

Lihue Plantation was the last plantation in Hawaii to convert from railroad transport to trucking (Conde´ and Best, 1973: 167). "By 1957 the company salvaged a part of their plantation railroad, which was being supplanted by roads laid out for on or close to the old rail bed" (Ibid: 167). By 1959, the plantation had completely converted over to trucking. The Cane Haul Road which begins near the intersection of Haua'ala Road and Kuhio Highway is thought to date to the late 1950s and follows the alignment of the old railroad until just before or near`Alibi Point.

Severe floods in Kapaa in 1940 led to the dredging and construction of the Waikaea and Mokeha Canals sometime during that decade. (Hawaii Territorial Planning Board, 1940: 7). Although the Waikaea Canal, bordering the Kapaa Pineapple Cannery, had been proposed as early as 1923, nothing was constructed until after the floods (Bureau of Land Conveyances, Grant 8248). A Master Plan for Kapaa, published in 1940, asks the Territorial Legislature for funds to be set aside for the completion of a drainage canal and for filling *makai* and *mauka* of the canal (Hawaii Territorial Planning Board, 1940:7). In 1955, the local newspaper reported the dredging of coral from the reef fronting Kapaa Beach Park for the building of plantation roads (Garden Island Newspaper, September 21, 1955). This dredging was later blamed for accelerated erosion along Kapaa Beach (Garden Island Newspaper, October 30, 1963). Today, there are several sea walls along the Kapaa Beach Park to check erosion. Old time residents claim the sandy beach in Kapaa was once much more extensive than it is now (Bushnell et al. 2002).

In the 1930s after the incorporation of Makee Sugar Company into Lihue Plantation, Kealia Town was slowly abandoned. Many of the plantation workers bought property of their own and moved out of the plantation camps. The camps which bordered Kuhio Highway were disbanded in the 1980s. In the last part of the 20th century the Lihue Plantation began to phase out and Kapaa Town suffered after the closing of the Kapaa Cannery; however the growing tourist industry helped to ease the economic effects of the Cannery's closing.

## PREVIOUS ARCHAEOLOGICAL RESEARCH

### Archaeological Studies and Sites in Kapa'a Ahupua'a

The following table outlines the archaeological research (Table 3) and historic properties (Table 4) identified in Kapa'a Ahupua'a. These tables are followed by discussion of the research and historic properties. Table 3 provides a list of archaeological research conducted within Kapa'a Ahupua'a, including columns for source, location, nature of study, and findings. The locations of these archaeological studies are shown in Figure 4. Table 4 is a list of known historic properties within the ahupua'a and includes columns for state site numbers, site type, location and reference. The locations of identified sites within Kapa'a Ahupua'a are shown in Figure 5. All site numbers are numbered 50-30-08-SHIP site number. Here only the SHIP site number designation will be used

**Table 3. Previous Archaeological Studies in coastal Kapa'a.**

EXPLORATION ASSOCIATES LTD

Source	Location	Nature of Study	Findings
Bennett 1931	Island wide: identifies 2 sites: Site 110 Taro terraces and bowl and Site 111 A large simple dirt Hawaiian ditch	Archaeological Reconnaissance	Identifies 2 sites: Site 110 Taro terraces and bowl and Site 111 A large simple dirt Hawaiian ditch
Handy and Handy 1972	Archipelago-wide	Native Planter study	Discusses "highly developed irrigation system"
Ching 1976	Just south of the Waikaea Drainage Canal	Archaeological Reconnaissance	No significant findings
Hammatt 1981	Upland Kapaa	Archaeological Reconnaissance	No significant findings
Hammatt 1986	Upper reaches of the Makaleha stream valley.	Archaeological Reconnaissance	No significant findings
Hammatt 1991	Along Kuhio Highway	Subsurface Testing	Identifies two sub-surface cultural layer sites
Kikuchi and Remoaldo 1992	Around Kapaa Town	Cemeteries of Kauai	Identifies six cemeteries
Spear 1992	South side Waikaea Canal, mauka of Kuhio Highway. (TMK: 4-5-05:04, 09)	Monitoring Report	Designated subsurface Site 547



Source	Location	Nature of Study	Findings
Chaffee, Burgett & Spear 1994a	A house lot near the corner of Kukui and Ulu Streets in <i>mauka</i> Kapaa Town. [TMK: 4-5-09:10]	Archaeological Inventory Survey	No significant findings
Chaffee, Burgett & Spear 1994b	Mamane Street Kapaa Town. [TMK: 4-5-09:51]	Archaeological Inventory Survey	No significant findings
Hammatt, Ida & Chiogioji 1994	Proposed bypass routes <i>mauka</i> of Kapaa Town	Archaeological Assessment	No new field work, literature review only
Hammatt, Ida & Folk 1994	South side Waikaea Canal, <i>mauka</i> of Kuhio Highway [TMK: 4-5-05:06]	Archaeological Inventory Survey	Weak cultural layer designated Site 748
Kawachi 1994	Inia Street (Jasper) [TMK 4-5-08:33]	Burial Report	Designated Site 871
McMahon 1994	"behind the armory in Kapa'a near the god stones" The location is uncertain, and at "Buzz's near the Coconut Marketplace"	Documents a report of two burials	16 sets of human remains. Site numbers unknown
Creed, Hammatt, Ida, Masterson & Winieski 1995	Kapa'a Sewer line project, Kuhio Highway, south and central Kapaa Town	Archaeological Monitoring Report	Documents cultural layer of Site - 1848 and (an enlarged) Site - 1849 & recovery of thirty burials at Sites —867, -868, -871, and -1894
Jourdane 1995	1382-A Inia Street, <i>makai</i> of Kuhio Highway, central Kapaa Town	Burial Report	Site 626
McMahon 1996	South side Waikaea Canal, <i>mauka</i> of Kuhio Highway [TMK: 4-5-05:08]	Archaeological Inventory Survey	No significant cultural material
Hammatt, Chiogioji, Ida & Creed 1997	Test excavations focused inland of Kapaa Town	Archaeological Inventory Survey	Four test trenches were excavated inland of Kapaa Town
Borthwick and Hammatt 1999	Kapaa Seventh-Day Adventist Church at 1132 Kuhio Highway	Archaeological Monitoring and Burial Treatment Plan	Monitoring was indicated as this parcel lay within designated Site 1848.



Figure 6. Map showing previous archaeological studies in Kapa'a.

Table 4. Historic Properties in Kapa'a Ahupua'a

Site #	Ahupua'a	Site Type/ Name (if any)	Location	Site Constraints	Reference
B001	Kapa'a	Historic Cemetery	South of bend of Kapa'a Stream, a kilometer <i>mauka</i> from Kuhio Hwy	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B002	Kapa'a	Historic Cemetery	Just <i>mauka</i> from Kuhio Highway, south of Kapa'a Stream	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B003	Kapa'a	Kapa'a Public Cemetery	South of Kanaele Road, one kilometer inland of Kuhio Highway	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B004	Kapa'a	Historic Cemetery	North of Apopo Road, one kilometer inland of Kuhio Highway	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B013	Kapa'a	Historic Cemetery	Just <i>mauka</i> from Kuhio Highway, north of the Waikaea Canal	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B014	Kapa'a	All Saints Episcopal Church Cemetery	Just <i>mauka</i> from Kuhio Highway, south of the Waikaea Canal	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo. 1992:62-65
547	Kapa'a	Sub-surface features including a firepit and a possible house foundation	South of bend of Waikaea Canal, <i>mauka</i> of Kuhio Highway	Archaeological monitoring in the vicinity recommended	Speare 1992:3
626	Kapa'a	Burial	Inia Street, <i>makai</i> of Kuhio Highway,	Consultation and monitoring in vicinity indicated	Jourdane 1995
748	Kapa'a	Minimal findings, a weak cultural layer (buried A-horizon)	South of the bend of the Waikaea Canal, <i>mauka</i> of Kuhio Highway	Considered no longer significant within project area	Hammatt et al. 1994
789	Kapa'a/Kealia	Historic Road	Coastal Cane Haul Road near Kawaihau Road turn off	Unknown	Perzinski et. al. 2000

Site # 50-30-08-	Ahupua'a	Site Type/ Name (if any)	Location	Site Constraints	Reference
867	Kapa'a	1 set of human remains	Kukui Street, just <i>mauka</i> of Kuhio Highway, Kapa'a Town	Consultation and monitoring in vicinity indicated	Creed et al. 1995:50
868	Kapa'a	1 set of human remains	Lehua Street <i>mauka</i> of Kuhio Highway, Kapa'a Town	Consultation and monitoring in vicinity indicated	Creed et al. 1995:50
871	Kapa'a	13 sets of human remains (Creed et al. 1995:50)	Inia Street, <i>makai</i> of hio Highway	Consultation and monitoring in vicinity indicated	Kawachi 1994; Creed et al. 1995:50
1848	Kapa'a	Cultural layer and sub-surface features	Along Kuhio Highway between Wana Road and the Waikaea Drainage Canal	Archaeological monitoring in the vicinity recommended	Hammatt 1991; Creed et al. 1995
1849	Kapa'a	Cultural layer and sub-surface features; Creed et al. 1995:53 expands boundaries to incl. burial sites 626, -867, -868 - 871, and -1894	Along Kuhio Highway between Inia Street and Kaula Street extending to the coast	Consultation and monitoring in vicinity indicated	Hammatt 1991; Creed et al. 1995
1894	Kapa'a	11 sets of human remains	Ulu Street, just north of Kuhio Highway, Kapaa Town	Consultation and monitoring in vicinity indicated	Creed et al. 1995:50
2075	Kapa'a/Kealia	Highway Bridge Foundation (old Kapa'a Belt Road)	Kuhio Highway at Kapa'a/ Kealia River	Unknown	Bushnell et al. 2002:55
2076	Kapa'a	Petroglyph	Rocky coast below former cane haul road (Site -789)	Preservation	Bushnell et al. 2002:55
2077	Kapa'a	Concrete steps (related to historic beach pavilion)	Near present Kapaa Beach Park Pavilion	Unknown	Bushnell et al. 2002:55



cultural layers has not been clearly defined. The five *kuleana* awarded during the *Mahele* are located adjacent to the present coastal highway. The areas directly *mauka* of Kapaa Town are marshy though much of it has been filled in recent decades for the Bypass Road and shopping centers and housing. These cultural deposits associated with pre-historic and early historic habitation are known to exist in a relatively narrow sand berm that makes up the physiogeography of Kapa`a. The more *mauka* studies but still lower coastal areas, suggest they are located towards the *mauka* fringe of the sand berm, approaching more marshy conditions and have generally reported no significant or minimal findings (Spear 1992; Chaffee et al. 1994a & 1994b; Hammatt et al. 1994, 1997; McMahon 1996). Less than 1.5 km to the south of Waikaea Canal at the southern boundary of Waipouli adjacent to Uhalekawa`a Stream (Waipouli Stream) and the ocean is another extensive subsurface cultural deposit which is associated with a pre-contact fishing encampment located (Hammatt et al. 2000).

Anticipated sites based on historic and archaeological studies in *mauka* Kapa`a are the remains of cane cultivation infrastructure such as ditches and pre-contact too historic period Native Hawaiian terracing for *lo`i* cultivation with nearby habitation sites in the gulches, however the gulches lay outside the current project area.

## RESULTS OF FIELD WORK

### Pedestrian Survey

On January 3 and April 25, 2012 Exploration Associates Ltd. archaeologist Nancy McMahon, M.A. made field inspections on proposed Kapa`a Highlands project area. Access was made via Olohena Road (two gates). North-south oriented transects were utilized to 100% survey the project area. Because of known historic cane cultivation in this area of Kapa`a, predicted sites might be historic plantation related infrastructure such as ditches, flumes, roads, temporary cane-haul railroad berms and reservoirs. None were observed during the survey. The shallow ravine the project area were surveyed and tested, however no pre-Contact or historic era terraces or habitation sites were revealed. The parcel contains no surface archaeological sites. The access road is related to access for construction of the buildings already present on the Phase I parcel.

### Subsurface Testing

On November 11, 2012, three trenches were excavated with a backhoe with a 24 in. width bucket (Figure ). Trench 1 was excavated to a depth of 183 cm with a length of 10 meters. Trench 2 was excavated to a depth of 160 cm and a length of 3 m. Trench 3 was excavated to a depth of 260 cm and a length of 2.5 m. Each evinced the same soil composition. A description of the soils representing all three trenches is presented here.

A representative profile description evinced the same stratigraphy consisting in all three trenches, consisting of three soil layers with only a single clear boundary delineating the topsoil from the underlying soils. Soil differences could only be determined utilizing the Munsell Color Chart. The topsoil in each trench 5 YR 4/3 *reddish brown organic*. The other two layers are classified as 5 YR 5/6 *yellowish red* [20 cmbs] and 5 YR 4/6 *yellowish red* [20cmbs to base of excavation]. Characteristics are dry to very dry, crumbly, medium firm, clayey silt. It is pretty much cultivated soils. A local informant, Mr. Vasquez, who worked for the Lihue plantation most of his life Informant stated the plantation chain and ball dragged this land several time over.

A geologic survey was undertaken on the adjacent Phase I parcel prior to the construction of a solar farm. Soils extracted and examined in test trenches revealed only agricultural soils. No buried cultural layers or plantation infrastructure was present.



Figure 8. Trench locations, facing northeast.



Figure 9. Profile Test Trench 2 on the left and Trench 3 right.



Figure 10. Entrance off Olohena Road looking makai in the distance the Solar Farm part of Phase I



Figure 11. Access Road to Solar Farm with Cattle Grazing in the Distance.





*Figure 12. Lower Elevation Outside Project Area from the access road.*



*Figure 13. View Across the Project Area, Facing Makai and Northeast.*





*Figure 14. The Roof of Kapaa Middle School on State land*

## RECOMMENDATIONS

As no archaeological sites are present, there are no historic preservation concerns for this project. We recommend no further historic preservation work. Though highly unlikely, if any human remains or other significant subsurface deposits are encountered during the course of development activities all work in the immediate area should stop and the State Historic Preservation Division promptly notified.

# REFERENCES

## Akina, Joseph

1913 "*I Ke hou i Ka Lulu-o-Moikeha i ka laula o Kapa`a*", *Kuokoa*. May 2-9, 1913. Bishop Museum Archives  
HEN Place Names, Kaua`i.

## Alexander, William Patterson

1991 "A Tour of Kaua`i in 1849: Private Journal of William DeWitt Alexander," *The Kaua`i Papers*, Kauai  
Historical Society, A Kauai Historical Society Publication, Lihue, Kaua`i, HI.

## Beckwith, Martha

1970 *Hawaiian Mythology*, University Press of Hawai`i, Honolulu.

## Bennett, Wendell C.

1931 *The Archaeology of Kaua`i*, Bishop Museum Bulletin 80, Honolulu, HI. Bishop Museum Archives HEN I: 214  
"Heiaus of Kealia and Kapa`a" and "Well Known Things [or Places]".  
HEN I: 215 "Famous Things mentioned by Two Men".  
HEN I: 216 "Heiaus from Kapa`a to Kealia" and "Things for which Kapa`a was Known".

## Bushnell, K.W., Melanie Mann, Douglas Borthwick, Tony Bush, Todd Tulchin, David Shideler and Hallett H.

### Hammatt

2002 *Archaeological Inventory Survey for the Proposed Kapa`a/Kealia Bike and Pedestrian Path, Kapa`a and  
Kealia, Kawaihau Districts, Kaua`i Island, Hawaii* (TMK 4-5, 4-6-14, 4-7-03 & 04). Cultural Surveys  
Hawai`i, Inc. Kailua, HI.

## Calis, Irene

2000 *End of Field Work Report: Human Burial Removal and Archaeological Monitoring, Kapa`a Beach Park Public  
Bathroom Installation, Kapa`a, Kaua`i* Scientific Consultant Services

## Chafee, David B., Berdena Burgett and Robert L. Spear

1994a *An Inventory Survey of a Kukui Street Houselot, Kapa`a Ahupua`a, Kawaihau District, Puna, Island  
of Kaua`i* (TMK: 4-5-09:10), SCS Inc., Kaneohe, HI.

1994b *An Inventory Survey of a Mamane Street Houselot, Kapa`a Ahupua`a, Kawaihau District, Puna, Island of  
Kaua`i* (TMK: 4-5-09:51), SCS Inc., Kaneohe, HI.

## Ching, Francis K. W.

1968 *Archaeological Surface Survey; Wailua State Park, Kaua`i, State of Hawaii*, Dept. of Land and Natural  
Resources, Honolulu, HI.

1976 *Letter Report: Archaeological Reconnaissance Report, Kapa`a "Wastewater Treatment and Disposal  
System, ARCH 14-96, Letter to R. M Towill Corporation, ARCH, Lawai, Kaua`i, HI.*

## Conde, Jesse C. and Gerald M. Best

1973 *Sugar Trains, Narrow Gauge Rails of Hawaii*, Glenwood Publishers, Felton, CA.

## Cook, Chris

1999 "*Kaua`i, the Garden Island: A Pictorial History of the Commerce and Work of the People*", Donning  
Co., Virginia Beach, VA.

## Creed, Victoria, Hallett H. Hammatt, Gerald K. Ida, Ian Masterson and John Wineski

1995 *A Summary of the Archaeological Monitoring for the Kapa`a Sewerline Project Waipouli and Kapa`a  
Ahupua`a, Puna District, Kaua`i* (TMK: (4)-3-09 and 4-5-03 to 11), Cultural Surveys Hawai`i, Kailua, HI.

## Damon, Ethel M.

1934 *The Heiau at Wailua, The Kauai Historical Society by the Garden Island Press, Lihue, Kaua`i, HI.*

1931 *Koamalu, two vols. privately printed by the Honolulu Star-Bulletin Press, Honolulu, HI.*

## Dega, Michael F. and James Powell

2003 *Archaeological Monitoring During Phase I of the Kaua`i Rural Fiber Optic Duct Lines Project, Kaua`i  
Island, Hawaii*. Scientific Consultant Services.

## Dole, Charles S.

1916 "*The Hui Kawaihau*" pp.8-15. A Paper read at the November meeting of the Kauai Historical Society  
on November 16, 1916. In Lihue, Kaua`i.

## Donohugh, Donald

2001 *The Story of Kōloa, A Kaua`i Plantation Town*, Mutual Publishing, Honolulu, HI.

## Foote, Donald E. E. L. Hill, S. Nakamura and F. Stevens

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

## Fomander, Abraham

1916-19 *Fomander Collection of Hawaiian Antiquities and Folk-Lore, with translations edited and illustrated  
with notes by Thomas G. Thrum, Volume 4, First series, 1916 - 1917 notes by Thomas G. Thrum,  
Memoirs of the Bernice P. Bishop Museum, Vols. 4, 5, 6, Honolulu, HI.*

## Garden Island Newspaper

1955 "*Geologists Says Kapa`a Coral Removal No Threat to Town*". September 21, 1955.

1963 "*Kapa`a Blames Federal Role As Erosion Continues. Says Barrier on Reef is Required*". October 30,  
1963.

1983 "*Centennial Year, Kapa`a School Wants Pix of its 100 Years*". April 1, 1983.

EXPLORATION ASSOCIATES LTD

- Giambelluca, Thomas W., Michael A. Nullet and Thomas A. Schroeder  
1986 Rainfall Atlas of Hawai'i, Department of Land and Natural Resources, Honolulu, HI.
- Hammatt, Hallett H.  
1981 Archaeological Reconnaissance of 52.56 Acres for a Proposed subdivision, TMK: (4)-6-13-1, Kapa'a, Puna, Kaua'i Island, ARCH Report 14-236, Prepared for Waialeale Partners.  
1986 Archaeological Reconnaissance of the Makaleha Springs Water Source Development, Kapa'a, Kaua'i TMK: (4)-6-01:1, Cultural Surveys Hawai'i, Kailua, HI.  
1991 Archaeological Subsurface Testing for the Proposed Kapa'a Sewer line, Wailua, Olohena, Waipouli and Kapa'a, Kaua'i, Cultural Surveys Hawai'i, Kailua, HI.
- Hammatt, Hallett H., Rodney Chiogioji, Gerald K. Ida and Victoria S. Creed  
1996 An Archaeological Inventory Survey for the Kuhio Highway Widening and Bypass Options Within the Ahupua'a of Wailua, South Olohena, North Olohena, Waipouli & Kapa'a, Island of Kaua'i, Cultural Surveys Hawai'i, Inc., Kailua, HI.
- Hammatt, Hallett H., Gerald K. Ida and William H. Folk  
1994 Archaeological Inventory of a 1.87-Acre Parcel, Kapa'a, Kaua'i (TMK (4)-5-05:6), Rev. August 1994, Cultural Surveys Hawai'i, Kailua, HI.
- Handy, E.S. Craighill and Elizabeth G. Handy  
1972 Native Planters in Old Hawaii: Their Life, Lore, and Environment, B.P. Bishop Museum Bulletin 233, B.P. Bishop Museum, Honolulu, HI.
- Hawaii State Archives  
1837 Interior Department, Land, Incoming Letter. August 1837.  
1882 Interior Department, Letter book, Vol. 20, p. 426, Letter from Spalding to the Honorable Jacob Hardy, Circuit Judge—Fourth Circuit Kaua'i.
- Hawaiian Territorial Planning Board  
1940 Master Plan of the Town of Kapa'a, In collaboration with the Kaua'i County Board of Supervisors, Publication No. 8. Advertiser Publishing Co., Honolulu, HI.
- Honolulu Advertiser  
1997 "Amfac to put more land up for sale: Tracts on Kaua'i, Big Island" by Mike Gordon. July 7, 1997. Section B1.  
1960 "Kaua'i Tries to See into Future. March 20, 1960.
- Joesting, Edward  
1984 Kaua'i, The Separate Kingdom, University of Hawaii Press and Kaua'i Museum Association, Ltd., Honolulu.
- Jourdane, Elaine  
1995 Inadvertent Discovery of Human Remains at 1382-A Inia Street, Kapa'a, Kaua'i (Kapa'a Sewerline Project Laterals) Site 626, SHPD, Honolulu, HI.

EXPLORATION ASSOCIATES LTD

- Kalakau'a, David  
1888 The Legends and Myths of Hawaii, Edited by R.M. Dagget, Charles L. Webster and Co., New York.
- Kamakau, Samuel Manaiakalani  
1976 The Works of the People of Old, Na Ham a ka Po'e Kahiko, Bishop Museum Special Publication, No. 61, Honolulu, HI.
- Kapa'a Elementary School  
1982 Kapaa School 1883-1983: A "Century of Knowledge". Kapa'a Elementary, Kapa'a, Kaua'i
- Kawachi, Carol T.  
1994 Inadvertent Burial at 1316 Inia Street (Jasper) TMK 4-5-08:33, Kapa'a, Kawaihau, Kaua'i 50-30-08-871, State Historic Preservation Division, Honolulu, HI.
- Kikuchi, William K. and Susan Remoaldo  
1992 Cemeteries of Kaua'i, Volume 1, Kaua'i Community College and University of Hawaii, Puhi, Kaua'i, HI.
- King, Robert D.  
1935 "Districts in the Hawaiian Islands" In Coulter, John Wesley (compiler)  
A Gazetteer of the Territory of Hawaii, University of Hawaii Research Publications, No. 11, University of Hawaii, Honolulu, HI.
- Lai, Violet L. assisted by Kum Pui Lai  
1985 He Was a Ram, Wong Aloiau of Hawaii, Published for the Hawaii Chinese History Cemetery and the Wong Aloiau Association by University of Hawaii Press, Honolulu.
- McMahon, Nancy A.  
1994 Inadvertent Burial Find, Kapa'a, Kawaihau, Kaua'i, SHPD, Honolulu, HI.  
1996 Archaeological Inventory Survey for 5 Unit Apartment, (TMK:(4)-5-05:8), Kapa'a, Kawaihau, Kaua'i, Exploration Associates, LTD., Kōloa, Kaua'i, HI.
- Nakuina, Moses K.  
1990 The Wind Gourd of La' amaoma, Translated by Esther T. Mookini and Sarah Nakoa, Kalamaku Press, Honolulu.
- Office of the Commissioner of Public Lands  
1929 Indices of Awards, Made by the Board of Commissioners to Quiet Land Title in the Hawaiian Islands.
- Pukui, Mary Kawena  
1983 (Melo No'eau: Hawaiian Proverbs and Poetical Sayings, Bishop Museum Special Publication No.71, Bishop Museum Press, Honolulu, HI.  
1986 Hawaiian Dictionary, 2<sup>nd</sup> Edition, University of Hawaii Press, Honolulu, HI.  
1974 Place Names of Hawaii, University of Hawaii Press, Honolulu, HI.

Rice, William Hyde

1974 Hawaiian Legends, Bernice P. Bishop Museum Bulletin 3, Honolulu, HI; originally published 1923, Kraus Reprint, Millwood, New York, N.Y.

1923 Hawaiian Legends, Bernice P. Bishop Museum Bulletin 3, Honolulu.

Spear, Robert L.

1992 Letter Report Concerning Monitoring for the Cost-U-Less Project Kapa'a, Kaua'i, HI (TMK: (4)-5-5:4&9), Scientific Consultant Services Inc., Honolulu, HI.

Thrum, Thomas G.

1906 "Heiaus and Heiau Sites Throughout the Hawaiian Islands, Kaua'i, in: Hawaiian Almanac and Annual 1907, pp. 36-48, Honolulu, HI.

1923 More Hawaiian Folk Tales, A.C. McClurg & Co., Chicago, IL.

Van Ryzin, Karl and Hallett H. Hammatt

2004 An Archaeological Assessment for The Proposed Water Reservoir, Kapa`a Ahupua`a, Kaua'i (TMK (4)-6-03:10 Cultural Surveys Hawai'i, Kailua, HI.

Wickman, Frederick B.

1998 Kaua'i Ancient Place Names and Their Stories. University of Hawaii Press: Honolulu

# APPENDIX A

## Photos of the Area Surveyed



*Figure 1. View of Project Area from the gate at the top of Olohena Road.*



*Figure 2. Solar Farm on Phase I Property view to north*



*Figure 3. Cattle Grazing in the Project Area.*



*Figure 4. Fence in the left side of photo indicating property boundary.*



*Figure 5. Goats Grazing in the Project Area.*



# APPENDIX B

State Historic Preservation Letter (June 2010) Requesting Survey

State Historic Preservation Letter (December 1999) Subdivision  
"No Effect"



# APPENDIX C

## Report of Geotechnical Evaluation Kapaa Solar Field



December 14, 1999

Mr. Greg Kamm  
P.O. Box 1200  
Kula, HI 96756

LDG NO: 24572 -  
DOC NO: 0012NM02

Dear Mr. Kamm:

**SUBJECT: Chapter 6E-42, Historic Preservation Review --  
Subdivision Permit Application 5-99-45 (Silagi Family Trust  
and Hillside Corp. Center L.L.C.)  
TMN: 4-3-03: 01 per  
Kapaa, Kawaiihau, Kua'i**

Thank you for submitting the 1975 air photo of the above subject parcels. We agree that the land has been extensively altered by cane cultivation and filling. Therefore, we now believe that this project will have "no effect" on significant historic sites.

