

**AN ARCHAEOLOGICAL MONITORING PLAN  
FOR THE PROPOSED CENTRAL MAUI REGIONAL PARK,  
WAILUKU AND WAIKAPU AHUPUA'A, WAILUKU DISTRICT  
ISLAND OF MAUI, HAWAII  
[TMK (2) 3-8-007:101 por.]**

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## **INTRODUCTION**

Scientific Consultant Services (SCS), Inc. has prepared this Archaeological Monitoring Plan (AMP) in advance of proposed development of the Central Maui Regional Park in Wailuku and Waikapu Ahupua`a, Wailuku District, Island of Maui, Hawai`i [TMK (2)-3-8-007:101 por.] (Figures 1, 2 and 3). The proposed Regional Park is being developed by the Department of Land and Natural Resources (DLNR) and will consist of a high school major league baseball field, a softball field, a Little League field, soccer fields, and open spaces for four softball fields and four youth baseball fields and other activities. The proposed park encompasses 65 acres and all associated construction activities including employee parking, office trailer locales and stockpiling of material will be contained within the project area boundaries.

The current AMP document follows after a 2013 Archaeological Monitoring Plan for a Soil Sample and Analysis Project within the Central Maui Regional Park (McEldowney 2013; Yent 2013). The Park also falls into the larger 607-acre Wai`ale development, which was subject to Inventory Survey (Tome and Dega 2010). The Park occurs within the 607-acres of the Wai`ale planned community. The results of both projects are presented below, this AMP being in response to recommendations made by the State Historic Preservation Division (SHPD) to conduct full-time monitoring within the 607-acre community, which includes the park.

Archaeological Monitoring is required due to the potential for the inadvertent discovery traditional or historic cultural deposits and/or human burials in subsurface contexts. Such culturally significant materials are often found in sandy substrate, which occurs across the entirety of the project area. While the Inventory Survey (Tome and Dega 2010) and sampling (McEldowney 2013) did not lead to the identification of significant historic properties, Archaeological Monitoring will ensure that significant cultural resources identified in the project area are adequately sampled, documented, and evaluated for their historical significance. The present Monitoring program will also ensure that any human remains found during subsurface work are identified and mitigated, as deemed appropriate and lawful under Hawai`i State Law for the Inadvertent Discovery of Human Remains (pursuant to 13-300-40a, b, c, HAR).

This AMP will require the approval of the State Historic Preservation Division (SHPD-Maui) prior to the commencement of any ground altering activities for the park. The following text provides more detailed information on the reasons for monitoring, potential site types to be encountered during excavation, monitoring conventions and methodology for both field and laboratory work, as well as discusses curation and reporting.

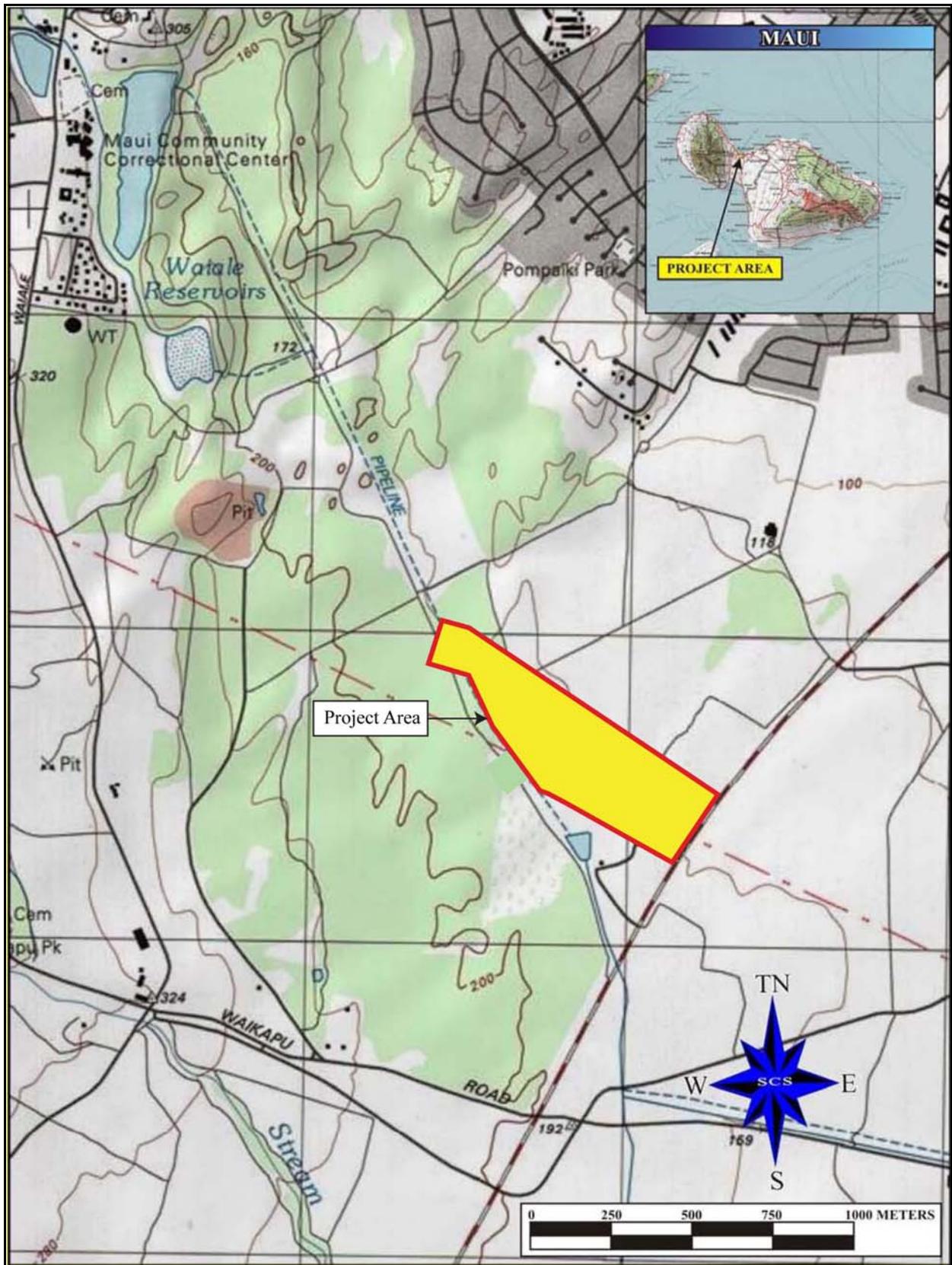


Figure 1: USGS Quadrangle Map Showing Project Area and Environs.

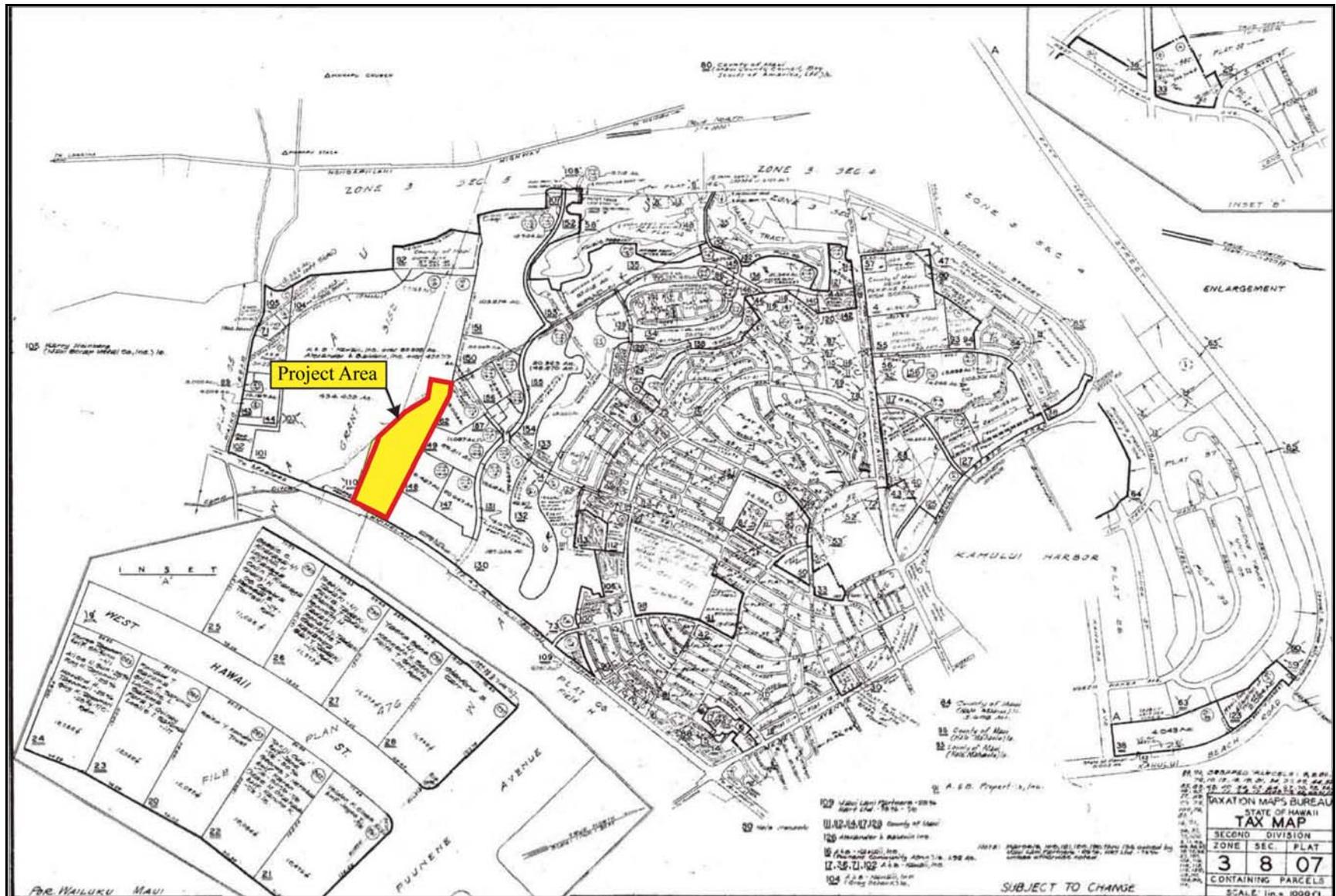


Figure 2: Tax Map Key [TMK] Showing Project Area.

