

Appendix I

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, Island of Kaua'i

Prepared by Hallett H. Hammatt and David W. Shideler [Cultural Surveys Hawai'i, Inc.], August 2004.

This study was conducted as part of the environmental assessment for the original bike/pedestrian path project.

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Waipouli, and Kapa'a,**

Island of Kaua'i

By

Hallett H. Hammatt, PhD

and

David W. Shideler, M.A.

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ABSTRACT

This archaeological assessment addresses the archaeological resources that may be encountered by the proposed Lydgate Park to Kapa'a Bike/Pedestrian Path Project, extending from Lydgate Park in Wailua Ahupua'a north to the Waikaea Canal in Kapa'a. The cultural history and archaeological resources of the coastal portions of the traditional Hawaiian land divisions (*ahupua'a*) of Wailua, South and North Olohena, Waipouli and Kapa'a were evaluated in reference to proposed trail corridor alignments. The work accomplished included primarily a synthesis of the pertinent literature including in particular adaptation and updating of earlier archaeological studies in support of proposed Kūhiō Highway improvement options (Hammatt et al. 1997, Hammatt and Shideler 2003). Additional fieldwork was carried out focused on the coast. Two additional sites were identified; an area of grinding stones (designated site # 50-30-08-823) and a WWII bunker (designated site 50-30-08-891). In general the alternative trail alignments studied were determined to be relatively free of archaeological constraints.

The greatest concerns are suggested to be the need for avoidance of any potential adverse impact to the Hikinaakalā Heiau complex and associated Wailua petroglyph site (sites 50-30-08-105 and 105A; sites on the National Register and part of the Wailua Complex of Heiau National Historic Landmark) and avoidance of any potential adverse impact to Kukui Heiau (site 50-30-08-108; listed on the National Register of Historic Places). The Alternative 3 path plan shows a possible spur trail on the south side of the Hikinaakalā Heiau complex and associated Wailua petroglyph site on the south side of the mouth of the Wailua River. Although this route would primarily or exclusively be on a former railroad berm, State Parks is unreceptive to this undertaking. The Alternative 3 path plan also envisions the construction of a new bike/pedestrian path bridge crossing the Wailua River on the seaward side of the existing bridges. It appears that such a bridge could be constructed without adversely impacting the Wailua petroglyph site. It is recommended, however, that if this new bridge alternative is pursued, that State Parks and the State Historic Preservation Division be consulted early regarding possible further study to better delimit the extent of this petroglyph field. Kukui Heiau on Alakukui Point in coastal South Olohena extends from the high water line into the adjacent privately held condominium lands. It is not possible to develop a trail along the coast here on public lands without going over this national register Hawaiian temple. It is recommended that consideration of path routes near the Hikinaakalā Heiau complex and Kukui Heiau are probably best deferred unless State Parks changes their position regarding the former or consideration is given to acquiring public access to a strip of privately held property just inland of Kukui Heiau.

After the National Register *heiau* site issues, the greatest archaeological concern for this project is suggested to be potential impact to human remains. As a generalization, significant archaeological resources (other than those included in the Wailua Complex of Heiau) are more likely to be encountered in the sandy deposits at the coast than further inland. Two concentrations of human burials have been documented along the proposed routes in Waipouli/Kapa'a and in the vicinity of the Coco Palms. The present route of Kūhiō Highway and the coastal routes through Waipouli/Kapa'a Town appear the most likely area for burial disturbance among the proposed road corridor segments. Low burial sensitivity is associated with more inland routes. In addressing burial concerns potentially associated with the bike and pedestrian pathway project consultation with the Kaua'i/Niihau Islands Burial Council, and an archaeological monitoring program with on-site monitoring in the areas indicated above are recommended.

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Glossary

(All definitions follow Pukui and Elbert's *Hawaiian Dictionary*, 1986 ed.)

<i>Ahupua'a</i>	Land division usually extending from the uplands to the sea.
<i>Āpana</i>	Land parcel, often a piece of a Land Commission Award.
<i>ʻAuwai</i>	Ditch, canal, typically for irrigation of fields.
<i>Haku ʻāina</i>	Landowner, Landlord.
<i>Hānai</i>	Foster child, adopted child.
<i>Hau</i>	A lowland tree (<i>Hibiscus tiliaceus</i>).
<i>Heiau</i>	Pre-Christian place of worship, shrine.
<i>Hōlua</i>	Ancient sled used on grassy slopes, sled course.
<i>ʻIli</i>	Land section, usually a subdivision of an <i>ahupua'a</i> .
<i>Kalo</i>	Taro (<i>Colocasia esculenta</i>).
<i>Kapu</i>	Taboo, prohibition.
<i>Konohiki</i>	Headman of an <i>ahupua'a</i> land division under a chief.
<i>Kukui</i>	Candlenut Tree (<i>Aleurites moluccana</i>).
<i>Kula</i>	Plain, field, open country, pasture.
<i>Kuleana</i>	Right, concern, property.
<i>Kupua</i>	Demigod or culture hero.
<i>Lo'i</i>	Irrigated terrace, especially for taro, but also for rice.
<i>Loko pu'uone</i>	Fish pond near the shore, as connected to the sea by a stream or ditch.
<i>Lua</i>	A type of dangerous hand-to-hand fighting, <i>Lua</i> holds were named.
<i>Māhele</i>	Land division of 1848, often used to refer to subsequent <i>kuleana</i> act land divisions
<i>Maka ʻāinana</i>	Commoner, people in general.
<i>Makai</i>	Directional, toward the sea.
<i>Mauka</i>	Directional, toward the uplands.
<i>Moku</i>	District
<i>Mo'o</i>	Narrow strip of land, smaller than an <i>ʻIli</i> , also lizard, dragon, water spirit.
<i>Noni</i>	Indian mulberry (<i>Morinda citrifolia</i>).
<i>Pāhale</i>	House lot.
<i>ʻUala</i>	Sweet potato (<i>Ipomoea batatas</i>).
<i>Wauke</i>	Paper mulberry (<i>Broussonetia papyrifera</i>). The bark was made into tough bark cloth.

I. INTRODUCTION

A. Project Background

This archaeological assessment study addresses the archaeological resources that may be encountered by the proposed Lydgate Park—Kapa‘a Bike/Pedestrian Path Project, extending from Lydgate Park in Wailua Ahupua‘a up to the Waikaea Canal in Kapa‘a Ahupua‘a. Cultural Surveys Hawai‘i has previously conducted two studies of much of the same area (Hamman et al. 1997 and Hammatt and Shideler 2003) in support of proposed Kapa‘a By-pass (Relief Route) projects. The present study builds on these earlier studies adapting and updating the data compiled to address the alignments presently under consideration for the Bike/Pedestrian Path project. The present study adapts the findings of the earlier studies to the presently considered alignments, incorporates the results of other studies that have subsequently become available, and incorporates the results of additional fieldwork focused on the most sensitive portion of the route along the coast. A summary discussion reviews archaeological concerns and suggests appropriate mitigation measures.

B. Description of the Project Area

Our study considers a large block of land in east Kaua‘i extending west from the coast inland approximately one kilometer and extending from Lydgate Park on the south side of the Wailua River mouth through Kapa‘a Town on the north (Figures 1 to 4). Descriptions of these lands are provided in the descriptions of the natural setting for each *ahupua‘a* (present report sections IIA1 for Wailua, IIB1 for Olohena, IIC1 for Waipouli, and IID1 for Kapa‘a). Three different alternative path routes are under present consideration: each of which involves some complexity. These are described in detail below.

The southern terminus of the proposed trail system would link up with the existing northern end of a previous trail project at the existing Lydgate Bike/Pedestrian Path cul-de-sac near the north end of Lydgate Park in the immediate vicinity of the northwest corner of the Aloha Beach Resort. The stated position of State Parks staff (Ms. Martha Yent, personal communication) that the trail should not come close to the Hikinaakalā Heiau and Pu‘uhonua o Hauola complex pretty much dictates that the south end of the proposed trail system would link up with the end of the existing concrete path on the seaward side of Kūhiō Highway just south of the Wailua River mouth. The main path, continuing north, would typically be a 10-12 foot wide concrete path. The path would follow a short section of an old railroad alignment before crossing the Wailua River. The different alternatives under consideration for how the trail system should proceed to the north are summarized under the three alternative headings below. A short summary of how each alternative differs from the preceding alternatives concludes each discussion.

1. Alternative 1

The Coastal Option of Alternative 1

The path would cross the Wailua River on a cantilevered new bike/pedestrian bridge to be constructed off of the seaward side of the existing cane haul road bridge. The path would then proceed north on the seaward side of Kūhiō Highway as a doublewide boardwalk on the *makai* side of an existing rock wall (and a new northern continuation of this low rock wall) to a point



Figure 1: Portion of USGS Kapa'a Quad map showing general location of project area (all alternative alignments are shown)

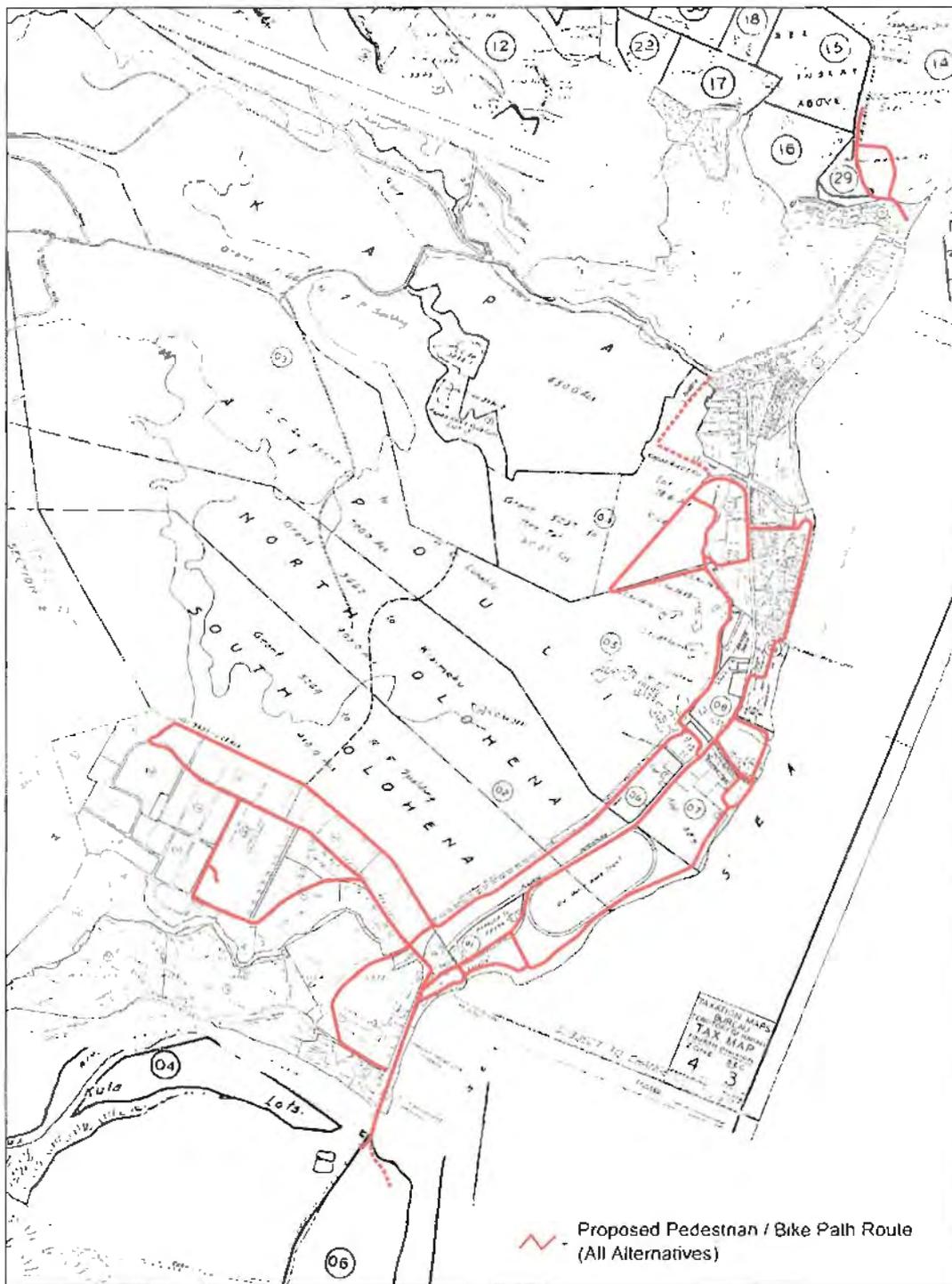


Figure 2: Tax Map Key showing general location of project area area (all alternative alignments are shown)

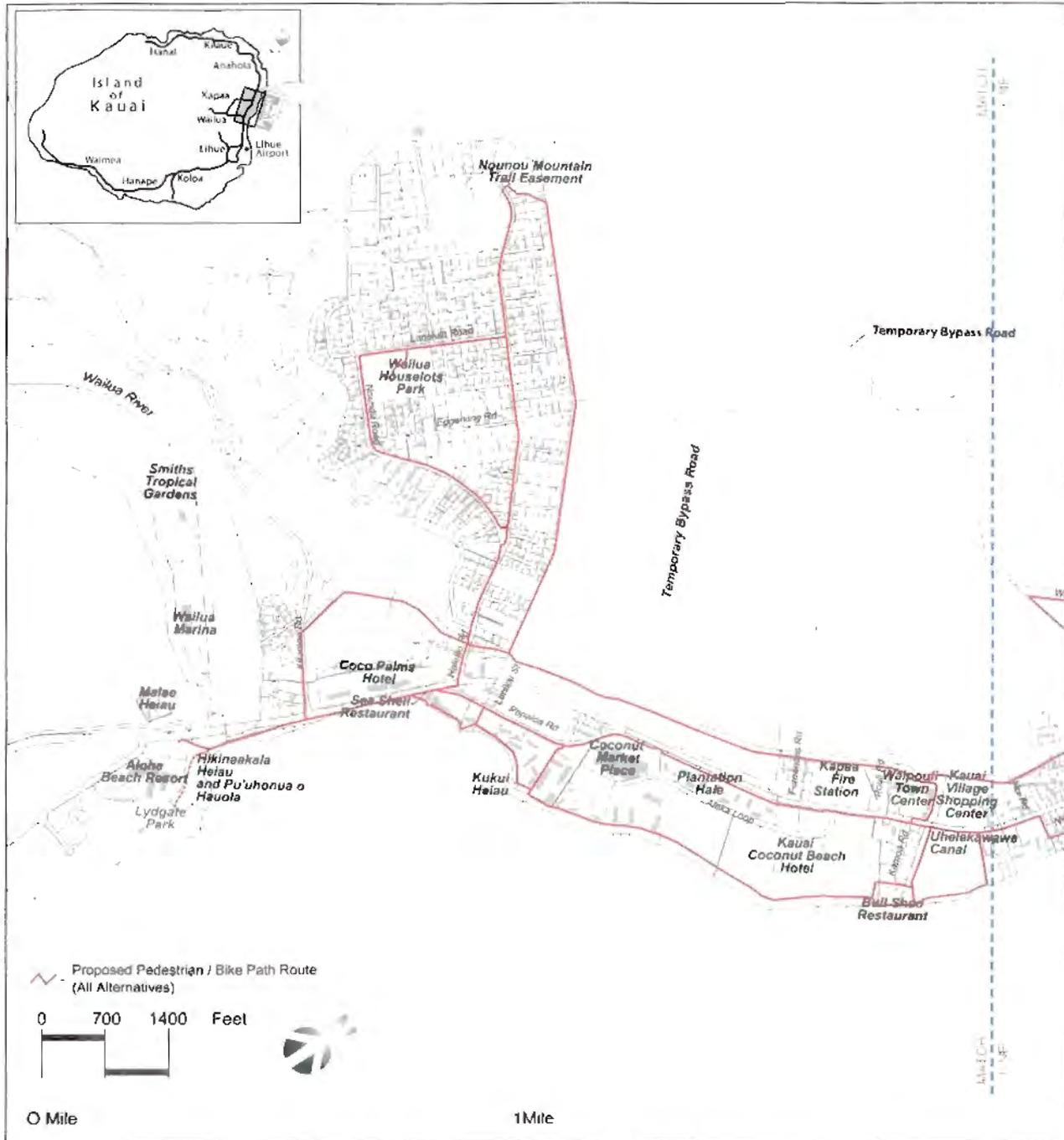


Figure 3: Map of south half of project area showing all alignments under consideration

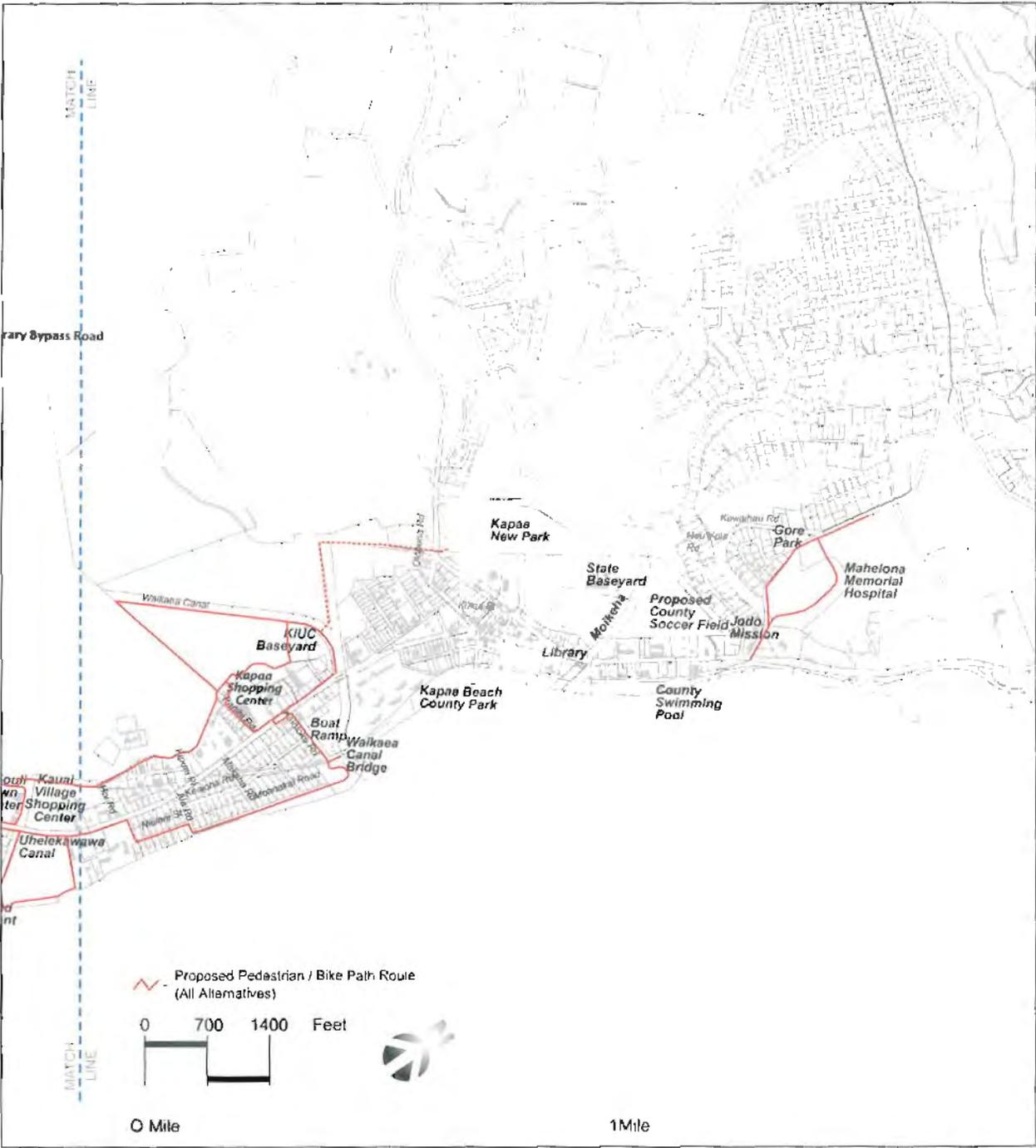


Figure 4: Map of north half of project area showing all alignments under consideration

just south of the old Sea Shell Restaurant where different options begin to be considered. These are summarized in the following overviews of Alternative 1 routes: 1) coastal option, 2) the inland option, 3) the Wailua House lots extension, and 4) the Kapa'a Town extension.

As presently conceived, the coastal option of Alternative 1 consists of various configurations on the seaward side of Kūhiō Highway. From a point just south of the old Sea Shell Restaurant the main 10-12 foot wide concrete path would continue up past the *mauka* side of the former Seashell Restaurant and then proceed north up the *makai* side of Papaloa Road. An existing pedestrian access between the Hale Awapuhi Condos and the Kapa'a Sands Condos might be widened as a spur to the trail for beach access. The main coastal route would continue up Papaloa Road turning seaward between the Lae Nani Condos and the Kaua'i Sands Hotel with the widening of an existing access to Kukui Heiau. A short spur path with look out might be provided to improve the access to Kukui Heiau and possibly provide some interpretation of this National Register of Historic Places site.

An alternate pedestrian path route, 5 feet wide, might also run along the coast from a point just south of the Sea Shell Restaurant joining up with the main seaward path by Kukui Heiau.

The main coastal option of the Alternative 1 trail would then head north along the coast on the seaward side of Kaua'i Sands Hotel, the Aston Islander on the Beach and the Kaua'i Coast Resort at the Beachboy, the Kaua'i Coconut Beach Hotel and the Mokihana of Kaua'i. In front of the latter resort and the adjacent Bullshed Restaurant a boardwalk might be built over an existing seawall. A bridge would need to be built across the Uhelekawawa Canal to support this proposed alignment. The coastal option of the Alternative 1 path might head west back to Kūhiō Highway on the Southside of the Waipouli Beach Resort (Singleton Development) or might continue along the coast and then head up to the highway on the north side of the Waipouli Beach Resort parcel. Certain improvements would be indicated for the stretch along Kūhiō Highway to be utilized extending north to Niulani Street. These might include widening sidewalks and providing bike/pedestrian warning signs. A crossing of the highway to a *mauka* path extending west along the south side of the Uhelekawawa Canal might be indicated. At Niulani Street the path would head back *makai* turning closer to the coast on Ala Road and then running north up Moanakai Road, to the vicinity of the mouth of Waikaea Canal. The county might acquire Niulani Street and convert it to a local road with bike/pedestrian priority. The path could connect with an earlier trail segment crossing the pedestrian bridge across the Waikaea Canal at the coast or could continue back to the Highway just south of the Kapa'a Hongwanji Mission. Some improvements extending south from the Hongwanji Mission along the *makai* side of Kūhiō Highway to a possible inland segment along Panihi Road may be indicated.

The Inland Option of Alternative 1

The inland option of Alternative 1 under consideration would run inland on the south side of Hale'ilio Road on up to the Wailua House lots extension option. From Hale'ilio Road, the inland option of Alternative 1 would turn north, following old cane haul roads running *mauka* of the Wailua Family Restaurant and the Wailua Shopping Plaza, crossing the Temporary Bypass Road, and continuing north to the large canal that parallels Kūhiō Highway on the *mauka* side. The trail would continue north on the *makai* side of this canal to where it runs seaward just north of the Waipouli Town Center. Two pedestrian bridges might be constructed west and north across the canal with the path continuing north inland of the Kaua'i Village Shopping Center. The path might continue north along the east side of the northwest trending drainage canal to the

A different route of the coastal option of Alternative 2 would continue north of the Lae Nani Condos on the east side of Papaloa Road and then continue up the east side of Kūhiō Highway past the Coconut Marketplace and the extensive Plantation Hale complex to the northwest corner of the Waipouli Beach Resort where it would rejoin the coastal route of the coastal option of Alternative 2.

Certain improvements would be indicated for the stretch along Kūhiō Highway to be utilized extending north from Kamao road to Niulani Street. These might include widening sidewalks and providing bike/pedestrian warning signs. A crossing of the highway to a *mauka* path extending west along the south side of the Uhelekawawa Canal might be indicated. At Niulani Street the path would head back *makai* turning closer to the coast on Ala Road and then running north up Moanakai Road, to the vicinity of the mouth of Waikaea Canal. The county might acquire Niulani Street and convert it to a local road with bike/pedestrian priority. The path could connect with an earlier trail segment crossing the pedestrian bridge across the Waikaea Canal at the coast or could continue back to the Highway just south of the Kapa‘a Hongwanji Mission. Some improvements extending both a short distance south and north from the Hongwanji Mission along the *makai* side of Kūhiō Highway to a possible inland segment along the south side of the Waikaea Canal may be indicated.

This coastal option of Alternative 2 differs from the coastal option of Alternative 1 primarily in that Alternative 2 includes a long stretch of path along streets, specifically Papaloa Road north of the Lae Nani condos and then along the *makai* side of Kūhiō Highway all the way north to Niulani Street. Other differences are that Alternative 2 does not include a route along the sea north from the Sea Shell restaurant, does not include an approach to Kukui Heiau and Alternative 2 traverses north on the west side of the Mokihana of Kapa‘a and Bull Shed restaurant.

The Inland Option of Alternative 2

The inland option of Alternative 2 is very much the same as the inland option of Alternative 1 with the only substantive difference appearing to be that the inland option of Alternative 2 does not include a spur route down Panihi Road.

The Wailua House lots Extension of Alternative 2

A portion of the proposed path may be extended straight up the north side of the Wailua House lots, using remnants of cane haul roads, all the way up to a Nounou Mountain Trail Easement. No branch of this route would extend to the Wailua House lots Park.

The Kapa‘a Town Extension of Alternative 2

The Kapa‘a Town extensions of Alternative 2 are the same as for Alternative 1.

3. Alternative 3

The path would cross the Wailua River on a new bike/pedestrian bridge to be constructed on the seaward side of the existing bridges. The path would then proceed north on the seaward side of Kūhiō Highway to Kuamo‘o Road, where different options begin to be considered. These are summarized in the following overviews of the 1) coastal option, 2) the inland option, 3) the Wailua House lots extension, and 4) the Kapa‘a Town extension.

West of the Kaua'i Village Shopping Center the inland option might continue north along the northwest trending drainage canal to the vicinity of the west end of Panihi Road. In the vicinity of the west end of Panihi Road three different inland routes continue to the north. One segment would continue down Panihi Road to Kūhiō Highway and then proceed north along the highway crossing to the *makai* side at mid block. Another segment would continue from the vicinity of the west end of Panihi Road up the northwest side of the drainage canal to the Waikaea Canal and then parallel the east side of the canal to the KIUC base yard. A third segment would continue from the vicinity of the west end of Panihi Road up the northeast side of the wetlands before joining the canal near the KIUC Base yard. The path would then sweep around the north side of the base yard and run along the south side of Waikaea Stream back to Kūhiō Highway.