If you have any questions, please call Nancy McMahon at 742-7033.

Aloha,

  
DON HIBBARD, Administrator  
State Historic Preservation Division

NM:lin

c. D. Crowell, Planning Department County of Kauai



REPORT OF  
GEOTECHNICAL EVALUATION-  
KAPAA SOLAR FIELD  
KAPAA, KAUAI

PREPARED FOR  
WAGNER ENGINEERING SERVICES, INC.

PREPARED BY:  
D.A.Evans, Inc.  
P.O. Box 745  
Kilauea, HI, 96754



REPORT OF  
GEOTECHNICAL EVALUATION-  
KAPAA SOLAR FIELD  
KAPAA, KAUAI

PREPARED FOR  
WAGNER ENGINEERING SERVICES, INC.

PREPARED BY:  
D.A.Evans, Inc.  
P.O. Box 745  
Kilauea, HI, 96754



**TABLE OF CONTENTS**

	Page
INTRODUCTION.....	1
Purpose.....	1
Scope.....	1
Location.....	1
REFERENCES.....	2
PROPOSED DEVELOPMENT.....	3
GEOLOGIC CONDITIONS.....	3
TSUNAMIS.....	4
SURFACE AND SUBSURFACE WATER.....	4
SOIL MATERIAL PROPERTIES.....	4
EARTHQUAKES.....	5
CONCLUSIONS.....	5
Feasibility.....	5
Site Preparation.....	5
Foundation Design.....	5
Pavement Design.....	5
PLATE 1- LOCATION MAP.....	6
PLATE 2- GEOTECHNICAL MAP.....	7
APPENDIX.....	A-1



**INTRODUCTION**

This report summarizes the results of our evaluation of the geotechnical feasibility of construction of a solar farm west of the town of Kapaa, Kauai. We understand the installation will be used to supply electric power to the Kauai Island Utility Cooperative.

**PURPOSE**

This report is for the exclusive use of our client, Wagner Engineering Services, Inc. Its purpose is to satisfy the terms of the contract between our two firms. The report summarizes the findings, conclusions and recommendations which were generated by the evaluation. The intent of the report has been to present conclusions and recommendations of a geotechnical nature in such a way as to assist the owner and their design team in preparing plans and specifications for construction.

**SCOPE**

As outlined in our contract dated August 22, 2010, the following work elements were performed.

- Review of available geologic data and stereographic aerial photographs.
- Subsurface exploration using a rubber-tired "Extendahoe" backhoe.
- Laboratory testing of selected samples of soil collected during subsurface exploration.
- Preparation of a formal report summarizing our findings, conclusions and recommendations.

**LOCATION**

The site is located slightly less than three miles west of the town of Kapaa. It is accessed by an unpaved road exiting from Olohena Road. The site is shown on Plate 1- Location Map.

**REFERENCES**

The following references were used in preparing our proposal, conducting our evaluation and preparing this report.



Our Job No. 2010-08-01

Page 2

- "Roadside Geology of Hawaii", Richard W. Hazlett and Donald W. Hyndman, Mountain Press Publishing Company, 1966.
- "Volcanoes in the Sea The Geology of Hawaii", Second Edition, Gordon A. MacDonald, Agafin T. Abbott and Frank L. Peterson, University of Hawaii Press, 1985.
- "Tsunami", Second Edition, Walter C. Dudley and Min Lee, University of Hawaii Press, 1998.
- "Atlas of Natural Hazards in the Hawaiian Coastal Zone", USGS, Geologic Investigations, Series I-2761, 2002.
- "Reconnaissance Following the October 15<sup>th</sup>, 2006 Earthquakes on the Island of Hawaii, University Of Hawaii, College Of Engineering, Research Report UHM/CEE/06-07, October 26, 2006.

#### SITE CONDITIONS AND PROPOSED DEVELOPMENT

The site, as evidenced by preliminary topography and USGS mapping, is located on an elevated stream terrace on the south side of Oloheua Road, 2.8 miles west of old Kapaa town and about 4000 feet northeast of the Nonou Forest Reserve. At the time of our exploration, vegetation was sparse due to the ongoing drought. Topography slopes toward the ancestral channel with the steepest portion immediately below Oloheua Road.

Detailed plans of the proposed development were not available at the time of our exploration although, because of the nature of the development, the knowledge that it is a solar field is sufficient for our purposes. Drawings which have been provided by your office indicate that the project will consist of six solar panel arrays of varying size mounted on a shallow foundation system.

#### GEOLOGIC CONDITIONS

The Lihue Depression is the dominant geologic feature which has influenced this site. The Lihue Depression is apparently the remains of the caldera of the ancestral Wai'ali'ali shield volcano. The caldera was displaced during the massive landsliding which caused the collapse of the portion of the island now occupied by Kapaa and Waipouli. The site is on the northern edge of the depression.

Although there is evidence to suggest that the island is still undergoing some settlement associated with the collapse of the volcano, the amount of movement is apparently so small as to be undetectable without instrumentation and there is no longer volcanic activity on the island.



Our Job No. 2010-08-01

Page 3

Our subsurface exploration indicates that the site is an erosion terrace formed by previous stream action. Subsequent erosion has produced a residual soil profile which grades from a fully developed, moderately firm, surface soil to very stiff weathered rock at a depth of about six feet. In this area, as is the case on the majority of the eastern side of the island, the underlying rock is part of the Koloa series of volcanic flow material.

#### TSUNAMIS

The island of Kauai is susceptible to damage from tsunamis. Although there is a comparatively sophisticated early warning system in place world-wide, the ability of the system to predict the size of any particular event is limited. The general consensus is that tsunamis are certain to occur but their frequency is uncertain. Published data suggest that the site is not vulnerable to damage from tsunami run-up of the magnitude experienced in the Hawaiian Islands historically.

#### SURFACE AND SUBSURFACE WATER

Drainage on the property occurs as southwesterly sheet flow from the slope below Oloheua Road toward the established stream. At the time of our exploration, drought conditions existed on the island and surface was non-existent.

We found no subsurface water to the depth of exploration. Because of the existing drought conditions, the near-surface soil was dry and brittle.

#### CONCLUSIONS

Based on the results of our geotechnical evaluation, we can offer the following conclusions.

#### FEASIBILITY

In our opinion, it is geotechnically feasible to develop the site essentially as proposed provided the improvements are properly designed and constructed.

#### SITE PREPARATION

We have assumed that little or no grading, other than that required for the creation of an access road and support facilities will be needed. Moreover, it is our understanding that the arrays will be supported by some form of pipe piles. As a result, it is likely that site preparation will be minimal.





Our Job No. 2010-089-01

Page 4

### EARTHQUAKES

The island of Kauai is in Uniform Building Code seismic zone 1, a designation indicative of a low level of seismic activity. Published data indicate that, during the period 1962 to 1980, for example, there were no recorded earthquakes with a Richter Magnitude greater than 3.0 with an epicenter on or near Kauai. Within the last two years, however, earthquakes in the Richter Magnitude 3 to 4 range have occurred offshore of Maui and Oahu as well as the Loihi seamount east of the Big Island and magma production from Kilauea has altered perceptibly. Of particular importance was the October 15, 2006, M=6.7 and the November 23, 2006, M=5.0 events off the Kona Coast. This may be indicative of shifts in the Pacific tectonic plate which could generate an increase in seismic activity for the near future. As part of our evaluation, we have provided below the numeric parameters necessary to perform the site characterization analysis required by the 1997 Uniform Building Code.

Soil Profile- S<sub>6</sub>  
 $z = 0.075$   
 $c_u = 0.12$   
 $c_v = 0.18$   
 $N_u = 1.0$   
 $N_v = 1.0$

In our opinion, it is likely that the site will experience low-level ground shaking due to volcanic activity on or near the Big Island, but the magnitude and number of these events will not be larger than those in the historic record.

### TSUNAMI

Tsunami run-up of historic proportions has been in the 10 to 40 foot range and, historically, has been concentrated on the north shore of the island. Although the pre-historic "monster" tsunami is still a theoretical possibility, the design practice in coastal areas of the island has apparently been to consider the run-up of historic proportion. The site of the proposed solar field is well above the elevation of historic run-up.

### FOUNDATION DESIGN

The upper two feet of the surface soil in the area of the arrays is poorly consolidated and should not be relied for either foundation support or uplift resistance. Below two feet, the soil is stiff and capable of generating more than 2500 pounds per square foot for bearing. Uplift resistance can be determined using the relationship  $(1100)d + W$  where "d" is outside shaft diameter, "W" is unit weight of the shaft and "l" is shaft length below two feet. This assumes that the shaft consists of a



Our Job No. 2010-08-01

Page 5

protected metal shaft encased in concrete. A passive pressure of 300 pounds per cubic foot (equivalent fluid) is reasonable for the soil below a depth of two feet.

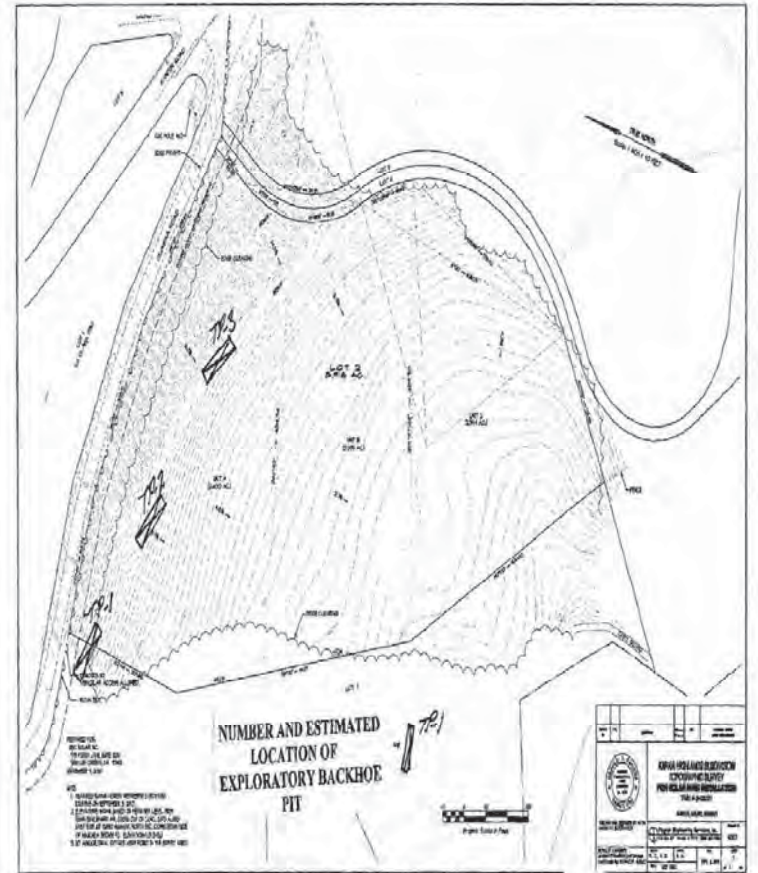
Laboratory tests to determine the relative corrosivity of the soil are currently being performed and the results will be reported under separate cover. However, our work on the island has shown, as the result of a number of tests, that the soil derived from the Koloa volcanic material is highly to severely corrosive to both concrete and metal. The results of the on-site tests will be submitted under separate cover.

### SURFACE DRAINAGE

Runoff from rainfall and irrigation should be directed away from the proposed structures to an approved drainage device.

The Plates which are attached and complete this report are listed in the Table of Contents.  
 oOo







Our Job 2010-08-01

Page A-1

## APPENDIX SUPPORTING DATA AND PROCEDURES

### SURFACE GEOLOGIC MAPPING

A limited amount of surface geologic mapping was performed as part of our evaluation. This mapping was performed both physically and with the aid of topographic maps before and during the subsurface exploration. The results of this work were assimilated with the subsurface exploration.

### SUBSURFACE EXPLORATION

Subsurface exploration at the site consisted of the excavation of three trenches using a rubber-tired backhoe with a three-foot-wide bucket. The trenches were located to (a) aid in establishing a "picture" of probable subsurface conditions at the site, and (b) provide access to the subsurface for possible sampling of soil and/or rock. To that extent, both the geomorphology of the site and the type and location of proposed improvements have a bearing on the location of subsurface exploration points. Our estimate of the location of each backhoe trench is shown on Plate-2 Geotechnical Map. Graphic logs, using standard United States Geological Survey, United States Corps of Engineers and United States Bureau of Reclamation nomenclature are included as Plates A-1.1 through A-1.3- Log of Test Pit. Upon completion, all pits were backfilled, tamped and wheel-rolled. The location of each test pits was also marked with a stake and flagging.

### LABORATORY TESTING

**Moisture/Density.** Field moisture content and in-place dry density were determined for each "undisturbed" sleeve sample obtained during exploration. The field moisture content was determined according to ASTM Test Method D2216-66 by obtaining one-half of the moisture sample from each end of the sleeve. The in-place wet and dry density was determined by using the wet weight of the entire sleeve.

At the same time the field moisture content and in-place dry density were determined, the soil material at each end of the sleeve was classified according to the Unified Soil Classification System and pocket penetrometer readings were taken in the cohesive samples. The results of the field moisture content and in-place dry density tests are presented on Plates- A-1 and A-1.2-Log of Test Pit.

**Index Tests.** For purposes of this report, we have grouped grain-size distribution and Atterberg Limits under "index tests". The bulk sample taken from test pit TP-1 at a depth of two to



Our Job No. 2010-08-01

Page A-2

three feet was also subjected to an analysis of its distribution of grain size and its Liquid Limit, Plastic Limit, and Plasticity Index were determined. The distribution of grain size was determined according to ASTM Test Method D422-63. Relative plasticity was determined according to ASTM Test Methods D423-66 and D424-59. Using these data, the soil can, among other things, be provided a positive Unified Soil Classification System group name. The tests indicate that the soil has no gravel-sized particles, 18 percent sand-sized particles, 80 percent silt-sized particles, two percent clay-sized particles, a Liquid Limit of 59, a Plastic Limit of 46 and a Plasticity Index of 13. The soil has been given a Unified Soil Classification System group name and symbol of Sandy Silt (MH). The results are summarized on Plate A-2- Relative Plasticity Data and Plate A-3- Grain Size Distribution Data.


**Direct Shear Tests.** Undisturbed samples taken from test pits TP-1 and Test Pit TP-2 at two feet were subjected to consolidated, drained direct shear tests to determine the shearing resistance of the soil. In each case, samples were allowed to stabilize in a suitable loading frame under the normal stress for the test (in this case, 500, 750 and 1000 pounds per square foot). The samples were then flooded, allowed to stabilize and then sheared at a constant rate of 0.008 inches per minute to failure. The applied normal and induced shear stresses were monitored with electronic load cells and the displacement in the normal and shear directions monitored with linear variable displacement transducers (LVDT's). The force and displacement in the direction of shear were plotted electronically. The results of the tests are summarized graphically on Plates A-4 - Shear Strength Data.

**Corrosion Tests.** Tests to determine the relative corrosivity of the on-site soil are currently being completed and will be submitted under separate cover.

With the exception of the corrosion tests, all laboratory testing was performed for us by Evans, Colbaugh & Associates, Inc. in San Marcos, California.


Log of Test Pit No. TP- 1									
Date: 09/11/10		Elevation: +60 (Map Datum)							
Logged By: DAE		Hole Size/ Type: 2x 6'x 6' Backhoe							
Depth (feet)	Sample Type	Blow count	Dry Density	Moisture Content	Other Tests	USCS	Graphic Log	Description	
1								SOIL (Residual), Clayey Silt (ML), medium-brown, moderately firm, dry, to very dry.	
2	D	59	72	50	DS, AL, GS	MH		stiff at two feet	
3									
4								very stiff, at 4 feet, mottled light brown and yellow grading to highly weathered Koolau volcanic rock at six feet.	
5									
6									
7									
8									
9									
10									
11								Bottom at 6 feet. No water. No caving. Hole backfilled, tamped and wheel-rimmed	

Water level shown is at time of measurement and may be different at different times.  
Blow counts are per foot; dry density is in pounds per square foot; moisture content is percent of dry weight.

	Date: 09/12/10	Project No.: 2010-08-01	<b>PLATE A-1.1</b>
	<b>SOLAR PANEL FIELD LOG OF TEST PIT TP-1</b>		

Log of Test Pit No. TP- 2									
Date: 09/11/10		Elevation: +60 (Map Datum)							
Logged By: DAE		Hole Size/ Type: 2x 6'x 6' Backhoe							
Depth (feet)	Sample Type	Blow count	Dry Density	Moisture Content	Other Tests	USCS	Graphic Log	Description	
1								SOIL (Residual), Clayey Silt (ML), medium-brown, moderately firm, dry, to very dry.	
2	D		70	28	DS	MH		stiff at two feet	
3									
4								very stiff, at 4 feet, mottled light brown and yellow grading to highly weathered Koolau volcanic rock at six feet.	
5									
6									
7									
8									
9									
10									
11								Bottom at 6 feet. No water. No caving. Hole backfilled, tamped and wheel-rimmed	

Water level shown is at time of measurement and may be different at different times.  
Blow counts are per foot; dry density is in pounds per square foot; moisture content is percent of dry weight.

	Date: 09/12/10	Project No.: 2010-08-01	<b>PLATE A-1.2</b>
	<b>SOLAR PANEL FIELD LOG OF TEST PIT TP-2</b>		



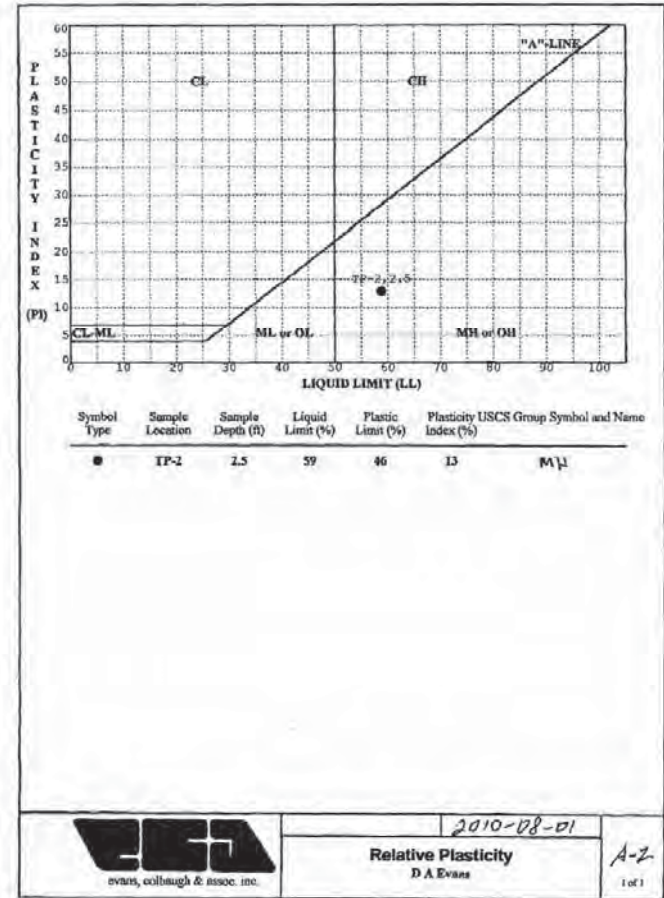
### Log of Test Pit No. TP-3

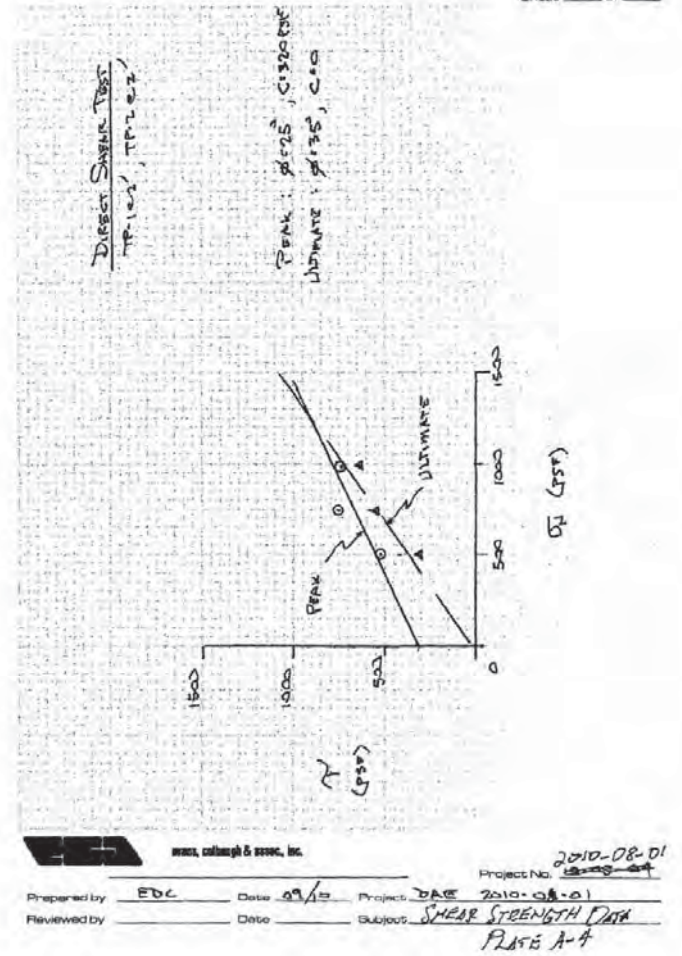
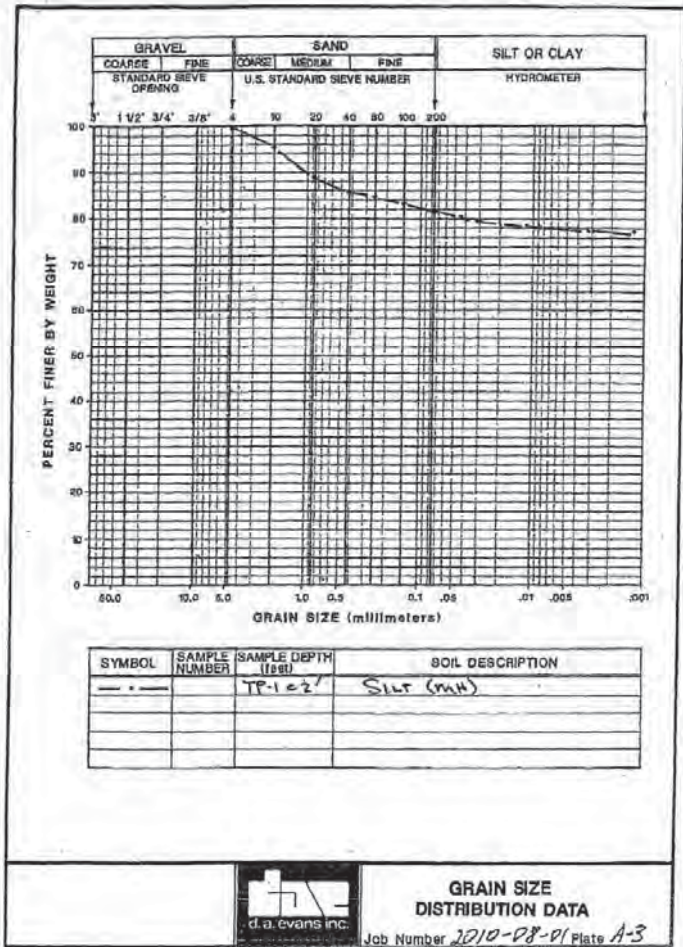
Date: 09/11/10      Elevation: +60 (Mnp Datum)  
 Logged By: DAE      Hole Size/ Type: 2'x 6'x 6' Backhoe

Depth (feet)	Sample Type	Flow out	Dry Density	Moisture Content	Other Tests	USCS	Empirical Log	Description
1								SOIL (Residual), Clayey Silt (ML), medium-brown, moderately firm, dry, to very dry.
2								four inch dia. "bomb" at three feet.
3								
4								
5								
6								stiff at six feet.
7								
8								
9								
10								
11								Bottom at 6 feet. No water. No caving. Hole backfilled, tamped and wheel-rolled.

Water level shown is at time of measurement and may be different at different times.  
 Blow counts are per foot; dry density is in pounds per square foot; moisture content is percent of dry weight.

	Date: 09/12/10	Project No.: 2010-08-01	PLATE A-1.3
SOLAR PANEL FIELD LOG OF TEST PIT TP-3			





**Exhibit M**

**A Cultural Impact Assessment for the Proposed Kapa`a  
Highlands Phase II  
Kapa`a Ahupua`a, Kawaihau District, Kaua`i**



Exploration Associates Ltd.

A Cultural Impact Assessment  
for the Proposed Kapa`a High-  
lands Phase II,  
Kapa`a Ahupua`a, Kawaihau  
District, Kaua`i

TMK (4) 4-3-03:01

by

Nancy McMahon, M.A.

Prepared for  
Three Stooges LLC

By  
Exploration Associates, Ltd.  
May 2012



# TABLE OF CONTENTS

INTRODUCTION	2
Scope of Work	2
Methods	2
KAPA'A	6
Natural Setting	9
Mo'olelo of Kapa'a	10
Place Names and Wahi Pana of Kapa'a	18
Summary of the Mythological and Traditional Accounts of Kapa'a	22
Early Post-Contact Period The Mahele Period	26
The Late 1800s 20th Century History of Kapa'a	29
Previous Archaeological and Cultural Studies of Kapa'a	33
RESULTS OF COMMUNITY CONSULTATION	39
TRADITIONAL RESOURCES/CULTURAL PRACTICES	42
SUMMARY AND CONCLUSION	46
BIBLIOGRAPHY	48
APPENDIX	58

## LIST OF FIGURES

Figure 1. Tax Map Showing the Kapa'a Highlands Phase II	7
Figure 2. Aerial View of the Project Area Looking North	8
Figure 3. Portion of 1872 Survey Map by James Gay, Showing Swamp Land in Puna	23
Figure 4. Aerial View of Kapa'a, Kaua'i, looking west, circa 1933 (Bishop Museum Archives)	31
Figure 5. Hawai'i Territory Survey Map (Iao 1914) of Kapa'a Section Showing Roads, Railroads and Camps	32
Figure 6. Historic Properties in Kapa'a Ahupua'a	37
Figure 7. Cattle Grazing	40
Figure 8. Goats (in the Distance) Grazing	40
Figure 9. Solar Farm and Equipment Buildings	41
Figure 10. Road Remnant with Cattle in Background	45

## LIST OF TABLES

Table 1. Place Names of Kapa'a	10
Table 2. Mahele Land Claims and Land Use of Kapa'a	25
Table 3. Heiau of Kapa'a	33
Table 4. Historic Properties in Kapa'a Ahupua'a	34

# INTRODUCTION

## Scope of Work

The following scope of work was agreed upon to fulfill the requirements of a cultural impact assessment, as outlined by the Office of Environmental Quality Control guidelines:

- 1) Further background research with the goal of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record.
- 2) Examination of historical documents, Land Commission Awards, and historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record to develop a Cultural landscape background study,
- 3) A review of the existing archaeological information pertaining to the sites in the study area as they may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices and beliefs associated with the parcel and identify present uses, if appropriate.
- 4) Conduct oral interviews with persons and agencies knowledgeable about the historic and traditional practices in the project area and region. This includes eight formal interviews and more informal interviews plus coordination with relevant community groups.
- 5) Preparation of a report on items 1-3 summarizing the information gathered related to traditional practices and land use. The report will assess the impact of the proposed action on the cultural practices and features identified.