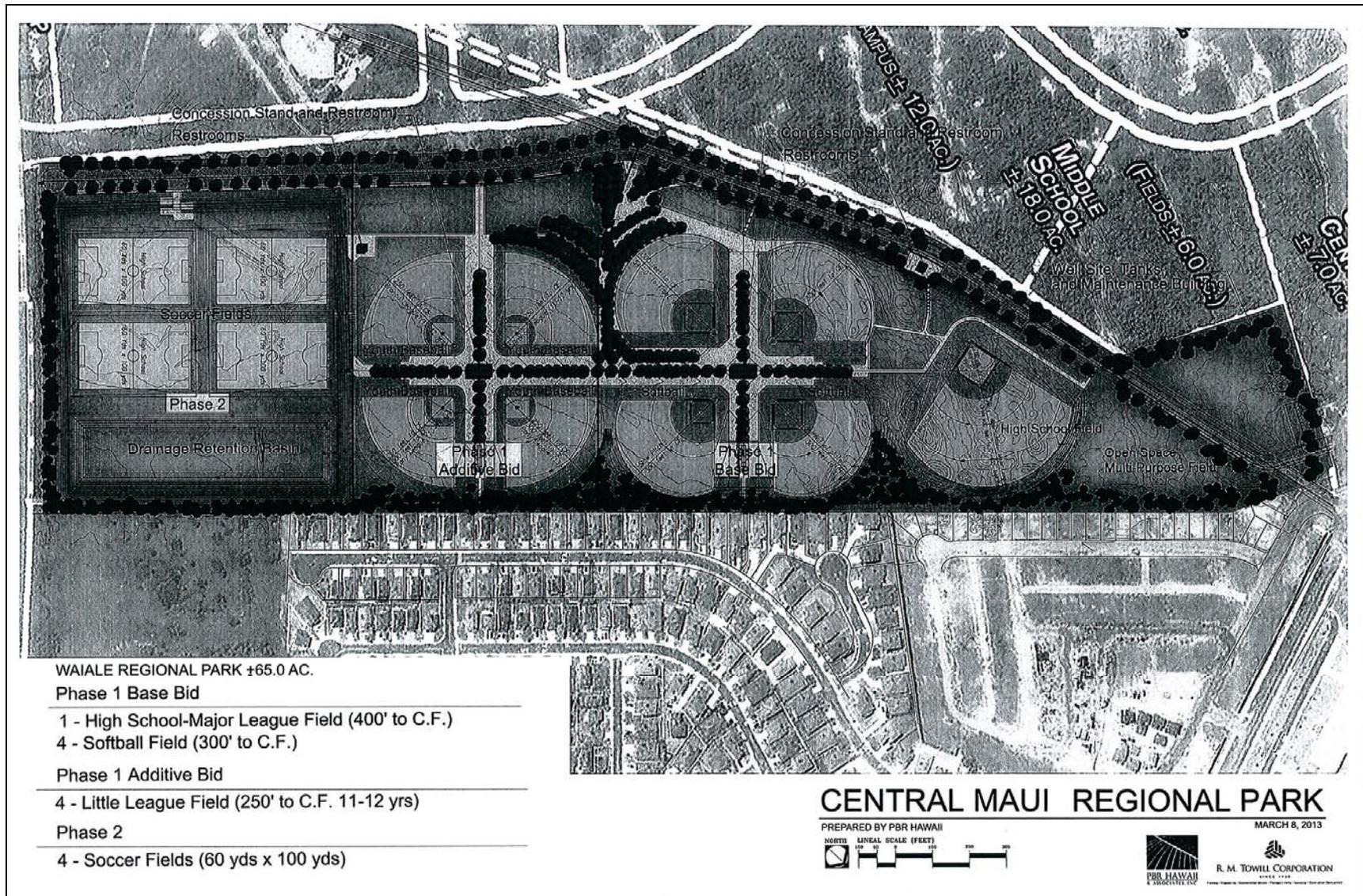


Figure 3: Plan View Map of Proposed Central Maui Regional Park (PBR Hawaii)

## **REASON FOR MONITORING**

Multiple archaeological projects have occurred within and near the current project area. Ten studies have occurred within the overall 607-acre proposed subdivision, of which 65-acres composes the park area. Of these ten studies, over half documented human burials and isolated human remains in the sandy sediment. This is the primary reasons for monitoring, to ensure that any human remains are identified, documented, and properly mitigated. Pre-Contact artifacts and historic-period sites have also been previously documented in the area. These would also be properly documented and mitigated during Monitoring.

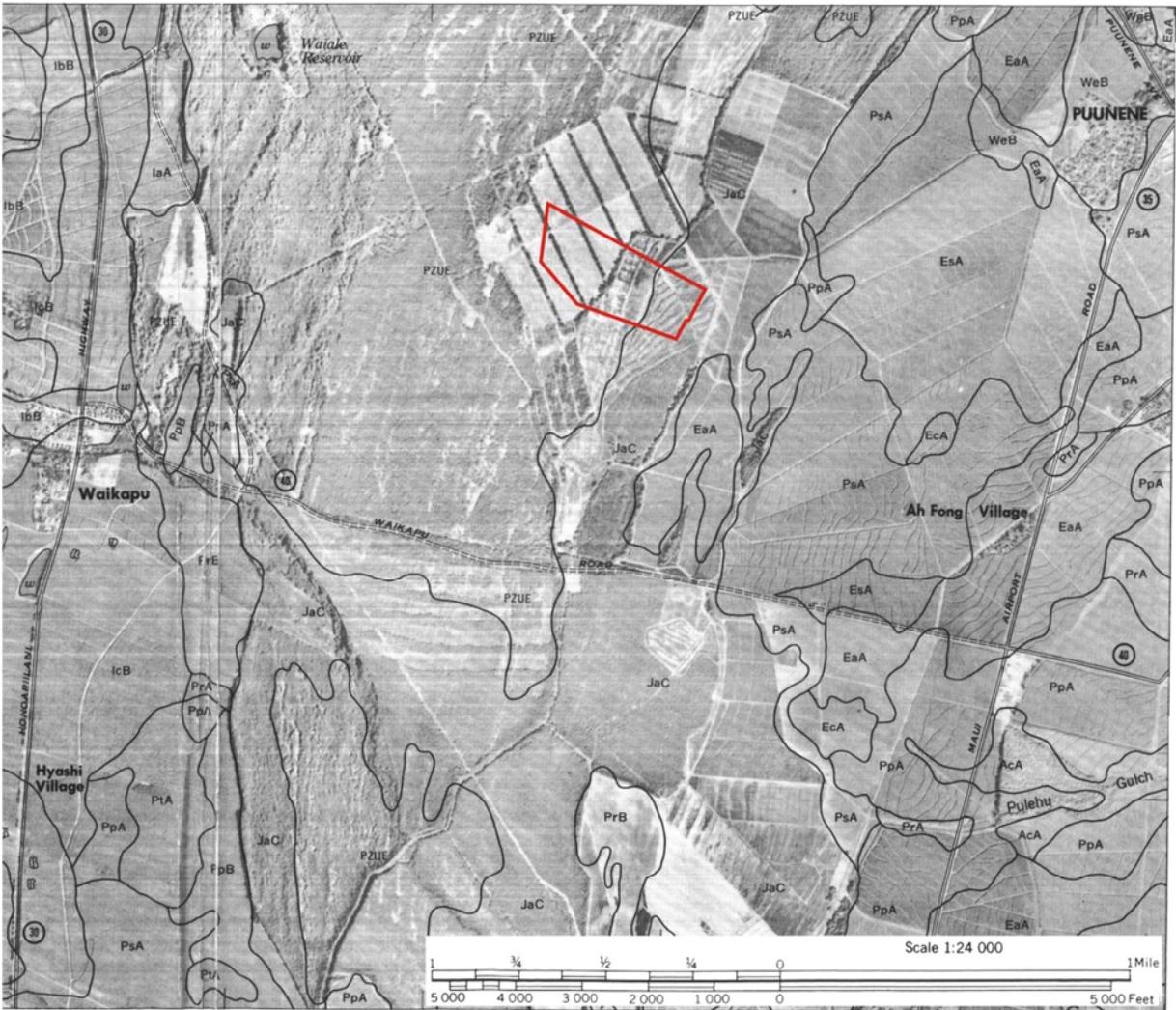
## **BACKGROUND: GEOGRAPHIC & HISTORICAL SETTING**

The project area is situated *c.* 3.50 kilometers (km) southwest of Kahului Harbor coastline and *c.* 4.80 km north-northeast from the beaches of Mā`alaea. The project area is situated at an elevation of *c.* 160 ft. above mean sea level on the isthmus between the West Maui Mountains and Haleakalā (see Figure 1). The project area is bordered by Kuhelani Highway to the east, the Maui Lani residential subdivision to the north, and undeveloped lands to the south and west.

With the exception of natural topography and Waikapū Stream, no natural features (*i.e.*, major hills or named *pu`u*, valleys, plateaus) exist within the project area confines. Much of the general project area and nearby have been extensively altered via mechanical means with uses such as construction baseyards, agriculture, sod farming, and sand mining, to name a few. Natural vegetation (as opposed to intentionally planted vegetation) covers approximately 60 percent of the project area with the remaining 40 percent being cleared lands for various uses (see below).