The Wailua House lots Extension of Alternative 3

A portion of the proposed path may be extended up the southern side of Hale'Īlio Road into the Wailua House lots all the way up to a Nounou Mountain Trail Easement. Another possible branch of this route would take a large U-turn to the south off of Hale'Īlio Road, following Nounou Road and Lanakila Road, before rejoining Hale'Īlio Road and continuing on up to the Nounou Mountain Trail Easement.

The Kapa'a Town Extension of Alternative 3

At the Waikaea Bridge, the project joins a previously planned Kapa'a-Keālia path running close to the coast. There may in the future be a connection from the vicinity of the KIUC Base yard, west up the south side of the Waikaea Canal and then north to the Kapa'a New Park inland of Kapa'a Town. Another spur route may extend up Kawaihau Road from Kūhiō Highway, possibly differing from Alternatives 1 and 2 by meandering across a stretch of undeveloped land, before connecting to the end of the existing Kawaihau bike/pedestrian path.

Scope of Work

The archaeological assessment scope of work included:

1. Historical research to include 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.
2. Field inspection of the project area to identify any surface archaeological features and to investigate and assess the potential for impact to such sites. This assessment will identify any sensitive areas that may require further investigation or mitigation before the project proceeds.
3. Preparation of a report to 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 will also provide mitigation recommendations if there are archaeologically sensitive areas that need to be taken into consideration. The generated data will assist in selection of a preferred alternative.

C. Methods

This archaeological assessment study builds on two previously conducted studies by Cultural Surveys Hawai'i that cover the same general area entitled *Archaeological Inventory Survey for the Kūhiō Highway Widening and Bypass Options within the Ahupua'a of Wailua, South Oloheua, North Oloheua and Waipouli and Kapa'a, Island of Kaua'i* (Hammatt et al. 1997; reviewed and accepted by the State Historic Preservation Division in 1998) and *Archaeological Study in Support of Proposed Kūhiō Highway Improvements Kapa'a By-Pass) Hanamā'ulu to Kapa'a Ahupua'a Kaua'i* (Hammatt and Shideler 2003; reviewed and accepted by the State Historic Preservation Division in 2004). The data developed in these prior studies has been adapted to the configuration of alternative alignments for the proposed Lydgate Park-Kapa'a Bike / Pedestrian Path under present consideration.

Additional research was conducted at the State Historic Preservation Division in order to update the work incorporating the results of recent studies.

Additional fieldwork was conducted by David W. Shideler, M.A. and Todd Tulchin B.A. under the overall supervision of Hallett H. Hammatt Ph.D. This fieldwork focused on the coastal proposed alignments that are regarded as the area of greatest concern for archaeological resources.

Preliminary consultations with the State Historic Preservation Division and State Parks were held regarding sites present and archaeological concerns.

II. HISTORIC AND ARCHAEOLOGICAL BACKGROUND

Alternative alignments for the proposed Lydgate Park-Kapa'a Bike / Pedestrian Path under present consideration cover land within five *ahupua'a*, from south to north: Wailua, South and North Olohena, Waipouli, and Kapa'a. In terms of historic perspective, emphasis is placed on Wailua, Waipouli, and Kapa'a - the three *ahupua'a* that have the most comprehensive source material. North and South Olohena are discussed briefly. Based on the dearth of historic documentation these Olohena *ahupua'a* did not play a major role in late pre-history and in the early historic era. Additionally much of the Olohena lands were in sugar cane for many decades and therefore little in the way of archaeological constraints would be expected within the *mauka* path alternatives through these *ahupua'a*. For example, there is only one Land Commission Award in Olohena Ahupua'a inland. The *ahupua'a* traversed by the alternative alignments for the proposed Lydgate Park-Kapa'a Bike/Pedestrian Path will be discussed separately in turn from south to north. The research on previous archaeology is generally incorporated into the historic background to form a comprehensive pattern of settlement within the *ahupua'a*.

A. Wailua

1. Natural Setting of Wailua

Wailua Ahupua'a, located on the eastern side of the island of Kaua'i, is exposed to the prevailing northeast trade winds and thus experiences 40 to 50 inches of rainfall annually at the seashore. This rapidly increases to 75 to 100 inches in more inland (western) localities. The Wailua River and its tributaries comprise the major drainage system for the central area of the Lihu'e basin. The Lihu'e basin is bounded by the Haupu Mountains to the south, Wai'ale'ale to the west and the Makaleha Mountains to the north. Sea level changes in recent geologic time on this side of Kaua'i have submerged the eastern edge of the Lihu'e basin, resulting in the deposition of alluvium, beach and dune sand, and lagoonal clays and marls along the seaward (eastern) side of the Kalepa-Nonou Ridge through which the Wailua River flows.

The *ahupua'a* of Wailua is situated in the old *moku* (or district) of Puna, but today is located in two separate judicial districts. North of the Wailua River it is in the district of Kawaihau and south of the river it is in Lihu'e District. It is the largest *ahupua'a* in both district systems, stretching from the shoreline to its *mauka* extent at Wai'ale'ale (elev. 5080 ft.), and encompassing most of the small streams and tributaries which flow into the Wailua River - the largest and singularly navigable river in the State (Handy and Handy 1972:425). Wailua Ahupua'a contains 20,255 Acres, 2,800 in Wailua Makai, and 17,455 in Wailua Mauka (Commission of Boundaries Record, Kauai Vol. 1: 37).

2. Origin of the Place Name - Wailua

The most popular and literal meaning of the place name Wailua is "two waters," supposedly referring to the two main forks (north and south) that flow together to form the Wailua River. However, as Lyle Dickey says (1916:15) "this explanation never seems to occur to a native Hawaiian." Other meanings include "water pit" referring to the pools at the bottom of several waterfalls along the river's course (Damon 1931:360) and "ghost or spirit" (Kikuchi 1973:5).

Perhaps even more plausible is the explanation that it comes from the name of the high chief - Wailuanuiaho'āno. Kamakau (1976:7) states:

Wailuanui-a-Ho'ano was born in 'Ewa, O'ahu, and his descendants went to Kaua'i and to Maui, and wherever they settled they called the land after the name of their ancestor. Wailua was a song of La'akona, ancestor of the 'Iwa family by Kahō'ano-o-Kalani. His name, Wailuanui-a-Ho'ano, came from adding the name of his mother.

Other early traditional and non-traditional data on the Wailua area are recorded on maps constructed from data collected during 19th century surveys of the Boundary Commission and later, during the early 20th century, Territory of Hawaii and U.S. Geological Survey topographical surveys. F.S. Craighill Handy (1940) and Elizabeth and E.S. Craighill Handy (1972) collected ethnohistorical data focusing on agriculture in some detail. Many traditions and legends are related to geological features in Wailua.

3. Cultural History of Wailua

Archaeological and ethnographic evidence reinforce one another and indicate that Wailua was the religious and political center of Kaua'i during ancient times. There were more *heiau* in Wailua than in other *ahupua'a* on Kaua'i (See Bennett 1931). The lower portion of the river valley, *makai* of Nonou ridgeline to the north and Mauna Kapu to the south, was known as Wailuanuiho'ano (Wailuanuiaho'āno) or alternately Wailuanuilani. It was an area so sacred that it was *kapu* to *maka'āinana* or commoners. Only the *ali'i*, their *kahuna* and retainers could reside or visit here (Dickey 1916). There have been at least seven major *heiau* recorded in this relatively small area of the *ahupua'a* (Ching 1968:28). The Wailua Complex of Heiau was declared a National Historic Landmark in 1962 (see Figure 8).

A survey of traditional mythological literature shows Wailua prominently associated with some of Hawaii's most famous legendary and historical figures including Maui, Kawelo, Pikoiakaula, Laieikawai, Mō'ikeha, La'amaikahiki and Kaililauokekoa (Dickey 1916; Fornander 1916-19; Kalākaua 1888; Rice 1923). These associations suggest a particularly ancient and continuous occupation of the area. Martha Yent (1989:1) suggests that because of the traditional connection of several Wailua *heiau* with Mō'ikeha as well as the mythical menchune, the religious complex there may have been constructed circa A.D. 1200.

A famous O'ahu chief, Mō'ikeha (dates ca. A.D. 1340-1360 by the 20 years per generation count), according to tradition, sailed off to Kahiki and on his return settles in Wailua, Kaua'i, where the Puna family of chiefs welcome him. "Upon the death of Puna, Mō'ikeha becomes the *Ali'i nui* of Kaua'i and remained there" (Fornander II 1879:53-54).

There is a chant associated with Mō'ikeha's favorite son, Kila (by the Kaua'i chiefess Ho'oipoikamalani) who also traveled to Kahiki. Kila is sent to seek a new chief and at each place he stops along the way he is asked who he is and what has become of Mō'ikeha. He answers that Mō'ikeha is alive and "Dwelling at ease on Kaua'i where the sun rises and sets; where the surf of Makāiwa curves and bends; by the changing blossoms of the *kukui* of Puna; by the broad waters of Wailua, he will live on Kaua'i and die on Kaua'i" (Beckwith 1989:355-356).

Also pointing to the great antiquity and importance of the settlement at Wailua is that the area is, in recorded traditions, the site of many "firsts." Dickey records claims that the first *kalo*

and *'uala* on Kaua'i were said to be planted by Mō'ikeha here (Dickey 1916:24). Mō'ikeha's *hūnai* son La'amaikahiki, brought the first temple drum to the islands and placed it at the *heiau* of Holoholokū at Wailua (Fornander 1878-85:II,62). Here also were introduced the first *hau* trees on Kaua'i at Hihikalahau along the river below Poliahu Heiau, and the first coconut tree in the islands at Molohua, just north of the river mouth (Dickey 1916:16,24,30).

4. Early Period After European Contact

Few Westerners visited Wailua in the years just after Cook's arrival, hence detailed descriptions of the area are scarce. Most of the voyagers during the late eighteenth and early nineteenth centuries landed at Waimea, on the southwestern side of the island, a location that would eventually overshadow Wailua in its royal importance because of the opportunities there to associate and trade with these foreigners (Lydgate 1920).

However, in 1793, Wailua was still the "capital" of Kaua'i and Capt. George Vancouver, who had already visited the island several times under Capt. James Cook and later on his own, knew this fact well and tried to land there in March. Although conditions prevented him from anchoring, Vancouver observed the area from off shore and gave this description:

This part seemed to be very well watered, as three other rapid small streams were observed to flow into the sea within the limits above mentioned. This portion of Atouai, the most fertile and pleasant district of the island, is the principal residence of the King, or, in his absence, of the superior chief, who generally takes up his abode in an extensive village, about a league to the southward of the north-east point of the island. Here Enemo the regent, with the young prince Tamooerrie, were now living...(Vancouver 1798:221-222).

Missionary Hiram Bingham passed through Wailua twice in 1824 and visited the birthplace of King Kaumuali'i (the *pōhaku ho'ohānau*), a *hōlua* slide and the lower falls on the south fork of the river, but left no clues as to the size or extent of the settlement there (Bingham 1847:220, 231).

In October 1840 members of the U.S. Exploring Expedition came to Wailua and recorded the following:

The country on this route was uninteresting, until they reached Wailua, the residence of Deborah, a chief woman of the islands, readily known as such from her enormous size, and the cast of her countenance. She has a person living with her called Olivia Chapin, who speaks English, and has learned how to extort money. Deborah has about forty men in her district; but they were absent, being employed in the mountains cutting timber to pay the tax to the king.

Near Deborah's residence are extensive fishponds belonging to her, which have been made with great labour: they are of different degrees of saltiness. The fish are taken from the sea when young and put into the saltiest pond; as they grow larger, they are removed into one less salt, and are finally fattened in fresh water. While our gentlemen were there, Deborah received young fish in payment of the poll-tax, which were immediately transferred to her ponds.

Wailua, (two waters,) was formerly a place of some importance. It is situated on a small stream of the same name, in a barren, sandy spot.

Deborah furnished them with a double canoe, to carry them up the river to visit the falls. Taking the western branch, they ascended it for two and a half miles.

There are many good taro-patches and sugar plantations on its banks. They landed in what appeared to have been an old crater, in front of a basin, with high perpendicular bank. The low grounds along the river are extremely fertile, producing bread-fruit, sugar-cane, oranges, etc. The latter, however, are suffering from the blight, and some of the trees were covered with a black smut, produced by a species of aphid.

In ascending, an insulated black rock is passed, known as the "Muu," which has been detached from a high rocky bluff, that is remarkable for the dikes visible in it.

They afterwards ascended the bank, two hundred feet high, and crossed about half a mile to the falls, over a plain covered with grass and wild sugar-cane. The stream was very small, running sluggishly, and passed over a precipice of barren rocks, one hundred and sixty feet in height. Although there is neither tree nor shrub along the stream above the fall, the valley beneath is filled with them; the most conspicuous was the pandanus. The whole scene is picturesque. Below, the falls present a very curious appearance, the wind continually breaking and dispersing the water in heavy showers over a great variety of ferns, which are growing in the crevices of the rocks. The volume of water does not exceed ten hogsheads a minute. In the basin beneath were found many fine specimens of *Neritina granulata*, and two other species were found further down the stream, about four feet below the surface; these were procured by diving. Mr. Rich obtained specimens of the plants. Mr. Peale found but few birds; ducks were abundant on the river's banks, some of which were killed. Rushes were growing along the banks from eight to ten feet in length, four or five feet under the water; besides these, the banks were covered with hibiscus and ricinus (castor-oil trees), growing wild (Wilkes 1846:IV, 68-69).

Deborah Kapule, the former wife of Kaua'i sovereign Kaumuali'i, took up residence in Wailua shortly after the rebellion of 1824 in which Kaumuali'i's son George led a revolt which was put down by forces loyal to Kamehameha II. Deborah, who remained loyal to Kamehameha, was granted lands at Wailua by Ka'ahumanu, *kuhina nui* or regent of the islands. Her fishpond, Akaimiki, that still exists on the grounds of the Coco Palms Hotel was of the *loka pu'uone* type. Another was said to be located just *mauka* of the hotel's historic coconut grove (*Foreign Testimony* 1848:IX, 55-56; XIII 72; Kikuchi 1987:9; Lydgate 1920). All alternative alignments avoid these ponds.

It is important to note the recording of only "about forty men" in the district. This is seemingly a major reduction in settlement from Vancouver's 1793 observation of an "extensive village." The apparent decrease in population may be attributed to the decimation of native Hawaiians by western-introduced diseases and possibly also by a movement of people to the Waimea area which, by 1840, had become the center of trade and politics on Kaua'i.

5. The Mahele Period

During the first privatization of land, the Mahele, only fifty-one parcels totaling approximately 75 acres were awarded to twenty-seven individual claimants in Wailua. All of the parcels are within approximately a mile of the shore. Of the parcels on which *kalo* was cultivated on the north side of the Wailua River, most were watered by *ʻauwai* sourced in ʻŌpaekaʻa (or Wailuaiki) Stream as shown in the Lydgate Map of 1920 (Figure 5). On the south side of the river (in or near the present Lydgate Park), three Land Commission Awards LCAs 3403:2, 3555:2, and 3567:2, attest to the existence of house sites, along the shore. The other house sites were on the north side of the river near the shore or just slightly inland.

There are 11 other *ahupuaʻa* on Kauaʻi with greater numbers of claims at the time of the Mahele (1848-1855). When it was the former religious, economic and social center of Kauaʻi more land would have been under cultivation, not only for the *loʻi* and *kula*, but other traditional crops, such as *wauke* and *noni*, bananas, woods and fishponds. The fact that so few claimed land in Wailua at the time of the Mahele, no doubt reflects Wailua's changed status after trading ships and missionaries arrived. Communities grew up around the new social and economic centers, especially on the south side of the island and drew people away from their former establishments.

The Wailua claims mention 53 *ʻāpana* of which 51 are awarded. These comprise 122 *loʻi*, 5 *moʻo*, 24 house lots, 8 *kula* (and more than a dozen pastures are mentioned by name), as well as one (1) graveyard belonging to Josiah Kaumualiʻi, a burying place called Mahuapuoni between two house lots on the sand dunes, Debora Kapule's royal fishponds right behind the dunes, and 3 orange trees. Over a dozen *ʻauwai* or ditches are mentioned as boundaries. Most of the house lots are at or near the shore, although Oliva Chapin, Josiah Kaumualiʻi and other illustrious personages had homes a bit farther inland. The majority of the *loʻi* and *moʻo* are inland along the floodplain (See Table 1: Chart of Land Use below).

Almost all of the awardees originally received their land from Debora Kapule "in the days of Kaikioewa" or "in the days of Kaʻahumanu" indicating a rather short tenancy since around the Kauaʻi Rebellion of 1824 or later. Kapule's claim also mentions land in Waimea which includes a *heiau*. In Wailua she claims a house lot and taro patches and two fishponds. Apparently when Debora Kapule received the Wailua lands from Kaʻahumanu, she served as *konohiki* for the *ahupuaʻa* or in her own words, the *hakuʻāina* or landlord (*Native Register* 1848:IX,55-56). Apparently, she later relinquished this position to her son Josia(h) Kaumualiʻi (*Foreign Testimony* :XIII,74-75).

Stauder, Cleeland and Frazier have traced the genealogy of Josia (Josiah) Kaumualiʻi and the title to his property in their article on the Wailua birthstones and *heiau* (*Archaeology on Kauaʻi*, Vol 5, No. 3, Dec. 1976:pps. 3, 5, 6, 7, 11). Within Kaumualiʻi's 17 acres, 1 acre was described in LCA 3561 as a family cemetery known as Holoholo-kū (p.7). This 1-acre lot was bequeathed to Queen Kapiʻolani, but because she predeceases, J. Kaumualiʻi's wife's second husband, J. Kaae, inherited it. "As late as 1900 the name Holoholo-kū designated a cemetery" (Ibid.). Another of J. Kaae's wives, Jessie Kapaihi, inherits the cemetery from him and mortgages it as a "house lot." The authors of the article hypothesize this redesignation in land use may have helped in the mortgage proceedings. Stauder et al. cite a Mr. Gerald Fowke who noted that late in the 1920s the property becomes state-owned.

Table 1 Chart of Land Use from Wailua Land Commission Awards

LCA no.	Claimant	'Ili of the 'Ahupua'a	Land use	No. of 'Āpana
3111	Kapule, Debora	Kapeleula Pakoli Kaimoki Kawaiiki Pohoula	house lot 2 <i>lo'i</i> 2 fishponds	1 (4 acres, 2 rods, 9 rods) 1 (3 acres, 3 rods, 15 rods) 1 (5 acres, 29 rods)
3226	Chapin, Oliva	Kuemanu Papohaku	house lot, 4 <i>lo'i</i> and <i>kula</i>	1 (1 acre, 3 rods, 7 rods) 1 (4 acres, 2 rods, 32 rods)
3238	Haweā / Kawea	Kahakoa Village Kahihei / Heikei	sleeping house, 1 <i>lo'i</i>	1 (36 rods) 1 (2 rods, 17 rods)
3248	Hanalea/ Hanale/ Hanare/ Henry	-	claims in Nāwiliwili, lives in Wailua	-
3264	Lanikaula	Hio, Kamani	7 <i>lo'i</i> , house lot	(1 acre, 2 rods, 22 rods) 1 (2 rods 34 rods)
3281	Wahine / Wahineai	Kahakoa Luaiokama/ Inaiokama	house lot, 2 <i>lo'i</i>	1 (30 rods) 1 (1 acre, 29 rods)
3282	Wahapu, Sera	Halepuōla Kahakoa Village	2 <i>lo'i</i> , house lot	1 (3 acres, 3 rods) 1 (14 rods)
3302	Maawe / Maawi	Kahakoa Village Puhauula	house lot, 6 <i>lo'i</i>	1 (27 rods) 1 (1 acre, 1 rod, 20 rods)
3303	Makaiki / Makaike	Kapalai (Waioo) Kapuaiomolohua	5 (1*) <i>lo'i</i> , house lot	1 (2 rods, 20 rods) 1 (27 rods)
3345	Nakai	Kapalai Kahakoa Village	2 <i>lo'i</i> , house lot	1 (1 acre, 31 rods) 1 (32 rods)
3346 (Location index) See also 3345	Nawai	Kulaakapueo Makunapanone	3 <i>lo'i</i> , 1 dry <i>lo'i</i> , house lot	1 1
3367	Noi	Hapuupuu Kahakoa	3 <i>lo'i</i> and <i>kula</i> , house lot	1 (2 rods, 9 rods) 1 (35 rods)
3368	Nakaakai	Maulili Palakawai	3 <i>lo'i</i> , house lot (also mentions a claim in Waimea,	1 (2 rods, 22 rods) 1 (2 rods, 4 rods)

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			containing a <i>heiau</i>)	
3403	Pahio	Kapuhai Malaihauono	3 <i>lo'i</i> and <i>kula</i> , house lot	1 (1 acre, 1 rood, 18 rods) 1 (1 rood, 1 rod)
3405	Poka	Kaiwaiiki / Halilauhau	3 <i>lo'i</i> and house lot	1 (1 rood, 4 rods)
3406	Pula	Kapuaiomolohua Village Waioo	house lot, 5 <i>lo'i</i> and <i>kula</i>	1 (29 rods), 1 (1 acre, 8 rods)
3551	Kehenui / Kaihenui	Noleha Palauhulu	house lot, 1 <i>lo'i</i> and 2 <i>mo'o</i>	1 (1 acre) 1 (3 acres, 1 rood, 4 rods)
3552	Kaula / Nakaula - died in epidemic	-	-	-
3553	Kekalo / Kikolo left the land	-	-	-
3555	Kiaipali	Malaehakoa/ Melehakoa Naliha	house lot, 10 <i>lo'i</i>	1 (1 rood, 7 rods) 1 (2 acres, 15 rods)
3556	Kekua	Kapalai	3 <i>lo'i</i>	1 (1.75 acres, 14 rods)
3557	Kaniwi / Kanjui	Kahakoa Lanipaa	house lot, 14 <i>lo'i</i>	1 (2 rods, 26 rods) 1 (2 acres, 20 rods)
3559 see 3111 Kapule	-	-	-	-
3560	Kauakahi / Kanakahi	Pua / Puaa Puuiki Village	3 <i>lo'i</i> and <i>kula</i> (pasture), house lot	1 (3 acres, 1 rood, 16 rods) 1 (1 rood, 12 rods)
3561	Kaumualii, Josiah	Papaalai	12 <i>lo'i</i> , <i>kula</i> , 2 houses and grave, 8 or 10 <i>lo'i</i> and <i>kula</i>	1 (17.75 acres, 28 rods)
3567	Kaiapa	Hapuupuu	7 <i>lo'i</i> (4 taro and 3 brush) and house lot	2 (1.25 acres, 18 rods)
3568	Kelani	Kawaiiki on shore Waioo	house lot, 5 <i>lo'i</i>	1 (29 rods) 1 (1 acre, 3 rods)

3569 (location index- LCA testimony lists as 3568)	Kupalu	Paki Pahoula	3 <i>lo'i</i> , house lot	1 (1 acre, 1 rood, 24 rods) 1 (19 rods)
3756	Amara / Amala / Amaja (died)	-	-	-
3759	Alika	Alalike Kauakahiuna Village	4 <i>lo'i</i> , house lot	1 1
3909	Nahinu, I	Kupapaupapa Pelehuna	4 <i>mo'o a lihi</i> (w/ 3 orange trees)	1 (4 acres, 16 rods) 1 (16 rods)
4146	Kaliu	Kamaluokukui Kaulupalau	2 <i>lo'i</i> and <i>kula</i> house lot	1 (2 rods, 26 rods)

No. of *lo'i* differs among Native Register, Native Testimony and Foreign Testimony

Kamehameha III awarded the *ahupua'a* 53 *'āpana* claims - 51 awarded

Claimed: more than 122 *lo'i*, 24 house lots, 8 *kula*, 2 fishponds 5 *mo'o*, 1 grave yard, 1 burial ground, 3 orange trees

Also on the topic of cemeteries - the Foreign Testimony supporting the claims of Maawe (#3302) and Nawai (#3346) mention a "burying ground" called Mahunapuoni, which today would be located on the grounds of the Coco Palms Hotel and may possibly be the site studied by William Kikuchi (1973) when excavation for a new wing to the hotel uncovered thirty-four burials. This burying ground may extend under and across Kūhō Highway into the area proposed for construction of a wall continuation and a double-wide boardwalk.

Referring to another burial site, Stanley B. Porteus (1962) mentions 2,000 Polynesians, mostly Gilbert Islanders brought in for plantation work and Porteus says those who died in Hawai'i "were buried in the sand dunes alongside what is now the golf course, near Kapa'a (i.e. Wailua Golf Course).

Within decades of western contact the area lost its ancient importance, and likely its population also. The *ali'i* who enjoyed and benefited from their contact with westerners, spent more time in Waimea - the preferred anchorage for visiting ships. Also the complex of *heiau* at Wailua lost their great significance after the abolishment of the *kapu* system. By the mid-1800s only a small population, decimated in part by disease, existed in the Wailua River Valley within a mile from the sea. They were displaced within decades by imported farmers and crops.

6. Post-Mahele Period

Like most well watered areas in Hawai'i, rice crops began taking over former *lo'i kalo* in the second half of the 1800's. This sharing of the land by the Chinese rice farmers and native *kalo* growers continued through the century. Knudsen (1991:152) visited Wailua in 1895 and wrote.

We rode through the Lihue Plantation cane fields, passed through Hanamaulu and came to the Wailua River. What a sight! The great river lay clear and placid - winding away up toward the mountains with rice fields and taro patches filling all the low lands.

By 1935, Handy (1940:67) found no *kalo* being cultivated. The terraces had been taken up by rice, sugar cane, sweet potato and pasture. However:

Kapa'a, Waipouli, Olohena, and Wailua are districts which have broad coastal plains bordering the sea, any part of which would be suitable for sweet potato plantings: presumably a great many used to be grown in this section. There are a few flourishing plantations in Wailua at the present time [Handy 1940:153].

7. Previous Archaeological Research and Finds in Wailua Ahupua'a

The following two tables outline the archaeological research (Table 2) and archaeological sites (Table 3) identified in Wailua Ahupua'a. Table 2 provides a list of archaeological research conducted within Wailua Ahupua'a, including columns for source, location, nature of study, and findings. The locations of these archaeological studies are shown in Figure 6. Table 3 is a list of known archaeological sites within the *ahupua'a* and includes columns for state site numbers, site type, location and reference. The locations of identified sites within seaward Wailua Ahupua'a are shown in Figure 7. The configuration of the designated Wailua Complex of Heiau National Historic Landmark is shown in Figure 8. A discussion of the research and a summary discussion of the likelihood of historic properties follows.