## Methods

### 1. Historic Research

Research was conducted to find historic maps at the Hawai'i State Survey Office, the State Historic Preservation Division library and the Kaua'i Historical Society. Historical research was conducted at the State Historic Preservation Division Library, the Hawai'i State Archives and the Bishop Museum where information on historic land use and past cultural traditions was sought. The Bishop Museum also provided historic photographs for

the report. In an attempt to obtain more regional or local sources, historic documents were sought at the Kaua'i Historical Society, Kaua'i Museum and the Kapa'a Public Library.

### 2. Archaeological Review

The library at the Department of Land and Natural Resources, State Historic Preservation Division were used to obtain information regarding previous archaeological and cultural studies in the Kapa'a area. Previously identified archaeological sites are presented for each section separately and are discussed in the context of associated cultural traditions. A complete review of archaeological sites, including descriptions, *ahupua'a*, settlement patterns and archaeological constraints is available in a separate archaeological assessment document (McMahon 2012).

### 3. Identification of Knowledgeable Informants

Hawaiian organizations, community members and cultural and lineal descendants with lineal ties to the greater Kapa'a area were contacted to: (1) identify potential knowledgeable individuals with cultural expertise and knowledge of the project area and surrounding vicinity, and (2) identify cultural concerns and potential impacts relative to the project. An effort was made to locate informants who either grew up in the project area or who, in the past, used the area for cultural purposes. These included lifetime residents of Kapa'a Town, families with ties to the historic rice industries of Kapa'a and former employees of Lihue Plantation who may have lived in one of the residential camps near the study area. Other potential user groups were residents in the Kapa'a who have their roots in Kapa'a, and continue to utilize the *makai* areas for cultural reasons. In addition, informal talk-story with community members familiar with the study area is ongoing. The organizations consulted were the State Historic Preservation Division (SHPD), The Office of Hawaiian Affairs (OHA), the Kaua'i/Ni'ihau Islands Burial Council, the Royal Order of Kamehameha, Kaumuali'i Chapter, Kaua'i County Council, Kaua'i County Mayor, Kaua'i Health Heritage Coastal Corridor Committee, Kaua'i Historical Society, Kaua'i Historic Preservation Commission.

### 4. Interviews

Interviews were conducted for this assessment. Once the participant was identified, she/he was contacted and interviewed. Excerpts from the interview are used throughout this report, wherever applicable.

### 5. Report

This study documents relevant information on traditions and practices from the historic record as well as from contemporary oral sources. The report includes cultural and historic documentation of Kapa'a, a summary of archaeological studies, the results of

community consultation, and an assessment of traditional resources/traditional practices. The report is organized in such a way that reflects the effort of data and information gathering. This is the information used in the final assessment of Traditional Resources/Cultural Practices reported in the Conclusions Section IV and V.

## KAPA'A

The Kapa'a Highlands Phase II is located in Kapa'a, above the Kapa'a Bypass Road and adjacent to Kapa'a Middle School. The property is further identified by Kaua'i Tax Map Key No. (4) 4-3-03:01. The total acreage of the area is 163.125. (Figure 1 and 2).

The project area lies in the traditional *ahupua'a* of Kapa'a belongs' to the ancient district of Puna (now the district is more commonly called "Kawaihau"), one of five ancient districts on Kaua'i (King 1935: 228). Puna was the second largest district on Kaua'i, behind Kona, and extended from Kipu south of Lihu'e to Kamalomalo'o, just north of Kealia. For taxation, educational and judicial reasons, new districts were created in the 1840's. The Puna District, with the same boundaries became the Lihu'e District, named for an important town in that district. In 1878, by the act of King Kalakaua in securing a future name for the new Hui Kawaihau, created the new district of Kawaihau. This new district encompassed the *ahupua'a* ranging from Olohena on the south to Kilauea on the north. Subsequent alterations to district boundaries in the 1920's left Kawaihau with Olohena as its southernmost boundary and Moloa'a as its northernmost boundary (King 1935:222).

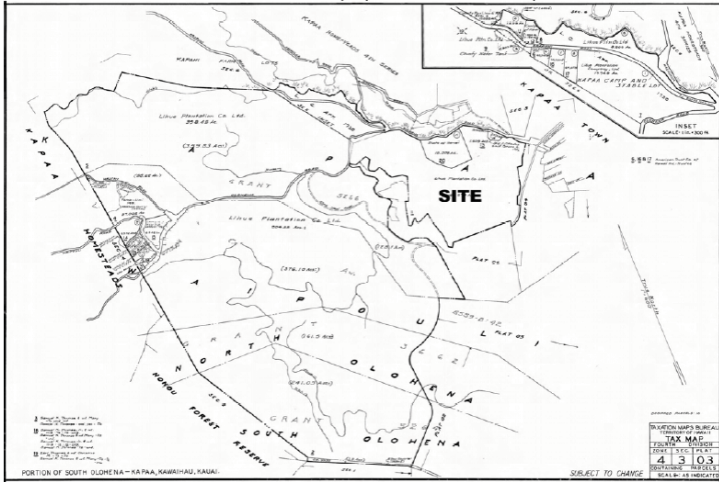


Figure 1. Tax Map Showing the Project Area for Kapaa Highlands Phase II.

Figure 2. Aerial View of Project Area Looking North



## Natural Setting

The *ahupua'a* of Kapa'a, is located on the eastern side of the island of Kaua'i, in the old district or *moku* of Puna. Adjacent and to the north is the *ahupua'a* of Keālia, and to the south, Waipouli. Like other *ahupua'a* in Puna, Kapa'a is exposed to the northeast tradewinds and receives 40 to 50 inches of rain a year at the shore and considerably more precipitation inland. The area of the *ahupua'a* of Kapa'a, is approximately 6,394 acres (Gay 1872 R.M. 159, Commission of Boundaries Record, Kaua'i, vol.1, 1873:23; Commission of Boundaries Record, Kauai, vol. 1, 1872:109). Wichman (1998:84) notes the paradox that Kapa'a "is one of the largest *ahupua'a* of the Puna District [of Kaua'i] and the most bereft of legends."

Alluvium, colluvium and terrigenous sediments resulting from the erosion of the primary island building events in Kaua'i history, the Waimea Canyon Volcanic Series and the Koloa Volcanic Series, are the major sources of sediment for the formation of Kaua'i's non-mountainous region, including Kapa'a (MacDonald and Abbott 1970:382-384). Kapa'a is located within the physiographic division known as the Lihue Plain (Armstrong 1973:30). During higher sea levels, terrigenous sediment accumulated further inland as streams released their sediment loads further inland from where the shoreline had encroached. Also, reefs grew with the rising sea level, and, as the sea receded, marine sediments were created and deposited on shore by the erosion of these reefs. Both of these processes were part of the formation of the Lihue Plain.

The soils of the project area reflect the original geologic sediments deposited and the erosional processes induced by climatic agents. Backshore of the sand berm in Kapa'a, are found sandy loams associated with the Mokuleia soil series (Foote et al. 1972:95). These soils consist of mostly recent alluvium deposited over coral sand and are typical of the eastern and northern coastal plains of Kaua'i. Behind Kapa'a Town and north of Moikeha Canal is found mixed fill. South of Moikeha Canal are Mokuleia clay loams, similar to the sandy loams fronting them. The soils found in the sand berm in Waipouli and Olohena are of the Lihue Series, which are characterized as well-drained soils derived from igneous material originating in Kapa'a's uplands (Foote et al. 1972:82).

Historically, these *ahupua'a* contained two prominent landscape features, a coastal plain with sand dunes and a large marsh. An 1872 map (Figure 2) by James Gay delineating the boundaries of Kapa'a and adjacent lands shows that much of the *makai* region was a "swamp" that extended from Waipouli into Kapa'a. This "swamp" appears to be the most prominent natural feature of the seaward end of Waipouli and Kapa'a. The *makai* areas of the *ahupua'a* can be characterized as fairly flat. Kapa'a has an irregularly-

shaped gulches and small valleys in the uplands, through which small tributary streams run, including the Kapahi, Makaleha, Moalepe and Konohiki Streams. While some of these streams combine with other tributaries in neighboring Keālia to form Kapa'a Stream, which empties into the ocean at the northern border of the *ahupua'a*, others flow directly into the marsh areas of Kapa'a and Waipouli (Handy and Handy 1972:394,423; Territorial Planning Board 1940:9).

Kapa'a Town areas is built on a sand berm with ocean on the *makai* side and marsh on the *mauka* side. The sand berm was probably slightly wider here than in other localities, but dry land was probably always at a premium.

## Mo'olelo of Kapa'a

A brief overview of some of the better documented mythological and traditional accounts of Kapa'a is presented below and is followed by a brief summation of their import.

The Puna district of Kaua'i is well known for two legendary chiefs, Kawelo and Mō'ikeha. Kawelo is more closely associated with Wailua and Hanamā'ulu and Mō'ikeha is linked to Kapa'a. Mō'ikeha is understood to be the grandchild of Maweke, one of the principal genealogical lines from which Hawaiians today trace their ancestry (Beckwith 1970:352). Sometime between the eleventh and twelfth centuries marks the arrival of Maweke to the Hawaiian Islands. Mō'ikeha succeeds his older brother Kumuhonua as ruling chief during the time of Mailikūhahi. Kapa'a is mentioned in traditions concerning Kawelo (Kaweloleimākua), the *mo'o* Kalamainu'u and the origins of the *hina'i hinālea* fish, and the story of Lonoikamakahiki (Fornander 1917:IV:318, 704-705; Rice 1923: 106-108; Thrum 1923: 123-135; Kamakau 1976:80).

### 1. Mō'ikeha

Kapa'a was the final home of the legendary chief Mō'ikeha. Born at Waipi'o on the island of Hawai'i, Mō'ikeha sailed to Kahiki (Tahiti), the home of his grandfather, Maweke, after a disastrous flood. On his return to Hawai'i, he settled at Kapa'a, Kaua'i. Kila, Mō'ikeha's favorite of three sons by the Kaua'i chiefess Ho'oiipoikamalani, was born at Kapa'a and was considered the most handsome man on the island. It was Kila who was sent by his father back to Kahiki to slay his old enemies and retrieve a foster son, the high chief La'amaikahiki (Handy and Handy 1972:424; Beckwith 1970:352-358; Kalākaua 1888:130-135; Fornander 1917:IV:160). Mō'ikeha's love for Kapa'a is recalled in the *'olelo no'eau*: *Ka lulu o Mo'ikeha i ka laulā o Kapa'a* "The calm of Mō'ikeha in the breadth of Kapa'a" (Pukui 1983: 157).

The place “Lulu-o-Mō’ikeha” is described as being situated “near the landing and the school of Waimahanalua” (Akina 1913: 5). The landing in Kapa’a was known as the Makee Landing and was probably constructed in the late 1870s, along with the Makee sugar mill. Today, in place of the old Makee Landing is part of a breakwater located on the north side of Moikeha Canal, near the present day Coral Reef Hotel (Bushnell et al. 2002:7).

In the Hawaiian newspaper *Ku’oko’a* published at the turn of the century, Akina (1913: 6) also tells the story of how Mō’ikeha’s son, Kila stocks the Hawaiian Islands with the *akule*, *kawakawa* and *’ōpelu* fish. When Kila travels to Kahiki, he seeks out his grandfather Maweke and explains that he is the child of Mō’ikeha. When Maweke asks Kila if Mō’ikeha is enjoying himself, Kila answers with the following chant of Puna, Kaua’i:

My father enjoys the billowing clouds over Pōhaku-pili,	<i>I walea no ku’u makuakāne i ke ao ho’okanunu, iluna o Pōhakupili</i>
The sticky and delicious poi,	<i>I ka poi uouo ono ae no a,</i>
With the fish brought from Puna,	<i>Me ka i’a i na mai o ka Puna,</i>
The broad-backed shrimp of Kapalua,	<i>Ka opae hoainahanaha o Kapalua;</i>
The dark-backed shrimp of Pohakuhapai,	<i>Na opae kua hauli o Pohakuhapai,</i>
The potent awa root of Maiakii,	<i>Na puawa ona mai no o Maiakii,</i>
The breadfruit laid in the embers at Makialo	<i>Me ka ulu moelehu mai no o Makialo,</i>
The large heavy taros of Keahapana	<i>Me na kalo pehi hua o Keahapana,</i>
The crooked surf of Makaiwa too	<i>A i kekee nalu ae no hoi o Makaiwa,</i>
The bending hither and thither of the reed and rush blossoms,	<i>A i ke kahuli aku kahuli mai o ka pua uku me ka pua neki,</i>
The swaying of the kalukalu Puna,	<i>A i ka nu’a ae no o ke kalukalu o Puna, grasses of</i>
The large, plump, private of my mothers,	<i>A i na mea nui nepunepu no a ku’u mau parts makuahine</i>
Of Ho’oipoikamalanai and Hinau-u,	<i>O Ho’oipoikamalanai me Hinau-u,</i>
The sun that rises and sets,	<i>A i ka la hiki ae no a napoo aku,</i>
He enjoys himself on Kaua’i,	<i>Walea ai no ka nohona ia Kaua’i,</i>
All of Kaua’i is Mō’ikeha’s	<i>Ua puni a puni Kaua’i ia Mō’ikeha</i>

Maweke was delighted and when the boy is questioned as to his purpose, Kila tells his great grandfather he is seeking fish for his family. Maweke tells Kila to lead the fish back to his homeland. This is how Kila led the *akule*, *kawakawa* and *’ōpelu* to Hawai’i (For- nander 1917:IV:162-163).

In another legend of Kila, Mō’ikeha sends his son to Tahiti to slay his enemies. Upon reaching Tahiti, Kila meets his father’s aunt, Kanepohihi, in the form of a blind, super- natural rat. He introduces himself, sending his father Mō’ikeha’s greetings. Kanepohihi asks of Mō’ikeha, and Kila responds:

He is indulging in ease in Kaua’i	<i>I walea ia Kaua’i</i>
Where the sun rises and sets again,	<i>I ka lā hiki ae a pō iho</i>
Where the surf of Makaiwa curves and	<i>I ke kee a ka nalu o Makaiwa bends,</i>
Where the sun comes up over	<i>I ka hiki mai a ka la maluna</i>
The kalukalu of Kewa;	<i>O ke kalukalu o Kewa</i>
The stretched out waters of Wailua,	<i>O ka wai halau o Wailua</i>
And the entrancing favors of my mother	<i>O ka lealea o ka mai o kuu makuahine</i>
Ho’oipoikamalanai	<i>O Ho’oipoikamalanai</i>
He will live and die in Kaua’i	<i>O kahi noho no o Kaua’i a make</i>

(For- nander 1916:IV:162-163)

## 2. Ka’ililauokekoa the Chiefess of Kapa’a and the Lute Kanikawi

Waipouli and Kapa’a are mentioned in the legend of Ka’ililauokekoa, a chiefess of Kapa’a and granddaughter or daughter of Mō’ikeha. Thomas Thrum (1907: 83-84) relates that:

[Kaililauokekoa’s] greatest desire was to play konane, a game somewhat re-sembling checkers, and to ride the curving surf of Makaiwa (*ke’eke’e nalu o Makaiwa*), a surf which breaks directly outside of Waipouli, Kapa’a. She passed the larger part of her time in this matter every day, and because of the con- tinual kissing of her cheeks by the fine spray of the sea of Makaiwa, the bloom of her youth became attractive ‘as a torch on high,’ so unsur- passed was her personal charm.

In the Thrum (1923:123-135) version, Ka’ililauokekoa is seduced by the nose flute of Kauakahiali’i who is at the time residing in Wailua uka at a place called Pihanakalani. She travels up to Pihanakalani with her companion where she joins Kauakahiali’i as his wife. They are found by Mō’ikeha’s people and taken down to Kapa’a where Kauakahi- ali’i is imprisoned. A boy named Kalukaluokewa takes pity on Kauakahiali’i and sneaks



through the *kalukalu* grass and the *ahuawa* rushes to bring the prisoner food and water. Meanwhile, Ka'ililauokekoa tells her parents of her calling by Kanikawi to the home of Kahalehewa at Pihanakalani and her encounter with Kauakahiali'i.

### 3. Kalukalu grass of Kapa'a

"*Kūmoena kalukalu Kapa'a*" or "Kapa'a is like the *kalukalu* mats" is a line from a chant recited by Lonoikamakahiki. *Kalukalu* is a sedge grass, apparently used for weaving mats (Fornander 1917:IV:318-319). Pukui (1983:187) associates the *kalukalu* with lovers in "*ke kalukalu moe ipo o Kapa'a*"; "the *kalukalu* of Kapa'a that sleeps with the lover." According to Wichman (1998:84), "a *kalukalu* mat was laid on the ground under a tree, covered with a thick pile of grass, and a second mat was thrown over that for a comfortable bed," thus the association with lovers. Kaua'i was famous for this peculiar grass, and it probably grew around the marshlands of Kapa'a. It is thought to be extinct now, but an old-time resident of the area recalled that it had edible roots, "somewhat like peanuts." Perhaps it was a famine food source (Kapa'a Elementary School 1933: VI).

### 4. Pāka'a and the wind gourd of La'amaomao (Keahiahi)

Kapa'a also figures prominently in the famous story of Pāka'a and the wind gourd of La'amaomao. Pāka'a was the son of Kuanu'uano, a high-ranking retainer of the Big Island ruling chief Keawenuia'umi (the son and heir to the legendary chief 'Umi), and La'amaomao, the most beautiful woman of Kapa'a and member of a family of high status *kahuna*. Kuanu'uano left the island of Hawai'i, traveled throughout the other islands and finally settled on Kaua'i, at Kapa'a. It was there that he met and married La'amaomao, although he never revealed his background or high rank to her until the day a messenger arrived, calling Kuanu'uano back to the court of Keawenuia'umi. By that time, La'amaomao was with child but Kuanu'uano could not take her with him. He instructed her to name the child, if it turned out to be a boy, Pāka'a. Pāka'a was raised on the beach at Kapa'a by La'amaomao and her brother Ma'ilou, a bird snarer. He grew to be an intelligent young man and it is said he was the first to adapt the use of a sail to small fishing canoes. Although Pāka'a was told by his mother from a very young age that his father was Ma'ilou, he suspected otherwise. After constant questioning by Pāka'a, La'amaomao told her son the truth about Kuanu'uano.

Intent on seeking out his real father, Pāka'a prepared for the journey to Hawai'i Island. His mother presented him with a tightly covered gourd containing the bones of her grandmother, also named La'amaomao, the goddess of the winds. With the gourd and chants taught to him by his mother, Pāka'a could command the forces of all the winds in Hawai'i. While this story continues on at length about Pāka'a and his exploits on Hawai'i and later

on Moloka'i, it will not be dwelt upon further here. It is important to note that several versions of this story do include the chants which give the traditional names of all the winds at all the districts on all the islands, preserving them for this and future generations (Nakuina 1990; Rice 1923:69-89; Beckwith 1970:86-87; Thrum 1923:53-67; Fornander 1918:V: 78-128).

Frederick Wichman (1998:84) writes that Pāka'a grew up on a headland named Keahiahi just south of Kapa'a River. Here, Pāka'a learned to catch *mālolo*, his favorite fish. After studying the ocean and devising his plan to fabricate a sail, Pāka'a wove a sail in the shape of a crab claw and tried it out on his uncle's canoe. One day, after going out to catch *mālolo*, he challenged the other fishermen to race to shore. He convinced them to fill his canoe with fish suggesting it was the only way he could truly claim the prize if he won:

The fishermen began paddling toward shore. They watched as Pāka'a paddled farther out to sea and began to fumble with a pole that had a mat tied to it. It looked so funny that they began to laugh, and soon they lost the rhythm of their own paddling. Suddenly Pāka'a's mast was up and the sail filled with wind. Pāka'a turned toward shore and shot past the astonished fishermen, landing on the beach far ahead of them. That night, Pāka'a, his mother, and his uncle had all the *mālolo* they could eat [Wichman 1998:85].

### 5. Kaweloleimakua

Kapa'a is also mentioned in traditions concerning Kawelo (Kaweloleimakua), Keililauokekoa (Moikeha's daughter, or granddaughter, dependent on differing versions of the tale), the *mo'o* or reptile Kalamainu'u and the origins of the *hina'i hinalaea* or the fish trap used to catch the *hinalaea* fish, and the story of Lonoikamakahiki (Fornander 1917, vol.4 pt.2:318, vol.4 pt.3:704-705; Rice 1923:106-108; Thrum 1923:123-135; Kamakau 1976:80).

### 6. Kanaka-Nunui-Moe-The Sleeping Giant

Frederick B. Wichman relates an account of Kaua'i's Sleeping Giant:

A long time ago, there was a giant living in Kawaihau among the low hills behind Kapa'a town. He was so tall he could see above the coconut trees. If he sat very still, it was easy to mistake him for one of the hills. Anyone who did not know him was afraid of his great size, fearing

the damage he might cause. However the people of Kawaihau loved him, for he was very friendly and went out of his way to be useful.

This giant was always careful where he stepped so that he would not injure anyone and he never destroyed taro patches or houses with a careless foot. When he wished to rest, he sat on one of the small hills above Kapa'a. The villagers were glad when this happened for his weight flattened the hilltop, making another plot of ground fit for cultivation.

"He is very helpful," the Kapa'a people said to astonished stranger who came to their land. "He does many things for us quickly that otherwise we could not do in many months." Wherever this giant stepped he left deep footprints and in these deep holes the people planted banana trees. The villagers threw leaves, taro peelings, and other vegetable rubbish into these holes. When compost had been formed, they planted banana sprouts. In this way, the people of Kapa'a always had ripe bananas to give to the giant, for banana was his favorite food.

The giant yawned very often, for he was always sleepy. The gust of wind from his mouth often knocked down houses and blew the grass thatch into the sea. The giant was always very apologetic whenever this happened and he quickly brought logs from the uplands to rebuild the fallen houses and gathered *pili* for the thatching.

He found it difficult to stay awake more than a hundred years at a time. When he could no longer fight against the drowsiness overpowering him, he would sleep using a small hill for a pillow. Because of this, the people called him Kakanunui-moe, the sleeping giant.

When he slept, Nunui slept for hundreds of years while the winds blew dirt over him and seeds were dropped there by the birds. The gently showers sent by *Kahale-lehua*, goddess of the gentle rains, fed these seeds and forest grew up over the giant. When Nunui awoke and stretched, the people of Kapa'a fled in great fear, for what they had thought to be a hill had come alive.

One time, while Nunui was still awake, the high chief of Kawaihau wanted to build a large *heiau* to honor one of his gods. This was to be no ordinary temple. The chief wanted water-polished rocks for the walls and hard *koa* wood from Kokee for the framework of the god's house.

So the chief told the Kawaihau people what he wanted them to do. They must gather rocks from the golden brown waters of the Koke'e streams and

cut *koa* trees on the edges of Waimea canyon, and gather *pili* grass that grew at Mana. "All this must be done in the turn of one moon," he ordered.

The unhappy people left their chief and silently returned to their village. The giant Nunui, stepping carefully among them, saw the long faces of the people.

"What is wrong?" he asked.

The Kapa'a villagers told him what they must do within the impossibly short time. "This cannot be done," the people said in low, sad voices. "How can we go to Kokee and bring back stones enough to build the walls in that time? And cut down the *koa* trees and bring the logs here and build the sacred house? And even if we do these things, who will cultivate our fields?"

Nunui smiled gently. "Tend to your fields," he said. "This work is nothing for me, and I'll gladly help you. Besides, it will give me something to do."

The giant went to Kokee and scooped up smooth, round boulders from the golden brown waters and brought them to Kapa'a. "Chief," he called to the astonished ruler, "show me where you wish to build this *heiau*."

The amazed chief pointed out the place set aside for the temple. Nunui placed the rocks to form a wall, fitting them so closely together that not even a mouse could squeeze between the cracks. Within a week, he had built a strong, thick, handsome wall around the sacred place.

Nunui returned to the edge of Waimea Canyon and cut down *koa* trees and trimmed them into the shape he needed. He carried these back and made the framework of the house. He gathered *pili* grass from Wild and wrapped the stems into bundles, tied these bundles to the framework, and within half the time the chief had set, the *heiau* was finished.

Everyone was happy. The farmers had been able to keep up with their chores, the chief had his *heiau*, and Nunui had something to do. There was even time enough a celebration. The chief ordered all his people to gather bananas and to pound sweet potatoes and taro into poi. Some people hurried to slaughter pigs and dogs to be cooked in the *imu*, while other paddled out to sea to fill their canoes with fish and sent their wives to gather seaweed and *opihii* from the reef. At last, enough food for everyone was ready, and the chief, the villagers, and Nunui sat down before the overflowing bowls and platters.

"Eat," said the chief to Nunui. "After the work you have done, you must be hungry."

The giant ate all the food that had been put before him. When he was through, his stomach bulged and he was very sleepy. He chose a comfortable hill just a short distance above Kapa'a town. Nunui stretched a last time, lay down along the top of the hill, and soon was sound asleep.

As he slept through the years, the winds blew dirt over him and the birds brought seeds. Ka-hale-lehua, goddess of the gentle rains, sent showers to water the plants that now covered the giant.

So Kanaka-nunui-moe sleeps and sleeps and has come to resemble a long hill with a lump at one end where his nose is and lumps at the other ends where his feet are. He no longer looks like a living being, but one day, perhaps soon, his eyes will open, he'll yawn and stretch his arms, and sit up. [Wichman 1985:13-16]

#### 7. Lepeamoa

In the Legend of "Lepeamoa (The Chicken Girl of Palama)" (Thrum 1923:177) is a reference to a fantastic battle at Kapa'a between Lepeamoa's brother, the hero Kauliani and a supernatural kupua called Akuapehuale ("god of swollen billows"):

Kauliani struck him a heavy blow and the spear leaped again and again upon him, till he rolled into a mountain stream at a place called Kapa'a, out of which he crawled, almost drowned. Then he was driven along even to the image houses, where a fierce battle took place, in which the wooden images took part, many of them being torn to pieces by the teeth of Akuapehuale.

