

VOLUME II OF II

(Including Appendices C to I)

Final Environmental Assessment

HO‘OLEHUA SCATTERED LOTS SUBDIVISION AND RELATED IMPROVEMENTS

**(TMK NOS. (2)5-2-005:031, (2)5-2-026:003, 014, 016 and
017; PU‘U KAPELE AVE. (POR.), FARRINGTON AVE.
(POR.) AND MO‘OMOMI AVE. (POR.))**

**Prepared for:
State of Hawai‘i
Department of Hawaiian Home Lands**

**Approving Agency:
Hawaiian Homes Commission**

March 2026

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Planning. Project Management. Sustainable Solutions.

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APPENDIX C.
U.S. FISH AND WILDLIFE
SERVICE OFFICIAL SPECIES
LIST





United States Department of the Interior



FISH AND WILDLIFE SERVICE
Pacific Islands Fish And Wildlife Office
300 Ala Moana Boulevard, Box 50088
Honolulu, HI 96850-5000
Phone: (808) 792-9400 Fax: (808) 792-9580

In Reply Refer To:
Project Code: 2025-0026990
Project Name: Hoolehua Scattered Lots

03/03/2026 03:21:40 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened and endangered species, as well as designated critical habitat that may occur within the boundary of your proposed project and that may be affected by project related actions. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Please contact the Service's Pacific Islands Fish and Wildlife Office (PIFWO) at 808-792-9400 if you have any questions regarding your IPaC species list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may adversely affect threatened and endangered species and/or designated critical habitat.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a Biological

Evaluation, similar to a Biological Assessment, be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment or Biological Evaluation are described at 50 CFR 402.12.

Due to the significant number of listed species found on each island within PIFWO's regulatory jurisdiction, and the difficulty in accurately mapping ranges for species that we have limited information about, your species list may include more species than if you obtained the list directly from a Service biologist. We recommend you use the species links in IPaC to view the life history, habitat descriptions, and recommended avoidance and minimization measures to assist with your initial determination of whether the species or its habitat may occur within your project area. If appropriate habitat is present for a listed species, we recommend surveys be conducted to determine whether the species is also present. If no surveys are conducted, we err on the side of the species, by regulation, and assume the habitat is occupied. Updated avoidance and minimization measures for plants and animals, best management practices for work in or near aquatic environments, and invasive species biosecurity protocols can be found on the PIFWO website at: <https://www.fws.gov/office/pacific-islands-fish-and-wildlife/library>.

If a Federal agency determines, based on the Biological Assessment or Biological Evaluation, that a listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <http://www.fws.gov/endangered/esa-library/index>.

Non-federal entities can also use the IPaC generated species list to develop Habitat Conservation Plans (HCP) in accordance with section 10(a)(1)(B) of the Act. We recommend HCP applicants coordinate with the Service early during the HCP development process. For additional information on HCPs, the Habitat Conservation Planning handbook can be found at <https://www.fws.gov/sites/default/files/documents/habitat-conservation-planning-handbook-entire.pdf>.

Please be aware that wind energy projects should follow the Service's wind energy guidelines (<http://www.fws.gov/windenergy>) for minimizing impacts to migratory birds. Listed birds and the Hawaiian hoary bat may also be affected by wind energy development and we recommend development of a Habitat Conservation Plan for those species, as described above. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at:

- <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers>
- <http://www.towerkill.com>
- <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow>

Fish and Wildlife Coordination Act: Any modification to freshwater or marine waters of the U.S. including impounding, diverting, deepening, controlling, or modification for any other purpose requires a Fish and Wildlife Coordination Act (FWCA) consultation with the U.S Fish and Wildlife Service, State/ Territorial wildlife agency (State of Hawaii Division of Aquatic

Resources, American Samoa's Department of Marine and Wildlife Resources, Guam's Division of Aquatic and Wildlife Resources, or the Northern Mariana Island's Division of Fish and Wildlife) and the National Marine Fisheries Service. The Pacific Islands Fish and Wildlife Office in Honolulu should be notified of a FWCA consultation request with a project description and any relevant biological information in order to expedite the appropriate level of coordination and consultation needs.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation actions that benefit threatened and endangered species into their project planning to further the purposes of the Act in accordance with section 7(a)(1). Please include the Consultation Tracking Number associated with your IPaC species list in any request for consultation or correspondence about your project that you submit to our office. Please feel free to contact us at PIFWO_admin@fws.gov or 808-792-9400 if you need more current information or assistance regarding the potential impacts to federally listed species and federally designated critical habitat.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Pacific Islands Fish And Wildlife Office
300 Ala Moana Boulevard, Box 50088
Honolulu, HI 96850-5000
(808) 792-9400

PROJECT SUMMARY

Project Code: 2025-0026990

Project Name: Hoolehua Scattered Lots

Project Type: Mixed-Use Construction

Project Description: The proposed action involves the subdivision and reconsolidation of five (5) parcels. The expenditure of NAHASDA funds will provide homeowner financing to eligible families for vertical construction of single-family residential units on the improved lots. NAHASDA funds may also be used for onsite improvements needed to make the subdivided lots suitable for lease, including the construction of access driveways, drainage basins, grubbing, grading, and trenching necessary to prepare for house construction and to ensure adequate drainage of the lot. Infrastructure laterals will be installed to connect homestead lots to the Moloka'i Water System for potable water, Moloka'i Irrigation System for irrigation water, as well as electrical and telecommunications line extensions to service the lots. Offsite improvements being funded by other State or Federal funding sources include paved roadways along Mo'omomi Avenue, Farrington Avenue and Pu'u Kapele Avenue, infrastructure installation, and roadway drainage improvements including basins, culverts, trenches and swales. It also is noted that there are several existing abandoned structures including a dilapidated home and greenhouse which will be demolished and a septic tank that will be closed. There is one more existing house that will be reassessed for potential lease or demolition if deteriorated beyond rehabilitation.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@21.181116799999998,-157.0992221147079,14z>



Counties: Maui County, Hawaii

ENDANGERED SPECIES ACT SPECIES

There is a total of 24 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Hawaiian Hoary Bat <i>Lasiurus cinereus semotus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/770 General project design guidelines: https://ipac.ecosphere.fws.gov/project/TDXWGNOHUNAINI6APG7XSJI5ZE/documents/generated/6477.pdf	Endangered

BIRDS

NAME	STATUS
Band-rumped Storm-petrel <i>Hydrobates castro</i> Population: USA (HI) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1226 General project design guidelines: https://ipac.ecosphere.fws.gov/project/TDXWGNOHUNAINI6APG7XSJI5ZE/documents/generated/6939.pdf	Endangered
Hawaiian Coot (alae Ke`oke`o) <i>Fulica alai</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7233 General project design guidelines: https://ipac.ecosphere.fws.gov/project/TDXWGNOHUNAINI6APG7XSJI5ZE/documents/generated/6934.pdf	Endangered
Hawaiian Duck <i>Anas wyvilliana</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7712 General project design guidelines: https://ipac.ecosphere.fws.gov/project/TDXWGNOHUNAINI6APG7XSJI5ZE/documents/generated/6934.pdf	Endangered
Hawaiian Goose <i>Branta (=Nesochen) sandvicensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1627 General project design guidelines: https://ipac.ecosphere.fws.gov/project/TDXWGNOHUNAINI6APG7XSJI5ZE/documents/generated/6925.pdf	Threatened
Hawaiian Petrel <i>Pterodroma sandwichensis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6746 General project design guidelines: https://ipac.ecosphere.fws.gov/project/TDXWGNOHUNAINI6APG7XSJI5ZE/documents/generated/6939.pdf	Endangered
Hawaiian Stilt <i>Himantopus mexicanus knudseni</i> No critical habitat has been designated for this species.	Endangered

NAME	STATUS
Species profile: https://ecos.fws.gov/ecp/species/2082 General project design guidelines: https://ipac.ecosphere.fws.gov/project/TDXWGNOHUNAINI6APG7XSJI5ZE/documents/generated/6934.pdf	
Newell's Shearwater <i>Puffinus newelli</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2048 General project design guidelines: https://ipac.ecosphere.fws.gov/project/TDXWGNOHUNAINI6APG7XSJI5ZE/documents/generated/6939.pdf	Threatened

REPTILES

NAME	STATUS
Hawksbill Sea Turtle <i>Eretmochelys imbricata</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered

FLOWERING PLANTS

NAME	STATUS
(=native Yellow Hibiscus) Ma`o Hau Hele <i>Hibiscus brackenridgei</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4075	Endangered
`aiea <i>Nothoestrum latifolium</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1061	Endangered
`ena`ena <i>Pseudognaphalium sandwicense var. molokaiense</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5993	Endangered
Awiwi <i>Schenkia sebaeoides</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7103	Endangered
Bonamia <i>menziesii</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2503	Endangered
Carter's Panicgrass <i>Panicum fauriei var. carteri</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5578	Endangered
Ihi <i>Portulaca villosa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4886	Endangered
Koki`o <i>Kokia cookei</i>	Endangered

NAME	STATUS
There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2459	
Lanai Sandalwood (= `iliahi) <i>Santalum haleakalae</i> var. <i>lanaiense</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3282	Endangered
Ohai <i>Sesbania tomentosa</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8453 General project design guidelines: https://ipac.ecosphere.fws.gov/project/TDXWGNOHUNAINI6APG7XSJI5ZE/documents/generated/7050.pdf	Endangered
Round-leaved Chaff-flower <i>Achyranthes splendens</i> var. <i>rotundata</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4709	Endangered
Spermolepis hawaiiensis There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1670	Endangered
Tetramolopium rockii There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5215	Threatened
Vigna o-wahuensis There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8445	Endangered
Wahine Noho Kula <i>Isodendrion pyriformium</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2235	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

1. The [Bald and Golden Eagle Protection Act](#) of 1940.
2. The [Migratory Birds Treaty Act](#) of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (MBTA). Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their nests, should follow appropriate regulations and implement required avoidance and minimization measures, as described in the various links on this page.

The data in this location indicates that no eagles have been observed in this area. This does not mean eagles are not present in your project area, especially if the area is difficult to survey. Please review the 'Steps to Take When No Results Are Returned' section of the Supplemental Information on Migratory Birds and Eagles document to determine if your project is in a poorly surveyed area. If it is, you may need to rely on other resources to determine if eagles may be present (e.g. your local FWS field office, state surveys, your own surveys).

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Red-tailed Tropicbird <i>Phaethon rubricauda melanorhynchos</i> This is a Bird of Conservation Concern (BCC) throughout its range in Hawaii and the Pacific Islands. https://ecos.fws.gov/ecp/species/10563	Breeds Dec 15 to Oct 15
Wandering Tattler <i>Tringa incana</i> This is a Bird of Conservation Concern (BCC) throughout its range in Hawaii and the Pacific Islands. https://ecos.fws.gov/ecp/species/11941	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

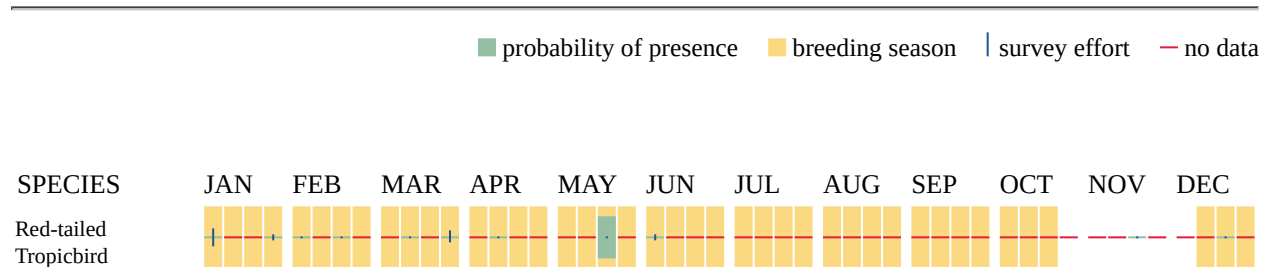
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (-)

A week is marked as having no data if there were no survey events for that week.



BCC Rangewide
(HPI)

Wandering Tattler
BCC Rangewide
(HPI)



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).


Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

RIVERINE


- R4SBC

IPAC USER CONTACT INFORMATION

Agency: State of Hawaii
Name: Patrick McCormic
Address: 305 High St., Ste. 104
City: Wailuku
State: HI
Zip: 96793
Email: patrick@munekiyohiraga.com
Phone: 8082442015



APPENDIX D.
BIOLOGICAL RESOURCES
SURVEY



A natural resources assessment for the Department of Hawaiian Home Lands' Moloka'i Water Systems Improvement Project, Infill Lots & Scattered Lots, Ho'olehua, Island of Moloka'i



LeGrande Biological Surveys Inc
4348 Waialae Ave 940
Honolulu HI 96816

Prepared by: Maya L. LeGrande

Prepared for: PBR Hawaii

May 13, 2023

A natural resources assessment for the Department of Hawaiian Home Lands' Moloka'i Water Systems Improvement Project, Infill Lots & Scattered Lots, Ho'olehua, Island of Moloka'i

Introduction

The State of Hawai'i, Department of Hawaiian Home Lands (DHHL) is currently working on several road, water facility, and housing projects on Moloka'i Island. This report summarizes site visits at current project locations for the water systems project as well as scattered homestead lots throughout the Ho'olehua area in order to update previous biological reports (SWCA 2011 & 2015) and document any changes or new species that occur at the locations. A description of the plants, animals, and habitats that were documented during the recent April 2023 biological surveys for the following locations are described in the Results section of this report.

Site Descriptions

Water System Improvements

There are 4 main survey locations that needed updating within the Water System Improvements Project:

Site #1 -Well Site Improvements is located in the mauka area of the Kalama'ula DHHL Lands near the Waiakala'e Gulch. The site is located along a sloping ridge and an east facing slope that descends into a gulch. The ridgeline has an existing access road running along it with vegetation on either side of the road. The majority of the planned work has been carried out in this location including the new 200,000 gallon water tank and infrastructure. The PV system which was initially proposed to be built on seven acres of the sloping land to the east of the access road has been put on hold as of this survey date. The area was included in the current survey in the case that renewed interest in the project is resurrected in the future.

Site #4 – Ho'olehua Tank Site Improvements is located at two 3.5 MG tanks in Ho'olehua, approximately 1 km northeast and mauka of Moloka'i High School. The site also extends from the two tanks down to Pālā'au Road through lands owned by Kualapu'u Ranch. The majority of the work for both the Tank site and the new roadway to access the tanks has

been initiated and the new access road has been fully graded and asphalt has been laid down along a section of the roadway. Active construction by Goodfellow Brothers International was ongoing during our survey of the roadway. The boundary area proposed for new 8 foot tall deer fencing was included in our surveys.

Site #6 – Ho’olehua Pressure Breaker Tank Facility Improvements is located from the intersection of Kūle’a and Mo’omomi Avenue to Farrington Avenue. The new roadway has been completed and the improvements to the Pressure Breaker Tank Facility has been completed.

Site #7 -Ho’olehua Maintenance Yard Improvement and Scattered Valve and Hydrant Replacements is located at the site of the current Ho’olehua Maintenance Building, and at scattered locations across Ho’olehua-Pālā’au. Ongoing improvements to the Maintenance yard continues and all of the valve and hydrant replacements have been completed.

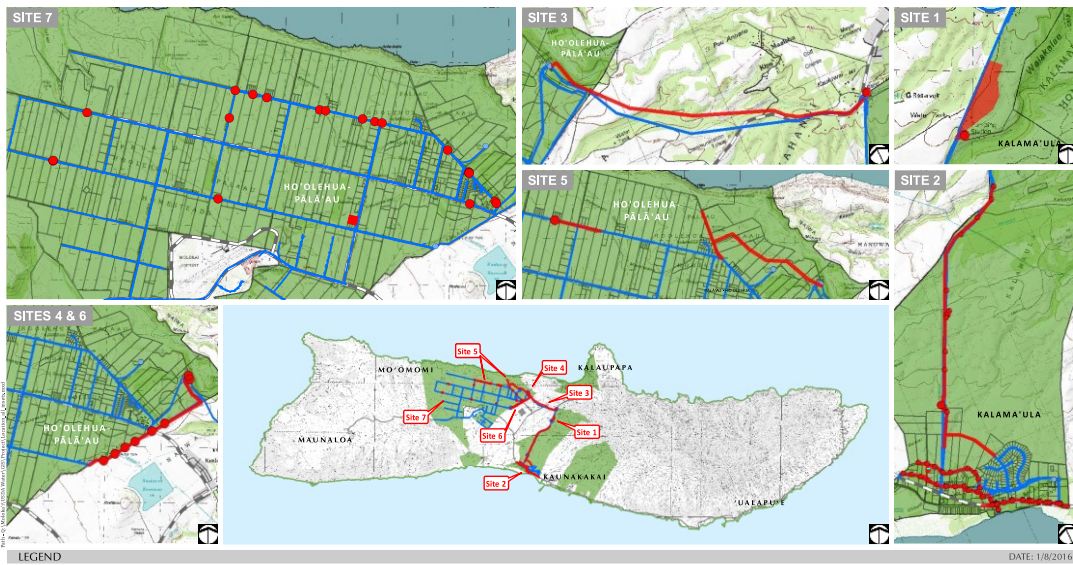


Figure 1
Location Map
MOLOKA'I WATER SYSTEM
Department of Hawaiian Home Lands
Island of Molokai
TERRACONCEPTS, INC.

Source: Department of Hawaiian Home Lands (2015). U.S. Geological Survey.
Disclaimer: This public has been prepared for general viewing purposes only, and should not be used for boundary interpretations or other spatial analysis.

Scattered Lots

There are six lots designated within this grouping. Four lots are located along Pu’u Kapele Avenue, two of which have existing structures on them and were not included in the surveys. One is located along Mo’omomi Avenue and the last is located along Farrington Avenue.

Infill Lots

There are 22 Infill Lots, all are located in residential neighborhoods in Ho’olehua. Two of the lots have structures built on them and were not included in the survey.

Methods

Botanical Survey

Maya LeGrande and Stephanie Dunbar-Co surveyed the water system improvement project areas, and infill lots, and scattered lots on April 20th & 21st, 2023. Plant species were identified as they were encountered during transects through the project areas and along boundaries. Notes were made on plant associations and distribution, disturbances, topography, substrate type, exposure, and drainage. Species names follow *Manual of the Flowering Plants of Hawai'i* (Wagner, Herbst, & Sohmer, 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants, *Hawai'i's Ferns and Fern Allies* (Palmer, 2003) and *Taxonomic and Nomenclatural Updates to the Fern and Lycophyte Flora of the Hawaiian Islands* (Ranker et al, 2019) for ferns, and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental plants. More recent name changes for naturalized plant species follow Imada (2019).

Terrestrial Vertebrates Survey

Avian Survey

Bird surveys were conducted in the morning hours of April 20th & 21st, 2023. Birds were identified by visual observations aided by Leica 8 X 42 binoculars, and by listening for vocalizations. Avian species were documented at individual point count-station at each of the four study areas for the Water Systems Improvements Project and at stations at each grouping of Infill Lots and Scattered Lots. A single eight-minute avian point-count was made at each of the count-stations. Weather conditions were ideal, with no rain, unlimited visibility, and winds between 1 and 5 kilometers per hour. The avian phylogenetic order and nomenclature used in this report follows the *AOU Check-List of North and Middle American Birds 2021* and the 63rd Supplement to the Checklist (Chesser et al., 2021, 2022).

Mammalian Survey

A list was made of mammals encountered during the survey. Indicators of mammalian presence, such as tracks, scat, and other signs were noted. Mammalian phylogenetic order and nomenclature follow *Mammal Species of the World* (Wilson and Reeder, 2005).

Results

Vegetation

The project areas all consist of disturbed non-native introduced vegetation. Mixed non-native forest dominates the vegetation at the majority of the sites with common species such as Formosan koa (*Acacia confusa*), Christmas berry (*Schinus terebinthifolius*), and Java plum (*Syzygium cumini*) growing in dense stands with little to no understory plants. Large thickets of ironwood (*Casuarina equisetifolia*) can be found in many of the survey locations with shrubs and herbs growing at the edges of the forested areas and along roadsides. The majority of the Infill lots and Scattered lots are characterized by koa hoale (*Leucaena leucocephala*) forest with Guinea grass (*Megathyrsus maximus*) or buffelgrass (*Cenchrus ciliaris*) understories. The following section lists each project area and lot with a description of the dominant plant species and any native plants that were observed in the area.

Water System Improvements

Site #1: The majority of the work has been completed in this area for the new water tank, equipment, and access road. The proposed PV project location is dominated by a slope covered with thick forested areas of Christmas berry, Java plum, swamp mahogany (*Eucalyptus robusta*), silver oak (*Grevillea robusta*), and guava (*Psidium guajava*). Understory plants include lantana (*Lantana camara*), indigo (*Indigofera suffruticosa*), spiny amaranth (*Amaranthus spinosus*), *Solanum seafortianum*, and vines of *Neonotonia wightii*. Along the access road on either side at the upper elevations of the project area, stands of ironwood dominate the vegetation. An area at the edges of ironwood stands and the access road, a patch of native 'ākia comprised of 2 separate species, (*Wikstroemia oahuensis* var. *oahuensis* & *W. uva-ursi* var. *uva-ursi*) was observed along with the native 'a'ali'i (*Dodonaea viscosa*) and 'uhaloa (*Waltheria indica*).

Site #4: The area around the existing water tanks is dominated by a monotypic forest of Formosan koa. The 8-foot tall fence installation is ongoing with transects of Formosan koa cleared. The tank improvements are ongoing with limited disturbance to the surrounding areas of maintained vegetation. Plant species around the tanks include sourgrass (*Digitaria insularis*), indigo, partridge pea (*Chamaecrista nictitans* subsp. *patellaria* var. *glabrata*), fuzzy rattlepod (*Crotalaria incana*), liliko'i (*Passiflora edulis*), Christmas Berry, and Chinese banyan (*Ficus microcarpa*). The new roadway access is nearly complete with the grubbing and grading finished and installation of gravel and asphalt nearing completion. The dominant plant along the roadway

transect is Formosan koa. This invasive species is already resprouting from stumps left during the initial clearance for the roadway build.

Site #6: The new roadway to the Pressure Breaker Tank Facility has been completed and a cursory survey was completed along the roadway. Guinea grass and various weedy species were observed along the roadway access. No native plant species were observed.

Site #7: Construction at the DHHL baseyard is ongoing. Limited disturbance to the area includes installation of a gravel pad between the existing warehouse buildings and the main road. Vegetation within the baseyard areas include a maintained lawn area with non-native surrounding vegetation including; Cooke pine (*Araucaria columnaris*), koa haole, Guinea grass, golden crown-beard (*Verbesina encelioides*), sourbush (*Pluchea carolinensis*), false ragweed (*Parthenium hysterophorus*), and castor bean (*Ricinus communis*). All of the valve and hydrant replacement locations were located and surveyed along Farrington Avenue, Lihi Pali Avenue, Pu'u Kapele Avenue, and Mo'omomi Avenue. These locations were surrounded by mowed grassy lawns with non-native koa haole and Guinea grass being the most dominant plant. In one location along Farrington Avenue, a few native plants, pā'ūohi'iaka (*Jacquemontia ovalifolia*) and 'uhaloa, were observed in and around a hydrant location.

Infill Lots

1030 Mamalu Lai Place: Lot with ironwood, koa haole, and Guinea grass. Trees up to 25 feet tall.

1036 Mamalu Lai Place: Lot with ironwood, koa haole, and Guinea grass. Trees up to 25 feet tall.

1044 Mamalu Lai Place: Lot with overgrown vegetation including ironwood, Christmas berry, and Guinea grass. Trees up to 15 feet tall. Flagged lot with house located on front lot.

1075 Mamalu Lai Place & 1045 Mamalu Lai Place: Lots with overgrown koa haole, Christmas berry, Formosan koa, and Guinea grass. Trees up to 20 feet tall.

995 Mamalu Lai Place & 2660 Pu'u Kapele Avenue: Mostly cleared vegetation with white shrimp plant (*Justicia betonica*) and Guinea grass along the street side of lots.

4, 11, 20, and 24 Pu'u Kukui Place: These lots are all dominated by koa haole with Guinea grass and buffelgrass understory. [20 Pu'u Kukui has an existing structure].

2291, 1347, & 1331 Lihi Pali Avenue, 2, 18, & 27 Malu Kukui Place: These six lots are all dominated by koa haole up to 15 feet tall and Guinea grass. A few sisal (*Agave sisalana*) plants were observed along Lihi Pali Avenue.

664 Ala Ekolu Street: This lot is almost completely Guinea grass with a few 5 to 10 foot tall koa haole at the boundaries of the lot.

686 Ala Ekolu Street: This lot has koa haole and Formosan koa growing up to 15 feet tall with and understory of false ragweed, Guinea grass, sourgrass (*Digitaria insularis*), and a few native pua kala (*Argemone glauca* var. *glauca*) plants along the sidewalk boundary.

706 Ala Ekolu Street: Existing structure on lot.

692 Lei Kukui Place: Mostly Guinea grass mixed with *Neonotonia wightii*, a few koa haole at edges of lot.

724 Le Kukui Place: Koa haole up to 15 feet in height with Guinea grass understory.

Scattered Lots

Puu Kapele Avenue: Lots 52026014 & 52026016 have existing house structures and were not included in the current surveys.

Lots 52026003 & 52026017: Vegetation at these lots consist of koa haole and Formosan Koa scrub with buffelgrass and Guinea grass dominating the ground cover. A few scattered natives include 'uhaloa and 'ilima (*Sida fallax*).

2465 Farrington Avenue: A large portion of this 3.9 areas lot is cleared with a mowed grassy area. Forested edges of the lot harbor non-native trees such as koa haole, mango, chinese banyan, kukui (*Aleurites moluccana*), and Formosan koa. Shrubs include false ragweed, golden crown-beard, and sourgrass. A drainage at the southern section of the property was dry and appears to be intermittent, most likely only having water in heavy precipitation events. No hydric plant species were noted in the area.

4710 Mo'omomi Avenue: This approximately 35-acres lot runs from the northern boundary along Farrington Avenue south to Mo'omomi Avenue. The entire lot consists of a buffelgrass grassland with scattered kiawe (*Prosopis pallida*) and koa haole trees up to 25 feet tall. Native shrubs and vines observed along dirt roadways include koali 'awa (*Ipomoea indica*), 'uhaloa, and 'ilima.

Avian Fauna

A total of 17 bird species were recorded during station counts (Table 1). All but one of the avian species recorded are alien to the Hawaiian Islands.

Table 1. Avian species detected during the April 2023 surveys for the DHHL Water Systems Improvements, Infill, and Scattered Lots project areas, Ho'olehua, Moloka'i

Common Name	Species	Status
Kōlea or Pacific golden-plover	<i>Pluvialis fulva</i>	MB
Red Junglefowl	<i>Gallus gallus</i>	A
Black francolin	<i>Francolinus francolinus</i>	A
Gray francolin	<i>Ortygornis pondicerianus</i>	A

Spotted Dove	<i>Streptopelia chinensis</i>	A
Zebra Dove	<i>Geopelia striata</i>	A
Cattle egret	<i>Bubulcus ibis</i>	A
Warbling White-eye	<i>Zosterops japonicus</i>	A
Common Myna	<i>Acridotheres tristis</i>	A
Scaly-breasted Munia	<i>Lonchura punctulata</i>	A
Common Waxbill	<i>Estrilda astrild</i>	A
House Finch	<i>Haemorhous mexicanus</i>	A
White-rumped shama	<i>Copsychus malabaricus</i>	A
Northern Cardinal	<i>Cardinalis cardinalis</i>	A
Red- crested Cardinal	<i>Paroaria coronata</i>	A
Saffron Finch	<i>Sicalis flaveola</i>	A
Red-vented bulbul	<i>Pycnonotus cafer</i>	A

Key to Table1

Status:

A = Naturalized, non-native species (introduced).

MB = Migratory Bird (native).

Avian diversity was in keeping with the location and vegetation present within the study site. Four species— Warbling White-eye (*Zosterops japonicus*), Cattle egret (*Bulbulcus ibis*), Zebra Dove (*Geopelia striata*), and common myna (*Acridotheres tristis*)—accounted for the majority of all birds recorded during station counts. The most frequently recorded species was Warbling White-eye.

Mammalian Fauna

Five terrestrial mammalian species were detected during this survey. Direct observation or signs including scat or tracks included; small Asian mongoose (*Herpestes javanicus*), domestic cat (*Felis catus*), pig (*Sus scrofa*), goat (*Capra hircus*), horse (*Equus ferus caballus*), and axis deer (*Axis axis*). Numerous dogs (*Canis lupus familiaris*) were heard barking and observed throughout the survey areas.

Invertebrate Fauna

Passive observations of invertebrates included various naturalized species previously recorded by SWCA in 2011 and 2015. A few individuals of the native green darner (*Anax junius*) were observed at Site #7.

Discussion and Recommendations

Recommendations are partly based on U.S. Fish and Wildlife Service, Animal Avoidance and Minimization Measures (USFWS-PIFWO, 2022). Implementation of the recommendations (provided below as bulleted items) by the Project contractor will minimize potential impacts to listed species to the maximum extent practicable.

Floral Resources

Native plant habitat within the proposed project area has been highly modified by human activities and dominated by non-native species. The six native species that were observed infrequently amongst the survey areas were ‘uhaloa, ‘ilima, ‘a‘ali‘i, pua kala, and ‘ākia (2). All of these species are encountered frequently throughout the Hawaiian Islands and none are considered Rare, Threatened, or Endangered. Due to human activity, introduced feral ungulates, and competition with non-native plants, the all of the sites surveyed are dominated by common, naturalized plant species. None of the plant species observed are listed as endangered or threatened under either the federal or State of Hawai‘i endangered species statutes. (HDLNR, 1998; USFWS, nd-a).

None of the 27 Threatened and Endangered plant species provided by the USFWS Information for Planning and Consultation (IPaC) (January 2023 & November 2022) and “Refined species list for DHHL Ho‘olehua Water Systems and Associated Housing Development” were observed during our survey of the project areas. They are; ma‘o hau hele (*Hibiscus brackenridgei*), ‘aiea (*Nothocestrum latifolium*), ‘ena‘ena (*Pseudognaphalium sandwicense* var. *molokaiense*), ‘awiwi (*Schenkia sebaeoides*), nānū (*Gardenia brighamii*), *Bonamia menziesii*, *Cyanea manii*, *Scheidea globosa*, Carter’s panicgrass (*Panicum fauriei* var. *carteri*), Cooke’s koki‘o (*Kokia cookei*), *Cyperus fauriei*, dwarf naupaka (*Scaevola coriacea*), *Gouania hillebrandii*, ihi (*Portulaca villosa*), ‘iliahi (*Santalum haleakalae* var. *lanaiense*), makou (*Peucedanum sandwicense*), mehamehame (*Flueggea neowawraea*), *Neraudia sericea*, ‘ohai (*Sesbania tomentosa*), round-leaved chaff-flower (*Achyranthes splendens* var. *rotundata*), *Silene lanceolata*, *Spermolepis hawaiiensis*, *stenogyne angustifolia* var. *angustifolia*, *Tetramolopium rockii*, *Vigna o-wahuensis*, wahine noho kula (*Isodendron pyriformis*), and *Microlepia strigosa* var. *mauiensis*. Owing to the highly degraded nature of the survey areas, as well as location of the project areas, the majority of these taxa were not expected to be extant.

Avian Resources

All but one avian species detected are alien to the Hawaiian Islands. The USFWS IPaC portal lists (January 2023 & November 2022) and “Refined species list for DHHL Ho‘olehua Water Systems and Associated Housing Development” list contained the following eight avian species: Short-tailed Albatross (*Phoebastria albatrus*), Band-

rumped Storm-Petrel (*Oceanodroma castro*)¹, Hawaiian Petrel (*Pterodroma sandwichensis*), and Newell's Townsends Shearwater (*Puffinus auricularis newelli*)², Hawaiian Stilt (*Himantopus mexicanus knudseni*), Hawaiian Duck (*Anas wyvilliana*), Hawaiian Coot (*Fulica alai*), Hawaiian Goose (*Branta sandvicensis*), (USFWS, 2023).

None of the eight Threatened or Endangered vertebrate avian species provided by the IPac system was detected during the survey. For three of them, Hawaiian Duck, Hawaiian Coot, and Hawaiian Stilt there is no suitable habitat within the site or immediately adjacent to any of the sites to support these water obligate species. Nēnē are not water obligate but require relatively low stature grass and or shrubs as suitable habitat, currently limited habitat is present at the project sites. However, see the discussion below as to the potential of four of the listed species provided by the USFWS, and a fifth State of Hawai'i listed species potentially using either airspace or habitat within one or more of the sites on a temporal or seasonal basis.

Seabirds

It is possible that the endangered Hawaiian Petrel, Band-rumped Storm-Petrel (*Hydrobates castro*), and the threatened Newell's Shearwater (*Puffinus newelli*) overfly the project areas between April and the middle of December each year in small numbers. The primary cause of mortality in Hawaiian Petrels, Newell's Shearwaters and Band-rumped Storm-Petrels in Hawai'i is thought to be predation by alien mammalian species at the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered the second most significant cause of mortality of these seabird species in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. Disoriented seabirds may collide with man-made structures and, if not killed outright, become easy targets of opportunity for feral mammals (Hadley, 1961; Telfer, 1979; Sincock, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1998; Podolsky et al., 1998; Ainley et al., 2001; Hue et al., 2001; Day et al., 2003). No suitable nesting habitat exists within or close to the project areas for any of these three seabird species.

The principal potential impact that development and ongoing construction poses to protected seabirds is an increased threat that birds will be downed after becoming disoriented by lights. The two ways outdoor lighting can pose a threat to nocturnally flying seabirds is if: 1) during construction it is deemed expedient or necessary to conduct night-time construction activities; or, 2) following build-out, security lighting is operated during the seabird nesting season.

¹ The scientific name of this species was changed to (*Hydrobates castro*) by the American Ornithological Union (AOU) in 2019 (Chesser et. al. 2019).

² The common and scientific name of this species were changed by the AOU to Newell's Shearwater (*Puffinus newelli*) in 2015 (Chesser et. al., 2015)

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- If night-time construction activity or equipment maintenance is proposed during any of the construction phases of the projects, all associated lights should be shielded, and when large flood/work lights are used, they should be placed on poles that are high enough to allow the lights to be pointed directly at the ground (Reed et al., 1985; Telfer et al., 1987). Deleterious impacts to transiting seabirds can be avoided if construction occurs during daylight hours and all outdoor lighting installed is fully “dark sky compliant” (HDLNR-DOFAW, 2016). DLNR recommends avoiding construction-related night-time lighting between September 15 and December 15 (DLNR, 2016).

Hawaiian Goose/nēnē

Hawaiian Goose were not observed during the current survey in any of the project areas. Nēnē may forage in the low statured grassy areas found in and around some of the water project area. USFWS requires ceasing construction activity within 100 feet of any nests (December through April) until chicks have hatched and fledged or moved into a new area. USFWS should be notified if any nests are observed within 100 feet of work areas.

Hawaiian Short-eared owl/pueo

Hawaiian short-eared owl or pueo (*Asio flammeus sandwichensis*) is an endemic subspecies to Hawai'i. Threats to this species include habitat degradation, predation by introduced animals, disease, and pesticide use in rodents. Pueo are found on all of the main Hawaiian Islands at elevations ranging from sea level to 8,000 feet (Pueo Project 2019a). This state listed species, for the island of O'ahu only, is regularly seen in the the grassland of Moloka'i. Although no individuals were recorded during our survey, the habitat at scattered lot: 4710 Mo'omomi Avenue [52005031], is suitable for pueo to forage and nest. Out of an abundance of caution it would be prudent to consider the following before vegetation clearance :

- Prior to the initiation of clearing and grubbing a qualified biologist could conduct a pueo nest survey to ensure that no active nest is disturbed during intial phases of construction.

Mammalian Resources

The findings of the mammalian survey are consistent with the location of the property and habitats present within all of the survey areas. Although no rodents were recorded it is likely that some of the four established Muridae found on Moloka'i Island—roof rat (*Rattus rattus*), brown rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiiensis*), and European house mouse (*Mus musculus*)

domesticus) use resources within the general areas on a seasonal basis. These introduced rodents are deleterious to native ecosystems and native faunal species.

No mammalian species currently protected or proposed for protection under either the federal or State of Hawai'i endangered species programs were detected during this survey (DLNR, 2015; USFWS, nd-a).

Hawaiian hoary bat

It is probable that the Hawaiian hoary bat (*Lasiurus cinereus semotus*), overflies the project areas on a seasonal basis. The removal of trees within any of the project areas could temporarily displace individual bats using the trees for roosting. As bats use multiple roosts within their home territories, the potential disturbance resulting from the removal of the vegetation is likely to be minimal. However, during the pupping season, females carrying their pups may be less able to vacate a roost site if the tree is felled. Further, adult female bats sometimes leave their pups in the roost tree while they forage. Very small pups may be unable to flee a tree that is being felled.

- Potential adverse impacts from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 m (15 ft) between June 1 and September 15, the period in which bats may have pups.

Other Resources of Potential Concern

Reptiles

Although the Green Sea Turtle or Honu (*Chelonia mydas*) was listed on the IpaC from USFWS (2011 & 2015), the current locations for the updated survey sites do not include coastal habitats needed for this species.

Invertebrates

The native damselflies, *Megalagrion xanthomelas* and *M. pacificum*, *M. hawaiiense*, *M. blackburni*, and *M. calliphya* were listed on the "USFWS Refined species list of DHHL Ho'olehua Water Systems and Associated Housing Development" document. None of these cryptic insects were located or observed during the surveys. All of these damselflies need water features that were non-existent within any of the survey areas.

Critical Habitat

No federally delineated Critical Habitat for any species occurs within the project areas (USFWS, nd-b). There is no equivalent designation under State of Hawai'i endangered species statutes.

Wetlands/Riparian Habitat

Although no wetlands are delineated within the project areas, a few riparian pathways are located either on the boundary or just outside of some of the project areas/scattered lots. All waterways were observed to be intermittent (water flow only during intense rain events) and would not be habitat for any of the Threatened or Endangered plants, animals, or invertebrates known to have previously or currently inhabit the area.

Photographs of Survey Areas



Photo 1. Site #1 showing thick forested section proposed for PV.



Photo 2. Site #1 showing habitat of 'ākia plants with ironwood along access road.



Picture 3. Site #1 water tanks and retaining wall to the right of tank.



Picture 4. Site #4 water tank upgrades and valve replacements.



Picture 5. New 8-foot fenceline installation at Site #4



Picture 6. New access road at Site #4



Picture 7. Maintenance Yard Site #7 with new gravel pad installed.



Picture 8. Site #7 includes new hydrant and valve locations.



Picture 9. Typical Infill Lot in Ho'olehua Lots with Guinea grass and koa haole.



Picture 10. Scattered lot at 2465 Farrington Avenue.



Picture 11. View of Scattered Lots 52026003 & 52026017 Formosan koa and buffelgrass vegetation.



Picture 12. Scattered Lot 52005031 with buffelgrass pueo habitat.

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APPENDIX E.
LITERATURE REVIEW AND
FIELD INSPECTION REPORT



Final
Archaeological Field Inspection and Literature Review to
Support Consultation with SHPD for the
Department of Hawaiian Home Lands
Ho‘olehua Scattered Lots Subdivision and Improvements
Project,
Pālā‘au Ahupua‘a,
Moloka‘i District, Moloka‘i Island
TMKs: [2] 5-2-005:031, Lot 17 and [2] 5-2-026:014, Lot 104D-1

Prepared for
Munekiyo Hiraga
on behalf of the
Department of Hawaiian Home Lands

Prepared by
David W. Shideler, M.A.,
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai‘i, Inc.
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November 2021

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Management Summary

Reference	Archaeological Field Inspection and Literature Review to Support Consultation with SHPD for the Department of Hawaiian Home Lands Ho'olehua Scattered Lots Subdivision and Improvements Project, Pālā'au Ahupua'a, Moloka'i District, Moloka'i Island, TMKs: [2] 5-2-005:031, Lot 17 and [2] 5-2-026:014, Lot 104D-1 (Shideler and Hammatt 2021)
Date	November 2021
Project Number(s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: PALAAU 10
Investigation Permit Number	CSH completed the fieldwork component of this study under archaeological fieldwork permit number 21-10, issued by the Hawai'i State Historic Preservation Division (SHPD) per Hawai'i Administrative Rules (HAR) §13-13-282.
Agencies	SHPD; Department of Hawaiian Home Lands (DHHL)
Land Jurisdiction and Project Funding	DHHL
Project Location	The project area includes two discrete parcels, a western TMK: [2] 5-2-005:031, Lot 17 (31.7 acres or 12.8 hectares), and an eastern TMK: [2] 5-2-026:014, Lot 104D-1 (4.7 acres or 1.9 hectares) for a total project area of 36.4 acres (14.7 hectares). The scattered lots subdivision project area parcels are within the Hawaiian Ho'olehua-Pālā'au Homesteads, and are located northwest and north from Moloka'i Airport. The long, narrow west project area is bound by Farrington Avenue (a dirt road) on the north and Mo'omomi Avenue (a dirt road) on the south. The eastern project area is on the south side of Pu'u Kapele Avenue (a dirt road). The project area is depicted on a portion of the 1993 Molokai Airport and Kaunakakai U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1), and many other figures.
Project Description	DHHL proposes to construct infrastructure improvements including clearing, grading, and installation of roadway, electrical, domestic water, and irrigation water utilities. The proposed plan calls for ground-disturbing activities to be confined to the two subject parcels, but will extend to existing roadways for access and connection for utilities. These improvements will support DHHL beneficiaries through the provision of essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action.
Project Acreage	The project parcel size is as follows: The western TMK: [2] 5-2-005:031 parcel is 31.7 acres (12.8 hectare) The eastern TMK: [2] 5-2-026:014 parcel is <u>4.7 acres</u> (1.9 hectare) The total project area is <u>36.4 acres</u> (14.7 hectare)

Document Purpose	This investigation was designed—through detailed historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the project and based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project’s planning and support the project’s historic preservation and environmental review compliance and to support obtaining an SHPD determination letter (as per HAR§ 13-275-3).
Fieldwork Effort	Fieldwork was conducted on 21 September 2021 by CSH archaeologist David W. Shideler, M.A., and CSH cultural specialist Kellen Tanaka, B.A., under the general supervision of Principal Investigator Hallett H. Hammatt, Ph.D. This work required approximately 2 person-days to complete.
Results Summary	<p>The results of the field inspection were consistent with what was expected based on background research and previous archaeological studies conducted in the vicinity. The project areas were determined to be relatively far from potable surface water, access to the coast, or notable land forms. The annual rainfall of 802 mm (32.83 inches) at the neighboring “Gage 34” station (Giambelluca et al. 2013) is suggested to be insufficient for non-irrigated agriculture. No historic properties have been identified previously within either project area or within 500 m of either project area. A 1964 USGS aerial photograph clearly shows the western TMK: [2] 5-2-005:031 (31.7-acre) parcel as entirely within intensive commercial pineapple cultivation that was thought likely to have removed any evidence of earlier historic properties. The absence of trees in the vicinity of either project as indicated on a 1950 USGS aerial photograph suggests ground clearing for prior ranching activities.</p> <p>Field inspection found no evidence of historic properties at the western TMK: [2] 5-2-005:031 parcel. Field inspection identified two terrace alignments on the south side of a natural drainage swale at the eastern TMK: [2] 5-2-026:014 (4.7-acre) parcel. These short sections of boulder alignments were interpreted as agricultural features to retain moisture, perhaps of an exploratory nature. The potential for subsurface deposits associated with these two terrace alignments was evaluated in the field to be very low. The antiquity of these boulder alignments is uncertain; they could be pre-Contact but may date to as late as the occupation of an adjacent abandoned house ca. 1980.</p>

Recommendations	<p>The results of this literature review and field inspection (LRFI) indicate there is no potential for archaeological historic properties in the western project area and that the archaeological potential in the eastern project area is limited to two boulder alignments.</p> <p>This LRFI would support an HAR§13-275-7(a)(2) determination of “Effect with proposed mitigation” with the proposed mitigation (as per HAR§13-275-8[a][1][a]) of Preservation” in the form of avoidance and protection of the two boulder alignments.</p>
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Section 1 Introduction

1.1 Project Background

At the request of Munekiyo Hiraga, and on behalf of Department of Hawaiian Home Lands (DHHL), Cultural Surveys Hawai'i, Inc. (CSH) has prepared this archaeological literature review and field inspection (LRFI) report for the proposed DHHL Ho'olehua Scattered Lots Subdivision and Improvements Project, Pālā'au Ahupua'a, Moloka'i District, Moloka'i Island, including two parcels, a western TMK: [2] 5-2-005:031, Lot 17 (31.7 acres or 12.8 hectares), and an eastern TMK: [2] 5-2-026:014, Lot 104D-1 (4.7 acres or 1.9 hectares) for a total project area of 36.4 acres (14.7 hectares). The scattered lots subdivision project area parcels are within the Hawaiian Ho'olehua-Pālā'au Homesteads, and are located northwest and north from Moloka'i Airport. The long, narrow west project area is bound by Farrington Avenue on the north and Mo'omomi Avenue on the south. The eastern project area is on the south side of Pu'u Kapele Avenue. The project area is depicted on a portion of the 1993 Molokai Airport and Kaunakakai U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1), a copy of the same map showing an overlay of TMK parcels (Figure 2), tax map key (TMK) plats (Figure 3 and Figure 4), on an aerial photograph (ESRI 2013) (Figure 5) and on the same aerial photograph with an overlay showing an TMK parcels (Figure 6).

DHHL proposes to construct infrastructure improvements including clearing, grading, and installation of roadway, electrical, domestic water, and irrigation water utilities. The proposed plan calls for ground-disturbing activities to be confined to the two subject parcels, but will extend to existing roadways for access and connection for utilities. These improvements will support DHHL beneficiaries through the provision of essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action.

1.2 Document Purpose

This investigation was designed—through detailed historical, cultural, and archaeological background research of the project area and a field inspection—to determine the likelihood that cultural resources/ historic properties may be affected by the project and based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project's planning and support the project's historic preservation and environmental review compliance and is intended specifically to support consultation with the State Historic Preservation Division (SHPD) and to support obtaining an SHPD determination letter (as per Hawai'i Administrative Rules or HAR §13-13-275-3).

1.3 Environmental Setting

1.3.1 Natural Environment

The project area is on relatively flat lands at approximately 120 foot (ft) elevation above sea level in the north central portion of Moloka'i Island, approximately 1.1 to 2.9 km (0.7 to 1.8 miles) inland (south) from Moloka'i's north shore sea cliffs.

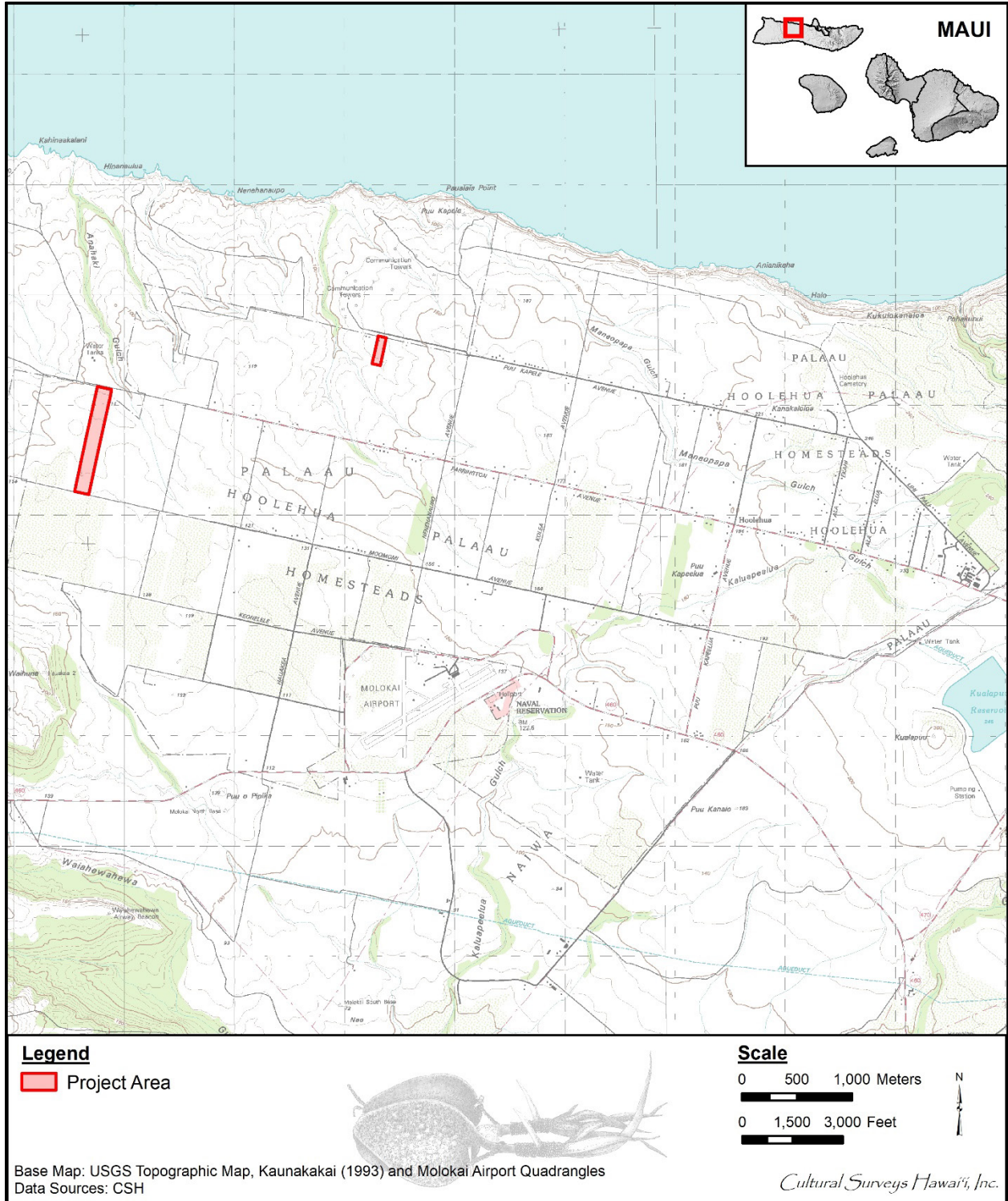


Figure 1. Portion of the 1993 Molokai Airport and Kaunakakai USGS 7.5-minute topographic quadrangles showing the location(s) of the project area

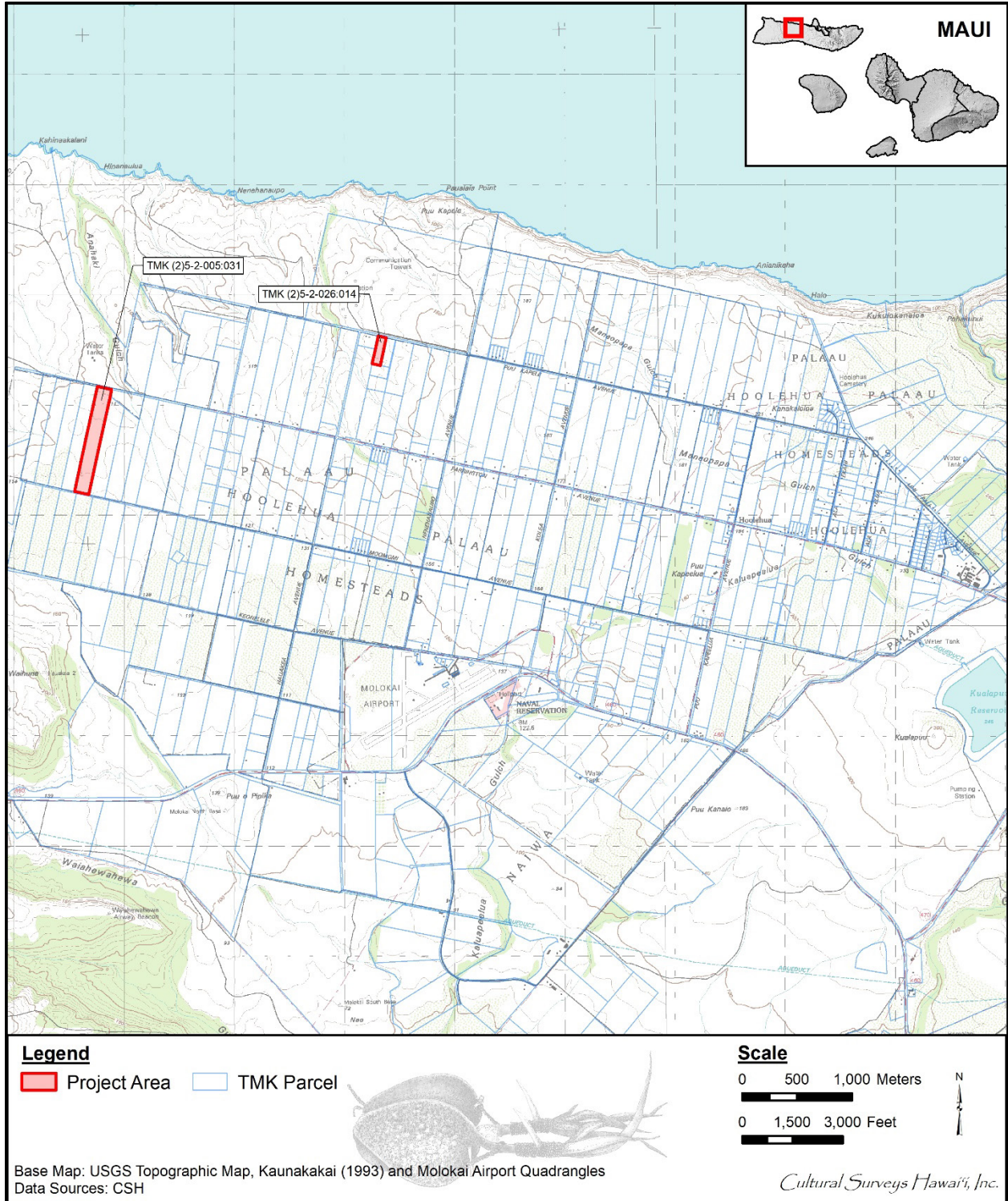


Figure 2. Portion of the 1993 Molokai Airport and Kaunakakai USGS 7.5-minute topographic quadrangles with an overlay of TMK parcels (mostly DHHL lots) showing the location(s) of the project area

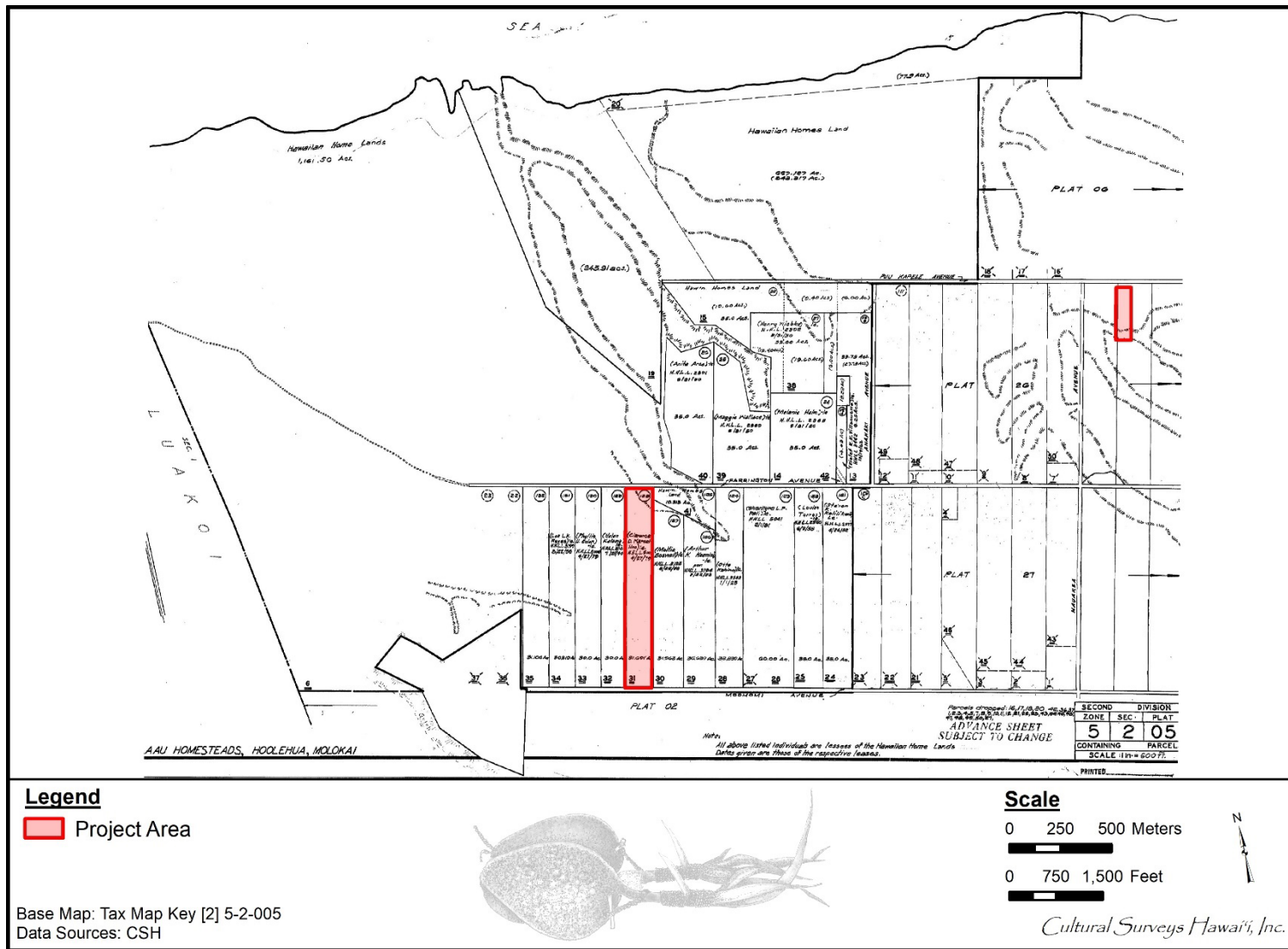


Figure 3. TMK: [2] 5-2-0005 showing the western TMK: [2] 5-2-005:031 Lot 17 portion of the project area (Hawai'i TMK Service 2014)

LRFI for the DHHL Ho‘olehua Scattered Lots Subdivision and Improvements Project, Pālā‘au, Moloka‘i

TMKs: [2] 5-2-005:031, Lot 17 and [2] 5-2-026:014, Lot 104D-1

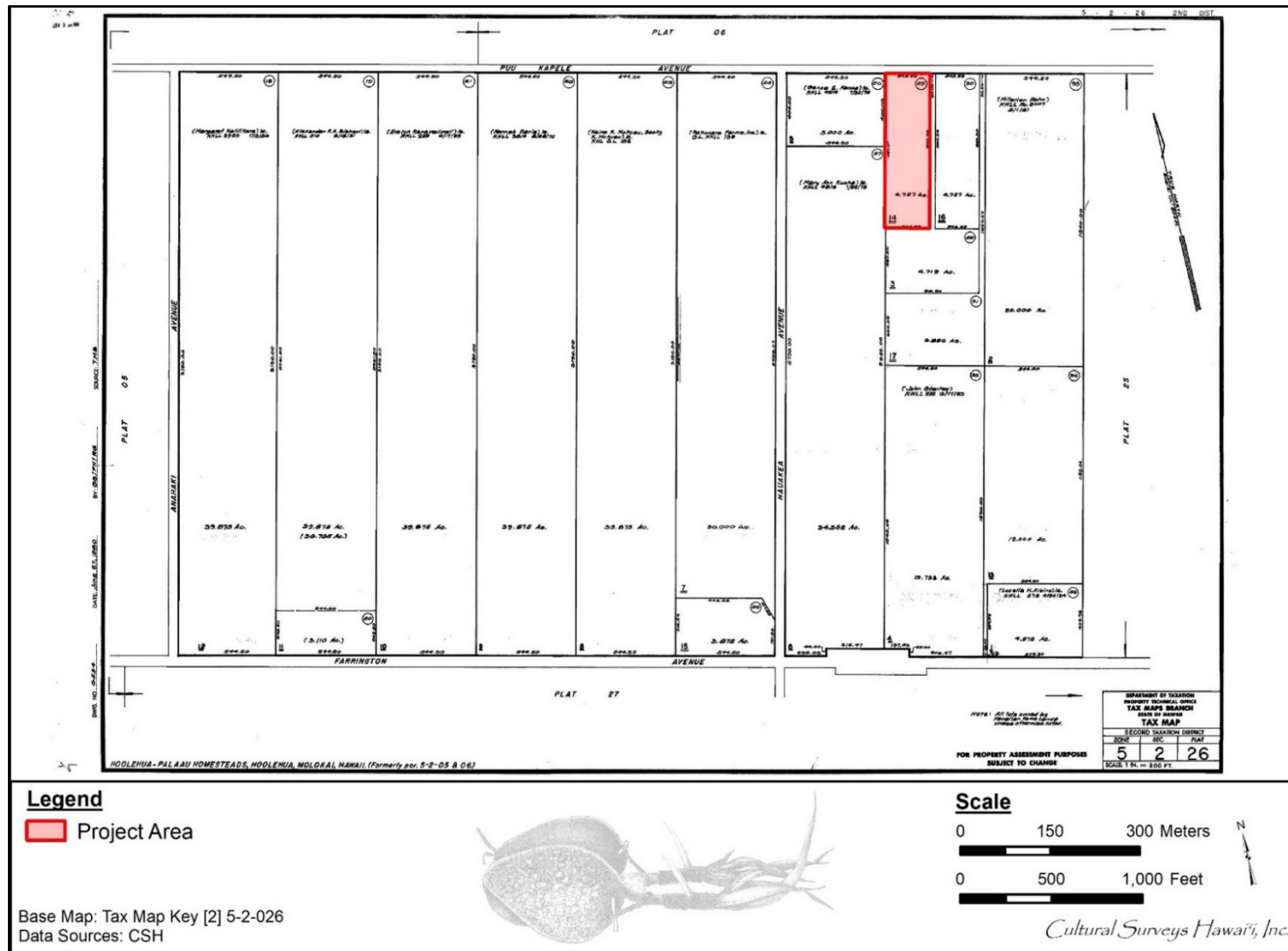


Figure 4. TMK: [2] 5-2-026 showing the eastern TMK: [2] 5-2-026:014, Lot 104D-1 project area (Hawai'i TMK Service 2014)



Figure 5. 2013 aerial photograph (ESRI 2013) showing the project area(s) and surrounding lands

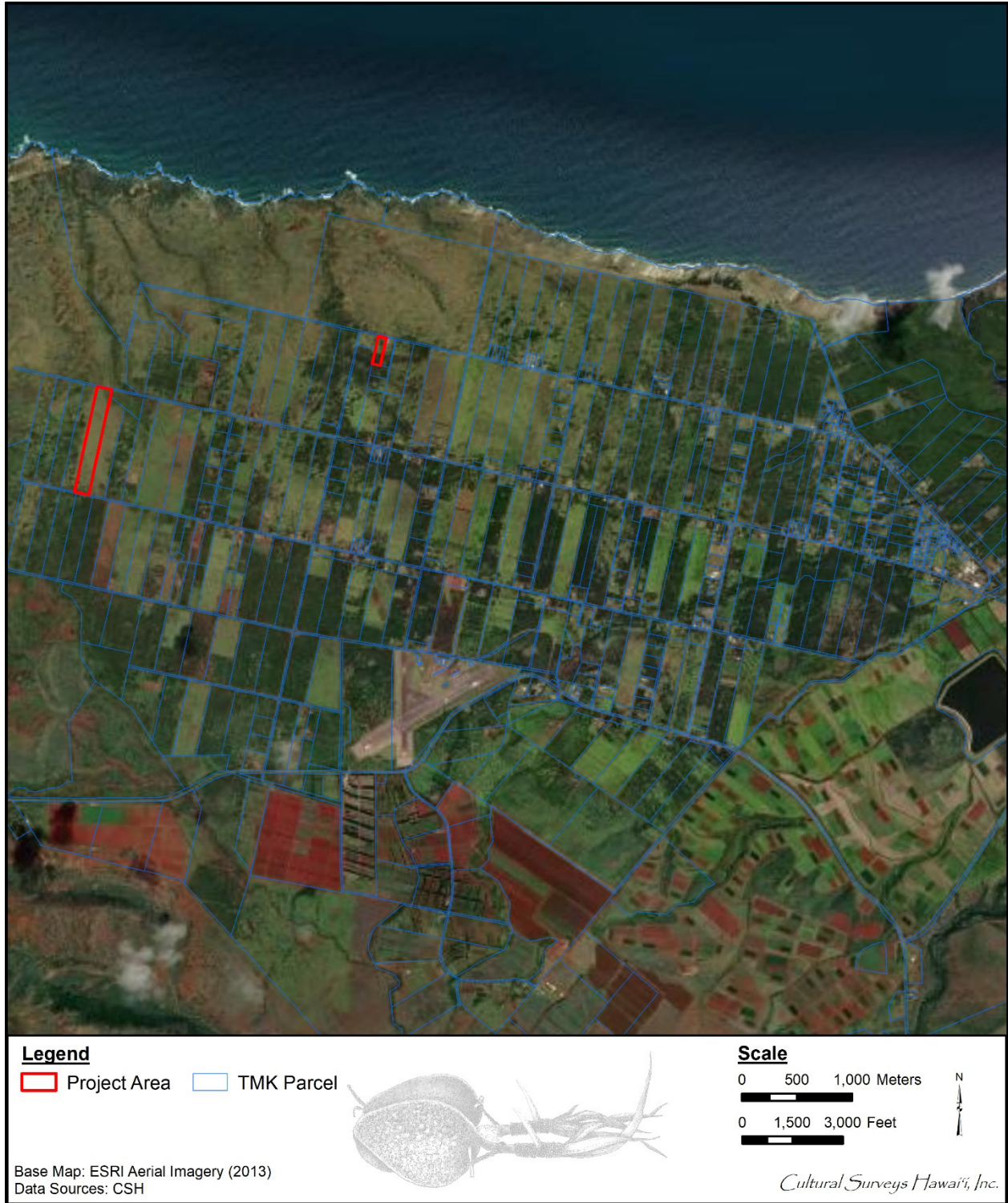


Figure 6. 2013 aerial photograph (ESRI 2013) with an overlay of TMK parcels (mostly DHHL lots) showing the location(s) of the project area

Due to its low elevation and partial shielding by the East Moloka'i volcano from trade winds, the vicinity is arid with only shallow, intermittent stream gulches (MacDonald et al. 1990:411).

The west project area lies just southwest of Anahaki Gulch that flows to the north. The eastern project area is just east of an unnamed gulch. It is believed these gulches rarely run with water and that there is no source of potable water nearby.

The project area receives an approximate mean annual rainfall of 802 mm (32.83 inches) at the neighboring "Gage 34" station, according to the University of Hawai'i Online Rainfall Atlas of Hawaii (Giambelluca et al. 2013) which is suggested to be insufficient for non-irrigated agriculture.

MacDonald et al. (1990:411) provide the following description for soil in West Moloka'i:

Long periods of weathering, accompanied by comparatively little stripping by erosion, have left a deep red soil cover over the top of West Molokai. In places recent erosion has cut through the upper horizon exposing the lower horizon, which locally exhibits pronounced iron enrichment in the form of masses of lateritic iron oxide. [MacDonald et al. 1990:411]

The "deep, red soil" described by MacDonald et al. (1990:411) is characteristic of the current project area and vicinity and is apparent in recent aerial imagery (see Figure 5).

According to the 2006 United States Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (USDA 2006) and soil survey data gathered by Foote et al. (1972), the soils within the west project area consist of Molokai series soils including Molokai silty clay loam, 0 to 3% slopes (MuA), Molokai silty clay loam, 3 to 7% slopes (MuB), and Molokai silty clay loam, 7 to 15% slopes, severely eroded (MuC3) soils (Figure 7).

Molokai series soils are described as follows:

[...] well-drained soils on uplands on the islands of Maui, Lanai, Molokai, and Oahu. These soils formed in material weathered from basic igneous rock. They are nearly level to moderately steep. Elevations range mainly from nearly sea level to 1,000 feet [...]

These soils are used for sugarcane, pineapple, pasture, wildlife habitat, and homesites. The natural vegetation consists of kiawe, ilima, uhaloa, feather fingergrass, and buffelgrass. [Foote et al. 1971:96]

MuA soils are further described as follows:

[...] The material at depths between 35 and 64 inches is moderately compact in place. The substratum is soft, weathered rock. The soil is slightly 'acid to neutral, except that areas used for pineapple are commonly very strongly acid or extremely acid in the surface layer.

Permeability is moderate. Runoff is slow, and the erosion hazard is slight. [Foote et al. 1971:96]

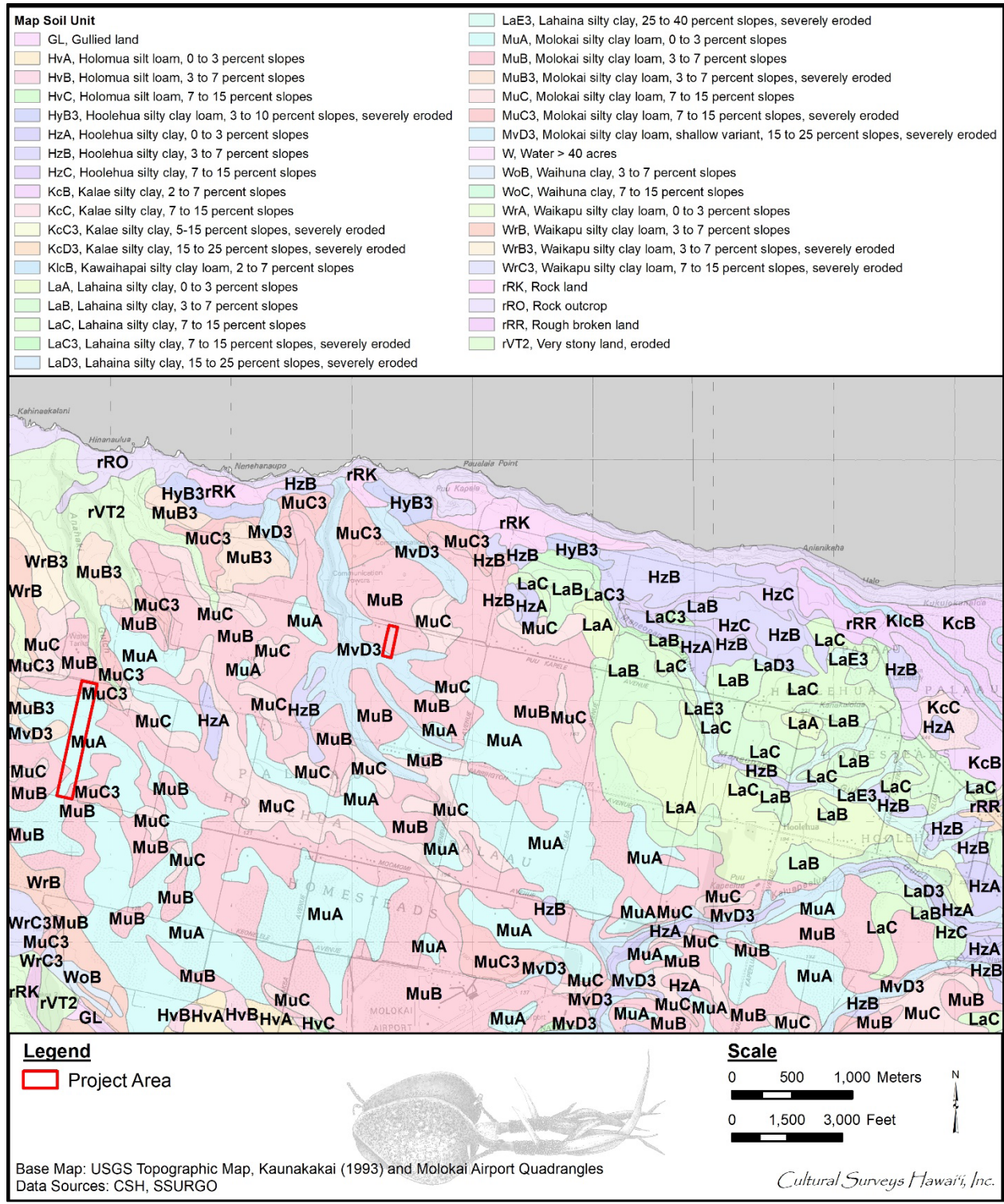


Figure 7. Portion of the 1993 Molokai Airport and Kaunakakai USGS 7.5-minute topographic quadrangles and overlay of Foote et al. (1972) *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, indicating soil types within and surrounding the project area(s) (USDA 2006)

MuB soils are further described as, “On this soil, runoff is slow to medium and the erosion hazard is slight to moderate. Included in mapping were a few small areas that are eroded to soft, weathered rock [...]” (Foote et al. 1971:96).

MuC3 soils are further described as, “This soil occurs on knolls and sharp slope breaks. Runoff is medium; and the erosion hazard is moderate” (Foote et al. 1971:97).

The eastern project area includes MuB soils (described above) and Molokai silty clay loam, shallow variant, 15 to 25% slopes, severely eroded (MvD3) soils (see Figure 7). These soils are described as follows:

This soil occurs on the sides of drainageways. In most places all of the surface layer and part of the subsoil have been removed, and about 12 to 20 inches of dark reddish-brown soil overlies the soft, weathered rock. In some places the soil is eroded to soft, weathered, rock and, as a result, is grayer or browner than is typical of the Molokai series. There are few to common stones and boulders on the surface. These are unweathered rock cores that have been exposed by erosion. Runoff is rapid, and the erosion hazard is severe. Workability is difficult. [Foote et al. 1971:97]

Ground visibility during the field inspection was good throughout much of the project area. The project area vegetation consisted primarily of introduced species including exotic grasses, *koa haole* (*Leucaena leucocephala*), and some *kiawe* (*Prosopis pallida*), *klu* (*Acacia farnesiana*), and lantana (*Lantana camara*). The only native species identified in the project area were *'ilima* (*Sida fallax*) and *'uhaloa* (*Waltheria indica*), and possibly an observed morning glory vine (*Ipomea* species).

The surrounding area was largely undeveloped with scattered DHHL homesteads.

1.3.2 Built Environment

The built environment within and surrounding the project area is minimal. The project area mostly consists of undeveloped DHHL parcels. Active homesteads are sporadic throughout the project area, located particularly along the bounding roadways. The long, narrow west project area is bound by Farrington Avenue (a dirt road) on the north and Mo'omomi Avenue (a dirt road) on the south. The eastern project area is on the south side of Pu'u Kapele Avenue (a dirt road). Molokai Airport and associated infrastructure is located approximately 2 km southeast of the project area(s).

Section 2 Methods

2.1 Background Research

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai'i, the Hawai'i State Archives, the Mission Houses Museum Library, the Hawai'i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai'i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona 'Aina (2021) database.

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of cultural resources in the project area.

2.2 Fieldwork

Fieldwork was conducted on 21 September 2021 by CSH archaeologist David W. Shideler, M.A., and CSH cultural specialist Kellen Tanaka, B.A., under the general supervision of Principal Investigator Hallett H. Hammatt, Ph.D. This work required approximately 2 person-days to complete. The fieldwork was conducted with systematic sweeps at approximately 15 m intervals with the tracklogs presented in Figure 25, Figure 26, and Figure 33. The purpose of the fieldwork was to identify, locate, and describe any potential historic properties and to provide representative photographs of the project areas.

Section 3 Background Research

3.1 Traditional and Historical Background

Traditionally, Moloka'i was divided into two *moku*, or districts: Kona and Ko'olau. Kona Moku was comprised of the lands of the southern and western sections of the island (which included Pālā'au and Ho'olehua Ahupua'a) and the Ko'olau Moku which comprised the lands of the northeastern portion of the island from Hālawā Valley to the Kalaupapa Peninsula. In 1859, the traditional *moku* of Kona and Ko'olau were dropped and the island as a whole was referred to as the Moloka'i district. In 1909, the island was again divided into two districts: Kalawao District, containing the lands of Kalaupapa, Kalawao, and Waikolu, and Moloka'i District, comprising the remainder of the island (Coulters in Summers 1971:2), including the current project area.

The two project areas are both within Pālā'au Ahupua'a (see Figure 9). Mrs. Pukui in Handy described the subdistricts of Pālā'au on Moloka'i as *kalana* (Handy et al. 1991:47). Today, the *kalana* of Pālā'au consists of one major land division and two *lele*. Pālā'au 1 is located at the southern shores of central Moloka'i, while Pālā'au 3 is in uplands, at the summit of the sea cliffs above Kalaupapa Peninsula. These two *lele* of Pālā'au Ahupua'a are significantly smaller than Pālā'au 2—which includes the present project areas. Pālā'au 2, the largest of the three land sections, is adjacent to the northwest of the *ahupua'a* of Ho'olehua (Dodge et al. 1897; Summers 1971:81, see Figure 9).

3.1.1 Place Names

In the preface of *Place Names of Hawaii* (Pukui et al. 1974:x), Samuel Elbert offers the following description regarding place names:

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

Place names are far from static [...] names are constantly being given to new houses and buildings, land holdings, airstrips, streets, and towns and old names are replaced by new ones [...] it is all the more essential, then to record the names and the lore associated with them [the ancient names] now. [Pukui et al. 1974:x]

Inherent in Elbert's statements is knowledge that the oldest place names held meaning and told the story of an area prior to European Contact. Many place names in the vicinity of the project area are provided in Figure 8. Literal translations of place names for land areas and divisions near the project area are listed in Table 1 and may provide insight into the area prior to Western Contact.

3.1.2 *Mo'olelo*

Early Hawaiian affairs and traditions were transmitted orally through *mo'olelo* (traditional stories). These legendary stories recount events involving nature, people, gods, and spirits, thereby offering a window to the essence of Hawaiian ideology and lifestyles prior to Western Contact. Several *mo'olelo* are associated with place names within or near Pālā'au and Ho'olehua are summarized below.

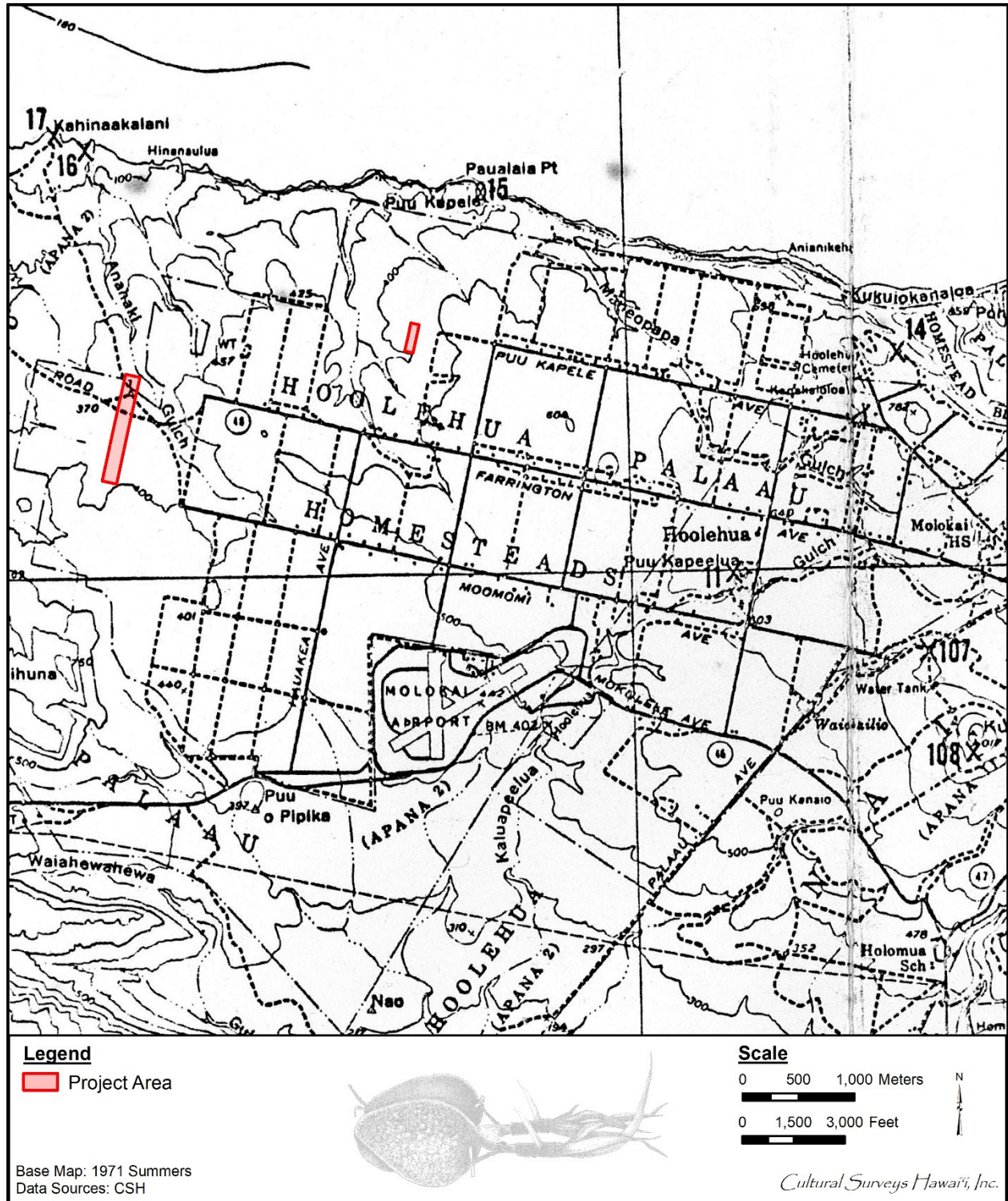


Figure 8. Map from Summers (1971) showing place names near the project area(s)

Table 1. Place names near the current project area(s)

Place Name	Description
Anahaki	Name of a gulch on the north side of the west project area. <i>Lit.</i> “Broken cave” (Pukui et al. 1974:12)
Anianikeha	Place along the sea cliff NW of the eastern project area. <i>Lit.</i> “blowing [on the] heights” (Pukui et al. 1974:12)
Hinanaulua	A point on the sea cliff north of the western project area. <i>Lit.</i> “inspired [by a god] <i>hinana</i> fish.” (Pukui et al. 1974:46)
Ho‘olehua	<i>Lit.</i> acting the expert. Village, land division, and Hawaiian homestead area near the Moloka‘i airport; said to be named for a chief (Pukui et al. 1974:51–52). Ho‘olehua Ahupua‘a encompasses most of the current project area.
Kahinaakalani	A point on the sea cliff NW of the western project area. <i>Lit.</i> “the grayness of the sky, heaven” (Pukui et al. 1974:65)
Kāluape‘elua	<i>Lit.</i> baked caterpillar. A caterpillar infestation was ended by baking the caterpillars (Pukui et al. 1974:79). Name of gulch within project area.
Kanakaloloa	Place NW of the eastern project area. <i>Lit.</i> “tall person” (Pukui et al. 1974:83)
Kualapu‘u	<i>Lit.</i> hill overturned. Hill, elementary school, reservoir, and Del Monte pineapple cannery village (Pukui et al. 1974:119). Summers Site 107, a <i>hōlua</i> (sled used on grassy slopes) slide, was documented on the SSW side of Kualapu‘u Hill (Summers 1971). This hill was formerly named Ka ‘Uala Pu‘u (the sweet potato hill) and appears on some maps as Mid Hill; the area had “many sweet potato patches [...] defined by rows of stones” (Summers 1971:80). Other maps label the hill as Middle Hill.
Kukuiokanaloa	Name of a stretch of sea cliff N of the eastern project area. <i>Lit.</i> “light of Kanaloa” (Pukui et al. 1974:122)
Lepekaheo	According to Summers (1971:37), “Monsarrat referred to Lepekaheo as an ‘old heiau.’” This <i>heiau</i> (pre-Christian place of worship), designated Summers Site 12, is located approx. 1.3 km north of the project area.
Manawainui	<i>Lit.</i> large water branch. Manawainui Gulch stream flows approx. 2.0 km SE of the project area. Manawainui also refers to an area S and adjacent to Ho‘olehua and Pālā‘au, which contains stone platforms used in the past by students of hula, and a stone outcrop modified by Native Hawaiians in traditional times known as the “Sacrifice Stones” (Fowke 1922:181).
Mane‘opapa	Gulch NW of the western project area. Meaning uncertain.
Nā‘iwa	<i>Lit.</i> the frigate birds (perhaps named for the beauty of the birds) (Pukui et al. 1974:161). Nā‘iwa Ahupua‘a comprises three ‘ <i>āpana</i> (lots) in Moloka‘i. The largest section, Nā‘iwa 1, borders the project area E.

Place Name	Description
Pālā'au	<i>Lit.</i> wooden fence or enclosure (Pukui et al. 1974:176). Pālā'au comprises three land sections in north, central, and southwest Moloka'i and along with Ho'olehua, names the homesteads where the current project area is located. A western portion of the project area is in Pālā'au 2, the largest 'āpana, of Pālā'au Ahupua'a.
Paulala	A point on the sea cliff N of the central project area. Meaning uncertain.
Pu'u Kanaio	<i>Lit.</i> the pinworm hill. Hill on the slopes of Kuala pu'u (Pukui et al. 1974:198). This hill is within 400 m E of the project area.
Pu'u-Ka Pe'elua	<i>Lit.</i> "hill of the caterpillar" (Pukui et al. 1974:198) (For <i>mo'olelo</i> see subsection 3.1.1.2.3). Location of Summers Sites 11A and 11B/ State Inventory of Historic Places (SIHP) # 50-60-03-11, Kape'elua Complex (see subsection 3.2.1).
Pu'u ka Pele	Hill on the sea cliff N of the central project area. <i>Lit.</i> "the volcano hill" (Pukui et al. 1974:198).
Waiakailio	<i>Lit.</i> water used by the dog (Pukui et al. 1974:219). Area with a stream approx. 375 m northeast of the project area's NE corner.

3.1.3 Origin of Moloka'i

Mo'olelo provide varying accounts for the origin of Moloka'i. Paku'i, a historian in the time of Kamehameha I, wrote of the Hawaiian Islands having been born of Wākea and his wives. According to this version, Wākea's first wife, Papa, gave birth to Hawai'i, Maui, and Kaho'olawe before returning to Tahiti. Wākea took Kaulawahine as his second wife, and she gave birth to Lāna'i. He then took a third wife:

Then Wakea turned around and found Hina,	<i>Hoi ae O Wakea loa Hina,</i>
Hina was found as a wife for Wakea,	<i>Loaa Hina he wahine moe na Wakea,</i>
Hina conceived Molokai, an island;	<i>Hapai Hina ia Molokai, he moku,</i>
Hina's Molokai is an island child.	<i>O Molokai a Hina he keiki moku.</i>

[Fornander 1916-1917:12–13]

The historian Kahako'ikamoana recorded a different lineage for Moloka'i:

Kuluwaiea of Haumea as the husband,	<i>Na Kuluwaiea o Haumea he kane,</i>
Of Hinanuiakalana as the wife	<i>Na Hinanuiakalana he wahine</i>
Was born Molokai, a god, a priest,	<i>Loaa Molokai, ke akua, he kahuna,</i>
The first morning light from Nuumea,	<i>He pualena no Nuumea,</i>

[Fornander 1916-1917:2–3]

3.1.4 Pā'aka'a and His Son Kū-a-Pā'aka'a

The following *mo'olelo* recounts two chiefs, Pālā'au and Ho'olehua, which are also the names of the *ahupua'a* in which the current project areas are located (Pālā'au) and the adjacent *ahupua'a* to the east (Ho'olehua).

On Molokai lived a very beautiful woman, Hikauhi, the daughter of Hoolehua and Ilali. Now it happened that the girl's father had promised her hand to Palaau, the chief of that part of the island. But as soon as she had seen Paakaa, she forgot all about her former lover and demanded that the stranger be given to her. Palaau very generously consented, and so they all lived in peace. Paakaa cultivated the lands well, fished skillfully, and brought great prosperity to his wife and her family. [Handy 1922:76]

3.1.5 Pu'u Ka Pe'elua, Caterpillar Hill

According to Harriet Ne (1992), the story of Pu'u Pe'elua involves Pele, the daughter of a chief of Pālā'au, who fell in-love with the *pe'elua* (caterpillar) of Ho'olehua, the *'aumakua* (family or personal gods, deified ancestors) of that district:

A beautiful young girl named Pele, the daughter of a chief in the Pālā'au area, encountered in the early twilight a handsome young man. They fell in love, and he courted her for almost a year. She concealed her love from her parents and lived only for the hours she spent with him.

She did not know that he was the *pe'elua* of the district, revered and loved by the people of Ho'olehua—even worshipped. Nor did she know that he had the form of a young man only at night but that in the day he returned to the form of a caterpillar.