8. Summary of Wailua Settlement Pattern and Discussion

Before discussing the most important sites of Wailua, we note that the importance of the area along the southern boundary in the *ahupua'a* of Wailua was probably minor in the total scheme of land use in traditional times and no Land Commission claims mention this area. The flatlands between the dunes and Kālepa Ridge contain swampy areas fed by springs along the base of the ridge that may have allowed limited *kalo* cultivation (Handy 1940:68) on the margins of the marsh. The situation here may have been very similar to that described by Ida and Hammatt (1993) in Kekaha where any permanent habitation was at the base of the ridge near the fresh water source. The *makai* side of the marsh would probably not have been used for taro because the water would have been warmer and less desirable for taro cultivation. The dunes between the marshland and the sea were probably used only for human interment, except for the seaside, which would have hosted temporary or seasonal fishing camps.

The Wailua River, along both shores, was the most important high-status area on Kaua'i in pre-Contact times. This area was the royal center where the high chiefs and chiefesses carried on their business when they were not traveling about the island(s), and where they entertained visitors. Today we see a small portion of this royal center when we look at the remnants of five of the *heiau* (where official decision making was carried out), the Hauola Pu'uhouua (place of refuge), the birthstones, the royal coconut grove, the bellstone and the royal fishponds. There exist no visible surface remnants of the chiefly homes, the supporting *lo'i* and *kula* lands, the places of recreation, the burial place called Mahunapuoni (just *makai* of Kapule's fishponds), the fish traps and the canoe landings.

Table 2 Previous Archaeological Studies in Coastal Wailua Ahupua'a (see Figure 6)

Source	Location	Nature of Study	Findings
Thrum 1906	Mouth of Wailua River	listing of <i>heiau</i>	Lists 4 <i>heiau</i> : Malae, Poli'ahu, Holoholokū and Hikinaakalā
Bennett 1931	Mouth of Wailua River	Archaeological reconnaissance survey of <i>heiau</i> and place of refuge	Describes 6 sites- Site 103: Dune burials, Site 104: Malae Heiau, Site 105: Hikinaakalā Heiau, Site 106: Holoholokū Heiau and sacred grove, Site 107: Poli'ahu Heiau and Site 109: an unnamed <i>heiau</i>
Soehren 1967	Wailua River Valley including North and South Forks	Field Trip Report	Locates and briefly describes 34 sites with B.P.B.M. site numbers A1-1 to A1-34
Ching 1968	Wailua River Valley including North and South Forks	Surface Survey	Locates and briefly describes Soehren's (1967) 34 sites and adds sites 35-58 with B.P.B.M. site numbers A1-1 to A1-58
Handy and Handy 1972	Archipelago-wide, discuss Wailua Ahupua'a	Native Planters Study	Discuss agricultural pattern at Wailua Ahupua'a
Kikuchi 1973	Coco Palm Hotel, north of Wailua River, <i>mauka</i> of Kūhiō Highway	Burial Study	Discusses 34 burial finds, other features and artifacts
Kikuchi 1974	Mouth of Wailua River	<i>Heiau</i> Study	Hikinaakalā Heiau
Walton and Spilker 1974	Lydgate State Park Pavilion Project, south of river mouth, <i>makai</i> of Kūhiō Highway	Assessment and sub-surface testing (7 post hole digger excavations)	Testing did not locate any archaeological materials
Kikuchi et al. 1976	Holoholo-kū and Pōhaku Ho'ohānau	Study of oral documentation and historical records	Compendium of information regarding these sites
Cox 1977	Wailua Golf Course	Burial Recovery project	13 burials located (Sites -542 to -546 and -819)

Source	Location	Nature of Study	Findings
Yent 1980	North side of <i>makai</i> portion of Wailua River	Evaluation of bellstone	Bellstones located, described and traditions are given along with preservation recommendations
Kikuchi 1984	South of Mouth of Wailua River	Mapping of Petroglyphs	Survey of petroglyphs noted 36 figures, more possibly in river and bulldozer damage from clearing mouth of river
Kikuchi 1987	Malae Heiau, South of mouth of Wailua River	Adze study	Discusses adze fragments from Malae Heiau
Yent 1987	South of Mouth of Wailua River	Demolition of old comfort station and corings for new comfort station	No subsurface cultural deposits located
Dunbar 1988	Wailua Complex of Heiau	National Register of Historic Places Inventory-Nomination Form	"One of the most important site complexes in the Hawaiian Islands"
Yent 1989a	South side of the mouth of Wailua River Hikinaakalā Heiau and Hauola area	Mapping and testing of Site 50-30-08-105 in 1986 (6 1m ² excavations)	Concluded 2 periods of occupation, one historic, and an earlier period may or may not be associated with <i>heiau</i> building
Hammatt 1991b	Wailua River Mouth	Subsurface Testing	No cultural deposit observed
McMahon 1991	Eastern margin of Sleeping Giant Mountain on the north edge of Wailua Ahupua'a	Archaeological Investigations	No significant findings
Walker et al. 1991	Work on both sides of Kūhiō Hwy. At the south end of the <i>ahupua'a</i>	Archaeological inventory survey for a master plan	Identified no sites

Source	Location	Nature of Study	Findings
Yent 1991a	Mouth of Wailua River	Archaeological Testing	Although several fill layers and extensive ground alteration was indicated, a possible pre-contact cultural deposit was noted; no site number was assigned
Yent 1991b	Malae Heiau South of mouth of Wailua River	Park Planning	Discusses Malae Heiau in context of proposed incorporation into Wailua River State Park
Yent 1991d	South side Wailua River Mouth	Damage Assessment	Summary of petroglyph site 50-30-08-105A
Folk and Hammatt 1992	Wailua County Golf Course from coast to Kūhiō Highway	Assessment for Fiber Optic Cable	Examination of exposed strata revealed no cultural material, informants described burials in the golf course area.
Kikuchi and Remoaldo 1992	Island-wide, B005 on north bank of <i>makai</i> Wailua River	Cemeteries of Kaua'i	Identifies site 50-30-08-B005-Poli'ahu Japanese Cemetery
Spear 1992	North of Wailua River mouth, <i>makai</i> of Kūhiō Highway	Sub-surface Testing (7 backhoe trenches)	No significant findings; two charcoal lenses noted.
State Parks 1992	Poli'ahu Heiau	Interpretive Signage Plan	Summarizes data on Poli'ahu Heiau
Yent 1992	Mouth of Wailua River	Hurricane Damage Assessment	Damage report
Erkelens and Welch 1993	Kaua'i Community Correctional Center west of Kūhiō Highway and the Wailua County Golf Course	Archaeological assessment	Summarizes literature and notes probability of burials
Kawachi 1993	Mouth of Wailua River	Survey of river mouth (4-1-04:01)	Discovered unreported submerged petroglyph, no site number assigned

Historic and Archaeological Background Wailua

Source	Location	Nature of Study	Findings
Beardsley 1994	Kaua'i Community Correctional Center west of Kūhiō Highway and the Wailua County Golf Course	Sub-surface testing for sewer line	One burial designated Site -9357 regarded as part of Bennett's site 50- 30-08-103 but no other significant findings
Folk et al. 1994	Wailua County Golf Course from coast to Kūhiō Highway	Archaeological Inventory Survey with sub-surface testing	No significant finds
Hammatt et al. 1994	Lands <i>mauka</i> of Kūhiō Highway	Archaeological Assessment	Identifies archaeological concerns including: 1) impact on the Wailua Complex of <i>heiau</i> , 2) impact on potential burial sites in the Wailua Golf Course and the Coco Palms Resort area, and 3) impact on existing and former Wailua marshlands in the vicinity of the County Correctional facility and on the north side of Wailua River
Carpenter and Yent 1995	North Fork of the Wailua River	Archaeological Reconnaissance	Notes high potential for extensive archaeology
Flores 1995	Malae (Malaha'akoa) Heiau; south of Wailua River mouth, <i>mauka</i> of Kūhiō Highway	Historical and Cultural Research	Data on the <i>heiau</i> (Site 50-30-08- 104) and Wailua Ahupua'a in general is presented
Folk and Hammatt 1995	Wailua County Golf Course from coast to Kūhiō Highway	Monitoring fiber optic cable conduits	Found remains of eight individuals from disturbed, possibly secondary, deposits
Hammatt et al. 1997	Lands <i>mauka</i> of Kūhiō Highway	Archaeological Inventory Survey for Kūhiō Highway widening	1 new site found north of river, 50- 30-08-756; a terrace

Source	Location	Nature of Study	Findings
Yent 1997a	Extreme south, coastal Wailua, <i>makai</i> of Kūhiō Highway	Burial Treatment and Monitoring Plan	Plans to attend proposed work at a temporary automobile storage facility close to Dune Burials sites
Yent 1997b	Malae Heiau, south of Wailua River, <i>mauka</i> of Kūhiō Highway	Vegetation Removal and Landscaping Plan	Outlines methodology and guidelines for vegetation removal at Malae Heiau
Yent 1997c	Malae Heiau	Vegetation Removal Report	Summarizes work
Shideler et al. 2001	Lydgate Park	Archaeological Assessment	Summarizes work
Jager and Spear 2000	Wailua Golf Course	Archaeological Monitoring Report	Documents several burials
Buffum and Dega 2002	Coco Palms	Archaeological Monitoring Report	Cultural layer identified as site 1711
Dega and Powell 2003	Kūhiō Hwy.	Archaeological Monitoring Report	Feature of site 1711 described
Hammatt and Shideler 2003	Kūhiō Hwy. Bypass options	Archaeological Assessment	Summarizes work, describes six new sites (667, 668, 676-679)

Table 3 Archaeological Sites in Coastal Wailua Ahupua'a (see Figure 7)

Site No. 50-30-08-	Site Type/ Name (if any)	Location	Size/Constraints	Reference
B005	Poli'ahu Japanese Cemetery (now Site 50-30-08- 675)	South side Kuamo'o Road (Poli'ahu Road)	Discrete Historic Cemetery approx 118 burials, interments as late as 1979	Kikuchi and Remoaldo 1992:66-74
103	Dune Burials	Wailua Golf Course, large area, not well defined; primarily seaward of Kūhiō Hwy, N of Wailua Golf Course club house	Minimum number of individuals encountered to date approx. 100; consultation and monitoring in vicinity indicated	Bennett 1931:125; Erkens and Welch 1993; Beardsley 1994; Fager and Spear 2000
104	Malae Heiau	South bank of Wailua River, 200 feet <i>mauka</i> of Kūhiō Highway	Part of Wailua Complex of Heiau National Historic Landmark - defined area 2 acres, <i>heiau</i> and buffer 9.49 acres, in State Park, Yent 2000 specifies view corridor concerns	Thrum 1906:40; Bennett 1931:125; Yent 1991b; Yent 2000
104A	Adze Workshop/ flake scatter	In cane field N and NE of Malae Heiau extending to road to marina	Within 9.49 acre Malae Heiau and buffer parcel in State Park	Kikuchi 1987:1-9; see Yent 2000
105	Hikinaakala Heiau and Pu'uhōnua o Hauola	Southern side of the mouth of Wailua River	Part of Wailua Complex of Heiau National Historic Landmark - defined area 2.3 acres in State Park	Thrum 1906:40; Bennett 1931:125-126; Kikuchi 1974; Yent 1989
106	Kalaeokamanu (Kalaeamanu) Heiau aka Holoholokū Heiau and associated pōhaku ho'ohānau	North bank of the Wailua River at the base of Pu'ukū	Part of Wailua Complex of Heiau National Historic Landmark - defined area 37,960 sq ft., in State Park	Bennett 1931:127; Damon 1934

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Site No. 50-30-08-	Site Type/ Name (if any)	Location	Size/Constraints	Reference
107	Poli'ahu Heiau	Wailua River State Park	Part of Wailua Complex of Heiau National Historic Landmark - defined area 49,140 sq ft., in State Park	Thrum 1906:40; Bennett 1931:127
217 (Soehren and Ching Site 10)	Kauhihalau agricultural site	S. of <i>makai</i> portion of Wailua River, eastern quarter occupied by Wailua State Marina	Virtually no data, size unclear, further work in area indicated; in State Park	Ching 1968:16
247 (Soehren and Ching Site 33)	Kamalau agricultural site	N. of Mauna Kapu on flats	Virtually no data, size unclear, further work in area indicated; in State Park	Ching 1968:16
250 (Soehren and Ching Site 11)	Hauloa agricultural site	N. of <i>makai</i> portion of Wailua River	Virtually no data, size unclear, further work in area indicated; in State Park	Ching 1968:16
321 (Soehren and Ching Site 12)	<i>Auwai</i> , earthen ditch	Just North of Confluence of North and South Forks, Wailua River (associated with sites 218 and 250) along base of valley wall in dense <i>hau</i>	Little data, length unclear, further work in area indicated; in State Park	Soehren 1967; Ching 1968:16; Yent 1989a:7; Carpenter and Yent 1997:35
325 (Ching Site 38)	Kamalau and Kulaina storied rocks	N of Mauna Kapu, at <i>mauka</i> end of site -247 one rock in middle of river below Poli'ahu Heiau	Site consists of two storied rocks; description insufficient for identification; in State Park	Ching 1968:16-18
326 (Ching Site 39)	Kamalau and Kulaina storied rocks	N of Mauna Kapu, at <i>mauka</i> end of site -247 one rock in middle of river below Poli'ahu Heiau	Site consists of two storied rocks; description insufficient for identification; in State Park	Ching 1968:16-18

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Site No. 50-30-08-	Site Type/ Name (if any)	Location	Size/Constraints	Reference
329 (Ching Site 42)	Ahuhauli, reported home and burial ground of Kumauna/ Lono Kelekoma family	North of <i>makai</i> portion of Wailua River "near the little hillock, Ahuhauli, where the one (lone) tall coconut tree stands" (Salisbury, 1936)	Virtually no data, size unclear, further work in area indicated; in State Park	Ching 1968:14, Salisbury, 1936
330 (Ching Site 43)	Kahuamokila legendary cave through hill from N to S, south end just above water level; sealed with a stone, land entrance opening is small	North of <i>makai</i> portion of Wailua River	Virtually no data, may only be legendary, further work in area indicated; in State Park	Ching 1968:13
331 (Ching Site 44)	Old Rice Mill	North of mouth of Wailua River, just <i>mauka</i> of Smith's and Doris' old boat landing	Still stood in 1953, only foundations are left, testing and marker recommended; in State Park	Ching 1968:12-13
334 (Ching Site 47)	Pōhaku'ele'ele Heiau (and several other sites reported by Dickey [1916:29])	"On the <i>makai</i> tip of a hill near the eastern end of the promontory between the two northern branches of the Wailua River" (Dickey 1916:14)	Virtually no data, some uncertainty about the location, size unclear, further work in area indicated; in State Park	Dickey 1916:29; Ching 1968:14-15
335 (Ching Site 48)	Bellstone(s)	North of <i>makai</i> portion of Wailua River	Part of Wailua Complex of Heiau National Historic Landmark - defined area N.A.; in State Park	Ching 1968:14

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Site No. 50-30-08-	Site Type/ Name (if any)	Location	Size/Constraints	Reference
337 (Ching Site 50)	Hihikalahu "the place where the first <i>hau</i> trees of Kaua'i grew"	North of Mauna Kapu. south of Polihahu	Seemingly just a legendary <i>hau</i> tree grove, size unclear; in State Park	Ching 1968:16
340 (Ching Site 53)	Agricultural Terraces "indicated as being in rice in 1900 and 1923"	North of confluence of North and South Forks. Wailua River	Virtually no data. size unclear, further work in area indicated; in State Park	Ching 1968:18
342 (Ching Site 55)	Agricultural flat "appears as rice land on Monsarratt's map of 1900 and Wall's map of 1923"	North of <i>makai</i> portion of Wailua River	Virtually no data, size unclear, further work in area indicated; in State Park	Ching 1968:13
343 (Ching Site 56)	<i>Kula</i> "indicated as <i>kula</i> land on Wall's map of 1923"	South side of <i>makai</i> portion of Wailua River	Virtually no data, size unclear, further work in area indicated; in State Park	Ching 1968:16
502	Wailua Complex of Heiau	Mouth of the Wailua River	Includes five discrete parcels, sites: -104, -105, - 106, -107, -335; in State Park	1962 National Register of Historic Places; 1981 Hawai'i Register of Historic Places
542	Burial	North part of Wailua County Golf Course	Burials understood as part of Site -103 consultation and monitoring in vicinity indicated	Cox 1977
543	Burial	North part of Wailua County Golf Course	Burials understood as part of Site -103 consultation and monitoring in vicinity indicated	Cox 1977

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Site No. 50-30-08-	Site Type/ Name (if any)	Location	Size/Constraints	Reference
544	Burial	North part of Wailua County Golf Course	Burials understood as part of Site -103 consultation and monitoring in vicinity indicated	Cox 1977
545	Burial	North part of Wailua County Golf Course	Burials understood as part of Site -103 consultation and monitoring in vicinity indicated	Cox 1977
546	Burial	North part of Wailua County Golf Course	Burials understood as part of Site -103 consultation and monitoring in vicinity indicated	Cox 1977
634	Extensive wetlands, former <i>lo'i</i> area	North bank of Wailua River	130-acre; further archaeological work indicated	Hammatt et al. 1997:68,70
660	Burial	N end of Coco Palms property N of Wailua River mouth	1 historic burial, consultation and monitoring in vicinity indicated	Elmore and Kennedy 2000
667	Linear Terrace	Adjacent to north side of pasture access road <i>mauka</i> of Smith's Tropical Paradise	Approx. 2 m by 5 m long, further archaeological work indicated	Hammatt and Shideler 2003
668	Cement slabs inscribed with year 1926	North central portion Smith's Tropical Paradise	An area 4 m by 5 m., further archaeological work indicated	Hammatt and Shideler 2003
675	Poliahu Japanese Cemetery (formerly known as 50- 30-08-B005)	East end of Pu'u Kī Ridge above Pōhaku Ho'ohānau and Holoholokū Heiau	Preservation of historic cemetery	Hammatt and Shideler 2003
676	Alignments and enclosures	Greatly modified as a contemporary sacred site - possibly former Heiau	Modern modifications make it difficult to evaluate; preservation or data recovery recommended	Hammatt and Shideler 2003

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Site No. 50-30-08-	Site Type/ Name (if any)	Location	Size/Constraints	Reference
677	Two lava tubes	Just S of Kuamo'o Road in the N side of Pu'u KI 100 m W of Pōhaku Ho'ohānau	Appears to be no surface deposits, testing of talus slope at entrance indicated	Hammatt and Shideler 2003
678	Terrace	central Pu'u KI summit ridge	Data Recovery	Hammatt and Shideler 2003
679	Overhang rock shelter	N bank of Wailua River, SW portion of Pu'u KI ridge	Appears to be no surface deposits, testing indicated	Hammatt and Shideler 2003
756	Terrace	North bank of Wailua River	In State Park, 30 m by 12 m-further archaeological work indicated	Hammatt et al. 1997:68.70
761	Burial	North bank of Wailua River mouth	Consultation and monitoring in vicinity indicated	Ida and Hammatt 1998
819	Burial	North part of Wailua County Golf Course	Burials understood as part of Site -103 consultation and monitoring in vicinity indicated	Cox 1977
1711	Traditional cultural layer	Coco Palms and Kūhiō Hwy	Monitoring in vicinity indicated	Buffum and Dega 2002, Dega and Powell 2003
1980	Burial	Wailua County Golf Course east of County Correctional Facility, half way to the sea	Minimum number of eight individuals encountered	Folk and Hammatt 1995
9557	Burial (1)	County Correctional Facility	Burial understood as part of Site -103, consultation and monitoring in vicinity indicated	Beardsley 1994

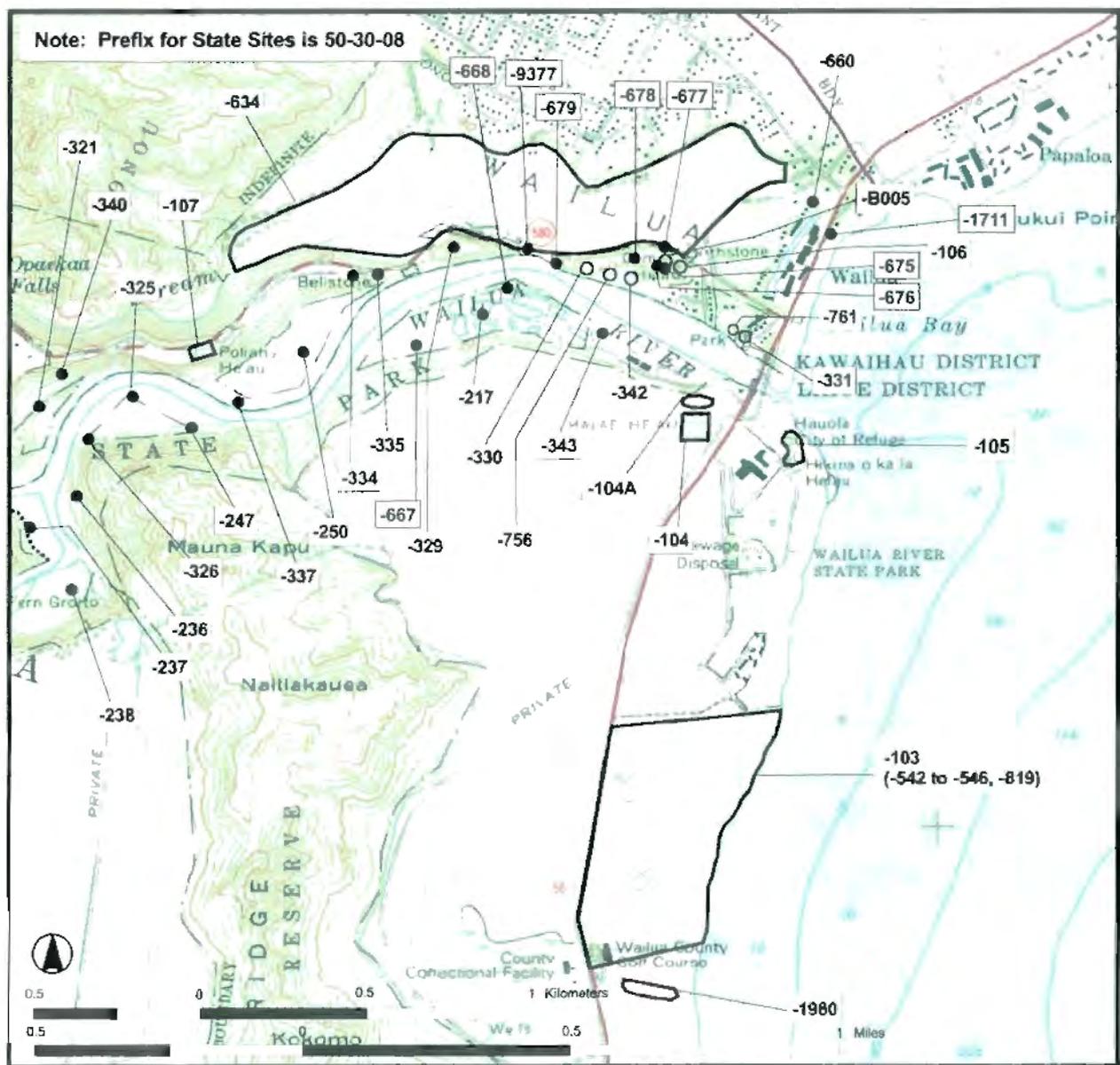


Figure 7: Archaeological Sites in Coastal Wailua Ahupua'a

The Wailua Complex of Heiau, on both sides of the River, was the focus of political and religious activity. Among the seven *heiau* of Wailua, the Malae Heiau (at the river mouth on the south side) and Poliabu Heiau (on the north side of the river inland atop Poliabu Ridge) were two large companion *heiau*. The *makai* section of the *ahupua'a* near the river mouth was the focus of daily life for the royal families. Some house sites were south of the river on the dunes (*makai* of the present highway), but the majority of house sites were on the north side of the river just *mauka* of the highway between the Coco Palms Resort and the river. A burial area is associated with these house lots on the dune and archaeological work shows there are still present remains of the habitation layer and the burials. A portion of Kapule's fishponds, just behind the sand berm, still exists on the grounds of the Coco Palms Resort. The choicest house area, according to the Mahele documents, is probably the area in and around the Royal Coconut Grove, where Debora Kapule (3111), Oliva Chapin (3226), Naakaakai (3368) and Kupalu, wife of Kaniwi (3568) had their homes. These homes were close to the river, the Kalacokamanu (Holoholokū) Heiau, the birthstones (where elaborate birthing ceremonies of royalty would take place), and the coconut grove.

Inland, along the floodplain, are remnants of the many *lo'i* parcels and other house sites as well. There is archaeological evidence that agricultural use of the land stretched far *mauka* along the Wailua River and its tributaries, and supported a relatively large population at an earlier time. Archival records mention other resources, including bananas, wood for canoes and housing, and candlenuts for lights as coming from farther inland. Archaeological research shows adze materials for tools also inland.

9. Pattern of Archaeological Sites and Constraints in Wailua

The pattern of archaeological sites in Wailua *Ahupua'a* is of almost contiguous historic sites (or former historic sites) located within the Wailua River valley, at the mouth of the valley, and in the flat coastal lands on the north side of the river mouth.

These archaeological resources may be a significant issue in this area particularly as they involve potential impacts to archaeology within a State Park and may involve impacts in proximity to sites on the National Register of Historic Places. Very little in the way of adverse impacts would be anticipated in the development of any of the former sugar cane lands back from the coast.

The designation of the Wailua Complex of Heiau National Historic Landmark (1988) consists of five discontinuous properties: Site -104, Malae Heiau; Site -105, Hikinaakalā Heiau (and petroglyphs); Site -106, Holoholokū Heiau and Pōhaku Ho'ohānau; Site -107, Poli'ahu Heiau; and Site -335, the Wailua Bellstone(s). The designation of these properties for the National Register/National Historic Landmark listing is five circles each centered in the middle of each of the sites but only slightly greater than the radius of the sites themselves (Figure 8).

All of the proposed alternatives begin at their southern end at the existing northern terminus of a previous trail project at the existing Lydgate Bike/Pedestrian cul-de-sac near the north end of Lydgate Park in the immediate vicinity of the northwest corner of the Aloha Beach Resort. All of the proposed alternatives involve the construction of a 10-12 foot wide path that heads north on an old railroad berm on the seaward side of Kūhiō Highway the short distance to the Wailua River mouth. The proposed path either crosses the Wailua River on a bridge cantilevered off of the existing *makai* bridge (Alternatives 1 and 2) or crosses the river on a new bike/ pedestrian

path bridge to be constructed seaward of the existing bridges (Alternative 3). The results of our field assessment and preliminary consultation with State Parks and the State Historic Preservation Division indicate that such an alignment is appropriate. However, we recommend continuing consultation as plans become more definite. The Wailua petroglyph site (Ka Pae Ki'i Mahu o Wailua, Site 50-30-08-105A; Figures 9 & 10) at the mouth of the Wailua River was clearly regarded by Dr. Kikuchi (1984) as "historically part of the temple of Hikina-a-ka-lā and the City of refuge, Hau'ola (both site coded 50-30-08-105)" which is why he designated the petroglyphs as site 105A. Thus the petroglyphs should probably be regarded as a contributing element of the designated Wailua Complex of Heiau National Historic Landmark.