#### 8. Palila and Ka'ea

High in the *mauka* region of Kapa'a in the Makaleha mountains at a place called Ka'ea, is reported to be the supernatural banana grove of the Kaua'i *kupua* or demigod Palila, grandson of Hina (Handy and Handy 1972:424). Joseph Akina for *Kieoko 'a* Newspaper in 1913 describes Palila's banana grove:

The stalk could hardly be surrounded by two men, and was about 35 feet high from the soil to the lowest petiole. The length of the cluster from stem to lowest end of the bunch of bananas was about  $1\frac{3}{4}$  fathoms long (one *anana* and one *muku*). There were only two bananas on each about 4  $\frac{1}{2}$  inches around the middle. There were just two bananas, one on the east side and one on the west, each about a foot or more in length. The one on the east side was tartish, like a *waiawi* (Spanish guava) in taste and the one on the west was practically tasteless. The diameter of the end of the fruit stem of this banana seemed to be about 11/2 feet. This kind of banana plant and its fruit seemed almost supernatural... (Akina, 1913:5).

#### 9. Winds

The winds of Kapa'a and Waipouli are named in the *mo'olelo* of Kuapaka'a and these include the *kehau* for Kapa'a, the *ho'olua* for Makaiwa and the *inuwai* for Waipouli (Forlander 1917:IV:96). A *kama'aina* interviewed for the 50th anniversary book of Kapa'a School in 1933 (p. 28) identified the winds of Kapa'a:

...Some persons call the wind MAKANI LIHUE: That is, those who live here in Kapa'a, because the wind comes from Lihue. The wind we had on Jan. 30 was really, MAKANI LIHUE. The wind that comes from Hanalei is called MAKANI KIU which means, a very cold wind. The wind that comes from the northeast—(tradewind) is called MAKANI HOOLUA. This is the plant destroying wind...

#### Place Names and Wahi Pana of Kapa'a

Place names and *wahi pana* ("legendary place") (Pukui and Elbert 1986:377) are an integral part of Hawaiian culture. "In Hawaiian culture, if a particular spot is given a name, it is because an event occurred there which has meaning for the people of that time" (McGuire 2000:17). The *wahi pana* were then passed on through language and the oral tradition, thus preserving the unique significance of the place. Hawaiians named all sorts of objects and places, points of interest that may have gone unnoticed by persons of other cultural backgrounds.

Hawaiians named taro patches, rocks and trees that represented deities and ancestors, sites of houses and *heiau* (places of worship), 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. (Pukui et al. 1974:x)

The following is a list of place names for Kapa'a, mentioned in this report. This list should by no means be considered complete. Place names were gathered from traditional literature (*mo'olelo*, chants), historical sources, maps and the Māhele records. Almost all of the *'ili* names were taken from Land Commission Award records. Sadly, none of these *'ili* names were documented on historic maps researched for this project, and their meanings and cultural associations appear to be lost and forgotten.

*Place Names of Hawai'i* (Pukui et al. 1974) was used as the primary source for all place name translations. Where there were no known translations, a literal translation of the place name was sometimes made using the *Hawaiian Dictionary* (Pukui and Elbert 1986). The intent of the author is merely to present the available information and let the reader come to his/her own conclusions.

An attempt was made to include the proper diacritical marks for all known and generally accepted translations of place names. Making incorrect assumptions about the pronunciation and where to place the diacritical marks in a name can entirely change the meaning of a name, (e.g. *pū‘ā‘ā*: “scattered; to flee in disorder and fright”; *pua‘a*: “pig, pork”). Therefore, in cases where the pronunciation of a name was uncertain, diacritical marks were not used and no attempt was made to translate the name. In some cases, cultural relationships were made based on the literal translation of the root word.

One of the beauties of the Hawaiian language is the dualism in names and the double meanings—the literal meaning and the *kaona* or hidden meaning. It should be remembered that the true significance of a place name lies only with the people who use them and know their history.

The following abbreviations are used throughout the Place Names section for ease and efficiency. (Refer to the References section for complete citations.)

LCA=Land Commission Award

PE=Hawaiian Dictionary by Pukui and Elbert, 1986

PEM=Place Names of Hawai‘i by Pukui, Elbert and Mookini, 1974

**Table 1 Place Names of Kapa‘a.**

Name	Meaning	Reference
Apopo	Land division, possibly 'ili in Kapa'a, pali, Literally "tomorrow"?	(LCA #10907/#8343) Soehren (2002:265)
Awawaloa	The name of a land division, possibly an 'ili in Kapa'a in which lo'i were cultivated meaning - long valley, gulch, ravine.	(LCA #8843/#8837), (Soehren, 2002:265)
Hahanui /Kahanui	The name of an 'ili in Kapa'a where lo'i were claimed pali, stream, Lobelia plant?	(LCA #10564/#3554/#3599), (Soehren, 2002:265)
Hoa	Pali, Literally "Friend"?	(LCA#3638:1) (Soehren, 2002:265)
Ho'opi'i	Waialele, Literally "To cause to rise?"	(Soehren, 2002:265)
Humu'ula	Pu'u, Literally "Jasper stone?"	(LCA #8247) (Soehren, 2002:265)
Kahana	The name of a land, possibly an 'ili in Kapa'a where uncultivated lo'i were claimed Literally, "cutting"	(LCA 3971). (PEM: 63), (Soehren, 2002:265)

Name	Meaning	Reference
Kaiakea/Kaikea	Name of area encompassing Kuahiahi Point. "Kaikea: White sea foam, especially as washed up on a beach: ka'ike'a: Station of the cross (Catholic); procession of the cross"	(PE:116).
Kalolo/Kaloko	The name of a village or housetlot in Kapa'a Ahupua'a Kauhale, kula, Literally, "the pond", " liquor"	(LCA#3638, #8843), (Soehren, 2002:265)
Kaloloku	Name of swamp in back of Kapa'a and Waipouli	
Kamahuna	Pu'u	(Soehren, 2002:265)
Kamali'i	Ridge, Literally "Children"	(Soehren, 2002:265)
Kapa'a	Ahupua'a name, Literally "solid" or "the closing"	(Wichman, 1988:84 and Soehren, 2002:265)
Kapahi	Village, stream, Literally "the Knife"	(Soehren, 2002:265)
Kapeku	Lo'i, Literally "the Kick"	LCA# 8837, (Soehren, 2002:265)
Kaulolo	Kauhale	LCA# 3638, (Soehren, 2002:265)
Kehau	Name of wind of Kapa'a	(Fornander, 1918:V:96, 97)
Keiwa	Ridge, boundary point, Literally "The ninth"	(Soehren, 2002:265)
Koalua	Surf, Literally "Two coral heads",	Finney 1959, (Soehren, 2002:265)
Kolehaka	Pali,	LCA#3971/#3243 (Soehren, 2002:265)
Kolokolo	Name of deep fresh water pond, Literally "Soap Plant"	Wichman (1988:84)
Kolouna	Pali,	LCA# 8247, (Soehren, 2002:265)
Kuahiahi/Kaahiahi	Name of rocky headland at north end of Kapa'a Ahupua'a;	
Kuahiahi/Keahiahi	Location of first Kapa'a School (1883-1908); location of former heiau called Kuahiahi, place where the legendary figure Paka'a, keeper of the wind gourd of La'amaomao, grew up and fished Literally "twilight"	(PEM 211 :216) ; (Wichman 1998 : 85)
Kupali'i	Name of a pond in Puna district famed in chant for the rustling of the manierie grass	(PEM: 211-216)

Name	Meaning	Reference
Kupanihi	The name of a pond in the Puna district associated with Kaeo, Kaumuāli'i's older brother, ʻili, kauhale, Name of fishpond and land in Kapa'a claimed	(PEM:216); in LCA #3971/#3243, (Soehren, 2002:265)
Maelele	The name of a land division, possibly an 'ili in Kapa'a in which lo'i Literally "Numb" were cultivated,	(LCA #3638), (Soehren, 2002:265)
Makaleha	Pu'u, boundary point, Eyes looking about as in wonder and admiration,	Boundary Commission, (Soehren, 2002:265)
Makanalimu	Place, heiau, Literally "Gift of seaweed"	PEM:141
Makea	'Auwai, Literally "fallow land"	LCA# 3599/#3554 (Soehren, 2002:265)
Moalepe/Moalepi	Hill in the mauka region of Keālia (HAS, Interior Dept., Land, June 23, 1862); land division, stream possibly an 'ili in mauka region of Kapa'a	LCA #8247 (Soehren, 2002:265)
Moikeha Canal	Canal which is traversed by two plantation era railroads near the present day Kapa'a Public Library and the Coral Reef Hotel	
Naele	Pali, Literally "swamp, big"	LCA #8837, (Soehren, 2002:265)
Paikahawai	'ili,	(Soehren, 2002:265)
Pohakiikii	Pu'u, Tilted stone,	(Soehren, 2002:265)
Pohakupili	Pu'u, boundary point, Literally "joined stone",	(Soehren, 2002:265)
Poo	Surf, Literally "Head"	Finney 1959, (Soehren, 2002:265)
Pueo	Pali, Literally "owl",	LCA# 8843, (Soehren, 2002:265)
Puhi	The name of a village or household in Kapa'a Ahupua'a, Kauhale, pond, Literally "eel",	LCA #3554/#3599, (Soehren, 2002:265)
Puohomaka	Pali,	LCA# 8837, (Soehren, 2002:265)
Pupukai	Pali,	LCA# 3638, (Soehren, 2002:265)
Puu Ekeeke	Pali,	LCA# 8837, (Soehren, 2002:265)
Puu Lauii	Pu'u, boundary point, Laui'i fern hill,	Boundary Commission,(Soehren, 2002:265)
Ulakiu	Ku,	LCA# 8837, (Soehren, 2002:265)
Ulukiu	Name of a houselot or village in Kapa'a	(LCA #8837)

Name	Meaning	Reference
Waika'ea	Canal and boat ramp in Kapa'a adjacent to the present day Pono Kai Resort, ditch,	(Clark 2002:374), (Soehren, 2002:265)
Waikaeae	A place described as being located in the uplands near Nounou	(PEM Placenames, Ku'oko'a, May 2, 1913)
Waieia	Rock, boundary point, Literally "Abundant Water"	Boundary Commission, (Soehren, 2002:265)
Waimahanalua	Name of a stream and school located near the old Makee The name mahanalua suggests the stream was forked and fed by multiple streams which could well be the case since the backlands of Kapa'a were swamplands fed by many streams. near the present day Moikeha Canal.	(PEM Placenames, Ku'oko'a May 9, 1913).
Waitala	"local" name used to refer to Waika'ea Canal	(T. Sokei, July 28, 2003 in Bushnell et.al. 2004)

### Summary of the Mythological and Traditional accounts of Kapa'a

A survey of traditional mythological literature shows Kapa'a prominently associated with some of the most famous legendary and historical figures including Maui, Kawelo, Mo'ikeha, Maweke, Palila, Paka'a and Kanaka Nunui Moe. What few specific references there are suggest that high status habitation was focused near the coast with less intensive utilization of the uplands which were regarded as wild places. The most notable feature of the traditional accounts are the references to grasses and sedges (*Kalukalu* grass and *Ahuawa* rushes) which undoubtedly reflects in part the natural marsh lands near the coast but may also reflect transformation of the landscape through a denudation of trees by the activities of a relatively dense population harvesting slow growing trees for firewood and construction materials over many centuries.

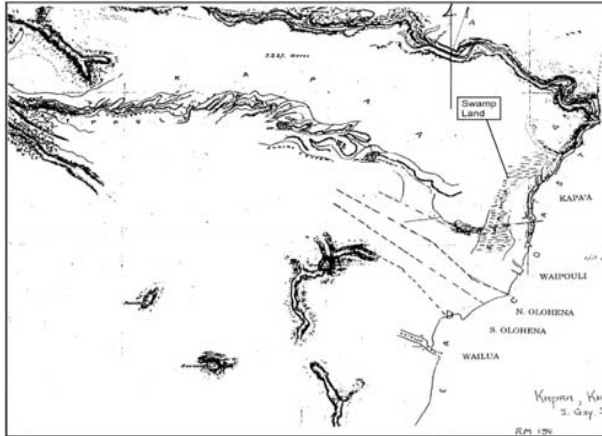


Figure 3. Portion of 1872 Survey Map by James Gay, Showing Swamp Land in Puna.

## Early Post-Contact Period

Very few recorded observations exist for this period in Kapa'a's history. George Vancouver (1798:221-223) examined the east coast of the island from his ship in 1793 and stated that it was the "most fertile and pleasant district of the island..." However, he did not anchor nor go ashore there due to inhospitable ocean conditions.

Kiimakani stands out as a particularly interesting Hawaiian chief in the early post-contact history of Waipouli. In 1824, the brig, "Pride of Hawaii," owned by Liholiho (Kamehameha II), ran aground in Hanalei Bay. Hiram Bingham (1847:221-222) recorded the efforts of a great crowd of Hawaiians to pull the vessel to shore for salvage:

Kiimakani passed up and down through the different ranks, and from place to place, repeatedly sung out with prolonged notes, and trumpet tongue... 'be quiet - shut up the voice.' To which the people responded... 'say nothing,' as a continuance of the prohibition to which they were ready to assent when they should come to the tug. Between the trumpet notes, the old chieftain, with

the natural tones and inflections, instructed them to grasp the ropes firmly, rise together at the signal, and leaning inland, to look and draw straight forward, without looking backwards toward the vessel. They being thus marshalled and instructed, remained quiet for some minutes, upon their hams.

The salvage efforts ultimately failed and the brig was lost. Bingham's account vividly suggests the force of personality of the chief and further betokens an authority and stature that may have been founded upon the traditional prestige of his domain, Waipouli.

Kiimakani appears in Samuel Kamakau's account (1961:267) of the 1824 rebellion of the chiefs of Kaua'i upon the death of Kaumuali'i. Kalanimoku, representative of Kamehameha II, had called a council of the Kaua'i chiefs at Waimea during which he announced

"The lands shall continue as they now stand. Our son, Kahala-i'a, shall be ruler over you." A blind chief of Waipouli in Puna, named Ki'ai-makani, said, "That is not right; the land should be put together and re-divided because we have a new rule," but Ka-lani-moku would not consent to this.

After some Kaua'i chiefs, including Kiimakani, rebelled against the imposed decrees:

On August 8 [1824] the battle of Wahiawa was fought close to Hanapepe. The Hawaii men were at Hanapepe, the Kauai forces at Wahiawa, where a fort had been hastily erected and a single cannon (named Hume-hume) mounted as a feeble attempt to hold back the enemy... Large numbers of Kauai soldiers had gathered on the battleground, but they were unarmed save with wooden spears, digging sticks, and javelins... No one was killed on the field, but as they took to flight they were pursued and slain. So Kia'imakani, Na-ke'u, and their followers met death [Kamakau 1961: 268].

Kamakau's singling out of Kiimakani for special mention reinforces the impression that the chief and his *ahupua'a* may have shared a traditional prestige.

In 1840, Peale and Rich, with Charles Wilkes' United States Exploring Expedition, traversed the coastline there on horseback heading north from Wailua:

The country on the way is of the same character as that already seen. They passed the small villages of Kuapau, Ke'alia, Anehola, Mowaa, and Kauharaki, situated at the mouths of the mountain streams, which were closed with similar sand-bars to those already described. These bars afforded places to cross at, though requiring great precaution when on horseback. The streams above the bars were in most cases deep, wide, and navigable a few miles for canoes. Besides the sugarcane, taro, &c., some good fields of rice were seen. The country may be called open; it is covered



with grass forming excellent pasture-grounds, and abounds in plover and turnstones, scattered in small flocks [Wilkes 1845:69].

James Jarves (1844:157), who tracked much of the same route as Peale and Rich, noted "nothing of particular interest is met with on the road, until arriving at Anahola."

### The Mahele Period

The Organic Acts of 1845 and 1846 initiated the process of the Mahele, which introduced private property into Hawaiian society. It is through information garnered from records for Land Commission Awards (LCAs) generated during the Mahele that specific documentation of traditional life in Kapa'a come to light.

**Table 2. Mahele Land Claims and Land Use of Kapa'a.**

LCA Number	Ahupua'a	Claimant	'Ili of the Ahupua'a	Land Use	Number of 'Āpana
3243 (See 3971)	Kapa'a	Honolii, Ioane	Kahana, Kupanihi Village	6 lo'i (uncult), house lot	2 (2 acres, 1 rood, 1 ord)
3554	Kapa'a	Keo	Kahanui Puihi Village	15 lo'i, house lot	2 (7 acres, 1 rood, 17 rods)
3638	Kapa'a	Huluili	Maelele Kalo Village	12-15 lo'i, house lot	2 (5 acres, 1 rood, 19 rods)
8247	Kapa'a	Ehu	Moalepe / Noalepe	20 lo'i,	1 (3 rods)
8837	Kapa'a	Kamapaa	Ulukiu lalo Awawaloa Ulukiu	3 lo'i, 2 lo'i, house lot	1 (2 acres, 2 roods, 27 rods)
8843	Kapa'a	Kiau	Apopo Kalo Village	6 (5) lo'i and kula, house lot	2 (2.75 acres, 3 rods)
10564	Kapa'a	Oleloa, Daniel	Hikinui farm	fishpond, 10 lo'i	

### Kapa'a Land Commission Awards

Documents relating to Land Commission Awards (*kuleana*) during this period show, surprisingly, that only six individuals were awarded *kuleana* parcels in the relatively large *ahupua'a* of Kapa'a. Five of the six received multiple parcels and show characteristic similarities. They are Keo (LCA #3554, 3599), Kiau (#8843), Kamapaa (#8837), Ioane Honolii (#3971), and Huluili (#3638) (See Table 1). All five had *lo'i* on the *mauka* side of the lowland swamp area, sometimes extending a short distance up into small, shallow gulches and valleys. Each also had a separate house lot located on the *makai* side of the swamp, adjacent to the beach.

Interestingly, the residential "village" of Kapa'a did not exist as a single entity, but was a series of small settlements or compounds that stretched along the shoreline of the *ahupua'a* and included (south to north) Kupanihi (Makahaikupanihi), Kalo (Kaulolo), Puihi, and Ulukiu. The sixth individual, Ehu (#8247), was the only person to be awarded a single parcel in the upland area of Kapa'a at Moalepe valley, approximately five miles from the shore. In 1848, when Ehu made his claim, he was the only one living there. A few years later, according to Honolii's testimony to support Ehu's claim, "There are no houses and no people now living on the land. Ehu found himself lonely there, all his neighbors having either died or left the land. Ehu now lives in Wailua." Ehu may have been the last person to live at and cultivate in the traditional way the far *mauka* region of Kapa'a.

A check of the Foreign Testimony (F.T) for *Kuleana* Claims to Quiet Land Titles in the Hawaiian Islands (1848-50) reveals the names of three *'auwai* in Kapa'a. Cross-referencing this information with various maps gives a general indication of their location: Makahaikupanihi, along the southern border near the shore and the settlement in Waipouli; Makea, near the current Kapa'a Public Library on the *mauka* side of Kūhiō Highway; and Kapa'a, probably along the current Kanaele Road.

There were no *kuleana* claims found within the project area.

### The Late 1800s

In 1849, a son of Wai'oli missionaries, William P. Alexander, recorded a trip he took around Kaua'i. Although, he focuses on the larger mission settlements like Koloa and Hanalei, he does mention Kapa'a:

A few miles from Wailua, near Kapa'a, we passed the wreck of a schooner on the beach, which once belonged to Capt. Bernard. It was driven in a gale over

the reef, and up on the beach, where it now lies. A few miles further we arrived at Kealia. We had some difficulty crossing the river at this place, owing to the restiveness of our horses. The country here near the shore was rather uninviting, except the valley which always contained streams of water (Alexander, 1991: 123).

In later years, the notorious Kapa'a reef was to become the location of many shipwrecks particularly once a landing was built there in the 1880s.

Although most of the historic record documents for Kaua'i in this period revolve around missionary activities and the missions themselves, there was indication that the Kapa'a area was being considered for new sugar cane experiments, similar to those occurring in Koloa. In a historic move, Ladd and Company received a 50 year lease on land in Koloa from Kamehameha III and Kaua'i Governor Kaikio'ewa of Kaua'i. The terms of the lease allowed the new sugar company "the right of someone other than a chief to control land" and had profound effects on "traditional notions of land tenure dominated by the chiefly hierarchy" (Donohugh, 2001: 88). In 1837, a very similar lease with similar terms was granted to Wilama Ferani, a merchant and U.S. citizen based in Honolulu (Hawai'i State Archives, Interior Dept., Letters, Aug. 1837). The lease was granted by Kauikeaouli or Kamehameha III for the lands of Kapa'a, Kealia and Waipouli for twenty years for the following purpose:

...for the cultivation of sugar cane and anything else that may grow on said land, with all of the right for some place to graze animals, and the forest land above to the top of the mountains and the people who are living on said lands, it is to them whether they stay or not, and if they stay, it shall be as follows: They may cultivate the land according to the instructions of Wilama Ferani and his heirs and those he may designate under him... (Hawai'i State Archives, Interior Dept., Letters, Aug. 1837).

Unlike Ladd & Company which eventually became the Koloa Sugar Company, there is no further reference to Wilama Ferani and his lease for lands in Kapa'a, Kealia and Waipouli. In a brief search for information on Honolulu merchant, Wilama Ferani, nothing was found. It is thought that perhaps Wilama Ferani may be another name for William French, a well known Honolulu merchant who is documented as having experimented with grinding sugar cane in Waimea, Kaua'i at about the same time the 1837 lease for lands in Kapa'a, Kealia and Waipouli was signed (Joesting, 1984: 152).

The sugar industry came to the Kapa'a region in 1877 with the establishment of the Makee Sugar Company and subsequent construction of a mill near the north end of the present town. Cane was cultivated mainly in the upland areas on former *kula* lands. The first crop was planted by the *Hui* Kawaihau, a group composed of associates of King

David Kalākaua. The king threw much of his political and economic power behind the project to ensure its success (Dole 1929:8-15). The *Hui* Kawaihau was originally a choral society begun in Honolulu whose membership consisted of many prominent names, both Hawaiian and *haole*. It was Kalakaua's thought that the *Hui* members could join forces with Makee, who had previous sugar plantation experience on Maui, to establish a successful sugar corporation on the east side of Kaua'i. Captain Makee was given land in Kapa'a to build a mill and he agreed to grind cane grown by *Hui* members. Kalakaua declared the land between Wailua and Moloa'a, the Kawaihau District, a fifth district and for four years the *Hui* attempted to grow sugar cane at Kapahi, on the plateau lands above Kapa'a. After a fire destroyed almost one half of the *Hui*'s second crop of cane and the untimely death of one of their principal advocates, Captain James Makee, the *Hui* began to disperse and property and leasehold rights passed on to Makee's son-in-law and new Makee Plantation owner, Colonel Z. S. Spalding (Dole, 1916: 14). As part of the infrastructure of the new plantation, a sugar mill was erected and the Makee Landing was built in Kapa'a during the early years of the Makee Sugar Plantation. Following Captain Makee's death, Colonel Spalding took control of the Plantation and in 1885 moved the mill to Kealia (Cook, 1999: 51). The deteriorating stone smokestack and landing were still there well into the 1900s (Damon, 1931:359).

A train line went inland from Kapa'a Town from the coast along the present Lehua Street alignment heading south behind Kapa'a Town. This railroad line skirts the rice lands behind Kapa'a Town. Another branch ran between Hauaala and Hundley Roads and the branch from behind Kapa'a Town joined the Hauaala/Hundley railroad alignment where the proposed corridors for this project join the present Kūhiō Highway. The train line continued north to the Keālia (Kapa'a) River. Chinese rice farmers had begun to cultivate the lowlands of Kapa'a with increasing success about this same time. Several Hawaiian *kuleana* owners leased or sold outright their parcels *mauka* of the swampland to rice cultivators. Concurrently, the economic activity as a result of the rice and sugar cultivation sparked interest in the house lot *kuleana* on the *makai* side of the marsh for increasing commercial and residential development (Lai 1985:148-161). This land was drained and used for cane in the early 20th century before more recent urbanization of the area.

Narrow wagon roads gave way to macadamized roads in the early part of the 20th century. This new road was called the Kaua'i Belt Road and parts of it are thought to have followed the "Old Government Road" (Cook, 1999). In Kapa'a, the present day Kuhio Highway probably follows the same route as the original Government Road and subsequent Kaua'i Belt Road. The location of the *kuleana* awards in Kapa'a indicates that the majority of the house lots were situated along the Government Road. LCA 3243 names a "road" as one of its boundaries.

## 20th Century History of Kapa'a

In the early 1900s, government lands were auctioned off as town lots in Kapa'a Town to help with the burgeoning plantation population. Many of these lots were purchased by Portuguese and Japanese laborers who had fulfilled their contract duties with Makee Plantation. One *kama'āina* interviewed for a previous project in Kapa'a mentioned that in the 1930s and 1940s, the area north of Mo'ikeha Canal in Kapa'a was mostly settled by Portuguese families (W. Kaneakua in Bushnell et al. 2002:28). The Japanese were also very prominent in the 1920s and 1930s, largely replacing the Chinese merchants of the turn of the century in the Kapa'a business sector.

Though most of the large plantation camps were located in neighboring Keālia, there were a few in Kapa'a. Many people consulted had clear memories of the plantation camps in Kapa'a: a fairly large camp located just behind Kapa'a Town and three smaller camps located in the hills above Kapa'a. The large camp, Pueo Camp (Figure 6), was located adjacent to the intersection where the current Kapa'a Bypass Road turns off of Olohena Road (Interview w/ A. Paik, 5/14/03 in Bushnell et al. 2004). One Kapa'a resident who grew up in Pueo Camp remembers the camp being quite large with between 75 and 100 people, mostly single Filipino and Chinese men with some Japanese families and a few Hawaiian and Portuguese families. Pueo Camp is thought to be a fairly early Makee Plantation Sugar Camp built strategically adjacent to the railroad tracks which accessed the sugar fields in the upland areas of Kapa'a. Though no one consulted knew the date Pueo Camp was established, the oldest of our informants, Mrs. Alice Paik, born in 1912, knew the camp was there before she was born (Interview w/ A. Paik, 5/14/03 in Bushnell et al. 2004). Pueo camp was destroyed sometime in the 1950s. The other three camps located in the hills adjacent to or just off of Olohena Road were considerably smaller than Pueo Camp. These consisted of Stable Camp, 35 Camp and 18 Camp (See Figure 6). Two other camps in the Kapa'a/Waipouli area were also mentioned. Aguiar camp was a residential camp for employees of the pineapple industry, and Mundon Camp was thought to be a residential camp for Lihue Plantation workers (Interview w/ G. Hiyane, 5/14/03 in Bushnell et al. 2004).