As the days passed, Pele grew pale and listless. [...] The *kahuna* perceived the problem at once. 'She is in love with the supreme manifestation of the caterpillar-Pe'elua,' he told [her parents]. 'When he comes to her at night, it is in the form of a handsome young man; but his power is draining her strength. She is human. She cannot live with a magical being. To save her, you must kill him. You must destroy him completely.' [Ne et al. 1992:49–50]

The same story is also told by Cooke (1949):

[...] this beautiful girl was visited each night by a lover who left before daylight. She was unable to discover who he was, this suspense told on her, and she began to waste away. A priest, consulted by her parents, advised the girl to attach a piece of white tapa to a wart on her lover's back. In the morning, shreds of tapa helped to trace the demi-god lover to the hill Puu Peelua, in the middle of Hoolehua. The kahuna [priest] and friends of the family found a large peelua [caterpillar] asleep on the hill. The kahuna ordered the people to collect wood which was placed around the sleeping peelua, and a fire was lit. As the heat of the fire increased, the caterpillar burst into myriads of small caterpillars which were scattered over the plain. That accounts for the army-worm pest, called peelua. [Cooke 1949:102]

3.1.6 Pele's Long Sleep

An ancient chant concerning Lohi'au, the king of Kaua'i, includes reference to Pālā'au. At the beginning of his romance with Pele,

Lohiau watched her while he partook of the feast with his chiefs, and she was resting on the couch of mats. He was thinking of her marvelous, restful beauty, as given in the ancient chant known as 'Lei Mauna Loa.'

Lei of Mauna Loa, beautiful to look upon.
 The mountain honored by the winds.
 Known by the peaceful motion.
 Calm becomes the whirlwind.
 Beautiful is the sun upon the plain.
 Dark-leaved the trees in the midst of the hot sun
 Heat rising from the face of the moist lava.
 The sunrise mist lying on the grass,
 Free from the care of the strong wind.
 The bird returns to rest at Palaau.
 He who owns the right to sleep is at Palaau.
 I am alive for your love—
 For you indeed. [Westervelt 1916:77]

3.1.7 Sorcery on Moloka'i

Kamakau (1992a) recounts a story regarding the origin of sorcery use on Moloka'i, in which the Ho'olehua and Pālā'au plains are mentioned:

Kaiakea, a prominent man of Kala'e and its vicinity, was said to have been a man without a god. He built a large new household below Kahanui and provided all kinds of food, such as poi, pig, 'awa, bananas, fish, and everything else necessary

for a 'house-warming' (*o ka hale komo*). When the day came, Kaiakea's wife and the other women were at the *hale noa*, the common house, and Kaiakea and the other men and the servers were at the *hale mua*, the men's house. The *hale noa* was apart from the *hale mua*, which was surrounded by a lanai. Kaiakea was in the doorway of the *hale mua*, and while the feast was being prepared, he saw a long procession of women coming over the plains of Ho'olehua to Pala'au. They were dressed in yellow tapa skirts and yellow tapa shoulder coverings (*kihei*), with variegated (*papahi*) leis of *ma 'o* and *'ilima* crowning their heads. There was one man among them. The procession went down to the spring, named Piliwale, and left their things (*he ukana*) there. These were a *puniu hulihuli*, or coconut-shell container, and the women's *'alae* bird bodies. When Kaiakea saw the many beautiful women in that company, he called out to them to come in on the lanai, but they remained outside. Only the man who was with them approached and stood at the door of Kaiakea's house and talked with him. Kaiakea offered them food, but the spirit man (*kanaka anela*) said they would not eat his food unless a leaf-thatched house, a *hale lau*, was built for them; then they would eat of his food. This man revealed that they were not humans, but 'angels,' and he told Kaiakea their names. Pua was his name, and Kauluimaunaloa (the-grove-at-Maunaloa, that is, Kapo) was the name of the chiefess who led the procession. He said they would become Kaiakea's gods if the *hale lau* was finished that day, and would give into his charge the *puniu hulihuli*, their visible form (*ko lakau kino 'ike maka 'ia*), and all the paraphernalia to do their work (*ka lakau mau hana a pau*), which was inside it. The *'alae* birds were their bodies which they showed abroad (*kino ho 'ike 'ia iwaho*). After revealing these things to Kaiakea, the being vanished. Kaiakea went to the spring to look for the *puniu*, and got it; the *'alae* birds were resting there at the spring. That very day Kaiakea erected the *hale lau* and filled it with poi, 'awa, bananas, and tapas appropriate to these gods; that same evening it was dedicated (*ke kapu no 'ia*). The food offerings (*ka 'ai me ka i'a*) and the 'awa were all consumed by the *'alae* birds, and they were well content with the food provided for them.

It was in this way that Kaiakea became the *kahu* of gods, and he became known as a man who had gods. He was the *kahu* of Kapo (Kauluimaunaloa) and Pua. Kaiakea, however, just took care (*malama pono*) of these gods. He did no harm to others, and did not send his gods to bring death (*ho 'aunauna e make*) to any man or to any chief. He just took care of his *akua ho 'ola 'a* (the spirits who had been made gods by his consecration and offerings). Upon his death he commanded his children to take care of the gods against the days of trouble; the gods would repay them with life (*ola*). But they were not to seek wealth from the gods through sorcery. [Kamakau1992a:131–132]

3.1.8 'Ōlelo No'eau

Pukui (1983) compiled an extensive list of *'ōlelo no'eau* (proverbs or traditional sayings) in *'Ōlelo No'eau: Hawaiian Proverbs & Poetical Sayings*. Authors of the preface to the book discuss these expressions as follows:

The sayings may be appreciated individually and collectively for their aesthetic, historic, and educational values. They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawai'i and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawai'i, they bring us closer to the everyday thoughts and lives of the Hawaiians who created them. [Pukui 1983:VII]

Several *'ōlelo no 'eau* concern Moloka'i. For example, the following references an origin story:

Moloka'i nui a Hina. *Great Moloka'i, land of Hina.*
[Pukui 1983:239]

Other sayings regard powers associated with Moloka'i. Though Kaiakea cautioned his children not to spread sorcery, his wishes went unheeded (Kamakau 1992a) (see subsection 3.1.1.2.5). Molokai'i became traditionally known for its medicinal and magical powers, as the following Hawaiian proverbs demonstrate:

Moloka'i ku'i lā'au. *Moloka'i, pounder of medicine.*
Moloka'i pule o'o. *Moloka'i of the potent prayers.*
[Pukui 1983:239]

At least two proverbs are associated with aspects of former ways of life in Ho'olehua:

Ku'u manu lawelawe o Ho'olehua. *My bird of Ho'olehua that cries out about food.* [Pukui 1983:235]
Mo'a nupu ka lā i ke kula o Ho'olehua *The sun scorches the plain of Ho'olehua* [Pukui 1983:207]

Pukui (1983:207) tells that the *kioea* bird cries out *Lawelawe keō! Lawelawe keō!* (Take the food! Take the food!) to the fishermen as they head out to sea.

3.1.9 Subsistence and Settlement

During his archaeological survey of Moloka'i in 1937, Southwick Phelps (1937) noted the following about West Moloka'i:

It is said that in former days western Molokai was not as devoid of forest as it is now. While this may be true to a limited extent, I think that the essential conditions have remained the same and that the western half was always a semi-arid region. One certainly finds there no extensive taro patches and no signs of dense population. We learn, furthermore, that it was traditionally a land of the sweet-potato, a plant that does not require much water. [Phelps 1937:6-7]

While exact boundaries for yam and sweet potato cultivation in Pālā'au and Ho'olehua are unknown, these tubers, along with fish, were staples of inhabitants in the area (Phelps 1937).

The region including Ho'olehua was a fertile plain known particularly for the cultivation of *'uala* (sweet potato). Summers (1971:38) cites Malihinihele who stated in 1876, "In the olden days this [Pālā'au 2] was a good land with a fertile plain where plants grew. The population was large but today it is uninhabited." Handy (1940:157) remarks, "In 1931 there were many flourishing

patches on the Hawaiian homesteads at Hoolehua. It is said that Hoolehua and Palaau were noted for sweet potatoes in olden days” although Handy and Handy (1972:283) note that homesteaders in Ho‘olehua were growing the sweet potatoes on land that had not been planted in ancient times.

The importance of *‘uala* to the area is further suggested by place names such as Pu‘u Pe‘elua (hill of the caterpillar) and Kāluape‘elua (baked caterpillar), which illustrate the connection to the environment of the area (Pukui et al. 1974). The *pe‘elua*, or the caterpillar, feeds on the sweet potato and is considered a pest by *‘uala* farmers of the region. Pukui et al. (1974) noted hilled sweet potatoes in the region south of Ho‘olehua and Pālā‘au known as Uala-pu‘e, which is also the name of a fishpond in that area. In addition to sweet potato, *‘olo* or *hokeo*, the long gourd used for holding fishing tackle and to make the *hula* drum, notably grew in Ho‘olehua (Handy et al. 1991:213).

The actual size of the pre-Contact Hawaiian population tending and supported by crops in central and western portions of Moloka‘i can only be conjectured. While the greater portion of the population resided on the eastern side of the island, a late nineteenth century anecdote by Abraham Fornander (1880) suggests a former substantial population that may have been widely dispersed:

As an instance of the dense population, even a few years previous to Kamehameha's death, the author has often been told by a grand-niece of Kekaulike, who was a grown-up girl at the time, that when the chiefs trumpetshell sounded, over a thousand able-bodied men would respond to the call, within a circle described by Palaau, Naiwa, Kalae and Kaunakakai. Those lands together cannot muster a hundred men this day. [Fornander 1880:73 footnote]

3.2 Early Historic Period

Early historic accounts briefly mention Moloka‘i. Summers (1971:18) relates that in 1779 when Captain Cook visited Hawai‘i, the status of Moloka‘i was uncertain. However, Kamakau (1992b) cites several reasons why Moloka‘i was as important as O‘ahu in the late 1700s, since both of the islands contained “rich lands, many walled fish-ponds, springs, and water taro patches. The island of Oahu was very fertile and Molokai scarcely less so” (Kamakau 1992b:132–133).

Captain George Vancouver (1798), sailing along the southern coast of Moloka‘i in 1793, essayed a portrait of the island’s geographic texture and distribution of Hawaiian population:

Early the next morning, with a pleasant breeze from the N.E., we stood over towards the east point of Morotai, [...] we sailed along to the westward, [...] About half a league south of the east point of Morotai [...] lies a small barren rocky islet, called by the natives Modooenete [...] In this direction east the land rises rather abruptly from the sea, towards the lofty mountains in the center of the east part of Morotai; and though the acclivity was great, yet the face of the country diversified by eminences and vallies; bore a verdant and fertile appearance. It seemed to be well inhabited, in a high state of cultivation, and presented not only a rich but a romantic prospect. To the westward of these cliffs, the shores terminated in the former direction, by a low point of land, called by the natives Crynoa [...] From Crynoa the country assumes a dreary aspect. The mountains, forming the eastern part of the island, gradually descend to the westward, and like those of Mowee, terminate on a low isthmus, which appears to divide the island into two peninsulas

[...] the easternmost, which is far the largest is composed of very high land, but the westernmost does not rise to any elevation, beyond that of a mean height. The country from Crynoa rises from the sea by an ascent, uninterrupted with chasms, hills or vallies. This uniform surface, on advancing to westward, exhibited a gradual decrease in the population; it discovered an uncultivated barren soil, and a tract of land that gave residence only to a few of the lower orders of the islanders, who resort to the shores for the purpose of taking fish, with which they abound. Those so employed are obliged to fetch their fresh water from a great distance; none but what is brackish being attainable on the western parts of Morotai. [Vancouver 1798:201–202]

Early visitors and Hawaiian historians confirm Vancouver's perception of a wide-spread Hawaiian population throughout the eastern portion of the island and a much smaller population clustered along the shoreline within the western portion.

After conquering the island of Maui in 1790, Kamehameha I advanced on to Moloka'i where he secured the allegiance of the chiefs. Archibald Menzies (1920), the naturalist who accompanied Captain George Vancouver to the Hawaiian Islands in the 1790s, relates that Kamehameha I "destroy[ed] the fields and plantations of the inhabitants" (Menzies 1920:115). He and his warriors remained on Moloka'i for a year to prepare the attack on O'ahu. He is said to have grown taro and "had all his canoes put in order. He drilled his warriors on the Hoolehua plain near where the airport is now" (Cooke 1949:112).

3.3 Early 1800s

The first Protestant missionaries arrived in Hawai'i in 1820. In the following years, the ruling Hawaiian chiefs and governors established a network of public schools throughout the villages of the Hawaiian Islands. In September 1828, a group of missionaries travelled to Moloka'i to determine the progress of the schools (Andrews 1829). After landing on the southeast side at Honomuni, they traveled west over the next two days to the villages of Hālawa, Halana, Makanalua (Kalaupapa Peninsula), and overland to Kaunakakai where they put up for the night:

During the whole night, the people continued to arrive; and, about sunrising, the chiefs made their appearance [...] Having examined a large school here, we walked on, and the chiefs followed, in canoes. We travelled along, on the sea shore, finding very little vegetation, on account of the drought. There is scarcely any water on this side of the island. [Andrews 1829:273]

They completed their examination of the schools on Moloka'i the following day, noting that they "numbered nearly 700 houses, and think there are about 1,000 on the island" (Andrews 1829:274).

The United States Navy Exploring Expedition under the command of Captain Charles Wilkes visited the island of Moloka'i in 1840 and described the island as follows:

[...] forty miles long, from east to west, and nine miles wide: the western portion, embracing about one third of the whole extent, is a barren waste; and the remaining two thirds is mountainous, in some places rising to the height of twenty-eight hundred feet, with the exception of a narrow strip of land on the south side, which has a most favorable exposure, and is highly productive. [Jenkins 1850:258]

3.4 The Māhele and the Kuleana Act

The Organic Acts of 1845 and 1846 initiated the process of the Māhele—the division of Hawaiian lands—that introduced private property into Hawaiian society. During the Māhele, all lands in the Kingdom of Hawai'i were divided among *mō'i* (king), *ali'i* (royalty), *konohiki* (overseer of an *ahupua'a*), and *maka'āinana* (common people/tenants of the land) and passed into the western land tenure model of private ownership. In 1848, the crown and the *ali'i* received their land titles. On 8 March 1848, Kamehameha III further divided his personal holdings into lands he would retain as private holdings (Crown Lands) and parcels he would give to the government. According to an 1897 Hawaiian Government Survey map of Moloka'i showing 1848 divisions of land, the entire *ahupua'a* of Ho'olehua was given to the government, and all of Pālā'au Ahupua'a (including the western and central project areas) was retained by the Crown (Figure 9).

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay a cash amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent (RP) was issued giving full title of ownership to the tenant.

On 19 October 1849, the Hawaiian Privy Council adopted resolutions to protect the rights of Native tenants, the *maka'āinana*. The *maka'āinana* were offered fee-simple titles for their house lots and lands that they cultivated for themselves. *Kuleana* awards for individual parcels within the *ahupua'a* were subsequently granted through a land commission. These awards were first presented to Native Hawaiian tenants followed by the naturalized foreigners (non-Hawaiians born in the islands) or long-term resident foreigners who could prove occupancy on the parcels before 1845. No commutation fee was necessary to apply for a Royal Patent for a *kuleana* award as the commutation fee had presumably already been paid by *ali'i/konohiki* who had been awarded the entire *ahupua'a*, or an *'ili* (a land division within an *ahupua'a*) in which the Native tenant claimed his own small parcels (Chinen 1958:29–30).

No native tenant LCAs were awarded near the current project areas, and only one LCA and one Land Grant were awarded in the vicinity. Approximately 4.6 km southeast of the eastern project area, LCA 11216 (LCA 11216*Mo) was awarded to Kekauonohi (see Figure 9 and Figure 10) a member of the House of Kamehameha and a wife to King Kamehameha II. This LCA included 5,803-acres comprising approximately half of the *ahupua'a* of Na'iwa. Southwest of the project area, Grant 3146 was awarded to Charles R. Bishop (see Figure 10). No land use information is provided for Grant 3146 (Waihona 'Aina 2021).

3.5 Mid- to Late 1800s

3.5.1 Cattle Ranching

Cattle were introduced to Moloka'i in the 1840s. De Loach (1975) summarizes this first effort at commercial ranching:

Rudolph W. Meyer, who was, [...] responsible, along with [Reverend] Hitchcock, for the introduction of cattle on the island, had come to Moloka'i in the 1840s. He established a ranch stocked with longhorns in the Kala'e [north central Moloka'i]

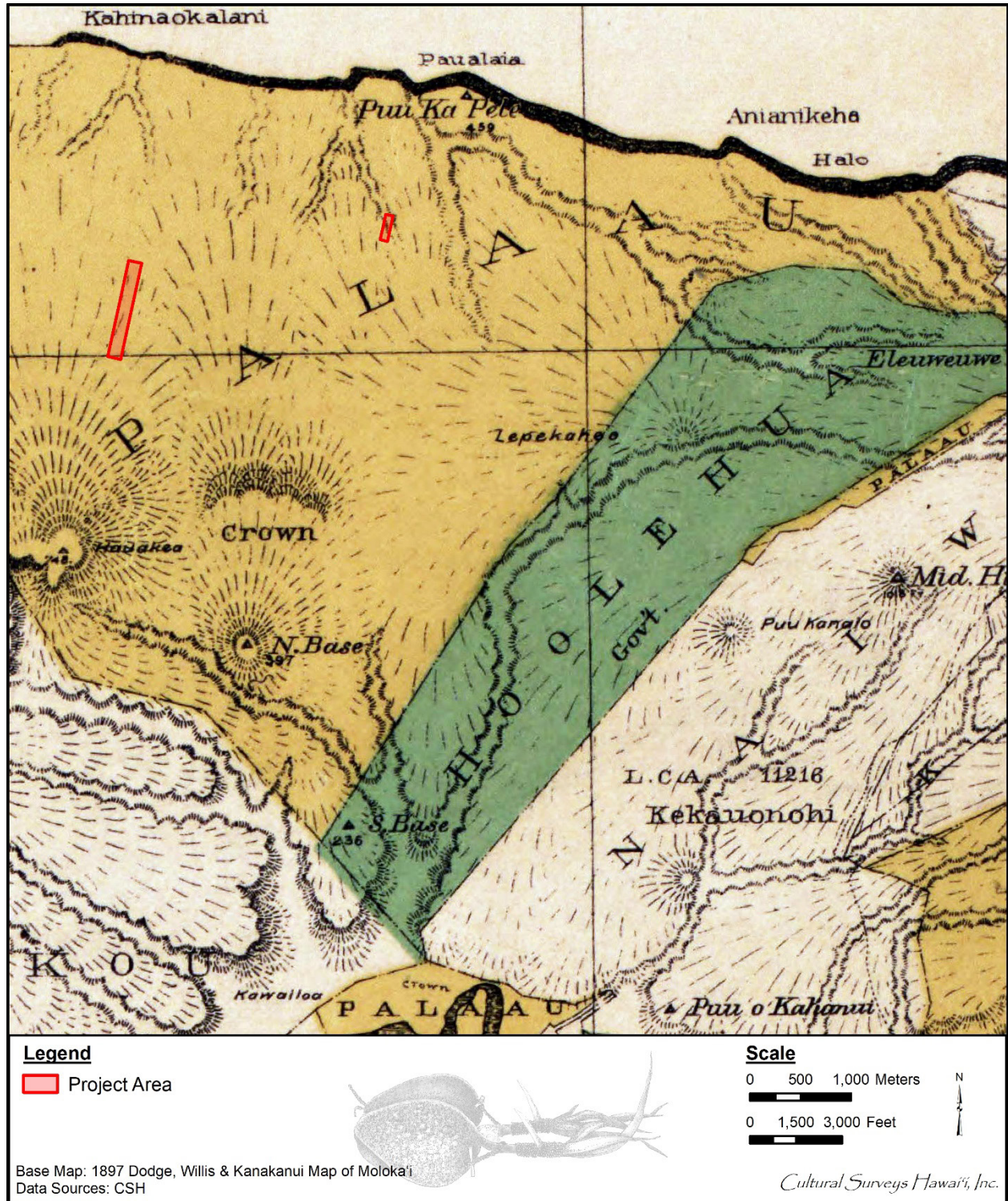


Figure 9. Portion of Dodge et al. (1897) map of Moloka'i showing 1848 land divisions (Crown [yellow], government [green], LCAs [no color]); the western and eastern project areas as within Crown lands

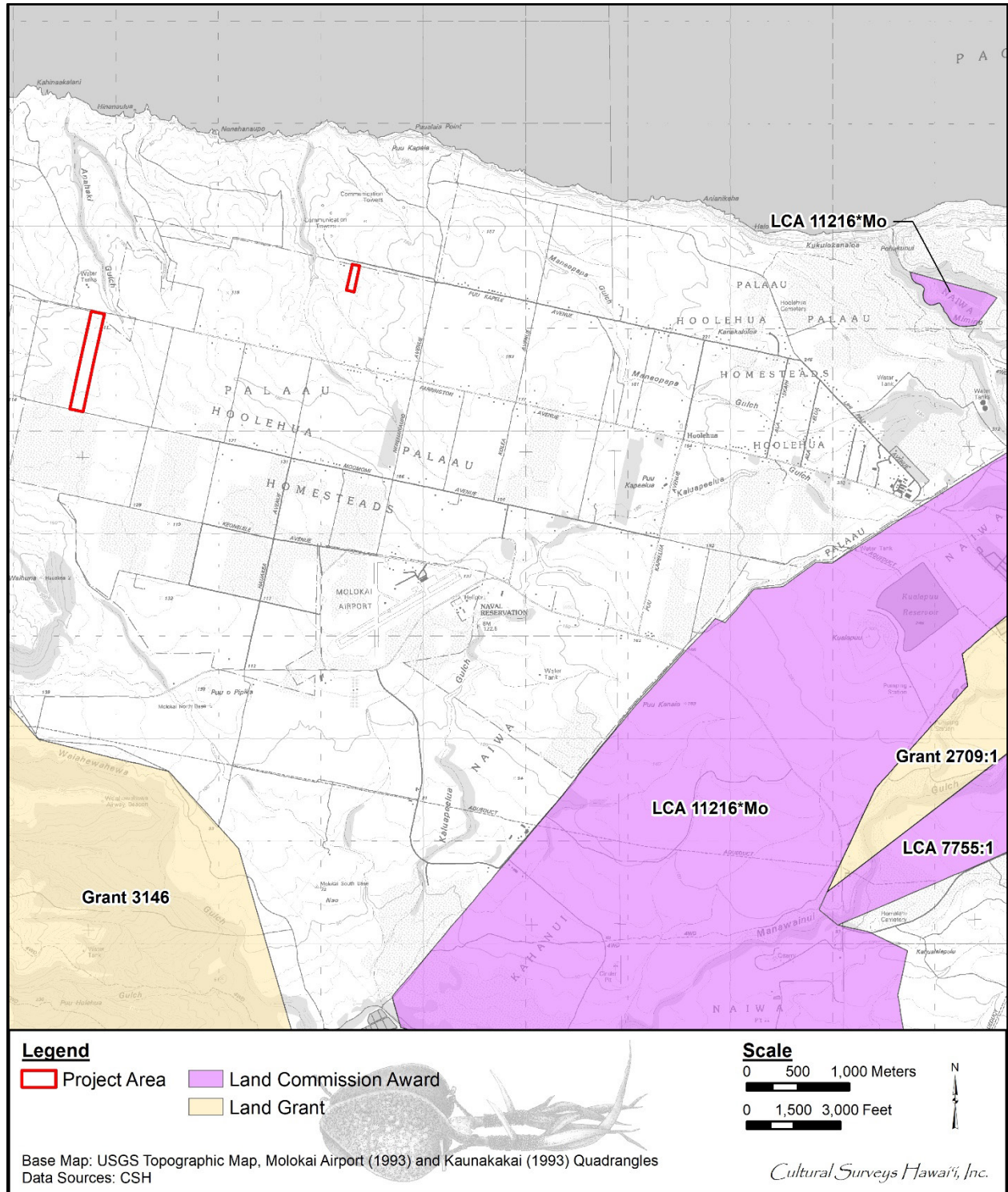


Figure 10. LCAs and Grants in the project area vicinity depicted on a portion of 1993 Molokai Airport and Kaunakakai USGS topographic quadrangles (none of the three project areas were close to a Native Tenant LCA or grant)

Area. A lucrative trade in cattle and hides was begun between Moloka'i and Honolulu. The cattle were exported from the village of Pālā'au on the southwestern shore, over the reef, and onto a waiting ship. Pālā'au grew wealthy on cattle and dry land taro. All this came to an end, however, in the 1850s, when Meyer discovered that the number of cattle in the herd had diminished considerably. He found that almost every male in the village was guilty of rustling, and so all the men were shipped off to jail in Honolulu. The men's families followed, and the village was deserted. Today Palaaau sits abandoned in a kiawe forest, as no one ever returned to live there. [de Loach 1975:68]

Despite these early setbacks, cattle (and sheep) ranching expanded greatly in the second half of the nineteenth century:

During this period, cattle, sheep and goats were imported to the island in ever-increasing numbers. According to Judd, there were no cattle on the island in 1832 and by 1853 there were only 200 head. The 1866 census, however, revealed 2,586 head of cattle, 13,332 sheep and 196 goats on the island. [...] In 1868, Kamehameha V released axis deer on the island. [de Loach 1975:86]

In 1855, Lot Kapuaiwa (King Kamehameha V) purchased the *ahupua'a* of Kaunakakai for two hundred dollars (Interior Department Letter, July 1885) to maintain the value of a sheep station established there by his brother, Alexander Liholiho (King Kamehameha IV) (Kuykendall 1953:152). Lot Kapuaiwa also actively sought to increase his Moloka'i holdings: "in the desire to have a country estate, he bought up land and cattle from the resident Hawaiians and used Moloka'i as a vacation ground from his cares of State" (Judd 1936:9–10).

In 1868, King Kamehameha V was sent seven live axis deer from Hong Kong as a gift (Tomich 1986:127). He released the deer, adding to the free-roaming game population on the island but, consequently, also to the destruction of vegetation by the flourishing population of foraging animals. In a 1902 talk given in Japan on Hawaiian Forests, E.M. Griffith (1902) remarked on the already alarmingly denuded state of Moloka'i:

Cattle, goats and deer have totally destroyed the forests upon the larger portion of the island of Molokai so that the western half is practically destitute of any tree growth. It is possible that the algaroba forests which have secured such a strong hold along the coast near Kaunakakai may gradually spread over this end of the island [...] The condition at present time is that the forest has been pushed back into the deeper and more inaccessible canyons and onto the highest slopes of the mountain. The effective watershed in respect to the conservation of the water supply has thus been greatly reduced and the careful protection of the remaining forests is an absolute necessity. [Griffith 1902:Appendix G]

An 1886 Government Survey map (Figure 11) depicts an approximate upper growth line of the algaroba (*kiawe*) forests approximately 3.5 km south of the present project areas. The western and eastern project areas are depicted as within the Momomi Paddock. Extensive pasture land is indicated with no other development suggested.

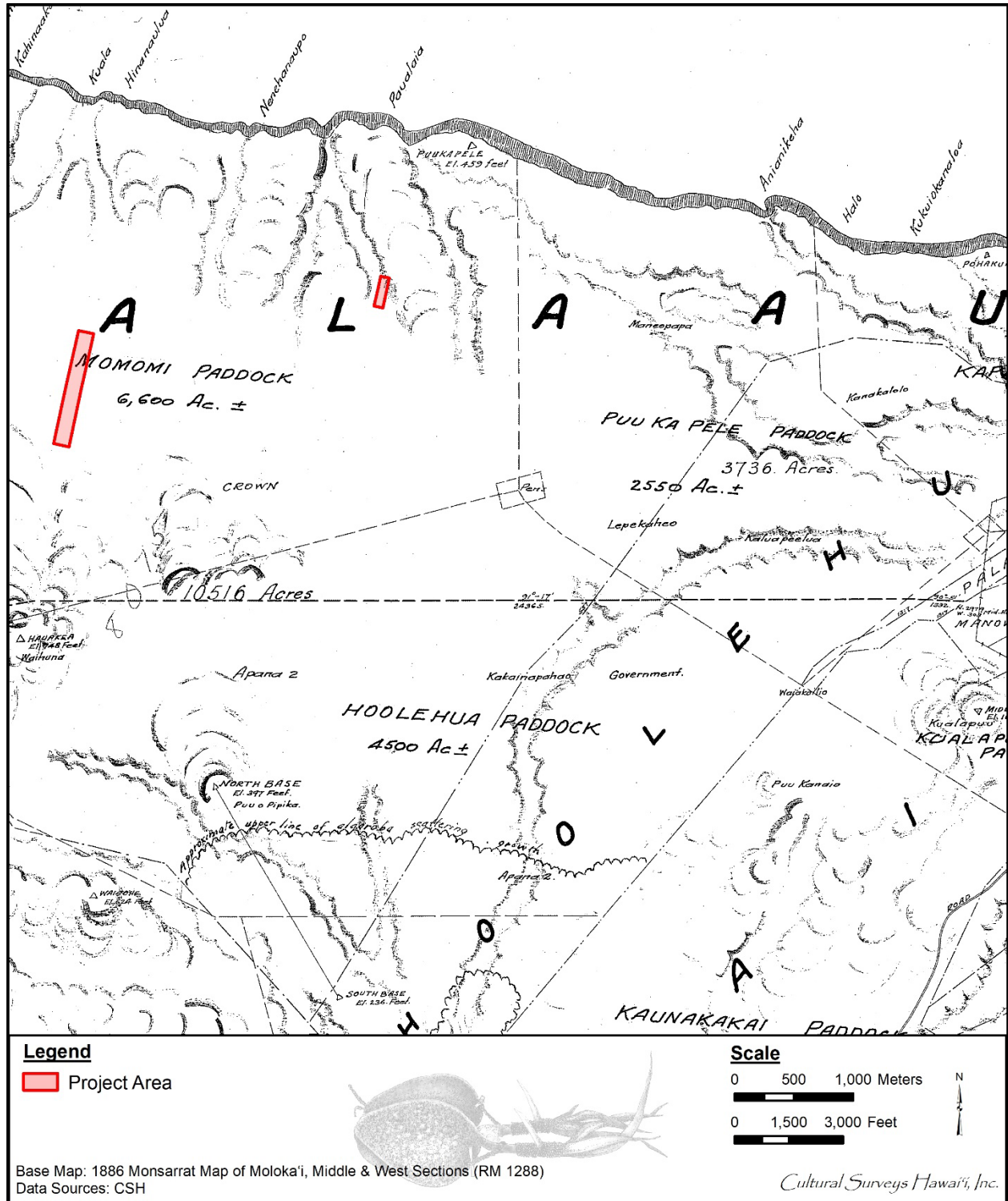


Figure 11. Portion of Monsarrat (1886) Hawaiian Government Survey Map of Molokai, Middle and West Sections (RM 1288); showing the western and eastern project areas as within the Momomi Paddock

During the Māhele in 1848, Bernice Pauahi Bishop, daughter of Abner Pākī and Laura Konia and last descendant of the Kamehameha dynasty, inherited much of the lands which are now Molokai Ranch lands. Her husband, Charles R. Bishop, inherited the lands of Kaluako'i in 1875. The Molokai Ranch was formed in 1897 when a *hui* (group of investors) purchased approximately 70,000 acres of central and western holdings from the Bishop Estate (Cooke 1949; Stearns and Macdonald 1947).

3.5.2 Agriculture

Mr. Harvey R. Hitchcock and Mrs. Rebecca H. Hitchcock became the first permanent missionaries on Moloka'i. They established a Protestant church at Kalua'aha in 1832, at which point the only agricultural crops they noted were bananas and taro grown in the valleys where water was most readily available. No "regular schools, churches, houses of permanent nature, no garments, no cattle, only one horse, and home articles of the most primitive nature" were present then (Wiebke 1940). Twenty years later, the island had a number of churches, 1,000 students enrolled in 21 schools across the island, and livestock including goats, hogs, 400 horses, and cattle. Taro, potatoes, and grapes were "cultivated quite extensively" (Wiebke 1940:1).

In the early 1840s, the Meyer family in Kala'e was growing and exporting coffee, corn, wheat, and potatoes to the mainland. The Meyer family started a sugar mill at Kala'e in 1878 using 30 acres of land to grow cane. This was one of the few locations on Moloka'i that had adequate rainfall to grow cane, but problems stemmed from the cane being planted at an elevation of 1,500 ft above sea level. Sugarcane matured slower at higher elevations, so yields were lower. The Meyer plantation produced 50 tons of sugar annually (Wiebke 1940). The sugar mill was closed in 1894, because it was too small to compete with larger operations.

Two other large sugar plantations were developed on Moloka'i beginning in the late 1870s, one at Moa-nui in East Moloka'i and one at Kaunakakai. Both of these plantations quickly failed and were abandoned (Wiebke 1940).

In 1898, American Sugar Company, Limited (ASCO) was incorporated by Molokai Ranch, which leased an additional 30,000 acres (Cooke 1949). Following the incorporation, a full-scale cane operation in central and western Moloka'i began, including an attempt to develop the arid lands of the Ho'olehua plain. "On the Hoolehua plain 750 acres were prepared in parallel trenches following the contours. 500 acres were actually planted in young cane shoots" (Judd 1936:12). Due to an inadequate water supply, this sugar enterprise was also unsuccessful. The well pumps, which had been installed in surface wells, were of such large capacity that they soon exhausted the fresh water, and irrigation ditches 8 miles long brought pumped water with such a high salt content that it could not be used to grow sugarcane:

Wells were dug in the lowlands and water pumped into a system of irrigation ditches above. As the pumping increased, the salt content of the water gradually increased until it became detrimental to the cane. This plantation like the others was quickly abandoned. [Wiebke 1940:1]

The ASCO plantation at Kamalō was the only Moloka'i sugar plantation to invest money in a railroad. Railroad tracks were constructed from Kaunakakai harbor "up through Palaau and Ilioli to the middle of the Hoolehua plateau" (Judd 1936:11). After failed sugar cultivation efforts, "graded railroad bed cutting through the gulches of Palaau" and "irrigation ditches [...] on the

Hoolehua plain” were all that remained (Judd 1936:11–12). No locomotives were ever shipped to Moloka'i. The tracks were removed and recycled into cattle guards. Today, stones mark the old railway route from Pālā'au to Mahana (Strazar 2000).

By 1900, all sugar production on Moloka'i had ceased (Stearns and Macdonald 1947:3). Regarding the ASCO plantation's demise, former Molokai Ranch manager, George C. Munro, recalled the following:

Hawaiians claimed that the plantation was doomed from the start, because as the company constructed the railroad along the shore to Palaau it tore down an ancient fishing heiau near Kahunui. It used the rocks for the railroad bed and ran the rails through the center of the heiau. [Morse 1953:6]

3.6 1900s

3.6.1 Molokai Ranch

Molokai Ranch became a more organized operation in the early 1900s. By 1905, the ranch had transitioned from an open country system to the paddock system (Henke 1929). During the transition, wild deer and feral goat populations were reduced, a water distribution system was implemented, and a breeding program begun. Water from the East Moloka'i mountains was gravity fed to a concrete reservoir and then piped down to the ranch. By 1929, Molokai Ranch had approximately 75 miles of water pipes and more than 100 miles of smooth wire fences. An 1886 Hawaiian Government Survey map shows several paddocks surrounding the current project area (see Figure 11). These labels were most likely added after the map's original creation, since the paddocks appear to indicate land use by Molokai Ranch, which wasn't established until 1897 and then transitioned to the paddock system from 1898 to 1905 (Henke 1929). The western and eastern project areas are within the Momomi Paddock.

In the 1920s, Molokai Ranch lands consisted of about 10,000 acres leased for pineapple cultivation, 8,000 acres of forest reserves, and 50,000 acres utilized for ranching (Henke 1929:52). Most ranching activities were associated with cattle. Beginning in 1923, Molokai Ranch imported Hereford bulls from the Parker Ranch on Hawai'i Island, which resulted in a beef cattle population of over 4,500 head by 1929. In 1929, the ranch also had 400 swine and about 200 sheep. Sheep ranching was formerly more prevalent, with sheep numbers up to approximately 17,000 in 1907. However, the combination of sheep and cattle ranching caused over-pasturing, and since cattle ranching was more lucrative, sheep ranching began phasing out. In 1951, grazing land for sheep ranching remained a viable industry, despite its heyday being many decades prior (Carlson 1951). Cattle ranching remains an important industry on Moloka'i.

Molokai Ranch also produced honey. In 1903, an Italian breed of bees was purchased and crossbred with the island's endemic species (Cooke 1949). In 1928, 350 tons of *kiawe* honey were produced on Molokai Ranch, most of which was sold to Germany (Henke 1929).

3.6.2 Hawaiian Homes Commission

In 1920, the U.S. Congress passed the Hawaiian Homes Commission Act to administer and manage some 200,000 acres of land that belonged to the government of the Kingdom of Hawai'i or was recognized as Crown lands. Agricultural homesteads were to be leased to Native Hawaiians, with leasehold terms generally lasting 99 years at one dollar a year. The following year, the

program began attracting people to Moloka'i. Kalaniana'ole Colony was the first homestead established under the Hawaiian Homestead Act of 1920. The settlement is located in Kalama'ula Ahupua'a, near the southern shores of Moloka'i Island.

The Moloka'i homestead program initially was impacted by many problems, including drought and high winds (McGregor 1990:37–38). Insect pests were also a discouraging impediment, at one point accounting for destruction of over 50% of many of the most desirable crops on the island (Wiebke 1940). A *Mauī News* article from 1940 recounts the following:

With the birth of the Hawaiian Homes commission, Hawaiian homesteaders began pouring into the Kala'e and Ho'olehua sections. For a number of years extensive truck crops of every kind were raised successfully, but today this project has become a sorrowful enigma. [Wiebke 1940:1]

The 1922 USGS map (Figure 12) shows the project areas as relatively undeveloped. An unimproved Moomomi Road passed through the western project area and a Waihi Pipeline and adjacent unimproved road passed to storage tanks 1.3 km southeast of the eastern project area. The pipelines reflect the burst of agricultural activity.

Despite such difficulties, people managed to cultivate their plots (McGregor 1990:37–38). For instance, at Kalaniana'ole Colony, water for “bathing, laundry, and farming” was originally supplied by wooden flume from a spring in Kaunakakai, with drinking water provided by a spring in Kalama'ula (Tomonari-Tuggle 1990:10). Farming was diversified and successful crops included corn, watermelons, cucumbers, sweet potatoes, eggplant, and papaya (Keesing 1936; Wiebke 1940). In addition, demand became high for Moloka'i alfalfa, and homestead tomatoes “controlled the Honolulu market” in 1924 (Keesing 1936:56).

Overall, the program succeeded and was expanded to include 11,400 acres of Pālā'au-Ho'olehua beginning in 1924. The current project area consists of approximately 36.4 acres (14.7 hectares) of these Pālā'au-Ho'olehua Homestead lands and includes Lots 17 and 104D-1. Due to the homestead program, the Pālā'au-Ho'olehua region had the largest population of Native Hawaiians in 1930. Of the 1,031 residents, 826 were Hawaiian (McGregor 1990:10).

In addition to agricultural pursuits, the Hawaiian Homes Commission encouraged raising livestock and ranching. Raising pigs brought the most revenue and economic value; however, a few families sold eggs and every family owned some cattle (Keesing 1936). In 1929, 54 homesteaders owned a total 358 cattle, including two Hereford bulls, 106 horses, 15 mules, and six donkeys (Henke 1929). Community pastures allowed each lot holder to graze up to 60 head of livestock. Additionally, three 250-acre pastures were reserved specifically for ranching. Pastures in Ho'olehua and Pālā'au totaled 6,630 acres. In 1935, 979 cattle, 72 horses, and 25 mules utilized the community pastures though less than half Ho'olehua families had cattle on these lands.

The Hawaiian Homes Commission was also instrumental in the establishment and expansion of Moloka'i High School, approximately 5.5 km east of the current eastern project area. The school gym was constructed between 1931 and 1932 by the Hawaiian Homes Commission and the county. Moloka'i High School became the first and only high school on the island when it expanded from an intermediate school to a high school in 1939. Situated at Ho'olehua on Hawaiian Homes Commission land, it opened to all students on the island with an enrollment of over 400. In 1950, the board of supervisors approved negotiation of the purchase of 40-acres of Hawaiian

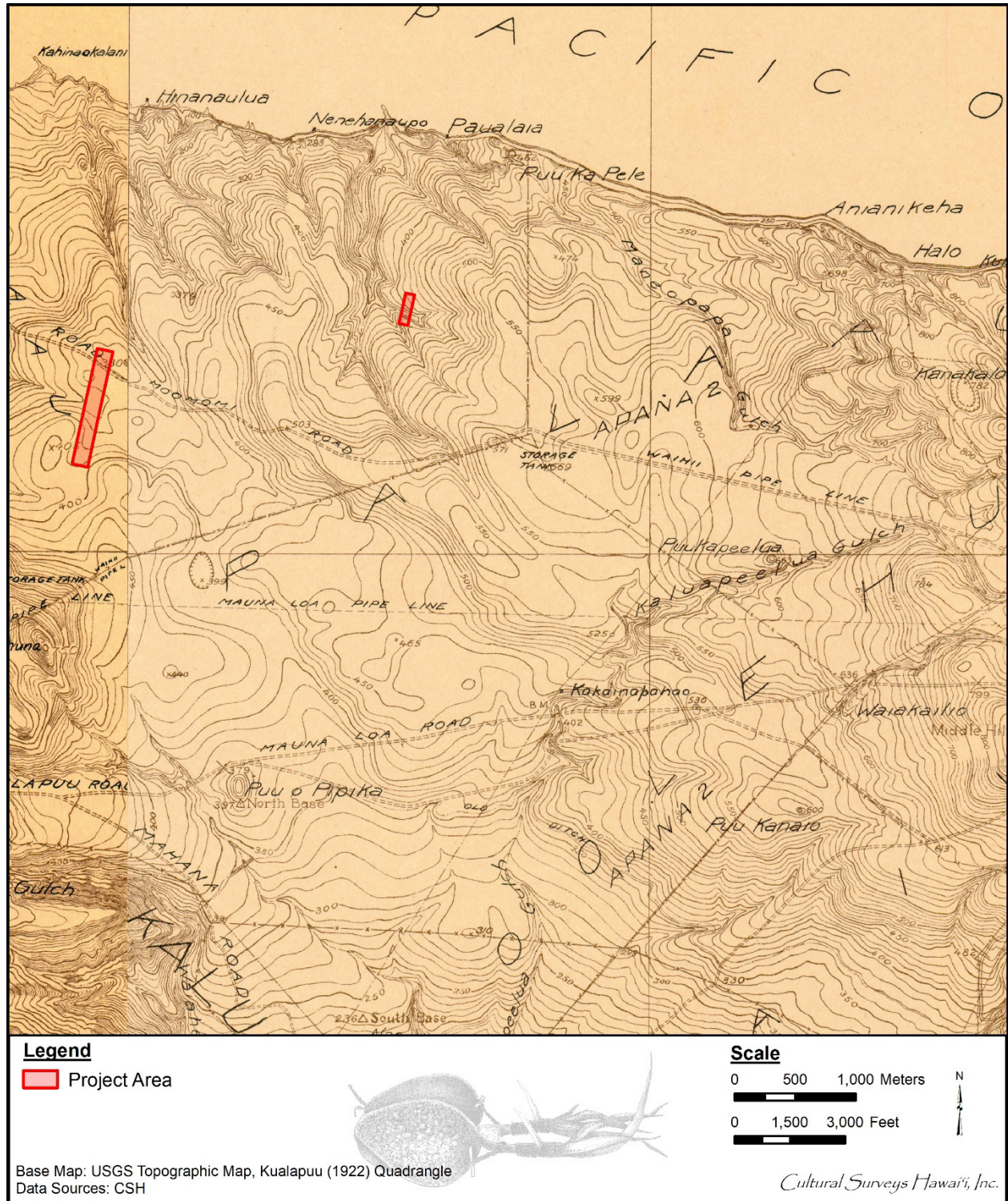


Figure 12. Portion of 1922 USGS topographic map of Kualapuu quadrangle, showing the project areas as relatively undeveloped (an unimproved Moomomi Road passed through the western project area and a Waihi Pipeline and adjacent unimproved road extended east to storage tanks southeast of the eastern project area)

Homes Commission lands adjacent to the extant campus for construction of a new high school site (Maui News 1950).

3.6.1 Pineapple

Starting in 1918, independent pineapple growers tilled “the hillsides from Ualapua to Halawa, but due to high cost of operations these small plantations were short lived” (Wiebke 1940:1). The commercial pineapple industry arrived on Moloka'i in the early 1920s, with Molokai Ranch owning a majority of the leased pineapple lands (Lee-Greig and Hammatt 2008). Pineapple cultivation began in Pālā'au-Ho'olehua in 1926, when Libby, McNeill and Libby signed up some homesteaders to grow pineapple on homestead land operated in leased blocks of several 35-acre homesteads, which were cultivated by Libby.

By 1929, the California Packing Corporation (Calpac) had begun enlisting Native Hawaiian homesteaders in the Kualapu'u region, including areas near the current project area, to grow pineapple. The system adopted by both Libby McNeill & Libby and Calpac involved homesteaders growing pineapple in blocks of land leased by the plantation. Between 12 to 15 abutting homesteads were assembled by the pineapple plantation to form a contiguous area that was assigned a block number (Figure 13). Homesteaders under this block system planted, tended, and harvested to receive a proportionate share of the sale of fruit from each block. The harvested fruit was trucked by Calpac to a pier constructed at Kaunakakai, where it was crane-loaded onto barges and shipped to the Calpac cannery at Kahului, Maui (Larsen and Marks 2010:371–372). Homestead residents received almost two million dollars in cash payments for their efforts between 1929 and 1935.

Despite droughts, including one between 1944 and 1945 that caused the loss of the entire crop, pineapple production in the vicinity of the project area continued until the 1970s (Larsen and Marks 2010:379). Dole Pineapple, which had subsumed Libby, McNeill and Libby's operations, ceased pineapple cultivation in 1975. The California Packing Corporation had planned on closing the same year but continued cultivation until 1983, when a majority of its production ceased business on Moloka'i (Larsen and Marks 2010:382).

3.6.1 School Farm

In the early 1920s, Ho'olehua consisted of an undeveloped wide, grassy plain used for pasture with little development and no public school. Several families moved into the area when the land opened to Hawaiian homesteading and California Packing Corporation started their pineapple plantation at Kualapu'u, formerly a Molokai Ranch camp. Kalae School, a one-room schoolhouse at Kalae, eventually moved to the old recreation hall at Kualapu'u to better accommodate students coming from the ranch camp. As homesteads and pineapple cultivation expanded in the area, a new school was constructed at Ho'olehua to meet growing numbers of student enrollment; in 1926 the students at Kalae School moved to the new school. The staff originally consisted of three teachers, including an instructor of agriculture, but within three years the faculty grew to 15.

The school established a progressive agricultural department in 1930, which rapidly developed into a highly reputable agricultural training center. Modern methods of farming and animal husbandry were taught to male vocational students (numbering 70 in 1939). Students cultivated crops designed to give them needed experience and experimented with plantings to test for possible improved crops or strains for use on the island. About half of the vocational boys came from

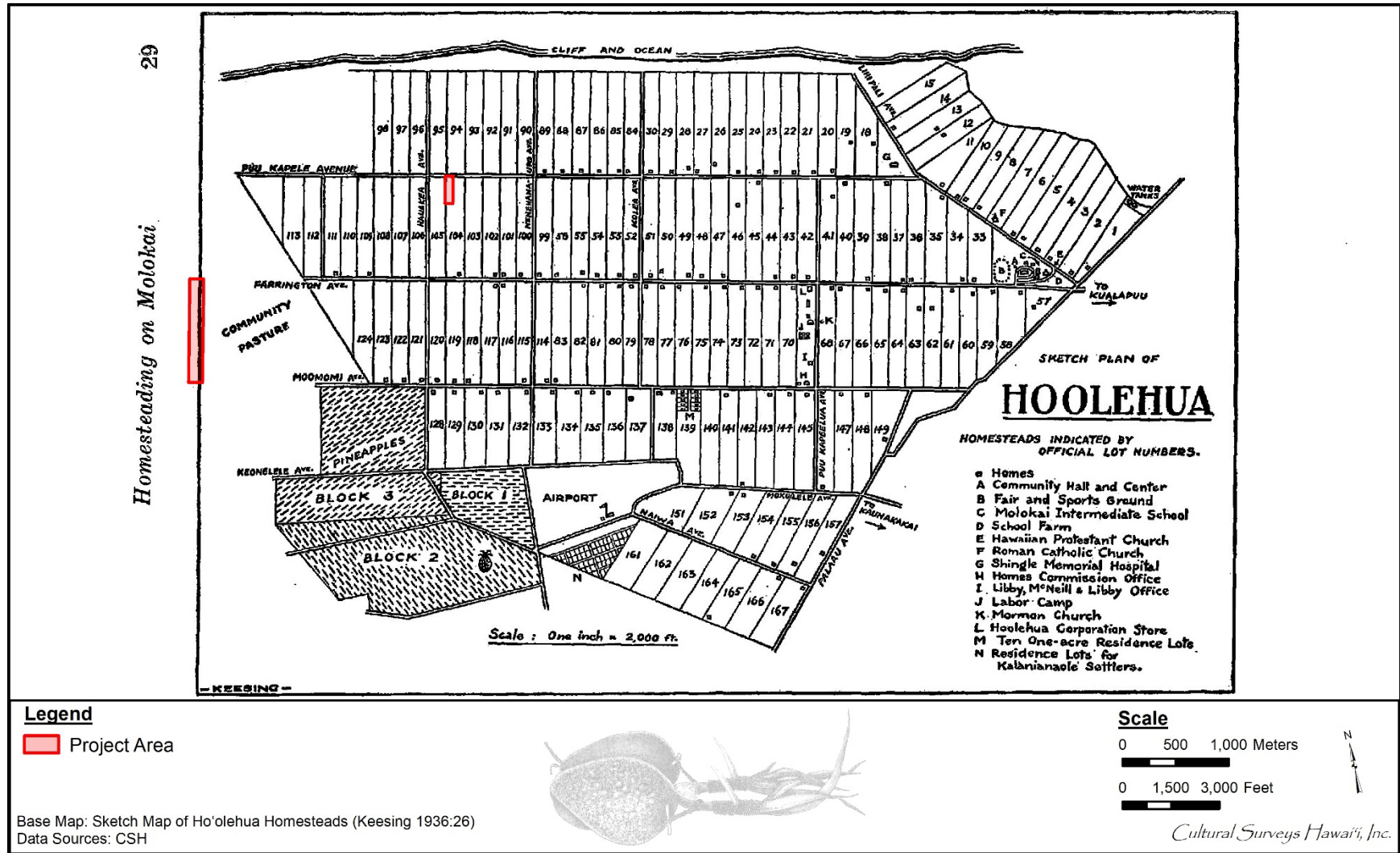


Figure 13. Sketch plan of Ho'olehua Homesteads (Keesing 1936:26) showing current project areas (the eastern lot was within the indicated Hoolehua Homesteads area while the western project area appears to have been in "Community Pasture")

homesteads and the other half from Calpac-employed families. A cooperative program between Moloka'i High School and Calpac was initiated in 1948, where boys from the vocational program worked at the plantation in the mornings before school for seniority consideration for employment post-graduation (*Maui News* 1948).

Hawaiian Homes Commission provided a 26-acre farm (Figure 14) to the department for educational purposes on “well selected land [...] makai of the Hawaiian Homes Commission office in Ho‘olehua” (*Maui News* 1940:1). The farm had chicken houses and pigpens built by the vocational students in the farm shop. “The instructor of agriculture and three classes of boys spent weeks with tractors and ropes clearing lantana” from the area to be cultivated (*Maui News* 1939:6). A 1939 news article describes the farm:

The farm is up to date and well equipped. It serves the community as a practice ground for students; a source of improved livestock, poultry and plans; an example to the community of good landscaping and agricultural methods and is an experimental ground for new crops. Here the boys are receiving thorough instruction in the fundamentals of good scientific farming coupled with training to farm management—increasingly important because of the vital necessity that the modern tiller of the soil have a good working knowledge of farm economics in Hawaii if local small scale agrarian enterprises are to be operated at a profit. [*Maui News* 1939:6]

Figure 15 illustrates a typical resident homestead lot in Ho‘olehua during the 1930s. Families farmed a variety of crops in Ho‘olehua, including corn, melons, tomatoes, cucumbers, pumpkins, sweet potatoes, squash, peanuts, beans, onions, and cabbage (Keesing 1936). Pumpkin poi became a staple for these homesteaders. Though dryland agriculture had successes at Pālā‘au-Ho‘olehua Homesteads, constant care was needed to combat hardships caused by droughts, winds, and pests.

3.6.2 Corn

Corn was grown on Moloka'i from as early as the 1920s. In a letter to the editor of the *Honolulu Star-Bulletin* in 1922, the writer comments quite fondly of Moloka'i corn (Figure 16). In the 1940s, the Moloka'i corn project was intended to provide a local source of food for livestock, since all feed corn was being imported (*Honolulu Advertiser* 1944a). Approximately 1,400 acres of field corn and 1,000 acres of milo maize were planted and harvested by resident high-schoolers and homesteaders. Homesteaders also grew feed corn separate from the Moloka'i corn project (*Honolulu Advertiser* 1944b). In Ho‘olehua, large amounts of corn were sold or fed to livestock (Keesing 1926).

In 1967, Kaye Waldorf became a third partner in Hawaiian Research, Ltd. and moved from his 430-acre corn and soybean farm in Iowa to become resident manager of the company and grow corn on Moloka'i (Lynch 1968) (Figure 17). Hawaiian Research, Ltd. began experimenting with seed corn on Moloka'i in the winter of 1966; by autumn 1968, the company was growing over 900 strains of corn. Fertile soils, a year-long temperate albeit arid climate, a culturally diverse environment for his teenage children, and an “intellectual curiosity” attracted Waldorf to experimental agricultural farming on Moloka'i (Lynch 1968:B-1).

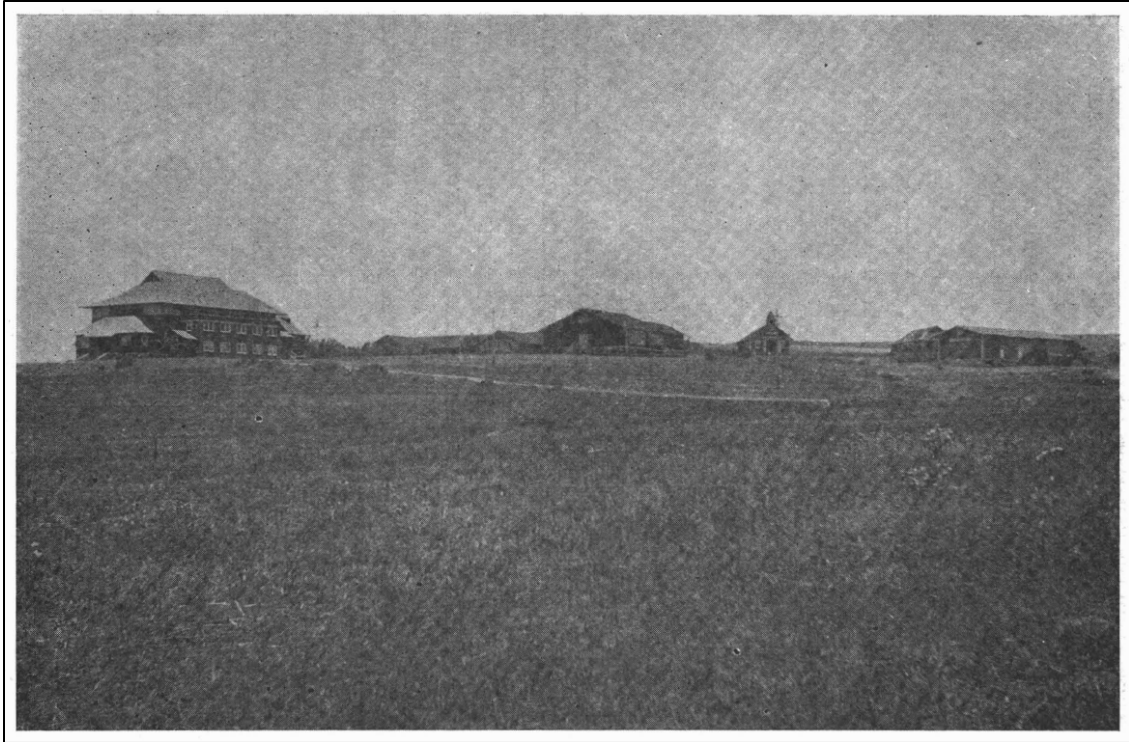


Figure 14. Community Center for Ho'olehua Homesteads including, from left to right, a hall, school, church, and farm, ca. 1939 (Keesing 1936:124)

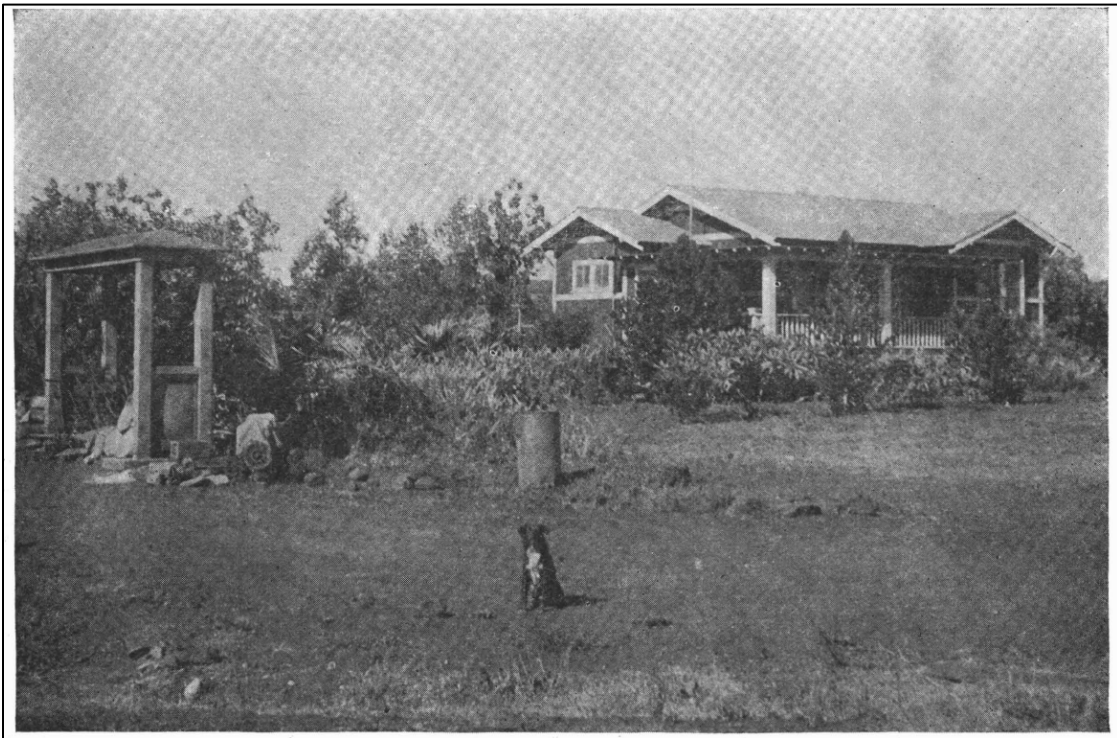


Figure 15. A Ho'olehua homestead in 1939 (Keesing 1936:59)

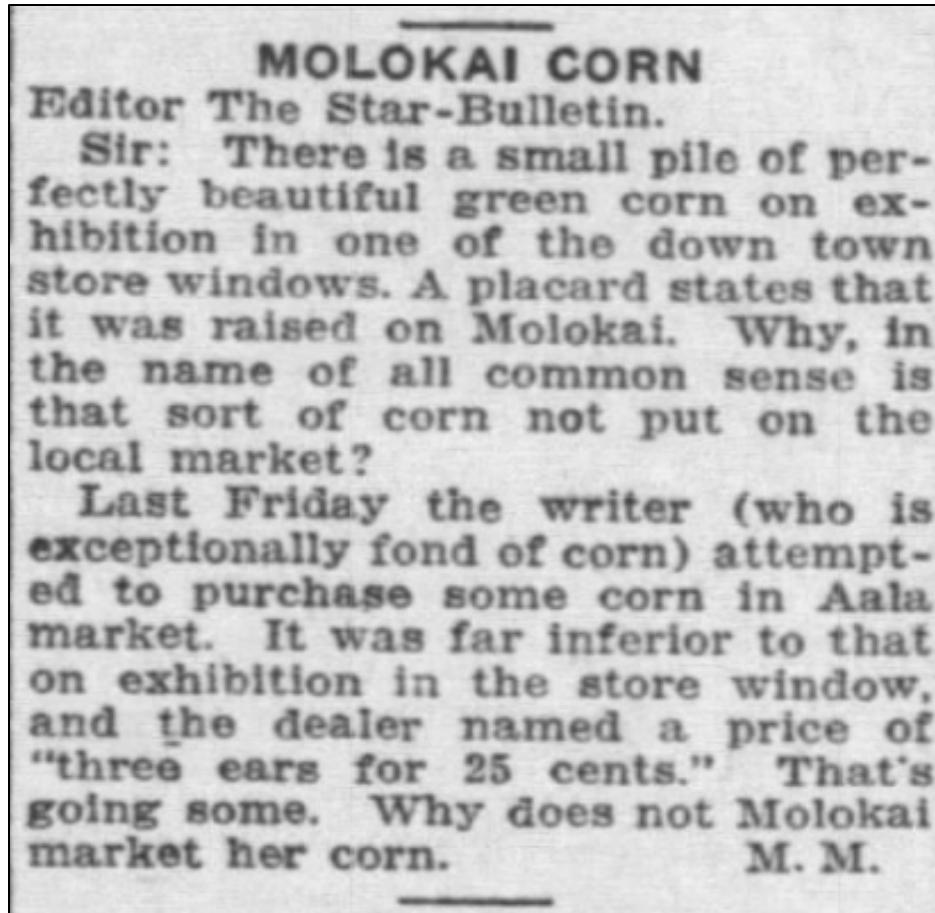


Figure 16. Letter to the editor praising the quality of Moloka'i corn in 1922 (*Honolulu Star-Bulletin* 1922:6)



Figure 17. Experimental corn farmer, Kaye Waldorf, in West Moloka'i; pipeline (left) transported water to his crops (Roll 1968:B-1)

The same State Department of Land and Natural Resources (DLNR), Water and Land Development Division irrigation project that supplied water to about 14,500 acres of pineapple fields in West Moloka'i was also used to irrigate the corn fields, which comprised a portion of 1,500 acres of diversified agricultural land that also included "experimental potato plantings and some Hawaiian Homestead truck farm lands" (Lynch 1968:B-1). In October 1968, the final stages were underway for a project involving 5 miles of tunnel and additional miles of pipeline to transport water from the wet, northeastern Waikolu Valley to crops in West Moloka'i. In addition, a 1.4-billion-gallon earth reservoir was being constructed at a central location in Kualapu'u to store any excess water collected during the rainy winter season in order to provide a year-round supply of water to arid West Moloka'i's crops. Kualapu'u Reservoir is located approximately 6 km southeast of the current eastern project area. While the lack of a natural water supply certainly created obstacles, Waldorf preferred the more controlled distribution of water to his crops via a pipeline (see Figure 17) to the unpredictable rains he experienced as a corn farmer in Iowa.

3.6.3 Infrastructure

In conjunction with agricultural, residential, and economic changes, the twentieth century also brought infrastructure improvements to the island of Moloka'i. On 13 May 1909, a telephone line was authorized for Moloka'i Island (*Maui News* 1926). In 1925, construction began on a road connecting Kaunakakai to Ho'olehua, which was used regularly during Moloka'i's pineapple era to transport loads for export. Access roads within the homesteads were established and have been maintained by the Hawaiian Homes Commission without charge to homesteaders or Maui County (Keesing 1936:49). Aerial photographs and topographic maps show unpaved roadways traversing the current project area(s) vicinity in the 1950s and 1960s (Figure 18 through Figure 21). The 1950 aerial photograph (see Figure 18) shows pineapple cultivation neighboring, but not within, the project areas. The 1964 USGS aerial photograph (see Figure 20) indicates active cultivation of pineapple in the western project area.

In 1932, Molokai Electric Company was incorporated and established an electric generating station in Kaunakakai with one 200-horsepower diesel generator, which first supplied electricity to 59 customers in Kaunakakai Village that year (Young 1961). By the 1960s, the company serviced the entire island with nine generators channeling electricity through 80 miles of transmission lines (Young 1961).

Following the development of aerial combat in the First World War, the availability of war-surplus aircraft for civilian aviation in the Hawaiian Islands led to the establishment of a civilian airfield at Ho'olehua in 1919 named Moloka'i Field. In the 1930s, improvements were made at Moloka'i Field including the construction of a terminal building for the use of Inter-Island Airways, the first commercial inter-island carrier. The segregation of part of the civilian airfield at Ho'olehua for military use occurred when the U.S. Army Air Corps established a portion of the field as "Homestead Field," beginning in September 1931 (Horvat 1966:38,40–47). By the time the United States entered World War II in 1941, aircraft of the Fifth Bombardment Group were stationed at Homestead Field. Heavy rains caused water and mud to flow into the operating area of the airport until a drainage ditch was completed in 1953. In 1954, the sod-on-sand runway was replaced by a paved runway and the airport terminal was built in 1957. Figure 19 shows the airport during the 1950s prior to the construction of the terminal. Improvements to the airport continued from 1969 through 1993, including terminal expansions, perimeter security fence installation, a

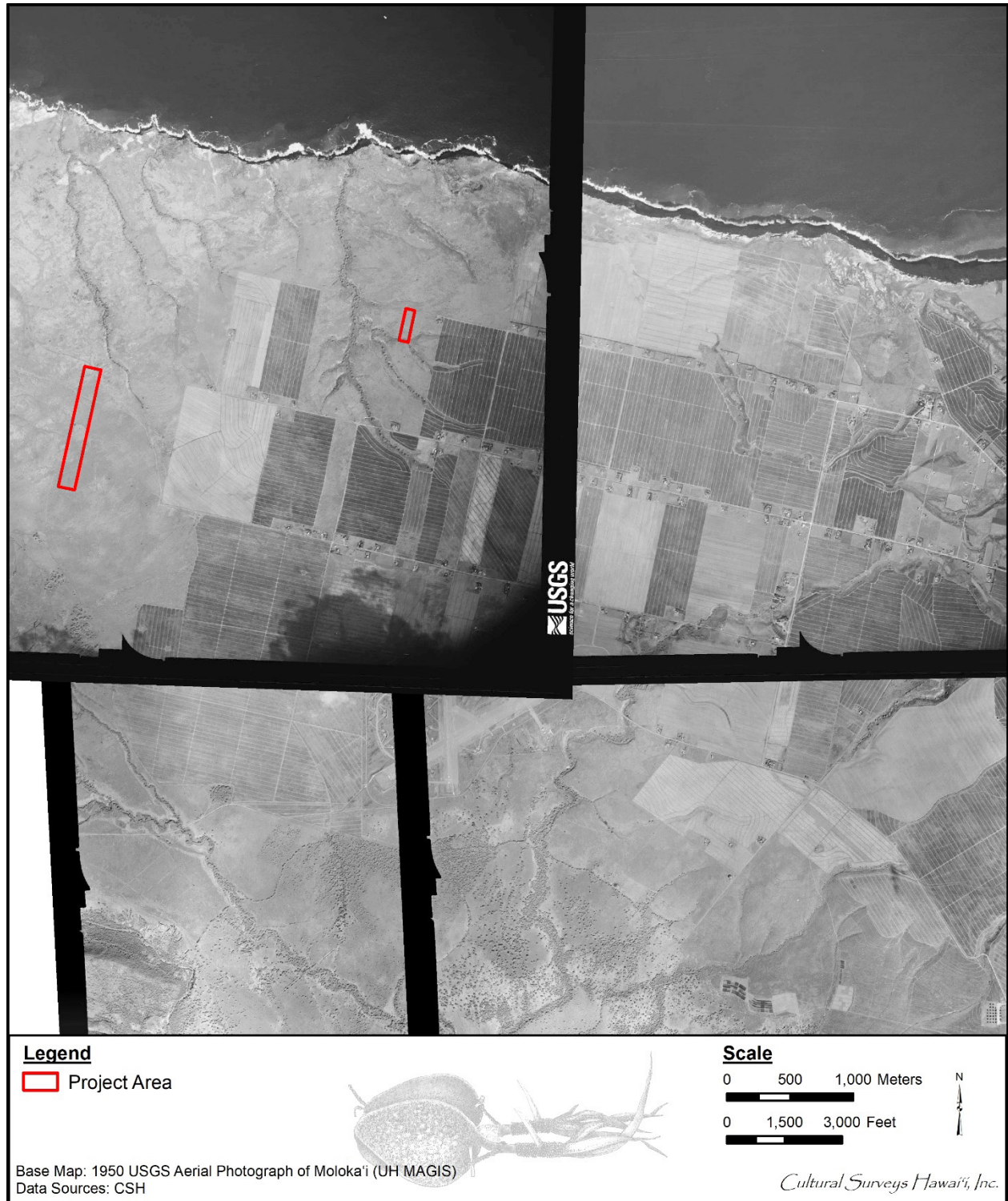


Figure 18. 1950 USGS aerial photograph of Molokai (UH MAGIS) showing pineapple cultivation neighboring, but not within, the project areas

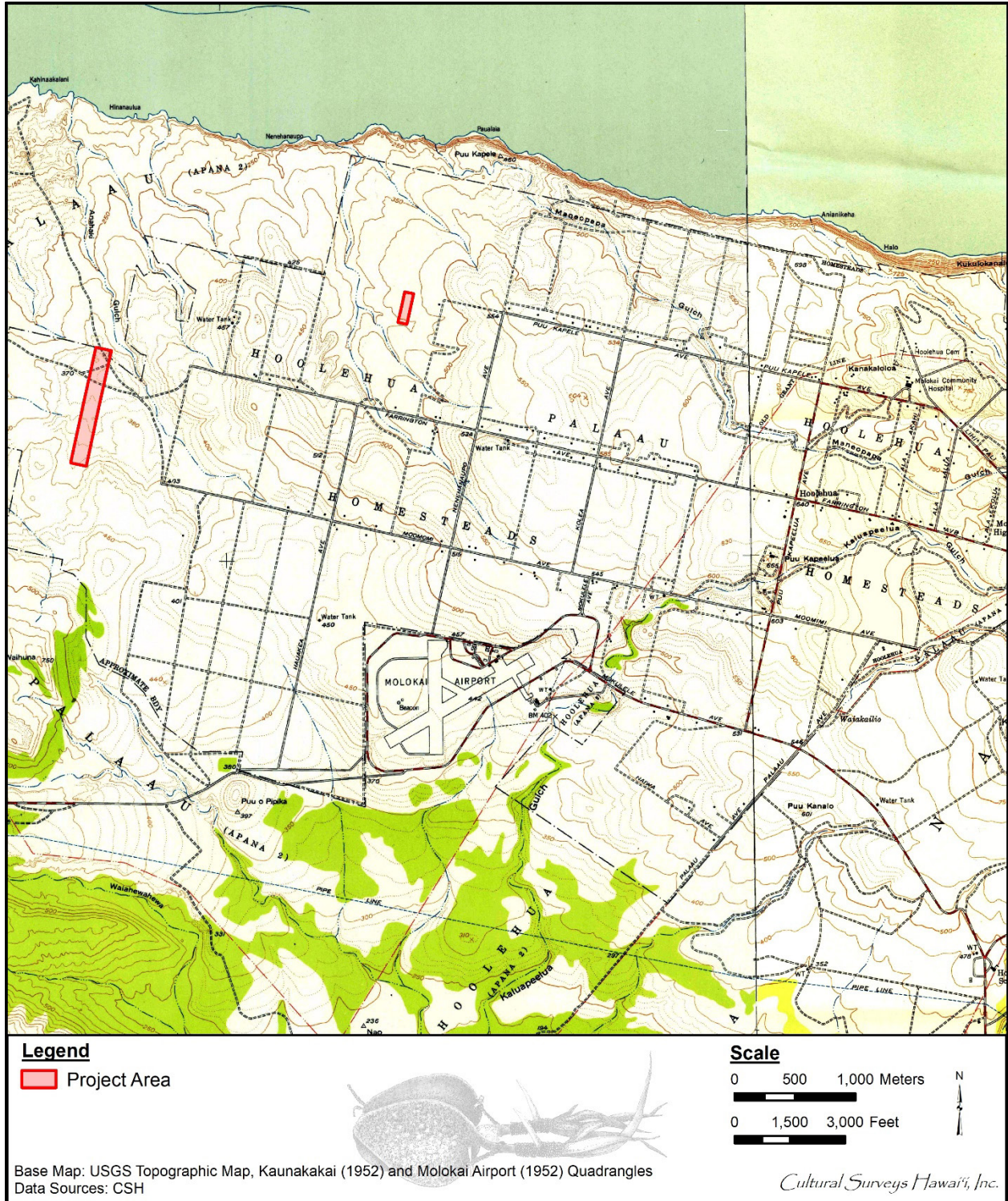


Figure 19. Portion of 1952 Kaunakakai and Molokai Airport USGS topographic quadrangles showing unpaved roads are present within and surrounding the project area; the pipeline south of the project area(s) was used to transport water from East Moloka'i

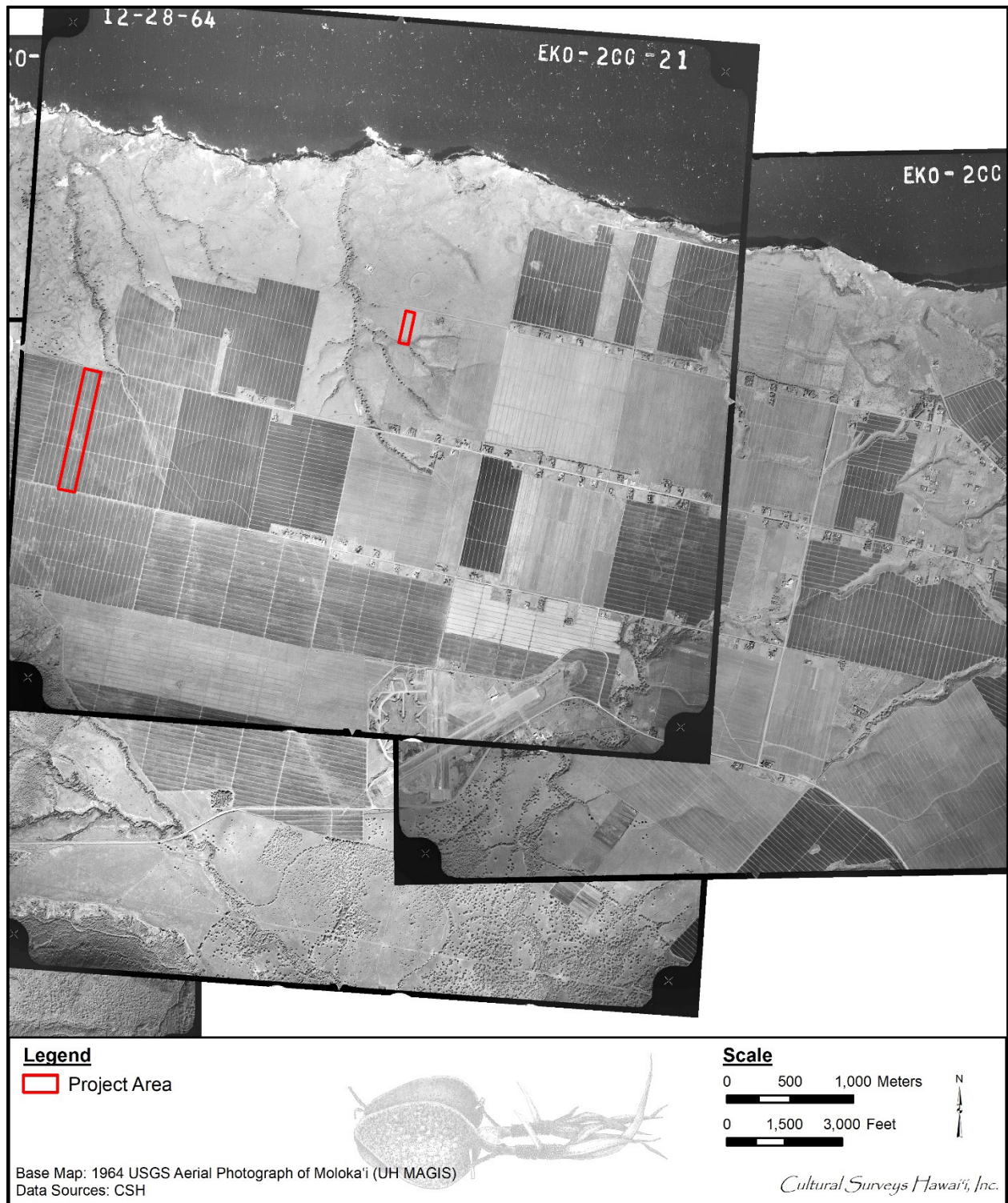


Figure 20. 1964 USGS aerial photograph of Moloka'i showing the present project areas (note the general absence of trees in the project areas and the indicated active cultivation of pineapple in the western project area)

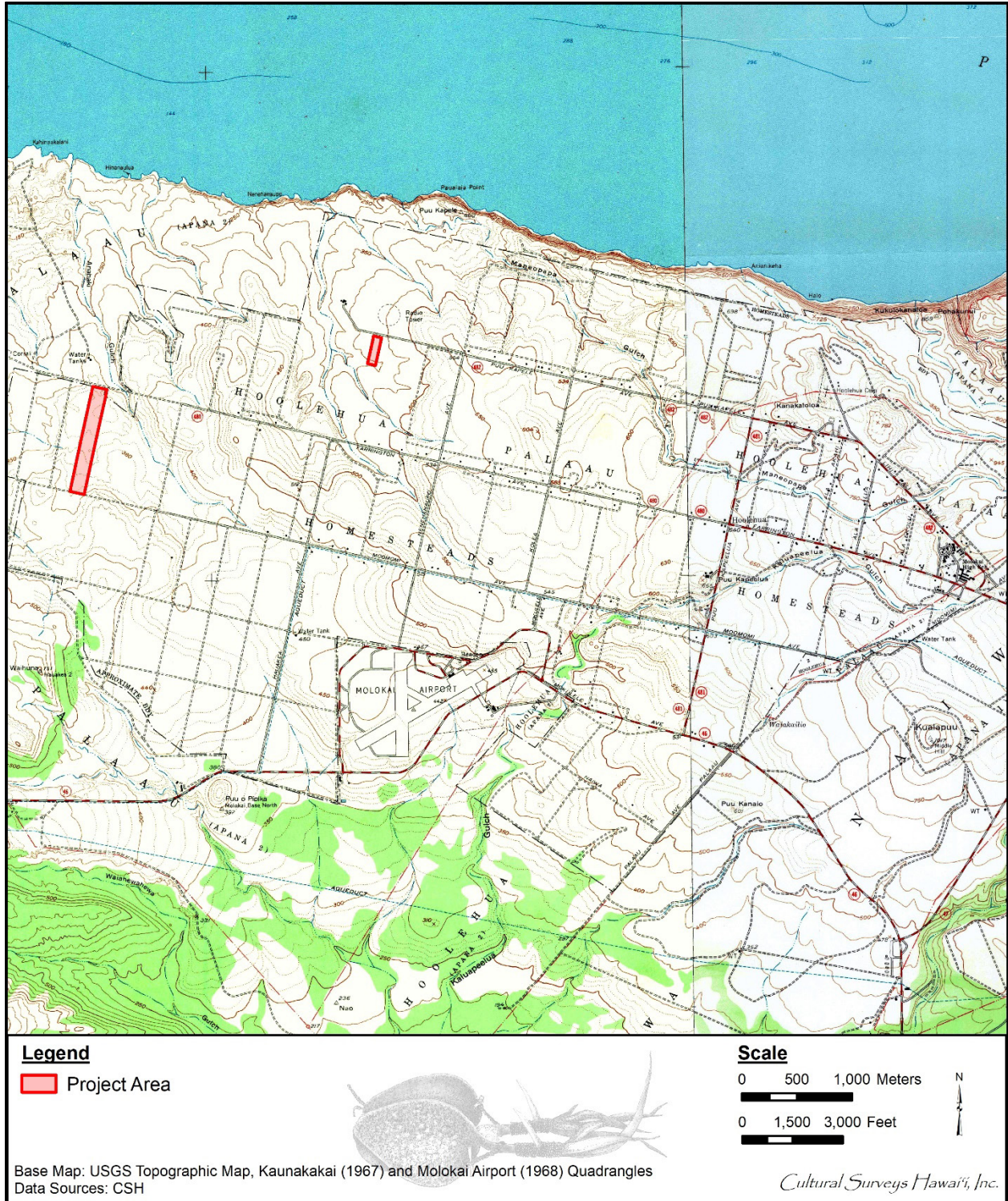


Figure 21. Portion of the 1967 Kaunakakai and 1968 Molokai Airport USGS topographic quadrangles showing unpaved roads abutting the project area(s) and an aqueduct crossing the Ho'oleuha Plain to the south

new FAA air traffic control tower, a fire protection system, and a maintenance base yard (State of Hawai'i 2008).

A heliport associated with the United States Navy reservation, appears on a 1983 topographic map (Figure 22) and 1993 topographic map quadrangles (see Figure 1). However, this development does not appear in recent aerial imagery (see Figure 5).

3.7 Contemporary Land Use

Pineapple production on Moloka'i phased out during the 1970s, with complete abandonment by the early 1980s. Tourism and service-related industries replaced commercial agriculture as the economic foundation of urban areas. The towns of Maunaloa and Kualapu'u have continued to support sizeable populations, though Kaunakakai has remained the island's major urban center.

The development history of large land holdings on the island of Moloka'i includes Molokai Ranch Company lands, some

55,575 acres, or 35 percent of the entire island. This ranch includes 20 miles of coastline and two hotel properties, the former Molokai Lodge and the former Kaluakoi Hotel, two golf courses, residential, agricultural and conservation land, as well as nearly 30 acres of commercial land near Kaunakakai and 85 acres of industrial land at Maunaloa and Kualapuu. [Magin 2017]

The company that owned all these properties, Molokai Properties Limited, ceased all operations on the island in 2008 (Mangieri 2019). These holdings have been listed for sale since 2017. While community interests actively desire purchasing the lands for residents and/or the state, the fate of these lands and, consequently Moloka'i in general, is still unknown.

DHHL proposes to construct infrastructure improvements including clearing, grading, and installation of roadway, electrical, connections to domestic water, and irrigation water utilities. The proposed plan calls for ground-disturbing activities to be confined to the two subject parcels, but will extend to existing roadways for access and connection for utilities. These improvements will support DHHL beneficiaries through the provision of essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action.

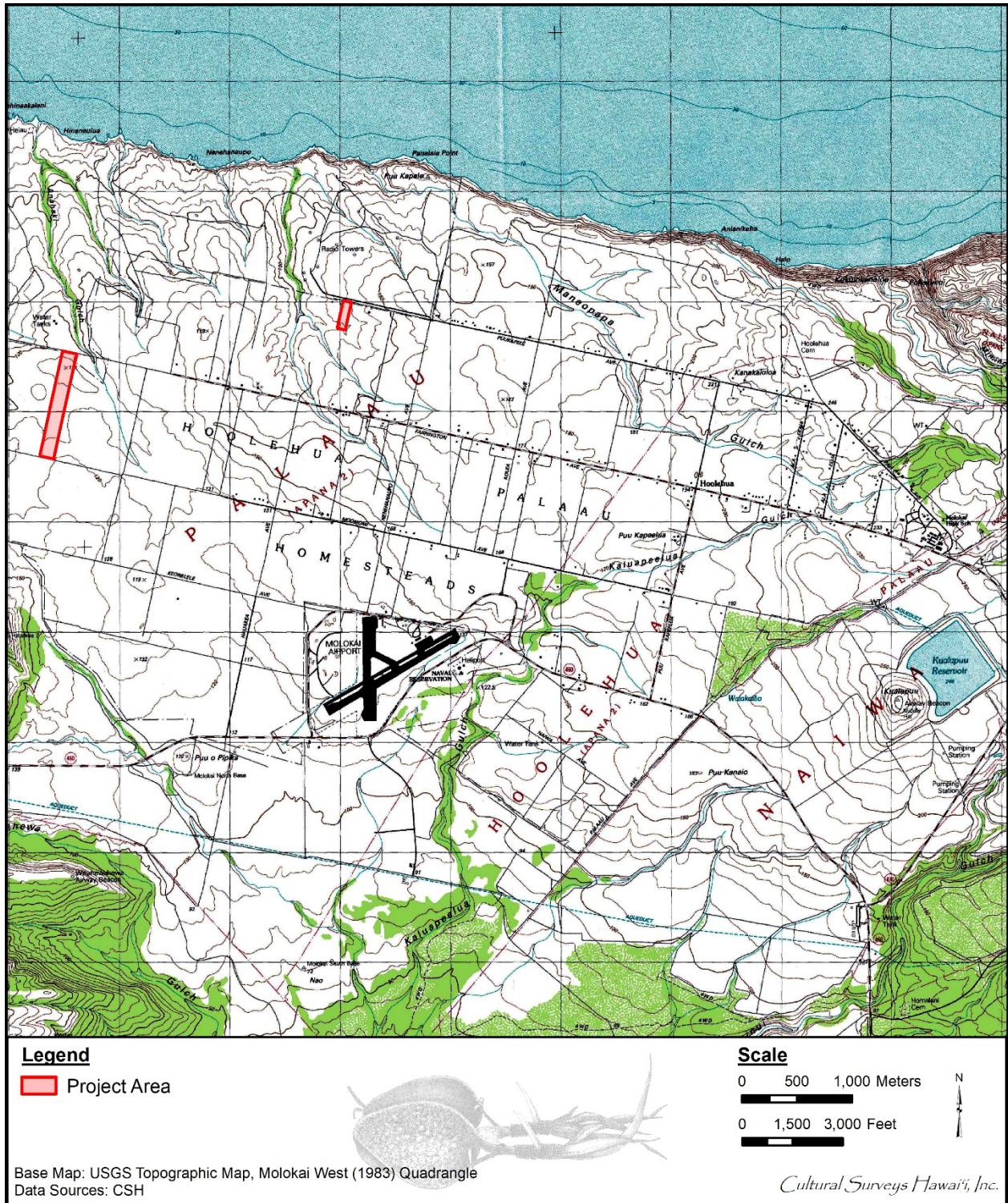


Figure 22. Portion of 1983 Molokai West USGS topographic quadrangle showing an aqueduct crossing the Ho‘olehua Plain to the south and the Kualapuu Reservoir southeast of the project area(s)

Section 4 Previous Archaeological Research

Previous archaeological studies conducted within approximately 3.0 km (1.9 miles) of the current project area include archaeological reconnaissance, field inspections, inventory surveys, and monitoring programs (Figure 23 and Table 2). No historic properties have been previously identified within the project area, and few have been identified within the vicinity (Figure 24 and Table 3).

4.1 Summers (1971)

Archaeological work accomplished prior to the late 1960s has been summarized by Catherine Summers (1971) in *Moloka'i: A Site Survey*, the most comprehensive island-wide study to date. Based on previous research, particularly the John F.G. Stokes (1909) survey of *heiau* and other major sites on Moloka'i, and through revisiting some 100 locations, Summers (1971) compiled a brief history and archaeological site survey for Moloka'i Island with the Bernice Pauahi Bishop Museum. Data in the compilation include documentation by M.D. Monsarrat in 1884 published by Thrum (1908); Cobb (1902); Cooke (1949); Emory's data in Bonk (1954); unpublished materials by Stokes from surveys in 1909 and Dunn in 1957, and map records by Cartwright. Summers (1971) documents over 300 sites, mainly concentrated along the coastal regions. These sites are described by individual *ahupua'a*, as well as legendary, traditional, and historical information related to Moloka'i. None of the sites were identified within the current project area. However, Summers (1971) documents seven sites in the project area vicinity.

Sites 11A and 11B are approximately 3.5 km southeast of the eastern project area. Together these two sites comprise the Kape'elua Complex, a historic property designated by the SHPD as SIHP # 50-60-03-11. Summers described the sites as follows:

Site 11A. 'Caterpillar Stones,' Ho'olehua 2

The stones are on top of the hill, Pu'u Kape'elua, 'The Caterpillar Hill.'

Cooke gave the following legend about these stones:

[...] this beautiful girl was visited each night by a lover who left before daylight. She was unable to discover who he was. This suspense told on her, and she began to waste away. A priest, consulted by her parents, advised the girl to attach a piece of white tapa to a wart on her lover's back. In the morning, shreds of tapa helped to trace the demi-god lover to the hill Puu Peelua, in the middle of Hoolehua. The kahuna (priest) and friends of the family found a large peelua (caterpillar) asleep on the hill. The kahuna ordered the people to collect wood which was placed around the sleeping peelua, and a fire was lit. As the heat of the fire increased, the caterpillar burst into myriads of small caterpillars which were scattered over the plain. That accounts for the army-worm pest, called peelua (Cooke, 1949:102).