## **PROJECT AREA SOILS**

According to Foote *et al.* (1972:48–49, 115–116, 117), three different types of soil matrices are common in the area, which Puuone Sand (PZUE) being the dominant series in the project area (Figure 4). The three matrices are described as Jaucas sand (JaC), Pulehu clay loam (PsA), and Puuone sand (PZUE). Jaucas sand, with zero to fifteen percent slopes, has rapid permeability. While water erosion is slight, aeolian forces can degrade the Jaucas matrix where vegetation is lacking. Water retention per foot has been measured to 0.5 to 1.0 inch. Given such a low retention capacity and landscape instability (sand migration, etc.), utilization of the landscape in recent times has been dominated by uses such as pasture land, sugarcane cultivation (planted in imported clay-silty clay over the sand beds), truck crops, and urban development. Pulehu clay loam, sometimes associated with Jaucas sand, exists with zero to three percent slopes and has a moderate permeability. Erosion is slight with a water retention



**Figure 4: Foote *et al.* (1972) Soil Survey Map Showing Project Area Location.**

capacity of approximately 1.4 inches per foot. The Pulehu clay loam is utilized for sugarcane, truck crops, and pastureland. Puuone sand, sometimes associated with Jaucas sand, is created from coral and seashells and occurs on seven to thirty percent slopes and has rapid permeability. Cementation of this matrix has been found within 20 inches of the ground surface. The severity of aeolian forces that can erode this type of matrix is classified as moderate to severe. Water retention per foot is 0.7 inches. Puuone sand is utilized for pastureland and home sites.

**PROJECT AREA VEGETATION**

The general project area environment contains mainly non-native vegetation inclusive of lion’s ear (*Leonotis nepetifolia*), Guinea grass (*Panicum maximum*), kiawe (*Prosopis pallida*), koa haole (*Leucaena leucocephala*), castor bean (*Ricinus communis*), buffel grass (*Cenchrus ciliaris*), lantana

(*Lantana camara*), *klu* (*Acacia farnesiana*), *koa haole* (*Leucaena leucocephala*), indigo (*Indigo suffruticosa*), glycine (*Glycine wightii*), tree tobacco (*Nicotiana glauca*), cow pea (*Macroptilium lathyroides*), and golden crown-beard (*Verbesina encelioides*). Native vegetation observed in the area includes `uhaloa (*Walteria indica*). Coconut (*Cocos nucifera*), a plant brought to the Hawaiian Islands by initial colonists, is also present.

## **CLIMATE**

The project area lies in the dry region of Maui's isthmus. Rainfall indicators, according to Price (1983:62), show that the project area could receive up to 5 inches during the winter months of December through February. Higher elevations within Wailuku and Waikapū Ahupua`a are prone to receive more precipitation due to increased rainfall, fog drip, and lower temperature climates. The frequency of the project area receiving much upland runoff appears almost non-existent, given the lack of multiple streams directly emptying onto the project area..

## **TRADITIONAL AND HISTORIC SETTING**

The project area lies near the base of the southeastern slope of Maui's second largest volcano, Pu`u Kukui, that rises to over 1,764 m (5,788 feet) amsl. While most of the project area is situated within the boundaries of Wailuku Ahupua`a, a small portion of the project area lies in Waikapū Ahupua`a, both land areas occurring directly adjacent to one another. Both *ahupua`a* are located on the northeastern side of West Maui in the district of Wailuku.

## **TRADITIONAL SETTING OF WAILUKU DISTRICT**

Wailuku District is frequently mentioned in historical texts and oral tradition as being politically, ceremonially, and geographically important during traditional times (Cordy 1981, 1996; Kirch 1985). Wailuku was considered a "chiefly center" (Sterling 1998:90) with many of the chiefs and much of the area's population residing near or within portions of `Īao Valley and lower Wailuku. The importance of the district is reflected by the relatively large number of *heiau* (temple/shrine/place of worship) that were reportedly present in pre-Contact times. Oral tradition accounts surrounding these *heiau* provide examples of how religion tied into political power in the traditional Wailuku setting. Indeed, the period immediately preceding contact with the Europeans was one of considerable upheaval and conflict. *Wailuku*, meaning 'water of destruction' (Pukui *et al.*, 1974), succinctly describes the area in the late 1700s. Political power emanating from Moloka`i was an active element during the mid-eighteenth century. The resulting battle at Kalae`ili`ili (A.D. 1765) led to the expulsion of Keeaumoku and the Moloka`i *ali`i* (chief) and the beginning of Kahekili's reign (Kamakau 1992). Kahekili successfully

defended his capital in Wailuku throughout the 1770s, until his defeat at the hands of Kamehameha's forces.

Closer to the current project area, in the southwest corner of Wailuku District, pre-Contact settlement was not as dense as concentrations to the north. Climate had much to do with that trend, as the lower Waikapū-Mā`alaea area is a more arid environment than the rain-soaked areas located upslope. According to Tomonari-Tuggle and Tuggle (1991), the majority of the pre-Contact population was located southwest of the project area, near what is now Ukumehame Beach State Park. Settlement was also probable north of Keālia Pond in Waikapū Ahupua`a. Handy and Handy (1972) report that before the historic sugarcane plantations in this region, water from Waikapū Stream “. . . was diverted into *lo`i* [irrigated terraces] and its overflow was dissipated on the dry plains of the broad isthmus between West and East Maui” (ibid: 496).

Wailuku District would see drastic change after Captain James Cook's 1778 arrival in Kahului Bay. The reign of Kamehameha I was intertwined with the increasing presence of Europeans within the Hawaiian Islands. By 1821, American missionaries had established a foothold in Lāhainā and arrived in Wailuku the following year. The religion of the Hawaiian people began to wane under the influence of Christianity. Fredericksen and Fredericksen (2002:4) point to a girls' seminary (Central Female Boarding School), established in Wailuku in 1836, as one of the initial steps in the conversion of Hawaiian language and customs in Maui. Sterling (1998:86) notes that "the district of Wailuku was once thickly settled, *kuleanas* to the number of over 400 were granted to natives and others. A large portion of these cultivated *kalo* with the aid of water from the river."

In 1848, commissioners of the Māhele instigated an extreme modification to traditional land tenure on all islands that resulted in a division of lands and a system of private ownership. The Māhele was based upon the principles of Western law. While a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III (Kamehameha III) was forced to establish laws changing the traditional Hawaiian society into that of a market economy (Kuykendall Vol. I 1938:145, footnote 47, *et passim*; Daws 1968:111; Kame`eleihiwa 1992:169–170, 176). The dramatic shift from a redistributive economy to a market economy resulted in drastic changes to land tenure, among other things. As a result, foreigners demanded private ownership of land to ensure their investments (Kuykendall Vol. I, 1938:145, *et passim*; Kame`eleihiwa 1992:178).

Once lands were made available and private ownership was instituted, Native Hawaiians, including the *maka`āinana* (commoners), were able to claim land plots upon which they had been cultivating and living. Oftentimes, foreigners were simply just given lands by the *ali`i*. However, commoners would often only make claims if they had first been made aware of the foreign procedures (*kuleana* lands, or land commission awards). These claims could not include any previously cultivated or currently fallow land, *okipu*, stream fisheries, or many other natural resources necessary for traditional survival (Kame`eleihiwa 1992:295; Kirch and Sahlins 1992). Awarded parcels were labeled as Land Commission Awards (LCAs). If occupation could be established through the testimony of witnesses, the petitioners were issued a Royal Patent number and could then take possession of the property. Commoners claiming house lots in Honolulu, Hilo, and Lāhainā were required to pay commutation to the government before obtaining a Royal Patent for their awards (Chinen 1961:16). A handful of foreigners (*e.g.*, Anthony Catalena, James Louzada, and E. Bailey) gained control of large parcels of lands that would later be used for mass cultivation of sugar. Significantly, the majority of LCAs were awarded to Hawaiians, a gauge that can be used to measure pre-Contact settlement, since there was little overall change in traditional land use among Hawaiians prior to 1853 (Creed 1993:38).

#### **TRADITIONAL AND HISTORIC SETTING OF WAILUKU AHUPUA`A**

Much of the pre-Western contact folklore and history of the Wailuku Ahupua`a involves `Īao Valley with peripheral areas (*e.g.*, Waihe`e, Waiehu, Greater Wailuku) giving additional content. As only a limited portion of the project area is situated in the Wailuku Ahupua`a, only an overview of the Wailuku Ahupua`a traditional setting will be displayed in the following paragraphs.

One of the earliest references for `Īao Valley itself refers to a Maui king in power during the A.D. 1400s (Sterling 1998:84). The king, Kaka`e, was held in such reverence that commoners could not look upon him without suffering punishment by death. King Kaka`e thus became a hermit within `Īao Valley during the 1400s so that his subjects could live without fear. It was supposed that this king also created a royal burial grounds (*Kapela*), an enigmatic place that was designated for himself and for worthy successors as a sacred burial area.

The Wailuku area, as Kirch (1985:134) also notes, was an important center of political development during late prehistoric and early historic times and was the seat of powerful chiefs, including Kahekili, arch-rival of Kamehameha. Kamehameha I's unification of the Hawaiian Islands in 1790 brought Maui under the political control of its first non-Maui chief during July of that year. The last king of Maui was Kahekili II, son of King Kekaulike, both who are

supposedly interred at the sacred burial grounds in upper `Īao Valley. By the early historic period, significant natural and cultural changes had taken place, not only due to contact with westerners, but also because of internal social and environmental restructuring and external social and environmental factors (*e.g.*, foreign species being introduced as well as foreign ideologies). These combined to have a severe impact on Hawaiian environments, land-tenure, and social structures.

Connolly (1974:5) states that pre-Contact `Īao valley had a large population base with "most people residing in a settlement near `Īao Needle." Supposedly, the subsistence base of this population consisted of fish and taro, with Kahului Harbor and the coast close by and *lo`i* systems lining `Īao Valley's stream banks. Prehistoric ditches or *`auwai* were utilized in taro cultivation (Connolly 1974:5). Sterling (1998:86) adds that two *`auwai* within the valley "have existed immemorially and were evidently constructed for the purpose of irrigating *kalo* on the plains which stretch away to the northward and southward of the [*`Īao*] river. Several minor *`auwai* have, since ancient times, tapped the river at different points lower down and spread the water through the lands in the gulch on either side of the river bed."