There is some uncertainty regarding the extent of this Wailua petroglyph site as: "The appearance of the boulders is determined by the vagaries of the weather, e.g. the flow pattern at the mouth of the Wailua River, the sand deposited by storms and the tides of the sea" (Kikuchi 1984).

Field inspection and available maps (Figures 9 & 10) indicate that the petroglyph field is well to the southeast of any likely footing for a new bike/pedestrian path bridge, however, if Alternative 3 is pursued (with footings for a new bridge on the south side of the river *makai* of the existing bridges) we recommend that plans be shared with State Parks and the State Historic Preservation Division to evaluate the possible need for a program of subsurface testing to further evaluate the prospect of impacting any buried portion of this petroglyph site that should be regarded as a contributing element of the designated National Historic Landmark.

Alternative 3 includes a possible spur path extending down the north side of the Aloha Beach Resort effectively connecting the proposed path with the vicinity of Hikinaakalā, the Pu'uhonua o Hauola, a parking area and the coast. Although this route would largely or entirely lie on a former railroad berm, and would provide access to a designated National Historic Landmark site, informal discussion with State Parks has indicated that they are not receptive to such a path in such close proximity to this site complex.

On the north side of the Wailua River mouth, the proposed path would pass the Coco Palms Resort on the *makai* side of Kūhiō Highway. All 3 alternatives involve construction of a low rock wall as a continuation of an existing rock wall with the provision of a doublewide boardwalk on the *makai* side of the wall. This presumably would involve some excavation for footings and foundations. Of concern in this area is the report of a burying ground or cemetery mentioned in the 1848 *Foreign Testimony* and *Native Testimony* as on the south edge of Land Commission Award 3346:1 to Nawai. This LCA lies just *mauka* of Kūhiō Highway and this may possibly be the site studied by William Kikuchi (1973) when excavation for a new wing to the hotel uncovered thirty-four burials. This burying ground may extend under and across Kūhō Highway into the area proposed for construction of a wall continuation and a doublewide boardwalk. Bullum and Dega (2002) and Dega and Powell (2003) furthermore documented a traditional cultural layer in this area between Kūhiō Highway and the Coco Palms resort. Because of the prospect for burials and/or other cultural resources archaeological monitoring is probably appropriate in this area.

All three proposed alignments include a route up Hale'ilio Road passing the north side of the Coco Palms lands. Elmore and Kennedy (2000) reported on a burial located approximately 100 m south of Hale'ilio Road within the Coco Palms. This indicates a heightened probability of burials and/or other cultural resources in the stretch of Hale'ilio Road traversing sandy soils.

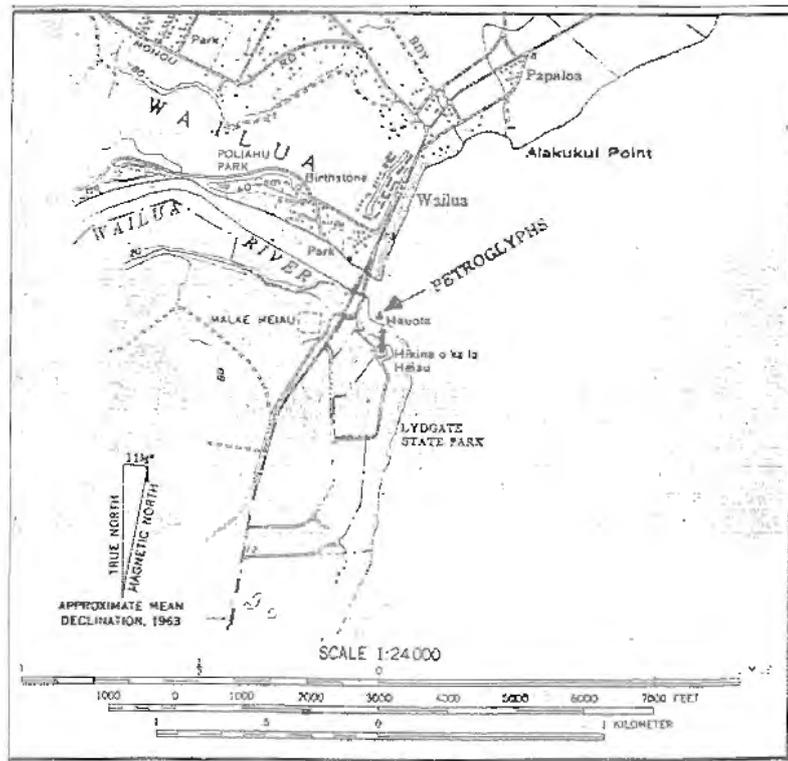


Figure 9: Location of Wailua petroglyph site (Ka Pae Ki'i Mahu o Wailua, Site 50-30-08-105A) at the mouth of the Wailua River (from Kikuchi 1984)

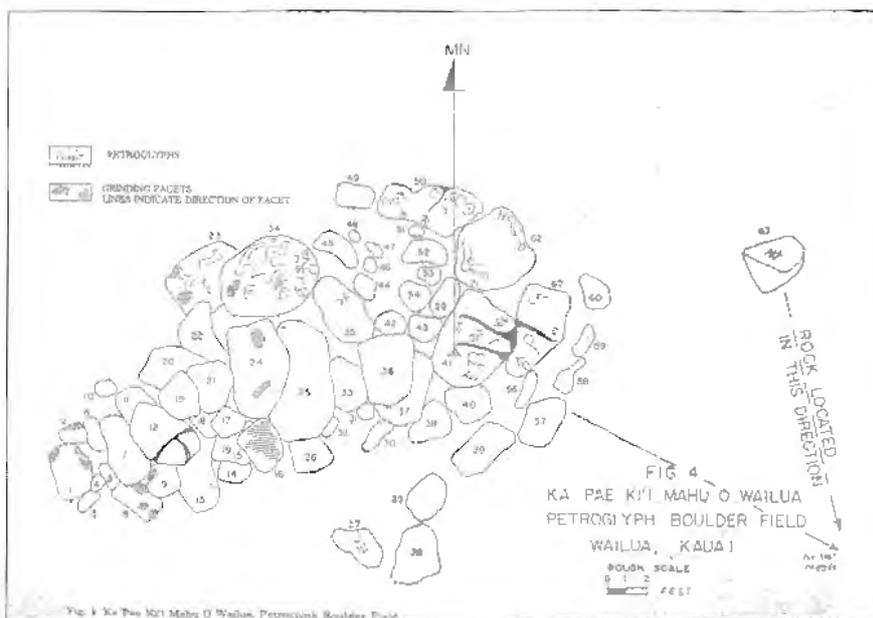


Figure 10: Sketch of petroglyph boulder field (Site 50-30-08-105A)

Proposed Alternative 3 includes an additional stretch of path development extending up Kuamo'o Road to the major ditch (just east of Kalacokamanu (Kalacamanu) Heiau aka Holoholokū Heiau and the associated Pōhaku Ho'ohānau; site -106) where the path then turns north arcing around the inland side of the Coco Palms coconut grove. Midway up the stretch of Kuamo'o Road the path would pass over the outlet of the Coco Palms water feature that was also the traditional outlet for the Hawaiian fishpond located there. Although recent archaeological study of the Coco Palms site (Hoffman et al. in progress) found very little in the way of cultural resources in the adjacent lands this area still has a somewhat elevated potential for cultural resources, particularly along the seaward portion of Kuamo'o Road.

B. Olohena (North Olohena and South Olohena)

1. Natural Setting of Olohena

Both Olohena Ahupua'a, north and south, are located on the eastern side of the island of Kaua'i, with Waipouli to the north and Wailua to the south. Like Waipouli and Wailua, these two *ahupua'a* are located within the central area of the Lihue basin and are exposed to the prevailing northeast tradewinds with 40 to 50 inches of rainfall annually at the seashore and 75 to 100 inches in the upland mountainous area. The Nounou Forest Reserve (ridge) forms a belt (north/south) across the two Olohena *ahupua'a* with plains on both sides. Konohiki Stream is about a mile inland. This stream meanders north and crosses into Waipouli to empty into the ocean. The shoreline of both Olohena is shallow topsoil above lava bedrock and there is shallow reef along the shore. Together the Olohena *ahupua'a* contain 2,368 acres. South Olohena contains 1,151 acres. and North Olohena 1,217 acres (Commission of Boundaries Record, Kaua'i, vol. 1, 1872:109).

2. Origin of the Place Name - Olohena

Pukui, Elbert and Mookini (1976) state that Olohena has no meaning, but may be a cognate with Olosenga, an island in the Manu'a group of Samoa.

3. Mahele Period and Boundary Commission

There is little cultural history known for Olohena, but some cultural information can be derived from the 1875 Boundary Commission report. Before that, in the Mahele Awards, we know that Kiaimoku relinquished half of Olohena and retained half, and purchased Grant 3662 of 403 acres. Interior Department Book 15 (p. 109) shows Kiaimoku had .60 miles of seacoast. Another Interior Department Document, dated June 28 1850, shows Kiaimoku offering to exchange his Olohena land for Moloa'a land. However Kiaimoku died in October of 1851 and no further documentation is found regarding this land for Kiaimoku (Barrère 1994:365). TMK map 4-3 (1932) shows North Olohena made up mostly of Kiaimoku's grant and South Olohena of Grant 5264 to R.P. Spaulding for Lihue Plantation (419 Acres). The one LCA claimed and granted (Table 4) is inland on Konohiki Stream (LCA 3831). Pahuwai, the single claimant in both Olohena, has 2 parcels, one in Olohena *'ili* and one in Kuanca *'ili* and he lived and worked his *lo'i* there. He is awarded one parcel, but all that he claims is included in the award. The *Native Testimony* adds the information that the entire area was surrounded by a wall. Pahuwai's award is near the Waipouli boundary at the edge of marshland called "Waialiali" and he was not far from his nearest neighbors, the most inland Waipouli claims.

Table 4 Chart of Land Use from Olohena Land Commission Award

LCA Number	Claimant	'Ili of the Ahupua'a	Land Use	No of 'Āpana Awarded
3831	Pahuwai	Kuanea	4 lo'i and house lot	1 (2 roods)

Awarded 1 claim, 1 'āpana, 4 lo'i, 1 house lot

In the Boundary Commission survey (1875) for Olohena, James Gay describes in general terms the boundaries of Olohena (the half belonging to Kamehameha III became government land) (Commission of Boundaries, Kauai, I:106-108). Probably around the turn of the century the racetrack (shown in TMK 4-3: 1932) was built along the shoreline, straddling both North and South Olohena Ahupua'a (1936). TMK 4-4 shows many small grants in South Olohena; probably government lands which according to R.D. King, principal cadastral engineer for the Territory of Hawaii, were sold during the period from 1846 to 1900 (King 1942:11).

The Wailua Boundary Commission report contains more information about Olohena than the Olohena report does -- no witnesses were called for the Olohena boundaries since the surrounding boundaries (Wailua and Waipouli) were already surveyed. The Wailua report notes that on the Wailua/Olohena boundary at approximately N 56° 33'W there is a stone shaped like a dog house and at S 85° 0'W one goes up a spur 850 links to a narrow place called Kaea (the fifth survey point between Wailua and Olohena) where there is an old burying ground surrounded by hau and kou "where the bodies of those slain in battle were buried" (Commission of Boundaries, Kauai, I:32-37). When one compares the Kapa'a Quad map with R. M. 976 and R.M. 388 (James Gay maps of Olohena and Wailua, Figures 11 and 12) this point appears to be at the Forest Reserve boundary at the Wailua-South Olohena line. The *kama'āina* testimony states that the boundary at the sand beach is where "the fish were drawn in and were divided between Olohena and Wailua," that the blow hole and the house and God Stone of Kewalo are in "Olohuna" (Commission of Boundaries, Kauai, I:32-37). No other mention of Kewalo's God Stone was found. The house of Kawelo - Ching's site 41 "a little below the cave of Mamaakualono [in Wailua] - is a stone shaped like a grass house. Kawelo would be Kawelomahamāhia, grandfather of Aikanaka and a king of Kauai ..." (Ching 1968:23). Kawelo is possibly the same as Kawelo. Fornander's accounts of the legend of Kawelo say he lived with his parents in Hanamā'ulu. In any case, the Boundary Commission report does not mention where the house or God Stone were.

4. Previous Archaeological Research and Finds in Olohena Ahupua'a

The following two tables outline the archaeological research (Table 5) and archaeological sites (Table 6) identified in Olohena (North Olohena and South Olohena) Ahupua'a. A discussion of the research and a summary discussion of the likelihood of historic properties follows. Table 5 provides a list of archaeological research conducted within Olohena Ahupua'a, including columns for source, location, nature of study, and findings. The locations of these archaeological studies are shown in Figure 13. Table 6 is a list of known archaeological sites within the *ahupua'a* and includes columns for state site numbers, site type, location and reference. The locations of identified sites within Olohena Ahupua'a are shown in Figure 14.

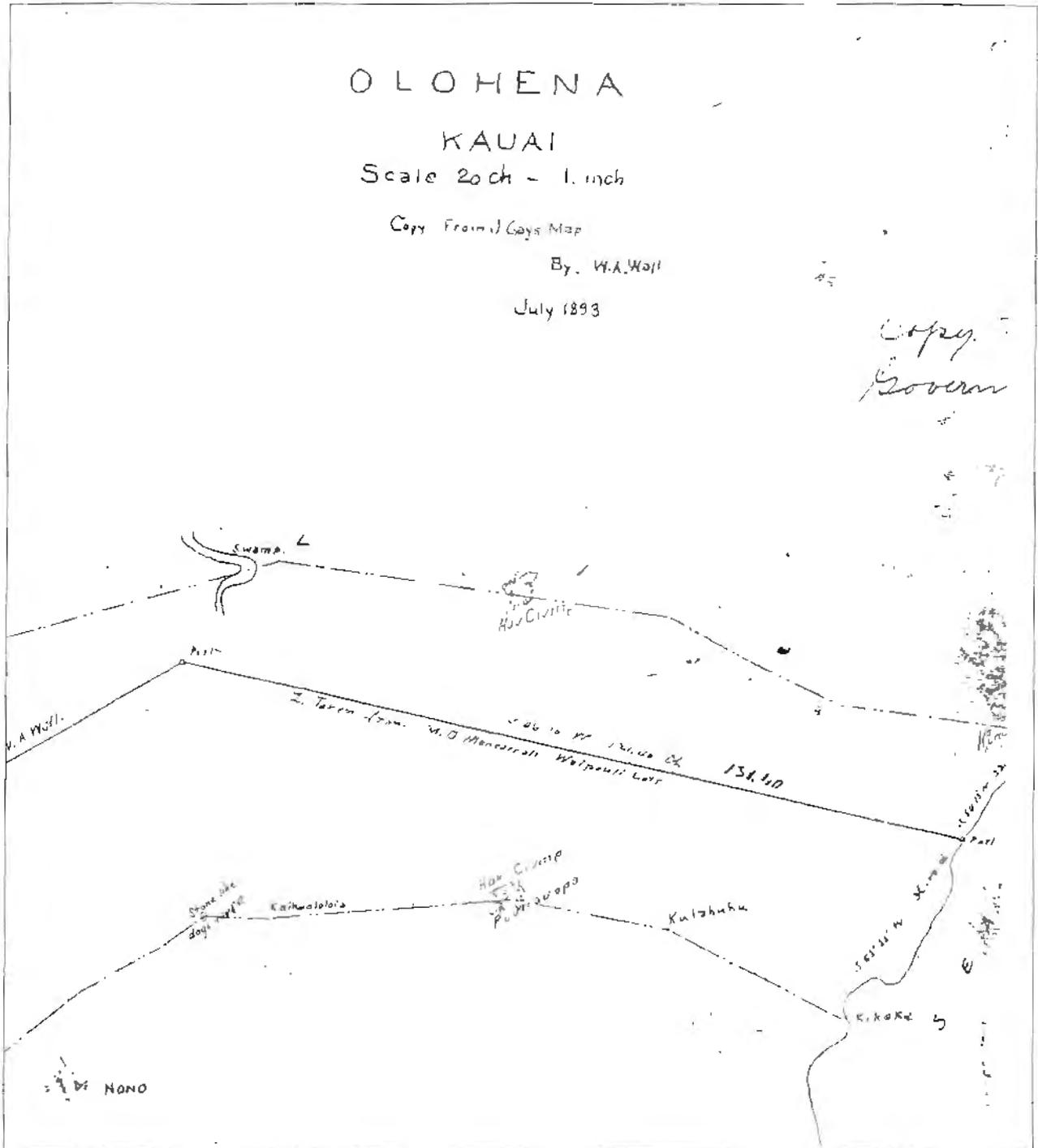


Figure 11: Portion of James Gay Map of Olohena copied by W.A. Wall in 1893, R. M. 976, Showing "Stone like dog's house" (citation from Boundary Commission report)



Figure 12: Olohena and Wailua Information on Portion of James Gay Map of Wailua in 1872, R. M. 388, Showing 5 Survey Points from Shore Inland

Table 5 Previous Archaeological Studies in Coastal North and South Olohena Ahupua'a (see Figure 13)

Source	Location	Nature of Study	Findings
Thrum 1906	Alakukui Point, central coastal South Olohena	<i>Heiau</i> Study	Kukui Heiau
Bennett 1931	Alakukui Point, central coastal South Olohena	Island-wide Survey	Kukui Heiau
Davis and Bordner 1977	Alakukui Point, central coastal South Olohena	Archaeological Investigation of Heiau	Kukui Heiau
Rosendahl and Kai 1990	North coastal North Olohena	Archaeological Inventory Survey	Cultural layer Site -1800 and burials (3) at coast
Hammatt 1991	Kūhiō Highway Road Corridor, South and North Olohena	Archaeological Subsurface Testing	Excavation of 3 trenches (3,4,and5) produced no significant findings
Kikuchi 1992	Central South Olohena <i>makai</i> of Kūhiō Highway (TMK: 4-3-01:10)	Archaeological Survey and Sub-surface Testing	Cultural layer and 3 <i>imu</i> . No site # assigned
Spear 1992	Along Kūhiō Highway, South and North Olohena	Archaeological Subsurface Testing	No significant findings
Hammatt et al. 1994	Lands <i>mauka</i> of Kūhiō Highway	Archaeological Assessment	Notes marshlands and the potential for paleoenvironmental data and evidence of wetland cultivation.
Hammatt et al. 1997	Just <i>mauka</i> of Kūhiō Highway, central South Olohena	Archaeological Inventory Survey	A sediment core yielded no significant findings
Perzinski et al. 2001	On coast, NE edge of South Olohena	Archaeological Monitoring Report	A cultural layer and burials (2) were given Site # 50-30-08-791.
Dega and Powell 2003	Kūhiō Hwy.	Archaeological Monitoring Report	No significant finds
Hammatt and Shideler 2003	Kūhiō Hwy. improvements alternate routes	Archaeological Assessment	Summarizes information

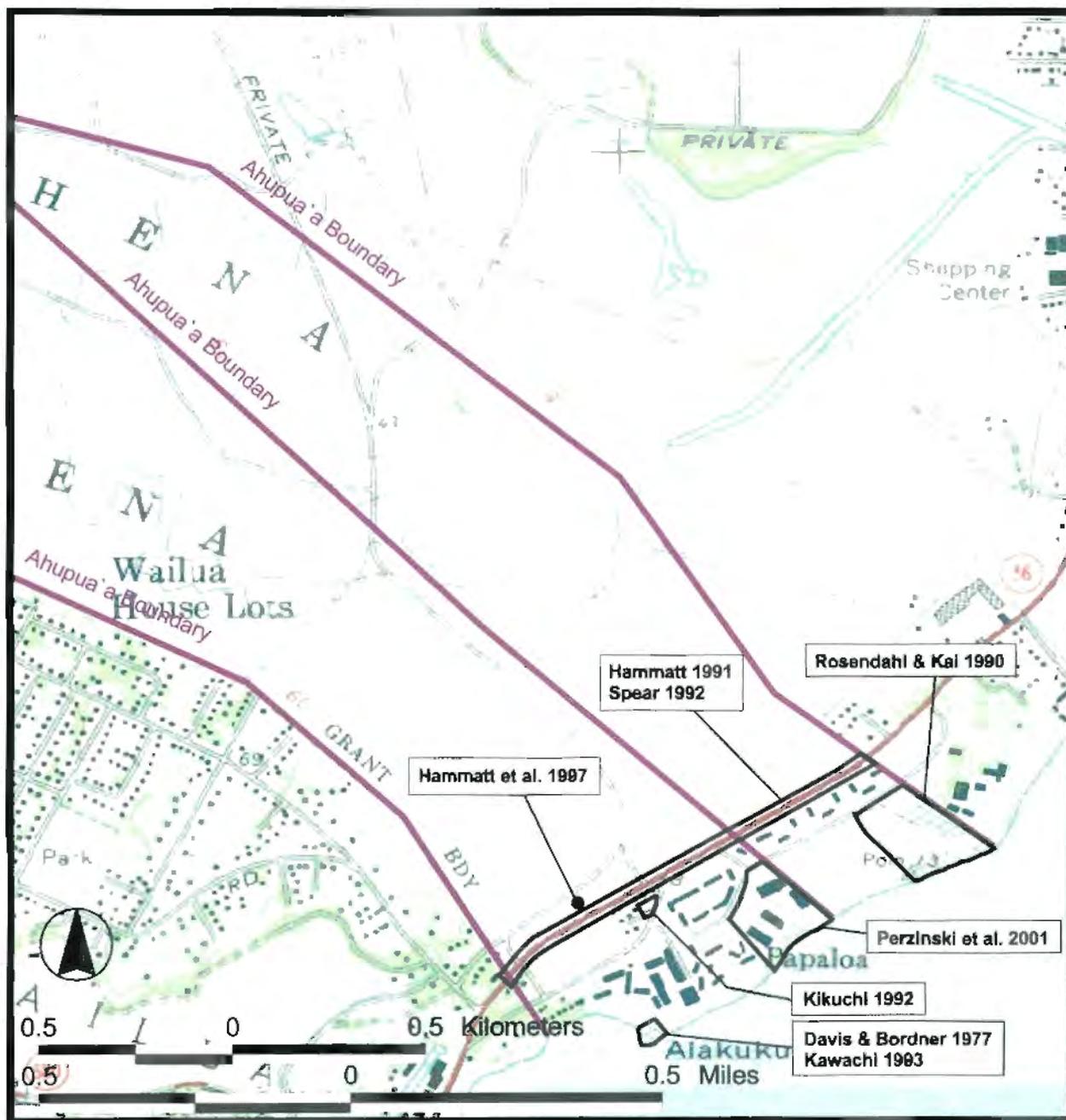


Figure 13: Previous Archaeological Studies North and South Olohena Ahupua'a

Table 6 Archaeological Sites in Coastal North and South Olohena Ahupua'a (see Figure 14)

Site # 50-30-08-	Site Type/ Name (if any)	Location	Site Constraints	Reference
108	Kukui Heiau	Alakukui Point. central South Olohena on coast	68 ft by 230 ft., can assume buffer of 100 feet; further work in area indicated	Thrum 1906; Bennett 1931:127; Davis and Bordner 1977; Kawachi 1993
791	Cultural layer and burials (2)	Northeast end of coastal South Olohena	Extends inland approximately 150 ft. from the coast, archaeological monitoring in area indicated	Perzinski et al. 2001
1800	Cultural layer and burials (2)	Northeast end of coastal North Olohena	Extends inland approximately 120 ft. from the coast, archaeological monitoring in area indicated	Rosendahl and Kai 1990

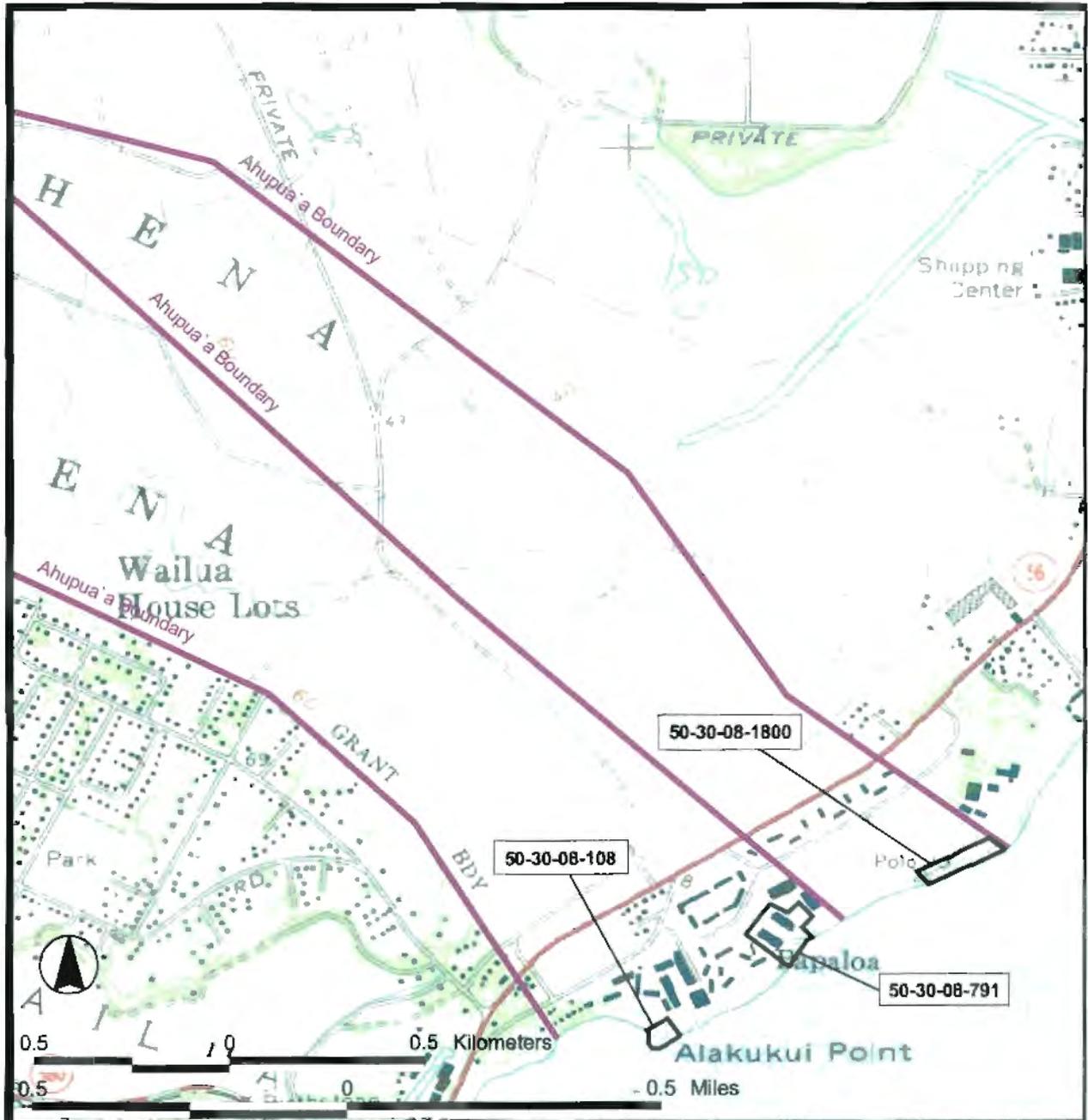


Figure 14: Archaeological Sites in Coastal North and South Olohena Ahupua'a

5. Pattern of Archaeological Sites and Constraints in Olohena

Only three archaeological sites have been designated at North and South Olohena Ahupua'a but all are located on the coast. Little data is available for more inland areas but the potential for archaeological resources *mauka* of Kūhiō Highway appears modest.