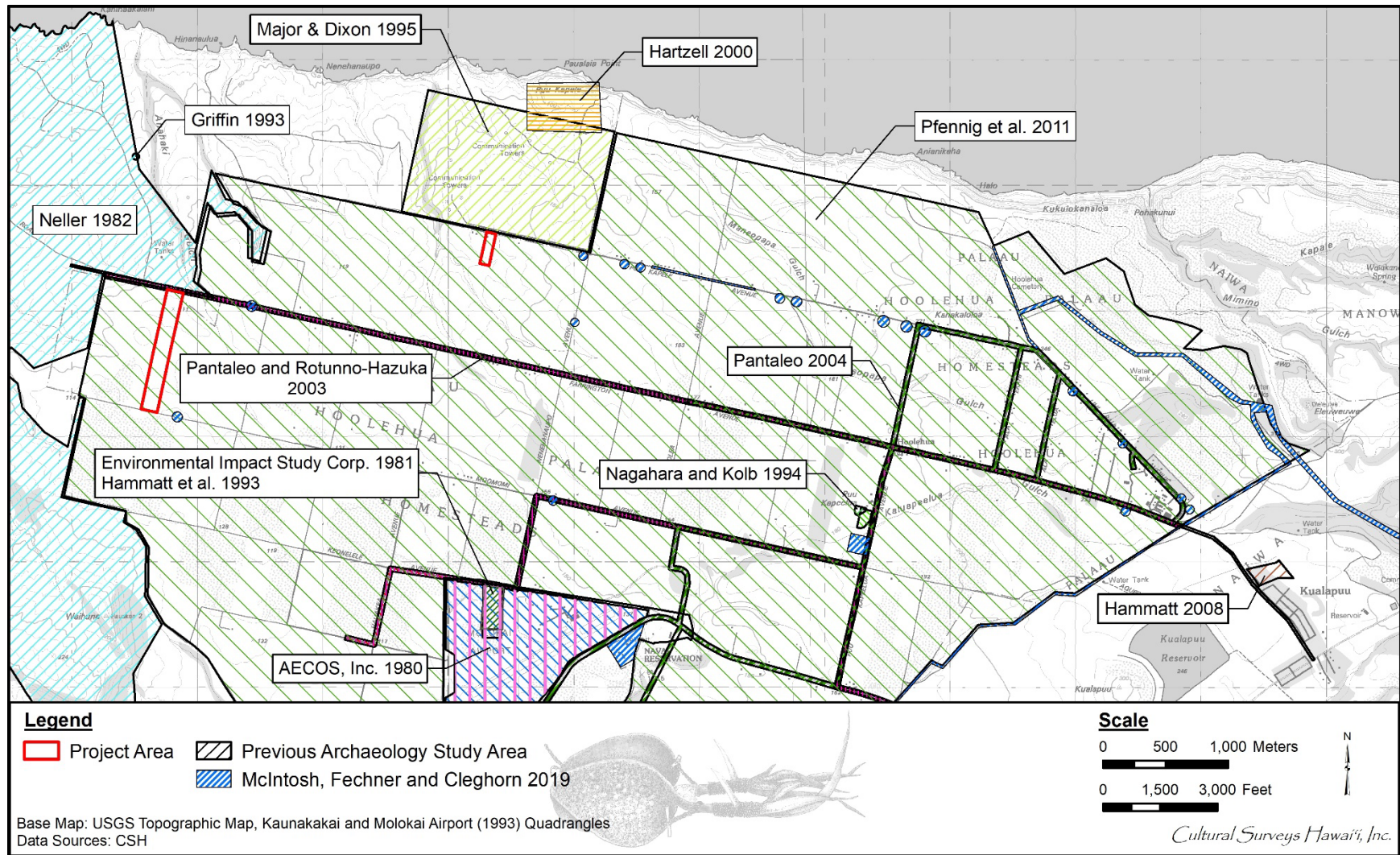


Figure 23. Previous archaeological studies in the project area vicinity depicted on a portion of the 1993 Kaunakakai and Molokai Airport USGS topographic quadrangles

Table 2. Previous archaeological studies conducted in the project area vicinity

Reference	Type of Study	Location	Results
Summers 1971	Site survey	Island-wide	Documented four sites in project area vicinity: 11A (SIHP # 50-60-03-11A), Caterpillar Stones; Site 11B, Stone at Pu'u Kape'elua; Site 12, Lepekaheo Heiau; and Site 16, Heiau at Anahaki
AECOS Inc. 1980	Archaeological reconnaissance survey	Moloka'i Airport and proposed airport site near Mo'omomi Beach	No historic properties identified in project area vicinity; however, a complex of WWII-era (not historic at time of study) bunker sites identified near Moloka'i Airport, west of project area
Environmental Impact Study Corp. 1981	Biological and archaeological reconnaissance survey	90 acres by Cooke Land Co., Inc., TMK: [2] 5-2-011:007 por.	Failed to locate Summers Site 106 (petroglyphs) within their study area (likely buried or destroyed) but observed two remnant features that indicate possible agricultural use of seasonal stream flow in gulch
Neller 1982	Archaeological aerial reconnaissance	Ho'olehua training Area, particularly north coastal Pālā'au	Documented Summers Site 16 <i>heiau</i> at Anahaki and numerous stone walls and platforms near Kahinaokalani Point he associated with Summers Site 17
Griffin 1993	Archaeological reconnaissance	North/central Ho'olehua uplands	She noted, "sites consisting of enclosures, L-shapes, U-shapes on the low promontories along the coast, in addition to the shelter sites noted by Summers between sites 16 and 17"; main focus associated with an anomalous growth of ti plants in an area with a wall segment, and lithic scatter and featuring a boulder that showed evidence of human modification as a "basin"
Hammatt et al. 1993	Archaeological inventory survey	One parcel in Pālā'au 2 adjacent to airport, and two parcels in Na'iwa	No historic properties identified

Reference	Type of Study	Location	Results
Nagahara and Kolb 1994	Field inspection	Kape'elua complex, Ho'olehua-Pālā'au Homesteads	Confirmed and GPS mapped Kape'elua Complex, SIHP # 50-60-03-11 (Summer Sites 11A and 11B)
Major and Dixon 1995	Archaeological inventory survey	364 acre (147.4 hectares) USAF Receiver Station near Ho'olehua	Two previously unrecorded historic properties documented consisting of pre-Contact dwelling (SIHP # 50-60-02-1624) and another structure of unknown function (SIHP # 50-60-02-1623); SIHP # -1624 consisted of enclosure with marine shell deposits, fire-cracked rocks and reworked basalt flake; SIHP # -1623 included two enclosures, each with minor amounts of marine shell and some modern refuse and 20th century rubbish dumps
Hartzell 2000	Archaeological inventory survey (supplemental)	USAF Molokai Receiver Station	Recorded 37 surface features for SIHP # 50-60-02-843 (Pu'ukaPele Rock Wall complex), consisting of 26 stacked-faced walls, five alignments, four enclosures, a depression, and a prominent, massive natural boulder; boundary or possibly religious function posited for 15 of the features with other features associated with water control/ diversion, habitation and a planting area
Pantaleo and Rotunno-Hazuka 2003	Archaeological monitoring	Ho'olehua uplands to coastal Kalama'ula	No historic properties identified (but monitoring on-call with spot-checks)
Pantaleo 2004	Archaeological monitoring	Ho'olehua uplands	No historic properties identified
Hammatt 2008	Field inspection and literature review	DOE Molokai schools including Kualapu'u Elementary School	No historic properties identified but a monitoring program was recommended

Reference	Type of Study	Location	Results
Pfennig et al. 2011	Archaeological literature review	8,955 acres of DHHL Molokai lands including 8,055 acres at Ho'olehua Ahupua'a and present project areas	Discuss four sites discussed by Summers (1971): SIHP # 50-60-03-11A, caterpillar stones; SIHP # -11B, stone at Pu'u Kape'elua; SIHP # -13, Kahua Maika at a place called Akani; and SIHP # -14, <i>heiau</i> near Ho'olehua Cemetery
McIntosh et al. 2019	Archaeological inventory survey	DHHL lands, including in Ho'olehua	No historic properties identified in project area vicinity; of note identifications of SIHP # 50-60-03-2521, concrete tank stands associated with ranching and Isolated Find (IF)-01, an <i>'ulu maika</i>

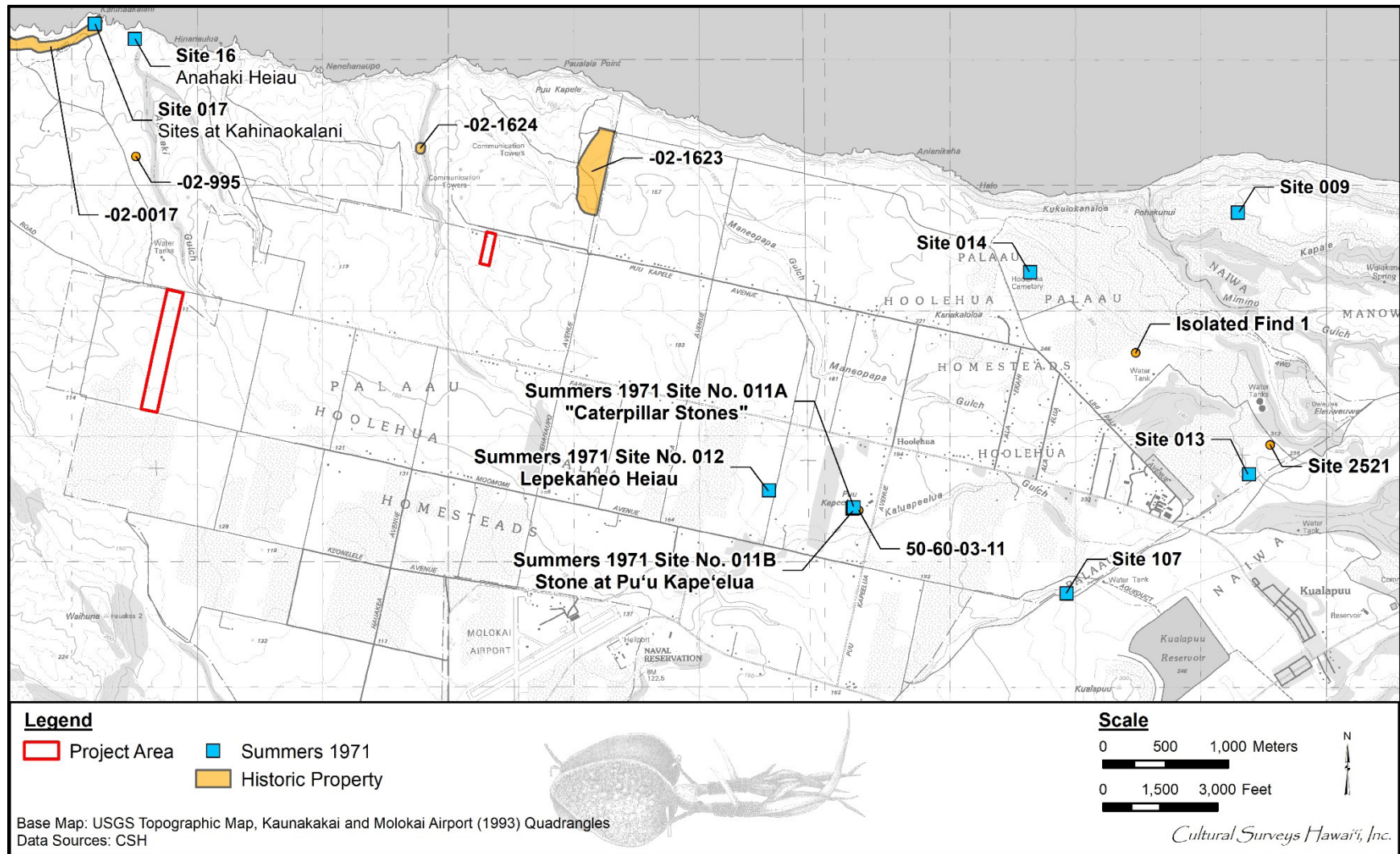


Figure 24. Previously identified historic properties in the project area vicinity depicted on a portion of the 1993 Kaunakakai and Molokai Airport USGS topographic quadrangles

Table 3. Previously identified historic properties in the project area vicinity

SIHP #	Source	Site Type	Description
50-60-02-995	Griffin 1993	Agricultural shrine	Notes “sites consisting of enclosures, L-shapes, U-shapes on the low promontories along the coast,” in addition to the shelter sites noted by Summers between sites 16 and 17 but her main focus was associated with an anomalous growth of ti plants and was described as including a wall segment, basalt flakes and a fragment of an adze blank and a rock with a flat surface, with a rectangular “basin” measuring about 8” x 14” pecked into it. She posits that “In addition to the practical purpose of the boulders for collecting rain water, it is possible that this site was an agricultural shrine for the worship of the god Lono.”
50-60-02-1623	Major and Dixon 1995	Two enclosures and dumps	SIHP # -1624, regarded as a pre-Contact dwelling consisted of an enclosure with marine shell deposits, fire-cracked rocks and a re-worked basalt flake.
50-60-02-1624	Major and Dixon 1995	An enclosure and an artifact	SIHP # -1623, a site of unknown function, included two enclosures, each with minor amounts of marine shell and some modern refuse and 20th century rubbish dumps.

SIHP #	Source	Site Type	Description
50-60-03-11A	Summers 1971:37	"Caterpillar Stones," Ho'olehua 2	<p>The stones are on top of the hill; Pu'u Kape'elua, "The Caterpillar Hill."</p> <p>Cooke gave the following legend about these stones:</p> <p>"[...] this beautiful girl was visited each night by a lover who left before daylight. She was unable to discover who he was. This suspense told on her, and she began to waste away. A priest, consulted by her parents, advised. the girl to attach a piece of white tapa to a wart on her lover's back. In the morning, shreds of tapa helped to trace the demi-god lover to the hill Pu'u Pe'elua, in the middle of Ho'olehua. The kahuna (priest) and friends of the family found a large <i>pe'elua</i> (caterpillar) asleep on the hill. The kahuna ordered the people to collect wood which was placed around the sleeping <i>pe'elua</i>, and a fire was lit. As the heat of the fire increased, the caterpillar burst into myriads of small caterpillars which were scattered over the plain. That accounts for the army-worm pest, called <i>pe'elua</i>" (Cooke, 1949:102). Akana (n.d.) told a legend similar to the one above; and added, "Today, about January to the first of March, many caterpillars are seen around Pu'u Pe'elua."</p>

SIHP #	Source	Site Type	Description
50-60-03-11B	Summers 1971:37	Stone at Pu'u Kape'elua Ho'olehua 2	The stone is located just S of the Caterpillar Stones (Site 11A) on Pu'u Kape'elua. When seen in 1959, this fairly flat stone measured 6 ft N to S, and 7 ft E to W. It stood about 22 in. high on the N and 18 in. high on the S. On the face of the stone was a hollowed-out basin, 21 in. E to W, 8.5 in. N to S, and 3 in. deep. Leading from the N side of the surface into either side of the basin were two grooves 1 in. wide and 2.5 in. deep. Two more grooves led from the S side of the basin to another basin located on a shelf 5 in. below the face, on the S side of the stone. This basin, which was 1.75 in. deep, measured 18 in. E to W and 6 in. N to S. Numerous sea shells were found in the vicinity of the site. G.P. Cooke (personal communication) said the stone was used for sharpening adzes. K.P. Emory was of the opinion that, because this is an arid region, the stone may have been for collecting water.
SIHP # 50-60-03-2521	McIntosh et al. 2019	Ranching infrastructure	Concrete tank stands associated with ranching
Summers Site 9	Summers 1971:34-36	"Kipu Ruins, Kipu"	The site is located on a headland about 800 ft S of the cliffs and N of Kapale Gulch, at an elevation of 1000 ft. Several structures are distributed over an area about 500 ft long and 250 (Structures "A" through "I" are described)
Summers Site 12	Summers 1971:37	<i>Heiau</i> (Lepekaheo Heiau)	This site is located on the boundary of Ho'olehua 2 and Pala'au 2, W of Kaluape'elua Gulch. Monsarrat referred to Lepekaheo as an "old heiau."
Summers Site 13	Summers 1971:38	"Kahua Maika, Pala'au 2" (<i>'ulu maika</i> bowling course)	The kahua maika was situated on a rise at a place called Akani; Monsarrat referred to it as an "old <i>kahua maika</i> "

SIHP #	Source	Site Type	Description
Summers Site 14	Summers 1971:38	" <i>Heiau</i> , Pala'au 2"	"The site is located E of the Ho'olehua Cemetery in the pineapple fields W of the gulch, at an elevation of 800 ft. Cartwright reported this (in 1922) as being a <i>heiau</i> . The structure was in ruins in 1957, however. Traces of paving could still be found, and the remains of a wall, 35 ft long NE to SE; 13 ft from the NE side was an upright stone 2 ft high, 2 ft wide, and 1 ft thick."
Summers Site 16	Summers 1971:38	<i>Heiau</i> and house site	This <i>heiau</i> is located on the W side of the mouth of Anahaki Gulch at an elevation of about 50 ft above sea level. Cartwright (1922) reported the site as being a <i>heiau</i> . Originally the structure was an enclosure. The exterior measurements in 1964 were 43 ft N to S and 36 ft E to W; the maximum height of the eastern wall was 5 ft. The northern wall was probably this same height originally, but the wall on the S was lower. Both the S and W walls were badly damaged. An inner division on the N side of the enclosure measured 17 ft E to W and extended the entire width of the structure. The southern portion of the enclosure was paved. On the crest of the hill to the S of the above site was a house site or shelter, which had a 5-ft-high wall running N to S; the rest of the site was open. Adjoining the northern portion of the wall on the E side was a small, paved terrace.
Summers Site 17 (02-0017)	Summers 1971:38	"Sites at Kahinaokalani, Pala'au 2"	"Emory reported seeing two house sites and a <i>ko'a</i> at Kahinaokalani; the <i>ko'a</i> was at the edge of the cliff. Phelps described a structure, which he called a canoe <i>halau</i> , which was on a bluff about 30 ft above the sea"

SIHP #	Source	Site Type	Description
Summers Site 107	Summers 1971:80	“Holua slide at Kualapu‘u, Na‘iwa”	The slide was on the SSW side of Kualapu‘u hill, and traces of it can still be seen. No indications of paving could be found in 1966. Apparently it was similar to ... Site 3. On the S and W slopes of Kualapu‘u hill, there used to be many sweet potato patches, which were defined by rows of stones (Cooke 1949:121). According to Sophie J. Cooke (1964:58), the former name of Kualapu‘u was Ka ‘Uala Pu‘u, “The Sweet Potato Hill.” On some maps it is called “Mid Hill.”
Isolated Find (IF)-01	McIntosh et al. 2019	Bowling game stone	An <i>‘ulu maika</i>

Akana (n.d.) told a legend similar to the one above, and added, ‘Today, about January to the first of March, many caterpillars are seen around Pu‘u Pe‘elua’ [Summers 1971:37]

Site 11B. Stone at Pu‘u Kape‘elua, Ho‘olehua 2

The stone is located just S of the Caterpillar Stones (Site 11A) on Pu‘u Kape‘elua. When seen in 1959, this fairly flat stone measured 6 ft N to S, and 7 ft E to W. It stood about 22 in. high on the N and 18 in. high on the S. On the face of the stone was a hollowed-out basin, 21 in. E to W, 8.5 in. N to S, and 3 in. deep. Leading from the N side of the surface into either side of the basin were two grooves 1 in. wide and 2.5 in. deep. Two more grooves led from the S side of the basin to another basin located on a shelf 5 in. below the face, on the S side of the stone. This basin, which was 1.75 in. deep, measured 18 in. E to W and 6 in. N to S. Numerous sea shells were found in the vicinity of the site.

G.P. Cooke (personal communication) said the stone was used for sharpening adzes. K.P. Emory was of the opinion that, because this is an arid region, the stone may have been for collecting water.

A recent archaeological study (Martell III et al. 2021, draft:45) noted the distinctive basins designated as Site 11B are indeed in very close proximity to the Caterpillar Stones designated Site 11A but neither the Cooke explanation of an adze sharpening function nor the Emory explanation of a water collecting function reflects this geographic relationship. A third theory is posited that these basins were for offerings (possibly ‘awa narcotic drink) to propitiate the destructive caterpillar pests.

Site 14. *Heiau*, Pala‘au 2

The site is located E of the Ho‘olehua Cemetery in the pineapple fields W of the gulch, at an elevation of 800 ft. Cartwright reported this (in 1922) as being a heiau. The structure was in ruins in 1957, however. Traces of paving could still be found, and the remains of a wall, 35 ft long NE to SE; 13 ft from the NE side was an upright stone 2 ft high, 2 ft wide, and 1 ft thick. [Summers 1971:38]

This *heiau* was located near the Kukuiokanaloa sea cliff approximately 4.2 km east of the eastern project area.

Site 15. *Ko‘a* at Pu‘u Kapele, Pala‘au 2

Summers (1971:38) describes this as “A small *ko‘a* is on the top of .the hill, Pu‘u Kapele” (citing a Phelps, n.d.:27 source.) This *ko‘a* was located near Paulalaia Point, 1,400 m north of the eastern project area.

Site 16. *Heiau* at Anahaki, Pala‘au 2

This *heiau* is located on the W side of the mouth of Anahaki Gulch at an elevation of about 50 ft above sea level. Cartwright (1922) reported the site as being a heiau. Originally the structure was an enclosure. The exterior measurements in 1964 were 43 ft N to S and 36 ft E to W; the maximum height of the eastern wall was 5 ft. The northern wall was probably this same height originally, but the wall on the S was

lower. Both the S and W walls were badly damaged. An inner division on the N side of the enclosure measured 17 ft E to W and extended the entire width of the structure. The southern portion of the enclosure was paved,

On the crest of the hill to the S of the above site was a house site or shelter, which had a 5-ft-high wall running N to S; the rest of the site was open. Adjoining the northern portion of the wall on the E side was a small, paved terrace. [Summers 1971:38]

This *heiau* was approximately 2.0 km northwest of the western project area.

Site 17. Sites at Kahinaokalani, Pala'au 2

Emory (n.d.) reported seeing two house sites and a ko'a at Kahinaokalani; the ko'a was at the edge of the cliff. Phelps described a structure, which he called a canoe halau, which was on a bluff about 30 ft above the sea: [Summers 1971:38]

Summers quotes Phelps (n.d.:17):

[...] the parallel walls [of the halau] are 20 feet long and 3 1/2 feet apart. They are no [now] so broken down that no estimate can be made of their height or width. Apparently the structure was open at both ends. The longitudinal axis of the shelter is at a slight angle to the line of the water's edge. [Summers 1971:38–39]

These sites were approximately 2.0 km northwest of the western project area.

Site 107. *Hōlua* Slide at Kualapu'u, Nā'iwa 1

The slide was on the SSW side of Kualapu'u hill, and traces of it can still be seen. No indications of paving could be found in 1966. Apparently it was similar to the one shown in Fig. 5, Site 3 [refers to a Site 3 *hōlua* Slide near Kauleonanahoa].

On the S and W slopes of Kualapu'u hill, there used to be many sweet potato patches, which were defined by rows of stones (Cooke, 1949:121). According to Sophie J. Cooke (1964:58), the former name of Kualapu'u was Ka 'Uala Pu'u, 'The Sweet Potato Hill.' On some maps it is called 'Mid Hill.' [Summers 1971:80]

This *hōlua* slide was approximately 800 m southeast of the eastern project area.

Site 108. Kalakupale or Palakupale Heiau, Nā'iwa 1

Monsarrat wrote that, from the heiau site, 'Puu Lua bears N 66°47' East true, Puu Luahine bears S 55°4' East true' (n.d.b:43). He referred to the structure as Kalakupale, 'a small heiau.' Cartwright (n.d.d) gave the name Palakupale. [Summers 1971:80]

This *heiau* was located approximately 1.9 km southeast of the eastern project area.

4.1.1 AECOS Inc. (1980)

In 1980, AECOS, Inc. conducted an archaeological reconnaissance survey for the Moloka'i Airport Master Plan Survey (AECOS Inc. 1980). Archaeologists Robert Connolly III and Paul Rosendahl surveyed the existing airport and two proposed sites for airport expansion: Site A-4, the potential connecting taxiway area, and Site C-1 and C-2, an alternate airport area located *mauka*

(inland) of Mo'omomi Beach. Neither the airport and Site A-4 provided evidence of prehistoric cultural remains. However, at the proposed Site C-1/C-2, AECOS Inc. (1980) documented seven features, six historic hunting blinds, and one likely pre-Contact wall.

Though no prehistoric cultural remains were observed at the proposed Site A-4, approximately 2.5 km to the south of the current eastern project area, the report noted the area did contain "an extensive complex of World War II bunkers consisting of horseshoe-shaped earthen revetments, earth-covered Quonset huts with concrete floors, wood-lined causeways, and extensive road systems. This complex was constructed during the years 1942-1947" (AECOS Inc. 1980:6). In 1980, these properties were insufficient age to be considered historic properties (50 years old or older). If these properties are still in existence, they likely would now be considered historic properties.

4.1.2 Environmental Impact Study Corp. (1981)

In 1981, Environmental Impact Study Corp. conducted biological and archaeological reconnaissance on approximately 90 acres of land owned by Cooke Land Company, Inc., designated as TMK: [2] 5-2-011:portion of parcel 007, located approximately 2.5 km to the south of the eastern project area.

Reconnaissance efforts did not locate the previously identified Summers Site 106 (petroglyphs) within their study area, although they did locate two other new sites within their study area. The first is a small series of terrace fragments above the west bank of the stream at the *mauka* end of the study area. Other possible agricultural cleared mounds were observed, but observations were inconclusive. The second site is a possible stacked wall on the high point of the ridge above the stream, roughly 90 m east of the first site. The stacked stone wall appeared to be placed between large natural outcrops and has collapsed.

Environmental Impact Study Corp. concluded that indications for possible agricultural use of the seasonal stream flow in the gulch existed, but the absence of more substantial and identifiable structures made it an assumption rather than fact. They recommended none of the sites located warrant further archaeological work, and that heavy ground disturbance at the location of Summers Site 106 (Petroglyphs) argues against the survival of this site, and that no further archaeological work was necessary and that no specific measures need be undertaken to preserve or protect the features already identified.

4.1.3 Neller (1982)

Earl (Buddy) Neller (then of the State Historic Preservation Office, DLNR) produced an archaeological reconnaissance of proposed Marine Corps Training Areas on Moloka'i at Kalama'ula and Pālā'au. His work at Pālā'au was exclusively a "helicopter windshield survey" (Neller 1982:1) He noted the presence of a number of house sites in the area east of Mo'omomi Beach (east of Naaukahihi Point) in the vicinity of Summer's sites 16 and 17. He documented the Site 16 *heiau* at Anahaki and numerous stone walls and platforms near Kahinaokalani Point he associated with Site 17. He comments regarding the north Pālā'au area:

Sites have not been noted previously in the *mauka* portion of the property.

Our windshield survey verified the existence of readily visible stone structures along the coast. Inland we saw nothing but dry grazing land and traces of former pineapple fields.

It is suspected that continued military activities in this parcel would have little impact on archaeological sites, except at the coast. It is also suspected, however, that an intensive field survey would identify a number of small archaeological sites in the mauka portion of the parcel, presumably altered by farming and ranching activities.[Neller 1982:2]

4.1.4 Griffin (1993)

Annie Griffin of the SHPD (1993) produced a memorandum on a newly identified historic site (SIHP # 60-02-995) at Pālā'au. She noted, "sites consisting of enclosures, L-shapes, U-shapes on the low promontories along the coast, in addition to the shelter sites noted by Summers between sites 16 and 17" (Griffin 1993:1). Her main focus was associated with an anomalous growth of ti plants and was described as follows:

Ground visibility was poor due to the dense grass cover, but a wall, possibly a c-shape or a wall segment, basalt flakes and a fragment of an adze blank were observed at the northwest base of the promontory. The promontory itself consists of large basalt boulders, in various natural positions. Only one boulder showed evidence of human modification. This rock has a flat surface, with a rectangular 'basin' measuring about 8" x 14" pecked into it. The 'basin' contained water along with decaying vegetation. An alignment of 6 rocks was placed along its basin's windward (east) edge, probably to minimize evaporation from wind. [Griffin 1993:1]

She posits that "In addition to the practical purpose of the boulders for collecting rain water, it is possible that this site was an agricultural shrine for the worship of the god Lono" (Griffin 1993:2)

4.1.5 Hammatt et al. (1993)

In 1993, CSH conducted an archaeological inventory survey of three parcels, which the study refers to as Sites #1, #2, and #5 (Hammatt et al. 1993). Only Site #5 is in proximity to the current project area, while Sites #1 and #2 are located further away to the southeast from the present project area(s) and will not be discussed.

Site #5 is an approximately 15-acre parcel within Pālā'au, adjacent to and west of Moloka'i Airport and approximately 2.5 km south of the current eastern project area. The parcel, which adjoined the airport security fence, was formerly part of the airfield and used for parking planes. At least 50% of this study area was paved. Grasses, *koa haole* (*Leucaena leucocephala*), and weeds covered unpaved areas, which appeared "denuded of soil: decomposing bedrock C-horizon was exposed on the surface and as was evidence of bulldozer tracks in various places [...]" (Hammatt et al. 1993:24). No historic properties were identified with the exception of the former plane taxiways and parking areas. No further archaeological work was recommended.

4.1.6 Nagahara and Kolb (1994)

On 1 June 1994, the SHPD and DHHL archaeologists conducted a field inspection in the Ho'olehua-Pālā'au Homesteads to locate and GPS map SIHP # 50-60-03-11, Kape'elua Complex (Nagahara and Kolb 1994). The Kape'elua Complex is a legendary site located on top of Pu'u Kape'elua ("caterpillar hill"), consisting of several various-sized basalt boulders and outcrops known as "caterpillar stones." One boulder was previously identified with two pecked rectangular channels and basins, which the property owner stated was a "birthing stone." During the inspection, a similar pecked basin was found in another stone. The function for the basin was regarded as unknown. The authors noted other pecking in some stones as possible pre-Contact modifications resembling footholds for climbing up the large boulders. A historic midden scatter composed of shells, bottle glass shards, and a thermometer was identified under a boulder. The property owner suggested the midden was associated with a former plantation camp. The field inspection resulted in adequate mapping of the complex, which involved the SHPD carving an X in one of the peripheral boulders. Overall, the site appeared in good condition, and preservation without additional mitigation was recommended.

4.1.7 Major and Dixon (1995)

The Bishop Museum Department of Anthropology (Major and Dixon 1995) prepared a report on an archaeological survey and evaluation at a 364-acre (147.42-hectare) USAF Receiver Station. Two previously unrecorded historic properties were documented in the project area, including a pre-Contact dwelling (SIHP # 50-60-02-1624) and another structure of unknown function (SIHP # 50-60-02-1623). SIHP # -1624 consisted of an enclosure with marine shell deposits, fire-cracked rocks and a reworked basalt flake. SIHP # -1623 included two enclosures, each with minor amounts of marine shell and some modern refuse and twentieth century rubbish dumps. The authors noted that "Immediately to the north, in the narrow strip between the project area and the sea, lie many more features indicating exploitation of coastal resources from pre-Contact times until the present" (Major and Dixon 1995:ii).

4.1.8 Hartzell (2000)

Leslie Hartzell of the Bernice Pauahi Bishop Museum Department of Anthropology reported on a supplemental archaeological inventory survey at the USAF Molokai Receiver Station with a 16-hectare rectangular project area along the upper rim and lower slopes of Mane'opapa Gulch and across the peak of Pu'ukaPele to the coastal cliff edges. A total of three archaeological sites were identified either entirely within or bisected by the boundaries of the USAF Molokai Receiver Station leased property. Two of the sites (SIHP #s 50-60-02-1623 and -1624) were recorded during the initial inventory survey investigation in 1994 (Major and Dixon 1995) and a third site (SIHP # 50-60-02-843) was identified as being partially within the northern property boundary of the Receiver Station during the supplemental inventory survey. Thirty-seven surface features were recorded for SIHP # 50-60-02-843 (the Pu'ukaPele Rock Wall complex), consisting of 26 stacked-faced walls, five alignments, four enclosures, a depression, and a prominent, massive natural boulder. A boundary of possibly religious function was posited for 15 of the features with other features associated with water control/diversion, habitation, and a planting area.

4.1.9 Pantaleo and Rotunno-Hazuka (2003)

Between September 2002 and February 2003, Archaeological Services Hawaii, LLC (ASH) conducted on-call archaeological monitoring and weekly site inspections for the Sandwich Isles Communications, Inc. (SIC) Moloka'i Rural Fiber Optics Duct Lines project, which connected DHHL properties to a modern, high-speed broad band telecommunications system (Pantaleo and Rotunno-Hazuka 2003). The study area was divided into six sections extending along state, DHHL, and county road rights-of-way from Ho'olehua uplands to coastal Kalama'ula. Sections 1 and 2 are in the current project area vicinity (see Figure 23) and it appears their project area extended along the north side of the eastern and western present project areas (although again the monitoring was just on-call with weekly spot-checks). No historic properties were encountered during the monitoring program; no additional archaeological work was recommended.

4.1.10 Pantaleo (2004)

Between October and December 2003, ASH conducted archaeological monitoring for Phase II of the SIC Moloka'i Rural Fiber Optics Duct Lines project (Pantaleo 2004). The area monitored appears to have included roads immediately north of the current eastern project area (see Figure 23). No historic properties were identified during this phase of the monitoring program. Stratigraphy observed (Pantaleo 2004:13, 14), as at his Profile 2 at "Ala Elua," located approximately 250 m north of the eastern project area, was as follows:

Layer I (approximately 0-35 cmbs), representing the most recent phase of post-occupation soil accumulation of overburden, consisted of a dark brown (IOYR 3/3), dry, crumbly, fine grain, loose, nonsticky, non-plastic, non-cultural, silt with abundant roots and rootlets, and minimal rocks and modern debris. This layer was present throughout the entire project area.

Layer II (approximately 35 to 65 cmbs), representing the till zone, consisted of a dark yellowish-brown (IOYR 3/4) to dark reddish-brown (5YR 3/4), moist, loose, powdery, fine grain, non-plastic, slightly sticky, non-cultural, silt with minimal roots and rootlets and rocks and black sheeting from pineapple cultivation.

Layer III (approximately 65 to 130 cmbs), representing the basal layer, consisted of a yellowish-brown (IOYR 5/6) to dark yellowish-brown (IOYR 3/6), compact, moist, fine grain, slightly sticky, slightly plastic, silt to silty clay with abundant basalt cobbles and boulders.

4.1.11 Hammatt (2008)

CSH (Hammatt 2008) carried out archaeological literature review and field check study of four DOE Schools on Moloka'i including Kualapu'u Elementary School. No historic properties were identified, but noting some traditional habitation, transit in the vicinity between Kalaupapa and Kaunakakai and historic ranching, an on-site archaeological monitoring program was recommended.

4.1.12 Pfennig et al. (2011)

Pacific Legacy, Inc. (Pfennig et al. 2011) produced an archaeological literature review of 8,955 acres of DHHL Moloka'i lands including 8,055 acres at Ho'olehua Ahupua'a, including the present project areas. They discuss four sites discussed by Summers (1971): SIHP # 50-60-03-

11A, the caterpillar stones; SIHP # -11B, the stone at Pu'u Kape'elua; SIHP # -13, the Kahua Maika at a place called Akani; and SIHP # -14, a *heiau* near the Ho'olehua Cemetery (Pfennig et al. 2011:73).

The authors note,

[...] archaeological sites appear more sparse on the Ho'olehua Plain, as the area lacks adequate rainfall to support the same population density as the southeast coastal region of Moloka'i. However, this vast plain contains several zones, particularly in the north and northeast, which boast a high concentration of religious sites and places associated with Traditional mythology. [Pfennig et al. 2011:81]

4.1.13 McIntosh et al. (2019)

In October 2011, November 2012, and September and November 2015, Pacific Legacy, Inc. (McIntosh et al. 2019) conducted an archaeological inventory survey of DHHL lands in seven areas across Moloka'i for proposed water system improvements (McIntosh et al. 2019). Area 7 of the study included four locations near the current project area, which were investigated for proposed maintenance yard improvements and valve and hydrant replacements in Ho'olehua. No historic properties were identified in Area 7.

Of note were the identification of SIHP # 50-60-03-2521, concrete tank stands associated with ranching, and Isolated Find (IF)-01, an *'ulu maika*.

Regarding SIHP # 50-60-03-2521, the authors report,

Four separate sets of tank stands were recorded a short distance from the now existing 3.5 MG tanks at Ho'olehua. Each set of stands measures ca. 5.0 m long, 3.7 to 5.9 m wide, and 0.3 m wide. It not known when these stands were constructed but were likely abandoned after the larger Ho'olehua tanks became operational in the 1930s. [McIntosh et al. 2019:96]

Regarding the IF-01 *'ulu maika*, the authors report,

IF-1 consists of an isolated sandstone *'ulu maika* located on the surface of an abandoned agricultural field situated along Project Area 5 (5-A Ho'olehua to Veterans' Cemetery to Lihi Pali Avenue Transmission Main) in Ho'olehua.

The *'ulu maika* is discoidal in shape and measures ca. 6.5 cm in diameter by 2.9 cm thick. Several fragments of the artifact have been broken off, but the overall shape is still clearly visible. The *'ulu maika* was collected from the field.

No surface archaeological features were observed in the vicinity of IF-1. It is likely that if any archaeological site was present in the area, it was destroyed during the modification of the landscape for commercial agriculture. The *'ulu maika* appears to have been manufactured and utilized during the pre-Contact or early post-Contact periods. Halealoha Ayau posits that this isolated find may be down slope of the traditional makahiki grounds known a Naiwa (pers. comm. 1/20/2016). [McIntosh et al. 2019:103]

4.2 Background Summary and Predictive Model

The current project area consists of DHHL lands on the northern plains of Pālā'au Ahupua'a. Historical anecdote and environmental data for this region indicate a possible substantial pre-Contact population (Fornander 1880; Summers 1971), which would have subsisted on dryland agriculture consisting mostly of sweet potatoes. According to Handy (1940:157), "in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua" and "Hoolehua and Palaau were noted for sweet potatoes in olden days." However, Handy and Handy (1972:283) note that homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.

Nearly the entire current project area appears to have been government owned lands since the Māhele land divisions in 1848. In 1924, the Hawaiian Homes Commission expanded their homestead program to include 11,400 acres of Pālā'au-Ho'olehua. The current project area consists of three discrete lots for a total of a 40.3 acres (16.3 hectares), a portion of these Pālā'au-Ho'olehua Homestead lands. Life on these lands involved dryland agriculture (including commercial pineapple cultivation) and some ranching.

Currently, the project area consists mostly of undeveloped DHHL parcels, of which only a few contain active residences.

No prior archaeological study has been conducted within the project areas and although one recent archaeological study was adjacent to the north of the western project area (Pantaleo and Rotunno-Hazuka 2003), much of that project is understood to have been on-call monitoring. No historic properties have been identified within the project area or within approximately 500 m (see Figure 24).

Historic properties previously identified in the vicinity are limited to a few sites recorded by Summers (1971) including the legendary Kape'elua Complex (SIHP # 50-60-03-11). There appears to have been a locus of traditional Hawaiian activity in Anahaki Gulch north of the western project area (see Figure 24) but this is suggested to relate to the micro-environment of that gulch and greater proximity to the coast.

Based on background research, cultural deposits and features related to historic homesteading (i.e., agricultural and/or habitation features) may be present at the current project areas. However, potential also exists for encountering evidence of pre-Contact and post-Contact land use such as ranching and commercial pineapple cultivation.

Section 5 Results of Field Work

Fieldwork was carried out at TMK: [2] 5-2-005:031, Lot 17 and TMK: [2] 5-2-026:014, Lot 104D-1 by CSH archaeologist David W. Shideler, M.A. and CSH cultural specialist Kellen Tanaka, B.A., on 21 September 2021. An overview showing tracklogs at both of the project areas is provided in Figure 25 with a more detailed view of the track logs and a key to the general location and direction of photographs provided in Figure 26 for the western 31.7-acre TMK: [2] 5-2-005:031 parcel project area and in Figure 33 for the eastern project area, the 4.7-acre TMK: [2] 5-2-026:014 parcel.

The fieldwork for the western project area (TMK: [2] 5-2-005:031, Lot 17) began at the northwest corner along the (dirt) Farrington Avenue with representative photographs of this project area proceeding counter clockwise from the northwest corner (Figure 27), southwest corner (Figure 28), southeast corner (Figure 29), and northeast corner (Figure 30). The project area was relatively flat and open with 50-cm high dry exotic grasses and scattered *haole koa* (*Leucaena glauca*), with relatively few *kiawe* (*Prosopis pallida*), and *klu* (*Acacia farnesiana*) and lantana (*Lantana camara*). Native plants were limited to *'ilima* (*Sida fallax*), *uhaloa* (*Waltheria americana*), and possibly a species of morning glory (*koali*, *Ipomea* sp.). The project area was bounded on the north side by a rutted dirt road (Farrington Avenue) and was bounded on the south side by another rutted dirt road (Mo'omomi Avenue) but was otherwise remarkably featureless. Remnants of black plastic irrigation lines and fragments of black plastic mulch related to this parcel having been entirely in commercial pineapple cultivation in the early 1960s (see Figure 20). There were suggestions of pineapple plantation furrows but the configuration of field access roads indicated on the 1964 USGS aerial photograph (see Figure 20) was not clear. Remnants of one or more (neighboring) collapsed wooden structures in the form of a somewhat amorphous pile of modern wood and tar paper and a 55-gallon drum was observed in the northeast corner of this project area. It was uncertain if this construction material was in situ or had been brought in and dumped. Figure 30 and Figure 31 convey the nature of this debris pile evaluated in the field as a possible historic property but which was considered as lacking sufficient integrity for designation as a historic property. This structure was not discerned on the 1964 USGS aerial photograph (see Figure 20) and was thought to likely post-date that aerial photograph.

No historic properties were observed in the western TMK: [2] 5-2-005:031, Lot 17 project area and the prospect of subsurface historic properties was evaluated as very low.

A tracklog and photo key for the eastern 4.7-acre TMK: [2] 5-2-026:014 parcel project area is provided in Figure 33. The project area was accessed via Pu'u Kapela Avenue but when this dirt road ended it was determined that a nearby parallel road just to the north did indeed access the parcel. Representative photographs are provided from the northwest corner (Figure 34) and proceeding counter-clockwise to the southwest corner (Figure 35), the southeast corner (Figure 36), and the northeast corner (Figure 37). The north half of this parcel is relatively open with 50 cm high exotic grass and few *haole koa* trees and is dominated by an abandoned house in the northwest corner of the lot (see Figure 34 and Figure 37 for views from the north corners of the property). Close-up views of the abandoned house are provided in Figure 38 and Figure 39. The date of construction is uncertain but it was thought likely to have been used in the 1970s. We do not make out this house on the 1964 aerial photograph (see Figure 20) or the 1967/68 USGS map

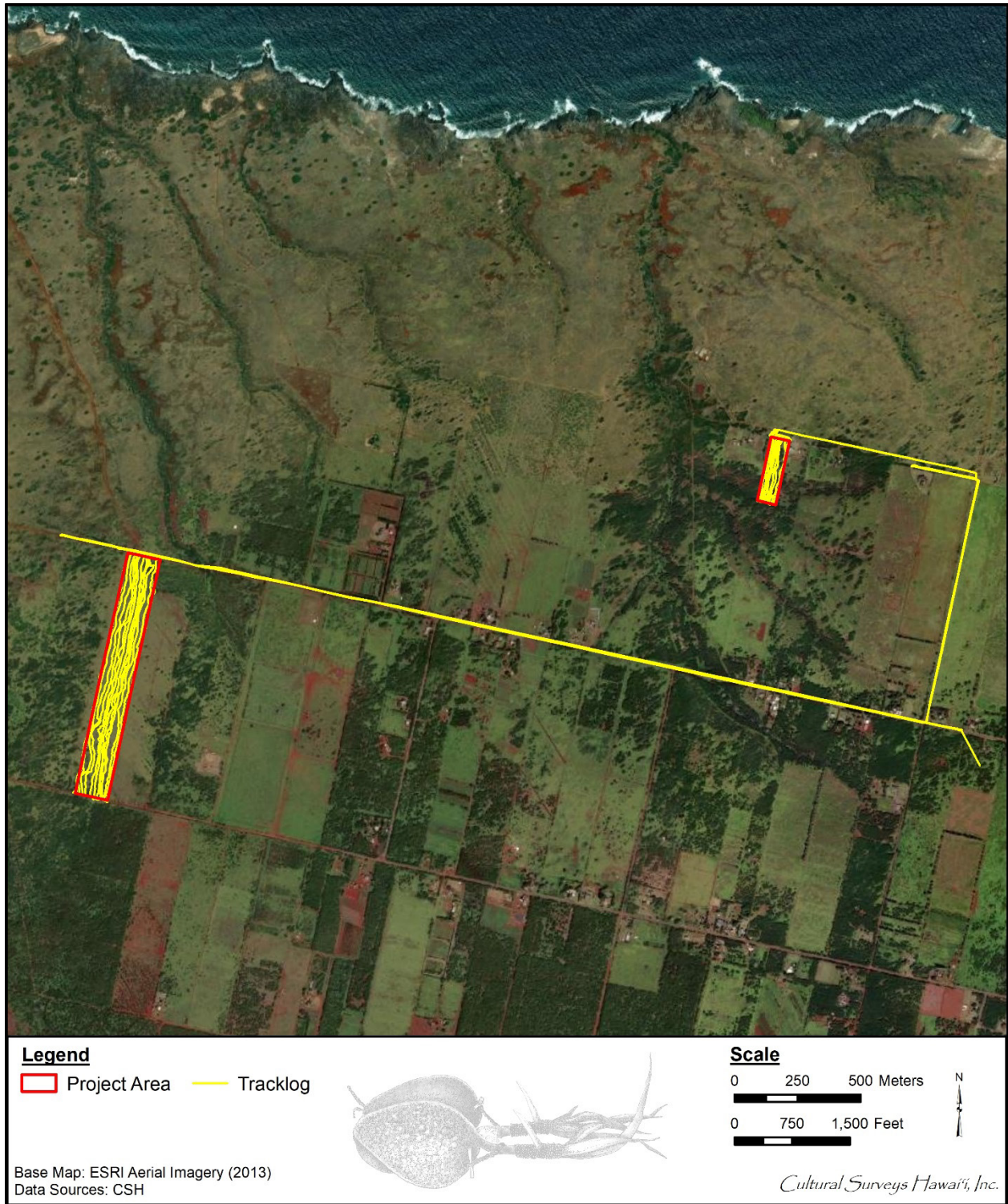


Figure 25. Overview showing tracklogs at both of the project areas (see following tracklog and photo key figures for details on the fieldwork at the western 31.7-acre TMK: [2] 5-2-005:031 parcel and the eastern 4.7-acre TMK: [2] 5-2-026:014 parcel

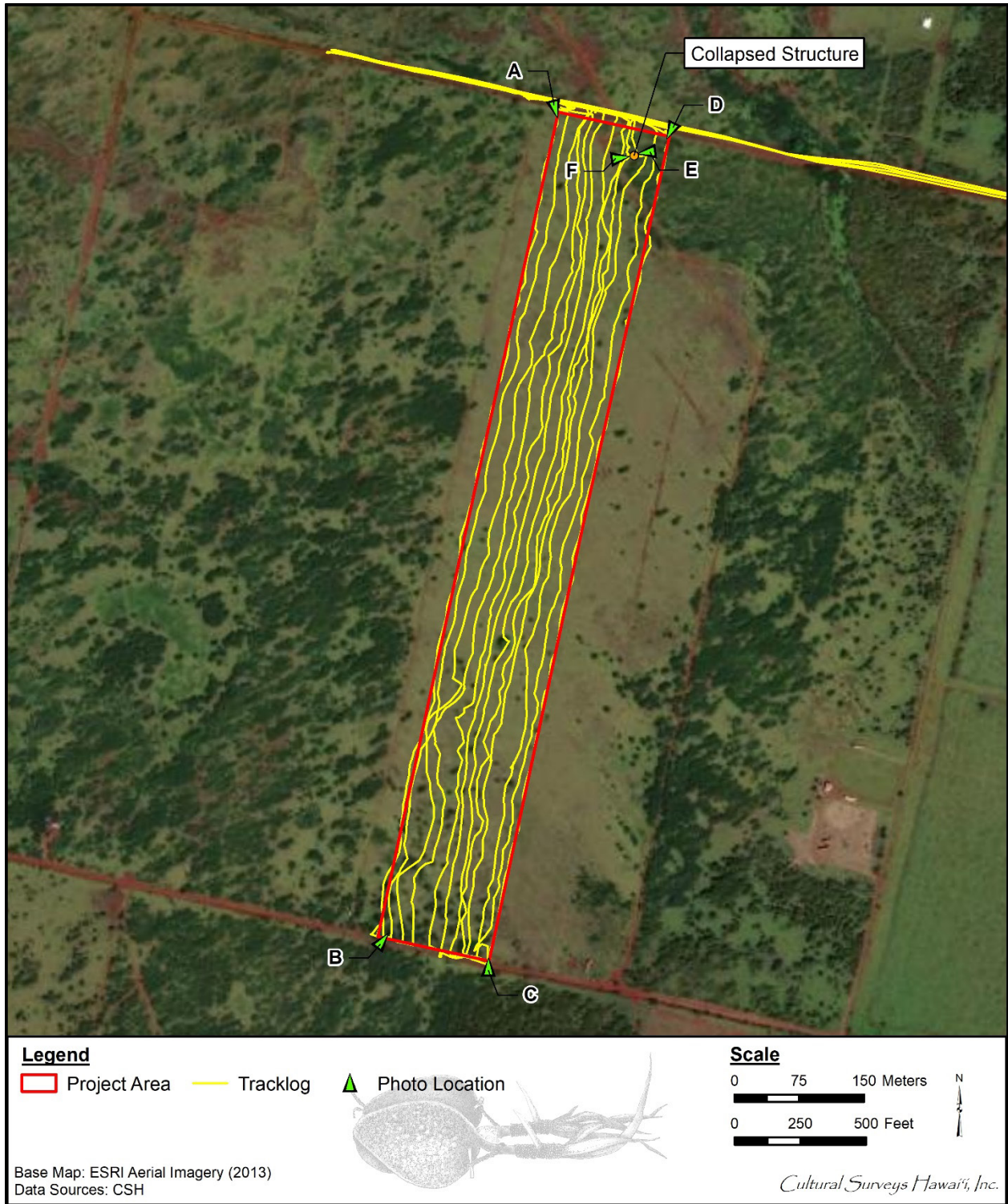


Figure 26. Tracklog and key to subsequent photographs for the western 31.7-acre TMK: [2] 5-2-005:031 parcel project area



Figure 27. Photo A: General view of the 31.7-acre TMK: [2] 5-2-005:031 parcel from the northwest corner (Farrington Avenue in foreground), view to south-southeast



Figure 28. Photo B: General view of the 31.7-acre TMK: [2] 5-2-005:031 parcel from the southwest corner, view to south-southeast



Figure 29. Photo C: General view of the 31.7-acre TMK: [2] 5-2-005:031 parcel from the southeast corner (Mo'omomi Avenue in foreground), view to north-northwest



Figure 30. Photo D: General view of the 31.7-acre TMK: [2] 5-2-005:031 parcel from the northeast corner, view to south-southwest



Figure 31. Photo E: View of collapsed structure in the 31.7-acre TMK: [2] 5-2-005:031 parcel, view to southwest



Figure 32. Photo F: View of collapsed structure in the 31.7-acre TMK: [2] 5-2-005:031 parcel, view to northeast

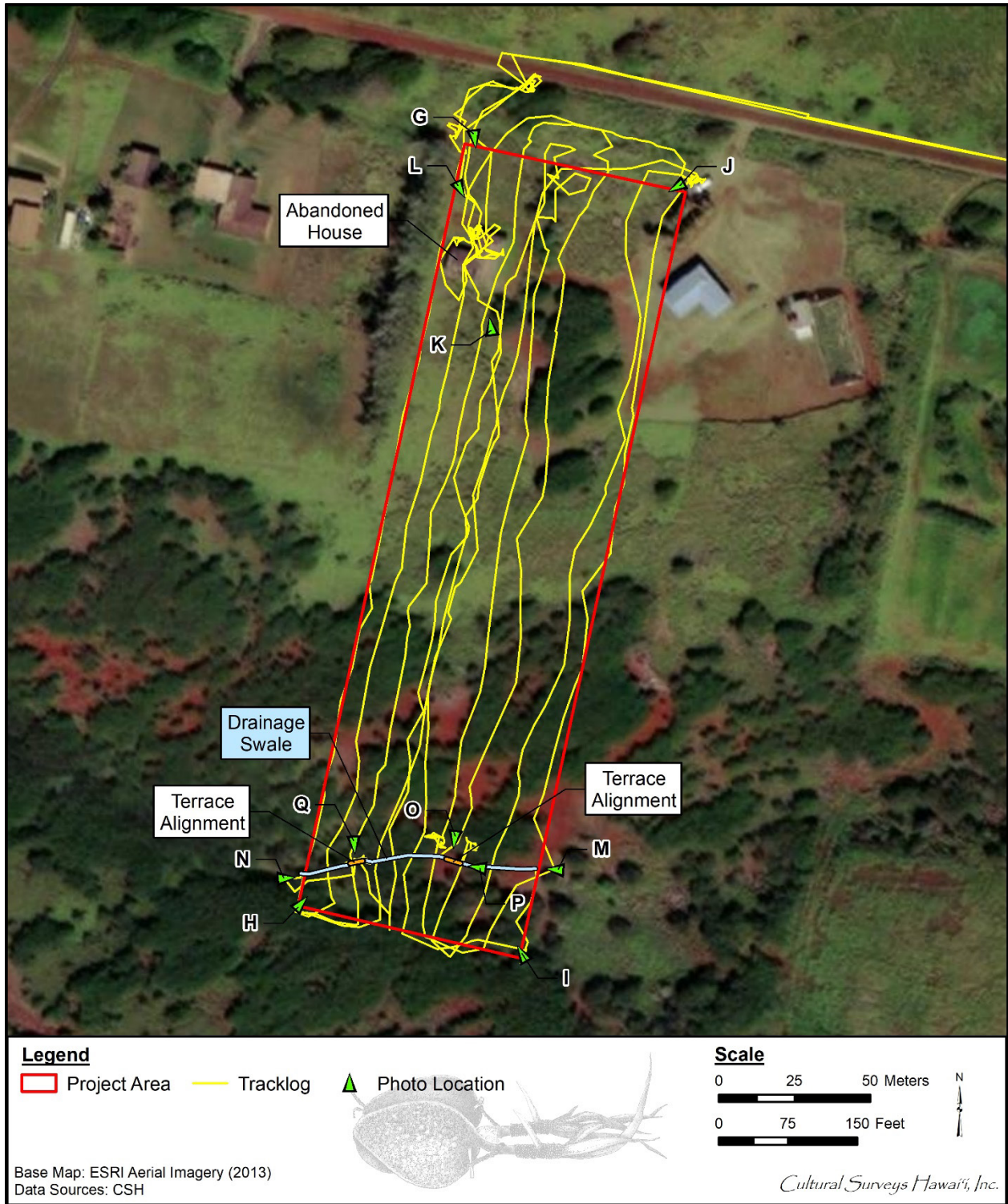


Figure 33. Tracklog and key to subsequent photographs for the eastern project area, the 4.7-acre TMK: [2] 5-2-026:014 parcel



Figure 34. Photo G: General view of the 4.7-acre TMK: [2] 5-2-026:014 parcel from the northwest corner, view to southeast



Figure 35. Photo H: General view of the 4.7-acre TMK: [2] 5-2-026:014 parcel from the southwest corner, view to northeast



Figure 36. Photo I: General view of the 4.7-acre TMK: [2] 5-2-026:014 parcel from the southeast corner, view to northwest

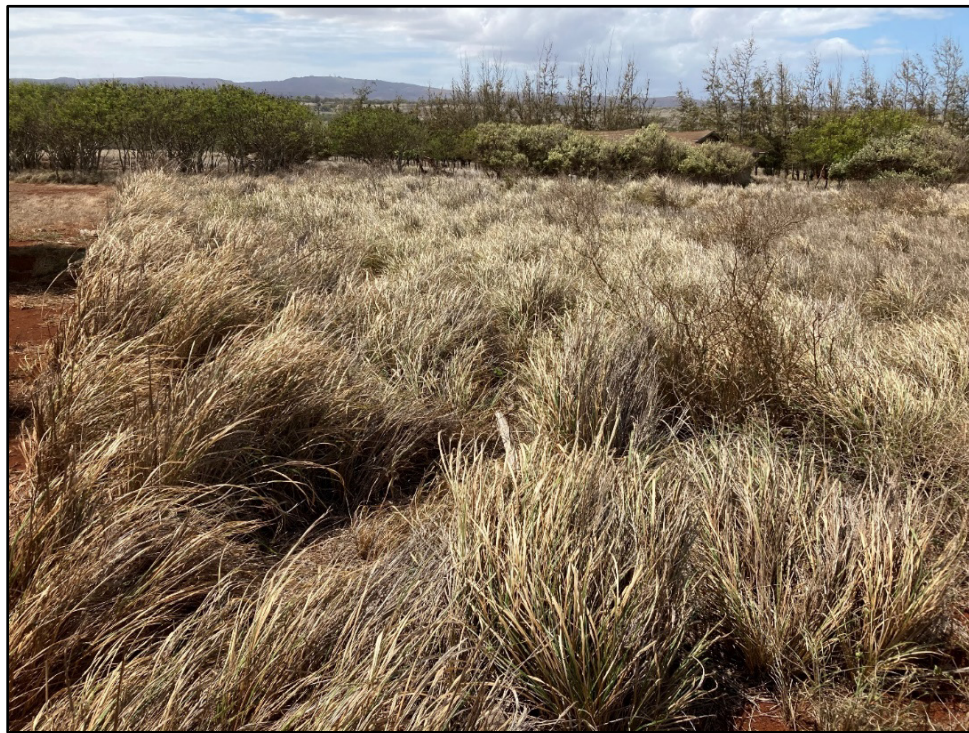


Figure 37. Photo J: General view of the 4.7-acre TMK: [2] 5-2-026:014 parcel from the northeast corner, view to southeast



Figure 38. Photo K: General view of the abandoned house in the 4.7-acre TMK: [2] 5-2-026:014 parcel, view to northwest



Figure 39. Photo L: View of the abandoned house in the 4.7-acre TMK: [2] 5-2-026:014 parcel

(see Figure 21) but we think we see it on the 1983 USGS map (see Figure 22).

The southern portion of this project area has a substantial cover of mature dry *haole koa* trees but was largely lacking in grass or any other ground cover with bare red dirt dominant (Figure 40, Figure 42, and Figure 43 are representative). A natural drainage swale crosses the south portion of the project area extending roughly east/west (see Figure 33 for the location and orientation of this drainage swale). Most of the south portion of this project area descends to this swale and then at the extreme south side, the project area rises. Views of this small drainage swale are provided from the east edge (see Figure 40) and the west edge (see Figure 41) of this project area. Two segments of boulder alignments were observed on the south side of this swale parallel to the ill-defined flow channel.

The eastern terrace alignment was more clearly defined, with a length of 8.4 m, and included approximately 24 waterworn small boulders roughly in a line (see Figure 33 for location and Figure 42 and Figure 43 for general views). There was no stacking of the boulders (the alignment was only one course high). A small clump of dead weeds at the west end of the slightly retained slope suggested some small degree of moisture retention resulting from the very modest terrace alignment.

The western terrace alignment was similar and included approximately 11 waterworn boulders over a length of 5.2 m (again with no stacking) (see Figure 33 for location and Figure 44 for a general view).

The function of these two terrace alignments was to retain the slope on the south side of this small drainage swale and likely to retain moisture for plant propagation. They were thought likely to be agricultural in function but were so very modest as unlikely to produce more than a meal or two of perhaps sweet potatoes in an exceptionally wet winter. It was thought that perhaps these terraces were experimental in nature to assess the utility of possible further terracing prior to a significant investment in labor. The antiquity of these two alignments is uncertain. We thought they might date to as recently as the abandoned house on the parcel but we cannot rule out that they were traditional Hawaiian constructions. The prospect of any related cultural or agricultural subsurface deposits was assessed in the field as very low.



Figure 40. Photo M: View of small drainage from the east edge of the 4.7-acre TMK: [2] 5-2-026:014 parcel, view to west



Figure 41. Photo N: View of small drainage from the west edge of the 4.7-acre TMK: [2] 5-2-026:014 parcel, view to east



Figure 42. Photo O: View of the eastern terrace alignment in the 4.7-acre TMK: [2] 5-2-026:014 parcel on the south side of a small gulch (1 m of tape shown at center for scale), view to south



Figure 43. Photo P: View of the eastern terrace alignment in the 4.7-acre TMK: [2] 5-2-026:014 parcel on the south side of a small gulch (1 m of tape shown at center for scale), view to west



Figure 44. Photo Q: View of the western terrace alignment in the eastern 4.7-acre TMK: [2] 5-2-026:014 parcel on the south side of a small gulch (1 m of tape shown at center for scale), view to south

Section 6 Summary and Recommendations

6.1 Summary

The current project area consists of DHHL lands on the northern plains of Pālā'au Ahupua'a. Historical anecdote and environmental data for this region indicate a possible substantial pre-Contact population (Fornander 1880; Summers 1971), which would have subsisted on dryland agriculture consisting mostly of sweet potatoes. According to Handy (1940:157), "in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua" and "Hoolehua and Palaaau were noted for sweet potatoes in olden days." However, Handy and Handy (1972:283) note homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.

The vicinity in central Moloka'i has historically been an area conducive to military training activities. In the 1790s, Kamehameha I reportedly "drilled his warriors on the Hoolehua plain near where the airport is now" (Cooke 1949:112). These training grounds may have included the current project area. A civilian airfield was established in Ho'olehua in 1919. In 1931, the U.S. Army Air Corps established a portion of this field as "Homestead Field" (Horvat 1966:38, 40–47). By the time the United States entered World War II in 1941, aircraft of the Fifth Bombardment Group were stationed at Homestead Field. A complex of World War II bunker sites was identified on the airport property well south of the present project areas in 1980 by AECOS Inc. (1980).

Nearly the entire current project area appears to have been government owned lands since the Māhele land divisions in 1848 (when Pālā'au was "Crown lands" owned by Kamehameha III). In 1924, the Hawaiian Homes Commission expanded their homestead program to include 11,400 acres of Pālā'au-Ho'olehua. The current project area consists of a western TMK: [2] 5-2-005:031, Lot 17 (31.7 acres or 12.8 hectares), and an eastern TMK: [2] 5-2-026:014, Lot 104D-1 (4.7 acres or 1.9 hectares) for a total project area of 36.4 acres (14.7 hectares) of these Pālā'au-Ho'olehua Homestead lands. Life on these approximately 40-acre joint residential and agricultural plots likely involved dryland agriculture and some ranching.

Currently, the project area consists of undeveloped DHHL parcels. An abandoned home is present on the TMK: [2] 5-2-026:014, Lot 104D-1.

No historic properties have been previously identified within the project areas or within 500 m. Historic properties previously identified in the vicinity are limited to a few sites recorded by Summers (1971), including the legendary Kape'elua Complex (SIHP # 50-60-03-11). There appears to have been a locus of traditional Hawaiian activity in Anahaki Gulch north of the western project area (see Figure 24) but this is suggested to relate to the micro-environment of that gulch and greater proximity to the coast.

Generally, the majority of the project area appears to have been modified by grading to some extent. A 1964 USGS aerial photograph clearly shows the western TMK: [2] 5-2-005:031 (31.7-acre) parcel as entirely within intensive commercial pineapple cultivation that likely removed any evidence of earlier historic properties.

No historic properties were observed in the western TMK: [2] 5-2-005:031, Lot 17 and none are believed to be present.

In the south portion of the eastern TMK: [2] 5-2-026:014, Lot 104D-1, two segments of boulder alignments were observed on the south side of a drainage swale parallel to the ill-defined flow channel.

The eastern terrace alignment was more clearly defined, with a length of 8.4 m, and included approximately 24 waterworn small boulders roughly in a line parallel to the base of the drainage swale (see Figure 33 for location and Figure 42 and Figure 43 for general views). There was no stacking of the boulders (the alignment was only one course high). A small clump of dead weeds at the west end of the slightly retained slope suggested some small degree of moisture retention resulting from the very modest terrace alignment.

The western terrace alignment was similar and included approximately 11 waterworn boulders over a length of 5.2 m (again with no stacking) and again parallel to the base of the drainage swale (see Figure 33 for location and Figure 44 for a general view).

The function of these two terrace alignments was to retain the slope on the south side of this small drainage swale and likely to retain moisture for plant propagation. They were thought likely to be agricultural in function but were so very modest as unlikely to produce more than a meal or two of perhaps sweet potatoes in an exceptionally wet winter. It was thought that perhaps these terraces were experimental in nature to assess the utility of possible further terracing prior to a significant investment in labor. The antiquity of these two alignments is uncertain. We thought they might date to as recently as the abandoned house on the parcel (ca. 1980) but we cannot rule out that they were traditional Hawaiian constructions. The prospect of any related cultural or agricultural subsurface deposits was assessed in the field as very low.

According to Handy (1940:157), “in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua” and “Hoolehua and Palaau were noted for sweet potatoes in olden days.” However, Handy and Handy (1972:283) note that homesteaders in Ho‘olehua were growing the sweet potatoes on land that had not been planted in ancient times—supporting the possibility that these are twentieth century constructions. No other potential historic properties were observed in the eastern TMK: [2] 5-2-026:014, Lot 104D-1 and no other potential historic properties are believed to be present.

6.2 Recommendations

The results of this LRFI indicate there is no potential for archaeological historic properties in the western project area and the archaeological potential in the eastern project area is limited to two boulder alignments.

This LRFI would support an HAR §13-275-7(a)(2) determination of “Effect with proposed mitigation” with the proposed mitigation (as per HAR §13-275-8[a][1][a]) of Preservation” in the form of avoidance and protection of the two boulder alignments.

The two terrace alignments are adjacent to a drainage swale near the southwest end of the eastern TMK: [2] 5-2-026:014, Lot 104D-1 drainage swale and are relatively far from the access road and the likely location of any home development (in the vicinity of the abandoned house). It is thus hoped that passive preservation would be only a very minor concern for development of this lot.

The newly identified potential historic properties (two small terrace alignments, a single stone high) are suggested to have been fully documented and have reached their information potential. Because of uncertainty over the antiquity of these features and their modest nature it is not clear that much would be gained by preparing a formal preservation plan to address them.

Consultation with the SHPD can determine the future course of action. As a general precaution, the project plans should include provisions stating that “In the event that historic resources, including structural remains, subsurface cultural deposits, or human skeletal remains, are identified during the construction project, cease all work in the immediate vicinity of the find, protect the find, protect the find from additional disturbance, and contact the SHPD at (808) 692-8015.”

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APPENDIX E-1.

**SUPPLEMENTAL LITERATURE
REVIEW AND FIELD
INSPECTION REPORT**



**Archaeological Literature Review and Field Inspection
for the Department of Hawaiian Home Lands
Ho‘olehua Scattered Lots Subdivision
and Improvements Project,
Pālā‘au Ahupua‘a, Moloka‘i District, Moloka‘i Island
TMKs: (2) 5-2-026:003, 016, and 017**

**Prepared for
Munekiyo Hiraga
on behalf of the
Department of Hawaiian Home Lands**

**Prepared by
David W. Shideler, M.A.,
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.
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Management Summary

Reference	Archaeological Literature Review and Field Inspection for the Department of Hawaiian Home Lands Ho'olehua Scattered Lots Subdivision and Improvements Project, Pālā'au Ahupua'a, Moloka'i District, Moloka'i Island, TMKs: (2) 5-2-026:003, 016, and 017 (Shideler and Hammatt 2025)
Date	April 2025
Project Number(s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: PALAAU 14
Investigation Permit Number	CSH completed the fieldwork component of this study under archaeological fieldwork permit number 23-30 (for 2023) and 25-04 (for 2025), issued by the Hawai'i State Historic Preservation Division (SHPD) per Hawai'i Administrative Rules (HAR) §13-13-282.
Agencies	SHPD; Department of Hawaiian Home Lands (DHHL)
Land Jurisdiction and Project Funding	DHHL
Project Location	The project area includes a total of three "Scattered Lots" parcels and adjacent portions of Pu'u Kapele Avenue, Farrington Avenue, and Mo'omomi Avenue located in the north portion of the Ho'olehua plain of central Moloka'i. The project area is within the DHHL Ho'olehua-Pālā'au Homesteads, and is located approximately 2.2 km northwest from the Moloka'i (Ho'olehua) Airport. The project area is depicted on a portion of the 2024 Molokai Airport U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
Project Description	<p>The project entails subdividing five lots on DHHL-owned lands in the Ho'olehua area on Moloka'i into 12 lots to be designated for subsistence agriculture use and improving them for lease to DHHL beneficiaries. The five lots are hereafter referred to as "subject properties." Two of these five lots—TMKs: (2) 5-2-005:031, Lot 17 and 5-2-026:014, Lot 04D-1—were the subject of a prior <i>Archaeological Field Inspection and Literature Review to Support Consultation with SHPD for the Department of Hawaiian Home Lands Ho'olehua Scattered Lots Subdivision and Improvements Project...</i> (Shideler and Hammatt, November 2021) that resulted in an SHPD §6E-8 Historic Preservation Review dated 16 February 2022, (Project No. 2021PR01540, Doc. No. 2201IK03) that concurred with DHHL's determination of "No historic properties affected" for those two lots.</p> <p>This companion study addresses three additional lots (TMKs: [2] 5-2-026:003, 016, and 017) in the immediate vicinity of one of the lots previously addressed (TMK: [2] 5-2-026:014) as well as adjacent roadway and drainage improvements within portions of Pu'u Kapele Avenue, Farrington Avenue, and Mo'omomi Avenue.</p>

	<p>Improvements to be undertaken include creating access driveways to each of the newly created lots with connections for domestic water and irrigation water for each lot provided within the access driveways from existing systems in the neighboring roadways. The lots will be made available to DHHL beneficiaries currently on the waitlist for an agricultural lease on Moloka'i. Once awarded, lessees will be able to construct homes on the lots, in addition to utilizing the lots for agricultural purposes.</p>
<p>Project Acreage</p>	<p>The project parcel size is as follows: TMK: (2) 5-2-026:003 parcel is 4.72 acres (1.91 hectares) TMK: (2) 5-2-026:016 parcel is 4.73 acres (1.91 hectares) TMK: (2) 5-2-026:017 parcel is <u>5.83 acres</u> (2.36 hectares)</p> <p>The roadway and drainage improvements portion of the project area includes an addition of approximately 5.9 acres (2.4 hectares).</p> <p>The total project area is 21.18 acres (8.58 hectares).</p>
<p>Document Purpose</p>	<p>This investigation was designed—through detailed historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the project and based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project’s planning and support the project’s historic preservation and environmental review compliance and to support obtaining an SHPD determination letter (as per HAR§ 13-275-3).</p>
<p>Fieldwork Effort</p>	<p>Fieldwork was conducted on 19 December 2023 by CSH archaeologist David W. Shideler, M.A and on 10 April 2025 by CSH archaeologists Jonas Madeus, B.A. and Noelani Hessler, B.A., under the general supervision of Hallett H. Hammatt, Ph.D. (principal investigator). This work required approximately 3 person-days to complete.</p>
<p>Results Summary</p>	<p>The results of the field inspection of the additional three lots and roadway areas were consistent with what was expected based on background research and previous archaeological studies conducted in the vicinity.</p> <p>These three lots were also determined to be relatively far from potable surface water, access to the coast, or notable landforms. The annual rainfall of 802 mm (32.83 inches) at the neighboring “Gage 34” station (Giambelluca et al. 2013) is suggested to be insufficient for non-irrigated agriculture. No historic properties have been identified previously within 500 m of these three additional lots and roadways. The general absence of trees in the vicinity of these three additional lots as indicated on a 1950 USGS aerial photograph suggests ground clearing for prior ranching activities.</p>

	No historic properties were identified within the project area.
Recommendations	<p>No historic properties have been identified within the current project area and, based on a review of background research and previous archaeological studies, no historic properties are anticipated to be impacted by the proposed project.</p> <p>This LRFI would support an HAR §13-275-7(a)(1) determination of “No historic properties affected” for the project. In light of the SHPD §6E-8 Historic Preservation Review dated 16 February 2022, (Project No. 2021PR01540, Doc. No. 2201IK03, included here as Appendix A) that concurred with DHHL’s determination of “No historic properties affected” for the two lots previously studied, a determination of “No historic properties affected” would be appropriate for the five lots of the DHHL Ho‘olehua Scattered Lots Subdivision and Improvements Project.</p>

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Section 1 Introduction

1.1 Project Background

At the request of Munekiyo Hiraga, and on behalf of Department of Hawaiian Home Lands (DHHL), Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this archaeological literature review and field inspection (LRFI) report for the proposed DHHL Ho‘olehua Scattered Lots Subdivision and Improvements Project, Pālā‘au Ahupua‘a, Moloka‘i District, Moloka‘i Island, TMKs: (2) 5-2-026:003, 016, and 017. The project area includes a total of three “Scattered Lots” parcels and adjacent portions of Pu‘u Kapele Avenue, Farrington Avenue, and Mo‘omomi Avenue located in the north portion of the Ho‘olehua plain of central Moloka‘i. The project area is within the DHHL Ho‘olehua-Pālā‘au Homesteads, and is located approximately 2.2 km northwest from the Moloka‘i (Ho‘olehua) Airport. The project area is depicted on a portion of the 2024 Molokai Airport U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), tax map keys (Figure 2 and Figure 3), and aerial photograph (Figure 4).

The project entails subdividing five lots on DHHL-owned lands in the Ho‘olehua area on Moloka‘i into 12 lots to be designated for subsistence agriculture use and improving them for lease to DHHL beneficiaries. The five lots are hereafter referred to as “subject properties.” Two of these five lots—TMKs: (2) 5-2-005:031, Lot 17 and 5-2-026:014, Lot 04D-1—were the subject of a prior *Archaeological Field Inspection and Literature Review to Support Consultation with SHPD for the Department of Hawaiian Home Lands Ho‘olehua Scattered Lots Subdivision and Improvements Project...* (Shideler and Hammatt, November 2021) that resulted in an SHPD §6E-8 Historic Preservation Review dated 16 February 2022,(Project No. 2021PR01540, Doc. No. 2201IK03; Appendix A) that concurred with DHHL’s determination of “No historic properties affected” for those two lots.

This companion study addresses three additional lots (TMKs: [2] 5-2-026:003, 016, and 017) in the immediate vicinity of one of the lots previously addressed (TMK: [2] 5-2-026:014) as well as adjacent roadway and drainage improvements within portions of Pu‘u Kapele Avenue, Farrington Avenue, and Mo‘omomi Avenue.

Improvements to be undertaken include creating access driveways to each of the newly created lots with connections for domestic water and irrigation water for each lot provided within the access driveways from existing systems in the neighboring roadways. The lots will be made available to DHHL beneficiaries currently on the waitlist for an agricultural lease on Moloka‘i. Once awarded, lessees will be able to construct homes on the lots, in addition to utilizing the lots for agricultural purposes.

1.2 Document Purpose

This investigation was designed—through detailed historical, cultural, and archaeological background research of the project area and a field inspection—to determine the likelihood that cultural resources/ historic properties may be affected by the project and based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project’s planning and support the project’s historic preservation and environmental review

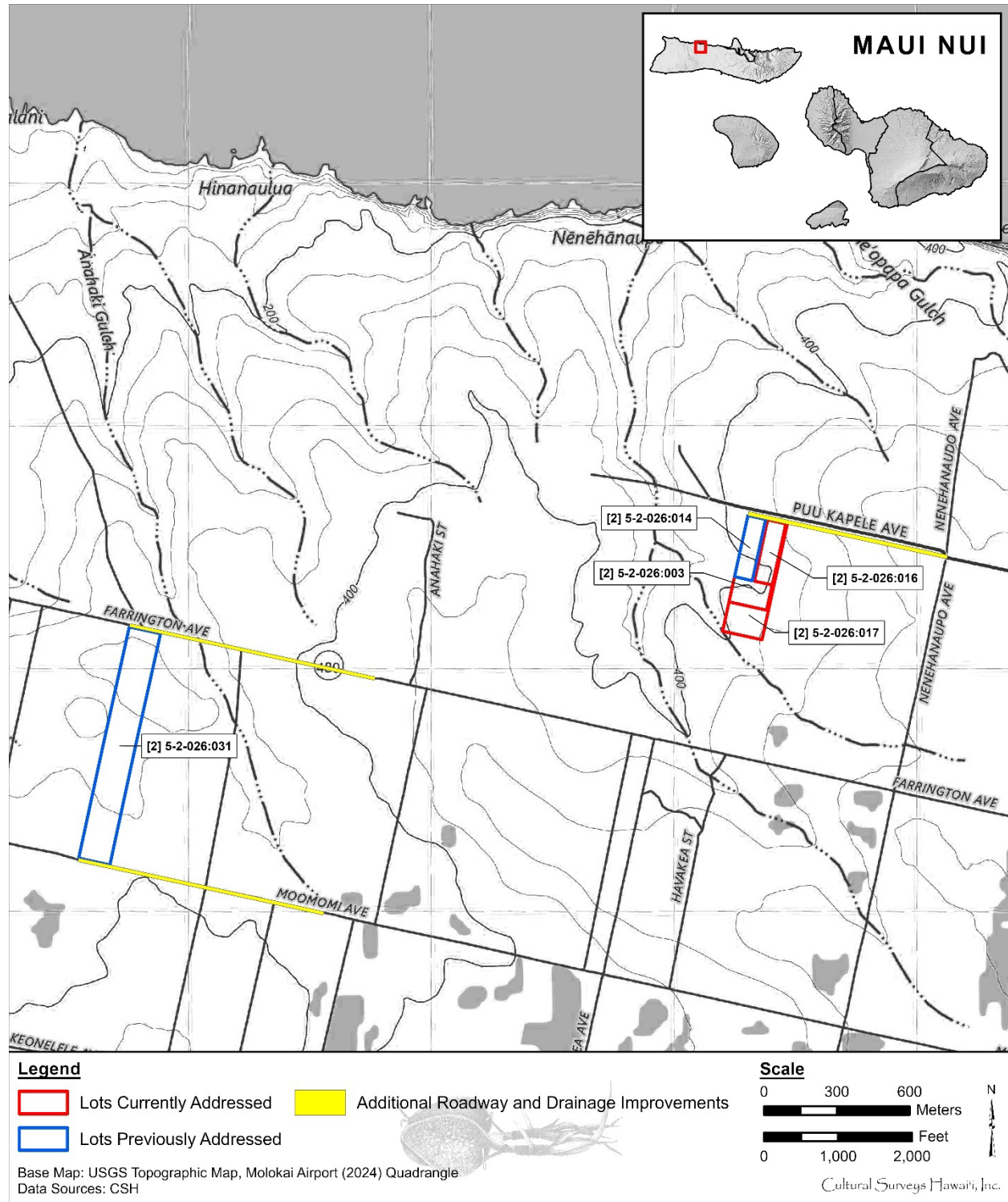


Figure 1. Portion of the 2024 Molokai Airport USGS 7.5-minute topographic quadrangle showing the location(s) of the three “Scattered Lots” currently addressed (in red), the additional roadway and drainage improvements (in yellow), and the two previously addressed “Scattered Lots” (in blue) (U.S. Geological Survey 2024b)

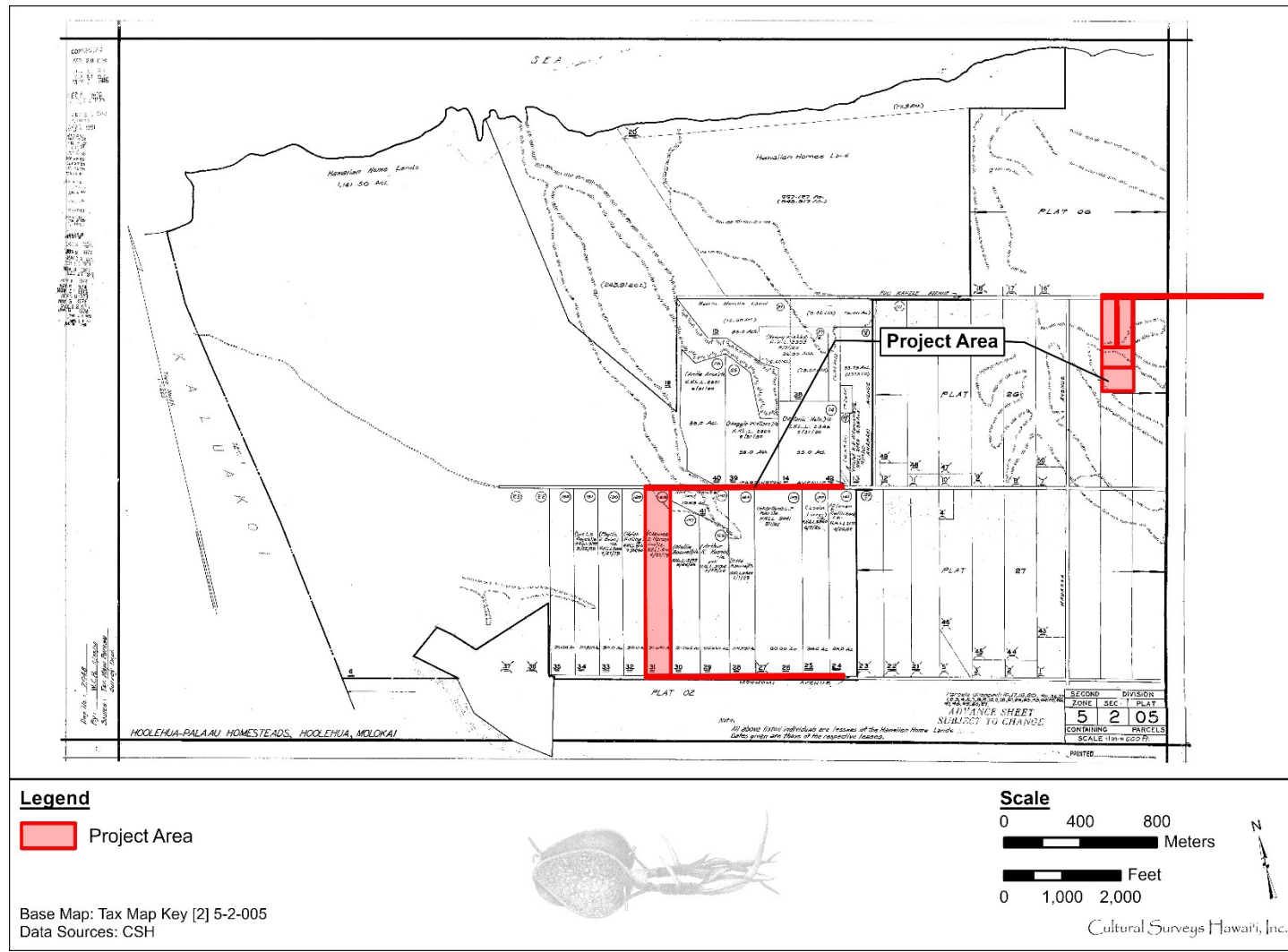


Figure 2. TMK: (2) 5-2-005 showing the location of the DHHL Ho'olehua Scattered Lots Subdivision and Improvements project area (Hawaii TMK Service 2014)

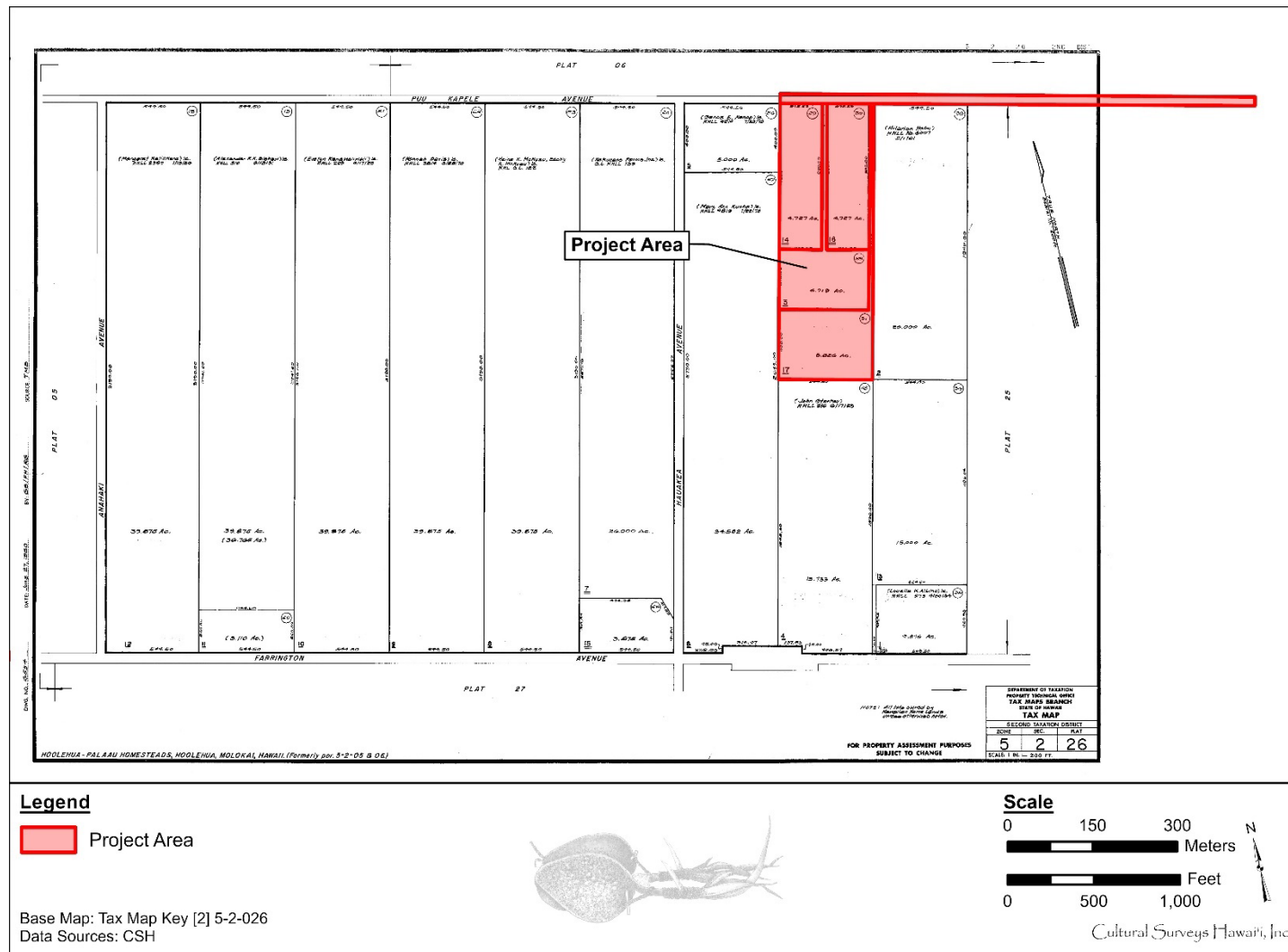


Figure 3. TMK: (2) 5-2-026 showing the location of the DHHL Ho‘olehua Scattered Lots Subdivision and Improvements project area (Hawaii TMK Service 2014)

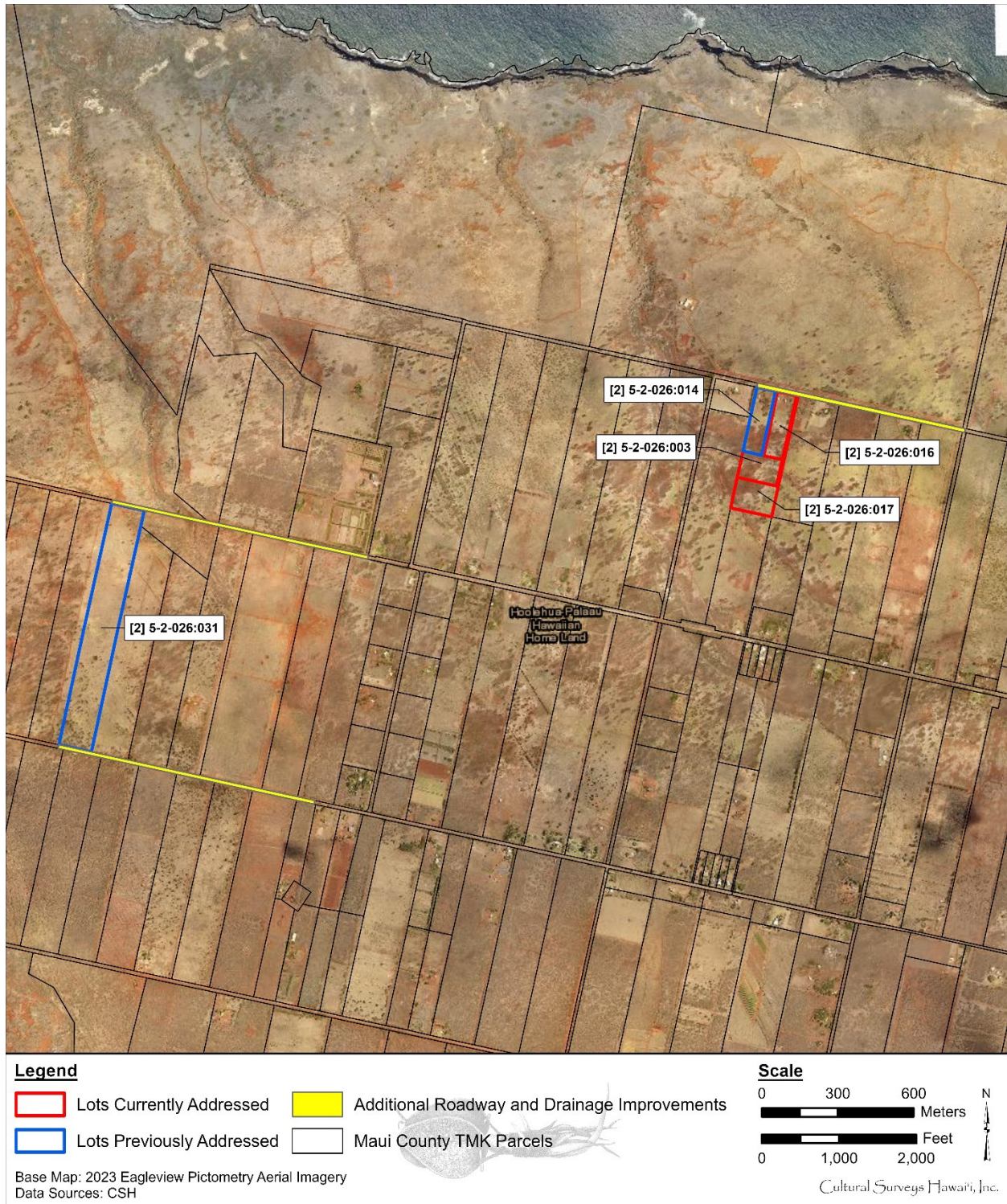


Figure 4. 2023 aerial image showing the location(s) of the three “Scattered Lots” currently addressed (in red), the additional roadway and drainage improvements (in yellow), and the two previously addressed “Scattered Lots” (in blue) (EagleView Technologies Inc. 2023)

compliance and is intended specifically to support consultation with the SHPD and to support obtaining an SHPD determination letter (as per Hawai'i Administrative Rules or HAR §13-13-275-3).