Past archaeological research (Fredericksen and Fredericksen 1996:52) has revealed that habitation sites along what is now Lower Main Street in Wailuku, "are associated with the rich taro producing lands in the Lower `Īao River flood plain, and the extensive cultivation systems present in `Īao Valley." These habitation sites have been dated to the A.D. 15<sup>th</sup> through 17<sup>th</sup> centuries. The `Īao Valley area was not only renowned for its agricultural base during prehistoric times but its ceremonial and political base as well (see also Cordy 1996; Donham 1996).

Haleki`i Heiau, part of the Haleki`i-Pihana Heiau complex, was constructed during the mid and late 18<sup>th</sup> century (Sterling 1998:89). Yent (1983:7) noted an interesting life cycle for the *ali`i* who lived nearby those *heiau*. Kamehameha I's wife was born there, Kahekili lived there, and Kekaulike died there. Thrum (1909:46) reported that Kamehameha I evoked his war god at Pihana Heiau after his warriors defeated Kalanikupule's forces during the Battle of `Īao in 1790. The two *heiau* are primarily associated with Kahekili, who is connected with the Haleki`i-Pihana complex between A.D. 1765 and 1790, and Kamehameha, during his conquering of Maui in 1792 (Yent 1983:18).

Importantly, Haleki`i and Pihana Heiau are the only remaining pre-Contact Hawaiian structures of religious and historical importance in the Wailuku-Kahului area that are easily

accessible to the public (Estioko-Griffin and Yent 1986:3). As stated, the area is known not only for its religious and/or ceremonial significance, but for its political prominence as well.

Fredericksen and Fredericksen (1996:52) state that politically, Wailuku [village] was known as a central settlement for high ranking chiefs and their retinue. The Wailuku area was also witness to many battles, from the Battles of `Īao and Sand Hill to the Battles of Kepaniwai and Kakanilua. The most famous battle was at Kepaniwai where in July 1790, Kamehameha I finally wrested control of Maui Island. Kamehameha I and his warriors landed at the Kawela portion of Kahului Bay and proceeded up `Īao and other valleys to score a decisive victory. *Wailuku*, meaning ‘water of destruction,’ succinctly describes the area in which many of these major battles occurred. Warriors apparently dwelt in the Kauahea area of `Īao Valley (southeast of `Īao Stream below Pihana Heiau), and were "trained in war skills and there was a boxing site in the time of Kahekili" (Sterling 1998:89).

Several periods of various land utilization strategies occurred within `Īao Valley and down below on the floodplains. Between 1778 and 1848, traditional land use occurred within `Īao Valley, albeit on a smaller scale, as the "Conquest" period began and the Sandalwood and whaling trades dominated political and commercial activity within the islands (Kirch and Sahlins 1992). Quite another conspicuous effect of the growing influence of foreigners in the Hawaiian Islands was the systematic division of lands, the Māhele of 1848. The Land Commission oversaw land divisions of three groups: Crown Lands (king), Konohiki Lands, and Government Lands, all of which were, in theory, open to the prerogative of native tenants. The awarded land claims, known as Land Commission Awards (LCA), bordered `Īao Valley. They were numerous in quantity and concentrated on the plateau above the stream valley, along the top of its sidewalls. Burgett and Spear (2003) and Tome and Dega (2004) both conducted studies adjacent to that area. In a study of land use near the `Īao Stream, Burgett and Spear (2003) noted that Wailuku area residents submitted 199 land claims of which 127 of these were awarded by the Land Commission in 1848 (Waihona `Aina 1998). The LCA information lists several categories of land use in Wailuku area through time, from pre-Historic times through at least the middle of the 19<sup>th</sup> century (see Burgett and Spear 2003 and Tome and Dega 2004). These include: *lo`i* systems (pondfield cultivation of irrigated taro), *kula* lands (dry land, not wet or taro land), *hala* clumps (*Pandanus odoratissimus* or screw pine; the leaves provide material for weaving baskets or mats), and *po`alima*. Several land divisions parcels were also claimed, from `ili (subdivision of *ahupua`a* lands) to *mo`o* (land subdivision of an `ili) to *apana* (land division of a *kuleana*).

There are no LCAs or any other claims of land (*e.g.*, royal patents, land grants) present within the Wailuku Ahupua`a section of the project area (see Figure 2). A single Land Grant is present on the Waikapu Ahupua`a side and is identified as Land Grant 3152. This particular Land Grant will be further discussed in the **TRADITIONAL AND HISTORIC SETTING OF WAIKAPŪ AHUPUA`A** section of this report. When looking at a more regional scale of the Waikapū area, in general, more LCA's were awarded within upland reaches, where soils more amenable to agriculture and habitation occur (see below).

Traditional land utilization within and `Īao Valley was, on an initially small scale, replaced by sugar cane cultivation during the 1850s. This small-scale cultivation began with Kamehameha III and was further intensified by foreign plantation managers and owners such as Peck, among others (see Sterling 1998:86).

Many of the awarded LCAs in the area were under sugar cane cultivation by the mid 19<sup>th</sup> century. By the late 1800s, much of the `Īao Valley and its immediate surroundings were planted with sugar cane. Sugar cane fields extended along the borders of `Īao Valley, within the valley, and even occurred between the Haleki`i-Pihana Heiau site. Connolly (1974:5) notes that in the early 1900s, the sugar cane industry dominated commerce and land use in the `Īao Valley area; it created a fair amount of water irrigation ditches, terraces, free standing walls, historic house sites, and mill structures. Agricultural terracing and a Portuguese worker's camp were located in the lower stream valley. The Portuguese laborers "lived in the stream bed area, growing taro and other vegetables in the *lo`i* and working as laborers on the plantation. This population lived in a worker's camp until the flood of 1916" (Connolly 1974:5). This flood presumably ended habitation within lower `Īao Valley.

In 1912, a rock crusher was installed in `Īao Valley by Mr. Willie Crozier, an entrepreneur who wanted to supply all of the rock needed for construction projects on Maui. This crusher, however, was also destroyed in the 1916 flood. The flood itself, generated within `Īao Valley, demolished taro *lo`i*, the rock crusher, the Portuguese Camp, and, among other things, portions of the two *heiau*. Yent (1983:7) suggests that major erosion of both Haleki`i and Pihana Heiau was due to the 1916 flood. The western half of Haleki`i eroded down the steep valley slope and the eastern half was eroded by `Īao Stream. Importantly, archaeological remnants in the valley were dramatically affected by the flood.

Sugar cane cultivation continued in and near the valley after the flood though, with plantations rebuilding the water systems feeding the sugar cane fields (Connolly 1974:6). Cultivation of sugar cane dominated land use of the project area environs through the middle of this century. During World War II, military training was done in *mauka* `Īao Valley areas while

ranching also occurred. Remnants of these activities (and earlier historic occupations) include iron broilers and concrete foundation walls (large ovens), concrete-lined trenches, and concrete house pads (Bordner 1983:6–9). During the late 1980s, the upper portion of the project area transitioned from sugar cane to macadamia nut production and in the late 1990s, production fell and the fields of macadamia nut were abandoned (Veith 1999).

### **The Battle of Kakanilua**

Many legends point to a famous battle occurring in the sand dunes between Wailuku and Kahului. The Battle of Kakanilua [valley], as it is known, is repeated often as follows<sup>1</sup>:

“These names, Piipii and Ahulau, are grievous and fear causing thing in the heart of Kalaniopuu for his chiefs and commoners who dies together in the battle of Kakanilua valley fought with the King Kahekili; all the warriors died except for four. Sixteen-hundred people were killed in the Battle of Kakanilua. Of the opponents, 800 were the warriors of the Alapa Regiment of Kohala and Hamakua under the leadership of Kauanonoula (k), grandson of Peleioholani (k), the chiefs of Hilo. Eight hundred were of the Piipii Regiment under the chiefly leadership of Kekuhaupio (k); all died. Killed was Keawehano, second ranking chief of the Alapa Battalion, and Kauanoanoa, chiefly leader, and his son Kawahaopeleiolani survived as did the great Leader Kekuhaupio and Honolii, second ranking chief of the Piipii warriors.”

Other than “sand dunes”, there is no clear indication of where this battle occurred. In some instances, the word “valley” is used after “Kakanilua” but in most cases, “sands” are noted. The major dune system of central Maui runs from lower Wailuku to Waikapū. As has been raised at two meetings of the Maui/Lana`i Islands Burial Council (meeting dates October 30, 2003, November 26, 2003), some feel the battle location occurs in the current Maui Lani development.

### **TRADITIONAL AND HISTORIC SETTING OF WAIKAPŪ AHUPUA`A**

As previously mentioned, most of the current project area is situated within the Waikapū Ahupua`a located in the land division once known as “Nā Wai Eha” (The Four Streams). This area is “...comprised the four great valleys [Waihe`e, Waiehu, Wailuku, and Waikapū] which cut far back into the slopes of West Maui and drain the eastward watershed of Pu`u Kukui and the ridges radiating northeastward, eastward, and southeastward from it” (Handy and Handy 1972). Currently, only the Waikapū Stream is located in the project area and could empty, if diverted, onto the project area. Waikapū was renowned for “...its majesty and splendid living, whose

<sup>1</sup>KE ALOHA AINA / PART 1 & 2 / March 2 & 9, 1907 Mookuauhau Haikupuna Holopuni O John Liwai Kalaniopuuikapali-0- Molilele-Ma-Wai-0-Ahukini-Kau-Hawaii Ena The Complete Ancestry of John Liwai Kalaniopuuikapali-o-Molilele-ma-wai-o-Ahukini-Kau- Hawaii Ena Page numbers are from reprinted article and translation in *Hawaiian Genealogies Volume II*

native songs gather flowers in the dew and weave wreaths of ohelo berries” (S.W. Nailiili in Sterling 1998:93). W. D. Alexander (in Sterling 1998:63) states that “...the lands of Waikapū and Wailuku appropriated almost the whole of the isthmus so as to cut off half of the lands in the district of Kula from access to the sea. These two *ahupua`a*, together with Waiehu and Waihe`e, which were independent, belonging to no *Moku*, were called Na Poko, and have been formed into a district in modern times.”