Pineapple became the next largest commercial enterprise in the region. In 1913, Hawaiian Canneries opened in Kapa'a at the site now occupied by Pono Kai Resort (Cook 1999:56; Figure 6). The Kapa'a Cannery provided employment for many Kapa'a residents and many of the informants for this project mentioned having worked in the cannery during some time of their lives. By 1960, 3400 acres were in pineapple and there were 250 full time employees and 1000 seasonal employees for the Kapa'a Cannery. However, in 1962, Hawaiian Canneries went out of business due to competition from third world countries.

The Ahukini Terminal & Railway Company was formed in 1920 to establish a railroad to connect Anahola, Keālia and Kapa'a to Ahukini Landing at Hanamā'ulu and to "provide relatively cheap freight rates for the carriage of plantation sugar to a terminal outlet" (Condé and Best 1973:185). This company was responsible for extending the Makee Sugar Company railroad line from the Makee Landing [formerly located near the present day Coral Reef Hotel] to the Ahukini Landing at Hanamā'ulu Bay. This railroad line traversed near much of the study area (Figures 4 & 5) and was in use from 1921, through the take-over by Lihue Plantation Company in 1934 and until Lihue Plantation converted from railroad transport to trucking in the late 1950s.

Lihue Plantation was the last plantation in Hawai'i to convert from railroad transport to trucking (Condé and Best 1973: 167). In 1955, reports came out on the dredging for coral proposed for the reef fronting Kapa'a Beach Park (*Garden Island Newspaper*, September 21, 1955). This coral was to be used for building plantation roads. The dredging was later blamed for accelerated erosion along Kapa'a Beach (*Garden Island Newspaper*, October 30, 1963). Today, there are several sea walls along the Kapa'a Beach Park to check erosion. Old time residents claim the sandy beach at Kapa'a was once much more extensive than it is now. "By 1957 the company was salvaging a part of their plantation road, which was being supplanted by roads laid out for the most part on or close to the old rail bed" (Condé and Best 1973: 167). By 1959, the plantation had completely converted over to trucking.

Severe floods in Kapa'a in 1940 led to the dredging and construction of the Waikaea and Moikeha Canals sometime in the 1940s (Territorial Planning Board 1940:7). Although the Waikaea Canal, bordering the Kapa'a Pineapple Cannery, had been proposed as early as 1923, nothing was constructed until after the floods (Bureau of Land Conveyances, Grant 8248). A Master Plan for Kapa'a, published in 1940, asks the Territorial Legislature for funds to be set aside for the completion of a drainage canal and for filling *makai* and *mauka* of the canal (Territorial Planning Board 1940:7). In 1955, reports came out on the dredging for coral proposed for the reef fronting Kapa'a Beach Park (*Garden Island Newspaper*, September 21, 1955). The coral was to be used for building plantation roads. This dredging was later blamed for accelerated erosion along Kapa'a Beach (*Garden Island Newspaper*, October 30, 1963).

Today, there are several sea walls along the Kapa'a Beach Park to check erosion. Old time residents claim the sandy beach in Kapa'a was once much more extensive than it is now (Bushnell et al. 2002).

Many of the plantation workers bought property of their own and moved out of plantation camps. The plantation camps which bordered Kahio Highway were disbanded in the 1980s. The Lihue Plantation began to phase out in the last part of the 20th century. Kapa'a Town suffered after the closing of the Kapa'a Cannery, however the growing tourist industry helped to ease the economic affects of the Cannery's closing.



Figure 4. Aerial View of Kapa'a, Kaua'i, looking west, circa 1933 (Bishop Museum Archives)

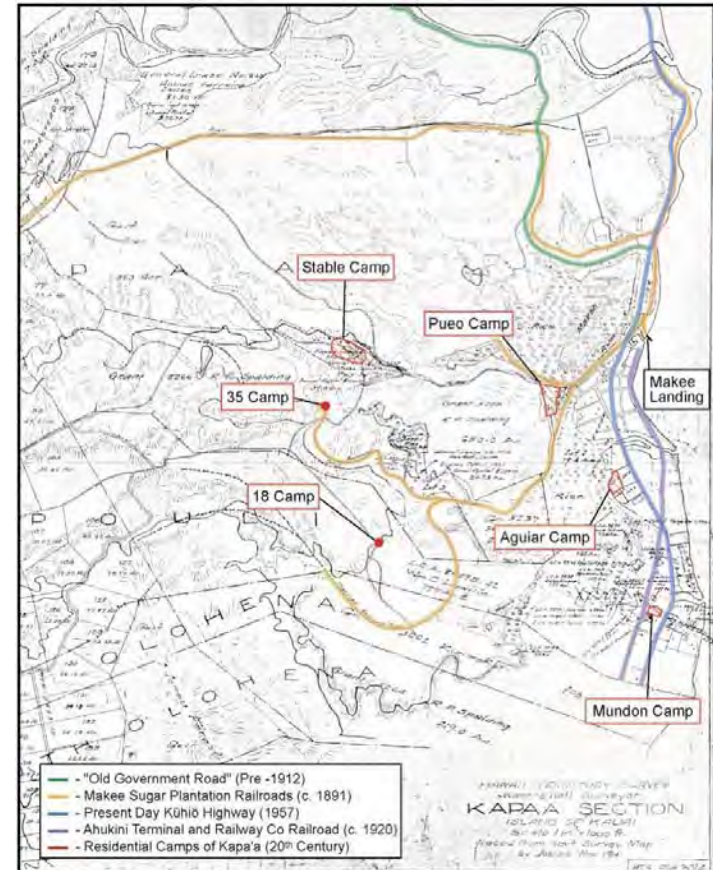


Figure 5. Hawai'i Territory Survey Map (1914) of Kapa'a Section Showing Roads, Railroads and Camps



### Previous Archaeological and Cultural Studies of Kapa'a

During their expeditions around Hawai'i in the 1880s collecting stories from *ka pō'e kahiko*, Lahainaluna students stopped in Kapa'a and Kealia and gathered information regarding *heiau* of the region (Bishop Museum Archives (HEN I:214). Fourteen *heiau* were named, suggesting that these two *ahupua'a* were probably more socially /politically/ religiously significant in ancient times and a testament to the substantial population of these *ahupua'a*.

Unfortunately, the locations for most *heiau* were given as Kapa'a/Kealia, indicating that the exact location of the *heiau* was not identified. Of the fourteen *heiau*, five are definitely located in Kapa'a. These include the locations of *wahi pana* or sacred places, Mailehuna (in the area of the present day Kapa'a School), Pueo, Kuahiahi ((also spelled Kaahiahi and Keahiahi) the site of the first Government School in Kapa'a—adjacent to the Kuliö Highway near the northern boundary of Kapa'a Ahupua'a), Makanalimu (in upland of Kawaihau) and Kaluluomoikeha. Kaluluomolkeha is thought to be the general area near the Mo'ikeha Canal and the present day Coral Reef Hotel.

There are no known remains of these *heiau* today. The exact locations of these *heiau* are unknown.

**Table 3. Heiau of Kapa'a**

Name	Location	Type	Associated
Mailehuna	Kapa'a (Mailehuna is the area of the present day Kapa'a School)	unknown	Kiha, Kaumuali'i/ Lukahakona
Pueo	Kapa'a	unknown	Kiha, Kaumuali'i/ Lukahakona
Pahua	Kapa'a/Kealia	unknown	Kiha/ Lukahakona
Kumalae	Kapa'a/Kealia	unknown	Kiha/ Lukahakona
Waiehumalama	Kapa'a/Kealia	unknown	Kiha/ Lukahakona
Napu'upa'akai	Kapa'a/Kealia	unknown	Kiha/ Lukahakona
Noeamakali'i	Kapa'a/Kedlla	"heiau for birth of Kaua'i Chiefs, like Holoholoku"	Unknown
Pu'ukoa	Kapa'a/Kealia	"unu type heiau"	Unknown
Piouka	Kapa'a/Kealia	"unu type heiau"	Unknown
Una	Kapa'a/Kealia	Unknown	Kiha/ Lukahakona
Mano	Kapa'a/Kealia	Unknown	Kiha/ Lukahakona

Name	Location	Type	Associated
Kuahiahi	Kapa'a (govn't school stands on site now)	Unknown	Kaumuali'i/ Lukahakona
Makanalimu	Upland of Kawaihau	Unknown	Kaumuali'i
Kaluluomoikeha	Kapa'a	Unknown	Mo'ikeha

### 4. Historic Properties in Kapa'a Ahupua'a (see Figure 6)

Site # 50-30-08-	Ahupua'a	Site Type/ Name (if any)	Location	Site Constraints	Reference
B001	Kapa'a	Historic Cemetery	South of bend of Kapa'a Stream, a kilometer mauka from Kuliö Hwy	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B002	Kapa'a	Historic Cemetery	Just mauka from Kuliö Highway, south of Kapa'a Stream	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B003	Kapa'a	Kapa'a Public Cemetery	South of Kanaele Road, one kilometer inland of Kuliö Highway	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B004	Kapa'a	Historic Cemetery	North of Apopo Road, one kilometer inland of Kuliö Highway	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B013	Kapa'a	Historic Cemetery	Just mauka from Kuliö Highway, north of the Waikaea Canal	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B014	Kapa'a	All Saints Episcopal Church Cemetery	Just mauka from Kuliö Highway, south of the Waikaea Canal	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992:62-65
547	Kapa'a	sub-surface features including a firepit and a possible house foundation	South of bend of Waikaea Canal, mauka of Kuliö Highway	Archaeological monitoring in the vicinity is recommended	Spears 1992:3



Site # 50-30-08-	Ahupua'a	Site Type/ Name (if any)	Location	Site Constraints	Reference
626	Kapa'a	Burial	'Inia Street, makai of Kuliö Highway, central Kapa'a	Consultation and monitoring in vicinity indicated	Jourdane 1995
748	Kapa'a	Minimal findings, a weak cultural layer (buried A-horizon)	South of the bend of the Waikaea Canal, mauka of Kuliö Highway	Considered no longer significant within project area	Hammatt et al. 1994
789	Kapa'a/ Kealia	Historic Road	Coastal Cane Haul Road near Kawaihau Road turn off		Perzinski et al. 2000
867	Kapa'a	1 set of human remains	Kukui Street, just mauka of Kuliö Highway, Kapa'a Town	Consultation and monitoring in vicinity indicated	Creed et al. 1995:50
868	Kapa'a	1 set of human remains	Lehua Street mauka of Kuliö Highway, Kapa'a Town	Consultation and monitoring in vicinity indicated	Creed et al. 1995:50
871	Kapa'a	13 sets of human remains (Creed et al. 1995:50)	'Inia Street, makai of Kuliö Highway	Consultation and monitoring in vicinity indicated	Kawachi 1994; Creed et al. 1995:50
1848	Kapa'a	Cultural layer and sub-surface features	Along Kuliö Highway between Wana Road and the Waikaea Drainage Canal	Archaeological monitoring in the vicinity is recommended	Hammatt 1991; Creed et al. 1995
1849	Kapa'a	Cultural layer and sub-surface features; Creed et al. 1995:53 expands boundaries to incl. burial sites, - 626, -867, -868 -871, and -1894	Along Kuliö Highway between 'Inia Street and Kauwila Street extending to the coast	Consultation and monitoring in vicinity indicated	Hammatt 1991; Creed et al. 1995
1894	Kapa'a	11 sets of human remains	Ulu Street, just north of Kuliö Highway, Kapa'a Town	Consultation and monitoring in vicinity indicated	Creed et al. 1995:50

Site # 50-30-08-	Ahupua'a	Site Type/ Name (if any)	Location	Site Constraints	Reference
2075	Kapa'a/Ke älia	Highway Bridge Foundation (old Kaula'i Belt Road)	Kuliö Highway at Kapa'a/ Keälia River		Bushnell et al. 2002:55
2076	Kapa'a	Petroglyph	Rocky coast below former cane haul road (Site -789)	Preservation	Bushnell et al. 2002:55
2077	Kapa'a	Concrete steps (related to historic beach pavilion)	Near present Kapa'a Beach Park Pavilion		Bushnell et al. 2002:55
2078	Kapa'a	Historic Railway Alignment (2 Railroad Bridges, & RR Culvert Foundation)	Both railroad bridges span the Moikeha Canal; the RR culvert foundation is located north of the Kapa'a Swimming Pool.		Bushnell et al. 2002:55

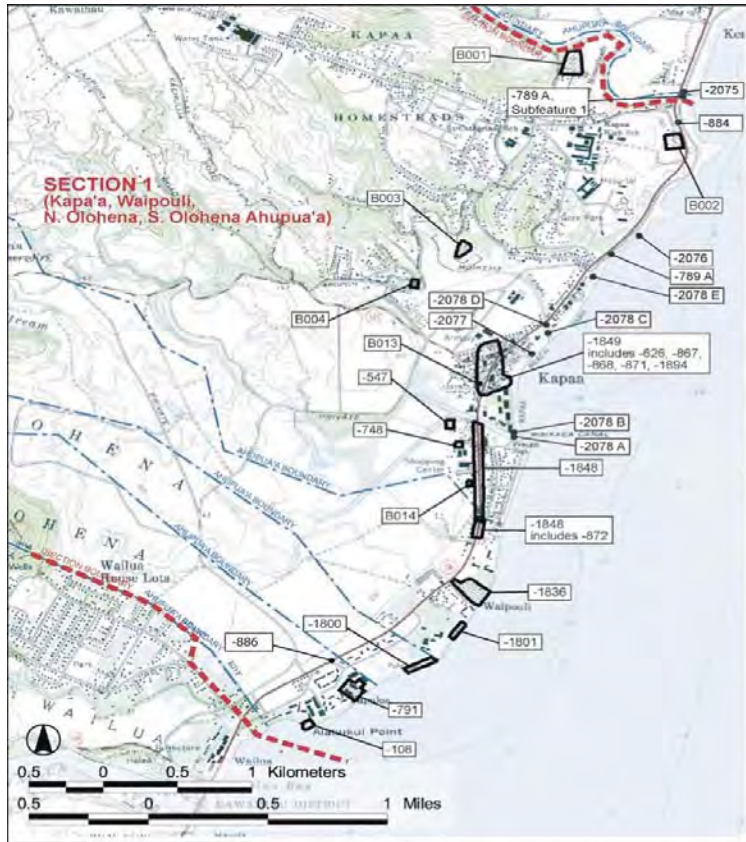


Figure 6. Historic Properties in Kapa'a, Waipouli and Olohena Ahupua'a.

In summary, the archaeological research of the Kapa'a, area has been somewhat skewed to development which has mostly occurred along the coast. Early 20th century archaeological studies attested to the existence of upland terraces, however subsequent studies in the 1980s found no record of upland sites. Although there is little in the way of surface archaeology of Kapa'a that has been able to withstand the test of time (with the exception of Kukui Heiau), archaeological studies have illustrated the vast potential for intact subsurface cultural layers. These cultural deposits extend throughout modern day Kapa'a Town, on the shorelines between the Waipouli Town Center and the Coconut Plantation Resort and along the coast in Olohena *makai* of the old Coconut Plantation Cinema. These cultural deposits suggest a long occupation of the area over many centuries beginning by the late 15th or early 16th centuries.

# RESULTS OF COMMUNITY CONSULTATION

As partial fulfillment of the Scope of Work, consultation with organizations and the community was conducted to identify knowledgeable *kūpuna* and participants to be interviewed, as well as others who could inform on the history of the subject area and previous land use. The organizations consulted were the State Historic Preservation Division, the Department of Land and Natural Resources (DLNR), the Office of Hawaiian Affairs, the Kaua'i/Ni'ihau Islands Burial Council, the Kaua'i Historical Society, and the Kaua'i Historic Preservation Review Committee (KHPRC).

A substantial effort was made to locate knowledgeable informants for the area of Kapa'a. An attempt was made to contact as many individuals as possible. These led us to the 5 knowledgeable parties that were interviewed for this project. A cultural impact assessment conducted for the Kapa'a-Kealia Bike and Pedestrian Path included a narrow corridor from the Waikaea Drainage Canal to Hōmaikawa'a, a small inlet beyond Kealia (Bushnell et al. 2002). In addition cultural impact assessment was also conducted for the Kapa'a Relief Route (Bushnell et. al. 2004). Only one cultural impact assessment has been conducted for the uplands of Kapa'a for the proposed Water Reservoir *Mauka* Locale in Kapa'a, Kaua'i Island (Mitchell et. al. 2004). These CIA and historic research of the project area, community consultation and informant interviews were combined to provide an assessment of cultural traditions, both past and present.

Traditions were also collected in connection to the streams, canals and marsh areas where 'ōpae and 'o'opu were once found in abundance. Fishing for 'oama in Kapa'a's canals continues to be a lively family tradition during the summers.

## Consultation Process

Through the consultation process, five individuals were identified as potential informants. Three had written letters of their knowledge of the area (Stanley Vasques,

Willie Sanchez, and Albert Fukashima) [see Appendix]. Two others informants gave a verbal interviews. One of these the Martin family spoke about the use of the lands for pasture when the Plantation ceased using the land for cane. The other informant was from the East Kauai Soil and Water District (Les Milnes) and had no knowledge any plantation ditches that were still intact within the project area. The old maps he had, showed the ditch system around Twin Reservoir which is located directly across Olo-hena Road from this property but the maps stop before this project area. This indicates that there were no permanent plantation ditch lines on this parcel.

Mr. Fukashima drew a map of his recollection of the land uses of the project area, which matched some of the historic maps for Kapa'a.

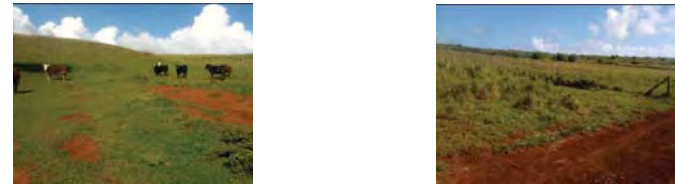


Figure 7 and 8 Showing Cattle and Goats (in the Distance) Grazing.

No Native Hawaiian informants came forward to discuss any traditional gather associated with this project area. The Office of Hawaiian Affairs gave a list of possible individuals with extensive knowledge of traditional cultural practices and resources but none knew of any for this project area.



Figure 9. KIUC's Solar Farm and Equipment Buildings.

## TRADITIONAL CULTURAL PRACTICES OF KAPA' A

### Burials

The coastline in Kapa'a once contained extensive sand dunes that were documented in travels throughout the nineteenth century (Knudsen 1991; Alexander 1991). Most of the sand dunes were modified or destroyed at the onset of the twentieth century. This was due to the extensive use of the coastal areas for ranching, settlement, and new transportation routes like trains and roads. Archaeological studies in the Kapa'a area demonstrate the widespread prehistoric use of sand as a medium for burials. Burials have been identified along the coast and extending well *mauka* of the coastline into present day Kapa'a Town. Cultural deposits found associated with burials in the Kapa'a area shed light on the Hawaiian tradition of burying members of the *'ohana* in the *kulaiwi*, or birth land.

For Hawaiians, "man's immortality was manifest in his bones...Even the bones of the living became symbols of the link between man's progenitors and his own eventual immortality" (Pukui et al. 1972:106). Thus, the discovery of *iwi* (bones) is a very sensitive issue for the Hawaiian community requiring much mediation and protocol.

No burials are believed to be present within the project area and none are known in the vicinity.

### Marshlands of Kapa'a

The areas inland of Kapa'a and Waipouli Towns were formerly the marshlands of Kapa'a. During the 20th century, portions of the marshlands of Kapa'a and Waipouli were filled, drained and designated as marginal agricultural lands. Traditionally, however, these marshlands were once much more significant. Westerners may call them "swamps," but Hawaiians who grew up in the Kapa'a and Waipouli area knew they were fishponds (Bushnell et. al. 2004). Many *kama'aina* recall fishing for freshwater shrimp and

gobies, the *'opae* and *'o'opu*. For the Kaneakua brothers, their childhood memories of *'opae* are tied to the old Chinese vendors who once traversed the neighborhood selling the shrimps.

I can remember Chinese, they used to catch shrimp, fresh water shrimp in big five gallon can. They put it in there, both side and they have their stick across, walking through the little village that we were over there and used to come out and say, "*'Opae, 'Opae*" and families who want buy the *'Opae* and they used to dig it out in a big a scoop, bowl, and was so much you know. Yeah, those were the days. Our streams used to be loaded with shrimp (Interview with J. & W. Kaneakua 8/1/02 in Bushnell et al. 2002).

One informant said that his experience catching *'opae* centered on the irrigation ditches that drained the marshlands behind Kapa'a. "My first lessons in swimming were in the drain ditches the sugar people created to dry out their cane lands. Also in the ditches were the *'opae* or river shrimp. I caught *'opae* and cooked them with soy sauce in recycled oil sardine cans." (Interview with G. Hiyane, 5/14/03 in Bushnell et al. 2004). One individual who grew up in Pueo Camp adjacent to the marsh recalls frequenting the irrigation ditches in Waipouli for *'opae*, *'o'opu*, and *pantat* (catfish) that were then sold to the old Chinese men in the camp for 10¢ (Personal communication with G. Mukai, 8/5/03 in Bushnell et al. 2004).

Mr. Sokei who grew up in a rice growing family in the back of what is known as All Saints Church in Kapa'a shared some memories of his home in the 1930s that may reflect the landscape a hundred years prior. Mr. Sokei remembers the family home located on high ground above the marsh. "Back then, the land was natural, full of mounds. Rice was cultivated in fields all the way to the hills. The water level in the marsh would go up and down with the tide and when there was lots of water, one could find *'o'opu*, *'opae*, catfish, frogs and mud turtles for eating" (Personal communication with T. Sokei, 7/28/03 in Bushnell et al. 2004). Likewise, the *kuleana* awards of the 1840s and 1850s present a picture of homes scattered on the edges of the marsh and on islands of high ground within the marsh. Numerous *'auwai* were constructed to irrigate *lo'i kalo*. *Hau* bush was shaped into fences to separate *kuleana* or physical features and fishponds were built to stock fish. For Hawaiians living the marsh was an extremely productive area constituting the basis of their existence.

The notion that the marshlands were quite significant traditionally is also evident in the Hawaiian place names, particularly the *wahi pana* (storied places) associated with the Kapa'a/Waipouli marsh. Mākaha-o-Kupānihi was a pond, a "deep pool set aside for *ali'i* to bathe in" located at the border of Kapa'a and Waipouli Ahupua'a presumably within the marsh (Lahainaluna Students Compositions, No. 15). It was here that Kaumuali'i's half-brother Keawe was shot to death forever defiling the waters of Kupānihi. Another *wahi pana* in this district was Kēwā. The proverb '*ke kalukalu o Kēwā*' refers to a certain type

of grass, *kalukalu* (used in making a very soft gauze or *kapa*) found growing in the marshlands of Kapa'a and Waipouli (Fornander 1916:IV:162).

## Gathering for Plant Resources

Hawaiians utilized upland resources for a multitude of purposes. Forest resources were gathered, for not only the basic needs of food and clothing, but for tools, weapons, canoe building, house construction, dyes, adornments, hula, medicinal and religious purposes. The present project area is dominated by alien vegetation (albezia, ginger, California grass) although some traditional cultigens (banana, bamboo, *kid* and historically introduced food plants (papaya) are present as well. Within the project area itself no specific documentation was found regarding gathering of plants during traditional Hawaiian times. During this assessment there were no ongoing practices related to traditional gathering of plant resources identified in the present project area. None of the individuals contacted for this assessment identified any native plant gathering practices within the project area.

## Historic Properties

No historic properties were identified within the project area or in the vicinity. The density of identified historic properties is far greater near the coast of Kapa'a Ahupua'a. For a listing of the historic properties of Kapa'a, Kaua'i, see Table 4.

## Trails

Based on nineteenth and twentieth century maps the primary transportation routes *mauka/makai* correlated closely to the existing major roadways. During this assessment there were no trail systems identified in the proposed project area.

## Planation Ditch System or 'Auwai

Based on the archaeological assessment (McMahon, 2012), field checks, documentation from land records, plantations records and maps, and informants information, no remnants of these historic properties exist. Several pieces presumed to be rem-



nant of the metal flumes (transportable irrigation) were found. It is also thought that the existing roads on the property might be filled.



Figure 10. Remnant Road and Cattle Grazing in the Project Area.

## SUMMARY AND CONCLUSIONS

A cultural impact assessment was conducted for the proposed Kapa'a Highlands Phase II. Historic research of the project area was carried out to identify any cultural resources or traditional cultural practices associated with the area encompassing the proposed Kapa'a Highlands Phase II. In addition, community consultation was conducted. An attempt was made to contact parties regarding cultural knowledge, land use history, cultural sites and traditional Hawaiian or other cultural practices in the vicinity of the project area. Five individuals came forward as knowledgeable informants. In addition to the informants, other community members shared valuable information regarding traditional land use, attitudes and practices associated with the project area.

The marshlands of Kapa'a were once a significant resource prior to Western contact. The fringes of the marsh were utilized for *lo'i kalo*, and other resources including the gathering of *kalukalu*, a type of grass utilized for *kapa*. Places in the marshes also served as fishponds. Vestiges of the cultural significance of the marshlands are retained in the *mo'olelo* and *'olelo no'eau* particular to this area. With the establishment of the sugar plantations in the late nineteenth century, the marshlands were significantly altered. Marsh areas were drained and filled to create more dryland for commercial agriculture and pasture land. Several individuals consulted and interviewed grew up fishing for *'opae* and *'o'opu* in the irrigation ditches which once drained the swamps. They expressed sadness at the changing of the landscape and the passing of their childhood traditions with the final draining and filling of the swamps. No further concerns regarding the marshlands were expressed other than the presumed low potential of possibly encountering habitation deposits and burials related to former LCA parcels.

This report documents the use of the *'auwai* or plantation ditches for irrigation and water use by the residents up until the 1960s. The *'auwai* were also utilized for a variety of activities beyond their primary irrigation purpose. The bulk of the *'auwai* have been lost through modern pasturage, disuse and adjacent road improvements.

In general the community emphasized the importance of communicating with the *'ohana* of Kapa'a regarding changes to the land. This includes asking permission of the *'ohana*, including *'uhane* (immortal spirits) for opening up the land to proposed new

uses. It was stressed that this and other protocols are necessary to “open the path” for change, thus avoiding accidents and potential obstacles of a cultural nature.