1.1 Environmental Setting

1.1.1 Natural Environment

The project area is on relatively flat lands at approximately 40 m (130 foot [ft]) elevation above sea level in the north central portion of Moloka'i Island, approximately 1.3 km (0.8 miles) inland (south) from Moloka'i's north shore sea cliffs. Due to its low elevation and partial shielding by the East Moloka'i volcano from trade winds, the vicinity is arid with only shallow, intermittent stream gulches (MacDonald et al. 1990:411). The project area is east of an unnamed gulch. It is believed this gulch rarely runs with water and that there is no source of potable water nearby.

The project area receives an approximate mean annual rainfall of 802 mm (32.83 inches) at the neighboring "Gage 34" station, according to the University of Hawai'i Online Rainfall Atlas of Hawaii (Giambelluca et al. 2013) which is suggested to be insufficient for non-irrigated agriculture.

MacDonald et al. (1990:411) provide the following description for soil in West Moloka'i:

Long periods of weathering, accompanied by comparatively little stripping by erosion, have left a deep red soil cover over the top of West Molokai. In places recent erosion has cut through the upper horizon exposing the lower horizon, which locally exhibits pronounced iron enrichment in the form of masses of lateritic iron oxide. [MacDonald et al. 1990:411]

The "deep, red soil" described by MacDonald et al. (1990:411) is characteristic of the current project area and vicinity and is apparent in recent aerial imagery (see Figure 4).

According to the 2006 United States Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (U.S. Department of Agriculture 2006) and soil survey data gathered by Foote et al. (1972), the soils within the west project area consist of Molokai series soils including Molokai silty clay loam, 3 to 7% slopes (MuB), and Molokai silty clay loam, shallow variant, 15 to 25% slopes, severely eroded (MvD3) soils (Figure 5).

Molokai series soils are described as follows:

[...] well-drained soils on uplands on the islands of Maui, Lanai, Molokai, and Oahu. These soils formed in material weathered from basic igneous rock. They are nearly level to moderately steep. Elevations range mainly from nearly sea level to 1,000 feet [...]

These soils are used for sugarcane, pineapple, pasture, wildlife habitat, and homesites. The natural vegetation consists of kiawe, ilima, uhaloa, feather fingergrass, and buffelgrass. [Foote et al. 1971:96]

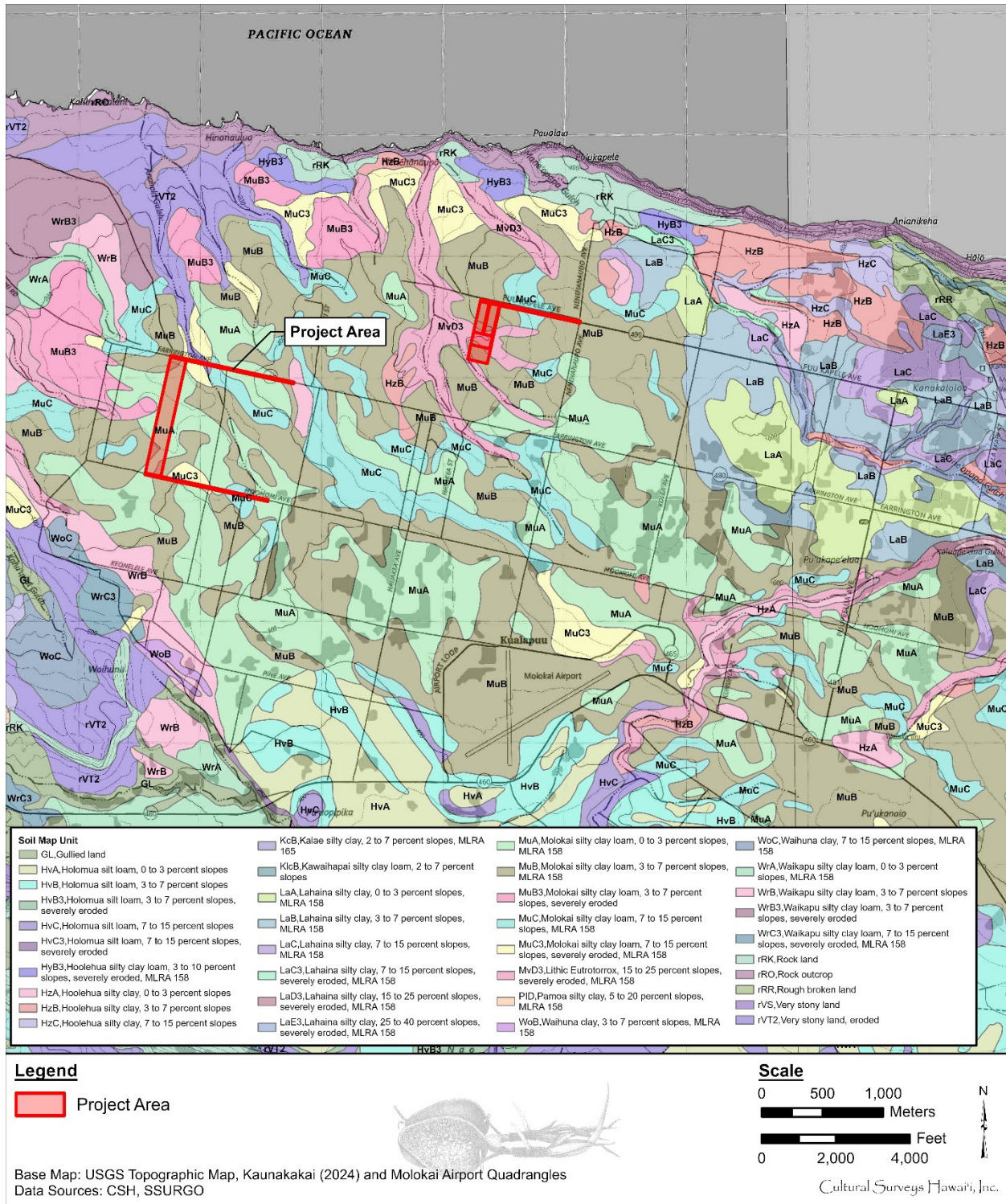


Figure 5. Portion of the 2024 Molokai Airport and Kaunakakai USGS 7.5-minute topographic quadrangles and overlay of Foote et al. (1972) *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, indicating soil types within and surrounding the project area (U.S. Department of Agriculture 2006)

MuB soils are further described as, “On this soil, runoff is slow to medium and the erosion hazard is slight to moderate. Included in mapping were a few small areas that are eroded to soft, weathered rock [...]” (Foote et al. 1971:96).

MvD3 soils are further described as follows:

This soil occurs on the sides of drainageways. In most places all of the surface layer and part of the subsoil have been removed, and about 12 to 20 inches of dark reddish-brown soil overlies the soft, weathered rock. In some places the soil is eroded to soft, weathered, rock and, as a result, is grayer or browner than is typical of the Molokai series. There are few to common stones and boulders on the surface. These are unweathered rock cores that have been exposed by erosion. Runoff is rapid, and the erosion hazard is severe. Workability is difficult. [Foote et al. 1971:97]

Ground visibility during the field inspection was variable from good in areas under a mature canopy of *koa haole* to poor in areas where exotic grasses were up to 1.5 m high. The project area vegetation consisted primarily of introduced species including exotic grasses, *koa haole* (*Leucaena leucocephala*), and some *kiawe* (*Prosopis pallida*), *klu* (*Acacia farnesiana*), and lantana (*Lantana camara*). The only native species identified in the project area were ‘ilima (*Sida fallax*) and ‘uhaloa (*Waltheria indica*).

The surrounding area was largely undeveloped with scattered DHHL homesteads.

1.1.2 Built Environment

The built environment within and surrounding the project area is minimal. The project area vicinity mostly consists of undeveloped DHHL parcels. Active homesteads are sporadic throughout the vicinity, located particularly along the bounding roadways. The roadway portions of the project area are mostly undeveloped dirt roads with some previously paved portions. Molokai Airport and associated infrastructure is located approximately 2 km south of the project area.

Section 2 Methods

2.1 Background Research

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai'i, the Hawai'i State Archives, the Mission Houses Museum Library, the Hawai'i Public Library, and the Bishop Museum Archives; study of historic photographs at the Hawai'i State Archives and the Bishop Museum Archives; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona 'Aina (2000) database.

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of cultural resources in the project area.

2.2 Fieldwork

Fieldwork was conducted on 19 December 2023 by CSH archaeologist David W. Shideler, M.A. and on 10 April 2025 by CSH archaeologists Jonas Madeus, B.A. and Noelani Hessler, B.A., under the general supervision of Hallett H. Hammatt, Ph.D. (principal investigator). This work required approximately 3 person-days to complete. The fieldwork was conducted with systematic sweeps, typically in a northeast to southwest direction, at approximately 5-15 m intervals. The purpose of the fieldwork was to identify, locate, and describe any potential historic properties and to provide representative photographs of the project areas. No potential historic properties were identified.

Section 3 Background Research

3.1 Traditional and Historical Background

Traditionally, Moloka'i was divided into two *moku*, or districts: Kona and Ko'olau. Kona Moku was comprised of the lands of the southern and western sections of the island (which included Pālā'au and Ho'olehua Ahupua'a) and the Ko'olau Moku which comprised the lands of the northeastern portion of the island from Hālawā Valley to the Kalaupapa Peninsula. In 1859, the traditional *moku* of Kona and Ko'olau were dropped and the island as a whole was referred to as the Moloka'i district. In 1909, the island was again divided into two districts: Kalawao District, containing the lands of Kalaupapa, Kalawao, and Waikolu, and Moloka'i District, comprising the remainder of the island (Coulter in Summers 1971:2), including the current project area.

The current project area is within Pālā'au Ahupua'a. Mrs. Pukui in Handy described the subdistricts of Pālā'au on Moloka'i as *kalana* (Pukui in Handy et al. 1991:47). Today, the *kalana* of Pālā'au consists of one major land division and two *lele*. Pālā'au 1 is located at the southern shores of central Moloka'i, while Pālā'au 3 is in uplands, at the summit of the sea cliffs above Kalaupapa Peninsula. These two *lele* of Pālā'au Ahupua'a are significantly smaller than Pālā'au 2—which includes the present project area. Pālā'au 2, the largest of the three land sections, is adjacent to the northwest of the *ahupua'a* of Ho'olehua (Dodge et al. 1897; Summers 1971:81).

3.1.1 Place Names

In the preface of *Place Names of Hawaii* (Pukui et al. 1974:x), Samuel Elbert offers the following description regarding place names:

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

Place names are far from static [...] names are constantly being given to new houses and buildings, land holdings, airstrips, streets, and towns and old names are replaced by new ones [...] it is all the more essential, then to record the names and the lore associated with them [the ancient names] now. (Pukui et al. 1974:x)]

Inherent in Elbert's statements is knowledge that the oldest place names held meaning and told the story of an area prior to European Contact. Many place names in the vicinity of the project area are provided in Figure 6. Literal translations of place names for land areas and divisions near the project area are listed in Table 1 and may provide insight into the area prior to Western Contact.

3.1.2 *Mo'olelo*

Early Hawaiian affairs and traditions were transmitted orally through *mo'olelo* (traditional stories). These legendary stories recount events involving nature, people, gods, and spirits, thereby offering a window on the essence of Hawaiian ideology and lifestyles prior to Western Contact. Several *mo'olelo* are associated with place names within or near Pālā'au and Ho'olehua are summarized below.

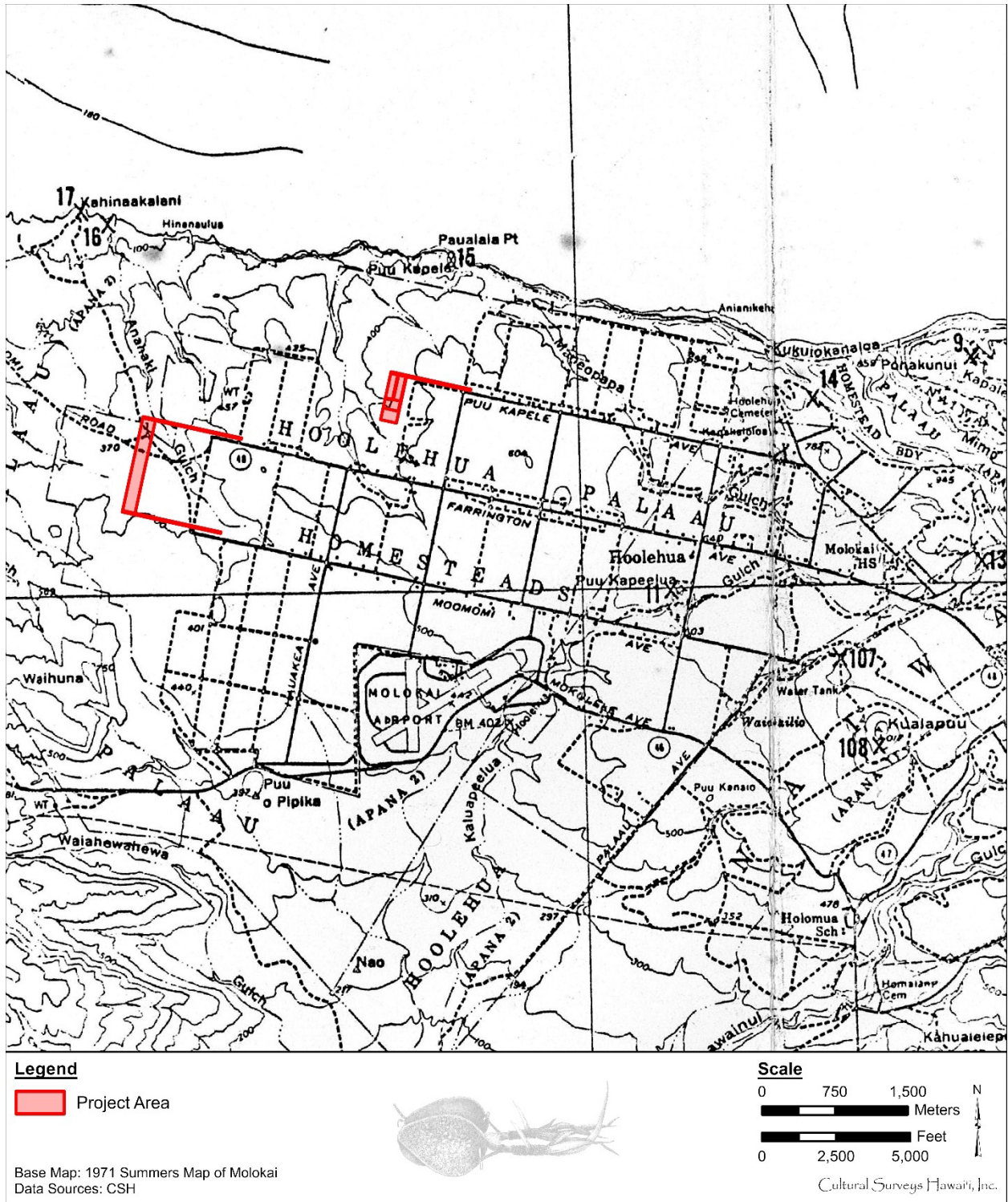


Figure 6. Map from Summers (1971) showing place names near the project area

Table 1. Place names near the current project area

Place Name	
Anahaki	Name of a gulch 2.5 km west of the three lots presently addressed. <i>Lit.</i> “Broken cave” (Pukui et al. (1974:51-52))
Anianikeha	Place along the sea cliff 3.0 km northeast of the three lots presently addressed. <i>Lit.</i> “blowing [on the] heights” (Pukui et al. (1974:51-52))
Hinanaulua	A point on the sea cliff 2.5 km northwest of the three lots presently addressed. <i>Lit.</i> “inspired [by a god] <i>hinana</i> fish.” (Pukui et al. (1974:51-52))
Ho‘olehua	<i>Lit.</i> acting the expert. Village, land division, and Hawaiian homestead area near the Moloka‘i airport; said to be named for a chief (Pukui et al. (1974:51-52)). Ho‘olehua Ahupua‘a encompasses the three lots presently addressed.
Kahinaakalani	A point on the sea cliff 3.2 km northwest of the three lots presently addressed <i>Lit.</i> “the grayness of the sky, heaven” (Pukui et al. (1974:51-52))
Kāluape‘elua	<i>Lit.</i> baked caterpillar. A caterpillar infestation was ended by baking the caterpillars (Pukui et al. 1974:79). Name of gulch 3.5 km southeast of the three lots presently addressed.
Kanakaloloa	Place 3.5 km southeast NW of the three lots presently addressed. <i>Lit.</i> “tall person” (Pukui et al. (1974:51-52))
Kukuiokanalooa	Name of a stretch of sea cliff 3.7 km northeast N of the three lots presently addressed <i>Lit.</i> “light of Kanalooa” (Pukui et al. (1974:51-52))
Mane‘opapa	Gulch 2.0 km northeast of the three lots presently addressed. Meaning uncertain.
Pālā‘au	<i>Lit.</i> wooden fence or enclosure (Pukui et al. 1974:176). Pālā‘au comprises three land sections in north, central, and southwest Moloka‘i and along with Ho‘olehua, names the homesteads where the three lots presently addressed are located. A western portion of the project area is in Pālā‘au 2, the largest ‘āpana [lot, parcel], of Pālā‘au Ahupua‘a.
Paulala	A point on the sea cliff 1.5 km north of the three lots presently addressed. Meaning uncertain.
Pu‘u Kanaio	<i>Lit.</i> the pinworm hill. Hill on the slopes of Kuala pu‘u (Pukui et al. 1974:198). This hill is 5.0 km southeast of the three lots presently addressed.
Pu‘u ka Pele	Hill on the sea cliff 1.4 km north of the three lots presently addressed. <i>Lit.</i> “the volcano hill” (Pukui et al. (1974:51-52)).
Pu‘u o Pipika	Hill, 4.0 km southwest of the three lots presently addressed, meaning uncertain (Pukui et al. 1974:204).
Waiakailio	<i>Lit.</i> water used by the dog (Pukui et al. 1974:219). Area with a stream approx. 4.7 km southeast of the three lots presently addressed.

3.1.3 Origin of Moloka'i

Mo'olelo provide varying accounts for the origin of Moloka'i. Paku'i, a historian in the time of Kamehameha I, wrote of the Hawaiian Islands having been born of Wākea and his wives. According to this version, Wākea's first wife, Papa, gave birth to Hawai'i, Maui, and Kaho'olawe before returning to Tahiti. Wākea took Kaulawahine as his second wife, and she gave birth to Lāna'i. He then took a third wife:

Then Wakea turned around and found Hina,	<i>Hoi ae O Wakea loa Hina,</i>
Hina was found as a wife for Wakea,	<i>Loaa Hina he wahine moe na Wakea,</i>
Hina conceived Molokai, an island;	<i>Hapai Hina ia Molokai, he moku,</i>
Hina's Molokai is an island child.	<i>O Molokai a Hina he keiki moku.</i>

[Fornander 1916-1917:12-13]

The historian Kahako'ikamoana recorded a different lineage for Moloka'i:

Kuluwaiea of Haumea as the husband,	<i>Na Kuluwaiea o Haumea he kane,</i>
Of Hinanuiakalana as the wife	<i>Na Hinanuiakalana he wahine</i>
Was born Molokai, a god, a priest,	<i>Loaa Molokai, ke akua, he kahuna,</i>
The first morning light from Nuumea,	<i>He pualena no Nuumea,</i>

[Fornander 1916-1917:2-3]

3.1.4 Pā'aka'a and His Son Kū-a-Pā'aka'a

The following *mo'olelo* recounts two chiefs, Pālā'au and Ho'olehua, which are also the names of the *ahupua'a* in which the current project area is located (Pālā'au) and the adjacent *ahupua'a* to the east (Ho'olehua).

On Molokai lived a very beautiful woman, Hikauhi, the daughter of Hoolehua and Ilali. Now it happened that the girl's father had promised her hand to Palaau, the chief of that part of the island. But as soon as she had seen Paakaa, she forgot all about her former lover and demanded that the stranger be given to her. Palaau very generously consented, and so they all lived in peace. Paakaa cultivated the lands well, fished skillfully, and brought great prosperity to his wife and her family. [Handy 1922:76]

3.1.5 Pu'u Ka Pe'elua, Caterpillar Hill

According to Harriet Ne (1992), the story of Pu'u Pe'elua involves Pele, the daughter of a chief of Pālā'au, who fell in love with the *pe'elua* (caterpillar) of Ho'olehua, the *'aumakua* (family or personal gods, deified ancestors) of that district:

A beautiful young girl named Pele, the daughter of a chief in the Pālā'au area, encountered in the early twilight a handsome young man. They fell in love, and he courted her for almost a year. She concealed her love from her parents and lived only for the hours she spent with him.

She did not know that he was the *pe'elua* of the district, revered and loved by the people of Ho'olehua—even worshipped. Nor did she know that he had the form of a young man only at night but that in the day he returned to the form of a caterpillar.

As the days passed, Pele grew pale and listless. [...] The *kahuna* perceived the problem at once. 'She is in love with the supreme manifestation of the caterpillar-Pe'elua,' he told [her parents]. 'When he comes to her at night, it is in the form of a handsome young man; but his power is draining her strength. She is human. She cannot live with a magical being. To save her, you must kill him. You must destroy him completely.' [Ne et al. 1992:49–50]

The same story is also told by Cooke (1949):

[...] this beautiful girl was visited each night by a lover who left before daylight. She was unable to discover who he was, this suspense told on her, and she began to waste away. A priest, consulted by her parents, advised the girl to attach a piece of white tapa to a wart on her lover's back. In the morning, shreds of tapa helped to trace the demi-god lover to the hill Puu Peelua, in the middle of Hoolehua. The kahuna [priest] and friends of the family found a large peelua [caterpillar] asleep on the hill. The kahuna ordered the people to collect wood which was placed around the sleeping peelua, and a fire was lit. As the heat of the fire increased, the caterpillar burst into myriads of small caterpillars which were scattered over the plain. That accounts for the army-worm pest, called peelua. [Cooke 1949:102]

3.1.6 Pele's Long Sleep

An ancient chant concerning Lohi'au, the king of Kaua'i, includes reference to Pālā'au. At the beginning of his romance with Pele,

Lohiau watched her while he partook of the feast with his chiefs, and she was resting on the couch of mats. He was thinking of her marvelous, restful beauty, as given in the ancient chant known as 'Lei Mauna Loa.'

Lei of Mauna Loa, beautiful to look upon.
 The mountain honored by the winds.
 Known by the peaceful motion.
 Calm becomes the whirlwind.
 Beautiful is the sun upon the plain.
 Dark-leaved the trees in the midst of the hot sun
 Heat rising from the face of the moist lava.
 The sunrise mist lying on the grass,
 Free from the care of the strong wind.
 The bird returns to rest at Palaau.
 He who owns the right to sleep is at Palaau.
 I am alive for your love—
 For you indeed. [Westervelt 1916:77]

3.1.7 Sorcery on Moloka'i

Kamakau (1992a) recounts a story regarding the origin of sorcery use on Moloka'i, in which the Ho'olehua and Pālā'au plains are mentioned:

Kaiakea, a prominent man of Kala'e and its vicinity, was said to have been a man without a god. He built a large new household below Kahanui and provided all kinds of food, such as poi, pig, 'awa, bananas, fish, and everything else necessary

for a 'house-warming' (*o ka hale komo*). When the day came, Kaiakea's wife and the other women were at the *hale noa*, the common house, and Kaiakea and the other men and the servers were at the *hale mua*, the men's house. The *hale noa* was apart from the *hale mua*, which was surrounded by a lanai. Kaiakea was in the doorway of the *hale mua*, and while the feast was being prepared, he saw a long procession of women coming over the plains of Ho'olehua to Pala'au. They were dressed in yellow tapa skirts and yellow tapa shoulder coverings (*kihei*), with variegated (*papahi*) leis of *ma 'o* and *'ilima* crowning their heads. There was one man among them. The procession went down to the spring, named Piliwale, and left their things (*he ukana*) there. These were a *puniu hulihuli*, or coconut-shell container, and the women's *'alae* bird bodies. When Kaiakea saw the many beautiful women in that company, he called out to them to come in on the lanai, but they remained outside. Only the man who was with them approached and stood at the door of Kaiakea's house and talked with him. Kaiakea offered them food, but the spirit man (*kanaka anela*) said they would not eat his food unless a leaf-thatched house, a *hale lau*, was built for them; then they would eat of his food. This man revealed that they were not humans, but 'angels,' and he told Kaiakea their names. Pua was his name, and Kauluimaunaloa (the-grove-at-Maunaloa, that is, Kapo) was the name of the chiefess who led the procession. He said they would become Kaiakea's gods if the *hale lau* was finished that day, and would give into his charge the *puniu hulihuli*, their visible form (*ko lakau kino 'ike maka 'ia*), and all the paraphernalia to do their work (*ka lakau mau hana a pau*), which was inside it. The *'alae* birds were their bodies which they showed abroad (*kino ho 'ike 'ia iwaho*). After revealing these things to Kaiakea, the being vanished. Kaiakea went to the spring to look for the *puniu*, and got it; the *'alae* birds were resting there at the spring. That very day Kaiakea erected the *hale lau* and filled it with poi, 'awa, bananas, and tapas appropriate to these gods; that same evening it was dedicated (*ke kapu no 'ia*). The food offerings (*ka 'ai me ka i'a*) and the 'awa were all consumed by the *'alae* birds, and they were well content with the food provided for them.

It was in this way that Kaiakea became the *kahu* of gods, and he became known as a man who had gods. He was the *kahu* of Kapo (Kauluimaunaloa) and Pua. Kaiakea, however, just took care (*malama pono*) of these gods. He did no harm to others, and did not send his gods to bring death (*ho 'aunauna e make*) to any man or to any chief. He just took care of his *akua ho 'ola 'a* (the spirits who had been made gods by his consecration and offerings). Upon his death he commanded his children to take care of the gods against the days of trouble; the gods would repay them with life (*ola*). But they were not to seek wealth from the gods through sorcery. [Kamakau1992a:131–132]

3.1.8 'Ōlelo No'eau

Pukui (1983) compiled an extensive list of *'ōlelo no'eau* (proverbs or traditional sayings) in *'Ōlelo No'eau: Hawaiian Proverbs & Poetical Sayings*. Authors of the preface to the book discuss these expressions as follows:

The sayings may be appreciated individually and collectively for their aesthetic, historic, and educational values. They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawai'i and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawai'i, they bring us closer to the everyday thoughts and lives of the Hawaiians who created them. [Pukui 1983:VII]

Several *'ōlelo no 'eau* concern Moloka'i. For example, the following references an origin story:

Moloka'i nui a Hina. [Pukui 1983:239]	<i>Great Moloka 'i, land of Hina.</i>
--	---------------------------------------

Other sayings regard powers associated with Moloka'i. Though Kaiakea cautioned his children not to spread sorcery, his wishes went unheeded (Kamakau 1992a) (see subsection 3.1.1.2.5). Molokai'i became traditionally known for its medicinal and magical powers, as the following Hawaiian proverbs demonstrate:

Moloka'i ku'i lā'au. [Pukui 1983:239]	<i>Moloka 'i, pounder of medicine.</i>
Moloka'i pule o'o. [Pukui 1983:239]	<i>Moloka 'i of the potent prayers.</i>

At least two proverbs are associated with aspects of former ways of life in Ho'olehua:

Ku'u manu lawelawe o Ho'olehua.	<i>My bird of Ho'olehua that cries out about food.</i> [Pukui 1983:235]
Mo'a nupu ka lā i ke kula o Ho'olehua	<i>The sun scorches the plain of Ho'olehua</i> [Pukui 1983:207]

Pukui (1983:207) tells that the *kioea* bird cries out *Lawelawe keō! Lawelawe keō!* (Take the food! Take the food!) to the fishermen as they head out to sea.

3.1.9 Subsistence and Settlement

During his archaeological survey of Moloka'i in 1937, Southwick Phelps (1937) noted the following about West Moloka'i:

It is said that in former days western Molokai was not as devoid of forest as it is now. While this may be true to a limited extent, I think that the essential conditions have remained the same and that the western half was always a semi-arid region. One certainly finds there no extensive taro patches and no signs of dense population. We learn, furthermore, that it was traditionally a land of the sweet-potato, a plant that does not require much water. [Phelps 1937:6-7]

While exact boundaries for yam and sweet potato cultivation in Pālā'au and Ho'olehua are unknown, these tubers, along with fish, were staples of inhabitants in the area (Phelps 1937).

The region including Ho'olehua was a fertile plain known particularly for the cultivation of *'uala* (sweet potato). Summers (1971:38) cites Malihinihele who stated in 1876, "In the olden days this [Pālā'au 2] was a good land with a fertile plain where plants grew. The population was large but today it is uninhabited." Handy (1940:157) remarks, "In 1931 there were many flourishing

patches on the Hawaiian homesteads at Hoolehua. It is said that Hoolehua and Palaau were noted for sweet potatoes in olden days” although (Handy and Handy 1972:283) note homesteaders in Ho‘olehua were growing the sweet potatoes on land that had not been planted in ancient times.

The importance of *‘uala* to the area is further suggested by place names such as Pu‘u Pe‘elua (hill of the caterpillar) and Kāluape‘elua (baked caterpillar), which illustrate the connection to the environment of the area (Pukui et al. 1974). The *pe‘elua*, or the caterpillar, feeds on the sweet potato and is considered a pest by *‘uala* farmers of the region. Pukui et al. (1974) noted hilled sweet potatoes in the region south of Ho‘olehua and Pālā‘au known as Uala-pu‘e, which is also the name of a fishpond in that area. In addition to sweet potato, *‘olo* or *hokeo*, the long gourd used for holding fishing tackle and to make the *hula* drum, notably grew in Ho‘olehua (Handy et al. 1991:213).

The actual size of the pre-Contact Hawaiian population tending and supported by crops in central and western portions of Moloka‘i can only be conjectured. While the greater portion of the population resided on the eastern side of the island, a late nineteenth century anecdote by Abraham Fornander (1880) suggests a former substantial population that may have been widely dispersed:

As an instance of the dense population, even a few years previous to Kamehameha's death, the author has often been told by a grand-niece of Kekaulike, who was a grown-up girl at the time, that when the chiefs trumpetshell sounded, over a thousand able-bodied men would respond to the call, within a circle described by Palaau, Naiwa, Kalae and Kaunakakai. Those lands together cannot muster a hundred men this day. [Fornander 1880:73 footnote]

3.2 Early Historic Period

Early historic accounts briefly mention Moloka‘i. Summers (1971:18) relates that in 1779 when Captain Cook visited Hawai‘i, the status of Moloka‘i was uncertain. However, Kamakau (1992b) cites several reasons why Moloka‘i was as important as O‘ahu in the late 1700s, since both of the islands contained “rich lands, many walled fish-ponds, springs, and water taro patches. The island of Oahu was very fertile and Molokai scarcely less so” (Kamakau 1992b:132-133).

Captain George Vancouver (1798), sailing along the southern coast of Moloka‘i in 1793, essayed a portrait of the island’s geographic texture and distribution of Hawaiian population:

Early the next morning, with a pleasant breeze from the N.E., we stood over towards the east point of Morotai, [...] we sailed along to the westward, [...] About half a league south of the east point of Morotai [...] lies a small barren rocky islet, called by the natives Modooenete [...] In this direction east the land rises rather abruptly from the sea, towards the lofty mountains in the center of the east part of Morotai; and though the acclivity was great, yet the face of the country diversified by eminences and vallies; bore a verdant and fertile appearance. It seemed to be well inhabited, in a high state of cultivation, and presented not only a rich but a romantic prospect. To the westward of these cliffs, the shores terminated in the former direction, by a low point of land, called by the natives Crynoa [...] From Crynoa the country assumes a dreary aspect. The mountains, forming the eastern part of the island, gradually descend to the westward, and like those of Mowee, terminate on a low isthmus, which appears to divide the island into two peninsulas

[...] the easternmost, which is far the largest is composed of very high land, but the westernmost does not rise to any elevation, beyond that of a mean height. The country from Crynoa rises from the sea by an ascent, uninterrupted with chasms, hills or vallies. This uniform surface, on advancing to westward, exhibited a gradual decrease in the population; it discovered an uncultivated barren soil, and a tract of land that gave residence only to a few of the lower orders of the islanders, who resort to the shores for the purpose of taking fish, with which they abound. Those so employed are obliged to fetch their fresh water from a great distance; none but what is brackish being attainable on the western parts of Morotai. [Vancouver 1798:201–202]

Early visitors and Hawaiian historians confirm Vancouver's perception of a wide-spread Hawaiian population throughout the eastern portion of the island and a much smaller population clustered along the shoreline within the western portion.

After conquering the island of Maui in 1790, Kamehameha I advanced on to Moloka'i where he secured the allegiance of the chiefs. Archibald Menzies (1920), the naturalist who accompanied Captain George Vancouver to the Hawaiian Islands in the 1790s, relates that Kamehameha I "destroy[ed] the fields and plantations of the inhabitants" (Menzies 1920:115). He and his warriors remained on Moloka'i for a year to prepare the attack on O'ahu. He is said to have grown taro and "had all his canoes put in order. He drilled his warriors on the Hoolehua plain near where the airport is now" (Cooke 1949:112).

3.3 Early 1800s

The first Protestant missionaries arrived in Hawai'i in 1820. In the following years, the ruling Hawaiian chiefs and governors established a network of public schools throughout the villages of the Hawaiian Islands. In September 1828, a group of missionaries travelled to Moloka'i to determine the progress of the schools (Andrews 1829). After landing on the southeast side at Honomuni, they traveled west over the next two days to the villages of Hālawa, Halana, Makanalua (Kalaupapa Peninsula), and overland to Kaunakakai where they put up for the night:

During the whole night, the people continued to arrive; and, about sunrising, the chiefs made their appearance [...] Having examined a large school here, we walked on, and the chiefs followed, in canoes. We travelled along, on the sea shore, finding very little vegetation, on account of the drought. There is scarcely any water on this side of the island. [Andrews 1829:273]

They completed their examination of the schools on Moloka'i the following day, noting that they "numbered nearly 700 houses, and think there are about 1,000 on the island" (Andrews 1829:274).

The United States Navy Exploring Expedition under the command of Captain Charles Wilkes visited the island of Moloka'i in 1840 and described the island as follows:

[...] forty miles long, from east to west, and nine miles wide: the western portion, embracing about one third of the whole extent, is a barren waste; and the remaining two thirds is mountainous, in some places rising to the height of twenty-eight

hundred feet, with the exception of a narrow strip of land on the south side, which has a most favorable exposure, and is highly productive. [Jenkins 1850:258]

3.4 The Māhele and the Kuleana Act

The Organic Acts of 1845 and 1846 initiated the process of the Māhele—the division of Hawaiian lands—that introduced private property into Hawaiian society. During the Māhele, all lands in the Kingdom of Hawai'i were divided among *mō'ī* (king), *ali'i* (royalty), *konohiki* (overseer of an *ahupua'a* [traditional land division]), and *maka'āinana* (common people/tenants of the land) and passed into the western land tenure model of private ownership. In 1848, the crown and the *ali'i* received their land titles. On 8 March 1848, Kamehameha III further divided his personal holdings into lands he would retain as private holdings (Crown Lands) and parcels he would give to the government. According to an 1897 Hawaiian Government Survey map of Moloka'i showing 1848 divisions of land, the entire *ahupua'a* of Ho'olehua was given to the government, and all of Pālā'au Ahupua'a was retained by the Crown (Figure 7).

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay a cash amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent (RP) was issued giving full title of ownership to the tenant.

On 19 October 1849, the Hawaiian Privy Council adopted resolutions to protect the rights of Native tenants, the *maka'āinana*. The *maka'āinana* were offered fee-simple titles for their house lots and lands that they cultivated for themselves. *Kuleana* awards for individual parcels within the *ahupua'a* were subsequently granted through a land commission. These awards were first presented to Native Hawaiian tenants followed by the naturalized foreigners (non-Hawaiians born in the Islands) or long-term resident foreigners who could prove occupancy on the parcels before 1845. No commutation fee was necessary to apply for a Royal Patent for a *kuleana* award as the commutation fee had presumably already been paid by *ali'i/konohiki* who had been awarded the entire *ahupua'a*, or an *'ili* (a land division within an *ahupua'a*) in which the Native tenant claimed his own small parcels (Chinen 1958:29-30).

No native tenant LCAs were awarded near the project area, and only one LCA and one Land Grant were awarded in the vicinity. Approximately 4.6 km southeast of the project area, LCA 11216 (LCA 11216*Mo) was awarded to Kekauonohi (see Figure 7 and Figure 8) a member of the House of Kamehameha and a wife to King Kamehameha II. This LCA included 5,803 acres comprising approximately half of the *ahupua'a* of Na'iwa. Approximately 4.8 km southwest of the project area, Grant 3146 was awarded to Charles R. Bishop (see Figure 8). No land use information is provided for Grant 3146 (Waihona 'Aina 2000).

3.5 Mid- to Late 1800s

3.5.1 Cattle Ranching

Cattle were introduced to Moloka'i in the 1840s. De Loach (1975) summarizes this first effort at commercial ranching:

Rudolph W. Meyer, who was, [...] responsible, along with [Reverend] Hitchcock, for the introduction of cattle on the island, had come to Moloka'i in the 1840s. He

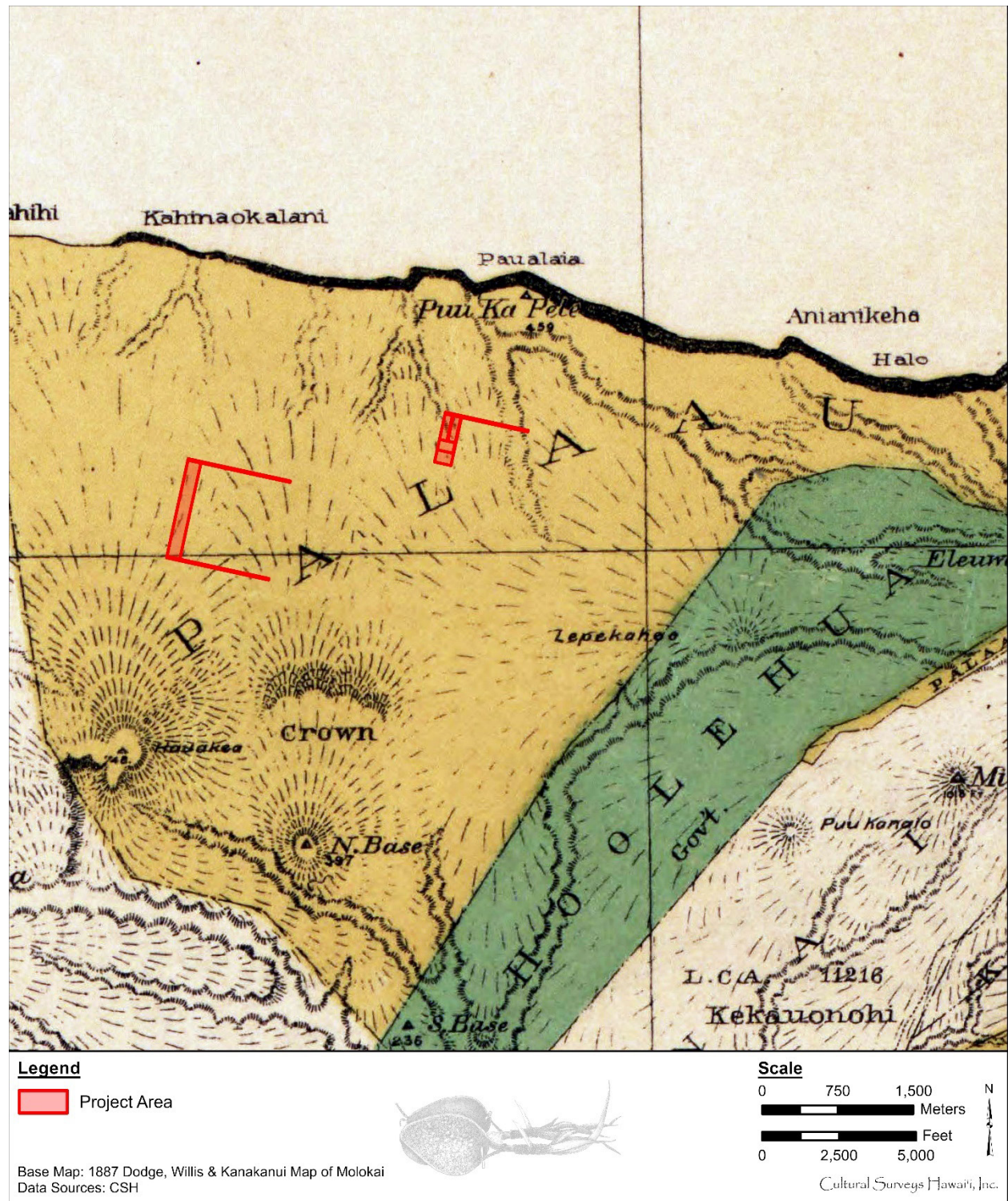


Figure 7. Portion of Dodge et al. (1897) map of Molokai showing 1848 land divisions (Crown [yellow], government [green], LCAs [no color]); the project area were within Crown lands

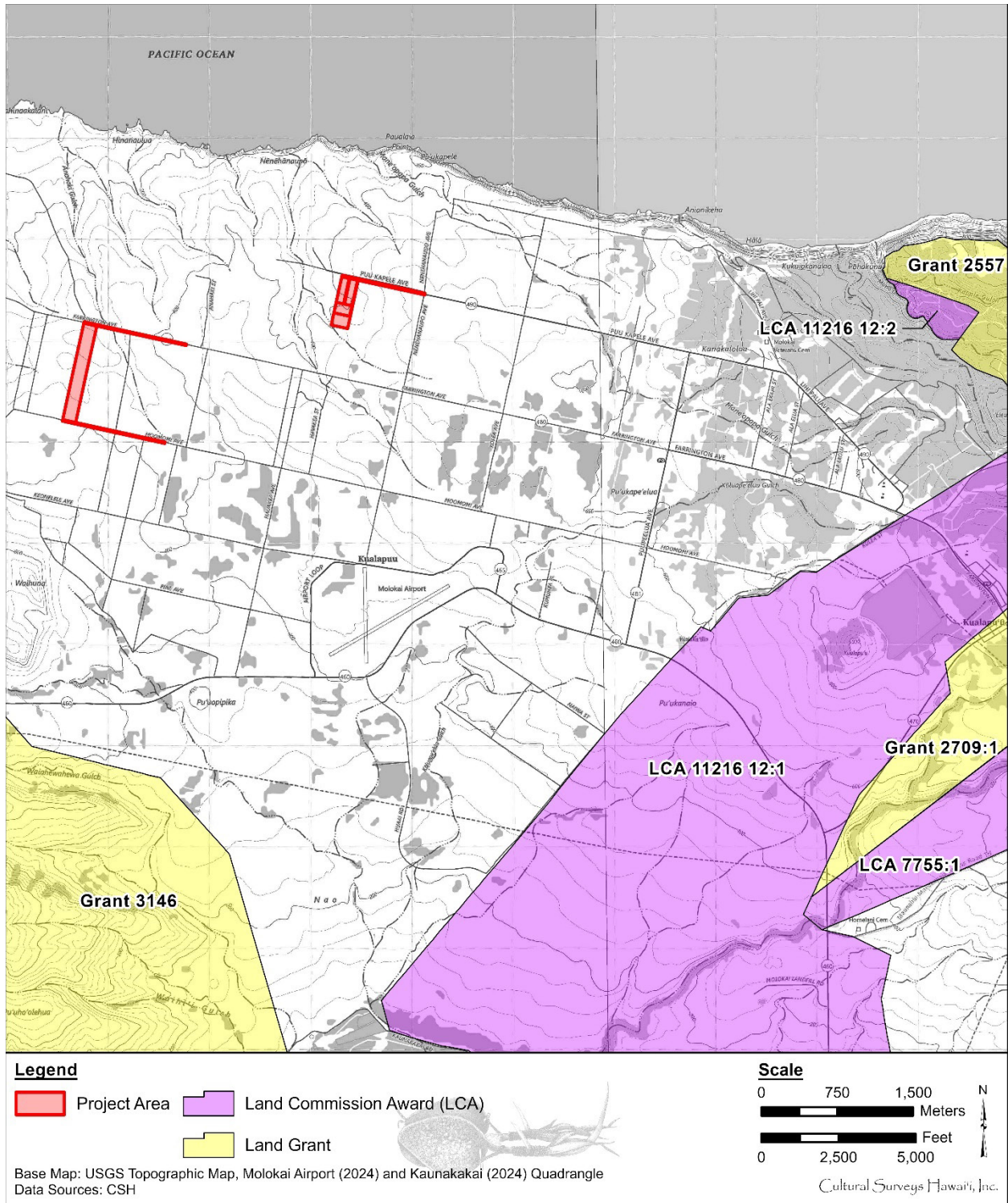


Figure 8. LCAs and Grants in the vicinity of the project area depicted on a portion of 2024 Molokai Airport and Kaunakakai USGS topographic quadrangles (U.S. Geological Survey 2024a, 2024b)

established a ranch stocked with longhorns in the Kala'e [north central Moloka'i] Area. A lucrative trade in cattle and hides was begun between Moloka'i and Honolulu. The cattle were exported from the village of Pālā'au on the southwestern shore, over the reef, and onto a waiting ship. Pālā'au grew wealthy on cattle and dry land taro. All this came to an end, however, in the 1850s, when Meyer discovered that the number of cattle in the herd had diminished considerably. He found that almost every male in the village was guilty of rustling, and so all the men were shipped off to jail in Honolulu. The men's families followed, and the village was deserted. Today Palaaau sits abandoned in a kiawe forest, as no one ever returned to live there. [de Loach 1975:68]

Despite these early setbacks, cattle (and sheep) ranching expanded greatly in the second half of the nineteenth century:

During this period, cattle, sheep and goats were imported to the island in ever-increasing numbers. According to Judd, there were no cattle on the island in 1832 and by 1853 there were only 200 head. The 1866 census, however, revealed 2,586 head of cattle, 13,332 sheep and 196 goats on the island. [...] In 1868, Kamehameha V released axis deer on the island. [de Loach 1975:86]

In 1855, Lot Kapuawai (King Kamehameha V) purchased the *ahupua'a* of Kaunakakai for two hundred dollars (Interior Department Letter, July 1885) to maintain the value of a sheep station established there by his brother, Alexander Liholiho (King Kamehameha IV) (Kuykendall 1953:152). Lot Kapuawai also actively sought to increase his Moloka'i holdings: "in the desire to have a country estate, he bought up land and cattle from the resident Hawaiians and used Moloka'i as a vacation ground from his cares of State" (Judd 1936:9-10).

In 1868, King Kamehameha V was sent seven live axis deer from Hong Kong as a gift (Tomich 1986:127). He released the deer, adding to the free-roaming game population on the island but, consequently, also to the destruction of vegetation by the flourishing population of foraging animals. In a 1902 talk given in Japan on Hawaiian Forests, E.M. Griffith (1902) remarked on the already alarmingly denuded state of Moloka'i:

Cattle, goats and deer have totally destroyed the forests upon the larger portion of the island of Molokai so that the western half is practically destitute of any tree growth. It is possible that the algaroba forests which have secured such a strong hold along the coast near Kaunakakai may gradually spread over this end of the island [...] The condition at present time is that the forest has been pushed back into the deeper and more inaccessible canyons and onto the highest slopes of the mountain. The effective watershed in respect to the conservation of the water supply has thus been greatly reduced and the careful protection of the remaining forests is an absolute necessity. [Griffith 1902:Appendix G]

An 1886 Government Survey map (Figure 9) depicts an approximate upper growth line of the algaroba (*kiawe*) forests approximately 3.5 km south of the present project area. The project area is depicted as within the Momomi Paddock. Extensive pastureland is indicated with no other development suggested.

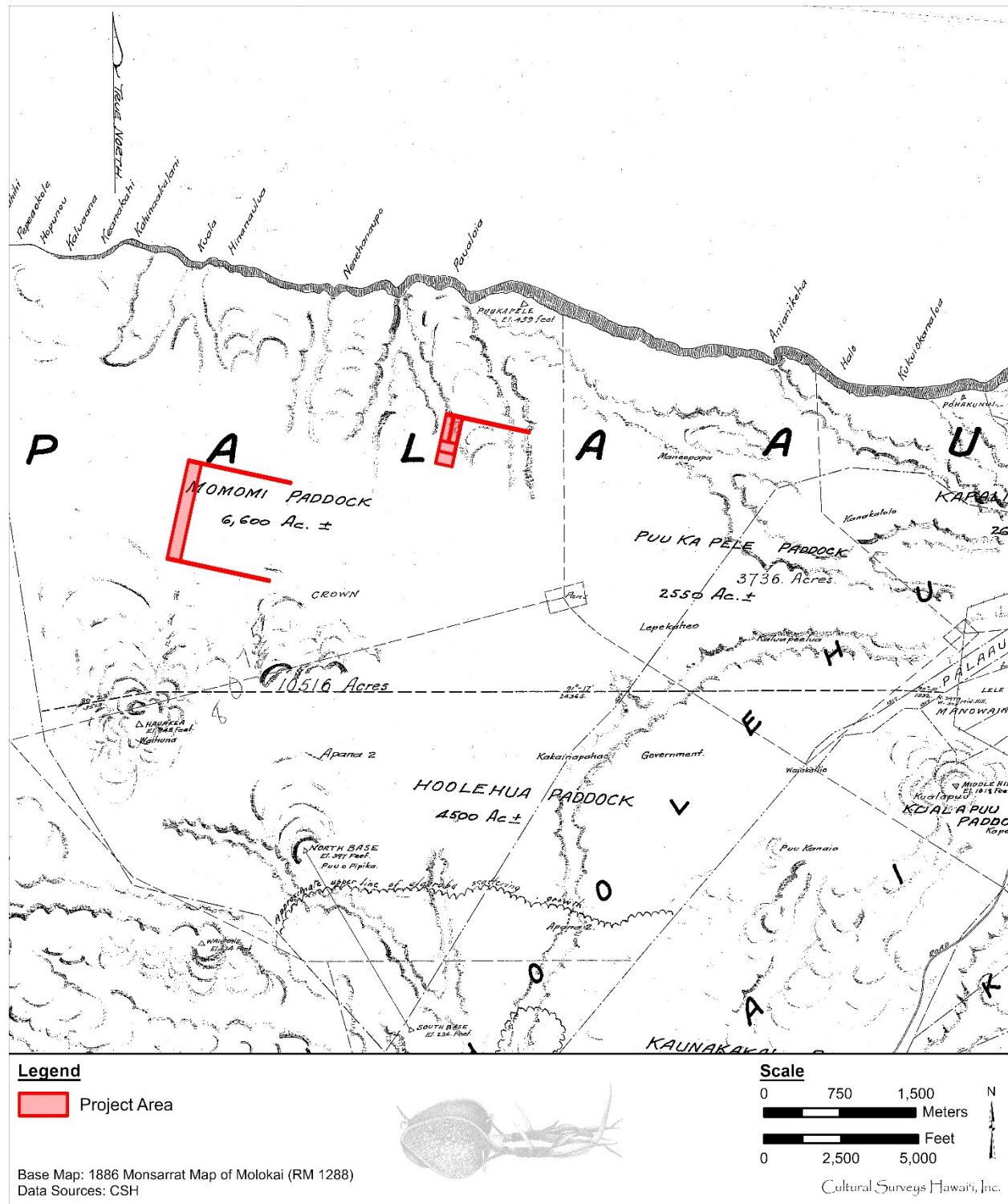


Figure 9. Portion of Monsarrat (1886) Hawaiian Government Survey map of Moloka'i, Middle and West Sections (RM 1288); showing the project area within the Momomi Paddock

During the Māhele in 1848, Bernice Pauahi Bishop, daughter of Abner Pākī and Laura Konia and last descendant of the Kamehameha dynasty, inherited much of the lands which are now Molokai Ranch lands. Her husband, Charles R. Bishop, inherited the lands of Kaluako'i in 1875. The Molokai Ranch was formed in 1897 when a *hui* (group of investors) purchased approximately 70,000 acres of central and western holdings from the Bishop Estate (Cooke 1949; Stearns and Macdonald 1947).

3.5.2 Agriculture

Mr. Harvey R. Hitchcock and Mrs. Rebecca H. Hitchcock became the first permanent missionaries on Moloka'i. They established a Protestant church at Kalua'aha in 1832, at which point the only agricultural crops they noted were bananas and taro grown in the valleys where water was most readily available. No "regular schools, churches, houses of permanent nature, no garments, no cattle, only one horse, and home articles of the most primitive nature" were present then (Wiebke 1940). Twenty years later, the island had a number of churches, 1,000 students enrolled in 21 schools across the island, and livestock including goats, hogs, 400 horses, and cattle. Taro, potatoes, and grapes were "cultivated quite extensively" (Wiebke 1940:1).

In the early 1840s, the Meyer family in Kala'e was growing and exporting coffee, corn, wheat, and potatoes to the mainland. The Meyer family started a sugar mill at Kala'e in 1878 using 30 acres of land to grow cane. This was one of the few locations on Moloka'i that had adequate rainfall to grow cane, but problems stemmed from the cane being planted at an elevation of 1,500 ft above sea level. Sugarcane matured slower at higher elevations, so yields were lower. The Meyer plantation produced 50 tons of sugar annually (Wiebke 1940). The sugar mill was closed in 1894, because it was too small to compete with larger operations.

Two other large sugar plantations were developed on Moloka'i beginning in the late 1870s, one at Moa-nui in East Moloka'i and one at Kaunakakai. Both of these plantations quickly failed and were abandoned (Wiebke 1940).

In 1898, American Sugar Company, Limited (ASCO) was incorporated by Molokai Ranch, which leased an additional 30,000 acres (Cooke 1949). Following the incorporation, a full-scale cane operation in central and western Moloka'i began, including an attempt to develop the arid lands of the Ho'olehua plain. "On the Hoolehua plain 750 acres were prepared in parallel trenches following the contours. 500 acres were actually planted in young cane shoots" (Judd 1936:12). Due to an inadequate water supply, this sugar enterprise was also unsuccessful. The well pumps, which had been installed in surface wells, were of such large capacity that they soon exhausted the fresh water, and irrigation ditches 8 miles long brought pumped water with such a high salt content that it could not be used to grow sugarcane:

Wells were dug in the lowlands and water pumped into a system of irrigation ditches above. As the pumping increased, the salt content of the water gradually increased until it became detrimental to the cane. This plantation like the others was quickly abandoned. [Wiebke 1940:1]

The ASCO plantation at Kamalō was the only Moloka'i sugar plantation to invest money in a railroad. Railroad tracks were constructed from Kaunakakai harbor "up through Palaau and Ilioli to the middle of the Hoolehua plateau" (Judd 1936:11). After failed sugar cultivation efforts, "graded railroad bed cutting through the gulches of Palaau" and "irrigation ditches [...] on the

Hoolehua plain” were all that remained (Judd 1936:11-12). No locomotives were ever shipped to Moloka'i. The tracks were removed and recycled into cattle guards. Today, stones mark the old railway route from Pālā'au to Mahana (Strazar 2000).

By 1900, all sugar production on Moloka'i had ceased (Stearns and Macdonald 1947:3). Regarding the ASCO plantation's demise, former Molokai Ranch manager, George C. Munro, recalled the following:

Hawaiians claimed that the plantation was doomed from the start, because as the company constructed the railroad along the shore to Palaau it tore down an ancient fishing heiau near Kahunui. It used the rocks for the railroad bed and ran the rails through the center of the heiau. [Morse 1953:6]

3.6 1900s

3.6.1 Molokai Ranch

Molokai Ranch became a more organized operation in the early 1900s. By 1905, the ranch had transitioned from an open country system to the paddock system (Henke 1929). During the transition, wild deer and feral goat populations were reduced, a water distribution system was implemented, and a breeding program begun. Water from the East Moloka'i mountains was gravity fed to a concrete reservoir and then piped down to the ranch. By 1929, Molokai Ranch had approximately 75 miles of water pipes and more than 100 miles of smooth wire fences. An 1886 Hawaiian Government Survey map shows several paddocks surrounding the three lots presently addressed (see Figure 9). These labels were most likely added after the map's original creation, since the paddocks appear to indicate land use by Molokai Ranch, which wasn't established until 1897 and then transitioned to the paddock system from 1898 to 1905 (Henke 1929). The western and eastern project areas are within the Momomi Paddock.

In the 1920s, Molokai Ranch lands consisted of about 10,000 acres leased for pineapple cultivation, 8,000 acres of forest reserves, and 50,000 acres utilized for ranching (Henke 1929:52). Most ranching activities were associated with cattle. Beginning in 1923, Molokai Ranch imported Hereford bulls from the Parker Ranch on Hawai'i Island, which resulted in a beef cattle population of over 4,500 head by 1929. In 1929, the ranch also had 400 swine and about 200 sheep. Sheep ranching was formerly more prevalent, with sheep numbers up to approximately 17,000 in 1907. However, the combination of sheep and cattle ranching caused over-pasturing, and since cattle ranching was more lucrative, sheep ranching began phasing out. In 1951, grazing land for sheep ranching remained a viable industry, despite its heyday being many decades prior (Carlson 1951). Cattle ranching remains a significant industry on Moloka'i.

Molokai Ranch also produced honey. In 1903, an Italian breed of bees was purchased and crossbred with the island's endemic species (Cooke 1949). In 1928, 350 tons of *kiawe* honey were produced on Molokai Ranch, most of which was sold to Germany (Henke 1929).

3.6.2 Hawaiian Homes Commission

In 1920, the U.S. Congress passed the Hawaiian Homes Commission Act to administer and manage some 200,000 acres of land that belonged to the government of the Kingdom of Hawai'i or was recognized as Crown lands. Agricultural homesteads were to be leased to Native Hawaiians, with leasehold terms generally lasting 99 years at one dollar a year. The following year, the

program began attracting people to Moloka'i. Kalaniana'ole Colony was the first homestead established under the Hawaiian Homestead Act of 1920. The settlement is located in Kalama'ula Ahupua'a, near the southern shores of Moloka'i Island.

The Moloka'i homestead program initially was impacted by many problems, including drought and high winds (McGregor 1990:37-38). Insect pests were also a discouraging impediment, at one point accounting for destruction of over 50% of many of the most desirable crops on the island (Wiebke 1940). A *Mauī News* article from 1940 recounts the following:

With the birth of the Hawaiian Homes commission, Hawaiian homesteaders began pouring into the Kala'e and Ho'olehua sections. For a number of years extensive truck crops of every kind were raised successfully, but today this project has become a sorrowful enigma. [Wiebke 1940:1]

The 1922 USGS map (Figure 10) shows the project area as relatively undeveloped. An unimproved Moomomi Road passed through the western project area and a Waihi Pipeline and adjacent unimproved road passed to storage tanks 1.3 km southeast of the three lots presently addressed. The pipelines reflect the burst of agricultural activity.

Despite such difficulties, people managed to cultivate their plots (McGregor 1990:37-38). For instance, at Kalaniana'ole Colony, water for "bathing, laundry, and farming" was originally supplied by wooden flume from a spring in Kaunakakai, with drinking water provided by a spring in Kalama'ula (Tomonari-Tuggle 1990:10). Farming was diversified and successful crops included corn, watermelons, cucumbers, sweet potatoes, eggplant, and papaya (Keesing 1936; Wiebke 1940). In addition, demand became high for Moloka'i alfalfa, and homestead tomatoes "controlled the Honolulu market" in 1924 (Keesing 1936:56).

Overall, the program succeeded and was expanded to include 11,400 acres of Pālā'au-Ho'olehua beginning in 1924. The current project area consists of approximately 36.4 acres (14.7 hectares) of these Pālā'au-Ho'olehua Homestead lands and includes Lots 17 and 104D-1. Due to the homestead program, the Pālā'au-Ho'olehua region had the largest population of Native Hawaiians in 1930. Of the 1,031 residents, 826 were Hawaiian (McGregor 1990:10).

In addition to agricultural pursuits, the Hawaiian Homes Commission encouraged raising livestock and ranching. Raising pigs brought the most revenue and economic value; however, a few families sold eggs and every family owned some cattle (Keesing 1936). In 1929, 54 homesteaders owned a total 358 cattle, including two Hereford bulls, 106 horses, 15 mules, and six donkeys (Henke 1929). Community pastures allowed each lot holder to graze up to 60 head of livestock. Additionally, three 250-acre pastures were reserved specifically for ranching. Pastures in Ho'olehua and Pālā'au totaled 6,630 acres. In 1935, 979 cattle, 72 horses, and 25 mules utilized the community pastures though less than half Ho'olehua families had cattle on these lands.

The Hawaiian Homes Commission was also instrumental in the establishment and expansion of Moloka'i High School, approximately 5.5 km east of the current eastern project area. The school gym was constructed between 1931 and 1932 by the Hawaiian Homes Commission and the county. Moloka'i High School became the first and only high school on the island when it expanded from an intermediate school to a high school in 1939. Situated at Ho'olehua on Hawaiian Homes Commission land, it opened to all students on the island with an enrollment of over 400. In 1950, the board of supervisors approved negotiation of the purchase of 40 acres of Hawaiian

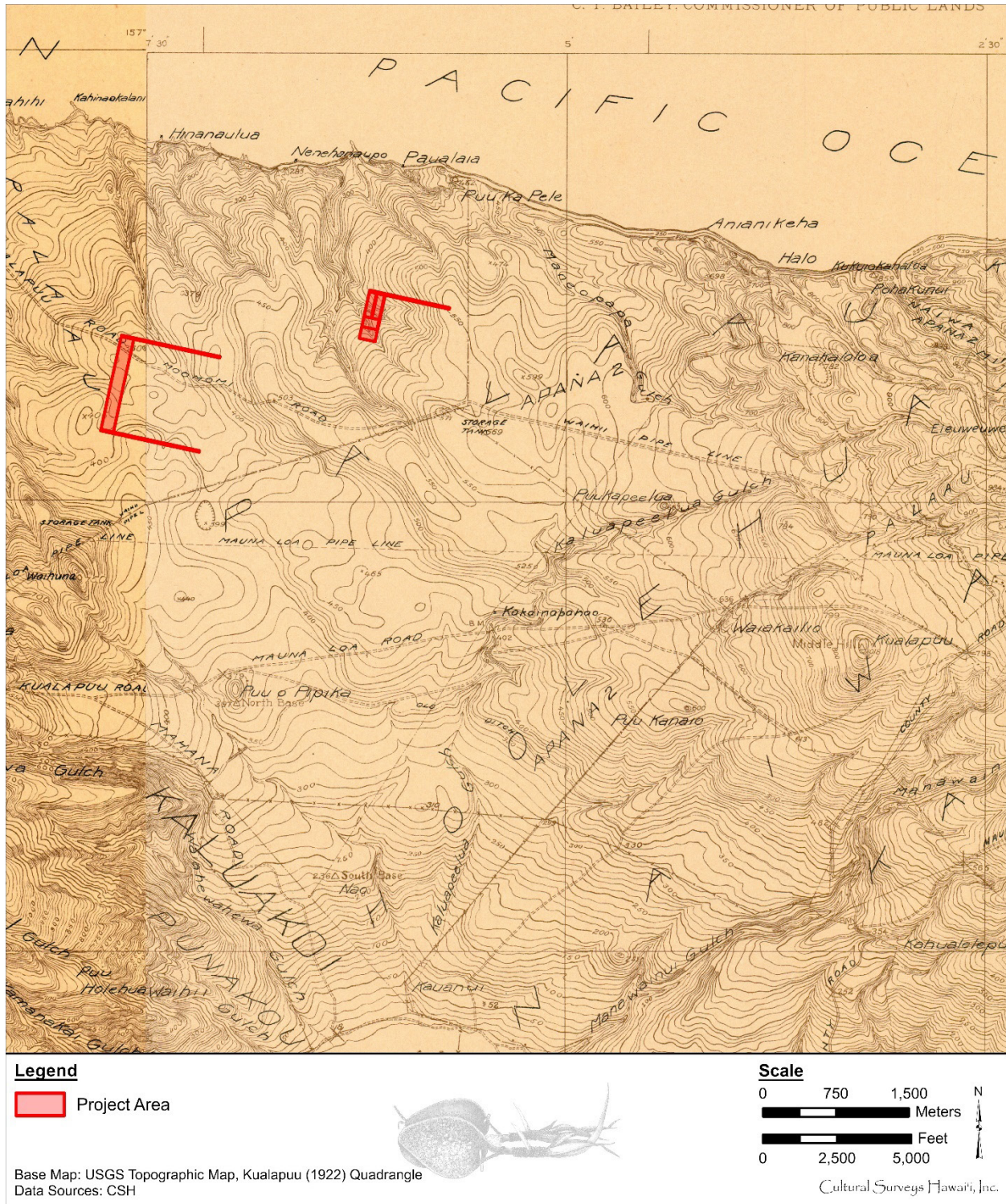


Figure 10. Portion of 1922 USGS topographic map of Kualapuu quadrangle, showing the project area as relatively undeveloped (an unimproved Moomomi Road passed through the area and a Waihi Pipeline and adjacent unimproved road extended east to storage tanks southeast of the project area) (U.S. Geological Survey 1922)

Homes Commission lands adjacent to the extant campus for construction of a new high school site (Maui News 1950).

3.6.3 Pineapple

Starting in 1918, independent pineapple growers tilled “the hillsides from Ualapua to Halawa, but due to high cost of operations these small plantations were short lived” (Wiebke 1940:1). The commercial pineapple industry arrived on Moloka'i in the early 1920s, with Molokai Ranch owning a majority of the leased pineapple lands (Lee-Greig and Hammatt 2008). Pineapple cultivation began in Pālā'au-Ho'olehua in 1926, when Libby, McNeill and Libby signed up some homesteaders to grow pineapple on homestead land operated in leased blocks of several 35-acre homesteads, which were cultivated by Libby.

By 1929, the California Packing Corporation (Calpac) had begun enlisting Native Hawaiian homesteaders in the Kualapu'u region, including areas near the current project area, to grow pineapple. The system adopted by both Libby McNeill & Libby and Calpac involved homesteaders growing pineapple in blocks of land leased by the plantation. Between 12 to 15 abutting homesteads were assembled by the pineapple plantation to form a contiguous area that was assigned a block number (Figure 11). Homesteaders under this block system planted, tended, and harvested to receive a proportionate share of the sale of fruit from each block. The harvested fruit was trucked by Calpac to a pier constructed at Kaunakakai, where it was crane-loaded onto barges and shipped to the Calpac cannery at Kahului, Maui (Larsen and Marks 2010:371-372). Homestead residents received almost two million dollars in cash payments for their efforts between 1929 and 1935.

Despite droughts, including one between 1944 and 1945 that caused the loss of the entire crop, pineapple production in the vicinity of the project area continued until the 1970s (Larsen and Marks 2010:379). Dole Pineapple, which had subsumed Libby, McNeill and Libby's operations, ceased pineapple cultivation in 1975. The California Packing Corporation had planned on closing the same year but continued cultivation until 1983, when a majority of its production ceased business on Moloka'i (Larsen and Marks 2010:382).

3.6.4 School Farm

In the early 1920s, Ho'olehua consisted of an undeveloped wide, grassy plain used for pasture with little development and no public school. Several families moved into the area when the land opened to Hawaiian homesteading and California Packing Corporation started their pineapple plantation at Kualapu'u, formerly a Molokai Ranch camp. Kalae School, a one-room schoolhouse at Kalae, eventually moved to the old recreation hall at Kualapu'u to better accommodate students coming from the ranch camp. As homesteads and pineapple cultivation expanded in the area, a new school was constructed at Ho'olehua to meet growing numbers of student enrollment; in 1926 the students at Kalae School moved to the new school. The staff originally consisted of three teachers, including an instructor of agriculture, but within three years the faculty grew to 15.

The school established a progressive agricultural department in 1930, which rapidly developed into a highly reputable agricultural training center. Modern methods of farming and animal husbandry were taught to male vocational students (numbering 70 in 1939). Students cultivated crops designed to give them needed experience and experimented with plantings to test for possible improved crops or strains for use on the island. About half of the vocational boys came from

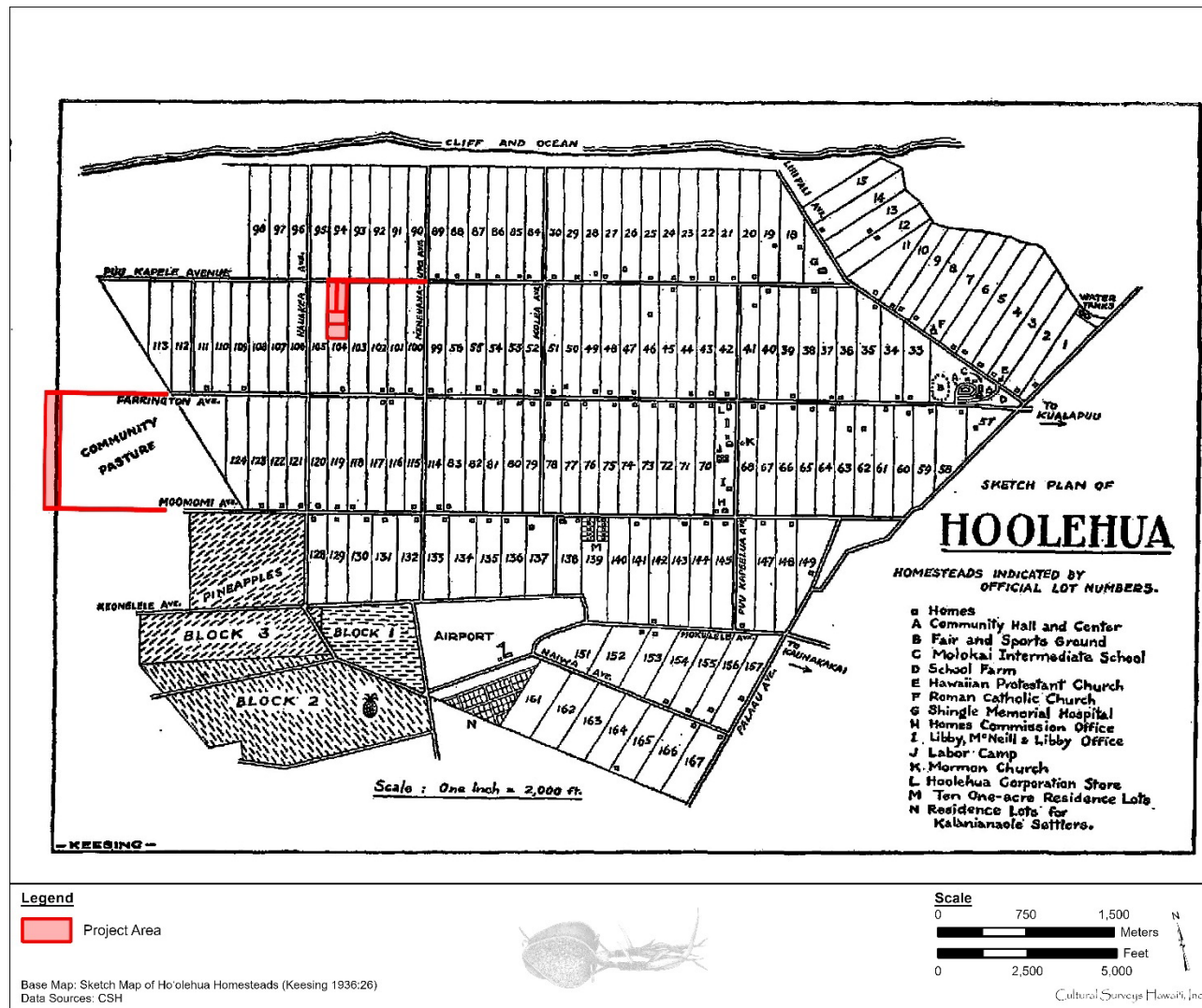


Figure 11. Sketch plan of Ho'olehua Homesteads (Keesing 1936:26) showing the project area within the indicated Hoolehua Homesteads

homesteads and the other half from Calpac-employed families. A cooperative program between Moloka'i High School and Calpac was initiated in 1948, where boys from the vocational program worked at the plantation in the mornings before school for seniority consideration for employment post-graduation (*Maui News* 1948).

Hawaiian Homes Commission provided a 26-acre farm (Figure 12) to the department for educational purposes on “well selected land [...] makai of the Hawaiian Homes Commission office in Ho‘olehua” (*Maui News* 1940:1). The farm had chicken houses and pigpens built by the vocational students in the farm shop. “The instructor of agriculture and three classes of boys spent weeks with tractors and ropes clearing lantana” from the area to be cultivated (*Maui News* 1939:6). A 1939 news article describes the farm:

The farm is up to date and well equipped. It serves the community as a practice ground for students; a source of improved livestock, poultry and plans; an example to the community of good landscaping and agricultural methods and is an experimental ground for new crops. Here the boys are receiving thorough instruction in the fundamentals of good scientific farming coupled with training to farm management—increasingly important because of the vital necessity that the modern tiller of the soil have a good working knowledge of farm economics in Hawaii if local small scale agrarian enterprises are to be operated at a profit. [*Maui News* 1939:6]

Figure 13 illustrates a typical resident homestead lot in Ho‘olehua during the 1930s. Families farmed a variety of crops in Ho‘olehua, including corn, melons, tomatoes, cucumbers, pumpkins, sweet potatoes, squash, peanuts, beans, onions, and cabbage (Keesing 1936). Pumpkin poi became a staple for these homesteaders. Though dryland agriculture had successes at Pālā‘au-Ho‘olehua Homesteads, constant care was needed to combat hardships caused by droughts, winds, and pests.

3.6.5 Corn

Corn was grown on Moloka'i from as early as the 1920s. In a letter to the editor of the *Honolulu Star-Bulletin* in 1922, the writer comments quite fondly of Moloka'i corn (Figure 14). In the 1940s, the Moloka'i corn project was intended to provide a local source of food for livestock, since all feed corn was being imported (The Honolulu Advertiser 1944a). Approximately 1,400 acres of field corn and 1,000 acres of milo maize were planted and harvested by resident high-schoolers and homesteaders. Homesteaders also grew feed corn separate from the Moloka'i corn project (The Honolulu Advertiser 1944b). In Ho‘olehua, large amounts of corn were sold or fed to livestock (Keesing 1926).

In 1967, Kaye Waldorf became a third partner in Hawaiian Research, Ltd. and moved from his 430-acre corn and soybean farm in Iowa to become resident manager of the company and grow corn on Moloka'i (Lynch 1968) (Figure 15). Hawaiian Research, Ltd. began experimenting with seed corn on Moloka'i in the winter of 1966; by autumn 1968, the company was growing over 900 strains of corn. Fertile soils, a year-long temperate albeit arid climate, a culturally diverse environment for his teenage children, and an “intellectual curiosity” attracted Waldorf to experimental agricultural farming on Moloka'i (Lynch 1968:B-1).

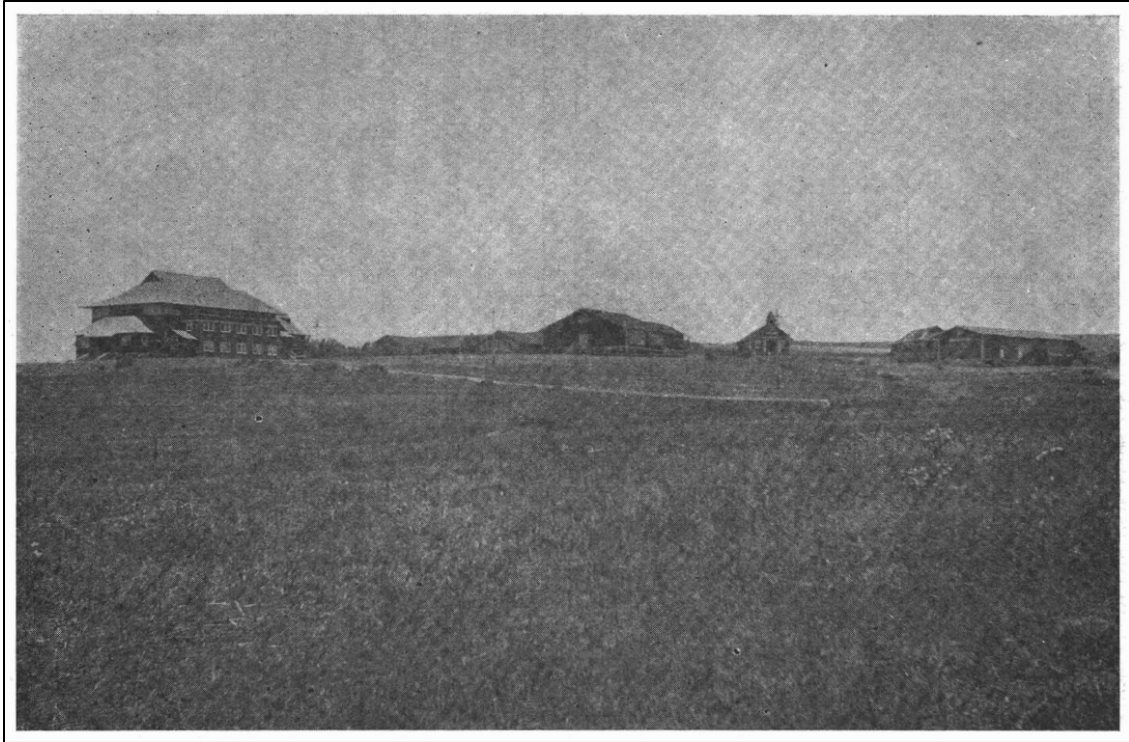


Figure 12. Community Center for Ho'olehua Homesteads including, from left to right, a hall, school, church, and farm, ca. 1939 (Keesing 1936:124)

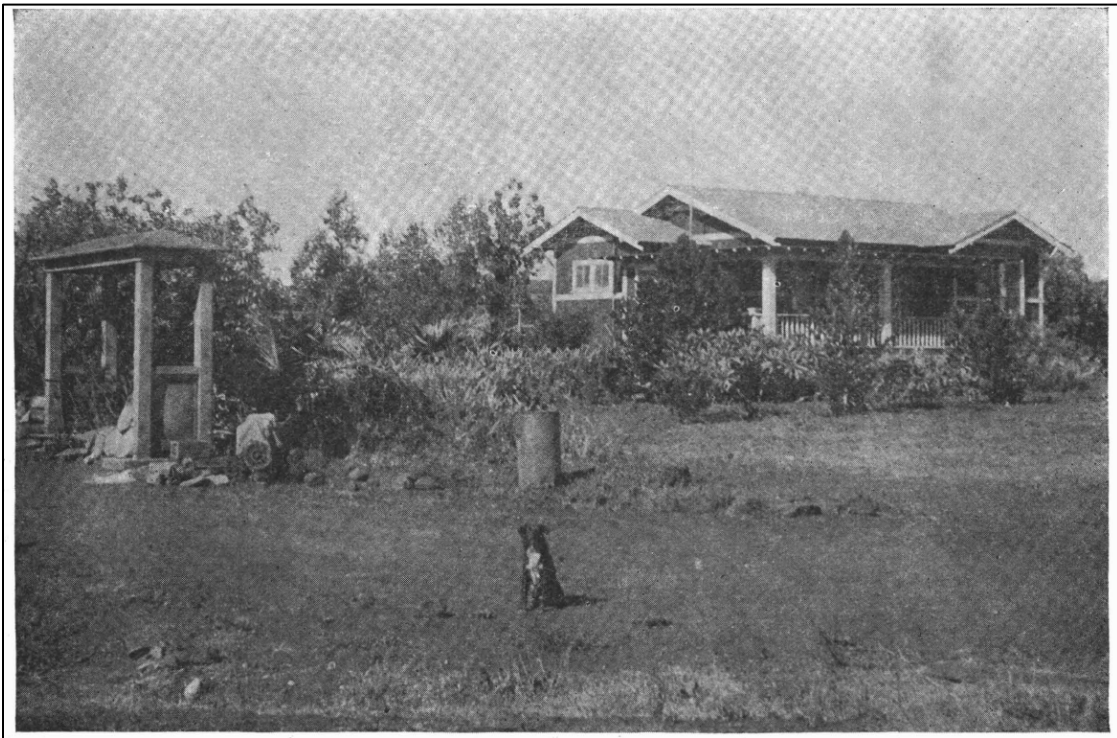


Figure 13. A Ho'olehua homestead in 1939 (Keesing 1936:59)

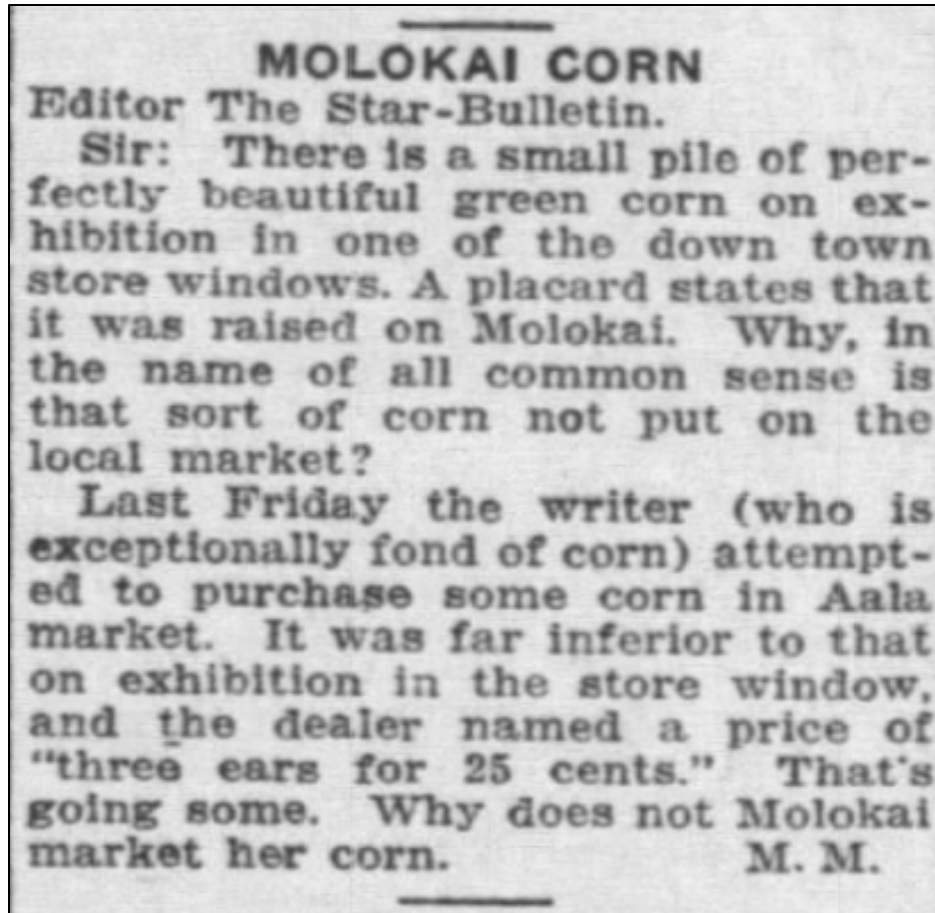


Figure 14. Letter to the editor praising the quality of Moloka'i corn in 1922 (*Honolulu Star-Bulletin* 1922:6)



Figure 15. Experimental corn farmer, Kaye Waldorf, in West Moloka'i; pipeline (left) transported water to his crops (Roll 1968:B-1)

The same State Department of Land and Natural Resources (DLNR), Water and Land Development Division irrigation project that supplied water to about 14,500 acres of pineapple fields in West Moloka'i was also used to irrigate the corn fields, which comprised a portion of 1,500 acres of diversified agricultural land that also included "experimental potato plantings and some Hawaiian Homestead truck farm lands" (Lynch 1968:B-1). In October 1968, the final stages were underway for a project involving 5 miles of tunnel and additional miles of pipeline to transport water from the wet, northeastern Waikolu Valley to crops in West Moloka'i. In addition, a 1.4-billion-gallon earth reservoir was being constructed at a central location in Kualapu'u to store any excess water collected during the rainy winter season in order to provide a year-round supply of water to arid West Moloka'i's crops. Kualapu'u Reservoir is located approximately 6 km southeast of the current project area. While the lack of a natural water supply certainly created obstacles, Waldorf preferred the more controlled distribution of water to his crops via a pipeline (see Figure 15) to the unpredictable rains he experienced as a corn farmer in Iowa.

3.6.6 Infrastructure

In conjunction with agricultural, residential, and economic changes, the twentieth century also brought infrastructure improvements to the island of Moloka'i. On 13 May 1909, a telephone line was authorized for Moloka'i Island (*Maui News* 1926). In 1925, construction began on a road connecting Kaunakakai to Ho'olehua, which was used regularly during Moloka'i's pineapple era to transport loads for export. Access roads within the homesteads were established and have been maintained by the Hawaiian Homes Commission without charge to homesteaders or Maui County (Keesing 1936:49). Aerial photographs and topographic maps show unpaved roads in the general vicinity in the 1950s and 1960s (Figure 16 through Figure 19). It appears Pu'u kapelle Avenue was extended west on the north side of TMK: (2) 5-2-026:016 between 1952 (Figure 17) and 1964 (Figure 18). The three lots presently addressed were something of an undeveloped island with significantly more development to the west, south, and east. The 1950 and 1964 aerial photographs (Figure 16 and Figure 18) show pineapple cultivation neighboring, but not within, the three lots.

In 1932, Molokai Electric Company was incorporated and established an electric generating station in Kaunakakai with one 200-horsepower diesel generator, which first supplied electricity to 59 customers in Kaunakakai Village that year (Young 1961). By the 1960s, the company serviced the entire island with nine generators channeling electricity through 80 miles of transmission lines (Young 1961).

