

Section 9 Summary and Interpretation

9.1 Summary

Cultural Surveys Hawai'i, Inc. (CSH), under contract to PB World, completed this AIS for the Airport Section 3 of the HHCTCP, for the City and for the FTA. The AIS Airport study area is from Kalaloa Drive (just northwest of Hālawā Stream) in the west to Middle Street (just west of Kalihi Stream) in the east, located within the traditional Hawaiian *ahupua'a* or traditional land divisions of Hālawā (ʻEwa District) and Moanalua Ahupua'a (Honolulu District), Island of O'ahu, TMK: [1] 1-2, 1-5, 1-7, 2-1, 2-3 (Various Plats and Parcels). The focus of this AIS is the majority of the Airport Section 3 construction section, which extends from Station 994+00 Kamehameha Highway at Kalaloa Drive (just northwest of Hālawā Stream) to Station 1248+00 (Kamehameha Highway at Middle Street, just west of Kalihi Stream), for a distance of 25,400 feet or 4.8 miles (7.74 kilometers), and includes three stations.

A total of 47 test excavations were completed. These included the forty test trenches specified in the AISP plus an additional five test excavations (numbered T-042 to T-046) in the vicinity of the Honolulu international Airport Station (excavated in accordance with the AISP Addendum).

Two archaeological cultural resources were identified: SIHP 50-80-13-7420, former twentieth century roads including three features; and SIHP 50-80-13-7421 remnants of military warehouse foundations.

No evidence of traditional Hawaiian occupation was observed. No traditional Hawaiian artifacts or features were identified at all. Only in T-038 does there appear to be midden reflecting a traditional Hawaiian consumption pattern but the midden density appears low and this is not indicative of intensive habitation and the deposit may in fact be fill (with midden in the fill).

9.2 Interpretation

9.2.1 Reasons for the Absence of Archaeological Resources in the HHCTCP Airport (Section 3) Corridor

No Water

The following map (Figure 251) depicting the annual precipitation in inches for selected locations on O'ahu (Source: Pacific Disaster Center) tells an important story in explaining the dearth of archaeological finds in the HHCTCP Airport (Section 3) corridor. The Honolulu (Honolulu International Airport) rainfall readings are suggested to be typical for the HHCTCP Airport (Section 3) portion of the corridor. It may be noted that the annual rainfall in this area is the lowest for the 29 locations on O'ahu for which rainfall data is reported. The Honolulu (Honolulu International Airport) annual rainfall readings (at 8.0 inches) are at 40.4% of the mean value of 19.8 inches of annual rainfall reported for these 29 locations on O'ahu. The HHCTCP Airport (Section 3) corridor lands could not have supported non-irrigated agriculture. Good

lands for irrigated agriculture were found on the immediate margins of Hālawā and Moanalua streams but irrigation did not extend laterally very far from these stream mouths.

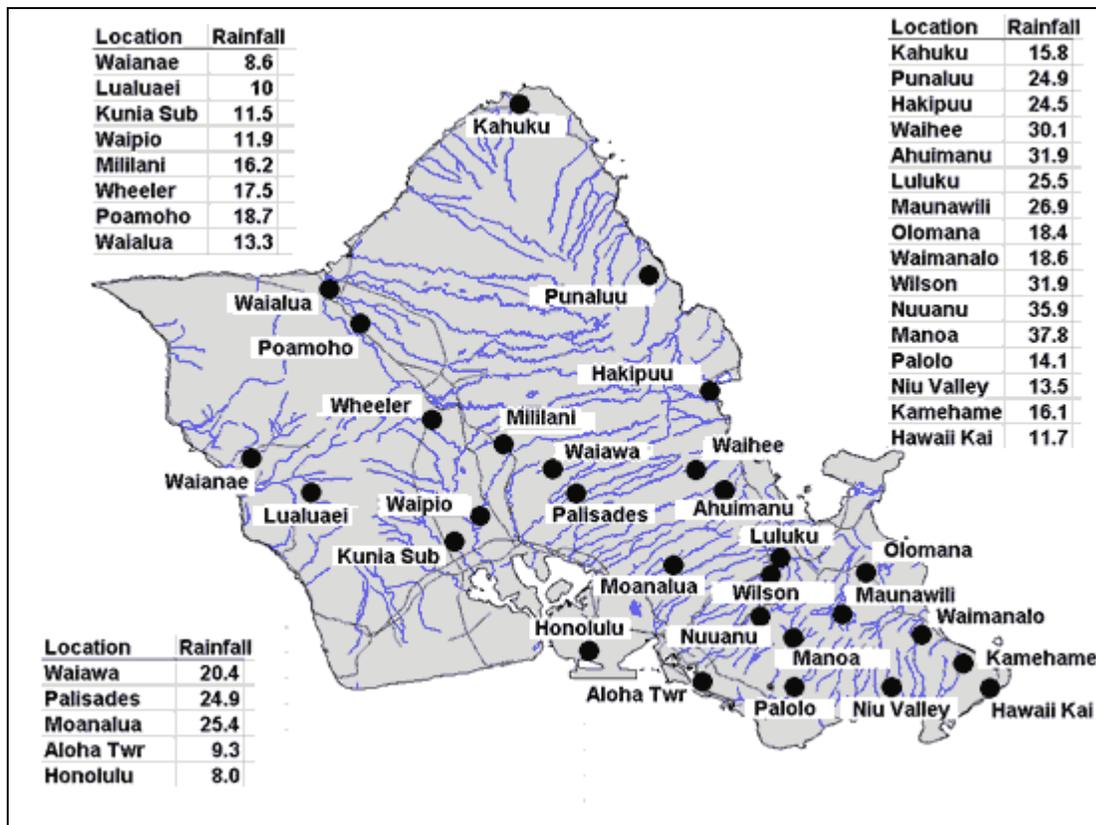


Figure 251. Distribution map and tables showing annual precipitation in inches for selected locations on O’ahu including the Honolulu (Honolulu International Airport) rain gauge (Source: Pacific Disaster Center)