Of particular concern is Kukui Heiau located right on the coast of central South Olohena at Alakukui Point. Kukui Heiau (designated site 50-30-08-108) was placed on the Hawai'i Register of Historic Places on June 13 1986 and was placed on the National Register on May 18, 1987. This site effectively extends from high-water right up and into the Lae Nani Condos parcel. Alternatives 1 and 3 show a primary path extending along the back of Kukui Heiau. Alternative 1 also has a proposed secondary path (5 feet wide) extending north along the coast linking up with this primary path. While these routes would offer access to the *heiau* and interpretive opportunities it seems clear that this would constitute an adverse impact to a National Register site and would require consideration of mitigation measures. Consideration might be given to the acquisition of an adjacent strip of the Lae Nani Condos parcel so that a path could be constructed without intruding directly upon Kukui Heiau. Without acquisition of a strip of private land it appears impossible to create paths transiting the coast at Ala Kukui Point without adverse impact to Kukui Heiau. The State Historic Preservation Division and concerned Hawaiian groups are likely to oppose such trail impacts.

Previous archaeological studies have shown the presence of intact cultural deposits and traditional Hawaiian burials along coastal Olohena (such as sites 791 and 1800). A monitoring program with on-site monitoring of coastal trail development appears warranted. An on-call archaeological monitoring program should suffice if the route were through former sugar cane lands *mauka* of Kūhiō Highway.

C. Waipouli

1. Natural Setting of Waipouli

The *ahupua'a* of Waipouli is located on the east side of the island of Kaua'i, south of Kapa'a and to the north of Olohena, and Wailua. Waipouli encloses within its boundaries remnants of the two volcanic series - the Waimea Canyon and the Kōloa - that created most of the present landmass of Kaua'i. Waipouli contains an area of 2,966 acres (Commission of Boundaries Record, Kauai, vol. 1, 1873:23).

During the Pliocene, the Waimea Canyon Volcanic Series formed Kaua'i's large, single shield volcano (MacDonald and Abbott 1970: 382-384). Part of the heavily eroded remnants of this shield volcano are the Makaleha Mountains that are the highest uplands of Waipouli. In the early Pleistocene the Kōloa Volcanic Series added to Kaua'i's land mass, with major vents in the area of present-day Kōloa, within the Līhu'e Basin, and in other areas of the island (MacDonald and Abbott 1970: 389). In Waipouli, the Kōloa Volcanic Series both added new land area and covered over the existing Waimea Canyon Volcanic Series land mass. The alluvium, colluvium and terrigenous sediments resulting from the erosion of these two volcanic series are major sources of sediment for the formation of Kaua'i's non-mountainous regions - including part of the *ahupua'a* of Waipouli.

Waipouli 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 where the shoreline had encroached. Also, reefs grew with the rising sea level, and, as the sea receded once again, marine sediment was 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 present Kūhiō Highway road corridor in Waipouli is located between 1800 ft. and 2600 ft. from the shoreline on a sandy coastal flat. Except for modern construction materials and inland clay soils brought in to modify the area's land surface, the Kūhiō Highway corridor area is made up of coralline beach sand. A resident of the area informed Cultural Surveys Hawai'i that the coralline beach sand extends much farther inland (*mauka*).

A large marshland was inland of the road corridor (at least until 1886), when it was cut through by drainages that reached the ocean. Two branches of these marsh-like drainages formed an island. The northern branch of this drainage was filled in 1960 as part of a program to improve the drainage of the inland marshy lands. Most likely, these lowland areas were the result of the slow in-filling of a lagoon that once existed in this area. The present shoreline forms a berm that appears to be slowly accreting, behind which the marshy lowlands continue to exist - although drainage of the area has been improved for recent development. These lowlands were used for the cultivation of taro and, beginning in the latter part of the nineteenth century, for rice planting.

2. Origin of the Place Name - Waipouli

Waipouli means the "dark water" (Pukui, Elbert and Mookini 1976).

3. Cultural History of Waipouli

Waipouli is mentioned in a version of the Legend of Kaililauokekoa, a chiefess of Kapa'a and granddaughter or daughter of the above-mentioned Mō'ikeha. Thomas Thrum (1907:83-84) relates that

[Kaililauokekoa's] greatest desire was to play *konane*, a game somewhat resembling checkers, and to ride the curving surf of Makaīwa (*ke'eke'e nalu o Makaīwa*), 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 continual kissing of her cheeks by the fine spray of the sea of Makaīwa, the bloom of her youth became attractive 'as a torch on high,' so unsurpassed was her personal charm.

Wailua Ahupua'a, where its river enters the sea, was traditionally the home of the high chiefs of the island. The *ahupua'a* of Waipouli, to the north of Wailua, is only associated with the surfing of these high chiefs whose residence was typically at Wailua.

When Captain George Vancouver (1798:221), sailing off the east coast of Kaua'i during his third voyage to the Hawaiian Islands in March of 1793, proclaimed it the "most fertile and pleasant district of the island," he was only confirming the qualities that must have, much earlier, captured the imagination and spirit of the ancient Hawaiians living within the *ahupua'a* of that coast.

Accounts of excursions by missionaries and naturalist-travelers along the east coast of Kaua'i during the first half of the nineteenth century make no specific reference to Waipouli. This may reflect a general desuetude within the area, the result of shifts in population that had taken place on Kaua'i in response to the stresses - including disease and commerce - of post-European contact life. J.W. Coulter (1931:15), in his study based on the missionary censuses, comments that by the mid-nineteenth century "on the east coast of Kauai nearly all the people lived in Kō'olau Wailua and in the vicinity of Nāwiliwili Bay." A map of Kaua'i in Coulter's study, showing population distribution in 1853, indicates that no single area from Oloheua to Kapa'a contained a population much greater than fifty. This may reflect an ongoing migration of people from more remote, though formerly well-populated, areas to the population centers of the mid-nineteenth century.

If Waipouli presented a nondescript appearance to a nineteenth-century visitor, a more interesting past is hinted at in the documented presence of a chief of Waipouli, Kiaimakani, at two important events on Kaua'i during the first quarter of the 19th century. In 1824 the brig "Pride of Hawaii," owned by Liholiho (Kamehameha II), ran aground in Hanalei Bay. Hiram Bingham (1848:221-222) recorded the efforts of a great crowd of Hawaiians to pull the vessel to shore for salvage.

Kiaimakani 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 marshaled 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.

Kiaimakani appears in Samuel Kamakau's (1961) account 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-noku would not consent to this [Kamakau 1961: 267].

Some Kaua'i chiefs, including Kiaimakani, rebelled against the imposed decrees.

On August 8 [1824] the battles of Wahiawa was fought close to Hanapēpē. The Hawaii men were at Hanapēpē, the Kauai forces at Wahiawa, where a fort had been hastily erected and a single cannon (named Humehume) mounted as a feeble attempt to hold back the enemy... Large numbers of Kaua'i 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'i-makani, Na-ke'u, and their followers met death [Kamakau 1961: 268].

Kamakau's singling out of Kiaimakani for special mention reinforces the impression that the chief and his *ahupua'a* may have shared a traditional prestige. However by the twentieth century, Handy (and Handy 1972:424) described Waipouli thus:

...a rather insignificant *ahupua'a* south of Kapa'a, watered by Konohiki stream, in the bed of which there were flats where taro was once planted. There is some level, swampy land by the sea that looks as if it had been terraced.

4. Mahele Period

Documentation produced during the second half of the nineteenth century creates a more lively sense of Waipouli itself. At the time of the Great Mahele, William C. I unalilo (the future king) was awarded the entire *ahupua'a* of Waipouli along with Kāhili, Kalihiwai, Pīlā'a, Manuahi, Kamalomalo'o and Kumukumu (See Table 7 below).

Land Commission records reveal ten individual *kuleana* awards within the wide *makai*-most extent of Waipouli. An 1872 map (Figure 15) by James Gay delineating the boundaries of Kapa'a and adjacent lands shows that much of this *makai* region of Waipouli was a "swamp" that extended into and across the southeast *makai* portion of Kapa'a. This swamp, perhaps the site of a former fishpond, appears to be the most pervasive natural feature of the seaward end of Waipouli and would have been the focus of the Hawaiians' attempt to work and harmonize with the land. The ten *kuleana* claims show house lots and *kula* from shore to inland.

A 1929 map traced from a M.D. Monsarrat map based upon an 1886 survey, charts the disposition of the ten Land Commission Awards (LCAs) of Waipouli. Eight of the awards included separate *'āpana* (parcels) for taro *lo'i* and *pāhale* (house lots). *Kula* and *lo'i* associated with these awards were located within and adjacent to the extensive swamp. Peter H. Buck (1964) describes how the marsh areas would have been utilized: "Wet taro planting took place along the banks of streams and in swamps where the mud was heaped up into mounds." However, it is in combination with details gathered from the *Foreign Testimony* for the Waipouli LCAs that the map - and the area itself - comes to life. Since seven of the ten claims are testified to by one man, Kaalihikaua (who is himself one of the claimants), and two other claimants testify for the remaining three claims, the testimonies in aggregate may possess a uniformity and heightened accuracy. No one in the claims mentions sweet potatoes, although Handy (and Handy 1972:424) suggested they would have been grown along the coastal plain.

The 1929 Monsarrat map (R.M. No. 1660) has been augmented with the *lo'i*, *kula*, *wauke*, house lots, pigpen and fishpond claimed in the LCAs (Figure 16). This mapping of the land use claims within the awards shows most of the house lots near the shore, but several inland LCAs (3639, 7636, 8836 and 8828) also have house lots where they are growing taro. There are 12 claims made for land and 10 are awarded. These 10 claims include 16 *'āpana*, with 38 *lo'i*, 10 house lots, 8 *kula*, 1 claim for *wauke*, and 1 pigpen. The *lo'i* are all within or around the marsh land just *mauka* of the shoreline. For LCA 3560 both *'āpana* state that they are bounded by the

Table 7 Chart of Land Use from Waipouli LCAs

LCA no.	Claimant	'Ili of <i>Ahupua'a</i>	Land use	No. of ' <i>Āpana</i>
3243	Honolii	Kupanihi Village	<i>mahina'ai</i> (farm), 7 <i>lo'i</i>	(Award in Kapa'a)
3560	Kauakahi	Pua / Puaa Puuiki	3 <i>lo'i</i> , <i>kula</i> (pasture), house lot	(Award in Wailua)
3622	Kamaholelani Kukaeculi	Makamakaole Village	3 <i>lo'i</i> and <i>kula</i> (pasture), house lot	1 (2 acres, 1 rood, 3 rods) 1 (1 rood, 2 rods)
3624	Kaumiumi	Pōhaku Makamakaole Village	3 <i>lo'i</i> and small <i>kula</i> (pasture), house lot	1 (3 roods, 38 rods) 1 (1 rood, 8 rods)
3639	Kapalahua and Nalopi	Kekee Kanalimua Village	3 <i>lo'i</i> and uncult. <i>kula</i> , house lot	1 (3 roods)
3971 See 3243		Honolii	living at Waipouli	
7636	Kanaka	Mokuapi Makahokoloko Village	3 (5) <i>lo'i</i> house lot	2 (3 roods, 27 rods)
8559B	Kanaina, C. for Lunalilo	<i>Ahupua'a</i> of Waipouli	Revenue	' <i>Āpana</i> 42
8836	Kaalihikaua	Kaheloko	2 <i>lo'i</i> , <i>kula</i> , <i>wauke</i> , pig pen, house lot	1 (1 acre, 8 rods)
8838	Kahukuma	Pini	2 <i>lo'i</i> , <i>kula</i> (pasture) and house lot	1 (1.5 acres, 37 rods)
8839	Kuaiwa	Hape Mokanehala / Mokunahala Village	4 <i>lo'i</i> and sm. <i>kula</i> , house lot	1 (3 roods, 13 rods) 1 (1 acre, 1 rood, 1 rod)
9013	Nawaimakanui Kawaimakanui	Naohe Uahalekakawawa	3 <i>lo'i</i> , house lot	1 (1 acre, 12 rods) 1 (1 rood, 27 rods)
10146	Mahi	Pau Paikahawai	3 <i>lo'i</i> and sm. <i>kula</i> , house lot	1 (1 acre, 17 rods) 1 (1 rood)

12 claims for land and 10 claims awarded, 16 '*āpana* awarded, 38 *lo'i*, 10 house lots, 8 *kula*, 1 *wauke* patch, 1 pigpen

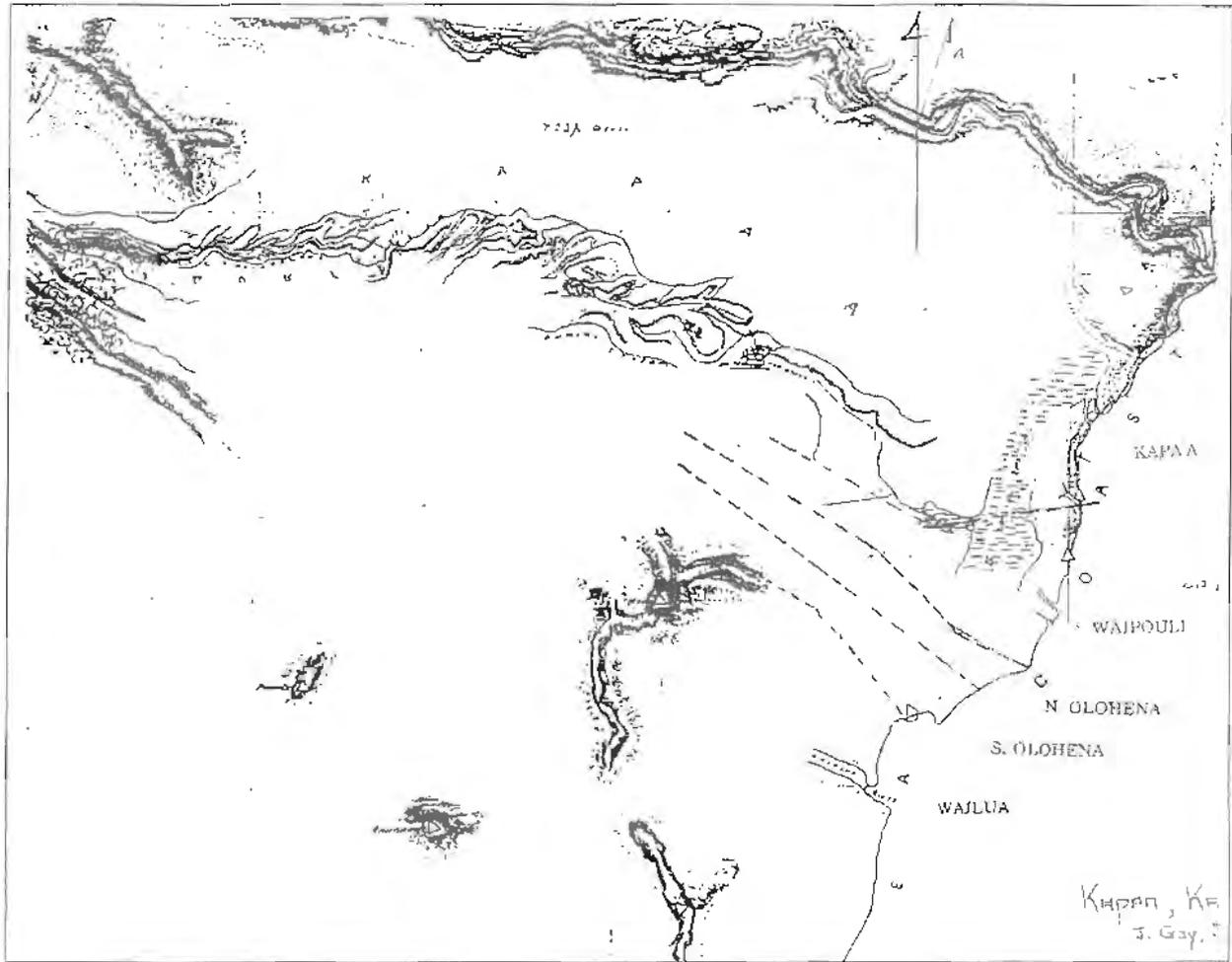


Figure 15: Portion of 1872 Survey Map by James Gay, Showing *Makai* Marsh Land in Waipouli and Kapa'a (rough estimates of *ahupua'a* boundaries at shore added)

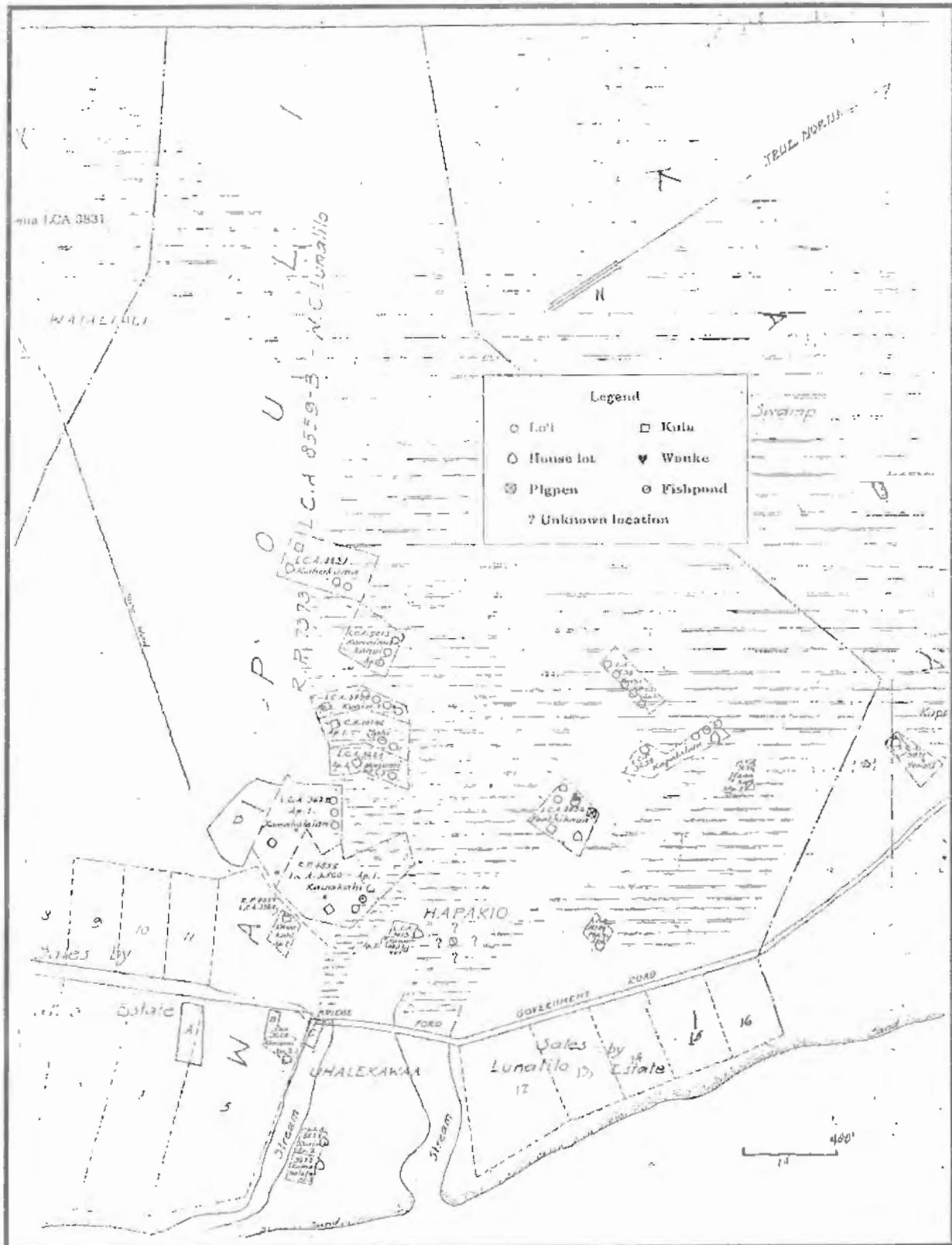


Figure 16: Portion of 1929 Map by R. Lane Based on 1886 M. D. Monsarrat Survey Showing Makai Portion of Waipouli with Land Commission Awards

Waipouli pigpen and the house lot has a cool spring on its *makai* side. LCA 3622 *'āpana* 2 (shown on the shore) states it is in a village of Makamakaole and states that the *muliwai* and Waipouli stream is just south. Umiuni (LCA 3624) claims two *'auwai* to the east and south of his *'āpana* 1 claim, and at the shore his *'āpana* is bounded by the Makamakaole *kula* (pasture) to the north. LCA 3639 *'āpana* 1 states the *konohiki*'s (Kaweloloko's) fishpond is to his east. His second lot (not located) states it is also near the Waipouli pig pen and the cool water spring.

Immediately striking in the testimonies is the number of individual features, each given a name by the Hawaiians, used to define the location and boundaries of the claims. The following list presents this profusion:

<i>'ILI</i>	Kekee, Kukaewli, Mokuapi, Kaheloko, Pōhaku, Pua, Pau, Koape, Naohe
<i>KULA</i>	Kaheloko, Kulaonohiwa, Makamakaole, of Konohiki, of Waipouli
VILLAGE	Mokanahala, Uahalekawawa, Makamakaole, Puuiki, Paikahawai, Makahokoloko, Kanelimua
FISHPOND	Hapakio (or Kopekia) (Figure 16)
<i>'AUWAI</i>	Waipouli, Koape, Pua, Papaika, Naohe, Pohakauawai, Kololuku (or Kololoko)
RIVER	Waipouli
BROOK	Waipouli, Ohia, Uhalakahawa, Olohena

Two noteworthy details emerge from this accumulation of names. The first is the identification of two place names - Uahalekawaa is a "village" and Hapakio is a fishpond of the *konohiki* (LCA 9013), and the profusion of named features within a very small portion of the entire *ahupua'a* suggests an intense use of the *makai* area by what must have been a much larger population than that present by the mid-nineteenth century. Ross Cordy (1988) also clearly documents the LCA location and land use of Waipouli in his work entitled *Initial Archival Information on Land Use Patterns: Waipouli Ahupua'a*.

5. Boundary Commission

Additional clues to the nature of Waipouli Ahupua'a come to light in the records of the 1872-73 Commission of Boundaries (1864-1905) proceedings concerning Waipouli. The guardians of William C. Lunalilo had petitioned that the "boundaries of the Ahupua'a of Waipouli situated in the district of Puna Island of Kaua'i may be defined and settled." Four witnesses, all Hawaiians familiar with the *ahupua'a*, gave evidence from which Duncan McBryde, the Commissioner of Boundaries, made his decision on November 7, 1872. A subsequent survey by James Gay was undertaken in June 1873.

McBryde's decision and Gay's survey notes - both included in the Boundary Commission record - contain an abundance, similar to that of the *Foreign Testimony* entries for Waipouli LCAs, of place names. Some of these place names are especially worth noting.