Following the development of aerial combat in the First World War, the availability of war-surplus aircraft for civilian aviation in the Hawaiian Islands led to the establishment of a civilian airfield at Ho'olehua in 1919 named Moloka'i Field. In the 1930s, improvements were made at Moloka'i Field including the construction of a terminal building for the use of Inter-Island Airways, the first commercial inter-island carrier. The segregation of part of the civilian airfield at Ho'olehua for military use occurred when the U.S. Army Air Corps established a portion of the field as "Homestead Field," beginning in September 1931 (Horvat 1966:38,40-47). By the time the United States entered World War II in 1941, aircraft of the Fifth Bombardment Group were stationed at Homestead Field. Heavy rains caused water and mud to flow into the operating area of the airport until a drainage ditch was completed in 1953. In 1954, the sod-on-sand runway was replaced by a paved runway and the airport terminal was built in 1957. Figure 17 shows the airport during the 1950s prior to the construction of the terminal. Improvements to the airport continued

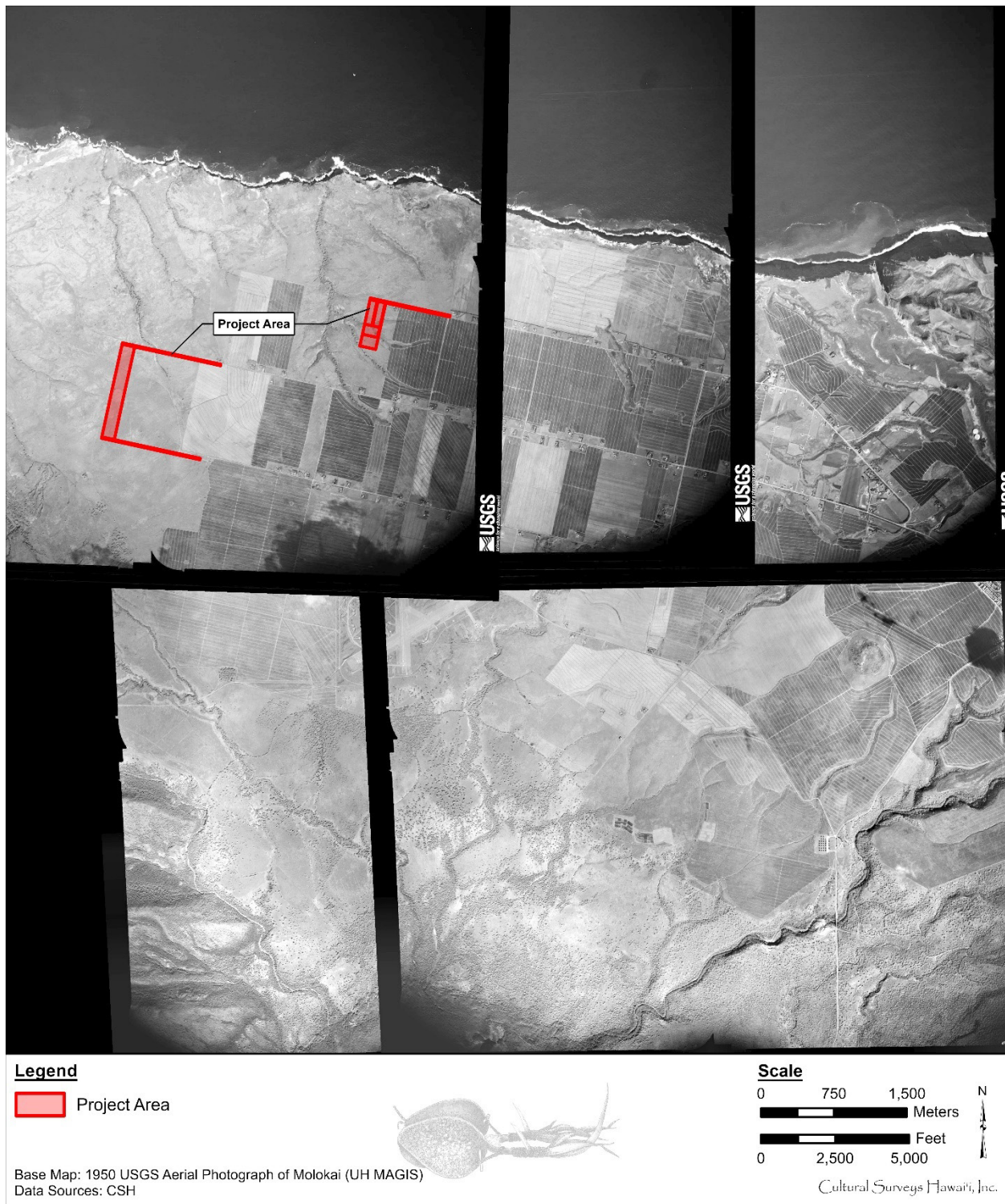


Figure 16. 1950 USGS aerial photograph of Molokai showing pineapple cultivation neighboring, but not within, the project area (U.S. Geological Survey 1950)

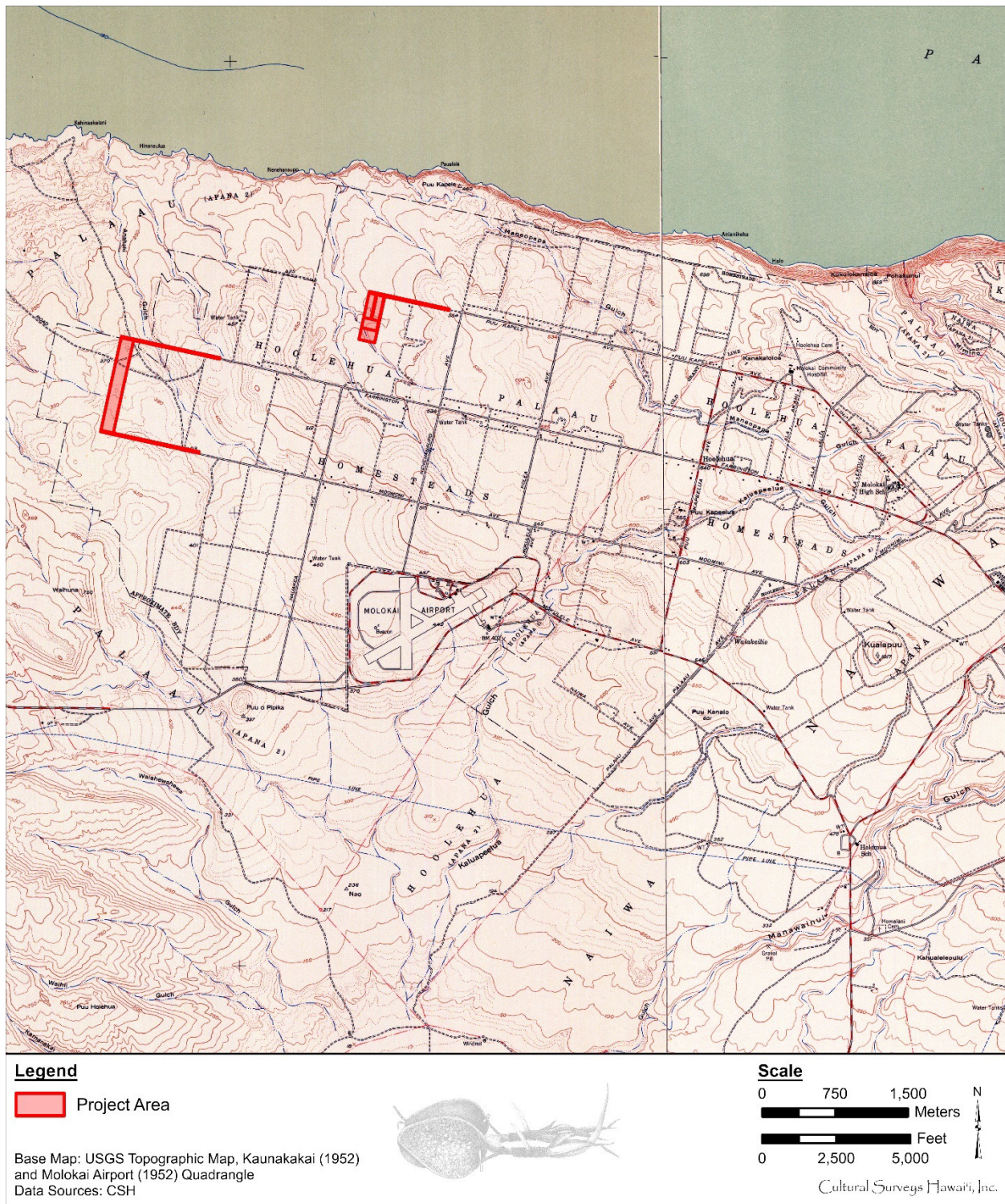


Figure 17. Portion of 1952 Kaunakakai and Molokai Airport USGS topographic quadrangles showing unpaved roads present surrounding, but not immediately adjacent, to the three lots presently addressed (U.S. Geological Survey 1952a, 1952b)

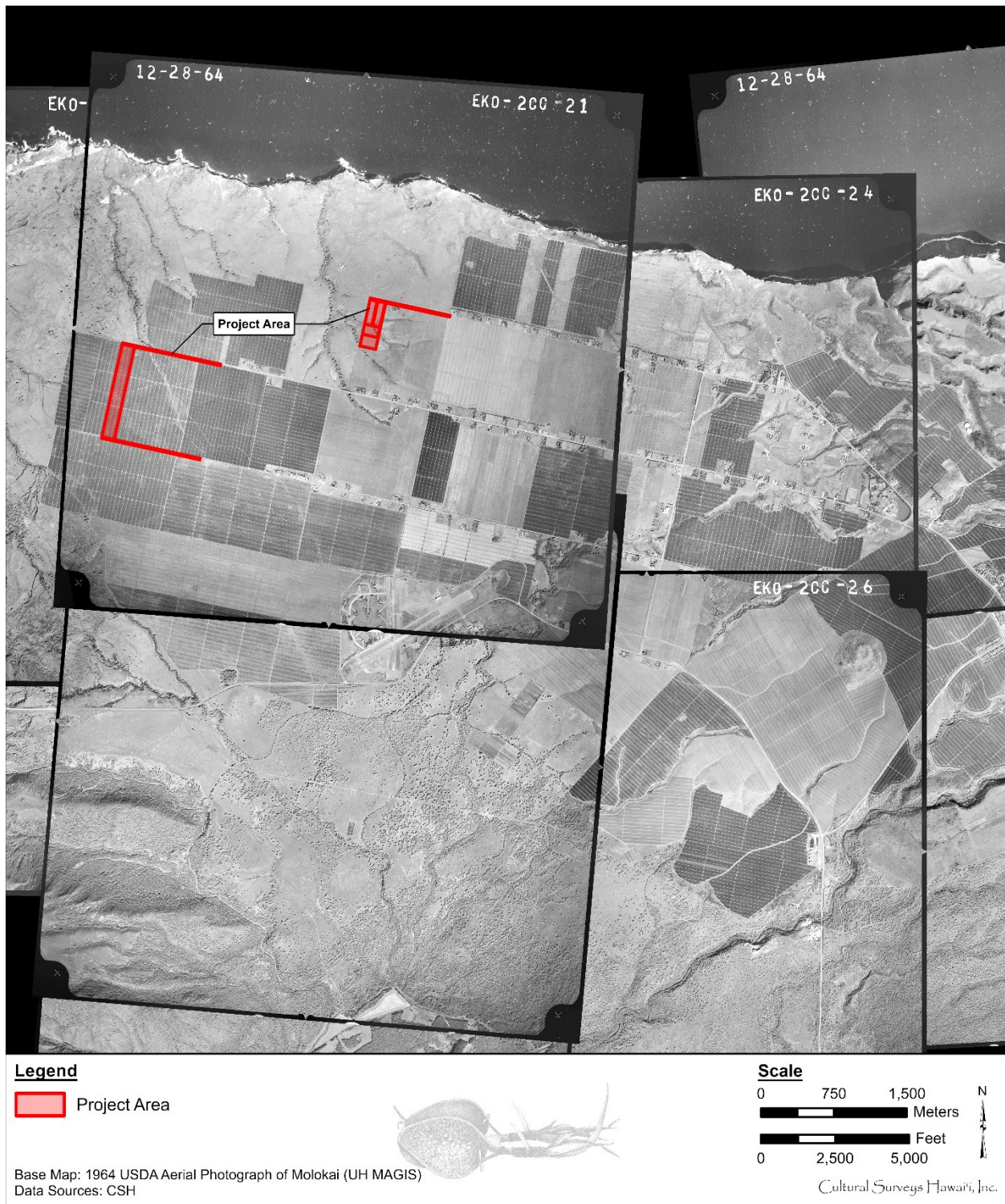


Figure 18. 1964 USGS aerial photograph of Moloka'i showing pineapple cultivation within a portion of the project area (note the general absence of trees in the project area) (USDA 1964)

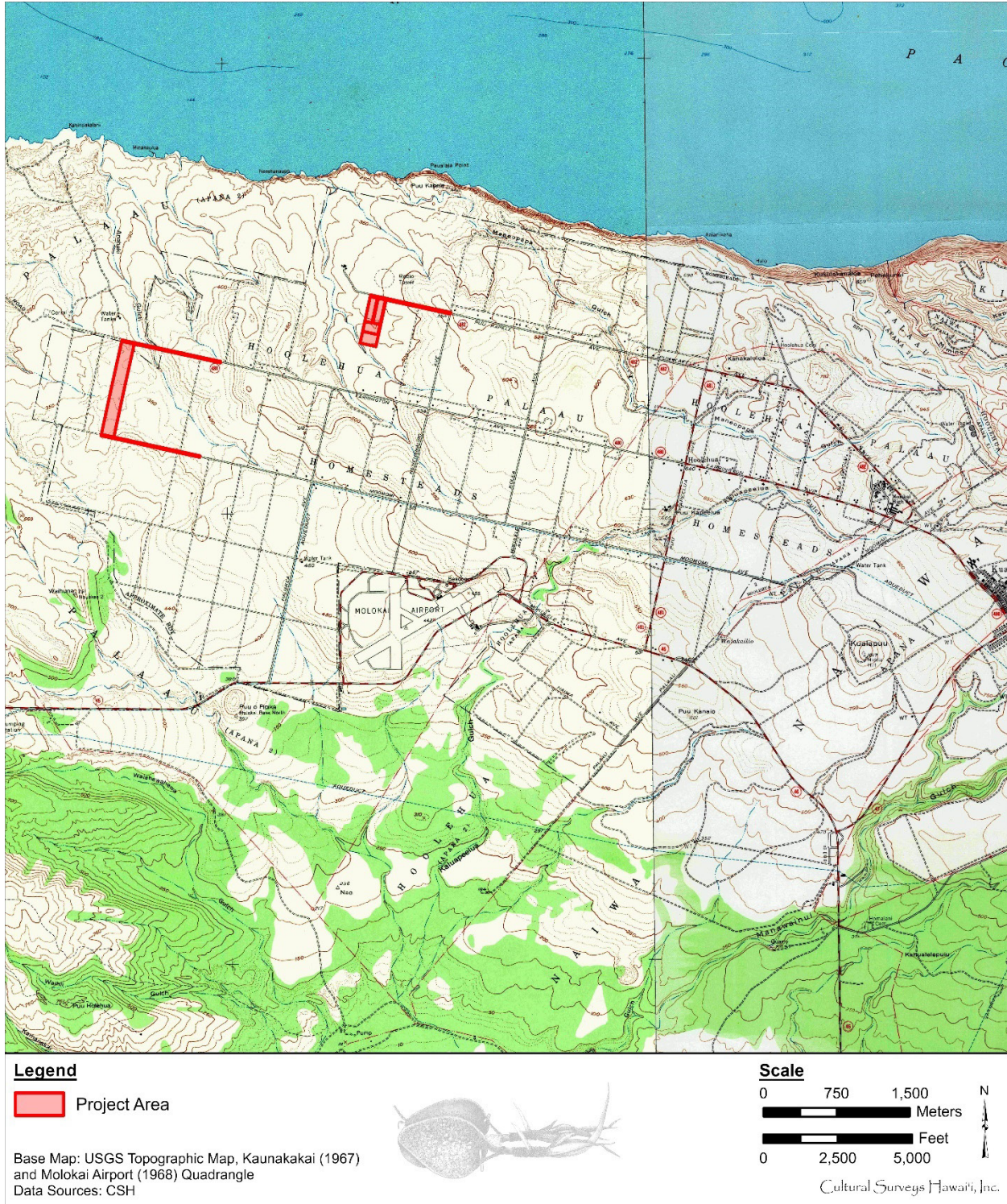


Figure 19. Portion of the 1967 Kaunakakai and 1968 Molokai Airport USGS topographic quadrangles showing unpaved roads in the general vicinity of the project area (U.S. Geological Survey 1967, 1968)

from 1969 through 1993, including terminal expansions, perimeter security fence installation, a new FAA air traffic control tower, a fire protection system, and a maintenance base yard (State of Hawai'i 2008).

A heliport associated with the United States Navy reservation, appears on a 1983 topographic map (Figure 20) and 1993 topographic map quadrangles (see Figure 1).

3.7 Contemporary Land Use

Pineapple production on Moloka'i phased out during the 1970s, with complete abandonment by the early 1980s. Tourism and service-related industries replaced commercial agriculture as the economic foundation of urban areas. The towns of Maunaloa and Kualapu'u have continued to support sizeable populations, though Kaunakakai has remained the island's major urban center.

The development history of large land holdings on the island of Moloka'i includes Molokai Ranch Company lands, some

55,575 acres, or 35 percent of the entire island. This ranch includes 20 miles of coastline and two hotel properties, the former Molokai Lodge and the former Kaluakoi Hotel, two golf courses, residential, agricultural and conservation land, as well as nearly 30 acres of commercial land near Kaunakakai and 85 acres of industrial land at Maunaloa and Kualapuu. (Magin 2017)]

The company that owned all these properties, Molokai Properties Limited, ceased all operations on the island in 2008 (Mangieri 2019). These holdings have been listed for sale since 2017. While community interests actively desire purchasing the lands for residents and/or the state, the fate of these lands, and consequently Moloka'i in general, is still unknown.

DHHL proposes to construct infrastructure improvements including clearing, grading, and installation of roadway, electrical, connections to domestic water, and irrigation water utilities. The proposed plan calls for ground-disturbing activities to be confined to the two subject parcels but will extend to existing roadways for access and connection for utilities. These improvements will support DHHL beneficiaries through the provision of essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action.

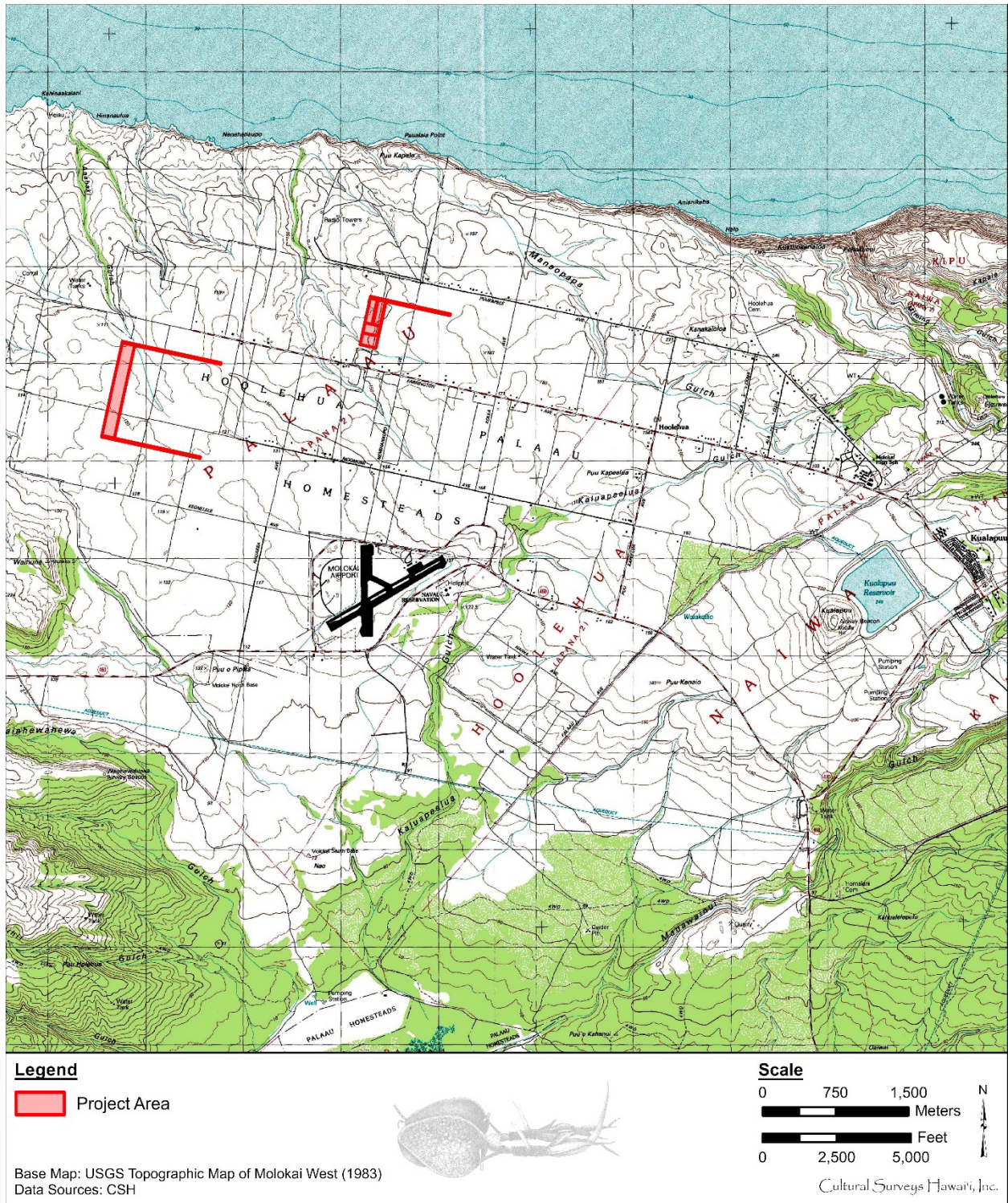


Figure 20. Portion of 1983 Molokai West USGS topographic quadrangle showing an aqueduct crossing the Ho'olehua Plain to the south and the Kualapuu Reservoir well to the southeast of the project area (U.S. Geological Survey 1983)

Section 4 Previous Archaeological Research

Previous archaeological studies conducted within approximately 3.0 km (1.9 miles) of the project area include archaeological reconnaissance, field inspections, inventory surveys, and monitoring programs (Figure 21 and Table 2). No historic properties have been previously identified within the project area, and few have been identified within the vicinity (Figure 22 and Table 3).

4.1 Summers (1971)

Archaeological work accomplished prior to the late 1960s has been summarized by Catherine Summers (1971) in *Moloka'i: A Site Survey*, the most comprehensive island-wide study to date. Based on previous research, particularly the John F.G. Stokes (1909) survey of *heiau* (pre-Christian place of worship) and other major sites on Moloka'i, and through revisiting some 100 locations, Summers (1971) compiled a brief history and archaeological site survey for Moloka'i Island with the Bernice Pauahi Bishop Museum. Data in the compilation include documentation by M.D. Monsarrat in 1884 published by Thrum (1908); Cobb (1902); Cooke (1949); Emory's data in Bonk (1954); unpublished materials by Stokes from surveys in 1909 and Dunn in 1957, and map records by Cartwright. Summers (1971) documents over 300 sites, mainly concentrated along the coastal regions. These sites are described by individual *ahupua'a*, as well as legendary, traditional, and historical information related to Moloka'i. None of the sites were identified within the three lots presently addressed. However, Summers (1971) documents seven sites in the project area vicinity.

Sites 11A and 11B are approximately 3.5 km southeast of the three-lot project area. Together these two sites comprise the Kape'elua Complex, a historic property designated by the SHPD as SIHP # 50-60-03-00011. Summers described the sites as follows:

Site 11A. 'Caterpillar Stones,' Ho'olehua 2

The stones are on top of the hill, Pu'u Kape'elua, 'The Caterpillar Hill.'

Cooke gave the following legend about these stones:

[...] this beautiful girl was visited each night by a lover who left before daylight. She was unable to discover who he was. This suspense told on her, and she began to waste away. A priest, consulted by her parents, advised the girl to attach a piece of white tapa to a wart on her lover's back. In the morning, shreds of tapa helped to trace the demi-god lover to the hill Puu Peelua, in the middle of Hoolehua. The kahuna (priest) and friends of the family found a large peelua (caterpillar) asleep on the hill. The kahuna ordered the people to collect wood which was placed around the sleeping peelua, and a fire was lit. As the heat of the fire increased, the caterpillar burst into myriads of small caterpillars which were scattered over the plain. That accounts for the army-worm pest, called peelua (Cooke, 1949:102).

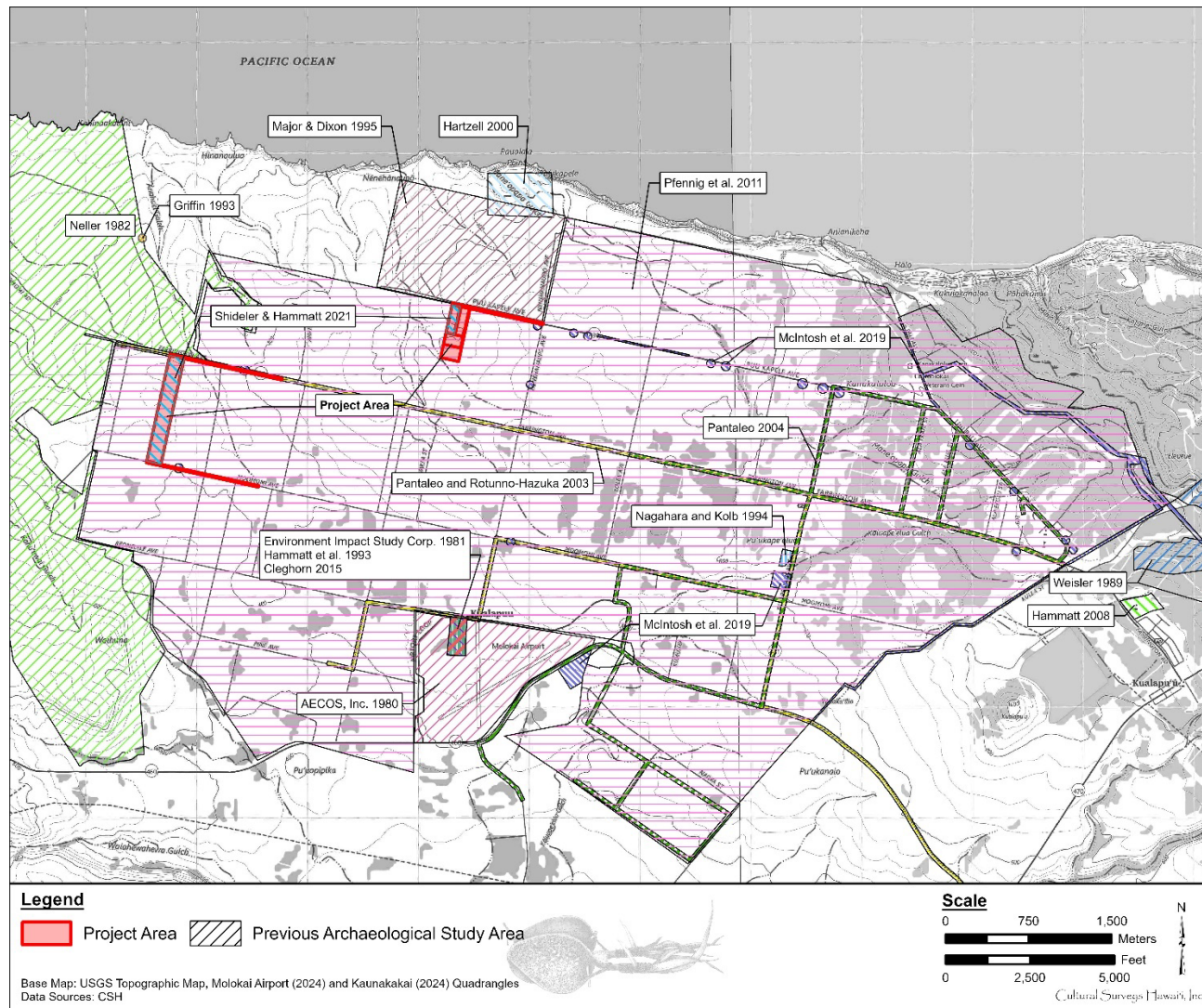


Figure 21. Previous archaeological studies within and near the project area depicted on a portion of the 2024 Kaunakakai and Molokai Airport USGS topographic quadrangles

Table 2. Previous archaeological studies conducted in the vicinity of the three lots presently addressed

		Location	
Summers 1971	Site survey	Island-wide	Documented four sites in vicinity: 11A (SIHP # 50-60-03-00011A), Caterpillar Stones; Site 11B, Stone at Pu'u Kape'elua; Site 12, Lepekaheo Heiau; and Site 16, Heiau at Anahaki
AECOS Inc. 1980	Archaeological reconnaissance survey	Moloka'i Airport and proposed airport site near Mo'omomi Beach	No historic properties identified in vicinity; however, complex of WWII-era (not historic at time of study) bunker sites identified near Moloka'i Airport, south of three lots presently addressed
Environmental Impact Study Corp. 1981	Biological and archaeological reconnaissance survey	90 acres by Cooke Land Co., Inc., TMK: (2) 5-2-011:007 por.	Failed to locate Summers Site 106 (petroglyphs) within their study area (likely buried or destroyed) but observed two remnant features that indicate possible agricultural use of seasonal stream flow in gulch
Neller 1982	Archaeological aerial reconnaissance	Ho'olehua training Area, particularly north coastal Pālā'au	Documented Summers Site 16 <i>heiau</i> at Anahaki and numerous stone walls and platforms near Kahinaokalani Point he associated with Summers Site 17
Griffin 1993	Archaeological reconnaissance	North/central Ho'olehua uplands	She noted, "sites consisting of enclosures, L-shapes, U-shapes on the low promontories along the coast, in addition to the shelter sites noted by Summers between sites 16 and 17"; main focus associated with anomalous growth of ti plants in area with a wall segment, and lithic scatter and featuring a boulder that showed evidence of human modification as a "basin"
Hammatt et al. 1993	Archaeological inventory survey	One parcel in Pālā'au 2 adjacent to airport, and two parcels in Na'iwa	No historic properties identified

Reference	Type of Study	Location	Results
Nagahara and Kolb 1994	Field inspection	Kape'elua complex, Ho'olehua-Pālā'au Homesteads	Confirmed and GPS mapped Kape'elua Complex, SIHP # 50-60-03-00011 (Summer Sites 11A and 11B)
Major and Dixon 1995	Archaeological inventory survey	364-acre (147.4-hectare) USAF Receiver Station near Ho'olehua	Two previously unrecorded historic properties documented consisting of pre-Contact dwelling (SIHP # 50-60-02-01624) and another structure of unknown function (SIHP # 50-60-02-01623); SIHP # -01624 consisted of enclosure with marine shell deposits, fire-cracked rocks, and reworked basalt flake; SIHP # -01623 included two enclosures, each with minor amounts of marine shell and some modern refuse and 20th century rubbish dumps
Hartzell 2000	Archaeological inventory survey (supplemental)	USAF Molokai Receiver Station	Recorded 37 surface features for SIHP # 50-60-02-00843 (Pu'ukaPele Rock Wall complex), consisting of 26 stacked-faced walls, five alignments, four enclosures, a depression, and a prominent, massive natural boulder; boundary or possibly religious function posited for 15 features with other features associated with water control/ diversion, habitation and a planting area
Pantaleo and Rotunno-Hazuka 2003	Archaeological monitoring	Ho'olehua uplands to coastal Kalama'ula	No historic properties identified (but monitoring on-call with spot-checks)
Pantaleo 2004	Archaeological monitoring	Ho'olehua uplands	No historic properties identified
Hammatt 2008	Field inspection and literature review	DOE Molokai schools including Kualapu'u Elementary School	No historic properties identified but monitoring program recommended

Reference	Type of Study	Location	Results
Pfennig et al. 2011	Archaeological literature review	8,955 acres of DHHL Molokai lands including 8,055 acres at Ho'olehua Ahupua'a and present three-lot project area	Discusses four sites mentioned by Summers (1971): SIHP # 50-60-03-00011A, caterpillar stones; SIHP # -00011B, stone at Pu'u Kape'elua; SIHP # -00013, Kahua Maika at a place called Akani; and SIHP # -00014, <i>heiau</i> near Ho'olehua Cemetery
McIntosh et al. 2019	Archaeological inventory survey	DHHL lands, including in Ho'olehua	No historic properties identified in project area vicinity; of note identifications of SIHP # 50-60-03-02521, concrete tank stands associated with ranching and Isolated Find (IF)-01, an <i>'ulu maika</i> (game stone)
Shideler and Hammatt 2021	Archaeological literature review and field inspection	Two DHHL scattered lots including one adjacent to three lots presently addressed	No historic properties identified in more distant lot; in neighboring lot, two terrace alignments documented on south side of a natural drainage swale and interpreted as agricultural features to retain moisture; antiquity of these boulder alignments uncertain; and no SIHP # assigned

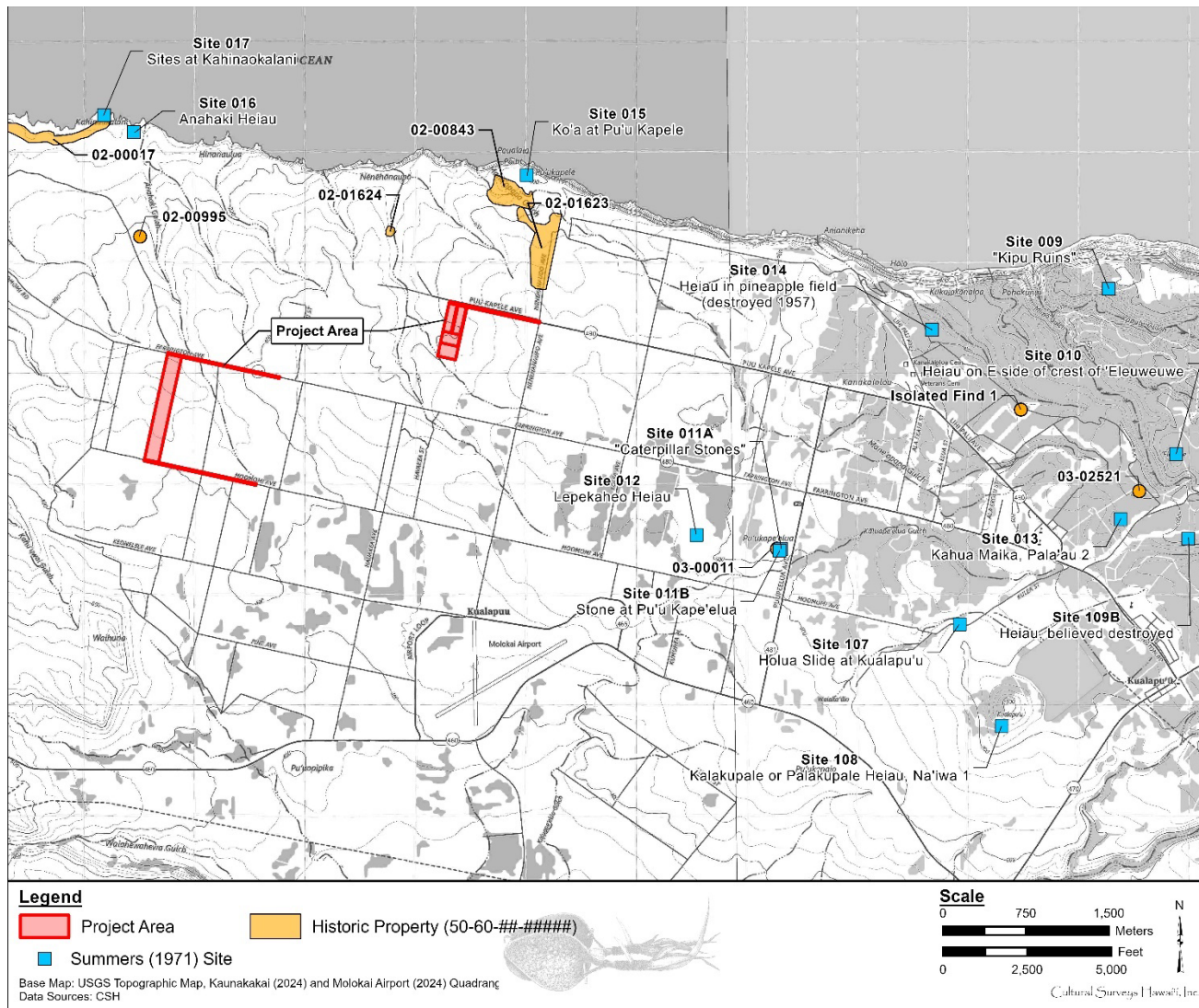


Figure 22. Previously identified historic properties in the vicinity of the project area depicted on a portion of the 1993 Kaunakakai and Molokai Airport USGS topographic quadrangles

Table 3. Previously identified historic properties in the vicinity of the three lots presently addressed

SIHP #	Source	Site Type	Description
50-60-02-00995	Griffin 1993	Agricultural shrine	Notes "sites consisting of enclosures, L-shapes, U-shapes on the low promontories along the coast," in addition to the shelter sites noted by Summers between sites 16 and 17 but her main focus was associated with an anomalous growth of ti plants and was described as including a wall segment, basalt flakes and a fragment of an adze blank and a rock with a flat surface, with a rectangular "basin" measuring about 8" x 14" pecked into it. She posits that "In addition to the practical purpose of the boulders for collecting rain water, it is possible that this site was an agricultural shrine for the worship of the god Lono."
50-60-02-01623	Major and Dixon 1995	Two enclosures and dumps	SIHP # -01624, regarded as a pre-Contact dwelling consisted of an enclosure with marine shell deposits, fire-cracked rocks, and a re-worked basalt flake.
50-60-02-01624	Major and Dixon 1995	An enclosure and an artifact	SIHP # -01623, a site of unknown function, included two enclosures, each with minor amounts of marine shell and some modern refuse and 20th century rubbish dumps.

SIHP #	Source	Site Type	
50-60-03-00011A	Summers 1971:37	"Caterpillar Stones," Ho'olehua 2	<p>The stones are on top of the hill; Pu'u Kape'elua, "The Caterpillar Hill."</p> <p>Cooke gave the following legend about these stones:</p> <p>"[...] this beautiful girl was visited each night by a lover who left before daylight. She was unable to discover who he was. This suspense told on her, and she began to waste away. A priest, consulted by her parents, advised the girl to attach a piece of white tapa to a wart on her lover's back. In the morning, shreds of tapa helped to trace the demi-god lover to the hill Pu'u Pe'elua, in the middle of Ho'olehua. The kahuna (priest) and friends of the family found a large <i>pe'elua</i> (caterpillar) asleep on the hill. The kahuna ordered the people to collect wood which was placed around the sleeping <i>pe'elua</i>, and a fire was lit. As the heat of the fire increased, the caterpillar burst into myriads of small caterpillars which were scattered over the plain. That accounts for the army-worm pest, called <i>pe'elua</i>" (Cooke, 1949:102). Akana (n.d.) told a legend similar to the one above; and added, "Today, about January to the first of March, many caterpillars are seen around Pu'u Pe'elua."</p>

SIHP #	Source	Site Type	Description
50-60-03-00011B	Summers 1971:37	Stone at Pu'u Kape'elua Ho'olehua 2	<p>The stone is located just S of the Caterpillar Stones (Site 00011A) on Pu'u Kape'elua. When seen in 1959, this fairly flat stone measured 6 ft N to S, and 7 ft E to W. It stood about 22 in. high on the N and 18 in. high on the S. On the face of the stone was a hollowed-out basin, 21 in. E to W, 8.5 in. N to S, and 3 in. deep. Leading from the N side of the surface into either side of the basin were two grooves 1 in. wide and 2.5 in. deep. Two more grooves led from the S side of the basin to another basin located on a shelf 5 in. below the face, on the S side of the stone. This basin, which was 1.75 in. deep, measured 18 in. E to W and 6 in. N to S. Numerous sea shells were found in the vicinity of the site.</p> <p>G.P. Cooke (personal communication) said the stone was used for sharpening adzes. K.P. Emory was of the opinion that, because this is an arid region, the stone may have been for collecting water.</p>
SIHP # 50-60-03-02521	McIntosh et al. 2019	Ranching infrastructure	Concrete tank stands associated with ranching
Summers Site 9	Summers 1971:34-36	"Kipu Ruins, Kipu"	The site is located on a headland about 800 ft S of the cliffs and N of Kapale Gulch, at an elevation of 1000 ft. Several structures are distributed over an area about 500 ft long and 250 (Structures "A" through "I" are described)
Summers Site 12	Summers 1971:37	Heiau (Lepekaheo Heiau)	This site is located on the boundary of Ho'olehua 2 and Pala'au 2, W of Kaluape'elua Gulch. Monsarrat referred to Lepekaheo as an "old heiau."
Summers Site 13	Summers 1971:38	"Kahua Maika, Pala'au 2" ('ulu maika bowling course)	The <i>kahua maika</i> was situated on a rise at a place called Akani; Monsarrat referred to it as an "old <i>kahua maika</i> ."

SIHP #	Source	Site Type	Description
Summers Site 14	Summers 1971:38	" <i>Heiau</i> , Pala'au 2"	"The site is located E of the Ho'olehua Cemetery in the pineapple fields W of the gulch, at an elevation of 800 ft. Cartwright reported this (in 1922) as being a <i>heiau</i> . The structure was in ruins in 1957, however. Traces of paving could still be found, and the remains of a wall, 35 ft long NE to SE; 13 ft from the NE side was an upright stone 2 ft high, 2 ft wide, and 1 ft thick."
Summers Site 16	Summers 1971:38	<i>Heiau</i> and house site	This <i>heiau</i> is located on the W side of the mouth of Anahaki Gulch at an elevation of about 50 ft above sea level. Cartwright (1922) reported the site as being a <i>heiau</i> . Originally the structure was an enclosure. The exterior measurements in 1964 were 43 ft N to S and 36 ft E to W; the maximum height of the eastern wall was 5 ft. The northern wall was probably this same height originally, but the wall on the S was lower. Both the S and W walls were badly damaged. An inner division on the N side of the enclosure measured 17 ft E to W and extended the entire width of the structure. The southern portion of the enclosure was paved. On the crest of the hill to the S of the above site was a house site or shelter, which had a 5-ft-high wall running N to S; the rest of the site was open. Adjoining the northern portion of the wall on the E side was a small, paved terrace.
Summers Site 17 (02-0017)	Summers 1971:38	"Sites at Kahinaokalani, Pala'au 2"	"Emory reported seeing two house sites and a <i>ko'a</i> at Kahinaokalani; the <i>ko'a</i> was at the edge of the cliff. Phelps described a structure, which he called a canoe <i>halau</i> , which was on a bluff about 30 ft above the sea"

SIHP #	Source	Site Type	Description
Summers Site 107	Summers 1971:80	“Holua slide at Kualapu‘u, Na‘iwa”	<p>The slide was on the SSW side of Kualapu‘u hill, and traces of it can still be seen. No indications of paving could be found in 1966. Apparently it was similar to [...] Site 3.</p> <p>On the S and W slopes of Kualapu‘u hill, there used to be many sweet potato patches, which were defined by rows of stones (Cooke 1949:121). According to Sophie J. Cooke (1964:58), the former name of Kualapu‘u was Ka ‘Uala Pu‘u, “The Sweet Potato Hill.” On some maps it is called “Mid Hill.”</p>
Isolated Find (IF)-01	McIntosh et al. 2019	Bowling game stone	An <i>‘ulu maika</i>
No SIHP # assigned	Shideler and Hammatt 2021	Terraces	Two terrace alignments were documented on the south side of a natural drainage swale and were interpreted as agricultural features to retain moisture. The antiquity of these boulder alignments was uncertain; and no SIHP # was assigned.

Akana (n.d.) told a legend similar to the one above, and added, 'Today, about January to the first of March, many caterpillars are seen around Pu'u Pe'elua' [Summers 1971:37]

Site 11B. Stone at Pu'u Kape'elua, Ho'olehua 2

The stone is located just S of the Caterpillar Stones (Site 11A) on Pu'u Kape'elua. When seen in 1959, this fairly flat stone measured 6 ft N to S, and 7 ft E to W. It stood about 22 in. high on the N and 18 in. high on the S. On the face of the stone was a hollowed-out basin, 21 in. E to W, 8.5 in. N to S, and 3 in. deep. Leading from the N side of the surface into either side of the basin were two grooves 1 in. wide and 2.5 in. deep. Two more grooves led from the S side of the basin to another basin located on a shelf 5 in. below the face, on the S side of the stone. This basin, which was 1.75 in. deep, measured 18 in. E to W and 6 in. N to S. Numerous sea shells were found in the vicinity of the site.

G.P. Cooke (personal communication) said the stone was used for sharpening adzes. K.P. Emory was of the opinion that, because this is an arid region, the stone may have been for collecting water.

A recent archaeological study (Martell III et al. 2021:45) noted the distinctive basins designated as Site 00011B are indeed in very close proximity to the Caterpillar Stones designated Site 00011A but neither the Cooke explanation of an adze sharpening function nor the Emory explanation of a water collecting function reflects this geographic relationship. A third theory is posited that these basins were for offerings (possibly 'awa narcotic drink) to propitiate the destructive caterpillar pests.

Site 14. *Heiau*, Pala'au 2

The site is located E of the Ho'olehua Cemetery in the pineapple fields W of the gulch, at an elevation of 800 ft. Cartwright reported this (in 1922) as being a heiau. The structure was in ruins in 1957, however. Traces of paving could still be found, and the remains of a wall, 35 ft long NE to SE; 13 ft from the NE side was an upright stone 2 ft high, 2 ft wide, and 1 ft thick. [Summers 1971:38]

This *heiau* was located near the Kukuiokanaloa sea cliff approximately 4.2 km east of the eastern project area.

Site 15. *Ko'a* at Pu'u Kapele, Pala'au 2

Summers (1971:38) describes this as "A small ko'a is on the top of the hill, Pu'u Kapele" (citing a Phelps, n.d.:27 source). This *ko'a* was located near Paulalaia Point, 1,400 m north of the eastern project area.

Site 16. *Heiau* at Anahaki, Pala'au 2

This heiau is located on the W side of the mouth of Anahaki Gulch at an elevation of about 50 ft above sea level. Cartwright (1922) reported the site as being a heiau. Originally the structure was an enclosure. The exterior measurements in 1964 were 43 ft N to S and 36 ft E to W; the maximum height of the eastern wall was 5 ft. The northern wall was probably this same height originally, but the wall on the S was

lower. Both the S and W walls were badly damaged. An inner division on the N side of the enclosure measured 17 ft E to W and extended the entire width of the structure. The southern portion of the enclosure was paved,

On the crest of the hill to the S of the above site was a house site or shelter, which had a 5-ft-high wall running N to S; the rest of the site was open. Adjoining the northern portion of the wall on the E side was a small, paved terrace. [Summers 1971:38]

This *heiau* was approximately 3.3 km northwest of three lots presently addressed.

Site 17. Sites at Kahinaokalani, Pala'au 2

Emory (n.d.) reported seeing two house sites and a ko'a at Kahinaokalani; the ko'a was at the edge of the cliff. Phelps described a structure, which he called a canoe halau, which was on a bluff about 30 ft above the sea: [Summers 1971:38]

Summers quotes Phelps (n.d.:17):

[...] the parallel walls [of the halau] are 20 feet long and 3 1/2 feet apart. They are no [now] so broken down that no estimate can be made of their height or width. Apparently the structure was open at both ends. The longitudinal axis of the shelter is at a slight angle to the line of the water's edge. [Summers 1971:38–39]

These sites were approximately 3.7 km northwest of the three lots presently addressed.

Site 107. *Hōlua* Slide at Kualapu'u, Nā'iwa 1

The slide was on the SSW side of Kualapu'u hill, and traces of it can still be seen. No indications of paving could be found in 1966. Apparently it was similar to the one shown in Fig. 5, Site 3 [refers to a Site 3 *hōlua* Slide near Kauleonahoa].

On the S and W slopes of Kualapu'u hill, there used to be many sweet potato patches, which were defined by rows of stones (Cooke, 1949:121). According to Sophie J. Cooke (1964:58), the former name of Kualapu'u was Ka 'Uala Pu'u, 'The Sweet Potato Hill.' On some maps it is called 'Mid Hill.' [Summers 1971:80]

This *hōlua* slide was approximately 5.0 km southeast of the three lots presently addressed.

4.2 AECOS Inc. (1980)

In 1980, AECOS, Inc. conducted an archaeological reconnaissance survey for the Moloka'i Airport Master Plan Survey (AECOS Inc. 1980). Archaeologists Robert Connolly III and Paul Rosendahl surveyed the existing airport and two proposed sites for airport expansion: Site A-4, the potential connecting taxiway area, and Site C-1 and C-2, an alternate airport area located *mauka* (inland) of Mo'omomi Beach. Neither the airport or Site A-4 provided evidence of prehistoric cultural remains. However, at the proposed Site C-1/C-2, AECOS Inc. (1980) documented seven features, six historic hunting blinds, and one likely pre-Contact wall.

Though no prehistoric cultural remains were observed at the proposed Site A-4, approximately 2.5 km to the south of the current eastern project area, the report noted the area did contain "an extensive complex of World War II bunkers consisting of horseshoe-shaped earthen revetments,

earth-covered Quonset huts with concrete floors, wood-lined causeways, and extensive road systems. This complex was constructed during the years 1942-1947” (AECOS Inc. 1980:6). In 1980, these properties were insufficient age to be considered historic properties (50 years old or older). If these properties are still in existence, they likely would now be considered historic properties.

4.3 Environmental Impact Study Corp. (1981)

In 1981, Environmental Impact Study Corp. conducted biological and archaeological reconnaissance on approximately 90 acres of land owned by Cooke Land Company, Inc., designated as TMK: (2) 5-2-011: portion of parcel 007, located approximately 2.2 km to the south of the project area.

Reconnaissance efforts did not locate the previously identified Summers Site 106 (petroglyphs) within their study area, although they did locate two other new sites within their study area. The first is a small series of terrace fragments above the west bank of the stream at the *mauka* end of the study area. Other possible agricultural cleared mounds were observed, but observations were inconclusive. The second site is a possible stacked wall on the high point of the ridge above the stream, roughly 90 m east of the first site. The stacked stone wall appeared to be placed between large natural outcrops and has collapsed.

Environmental Impact Study Corp. concluded that indications for possible agricultural use of the seasonal stream flow in the gulch existed, but the absence of more substantial and identifiable structures made it an assumption rather than fact. They recommended none of the sites located warrant further archaeological work, and that heavy ground disturbance at the location of Summers Site 106 (Petroglyphs) argues against the survival of this site, and that no further archaeological work was necessary and no specific measures need be undertaken to preserve or protect the features already identified.

4.4 Neller (1982)

Earl (Buddy) Neller (then of the State Historic Preservation Office, DLNR) produced an archaeological reconnaissance of proposed Marine Corps Training Areas on Moloka'i at Kalama'ula and Pālā'au. His work at Pālā'au was exclusively a “helicopter windshield survey” (Neller 1982:1) He noted the presence of a number of house sites in the area east of Mo'omomi Beach (east of Naaukahihi Point) in the vicinity of Summer's sites 16 and 17. He documented the Site 16 *heiau* at Anahaki and numerous stone walls and platforms near Kahinaokalani Point he associated with Site 17. He comments regarding the north Pālā'au area:

Sites have not been noted previously in the *mauka* portion of the property.

Our windshield survey verified the existence of readily visible stone structures along the coast. Inland we saw nothing but dry grazing land and traces of former pineapple fields.

It is suspected that continued military activities in this parcel would have little impact on archaeological sites, except at the coast. It is also suspected, however, that an intensive field survey would identify a number of small archaeological sites in the *mauka* portion of the parcel, presumably altered by farming and ranching activities.[Neller 1982:2]

4.5 Griffin (1993)

Annie Griffin of the SHPD (1993) produced a memorandum on a newly identified historic site (SIHP # 60-02-00995) at Pālā'au. She noted, "sites consisting of enclosures, L-shapes, U-shapes on the low promontories along the coast, in addition to the shelter sites noted by Summers between sites 16 and 17" (Griffin 1993:1). Her main focus was associated with an anomalous growth of *ti* plants and was described as follows:

Ground visibility was poor due to the dense grass cover, but a wall, possibly a c-shape or a wall segment, basalt flakes and a fragment of an adze blank were observed at the northwest base of the promontory. The promontory itself consists of large basalt boulders, in various natural positions. Only one boulder showed evidence of human modification. This rock has a flat surface, with a rectangular 'basin' measuring about 8" x 14" pecked into it. The 'basin' contained water along with decaying vegetation. An alignment of 6 rocks was placed along its basin's windward (east) edge, probably to minimize evaporation from wind. [Griffin 1993:1]

She posits that "In addition to the practical purpose of the boulders for collecting rain water, it is possible that this site was an agricultural shrine for the worship of the god Lono" (Griffin 1993:2).

4.6 Hammatt et al. (1993)

In 1993, CSH conducted an archaeological inventory survey (AIS) of three parcels, which the study refers to as Sites #1, #2, and #5 (Hammatt et al. 1993). Only Site #5 is in proximity to the current project area, while Sites #1 and #2 are located further away to the southeast from the present project area and will not be discussed.

Site #5 is an approximately 15-acre parcel within Pālā'au, adjacent to and west of Moloka'i Airport and approximately 2.5 km south of the current project area. The parcel, which adjoined the airport security fence, was formerly part of the airfield and used for parking planes. At least 50% of this study area was paved. Grasses, *koa haole* (*Leucaena leucocephala*), and weeds covered unpaved areas, which appeared "denuded of soil: decomposing bedrock C-horizon was exposed on the surface and as was evidence of bulldozer tracks in various places [...]" (Hammatt et al. 1993:24). No historic properties were identified with the exception of the former plane taxiways and parking areas. No further archaeological work was recommended.

4.7 Nagahara and Kolb (1994)

On 1 June 1994, the SHPD and DHHL archaeologists conducted a field inspection in the Ho'olehua-Pālā'au Homesteads to locate and GPS map SIHP # 50-60-03-00011, Kape'elua Complex (Nagahara and Kolb 1994). The Kape'elua Complex is a legendary site located on top of Pu'u Kape'elua ("caterpillar hill"), consisting of several various-sized basalt boulders and outcrops known as "caterpillar stones." One boulder was previously identified with two pecked rectangular channels and basins, which the property owner stated was a "birthing stone." During the inspection, a similar pecked basin was found in another stone. The function for the basin was regarded as unknown. The authors noted other pecking in some stones as possible pre-Contact modifications resembling footholds for climbing up the large boulders. A historic midden scatter

composed of shells, bottle glass shards, and a thermometer was identified under a boulder. The property owner suggested the midden was associated with a former plantation camp. The field inspection resulted in adequate mapping of the complex, which involved the SHPD carving an X in one of the peripheral boulders. Overall, the site appeared in good condition, and preservation without additional mitigation was recommended.

4.8 Major and Dixon (1995)

The Bernice Pauahi Bishop Museum Department of Anthropology (Major and Dixon 1995) prepared a report on an archaeological survey and evaluation at a 364-acre (147.42-hectare) USAF Receiver Station. Two previously unrecorded historic properties were documented in the project area, including a pre-Contact dwelling (SIHP # 50-60-02-01624) and another structure of unknown function (SIHP # 50-60-02-01623). SIHP # -01624 consisted of an enclosure with marine shell deposits, fire-cracked rocks, and a reworked basalt flake. SIHP # -01623 included two enclosures, each with minor amounts of marine shell and some modern refuse and twentieth century rubbish dumps. The authors noted that “Immediately to the north, in the narrow strip between the project area and the sea, lie many more features indicating exploitation of coastal resources from pre-Contact times until the present” (Major and Dixon 1995:ii).

4.9 Hartzell (2000)

Leslie Hartzell of the Bernice Pauahi Bishop Museum Department of Anthropology reported on a supplemental archaeological inventory survey at the USAF Molokai Receiver Station with a 16-hectare rectangular project area along the upper rim and lower slopes of Mane‘opapa Gulch and across the peak of Pu‘ukaPele to the coastal cliff edges. Three archaeological sites were identified either entirely within or bisected by the boundaries of the USAF Molokai Receiver Station leased property. Two of the sites (SIHP #s 50-60-02-01623 and -01624) were recorded during the initial inventory survey investigation in 1994 (Major and Dixon 1995) and a third site (SIHP # 50-60-02-00843) was identified as being partially within the northern property boundary of the Receiver Station during the supplemental inventory survey. Thirty-seven surface features were recorded for SIHP # 50-60-02-00843 (the Pu‘ukaPele Rock Wall complex), consisting of 26 stacked-faced walls, five alignments, four enclosures, a depression, and a prominent, massive natural boulder. A boundary of possibly religious function was posited for 15 of the features with other features associated with water control/diversion, habitation, and a planting area.

4.10 Pantaleo and Rotunno-Hazuka (2003)

Between September 2002 and February 2003, Archaeological Services Hawaii, LLC (ASH) conducted on-call archaeological monitoring and weekly site inspections for the Sandwich Isles Communications, Inc. (SIC) Moloka‘i Rural Fiber Optics Duct Lines project, which connected DHHL properties to a modern, high-speed broad band telecommunications system (Pantaleo and Rotunno-Hazuka 2003). The study area was divided into six sections extending along state, DHHL, and county road rights-of-way from Ho‘olehua uplands to coastal Kalama‘ula. Sections 1 and 2 are in the current project area vicinity (see Figure 21) and it appears their project area extended along the north side of the eastern and western present project areas (although again the monitoring was just on-call with weekly spot-checks). No historic properties were encountered during the monitoring program; no additional archaeological work was recommended.

4.11 Pantaleo (2004)

Between October and December 2003, ASH conducted archaeological monitoring for Phase II of the SIC Moloka'i Rural Fiber Optics Duct Lines project (Pantaleo 2004). No historic properties were identified during this phase of the monitoring program. Stratigraphy observed (Pantaleo 2004:13, 14), as at his Profile 2 at "Ala Elua," located approximately 250 m north of the eastern project area, was as follows:

Layer I (approximately 0-35 cmbs), representing the most recent phase of post-occupation soil accumulation of overburden, consisted of a dark brown (IOYR 3/3), dry, crumbly, fine grain, loose, nonsticky, non-plastic, non-cultural, silt with abundant roots and rootlets, and minimal rocks and modern debris. This layer was present throughout the entire project area.

Layer II (approximately 35 to 65 cmbs), representing the till zone, consisted of a dark yellowish-brown (IOYR 3/4) to dark reddish-brown (5YR 3/4), moist, loose, powdery, fine grain, non-plastic, slightly sticky, non-cultural, silt with minimal roots and rootlets and rocks and black sheeting from pineapple cultivation.

Layer III (approximately 65 to 130 cmbs), representing the basal layer, consisted of a yellowish-brown (IOYR 5/6) to dark yellowish-brown (IOYR 3/6), compact, moist, fine grain, slightly sticky, slightly plastic, silt to silty clay with abundant basalt cobbles and boulders. [Pantaleo 2004:13, 14]

4.12 Hammatt (2008)

CSH (Hammatt 2008) carried out archaeological literature review and field check study of four DOE schools on Moloka'i including Kualapu'u Elementary School. No historic properties were identified, but noting some traditional habitation, transit in the vicinity between Kalaupapa and Kaunakakai and historic ranching, an on-site archaeological monitoring program was recommended.

4.13 Pfennig et al. (2011)

Pacific Legacy, Inc. (Pfennig et al. 2011) produced an archaeological literature review of 8,955 acres of DHHL Moloka'i lands including 8,055 acres at Ho'olehua Ahupua'a, including the three lots presently addressed. They discuss four sites discussed by Summers (1971): SIHP # 50-60-03-00011A, the caterpillar stones; SIHP # -00011B, the stone at Pu'u Kape'elua; SIHP # -00013, the Kahua Maika at a place called Akani; and SIHP # -00014, a *heiau* near the Ho'olehua Cemetery (Pfennig et al. 2011:73).

The authors note,

[...] archaeological sites appear more sparse on the Ho'olehua Plain, as the area lacks adequate rainfall to support the same population density as the southeast coastal region of Moloka'i. However, this vast plain contains several zones, particularly in the north and northeast, which boast a high concentration of religious sites and places associated with Traditional mythology. [Pfennig et al. 2011:81]

4.14 McIntosh et al. (2019)

In October 2011, November 2012, and September and November 2015, Pacific Legacy, Inc. (McIntosh et al. 2019) conducted an archaeological inventory survey of DHHL lands in seven areas across Moloka'i for proposed water system improvements (McIntosh et al. 2019). Area 7 of the study included four locations near the three lots presently addressed, which were investigated for proposed maintenance yard improvements and valve and hydrant replacements in Ho'olehua. No historic properties were identified in Area 7.

Of note was the identification of SIHP # 50-60-03-02521, concrete tank stands associated with ranching, and Isolated Find (IF)-01, an *'ulu maika*.

Regarding SIHP # 50-60-03-02521, the authors report,

Four separate sets of tank stands were recorded a short distance from the now existing 3.5 MG tanks at Ho'olehua. Each set of stands measures ca. 5.0 m long, 3.7 to 5.9 m wide, and 0.3 m wide. It not known when these stands were constructed but were likely abandoned after the larger Ho'olehua tanks became operational in the 1930s. [McIntosh et al. 2019:96]

Regarding the IF-01 *'ulu maika*, the authors report,

IF-1 consists of an isolated sandstone *'ulu maika* located on the surface of an abandoned agricultural field situated along Project Area 5 (5-A Ho'olehua to Veterans' Cemetery to Lihi Pali Avenue Transmission Main) in Ho'olehua.

The *'ulu maika* is discoidal in shape and measures ca. 6.5 cm in diameter by 2.9 cm thick. Several fragments of the artifact have been broken off, but the overall shape is still clearly visible. The *'ulu maika* was collected from the field.

No surface archaeological features were observed in the vicinity of IF-1. It is likely that if any archaeological site was present in the area, it was destroyed during the modification of the landscape for commercial agriculture. The *'ulu maika* appears to have been manufactured and utilized during the pre-Contact or early post-Contact periods. Halealoha Ayau posits that this isolated find may be down slope of the traditional makahiki grounds known a Naiwa (pers. comm. 1/20/2016). [McIntosh et al. 2019:103]

4.15 Shideler and Hammatt (2021)

CSH (Shideler and Hammatt 2021) carried out an archaeological field inspection and literature review for a prior DHHL Ho'olehua Scattered Lots Subdivision project that included two widely separated lots (TMKs: [2] 5-2-005:031, Lot 17 and 5-2-026:014, Lot 104D-1). The TMK: (2) 5-2-026:014 parcel studied is in the immediate vicinity of the three lots and roadway improvements presently addressed. No potential historic properties were identified at the more distant parcel (TMK: [2] 5-2-005:031). At the neighboring parcel field inspection identified two terrace alignments on the south side of a natural drainage swale. These short sections of boulder alignments were interpreted as agricultural features to retain moisture, perhaps of an exploratory nature. The potential for subsurface deposits associated with these two terrace alignments was evaluated in the field to be very low. The antiquity of these boulder alignments was uncertain; it

was posited they could be pre-Contact but might date to as late as the occupation of an adjacent abandoned house ca. 1980. No SIHP # was assigned.

4.16 Background Summary and Predictive Model

The project area is within DHHL lands on the northern plains of Pālā'au Ahupua'a. Historical anecdote and environmental data for this region indicate a possible substantial pre-Contact population (Fornander 1880; Summers 1971), which would have subsisted on dryland agriculture consisting mostly of sweet potatoes. According to Handy (1940:157), "in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua" and "Hoolehua and Palaaau were noted for sweet potatoes in olden days." However, Handy and Handy (1972:283) note homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.

The entirety of the project area appears to have been government-owned lands since the Māhele land divisions in 1848. In 1924, the Hawaiian Homes Commission expanded their homestead program to include 11,400 acres of Pālā'au-Ho'olehua. Life on these lands involved dryland agriculture (including commercial pineapple cultivation) and some ranching.

Currently, the vicinity of the project area consists mostly of undeveloped DHHL parcels, of which only a few contain active residences.

No prior archaeological study has been conducted within the project area, although one recent archaeological study was adjacent to the north of the western project area (Pantaleo and Rotunno-Hazuka 2003), much of that project is understood to have been on-call monitoring. No historic properties have been identified within the project area or within approximately 500 m (see Figure 22).

Historic properties previously identified in the vicinity are limited to a few sites recorded by Summers (1971) including the legendary Kape'elua Complex (SIHP # 50-60-03-00011). There appears to have been a locus of traditional Hawaiian activity in Anahaki Gulch 2.5 km west of the project area (see Figure 22) but this is suggested to relate to the micro-environment of that gulch and greater proximity to the coast.

Based on background research, cultural deposits and features related to historic homesteading (i.e., agricultural and/or habitation features) may be present at the project area. However, potential also exists for encountering evidence of pre-Contact and post-Contact land use such as ranching and commercial pineapple cultivation.

Section 5 Results of Fieldwork

Fieldwork was carried out at TMKs: (2) 5-2-026:003, 016, and 017 by CSH archaeologist David W. Shideler, M.A., on 19 December 2023. An archaeologist's track log and a key to the general location and direction of representative photographs is provided in Figure 23. Additional fieldwork was carried out on the roadway and drainage improvements portion of the project area by CSH archaeologists Jonas Madeus, B.A. and Noelani Hessler, B.A. on 10 April 2025. Representative photographs of the roadway and drainage area are also provided.

The project area was accessed via Pu'u Kapele Avenue but when this dirt road ended it was determined that a nearby parallel road just to the north did indeed access the parcels. No potential historic properties were identified in the course of the fieldwork and none are believed to be present. Representative photographs are provided for each parcel.

For TMK: (2) 5-2-026:016 (the northern parcel fronting Pu'u Kapele Avenue) representative photographs are supplied in Figure 24 through Figure 29. A modern home understood as the "Hill residence" (presently boarded up) is present in the northwest corner of the parcel (see Figure 28). This appears to be in relatively good condition but the interior was not observed. To the east of this residence are certain outbuildings (see Figure 26), with the more formal structure in a dilapidated state and a greenhouse-like structure in a state of total collapse.

The intermediate lot, TMK: (2) 5-2-026:003 is depicted in Figure 30 through Figure 33. This was the easiest parcel to traverse as mature *haole koa* provided for some clear ground.

Views of TMK: (2) 5-2-026:017 parcel are provided in Figure 34 through Figure 36.

Views of the roadway and drainage improvements portion of the project area within Pu'u Kapele Avenue, Farrington Avenue, and Mo'omomi Avenue are provided in Figure 37 through Figure 39.

The entire project area appeared to have been previously graded. No potential historic properties were observed. The potential for subsurface cultural deposits was evaluated for each area and was regarded as uniformly low.

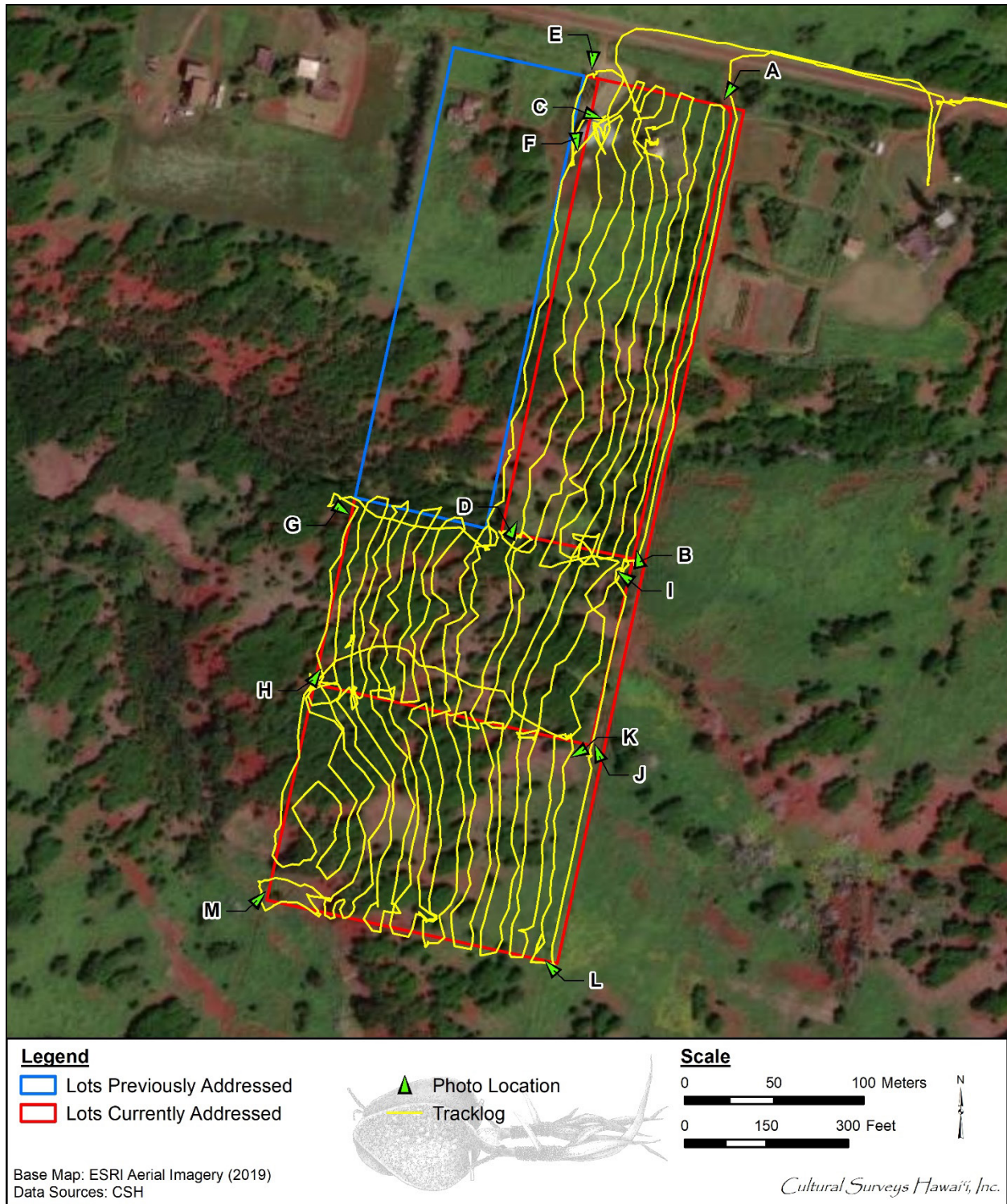


Figure 23. Overview showing tracklogs at the three DHHL Ho'olehua Scattered Lots Subdivision and Improvements project parcels addressed in this study showing the general location and direction of the following representative photographs



Figure 24. Photo A: View from the northeast corner of TMK: (2) 5-2-026:016, view to southwest toward the center of the parcel



Figure 25. Photo B: View from the southeast corner of TMK: (2) 5-2-026:016, view to northwest toward the center of the parcel



Figure 26. Photo C: View of outbuildings from the main Hill Residence building, view to east



Figure 27. Photo D: View from the southwest corner of TMK: (2) 5-2-026:016, view to northeast toward the center of the parcel



Figure 28. Photo E: View from the northwest corner of TMK: (2) 5-2-026:016, view to southeast (dominated by the main Hill Residence) toward the center of the parcel



Figure 29. Photo F: View from the northern northwest side of TMK: (2) 5-2-026:016 (from just southwest of the Hill Residence) to southeast toward the center of the parcel



Figure 30. Photo G: View of TMK: (2) 5-2-026:003 parcel from the northwest corner, view to southeast toward the center of the parcel



Figure 31. Photo H: View of TMK: (2) 5-2-026:003 parcel from the southwest corner, view to northeast toward the center of the parcel



Figure 32. Photo I: View of TMK: (2) 5-2-026:003 parcel from the northeast corner, view to southwest toward the center of the parcel



Figure 33. Photo J: View of TMK: (2) 5-2-026:003 parcel from the southeast corner, view to northwest toward the center of the parcel



Figure 34. Photo K: View of TMK: (2) 5-2-026:017 parcel from the northeast corner, view to southwest toward the center of the parcel



Figure 35. Photo L: View of TMK: (2) 5-2-026:017 parcel from the southeast corner, view to northwest toward the center of the parcel



Figure 36. Photo M: View of TMK: (2) 5-2-026:017 parcel from the southwest corner, view to northeast toward the center of the parcel



Figure 37. General view of a portion of Farrington Avenue within the roadway and drainage improvements portion of the project area, view to west



Figure 38. General view of a portion of Mo'omomi Avenue within the roadway and drainage improvements portion of the project area, view to west



Figure 39. General view of a portion of Pu'u Kapele Avenue within the roadway and drainage improvements portion of the project area, view to west

Section 6 Summary and Recommendations

6.1 Summary

The project area is within DHHL lands on the northern plains of Pālā'au Ahupua'a. Historical anecdote and environmental data for this region indicate a possible substantial pre-Contact population (Fornander 1880; Summers 1971), which would have subsisted on dryland agriculture consisting mostly of sweet potatoes. According to Handy (1940:157), "in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua" and "Hoolehua and Palaaau were noted for sweet potatoes in olden days." However, Handy and Handy (1972:283) note homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.

The vicinity of the project area in central Moloka'i has historically been an area conducive to military training activities. In the 1790s, Kamehameha I reportedly "drilled his warriors on the Hoolehua plain near where the airport is now" (Cooke 1949:112). These training grounds may have included the current project area. A civilian airfield was established in Ho'olehua in 1919. In 1931, the U.S. Army Air Corps established a portion of this field as "Homestead Field" (Horvat 1966:38,40-47). By the time the United States entered World War II in 1941, aircraft of the Fifth Bombardment Group were stationed at Homestead Field. A complex of World War II bunker sites was identified on the airport property well south of the present project area in 1980 by AECOS Inc. (1980).

The project area appears to have been government-owned lands since the Māhele land divisions in 1848 (when Pālā'au was "Crown lands" owned by Kamehameha III). In 1924, the Hawaiian Homes Commission expanded their homestead program to include 11,400 acres of Pālā'au-Ho'olehua.

No historic properties have been previously identified within the project area or within 500 m. Historic properties previously identified in the vicinity are limited to a few sites recorded by Summers (1971), including the legendary Kape'elua Complex (SIHP # 50-60-03-00011). There appears to have been a locus of traditional Hawaiian activity in Anahaki Gulch 3 kms northwest of the three-lot project area (see Figure 22) but this is suggested to relate to the micro-environment of that gulch and greater proximity to the coast. The entirety of the project area appears to have been modified by grading to some extent associated with pasture improvement and road grading.

6.2 Recommendations

No historic properties have been identified within the current project area and, based on a review of background research and previous archaeological studies, no historic properties are anticipated to be impacted by the proposed project.

This LRFI would support an HAR §13-275-7(a)(1) determination of "No historic properties affected." In light of the SHPD §6E-8 Historic Preservation Review dated 16 February 2022, (Project No. 2021PR01540, Doc. No. 2201IK03, included here as Appendix A) that concurred with DHHL's determination of "No historic properties affected" for the two lots previously studied, a determination of "No historic properties affected" would be appropriate for the five lots of the DHHL Ho'olehua Scattered Lots Subdivision and Improvements project.

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Appendix A SHPD Review of Two “Scattered Lots” TMK: (2) 5-2-005:031 por. and (2) 5-2-026:014

<p>DAVID Y. IGE GOVERNOR OF HAWAII</p> 	 <p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES</p> <p>STATE HISTORIC PRESERVATION DIVISION KAKUHIHEWA BUILDING 601 KAMOKILA BLVD., STE 555 KAPOLEI, HI 96707</p>	<p>SUZANNE D. CASE CHAIRPERSON BOARD OF LAND AND NATURAL RESOURCES COMMISSION ON WATER RESOURCE MANAGEMENT</p> <p>ROBERT K. MASUDA FIRST DEPUTY</p> <p>M. KALEO MANUEL DEPUTY DIRECTOR - WATER</p> <p>AQUATIC RESOURCES BOATING AND OCEAN RECREATION BUREAU OF CONVEYANCES COMMISSION ON WATER RESOURCE MANAGEMENT CONSERVATION AND COASTAL LANDS CONSERVATION AND RESOURCES ENFORCEMENT ENGINEERING FORESTRY AND WILDLIFE HISTORIC PRESERVATION KAHOOLAWE ISLAND RESERVE COMMISSION LAND STATE FARMS</p>
<p>February 16, 2022</p> <p>William J. Ailā Jr., Chairman State of Hawaii Department of Hawaiian Home Lands (DHHL) P.O. Box 1879 Honolulu, HI 96805 c/o james.c.richardson@hawaii.gov</p>		<p>IN REPLY REFER TO: Project No. 2021PR01540 Doc. No. 2201IK03 Archaeology</p>
<p>Dear William J. Ailā Jr.:</p>		
<p>SUBJECT: Chapter 6E-8 Historic Preservation Review – DHHL Request for Determination Ho'olehua Scattered Lots Subdivision and Improvements Projects Pālā'au Ahupua'a, Kona District, Island of Moloka'i TMK: (2) 5-2-005:031 por. and (2) 5-2-026:014</p>		
<p>This letter provides the State Historic Preservation Division's (SHPD's) review of the DHHL Ho'olehua Scattered Lots Subdivision and Improvements Projects. SHPD received the submittal on December 8, 2021, including a DHHL letter requesting SHPD's concurrence with a Chapter 6E-8 project effect determination of "Effect, with proposed mitigation commitments" for the proposed project, an HRS 6E Submittal Form, Cultural Surveys Hawaii, Inc. (CSH) cover letters, and a literature review field inspection (LRFI) report titled, <i>Archaeological Field Inspection and Literature Review to Support Consultation with SHPD for the Department of Hawaiian Home Lands Ho'olehua Scattered Lots Subdivision and Improvements Project...</i> (Shideler and Hammatt, November 2021). Subsequently, SHPD received a CSH letter on February 11, 2022 (Submission No. 2021PR01540.002) and a DHHL letter with a revised project effect determination of "No historic properties affected" on February 16, 2022 (Submission No. 2021PR01540.003).</p>		
<p>The DHHL proposes to construct infrastructure improvements, including clearing, grading, and installation of roadway, electrical, domestic water, and irrigation water utilities. The proposed plan calls for ground-disturbing activities confined to the two subject parcels. However, it will extend to existing roadways for access and connection to utilities. These improvements will support DHHL beneficiaries by providing essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action. The project area consists of two discontinuous areas totaling 36.4 acres located within the Ho'olehua Scattered Lots Subdivision.</p>		
<p>CSH produced the subject LRFI (Shideler and Hammatt, November 2021) in support of the proposed DHHL project. The LRFI includes a project history, background research, previous archaeological research, and results of the field inspection. The LRFI conducted a 100% pedestrian survey of the project area with transects spaced at 15-meter intervals. Two terrace alignments were documented as well as an abandoned house structure and a pile of lumber. The historic properties were documented within Lot 104D-1 [TMK: (2) 5-2-026:014], situated on the southside of a drainage swale parallel to an ill-defined flow channel. Shideler and Hammatt (November 2021) assessed the sites' function to retain the slope of a small drainage swale for plant propagation. The LRFI report indicates the age of the two features' is indeterminate and contains a very low probability of any related cultural or agricultural subsurface deposits. No significance assessments are provided in the LRFI report. However, Shideler and Hammatt (November 2021) made a project effect determination of "Effect with proposed mitigation commitments" with the proposed mitigation in the form of preservation through avoidance. Furthermore, the report</p>		

William J. Ailā Jr.
02/16/22
Page 2

stipulates that due to the uncertainty over the antiquity of these features and their modest nature, no further data can be gained by preparing a formal preservation plan to address them. The report indicates that SHPD shall be consulted to determine the future course of action.

Subsequently, SHPD consulted with CSH (Susan Lebo and 'Iolani Kauhane [SHPD] to David Shideler [CSH]) on February 10, 2022, regarding the two alignment features. During consultation, it was agreed that the features contain a very low probability of collecting additional data to determine the features' antiquity and to assess the features' significance. SHPD received an email from DHHL on February 15, 2022 (Bryan Toda [DHHL] to Dr. Susan Lebo [SHPD]) requesting SHPD's concurrence with a revised project effect determination of "No historic properties affected" for the proposed project.

Per HAR §13-275-7, the project will have no effect on significant historic properties, and therefore, **SHPD concurs** with DHHL's determination of "No historic properties affected" for the current project. When the SHPD agrees that the action will not affect any significant historic properties, this is the SHPD's written concurrence and historic preservation review ends. The HRS 6E historic preservation review process is ended. The project initiation process may proceed.


Please attach to plans: In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 652-1510.

Please contact 'Iolani Kauhane, Historic Preservation Archaeologist III, at Iolani.Kauhane@hawaii.gov for matters regarding archaeological resources or this letter.


Aloha,
Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

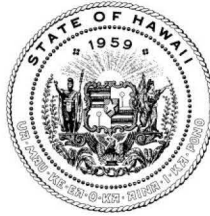
cc: Bryan Esmeralda, bryan@munekiyohiraga.com
David Shideler, submittals@culturalsurveys.com
Stewart Matsunaga, stewart.t.matsunaga@hawaii.gov
Emily Murai, emily@munekiyohiraga.com
Bryan Toda, bryan.toda@hawaii.gov



APPENDIX E-2.
STATE HISTORIC
PRESERVATION DIVISION
CHAPTER 6E
CORRESPONDENCE



DAVID Y. IGE
GOVERNOR OF
HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD., STE 555
KAPOLEI, HI 96707

February 16, 2022

William J. Ailā Jr., **Chairman**
State of Hawaii
Department of Hawaiian Home Lands (DHHL)
P.O. Box 1879
Honolulu, HI 96805
c/o james.c.richardson@hawaii.gov

IN REPLY REFER TO:
Project No. 2021PR01540
Doc. No. 2201HK03
Archaeology

Dear **William J. Ailā Jr.**:

SUBJECT: **Chapter 6E-8 Historic Preservation Review –
DHHL Request for Determination
Ho‘olehua Scattered Lots Subdivision and Improvements Projects
Pālā‘au Ahupua‘a, Kona District, Island of Moloka‘i
TMK: (2) 5-2-005:031 por. and (2) 5-2-026:014**

This letter provides the State Historic Preservation Division’s (SHPD’s) review of the DHHL **Ho‘olehua Scattered** Lots Subdivision and Improvements Projects. SHPD received the submittal on December 8, 2021, including a DHHL letter requesting SHPD’s concurrence with a Chapter 6E-8 project effect determination of “Effect, with proposed mitigation commitments” for the proposed project, an HRS 6E Submittal Form, Cultural Surveys Hawaii, Inc. (CSH) cover letters, and a literature review field inspection (LRFI) report titled, *Archaeological Field Inspection and Literature Review to Support Consultation with SHPD for the Department of Hawaiian Home Lands Ho‘olehua Scattered Lots Subdivision and Improvements Project...* (Shideler and Hammatt, November 2021). Subsequently, SHPD received a CSH letter on February 11, 2022 (Submission No. 2021PR01540.002) and a DHHL letter with a revised project effect determination of “No historic properties affected” on February 16, 2022 (Submission No. 2021PR01540.003)

The DHHL proposes to construct infrastructure improvements, including clearing, grading, and installation of roadway, electrical, domestic water, and irrigation water utilities. The proposed plan calls for ground-disturbing activities confined to the two subject parcels. However, it will extend to existing roadways for access and connection to utilities. These improvements will support DHHL beneficiaries by providing essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action. The project area consists of two discontinuous areas totaling 36.4 acres located within **the Ho‘olehua Scattered Lots Subdivision**.

CSH produced the subject LRFI (Shideler and Hammatt, November 2021) in support of the proposed DHHL project. The LRFI includes a project history, background research, previous archaeological research, and results of the field inspection. The LRFI conducted a 100% pedestrian survey of the project area with transects spaced at 15-meter intervals. Two terrace alignments were documented as well as an abandoned house structure and a pile of lumber. The historic properties were documented within Lot 104D-1 [TMK: (2) 5-2-026:014], situated on the southside of a drainage swale parallel to an ill-defined flow channel. Shideler and Hammatt (November 2021) assessed the **sites’** function to retain the slope of a small drainage swale for plant propagation. The LRFI report indicates the age of the two features’ is indeterminate and contains a very low probability of any related cultural or agricultural subsurface deposits. No significance assessments are provided in the LRFI report. However, Shideler and Hammatt (November 2021) made a project effect determination of “Effect with proposed mitigation commitments” with the proposed mitigation in the form of preservation through avoidance. Furthermore, the report

William J. Ailā Jr.

02/16/22

Page 2

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Per HAR §13-275-7, the project will have no effect on significant historic properties, and therefore, **SHPD concurs** with DHHL's **determination of "No historic properties affected" for the current project**. When the SHPD agrees that the action will not affect **any significant historic properties, this is the SHPD's written concurrence and historic** preservation review ends. The HRS 6E historic preservation review process is ended. The project initiation process may proceed.

Please attach to plans: In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 652-1510.

Please contact 'Iolani Kauhane, Historic Preservation Archaeologist III, at Iolani.Kauhane@hawaii.gov for matters regarding archaeological resources or this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD

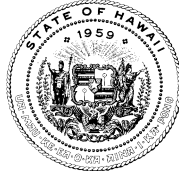
Administrator, State Historic Preservation Division

Deputy State Historic Preservation Officer

cc: Bryan Esmeralda, bryan@munekiyohiraga.com
David Shideler, submittals@culturalsurveys.com
Stewart Matsunaga, stewart.t.matsunaga@hawaii.gov
Emily Murai, emily@munekiyohiraga.com
Bryan Toda, bryan.toda@hawaii.gov

JOSH GREEN, M.D.
GOVERNOR
STATE OF HAWAII
*Ke Kia 'āina o ka Moku 'āina 'o
Hawai'i*

SYLVIA J. LUKE
LT. GOVERNOR
STATE OF HAWAII
*Ka Hope Kia 'āina o ka Moku 'āina
'o Hawai'i*



KALI WATSON
CHAIRPERSON, HHC
Ka Luna Ho'okele

KATIE L. LAMBERT
DEPUTY TO THE CHAIR
Ka Hope Luna Ho'okele

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Ka 'Oihana 'Āina Ho'opulapula Hawai'i
P. O. BOX 1879
HONOLULU, HAWAII 96805

January 6, 2025

Ryan Kanaka'ole
Acting State Historic Preservation Officer
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Boulevard, Suite 555
Kapolei, Hawai'i 96707

HICRIS No. 2021PR01540

Attn: Jessica Puff, Administrator

Subject: PRESUMED CONCURRENCE DETERMINATION WITH CHAPTER 6E DETERMINATION OF "NO HISTORIC PROPERTIES AFFECTED" FOR THE DEPARTMENT OF HAWAIIAN HOME LANDS HO'OLEHUA SCATTERED LOTS (TMKS): (2)5-2-005:031, (2)5-2-026:003, (2)5-2-026:014, (2)5-2-026:016, (2)5-2-026:017 AND PORTIONS OF MO'OMOMI AVENUE, FARRINGTON HIGHWAY, AND PU'U KAPELE AVENUE, PĀLĀ'AU AHUPUA'A, ISLAND OF MOLOKA'I, HAWAII'

Dear Mr. Kanaka'ole,

In accordance with Chapter 6E, Hawai'i Revised Statutes, and pursuant to Hawai'i Administrative Rules (HAR) §13-275-7(c)(1), §13-275-3(e) and §13-284-3(e), the Department of Hawaiian Home Lands (DHHL) submits this letter to affirm that the review period for the Ho'olehua Scattered Lots Project has exceeded the 90-day review period since our formal submittal on September 23, 2025, and DHHL has not received written comments from the State Historic Preservation Division (SHPD).

Pursuant to HAR §13-275-3(e) and §13-284-3(e), "if the SHPD fails to send written comments within the set time, or by a mutually agreed upon date, then the SHPD is presumed to concur with the agency's submittal". Inasmuch as DHHL has not received written comments within 90 days, DHHL interprets this as SHPD's concurrence with the project effect determination of "no historic properties affected" pursuant to (HAR) §13-275-7(c)(1) for the subject undertaking.

Ryan Kanaka'ole, Acting State Historic Preservation Officer
January 6, 2026
Page 2

Should the SHPD have any additional comments or concerns, we kindly request immediate communication to address or clarify any outstanding matters. Mahalo for your attention to this matter. DHHL looks forward to continuing our shared efforts to safeguard Hawaii's cultural and historical resources.

Mahalo,

A handwritten signature in black ink that reads "Kali Watson". The signature is written in a cursive, flowing style.