According to Handy and Handy (1972:497) and Pukui *et al.* (1974:223), the name “Waikapū” (Water of the Conch) refers to an ancient cave in the area where a famous conch shell (*pū*) was hidden until it was stolen by Puapua-lenalena (a supernatural dog). Sterling (1998) offers two alternative origins of the name “Waikapū.” In one account, the area, known as “Nā Wai Eha,” was renowned for the battles fought there; the name Waikapū (the water where the conch was blown) referred to a conch shell which was blown to announce the commencement of a battle [C. W. Stoddard (1894) in Sterling 1998:63]. In another account [H. T. Cheever (1851) in Sterling 1998:63], “Waikapū” (Forbidden Water) refers to the time Kamehameha I, the Conqueror, beached his canoes at Kalepolepo and placed a *kapu* (taboo, restriction) on the nearest stream [Stoddard (1894) in Sterling 1998:63]. Although Waikapū Stream is not the closest stream to Kalepolepo, it does drain into Keālia Pond, and it may have been the closest stream with flowing water at the time of Kamehameha’s landing (Sterling 1998:63).

Waikapū once was the setting of vast wet-land taro fields. Evidence of the widespread *lo`i* planting is provided by the Land Commission Awards that indicate there once were more than 1,300 wet-land taro patches extending along the boundaries of Waikapū Stream (Creed 1993). Handy and Handy (1972: 497) describe the general Waikapū area as follows:

Spreading north and south from the base of Waikapu to a considerable distance below the valley are the vestiges of extensive wet-taro plantings, now almost obliterated by sugar-cane cultivation; a few here and there are preserved in plantation camps and under house and garden sites along the roads. Among these gardens there were, in 1934, a few patches of Japanese taro. Far on the north side, just above the main road and at least half a mile below the entrance to the canyon, an extensive truck garden on old terrace ground showed the large area and the distance below and away from the valley that was anciently developed in terraced taro culture. On the south side there are likewise several sizable *kuleana* where in 1934 old terraces were used for truck gardening. In the largest of these a few old patches were flooded and planted with Hawaiian wet taro. Several terraces were used as ponds planted with lotus for their edible

seed. There were probably once a few small terraces on the narrow of valley bottom in the lower canyon.

Available archival research indicates no Land Commission Awards were awarded within the portion of the current project area located in the Waikapū Ahupua`a. The dearth of Land Commission Awards within the current project area and the area immediately surrounding the project area may be attributed to an absence of pre-1848 Hawaiian population, a result of settlement conditions within these particular *ahupua`a* favoring upland loci (see Creed 1993) where more precipitous conditions are present and ideal for agricultural pursuits. However, as previously stated, a single Land Grant is present on TMK: (2) 3-8-007: 101 and identified as Land Grant 3152. This grant occurs within the project area confines only on the Waikapū Ahupua`a side of the project area. As the mention of Land Grant 3152 in this paragraph is to solely notify the reader of the presence of a land claim, a further explanation of the specific Land Grant will be detailed in the following section regarding the events that occurred in the Waikapū Ahupua`a during late Historic Period.

#### **THE LATE HISTORIC PERIOD AND GROWTH OF THE SUGAR INDUSTRY**

Another influence that brought change to Maui was foreign commercialism. Two Chinese brothers, Ahung and Atai, of Honolulu's Hungtai Company arrived in Wailuku in 1828 to explore the possibility of setting up one of its earliest sugar mills. Atai soon created a plant that processed sugarcane cultivated by Hawaiians, named the Hungtai Sugar Works (Dorrance and Morgan 2000:15-16). Ahung later joined Kamehameha III's sugar producing enterprise, although by 1844 both operations had ceased. In 1862, The Wailuku Sugar Company was established and would expand sugar production over the next 126 years of its existence (4,450 acres by 1939), still more than three decades before its maximum production levels.

As it expanded its territory, the Wailuku Sugar Company first appeared on maps in the area in the 1920s, although their acquisition of land south of the project area may have been as early as the turn of the century (Kennedy and Trimble 1992:4). On November 18, 1875 Henry Cornwell, through Grant 3152, acquired Waikapū Ahupua`a from the state government (ibid.1992). *Hawaiian Reports*, 4:248 in Sterling (1998:95) contains the following passage entitled the "Opinion of the Court by McCully, J., in the Matter of the Boundaries of Pulehunui (from) which discusses the acquisition of Waikapū from the state government:

The land of Waikapu, belonging to the Government, was set over to the Department of Education. There is in the office of the Department a map of Waikapu, and survey notes on separate paper taken to refer to it. The notes and the names written

on the map were in the handwriting of one J.W. Marsh, deceased, who had been a clerk in this Department...

In 1875 the Board of Education sold at auction the “Land known as the ahupua`a of Waikapu, saving grants hitherto made within said ahupua`a, or sales by the Board of Education,” to Henry Cornwell, the Government issuing a royal patent in the above terms without survey or statement of area. Mr. Cornwell afterward sold to Claus Spreckels and others the part known as Waikapu Commons.

By the turn of the century, a large portion of Waikapū, and possibly portions of the project area, was under sugarcane cultivation.

Wailuku Sugar Company ended production in 1988, having averaged over 30,000 tons of sugar produced annually at its pinnacle in the 1970s (Dorrance and Morgan 2000:66). Owner C. Brewer & Company, Ltd. shut down sugar cultivation on the project area, which was then used almost entirely for pineapple cultivation starting no later than 1992 (Kennedy and Trimble 1992:1). The lands were under pineapple for at least the next three years (Tomonari-Tuggle and Tuggle 1991:11) (and probably slightly longer) before transitioning to smaller-scale “garden” plots.

## **RANCHING**

Livestock was introduced to the Hawaiian Islands in 1793 when Captain Vancouver transported cattle and sheep aboard his ship the *Discovery* with the intention of giving the four cows, two bulls, four ewes, and two rams to Kamehameha I as a gift of goodwill. The rough seas and intense heat of the journey took its toll on the health of the cattle and several of the animals died. In order to ensure that the cattle population would increase, a ten year *kapu* was placed on slaughtering them. Eventually the cattle did recover in number. However, once the 10 year *kapu* on cattle slaughter had been lifted the number of cattle increased so dramatically they became a dangerous nuisance. As they were allowed to roam wild gardens were destroyed and the Native Hawaiians were terrified of being attacked. Managing and controlling the unruly animals became a necessity. In order to solve this problem Kamehameha I employed “a varied crew with unsavory reputations who had immigrated to the islands to escape their pasts” as bullock *hunters* to capture the animals (Cowan-Smith and Stone 1988:8).

Things were about to change in 1803 when Captain Richard Cleveland and his partner Captain William Shaler introduced horses to the Islands. These men brought aboard their ship, the HMS *Lelia Byrd*, several horses including a stallion and a mare with foal which they presented as gifts to Kamehameha. Soon the horses, like the cattle, were roaming freely across

the Islands. The horses (*lio*) adapted rapidly to the rough terrain where the cattle grazed and “their ability to work the livestock [did not] go unnoticed” (Cowan-Smith and Stone 1988:12).

Around 1830, Kamehameha III brought Mexican *vacqueros* from Vera Cruz to the Big Island to teach the local men how to rope and handle the animals. As the cattle and horse populations proliferated the animals were transferred to the various Hawaiian Islands and the *vacqueros*, which now included local cowboys, were needed on the outer islands.

Cattle were on the Island of Maui as early as 1806. Amaso Delano (in Brennan 1995:97), provides the following account of the effect cattle had on traditional life on Maui:

They had recently brought to this island, one of the bulls the Captain Vancouver landed at Owhyee (Hawaii). He had made very great destruction amongst their sugar cane and gardens, breaking them and their cane patches and tearing them to pieces with his horns and tearing them with his feet. He would run after and frighten the natives and appeared to have the disposition to do all the mischief he could, so much so that he was an unwelcome guest among them.

As sandalwood and *koa* were diminishing, cattle became an important resource to the Hawaiian economy. By 1820, the number of cattle had increased to such a degree they were aggressively being hunted for their hides. In addition, their tallow and meat became important commodities of local and international trade. Soon cattle and their importance in the trade industry flourished to such an extent that Hawai`i became a major supplier of beef to California during the Gold Rush and subsequently to the visiting whaling ships, as well (Cowan-Smith and Stone 1988:6). Currently, a portion of the larger project area (*i.e.*, TMK: (2) 3-8-007:101 por.) is utilized for cattle ranching and albeit not known when, if ever, cattle ranching terminated within Waikapū Ahupua`a, the presence of such could be interpreted as having continued the Historic Period tradition of cattle ranching within the Waikapū Ahupua`a.

Besides the unification of the islands, perhaps the most significant development following contact with Westerners was the Māhele of 1848. Many awards were distributed in areas bordering `Īao Valley. Most land in that area was being utilized for the cultivation of taro and *hala* trees, and for house sites resting near agricultural production areas.

Another significant development was the cultivation of sugar cane, which began in the `Īao Valley area during the 1850s. Sugar cane became the dominant crop cultivated in the area and provided occupational opportunities for both local and non-local residents. With sugar cane

cultivation came irrigation and processing structures across the landscape like irrigation ditches, mills, and other infrastructures supporting the cash crop production. Sugar cane cultivation continued through the 20<sup>th</sup> century.