Kauwanawa'a is a "canoe harbour" on the shore at the southern boundary of Waipouli. Mid-way up the southern boundary is an "old pig pen Papuaa". Along the *mauka* half of the northern boundary are the "site of old houses Panini" and "old houses Kapukaili." The presence of the pig pen and two old house sites suggests there were populated areas, of which these were only three,

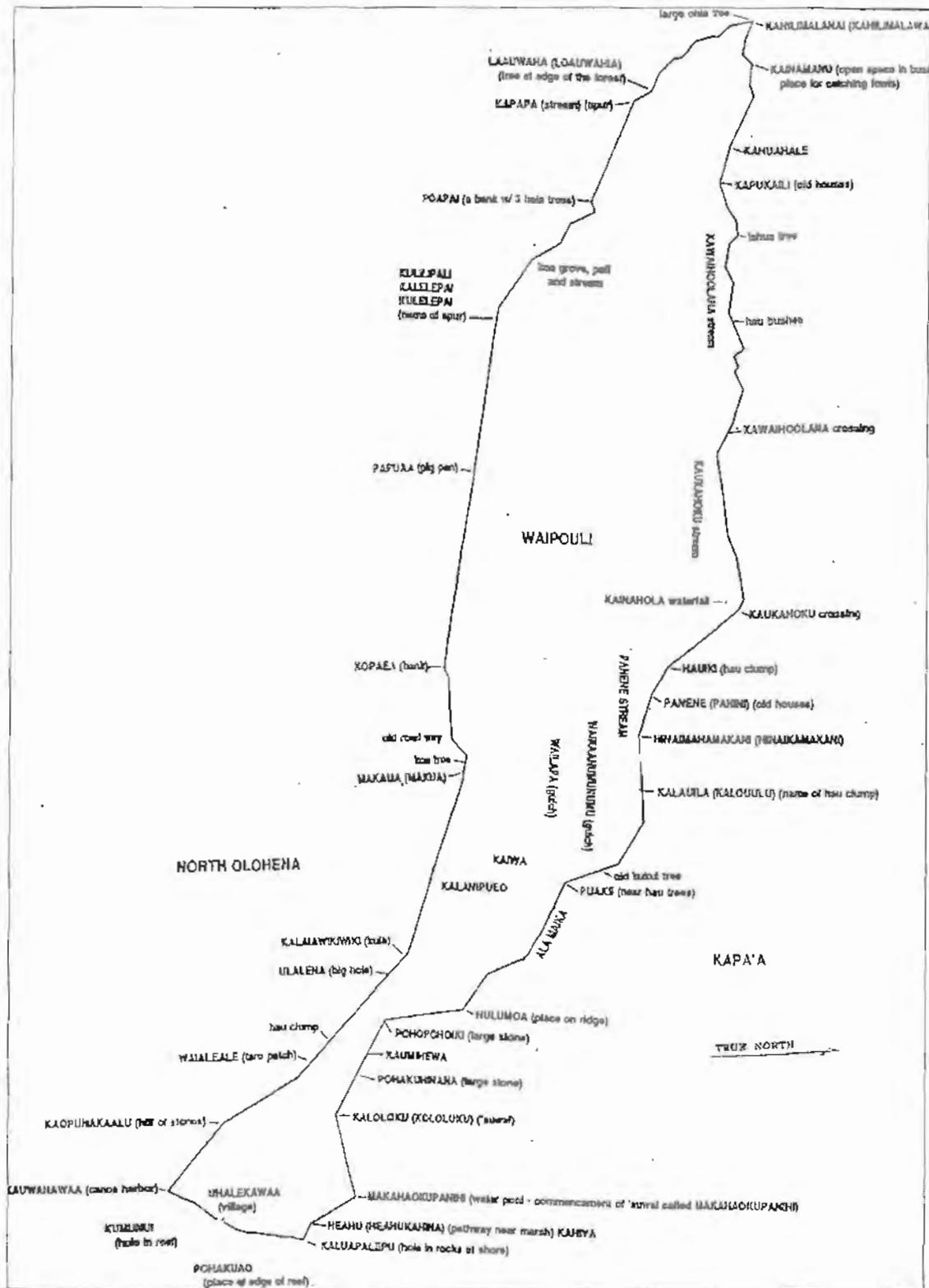


Figure 17: Map Showing Waipouli Place Names from Nineteenth Century Documents

Table 8 Previous Archaeological Studies in Coastal Waipouli Ahupua'a (see Figure 18)

Source	Location	Nature of Study	Findings
Handy and Handy 1972	Archipelago-wide	Native Planters Study	Brief discussion of traditional agriculture in Waipouli Ahupua'a
Cordy 1988	Waipouli Ahupua'a	Archival Study of Land Use Patterns	Primary pattern houses clustered on coast, <i>lo'i</i> just back
Rosendahl and Kai 1990	Coconut Plantation Development Site 6, (TMK: 4-4-3-07:27) <i>makai</i> of Kūhiō Highway, S. Waipouli	Archaeological Inventory Survey	Extensive subsurface cultural deposit with 5 burials encountered
Folk, et al. 1991	(TMK: 4-3-08:1) 12.66-Acre Parcel <i>makai</i> of Kūhiō Highway, central Waipouli	Archaeological Survey and Subsurface Testing	An extensive pre-contact layer and eight identified burials; was assigned Site # 50-30-08-1836
Folk and Hammatt 1991a	(TMK: 4-3-08:1) 12.66-Acre Parcel <i>makai</i> of Kūhiō Highway, central Waipouli	Addendum to Archaeological Survey and Subsurface Testing	Site # 50-30-08-1836 encountered 3 additional burials
Hammatt 1991a	Coconut Plantation Development Site 6 (TMK: 4-4-3-07:27) <i>makai</i> of Kūhiō Highway S. Waipouli	Archaeological Testing Results	17 1-m ² hand-dug units better defined the site
Hammatt 1991b	Proposed Kapa'a Sewer line	Archaeological Subsurface Testing	Identified Site # 50-30-08-1836 as extending as far inland as Kūhiō Highway
Hammatt 1991c	Coconut Plantation Development Site 6, (TMK: 4-4-3-07:27) <i>makai</i> of Kūhiō Highway, S. Waipouli	Data Recovery, Interim Preservation and Burial Treatment Plan	Plan was followed in the work of Toenjes et al 1991
Shun 1991	TMK:4-4-3-07:29 and 30	Archaeological Subsurface Testing	No significant findings

Historic and Archaeological Background Waipouli

Source	Location	Nature of Study	Findings
Toenjes et al. 1991	A 12-Acre Property at Coconut Plantation. Waipouli, Kaua'i.. (TMK 4-3-07:27)	Results of Archaeological Data Recovery	Site 50-30-08-1801, re-identified two known burials (no new burials found) and identified a workshop area and permanent habitation.
Hammatt and Folk 1992a	(TMK: 4-3-08:1) 12.66-Acre Parcel <i>makai</i> of Kūhiō Highway, central Waipouli	Data Recovery Plan	Site 50-30-08-1836
Hammatt and Folk 1992b	TMK 4-3-06:01, adjacent to <i>mauka</i> side of Kūhiō Highway, central Waipouli	Archaeological Subsurface Testing	No significant findings
Spear 1992	Along Kūhiō Highway	Archaeological Subsurface Testing	No significant findings
Hammatt et al. 1994	Lands <i>mauka</i> of Kūhiō Highway crossing Waipouli Ahupua'a	Archaeological Assessment	Notes the extensive marshlands stretching across portions of Waipouli just <i>mauka</i> of Kūhiō Highway and the potential for paleoenvironmental data and evidence of wetland cultivation.
Chaffee and Spear 1995	N. Olohena/Waipouli boundary near Kalama Stream	Reconnaissance Survey	No significant findings
Creed et al. 1995	Kūhiō Highway between Wana Road and Keaka Road in north Waipouli	Archaeological Monitoring Report	4 burials designated Site 50-30-08-872 within the cultural layer designated Site 50-30-08-1848
Hammatt et al. 2000	TMK: 4-3-08:1) 12.66-Acre Parcel <i>makai</i> of Kūhiō Highway, central Waipouli	Archaeological Data Recovery Report	Documents extensive finds of midden artifacts and features

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Source	Location	Nature of Study	Findings
Ida et al. 2000	TMK: 4-3-08:1) 12.66-Acre Parcel <i>makai</i> of Kūhiō Highway, central Waipouli	Documentation of Burial Disinterment	Documents Burial Finds
Dega and Powell 2003	Kūhiō Highway	Archaeological Monitoring Report	Identifies site 886 cultural layer, possible <i>'auwai</i> , & human remains
Hammatt and Shideler 2003	Kūhiō Hwy. improvements alternate routes	Archaeological Assessment	Summarizes information

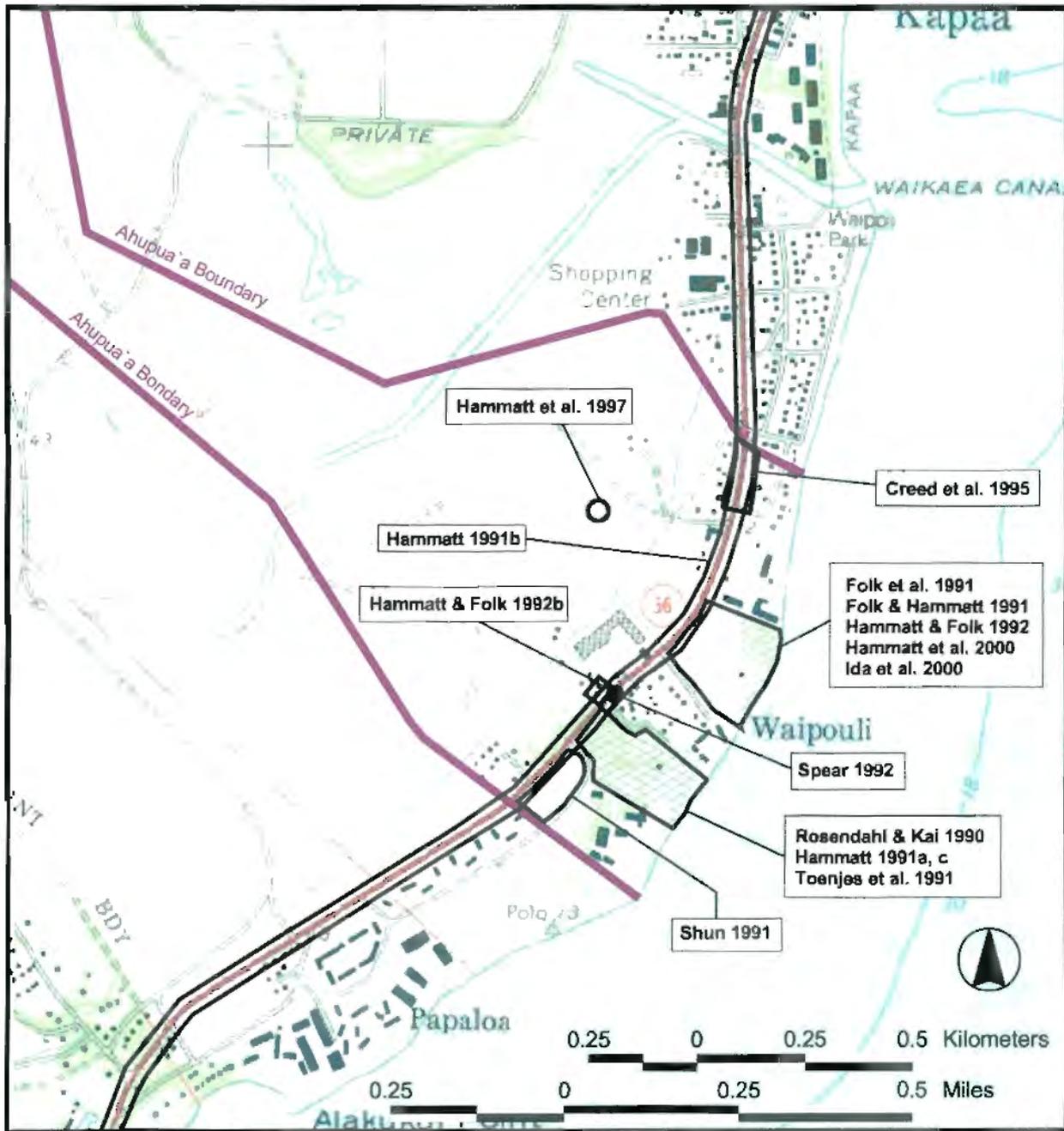


Figure 18: Previous Archaeological Studies in Coastal Waipouli Ahupua'a

Historic and Archaeological Background Waipouli

Table 9 Archaeological Sites in Coastal Waipouli Ahupua'a (see Figure 19)

Site # 50-30-08-	Site Type/ Name (if any)	Location	Site Constraints	Reference
872	Burials (+)	Along Kūhiō Highway in north Waipouli, lies within Site 50-30-08-1848	Consultation and monitoring in vicinity indicated	Creed et al. 1995:50
886	Cultural layer, possible <i>'auwai</i> & human remains	Kūhiō Hwy near Coconut Market Place	Consultation and monitoring in vicinity indicated	Dega and Powell 2003
1801	Subsurface cultural deposit and 5 human burials	Adjacent to coast, S central Waipouli, 200 m <i>makai</i> of Kūhiō Highway	Consultation and monitoring in vicinity indicated	Rosendahl and Kai 1990; Hammatt 1991a and c; Toenjes et al. 1991
1836	Subsurface cultural layer and burials (15)	Central Waipouli, strongest expression at coast, extends to Kūhiō Highway	Consultation and monitoring in vicinity indicated	Folk et al. 1991; Folk and Hammatt 1991; Hammatt and Folk 1992; Hammatt et al. 2000; Ida et al. 2000
1848	Subsurface cultural layer	Along Kūhiō Highway in north Waipouli	Consultation and monitoring in vicinity indicated	Hammatt 1991b; Creed et al. 1995

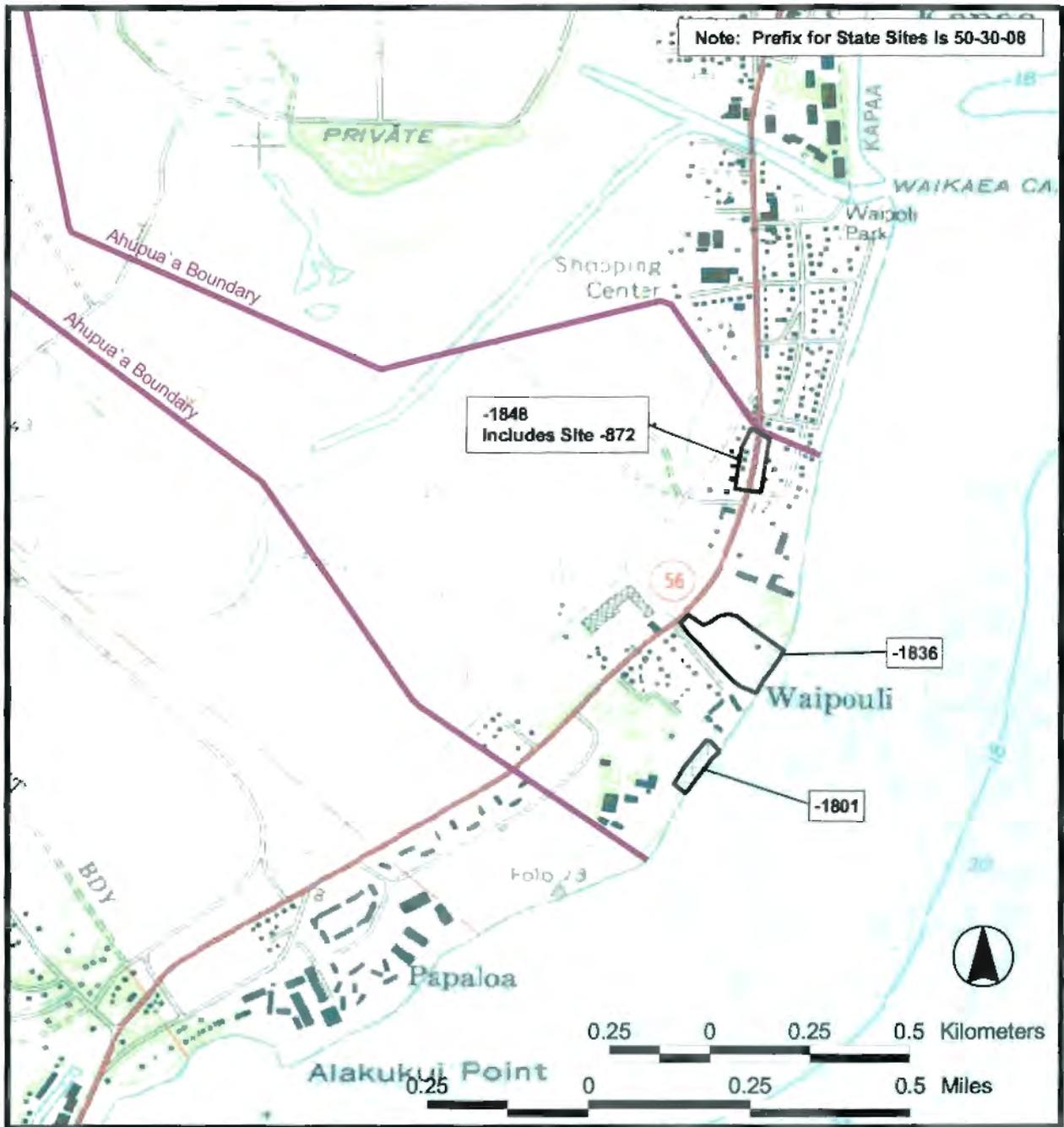


Figure 19: Archaeological Sites in Coastal Waipouli Ahupua'a

continuous accretion of beach sand, there had been no major depositional or erosional events. The integrity of the cultural deposits indicated the land surface had remained stable for a long period and had escaped modern disturbances such as sand mining, grading, and coconut tree planting in contrast to neighboring localities (Folk et al. 1991:81-82). They found the prehistoric cultural A-Horizon (Stratum II) formed in the upper limits of the extensive terrace of coralline beach sand. There was some mixing of the modern A-Horizon (Stratum I) with the top 3 to 5 centimeters of the prehistoric A-horizon as seen in the reworking of the prehistoric materials from Stratum II into Stratum I due to historic use of the land surface for pasturage and rodeo practice. The natural, culturally sterile, parent beach sand material (Stratum III) is present throughout this shoreline property from beneath the cultural layer, at a maximum of about 6 feet (2 m) above mean sea level, to an undetermined depth below the ground water table. This sequence was consistent throughout the southeastern and south-central portions of the property. Prehistoric basalt flake tools were observed on the ground surface across the southern half of the project area coming from the Stratum II cultural (habitation) layer (Folk et al. 1991:81-82).

There were fill deposits over the wetlands along the northern and northwestern portion of this property, some of it apparently brought in for the 1960 Waipouli Drainage Canal project. Along the eastern boundary, the present day beach berm has buried the cultural layer beneath recently deposited sand. Folk et al. (1991:81-82) surmised human occupation began upon the beach terrace, possibly as early as A.D. 1500, based on the charcoal sample from Stratum II. This stratum contained a significant number of traditional Hawaiian artifacts and innumerable features associated with human activity in relatively undisturbed stratigraphic context. The features varied from wide, shallow pits to deep, narrow pits. The traditional artifacts represented activities including the manufacture of tools for fishing and woodworking, and for use as weapons. The abundance of these tools suggested the site was utilized in the pursuit of occupational endeavors rather than for permanent habitation. A unique cache of sling stones in various stages of completion was found.

Midden, or refuse from food consumption, indicated exploitation of the inshore fringing reef marine environment of this coastal area and the freshwater limpet – *Neritina granosa*. Other food resources represented in the midden by skeletal remains were birds – shearwaters and petrels exclusively – and juvenile and adult pigs. The pig remains were found in varied contexts including use in the manufacture of tools and ornaments of social status, and possibly for religious offerings in the cases of burial of entire young pigs.

Testing located several human burials, some probably associated with two Land Commission Awards. Some of the burials post-dated the prehistoric layer, some predated it, and some were contemporaneous with it. Burials were re-interred along with grave goods that were thought to be associated with the burials.

Details about the shoreline from the 20th century, were provided by Mr. Ed B. Crabbe, President of Niupia Farms, Ltd. Mr. Crabbe's grandfather bought the shoreward lands of Waipouli sometime in the first quarter of the century. A coconut grove was planted at the present site of the Coconut Plantation to produce copra and animal feed. Mr. Crabbe's father moved his family from Maui to Kua'i sometime in the 1940s. They occupied the former Golding house (Dr. Golding was a veterinarian) with Mr. Crabbe living in the former office. Mr. Crabbe recalled that there was indeed a surf break off Waipouli called Mākāiwa. Another coastal feature of Waipouli was a "double reef" formation that somehow dissipated the force of such inundations as the 1946 tidal wave that swept over the Hawaiian Islands. Mr. Crabbe recalls that

his shoreline property was used only for horse pasturage and rodeo practice. The north side of the property, formerly the bank of the northernmost watercourse exiting from the marshlands, was filled in when the Waipouli Drainage Canal was constructed. A portion of this canal *mauka* of the Kūhiō Highway runs parallel to the shore; a branch exiting to the sea follows the natural drainage of the former Waipouli (or Konohiki) Stream. The canal was built in 1960 for flood control as a Department of Accounting and General Services project (information provided by Mr. Tom Kam of the Department of Land and Natural Resources). Mr. Crabbe's location of the Makaīwa surf break off Waipouli brings the Waipouli account full circle to its beginning in the legend of Kaililaukekou whose "greatest desire was to ride the curving surf at Makaīwa."

Legend told of the surf break, 19th century documentation mentions a location suitable for a "canoe harbour", and a present-day informant has told of a "double reef" capable of diminishing the force of tidal waves and seasonal high surf. These features would have heightened the appeal of the *makai* portion of Waipouli for settlement by the Hawaiians. That this area may have been, in fact, well-populated in former times has been suggested by the numerous villages, *lo'i*, and watercourse features named in 19th century documents. More speculatively, these documents further suggest that a significant population was dispersed throughout the *ahupua'a*.

7. Summary of Waipouli Settlement Pattern and Discussion

Traditionally, Waipouli was known for its fine surf area. The Land Commission Awards show several house lots at the beach, but there are also house lots within the plots claimed for *lo'i* and *kula* along the southern edge and within the marshy area more in the Kapa'a direction. While most of the claims are for *lo'i* and *kula*, one LCA (8836) also claimed a fishpond and some *wauke*. This general area is known as Hapakio or the *konohiki's* fishpond. Homes and *kula* were scattered around the pond where *lo'i* would have been on the edges of the wetland and the flatlands were used for pasture and grasslands. The settlement in Waipouli, unlike adjoining *ahupua'a*, is spread from the shoreline inland and those living inland at the time of the Māhele also had houses with their *lo'i* and *kula*, even in the most *mauka* claim (8838). The Boundary Commission record adds locations of old home sites far inland as well locations of *koa* and *kukui* trees and places to catch wild fowl.

Archaeological work along the beach terrace of Waipouli has uncovered cultural layers both at the Coconut Plantation Resort area and the Uhalekawa'a area, with dates for use during the 15th century for the former and the 16th century for the latter. Archaeologists believe that the Coconut Plantation area was a recreational area, due to its extensive layer but paucity of artifacts. The Uhalekawa'a area has a thick cultural layer with the traditional artifacts representing activities such as tool manufacture for fishing and woodworking, and for weapons. The abundance of these tools suggested the area was a work site rather than a permanent habitation one.

The traditional landscape around the marsh was replaced by dry land in the 1960's when Waipouli Drainage activities drained and filled the former marshlands which allowed for its use for sugar cane.

8. Pattern of Archaeological Sites and Constraints in Waipouli

The strongest expression of archaeological sites (cultural layers and human burials) at Waipouli is immediately on the coast such as designated sites 1801 and 1836. Site 1836 does

extend as far inland as Kūhiō Highway and four burials (Site -872) have been recovered from under Kūhiō Highway. Thus it must be assumed that other subsurface deposits and burials extend *mauka* of Kūhiō Highway particularly in the east portion of Waipouli. Most of the former sugar cane lands well *mauka* of the highway would be anticipated to be free of archaeological sites. An on-site archaeological monitoring program and consultation with the Kaua'i/Niihau Islands Burial Council would be recommended for any area near or seaward of Kūhiō Highway.

D. Kapa'a

1. Natural Setting of Kapa'a

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 to the north is the *ahupua'a* of Keālia, and to the south, Waipouli. Like its neighboring *ahupua'a* to the south it is exposed to the northeast tradewinds and similarly has 40 to 50 inches of rain a year at the shore and more inland. Kapa'a contains an area of 7,237 acres (Gay 1872 R.M. 159).

Geologically, Kapa'a does not fit the mold of the typical high-walled valley setting with a flat bottom that lent itself to the well-developed wetland agricultural techniques of the ancient Hawaiians. Rather, it can be characterized as fairly flat, with irregularly-shaped gulches and small valleys in the uplands, through which small tributary streams run including Kapahi, Makaleha and Moalepe. 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 lowlands of Kapa'a creating a large (approximately 170 acre) swamp area which has, in modern times, been filled in (Handy and Handy 1972:394, 423; Territorial Planning Board 1940:9).

Kapa'a Town is presently built on either side of Kūhiō Hwy. 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.

2. Cultural History of Kapa'a

In the Pre-Contact Period, while Kapa'a does not shine in the spotlight of Hawaiian myths and legends to the degree of other areas on the island like nearby Wailua *Ahupua'a*, it is tied to several esteemed native traditions. High in the *mauka* region of Kapa'a in the Makaleha mountains at a place called Ka'ea is said to lie the supernatural banana grove of the Kaua'i *kupua*, or demigod, Palila, grandson of Hina. It is said that the banana plants grew 35 feet tall, the fruit clusters over 10 feet long, and each banana over 4 inches in diameter (Handy and Handy 1972:424; Beckwith 1970:414).

Mō'ikeha, the chief is also associated in chant with Kapa'a. Pukui reports the saying, "*Ka lulu o Mō'ikeha i ka laulā o Kapa'a* - The calm of Mō'ikeha in the breadth of Kapa'a," referring the peace of Kapa'a, Kaua'i, the place he chose as his permanent home (Pukui 1983:157).

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 Kūanu'uanu, a high-ranking retainer of the island of Hawai'i ruling chief Keawenuia'umi (a son and eventual successor to the legendary chief 'Umi), and La'amaomao, the most beautiful girl of Kapa'a and member of a family of high status kahuna. Keawenuia'umi 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 Kūanu'uānu back to the court of Keawenuia'ūmi.

By that time, La'amaomao was with child, but Kūanu'uānu 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 and after constant questioning La'amaomao told her son the truth about Kuanu'uānu.

Intent on seeking out his real father and making himself known to him, Pāka'a prepared for the journey to the island of Hawai'i. 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, 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 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; Fornander 1918:78-128).

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

"*Kūmoena kalukalu Kapa'a*" or "Kapa'a is like the *kalukalu* mats" is a line from a chant recited by Lonoikamakahiki. The *kalukalu* is a sedge grass, apparently used for weaving mats. 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 (Fornander 1917:318-19; Kapaa Elementary School 1933:VI).

Handy (1940:68; Handy and Handy 1972:269,282) commented that the *ahupua'a* contained a wealth of good *kula* land, and also stated that there was a "highly developed irrigation system" there, although no specifics were given. He noted that terraces were present where the terrain allowed, more than 4 miles up Kapa'a stream, and that wetland cultivation probably also occurred at the edges of the marsh nearer to the coast.

3. 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.

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, Kealia, 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, etc., 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."

4. The Mahele Period

Documents relating to Land Commission Awards (*kuleana*) during this period show, surprisingly, that only six individuals were awarded land parcels in the relatively large *ahupua'a* of Kapa'a (Table 10 and Figure 20). Five of the six received multiple parcels and show characteristic similarities. They are Keo (LCA #3554, 3599), Kiau (#8843), Kamapaa (#8837), Ioane Honolulu (#3971), and Huhuli (#3638).

All five had *lo'i* fields 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. The five LCAs within Kapa'a Town are all right next to the present highway. Interestingly, the residential "village" of Kapa'a did not exist as a single entity, but was a series of probably small settlements or compounds that stretched along the shoreline of the *ahupua'a* and included (north to south) Ulukiu, Puhi, Kalolo (Kaulolo), and Kupanihi (Makahaikupanihi). 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 Honolulu'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." (*Foreign Testimony* 92-93 Vol. 13, No. 8247, Ehu, Claimant) 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 for Kuleana Claims to Quiet Land Titles in the Hawaiian Islands* (1848-50) reveals the names of four *'auwai* in Kapa'a. Cross-referencing this information with various maps gives a general indication of most of their locations: Makahaikupanihi, along the southern border of the *ahupua'a* near the shore; Makea, near the current Kapa'a Public Library on the *mauka* side of Kūhiō Highway; and Kapa'a, probably along the current Kanaele Road.