Kali Watson, Chairperson
Hawaiian Homes Commission

cc: Munekiyo Hiraga

K:\DATA\SOH DHHL\Hoolehua Scattered Lots\Apps\6E Concurrence\Presumed Concurrence Determination Letter.docx



APPENDIX F-1.
CULTURAL IMPACT
ASSESSMENT REPORT



**Cultural Impact Assessment for the
Department of Hawaiian Home Lands
Ho‘olehua Scattered Lots Subdivision and Improvements
Project,
Pālā‘au Ahupua‘a,
Moloka‘i District, Moloka‘i Island
TMKs: (2) 5-2-005:031 and 5-2-026:014**

**Prepared for
Munekiyo Hiraga
on behalf of the
Department of Hawaiian Home Lands**

**Prepared by
Kamuela Kaapana,
Kellen Tanaka, B.S.,
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: PALAAU 11)**

September 2023

**O‘ahu Office
P.O. Box 1114
Kailua, Hawai‘i 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950**

www.culturalsurveys.com

**Maui Office
1860 Main St.
Wailuku, Hawai‘i 96793
Ph: (808) 242-9882
Fax: (808) 244-1994**

Management Summary

Reference	Cultural Impact Assessment for the Department of Hawaiian Home Lands Ho'olehua Scattered Lots Subdivision and Improvements Project, Pālā'au Ahupua'a, Moloka'i District, Moloka'i Island, TMKs: (2) 5-2-005:031 and 5-2-026:014 (Kaapana et al. 2023)
Date	September 2023
Project Number(s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: PALAAU 11
Agencies	State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP)
Land Jurisdiction	Department of Hawaiian Home Lands (DHHL)
Project Location	The assessed area includes two discrete parcels, a western TMK: (2) 5-2-005:031, Parcel 31 (31.7 acres or 12.8 hectares), and an eastern TMK: (2) 5-2-026:014, Parcel 14 (4.7 acres or 1.9 hectares) for a total area of 36.4 acres (14.7 hectares). Two (2) of the scattered lots subdivision project area parcels are within the Ho'olehua-Pālā'au Hawaiian Homesteads, and are located northwest and north from Moloka'i Airport. Parcel 31 is bound by Farrington Avenue (a dirt road) on the north and Mo'omomi Avenue (a dirt road) on the south. Parcel 14 is on the south side of Pu'u Kapele Avenue (a dirt road). The project area is depicted on a portion of the 1993 Molokai Airport and Kaunakakai U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles and many other figures.
Project Description	DHHL proposes to construct infrastructure improvements including clearing, grading, and installation of roadway, electrical, and water irrigation utilities. The proposed plan calls for ground-disturbance activities to be confined to the two subject parcels, but will extend to existing roadways for access and connection for utilities. These improvements will support DHHL beneficiaries through the provision of essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action.
Project Acreage	The project parcel size is as follows: The western TMK: (2) 5-2-005:031 parcel is 31.7 acres (12.8 hectare). The eastern TMK: (2) 5-2-026:014 parcel is 4.7 acres (1.9 hectare). The total project area included in this report is 36.4 acres (14.7 hectare).
Document Purpose and Regulatory Context	This cultural impact assessment (CIA) supports compliance for the Department of Hawaiian Home Lands Ho'olehua Scattered Lots Subdivision and Improvements project with: <ul style="list-style-type: none"> • The mandate set forth by the Hawai'i State Constitution (Articles IX and XII), courts, Hawai'i Revised Statutes (HRS),

	<p>and Hawai‘i Administrative Rules (HAR) and other Hawai‘i State laws requiring government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups;</p> <ul style="list-style-type: none"> • the State of Hawai‘i’s environmental review process under HRS §343, which requires consideration of the proposed project’s potential effects on cultural practices and cultural features in order to “promote responsible decision making” (HRS §343); • and the State of Hawai‘i’s historic preservation review process under HAR §13-275-6 and §13-284-6, which requires the identification and mitigation of adverse effects proposed by a potential project in order to “promote the use and conservation of historic properties for the education of the citizens of Hawai‘i” (HAR §13-275-6) <p>This CIA contains information gathered from archival research and consultation, compiled in order to “analyze the impact of a proposed action on cultural practices and features associated with the project area” (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State of Hawai‘i significance Criterion e, pursuant to HAR §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6).</p>
<p>Results of Background Research</p>	<p>Background research for the proposed project yielded the following information:</p> <ol style="list-style-type: none"> 1. Traditionally, Moloka‘i was divided into two <i>moku</i>, or districts: Kona and Ko‘olau. In 1859, the traditional <i>moku</i> of Kona and Ko‘olau were dropped and the island as a whole was referred to as the Moloka‘i district. In 1909, the island was again divided into two districts: Kalawao District, containing the lands of Kalaupapa, Kalawao, and Waikolu, and Moloka‘i District, comprising the remainder of the island (Coulters in Summers 1971:2), including the current project area. 2. The winds of Pālā‘au are Ho‘olua, Moa‘e, Ka‘ele, and Hualialia (<i>Ka Hae Hawaii</i> 1861; Nakuina 1995:64). The rain of the area is known as Nāulu (Akana and Gonzalez 2015:175). 3. The prominent <i>ka‘ao</i> (legends) of Pāka‘a and Kū-a-Pāka‘a originates from Moloka‘i (Handy 1922:76). Chief Ho‘olehua

	<p>was married to 'Īloli and they had a daughter named Hikauhi, who later became wife of Pāka'a and mother of Kū-a-Pāka'a, the caretakers of the wind gourd of La'amaomao (Nakuina 1992:29–30).</p> <ol style="list-style-type: none"> 4. Pu'u Pe'elua, or Caterpillar Hill, is located in Ho'olehua and named after the <i>pe'elua</i> (caterpillar). This <i>pe'elua</i> was a <i>kupua</i> (demigod), who took the form of a caterpillar in the day and a handsome man at night. The <i>pe'elua</i> became an <i>'aumakua</i> (family or personal gods, deified ancestors) for the district of Ho'olehua (Ne et al. 1992:49–50). 5. Four <i>heiau</i> (pre-Contact place of worship) were recorded in the Pālā'au and Ho'olehua Ahupua'a including Lepekaheo Heiau and three unnamed <i>heiau</i> (Summers 1971:37–38). 6. Historical anecdote and environmental data for this region indicate a possible substantial pre-Contact population (Fornander 1880; Summers 1971), which would have subsisted on dryland agriculture consisting mostly of sweet potatoes. 7. Historic properties previously identified in the vicinity are limited to a few sites recorded by Summers (1971), including the legendary Kape'elua Complex (State Inventory of Historic Places [SIHP] # 50-60-03-00011). There appears to have been a locus of traditional Hawaiian activity in Anahaki Gulch north of the western project area but this is suggested to relate to the micro-environment of that gulch and greater proximity to the coast. 8. In the 1790s, Kamehameha I reportedly “drilled his warriors on the Hoolehua plain near where the airport is now” (Cooke 1949:112). These training grounds may have included the current project area. 9. Following the Māhele in 1848, the entire <i>ahupua'a</i> (traditional land division usually extending from the mountains to the sea) of Ho'olehua was given to the government, and all of Pālā'au Ahupua'a (including the western and central project areas) was “Crown lands” owned by Kamehameha III (Dodge et al. 1897). 10. Cattle were introduced to Moloka'i in the 1840s (De Loach 1975:68). In the second half of the nineteenth century, cattle, sheep and goat ranching expanded greatly. By 1866, there were “2,586 head of cattle, 13,332 sheep and 196 goats on the island” (de Loach 1975:86). 11. Molokai Ranch was formed in 1897 when a <i>hui</i> (group) of investors purchased approximately 70,000 acres of central and western holdings from the Bishop Estate (Cooke 1949; Stearns
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	<p>and Macdonald 1947). By 1905, the ranch had transitioned from an open country system to the paddock system (Henke 1929). The western and eastern project areas are within the Momomi Paddock. In the 1920s, Molokai Ranch lands consisted of about 10,000 acres leased for pineapple cultivation, 8,000 acres of forest reserves, and 50,000 acres utilized for ranching (Henke 1929:52). Cattle ranching remains an important industry on Moloka'i.</p> <p>12. In 1920, the U.S. Congress passed the Hawaiian Homes Commission Act to administer and manage some 200,000 acres of land that belonged to the government of the Kingdom of Hawai'i or was recognized as Crown lands. The following year, the program began attracting people to Moloka'i. Overall, the program succeeded and was expanded to include 11,400 acres of Pālā'au-Ho'olehua beginning in 1924. Parcels 31 and 14 consists of approximately 36.4 acres (14.7 hectares) of these Pālā'au-Ho'olehua Homestead lands and includes Lots 17 and 104D-1.</p> <p>13. The Moloka'i homestead program initially was impacted by many problems, including drought and high winds (McGregor 1990:37–38). Despite such difficulties, people managed to cultivate their plots (McGregor 1990:37–38). Farming was diversified and successful crops included corn, watermelons, cucumbers, sweet potatoes, eggplant, and papaya (Keesing 1936; Wiebke 1940). In addition to agricultural pursuits, the Hawaiian Homes Commission encouraged raising livestock and ranching. Raising pigs brought the most revenue and economic value; however, a few families sold eggs and every family owned some cattle (Keesing 1936).</p> <p>14. According to Handy (1940:157), “in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua” and “Hoolehua and Palaau were noted for sweet potatoes in olden days.” However, Handy and Handy (1972:283) note homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.</p> <p>15. A civilian airfield was established in Ho'olehua in 1919. In 1931, the U.S. Army Air Corps established a portion of this field as “Homestead Field” (Horvat 1966:38, 40–47). By the time the United States entered World War II in 1941, aircraft of the Fifth Bombardment Group were stationed at Homestead Field. A complex of World War II bunker sites were identified on the</p>
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	<p>airport property well south of the present project areas in 1980 by AECOS Inc. (1980).</p>
<p>Results of Community Consultation</p>	<p>CSH attempted to contact Native Hawaiian Organizations (NHO), agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 20 individuals or groups; eight (8) responded, and three (3) of these <i>kama 'āina</i> (native-born) and/or <i>kūpuna</i> (elder/of the grandparent's generation) met with CSH for more in-depth interview(s). Consultation was received from:</p> <ol style="list-style-type: none"> 1. Kilia Purdy-Avelino and Justin Avelino, <i>kama 'āina</i> of Ho'olehua 2. Malia Lani Forbes Greaney, <i>kama 'āina</i> of Pālā'au
<p>Identification of Cultural Practices</p>	<p>Consultation identified the following cultural, historical, and natural resources where cultural practices (including traditional and customary Native Hawaiian rights) are being exercised in Pālā'au Ahupua'a:</p> <ol style="list-style-type: none"> 1. Agricultural and gathering practices 2. Marine resources 3. <i>Mo'olelo</i> (stories) and <i>wahi pana</i> (storied places) 4. Recreational activities 5. Healing practices 6. Religious activities 7. Burial practices <p>CSH has determined that no ongoing cultural practices were identified within the project area during community consultation, however, the project area is also located in the general vicinity of ongoing cultural practices such as agricultural and gathering activities, ceremonial purposes, and traditional burial practices.</p>
<p>Identification of Impacts to Cultural Practices</p>	<p>No impacts to ongoing cultural practices were identified within the project area during community consultation for this CIA. Consultation identified a number of concerns related to the environment and the broader community:</p> <ol style="list-style-type: none"> 1. Availability of water 2. Soil quality 3. Impacts to <i>'uhane</i> (spirits) and <i>'iwi kūpuna</i> (ancestral remains) 4. Impacts to <i>wahi pana</i>
<p>Mitigation Possibilities Identified During Background Research and Consultation</p>	<p>The results of community consultation, underscored by background research conducted for this CIA, inform the following mitigation possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups:</p>

	<ol style="list-style-type: none"> 1. Mrs. Purdy-Avelino expressed concerns for sacred sites located in the vicinity of the project area. She supports the development of more homestead lots for homesteaders on the waitlist, however, she emphasized the need to make sure to continue to protect sacred sites. 2. Mr. Avelino stated that it is vital that no work be done to the Makahiki Grounds. 3. Ms. Greaney expressed concern regarding the availability of water. She noted that Ho'olehua, including Nā'iwa, is historically known for its dry and barren land, with little to no water available. She stressed that it is also important to ensure access to the appropriate amount of water is available and at a reasonable cost. 4. Ms. Greaney strongly suggests the soil is well tested by third party professionals for any presence of harmful chemical residue possibly remaining in the soil. This is a good safety precaution for farmers. 5. Ms. Greaney also suggested that future studies may also look at nearshore areas off of Pālā'au to assess for the presence of chemicals from runoff and any impacts. 6. Ms. Greaney insists that the homestead community should be notified well in advance of any proposed developments that will occur on the Makahiki lands. 7. Ms. Greaney also stated that if there are any future developments, it is important that in depth archaeological inventory surveys be conducted as it is known that many artifacts still exist in the <i>mauka</i> (toward the mountains) and central regions of Nā'iwa and Pālā'au. 8. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3. 9. Non-Native Hawaiian human remains will undergo the process laid out under state law (HAR 13-300), however, Native Hawaiian human remains and cultural items found on DHHL lands are subject to the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3001 et seq and its implementing regulations (43 CFR Part 10). As 43 CFR § 10.2 provides, tribal lands include "All lands administered by the Department of Hawaiian Home Lands (DHHL) under the Hawaiian Homes Commission Act of 1920 (HHCA, 42 Stat. 108) and Section 4 of the Act to Provide for the Admission of the State of Hawai'i into the Union (73 Stat. 4), including "available
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	<p>lands” and “Hawaiian home lands.” Under NAGPRA, DHHL must prepare a plan of action (POA) prior to any planned activity that is likely to result in a discovery or excavation of human remains or cultural items. If not part of a planned activity, a POA is required after the discovery of human remains or cultural items. In developing a POA, DHHL will initiate consultation with lineal and cultural descendants, consult on the POA, and approve and sign the POA and provide a copy to all consulting parties. The 3-step process for drafting a POA pursuant to NAGPRA can be found in 43 CFR § 10.4(b).</p>
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Section 1 Introduction

1.1 Project Description

At the request of Munekiyo Hiraga, and on behalf of Department of Hawaiian Home Lands (DHHL), Cultural Surveys Hawai'i, Inc. (CSH) has prepared this cultural impact assessment (CIA) report for the proposed DHHL Ho'olehua Scattered Lots Subdivision and Improvements Project, Pālā'au Ahupua'a, Moloka'i District, Moloka'i Island, including two parcels, a western TMK: (2) 5-2-005:031, Parcel 31 (31.7 acres or 12.8 hectares), and an eastern TMK: (2) 5-2-026:014, Parcel 14 (4.7 acres or 1.9 hectares) for a total project area of 36.4 acres (14.7 hectares). The scattered lots subdivision project area parcels are within the Ho'olehua-Pālā'au Hawaiian Homesteads, and are located northwest and north from Moloka'i Airport. The long, narrow west project area is bound by Farrington Avenue on the north and Mo'omomi Avenue on the south. The eastern project area is on the south side of Pu'u Kapele Avenue. The project area is depicted on a portion of the 1993 Molokai Airport and Kaunakakai U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1), a copy of the same map showing an overlay of TMK parcels (Figure 2), tax map key (TMK) plats (Figure 3 and Figure 4), on an aerial photograph (ESRI 2013) (Figure 5) and on the same aerial photograph with an overlay showing an TMK parcels (Figure 6).

DHHL proposes to construct infrastructure improvements including clearing, grading, and installation of roadway, electrical, and water irrigation utilities. The proposed plan calls for ground-disturbance activities to be confined to the two subject parcels, but will extend to existing roadways for access and connection for utilities. These improvements will support DHHL beneficiaries through the provision of essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action.

1.2 Regulatory Context

This CIA supports compliance for the DHHL Ho'olehua Scattered Lots Subdivision and Improvements project with:

- The mandate set forth by the Hawai'i State Constitution (Articles IX and XII), courts, Hawai'i Regulatory Statutes (HRS), and Hawai'i Administrative Rules (HAR) and other Hawai'i State laws requiring government agencies to promote and preserve cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups;
- the State of Hawai'i's environmental review process under HRS §343, which requires consideration of the proposed project's potential effects on cultural practices and cultural features in order to "promote responsible decision making" (HRS §343);
- and, the State of Hawai'i's historic preservation review process under HAR §13-275-6 and §13-284-6, which requires the identification and mitigation of adverse effects proposed by a potential project in order to "promote the use and conservation of historic properties for the education of the citizens of Hawai'i" (HAR §13-275-6)

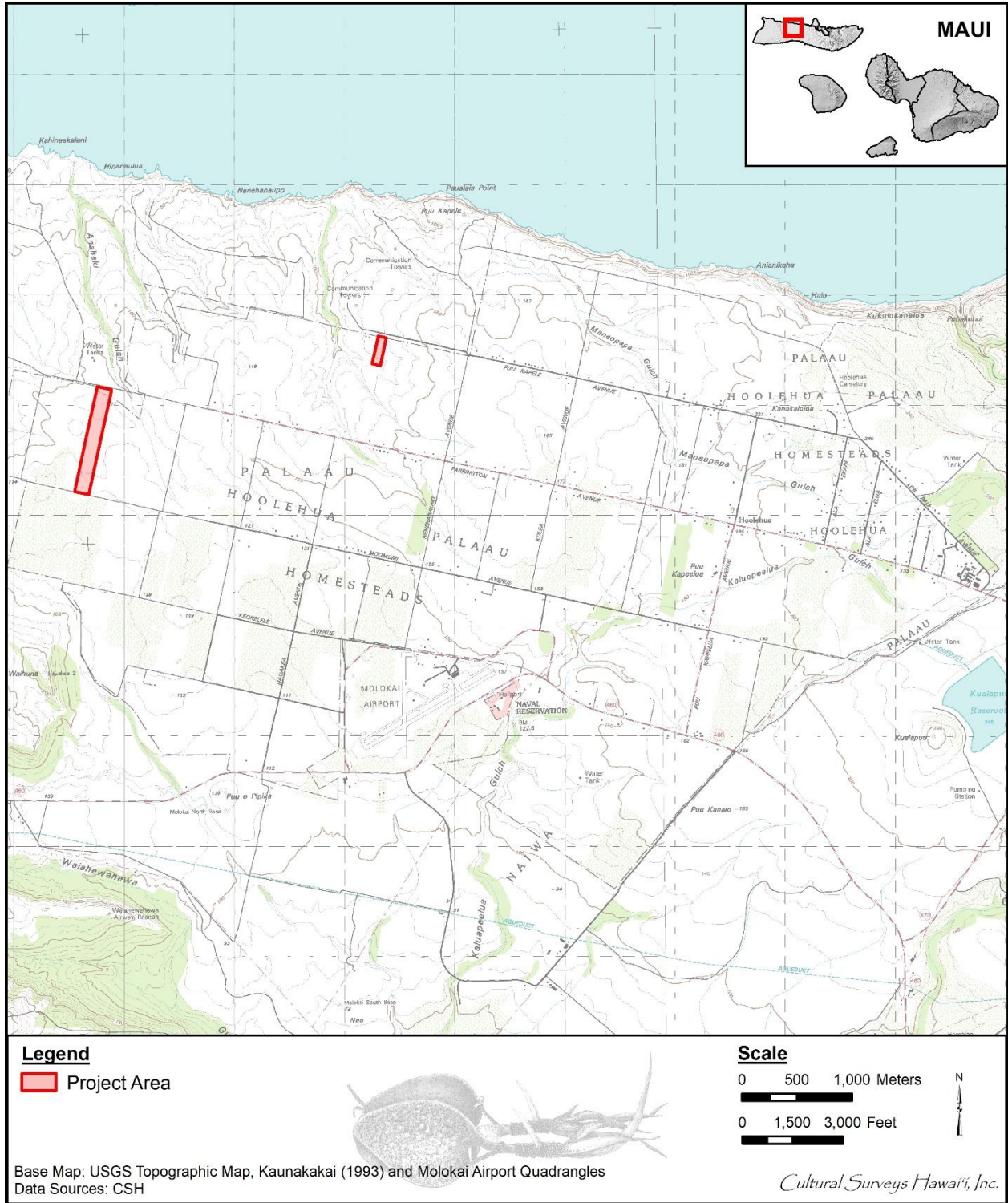


Figure 1. Portion of the 1993 Molokai Airport and Kaunakakai USGS 7.5-minute topographic quadrangles showing the location(s) of the project area

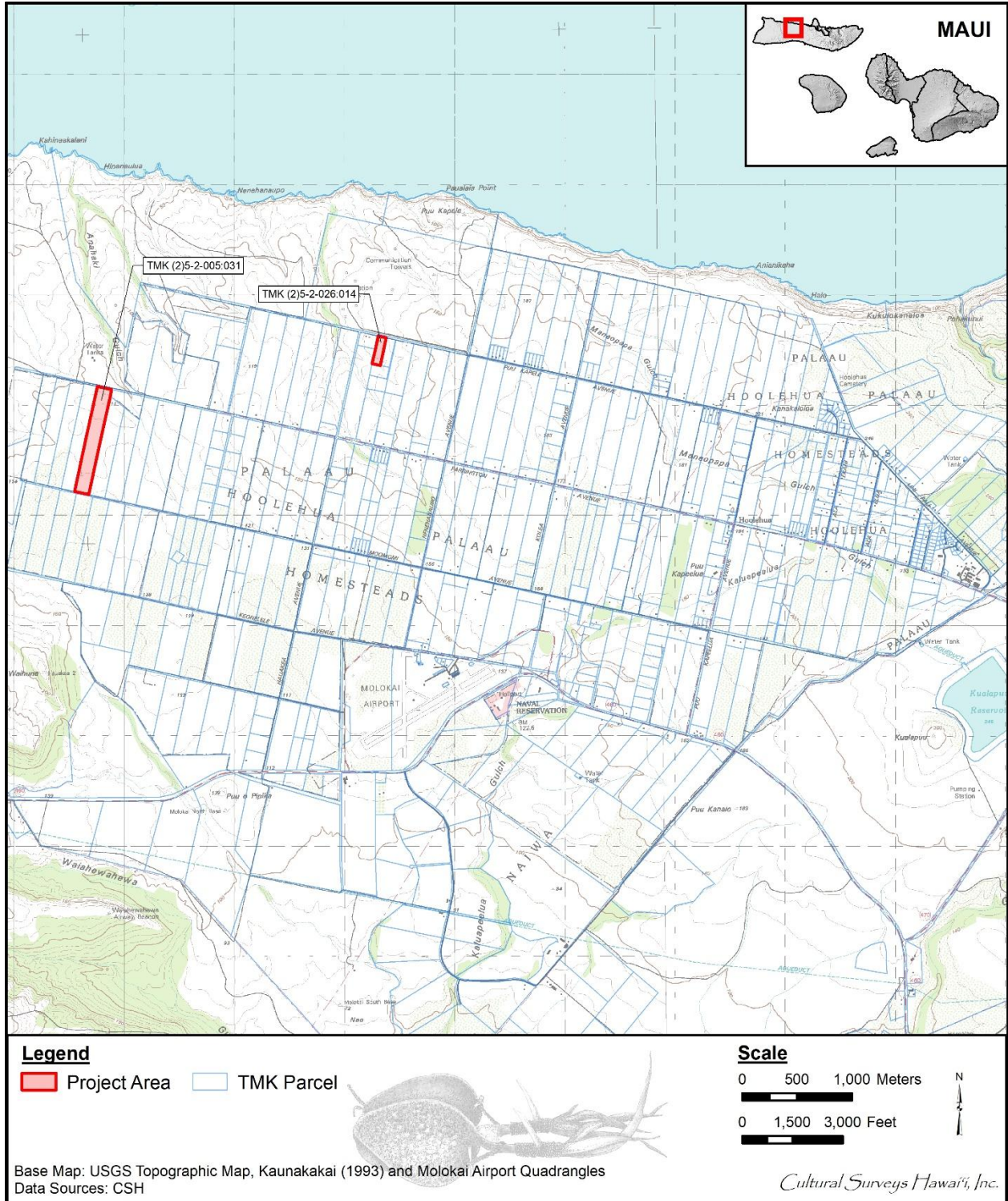


Figure 2. Portion of the 1993 Molokai Airport and Kaunakakai USGS 7.5-minute topographic quadrangles with an overlay of TMK parcels (mostly DHHL lots) showing the location(s) of the project area

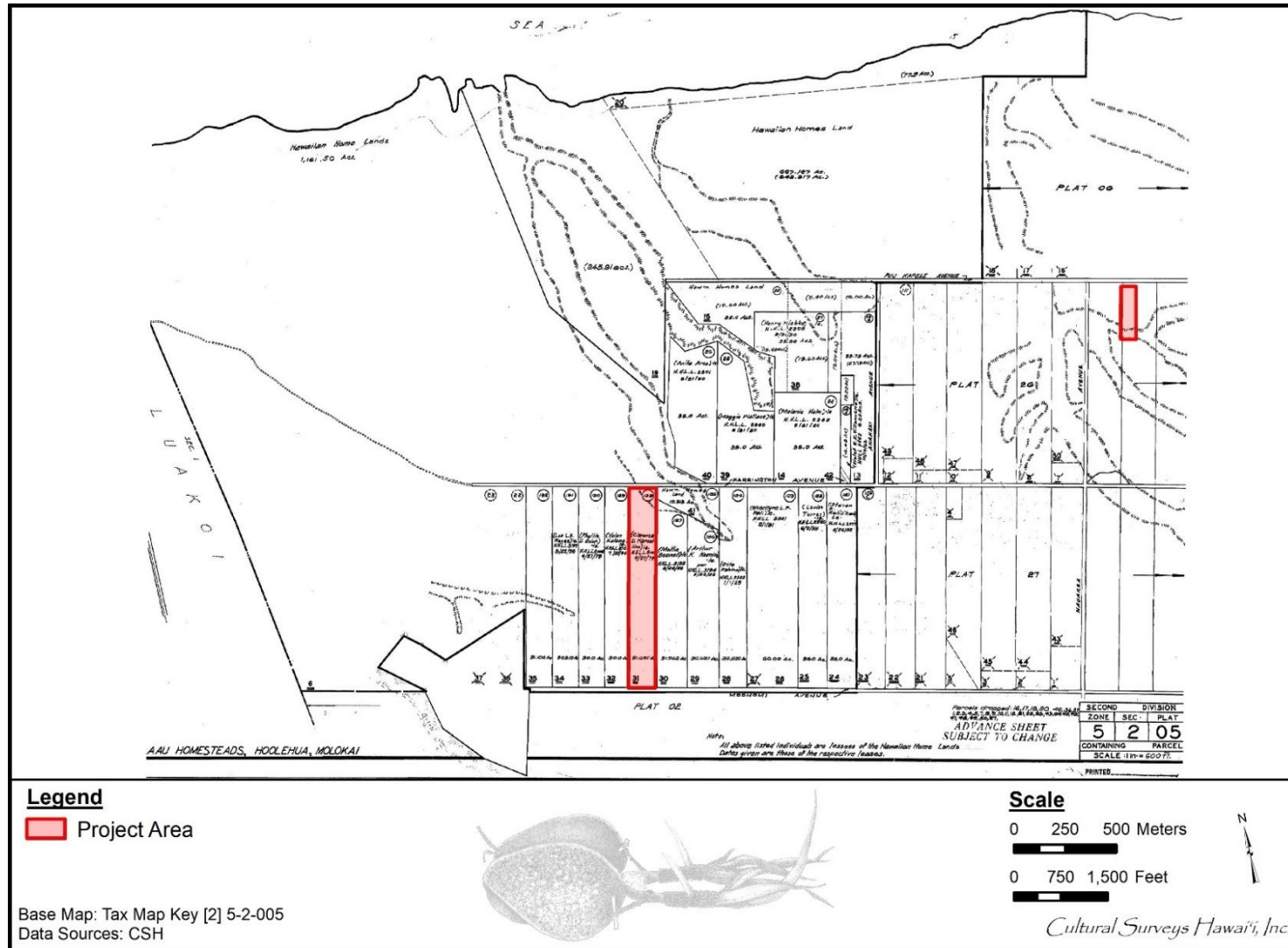


Figure 3. TMK: (2) 5-2-0005 showing the western TMK: (2) 5-2-005:031 portion of the project area (Hawai'i TMK Service 2023)

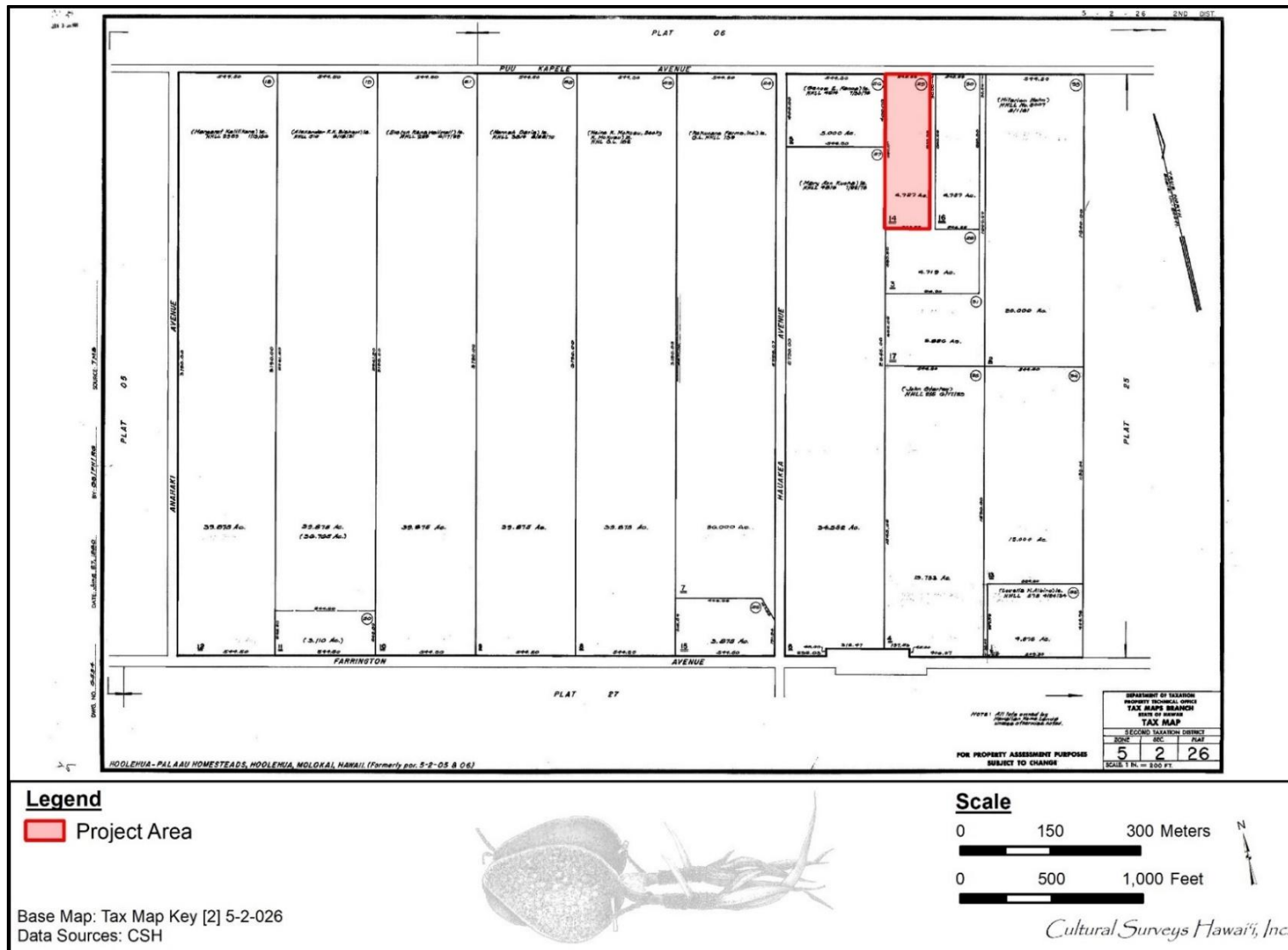


Figure 4. TMK: (2) 5-2-026 showing the eastern TMK: (2) 5-2-026:014 project area (Hawai'i TMK Service 2023)

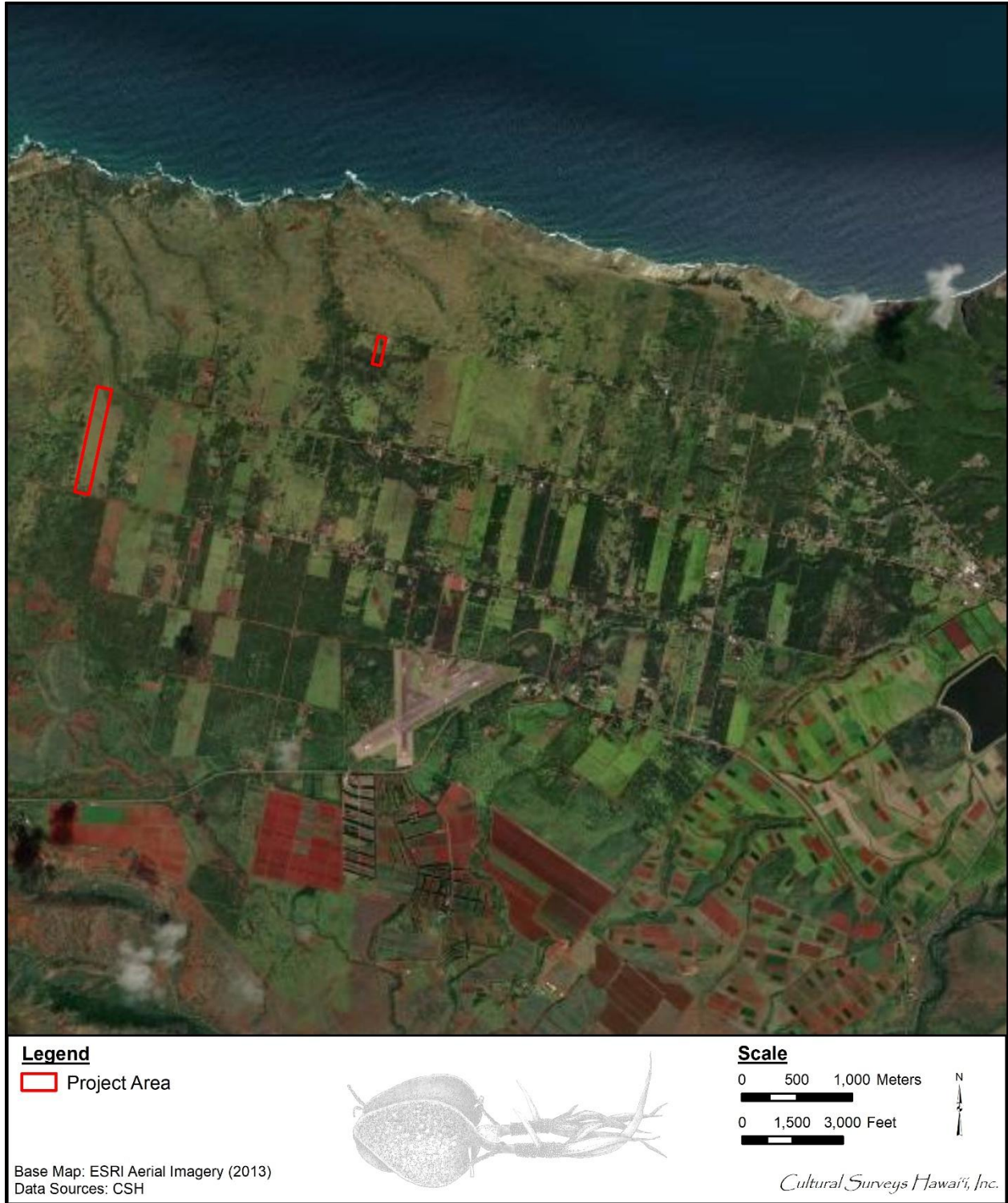


Figure 5. 2013 aerial photograph (ESRI 2013) showing the project area(s) and surrounding lands

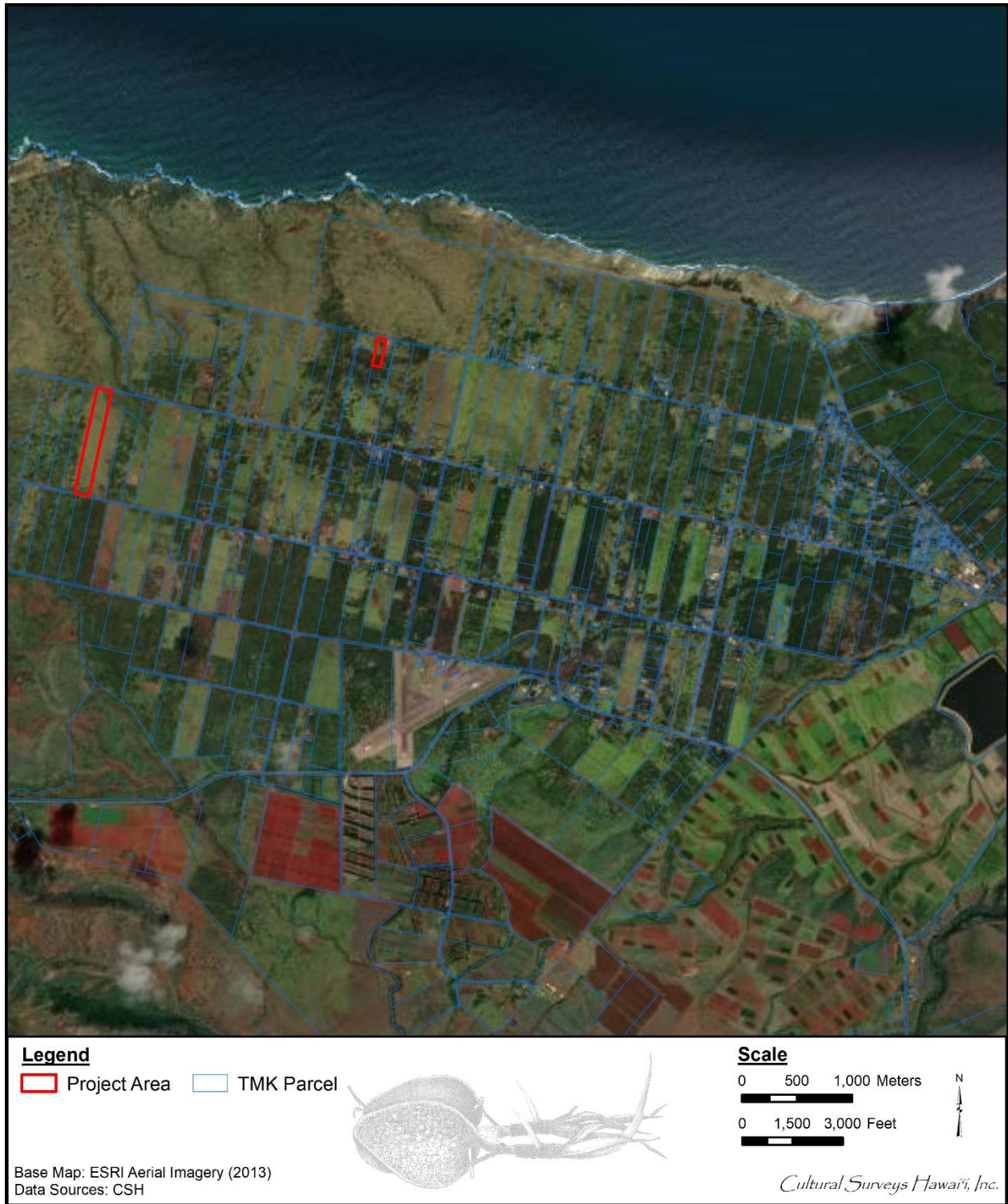


Figure 6. 2013 aerial photograph (ESRI 2013) with an overlay of TMK parcels (mostly DHHL lots) showing the location(s) of the project area

1.3 Document Purpose

This CIA contains information gathered from archival research and consultation, compiled in order to “analyze the impact of a proposed action on cultural practices and features associated with the project area” (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State of Hawai'i significance Criterion e, pursuant to HAR §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6).

1.4 Natural Environment

1.4.1 *Nā Lepo* (Soils)

MacDonald et al. (1990:411) provide the following description for soil in West Moloka'i:

Long periods of weathering, accompanied by comparatively little stripping by erosion, have left a deep red soil cover over the top of West Molokai. In places recent erosion has cut through the upper horizon exposing the lower horizon, which locally exhibits pronounced iron enrichment in the form of masses of lateritic iron oxide. [MacDonald et al. 1990:411]

The “deep, red soil” described by MacDonald et al. (1990:411) is characteristic of the current project area and vicinity and is apparent in recent aerial imagery (see Figure 5).

According to the United States Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (USDA 2006) and soil survey data gathered by Foote et al. (1972), the soils within the west project area consist of Molokai series soils including Molokai silty clay loam, 0 to 3% slopes (MuA), Molokai silty clay loam, 3 to 7% slopes (MuB), and Molokai silty clay loam, 7 to 15% slopes, severely eroded (MuC3) soils (Figure 7).

Molokai series soils are described as follows:

[...] well-drained soils on uplands on the islands of Maui, Lanai, Molokai, and Oahu. These soils formed in material weathered from basic igneous rock. They are nearly level to moderately steep. Elevations range mainly from nearly sea level to 1,000 feet [...]

These soils are used for sugarcane, pineapple, pasture, wildlife habitat, and homesites. The natural vegetation consists of kiawe, ilima, uhaloa, feather fingergrass, and buffelgrass. [Foote et al. 1972:96]

MuA soils are further described as follows:

[...] The material at depths between 35 and 64 inches is moderately compact in place. The substratum is soft, weathered rock. The soil is slightly ‘acid to neutral, except that areas used for pineapple are commonly very strongly acid or extremely acid in the surface layer.

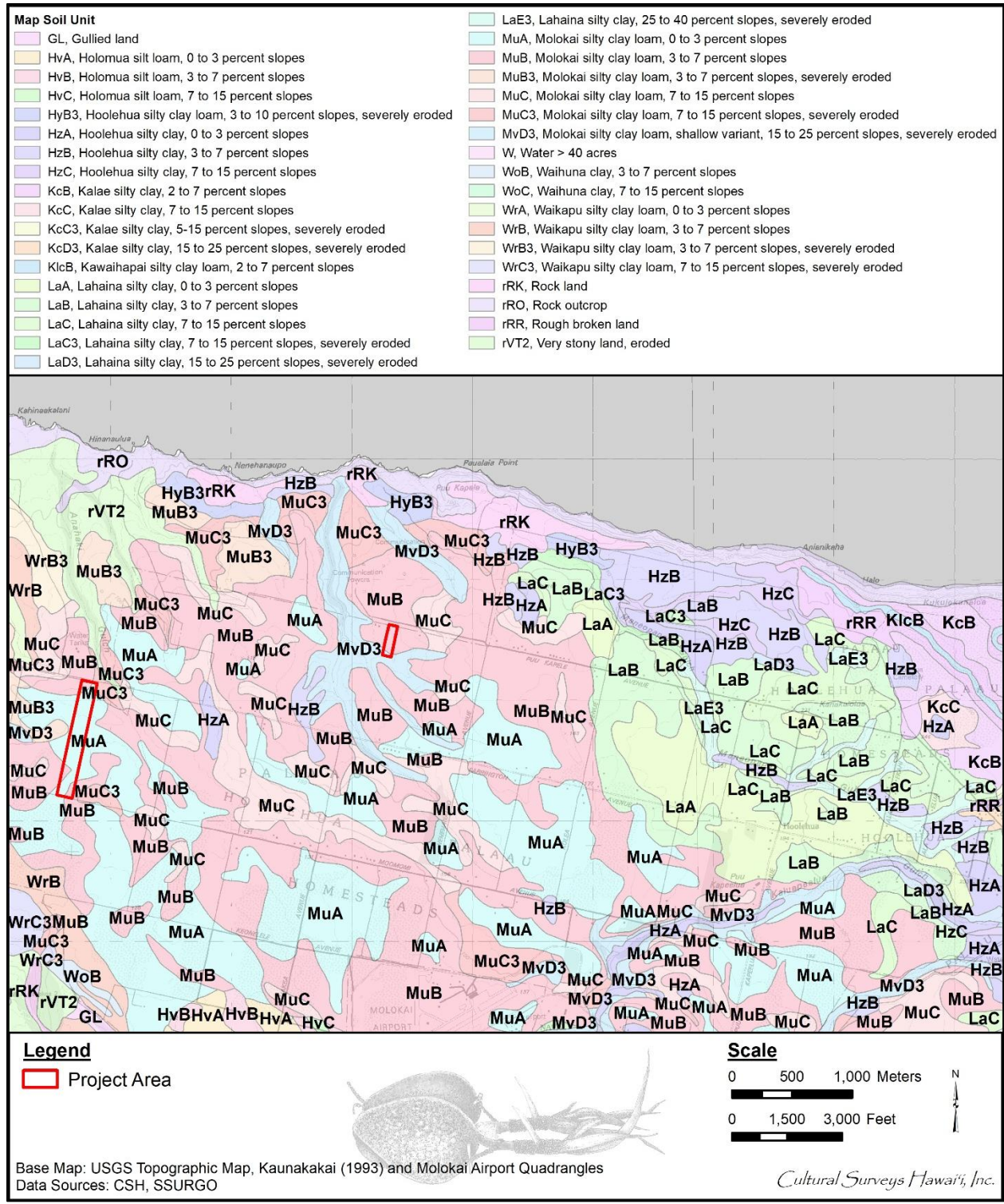


Figure 7. Portion of the 1993 Molokai Airport and Kaunakakai USGS 7.5-minute topographic quadrangles and overlay of Foote et al. (1972) *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, indicating soil types within and surrounding the project area(s) (USDA 2006)

Permeability is moderate. Runoff is slow, and the erosion hazard is slight. [Foote et al. 1972:96]

MuB soils are further described as, “On this soil, runoff is slow to medium and the erosion hazard is slight to moderate. Included in mapping were a few small areas that are eroded to soft, weathered rock [...]” (Foote et al. 1972:96).

MuC3 soils are further described as, “This soil occurs on knolls and sharp slope breaks. Runoff is medium; and the erosion hazard is moderate” (Foote et al. 1972:97).

The eastern project area includes MuB soils (described above) and Molokai silty clay loam, shallow variant, 15 to 25% slopes, severely eroded (MvD3) soils (see Figure 7). These soils are described as follows:

This soil occurs on the sides of drainageways. In most places all of the surface layer and part of the subsoil have been removed, and about 12 to 20 inches of dark reddish-brown soil overlies the soft, weathered rock. In some places the soil is eroded to soft, weathered, rock and, as a result, is grayer or browner than is typical of the Molokai series. There are few to common stones and boulders on the surface. These are unweathered rock cores that have been exposed by erosion. Runoff is rapid, and the erosion hazard is severe. Workability is difficult. [Foote et al. 1972:97]

1.4.2 *Nā Ua* (Rains)

Precipitation is a major component of the water cycle and is responsible for depositing *wai* (fresh water) on local flora. Pre-Contact *kānaka* (Native Hawaiians) recognized two distinct annual seasons. The first, known as *kau* (period of time, especially summer) lasts typically from May to October and is a season marked by a high-sun period corresponding to warmer temperatures and steady trade winds. The second season, *ho‘oilo* (winter, rainy season) continues through the end of the year from November to April and is a much cooler period when trade winds are less frequent, and widespread storms and rainfall become more common (Giambelluca et al. 1986:17). Each small geographic area on Moloka‘i had a Hawaiian name for its own rains. According to Akana and Gonzalez (2015),

Our kupuna had an intimate relationship with the elements. They were keen observers of their environment, with all of its life-giving and life-taking forces. They had a nuanced understanding of the rains of their home. They knew that one place could have several different rains, and that each rain was distinguishable from another. They knew when a particular rain would fall, its color, duration, intensity, the path it would take, the sound it made on the trees, the scent it carried, and the effect it had on people. [Akana and Gonzalez 2015:XV]

Nāulu is a rain associated with different *wahi pana* throughout Moloka‘i. In a *kanikau* (lament) for a person named Nuholani, it states that this rain rumbles across the expansive land of Pālā‘au.

<i>Nā Lehua o Kā‘ana</i>	The lehua of Kā‘ana
<i>I ka noua e ka ua Nāulu</i>	Pelted by the Nāulu rain
<i>Kamumu akula i ke kaha o Pālā‘au</i>	Rumbling across the expanse of Pālā‘au

[Akana and Gonzalez 2015:175]

1.4.3 *Nā Makani* (Winds)

Similar to rain, *makani* (wind) were named for various reasons such as describing the intensity or direction of the wind, relating the wind to a story, or even relating the wind to the landscape. David Malo, a Native Hawaiian historian, explains some general terms related to wind:

[...] There was the *kona*, a wind from the south, of great violence and of wide extent. It affected all sides of an island, east, west, north, and south, and continued for many days [...] The *kona* wind often brings rain, though sometimes it is rainless [...] The *hoolua*, a wind that blows from the north, sometimes brings rain and sometimes is rainless [...] The *hau* is a wind from the mountains, and they are thought to be the cause of it, because this wind invariably blows from the mountains outwards towards the circumference of the island. [Malo 1951:14]

Malo has supplied a foundation of names for winds, however, there is an abundance of names in various stories and chants. The *mo'olelo* called “The Wind Gourd of La‘amaomao” tells the story of Pāka‘a and his son Kuāpāka‘a who are descendants of the wind goddess La‘amaomao. With their possession of this special wind gourd, they could control and call forth the winds of Hawai‘i. Pāka‘a’s chant traces the winds of and surrounding Pālā‘au Ahupua‘a. Pāka‘a’s chant is listed below:

<i>Ka hoolua o ka moae</i>	Ho‘olua, Moa‘e
<i>Kaele i Palaau</i>	Ka‘ele are at Pālā‘au
<i>Hauialialia ilaila</i>	Hauialialia is there
<i>Ka iki aea i Hoolehua</i>	Kaiki-aea is of Hoolehua
[...]	Laumaomao is at Punakou
	Lawelawe-mālie is at Kekaha
	Haleolono is at Kaluako‘i
<i>Ma ke kuapā maluna mai o</i>	The Kuapā is at Mo‘omomi
<i>Mo‘omomi</i>	
[<i>Ka Hae Hawaii</i> 1861]	[Nakuina 1995:64]

Within this chant, there are various winds names mentioned which are associated with Pālā‘au. In the first three lines of the chant, indicated there are four main winds of Pālā‘au. These winds include, Ho‘olua, Moa‘e, Ka‘ele, and Hauali‘ali‘a. Another line, “*Ma ke kuapā ma luna mai o Mo‘omomi*,” indicates there is a wind called Kuapā at Mo‘omomi. Mo‘omomi is located within the Pālā‘au Ahupua‘a. Nakuina’s (1995) version of the chant contains wind names that were not originally included in *Ka Hae Hawaii* (1861), a Hawaiian language newspaper.

1.5 Built Environment

The built environment within and surrounding the project area is minimal. The project area mostly consists of undeveloped DHHL parcels. Active homesteads are sporadic throughout the project area, located particularly along the bounding roadways. The long, narrow west project area is bound by Farrington Avenue (a dirt road) on the north and Mo‘omomi Avenue (a dirt road) on the south. The eastern project area is on the south side of Pu‘u Kapele Avenue (a dirt road). Molokai Airport and associated infrastructure is located approximately 2 km southeast of the project area(s).

Section 2 CIA Methods

2.1 Archival Research

Research centers on Hawaiian activities including *ka'ao*, *wahi pana*, *'ōlelo no'eau* (proverbs), *oli* (chants), *mele* (songs), traditional *mo'olelo*, traditional subsistence and gathering methods, ritual and ceremonial practices, and more. Background research focuses on land transformation, development, and population changes beginning with the early post-Contact era to the present day.

Cultural documents, primary and secondary cultural and historical sources, historic maps, and photographs were reviewed for information pertaining to the study area. Research was primarily conducted at the CSH library. Other archives and libraries including the Hawai'i State Archives, the Bishop Museum Archives, the University of Hawai'i at Mānoa's Hamilton Library, Ulukau, The Hawaiian Electronic Library (Ulukau 2014), the State Historic Preservation Division (SHPD) Library, the State of Hawai'i Land Survey Division, the Hawaiian Historical Society, and the Hawaiian Mission Houses Historic Site and Archives are also repositories where CSH cultural researchers gather information. Information on Land Commission Awards (LCAs) were accessed via Waihona 'Aina Corporation's Māhele database (Waihona 'Aina 2021), the Office of Hawaiian Affairs (OHA) Papakilo Database (Office of Hawaiian Affairs 2015), and the Ava Konohiki Ancestral Visions of 'Āina website (Ava Konohiki 2015).

2.2 Consultation

Throughout the course of this assessment, an effort was made to contact and consult with Native Hawaiian Organizations (NHO), agencies, and community members including descendants of the area, in order to identify individuals with cultural expertise and/or knowledge of the *ahupua'a* of Pālā'au.

2.2.1 Community Outreach, Interview, and Transcription Methods

2.2.1.1 Scoping for Participants

We begin our consultation efforts with utilizing our in-house contact list from previous outreach efforts to facilitate the interview process. This list often includes *kūpuna*, *kama'āina*, cultural practitioners, lineal and cultural descendants, Native Hawaiian Organizations (NHOs; includes Hawaiian Civic Clubs and those listed on the Department of Interior's NHO list), and community groups. We also contact agencies such as SHPD, OHA, and the appropriate Island Burial Council where the proposed project is located for their response to the project and to identify lineal and cultural descendants, individuals and/or NHO with cultural expertise and/or knowledge of the study area. CSH is also open to referrals and new contacts.

2.2.1.2 "Talk Story" Sessions

Prior to the interview, CSH cultural researchers explain the role of a CIA, how the consent process works, the project purpose, the intent of the study, and how their *'ike* (insight) and *mana'o* (opinion) will be used in the report. The interviewee is given an Authorization and Release Form to read and sign.

“Talk Story” sessions range from the formal (e.g., sit down and *kūkākūkā* [consultation, discussion] in participant’s choice of place over set interview questions) to the informal (e.g., hiking to cultural sites near the study area and asking questions based on findings during the field outing). In some cases, interviews are recorded and transcribed later.

CSH also conducts group interviews, which range in size. Group interviews usually begin with set, formal questions. As the group interview progresses, questions are based on interviewee’s answers. Group interviews are always transcribed and notes are taken. Recorded interviews assist the cultural researcher in 1) conveying accurate information for interview summaries, 2) reducing misinterpretation, and 3) providing missing details for *mo‘olelo*.

CSH seeks *kōkua* (assistance) and guidance in identifying past and current traditional cultural practices of the study area. Those aspects include general history of the *ahupua‘a*; past and present land use of the study area; knowledge of cultural sites (for example, *wahi pana*, archaeological sites, and burials); knowledge of traditional gathering practices (past and present) within the study area; cultural associations (*ka‘ao* and *mo‘olelo*); referrals; and any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the study area.

2.2.1.3 Interview Completion

After an interview, CSH cultural researchers transcribe and create an interview summary based on information provided by the interviewee. Cultural researchers give a copy of the transcription and interview summary to the interviewee for review and ask them to make any necessary edits. Once the interviewee has made those edits, we incorporate their *‘ike* and *mana‘o* into the report. When the draft report is submitted to the client, cultural researchers then prepare a finalized packet of the participant’s transcription, interview summary, and any photos taken during the interview. We also include a thank you card and honoraria. This is for the interviewee’s records.

It is important to CSH cultural researchers to cultivate and maintain community relationships. The CIA report may be completed, but CSH researchers continuously keep in touch with the community and interviewees throughout the year—such as checking in to say hello via email or by phone, volunteering with past interviewees on community service projects, and sending holiday cards to them and their *‘ohana* (family). CSH researchers feel this is an important component to building relationships and being part of an *‘ohana* and community.

“*I ulu no ka lālā i ke kumu*—the branches grow because of the trunk,” an *‘ōlelo no‘eau* (#1261) shared by Mary Kawena Pukui with the simple explanation: “Without our ancestors we would not be here” (Pukui 1983:137). As cultural researchers, we often lose our *kūpuna* but we do not lose their wisdom and words. We routinely check obituaries and gather information from other informants if we have lost our *kūpuna*. CSH makes it a point to reach out to the *‘ohana* of our fallen *kūpuna* and pay our respects including sending all past transcriptions, interview summaries, and photos for families to have on file for genealogical and historical reference.

Section 3 Archival Research Results

3.1 Traditional Accounts

3.1.1 *Nā Ka'ao a me Nā Mo'olelo (Legends and Stories)*

Hawaiian storytellers of old were greatly honored; they were a major source of entertainment and their stories contained teachings while interweaving elements of Hawaiian lifestyles, genealogy, history, relationships, arts, and the natural environment (Pukui and Green 1995:IX). According to Pukui and Green (1995), storytelling is better heard rather than read for much becomes lost in the transfer from the spoken to the written word and *ka'ao* are often full of *kaona* or double meanings.

Ka'ao are defined by Pukui and Elbert as a “legend, tale [...], romance, [and/or], fiction” (Pukui and Elbert 1986:108). *Ka'ao* may be thought of as oral literature or legends, often fictional or mythic in origin, and have been “consciously composed to tickle the fancy rather than to inform the mind as to supposed events” (Beckwith 1970:1). Conversely, Pukui and Elbert define *mo'olelo* as a “story, tale, myth, history, [and/or] tradition” (Pukui and Elbert 1986:254). The *mo'olelo* are generally traditional stories about the gods, historic figures or stories that cover historic events and locate the events with known places. *Mo'olelo* are often intimately connected to a tangible place or space.

In differentiating *ka'ao* and *mo'olelo* it may be useful to think of *ka'ao* as expressly delving into the *wao akua* (realm of the gods), discussing the exploits of *akua* (gods) in a primordial time. However, it is also necessary to note there are exceptions, and not all *ka'ao* discuss gods of an ancient past. *Mo'olelo* on the other hand, reference a host of characters from *ali'i* (royalty), to *akua* and *kupua*, to finally *maka'āinana* (commoners), and discuss their varied and complex interactions within the *wao kānaka* (realm of man). Beckwith elaborates, “In reality, the distinction between *ka'ao* as fiction and *mo'olelo* as fact cannot be pressed too closely. It is rather in the intention than in the fact” (Beckwith 1970:1). Thus, a so-called *mo'olelo*, which may be enlivened by fantastic adventures of *kupua*, “nevertheless corresponds with the Hawaiian view of the relation between nature and man” (Beckwith 1970:1).

Both *ka'ao* and *mo'olelo* provide important insight into a specific geographical area, adding to a rich fabric of traditional knowledge. The preservation and passing on of these stories through oration remains a highly valued tradition. Additionally, oral traditions associated with the study area communicate the intrinsic value and meaning of a place, specifically its meaning to both *kama'āina* as well as others who also value that place.

The following section presents traditional accounts of ancient Hawaiians living in the vicinity of the project area. Many relate an age of mythical characters whose epic adventures inadvertently lead to the Hawaiian race of *ali'i* and *maka'āinana*. The *ka'ao* in and around the project area shared below are some of the oldest Hawaiian stories that have survived; they still speak to the characteristics and environment of the area and its people.

3.1.1.1 Origin of Moloka'i

Mo'olelo provide varying accounts for the origin of Moloka'i. Paku'i, a historian in the time of Kamehameha I, wrote of the Hawaiian Islands having been born of Wākea and his wives.

According to this version, Wākea's first wife, Papa, gave birth to Hawai'i, Maui, and Kaho'olawe before returning to Tahiti. Wākea took Kaulawahine as his second wife, and she gave birth to Lāna'i. He then took a third wife:

<p><i>Hoi ae O Wakea loa Hina, Loaa Hina he wahine moe na Wakea, Hapai Hina ia Molokai, he moku, O Molokai a Hina he keiki moku.</i> [Fornander 1916-1917:12–13]</p>	<p>Then Wakea turned around and found Hina, Hina was found as a wife for Wakea, Hina conceived Molokai, an island; Hina's Molokai is an island child.</p>
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The historian Kahako'ikamoana recorded a different lineage for Moloka'i:

<p><i>Na Kuluwaiea o Haumea he kane, Na Hinanuiakalana he wahine Loaa Molokai, ke akua, he kahuna, He pualena no Nuumea,</i> [Fornander 1916-1917:2–3]</p>	<p>Kuluwaiea of Haumea as the husband, Of Hinanuiakalana as the wife Was born Molokai, a god, a priest, The first morning light from Nuumea,</p>
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3.1.1.2 Pā'aka'a and His Son Kū-a-Pā'aka'a

The following *mo'olelo* recounts two chiefs, Pālā'au and Ho'olehua, which are also the names of the *ahupua'a* in which the current project areas are located (Pālā'au) and the adjacent *ahupua'a* to the east (Ho'olehua).

On Molokai lived a very beautiful woman, Hikauhi, the daughter of Hoolehua [Ho'olehua] and Ilali [‘Īloli]. Now it happened that the girl's father had promised her hand to Palaau [Pālā'au], the chief of that part of the island. But as soon as she had seen Paakaa [Pāka'a], she forgot all about her former lover and demanded that the stranger be given to her. Palaau very generously consented, and so they all lived in peace. Paakaa cultivated the lands well, fished skillfully, and brought great prosperity to his wife and her family. [Handy 1922:76]

Hikauhi and Pāka'a had a son, Kū-a-Pāka'a (Nakuina 1992:29–30). Pāka'a and Kuāpāka'a are the caretakers of the wind gourd of La'amaomao which could control and call forth the winds of Hawai'i.

3.1.1.3 Hālena, the Yellowing

Ne (1992) tells of a story involving Kahekili, the ruling chief of Moloka'i who lived on Maui, in which Pālā'au is referenced. Although the story is about the naming of Hālena, a place on the southwest side of Moloka'i, Pālā'au is mentioned as a place known for its "fat" *āholehole* (Hawaiian flagtail, *Kuhlia sandvicensis*) and 'ō'io (Ladyfish, bonefish, *albula vulpes*). In the story, Kahekili sends one of his chiefs to Pālā'au to collect fish to supply his army as he made plans to invade O'ahu. The following is an excerpt from Ne:

When Kahekili was the ruling chief of Molokai, he lived on Maui. He made his plans and set out in his canoes to invade O'ahu, stopping at Molokai to get a supply of fish for his journey. He sent Hulu, chief of a village, in his canoe to Pūko'o for the fat mullet from the fishponds. He sent another canoe with another chief, Kuikai, to Pālā'au, noted for its fat *āholehole* and 'ō'io. [Ne 1992:47]

3.1.1.4 Pele's Long Sleep

Westervelt's (1916) version of the story of Lohi'au, the king of Kaua'i, and his romance with Pele which includes an ancient chant with a reference to Pālā'au:

Lohiau watched her while he partook of the feast with his chiefs, and she was resting on the couch of mats. He was thinking of her marvelous, restful beauty, as given in the ancient chant known as 'Lei Mauna Loa.'

Lei of Mauna Loa, beautiful to look upon.

The mountain honored by the winds.

Known by the peaceful motion.

Calm becomes the whirlwind.

Beautiful is the sun upon the plain.

Dark-leaved the trees in the midst of the hot sun

Heat rising from the face of the moist lava.

The sunrise mist lying on the grass,

Free from the care of the strong wind.

The bird returns to rest at Palaau.

He who owns the right to sleep is at Palaau.

I am alive for your love—

For you indeed. [Westervelt 1916:77]

3.1.1.5 Sorcery on Moloka'i

Kamakau (1991) recounts a story regarding the origin of sorcery use on Moloka'i, in which the Ho'olehua and Pālā'au plains are mentioned:

Kaiakea, a prominent man of Kala'e and its vicinity, was said to have been a man without a god. He built a large new household below Kahanui and provided all kinds of food, such as poi, pig, 'awa, bananas, fish, and everything else necessary for a 'house-warming' (*o ka hale komo*). When the day came, Kaiakea's wife and the other women were at the *hale noa*, the common house, and Kaiakea and the other men and the servers were at the *hale mua*, the men's house. The *hale noa* was apart from the *hale mua*, which was surrounded by a lanai. Kaiakea was in the doorway of the *hale mua*, and while the feast was being prepared, he saw a long procession of women coming over the plains of Ho'olehua to Pala'au. They were dressed in yellow tapa skirts and yellow tapa shoulder coverings (*kihei*), with variegated (*papahi*) leis of *ma'o* and *'ilima* crowning their heads. There was one man among them. The procession went down to the spring, named Piliwale, and left their things (*he ukana*) there. These were a *puniu hulihuli*, or coconut-shell container, and the women's *'alae* bird bodies. When Kaiakea saw the many beautiful women in that company, he called out to them to come in on the lanai, but they remained outside. Only the man who was with them approached and stood at the door of Kaiakea's house and talked with him. Kaiakea offered them food, but the spirit man (*kanaka anela*) said they would not eat his food unless a leaf-thatched house, a *hale lau*, was built for them; then they would eat of his food. This man revealed that they were not humans, but 'angels,' and he told Kaiakea their names. Pua was his name, and Kauluimaunaloa (the-grove-at-Maunaloa, that is, Kapo) was

the name of the chiefess who led the procession. He said they would become Kaiakea's gods if the *hale lau* was finished that day, and would give into his charge the *puniu hulihuli*, their visible form (*ko lakau kino 'ike maka 'ia*), and all the paraphernalia to do their work (*ka lakau mau hana a pau*), which was inside it. The 'alae birds were their bodies which they showed abroad (*kino ho 'ike 'ia iwaho*). After revealing these things to Kaiakea, the being vanished. Kaiakea went to the spring to look for the *puniu*, and got it; the 'alae birds were resting there at the spring. That very day Kaiakea erected the *hale lau* and filled it with poi, 'awa, bananas, and tapas appropriate to these gods; that same evening it was dedicated (*ke kapu no 'ia*). The food offerings (*ka 'ai me ka i'a*) and the 'awa were all consumed by the 'alae birds, and they were well content with the food provided for them.

It was in this way that Kaiakea became the *kahu* of gods, and he became known as a man who had gods. He was the *kahu* of Kapo (Kauluimaunaloa) and Pua. Kaiakea, however, just took care (*malama pono*) of these gods. He did no harm to others, and did not send his gods to bring death (*ho 'aunauna e make*) to any man or to any chief. He just took care of his *akua ho 'ola 'a* (the spirits who had been made gods by his consecration and offerings). Upon his death he commanded his children to take care of the gods against the days of trouble; the gods would repay them with life (*ola*). But they were not to seek wealth from the gods through sorcery. [Kamakau1991:131–132]

3.1.2 Nā Wahi Pana (Storied Places)

Wahi pana are legendary or storied places in a landscape. These legendary or storied places can be a variety of natural or human-constructed features. Oftentimes dating to the pre-Contact period, many but not all *wahi pana* are connected to particular *mo 'olelo*. Dr. Davianna McGregor outlines the types of natural and human-made structures that may constitute *wahi pana*:

Natural places have mana or spiritual power, and are sacred because of the presence of the gods, the *akua*, and the ancestral guardian spirits, the 'aumakua. Human-made structures for the Hawaiian religion and family religious practices are also sacred. These structures and places include temples, and shrines, or heiau, for war, peace, agriculture, fishing, healing, and the like; pu'uhonua, places of refuge and sanctuaries for healing and rebirth; agricultural sites and sites of food production such as the lo'i pond fields and terraces slopes, 'auwai irrigation ditches, and the fishponds; and special function sites such as trails, salt pans, hōlua slides, quarries, petroglyphs, gaming sites, and canoe landings. [McGregor 1996:22]

As McGregor makes clear, *wahi pana* can refer to natural geographic locations such as streams, peaks, rock formations, ridges, offshore islands and reefs, or they can refer to Hawaiian land divisions such as *ahupua 'a* or *'ili* (a land division within an *ahupua 'a*), and man-made structures such as fishponds. In this way, the *wahi pana* of Pālā'au tangibly link the *kama 'āina* of Pālā'au to their past. It is common for places and landscape features to have multiple names, some of which may only be known to certain 'ohana or even certain individuals within an 'ohana, and many have been lost, forgotten, or kept secret through time. Place names also convey *kaona* and *huna* (secret) information that may even have political or subversive undertones. Before the introduction of

writing to the Hawaiian Islands, cultural information was exclusively preserved and perpetuated orally. Hawaiians gave names to literally everything in their environment, including individual garden plots and *'auwai* (waterway or ditch), house sites, intangible phenomena such as meteorological and atmospheric effects, *pōhaku* (stone), *pūnāwai* (freshwater springs), and many others. According to Landgraf (1994), Hawaiian *wahi pana* “physically and poetically describes an area while revealing its historical or legendary significance” (Landgraf 1994:v).

3.1.2.1 *Nā Inoa 'Āina* (Place Names)

In the preface of *Place Names of Hawaii* (Pukui et al. 1974:x), Samuel Elbert offers the following description regarding place names:

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

Place names are far from static [...] names are constantly being given to new houses and buildings, land holdings, airstrips, streets, and towns and old names are replaced by new ones [...] it is all the more essential, then to record the names and the lore associated with them [the ancient names] now. [Pukui et al. 1974:x]

Inherent in Elbert's statements is knowledge that the oldest place names held meaning and told the story of an area prior to European Contact. Many place names in the vicinity of the project area are provided in Figure 8. Literal translations of place names for land areas and divisions near the project area are listed in Table 1 and may provide insight into the area prior to Western Contact.

3.1.2.2 *Pu'u Ka Pe'elua*, Caterpillar Hill

Pu'u Pe'elua, also known as *Pu'u Kape'elua* or Caterpillar Hill, is located above Ho'olehua. According to Harriet Ne (1992), the story of *Pu'u Pe'elua* involves Pele, the daughter of a chief of Pālā'au, who fell in-love with *Pe'elua* of Ho'olehua, the *'aumakua* of that district:

A beautiful young girl named Pele, the daughter of a chief in the Pālā'au area, encountered in the early twilight a handsome young man. They fell in love, and he courted her for almost a year. She concealed her love from her parents and lived only for the hours she spent with him.

She did not know that he was the *pe'elua* of the district, revered and loved by the people of Ho'olehua—even worshipped. Nor did she know that he had the form of a young man only at night but that in the day he returned to the form of a caterpillar.

As the days passed, Pele grew pale and listless. [...] The *kahuna* perceived the problem at once. 'She is in love with the supreme manifestation of the caterpillar-Pe'elua,' he told [her parents]. 'When he comes to her at night, it is in the form of a handsome young man; but his power is draining her strength. She is human. She cannot live with a magical being. To save her, you must kill him. You must destroy him completely.' [Ne et al. 1992:49–50]

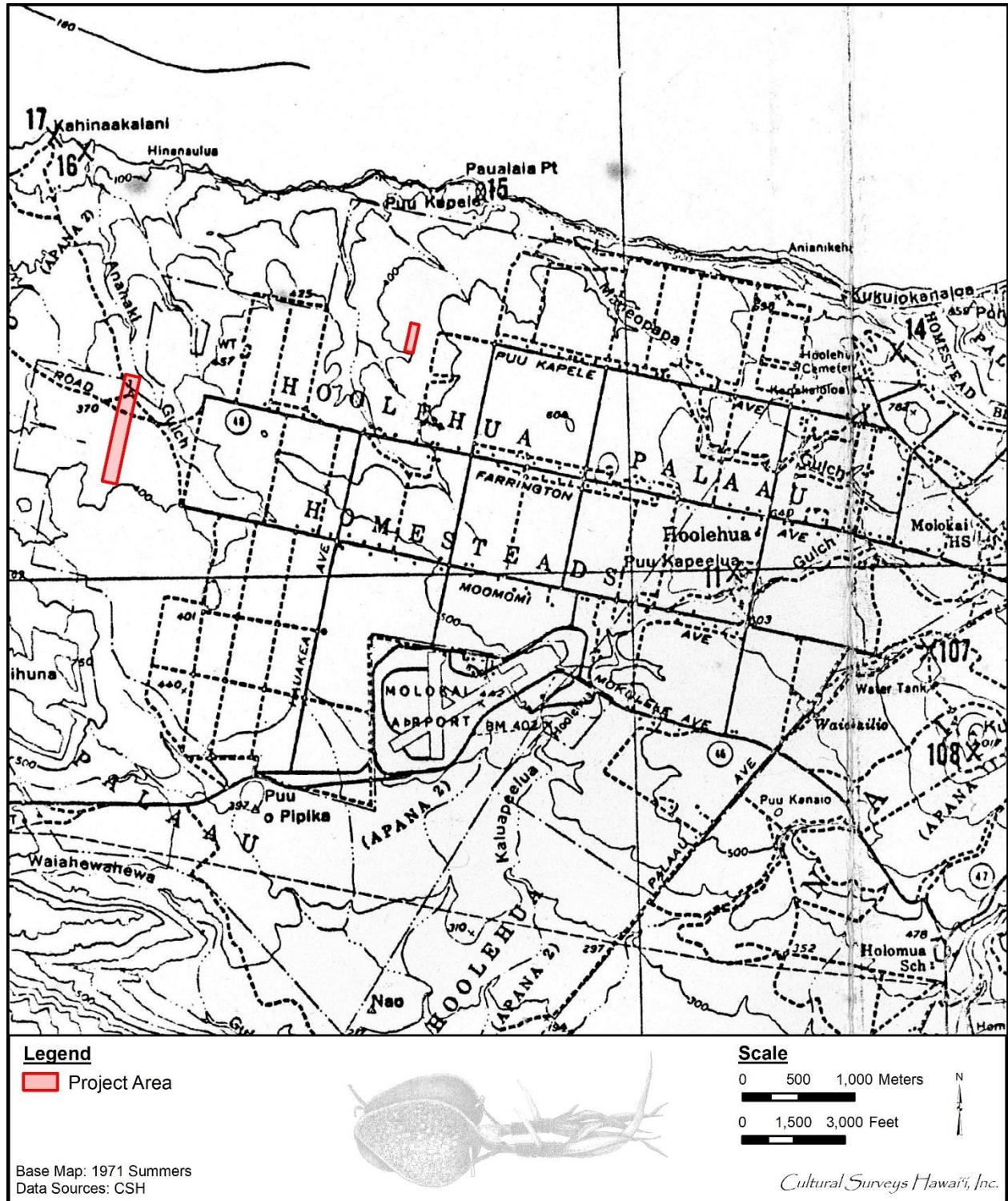


Figure 8. Map from Summers (1971) showing place names near the project area(s)

Table 1. Place names near the current project area(s)

Place Name	Description
Anahaki	Name of a gulch on the north side of the west project area. <i>Lit.</i> “Broken cave” (Pukui et al. 1974:12)
Anianikeha	Place along the sea cliff NW of the eastern project area. <i>Lit.</i> “blowing [on the] heights” (Pukui et al. 1974:12)
Hinanaulua	A point on the sea cliff north of the western project area. <i>Lit.</i> “inspired [by a god] <i>hinana</i> [Young of ‘o‘ <i>opu</i> (Hawaiian freshwater goby; <i>Lentipes concolor</i>)] fish.” (Pukui et al. 1974:46)
Ho‘olehua	<i>Lit.</i> acting the expert. Village, land division, and Hawaiian homestead area near the Moloka‘i airport; said to be named for a chief (Pukui et al. 1974:51–52). Ho‘olehua Ahupua‘a encompasses most of the current project area.
Kahinaakalani	A point on the sea cliff NW of the western project area. <i>Lit.</i> “the grayness of the sky, heaven” (Pukui et al. 1974:65)
Kāluape‘elua	<i>Lit.</i> baked caterpillar. A caterpillar infestation was ended by baking the caterpillars (Pukui et al. 1974:79). Name of gulch within project area.
Kanakaloloa	Place NW of the eastern project area. <i>Lit.</i> “tall person” (Pukui et al. 1974:83)
Kualapu‘u	<i>Lit.</i> hill overturned. Hill, elementary school, reservoir, and Del Monte pineapple cannery village (Pukui et al. 1974:119). Summers Site 107, a <i>hōlua</i> (sled used on grassy slopes) slide, was documented on the SSW side of Kualapu‘u Hill (Summers 1971). This hill was formerly named Ka ‘Uala Pu‘u (the sweet potato hill) and appears on some maps as Mid Hill; the area had “many sweet potato patches [...] defined by rows of stones” (Summers 1971:80). Other maps label the hill as Middle Hill.
Kukuiokanaloa	Name of a stretch of sea cliff N of the eastern project area. <i>Lit.</i> “light of Kanaloa” (Pukui et al. 1974:122)
Lepekaheo	According to Summers (1971:37), “Monsarrat referred to Lepekaheo as an ‘old heiau.’” This <i>heiau</i> , designated Summers Site 12, is located approx. 1.3 km north of the project area.
Manawainui	<i>Lit.</i> large water branch. Manawainui Gulch stream flows approx. 2.0 km SE of the project area. Manawainui also refers to an area S and adjacent to Ho‘olehua and Pālā‘au, which contains stone platforms used in the past by students of <i>hula</i> (dance), and a stone outcrop modified by Native Hawaiians in traditional times known as the “Sacrifice Stones” (Fowke 1922:181).
Mane‘opapa	Gulch NW of the western project area. Meaning uncertain.
Nā‘iwa	<i>Lit.</i> the frigate birds (perhaps named for the beauty of the birds) (Pukui et al. 1974:161). Nā‘iwa Ahupua‘a comprises three ‘ <i>āpana</i> (lots) in Moloka‘i. The largest section, Nā‘iwa 1, borders the project area E.

Place Name	Description
Pālā'au	<i>Lit.</i> wooden fence or enclosure (Pukui et al. 1974:176). Pālā'au comprises three land sections in north, central, and southwest Moloka'i and along with Ho'olehua, names the homesteads where the current project area is located. A western portion of the project area is in Pālā'au 2, the largest 'āpana, of Pālā'au Ahupua'a.
Paulala	A point on the sea cliff N of the central project area. Meaning uncertain.
Pu'u Kanaio	<i>Lit.</i> the pinworm hill. Hill on the slopes of Kuala pu'u [hill] (Pukui et al. 1974:198). This hill is within 400 m E of the project area.
Pu'u-Ka Pe'elua	<i>Lit.</i> "hill of the caterpillar" (Pukui et al. 1974:198) (For <i>mo'olelo</i> see subsection 3.1.2.2). Location of Summers Sites 11A and 11B/ State Inventory of Historic Places (SIHP) # 50-60-03-11, Kape'elua Complex (see subsection 3.3.1).
Pu'u ka Pele	Hill on the sea cliff N of the central project area. <i>Lit.</i> "the volcano hill" (Pukui et al. 1974:198).
Waiakailio	<i>Lit.</i> water used by the dog (Pukui et al. 1974:219). Area with a stream approx. 375 m northeast of the project area's NE corner.

The same story is also told by Cooke (1949):

[...] this beautiful girl was visited each night by a lover who left before daylight. She was unable to discover who he was, this suspense told on her, and she began to waste away. A priest, consulted by her parents, advised the girl to attach a piece of white tapa to a wart on her lover's back. In the morning, shreds of tapa helped to trace the demi-god lover to the hill Puu Peelua, in the middle of Hoolehua. The kahuna [priest] and friends of the family found a large peelua [caterpillar] asleep on the hill. The kahuna ordered the people to collect wood which was placed around the sleeping peelua, and a fire was lit. As the heat of the fire increased, the caterpillar burst into myriads of small caterpillars which were scattered over the plain. That accounts for the army-worm pest, called peelua. [Cooke 1949:102]

3.1.2.3 Heiau

Summers (1971:37–38) recorded four *heiau* in the Pālā'au and Ho'olehua Ahupua'a including Lepekaheo Heiau and three unnamed *heiau*.

Lepekaheo Heiau, designated by Summers (1971:37) as Site 12, is located west of Kaluape'elua Gulch on the boundary between Ho'olehua 2 and Pālā'au 2, approximately 1.3 km north of the project area. According to Summers (1971:37), "Monsarrat referred to Lepekaheo as an 'old heiau.'" Summers also mentions another *heiau* (Site 10) in Ho'olehua 2 located on east side of the "crest of 'Eleuweue" (Summers 1971:37).

In Pālā'au 2, Summers (1971:38) mentions a *heiau* (Site 16) located at the west side of the mouth of Anahaki Gulch at an elevation of 35 ft above mean sea level and another *heiau* (Site 14) located east of Ho'olehua Cemetery in the pineapple fields west of the gulch at an elevation of 800 ft. (Summers 1971:38). Regarding Site 14, Summers (1971:38) states, "The structure was in ruins in 1957, however. Traces of paving could still be found, and the remains of a wall, 35 ft long from SE to NE; 13 ft. from the NE side was an upright stone 2 ft. high, 2 ft. wide, and 1 ft. thick."

3.1.2.4 Loko I'a (Fishponds)

A *loko i'a* is a fishpond. There were two types of *loko i'a*, mentioned by Catherine Summers. One is called a *loko kuapā* and the other is a *loko 'umeiki*. The *loko kuapā* was made by building a wall on a reef (Pukui and Elbert 1986:171). *Kuapā* means wall, specifically for a fishpond which were entirely enclosed. The fishpond walls were usually built using coral or basalt. Within these types of fishponds, *mākāhā* or sluice gates (Pukui and Elbert 1986:225) were built into the rock walls made of sticks and beams. The purpose of a *mākāhā* was to create a gate-like contraption. This would allow gatekeepers to regulate the fishpond. The smaller fish were able to swim through the gate and dwell in the pond, while larger predators were kept outside the barriers (Summers 1964:8). These were exclusive to the Hawaiian Islands based on the physical features of its shores. As explained by Summers,

Loko kuapa were owned by the kings and chiefs, and at their command, were built by the common people. The building of a pond was a communal project of the chiefs who, from their individual land sections (ahupua'a), furnished the large number of people required for this work. [Summers 1964:2, 6]

A *loko umeiki* drastically differs from a *loko kuapā*. The walls of a *loko umeiki* were much lower and it essentially functioned as a fish trap (Summers 1964:12). Emma Beckley mentioned that this type of shore pond was

[...] surrounded by a low wall that is submerged at high tide and has openings, walled on each side like lanes, leading in or out of the pond [...] At night when the tide was coming in, a man or a woman waded out to the end of an inward lane. Here he, or she, sat on a raised stone platform which was situated at the end of one side of a lane. The fisherman held a net which was just wide and deep enough to cover the opening of the lane. The mouth of the net was faced toward the sea. [Beckley 1883:20]

Summers (1971) gives a lengthy description of Poho‘ele pond also known as Pālā‘au fishpond:

This was the largest of the Moloka‘i fishponds: its size has been estimated as being from between 200 and 500 acres. Cobb referred to it as ‘Nameless extensive pond, in palaa, filled with mud’ (1902:429). On the 1897 Hawaiian Government Survey Map of Molokai, the broken walls of the pond are shown, although the pond itself is labelled ‘mud’; it is not shown on later maps. In 1922 portions of the stone wall could still be seen, ‘...and traces of an old-fashioned sluice gate.’

A native writer gave the name of the pond as Poho‘ele, ‘Dark hollow,’ and said that it was built by Ho‘olepanui, a favorite of Kamehameha I, who came from Hawai‘i to live on Moloka‘i after Kamehameha had conquered O‘ahu.

[...] the men of Hawai‘i looked at the shoreline, the capes and nooks and then Ho‘olepanui’s ‘engineers’ planned to enclose some of the nooks from one point to another, thus converting them into fishponds [...]

The men arose at the command of Ho‘olepanui and laid the stones along the sea from Pu‘apo‘o to Puhaka in Ho‘olehua, and the pond was given the name of Poho‘ele. This was a famous pond at Pala‘au and had gates that were skillfully made. All kinds of fish were caught in this pond at the time when it was being well cared for.

The Hawai‘i people were indeed skilled workers. Let us notice this, it was said that the deepest part in the pond had a depth of five fathoms and was somewhat like the harbor of Kou (now Honolulu) in depth.

Stokes was told the pond was a *loko po‘oiki*, but he considered this as a local term for *loko umeiki* (1911). When he saw the pond in 1909, he found 27 lanes, all leading outward. The walls commenced on the W at the wall of Ho‘olehua Pond, and extended for a distance of over 6100 ft. [Summers 1971:77]

3.1.3 Nā ‘Ōlelo No‘eau (Proverbs)

Hawaiian knowledge was shared by way of oral histories. Indeed, one’s *leo* (voice) is oftentimes presented as *ho‘okupu* (“a tribute or gift” given to convey appreciation, to strengthen bonds, and to show honor and respect); the high valuation of the spoken word underscores the importance of the oral tradition (in this case, Hawaiian sayings or expressions), and its ability to impart traditional

Hawaiian “aesthetic, historic, and educational values” (Pukui 1983:vii). Thus, in many ways these expressions may be understood as inspiring growth within reader or between speaker and listener:

They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawai'i and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawai'i, they bring us closer to the everyday thoughts and lives of the Hawaiians who created them. Taken together, the sayings offer a basis for an understanding of the essence and origins of traditional Hawaiian values. The sayings may be categorized, in Western terms, as proverbs, aphorisms, didactic adages, jokes, riddles, epithets, lines from chants, etc., and they present a variety of literary techniques such as metaphor, analogy, allegory, personification, irony, pun, and repetition. It is worth noting, however, that the sayings were spoken, and that their meanings and purposes should not be assessed by the Western concepts of literary types and techniques. [Pukui 1983:vii]

Simply, *'ōlelo no'eau* may be understood as proverbs. The Webster dictionary notes it as “a phrase which is often repeated; especially, a sentence which briefly and forcibly expresses some practical truth, or the result of experience and observation.” It is a pithy or short form of folk wisdom. Pukui equates proverbs as a treasury of Hawaiian expressions (Pukui 1995:xii). Oftentimes within these Hawaiian expressions or proverbs are references to places. This section draws from the collection of author and historian Mary Kawena Pukui and her knowledge of Hawaiian proverbs describing *'āina* (land), chiefs, plants, and places.

Several *'ōlelo no'eau* mention Moloka'i. Other sayings regard powers associated with Moloka'i, which was traditionally known for its sorcery-like *mana* (divine power).

3.1.3.1 'Ōlelo No'eau #2194

The following *'ōlelo no'eau* references an origin story of the island of Moloka'i:

Moloka'i nui a Hina.

Great Moloka'i, land of Hina.

The goddess Hina is said to be the mother of Moloka'i. [Pukui 1983:239]

3.1.3.2 'Ōlelo No'eau #2193

The following *'ōlelo no'eau* describe the medicinal expertise associated with the *kahuna* (priest) of Moloka'i.

Moloka'i ku'i lā'au

Moloka'i, pounder of medicine.

The *kahuna* of Moloka'i were said to be experts in compounding medicines and poisonous potions. Also, a stick dance bore this name. [Pukui 1983:239]

3.1.3.3 'Ōlelo No'eau #2195

The following *'ōlelo no'eau* describe the magical powers associated with Moloka'i.

Moloka'i pule o'o.

Moloka'i of the potent prayers.

Moloka'i is noted for its sorcery, which can heal or destroy. [Pukui 1983:239]

3.1.3.4 'Ōlelo No'eau #1935

The following 'ōlelo no'eau mentions the *kioea* (Bristle-thighed curlew, *Numenius tahitiensis*) of Ho'olehua:

Ku'u manu lawelawe ō o Ho'olehua

My bird of Ho'olehua that cries out about food.

Said of the *kioea*, whose cry sounds like 'Lawelawe ke ō! Lawelawe ke ō!' (Take the food! Take the food!). The *kioea* is the bird that calls to the fishermen to set out to sea. [Pukui 1983:207]

3.1.3.5 'Ōlelo No'eau #2164

The following 'ōlelo no'eau describes the hot plain of Ho'olehua:

Mo'a nupu ka lā i ke kula o Ho'olehua.

The sun scorches the plain of Ho'olehua

Refers to Ho'olehua, Moloka'i. [Pukui 1983:235]

3.1.3.6 Pālā'au Lo'i

The following 'ōlelo no'eau which appears in *Ka Nupepa Kuokoa* (1922) discusses the *lo'i kalo* (taro terraces):

Kinikini wale na lo'i ai o Palaau, ua like me na hoku o ka lani.

The taro patches of Pālā'au are in abundance, resembling the stars in the sky.

[*Ka Nupepa Kuokoa* 1922]

It was said that after climbing atop Kaana, one could glance below to Pālā'au and see the fertility of the soil through its numerous taro patches.

3.1.4 Nā Oli (Chants)

Oli, according to Mary Kawena Pukui (1995:xvi–xvii) are often grouped according to content. Chants often were imbued with *mana* (divine power); such *mana* was made manifest through the use of themes and *kaona*. According to Pukui, chants for the gods (prayers) came first, and chants for the *ali'i*, "the descendants of the gods," came second in significance. Chants "concerning the activities of the earth peopled by common humans," were last in this hierarchy (Pukui 1995:xvi–xvii). Emerson conversely states:

In its most familiar form the Hawaiians—many of whom [were lyrical masters]—used the *oli* not only for the songful expression of joy and affection, but as the vehicle of humorous or sarcastic narrative in the entertainment of their comrades. The dividing line, then, between the *oli* and those other weightier forms of the *mele*, the *inoa*, the *kanikau* (threnody), the *pule*, and that unnamed variety of *mele* in

which the poet dealt with historic or mythologic subjects, is to be found almost wholly in the mood of the singer. [Emerson 1965:254]

While *oli* may vary thematically, subject to the perspective of the *ho'opa'a* (chanter), it was undoubtedly a valued art form used to preserve oral histories, genealogies, and traditions, to recall special places and events, and to offer prayers to *akua* and *'aumākua* (family gods) alike. Perhaps most importantly, as Alameida (1993:26) writes, “chants [...] created a mystic beauty [...] confirming the special feeling for the environment among Hawaiians: their *one hānau* (birthplace), their *kula iwi* (land of their ancestors).”

3.1.4.1 *Ka Huaka'i*

The following *oli* honors an “errand of mercy” in which Lot Kamehameha (Kamehameha V) delivered the “necessities of life, including native medicines as well as food,” to workers on his royal ranch at Hālawā on Moloka'i (Pukui and Korn 1973:83–85). The *oli* states Kamehameha V's ship, the *Kilauea*, stopped at Pālā'au to unload cargo.