### **RECENT HISTORIC PERIOD AND PRESENT LAND USE**

During the 20<sup>th</sup> century, sugar cane cultivation continued on an intensive scale. Sugar cane continued to be the dominant activity in the Wailuku-Waikapū area, although small taro plots were still being cultivated. In addition, ranching became a viable activity in the Wailuku and Waikapū areas, particularly in *mauka* areas below the precipitous cliffs of the West Maui mountain range. At present, locales within and nearby the current project area located within Wailuku Ahupua`a contains portions of land that have been extensively altered via mechanical means with regards to commercial development (*e.g.*, construction baseyards) and other modern day uses (*i.e.*, sod farming and sand mining). Natural vegetation (as opposed to intentionally planted vegetation) covers approximately 60 percent of the project area with the remaining 40 percent being cleared lands for various uses.

### **PREVIOUS ARCHAEOLOGY**

Multiple archaeological projects have occurred within and near the current project area. This section specifically targets archaeological projects conducted within the larger 607-acre parcel of which the park is part. The reader is referred to Tome and Dega (2010) for a regional compilation.

Ten archaeological projects have been completed or are in the process of being completed within and adjacent to the current project area, within the greater 607-acre development. To date, no previously documented human remains have been encountered or are being preserved within the current 65-acre project area. Figure 7 (below) shows that the current project will not intrude into any of the existing cultural preserves and no associated construction activities (*i.e.* stockpiling of material) will take place outside of the project area boundaries.

Summary information of all ten projects is listed chronologically below. Figure 5 illustrates projects that have occurred in the 607-acre development, inclusive of the current park area (see Tome and Dega 2010; McEldowney 2013; Yent 2013).

**Moore and Kennedy (1998):**

**An Archaeological Inventory Survey Report for a Proposed Sand Mine to be Located at TMK: 3-8-07: 101 (por.) in Waikapū and Wailuku Ahupua`a, Wailuku District, Island of Maui**

This study consisted of survey and testing across approximately 90 acres of undeveloped land in the northwest portion of the 607-acre area. The survey area consisted of two separate, but adjacent parcels of land bisected by an access road. Area A occurred to the east of the access road and consisted of 59 acres. Area B consisted of 30.3 acres and occurred to the west of the access road. A total of 117 trenches were excavated in the project area which resulted in the identification of three sites. Site 50-50-04-4200 consists of four burials and associated artifacts, Site -4201 contained one burial, and Site -4202 was composed of a tiered terrace with paving thought to represent a temporary habitation locus. All three sites occurred within Area A and were interpreted as associated with prehistoric/early historic times. Following, a Burial Treatment Plan was composed for Site -4200 and Site -4201 (see below).

Monitoring of sand mining activities in this area was undertaken by Archaeological Services Hawaii, LLC (see Rotunno-Hazuka and Pantaleo n.d. below)

**Kennedy and Moore (1998)**

**A Revised Burial Treatment Plan for a Proposed Sand Mine To Be Located at TMK: 3-8-07: 101 (por.) in Waikapu and Wailuku Ahupua`a, Wailuku District, Island of Maui**

The Burial Treatment Plan (BTP) followed the findings of the above noted Inventory Survey and covered Site -4200 and Site -4201. The plan includes temporary mitigation measures (fencing and buffer around sites during construction activities), as well as provisions for long term preservation in place of all five burials. The plan was prepared in consultation with the Maui/Lana`i Islands Burial Council (MLIBC) and the preservation tenets of the plan are still in place as of this writing.

**Fredericksen and Fredericksen (1996)**

**Report on the Waikapu Human Remains Recovery Project, Waikapu, Maui, Hawaii (Borrow Site 50-50-04-3525) TMK: 3-8-07: 104**

This report discusses the recovery of human remains both on site and removed off site during sand mining activities. The area of origination occurs along the western flank of the current parcel. The project commenced in May 1994, with mitigation occurring intermittently at least through February 1996. Mitigation included the recovery, description, and inventory of remains. Members of the Maui/Lana`i Islands Burial Council conducted on-site re-interment of the remains in March, 1995. A total Minimum Number of Individuals (MNI) equated to twenty-two individuals recovered during this project. This population included both males and females of various age. All recovered remains, as well as those left *in situ*, remain protected on the parcel.

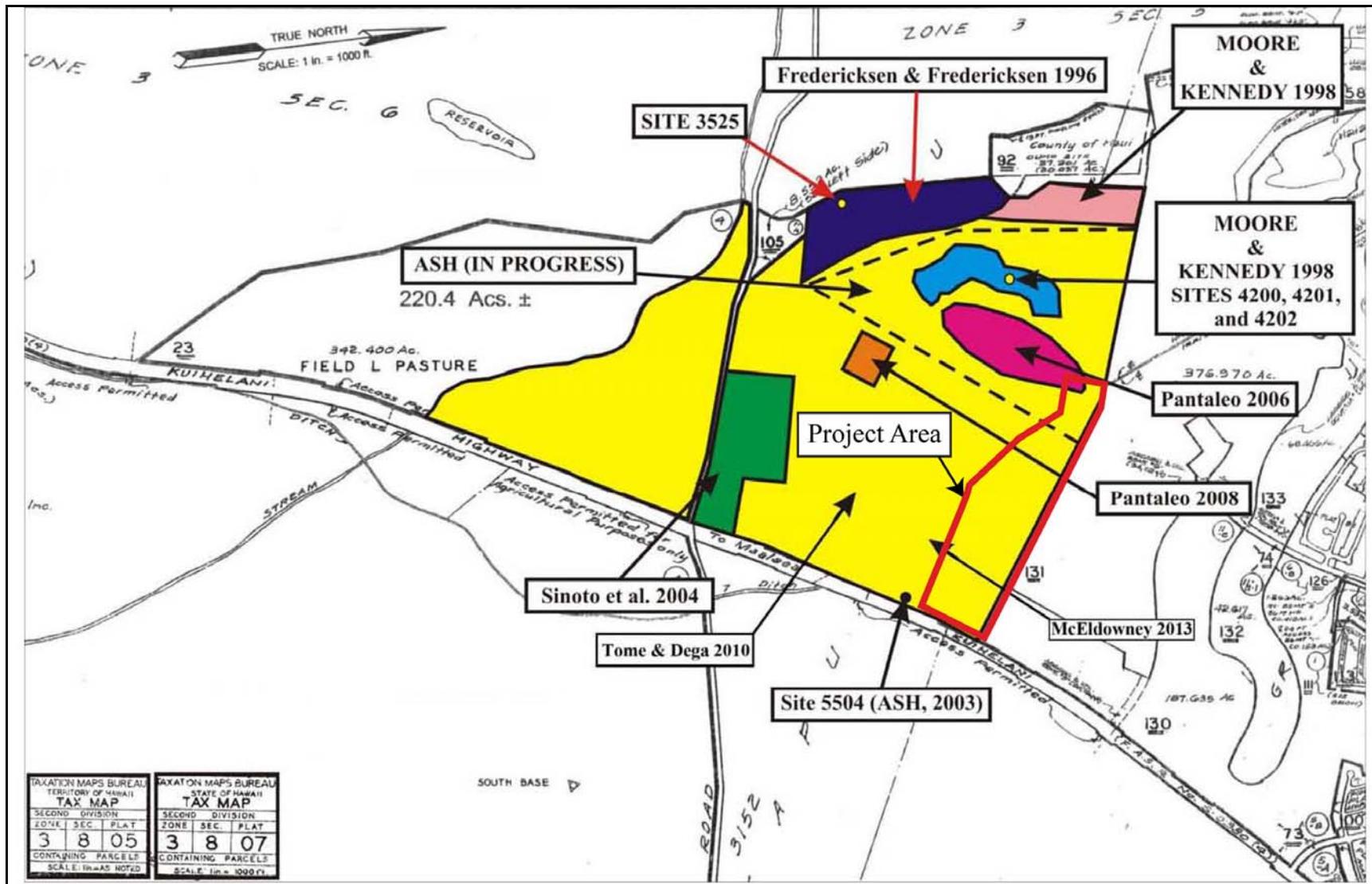


Figure 5: Previous Archaeological Work Conducted within Current Project Area Boundaries and the 607-Acre Development.

**Sinoto et al. (2004)**

**Archaeological Inventory Survey of the Proposed Industrial Park Development Area, Waikapu, Wailuku, Maui Island TMK: 3-8-07:89 & 102 (por.).**

Archaeological Inventory Survey of TMK: (2) 3-8-07:89 & 102 (por.) was completed by Sinoto *et al.* (2004). Parcel 89 occurs outside the current project area and is known as the “Consolidated Baseyards.” Parcel 102 is located in the southeastern-most corner of the current parcel. The Inventory Survey involved both pedestrian survey and testing (eight mechanically-excavated trenches). The results of the project were negative; no historic properties were identified on either Parcel 89 or Parcel 102. The authors noted that approximately 75% of the project area had been previously impacted by mechanical means.

**Pantaleo 2006**

**Archaeological Assessment for the Proposed Hawaiian Cement and Ameron Sand Mining Area, Maui Lani Subdivision Lot 12-A, Waikapu Ahupua`a, Wailuku District, Island of Maui TMK: 3-8-07: 101 (por.)**

Inventory Survey of this 50-acre parcel was conducted in 2006 through use of survey and the excavation of 50 backhoe trenches. The study area occurs in the northern portion of the overall 607-acre development and is a section of a license to Hawaiian Cement for sand mining. Testing amounted to one trench per acre and no surface or subsurface cultural remains were identified. While the results of the project were negative, Archaeological Monitoring was recommended due to the sandy nature of the locale and potential for the discovery of burials.

**Pantaleo 2008**

**Archaeological Assessment of a 15-Acre Portion of Hawaiian Cement Sand Mining Area, Maui Lani Subdivision Lot 12-A, Waikapu Ahupua`a, Wailuku District TMK: 3-8-07: 101 (por.)**

Inventory Survey of this 15-acre parcel was conducted in 2008 through use of surface survey and representative testing. The area covered by this study is in the central portion of the greater 607-acre area. A total of 20 trenches were mechanically excavated within the project area. The results of testing were negative and the project was re-designated as an Archaeological Assessment. Due to the presence of sand and thus, the possibility of burials being present in the project area, Archaeological Monitoring was recommended for the project area (see below).