Table 10 Chart of Land Use from Kapa'a LCAs

LCA No.	Claimant	'Ili of the Ahupua'a	Land Use	No. of 'Āpana
3243 See 3971	Honolii, Ioane	Kahana	Kupanihi Village, 6 <i>lo'i</i> (uncult), house lot	2 (2 acres, 1 rood, 1 rod)
3554	Keo	Kahanui Puhi Village	15 <i>lo'i</i> , house lot	2 (7 acres, 1 rood, 17 rods)
3559 See 3554	Keo			
3638	Huluili	Maeleele Kaloko Village	12-15 <i>lo'i</i> , house lot	2 (5 acres, 1 rood, 19 rods)
3971 See 3243	Hololii, Ioane	Kahana		
8247	Ehu	Moalepe/ Noalepe	20 <i>lo'i</i>	1 (3 rods)
8837	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	Kiau	Apopo Kalolo Village	6 (5) <i>lo'i</i> and <i>kula</i> house lot	2 (2.75 acres, 3 rods)
10564	Oleloa, Daniel	Hikinui farm	fishpond, 10 <i>lo'i</i>	

7 claimants. 6 awards of 10 'āpana, more than 64 *lo'i* (more than 77 claimed). 5 house lots, 1 fishpond claimed but not awarded.

5. The Late 1800's

The sugar industry came to Kapa'a 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, composed of associates of then King David Kalākaua, and the king threw much of his political and economic power behind the project to ensure its success (Dole 1929:8-15). 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 join the present Kūhiō Highway and the train line continued north to the Keālia (Kapa'a) River (Figures 21 and 22). Chinese rice farmers had begun cultivating 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 rice and sugar sparked the same fate for the house lot *kuleana* on the *makai* side of the

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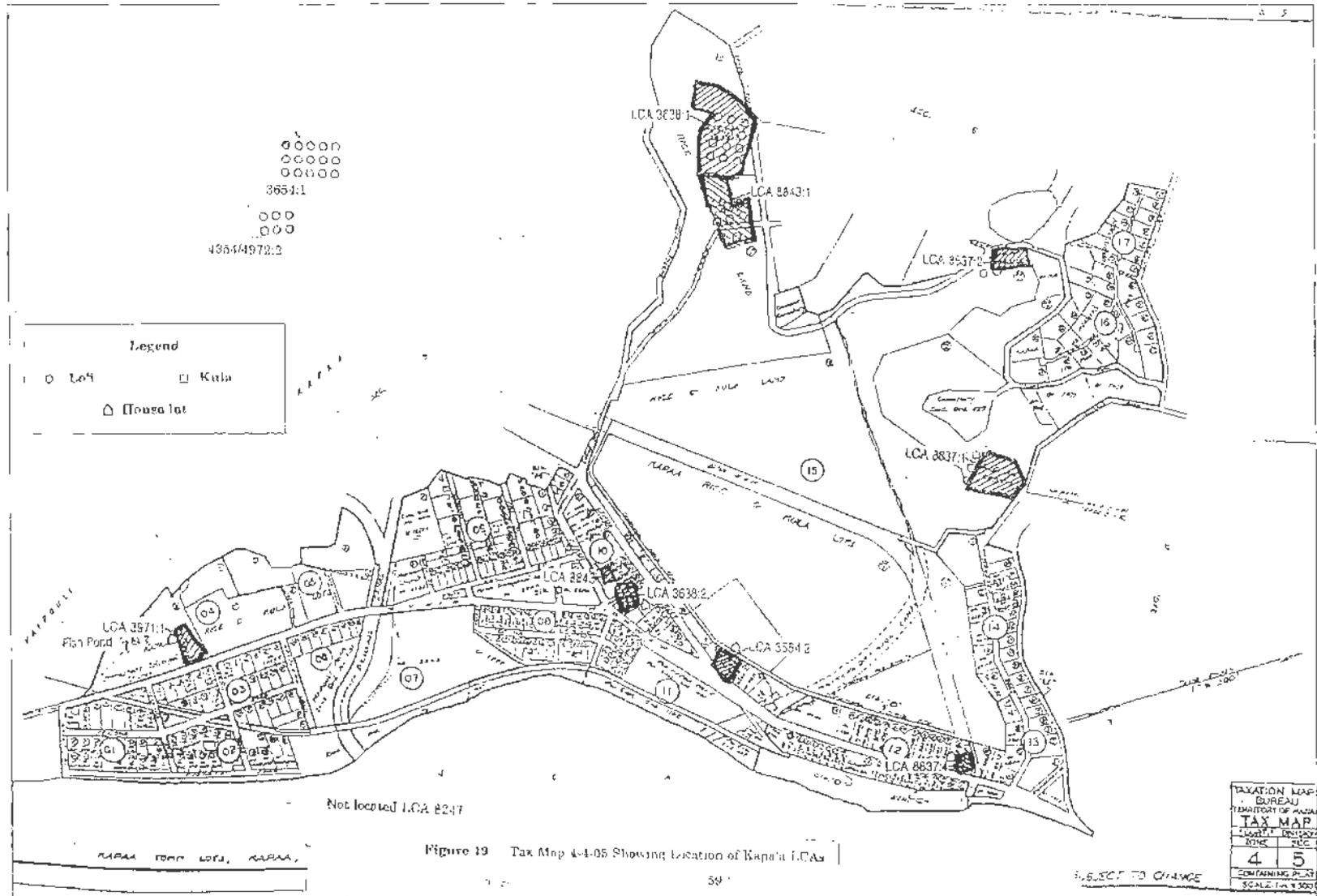


Figure 20: Tax Map 4-4-05 Showing Location of Kapa'a Kuleana Land Commission Awards (LCAs)

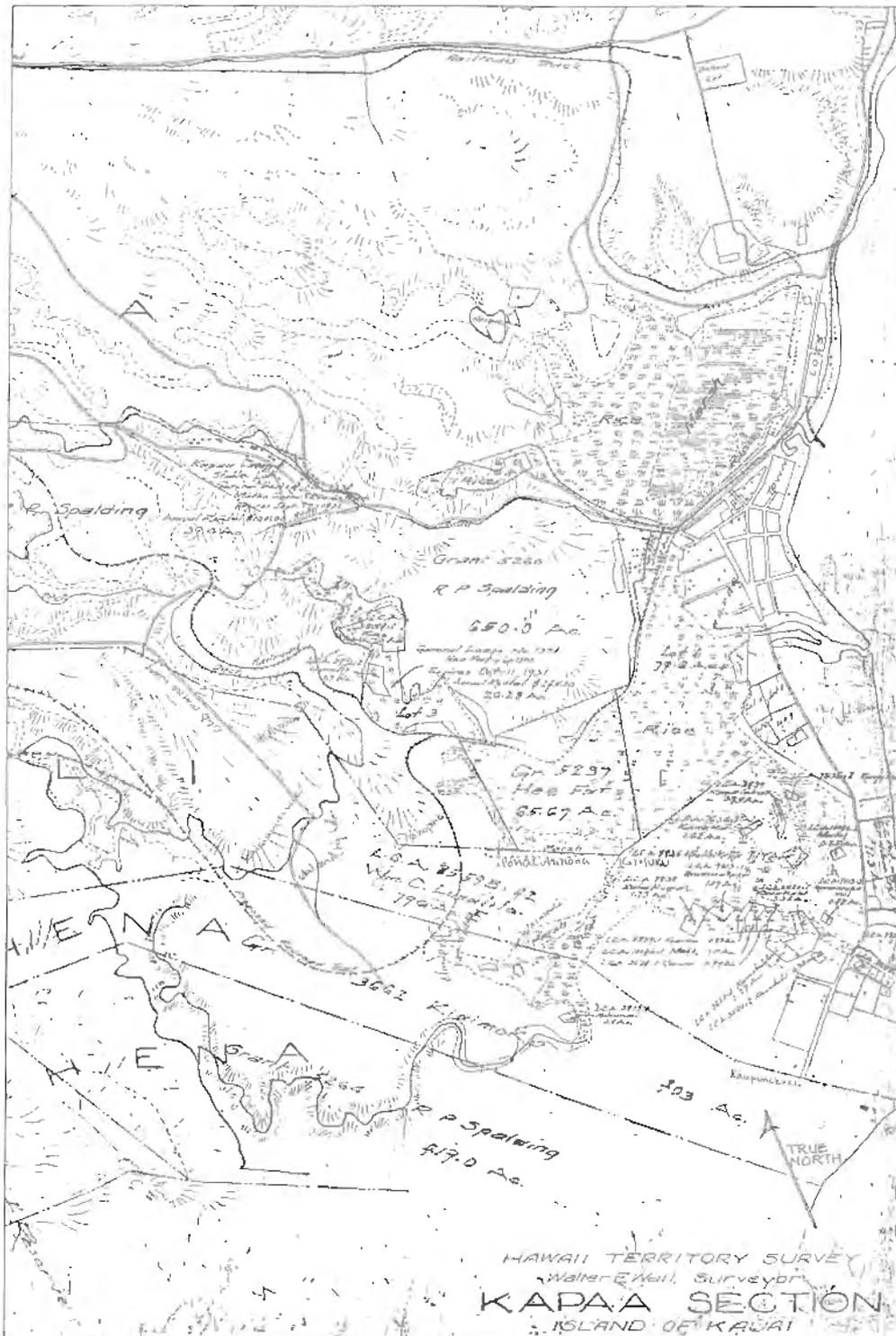


Figure 21: Portion of Map by Joseph Iao (Nov. 1914) Kapa'a Section, Island of Kauai Showing Railroad and Rice Lands, Hawai'i Territory Survey (HTS Plat 3014)

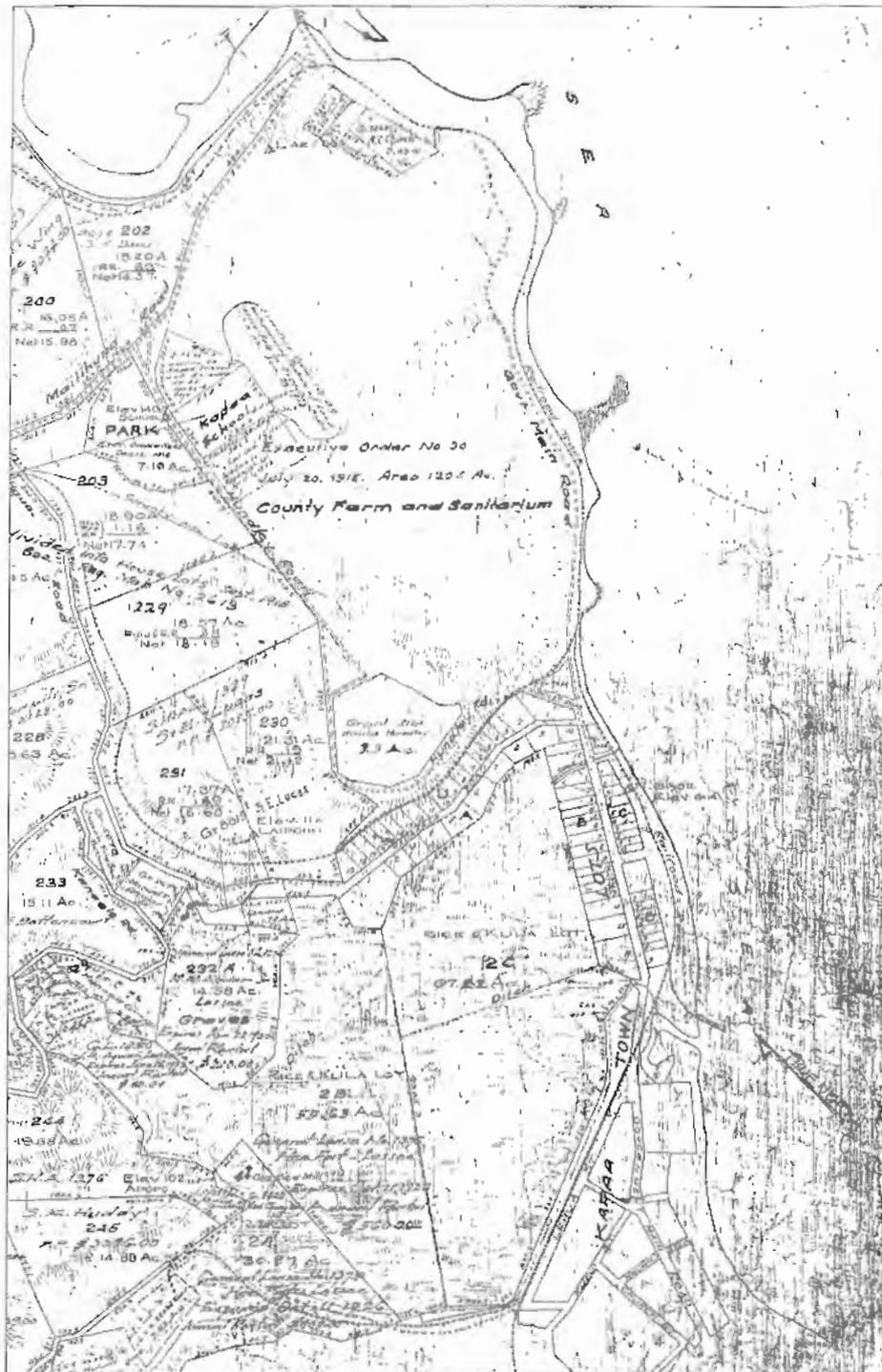


Figure 22: Portion of Map by James S. Mann (Nov. 1914) Kapa‘a Homesteads, 4th Series, Puna, Kaua‘i, Hawai‘i Territory Survey (HTS Plat 3018); Note Railroad Lines, Rice and Kula Lots, and Church Grants by the Keālia River

marsh for increasing commercial and residential development (Lai 1985:148-161). This land was drained and used for cane in this century before more recent urbanization of the area.

6. Previous Archaeological Research and Finds in Kapa'a Ahupua'a

The following two tables outline the archaeological research (Table 11) and historic properties (Table 12) identified in Kapa'a Ahupua'a. These tables are followed by discussion of the research and historic properties. Table 11 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 23. Table 12 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 24.

Bennett (1931:128), who surveyed the island in 1928-29, listed only one site for the *ahupua'a*:

Site 110. Taro terraces and bowl, back of the Kapa homesteads.

In the foothills of the mountains are many little valleys which contain taro terraces.

Single rows of stone mark the divisions with some 2-foot terraces. Under a large mango tree was found a bowl.

Bennett (1931:73) also refers to "taro terraces and house sites" at Kapahi, approximately 5 miles from the shoreline.

Hammatt did not observe any archaeological sites during his 1981 reconnaissance of 52.56 acres of mostly *kula* land in upland Kapa'a, nor were any terraces or other sites apparent during a 1986 reconnaissance of the upper reaches of the Makaleha stream valley. In 1991 during subsurface testing for the proposed Kapa'a sewer line, Hammatt obtained radiocarbon dates from a buried habitation deposit along Inia Street, which parallels the beach *makai* of Kūhiō Highway. This cultural deposit was radiocarbon dated to A.D. 1435 to 1665.

Archaeological work on the Kapa'a Sewer line (Creed et al. 1995) encountered 26 burials associated with habitation locations, which ultimately totaled 30 individuals in the sewer line corridor, within the sand deposits underlying Kapa'a Town and Kūhiō Highway to the south. In spite of urban development, large areas of undisturbed subsurface sediments remain under the streets and, presumably within the blocks (State site areas, site 50-30-08-1848, south of Kūhiō Highway and site 50-30-08-1849) and are associated with the habitation areas (Figure 25). The *mauka* east and west boundaries of the latter site can now be extended in Kapa'a Town to include a continuous stretch from 'Ōhia Street eastward to Lehua Street. These sites are expressed as preserved pre-contact A-horizon/cultural layers with artifactual and midden materials, charcoal and soil pits. On 'Inia Street small deep pits probably represent postholes of pole and thatch dwellings.

Five radiocarbon dates were recovered, three from the cultural layer of Site -1849, one from a burial pit on Utu Street, and one from a pit feature on the corner of Lehua and Niu Streets. These indicate a prehistoric time spread from A.D. 1165 to 1950. Two of these dates are well within the pre-contact period. One from A.D. 1435 to 1665 and the other A.D. 1165 to 1400. Materials from the historic development of Kapa'a town were seen in the trash pits from various localities in the present commercial district. Bottles and other historic materials were recovered

Table 11 Previous Archaeological Studies in Coastal Kapa'a (see Figure 23)

Source	Location	Nature of Study	Findings
Bennett 1931	Island-wide	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 Kapa'a	Archaeological Reconnaissance	No significant findings
Hammatt 1986	Upper reaches of the Makaleha stream valley.	Archaeological Reconnaissance	No significant findings
Hammatt 1991b	Along Kūhiō Highway	Subsurface Testing	Identifies two sub-surface cultural layer sites
Kikuchi and Remoaldo 1992	Around Kapa'a Town	Cemeteries of Kaua'i	Identifies six cemeteries
Spear 1992	South side Waikaea Canal, <i>mauka</i> of Kūhiō Highway	Monitoring Report	Designated subsurface site 50-30-08-547
Chaffee, Burgett and Spear 1994a	A house lot (TMK: 4-5-09:10) near the corner of Kukui and Ulu Streets in <i>mauka</i> Kapa'a Town.	Archaeological Inventory Survey	No significant findings
Chaffee, Burgett and Spear 1994b	Māmane Street Kapa'a Town.	Archaeological Inventory Survey	No significant findings
Hammatt, Ida and Chiogioji 1994	Proposed bypass routes <i>mauka</i> of Kapa'a Town	Archaeological Assessment	No new fieldwork, reviews literature
Hammatt, Ida and Folk 1994	South side Waikaea Canal, <i>mauka</i> of Kūhiō Highway	Archaeological Inventory Survey	Weak cultural layer; designated site 50-30-08-748

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Source	Location	Nature of Study	Findings
Kawachi 1994	Inia Street (Jasper) TMK 4-5-08:33	Burial Report	Designates Site 50-30-08-871
McMahon 1994	The location is uncertain "behind the armory in Kapa'a near the god stones" and "Buzz's near the Coconut Marketplace"	Documents second hand report of burials in two locations	Bones in 3 places reported from behind the armory, 16 bodies reported from the Buzz's restaurant. No site numbers assigned
Creed et al. 1995	Kapa'a Sewer line project, Kūhiō Highway, south and central Kapa'a Town	Archaeological Monitoring Report	Documents cultural layer of site -1848 and (an enlarged) site -1849 and recovery of thirty burials at sites -867, -868, -871. and -1894
Jourdane 1995	1382-A Inia Street, <i>makai</i> of Kūhiō Highway, central Kapa'a Town	Burial Report	Site 626
McMahon 1996	South side Waikaea Canal, <i>maku</i> of Kūhiō Highway	Archaeological Inventory Survey	No significant cultural material
Hammatt et al. 1997		Archaeological Inventory Survey	Four test trenches were excavated inland of Kapa'a Town
Borthwick and Hammatt 1999	Kapa'a Seventh-Day Adventist Church at 1132 Kūhiō Highway.	Archaeological Monitoring and Burial Treatment Plan	Monitoring was indicated as this parcel lay within the designated Site 50-30-08-1848.
Bushnell and Hammatt 2000	Seventh-Day Adventist Church, <i>makai</i> of Kūhiō Highway, south of the Waikaea Canal	Archaeological Monitoring Report	Minimal findings (one piece of worked bone)
Callis 2000	Kapa'a Beach Park	Human Burial Removal and Archaeological Monitoring Report	
Perzinski and Hammatt 2001	Kūhiō Highway on the margins of the Waikaea Canal	Archaeological Monitoring Report	No significant cultural material

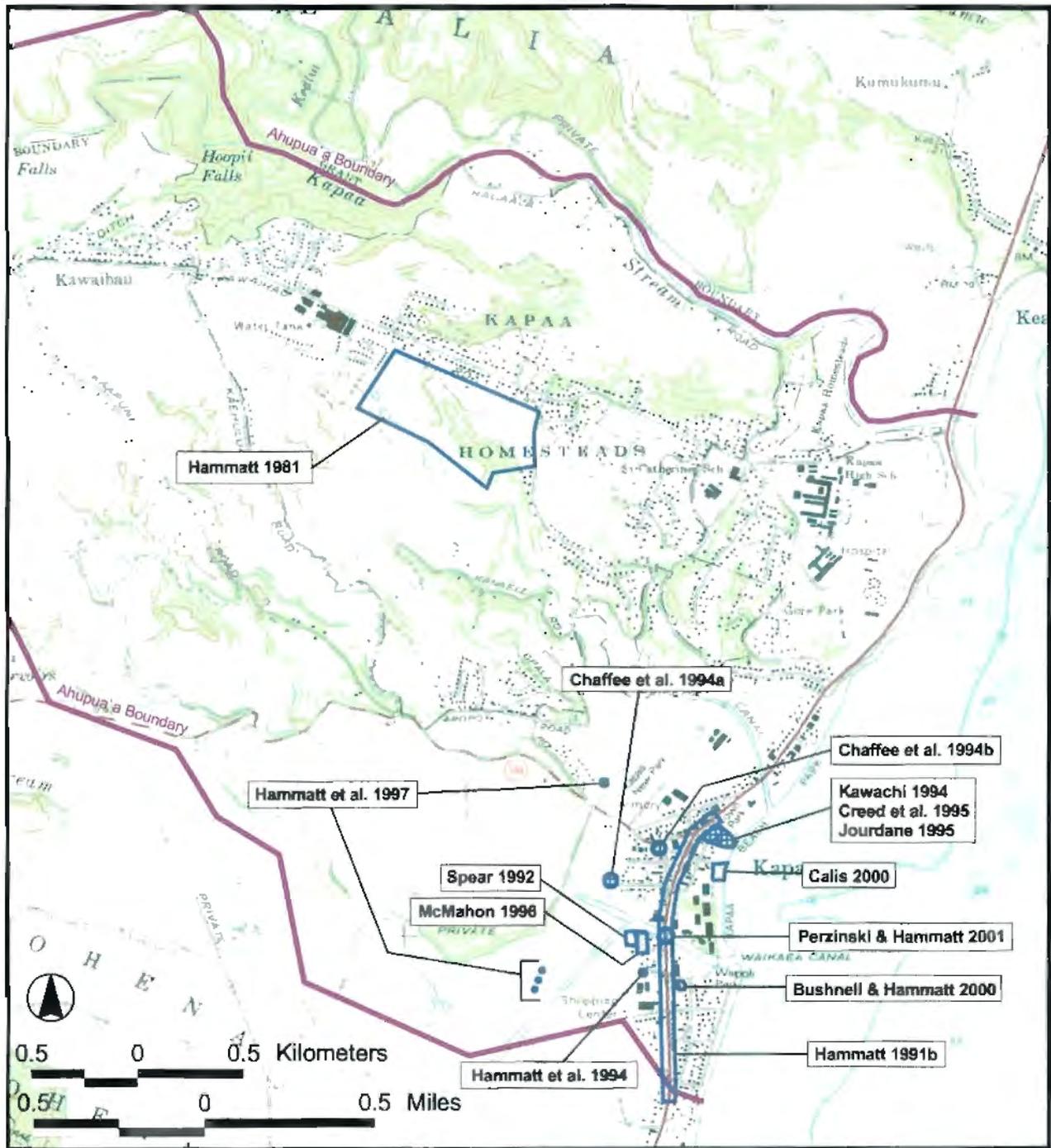


Figure 23: Previous Archaeological Studies in Coastal Kapa'a Ahupua'a

Table 12 Archaeological Sites in Coastal Kapa'a Ahupua'a (see Figure 24)

Site # 50-30-08-	Site Type/ Name (if any)	Location	Site Constraints	Reference
B001	Historic Cemetery	South of bend of Kapa'a Stream, a kilometer <i>mauka</i> from Kūhiō Highway	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B002	Historic Cemetery	Just <i>mauka</i> from Kūhiō Highway, south of Kapa'a Stream	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B003	Kapa'a Public Cemetery	South of Kanaele Road, approximately one kilometer inland of Kūhiō Highway	Appears to be a discrete historic cemetery	Kanaele Road; Kikuchi and Remoaldo 1992
B004	Historic Cemetery	North of Apopo Road, approximately one kilometer inland of Kūhiō Highway	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B013	Historic Cemetery	Just <i>mauka</i> from Kūhiō Highway, north of the Waikaea Canal	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992
B014	All Saints Episcopal Church Cemetery	Just <i>mauka</i> from Kūhiō Highway, south of the Waikaea Canal	Appears to be a discrete historic cemetery	Kikuchi and Remoaldo 1992:62-65
547	sub-surface features including a firepit and a possible house foundation	South of bend of Waikaea Canal. <i>mauka</i> of Kūhiō Highway	Archaeological monitoring in the vicinity is recommended	Spear 1992:3
626	Burial	'Inia Street, <i>makai</i> of Kūhiō Highway, central Kapa'a	Consultation and monitoring in vicinity indicated	Jourdane 1995
748	Minimal findings, a weak cultural layer (buried A-horizon)	South of the bend of the Waikaea Canal, <i>mauka</i> of Kūhiō Highway	Considered no longer significant within project area	Hammatt et al. 1994
867	1 set of human remains	Kukui Street, just <i>mauka</i> of Kūhiō Highway. Kapa'a Town	Consultation and monitoring in vicinity indicated	Creed et al. 1995:50

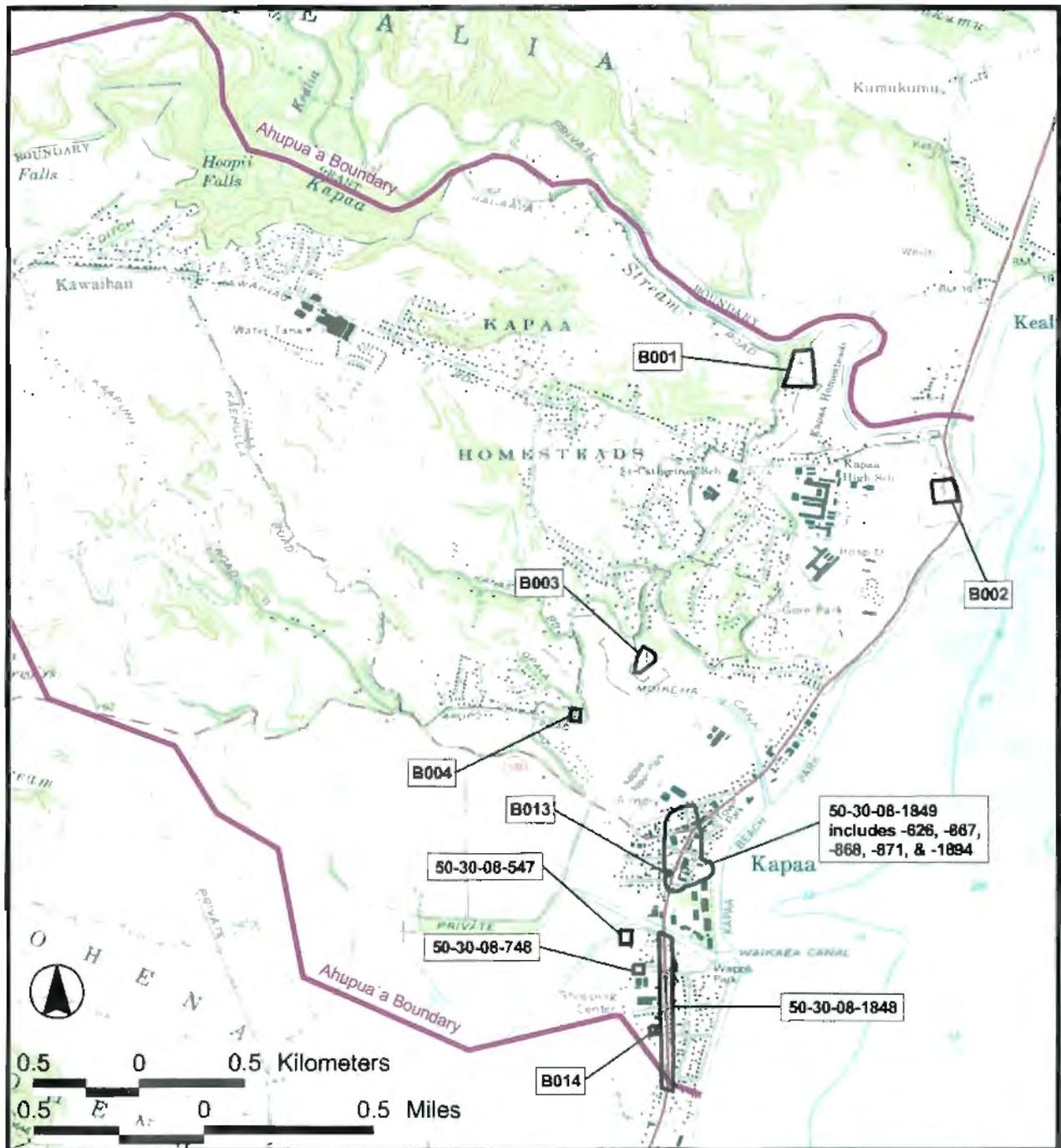


Figure 24: Archaeological Sites in Coastal Kapa‘a Ahupua‘a from these historic pits and are datable as early as 1840 but most fall within the period 1910-1930. Some may have been

associated with the clearing of debris after the well-known Dec. 22, 1923 Kapa'a town fire which affected more than 25 buildings along Kukui, Lehua, Huluhuli and Niu Streets.