<i>Ka Huaka'i</i>	Errand
<i>Ia aloha ia Kilauea, Lio kākele a o ka moana, Holo mamua holo mahope.</i>	Kilauea, beloved ship, sea-roving steed roams this ocean full-steam ahead backing and hauling, then the voyage home.
<i>Kau pono ka ihu i ka makani, Haki nu'a ka uwahi i ke kai, Nome a'e ka huila malalo, Halaeka lae o Ka-lā'au,</i>	Now Kilauea's prow heads into the wind, smoke breaks from stack, ripples over the sea, paddle wheel slowly revolves, passes Ka-lā'au Point, Moloka'i up ahead,
<i>'Oni ana Moloka'i mamua, Huli a'e e eke alo i Lā-hainā, He ukana ka Kilauea, Lū a'e la i Pā-lā'au, Ho'okahi pahuna malalo.</i>	Lā-hainā yonder awaiting freight, and stops at Pā-lā'au to unload cargo, heave-ho and shove down below. Like a flock of seabirds upon a waste of sand a hungry horde races along this salt- encrusted shore.
<i>Kohu 'āuna manu i ke one, Ka hoholo i ke ālialia. E 'oleo Ka-lani Mehameha Ola ai nei pū'ā hipa,</i>	Were it not for Chief Ka-mehameha these creatures would be bereft of all supply, would be as sheep without forage, no shepherd were it not for life-bringing Ka-ma'i- pu'u-pa'a the Kahuna,

Nā hi pa a Ka-ma 'i-pu 'u-pa 'a.

wise in matters of sickness, life and death.

'Ai ana i ka lau 'oliwa.

Now let his famished flock feed on olive leaves given with a King's love.

*Ha 'ina 'ia mai ka puana,
No Ka-lani Mehameha he inoa.
[Pukui and Korn 1973:83–85]*

This is the end of my song
in praise of Chief Ka-mehameha.

3.1.5 *Nā Mele* (Songs)

The following section draws from the Hawaiian art of *mele*, poetic song intended to create two styles of meaning:

Words and word combinations were studied to see whether they were auspicious or not. There were always two things to consider the literal meaning and the *kaona*, or 'inner meaning.' The inner meaning was sometimes so veiled that only the people to whom the chant belonged understood it, and sometimes so obvious that anyone who knew the figurative speech of old Hawai'i could see it very plainly. There are but two meanings: the literal and the *kaona*, or inner meaning. The literal is like the body and the inner meaning is like the spirit of the poem. [Pukui 1949:247]

The Hawaiians were lovers of poetry and keen observers of nature. Every phase of nature was noted and expressions of this love and observation woven into poems of praise, of satire, of resentment, of love and of celebration for any occasion that might arise. The ancient poets carefully selected men worthy of carrying on their art. These young men were taught the old *meles* and the technique of fashioning new ones. [Pukui 1949:247]

3.1.5.1 Aloha Moloka'i

This *mele* by an unknown author was found in "Johnny Noble's manuscript collection of Hawaiian Songs" by Robert M. Mondoy and translated by Puakea Nogelmeier and Robert M. Mondoy. The *mele* states that Maunaloa, a mountain in West Moloka'i, "stands majestic" with the "broad expanse of Pālā'au" (Mondoy 2018:62–63).

*Nani wale ku 'u 'ike kūmaka 'eā
I ka nani kaulana moku a 'o Hina 'eā*

It was glorious for me to behold
The famed beauty of Hina's isle

*'O ke kai hone a 'o Nalulua 'eā
E pili a 'e nei me Kalama 'ula 'eā*

The murmuring sea of Nalulua
Joining with Kalama'ula there.

*Kūkilakila mai 'o Maunaloa 'eā
Ka waiho laulaha a 'o Pālā'au 'eā*

Maunaloa stands majestic
With the broad expanse of Pālā'au

*Heahea mai ana 'o Kala 'e 'eā
E ho 'i i ka poli o Maunahui 'eā*

Kala'e is beckoning
To return to the embrace Maunahui

(Originally “Maunahina”, a probable error)

*‘Alawa i ka nani o Kalaupapa ‘eā
Ke ‘alohi a ke kai lana mālie ‘eā*

Gazing at the beauty of Kalaupapa
The calm seas there sparkle

*Ha ‘ina ‘ia mai ana ka puana ‘eā
Aloha Moloka ‘i Nui a Hina ‘eā*

The story be told in the refrain
Beloved is Great Moloka‘i, isle of Hina
Translation: Puakea Nogelmeier &
Robert M. Mondoy

[Mondoy 2018:62–63]

3.1.5.2 Ho‘olehua

This *mele* was composed by Clarence Kinney; Ho‘olehua was his home. This *mele* is in honor of Ho‘olehua.

*Ha ‘aheo no ku ‘u home lā
E ke kau mai la i ka la ‘i
Ho ‘opulu ia mai ka ‘ehukai
I ka nani o Ho ‘olehua*

Proudly my home
Repose in the calm
Dampened by the sea spray
In the beauty of Ho‘olehua

*Ku ‘u home i ka uka
I ka pā ka makani
Ko aloha pumehana
Mau ana no me ia ‘u*

My home is in the uplands
Where the wind blows
The warmth of your love
Will always be with you

*Hu ‘i lā koni lā
I ka uka ‘iu ‘iu
I ka pā kolonahe
A ke kēhau*

Chilling, throbbing
In the distant upland
Where the wind wafts
with the dew

*Ku ‘u home lā ho ‘opulapula lā
Me ka nani o Ho ‘olehua
Me ka nani o Ho ‘olehua
[Huapala n.d.]*

My home, my homestead
In the beauty of Ho‘olehua
In the beauty of Ho‘olehua

Another *mele* titled *Ho ‘olehua* [*‘Āina Ho ‘opulapula*] (*Ho ‘olehua, The Homestead Land*) was written Robert Niau Kamaunu Sr. and published in *A Collection of Popular Hawaiian Melodies* in 1929 (Mondoy 2018:62).

*Kū kilakila mau ‘o Ho ‘olehua
‘Āina nani i ka ho ‘opulapula*

Ever-imposing and arising is Ho‘olehua
A glorious land for the Hawaiian
homestead

*He pula kau maka na ka lehulehu
Ka uluwehiwehi a ‘o ia uka*

Although an insignificant mote to most
The countryside there is abundantly
lush

<i>Ka uka 'iu'iu me ke onaona A ka 'ano'i a'e lei mau nei</i>	A countryside distant and alluring With a longing like for a beloved child
<i>Ho'ohihi ka mana'o ke 'ike aku Ka waiho kāhela i ka la'i</i>	A spreading hope is the vision there Of a vista vast and expansive in tranquility
<i>Ua la'i ka nohona me ke aloha He home ho'okipa i ka malihini</i>	Life is peaceful and filled with aloha A home hospitable to the new-comer
<i>Haina 'ia mai ana ka puana Ho'olehua ē ka heke a'o Moloka'i</i>	Repeat the refrain, tell the story of Ho'olehua and the great island of Moloka'i (Translation: Robert Mondoy & Puakea Nogelmeier)

[Mondoy 2018:62]

3.1.5.3 Moloka'i Hula

This *mele* for Moloka'i was composed by Mary Robins, with music by John Noble to honor the various *wahi pana* of Moloka'i.

One verse in particular references Ho'olehua Ahupua'a with the lines "*Ho'olehua he 'āina nani, kaulana ka inoa ho'opulapula*. Ho'olehua, a beautiful land, name of the famous Homestead" (Huapala n.d.). The composer of this *mele* explains that Ho'olehua means no seed. This name was given to the land as the wind blew away the seeds that were planted (Huapala n.d.).

<i>Hanohano ka inoa a'o Moloka'i lā Lei ana i ka pua o ke kukui</i>	Distinguished, the name of Moloka'i Adorned with a wreath of the kukui flower
<i>O ka wehi kaulana o ku'u 'āina O Moloka'i nui a Hina</i>	Famous symbol of my land Moloka'i, born of Great Hina
<i>O Hālawa e 'alawa iho 'Ālawa ka ulua e ma alo nei</i>	Hālawa, glance down Look quickly, see the ulua on the upper surface
<i>O Pūko'o no'u ko aloha Me ka ulu kukui o Lanikāula</i>	Pūko'u, my love With the kukui grove of Lanikāula
<i>Ho'olehua he 'āina nani Kaulana ka inoa ho'opulapula</i>	Ho'olehua, a beautiful land Name of the famous homestead
<i>Kalama'ula a he home nani Ho mai ko lama 'ai ala no'u</i>	Kalama'ula, oh, beautiful home Come, let us go there to eat

*Hea aku no wau e ʻō mai ʻoe
Lei ana i ka pua o ke kukui*

I call to you, you answer
Adorned with a wreath of the kukui
flower.

[Huapala n.d.]

3.1.5.4 Nani Molokaʻi

Composed by Helen Smythe Ayat and Ida Hanakahi, this *mele* honors various *wahi pana* throughout Molokaʻi by showcasing attributes of these lands that make them so famous. In this *mele*, Hoʻolehua is honored by being famous for its *hala* (*Pandanus odoratissimus*) grove. Please note that *hala* is commonly defined as “pandanus fruit.” However, the translator of this *mele* defined “hala” as pineapple.

*He nani Molokaʻi
Nui a Hina
I ka ulu kukui
Aʻo Lanaikāula*

Beautiful Molokaʻi
Child of Hina
And is famous kukui grove
of Lanikāula

*He nani Hālawā
I ka[ʻ]ju ʻike
He waialele
Aʻo Moaʻula*

Beautiful Hālawā
In my sight
The waterfall
Of Moaʻula

*He nani Kalamaʻula
I ka ulu o ka niu
He ʻāina hoʻopulapula
O Kalanianaʻole*

Beautiful Kalamaʻula
with its coconut trees
Homestead land
Of Kalanianaʻole

*He nani Hoʻolehua
I ka ulu o ka hala
He waiwai ui
Ke loaʻa mai*

Beautiful Hoʻolehua
with the pineapple
Brings wealth
To the community

*He nani Kalaupapa
Hoʻokipa malihini
Hāʻina mai ka puana
A he nani Molokaʻi
[Huapala n.d.]*

Beautiful Kalaupapa
Welcomes visitors
tell the refrain
Beautiful Molokaʻi

3.2 Archaeological and Historical Narrative

3.2.1 Pre-Contact and Early Post-Contact Period

Traditionally, Molokaʻi was divided into two *moku*: Kona and Koʻolau. Kona Moku was comprised of the lands of the southern and western sections of the island (which included Pālāʻau and Hoʻolehua Ahupuaʻa) and the Koʻolau Moku which comprised the lands of the northeastern portion of the island from Hālawā Valley to the Kalaupapa Peninsula. In 1859, the traditional *moku*

of Kona and Ko'olau were dropped and the island as a whole was referred to as the Moloka'i district. In 1909, the island was again divided into two districts: Kalawao District, containing the lands of Kalaupapa, Kalawao, and Waikolu, and Moloka'i District, comprising the remainder of the island (Coulters in Summers 1971:2), including the current project area.

The two project areas are both within Pālā'au Ahupua'a (Figure 9). Mrs. Pukui in Handy et al. (1991:47) described the subdistricts of Pālā'au on Moloka'i as *kalana* (division of land smaller than a *moku*). Today, the *kalana* of Pālā'au consists of one major land division and two *lele* (a detached part or lot of land belonging to one *'ili*, but located in another *'ili*). Pālā'au 1 is located at the southern shores of central Moloka'i, while Pālā'au 3 is in uplands, at the summit of the sea cliffs above Kalaupapa Peninsula. These two *lele* of Pālā'au Ahupua'a are significantly smaller than Pālā'au 2—which includes the present project areas. Pālā'au 2, the largest of the three land sections, is adjacent to the northwest of the *ahupua'a* of Ho'olehua (Dodge et al. 1897; Summers 1971:81, see Figure 9).

3.2.1.1 Subsistence and Settlement

During his archaeological survey of Moloka'i in 1937, Southwick Phelps (1937) noted the following about West Moloka'i:

It is said that in former days western Molokai was not as devoid of forest as it is now. While this may be true to a limited extent, I think that the essential conditions have remained the same and that the western half was always a semi-arid region. One certainly finds there no extensive taro patches and no signs of dense population. We learn, furthermore, that it was traditionally a land of the sweet-potato, a plant that does not require much water. [Phelps 1937:6–7]

While exact boundaries for yam and sweet potato cultivation in Pālā'au and Ho'olehua are unknown, these tubers, along with fish, were staples of inhabitants in the area (Phelps 1937).

The region including Ho'olehua was a fertile plain known particularly for the cultivation of *'uala* (sweet potato). Summers (1971:38) cites Malihinihele who stated in 1876, “In the olden days this [Pālā'au 2] was a good land with a fertile plain where plants grew. The population was large but today it is uninhabited.” Handy (1940:157) remarks, “In 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua. It is said that Hoolehua and Palaau were noted for sweet potatoes in olden days” although Handy and Handy (1972:283) note that homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.

The importance of *'uala* to the area is further suggested by place names such as Pu'u Pe'elua (hill of the caterpillar) and Kāluape'elua (baked caterpillar), which illustrate the connection to the environment of the area (Pukui et al. 1974). The *pe'elua* feeds on the sweet potato and is considered a pest by *'uala* farmers of the region. Pukui et al. (1974) noted hilled sweet potatoes in the region south of Ho'olehua and Pālā'au known as Uala-pu'e, which is also the name of a fishpond in that area. In addition to sweet potato, *'olo* or *hokeo*, the long gourd used for holding fishing tackle and to make the *hula* drum, notably grew in Ho'olehua (Handy et al. 1991:213).

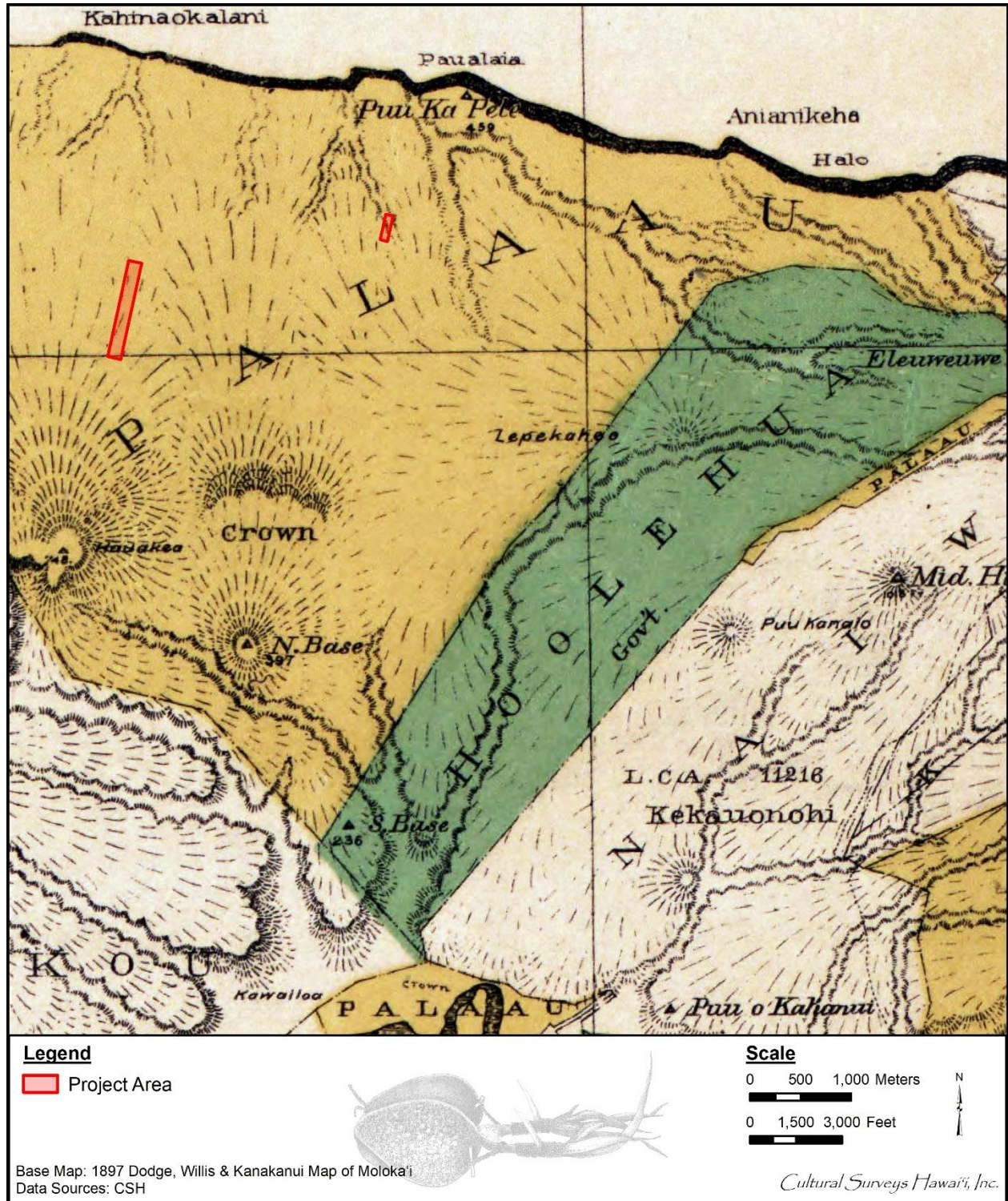


Figure 9. Portion of Dodge et al. (1897) map of Moloka'i showing 1848 land divisions (Crown [yellow], government [green], LCAs [no color]); the western and eastern project areas as within Crown lands

The actual size of the pre-Contact Hawaiian population tending and supported by crops in central and western portions of Moloka'i can only be conjectured. While the greater portion of the population resided on the eastern side of the island, a late nineteenth century anecdote by Abraham Fornander (1880) suggests a former substantial population that may have been widely dispersed:

As an instance of the dense population, even a few years previous to Kamehameha's death, the author has often been told by a grand-niece of Kekaulike, who was a grown-up girl at the time, that when the chiefs trumpetshell sounded, over a thousand able-bodied men would respond to the call, within a circle described by Palaau, Naiwa, Kalae and Kaunakakai. Those lands together cannot muster a hundred men this day. [Fornander 1880:73 footnote]

3.2.2 Early Historic Period

Early historic accounts briefly mention Moloka'i. Summers (1971:18) relates that in 1779 when Captain Cook visited Hawai'i, the status of Moloka'i was uncertain. However, Kamakau (1992) cites several reasons why Moloka'i was as important as O'ahu in the late 1700s, since both of the islands contained "rich lands, many walled fish-ponds, springs, and water taro patches. The island of Oahu was very fertile and Molokai scarcely less so" (Kamakau 1992:132–133).

Captain George Vancouver (1798), sailing along the southern coast of Moloka'i in 1793, essayed a portrait of the island's geographic texture and distribution of Hawaiian population:

Early the next morning, with a pleasant breeze from the N.E., we stood over towards the east point of Morotai, [...] we sailed along to the westward, [...] About half a league south of the east point of Morotai [...] lies a small barren rocky islet, called by the natives Modooenete [...] In this direction east the land rises rather abruptly from the sea, towards the lofty mountains in the center of the east part of Morotai; and though the acclivity was great, yet the face of the country diversified by eminences and vallies; bore a verdant and fertile appearance. It seemed to be well inhabited, in a high state of cultivation, and presented not only a rich but a romantic prospect. To the westward of these cliffs, the shores terminated in the former direction, by a low point of land, called by the natives Crynoa [...] From Crynoa the country assumes a dreary aspect. The mountains, forming the eastern part of the island, gradually descend to the westward, and like those of Mowee, terminate on a low isthmus, which appears to divide the island into two peninsulas [...] the easternmost, which is far the largest is composed of very high land, but the westernmost does not rise to any elevation, beyond that of a mean height. The country from Crynoa rises from the sea by an ascent, uninterrupted with chasms, hills or vallies. This uniform surface, on advancing to westward, exhibited a gradual decrease in the population; it discovered an uncultivated barren soil, and a tract of land that gave residence only to a few of the lower orders of the islanders, who resort to the shores for the purpose of taking fish, with which they abound. Those so employed are obliged to fetch their fresh water from a great distance; none but what is brackish being attainable on the western parts of Morotai. [Vancouver 1798:201–202]

Early visitors and Hawaiian historians confirm Vancouver’s perception of a wide-spread Hawaiian population throughout the eastern portion of the island and a much smaller population clustered along the shoreline within the western portion.

After conquering the island of Maui in 1790, Kamehameha I advanced on to Moloka‘i where he secured the allegiance of the chiefs. Archibald Menzies (1920), the naturalist who accompanied Captain George Vancouver to the Hawaiian Islands in the 1790s, relates that Kamehameha I “destroy[ed] the fields and plantations of the inhabitants” (Menzies 1920:115). He and his warriors remained on Moloka‘i for a year to prepare the attack on O‘ahu. He is said to have grown taro and “had all his canoes put in order. He drilled his warriors on the Hoolehua plain near where the airport is now” (Cooke 1949:112).

3.2.3 Early 1800s

The first Protestant missionaries arrived in Hawai‘i in 1820. In the following years, the ruling Hawaiian chiefs and governors established a network of public schools throughout the villages of the Hawaiian Islands. In September 1828, a group of missionaries travelled to Moloka‘i to determine the progress of the schools (Andrews 1829). After landing on the southeast side at Honomuni, they traveled west over the next two days to the villages of Hālawa, Halana, Makanalua (Kalaupapa Peninsula), and overland to Kaunakakai where they put up for the night:

During the whole night, the people continued to arrive; and, about sunrising, the chiefs made their appearance [...] Having examined a large school here, we walked on, and the chiefs followed, in canoes. We travelled along, on the sea shore, finding very little vegetation, on account of the drought. There is scarcely any water on this side of the island. [Andrews 1829:273]

They completed their examination of the schools on Moloka‘i the following day, noting that they “numbered nearly 700 houses, and think there are about 1,000 on the island” (Andrews 1829:274).

The United States Navy Exploring Expedition under the command of Captain Charles Wilkes visited the island of Moloka‘i in 1840 and described the island as follows:

[...] forty miles long, from east to west, and nine miles wide: the western portion, embracing about one third of the whole extent, is a barren waste; and the remaining two thirds is mountainous, in some places rising to the height of twenty-eight hundred feet, with the exception of a narrow strip of land on the south side, which has a most favorable exposure, and is highly productive. [Jenkins 1850:258]

3.2.3.1 The Māhele and the Kuleana Act

The Organic Acts of 1845 and 1846 initiated the process of the Māhele—the division of Hawaiian lands—that introduced private property into Hawaiian society. During the Māhele, all lands in the Kingdom of Hawai‘i were divided among *mō‘ī* (king), *ali‘i*, *konohiki* (overseer of an *ahupua‘a*), and *maka‘āinana* and passed into the western land tenure model of private ownership. In 1848, the crown and the *ali‘i* received their land titles. On 8 March 1848, Kamehameha III (Kamehameha III) further divided his personal holdings into lands he would retain as private holdings (Crown Lands) and parcels he would give to the government. According to an 1897 Hawaiian Government Survey map of Moloka‘i showing 1848 divisions of land, the entire

ahupua'a of Ho'olehua was given to the government, and all of Pālā'au *Ahupua'a* (including the western and central project areas) was retained by the Crown (see Figure 9).

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay a cash amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent (RP) was issued giving full title of ownership to the tenant.

On 19 October 1849, the Hawaiian Privy Council adopted resolutions to protect the rights of Native tenants, the *maka 'āinana*. The *maka 'āinana* were offered fee-simple titles for their house lots and lands that they cultivated for themselves. *Kuleana* (land holding of the tenant residing in the *ahupua'a*) awards for individual parcels within the *ahupua'a* were subsequently granted through a land commission. These awards were first presented to Native Hawaiian tenants followed by the naturalized foreigners (non-Hawaiians born in the islands) or long-term resident foreigners who could prove occupancy on the parcels before 1845. No commutation fee was necessary to apply for a Royal Patent for a *kuleana* award as the commutation fee had presumably already been paid by *ali 'i/konohiki* who had been awarded the entire *ahupua'a*, or an *'ili* in which the Native tenant claimed his own small parcels (Chinen 1958:29–30).

No native tenant LCAs were awarded near the current project areas, and only one LCA and one Land Grant were awarded in the vicinity. Approximately 4.6 km southeast of the eastern project area, LCA 11216 (LCA 11216*Mo) was awarded to Kekauonohi (see Figure 9 and Figure 10) a member of the House of Kamehameha and a wife to King Kamehameha II. This LCA included 5,803-acres comprising approximately half of the *ahupua'a* of Na'iwa. Southwest of the project area, Grant 3146 was awarded to Charles R. Bishop (see Figure 10). No land use information is provided for Grant 3146 (Waihona 'Aina 2021).

3.2.4 Mid- to Late 1800s

3.2.4.1 Cattle Ranching

Cattle were introduced to Moloka'i in the 1840s. De Loach (1975) summarizes this first effort at commercial ranching:

Rudolph W. Meyer, who was, [...] responsible, along with [Reverend] Hitchcock, for the introduction of cattle on the island, had come to Moloka'i in the 1840s. He established a ranch stocked with longhorns in the Kala'e [north central Moloka'i] Area. A lucrative trade in cattle and hides was begun between Moloka'i and Honolulu. The cattle were exported from the village of Pālā'au on the southwestern shore, over the reef, and onto a waiting ship. Pālā'au grew wealthy on cattle and dry land taro. All this came to an end, however, in the 1850s, when Meyer discovered that the number of cattle in the herd had diminished considerably. He found that almost every male in the village was guilty of rustling, and so all the men were shipped off to jail in Honolulu. The men's families followed, and the village was deserted. Today Palaaau sits abandoned in a kiawe forest, as no one ever returned to live there. [de Loach 1975:68]

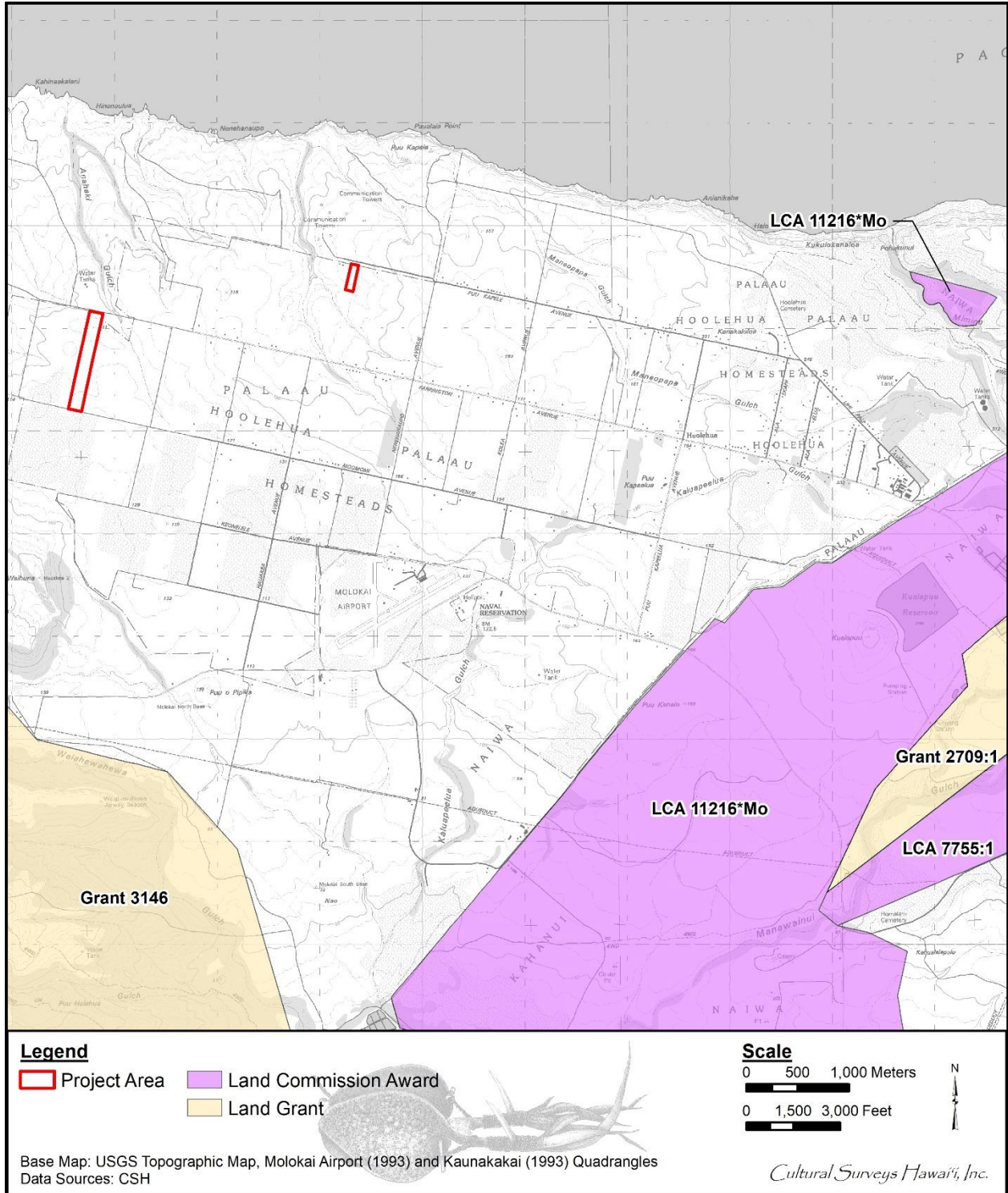


Figure 10. LCAs and Grants in the project area vicinity depicted on a portion of 1993 Molokai Airport and Kaunakakai USGS topographic quadrangles (none of the three project areas were close to a Native Tenant LCA or grant)

Despite these early setbacks, cattle (and sheep) ranching expanded greatly in the second half of the nineteenth century:

During this period, cattle, sheep and goats were imported to the island in ever-increasing numbers. According to Judd, there were no cattle on the island in 1832 and by 1853 there were only 200 head, The 1866 census, however, revealed 2,586 head of cattle, 13,332 sheep and 196 goats on the island. [...] In 1868, Kamehameha V released axis deer on the island. [de Loach 1975:86]

In 1855, Lot Kapuwiwa (King Kamehameha V) purchased the *ahupua'a* of Kaunakakai for two hundred dollars (Interior Department Letter, July 1885) to maintain the value of a sheep station established there by his brother, Alexander Liholiho (King Kamehameha IV) (Kuykendall 1953:152). Lot Kapuwiwa also actively sought to increase his Moloka'i holdings: "in the desire to have a country estate, he bought up land and cattle from the resident Hawaiians and used Moloka'i as a vacation ground from his cares of State" (Judd 1936:9–10).

In 1868, King Kamehameha V was sent seven live axis deer from Hong Kong as a gift (Tomich 1986:127). He released the deer, adding to the free-roaming game population on the island but, consequently, also to the destruction of vegetation by the flourishing population of foraging animals. In a 1902 talk given in Japan on Hawaiian Forests, E.M. Griffith (1902) remarked on the already alarmingly denuded state of Moloka'i:

Cattle, goats and deer have totally destroyed the forests upon the larger portion of the island of Molokai so that the western half is practically destitute of any tree growth. It is possible that the algaroba forests which have secured such a strong hold along the coast near Kaunakakai may gradually spread over this end of the island [...] The condition at present time is that the forest has been pushed back into the deeper and more inaccessible canyons and onto the highest slopes of the mountain. The effective watershed in respect to the conservation of the water supply has thus been greatly reduced and the careful protection of the remaining forests is an absolute necessity. [Griffith 1902:Appendix G]

An 1886 Government Survey map (Figure 11) depicts an approximate upper growth line of the algaroba (*kiawe*) forests approximately 3.5 km south of the present project areas. The western and eastern project areas are depicted as within the Momomi Paddock. Extensive pasture land is indicated with no other development suggested.

During the Māhele in 1848, Bernice Pauahi Bishop, daughter of Abner Pākī and Laura Konia and last descendant of the Kamehameha dynasty, inherited much of the lands which are now Molokai Ranch lands. Her husband, Charles R. Bishop, inherited the lands of Kaluako'i in 1875. The Molokai Ranch was formed in 1897 when a *hui* purchased approximately 70,000 acres of central and western holdings from the Bishop Estate (Cooke 1949; Stearns and Macdonald 1947).

3.2.4.2 Agriculture

Mr. Harvey R. Hitchcock and Mrs. Rebecca H. Hitchcock became the first permanent missionaries on Moloka'i. They established a Protestant church at Kalua'aha in 1832, at which point the only agricultural crops they noted were bananas and taro grown in the valleys where water was most readily available. No "regular schools, churches, houses of permanent nature, no

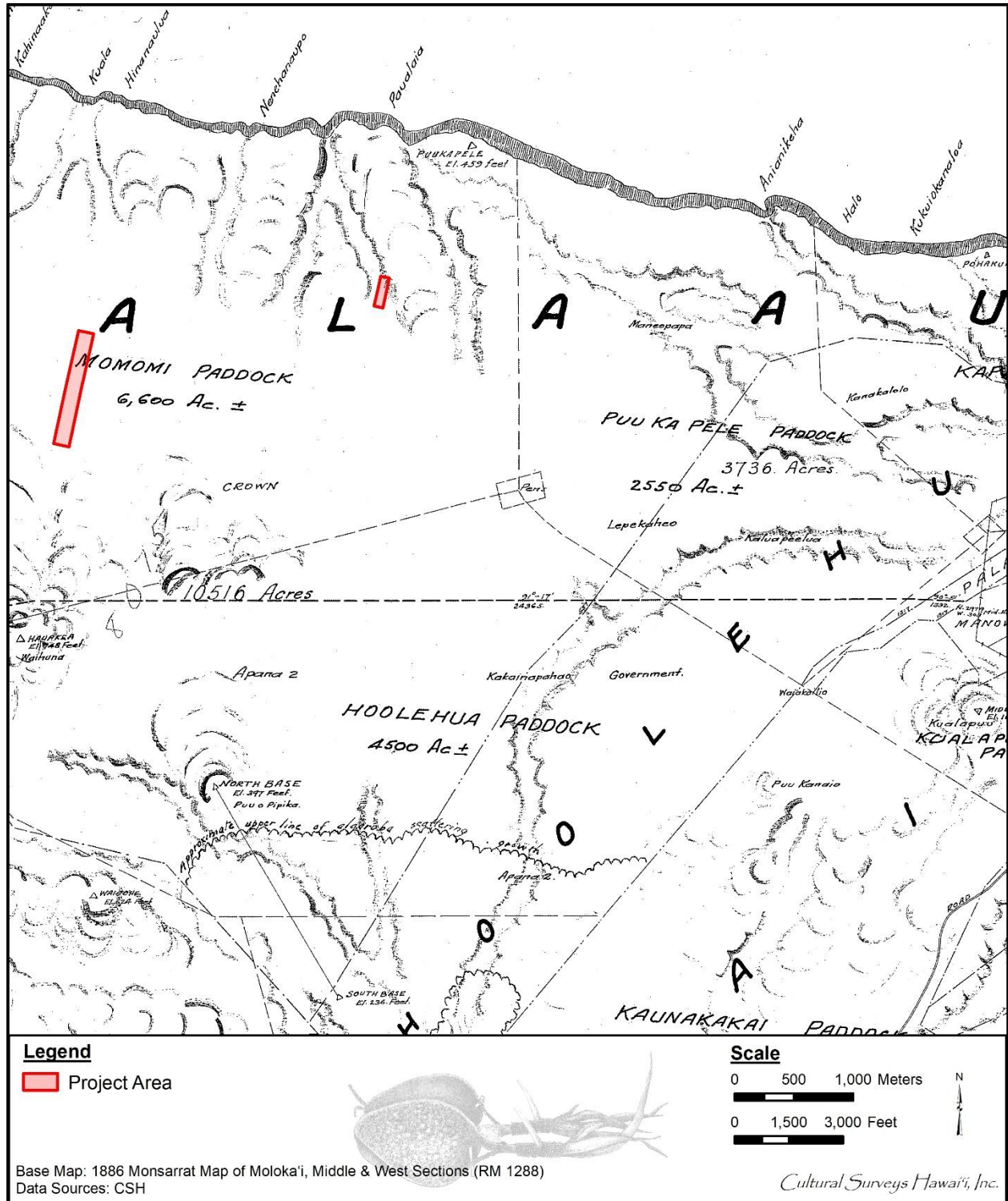


Figure 11. Portion of Monsarrat (1886) Hawaiian Government Survey Map of Molokai, Middle and West Sections (RM 1288); showing the western and eastern project areas as within the Momomi Paddock

garments, no cattle, only one horse, and home articles of the most primitive nature” were present then (Wiebke 1940). Twenty years later, the island had a number of churches, 1,000 students enrolled in 21 schools across the island, and livestock including goats, hogs, 400 horses, and cattle. Taro, potatoes, and grapes were “cultivated quite extensively” (Wiebke 1940:1).

In the early 1840s, the Meyer family in Kala'e was growing and exporting coffee, corn, wheat, and potatoes to the mainland. The Meyer family started a sugar mill at Kala'e in 1878 using 30 acres of land to grow cane. This was one of the few locations on Moloka'i that had adequate rainfall to grow cane, but problems stemmed from the cane being planted at an elevation of 1,500 ft above sea level. Sugarcane matured slower at higher elevations, so yields were lower. The Meyer plantation produced 50 tons of sugar annually (Wiebke 1940). The sugar mill was closed in 1894, because it was too small to compete with larger operations.

Two other large sugar plantations were developed on Moloka'i beginning in the late 1870s, one at Moa-nui in East Moloka'i and one at Kaunakakai. Both of these plantations quickly failed and were abandoned (Wiebke 1940).

In 1898, American Sugar Company, Limited (ASCO) was incorporated by Molokai Ranch, which leased an additional 30,000 acres (Cooke 1949). Following the incorporation, a full-scale cane operation in central and western Moloka'i began, including an attempt to develop the arid lands of the Ho'olehua plain. “On the Hoolehua plain 750 acres were prepared in parallel trenches following the contours. 500 acres were actually planted in young cane shoots” (Judd 1936:12). Due to an inadequate water supply, this sugar enterprise was also unsuccessful. The well pumps, which had been installed in surface wells, were of such large capacity that they soon exhausted the fresh water, and irrigation ditches 8 miles long brought pumped water with such a high salt content that it could not be used to grow sugarcane:

Wells were dug in the lowlands and water pumped into a system of irrigation ditches above. As the pumping increased, the salt content of the water gradually increased until it became detrimental to the cane. This plantation like the others was quickly abandoned. [Wiebke 1940:1]

The ASCO plantation at Kamalō was the only Moloka'i sugar plantation to invest money in a railroad. Railroad tracks were constructed from Kaunakakai harbor “up through Palaaau and Iloli to the middle of the Hoolehua plateau” (Judd 1936:11). After failed sugar cultivation efforts, “graded railroad bed cutting through the gulches of Palaaau” and “irrigation ditches [...] on the Hoolehua plain” were all that remained (Judd 1936:11–12). No locomotives were ever shipped to Moloka'i. The tracks were removed and recycled into cattle guards. Today, stones mark the old railway route from Pālā'au to Mahana (Strazar 2000).

By 1900, all sugar production on Moloka'i had ceased (Stearns and Macdonald 1947:3). Regarding the ASCO plantation's demise, former Molokai Ranch manager, George C. Munro, recalled the following:

Hawaiians claimed that the plantation was doomed from the start, because as the company constructed the railroad along the shore to Palaaau it tore down an ancient fishing heiau near Kahunui. It used the rocks for the railroad bed and ran the rails through the center of the heiau. [Morse 1953:6]

3.2.5 1900s

3.2.5.1 Molokai Ranch

Molokai Ranch became a more organized operation in the early 1900s. By 1905, the ranch had transitioned from an open country system to the paddock system (Henke 1929). During the transition, wild deer and feral goat populations were reduced, a water distribution system was implemented, and a breeding program begun. Water from the East Moloka'i mountains was gravity fed to a concrete reservoir and then piped down to the ranch. By 1929, Molokai Ranch had approximately 75 miles of water pipes and more than 100 miles of smooth wire fences. An 1886 Hawaiian Government Survey map shows several paddocks surrounding the current project area (see Figure 11). These labels were most likely added after the map's original creation, since the paddocks appear to indicate land use by Molokai Ranch, which wasn't established until 1897 and then transitioned to the paddock system from 1898 to 1905 (Henke 1929). The western and eastern project areas are within the Momomi Paddock.

In the 1920s, Molokai Ranch lands consisted of about 10,000 acres leased for pineapple cultivation, 8,000 acres of forest reserves, and 50,000 acres utilized for ranching (Henke 1929:52). Most ranching activities were associated with cattle. Beginning in 1923, Molokai Ranch imported Hereford bulls from the Parker Ranch on Hawai'i Island, which resulted in a beef cattle population of over 4,500 head by 1929. In 1929, the ranch also had 400 swine and about 200 sheep. Sheep ranching was formerly more prevalent, with sheep numbers up to approximately 17,000 in 1907. However, the combination of sheep and cattle ranching caused over-pasturing, and since cattle ranching was more lucrative, sheep ranching began phasing out. In 1951, grazing land for sheep ranching remained a viable industry, despite its heyday being many decades prior (Carlson 1951). Cattle ranching remains an important industry on Moloka'i.

Molokai Ranch also produced honey. In 1903, an Italian breed of bees was purchased and crossbred with the island's endemic species (Cooke 1949). In 1928, 350 tons of *kiawe* honey were produced on Molokai Ranch, most of which was sold to Germany (Henke 1929).

3.2.5.2 Hawaiian Homes Commission

In 1920, the U.S. Congress passed the Hawaiian Homes Commission Act to administer and manage some 200,000 acres of land that belonged to the government of the Kingdom of Hawai'i or was recognized as Crown lands. Agricultural homesteads were to be leased to Native Hawaiians, with leasehold terms generally lasting 99 years at one dollar a year. The following year, the program began attracting people to Moloka'i. Kalaniana'ole Colony was the first homestead established under the Hawaiian Homestead Act of 1920. The settlement is located in Kalama'ula Ahupua'a, near the southern shores of Moloka'i Island.

The Moloka'i homestead program initially was impacted by many problems, including drought and high winds (McGregor 1990:37–38). Insect pests were also a discouraging impediment, at one point accounting for destruction of over 50% of many of the most desirable crops on the island (Wiebke 1940). A *Maui News* article from 1940 recounts the following:

With the birth of the Hawaiian Homes commission, Hawaiian homesteaders began pouring into the Kala'e and Ho'olehua sections. For a number of years extensive truck crops of every kind were raised successfully, but today this project has become a sorrowful enigma. [Wiebke 1940:1]

The 1922 USGS map (Figure 12) shows the project areas as relatively undeveloped. An unimproved Moomomi Road passed through the western project area and a Waihi Pipeline and adjacent unimproved road passed to storage tanks 1.3 km southeast of the eastern project area. The pipelines reflect the burst of agricultural activity.

Despite such difficulties, people managed to cultivate their plots (McGregor 1990:37–38). For instance, at Kalaniana'ole Colony, water for “bathing, laundry, and farming” was originally supplied by wooden flume from a spring in Kaunakakai, with drinking water provided by a spring in Kalama'ula (Tomonari-Tuggle 1990:10). Farming was diversified and successful crops included corn, watermelons, cucumbers, sweet potatoes, eggplant, and papaya (Keesing 1936; Wiebke 1940). In addition, demand became high for Moloka'i alfalfa and homestead tomatoes “controlled the Honolulu market” in 1924 (Keesing 1936:56).

Overall, the program succeeded and was expanded to include 11,400 acres of Pālā'au-Ho'olehua beginning in 1924. The current project area consists of approximately 36.4 acres (14.7 hectares) of these Pālā'au-Ho'olehua Homestead lands and includes Lots 17 and 104D-1. Due to the homestead program, the Pālā'au-Ho'olehua region had the largest population of Native Hawaiians in 1930. Of the 1,031 residents, 826 were Hawaiian (McGregor 1990:10).

In addition to agricultural pursuits, the Hawaiian Homes Commission encouraged raising livestock and ranching. Raising pigs brought the most revenue and economic value; however, a few families sold eggs and every family owned some cattle (Keesing 1936). In 1929, 54 homesteaders owned a total 358 cattle, including two Hereford bulls, 106 horses, 15 mules, and six donkeys (Henke 1929). Community pastures allowed each lot holder to graze up to 60 head of livestock. Additionally, three 250-acre pastures were reserved specifically for ranching. Pastures in Ho'olehua and Pālā'au totaled 6,630 acres. In 1935, 979 cattle, 72 horses, and 25 mules utilized the community pastures though less than half Ho'olehua families had cattle on these lands.

The Hawaiian Homes Commission was also instrumental in the establishment and expansion of Moloka'i High School, approximately 5.5 km east of the current eastern project area. The school gym was constructed between 1931 and 1932 by the Hawaiian Homes Commission and the county. Moloka'i High School became the first and only high school on the island when it expanded from an intermediate school to a high school in 1939. Situated at Ho'olehua on Hawaiian Homes Commission land, it opened to all students on the island with an enrollment of over 400. In 1950, the board of supervisors approved negotiation of the purchase of 40-acres of Hawaiian Homes Commission lands adjacent to the extant campus for construction of a new high school site (Maui News 1950).

3.2.5.3 Pineapple

Starting in 1918, independent pineapple growers tilled “the hillsides from Ualapua to Halawa, but due to high cost of operations these small plantations were short lived” (Wiebke 1940:1). The commercial pineapple industry arrived on Moloka'i in the early 1920s, with Molokai Ranch owning a majority of the leased pineapple lands (Lee-Greig and Hammatt 2008). Pineapple cultivation began in Pālā'au-Ho'olehua in 1926, when Libby, McNeill and Libby signed up some homesteaders to grow pineapple on homestead land operated in leased blocks of several 35-acre homesteads, which were cultivated by Libby.

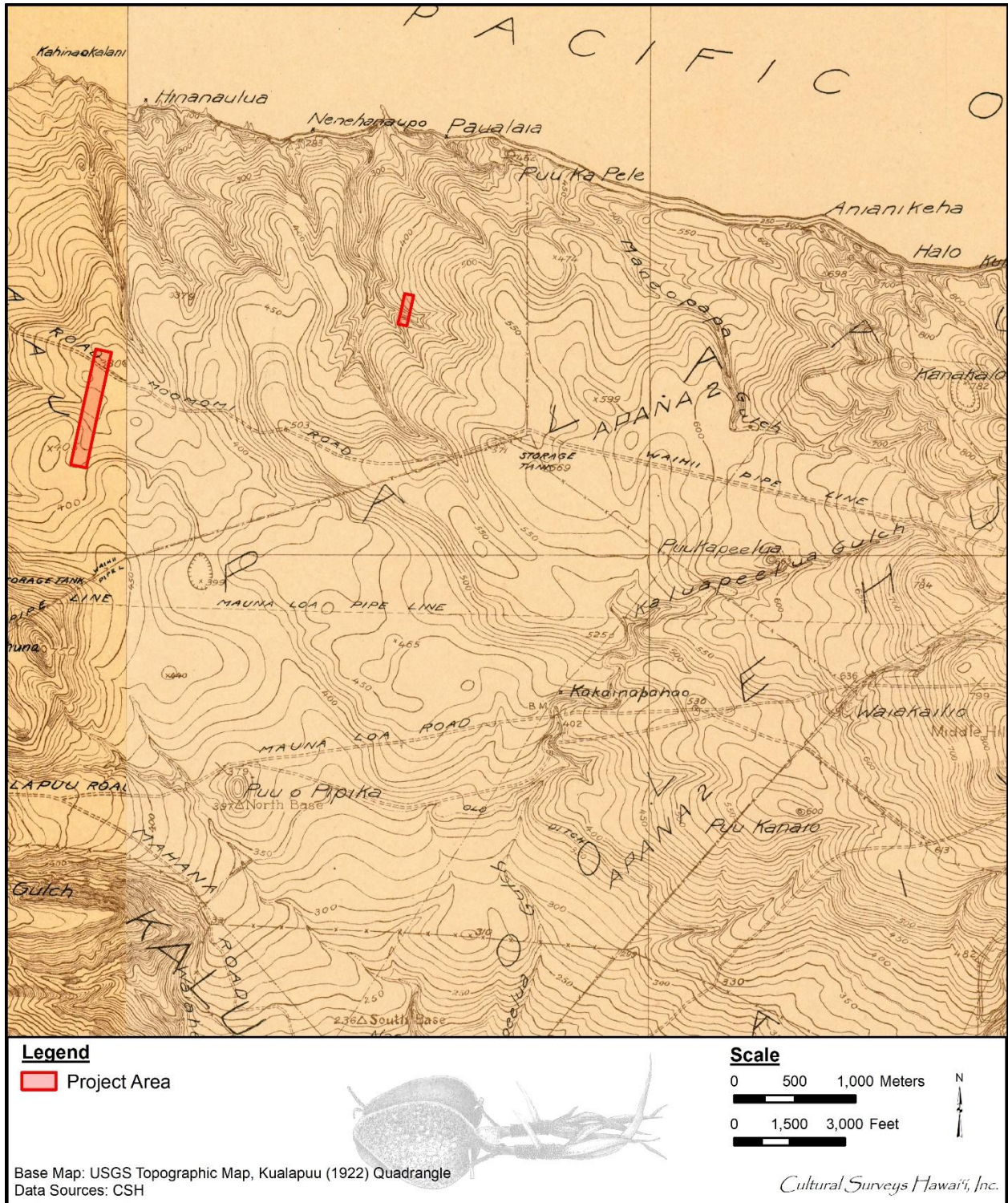


Figure 12. Portion of 1922 Kualapuu USGS topographic quadrangle, showing the project areas as relatively undeveloped (an unimproved Moomomi Road passed through the western project area and a Waihanalo Pipeline and adjacent unimproved road extended east to storage tanks southeast of the eastern project area)

By 1929, the California Packing Corporation (Calpac) had begun enlisting Native Hawaiian homesteaders in the Kualapu'u region, including areas near the current project area, to grow pineapple. The system adopted by both Libby McNeill & Libby and Calpac involved homesteaders growing pineapple in blocks of land leased by the plantation. Between 12 to 15 abutting homesteads were assembled by the pineapple plantation to form a contiguous area that was assigned a block number (Figure 13). Homesteaders under this block system planted, tended, and harvested to receive a proportionate share of the sale of fruit from each block. The harvested fruit was trucked by Calpac to a pier constructed at Kaunakakai, where it was crane-loaded onto barges and shipped to the Calpac cannery at Kahului, Maui (Larsen and Marks 2010:371–372). Homestead residents received almost two million dollars in cash payments for their efforts between 1929 and 1935.

Despite droughts, including one between 1944 and 1945 that caused the loss of the entire crop, pineapple production in the vicinity of the project area continued until the 1970s (Larsen and Marks 2010:379). Dole Pineapple, which had subsumed Libby, McNeill and Libby's operations, ceased pineapple cultivation in 1975. The California Packing Corporation had planned on closing the same year but continued cultivation until 1983, when a majority of its production ceased business on Moloka'i (Larsen and Marks 2010:382).

3.2.5.4 School Farm

In the early 1920s, Ho'olehua consisted of an undeveloped wide, grassy plain used for pasture with little development and no public school. Several families moved into the area when the land opened to Hawaiian homesteading and California Packing Corporation started their pineapple plantation at Kualapu'u, formerly a Molokai Ranch camp. Kalae School, a one-room schoolhouse at Kalae, eventually moved to the old recreation hall at Kualapu'u to better accommodate students coming from the ranch camp. As homesteads and pineapple cultivation expanded in the area, a new school was constructed at Ho'olehua to meet growing numbers of student enrollment; in 1926 the students at Kalae School moved to the new school. The staff originally consisted of three teachers, including an instructor of agriculture, but within three years the faculty grew to 15.

The school established a progressive agricultural department in 1930, which rapidly developed into a highly reputable agricultural training center. Modern methods of farming and animal husbandry were taught to male vocational students (numbering 70 in 1939). Students cultivated crops designed to give them needed experience and experimented with plantings to test for possible improved crops or strains for use on the island. About half of the vocational boys came from homesteads and the other half from Calpac-employed families. A cooperative program between Moloka'i High School and Calpac was initiated in 1948, where boys from the vocational program worked at the plantation in the mornings before school for seniority consideration for employment post-graduation (*Maui News* 1948).

Hawaiian Homes Commission provided a 26-acre farm (Figure 14) to the department for educational purposes on "well selected land [...] makai [toward the sea] of the Hawaiian Homes Commission office in Ho'olehua" (*Maui News* 1940:1). The farm had chicken houses and pigpens built by the vocational students in the farm shop. "The instructor of agriculture and three classes of boys spent weeks with tractors and ropes clearing lantana" from the area to be cultivated (*Maui News* 1939:6). A 1939 news article describes the farm:

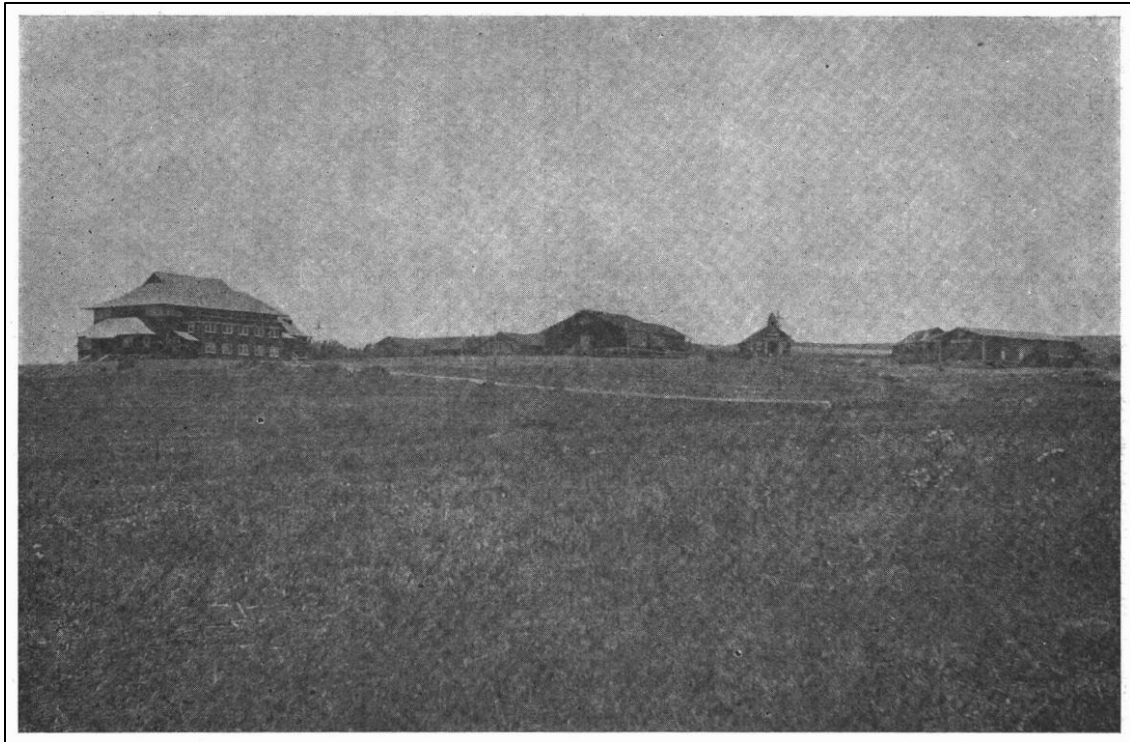


Figure 14. Community Center for Ho'olehua Homesteads including, from left to right, a hall, school, church, and farm, ca. 1939 (Keesing 1936:124)

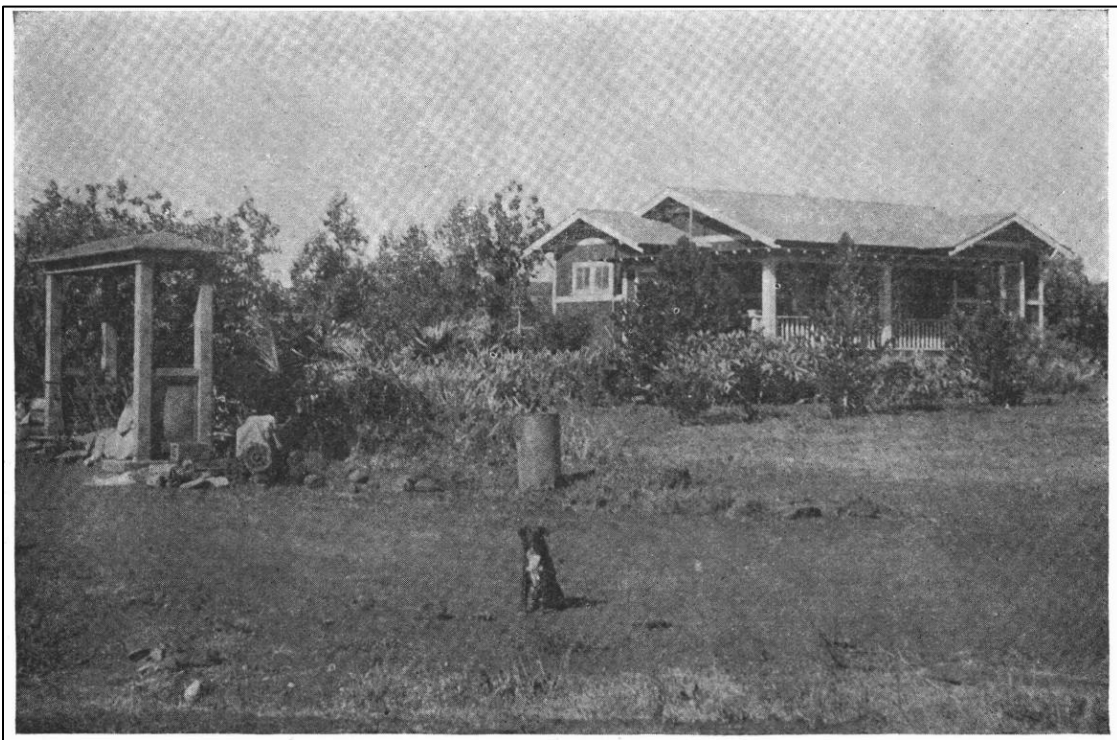


Figure 15. A Ho'olehua homestead in 1939 (Keesing 1936:59)

The farm is up to date and well equipped. It serves the community as a practice ground for students; a source of improved livestock, poultry and plans; an example to the community of good landscaping and agricultural methods and is an experimental ground for new crops. Here the boys are receiving thorough instruction in the fundamentals of good scientific farming coupled with training to farm management—increasingly important because of the vital necessity that the modern tiller of the soil have a good working knowledge of farm economics in Hawaii if local small scale agrarian enterprises are to be operated at a profit. [*Maui News* 1939:6]

Figure 15 (above) illustrates a typical resident homestead lot in Ho‘olehua during the 1930s. Families farmed a variety of crops in Ho‘olehua, including corn, melons, tomatoes, cucumbers, pumpkins, sweet potatoes, squash, peanuts, beans, onions, and cabbage (Keesing 1936). Pumpkin *poi* (the Hawaiian staff of life, made from cooked taro corms) became a staple for these homesteaders. Though dryland agriculture had successes at Pālā‘au-Ho‘olehua Homesteads, constant care was needed to combat hardships caused by droughts, winds, and pests.

3.2.5.5 Corn

Corn was grown on Moloka‘i from as early as the 1920s. In a letter to the editor of the *Honolulu Star-Bulletin* in 1922, the writer comments quite fondly of Moloka‘i corn (Figure 16). In the 1940s, the Moloka‘i corn project was intended to provide a local source of food for livestock, since all feed corn was being imported (*Honolulu Advertiser* 1944a). Approximately 1,400 acres of field corn and 1,000 acres of milo maize were planted and harvested by resident high-schoolers and homesteaders. Homesteaders also grew feed corn separate from the Moloka‘i corn project (*Honolulu Advertiser* 1944b). In Ho‘olehua, large amounts of corn were sold or fed to livestock (Keesing 1926).

In 1967, Kaye Waldorf became a third partner in Hawaiian Research, Ltd. and moved from his 430-acre corn and soybean farm in Iowa to become resident manager of the company and grow corn on Moloka‘i (Lynch 1968) (Figure 17). Hawaiian Research, Ltd. began experimenting with seed corn on Moloka‘i in the winter of 1966; by autumn 1968, the company was growing over 900 strains of corn. Fertile soils, a year-long temperate albeit arid climate, a culturally diverse environment for his teenage children, and an “intellectual curiosity” attracted Waldorf to experimental agricultural farming on Moloka‘i (Lynch 1968:B-1).

The same State Department of Land and Natural Resources (DLNR), Water and Land Development Division irrigation project that supplied water to about 14,500 acres of pineapple fields in West Moloka‘i was also used to irrigate the corn fields, which comprised a portion of 1,500 acres of diversified agricultural land that also included “experimental potato plantings and some Hawaiian Homestead truck farm lands” (Lynch 1968:B-1). In October 1968, the final stages were underway for a project involving 5 miles of tunnel and additional miles of pipeline to transport water from the wet, northeastern Waikolu Valley to crops in West Moloka‘i. In addition, a 1.4-billion-gallon earth reservoir was being constructed at a central location in Kualapu‘u to store any excess water collected during the rainy winter season in order to provide a year-round supply of water to arid West Moloka‘i’s crops. Kualapu‘u Reservoir is located approximately 6 km southeast of the current eastern project area. While the lack of a natural water supply certainly

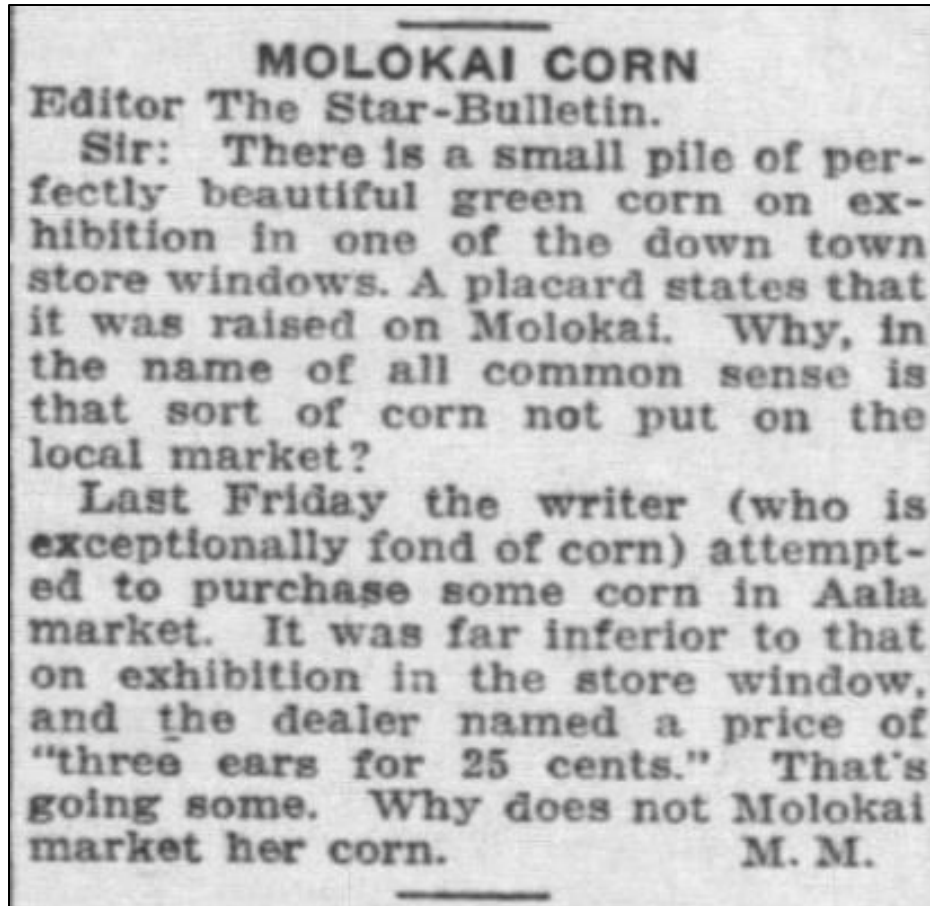


Figure 16. Letter to the editor praising the quality of Moloka'i corn in 1922 (*Honolulu Star-Bulletin* 1922:6)



Figure 17. Experimental corn farmer, Kaye Waldorf, in West Moloka'i; pipeline (left) transported water to his crops (Roll 1968:B-1)

created obstacles, Waldorf preferred the more controlled distribution of water to his crops via a pipeline (see Figure 17) to the unpredictable rains he experienced as a corn farmer in Iowa.

3.2.5.6 Infrastructure

In conjunction with agricultural, residential, and economic changes, the twentieth century also brought infrastructure improvements to the island of Moloka'i. On 13 May 1909, a telephone line was authorized for Moloka'i Island (*Maui News* 1926). In 1925, construction began on a road connecting Kaunakakai to Ho'olehua, which was used regularly during Moloka'i's pineapple era to transport loads for export. Access roads within the homesteads were established and have been maintained by the Hawaiian Homes Commission without charge to homesteaders or Maui County (Keesing 1936:49). Aerial photographs and topographic maps show unpaved roadways traversing the current project area(s) vicinity in the 1950s and 1960s (Figure 18 through Figure 21). The 1950 aerial photograph (see Figure 18) shows pineapple cultivation neighboring, but not within, the project areas. The 1964 USGS aerial photograph (see Figure 20) indicates active cultivation of pineapple in the western project area.

In 1932, Molokai Electric Company was incorporated and established an electric generating station in Kaunakakai with one 200-horsepower diesel generator, which first supplied electricity to 59 customers in Kaunakakai Village that year (Young 1961). By the 1960s, the company serviced the entire island with nine generators channeling electricity through 80 miles of transmission lines (Young 1961).

Following the development of aerial combat in the First World War, the availability of war-surplus aircraft for civilian aviation in the Hawaiian Islands led to the establishment of a civilian airfield at Ho'olehua in 1919 named Moloka'i Field. In the 1930s, improvements were made at Moloka'i Field including the construction of a terminal building for the use of Inter-Island Airways, the first commercial inter-island carrier. The segregation of part of the civilian airfield at Ho'olehua for military use occurred when the U.S. Army Air Corps established a portion of the field as "Homestead Field," beginning in September 1931 (Horvat 1966:38, 40–47). By the time the United States entered World War II in 1941, aircraft of the Fifth Bombardment Group were stationed at Homestead Field. Heavy rains caused water and mud to flow into the operating area of the airport until a drainage ditch was completed in 1953. In 1954, the sod-on-sand runway was replaced by a paved runway and the airport terminal was built in 1957. Figure 19 shows the airport during the 1950s prior to the construction of the terminal. Improvements to the airport continued from 1969 through 1993, including terminal expansions, perimeter security fence installation, a new FAA air traffic control tower, a fire protection system, and a maintenance base yard (State of Hawai'i 2008).

A heliport associated with the United States Navy reservation, appears on a 1983 topographic map (Figure 22) and 1993 topographic map quadrangles (see Figure 1). However, this development does not appear in recent aerial imagery (see Figure 5).

3.2.5.7 Contemporary Land Use

Pineapple production on Moloka'i phased out during the 1970s, with complete abandonment by the early 1980s. Tourism and service-related industries replaced commercial agriculture as the economic foundation of urban areas. The towns of Maunaloa and Kualapu'u have continued to support sizeable populations, though Kaunakakai has remained the island's major urban center.

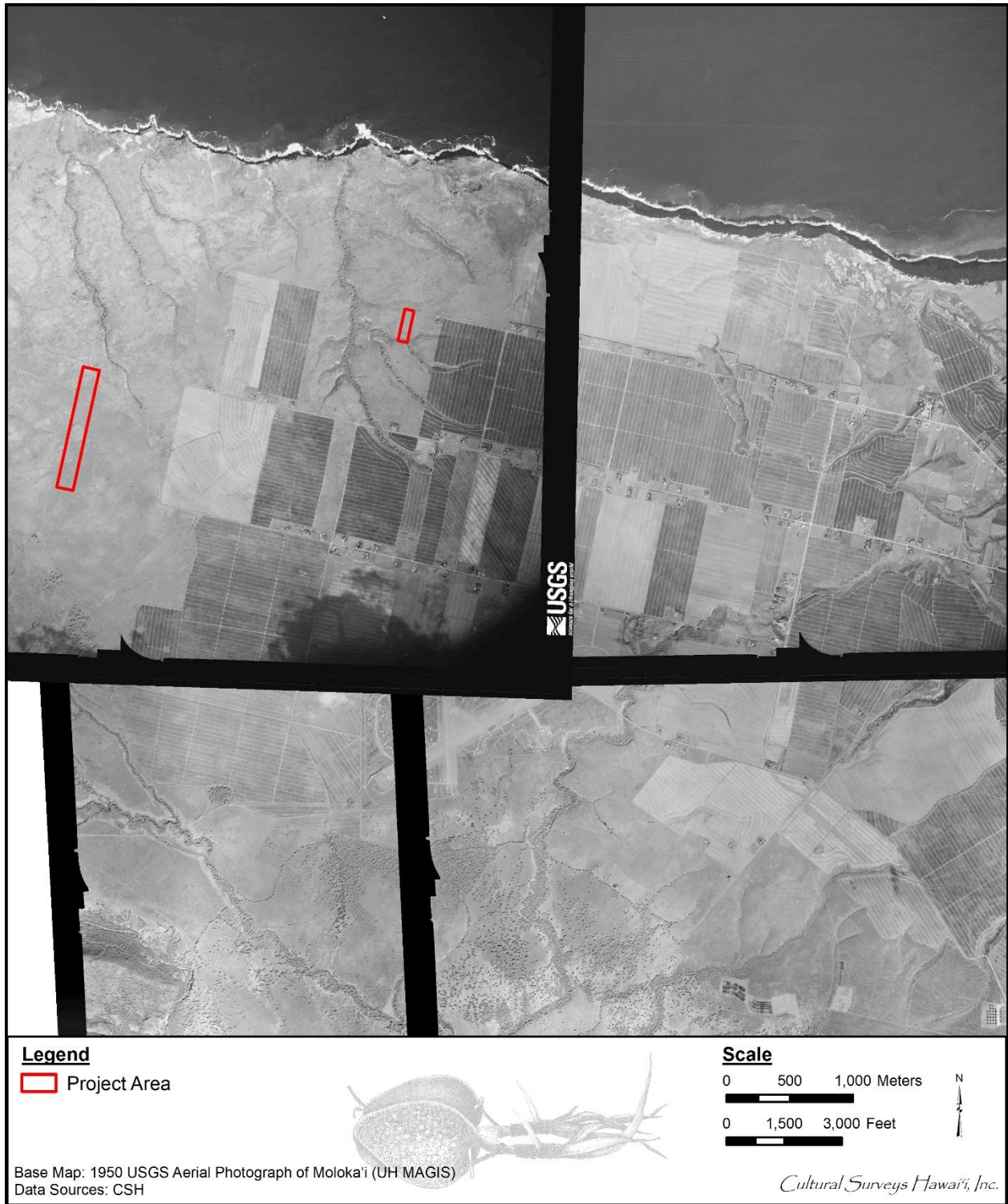


Figure 18. 1950 USGS aerial photograph of Molokai (UH MAGIS) showing pineapple cultivation neighboring, but not within, the project areas

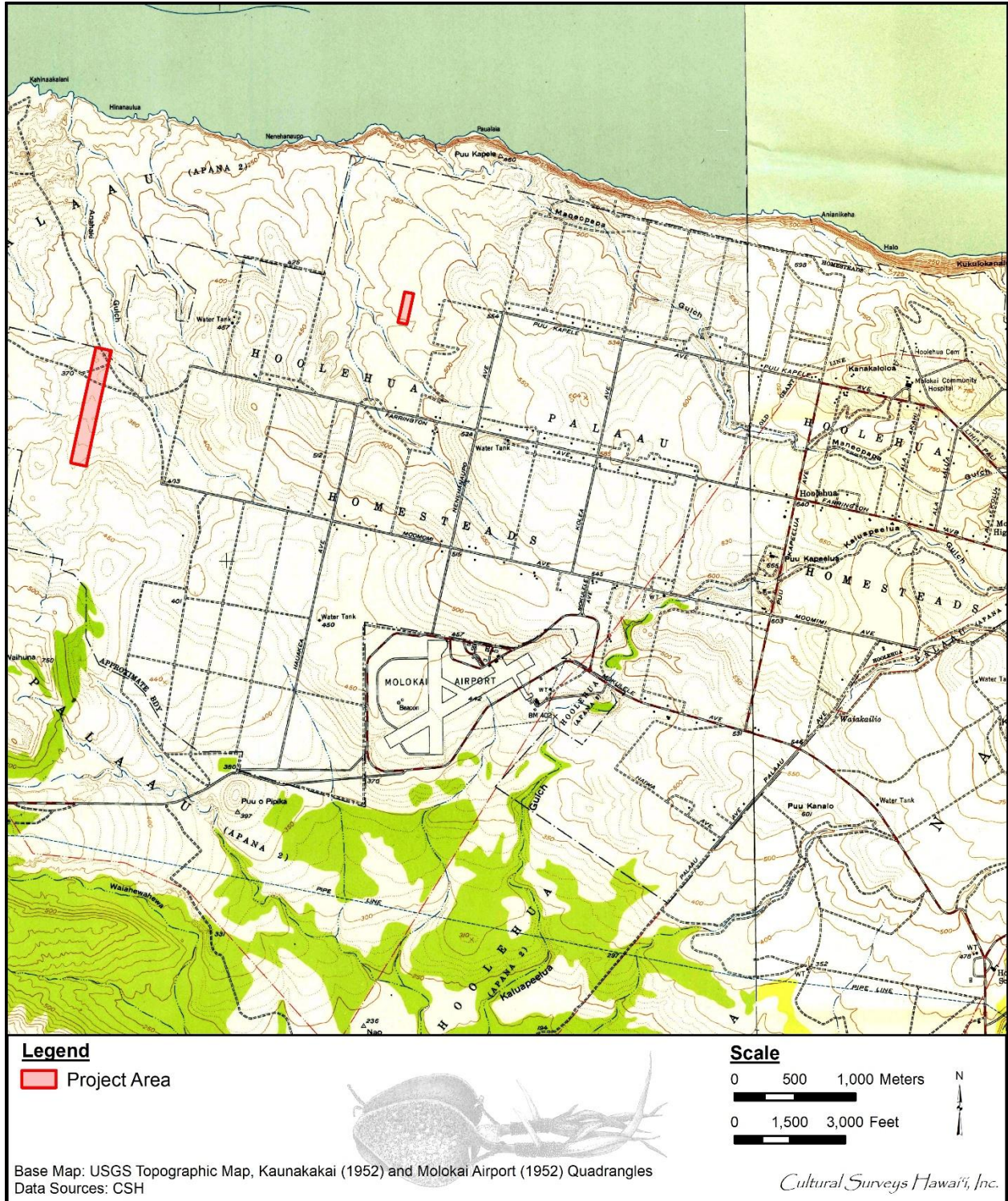


Figure 19. Portion of 1952 Kaunakakai and Molokai Airport USGS topographic quadrangles showing unpaved roads are present within and surrounding the project area; the pipeline south of the project area(s) was used to transport water from East Moloka'i

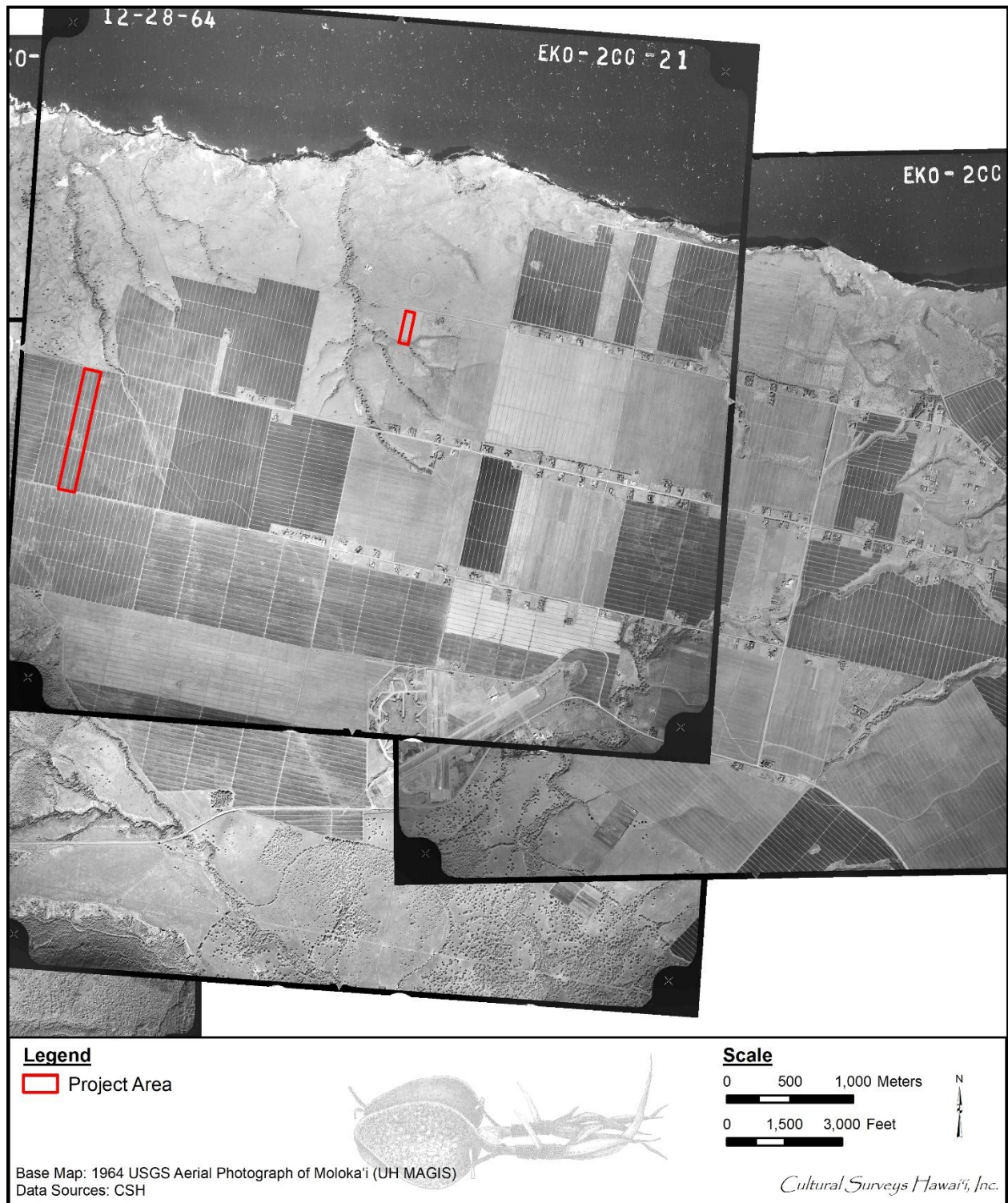


Figure 20. 1964 USGS aerial photograph of Moloka'i showing the present project areas (note the general absence of trees in the project areas and the indicated active cultivation of pineapple in the western project area)

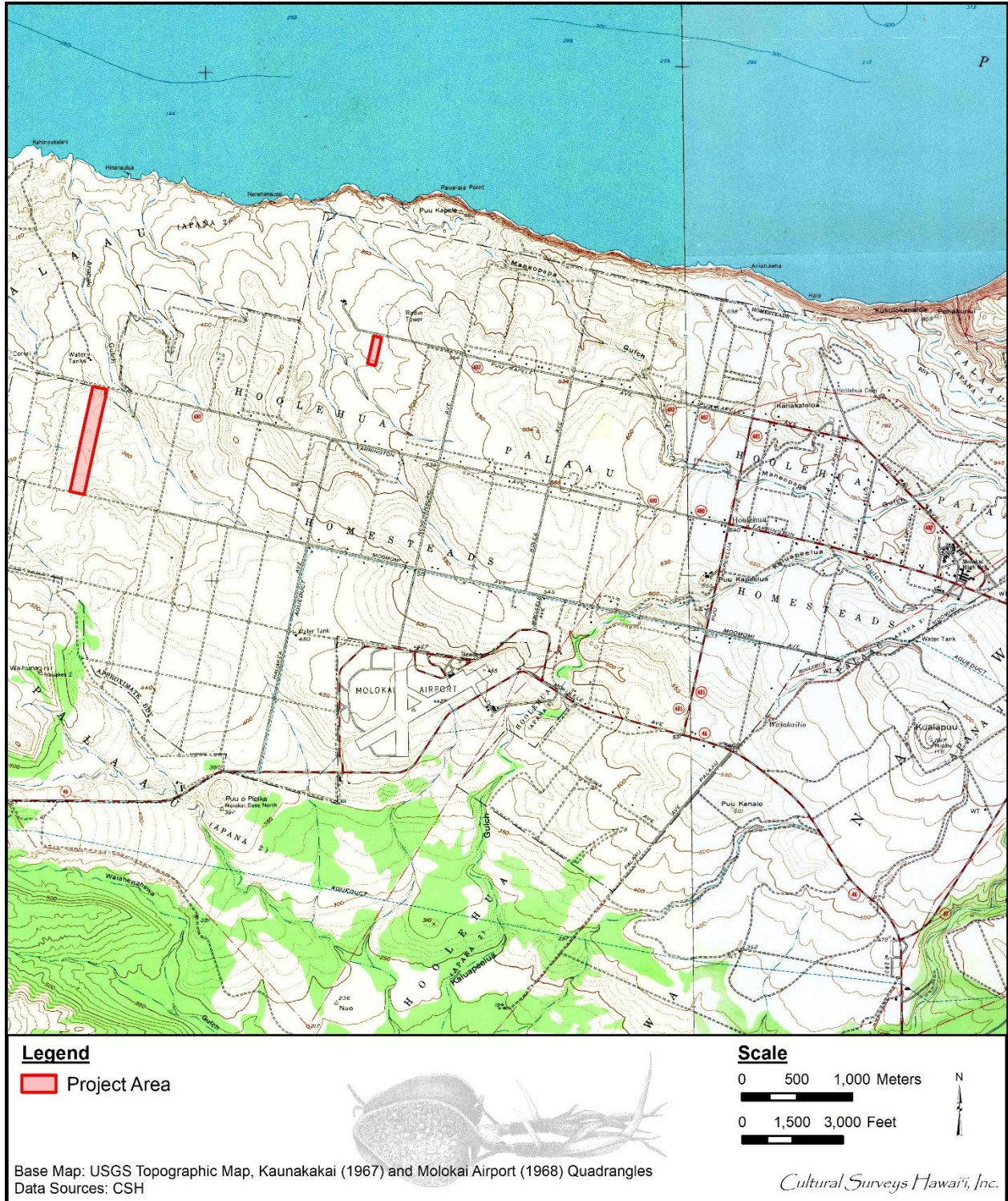


Figure 21. Portion of the 1967 Kaunakakai and 1968 Molokai Airport USGS topographic quadrangles showing unpaved roads abutting the project area(s) and an aqueduct crossing the Ho'olehua Plain to the south

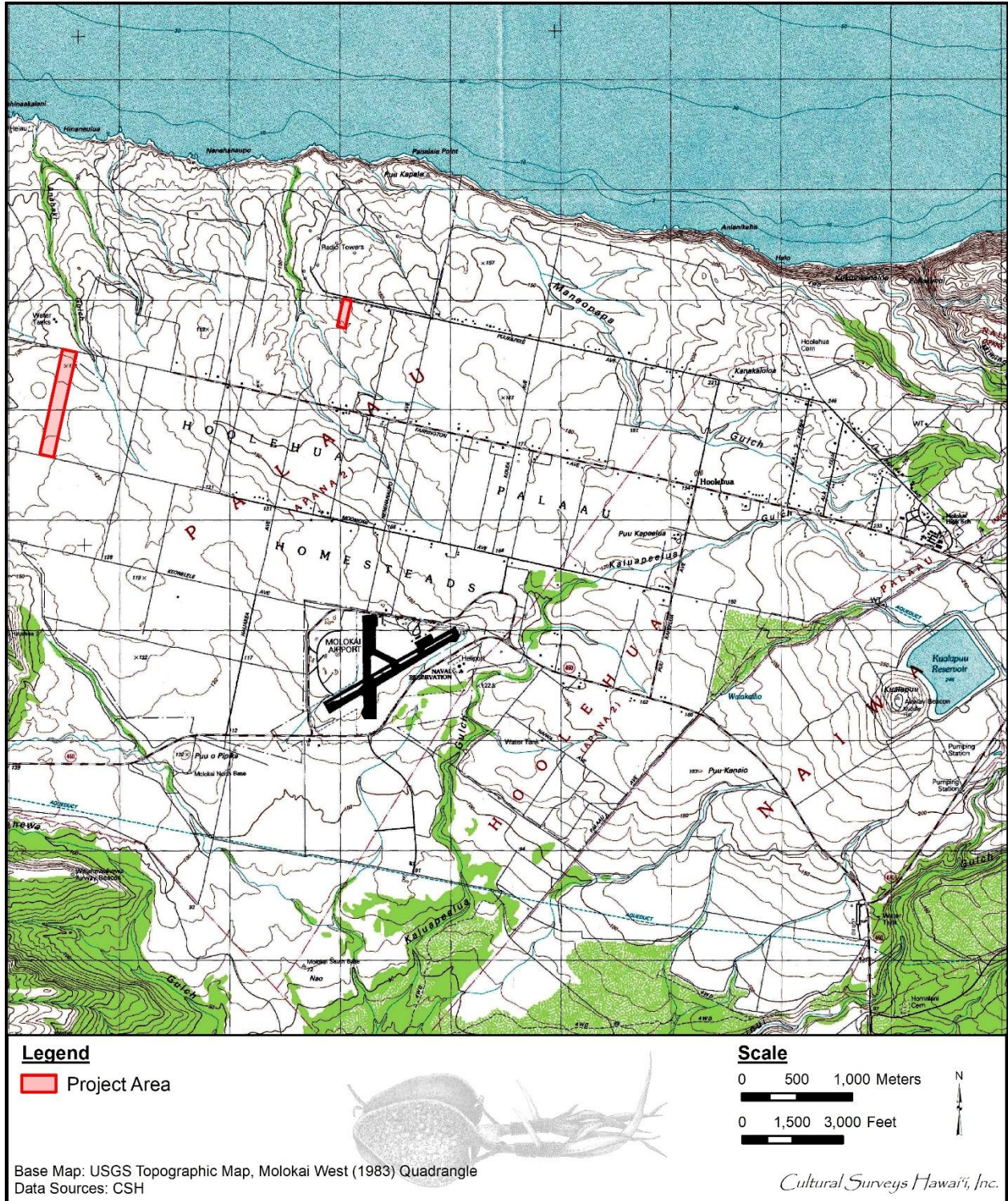


Figure 22. Portion of 1983 Molokai West USGS topographic quadrangle showing an aqueduct crossing the Ho'olehua Plain to the south and the Kualapuu Reservoir southeast of the project area(s)

The development history of large land holdings on the island of Moloka'i includes Molokai Ranch Company lands, some

55,575 acres, or 35 percent of the entire island. This ranch includes 20 miles of coastline and two hotel properties, the former Molokai Lodge and the former Kaluakoi Hotel, two golf courses, residential, agricultural and conservation land, as well as nearly 30 acres of commercial land near Kaunakakai and 85 acres of industrial land at Maunaloa and Kualapuu. [Magin 2017]

The company that owned all these properties, Molokai Properties Limited, ceased all operations on the island in 2008 (Mangieri 2019). These holdings have been listed for sale since 2017. While community interests actively desire purchasing the lands for residents and/or the state, the fate of these lands and, consequently Moloka'i in general, is still unknown.

DHHL proposes to construct infrastructure improvements including clearing, grading, and installation of roadway, electrical, connections to domestic water, and irrigation water utilities. The proposed plan calls for ground-disturbing activities to be confined to the two subject parcels, but will extend to existing roadways for access and connection for utilities. These improvements will support DHHL beneficiaries through the provision of essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action.

3.3 Archaeological and Historic Properties

A discussion of previously identified archaeological resources in the project area vicinity is included in this CIA to inform understandings of land and local communities from the initial Hawaiian discovery and settlement of the islands through the historic era, and to provide additional context for the historic documentation, traditional cultural practices, and oral histories associated with the project area and vicinity.

No historic properties have been previously identified within the project area, and few have been identified within the vicinity (Figure 23 and Table 2, and Table 3).