**Rotunno-Hazuka and Pantaleo (2008)**

**Archaeological Monitoring Plan For All Grading and Grubbing Activities at a 15-Acre Portion of Land at Hawaiian Cement Located at TMK: 3-8-07:101 (por.) Waikapu Ahupua`a, Wailuku District, Island of Maui**

This Archaeological Monitoring Plan is an outgrowth of the recommendation made after completion of the Archaeological Assessment work (see above report). At the time of this writing, several burials were identified during this Monitoring project (see below update).

**Rotunno-Hazuka and Pantaleo (n.d.)**

**Hawaiian Cement Sand Mining: Archaeological Monitoring Summary for TMK: 3-8-07: 101 Pors., Archaeological Services Hawaii, LLC, July 2009 (Supersedes the 2003 Interim Monitoring Report Update)**

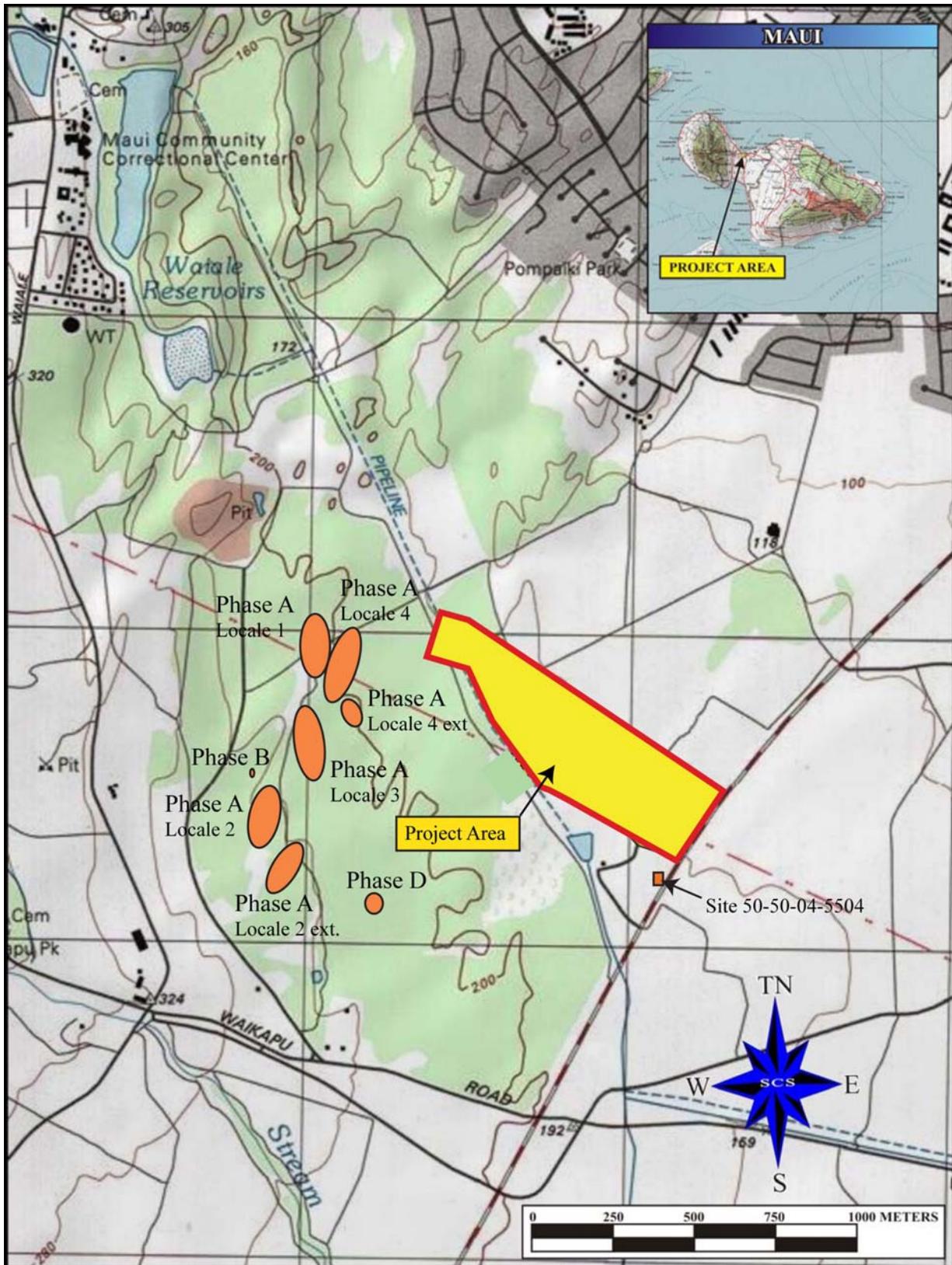
This Monitoring summary covers the area subject to Inventory Survey by Moore and Kennedy (1998; designated as Phase A and Phase B), the 50-acre Assessment survey area documented by Pantaleo (2006; Phase C), and the Assessment area documented by Pantaleo (2008; Phase D). Phase A was further divided into six locales known as Locale 1, Locale 2, Locale 2 extension, Locale 3, Locale 4, and Locale 4 extension (Figure 6 and 7). Forty-nine inadvertent burials from Phase A were *in situ* and/or were probably *in situ*. Additional to the *in situ* burials are scatters of human skeletal remains that were disturbed prior to Hawaiian Cement grading activities and do not contain an *in situ* component. A minimum of 21 individuals are represented within the scatters. Phase B contained 2 burial features, 1 partial *in situ* and 1 recently disturbed, probable *in situ*. Phase C, the 50-acre survey area, has not yielded any burials and grading by Hawaiian Cement is complete. Within Phase D, the 15-acre survey area, documentation and lab work of the disturbed remains is not complete, however the data is as follows: at least 3 *in situ* burials and a large scatter of human skeletal remains that were previously and possibly recently disturbed have been identified within a discrete 0.90 acre area. Within the scatter, a minimum of 14 individuals are represented. Together, the phased Hawaiian Cement Sand Mining area contains 54 inadvertent burial features which contain articulated, *in situ* human remains and/or were likely to contain *in situ* burial features, as well as a minimum of 35 individuals represented within the assemblage of scattered human remains. In addition to these inadvertent finds by ASH, five previously identified burial features were documented during the Moore and Kennedy (1998) survey, as is noted above.

Specific plans for the preservation of these burials will be detailed under separate cover in a Burial Treatment Plan authored by Archaeological Services Hawaii, LLC. Appropriate interim protocol and procedures, including demarcation and protection of these areas has been instituted.

### **Inadvertent Discovery**

The inadvertent discovery of multiple burials (one *in situ* and two areas of scattered remains) in the greater 607-acre area occurred on October 27, 2003. The discovery area occurs in the east-northeastern portion of the overall development near Kuihelani Highway. The burials, designated as State Site No. 50-50-04-5504 (see Figure 7), were discovered by ASH employees who had been working at Maui Lani. The location of the burial preserve is approximately 80 m south of the southwest corner of the proposed park boundary along Kuihelani Highway. The following summary paraphrases the Maui/Lana'i Islands Burial Council meeting minutes for October 30, 2003, and November 26, 2003 in which the burials are discussed.

ASH employees, working at the adjacent Maui Lani parcel, investigated an area known as the "Sod Farm" that had been subject to grading by a front-end loader without an archaeological monitor present. Three areas (designated as Area I, II, and III) were found to contain remains, of which would eventually be one *in situ* burial and two areas of scattered remains. During the October 30, 2003 meeting of the MLIBC, the council made a three-part motion concerning the remains: that the area where the human skeletal remains were found be assigned a state inventory site number; that there be a good faith archaeological attempt to define the boundaries of the inadvertent burial area; and that the disturbed dune sands within the inadvertent burial discovery area be screened in order to recover any other human skeletal remains.



**Figure 6: Archaeological Services Hawaii (ASH) Map Showing Hawaiian Cement Burial Locales in Relation to Current Project Area.**