The five LCAs within Kapa'a Town are all right next to the present highway. Perhaps, because of the narrowness of this sandy strip and limited land available for habitation, the human burials and habitation areas (cultural layers) are not separate entities.

The cultural layer, usually identified as **Stratum II**, was **observed intact through large stretches of excavations under streets**. Stratum II survives as a buried A-horizon/cultural layer with variable amounts of midden, charcoal and artifactual material. The lower portion of this stratum is generally prehistoric in age with mixing of historic materials in the upper portions of the stratum. It represents continuous occupation on a stable beach sand surface from as early as A.D. 1165. Major erosional or depositional events to interrupt this stability were not apparent in stratigraphic profiles, such as storm surf, tsunami, flood events, etc. In almost all cases, burial pits could be traced to an origin somewhere in Stratum II cultural layer. However, on Inia Street three burials occurred in pits which were sealed by sterile sand underlying Stratum II and were probably slightly older.

7. Summary of Kapa'a Settlement Pattern and Discussion

The association of the *ahupua'a* of Kapa'a with legendary historical figures such as Mō'ikeha implies that the area was settled previous to Mō'ikeha's time (early 14th century), although the extent of this settlement is not known. Through archaeology and other sources, it is known that at one time agricultural and domestic activities extended into the far *mauka* areas of Kapa'a, but were totally abandoned by the mid-19th century.

The LCA pattern in Kapa'a (as indicated by six awards) shows *lo'i* and *kula* on the rim of the swamplands and extending partly into watered valleys. Marshlands without known LCAs may have had *lo'i* along the edges. The six claimants had shoreline house lots *makai* of the swamp. We assume that permanent settlement existed in association with *mauka* agricultural lands in the prehistoric period but this is not reflected in the LCAs. The *mauka* settlements were probably abandoned before the 19th century. Permanent settlement occurred along the coast throughout late prehistory, as indicated by the presence of extensive and thick habitation deposits in the shore and backshore areas of Kapa'a, especially along Inia Street and Kūhiō Highway (Hammatt 1991). However in the early 20th century the entire area behind Kapa'a Town was rice and *kula* lots and there was a rice mill in the area. When flood control measures were instituted in the 1960's, these marsh lands, used previously for taro and then taken over by the rice farmers, were drained and became cane and pasture land.

8. Pattern of Archaeological Sites and Constraints in Kapa'a

The pattern of archaeological studies in Kapa'a Ahupua'a is somewhat skewed with a dozen projects in urban Kapa'a Town and very little work back from the coast. Numerous burials and other subsurface sites have been reported from coastal Kapa'a Town (Kawachi 1994; Creed et al. 1995; Jourdane 1995; Callis 2000) (Figure 25). The more inland studies (Hammatt 1981; Spear 1992; Chaffee et al. 1994a; Hammatt et al. 1994, 1997; McMahon 1996), however, have generally reported minimal or no significant findings. Given the large pre-contact and early

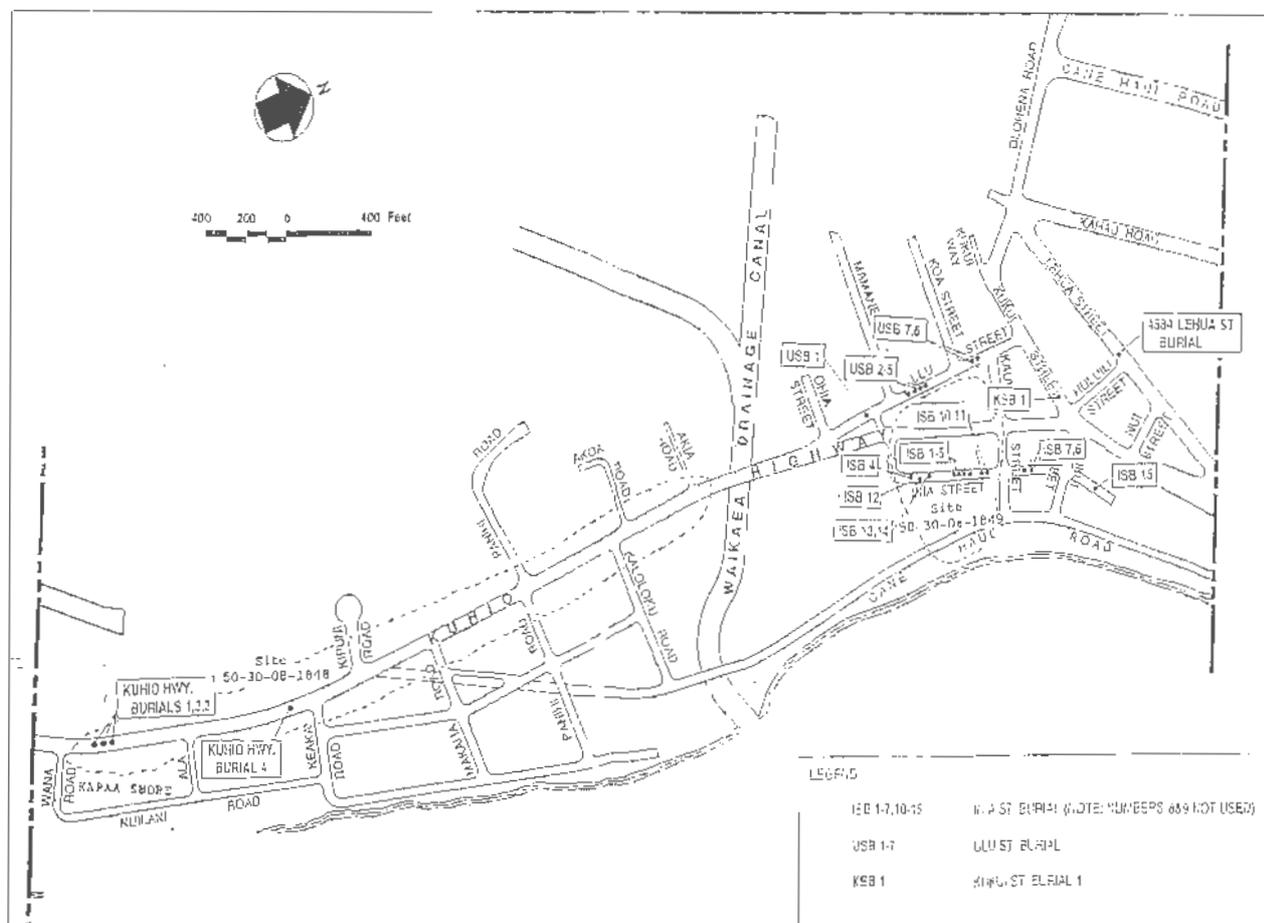


Figure 25: Map of Coastal Kapa'a Showing Locations of Burials Previously Encountered (adapted from Creed et al. 1996:Figure 10)

historic populations of Kapa'a and previous archaeological finds on-site archaeological monitoring is probably warranted for any significant subsurface impacts on or seaward of Kūhiō Highway

III. RESULTS OF FIELD INSPECTION

Pedestrian inspection of portions of the proposed Lydgate to Kapa'a Bike and Pedestrian Pathway Project was conducted on December 10, 2003 by two CSH archaeologists, David Shideler, M.A. and Todd Tulchin, B.S., under the overall supervision of Hallett H. Hammatt, Ph.D. The pedestrian inspection was made to locate any surface historic properties within the proposed pathway corridor. As previously discussed, the majority of the inland portions of the proposed pathway involve modifications to existing roads and sidewalks. In these developed areas, any surface historic properties would have been destroyed by construction activities. Therefore, the pedestrian inspection was focused on the undeveloped portions of the project corridor, including the coastline and areas in the vicinity of the former Lihue Plantation railroad. Bridge crossings were also inspected for possible historic concerns, though none were noted. The following Table 13 and text provide descriptions of historic properties located during the pedestrian inspection:

Table 13 Sites Identified in Field Inspection

State Site #	Temporary #	# Features	Form	Function	TMK
50-30-08-823	CSH 3	1	Stone and concrete railroad culvert	drainage to support transportation	4-3-02:6
50-30-08-890	CSH 1	1	Shallow depressions in boulders (Grinding stones)	Tool manufacture	4-3-02: beach reserve
50-30-08-891	CSH 2	1	WWII bunker	Coastal defense	4-3-02: 16

1. Grinding Stone Artifacts

A collection of traditional Hawaiian grinding stones (State Site 50-30-08-890) were located along the shoreline within a small bay, northwest of Kukui Heiau (Figure 26). The stones are resting on the sandy shoreline near the high tide line, in the area fronting the Lanikai, Lae Nani, and Kapaa Sands Condominiums. The grinding stone artifacts consist of several large basalt boulders with both linear and circular worn depressions (Figure 27). These stones would have been used in traditional times to sharpen stone tools and weapons. Along with readily available sand and water, stone implements could be rounded or sharpened as appropriate using these stones.

2. WWII Era Pillbox

A concrete WWII era military structure (State Site 50-30-08-891) was located fronting the shoreline within a vacant lot adjacent to the southwest side of the Kaua'i Coconut Beach Hotel (Figure 26). The structure rests at the edge of the sandy shoreline with windbreak plantings of

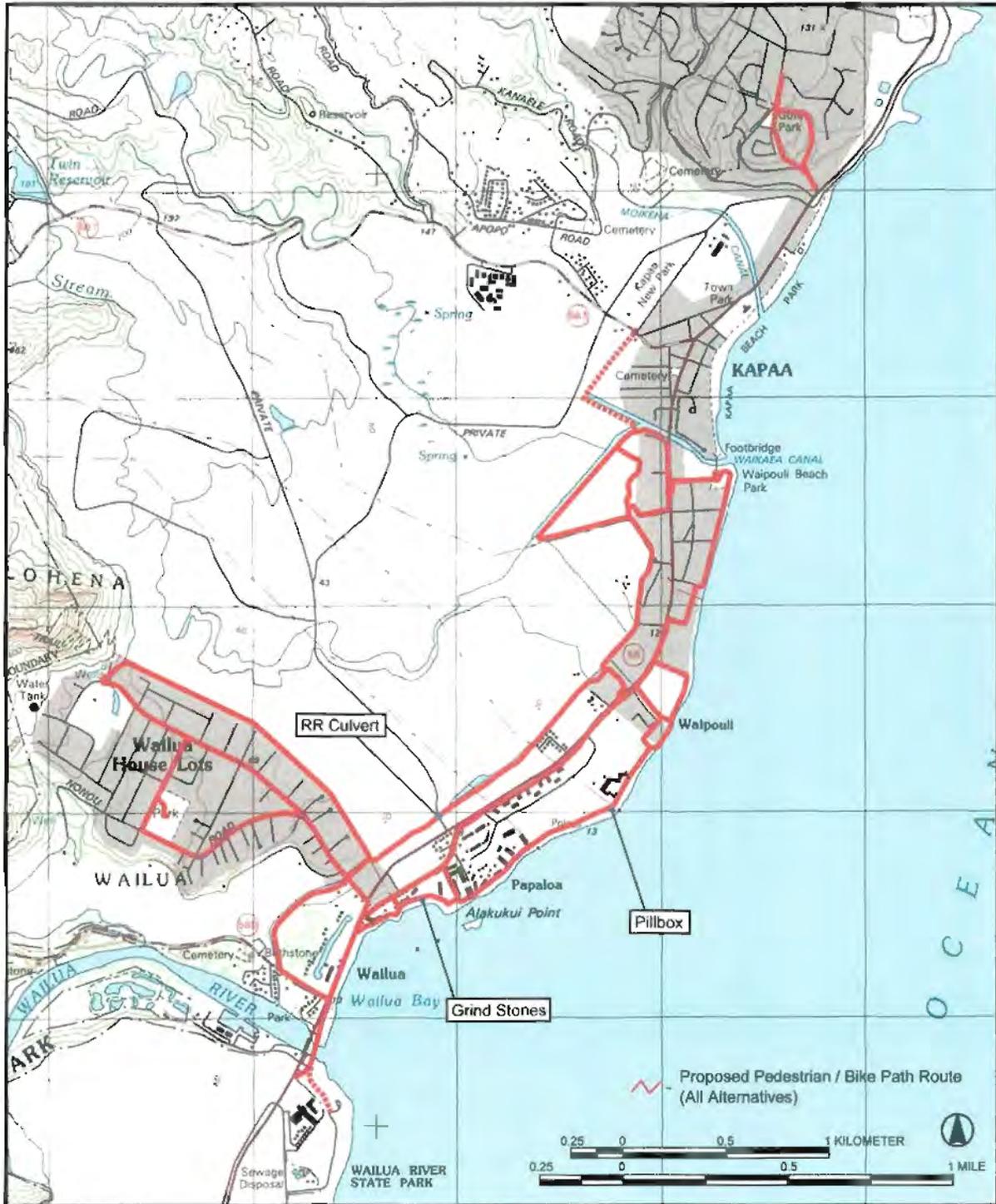


Figure 26: USGS Topographic Map showing the location of identified historic properties in relation to the proposed pathway



Figure 27: Example of grinding stone artifact located along shoreline



Figure 28: WWII Era bunker located near coastline, view to east

ironwood trees, immediately *makai* of the existing coastal footpath. The structure is a combination of brick and reinforced concrete construction (Figure 28). The structure is rectangular, measuring 3.4 by 3.8 m with a maximum height of 2.3 m. The four walls and floor of the structure exhibited significant cracking and weathering. No roof was present. Two entrances (doors) were located within the *mauka* and *makai* facing walls, each measuring approximately 0.8 m wide and 2 m high. Adjacent to the *makai* wall is a small porch, 1.3 by 1.2 m wide and 0.7 m high, with four metal posts for mounting equipment. The structure is believed to be a former U.S. military pillbox, or machine-gun emplacement. It is one of hundreds of pillboxes located throughout the shorelines of the Hawaiian Islands, constructed to defend against a coastal invasion by the Japanese during WWII.

3. Railroad Culvert

A stone and concrete railroad culvert was located at the intersection of the former railroad grade and the existing Kapa'a Temporary Bypass Road (Figure 26). The culvert crosses a drainage ditch which runs parallel to the Temporary Bypass Road. The culvert is of concrete construction with a basalt boulder facing, and measures approximately 2 m wide by 3 m long (Figure 29). This railroad culvert is understood to be a portion of the Lihue Plantation Railroad Embankment (previously given State Site # 50-30-08-823). Virtually the entire alignment of this railroad has been obliterated.



Figure 29: Stone faced railroad culvert, view to east

IV. SUMMARY OF ARCHAEOLOGICAL CONCERNS

A. Summary Discussion of all Sites Which May be Affected by the Proposed Undertaking

The following table lists designated archaeological sites that lie in or near (within 100 m) the proposed bike and pedestrian pathway alternatives. While the length of this table may appear to suggest great potential impact, this is exaggerated by the pattern of giving separate site numbers for burials within a larger designated site. Some site numbers designate single burials or groups of burials within a larger site complex.

The following discussion summarizes the greatest potential impacts on archaeological resources and associated issues.

1. The Wailua Complex of Heiau

Of particular concern are potential impacts to the Wailua Complex of Heiau National Historic Landmark (1988) which consists of five discontinuous properties: Site -104, Malae Heiau; Site -105, Hikinaakalā Heiau (and petroglyphs); Site -106, Holoholoku Heiau and Pōhaku Ho'ohānau; Site -107, Poli'ahu Heiau; and Site -335, the Wailua Bellstone(s). The designation of these properties for the National Register/National Historic Landmark listing is five circles each centered in the middle of each of the sites but only slightly greater than the radius of the sites themselves (see Figure 8). Alternative 3 includes a possible spur path extending down the north side of the Aloha Beach Resort effectively connecting the proposed path with the vicinity of Hikinaakalā, the Pu'uhonua o Hauola, a parking area and the coast. Although this route would largely or entirely lie on a former railroad berm, and would provide access to a designated National Historic Landmark site, informal discussion with State Parks has indicated that they are not receptive to such a path in such close proximity to this site complex. We thus must recommend that this option not be pursued at this time.

Another potential issue involves the Wailua petroglyph site (Ka Pae Kī'i Mahu o Wailua, Site 50-30-08-105A) at the mouth of the Wailua River. This site was clearly regarded by Dr. Kikuchi (1984) as "historically part of the temple of Hikina-a-ka-lā and the City of refuge, Hau'ola (both sites coded 50-30-08-105)" which is why he designated the petroglyphs as site 105A. Thus the petroglyphs should probably be regarded as a contributing element of the designated Wailua Complex of Heiau National Historic Landmark. There is some uncertainty regarding the extent of this Wailua petroglyph site as: "The appearance of the boulders is determined by the vagaries of the weather, e.g. the flow pattern at the mouth of the Wailua River, the sand deposited by storms and the tides of the sea" (Kikuchi 1984).

Field inspection and available maps indicate that the petroglyph field is well to the southeast of any likely footing for a new bike/pedestrian path bridge, however, if Alternative 3 is pursued (with footings for a new bridge on the south side of the river *makai* of the existing bridges) we recommend that plans be shared with State Parks and the State Historic Preservation Division to evaluate the possible need for a program of subsurface testing to further evaluate the prospect of impacting any buried portion of this petroglyph site that should be regarded as a contributing element of the designated National Historic Landmark.

Table 14 Archaeological Sites Within or Near Proposed Bike and Pedestrian Pathway Alternatives

Site No. 50-30- 08-	General Location	Function	Recommended Mitigation/ Comments	Relation to Path Alternatives	Source
105	Southern side of Mouth of Wailua River, <i>makai</i> of Kūhiō Hwy.	Hikinaakalā Heiau and Pu'uhōnua o Hauola	Preservation as part of National Historic Landmark; avoidance of vicinity	Kūhiō Hwy runs just inland (approx. 70 m.) of concern regarding possible spur route in Alternative 3	Bennett 1931:125-126
105A	Southern side of Mouth of Wailua River, <i>makai</i> of Kūhiō Hwy	Wailua petroglyph site (Ka Pae Ki'i Mahu o Wailua)	Preservation as part of National Historic Landmark; avoidance of vicinity	Kūhiō Hwy runs just inland (approx. 50 m.) of concern regarding possible new free-standing Wailua River bridge in Alternative 3	Kikuchi 1984
108	Alakukui Point, central South Olohena on coast	Kukui Heiau	Avoidance of <i>heiau</i> structure, acquiring rights to strip of condo property?	Extends from highwater to Lae Nani Condo property making path on <i>mauka</i> side of heiau in all Alternatives problematic	Thrum 1906; Bennett 1931:127; Davis and Bordner 1977; Kawachi 1993
547	Near big bend in Waikaea Canal	Subsurface features incl. a fire pit & possible house foundation	Monitoring Program indicated for vicinity	Near big bend in Waikaea Canal	Hammatt et al. 1994
634	North bank of Wailua river, inland of Coco Palm parcel	Extensive wetlands, former taro <i>lo'i</i> area	Adjacent but no significant impact anticipated	Adjacent to path around back of Coco Palms parcel	Hammatt et al. 1997

Summary of Archaeological Concerns

1800	Coastal North Olohena	Cultural layer and burials (2)	Monitoring Program indicated for vicinity	Coastal north Olohena	Rosendahl and Kai 1990
1801	Coastal Waipouli	Cultural layer and burials (5)	Monitoring Program indicated for vicinity	Coastal Waipouli	Rosendahl and Kai 1990, Hammatt 1991 a &c, Toenjes et al. 1991
1836	East of Waipouli Town Center on <i>Makai</i> side of Kūhiō Hwy.	Waipouli Cultural Layer and burials (17)	Monitoring Program indicated for vicinity	East of Kūhiō Hwy. strongest expression at coast, site extends to Kūhiō Hwy	Folk et al. 1991, Hammatt et al. 2000
1848	South central Kapa'a Town along Kūhiō Hwy.	Kapa'a Cultural Layer (and burials)	Monitoring Program indicated for vicinity	Kūhiō Hwy. between Wana Rd. and Waikaea Drainage	Hammatt 1991, Creed et al. 1995
B014	South Kapa'a Town, <i>mauka</i> edge of Kūhiō Hwy.	All Saints Episcopal Church Cemetery	Monitoring Program indicated for vicinity	Kūhiō Hwy. near All Saints Episcopal Church	Kikuchi and Remoaldo 1992:63

2. Kukui Heiau

Of particular concern is Kukui Heiau located right on the coast of central South Olohena at Alakukui Point. Kukui Heiau (designated site 50-30-08-108) was placed on the Hawai'i Register of Historic Places on June 13 1986 and was placed on the National Register May 18, 1987. This site effectively extends from high-water right up and into the Lae Nani Condos parcel. Alternatives 1 and 3 show a primary path extending along the back of Kukui Heiau. Alternative 1 also has a proposed secondary path (5 feet wide) extending north along the coast linking up with this primary path. While these routes would offer access to the *heiau* and interpretive opportunities it seems clear that if these paths were constructed on what is now public land that this would constitute an adverse impact to a National Register site. Consideration might be given to the acquisition of an adjacent strip of the Lae Nani Condos parcel so that a path could be constructed without intruding directly upon Kukui Heiau. Without acquisition of a strip of private land it appears impossible to create paths transiting the coast at Ala Kukui Point without adverse impact to Kukui Heiau. The State Historic Preservation Division and concerned Hawaiian groups are likely to oppose such trail impacts. We thus recommending abandoning consideration of paths that physically cross Kukui Heiau

3. Burials

After the Wailua Complex of Heiaus and Kukui Heiau, the greatest archaeological historic preservation concern for this project is suggested to be potential impact to human remains. Two concentrations of human burials have been documented along the proposed routes: extending back from the coast in Waipouli/Kapa'a (including designated sites 626, 867, 871, 872, 1836, 1848, 1849, and adjacent historic cemeteries), and in the vicinity of the Coco Palms (including site 660).

In the vicinity of Waipouli/Kapa'a Town several burials have been encountered near the coast and in close proximity to Kūhiō Highway. Improvements along the coast or along Kūhiō Highway involving substantial subsurface impacts would be expected to encounter human remains in these areas. This area is also particularly rich in other non-burial cultural resources.

In the vicinity of the Coco Palms, the highest densities of burials are thought to lie just inland of the present Kūhiō Highway alignment with only modestly elevated burial sensitivity along Kūhiō Highway. This area may also be particularly rich in other non-burial cultural resources. No increased burial sensitivity is associated with more inland routes.

In addressing burial concerns potentially associated with the Kapa'a Relief Route project we recommend continuing consultation with the Kaua'i/Ni'ihau Islands Burial Council and an archaeological monitoring program with on-site monitoring in the areas indicated above. If substantial subsurface impacts in these areas are anticipated, it may be advisable to consider re-interment options in advance of construction.

B. Opportunities for Site Interpretation

The proposed bike and pedestrian pathway alignments pass quite close to two sites that may be regarded as of national historic importance: 1) Site -105 (and 105A), Hikinaakalā Heiau and Pu'uhōnua o Hauola (and petroglyphs) on the south side of the Wailua River mouth, and 2) Kukui Heiau in coastal South Olohena. Regrettably concerns regarding avoiding any adverse

impact to these sites make any close access or interpretation of these sites in association with the bike and pedestrian pathway project problematic.

The vast majority of identified sites along the bike and pedestrian pathway project routes are entirely of a subsurface nature and many involve culturally sensitive burial issues as well. These sites would thus appear to have little interpretive potential. While the grinding stones on the coast are a readily observable remnant of traditional Hawaiian practices they lie in a stretch of coast for which no coastal path may be possible because of the difficulty of getting a trail around Kukui Heiau at Alakukui Point. The WWII era bunker and railroad culvert offer modest interpretive potential.

C. Mitigation of Impacts to Historic Sites

An archaeological monitoring program (plan, combination of on-call and on-site monitoring, monitoring report) is recommended to mitigate potential impacts to burials and other cultural resources that are believed to underly portions of the proposed alternative routes of the Lydgate to Kapa'a Bike and Pedestrian Pathway Project. Particularly sensitive areas are understood to include the vicinity of the Coco Palms including adjacent stretches of Kuamo'o Road and Hale'ilio Road. The area in the vicinity of the south side of LCA 3346 to Nawai (south of the central portion of the Coco Palms Resort; see Figure 5) may be of particular concern. Areas of Jaucas sand in Waipouli and Kapa'a Ahupuaa are well known for both burials and intact cultural deposits. These historical preservation concerns would be anticipated to be greatest at the coast but may extend *mauka* of Kūhiō Highway in some areas. It is understood that the pathway project will have a very light footprint with much of the path requiring minimal excavation. Many of the burials and cultural deposits previously documented, however, are quite shallow. In those areas in which monitoring is indicated, an approach of monitoring excavations extending greater than 30 cm into undisturbed sediments might be suggested for consideration to the State Historic Preservation Division.

Early consultation with the Kaua'i/Ni'ihau Islands Burial Council is recommended regarding burial treatment.

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