In summary, there are no known traditional resources or cultural practices associated with the Kapaa Highlands Project Area.

## BIBLIOGRAPHY

- Akina, Joseph  
1913 “I Ke hou I Ka Lulu-o-Moikeha I ka laula o kapaa”, Ku’oko’a. May 2-9, 1913. Bishop Museum Archives HEN Place Names, Kauai.
- Alexander, William Patterson  
1991 "A Tour of Kauai in 1849: Private Journal of William DeWitt Alexander," *The Kauai Papers*, Kauai Historical Society, A Kauai Historical Society Publication, Lihue, Kauai, HI.
- Armitage, George T. and H.P. Judd  
1944 *Ghost Dog and Other Hawaiian Legends*; Advertiser Publishing Co., Ltd., Honolulu.
- Armstrong, Warwick, Ed.  
1973 *Atlas of Hawai'i*, University of Hawaii Press, Honolulu.
- Barrère, Dorothy, compiler  
1994 *The King's Māhele: The Awardees and Their Lands*, Honolulu, HI.
- Beckwith, Martha W.  
1970 *Hawaiian Mythology*, University of Hawaii Press, Honolulu, HI.
- Bennett, Wendell C.  
1931 *The Archaeology of Kaua'i*, Bishop Museum Bulletin 80, Honolulu.
- Bingham, Hiram  
1847 *A Residence of Twenty-One Years in the Sandwich Islands*, Huntington, Hartford.Conn., Convers, New York
- Bishop Museum Archives  
HEN I: 214 "Heiaus of Kealia and Kapa`a" and "Well Known Things [or Places]".  
HEN I: 215 "Famous Things mentioned by Two Men".  
HEN I: 216 "Heiaus from Kapa'a to Kealia" and "Things for which Kapa'a was Known".
- Borthwick, Douglas F. and Hallett H. Hammatt

- 1999 Archaeological Monitoring and Burial Treatment Plans for the Proposed Improvements to the Kapa'a Seventh-day Adventist Church, Kapa'a Ahupua'a, Puna District, Kaua'i Island (TMK 4-5-03: 19), Cultural Surveys Hawai'i, Kailua, HI.
- Boundary Commission see Commission of Boundaries
- Buck, Peter H. (see also Te Rangi Hiroa)
- 1964 Arts and Crafts of Hawaii, Bishop Museum Special Publication 45, Vol. I, Honolulu.
- Bureau of Land Conveyances  
Grant 8248
- Bushnell, K.W., D.W. Shideler, and H. H. Hammatt
- 2002 Cultural Impact Assessment for the Proposed Kapa'a -Kealia Bike and Pedestrian Path, Kapa'a and Kealia, Kawaihau District, Kaua'i Island, Hawai'i (TMK: 4-5, 4-6-14, 4-7-03 & 04), Vols. I & II; Cultural Surveys Hawai'i, Inc., Kailua, HI
- 2004 Cultural Impact Assessment for Kapa'a Relief Route: Kapa'a Waipouli, Olena and Hanamaulu, Kaua'i Island, Hawai'i Cultural Surveys Hawai'i, Kailua, HI
- Bushnell, Kristina and Hallett H. Hammatt
- 2000 An Archaeological Monitoring Report for Improvements to the Kapa'a Seventh-Day Adventist Church, 1132 Kuhio Highway, Kapa'a Ahupua'a, District of Puna, Island of Kauai (TMK 4-5-03:19), Cultural Surveys Hawai'i, Kailua, HI.
- Bushnell, K.W., Melanie Mann, Douglas Borthwick, Tony Bush, Todd Tulchin, David Shideler and Hallett H. Hammatt
- 2003 *Archaeological Inventory Survey for the Proposed Kapa'a/Kealia Bike and Pedestrian Path, Kapa'a and Kealia, Kawaihau District, Kaua'i Island, Hawaii (TMK 4-5, 4-6-14, 4-7-03 & 04)*. Cultural Surveys Hawaii, Inc. Kailua, HI.
- Calis, Irene
- 2000 End of Field Work Report: Human Burial Removal and Archaeological Monitoring, Kapa'a Beach Park Public Bathroom Installation, Kapa'a, Kaua'i Scientific Consultant Services.
- Chafee, David B., Berdena Burgett and Robert L. Spear
- 1994a An Inventory Survey of a Mamane Street Houselot, Kapa'a Ahupua'a, Kawaihau District, Puna, Island of Kaua'i (TMK: 4-5-09:51), SCS Inc., Kane'ohe, HI.

- 1994b An Inventory Survey of a Kukui Street Houselot, Kapa'a Ahupua'a, Kawaihau District, Puna, Island of Kaua'i (TMK: 4-5-09:10), SCS Inc., Kane'ohe, HI.
- Chaffee, David B. and Robert L. Spear
- 1995 A Reconnaissance Survey Letter Report, Earl & Maggie Arruda Property, Kapa'a, Kaua'i, Hawai'i, TMK 4-4-02:100 Scientific Consultant Services, Inc. Kane'ohe, HI.
- Ching, Francis K. W.
- 1976 *Letter Report: Archaeological Reconnaissance - Report, Kapa'a "Wastewater Treatment and Disposal System"*, ARCH 14-96, Letter to R. M Towill Corporation, ARCH, Lawa'i, Kaua'i, HI.
- Clark, John R.K.
- 2002 Hawai'i Place Names, Shores, Beaches and Surf Sites, University of Hawaii Press, Honolulu, HI.
- Commission of Boundaries
- 1864-1905 Record of Commission of Boundaries for the Island of Kaua'i, vol. 1, Honolulu, HI.
- Condé, Jesse C. and Gerald M. Best
- 1973 *Sugar Trains, Narrow Gauge Rails of Hawaii*, Glenwood Publishers, Felton, CA.
- Cook, Chris
- 1999 "Kaua'i, the Garden Island: A Pictorial History of the Commerce and Work of the People", Donning Co., Virginia Beach, VA.
- Cooper, George and Gavan Daws
- 1990 *Land and Power in Hawaii, The Democratic Years*; University of Hawaii Press, Honolulu.
- Coulter, John Wesley
- 1931 *Population and Utilization of Land and Sea in Hawaii, 1853* Bernice P. Bishop Museum Bulletin 88, Honolulu, Hawaii.
- Coulter, John Wesley and Chee Kwon Chun
- 1937 *Chinese Rice Farmers in Hawaii*, University of Hawai'i, Honolulu.
- Creed, Victoria, Hallett H. Hammatt, Gerald K. Ida, Ian Masterson and John Winieski
- 1995 *A Summary of the Archaeological Monitoring for the Kapa'a Sewerline Project Waipouli and Kapa'a Ahupua'a, Puna District, Kaua'i (TMK: 4-3-09 and 4-5-03 to 11)*, Cultural Surveys Hawaii, Kailua, HI.

- Damon, Ethel M.  
1931 Koamalu, Privately printed at the Honolulu Star-Bulletin Press, Honolulu, (2 Volumes).
- Dega, Michael F. and James Powell  
2003 Archaeological Monitoring During Phase I of the Kaua'i Rural Fiber Optic Duct Lines Project, Kaua'i Island, Hawai'i. Scientific Consultant Services
- Dole, Charles S.  
1929 "The Hui Kawaihau" in Papers of the Hawaiian Historical Society, Number 16, Honolulu.
- Donohugh, Donald  
2001 *The Story of Koloa, A Kaua'i Plantation Town*, Mutual Publishing, Honolulu, HI.
- Elmore, Michelle and Joseph Kennedy  
2003 *An Archaeological Monitoring Report for the Proposed Kiihio Drainage Improvements Kapa'a and Anahola (Project # 56AC-01-01)*  
*Located in Kawaihau District, Island of Kaua ACPI.*
- Foote, Donald E., Elmer L. Hill, Sakuichi Nakamura, and Floyd Stephens  
1972 Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. Soil Conservation Service, U.S. Department of Agriculture.
- Fornander, Abraham  
1878-85 An Account of the Polynesian Race, Its Origin and Migrations and the Ancient History of the Hawaiian People to the Time of Kamehameha I, 3 vols., Trubner & Co., London.
- Fornander, Abraham  
1917-1918 Collection of Hawaiian Antiquities and Folklore, T.G. Thrum edit., Memoirs of the Bernice Pauahi Bishop Museum (Vol. IV & V), Bishop Museum Press, Honolulu.
- Fornander, Abraham  
1996 Ancient History of the Hawaiian People to the Times of Kamehameha I, with an Introduction by Glen Grant, Mutual Publishing, Honolulu, HI.
- Garden Island Newspaper  
1955 "Geologists Says Kapaa Coral Removal No Threat to Town". September 21, 1955.

- 1963 "Kapaa Blames Federal Role As Erosion Continues. Says Barrier on Reef is Required". October 30, 1963.
- 1983 "Centennial Year, Kapa'a School Wants Pix of its 100 Years". April 1, 1983.
- Giambelluca, Thomas W., Michael A. Nullet and Thomas A. Schroeder  
1986 *Rainfall Atlas of Hawaii*, Department of Land and Natural Resources, Honolulu, HI.
- Glick, Clarence E.  
1980 *Sojourners and Settlers: Chinese Migrants in Hawaii*. Hawaii Chinese History Center and The University Press of Hawaii, Honolulu.
- Hammatt, Hallett H.  
1981 Archaeological Reconnaissance of 52.56 Acres for a Proposed Subdivision, TMK:4-8(?) -13-1, Kapa'a, Puna, Kaua'i Island, ARCH Report 140298, Prepared for Waialeale Partners.
- 1986 Archaeological Reconnaissance of the Makaleha Springs Water Source Development, Kapa'a, Kaua'i TMK: 4-6-01:1, Cultural Surveys Hawaii, Kailua, HI.
- 1987 Letter Reports on Kapa'a Sewerline Project
- 1991a *Archaeological Subsurface Testing for the Proposed Kapa'a Sewer line, Wailua, Olohena, Waipouli and Kapa'a, Kaua'i*, Cultural Surveys Hawaii, Kailua, HI.
- 1991b *Archaeological Subsurface Testing for the Proposed Kapa'a Sewerline, Wailua, Olohena, Waipouli and Kapa'a, Kaua'i*, Cultural Surveys Hawaii, Kailua, O'ahu.
- Hammatt, Hallett H., Rodney Chiogioji, Gerald K. Ida, and Victoria S. Creed  
1997 An Archaeological Inventory Survey for the Kuhio Highway Widening and Bypass Options within the Ahupua'a of Wailua, South Olohena, North Olohena, Waipouli & Kapa'a, Island of Kaua'i, with Appendix on Paleontology by Jerome Ward, Ph.D., Cultural Surveys Hawaii, Kailua, HI.
- Hammatt, Hallett H., Gerald K. Ida, and Rodney Chiogioji  
1994 Archaeological Document Review and Assessment of Three Alternative Widening and Bypass Options for the Kuhio Highway Within the Ahupua'a of Hanamaulu, Wailua, South Olohena, North Olohena, Waipouli & Kapa'a, Lihu'e and Kawaihau Districts, Island of Kaua'i, Revised 1994, Cultural Surveys Hawaii, Kailua, HI.

- Hammatt, Hallett H., Gerald K. Ida and William H. Folk  
 1994 Archaeological Inventory of a 1.87-Acre Parcel, Kapa'a, Kaua'i (TMK 4-5-05:6), Rev. August 1994, Cultural Surveys Hawaii, Kailua, HI.
- Hammatt, Hallett H. and David W. Shideler  
 2004 Archaeological Assessment of Alternative Routes Proposed for the Lydgate to Kapa'a Bike and Pedestrian Pathway Project Within the Ahupua'a of Wailua, South Olohena, North Olohena, Waipouli and Kapa'a, Cultural Surveys Hawaii, Kailua, HI.
- Hammatt, Hallett H., David W. Shideler and William H. Folk  
 2002 Archaeological Study in Support of Proposed Kuhio Highway Improvements (Kapa'a By-Pass) Hanama'ulu to Kapa'a Ahupua'a, Kaua'i, Cultural Surveys Hawaii, Kailua, HI.
- Handy, E.S. Craighill  
 1940 The Hawaiian Planter, Volume 1, Bishop Museum, Bulletin No. 161., Honolulu, HI.
- Handy, E.S. Craighill, and Elizabeth G. Handy  
 1972 Native Planters in Old Hawaii, Bishop Museum Press, Honolulu, HI.
- Hawaii State Archives  
 1837 Interior Department, Land, Incoming Letter. August 1837.
- 1882 Interior Department, Letter book, Vol. 20, p. 426, Letter from Spalding to the Honorable Jacob Hardy, Circuit Judge—Fourth Circuit Kauai
- Hawaii Territorial Planning Board  
 1940 Master Plan of the Town of Kapa'a, In collaboration with the Kaua'i County Board of Supervisors, Publication No. 8. Advertiser Publishing Co., Honolulu, HI.
- Honolulu Advertiser  
 1997 "Amfac to put more land up for sale: Tracts on Kaua'i, Big Island" by Mike Gordon. July 7, 1997. Section B1.
- 1960 "Kaua'i Tries to See into Future. March 20, 1960.
- Jarves, James Jackson  
 1844 Scenes and Scenery in the Sandwich Islands and a Trip through Central America 1837-42, J. Munroe and Co., Boston.

- Joesting, Edward  
 1984 Kaua'i, The Separate Kingdom, University of Hawaii Press and Kaua'i Museum Association, Ltd., Honolulu
- Jourdane, Elaine  
 1995 Inadvertent Discovery of Human Remains at 1382-A Inia Street, Kapa'a, Kaua'i (Kapa'a Sewerline Project Laterals) Site 626, SHPD, Honolulu, HI..
- Kalākaua, David  
 1888 The Legends and Myths of Hawaii, Charles L. Webster, (Reprint of three volumes published in 1877-85), New York.
- Kamakau, Samuel Manaiakalani  
 1961 Ruling Chiefs of Hawaii, The Kamehameha Schools Press, Honolulu, HI.
- Kamakau, Samuel Manaiakalani  
 1976 The Works of the People of Old, Bishop Museum Special Publication, No. 61, Honolulu.
- Kapa'a Elementary School  
 1933 Kapaa Elementary School, Kula O Kapa'a, 1883-1933, Published by the school on its fiftieth anniversary, Kapa'a, Kaua'i .
- 1983 Kapa'a School 1883 1983: A "Century of Knowledge". Kapa'a Elementary, Kapa'a, Kaua'i .
- Kawachi, Carol T.  
 1994 Inadvertent Burial at 1316 Inia Street (Jasper) TMK 4-5-08:33, Kapa'a, Kawaihau, Kauai 50-30-08-871, State Historic Preservation Division, Honolulu, HI.
- Keaweamahi, D.  
 1876 "Huakai makaikai ia Kauai." Ka Lahui Hawai'i, 10 & 17 August 1876. "Tour of Kauai." English Translation by M.K. Pukui. BMA: HEN Thrum #227.
- Kikuchi, William K. and Susan Remoaldo  
 1992 Cemeteries of Kaua'i, Vol. 1, Kaua'i Community College and University of Hawai'i, Puihi, Kaua'i .
- King, Robert D.  
 1935 "Districts in the Hawaiian Islands" In Coulter, John Wesley (compiler) A Gazetteer of the Territory of Hawaii, University of Hawaii Research Publications, No. 11, University of Hawaii, Honolulu, HI.
- King, Robert D., compiler  
 1942 Real Property, Appraisers Manual, Honolulu, HI.



Klass, Tim

- 1970 World War II on Kauai: Historical Research, Prepared for the Kauai Historical Society by The Westland Foundation, Portland, Oregon.

KRD (Kaua'i Renovation and Development - Kaipo Akana)

- 1994 Archaeological Monitoring of the Rock Wall Revetment for Burial Site - 746

Lai, Violet L. assisted by Kum Pui Lai

- 1985 He Was a Ram, Wong Aloiau of Hawaii, Published for the Hawaii Chinese History Center and the Wong Aloiau Association by University Press of Hawai'i, Honolulu.

Lydgate, J.M.

- 1917 Kaumuali'i, The Last King of Kaua'i, Hawaiian Historical Society, Annual Report No. 24, Honolulu.

Lydgate, John M.

- 1916 "The Pictured Rocks", The Garden Island, 22 February: 5.

MacDonald, G.A. and Abbott, A.T.

- 1970 Volcanoes in the Sea. University of Hawaii Press, Honolulu.

McMahon, Nancy A.

- 1996 Archaeological Inventory Survey for 5 Unit Apartment, TMK: 4-5-05:8, Kapa'a, Kawaihau, Kaua'i, Exploration Associates, Ltd., Koloa, Kauai, HI.
- 1994 Inadvertent Burial Find, Kapa 'a, Kawaihau, Kaua 'i, SHPD, Honolulu, HI
- 1993a Inadvertent Burial Discovery and Disinterment, Site 50-30-09-6011, State Preservation Division, DLNR, Honolulu, HI.
- 1992a Field Inspection Report for Site 50-30-04-1880, on file at State Historic Preservation Division.
- 1992b Field Inspection Report for Site 50-30-04-1881, on file at State Historic Preservation Division.
- 2012 An Archaeological Assessment for the Kapaa Highlands Phase II, TMK: (4) 4-3-03:01, Exploration Associates Ltd, Lihue, Kauai

Mitchell, Auli'i and Hallett Hammatt

- 2004 A Cultural Impact Assessment For A Proposed Water Reservoir, Kapa'a Ahupua'a, Kawaihau District, Kaua'i, TMKS 4-6-11.; 4-6-8:24, 4-6-03: 30, Cultural Surveys Hawaii, Kailua HI

Malo, David

- 1951 Hawaiian Antiquities, Bishop Museum Press: Honolulu.

Nakuina, Moses K.

- 1990 The Wind Gourd of La'amaomao, Translated by Esther T. Mookini and Sarah Nakoa, Kalamaku Press, Honolulu.

Office of the Commissioner of Public Lands

- 1929 Indices of Awards, Made by the Board of Commissioners to Quiet Land Title in the Hawaiian Islands.

Pacific Planning & Engineering, Inc.

- 1992 Environmental Assessment and Environmental Impact Statement Preparation Notice Kuhio Highway, Hanamaulu to Kapaa Project Number 56A-07-90, Kapa'a, Kaua'i, Hawai'i, For U.S. Department of Transportation Federal Highways Administration and State of Hawai'i, Department of Transportation Highways Division.

Perzinski, Mary and Hallett H. Hammatt

- 2001 A Summary of Archaeological Monitoring for the Kuhio Highway, Waikaea Bridge Widening Project Kapa'a Ahupua'a, Kawaihau District, Kaua'i Island (TMK: 4-3-06 to 4-3-08), Cultural Surveys Hawaii, Kailua, HI.

Porteus, Stanley B.

- 1962 A Century of Social Thinking in Hawaii, Pacific Books Publication, Palo Alto, CA.

Pukui, Mary Kawena

- 1983 Olelo No'oeau: Hawaiian Proverbs and Poetical Sayings, Bishop Museum Special Publication No.71, Bishop Museum Press, Honolulu.
- 1986 Hawaiian Dictionary, 2<sup>nd</sup> Edition, University of Hawaii Press, Honolulu, HI.

Pukui, Mary K., Samuel H. Elbert and Esther Mookini

- 1974 Place Names of Hawai'i, University of Hawai'i Press, Honolulu.

Rice, William Hyde

- 1923 Hawaiian Legends, Bernice P. Bishop Museum Bulletin 3, Honolulu..

Spear, Robert L.

- 1992c Letter Report Concerning Monitoring for the Cost-U-Less Project Kapa'a, Kaua'i, Hawai'i (TMK: 4-5-5:4&9), Scientific Consultant Services Inc.

Territorial Planning Board, Territory of Hawaii in collaboration with the County Board of Supervisors, County of Kaua'i

- 1940 Master Plan of the Town of Kapaa, County of Kauai, Hawaii, Publication No. 8, Advertiser Publishing Co., Ltd., Honolulu.

Thrum, Thomas G.

- 1906 "Heiaus and Heiau Sites Throughout the Hawaiian Islands, Kauai, in: Hawaiian Almanac and Annual 1907, pp. 36-48, Honolulu, HI.
- 1923 More Hawaiian Folk Tales, A.C. McClurg & Co., Chicago.
- 1998 Hawaiian Folk Tales: A Collection of Native Legends, Mutual Publishing, Honolulu.

Vancouver, George

- 1798 A Voyage of Discovery to the North Pacific Ocean and Round the World Performed in the Years 1790-95, 6 vols., John Stockdale, London.

Van Ryzin, Karl and Hallett H. Hammatt

- 2004 An Archaeological Assessment For The Proposed Water Reservoir, Kapa 'aAhupua 'a, Kaua 'i TMK 4-6-03:10 Cultural Surveys Hawai'i, Kailua, HI.

Wichman, Frederick B.

- 1998 Kaua'i Ancient Place Names and Their Stories. University of Hawaii Press: Honolulu.
- 1985 Kauai Tales, Bamboo Ridge Press, Honolulu, HI

Wilkes, Charles

- 1845? Narrative of the United States Exploring Expedition, During the Years 1838, 1839, 1840, 1841, 1842, 5 Vols. Lea and Blanchard, Philadelphia, Pa.

## APPENDIX

### Letters from Informants

DEC 4 2012 4:37PM

13 4618 3 171

I worked for Lihua Plantation from 1965-1984 in various jobs I worked in Kapaa 20, approximately 80-100 acres, of which TMK (4) 4-3-03-1 is a portion of this field. My father and uncles, also, worked in these fields in the 1930s-1970s. I worked in Kapaa 20 any other year as a bulldozer driver pushing cane as a crane operator and with the Plow department plowing this field. At no time did we ever see or hear of anyone finding any human remains or gravesites in this field. If you have questions or require additional information, please call me at 651-8978.

Stanley Vaquer  
 1757 Hula Rd  
 Kapaa HI 96746

December 30, 2011

To Whom It May Concern,

I Willie Sanchez was the first person to work in the area of TMK (4) 4-3-03-1 after Amfac Sugar sold the property. I started mowing the property in about 1999. The agricultural water system was abandoned and the interior ditches have become almost flat from non-use. I have never seen any historical or cultural items on this property. I mowed the property for about 5 years. The property is now overgrown with guinea grass and hale koa.

*Willie Sanchez*  
 Willie Sanchez



**Exhibit N**

**Comment Letters, Scoping Letters and Letters of Support**

**Bernard P. Carvalho, Jr.**  
Mayor

**Gary K. Heu**  
Managing Director



**DEPARTMENT OF PUBLIC WORKS**  
**County of Kaua'i, State of Hawai'i**  
4444 Rice Street, Suite 275, Lihue, Hawai'i 96766  
TEL (808) 241-4992 FAX (808) 241-6604

**Larry Dill, P.E.**  
County Engineer

**Lyle Tabata**  
Deputy County Engineer

January 4, 2012

Vladmir P. Devens, Chairperson  
Land Use Commission  
Department of Business, Economic Development, and Tourism  
State of Hawai'i  
P.O. Box 2359  
Honolulu, Hawai'i 96804-2359

**Subject:** Petition to amend the Land Use Boundary of certain lands situated at Kapa'a, Island of Kaua'i, State of Hawai'i, consisting of 97 acres from the Agriculture and Rural District, to the Urban District, Tax Map Key No. (4) 4-3-003:001, Kapa'a Highlands, Three Stooges, LLC

Dear Chairperson Devens:

This letter is to inform you of the County of Kaua'i, Department of Public Work's (County) general support of the Kapa'a Highlands petition to amend 97 acres in Kapa'a to the Urban District. The proposed amendment is for the development of 231 affordable housing units. The County is generally supportive of petitions that will provide affordable housing units in a manner consistent with the Kaua'i County General Plan.

We have met with the Petitioners, Three Stooges LLC, and we will work with them to ensure that any impacts from the project are analyzed and effectively mitigated.

Please call me at (808) 241-4996 if you have any questions.

Very truly yours,

Larry Dill, P.E.  
County Engineer

cc: Greg Allen  
Mayor Carvalho

*An Equal Opportunity Employer*



December 30, 2011

I worked for Lihue Plantation  
from 1963 - 1984 in various jobs  
I worked in Kapaa 20, approximately  
80-100 acres, of which TMK (4) 4-3-03-1  
is a portion of this field. My  
father and uncles, also, worked in  
these fields in the 1930's - 1970's I  
worked in Kapaa 20 every other year  
as a bulldozer driver pushing cane  
as a crane operator and with the  
Plow Department plowing this field  
At no time did we ever see or  
hear of anyone finding any  
human remains or gravesites in this  
field If you have questions or  
require additional information, please  
call me at 651-8978

To Whom It May Concern,

I Willie Sanchez was the first person to work in the area of TMK (4) 4-3-03-1 after Amfac Sugar sold the property. I started mowing the property in about 1999. The agricultural water system was abandoned and the interior ditches have become almost flat from non-use. I have never seen any historical or cultural items on this property. I mowed the property for about 5 years. The property is now overgrown with guinea grass and hale koa.

Willie Sanchez

Stanley Vasquez  
1737 Haina Rd  
Kapaa HI 96746

NEIL ABERCROMBIE  
GOVERNOR



KATHRYN S. MATAYOSHI  
SUPERINTENDENT

STATE OF HAWAII  
DEPARTMENT OF EDUCATION  
OFFICE OF THE COMPLEX AREA SUPERINTENDENT  
KAUAI SCHOOLS  
3060 Ewa Street, Room 305  
Lihue, Hawaii 96768

October 28, 2011

Mr. Greg Allen  
Kapaa Highlands Phase II Project  
Harbor Mall

Dear Mr. Allen:

This is a letter of support for the relocation of the County of Kauai, Kapaa Swimming Pool to the subdivision area of the Kapaa Highlands Phase II Project.

The project will provide an opportunity to have a recreational facility in an area away from the tsunami inundation zone due to the current location. The relocation of the Kapaa Swimming Pool will provide accessibility to swimming and recreational activities for the general population in the Kapaa area.

The proposed new location of the pool will be in close proximity to Kapaa Middle School for students, teachers and staff usage for educational purposes such as physical education, sports events, and water safety training.

The Kauai Complex Area supports your effort to relocate the pool. It will serve as an added resource to reach our educational and healthy Hawaii initiatives for our students in the Kapaa complex school area.

We look forward to reviewing your environmental studies to better understand the full impact of your proposed Kapaa Highlands Phase II Project.

Please feel free to call me at 274-3502 should you have any questions.

Aloha,

William N. Arakaki  
Kauai Complex Area Superintendent

cc: Mayor Bernard P. Carvalho, Jr.