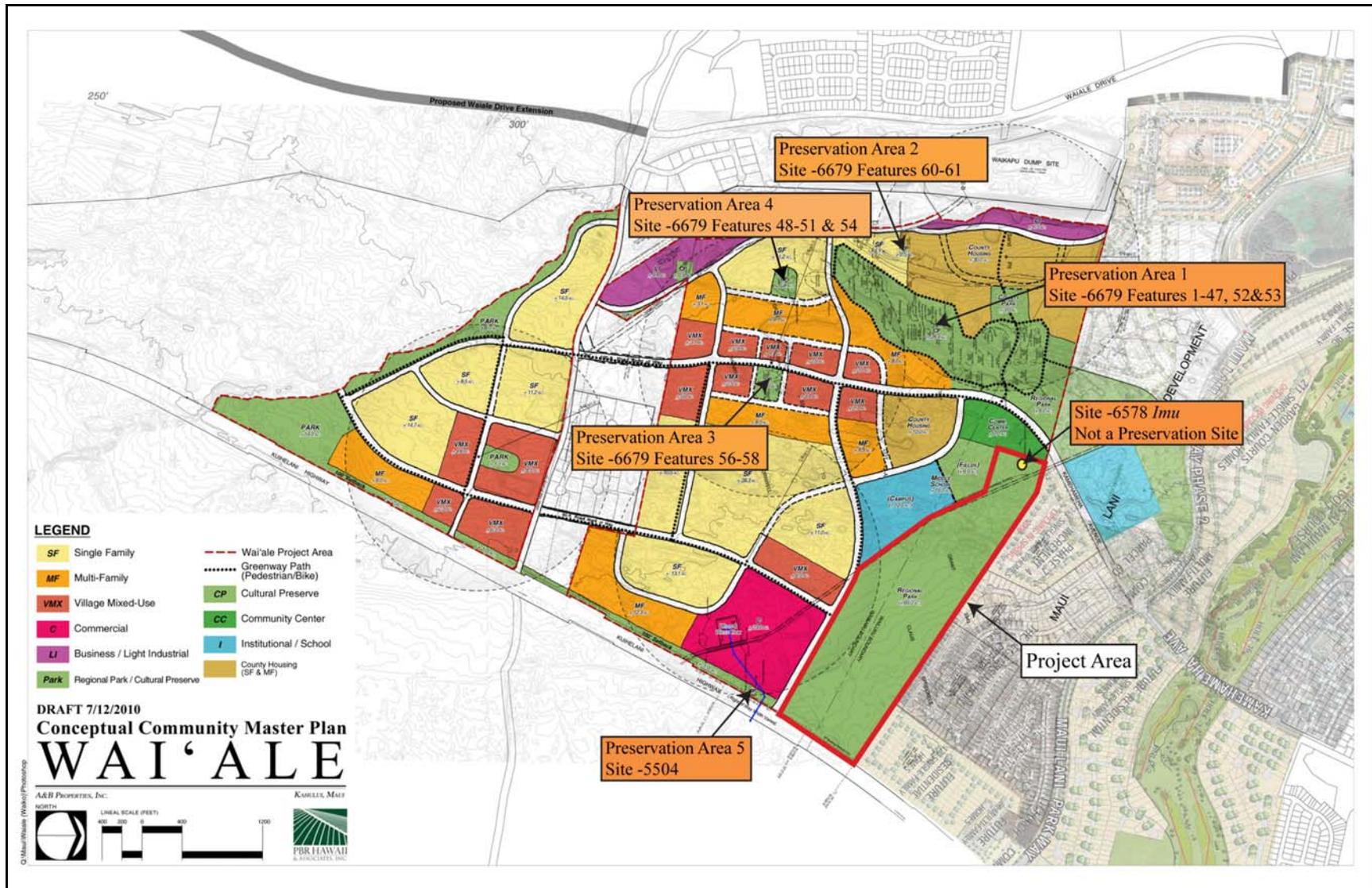


Figure 7: Wai'ale Conceptual Community Master Plan Showing Location of Preserve Areas and Site -6578 (*Imu*) in Relation to the Current Project Area.

The project was updated again by ASH at the November 26, 2003 meeting of the MLIBC. The three areas containing remains were noted and little work had occurred since the previous meeting, beyond the identification and additional, exposed remains. The inadvertent discovery area still contained one possible *in situ* burial and two areas of scattered remains. There is little information on these burials between November 26, 2003 and in 2008 when SCS conducted fieldwork in the area for the current project (see results below).

### **Tome and Dega (2010)**

Archaeological Inventory Survey was conducted on the overall 607-acres of land in Wai`ale, Wailuku and Waikapū Ahupua`a, Wailuku District Maui [TMK: (2) 3-8-005:23 (por.), 37 and (2) 3-8-007: 71, 101, 102, 104]. The project area, slated for a residential community inclusive of housing, the current park, schools, and light industry, is located on lands that have been historically utilized for various purposes such as agriculture, ranching, and sand mining. A total of 282 mechanically excavated trenches and five manually excavated units were placed throughout the project area. While 281 of the trenches and five manual test trenches yielded negative results, one trench (ST-90) revealed the presence of State Site No. 50-50-04-6578, an *imu* pit. No burials were identified during the project. Data derived from stratigraphic analysis indicated a large number of ground alteration events through time as the lands were used for industrial agricultural production (*e.g.*, sod farming, sugarcane). Natural processes illustrating flooding and deposition via upslope runoff were also deciphered in the strata. Precautionary Archaeological Monitoring was recommended for most portions of the project area which contain natural, sandy matrices that are relatively undisturbed. The current AMP is an outgrowth of this mitigation strategy.

### **McEldowney 2013; Yent 2013**

Archaeological Monitoring was conducted during soil sampling by the Division of State Parks to determine the extent and density of potentially harmful soil contaminants occurring at the proposal Central Maui Park. On-site analysis was conducted to determine whether unexploded ordinance or munition debris were also present. A total 270 soil coring samples were taken across the project area. The cores extended to a depth of c. 24 inches below the surface and sandy silty/silty sand and lithified sand were the most common soil types encountered. Yent (2013:24) notes the presence of a concrete slab located in Coring Area E, the slab measuring 20' by 40' with 8' wide extensions (see Figure 7). The slab is related to the former sod farm. In addition, in Coring Areas G, E, and F, which border Kuihelani Highway, push berms from historic and modern land use activities are present. These have been found to contain not only historic-era bottles and debris but human remains (see Tome and Dega 2010).

## MONITORING CONVENTIONS AND METHODOLOGY

This AMP has been outlined in accordance with DLNR/SHPD administrative rule 13-279. Archaeological monitors will adhere to the following guidelines during monitoring procedures:

1. A qualified archaeologist familiar with the project area and the results of previous archaeological work conducted in the area, will monitor subsurface construction activities on the parcel. If significant deposits or features are identified and additional field personnel are required, the archaeologist will notify the contractor or representatives before additional personnel are brought to the site. One archaeologist is required for each piece of ground altering equipment.
2. If features or cultural deposits are identified during Archaeological Monitoring, the on-site archaeologist will have the authority to temporarily suspend construction activities at the significant location so that the cultural feature(s) or deposit(s) may be fully evaluated and appropriate treatment of the cultural deposit(s) is conducted. SHPD will be consulted to establish feature significance and potential mitigation procedures. Treatment activities primarily include documenting the feature/deposit through plotting its location on an overall site map, illustrating a plan view map of the feature/deposit, profiling the deposit in three dimensions, photographing the finds (with the exception of human burials), artifact and soil sample collection, and triangulation of the finds. Construction work will only continue in the significant location when all documentation has been completed.
3. Control stratigraphy in association with subsurface cultural deposits will be noted and photographed, particularly those containing significant quantities or qualities of cultural materials. If deemed significant, these deposits will be sampled.
4. In the event that human remains are encountered, all work in the immediate area of the find will cease; the area will be secured from further activity until burial protocol has been completed. The SHPD island archaeologist and SHPD-Cultural Historian will both be immediately notified about the inadvertent discovery of human remains on the property. Notification of the inadvertent discovery will also be made to the Maui/Lanai Islands Burial Council by SHPD. A determination of minimum number of individuals (MNI), age(s), and ethnicity of the burial(s) will be ascertained in the field, following standard osteological procedures (*e.g.*, White and Folkens 2000). Rules outlined in Chapter 6E, Section 43 shall be followed. Profiles, plan view maps, and illustrative documentation of skeletal parts will be recorded to document the burial(s). The burial location will be identified and marked. If a burial is disturbed, materials excavated from the vicinity of the burial(s) will be manually screened through 1/8-inch wire mesh screens in order to recover any displaced skeletal material. If the remains are to be removed, the work will be in compliance with HRS 6.E-43.6, Procedures Relating to Inadvertent Discoveries after approval from all parties (SHPD, Burial Council). All remains recovered from the site will be temporarily stored in a secure, on-site location until final disposition is determined and completed.
5. To ensure that contractors and the construction crew are aware of this AMP and possible site types to be encountered on the parcel, a brief coordination meeting will be held between the construction personnel and monitoring archaeologist prior to initiation of the project. The

construction crew will also be informed as to the possibility that human burials could be encountered and how they should proceed if they observe such remains.

6. The contracting archaeologist shall provide all coordination with the contractor, SHPD, and any other group involved in the project. The archaeologist will coordinate all monitoring and sampling activities with the safety officers for the contractors to ensure that proper safety regulations and protective measures meet compliance. Close coordination will also be maintained with construction representatives in order to adequately inform personnel of the possibility that open archaeological units or trenches may occur in the project area.
7. As necessary, verbal reports will be made to SHPD and any other agencies as requested.

## **LABORATORY ANALYSIS**

All samples collected during the project, except human remains, will undergo analysis at the SCS laboratory on Maui. In the event that human remains are identified and the SHPD authorizes their removal, these remains and all associated cultural materials will be curated on-site. Photographs, illustrations, and all notes accumulated during the project will be curated at the Maui laboratory of SCS. All retrieved artifact and midden samples will be sent to the SCS laboratory on Maui to be cleaned, sorted, and analyzed. Significant artifacts will be photographed, sketched, and classified (qualitative analysis). All metric measurements and weights will be recorded (quantitative analysis). This data will be presented in tabular form within the final monitoring report. Midden samples will be minimally identified to major 'class' (e.g., bivalve, gastropod mollusk, echinoderm, fish, bird, and mammal). All data will be clearly recorded on standard laboratory forms which also include number and weight (as appropriate) of each constituent category. These counts will also be included in the final report.

Should any samples amenable to dating be collected from a significant cultural deposit, they will be prepared in the SCS laboratory and submitted for specialized radiocarbon analysis. While primary emphasis for dating is placed on charcoal samples, we do not preclude the use of other materials such as marine shell or nonhuman bone materials. SCS will consult with SHPD and the client if radiocarbon dates are deemed necessary.

All stratigraphic profiles will be drafted for presentation in the final report. Representative plan view sketches showing the location and morphology of identified sites/features/deposits will be compiled and illustrated.

## **CURATION**

If requested by the landowner, SCS will curate all recovered materials on Maui (except human remains, which would remain on-site) until a permanent, more suitable curation locale is identified. The land owner(s) may request to curate all recovered materials once analysis has been completed.

## **REPORTING**

An Archaeological Monitoring report documenting the project findings and interpretation, following SHPD guidelines for Archaeological Monitoring reports, will be submitted within 180 days of the completion of fieldwork. This time line is requested to account for any radiocarbon age determinations (typically 60 days), if necessary.

If cultural features or deposits are identified during fieldwork, the sites will be evaluated for historical significance and assessed under State and Federal Significance Criteria. The Archaeological Monitoring report will be drafted until accepted by SHPD and will be submitted to both SHPD and to the client.

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