Off the Beaten Path

The HHCTCP Airport (Section 3) corridor lies significantly seaward of the alignment of the main pedestrian trail system traversing the southern coastal plain of O’ahu in an east/west direction (see Map of trails and places mentioned by John Papa ‘Ī‘Ī 1959:96; Figure 7). This was a land cut-off from the main Kona District/‘Ewa District traffic. For those who were not of Hālawā and Moanalua Ahupua’a there may have been little reason to venture into these dry seaward lands.

The *wahi pana* of Āliapa’akai and Āliamanu along this *mauka* main east/west trail were attractions for early western visitors and would have been places of interest for pre-Contact travelers as well.

It is possible that these crater pits of Āliapa’akai and Āliamanu provided shelter for travelers respites along the route. Maly and Maly (2012:76)

9.2.2 Environmental Reconstruction

Section 8.3.1 briefly summarizes some nine prior efforts at paleo-environmental reconstruction in the immediate vicinity. Most of these prior efforts were focused on what reasonably could have been hoped to be good depositional environments specifically inland fishponds (see Figure 246 and Figure 247) in calm environments. Clearly the extraordinary intensity of fill activities (particularly circa 1942/1943) caused great disruption to the pollen-bearing record with inversions being the norm of relatively clean fill bearing relatively old pollen assemblages overlying sediments with 1930s pollen. This airport project does not cross good depositional environments and the information for paleo-environmental reconstruction is limited.

The current study's reconstruction of a prior Hawaiian environment of *Sida* ('ilima), *Waltheria* ('uhaloa), and *Vitex* (*pōhinahina*) but also seemingly including *kōlea* (*Myrsine*), *ho'awa* (*Pittosporum*), *kanawao* (*Broussaisia arguta*), 'aweoweo (*Chenopodium*) supports and augments prior reconstructions. Several relatively drought tolerant trees are indicated in the pollen record including *Pandanus tectorius* (*hala*), *Acacia* (*koai'e*) and *Pritchardia* (*loulu*) but whether these actually grew near the present project corridor or are represented by pollen from trees several kilometers upwind remains unclear.

No data suggestive of environmental change prior to the second Half of the 1800s is suggested. The evidence of rice and cotton cultivation expands our understanding of commercial use of the seaward lands of Hālawā and Moanalua.

9.2.3 Fill Activities

It seems the observed fill relates to at least four different purposes: 1) plantation field expansion – understood as dating between circa 1900 and 1940, 2) military grading and preparation of hard, flat surfaces particularly for the storage and movement of stock-piled materials particularly in 1942/1943, 3) grading and filling for airport expansion following WW II, and grading and filling for roadways which spans the widest period from the 1930s to the end of the twentieth century.

Like other sugar companies on O'ahu in the early twentieth century, the Honolulu Plantation pretty clearly saw fit to effectively expand its operations through the movement of locally available sediments seaward onto lands with thin (or no) soil. It appears that sugar cane (being a grass) can thrive in sediments less than 40 cm thick. Generally these sugar plantation transported sediments lack consolidation and lack the incorporation of inclusions of modern trash or clear signs of mixing. Because these sediments are often from immediately adjacent areas and lack clear signs of mixing this determination of whether the strata are early agricultural "fill" or are in fact naturally deposited is not always clear.

The burst of military activity is clear in a comparison of the 1933 (see Figure 16) and 1943 (see Figure 19) maps. It appears that very large areas on the seaward side of the Kamehameha/Nimitz alignment were grubbed and graded. Part of the fill activity may have been as straight-forward as efforts to dispose of sediments from dredging activities – such as the creation of seaplane runways in Ke'ehi Lagoon. These military-deposited fills tend to be much clearer because of the mixing of earth and marine sediments, the laminar nature of the deposition, compaction for the creation of hard surfaces, the presence of cement slabs and the incorporation of trash (often non-diagnostic glass shards or metal fragments). The identification

of two bottles (both dated to 1942) within fill deposits provides further evidence of when this fill was deposited. The immediate vicinity of the proposed Honolulu International Airport Station was quite clearly extensively modified for the transportation and storage of military materials via a seaward loop of the OR&L (see Figure 19). The thick concrete slabs observed may well have been loading aprons or possibly relate to warehouse foundations to accommodate the supplies delivered by rail.

The reason why some of these military surfaces (particularly in the vicinity of the proposed Honolulu International Airport Station) needed to be covered by up to 181 cm of additional fill following WWII is not altogether clear but it certainly relates to improvements to Honolulu International Airport.