P. O. Box 81 - Lihue, HI 96766  
phone 808.822.9447 ; fax 808.822.5075  
www.KauaiPath.org  
Pres@KauaiPath.org

registered 501(c)(3)

October 17, 2011

Commissioner Normand R. Lezy, Chairperson  
Land Use Commission  
Department of Business, Economic Development, and Tourism  
State of Hawaii  
PO Box 2359  
Honolulu, HI. 96804-2359

**RE: Petition to amend the Land Use Boundary of certain lands situated at Kapa'a, Island of Kaua'i, State of Hawaii, consisting of 97 acres from the Agriculture and Rural District to the Urban District, Tax Map Key No. (4)4-3-03:001. Kapa'a Highlands, Three Stooges, LLC**

Dear Commissioner Lezy,

Thank you for the opportunity for the Kauai Path, Inc. Board of Directors to offer our support for Kapa'a Highlands subdivision.

This proposed development as described to us by the developer appears to be consistent with smart, responsible growth. The planned development has the potential to serve the best interests of our communities. Preliminary plans we have been shown integrate community parks, green spaces, residential housing, and commercial areas. These elements promote a healthy and livable community.

Accordingly, it is our recommendation that if the Commission approves the applicants' request to change the property's zoning, such an approval should include conditions requiring the project to incorporate active transportation facilities. We recommend that these accommodations be designed with all users in mind. Such facilities should be described in a well-conceived circulation plan with provisions for safe bicycling and access to public transportation serving riders and pedestrians of all ages and abilities in compliance with Americans with Disabilities Act ("ADA") guidelines. The final plan

Kauai residents working together to preserve, protect, and extend access island-wide through the design, implementation, and stewardship of non-vehicular paths.

should include appropriate traffic calming features like roundabouts, back-in diagonal parking, sidewalks, bike lanes and/or multi-use paths, public transportation stop(s), safe crossing opportunities, and median islands. These concepts encompass a Complete Streets approach to urban development.

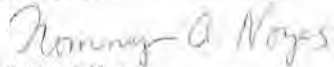
As a feature conducive to smart growth and urban in-fill projects, we further recommend the inclusion of a modest community center providing sundries, sanitary facilities, and preferably some type of commercial food service for neighbors, visitors to the public swimming pool, the project's residents, and the nearby Kapa'a Middle School campus.

Creating attractive multimodal transportation connections—not only within the project, but most importantly to the surrounding multimodal infrastructure as well—will help create a community where families can live, work, and play with less dependence on automobiles and enhanced opportunities for improved health.

Respectfully,



Sally Jo Manea, President Board of Directors,  
Kauai Path Inc.



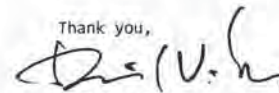
Tommy A Noyes  
Member of Board of Directors  
Kauai Path Inc.

Dear Land Use Commission,

10/14/11

This letter is to show my support for the Kapa'a Highlands subdivision. It has been many years since the Kapa'a Ahupua'a has had a new planned subdivision. Planned communities are superior to random growth because they integrate community parks, green spaces, commercial areas and housing in an organized, smart layout that benefits everyone. The Kapa'a Highlands subdivision will be a planned community. It promises a healthy and livable community that will provide some work force housing which is sorely needed. I ask that you give the Three Stooges LLC and Kapa'a Highlands your approval.

Thank you,



David Vickers

Island Truss



October 14, 2011

Land Use Commission  
Department of Business, Economic Development, and Tourism  
State of Hawai'i  
P.O. Box 2359  
Honolulu Hawai'i 96804-2359

Re: Petition to amend the Land Use Boundary of certain lands situated at Kapa'a, Island of Kaua'i, State of Hawai'i, consisting of 97 acres from the Agriculture and Rural District to the Urban District, Tax Map Key No. (4)4-3-03:001. Kapa'a Highlands, Three Stooges, LLC.

Dear Land Use Commissioners,

I am writing in support of the Kapaa Highlands project. As a person who has a degree in Urban Planning I believe this project has many of the features of a true smart growth community and will be a welcomed and vital addition to the Kapaa community. The project is close to town center making it a walkable community. It is also near a public transportation site. The plans are also asking for some limited mixed use within the community which could provide shopping and jobs within walking distance for residents. The project will allow the middle school to in effect expand into the park area and provide them with use of a pool (a needed addition since the nearby Kapaa pool is in need of repair.

The community will have a good density with single family homes duplexes and apartments. The plan is to make this community affordable for the average person which is most needed. The so called "gap housing" is often neglected on Kauai. They are incorporating parks and green space and the community is across the street from the Kapaa Park which will be a great addition for the kids of the community. The community will be walkable and bike able and they are looking to extend a spoke of the eastside bike path to the community. All streets are planned to be complete and therefore safe for all modes of transportation. The developers will be dedicating the bypass road to the state which is necessary for the development of Kapaa. The current circle at the bypass is a very safe feature for pedestrians and bicycles.

There are so many good and thoughtful smart growth considerations in this community that it should be approved and built. In addition this is one of the best uses for this land that is so near to central Kapaa.

Thank you for your consideration of this project, which I feel should be approved overwhelming.

Sincerely,

Neil J Clendeninn, MD, PhD, MS-arch  
PO Box 1005, Hanalei, HI 96714  
[cybermad@msn.com](mailto:cybermad@msn.com)  
808-294-0660

**KURT R. BOSSHARD**

ATTORNEY AT LAW  
3144 ELUA STREET  
LIHUE, HAWAII 96766  
TELEPHONE 808-245-5302  
FAX 808-245-0929

October 6, 2011

Re: TMK 4-3-03-001

To Whom It May Concern:

I am the President of Kapaa Solar LLC. In 2010, Kapaa Solar LLC entered into with its owners who are the applicants herein, a lease/purchase and option to purchase portions of TMK 4-3-03-001. Construction of Kapaa Solar LLC's approximately 1.2 megawatt facility which will feed the Kauai Island Utility Cooperative's grid was successfully completed in December 2010. Construction was completed without placing any encumbrances upon the real property. And, in fact should the owner/applicant successfully complete the subdivision of the property, Kapaa Solar hopes to purchase several of the agriculturally zoned condominium units where the solar farm is located. The Kurt Bosshard Trust, of which I am the Trustee, has been the first mortgage holder as to the property since 2001.

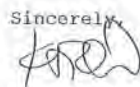
I presently engage in other agricultural pursuits on approximately 30 additional acres of this property. Presently, the property is used for pasturage but my intention is to engage in more intensive farming activities should I be able to obtain subdivided lots/units where I am now farming. These activities would include aquaculture and fish farming, as I own an adjacent kuleana which has access to water. In these regards, I have had the Kauai Community College Chancellor and faculty members at the site who have shown interest in working with me to move such a project forward. KCC has a "sustainability" curriculum and it would like to place its graduates into such projects.

I have been a resident of Kauai's east side since 1976 and believe I have significant knowledge of this property, development in this area, and the communities' needs and concerns. Kapaa Solar LLC and the Bosshard Trust believe that the development of the property as proposed by the owners is in the communities' best interests as outlined in the application presently pending your approval. It is unfortunate that this land was not available in the year 2000 and thereafter when growth in the Kapaa area was forced to spread out away from the Kapaa urban area. It would be a shame should the same pressures for growth again emerge and the land not be available for reasonable urban expansion to meet the needs of Kauai's east and north sides. Timely approval of the

To Whom It May Concern  
October 6, 2011

owners' application would be a significant step towards proper planning for the area and the communities' benefit.

I am available to respond to any questions you may have as to any of the foregoing and appreciate your attention to these matters.

Sincerely,  


KURT BOSSHARD  
President, Kapaa Solar LLC  
Trustee, Kurt Bosshard Trust

KB:tes

COUNTY COUNCIL  
JAY FURFARO, CHAIR  
JOANN A. YUKIMURA, VICE CHAIR  
TIM BYNUM  
DICKIE CHANG  
KIPUKAI KUALI'I  
NADINE K. NAKAMURA  
MEL RAPOZO



4396 RICE STREET, SUITE 209  
LIHU'E, KAUAI, HAWAII 96766  
E-mail: cokcouncil@kauai.gov

October 5, 2011

Records

OFFICE OF THE COUNTY CLERK  
Council Services Division  
Elections Division

PETER A. NAKAMURA, County Clerk  
EDUARDO TOPENIO, JR., Deputy County Clerk

Telephone: (808) 241-4188  
Facsimile: (808) 241-6349

Normand R. Lezy, Chairperson  
Land Use Commission  
State of Hawaii  
Department of Business, Economic Development, and Tourism  
P.O. Box 2359  
Honolulu, Hawaii 96804-2359

Dear Chairperson Lezy:

**RE: Petition To Amend The Land Use Boundary Of Certain Lands Situated At Kapa'a. Island of Kaua'i, State of Hawai'i, Consisting Of 97 Acres From The Agriculture And Rural District To The Urban District, Tax Map Key No. (4)4-3-03:001. Kapa'a Highlands, Three Stooges, LLC.**

Thank you for the opportunity to offer my support in my individual capacity as a member of the Kaua'i County Council for the amendment of 97 acres in the Urban State Land Use District.

I have been assured that the Petitioners, Three Stooges, LLC, continues to work directly with various County departments in order to follow all County ordinance requirements.

The proposed amendment is expected to provide 231 affordable housing units, both single family and multi-family types of structures.

The Petitioners are dedicated to creating a multi-use development that serves the best interest of its surrounding community and is consistent with smart, responsible growth.

Thank you for allowing me this opportunity to provide my support as an individual member of the Kaua'i County Council.

U:2011 memos & letters/CMBynumSupportLTRtoLUCChairperson/IT:mpw

AN EQUAL OPPORTUNITY EMPLOYER


Test leg



Norman R. Lezy, Chairperson  
October 5, 2011  
Page 2

Should you have any questions, please feel free to contact me at (808) 241-4188.

Sincerely,

  
TIM BYNUM  
Councilmember  
Kaua'i County Council

10/04/2011 12:14 FAX 8082464847

P Childs Atty at Law

001

NEIL ABERCROMBIE  
GOVERNOR OF HAWAII



GARY L. HOOSER  
DIRECTOR

STATE OF HAWAII  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
235 SOUTH BERETANIA STREET, SUITE 702  
HONOLULU, HAWAII 96813

In reply, please refer to  
File

October 3, 2011

Patrick J. Childs  
Suite 104  
4365 Kukul Grove Street  
Lihue, Hawaii 96766

Dear Mr. Childs:


**Subject: Kapaa Highlands Phase II, Petition for District Boundary Amendment, TMK:  
4-4-02-01 por. Kauai**

Am in receipt of your letter requesting the Office of Environmental Quality Control (OEQC) to "...confirm through your office that there is no specific requirement for an EA at this time."

Based on the information presented in your letter, it appears that this action involves an application before the Land Use Commission requesting the redistricting of 97 acres of agricultural land into urban. In this case, the determination as to whether or not this application triggers HRS Chapter 343 would be made by the LUC. It is my understanding that changing the land use designation as described does not by itself trigger HRS Chapter 343, however depending on the extent and nature of the planned development, a permitting agency may determine otherwise. Furthermore, depending on the developments ultimate impact on adjacent State highways, the Department of Transportation should also be consulted. I would be pleased to meet and discuss this project or any issues of concern or questions that you might have, should you believe that would be helpful.

*NOTE: The OEQC is not authorized to determine or enforce compliance with HRS Chapter 343, nor does it have legal authority to approve or disapprove exemptions, EA's or EIS documents. The OEQC policy on such requests is to consult and offer general guidance based on our understanding of HRS Chapter 343 and past practice with regards to its implementation, but to refrain from issuing specific opinions on specific projects, except that the OEQC may make a recommendation as to the acceptability of a final statement upon request. Not only does the OEQC not have the legal authority to direct compliance or make determinations, the office also lacks the resources to effectively analyze specific projects, conduct site visits and in general conduct the due diligence needed to properly evaluate a projects impacts and potential Chapter 343 compliance issues. The responsibility for such analysis and determinations rests solely on the permitting and approving or accepting agency.*

Sincerely,

  
Gary Hooser, Director  
Office of Environmental Quality Control

Bernard P. Carvalho, Jr.  
Mayor



Michael A. Dahilig  
Interim Director of Planning

Gary K. Heu  
Managing Director

Dee M. Crowell  
Deputy Director of Planning

**PLANNING DEPARTMENT**  
County of Kaua'i, State of Hawai'i  
4444 Rice Street, Suite A-473, Lihue, Hawai'i 96766  
TEL (808) 241-4050 FAX (808) 241-6699



*Water has no substitute.....Conserve it*

August 22, 2011

August 31, 2011

Max W. J. Graham, Jr.  
BELLES GRAHAM PROUDFOOT WILSON & CHUN, LLP.  
Watumull Plaza  
4334 Rice Street, Suite 202  
Lihue, Hawai'i 96766-1388

**RECEIVED**  
SEP -6 2011  
BELLES GRAHAM PROUDFOOT  
WILSON & CHUN, LLP

Subject: KAPA'A HIGHLANDS SUBDIVISION – Subdivision of Parcel 1, Being a Portion of Grant 5266 to Rufus P. Spalding Into Lots 1 to 13, Inclusive, Kapa'a and Waipōuli, Kaua'i, Hawai'i. (S-99-45, Allen Family LLC/Moloa'a Bay Ventures, LLC/Three Stooges, LLC)

An extension until **AUGUST 31, 2012** to file final subdivision maps has been approved by the Planning Commission at their meeting held on August 30, 2011. The Applicant shall submit an updated status report on the subdivision that includes a detailed time chronology on the progress of the tentative approval requirements and it shall be submitted to the Planning Department no later than six (6) months from that date of the extension approval.

MICHAEL A. DAHILIG  
Interim Director of Planning

cc: CoK – Public Works Dept.  
CoK – Water Dept.  
CoK – Real Property Div. – Assessment  
State Health Dept.

*An Equal Opportunity Employer*

Mr. Gregg Allen  
161 Wailua Road  
Kapaa, HI 96746

Dear Mr. Allen:

Subject: Water Master Plan for the Kapa'a Highlands Project on TMK: 4-3-03:001

At the Department of Water, Water Board July 28<sup>th</sup> 2011 meeting, via Managers Report 12-10, in response to your letters of April 22, 2011 and May 11, 2011, accepted the proposed exchange of source for storage on a dollar for dollar basis. This acceptance is based on your commitment to proceed with zoning changes in your development to match the county zoning. That zoning change requires affordable housing in certain portions of your proposed development.

This acceptance is based on building permits and County water meter service not being issued if the source and storage requirements have not been completed as of the date of requested building permit approval. We ask that you submit a proposed draft of an agreement to memorialize this action. We would expect that this agreement runs with the land.

If you have any questions, please contact Mr. Gregg Fujikawa at (808) 245-5416.

Sincerely,

David R. Craddick, P.E.  
Manager and Chief Engineer

GF/WE:bdm  
Bill/Gregg Allen Response Letter/July Board Mtg.

**Bernard P. Carvalho, Jr.**  
Mayor



**Michael A. Dahilig**  
Director of Planning

**Gary K. Heu**  
Managing Director

**PLANNING DEPARTMENT**  
**County of Kaua'i, State of Hawai'i**  
4444 Rice Street, Suite A-473, Lihu'e, Hawai'i 96766  
TEL (808) 241-4050 FAX (808) 241-6699

**Dee M. Crowell**  
Deputy Director of Planning

Also, please be advised that recent court decisions and legislation have had an impact on HRS Ch. 343 triggers. You may want to consult other state and county agencies that deal with land development to discuss any change in their particular requirements.

If you have any questions, please feel free to call me, or Deputy Director Dee Crowell at (808)241-4050, or email [dcrowell@kauai.gov](mailto:dcrowell@kauai.gov).



**MICHAEL A. DAHILIG**  
Planning Director

4 March 2011

Agor Architecture, LLC  
424 Ena Road, Suite 206A  
Honolulu, HI 96815

Re: **Kapa'a Highlands Phase II**  
Petition for District Boundary Amendment  
TMK: 4-4-03: 01 Por.

Dear Mr. Agor:

Mahalo, for providing information to us on your proposed project. In reviewing your Draft EA and Petition, we note that you propose to apply to the State Land Use Commission to redesignate approximately 97 acres of land, from the Agriculture State Land Use District to the Urban State Land Use District. The proposed area is located adjacent to, and south and east of the existing Kapa'a Middle School.

The area is located in the Agriculture Zoning District. From a map and text review of the 2000 General Plan, we note that the area was redesignated from Agricultural to Urban Center and Residential Community. It appears that the 97 acres is located totally within the General Plan Urban Center area. Because of the conceptual nature of your submittal, we cannot locate the exact area of your project on our General Plan Map. However, General Plan designations do allow for some flexibility in interpretation and we may be able to make minor adjustments. Be aware that the Land Use Commission will require a metes and bounds description of the area you propose to redesignate.

Therefore, because your proposed project appears to be in conformance with the General Plan of the County of Kaua'i, and HRS Ch. 343 is not triggered by any requirements of the Planning Department. We have no comments to offer on the particulars of your project at this time.

Bernard P. Carvalho, Jr.  
Mayor



Gary K. Heu  
Managing Director

OFFICE OF THE MAYOR  
County of Kaua'i, State of Hawai'i  
4444 Rice Street, Suite 235, Lihue, Hawai'i 96766  
TEL (808) 241-4900 FAX (808) 241-6877

March 1, 2011

Mr. Greg Allen  
161 Wailua Road  
Kapa'a, Hawai'i 96746

Dear Greg:

Allow me to extend my deepest Mahalo and congratulations for the recent dedication of the Kapa'a solar project. This is such a huge accomplishment and will benefit Kaua'i for many years to come. I know you played a significant role in its development and hope that you know we are very grateful for your efforts.

I'm also hopeful your plans for additional housing for Kapa'a will move forward expeditiously, as this project could also provide many benefits such as affordable housing and community facility assets – especially for the nearby schools.

Best wishes, Greg, for continued success and Mahalo again for your contribution to Kaua'i's renewable energy future!

Sincerely,

A handwritten signature in black ink, appearing to read "Bernard P. Carvalho, Jr.", written over a horizontal line.

Bernard P. Carvalho, Jr.  
Mayor

*An Equal Opportunity Employer*

Bernard P. Carvalho, Jr.  
Mayor



Gary K. Heu  
Managing Director

OFFICE OF THE MAYOR  
County of Kaua'i, State of Hawai'i  
4444 Rice Street, Suite 235, Lihue, Hawai'i 96766  
TEL (808) 241-4900 FAX (808) 241-6877

December 9, 2010

Vladimir P. Devens, Chairperson  
Land Use Commission  
Department of Business, Economic Development, and Tourism  
State of Hawai'i  
P.O. Box 2359  
Honolulu, Hawai'i 96804-2359

Re: Petition to amend the Land Use Boundary of certain lands situated at Kapa'a, Island of Kaua'i, State of Hawai'i, consisting of 97 acres from the Agriculture and Rural District to the Urban District, Tax Map Key No. (4) 4-3-03: 001. Kapa'a Highlands, Three Stooges, LLC.

Dear Chairperson Devens:

Thank you for the opportunity to offer my support for the amendment of 97 acres in the Urban State Land Use District.

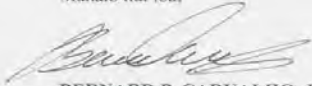
The Petitioners, Three Stooges, LLC, have continued to work directly with various County departments to ensure this development project follows all County ordinance requirements and mitigates any adverse impacts during construction.

The proposed amendment will provide 231 affordable housing units in a manner consistent with the County of Kaua'i's General Plan. The development will provide single and multi-family housing as well as various public facilities to support its close proximity to Kapa'a Middle School and the urban areas of Kapa'a town.

Furthermore, Petitioners are dedicated to creating a multi-use development that serves the best interest of its surrounding community. This is consistent with the smart, responsible growth that I envision for the island of Kaua'i, to create communities where families can live, work and play.

For these aforementioned reasons, I support the petition to amend the land of 97 acres to the Urban District.

Mahalo nui loa,



**BERNARD P. CARVALHO, JR.**  
Mayor, County of Kauai

LINDA LINGLE  
GOVERNOR



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
KAPAA DISTRICT  
1420 KALEI DRUMMOND STREET  
KAPAA, HAWAII 96761

MICHAEL D. FORMBY  
INTERIM DIRECTOR

Deputy Directors  
FRANCIS PAUL KEENO  
JERO A. SUMARA

IN REPLY REFER TO

HWY-K 4.100528

November 3, 2010

Vladimir P. Devens, Chairperson  
Land Use Commission  
Department of Business, Economic Development, and Tourism  
State of Hawaii  
P.O. Box 2359  
Honolulu, Hawaii 96804-2359

Dear Chairperson Devens:

Subject: Petition to amend the Land Use Boundary of certain lands situated at Kapaa, Island of Kauai, State of Hawaii, consisting of 97 acres from the Agriculture and Rural District, to the Urban District, Tax Map Key No. (4) 4-3-03: 001  
Kapaa Highlands  
Three Stooges, LLC

We are writing in general support of the Kapaa Highlands petition to amend 97 acres in Kapaa to the Urban District. The proposed amendment is for the development of 231 affordable housing units. The Department of Transportation is generally supportive of petitions that will provide affordable housing units in a manner consistent with the Kauai County General Plan.

We have met with the Petitioners, Three Stooges LLC, and we will work with them to ensure that any traffic impacts from the project are analyzed and effectively mitigated

If you have any questions, please call me at 241-3006.

Sincerely,



**RAYMOND J. MC CORMICK, P.E.**  
District Engineer

SMI:JI  
cc: Ron Agor



LINDA LINGLE  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION  
601 KAMOKILA BOULEVARD, ROOM 555  
KAPOLEI, HAWAII 96707

June 28, 2010

LOG NO: 2010.2441  
DOC NO: 1006MV50

LAURA H. THELEN  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

RUSSELL Y. TSUJI  
FIRST DEPUTY

KEN C. KAWAHARA  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONSERVATION  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
BUREAU  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAHOOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

Bernard P. Carvalho, Jr.  
Mayor

Gary K. Heu  
Administrative Assistant

March 2, 2010

Mr. Greg Allen  
161 Wailua Road  
Kapa'a, HI 96746



KAUAI COUNTY HOUSING AGENCY  
Pi'ikoi Building 4444 Rice Street Suite 330  
Lihue Hawaii 96766

Eugene K. Jimenez  
Housing Director

COPY

Greg Allen, Kapaa Highlands Inc.  
161 Wailua Road  
Kapaa, HI 96746

**SUBJECT: Historic Preservation Review-  
Consultation Letter on TMK [4]-4-3-003:001, Kapa'a Kauai**

Thank you for the opportunity to provide a current determination letter on the property with TMK# [4]-4-3-003:001. According to our records, there has not been an Archaeological Inventory Survey (AIS) of this property. In addition, Archaeological Inventory Surveys of nearby properties (TMK [4]-4-3-003:004 and TMK [4]-4-3-003:005) recorded multiple historic properties (SHPD Log No. 2008.1916). However, aerial photos indicate that this property was previously cultivated with sugar cane, which may have destructive implications for pre and post-contact Native Hawaiian sites within the project area. However, current aerial photos indicate the presence of potentially historic irrigation features as well as terrain that may not have been subject to intensive cultivation.

The historic preservation requirements for any proposed action within this project area would vary depending on the extent of the action's impact on the parcel. If the action were to take place on previously cultivated land the only historic preservation requirement would be to document the irrigation features. However, if the action takes place in a part of the property that was not cultivated an Archaeological Inventory of that area may be required. It would be highly beneficial for all proposed actions to have an Archeological Inventory Survey for the entire property in order to document the presence or absence of historic sites in this parcel.

Please call Mike Vitousek at (808) 692-8024 if you have any questions or concerns regarding this letter.

Aloha,

Nancy McMahon, Deputy SHPO/State Archaeologist  
and Historic Preservation Manager

**SUBJECT:** In the Matter of the Petition of KAPA'A HIGHLANDS, THREE STOOGES, LLC, to Amend the Land Use District Boundary of Certain Lands Situated at Kapa'a, Island of Kaua'i, State of Hawai'i, Consisting of 97 Acres from the Agriculture and Rural District, To the Urban District, TAX MAP KEY NO. (4) 4-3-03: 01 (por.)

Dear Mr. Allen,

Thank you for the opportunity to review your preliminary Petition for District Boundary Amendment of 97 acres into the Urban State Land Use District. We are aware that a portion of TMK (4) 4-3-03:01 has been designated Urban Center by the Kaua'i County General Plan since the 1980's. The property is contiguous to and in close proximity to the coastal urban areas of Kapa'a Town, yet sits at a higher elevation and abuts the Kapa'a Middle School. The Petitioner proposes to develop single and multi-family housing as well as public facilities on the redistricted land. For the foregoing reasons, we support the petition to amend the land into the Urban District.

Please be advised that under current law, at the time of zoning amendment, the project area will be subject to Ordinance No. 860, the Housing Policy for the County of Kaua'i. The Ordinance requires the development of workforce housing targeted to Kaua'i residents earning from up to 80% to 140% of the Kaua'i Median Household Income. Ordinance No. 860 requires the fee-simple sale of workforce housing equivalent to thirty (30%) of the market units, which may be reduced to a minimum of fifteen percent (15%) through the use of incentives. We anticipate that the subject project would comply with all County ordinance requirements, and that our comments will be sought in the Land Use Commission's formal petition review.

Sincerely,

EUGENE K. JIMENEZ  
Housing Director

cc: Ron Agor, AIA; Imai Aiu, Planning



BERNARD P. CARVALHO JR.  
MAYOR

GARY K. HEU  
ADMINISTRATIVE ASSISTANT



COUNTY OF KAUAI  
PLANNING DEPARTMENT  
4444 RICE STREET  
KAPULE BUILDING, SUITE A473  
LIHUE, KAUAI, HAWAII 96766-1326

TELEPHONE: (808) 241-4050 FAX: (808) 241-6699

COPY

IAN K. COSTA  
DIRECTOR OF PLANNING

IMAICALANI P. AIU  
DEPUTY DIRECTOR OF PLANNING

BERNARD P. CARVALHO, JR.  
MAYOR

GARY K. HEU  
ADMINISTRATIVE ASSISTANT



AN EQUAL OPPORTUNITY EMPLOYER  
COUNTY OF KAUAI  
DEPARTMENT OF PUBLIC WORKS  
4444 RICE STREET  
MO'IKEHA BUILDING, SUITE 275  
LIHUE, KAUAI, HAWAII 96766-1340

December 22, 2009

DONALD M. FUJIMOTO  
COUNTY ENGINEER  
TELEPHONE 241-4992

EDMOND P.K. RENAUD  
DEPUTY COUNTY ENGINEER  
TELEPHONE 241-4992

January 5, 2010

To: Ransom A.K. Piltz, Chairperson  
Department of Business, Economic Development & Tourism  
State of Hawaii  
P.O. Box 2359  
Honolulu, Hawaii 96804-2359

Subject: Petition to amend the Land Use District boundary of certain lands situated at Kapa'a, Island of Kaua'i, State of Hawaii, consisting of 97 acres from the Agriculture and Rural District, to the Urban District, Tax Map Key no. (4)4-3-03:01. Kapa'a Highlands, Three Stooges LLC

Aloha Chair Piltz,

We are writing in general support of Three stooges LLC's petition to amend 97 acres in Kapa'a to the Urban district. The proposed amendment is in conformance with the County of Kaua'i's General Plan and will provide 231 units of affordable housing. Affordable housing remains an acute need on Kaua'i, even with a falling real estate market and as such the County is generally supportive of any petition that proposes additional affordable housing, particularly when contiguous to developed urban areas, infrastructure and consistent with our General Plan.

Sincerely,

IAN K. COSTA

Planning Director, County of Kaua'i

CC: Ron Agor

Mr. Greg Allen  
161 Wailua Road  
Kapa'a, Hawaii 96746

SUBJECT: PROPOSED KAPA'A HIGHLANDS RESIDENTIAL DEVELOPMENT

Dear Mr. Allen:

We acknowledge receipt of your email dated September 24, 2009 for the proposed project and offer the following comments:

1. The proposed project will be connected to the Wailua Wastewater Treatment Plant (WWTP) via a connection to the County's Wailua-Kapa'a sewer system in the vicinity of Olohena Road. The on-site and any necessary off-site extension of a sewer collection system will need to be designed and constructed as part of the development, and may either be a privately owned and operated collection system, or may be designed and constructed with the intent to convey the new collection system to the County. In either case, the system should be designed and constructed pursuant to County standards.
2. The concept plan map submitted does not show proposed sewer utility lines. All appurtenant sewer collection system improvements necessary to serve the development will be designed and installed by the developer. As such, sewer connection charges (SCC) will be waived as provided by the County's sewer ordinance.
3. Based on the proposed 769 single-family and multi-family residential units to be developed, at the current rate of \$3,900.00 per unit, the Wastewater Treatment Capacity Assessment (WTCA) is in the amount of \$2,999,100.00. The WTCA shall be paid prior to any final subdivision or building permit approvals.
4. Please note that a preliminary engineering report (PER) is required to evaluate the adequacy of the existing and proposed sewer collection system and treatment plant capacity. The PER shall be submitted for our review and approval. The PER should include sufficient detail to allow the County to verify that the proposed sewer system will comply with County Standards, identify the anticipated flow to the County's

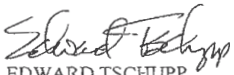
Mr. Greg Allen  
December 22, 2009  
Page No. 2

sewer system, and to evaluate whether improvements to the existing County sewer system will be needed to serve the development. In the event the project will be developed in phases, please indicate the approximate schedule for phasing of the project, to allow the County to identify impacts from the project on the County's wastewater system, including the flow projections for the Wailua WWTP.


5. Prior to start of any sewer system construction, plans need to be submitted for our review for compliance with sewer design standards.
6. Depending on the extent of necessary improvements to the County's wastewater system, applications for sewer service by others, and project phasing and build-out flows to the Wailua WWTP, there may need to be improvements at the WWTP prior to the County having adequate capacity for the full build-out of the project.

Should you have questions, please contact Valentino Reyna at (808) 241-4083.

Very truly yours,

  
EDWARD TSCHUPP  
Chief, Wastewater Management Division

CONCUR:

  
DONALD M. FUJIMOTO  
County Engineer

VR

cc: Engineering Division  
Planning Department

---

## GAllen

**From:** Tadani, Curtis [ctadani@kiuc.coop]  
**Sent:** Thursday, September 06, 2007 9:44 AM  
**To:** gallen@harbormall.net  
**Cc:** Pascual, Ferdinand  
**Subject:** Kapaa Highlands

Hi Greg,

I got your message and the plans that you brought in were already approved and signed off by us on June 27, 2005 so as far as we're concerned, it should be okay. But if you need to do anything different that will affect the electrical plans, than you should revise them and resubmit them to us for further review. Let me know if anything happens after your Planning Commission meeting next week that will affect the design of the subdivision and more so the electrical portion.

Thanks,

Curt K. Tadani  
Eastside Distribution Planner  
Kauai Island Utility Cooperative  
Ph: 246-4356  
Fax: 246-4332  
Email: [ctadani@kiuc.coop](mailto:ctadani@kiuc.coop)

ELEC  
Plans  
OK

BRYAN J. BAPTISTE  
MAYOR

IAN K. COSTA  
DIRECTOR OF PLANNING

GARY K. HEU  
ADMINISTRATIVE ASSISTANT

IMAICALANI P. AIU  
DEPUTY DIRECTOR OF PLANNING

COUNTY OF KAUAI  
PLANNING DEPARTMENT  
4444 RICE STREET  
KAPULE BUILDING, SUITE A473  
LIHUE, KAUAI, HAWAII 96786-1326  
TEL (808) 241-6677 FAX (808) 241-6609

May 29, 2007

Max Graham, Jr.  
Belles Graham  
Proudfoot & Wilson  
4334 Rice Street, Suite 202  
Lihue, Kauai HI 96766

SUBJECT: TMK: 4-3-003:001  
Kapa'a and Waipouli, Kauai

In response to your letter dated April 16, 2007 concerning the Kapa'a and Waipouli property Tax Map Key (TMK) 4-3-003:001, the subject property is approximately 163.125 acres in size. The State Land Use Commission (SLUC) designates the entire 163.125 acres of the subject property as Agriculture. The County General Plan designates approximately 97.654 acres Urban-Center, 33.685 acres Open, and 31.787 Agriculture. The Comprehensive Zoning Ordinance has the property zoned approximately 127.305 acres Agriculture (A) and 35.820 acres Open (O).

Please understand that the contents of this letter reflect the regulations and/or requirements that are currently in effect and being administered by this Department. These regulations are subject to change. Additionally, we recommend that you also check with other governmental agencies which may administer regulations and requirements that relate to development on this property and/or the proposed use.

Attached is a copy of a map showing the SLUC District boundaries on the subject property.

Should you have any questions, please contact Ka'ama Hull of my staff at 241-6677.

Sincerely,

  
IAN K. COSTA  
Director of Planning

Attached.

AN EQUAL OPPORTUNITY EMPLOYER

2-16-2010 8:54AM FROM BUSSHARD/BRUNSTEIN 808 245 8929

P. 2

Dec-19-99 12:40P GREG KAMM

1 808 7421751

P. 02

12/18/99

SELWAGE J. CAYetano  
GOVERNOR OF HAWAII



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
HISTORIC PRESERVATION DIVISION  
Kahala Annex Building, Room 565  
801 Kamehameha Boulevard  
Kapolei, Hawaii 96707

TIMOTHY E. JOHNS, CHAIRPERSON  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCES MANAGEMENT

DEPUTIES  
JANET L. RAWELD  
LUNEL NISHIOKA

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
CONSERVATION AND RESTORATION  
ENFORCEMENT  
CONVEYANCES  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND  
STATE PARKS  
WATER RESOURCE MANAGEMENT

December 14, 1999

Mr. Greg Kamm  
P.O. Box 1200  
Koloa, HI 96756

LOG NO: 24572  
DOC NO: 9912NM02

Dear Mr. Kamm:

SUBJECT: Chapter 6E-42, Historic Preservation Review --  
Subdivision Permit Application S-99-45 (Silagi Family Trust  
and Hillside Corp. Center L.L.C.)  
TMK: 4-3-03: 01 por  
Kapa'a, Kawaihau, Kaua'i

Thank you for submitting the 1975 air photo of the above subject parcels. We agree that the land has been extensively altered by cane cultivation and filling. Therefore, we now believe that this project will have "no effect" on significant historic sites.

If you have any questions, please call Nancy McMahon at 742-7033.

Aloha,

  
DON HIBBARD, Administrator  
State Historic Preservation Division

NM:lm

c: D. Crowell, Planning Department County of Kauai

From: [Heidi\\_Meeker/FacilDev/HIDOE@notes.k12.hi.us](mailto:Heidi_Meeker/FacilDev/HIDOE@notes.k12.hi.us)  
[mailto:[Heidi\\_Meeker/FacilDev/HIDOE@notes.k12.hi.us](mailto:Heidi_Meeker/FacilDev/HIDOE@notes.k12.hi.us)]  
Sent: Wednesday, April 25, 2012 11:24 AM  
To: [PeterYoung@Hookuleana.com](mailto:PeterYoung@Hookuleana.com)  
Subject: Kapaa Highlands II - Draft Language in EA

Heidi Meeker/FacilDev/HIDOE

To: Jeremy Kwock/FacilDev/HIDOE@HIDOE,

cc

04/25/2012 10:40 AM

Subject: Kapaa Highlands II - Draft Language in EA [Link](#)

Hello Peter,

I appreciate the opportunity to review the education section of the DEA for Kapaa Highlands.

1. Publication of our worksheet

We didn't have a problem with responding to your specific request for a hypothetical impact worksheet, but the sheet itself was marked for discussion purposes only. We have a real problem with the publication of an impact fee work sheet for an impact fee district that doesn't exist, with no current plans to proposed one. The sheet doesn't serve any real purpose for Kapaa Highlands and could be grossly misinterpreted if it was applied to other proposed projects.

2. There's no impact district

Your narrative never states in plain language that there is no school impact fee district in Kapaa, or any where else on the island. The conclusion seems to be buried: we will not be asking the Kapaa Highlands project for any contributions or fees at this point in time. We do not have any current plans to propose an impact district in Kapaa. However, it is possible that a future impact district may cover Kapaa. In that event, Kapaa Highlands may be required to pay impact fees, based on the fee schedule established for the district.

3. Capacity figure

We would prefer that the capacity figures you use be labeled "Classroom Utilization Report 2007-2008" and "CUR 07-08". The annual Classroom Utilization Report was not strictly an inventory of classroom space, it relied on other data such as faculty and staff counts.

We don't have a problem with your estimated student count, but would like the Student Generation Rate to be identified as an estimated Kapaa-area-only SGR.

We don't have a problem with your general assessment that there is sufficient capacity in the Kapaa schools at this point in time to accommodate the students who will reside in the Highlands project.

Please get back to me if you have questions.

Heidi Meeker - [heidi\\_meeker@notes.k12.hi.us](mailto:heidi_meeker@notes.k12.hi.us)  
Planning Section  
Department of Education/Facilities Development Branch  
Kalani High School TB1B  
4680 Kalaniana'ole Highway  
Honolulu, 96821  
Ph.808-377-8301



Exhibit O

Kaua'i County Planning Commission  
Tentative Subdivision Approval for HoKua Farm Lots  
June 19, 2014

Jan Kimura  
Chair

Angela Anderson  
Vice-Chair

Hartwell Blake  
John Isobe  
Wayne Katayama  
Sean Mahoney  
Amy Mendonca  
Members



PLANNING COMMISSION  
County of Kaua'i, State of Hawai'i  
4444 Rice Street  
Kapule Building, Suite A-473  
Lihu'e, Hawai'i 96766-1326  
TEL (808) 241-4050 FAX (808) 241-6699

Michael A. Dahilig  
Clerk of the Commission

JUN 19 2014

Mr. Brian M. Hennessy  
HONUA ENGINEERING, INC.  
Ching Young Center, Suite C7  
P.O. Box 851  
Hanalei, Hawai'i 96714

Subject: Hokua Farm Lots, being the Subdivision of Parcel 1 into Lots 1 to 6 inclusive and designating Easements "AU-1", "AU-2", "D-1", and "W-1", being a portion of Grant 5226 to Rufus P. Spalding at Kapa'a, Kaua'i, Hawai'i. (S-2014-02, HG Kauai Joint Ventures LLC)

Dear Mr. Hennessy,

This letter memorializes the action taken by the Kaua'i Planning Commission effective JUNE 10, 2014 concerning **TENTATIVE APPROVAL** of the above subject application. Final subdivision map approval, per your consent, is subject to the following conditions:

1. Requirements of the Planning Department:

- a. An updated preliminary title report for the existing lot shall be submitted to the Planning Department for review.
- b. All existing and proposed easements shall be identified in the deed descriptions of affected lots and shown on the final subdivision map. Draft copies of the deed descriptions shall be submitted to the Planning Department for review and approval.
- c. Pursuant to section 9-3.8(b) of the Subdivision Ordinance, Kaua'i County Code (1987), the applicant shall submit to the Planning Department an electronic record (digitized format) of the final subdivision map(s) on disk for record keeping purposes prior to final subdivision approval.

*An Equal Opportunity Employer*

V:\2014 Master Files\Regulatory\Subdivisions\S-2014-2\Tentative Approval\Tentative Approval Letter\TA Letter- 6.10.14 KE HG Kauai Joint Ventures LLC.docx

rec'd 6/21/14  
Tnb #5117

- d. The following fees shall be paid to the County of Kaua'i:
- 1) Park Dedication fee: \$900.00
  - 2) Environmental Impact Assessment fee: \$1,250.00
- e. A future road widening reserve shall be established along the frontage of Olohena Road and Kapa'a By-Pass Road which shall be subject to the specifications of the Public Works Department for a major street. There shall be no new structures permitted within the reserve, and any new structures should be setback from the reserve. The reserve along with its restrictions shall be incorporated into the deed descriptions of the affected lots, draft copies of which shall be submitted to the Planning Department for review and approval.
- f. Prior to final subdivision approval, the subdivider shall delineate the Class "B" classified lands on the final subdivision map. In addition and pursuant to Act 199, Session Laws of Hawai'i, 1976, the applicant shall enter into an agreement with the County to incorporate agricultural restrictions into the instruments of conveyance for those lots which contain the Class "A" and/or "B" soils.
- g. The Applicant is advised that uses on the newly-created lots shall be limited to those listed as permissible uses within the "A" Agricultural District in the State Land Use Commission Rules and Regulations. Dwellings on the lot shall mean a single-family dwelling located on and used in connection with a farm where agriculture activity provides income to the family occupying the dwelling. These restrictions shall be included in the covenants for the proposed lots, draft copies of which shall be submitted to the Planning Department for review and approval.
- h. Prior to final subdivision approval, the Applicant shall submit to the Planning Department a density breakdown for each lot which will be subject to review and approval by the Department. These restrictions shall be included in the covenants and deed descriptions of the proposed lots, draft copies of which shall be submitted to the Planning Department for review and approval. The Planning Department reserves the right to impose additional conditions relating to this matter while in the process of resolving this condition.
- i. The pole sections of the double flag lots shall be designated as common access/utility easements in favor of each other and shall be incorporated into the deed descriptions of the affected lots (Lot 4 and Lot 5), draft copies of which shall be submitted to the Planning Department for review and approval.
- j. The subdivider shall resolve with the Planning and Public Works Departments the following:
- 1) Participation in the upgrading of the intersection of 'Olohena Road, Ka'apuni and Kaehulua Roads by providing necessary lands to accommodate the future improvements.
  - 2) Limiting vehicular access points onto 'Olohena Road.

*An Equal Opportunity Employer*

- 3) Establishing a road reserve within the project area in order to accommodate future construction of interior roadway system that would allow a connection for 'Olohena Road to the Kapa'a By-Pass Road and relieve traffic off 'Olohena Road.

The Planning Department reserves the right to impose additional conditions relating to this matter while in the process of resolving this condition.

- k. The Applicant shall prepare and obtain construction plan approvals for necessary road, water, drainage, electrical and telephone utilities and facilities, and either construct the same or post a surety bond for completion.
- l. In order to ensure that the subdivision and development of property complies with the land use requirements contained in Chapter 205 of the Hawai'i Revised Statutes ("HRS"), the following matter shall be resolved prior to final subdivision approval:
- (1) The Applicant shall provide the following documents to the Subdivision Committee of the Planning Commission ("Subdivision Committee") for its review and approval:
    - (A) An Agriculture Master Plan shall describe the proposed agricultural uses of the property, the marketing and business plans associated with such activities, and the manner in which the agricultural and related uses on the property will comply with HRS Chapter 205.
    - (B) A map of the property showing the proposed location of: Agricultural Activities; Building Areas; and Agricultural Easements.
    - (C) A Declaration of Conditions, Covenants and Restrictions ("Restrictive Covenants") which will be recorded in the Bureau of Conveyances of the State of Hawai'i ("Bureau"), which will encumber and run with the property, and which will provide and require: that the owners of the lots in the subdivision ("Subdivision Lots") shall comply with the Agricultural Plan and the provisions of HRS Chapter 205; that the owners of all of the Subdivision Lots shall be members in an association ("Association") which will have the power and duty to enforce the Restrictive Covenants; that the Association shall file periodic reports (as determined by the Planning Department) with the Planning Department verifying compliance with the Agricultural Master Plan; and that the Agricultural Master Plan shall not be amended without prior approval of the Planning Department.
    - (D) An Agricultural Subdivision Agreement which will be recorded in the Bureau, run with and encumber the property, and which will provide and require: that each Subdivision Lot owner shall indemnify, defend and hold the County harmless from any claims arising out of the failure of the Subdivision Lot owner to comply with the Agricultural Master Plan and/or HRS Chapter 205; and that in the

*An Equal Opportunity Employer*

event of a Subdivision Lot owner's noncompliance with the Agricultural Master Plan and/or HRS Chapter 205 as determined by the Planning Department, the County and the State of Hawai'i shall have the right to refuse to grant any permits or approvals for uses or development on any Subdivision Lot affected by such noncompliance unless and until the noncompliance is cured, as determined by the Planning Department.

- m. The subdivider shall resolve with the Planning Department the provision of public access within the subdivision. The applicant shall propose an access plan for the review and approval of the Planning and Public Works Departments. Additionally, due to the farming activities, the subdivider shall work with the Planning Department on establishing a public access control system.

Proper documents shall be prepared and ready for execution prior to final subdivision approval. The Planning Department reserves the right to impose additional conditions relating to this matter while in the process of resolving this condition.

2. Requirements of the Department of Public Works:

DRAINAGE

- a. The subject subdivision abuts a natural unnamed drainage way on the West for which a detailed flood study has not been incorporated with the Flood Insurance Rate Maps (FIRM). Several natural drainage valleys or drainage swales traverses through and along the property. The natural drainage water courses will collect and concentrate storm flows through the site. A drainage study and provisions need to be established to prevent structures from being built in flood prone areas and to preserve the function and capacity of the natural water courses.

The subdivision and subsequent development of residences and other impermeable surfacing will increase storm water flowage. A drainage study needs to be made to evaluate the impacts of the increased storm runoffs. Measures to keep flow rates to predevelopment conditions is required.

- b. Flood studies need to include the existing bridge at the Kapa'a By Pass Road whether the bridge is adequate to convey storm flows without overtopping the Kapaa By Pass Road.
- c. The flood zoning, FIRM panel no. 204F and the date of the FIRM November 26, 2010 needs to be labeled on the final maps as well as the determined flood prone areas with base flood elevations. The applicant and future owners shall be advised that construction of new structures in flood prone areas presents flood risks and associated flood problems.

*An Equal Opportunity Employer*

ROAD

- d. The street name labeling for *Opala Road* needs to be amended to "**Malu Road**". The Kapa'a By Pass Road traverses through the proposed Lot 6. We recommend that the Kapa'a By Pass Road be named to facilitate house addressing assignment.
- e. The subject subdivision abuts the Olohena Road on the North. Olohena Road has a right of way width of 40 feet and an average pavement width of 20 feet. The pavement width is adequate for two way passenger vehicular type traffic. The right of way width is inadequate for a major collector street classification (60 feet right of way). We recommend a road reserve be established along Olohena Road or lands be dedicated to the County as well as improvements to Olohena Road to facilitate Safe Route to School and Complete Streets facilities.
- f. Access along Olohena Road **must** be restricted. Access for Lots 1, 2 and 3 **shall** be restricted to the pole section for Lots 4 and 5. Easement "AU-1" for roadway and utility purposes shall be restricted to the pole section for Lots 4 and 5. Comments should be solicited from the State Department of Transportation whether access would be allowed for Lot 6 from the Kapa'a By Pass Road.

OTHERS

- g. Complete Streets and Safe Route to School design principles needs to be incorporated with the subdivision improvements to Olohena Road. Complete Streets and Safe Route to School features include interconnected sustainable transportation networks providing opportunities for all modes of travel to and from neighborhood destination points for users of all ages and abilities. Comments should be solicited from the County's Transportation Planner.

3. Requirements of the Department of Water:

- a. The subdivider shall pay the Department of Water, a Facilities Reserve Charge of \$23,000 (5 lots at \$4,600 per lot). The subdivider shall pay any rate increase and/or applicable charges in effect at the time of receipt.
- b. The subdivider shall prepare and get Department of Water's approval on construction drawings for necessary water system facilities and either construct said facilities or post a performance bond for construction. These facilities shall also include:
  - 1) Additional source facilities. The Applicant may wait until others (including the Department of Water) to construct additional source for this area.
  - 2) The domestic service connection.
- c. Locate and show all existing water meter/s (with appropriate water meter number) on the tentative subdivision map for the Department of Water's review and approval. Also identify the proposed subdivision lot that the existing water meter/s will be assigned to. The DOW comments may change depending on the approved tentative map.

*An Equal Opportunity Employer*

4. Requirements of the State Health Department:

- a. The existing individual wastewater system can continue to serve the existing building. However, wastewater generated from any additional dwelling units and other buildings shall be disposed of in wastewater systems that meet the wastewater rules in effect at the time of building permit application.
- b. Noise will be generated when construction occurs after Lots 1 through 6 are subdivided, shall not exceed the applicable maximum permissible sound levels as stated in Title 11, Hawaii Administrative Rules (HAR), Chapter 11-46, entitled "Community Noise Control" unless a noise permit is obtained from the State Department of Health (DOH).
- c. Temporary fugitive dust emissions could be emitted when/if construction activities occur after Lots 1 through 6 are subdivided. At that time, in accordance with Title 11, HAR, Chapter 11-60.1, entitled "Air Pollution Control", effective measures for air pollution control shall be provided to minimize or prevent any fugitive dust emissions caused by the construction work from impacting the surrounding areas. This includes the off-site roadways used to enter / exit the project. The control measures include but are not limited to the use of water wagons, sprinkler systems, dust fences, etc.
- d. In accordance with Title 11, HAR, Chapter 11-58.1, entitled "Solid Waste Management Control", the construction waste that is generated when/if the subdivided lots are developed shall be either recycled or disposed of at a solid waste disposal facility that complies with the DOH. The open burning of any of these wastes on or off site is prohibited.
- e. Any project and its potential impacts to State waters must meet the following criteria:
  - 1) Anti-degradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
  - 2) Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
  - 3) Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
- f. Please call the Army Corps of Engineers at (808) 438-9258 to see if this project requires a Department of the Army (DA) permit. Permits may be required for work performed in, over, and under navigable waters of the United States. Projects requiring a DA permit also require a Section 401 Water Quality Certification (WQC) from our office.
- g. You are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters

(HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form:

- 1) Storm water associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi).
  - 2) Storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the start of the construction activities.**
  - 3) Treated effluent from leaking underground storage tank remedial activities.
  - 4) Once through cooling water less than one (1) million gallons per day.
  - 5) Hydro-testing water.
  - 6) Construction dewatering effluent.
  - 7) Treated effluent from petroleum bulk stations and terminals.
  - 8) Treated effluent from well drilling activities.
  - 9) Treated effluent from recycled water distribution systems.
  - 10) Storm water from a small municipal separate storm sewer system.
  - 11) Circulation water from decorative ponds or tanks.
- h. You must submit a separate NOI form for each type of discharge at least 30 days prior to the start of the discharge activity, except when applying for coverage for discharges of storm water associated with construction activity. For this type of discharge, the NOI must be submitted 30 before to the start of construction activities.
  - i. For types of wastewater not listed in Item 3 above or wastewater discharging into Class 1 or Class AA waters, you must obtain an NPDES individual permit. An application for an NPDES individual permit must be submitted at least 180 days before the commencement of the discharge.
  - j. You must also submit a copy of the NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or

demonstrate to the satisfaction of the CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.

- k. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with the water quality requirements contained in HAR, Chapter 11-54 and/or permitting requirements, specified in HAR Chapter 11-55 may be subject to penalties of \$25,000 per day per violation.

5. Requirements of the Housing Agency:

- a. Chapter 7A of the Kaua'i County Code, 1987, as amended, is applicable to the proposed subdivision, pursuant to Section 7A-1.4(c)(1).

Prior to final subdivision approval, the Applicant shall resolve the workforce housing assessment and shall execute a Workforce Housing Agreement with the Kaua'i County Housing Agency, as to the method of meeting the workforce housing requirement pursuant to Chapter 7A. The executed agreement shall be recorded on the deed of the project properties concurrent with final subdivision approval.

The Kaua'i County Housing Agency reserves the right to change this determination if the petition or application changes from the above, or if the project incorporates or becomes part of a larger residential or resort project, such that provisions of Kaua'i County Code, Section 7A-1.4 become applicable.

6. Requirements of the Department of Wastewater:

- a. The proposed subdivision is near the County's sewer service area. If sewer service is needed, the Applicant shall apply for County sewer service and shall be responsible for design and construction of all infrastructure necessary to connect to the County sewer and shall be responsible for payment of all applicable fees.

7. Requirements of the State Historic Preservation Division (SHPD):

- a. Pursuant to Hawaii Administrative Rules §13-284 we request an **archaeological inventory survey** be conducted by a qualified archaeologist in order to adequately determine the potential impacts of this subdivision on both surface and subsurface historic properties. We look forward to the opportunity to review the archaeological report prior to commencing further on the subdivision application. We recommend the final subdivision approval be deferred until the archaeological inventory survey report has been completed and appropriate mitigation measures/plans are in place.

*An Equal Opportunity Employer*

- b. As recommended by the State Historic Preservation Division (SHPD) of the Department of Land and Natural Resources (DLNR), in the event that historic resources, including human skeletal remains are identified during routine construction activities, all work needs to cease in the immediate vicinity of the find, and the finds need to be protected from additional disturbance, and the State Historic Preservation Division, Kaua'i section, needs to be contacted immediately at (808)692-8015.

- 8. The Applicant is advised that prior to and/or during construction and use additional conditions may be imposed by government agencies. Should this occur, the Applicant shall resolve these conditions with the respective agency(ies).

Sincerely Yours,



MICHAEL A. DAHLIG  
Clerk, Kaua'i Planning Commission

- xc: COK Public Works Dept.  
COK Water Dept.  
COK Real Property – Assessment Div.  
State Dept. of Health  
State Historic Preservation Dept.

*An Equal Opportunity Employer*