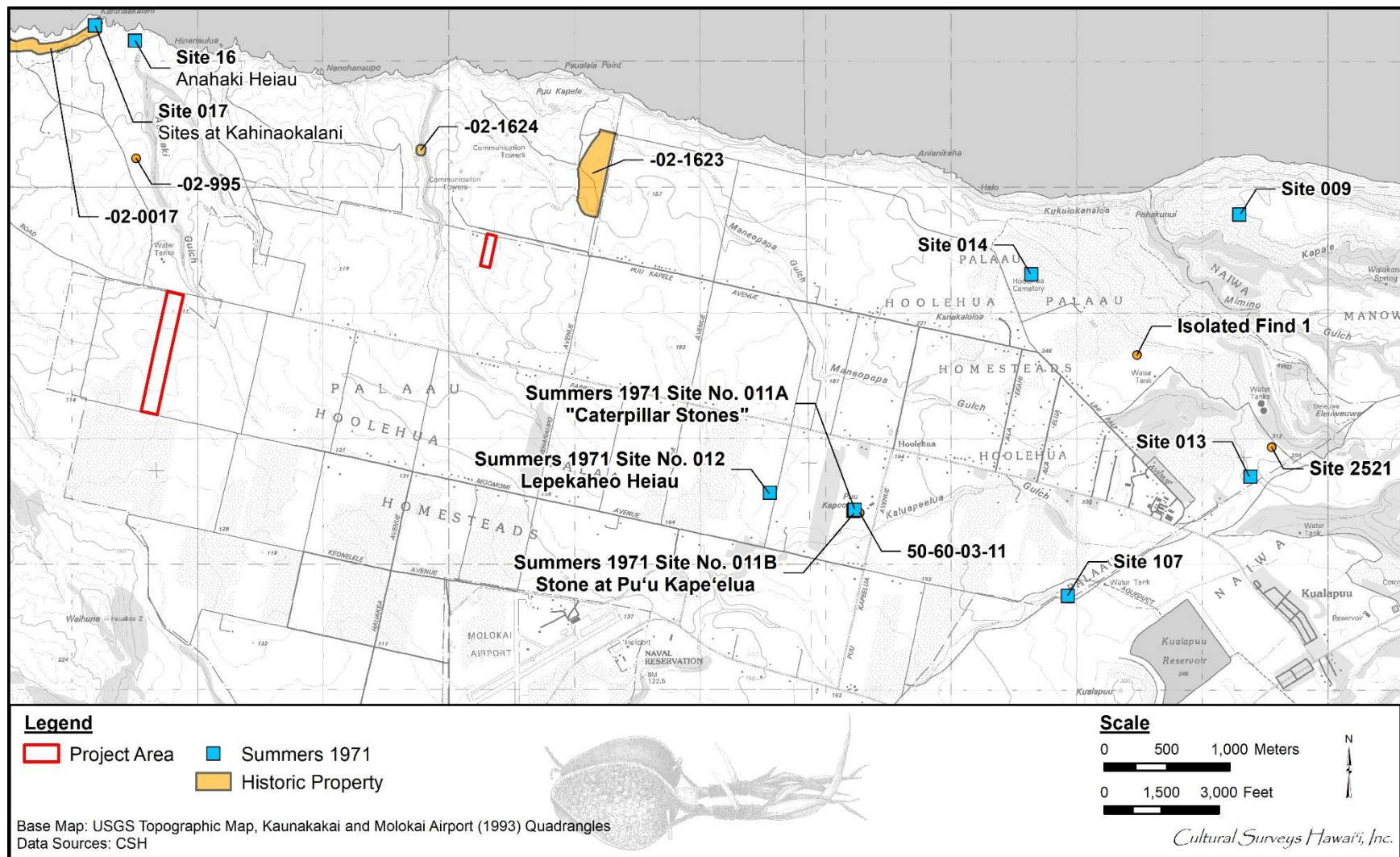


Figure 23. Previously identified historic properties in the project area vicinity depicted on a portion of the 1993 Kaunakakai and Molokai Airport USGS topographic quadrangles

3.3.1 Discussion and Overview of Archaeological Historic Properties in the Project Area Vicinity

Table 2. Archaeological historic properties in the project area vicinity

SIHP Number	Type	Description	Reference
50-60-02-00995	Agricultural shrine	Notes "sites consisting of enclosures, L-shapes, U-shapes on the low promontories along the coast," in addition to the shelter sites noted by Summers between sites 16 and 17 but her main focus was associated with an anomalous growth of ti plants and was described as including a wall segment, basalt flakes and a fragment of an adze blank and a rock with a flat surface, with a rectangular "basin" measuring about 8" x 14" pecked into it. She posits that "In addition to the practical purpose of the boulders for collecting rain water, it is possible that this site was an agricultural shrine for the worship of the god Lono."	Griffin 1993
50-60-02-01623	Two enclosures and dumps	SIHP # -01623, a site of unknown function, included two enclosures, each with minor amounts of marine shell and some modern refuse and 20th century rubbish dumps.	Major and Dixon 1995
50-60-02-01624	An enclosure and an artifact	SIHP # -01624, regarded as a pre-Contact dwelling consisted of an enclosure with marine shell deposits, fire-cracked rocks and a re-worked basalt flake.	Major and Dixon 1995
50-60-03-00011	Kape'elua Complex	The Kape'elua Complex consists of two sites: "Caterpillar Stones" (Summers Site 11A) and "Stone at Pu'u Kape'elua" (Summers Site 11B)	Summers 1971:37
Summers Site 9	"Kipu Ruins, Kipu"	The site is located on a headland about 800 ft S of the cliffs and N of Kapale Gulch, at an elevation of 1000 ft. Several structures are distributed over an area about 500 ft long and 250 (Structures "A" through "I" are described)	Summers 1971:34-36

SIHP Number	Type	Description	Reference
Summers Site 11A	“Caterpillar Stones”	The stones are on top of the hill; Pu‘u Kape‘elua, “The Caterpillar Hill.” (For <i>mo‘olelo</i> see subsection 3.1.2.2).	
Summers Site 11B	Stone at Pu‘u Kape‘elua Ho‘olehua 2	The stone is located just S of the Caterpillar Stones (Site 11A) on Pu‘u Kape‘elua. When seen in 1959, this fairly flat stone measured 6 ft N to S, and 7 ft E to W. It stood about 22 in. high on the N and 18 in. high on the S. On the face of the stone was a hollowed-out basin, 21 in. E to W, 8.5 in. N to S, and 3 in. deep. Leading from the N side of the surface into either side of the basin were two grooves 1 in. wide and 2.5 in. deep. Two more grooves led from the S side of the basin to another basin located on a shelf 5 in. below the face, on the S side of the stone. This basin, which was 1.75 in. deep, measured 18 in. E to W and 6 in. N to S. Numerous sea shells were found in the vicinity of the site. G.P. Cooke (personal communication) said the stone was used for sharpening adzes. K.P. Emory was of the opinion that, because this is an arid region, the stone may have been for collecting water.	Summers 1971:37
Summers Site 12	<i>Heiau</i> (Lepekaheo Heiau)	This site is located on the boundary of Ho‘olehua 2 and Pala‘au 2, W of Kaluape‘elua Gulch. Monsarrat referred to Lepekaheo as an “old heiau.”	Summers 1971:37
Summers Site 13	“Kahua Maika, Pala‘au 2” (<i>‘ulu maika</i> bowling course)	The <i>kahua maika</i> (<i>‘ulu maika</i> [stone used in <i>maika</i> (ancient Hawaiian game suggesting bowling) game] bowling course) was situated on a rise at a place called Akani; Monsarrat referred to it as an “old <i>kahua maika</i> ”	Summers 1971:38

SIHP Number	Type	Description	Reference
Summers Site 14	" <i>Heiau</i> , Pala'au 2"	"The site is located E of the Ho'olehua Cemetery in the pineapple fields W of the gulch, at an elevation of 800 ft. Cartwright reported this (in 1922) as being a <i>heiau</i> . The structure was in ruins in 1957, however. Traces of paving could still be found, and the remains of a wall, 35 ft long NE to SE; 13 ft from the NE side was an upright stone 2 ft high, 2 ft wide, and 1 ft thick."	Summers 1971:38
Summers Site 16	<i>Heiau</i> and house site	This <i>heiau</i> is located on the W side of the mouth of Anahaki Gulch at an elevation of about 50 ft above sea level. Cartwright (1922) reported the site as being a <i>heiau</i> . Originally the structure was an enclosure. The exterior measurements in 1964 were 43 ft N to S and 36 ft E to W; the maximum height of the eastern wall was 5 ft. The northern wall was probably this same height originally, but the wall on the S was lower. Both the S and W walls were badly damaged. An inner division on the N side of the enclosure measured 17 ft E to W and extended the entire width of the structure. The southern portion of the enclosure was paved. On the crest of the hill to the S of the above site was a house site or shelter, which had a 5-ft-high wall running N to S; the rest of the site was open. Adjoining the northern portion of the wall on the E side was a small, paved terrace.	Summers 1971:38
Summers Site 17 (02-0017)	"Sites at Kahinaokalani, Pala'au 2"	"Emory reported seeing two house sites and a <i>ko'a</i> [fishing shrine] at Kahinaokalani; the <i>ko'a</i> was at the edge of the cliff. Phelps described a structure, which he called a canoe <i>halau</i> [long house], which was on a bluff about 30 ft above the sea"	Summers 1971:38

SIHP Number	Type	Description	Reference
Summers Site 107	“Holua slide at Kualapu‘u, Na‘iwa”	The slide was on the SSW side of Kualapu‘u hill, and traces of it can still be seen. No indications of paving could be found in 1966. Apparently it was similar to Site 3. On the S and W slopes of Kualapu‘u hill, there used to be many sweet potato patches, which were defined by rows of stones (Cooke 1949:121). According to Sophie J. Cooke (1964:58), the former name of Kualapu‘u was Ka ‘Uala Pu‘u, “The Sweet Potato Hill.” On some maps it is called “Mid Hill.”	Summers 1971:80
Isolated Find (IF)-01	Bowling game stone	An <i>‘ulu maika</i>	McIntosh et al. 2019

3.3.2 Overview of Architectural Historic Properties in the Project Area Vicinity

Table 3. Architectural historic properties in the project area vicinity

SIHP Number	Type	Significance	Reference
50-60-03-02521	Ranching infrastructure	Concrete tank stands associated with ranching	McIntosh et al. 2019

Fifteen historic properties are located in the project area vicinity. These include a few sites recorded by Summers (1971) north of the project areas and the legendary Kape‘elua Complex (SIHP # 50-60-03-00011) to the west. There appears to have been a locus of traditional Hawaiian activity in Anahaki Gulch north of the western project area (Figure 23) but this is suggested to relate to the micro-environment of that gulch and greater proximity to the coast. A World War II-era military feature complex adjacent to the western border of the current project area was documented, although it is not designated as a historic property (was not older than 50 years when studied) (AECOS Inc. 1980).

Based on background research, cultural deposits and features related to historic homesteading (i.e., agricultural and/or habitation features) are likely present at the current project area. However, potential also exists for encountering evidence of pre-Contact and post-Contact land use.

Section 4 Consultation Results

4.1 Introduction

Throughout the course of this assessment, an effort was made to contact and consult with NHO, agencies, and community members including descendants of the area, in order to identify individuals with cultural expertise and/or knowledge of the *ahupua'a* of Pālā'au. CSH initiated its outreach effort in November 2021 through letters, emails, and/or telephone calls. CSH completed consultation in September 2022.

4.2 Community Outreach Letter

Letters along with maps and aerial photographs (see Appendix A) of the project areas were mailed with the following text:

Aloha mai kākou,

With this letter, Cultural Surveys Hawai'i (CSH) humbly requests your *mana'o* and *'ike* (experience, insights, and perspectives) regarding past and ongoing cultural, practices, beliefs, and resources within Pālā'au and Ho'olehua Ahupua'a.

Consultation with traditional cultural practitioners, *kūpuna*, *kama'āina*, and Hawai'i's diverse ethnic communities is an important and deeply valued part of our work and the environmental review process for proposed projects in Hawai'i. Your contributions will revitalize and keep alive knowledge of cultural practices, storied places, and life experiences that will remind Hawai'i's children of their history for generations to come.

Project Description

At the request of Munekiyo Hiraga on behalf of the Department of Hawaiian Home Lands (DHHL), CSH is conducting a cultural impact assessment (CIA) for the DHHL Ho'olehua Scattered Lots Subdivision and Improvements, Pālā'au Ahupua'a, Moloka'i District, Moloka'i Island, TMKs: (2) 5-2-005:031, Lot 17 and (2) 5-2-026:014, Lot 104D-1. The location and boundaries of the proposed project are delineated on a 1993 Kaunakakai and Molokai Airport U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1) and a 2013 ESRI aerial map (Figure 2) attached to this invitation. The purpose of the project is to create additional homesteading opportunities for DHHL beneficiaries on the Moloka'i Agriculture Waitlist. The DHHL proposes improvement and subdivision of two (2) parcels. The improvements include clearing, grading, and installation of roadway, electrical, and irrigation water utilities. The proposed plan calls for ground-disturbing activities to be confined to the two (2) subject parcels, but will extend to existing roadways for access and connection for utilities.

Purpose of this Study

The purpose of a CIA is to gather information on Hawai'i's cultural resources, practices, or beliefs that have occurred or still occur within the proposed project

area and Pālā'au and Ho'olehua Ahupua'a. This is accomplished through consultation and background research using previously written documents, studies, and interviews. This information is used to assess potential impacts by the proposed project to the specific identified resources, practices, and beliefs in the project area and throughout Pālā'au and Ho'olehua Ahupua'a. As a traditional cultural practitioner and holder of long-term knowledge, your insight, input, and perspective provide a valuable contribution to the assessment of potential effects of this project and an understanding of how to protect these resources and practices.

Insights focused on the following topics in the project area (shown on the attached Figures 1 and 2) are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your specific traditional cultural practice and its connection to the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- The different natural resources associated with your specific traditional cultural practice
- Legends, stories, or chants associated with your specific traditional cultural practices and their relationships to the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Referrals to other *kūpuna*, *kama'āina*, and traditional cultural practitioners knowledgeable about the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on your ongoing traditional cultural practices and natural resources within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and Pālā'au and Ho'olehua Ahupua'a

Consultation Information

Consultation is an important and deeply valued part of the CIA and environmental review process. Your contributions will revitalize and keep alive our combined knowledge of past and ongoing cultural practices, historic places, and experiences, reminding our children of their history generation after generation.

With your agreement to participate in this study, your contributions will become part of the comprehensive understanding of traditions of the area, and part of the public record; they will be available for future access through the Office of Environmental Quality Control (<https://health.hawaii.gov/oeqc/>) and at the State

Historic Preservation Division Library
(<https://dlnr.hawaii.gov/shpd/about/research-resources-library>).

As a part of this process, your knowledge may be used to inform future CIAs and other heritage studies of cultural practices and resources that need protection from impacts of proposed future projects. If you engage in consultation, and the *mana'o* and *'ike* you provide appears in the study, we would like to recognize your contribution by including your name. If you prefer not to allow your name to be included, your information can be attributed to an anonymous source.

The consultation interview structure and format are flexible. We will accommodate your preference on how to get together; talk story, over the phone, by email correspondence, remotely via Zoom, MS Teams, Google Chat or other remote meeting platforms.

Your knowledge of the resources and potential effect of the project on traditional practices in the project area and Pālā'au and Ho'olehua Ahupua'a focusing on the topics in the bullet points above can also be submitted in a written statement. CSH will provide return postage of your written statement on request.

CSH is happy to provide a list of topics for discussion, a more structured questionnaire of interview questions, or any other assistance that might be helpful.

If you have questions regarding consultation, or are interested in participating in this study, please contact CSH Cultural Researchers, Kellen Tanaka, by email at [...] or Chantellee Spencer at [...] phone at [...].

Mahalo nui loa for your time and attention to this request for consultation.

4.3 Community Outreach Table

Table 4 contains the names, affiliations, dates of contact, and comments from NHOs, individuals, organizations, and agencies contacted for this project. Results are presented below in alphabetical order.

Table 4. Community outreach table

Name	Affiliation	Comments
Buchanan, Lori L.	Coordinator at Molokai/Maui Invasive Species Committee	Letter and figures forwarded to Ms. Buchanan 5 November 2021 Ms. Buchanan replied via email 8 November 2021 requesting information regarding project area location, acreage and project specific plans CSH replied via email 8 November 2021 clarifying the project location and acreage
Feiteira, Blossom	President, Association of Hawaiians for Homestead Lands	Letter and figures sent via USPS 2 November 2021 Letter and figures sent via email 5 November 2021 Ms. Feiteira replied via email 5 November 2021

Name	Affiliation	Comments
		Ms. Feiteira forwarded letter and figures to Karen Poepoe, Sybil Lopez, Cora Schnackenberg, Lori Buchanan CSH thanked Ms. Feiteira 5 November 2021
Greaney, Malia	<i>Kama 'āina</i> of Pālā'au	Letter and figures sent via email 5 November 2021 Ms. Greaney granted CSH permission to include summary from previous CIA
Nakahashi, Ikaika	Cultural Historian	Letter and figures sent via email 4 November 2021 Mr. Nakahashi replied via email 10 November 2021 suggesting utilizing the media to solicit information. Mr. Nakahashi also recommended meeting with "native tenants and people that currently live or previously lived in the <i>ahupua 'a</i> " CSH replied via email 10 November 2021
Phillips, Kealana	Burial Sites Specialist	Letter and figures sent via email 4 November 2021 Mr. Phillips replied via email 5 November 2021 Mr. Phillips forward request to members of Molokai Island Burial Council CSH thanked Mr. Phillips via email 8 November 2021
Purdy-Avelino, Kilia	<i>Kama 'āina</i> , daughter of Aunty Kammy	Letter and figures sent via email 5 November 2021 Ms. Purdy-Avelino granted CSH permission to include summary from previous CIA
Soares, Niles	Molokai Burial Council	Mr. Soares called CSH 15 December 2021 CSH returned phone call 16 December 2021 to answer Mr. Soares questions. Mr. Soares offered to ask others if they would like to participate.

4.4 *Kama'āina* Interview Discussions

4.4.1 Kilia Purdy-Avelino and Justin Avelino

4.4.1.1 Interview synthesis

Kilia Purdy-Avelino was originally born on O'ahu but lived in Ho'olehua, Moloka'i for most of her life. She is the fourth generation of her family to live in the Ho'olehua-Pālā'au Homestead. Her grandmother was one of the first Native Hawaiians to move into the Ho'olehua-Pālā'au Homestead. Now an educator, Mrs. Purdy-Avelino teaches multiple grade levels (K-12), college-level courses, and is currently obtaining her doctoral degree.

Justin Avelino was born and raised in Hilo, but has lived in Moloka'i for many years with his wife, raising their children on the homestead. Mr. Avelino is dedicated to Hawaiian cultural protocols, which he first learned from his grandfather. He is an avid hunter and the unofficial caretaker of the lands in Ho'olehua-Pālā'au Homestead, helping out his fellow neighbors when they are in need, farming their lands, and guarding knowledge of various sacred sites and *mo'olelo* of Moloka'i.

On 5 November 2021, CSH reached out to Kilia Purdy-Avelino regarding the CIA for the DHHL Ho'olehua Scattered Lots Subdivision and Improvements project. Mrs. Purdy-Avelino granted CSH permission to reuse information she previously shared for a cultural impact assessment pertaining to the Pālā'au and Ho'olehua Ahupua'a. Mrs. Purdy-Avelino and Mr. Avelino discussed the various fruits and vegetables grown on their property in the Ho'olehua-Pālā'au Homestead and also shared their *'ike* regarding *mo'olelo* and *wahi pana* of the adjacent *ahupua'a* of Ho'olehua and Nā'iwa. A summary of the interview is included in its entirety in Appendix B .

4.4.1.2 Individual's specific traditional cultural practice and its connection to the proposed project area and greater *ahupua'a*

Mrs. Purdy-Avelino shared that the original lease for their *'ohana's* homestead property (located in the *mauka* region of the Ho'olehua-Pālā'au Homestead) contained 40 acres of land. The original lease owner, Aunt Gladys (Mrs. Purdy-Avelino's relative), leased her lands to aid the pineapple company (either Dole or Del Monte), however, the pineapple company pulled out and Aunt Gladys returned a portion of her lands back to DHHL and kept five acres.

In 1980, when Mrs. Purdy-Avelino's father obtained the land from his cousin Frank Kupau, who was Aunt Gladys' son., there was an acre of approximately 50 macadamia nut trees. Mrs. Purdy-Avelino believes they were planted during the 1920s. Now, there is a grove of macadamia nut trees that cover roughly five acres.

Mrs. Purdy-Avelino's *'ohana* received the remaining 35 acres of land in the original lease just a few months ago. With the increased land acreage, they plan to help reforest the lands, which will help the rain return to the area.

Currently, Mrs. Purdy-Avelino and Mr. Avelino grow various fruits and vegetables such as *'ulu* (breadfruit), *kalo* (taro), papaya, *mai'a* (banana), mango, and macadamia nut trees which feeds their family, as well as their livestock of pigs and chickens. Mrs. Purdy-Avelino also mentioned that her grandmother grew various floral plants on their property such as *'ākulikuli* (*Sesuvium portulacastrum*), *'awapuhi* (wild ginger, *Zingiber zerumbet*), *kīkā* (cigar flower, *Cuphea ignea*), *kīkānia* (*Solanum capsicoides*), and *kupaloke* (tuberose), which are used to make *lei* (garland). Mrs. Purdy-Avelino's father also grows *gardenia*, orchids (*Orchidaceae*), bird-of-paradise (*Strelitzia reginae*), and *anthuriums*.

Mrs. Purdy-Avelino also recalled that during her childhood days, her father would take her down *makai* of Nā'iwa (toward the project area) to pick up *'uala* from an *'ohana* who lived in the area. She remembers eating it raw in the back of the truck.

4.4.1.3 Legends, stories, or chants associated with the individual's traditional cultural practices and their relationships to the proposed project area and greater *ahupua'a*

Mrs. Purdy-Avelino shared a *mo'olelo* she learned from her cousin about how the land of Nā'iwa received its name. According to the *mo'olelo*, a mother from Kalaupapa (located east of Pālā'au), who was a very skilled *lei* maker, made a *lei* out of the *'iwa'iwa* (maidenhair fern) fern for her son who wanted to compete in a *lei* making competition held at the Makahiki festival and impress a *wahine* (woman) he was admiring. The son gave this *lei* to the *wahine* who loved it and wore it wherever she went. As she traveled, the spores from the *'iwa'iwa* ferns in the *lei* would fall and scatter across the land. Hence the name, Nā'iwa.

4.4.1.4 Individual's knowledge of cultural sites and *wahi pana* within the proposed project area and greater *ahupua'a*

Mr. Avelino emphasized the importance of understanding and respecting the spirituality and history of the land. He shared one of the lessons he learned while hunting is to open yourself to your surroundings. He pointed out that there are many ways in which nature and spirits communicate with us and when you are open to receiving such information, you will gain a deeper connection to the land. He recalled coming across areas while hunting where he could "feel the *mana* of the land" or sense that the area was "not *pono* [goodness]." In Ho'olehua, he recalled encountering certain areas and/or certain objects, like *pōhaku*, that he knew were sacred. He mentioned coming across two *pōhaku* in the shape of a chair while following hunting missions.

Mr. Avelino also mentioned the *makahiki* (ancient festival) ground which are located in Nā'iwa. He shared a *mo'olelo* which stated that one of the chiefs of Moloka'i looked toward the mountains of Nā'iwa and noticed a cloud shaped like a finger which was pointing to a piece of land. A council of chiefs decided the area as the place that Makahiki ceremonies would be held. Makahiki ceremonies and activities continue to take place in this area and items such as *'ulu maika* have been discovered. Mr. Avelino stressed that it is vital that no work be done to this area.

4.4.1.5 Individual's comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and greater *ahupua'a*

Mrs. Purdy-Avelino shared her concerns related to the proposed project including:

- 1) Remember that *kūpuna* are always here in spirit and they will show themselves in various ways. It is up to us to make sure that we open ourselves up to receive their information.
- 2) Be mindful of sacred sites within and around the vicinity of work.
- 3) Do not *hana 'ino* (harm) the land or anything that may be disturbed.

Mrs. Purdy-Avelino recommends that a cultural monitor should be on site during any work to help provide guidance in regard to Hawaiian sense of place, protection of sacred areas and objects, and to be a voice for *kūpuna*.

Mrs. Purdy-Avelino supports more homestead lots being developed so more homesteaders can get off the waitlist and into homes, however, she stressed that as more homestead developments occur (whether it may be from DHHL or homesteaders developing their own plots), we all need to make sure to continue to protect sacred sites.

Mrs. Purdy-Avelino also shared her concerns regarding the overall process of outreach to Native Hawaiian communities and how the information received is used.

- 1) Please make sure to reach out to Native Hawaiian communities in multiple ways and not just by an announcement in a newspaper or on the internet. That way, *kānaka* can be more *maka'ala* (aware) of proposed projects that are happening in their community.
- 2) Please do not utilize Native Hawaiians and the *'ike* that is shared just to "check a box." Native Hawaiians are sharing their *'ike* of their ancestors to help with the proposed projects and to provide a Hawaiian perspective of the land, its history, and its spirit. Our words and concerns carry *mana*, and it is important that they are heard and the suggestions given are followed through.

- 3) Full disclosures of project and project details are a must. Developers need to provide transparency to work that will be conducted as well as any other supplemental or follow-up work that may be conducted.

4.4.2 Malia Lani Forbes Greaney

4.4.2.1 Interview synthesis

On 5 November 2021, CSH reached out to Malia Greaney regarding the CIA for the DHHL Ho'olehua Scattered Lots Subdivision and Improvements project. Ms. Greaney granted CSH permission to reuse information she previously shared for a cultural impact assessment pertaining to the Pālā'au and Ho'olehua Ahupua'a. In 2022, Ms. Greaney provided additional *'ike, no 'ono 'o, no 'ono 'omua, ho 'oka 'ina mana 'o* (knowledge and experience hence learning, thoughts, considerations, anticipations, composed ideas) on Hawaiian traditions and history of Ho'olehua, and Pālā'au and Nā'iwa Ahupua'a in context of ancient Hawaiians, recent past, current situation, and future possibilities for Hawaiians living on homesteads in central Moloka'i. She also shared information regarding continuous native practices of the area and some areas of concern related to the proposed project. A summary of the interview is included in its entirety in Appendix B .

Ms. Greaney recognizes her *kupuna* as her main source of Moloka'i knowledge. She traces her genealogy on Moloka'i for centuries through both maternal grandparents who helped raise her.

Ms. Greaney's *'ohana* has resided on the same homestead for near a century. She continues to live and farm with her children who are fifth generation homesteaders. She inherited her homestead through her *manaleo* (Hawaiian is the first language) *tutu* lady (grandmother). Her grandmother was born in Waialua Valley in Mana'e, also known as East End. Waialua's river still flows after sustaining many generations of her *'ohana* on extensive *lo 'i* that produced high yields and quality of *kalo*.

One hundred years ago, Ms. Greaney's pure Hawaiian maternal great-grandmother, Emily Lani Cathcart (Maliu), moved her young family from Waialua Valley to the shores of Kalamaula, and became a participant in the pilot project for the first homesteads in Hawai'i. Kalamaula was the test site for what would soon expand to Ho'olehua, then be replicated throughout Hawai'i after passage of the Hawaiian Homes Commission Act, a federal project in the Territory. Her grandma's mother settled at the shoreline approximately 100 yards from Kapuāiwa Coconut Grove, which her grandpa's grandfather had planted for King Kamehameha V. Ms. Greaney noted that in this protected place of royalty, *puna* (fresh water spring) filled small clear pools and shift close underground in continuous flow ending offshore.

Ms. Greaney's grandfather was born in the central *mauka* lands of Kala'e which includes the uppermost portions of Nā'iwa and other of *ahupua'a*, shown on some family maps as long land divisions with typical tracts from mountain top to wider shoreline and sea. These *ahupua'a* are also mapped as three detached parcels, when combined they provide varied environments common within *ahupua'a* boundaries and allow sustainable land and ocean-based living with proper stewardship. Her grandfather's pure Hawaiian grandmother, High Chiefess Kalama Waha was raised near 'Ili'ili'ōpae, Hawai'i's second largest *heiau* which is located in Mapulehu, another river valley in Mana'e. She moved to Kalua'aha where she met and wed R.W. Meyer. He was from Germany via Tahiti, and they later created a settlement in Kala'e with their 11 children.

R.W. Meyer was also fluent in Hawaiian, English, and other languages. He held many Moloka'i leadership roles and was instantly appointed Superintendent of Health when the government suddenly began forcibly removing anyone suspected of possibly having Hanson's Disease from their homes and society for quarantine. R.W. Meyer also served Kamehameha IV, Kamehameha V, Princess Ruth Ke'elikolani, and King Kalakaua in various capacities such as managing Moloka'i Ranch. Princess Ruth Ke'elikolani selected Charles Reed Bishop and R.W. Meyer as co-executors of her Will which later made Princess Bernice Pauahi Bishop Hawai'i's largest private land owner and created Kamehameha Schools. Two-thirds of Kalama and R.W. Meyer's land including 285 acres in Nā'iwa and land in Kala'e, Kahanui, Kīpū, and nearby, came from the princesses because of family ties with extremely close relationships, trust and understanding of the *kuleana* (rights, responsibility) to oversee these places that sustain life and fruitfulness of Hawaiian land and people. Ms. Greaney serves on the volunteer board of directors overseeing all remaining Meyer family land and is working toward collaboration with island farmers to create a more sustainable island future.

4.4.2.2 Individual's knowledge of traditional cultural practices of the past within the proposed project area and greater ahupua'a

Ms. Greaney noted that agricultural lease homesteaders have made concerted efforts as individuals, families, and groups with expert agricultural assistance to return to historic cultivation of native plants, despite difficulty obtaining public water access. She stated Ho'olehua homesteaders are again successfully growing plants vital to Hawai'i culture and bringing back to larger scale crops like dryland *kalo*, 'uala, and 'awa (kava; *Piper methysticum*) through continued propagation. She stressed that these and other plant resources are critically important because they are necessary in Hawaiian cultural traditions. Ms. Greaney believes the highest percentage of Hawaiians on Moloka'i Island have helped residents perpetuate endangered plant-based interest, knowledge, and practices.

4.4.2.3 Individual's specific traditional cultural practice and its connection to the proposed project area and greater ahupua'a

Ms. Greaney continues to raise animals—and consistently pigs—and to grow crops on her homestead. Her 'ohana has a tropical fruit orchard and has grown and processed many diversified crops such as sugar, coffee, corn, potatoes. Ms. Greaney sees her homestead as the perfect place to promote indigenous health knowledge and continues to identify medicinal plants in the area which can be gathered or cultivated. Her mother, Yola Forbes, also grew food and medicinal trees on their homestead.

Ms. Greaney also noted that documents and family photos from the 1920s and forward record DHHL's earliest farmers raised pigs and planted crops in the arid conditions of central Moloka'i. She also mentioned that *mo'olelo* tell of *puna* (fresh water spring) once located behind the house of a third-generation homesteader on very dry Olo'olo Lane.

Ms. Greaney pointed out that Moloka'i's history of food abundance gave it the enduring name *Moloka'i 'Āina Momona* (rich, fat land). She noted that as recently as a 150 years ago, Moloka'i was known for large quantities of agricultural and value-added exports such as *kalo* grown in *lo'i* and dry land *māla* (gardens) along with 'uala and other food sources. Similar to current population numbers, in the past Moloka'i routinely produced food in excess of its own needs and helped feed

the other islands. An elder explained to Ms. Greaney that so abundant was food on Moloka'i that for hundreds of years Moloka'i sent food grown in back valleys over the mountains to Kamalō and across the channel to Maui. Today only 2% of food purchased on island is from Moloka'i, showing the island is capable of providing much more of Hawai'i's agriculture products if resources like water are prioritized accordingly.

This abundance also included aquaculture with Moloka'i having the largest number of *loko 'ia* in Hawai'i including over 60 that are still recognizable. Ms. Greaney was first taken to fishponds alone by her grandfather who was proud to share this purely Hawaiian innovation to feed the people. As an adult she worked for many years with restoration efforts. Ms. Greaney hopes more people will join restoration efforts for abundance through restoration of aquaculture in Moloka'i *loko 'ia* and help support current *mahiai* (farmers) of Ho'olehua Homesteads, and development of the next generations.

Ms. Greaney continues cultural practices which are important to physical and spiritual wellness. She noted that Nā'iwa was widely known as an area of physical and spiritual healing, attracting injured, sick, and dying Hawaiians with their caregivers and loved ones in the past. At the start DHHL's development, the first medical doctor's clinic was placed as closely as possible to the ancient healing area. Shingle Hospital, Moloka'i's first hospital, opened a decade after the clinic and was also located as closely as possible to Ho'olehua's northernmost side approximating the middle of the Nā'iwa *ahupua'a*.

Ms. Greaney credits being raised in the place of centuries of Hawaiian healing for her teen choice of a health career and decades as a Registered Nurse (RN). Ms. Greaney learned traditional medicine, receiving some of her grandmother's Hawaiian knowledge and continued under many other Hawaiian health practitioners and *kauka* (doctors). Her Auntie Charlene Tinau, a pure Hawaiian traditional healer with shared genealogical ties in Mana'e came nearly every week for years, uniquely blending Hawaiian and western healthcare. She tended their plants, cultivated nearly a century, and shared her knowledge of what to gather for common ailments and emergency applications. She successfully healed bone fractures and many conditions using *la'au lapa'au* (plant-based medicine) for Hawaiians without insurance or preferring traditional medicine.

Ms. Greaney was taught starting at ten years old by her experienced Hawaiian grandfather, later her aunty and many expert Hawaiian healers. Her grandpa was first to teach her how to apply traditional techniques of *lomilomi* (body manipulation) to maintain health and for more effective healing. She was taught by Hawaiian elders in the practice of *ho'oponopono* (Hawaiian conflict resolution), a guided technique for spiritual, self, and interpersonal relationship healing. She noted that unresolved conflict causes stress, physical inflammation, and may lead to severe illness. She has received intensive instruction on how to provide this service for Hawaiian families seeking reconciliation when facing terminal illness. She stressed that a necessary part of all Hawaiian healing methods is prayer and meditation during preparation like planting or gathering medicine and during application, through the healing process until it finishes. Powerful prayers affect body, mind and spirit, and are strengthened by connectedness to the spiritual nature of the place, plants, person being healed, and the healer.

Moloka'i was of the highest spiritual importance to ancient Hawaiians as recognized in one of the island's nicknames, Moloka'i Pule O'o (Moloka'i of powerful prayer). Members of the House of Kamehameha saw Moloka'i as the physical *piko* (naval, center, source) centralizing Hawai'i's

spiritual power which united people and place. The spiritual epicenter of Hawaii drew *ali'i* and champions from outer islands who would travel to this hallowed place to compete for top honors and recognition in the annual Makahiki competitions. All manner of strength and skill were tested in physical, strategic, intelligence, talent, and metaphysical challenges. Makahiki was an integral part of life that allowed for peace, shared abundance, and continuation of the Hawaiian race. Each island had Makahiki grounds dedicated to Lono where offerings would be made in reverence, appreciation, and hopes of an abundance of food in the coming year. Lono is one of the four main Hawaiian gods with Kū (God of war), Kāne (creator of man), and Kanaloa (God of the ocean) with influences on time, spiritual and physical realms; inanimate things, plants, animals, and people; lesser gods, and each other. Varying powers and characteristics of each god have great complexity, as do their relationships, and in different ways and times may be oppositional, parallel, complementary, and overlapping. In the overarching belief system of Native Hawaiian life, influences of Lono were life sustaining, including for abundant agricultural crops. To this day the processional moves east to west to the sacred grounds of the god Lono, publicly known simply as Nā'iwa.

Old Hawaiian historians recorded genealogies tied to the original Makahiki grounds. This includes the *ali'i* credited for starting all Makahiki practices in Hawai'i. He was called by the name of Lonoikamakahiki. One account says he came to Moloka'i from Hawai'i Island and from among all areas in Hawai'i identified much earlier as high holy places, he decided this specific area was to be the primary place in the islands for honoring Lono. Early land records specify Lono descendants as *konohiki* and title holders in the region through the nineteenth century. The final third of the regional lands owned by R.W. Meyer and Kalama Waha, beyond the Nā'iwa land, did not come from the princesses but rather 1,060 acres came from Lonowahine *ali'i* in 1883.

Ms. Greaney mentioned there is an ancient *hula* site remaining in the Nā'iwa Makahiki grounds near and above her homestead. Moloka'i is the birthplace of the enduring ancient traditions of Kapo and Laka. *Hula* is celebrated in Ka Hula Piko, and Lua (a type of dangerous hand-to-hand fighting), for defense is sometimes referred to as a twin or sibling of dance. Ms. Greaney noted that neither practice was restricted to one gender and both perpetuate Hawaiian philosophies of spiritual and physical existence.

Makahiki was so important that it marked time and regulated people's physical and religious life. Ms. Greaney insists no one can authentically recognize or celebrate the true spirit of Makahiki, and the peace and abundance it symbolizes for all of Hawai'i, without also recognizing what began, endured, and exists in this particular physical space. It is a critical part of Moloka'i's role and record in history prior to Contact, including land use, religious culture, and the daily lives of the Hawaiian people. It played an important part in continuance of intergenerational and communal practices near extinction at the time of the Hawaiian Renaissance; and because of Moloka'i it is again firmly rooted in annual calendars and celebrations statewide.

Ms. Greaney pointed out that the original Makahiki lands are also the only place of continuous practice of the social, physical, emotional and spiritual ritual, healing, and enlightenment associated with Makahiki. She noted that cultural experts on Moloka'i still observe Makahiki with formal protocol, and all youth learn the traditional practices of their ancestors. Other islands ceased to honor these practices while the ancient knowledge continued only on Moloka'i. School students throughout Hawai'i have traveled for nearly a decade to participate in our Makahiki competitions,

including decades of annual representatives from Kamehameha Schools. It remains one of the island's main annual social celebrations with generations carrying memories of Hawaiian sportsmanship as competitors and spectators.

4.4.2.4 Different natural resources associated with the individual's specific traditional cultural practice

Ms. Greaney stated that Hawaiians intimately understood the relationship of people and *wai* with a necessity to maintain and protect clean water systems for health, wealth, and survival. She noted Ho'olehua, including Nā'iwa, is historically known for its dry and barren land, with little to no water available. She mentioned that homestead residents have been faced with high costs of water and limited access to water. She stated the proposed project is important as it will provide homestead residents the opportunity to use land for agricultural purposes; however, she stressed that it is also important to ensure access to the appropriate amount of water and at a reasonable cost. If this is not possible, residents who move into these agricultural lots may have difficulty growing crops.

Ms. Greaney also noted that during the months of Makahiki, southerly Kona storms are associated with Lono. Winter storms are stronger and more frequent, bringing rains to much dryer Leeward sides of southwest shores including the low elevations of Nā'iwa and Pālā'au. Most months of the year, prevailing trade winds blow from the northeast windward side, carrying rains of Kahanui, Nā'iwa, and Pālā'au in upland Kala'e inland from the cliff tops to the upper regions of the Ho'olehua homesteads at the mid-elevation of Nā'iwa and Pālā'au. These rains lighten as they travel to the Pālā'au and Nā'iwa foothills of Ms. Greaney's homestead. The windward rains largely dissipate before reaching homesteads in the southern and western halves of the slowly sloping lowlands. In early morning hours, *ua poko* (passing showers) often travel along a small gulch along the length of her homestead.

Ms. Greaney stated that an immense *hau* (*Hibiscus tiliaceus*) tree has thrived in Nā'iwa/Pālā'au for unknown generations, including the last four of her family, and helped them to flourish. She believes the tree a living linkage to the past allowing continuation of endangered native practices and accompanying understanding. The ancient tree is located at the lower Makahiki grounds rather close to the cliff line.

The *hau* provides a windbreak, helping new crops grow without damage, reducing erosion from water coming down the gulch, and many more provisions. It is an irreplaceable source for of plant parts with medicinal properties for *la'au lapa'au* and tools for *lomilomi* made from *hau*'s strong, light branches with beneficial bends. It is also her 'ohana's main resource to make *ko'i* (adze) for hand carving *papa he'e nalu* (surfboards).

Making surfboards in the way they were first made is a source of pride for Ms. Greaney's 'ohana. Surfing was always their most enjoyed family bonding activity. Ms. Greaney noted that making surfboards involves several plants found in this area of Moloka'i. She pointed out there are very few families that still know and can pass on this traditional practice.

Her 'ohana also all have a hand carving *papa ku'i 'ai* (pounding board such as to make *poi*) with handmade *pōhaku ku'i 'ai* (food pounding stone) for the preparation of many traditional and common foods. Ms. Greaney stressed it is very important that appropriate prayers are offered in creation of both types of *papa* (board), *pōhaku*, and all other implements. She also emphasized

that emotions and interactions must be positive because it is imbued in the creation process and will accordingly effect people using the product.

Hau can also be used for building fires. *Hau*'s straight branches provide light, strong wood for making spears. Ms. Greaney mentioned her son enjoys the sport of throwing and blocking spears which he was taught by Hawaiian *lua* elders, and he makes them from *hau* and other homestead trees. Young *hau* branches are also flexible enough to make the excellent kites flown during Makahiki. Ms. Greaney recalled frequently flying such kites as a girl upon the reliable trade winds over their rolling hills in this area of Nā'iwa/Pālā'au. Cordage made of *hau* was also used to make bows for hunting and sport, and for sling shots, the most preferred weapon of war for its long range and lethal power.

Ms. Greaney also noted the initiation of war was bound to spiritual guidance, and branches of *hau* were placed in front of advancing armies by a *kahuna* while others prayed throughout the battle. In the end the victor's *hau* remained standing. *Hau* is also used in other spiritual practices, being important in *heiau* and *hula*. It was so integral to Hawaiian ritual and daily life that permission from *ali'i* was required to cut one down.

Hau is also included in Hawaiian creation stories involving the great mother of Moloka'i Island, Hina, and two of her demi-god sons, Maui and Kamapua'a. In native religion, Kamapua'a (the pig-God) oversees fertility, he is recognized on "pig alters" that mark *ahupua'a* boundaries visited by priests in Makahiki protocol, and he is appears in many stories with the god Lono.

4.4.2.5 Legends, stories, or chants associated with the individual's traditional cultural practices and their relationships to the proposed project area and greater *ahupua'a*

Ms. Greaney stated that a large *hau* tree at the gulch edge supports oral and written histories on the origins of Ho'olehua in connection with the Nā'iwa Makahiki grounds. She mentioned *kupuna* recorded that an ancient *hau* tree identifies the location where a beloved *ali'i* named Lehua lived in Ho'olehua. Some believe she became the namesake of the area she overlooked. Ms. Greaney also discussed the more well-known naming history in which a beautiful *hula* dancer named Lehua was given a *lei* made of Nā'iwa fern by a Makahiki champion. They married and the fern which had only grown in his Kalaupapa home continued to spread from the cliff line, giving Nā'iwa its name.

Ms. Greaney also shared that another source of Ho'olehua's name is the soldiers leading the advance in war. She heard old stories of Night Marchers (spirits of dead Hawaiian warriors) traveling their path from mountains in Kala'e toward the Makahiki grounds. They then make their way along the same boundary gulch toward the high school gym on Farrington Avenue. Some Hawaiians still testify to having seen them in this area as children. Kamehameha rested his troops in the food-abundant and spiritual Moloka'i uplands while recuperating and training before going on to successfully capture O'ahu.

Ms. Greaney recalled stories of Pu'u Pe'elua (Caterpillar Hill) in Ho'olehua. Her mother shared that in certain years in the 1940s and 1950s, the entire lower area of Nā'wa would be covered with caterpillars to the extent they could not walk to school as children without crushing them underfoot. *Mo'olelo* about this area of central Moloka'i include large caterpillars, indicating they have come at various times during history. Ms. Greaney also discussed Kualapu'u (Sweet Potato Hill). She recalled that when she was in school the whole area around Kualapu'u was planted in pineapple,

and from 50 years before that nearly all of Ho‘olehua’s homestead area was also used for growing pineapples. She mentioned that in the 1980s, there were so many small black beetles called “pineapple bugs” that electric zappers were placed in the school cafeterias to keep the numbers down, however, students still had to cover their plates or they would have them in their food. They disappeared in the years after the pineapple companies left.

Ms. Greaney mentioned that fruit flies have caused serious damage to fruit crops for decades. She noted her ‘ohana participated in research to reduce their numbers in the 1980s and early 2000s. She also mentioned that over the past decade, there have been years when locusts and large black moth populations exploded such that a hundred could easily end up in the house and cover the lights if any doors were opened after dark. They caused major agricultural damage by eating and stinging the fruit, and significantly reduced viable crop yields. She isn’t sure if the more recent spikes in pest populations have been explained, whether they occurred naturally, were exacerbated by man’s actions, or if any of the infestations will occur cyclically.

4.4.2.6 Individual’s comments or thoughts on the potential impacts the proposed project may have on ongoing traditional cultural practices and natural resources within the proposed project area and greater ahupua‘a

Ms. Greaney sees great potential in reducing disproportionately high Hawaiian mortality and morbidity rates with traditional native diet, lifestyle, and healing techniques. She believes this will be eagerly adopted by residents of this area when it is affordable and readily available, as more Hawaiians are looking to the past for knowledge on how to have a high quality of life. She noted homesteaders interested in growing medicinal plants as crops have the benefit of high demand from people of all cultures who seek alternatives to “big pharma” and are willing to invest in their health by purchasing products offering more natural healing methods. She also noted that increasing homesteader’s income generation this way has the potential to raise socio-economic status and quality of life, continue cultural practices of this area, and maintain a rural community and traditional lifestyles.

Ms. Greaney expressed some hesitation regarding agricultural and housing development in the proposed project areas related to assuring new lessees would be aware of past use of the land and any possible health effects it may have directly on those using the land as well as for those who consume food grown in these and nearby areas. She pointed out that Hawaiian Home Lands were leased to plantations for a century and a half, and land in all areas continues to be leased to private companies including sugar, pineapple, and coffee plantations, as well as for research by large agricultural bioscience companies for designing products for pest control.

Ms. Greaney mentioned her master’s thesis in 2001 looked at possible public health effects of the copious pesticide use of chemicals that were made illegal in the U.S. which she found were applied by the pineapple plantations. She does not know what harsh chemicals may have been used by the other agri-businesses. Ms. Greaney strongly suggests the soil be well tested by third-party professionals for any presence of harmful chemical residue possibly remaining in the soil. This is a good safety precaution for farmers. She also suggested future studies look at nearshore areas off Pālā‘au to assess the presence of chemicals from runoff and any impacts.

Ms. Greaney insists that due to the special significance of this place in Hawaiian culture, historically and continuously, the homestead community should be notified well in advance of any

proposed developments that will occur on the Makahiki lands. She also insists homesteaders be individually consulted with if any proposed development involves their land since many lots have been occupied by the same family for a century.

4.4.2.7 Individual's knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and greater *ahupua'a*

Ms. Greaney mentioned there are three *wahi pana* located near the center of Moloka'i above the Kalaupapa cliff line, also called *piko*. At the highest elevation of Nā'iwa is Pu'uolelo (speaking hill). It is easy to identify from lower lands of Ho'olehua and Nā'iwa by a grove with pines trees which was planted by Mr. Meyer at the summit in the early 1800s. To the east is the high precipice, Kaohu (adorned in fog) and in the middle is Keālia Lake, commonly called Meyer Lake, one of few naturally occurring freshwater lakes in Hawai'i. These three *wahi pana* form a line that passes procreative Ka'ule o Nanahoa (Phallic Rock), the female fertility partner *pōhaku* sometimes called Waihuehue, and other sites of regeneration. Birthing stones for delivery of babies are still located in the area.

Ms. Greaney noted that Homelani and Ho'olehua cemeteries, both chosen by Hawaiians as the final resting place for their beloved *'ohana*, are located in proximity to *wahi pana*. She was also informed by *kupuna* about a *lele* (place of transition to the afterlife for souls/spirits) above her homestead where the physical and spiritual realm connect. She also mentioned a mapped *heiau* exists in that location.

4.4.2.8 Individual's comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and greater *ahupua'a*

Ms. Greaney stated that if there are any future developments, it is important that in depth archaeological inventory surveys be conducted as it is known that many artifacts still exist in the *mauka* and central regions of Nā'iwa and Pālā'au. She pointed out that though not inhabited by such a large constant population year round like other areas near the coast and freshwater, this area supported thousands of Hawaiians who regularly occupied it for seasonal, ceremonial, celebratory, and other prime purposes.

She mentioned many *pōhaku* implements including *'ulu maika* for ceremonial competitions and *ma'a* (slingshot stones) for battles of sport and war have always been found in the area of her homestead and continued to be unearthed to this day. She noted more artifacts have been found recently and numerous more are likely to be present because of past heavy use of the area, however, they may not be immediately recognized if they do not have the obvious shape of *'ulu maika*.

Section 5 Cultural Practices and Cultural Resources Identified During Consultation as Associated with the Project Area/ Greater Ahupua'a

5.1 Agricultural and Gathering Practices

On their homestead property, located in the *mauka* region of the Ho'olehua-Pālā'au Homestead, Mrs. Purdy-Avelino and her husband Justin Avelino grow various fruits and vegetables such as 'ulu, kalo, papaya, mai'a, mango, and macadamia nut trees which feed their 'ohana, as well as their livestock of pigs and chickens. Mrs. Purdy-Avelino's grandmother also grew various floral plants such as 'ākulikuli, 'awapuhi, kīkā, kīkānia, and kupaloke which are used to make lei. On their homestead today, Mrs. Purdy-Avelino's father also grows gardenia, orchids, bird-of-paradise, and anthuriums. During her childhood, her father also took her down makai of Nā'iwa to pick up 'uala from an 'ohana who lived in the area. She recalled eating it raw in the back of the truck.

Recently, Mrs. Purdy-Avelino's 'ohana received the 35 acres of land that was in their original lease but had been returned to DHHL. They plan to reforest the lands which will also help the rain return to the area.

Ms. Greaney continues to raise animals including pigs and grow crops on her homestead. Her 'ohana also has a tropical fruit orchard and has grown and processed many diversified crops such as sugar, coffee, corn, potatoes. Ms. Greaney also continues to identify medicinal plants in the area which can be gathered or cultivated. Her mother, Yola Forbes, also grew food and medicinal trees on their homestead.

Ms. Greaney also noted that documents and family photos from the 1920s and forward record DHHL's earliest farmers raised pigs and planted crops in the arid conditions of central Moloka'i. She also mentioned that mo'olelo tell of puna (fresh water spring) once located behind the house of a third-generation homesteader on very dry Olo'olo Lane.

Ms. Greaney noted that agricultural lease homesteaders have made concerted efforts to return to historic cultivation of native plants, despite difficulty obtaining public water access. She stated Ho'olehua homesteaders are successfully growing plants vital to Hawai'i culture and bringing back to larger scale crops like dryland kalo, 'uala, and 'awa. She stressed that these and other plant resources are critically important because they are necessary in Hawaiian cultural traditions. Ms. Greaney believes Moloka'i's highest percentage of Hawaiians has helped residents perpetuate endangered plant-based interests, knowledge, and practices.

Ms. Greaney pointed out that Moloka'i's history of food abundance gave it the enduring name *Moloka'i 'Āina Momona* (rich, fat land). She noted that as recently as a 150 years ago, Moloka'i was known for large quantities of agricultural and value-added exports such as wet and dry land kalo, 'uala, and other foods. She recalled a kupuna explained that food on Moloka'i was so abundant that Moloka'i sent food grown in back valleys over the mountains to Kamalō and across the channel to Maui for hundreds of years. She also mentioned that currently, only 2% of food purchased on island is from Moloka'i, showing that the island is capable of providing much more of Hawai'i's agricultural products if resources like water are prioritized accordingly.

Ms. Greaney also recalled that when she was in school the whole area around Kualapu'u was planted in pineapple, and from 50 years before that nearly all of Ho'olehua's homestead area was also used for growing pineapples.

Ms. Greaney stated an immense *hau* tree has thrived in Nā'iwa/Pālā'au for unknown generations, including the last four of her family, and helped them to flourish. She believes the tree is a living linkage to the past allowing continuation of endangered native practices and accompanying understanding. The ancient tree is located at the lower Makahiki grounds rather close to the cliff line.

Ms. Greaney shared the numerous uses of the *hau* tree. She stated that the *hau* tree provides a windbreak, helping new crops grow without damage, reduces erosion from water coming down the gulch, and many more provisions. *Hau* is also an irreplaceable source for plant parts with medicinal properties for *la'au lapa'au* and tools for *lomilomi* made from *hau*'s strong, light branches with beneficial bends. It is also her 'ohana's main resource for making *ko'i* for hand carving *papa he'e nalu*. She noted that making surfboards involves several plants found in this area of Moloka'i. *Hau* can also be used for building fires. *Hau*'s straight branches provide light, strong wood for making spears. Young *hau* branches are also flexible enough to make the excellent kites flown during Makahiki. Cordage made of *hau* was also used to make bows for hunting and sport, and for sling shots, the most preferred weapon of war for its long range and lethal power.

Ms. Greaney also noted the initiation of war was bound to spiritual guidance; branches of *hau* were placed in front of advancing armies by a *kahuna* while others prayed throughout the battle and in the end only the victor's *hau* remained standing. *Hau* is also used in other spiritual practices, being important in *heiau* and *hula*. It was so integral to Hawaiian ritual and daily life that permission from *ali'i* was required to cut one down.

Hau is also included in Hawaiian creation stories involving the great mother of Moloka'i Island, Hina, and two of her demi-god sons, Maui and Kamapua'a. In native religion, Kamapua'a (the pig-God) oversees fertility, he is recognized on "pig alters" that mark *ahupua'a* boundaries visited by priests in Makahiki protocol, and he is included in many stories with the god Lono.

5.2 Marine Resources

Ms. Greaney mentioned Moloka'i has the largest number of *loko 'ia* in Hawai'i including over 60 that are still recognizable. She recalled being taken to fishponds alone by her grandfather who was proud to share this purely Hawaiian innovation to feed the people. As an adult, she worked for many years with restoration efforts. Ms. Greaney hopes more people will join restoration efforts for abundance through restoration of aquaculture in Moloka'i *loko 'ia*.

5.3 Recreational Activities

Ms. Greaney stated surfing was always her 'ohana's most enjoyed family bonding activity. She noted that making surfboards in the way they were first made is a source of pride for them. She pointed out there are very few families that still know and can pass on this traditional practice.

Ms. Greaney mentioned that her son enjoys the sport of throwing and blocking spears. He was taught by Hawaiian *lua* elders, and he makes them from *hau* and other homestead trees. Ms.

Greaney recalled frequently flying kites as a girl upon the reliable trade winds over their rolling hills in this area of Nā'iwa/Pālā'au.

5.4 *Mo'olelo and Wahi Pana*

Mrs. Purdy-Avelino also shared a *mo'olelo* told to her by her cousin regarding the naming of the land of Nā'iwa. According to the *mo'olelo*, a mother from Kalaupapa, who was a very skilled *lei* maker, made a *lei* out of the 'iwa'iwa fern for her son who wanted to compete in a *lei* making competition held at the Makahiki festival and to impress a *wahine* he admired. The son gave this *lei* to the *wahine*. She would wear it wherever she went and the spores from the 'iwa'iwa ferns in the *lei* would fall and scatter across the land.

Mr. Avelino also shared a *mo'olelo* regarding how the Makahiki Grounds was selected. According to the *mo'olelo*, a chief of Moloka'i looked toward the mountains of Nā'iwa and noticed a cloud shaped like a finger which was pointing to a piece of land. A council of chiefs gathered and decided the Makahiki ceremonies would be held in that area. To this day, Makahiki ceremony and activities continue to take place there and items such as 'ulu maika have been encountered in this area.

Ms. Greaney also mentioned many *pōhaku* implements including 'ulu maika for ceremonial competitions and *ma'a* for battles of sport and war have been found in the area of her homestead and continue to be unearthed to this day. She noted more artifacts have been found recently and numerous more are likely to be present because of past heavy use of the area, however, they may not be immediately recognized if they do not have the obvious shape of 'ulu maika.

Ms. Greaney noted that as the spiritual epicenter of Hawai'i, Moloka'i drew *ali'i* and champions from outer islands who would travel to this hallowed place to compete for top honors and recognition in the annual Makahiki competitions. Makahiki was an integral part of life that allowed for peace, shared abundance, and continuation of the Hawaiian race. Each island had Makahiki grounds dedicated to Lono where offerings would be made in reverence, appreciation, and hopes of an abundance of food in the coming year. To this day the Makahiki processional moves east to west to the sacred grounds of the god Lono, commonly known simply as Nā'iwa.

Ms. Greaney mentioned that old Hawaiian historians recorded genealogies tied to the original Makahiki grounds including Lonoikamakahiki, the *ali'i* credited with starting all Makahiki practices in Hawai'i. One account says he came to Moloka'i from Hawai'i Island and from among all areas in Hawai'i identified much earlier as high holy places, he decided this specific area was to be the primary place in the islands for honoring Lono. Early land records specify Lono descendants as *konohiki* and title holders in the region through the nineteenth century.

Ms. Greaney mentioned there is an ancient *hula* site remaining in the Nā'iwa Makahiki grounds near and above her homestead. Moloka'i is the birthplace of the enduring ancient traditions of Kapo and Laka. *Hula* is celebrated in Ka Hula Piko, and *lua* for defense is sometimes referred to as a twin or sibling of dance. Ms. Greaney noted neither practice was restricted to one gender and both perpetuate Hawaiian philosophies of spiritual and physical existence.

Ms. Greaney stated that Makahiki was so important it marked time and regulated people's physical and religious life. She insists no one can authentically recognize or celebrate the true spirit of Makahiki, and the peace and abundance it symbolizes for all of Hawai'i, without also

recognizing what began, endured, and exists in this particular physical space. It is a critical part of Moloka'i's role and record in history prior to Contact, including land use, religious culture, and the daily lives of the Hawaiian people. It played an important part in continuance of intergenerational and communal practices near extinction at the time of the Hawaiian Renaissance; and because of Moloka'i it is again firmly rooted in annual calendars and celebrations statewide.

Ms. Greaney pointed out that the original Makahiki lands are also the only place of continuous practice of the social, physical, emotional and spiritual ritual, healing, and enlightenment associated with Makahiki in existence. She noted cultural experts on Moloka'i still observe Makahiki with formal protocol, and all youth learn the traditional practices of their ancestors. When other islands ceased to honor these practices the ancient knowledge continued only on Moloka'i. School students throughout Hawai'i have traveled for nearly a decade to participate in our Makahiki competitions, including decades of annual representatives from Kamehameha Schools. It remains one of Moloka'i's main annual social celebrations with generations carrying memories of Hawaiian sportsmanship as competitors and spectators.

Ms. Greaney stated that a large *hau* tree at the gulch edge supports oral and written histories on the origins of Ho'olehua in connection with the Nā'iwa Makahiki grounds. She mentioned *kupuna* recorded that an ancient *hau* tree identifies the location where a beloved *ali'i* named Lehua lived in Ho'olehua. Some believe she became the namesake of the area she overlooked. Ms. Greaney also discussed the more well-known naming history in which a beautiful *hula* dancer named Lehua was given a *lei* made of Nā'iwa fern by a Makahiki champion. They married and the fern which had only grown in his Kalaupapa home continued to spread from the cliff line, giving Nā'iwa its name.

Ms. Greaney also shared another source of Ho'olehua's name is the soldiers leading the advance in war. She heard old stories of Night Marchers traveling their path from mountains in Kala'e toward the Makahiki grounds. They continued along the same boundary gulch toward the high school gym on Farrington Avenue. Some Hawaiians still testify to having seen them in this area as children. Kamehameha rested his troops in the food-abundant spiritual Moloka'i uplands while recuperating and training before going on to successfully capture O'ahu.

Ms. Greaney mentioned there are three *wahi pana* located near the *piko* of Moloka'i above the Kalaupapa cliff line. At the highest elevation of Nā'iwa is Pu'uolelo (speaking hill). It is easy to identify from lower lands of Ho'olehua and Nā'iwa by a grove of pines trees planted by Mr. Meyer at the summit in the early 1800s. To the east is the high precipice, Kaohu (adorned in fog) and in the middle is Keālia Lake, commonly called Meyer Lake, one of few naturally occurring freshwater lakes in Hawai'i. These three *wahi pana* form a line which passes procreative Ka'ule o Nanahoa (Phallic Rock), the female fertility partner *pōhaku* sometimes called Waihuehue, and other sites of regeneration. Birthing stones for delivery of babies are also still located in the area.

Ms. Greaney recalled stories of Pu'u Pe'elua (Caterpillar Hill) in Ho'olehua. Her mother shared that in certain years in the 1940s and 1950s, the entire lower area of Nā'wa would be covered with caterpillars to the extent that they could not walk to school as children without crushing them underfoot. *Mo'olelo* about this area of central Moloka'i include large caterpillars, indicating they have come at various times during history.

5.5 Healing Practices

Ms. Greaney sees her homestead as the perfect place to promote indigenous health knowledge. She continues cultural practices that are important to physical and spiritual wellness.

Ms. Greaney noted that Nā'iwa was widely known as an area of physical and spiritual healing, attracting injured, sick, and dying Hawaiians with their caregivers and loved ones in the past. She pointed out that at the start DHHL's development, the first medical doctor's clinic was placed as closely as possible to the ancient healing area and Moloka'i's first hospital, Shingle Hospital, was also located as closely as possible to Ho'olehua's northernmost side approximating the middle of the Nā'iwa *ahupua'a*.

Ms. Greaney credits being raised in the place of centuries of Hawaiian healing for her teen choice of a health career and decades as a Registered Nurse (RN). Ms. Greaney learned traditional medicine from her grandmother and many other Hawaiian health practitioners and *kauka*. She mentioned her Auntie Charlene Tinau, a pure Hawaiian traditional healer with shared genealogical ties in Mana'e came nearly every week for years, uniquely blending Hawaiian and western healthcare. She tended their plants, cultivated nearly a century, and shared her knowledge of what to gather for common ailments and emergency applications. She successfully healed bone fractures and many conditions using *la'au lapa'au* for Hawaiians without insurance or who preferred traditional medicine.

At ten years old, Ms. Greaney was taught by her experienced Hawaiian grandfather, later her aunt, and many expert Hawaiian healers. Her grandpa was first to teach her how to apply traditional techniques of *lomilomi* to maintain health and for more effective healing. She was also taught the practice of *ho'oponopono*, a guided technique for spiritual, self, and interpersonal relationship healing by *kupuna*. She also received intensive instruction on how to provide this service for Hawaiian families seeking reconciliation when facing terminal illness. She stressed that a necessary part of all Hawaiian healing methods is prayer and meditation during preparation like planting or gathering medicine and during application, through the healing process until it finishes. Powerful prayers affect body, mind, and spirit, and are strengthened by connectedness to the spiritual nature of the place, plants, the person being healed, and the healer.

Ms. Greaney also stressed it is very important that appropriate prayers are offered in creation of both types of *papa*, *pōhaku*, and all other implements. She also emphasized emotions and interactions must be positive because they are imbued in the creation process and will accordingly affect people using the product.

5.6 Religious Activities and Burials

Mr. Avelino discussed the importance of understanding and respecting the spirituality and history of the land. He noted that if you open yourself to your surroundings, listen to the nature and spirits, you can gain a deeper connection to the land. He also mentioned encountering certain areas and/or certain objects in Ho'olehua that he knew were sacred. He shared that while hunting, he came across areas where he felt "the *mana* of the land" or a sense that the area was "not *pono*." He also recalled encountering two *pōhaku* in the shape of a chair while he was hunting.

Ms. Greaney stated Moloka'i was of the highest spiritual importance to ancient Hawaiians as recognized in one of the island's nicknames, Moloka'i Pule O'o (Moloka'i of powerful prayer).

She noted that members of the House of Kamehameha saw Moloka'i as the physical *piko* centralizing Hawai'i's spiritual power which united people and place.

Ms. Greaney noted Homelani and Ho'olehua cemeteries, both chosen by Hawaiians as the final resting place for their beloved *'ohana*, are located in proximity to *wahi pana*. She was also informed by *kupuna* about a *lele* above her homestead where the physical and spiritual realms connect. She also mentioned a mapped *heiau* exists in that location.

Section 6 Summary and Recommendations

6.1 Summary of Cultural Practices and Resources Identified During Background Research and Consultation

Cultural practices and resources identified during background research and consultation are discussed below with cultural practices and resources identified during consultation summarized in Table 5.

6.1.1 Agricultural Practices and Gathering Practices

Archaeological sites identified in the vicinity of the project area provide evidence that lands of Pāla'au Ahupua'a were utilized for habitation, agricultural endeavors, and ceremonial purposes. Archaeological studies (Griffin 1993; Major and Dixon 1995; Summers 1971) have identified pre-Contact dwellings and enclosures (SIHP # 50-60-02-01624, -01623, Summers Site 9, 16, 17), *heiau* and shrines (Summers Site 12, 14, 16, 17), a *kahua maika* (Summers Site 13) and *holua* slide (Summers Site 107).

Historic accounts indicate a possible substantial pre-Contact population (Fornander 1880; Summers 1971), which would have subsisted on dryland agriculture consisting mostly of sweet potatoes. According to Handy (1940:157), "in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua" and "Hoolehua and Palaaau were noted for sweet potatoes in olden days." However, Handy and Handy (1972:283) note homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.

Craigshill Handy and Elizabeth Handy suggest the *ahupua'a* of Pāla'au was among the "many parts of the *kula* [plain, field, open country, pasture] land [that] used to be planted with both sweet potato and dry taro." They note that:

Kualapu'u (sweet potato hill), the name of a hill [...] [located in Nā'iwa], probably refers to sweet potato planting.

It is said that Ho'olehua and Pala'au were noted for sweet potatoes in olden days. Any part of the pineapple lands westward from this section may have been used for sweet potatoes. However, much of western Molokai was formerly covered with trees. [Handy and Handy 1972:517]

Interviewee Malia Greaney recalled that when she was in school the whole area around Kualapu'u was planted in pineapple, and from fifty years before that nearly all of Ho'olehua's homestead area was also used for growing pineapples.

Handy and Handy also cite Southwick Phelps who made an archaeological survey of Moloka'i in 1937:

For Pala'au, Kaluakoi, and Punakou, Ho'olehua, and Nā'iwa, planting areas for yams and sweet potatoes cannot be delimited but it is known that these were grown in that general area and were, with fish, the staples of the inhabitants. [Phelps in Handy and Handy 1972:518]

Table 5. Cultural resources associated with the project area and vicinity identified during consultation

Consultee	Project Area Affiliation	Resource/Type/Area	Concerns/Opinions
Kilia Purdy-Avelino	<i>Kama 'āina</i> of Ho'olehua	<i>Wahi pana</i>	Expressed concerns for sacred sites located in the vicinity of the project area. She emphasized the need to make sure to continue to protect sacred sites.
Justin Avelino	<i>Kama 'āina</i> of Ho'olehua	<i>Wahi pana</i>	Stressed that no work be done to the Makahiki Grounds.
Malia Greaney	<i>Kama 'āina</i> of Pālā'au	Agricultural practices	Ms. Greaney strongly suggests the soil be well tested by third party professionals for any presence of harmful chemical residue possibly remaining in the soil. This is a good safety precaution for farmers.
Malia Greaney	<i>Kama 'āina</i> of Pālā'au	Marine resources	Ms. Greaney hopes more people will join restoration efforts for abundance through restoration of aquaculture in Moloka'i <i>loko 'ia</i> . She also suggested future studies may also look at nearshore areas off Pālā'au to assess the presence of chemicals from runoff and any impacts.
Malia Greaney	<i>Kama 'āina</i> of Pālā'au	<i>Wai</i>	Ms. Greaney expressed concern regarding the availability of water. She noted Ho'olehua, including Nā'iwa, is historically known for its dry and barren land, with little to no water available. She stressed it is also important to ensure access to the appropriate amount of water and at a reasonable cost.

Consultee	Project Area Affiliation	Resource/Type/Area	Concerns/Opinions
Malia Greaney	<i>Kama 'āina</i> of Pālā'au	<i>Wahi pana</i>	Ms. Greaney insists the homestead community should be notified well in advance of any proposed developments that will occur on the Makahiki lands. Ms. Greaney also stated that if there are any future developments, it is important that in-depth archaeological inventory surveys be conducted as it is known that many artifacts still exist in the <i>mauka</i> and central regions of Nā'iwa and Pālā'au.

In the early 1900s, farming cultivation began to include a variety of crops, including watermelon, corn, beans, and others. Farmers also began raising livestock such as pigs, horses, and cattle.

Mrs. Kilia Purdy-Avelino and her husband Justin Avelino grow various fruits and vegetables such as *'ulu*, *kalo*, papaya, *mai'a*, mango, and macadamia nut trees on their homestead property. She recalled that her grandmother grew various floral plants such as *'ākulikuli*, *'awapuhi*, *kīkā*, *kīkānia*, and *kupaloka*, which are used to make *lei*. Today, her father also grows *gardenia*, orchids, bird-of-paradise, and *anthuriums*.

Mrs. Purdy-Avelino also recalled that during her childhood days, her dad would take her down *makai* of Nā'iwa to pick up *'uala* from an *'ohana* who lived in the area which she recalled eating raw in the back of the truck.

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6.1.2 Marine Resources

Traditional accounts mention that Pālā'au was known for its fat *āholehole* and *'ō'io*. According to *mo'olelo*, the ruling chief of Moloka'i, Kahekili, sent one of his chiefs, Kuikai, to Pālā'au to collect fish for his army as they prepared to invade O'ahu (Ne 1992:47).

Catherine Summers (1971:77) noted that Poho'ele pond (Site 99), also known as Pālā'au fishpond, was "the largest of the Moloka'i fishponds" with an estimated size between "200 and 500 acres" and a "depth of five fathoms" at its "deepest part." The pond had "gates that were skillfully made" and contained "[a]ll kinds of fish" (Summers 1971:77). Summers also reported a *ko'a* observed "at the edge of the cliff" at Kahinaokalani (Site 17) (Summers 1971:38).

Ms. Greaney mentioned Moloka'i has the largest number of *loko 'ia* in Hawai'i including over 60 that are still recognizable. She recalled being taken to fishponds alone by her grandfather who was proud to share this purely Hawaiian innovation to feed the people. As an adult, she worked for many years with restoration efforts. Ms. Greaney hopes more people will join restoration efforts for abundance through restoration of aquaculture in Moloka'i *loko 'ia*.

6.1.3 Mo'olelo and Wahi Pana

Mo'olelo plays a large role in Native Hawaiian culture. Many of these *mo'olelo* contain valuable *'ike* on/about the land, its naming, and the countless events that have transpired on these lands.

Mrs. Purdy-Avelino shared a *mo'olelo* told to her by her cousin about how the land of Nā'iwa received its name. According to the *mo'olelo*, a mother from Kalaupapa, who was a very skilled

lei maker, made a *lei* out of the *'iwa 'iwa* fern for her son who wanted to compete in a *lei* making competition held at the Makahiki festival, as well as to impress a *wahine* he admired. The son gave this *lei* to the *wahine*. She would wear it wherever she went and the spores from the *'iwa 'iwa* ferns in the *lei* would fall and scatter across the land.

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Ms. Greaney also shared that another source of Ho'olehua's name is the soldiers leading the advance in war. She heard old stories of Night Marchers traveling their path from mountains in Kala'e toward the Makahiki grounds. They continued along the same boundary gulch toward the high school gym on Farrington Avenue. Some Hawaiians still testify to having seen them in this area as children. Kamehameha rested his troops in the food-abundant spiritual Moloka'i uplands while recuperating and training in this area before going on to successfully capture O'ahu.

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Ms. Greaney also mentioned many *pōhaku* implements including *'ulu maika* for ceremonial competitions and *ma 'a* for battles of sport and war have been found in the area of her homestead and continued to be unearthed to this day. She noted more artifacts have been found recently and numerous more are likely to be present because of past heavy use of the area, however, they may not be immediately recognized if they do not have the obvious shape of *'ulu maika*.

Ms. Greaney noted that as the spiritual epicenter of Hawai'i, Moloka'i drew *ali 'i* and champions from outer islands who would travel to this hallowed place to compete for top honors and recognition in the annual Makahiki competitions. Makahiki was an integral part of life that allowed for peace, shared abundance, and continuation of the Hawaiian race. Each island had Makahiki grounds dedicated to Lono where offerings would be made in reverence, appreciation, and hopes of an abundance of food in the coming year. To this day the Makahiki processional moves east to west to the sacred grounds of the god Lono, publicly known simply as Nā'iwa.

Ms. Greaney mentioned old Hawaiian historians recorded genealogies tied to the original Makahiki grounds including Lonoikamakahiki, the *ali 'i* credited with starting all Makahiki practices in Hawai'i. One account says he came to Moloka'i from Hawai'i Island and from among all areas in Hawai'i identified much earlier as high holy places, he decided this specific area was to be the primary place in the islands for honoring Lono. Early land records specify Lono descendants as *konohiki* and title holders in the region through the nineteenth century.

Ms. Greaney mentioned there is an ancient *hula* site remaining in the Nā'iwa Makahiki grounds near and above her homestead. Moloka'i is the birthplace of the enduring ancient traditions of Kapo and Laka. *Hula* is celebrated in Ka Hula Piko, and *lua* for defense is sometimes referred to as a twin or sibling of dance. Ms. Greaney noted neither practice was restricted to one gender and both perpetuate Hawaiian philosophies of spiritual and physical existence.

Ms. Greaney stated Makahiki was so important that it marked time and regulated people's physical and religious life. She insists no one can authentically recognize or celebrate the true spirit of Makahiki, and the peace and abundance it symbolizes for all of Hawai'i, without also recognizing what began, endured, and exists in this particular physical space. It is a critical part of Moloka'i's role and record in history prior to Contact, including land use, religious culture, and the daily lives of the Hawaiian people. It played an important part in continuance of intergenerational and communal practices near extinction at the time of the Hawaiian Renaissance; and because of Moloka'i it is again firmly rooted in annual calendars and celebrations statewide.

Ms. Greaney pointed out that the original Makahiki lands are also the only place of continuous practice of the social, physical, emotional and spiritual ritual, healing, and enlightenment associated with Makahiki in existence. She noted cultural experts on Moloka'i still observe Makahiki with formal protocol, and all youth learn the traditional practices of their ancestors. When other islands ceased to honor these practices, the ancient knowledge continued only on Moloka'i. School students throughout Hawai'i have traveled for nearly a decade to participate in our Makahiki competitions, including representatives from Kamehameha Schools. It remains one of Moloka'i's main annual social celebrations with generations carrying memories of Hawaiian sportsmanship as competitors and spectators.

Previous archaeological work has identified three historic sites in the vicinity of the project area: the Kape'elua Complex (SIHP # 50-6-03-00011), which is comprised of two sites, the "Caterpillar Stones" (Site 11A) and the "Stone at Pu'u Kape'elua" (Site 11B), and Lepekaheo Heiau (Site 12) (Summers 1971:37).

The "Caterpillar Stones" are associated with a *mo'olelo* that involves Pele, the daughter of a chief of Pālā'au, who fell in love with the *pe'elua* of Ho'olehua, the *'aumakua* of that district (Summers 1971:37; Cooke 1949:102; and Ne 1992:49–50). For full discussion regarding Pu'u Pe'elua, see Section 3.1.2.2. The "Stone at Pu'u Kape'elua" is located south of the "Caterpillar Stones." Summers (1971:37) noted the stone may have been used for sharpening adzes or collecting water. Another theory states that due to the stone's proximity to the "Caterpillar Stones," it may have been used for offerings to propitiate the destructive caterpillars.

Ms. Greaney mentioned there are three *wahi pana* located near the *piko* of Moloka'i above the Kalaupapa cliff line. At the highest elevation of Nā'iwa is Pu'uolelo (speaking hill). It is easy to identify from lower lands of Ho'olehua and Nā'iwa by a grove of pines trees planted by Mr. Meyer at the summit in the early 1800s. To the east is the high precipice, Kaohu (adorned in fog) and in the middle is Keālia Lake, commonly called Meyer Lake, one of few naturally occurring freshwater lakes in Hawai'i. These three *wahi pana* form a line which passes procreative Ka'ule o Nanahoa (Phallic Rock), the female fertility partner *pōhaku* sometimes called Waihuehue, and other sites of regeneration. Birthing stones for delivery of babies are also still located in the area.

Ms. Greaney recalled stories of Pu'u Pe'elua (Caterpillar Hill) in Ho'olehua. Her mother shared that in certain years in the 1940s and 1950s, the entire lower area of Nā'wa would be covered with caterpillars to the extent that they could not walk to school as children without crushing them underfoot. *Mo'olelo* about this area of central Moloka'i include large caterpillars, indicating they have come at various times during history.

6.1.4 Healing Practices

Kahuna of Moloka'i were also "said to be experts in compounding medicine" (Pukui 1983:239). This expertise is described in the saying, "Moloka'i ku'i lā'au. *Moloka'i, pounder of medicine*" (Pukui 1983:239).

Ms. Greaney sees her homestead as the perfect place to promote indigenous health knowledge. She continues cultural practices which are important to physical and spiritual wellness.

Ms. Greaney noted Nā'iwa was widely known as an area of physical and spiritual healing, attracting injured, sick, and dying Hawaiians with their caregivers and loved ones in the past. She pointed out that at the start DHHL's development, the first medical doctor's clinic was placed as closely as possible to the ancient healing area and Moloka'i's first hospital, Shingle Hospital, was also located as closely as possible to Ho'olehua's northernmost side approximating the middle of the Nā'iwa *ahupua'a*.

Ms. Greaney credits being raised in the place of centuries of Hawaiian healing with her teen choice of a health career and decades as a Registered Nurse (RN). Ms. Greaney learned traditional medicine from her grandmother and many other Hawaiian health practitioners and *kauka*. She mentioned her Auntie Charlene Tinau, a pure Hawaiian traditional healer with shared genealogical ties in Mana'e, came nearly every week for years, uniquely blended Hawaiian and western healthcare. She tended their plants, cultivated nearly a century, and shared her knowledge of what to gather for common ailments and emergency applications. She successfully healed bone fractures and many conditions using *la'au lapa'au* for Hawaiians without insurance or those preferring traditional medicine.

At ten years old, Ms. Greaney was taught by her experienced Hawaiian grandfather, later her auntie, and many expert Hawaiian healers. Her grandpa was first to teach her how to apply traditional techniques of *lomilomi* to maintain health and for more effective healing. She was also taught the practice of *ho'oponopono*, a guided technique for spiritual, self, and interpersonal relationship healing, by *kupuna*. She also received intensive instruction on how to provide this service for Hawaiian families seeking reconciliation when facing terminal illness. She stressed that a necessary part of all Hawaiian healing methods is prayer and meditation during preparation like planting or gathering medicine and during application, through the healing process until it finishes. Powerful prayers effect body, mind, and spirit, and are strengthened by connectedness to the spiritual nature of the place, plants, the person being healed, and the healer.

Ms. Greaney also stressed it is very important that appropriate prayers are offered in creation of both types of *papa*, *pōhaku*, and all other implements. She also emphasized that emotions and interactions must be positive because they are embedded in the creation process and will accordingly affect people using the product.

6.1.5 Religious Activities and Burials

Ms. Greaney stated that Moloka'i was of the highest spiritual importance to ancient Hawaiians as recognized in one of the island's nicknames, Moloka'i Pule O'o (Moloka'i of powerful prayer). She noted that members of the House of Kamehameha saw Moloka'i as the physical *piko* centralizing Hawai'i's spiritual power which united people and place.

Pālā'au and Ho'olehua are mentioned in a *mo'olelo* discussing the origins of sorcery on Moloka'i. According to the *mo'olelo*, a man, Kaiakea, witnessed "a long procession of women coming over the plains of Ho'olehua to Pala'au" (Kamakau 1991:131–132). Among these women was a man named Pua who told Kaiakea that if he built a *hale lau* (leaf-thatched house) for them, "they would become Kaiakea's gods" and they "would give into his charge the *puniu hulihuli*, their visible form (*ko lakau kino 'ike maka 'ia*), and all the paraphernalia to do their work (*ka lakau mau hana a pau*)" (Kamakau 1991:131–132). Kaiakea built the *hale lau* and "filled it with poi, 'awa, bananas, and tapas appropriate to these gods; that same evening it was dedicated (*ke kapu no 'ia*)" (Kamakau 1991:131–132). Kaiakea became the *kahu* (care taker) of gods, Pua and Kapo (Kauluimaunaloa), "the chiefess who led the procession" of women (Kamakau 1991:131–132).

Kamakau noted that, "Kaiakea, however, just took care (*malama pono*) of these gods. He did no harm to others, and did not send his gods to bring death (*ho'aunauna e make*) to any man or to any chief" (Kamakau 1991:131–132).

Summers (1971:37–38) recorded four *heiau* in the Pālā'au and Ho'olehua Ahupua'a. Lepekaheo Heiau (Site 12) is located west of Kaluape'elua Gulch on the boundary between Ho'olehua 2 and Pālā'au 2, approximately 1.3 km north of the project area. Another *heiau* (Site 10) is located on the east side of the "crest of 'Eleuweue" in Ho'olehua 2 (Summers 1971:37). Summers (1971:38) mentions a *heiau* (Site 16) located at the west side of the mouth of Anahaki Gulch at an elevation of 35 ft above mean sea level and another *heiau* (Site 14) located east of Ho'olehua Cemetery in the pineapple fields west of the gulch at an elevation of 800 ft in Pālā'au 2 (Summers 1971:38).

Mr. Avelino discussed the importance of understanding and respecting the spirituality and history of the land. He noted that if you open yourself to your surroundings, listen to the nature and spirits, you can gain a deeper connection to the land.

Mr. Avelino recalled encountering certain areas and/or certain objects he knew were sacred while passing through the lands of Ho'olehua. He recalled coming across two *pōhaku* in the shape of a chair while he was hunting. He also shared that while hunting, he would come across areas in which he could "feel the *mana* of the land" or sense that the area was "not *pono*."

Native Hawaiians are protective of their *iwi kūpuna*. As stated by the State Historic Preservation Division (SHPD),

When departing kupuna was laid to rest there was never a doubt that their remains would empower their descendants until they themselves were reduced to earth. Some kupuna were covered by stacked stones while others were buried with no surface markers at all, frequently in sand dunes. [SHPD n.d.]

It is believed that the *mana* of a person is held within the *iwi* (bones). Therefore, *iwi kūpuna* were treated with upmost respect. For example, remains of a passing *ali'i* were usually buried

under cover of night to protect the *iwi* from possible poachers, or those who might steal them to utilize the *mana* of the passing *ali'i* (SHPD n.d.).

Ms. Greaney noted that Homelani and Ho'olehua cemeteries, both chosen by Hawaiians as the final resting place for their beloved *'ohana*, are located in proximity to *wahi pana*. She was also informed by *kupuna* about a *lele* above her homestead where the physical and spiritual realms connect. She mentioned a mapped *heiau* exists in that location.

6.2 Assessment of Impacts Posed to Cultural Practices and Cultural Resources

6.2.1 Individual's comments or thoughts on the potential impacts the proposed project may have on ongoing traditional cultural practices and natural resources within the proposed project area and greater *ahupua'a*

Ms. Greaney expressed concern regarding the availability of water. She stated that Hawaiians intimately understood the relationship of people and *wai* and the necessity to maintain and protect clean water systems for health, wealth, and survival. She noted Ho'olehua, including Nā'iwa, is historically known for its dry and barren land, with little to no water available. She mentioned homestead residents have been faced with high costs of water and limited access to water. She stated the proposed project is important as it will provide homestead residents the opportunity to use land for agricultural purposes, however, she stressed it is also important to ensure access to the appropriate amount of water at a reasonable cost. If this is not possible, residents who move into these agricultural lots may have difficulty growing crops.

Ms. Greaney also expressed some hesitation regarding agricultural and housing development in the proposed project areas related to alerting new lessees to be aware of past use of the land and any possible health effects it may have directly on those using the land as well as for those who consume food grown in these and nearby areas. She pointed out that Hawaiian Home Lands were leased to plantations for a century and a half, and land in all areas continues to be leased to private companies including sugar, pineapple, and coffee plantations, as well as for research by large agricultural bioscience companies for designing products for pest control.

Ms. Greaney mentioned her master's thesis in 2001 looked at possible public health effects of the copious pesticide use of chemicals made illegal in the U.S. which she found were applied by the pineapple plantations. She does not know what harsh chemicals may have been used by the other agri-businesses.

6.2.2 Comments or thoughts on the potential impacts the proposed project may have cultural sites and *wahi pana* within the proposed project area and greater *ahupua'a*

Mrs. Purdy-Avelino expressed concerns for sacred sites located in the vicinity of the project area. She supports the development of more homestead lots for homesteaders on the waitlist, however, she emphasized the need to continue to protect sacred sites.

Mr. Avelino stressed it is vital that no work be done to the Makahiki Grounds.

Ms. Greaney emphasized the importance of the Makahiki Grounds to the Hawaiian culture. She insists the homestead community should be notified well in advance of any proposed developments on the Makahiki Grounds. She also noted it is known that many artifacts still exist in the *mauka*

and central regions of Nā'iwa and Pālā'au. She insists it is important that in-depth archaeological inventory surveys be conducted if there are any future developments.

6.2.3 CSH Assessment of Impacts Posed to Cultural Practices and Cultural Resources, integrating perspectives from consultation, and evidence from background research

Cultural deposits and features related to historic homesteading (i.e., agricultural and/or habitation features) are likely present at the current project area. However, potential also exists for encountering evidence of pre-Contact and post-Contact land use.

Table 6. Potential impacts posed by the proposed project to cultural resources or activities within the project area vicinity

Cultural Resource or Activity	Potential Impacts	Explanation
<i>Wahi pana</i>		Mrs. Purdy-Avelino expressed concerns for sacred sites located in the vicinity of the project area. She emphasized the need to continue to protect sacred sites. Mr. Avelino stressed that no work be done to the Makahiki Grounds. Ms. Greaney also emphasized the importance of the Makahiki Grounds to the Hawaiian culture. She insists the homestead community should be notified well in advance of any proposed developments on the Makahiki Grounds. She also noted it is known that many artifacts still exist in the <i>mauka</i> and central regions of Nā'iwa and Pālā'au. She insists it is important that in-depth archaeological inventory surveys be conducted if there are any future developments.

6.2.4 Discussion of impacts to historic properties (i.e., cultural resources) identified during background research and consultation

No impacts to historic properties within the proposed project area and Pālā'au Ahupua'a were identified during the consultation process.

6.2.5 Discussion of impacts to cultural practices and resources identified during background research and consultation

No impacts to ongoing traditional cultural practices and natural resources within the proposed project area and Pālā'au Ahupua'a were identified during the consultation process.

6.3 Mitigation Possibilities Identified During Consultation and Background Research

Mrs. Purdy-Avelino recommends a cultural monitor should be on site during any work to help provide guidance in regard to Hawaiian sense of place, protection of sacred areas and objects, and to be a voice for *kūpuna*. She stated that people should remember *kūpuna* are always here in spirit and they will show themselves in various ways and it is up to us to make sure we open ourselves

up to receive their information. She also recommended project proponents should be mindful of sacred sites within and around the vicinity of work and that they not harm the land or anything that may be disturbed.

Mrs. Purdy-Avelino is supportive of more homestead lots being developed so more homesteaders can get off the waitlist and into homes, however, she noted that as more homestead developments occur (whether it may be from DHHL or homesteaders developing their own plots), we all need to make sure to continue to protect sacred sites.

Mrs. Purdy-Avelino also shared concerns regarding the overall process of outreach to Native Hawaiian communities and how information is shared. She recommends reaching out to Native Hawaiian communities in multiple ways and not just by an announcement in a newspaper or on the internet. That way, *kānaka* can be more *maka'ala* of proposed projects happening in their community. She stated that full disclosures of projects and project details are a must. Developers need to provide transparency to work that will be conducted as well as any other supplemental or follow-up work that may be conducted. She requested that project proponents not utilize Native Hawaiians and the *'ike* that is shared just to "check a box." She noted Native Hawaiians are sharing their *'ike* of their ancestors to help with the proposed projects and to provide a Hawaiian perspective of the land, its history, and its spirit. She stated their words and concerns carry *mana*, and it is important they are heard and the suggestions given are followed through.

Ms. Greaney insists that due to the special significance of this place to Hawaiian culture, historically and continuously, the homestead community should be notified well in advance of any proposed developments that will occur on the Makahiki lands. She also insists homesteaders be individually consulted with if any proposed developments involve their land since many lots have been occupied by the same families for a century.

Ms. Greaney stated that if there are any future developments, it is important that in-depth archaeological inventory surveys be conducted as it is known that many artifacts still exist in the *mauka* and central regions of Nā'iwa and Pālā'au. She pointed out that though not inhabited by such a large constant population year around like other areas near the coast and freshwater, this area supported thousands of Hawaiians who regularly occupied it for seasonal, ceremonial, celebratory, and other prime purposes.

Ms. Greaney strongly suggests the soil be well tested by third party professionals for any presence of harmful chemical residue possibly remaining in the soil. This is a good safety precaution for farmers. She also suggested future studies also look at nearshore areas off Pālā'au to assess the presence of chemicals from runoff and any impacts.

Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3.

Non-Native Hawaiian human remains will undergo the process laid out under state law (HAR 13-300), however, Native Hawaiian human remains and cultural items found on DHHL lands are subject to the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3001 et seq and its implementing regulations (43 CFR Part 10). As 43 CFR § 10.2 provides, tribal lands include "All lands administered by the Department of Hawaiian Home Lands (DHHL) under

the Hawaiian Homes Commission Act of 1920 (HHCA, 42 Stat. 108) and Section 4 of the Act to Provide for the Admission of the State of Hawai'i into the Union (73 Stat. 4), including “available lands” and “Hawaiian home lands.” Under NAGPRA, DHHL must prepare a plan of action (POA) prior to any planned activity that is likely to result in a discovery or excavation of human remains or cultural items. If not part of a planned activity, a POA is required after the discovery of human remains or cultural items. In developing a POA, DHHL will initiate consultation with lineal and cultural descendants, consult on the POA, and approve and sign the POA and provide a copy to all consulting parties. The 3-step process for drafting a POA pursuant to NAGPRA can be found in 43 CFR § 10.4(b).

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Appendix A Community Outreach Letter

CULTURAL SURVEYS HAWAII

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL DOCUMENTATION SERVICES - SINCE 1982



P.O. Box 1114

Kailua, Hawai'i 96734

Ph: (808) 262-9972

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Aloha mai kākou,

With this letter, Cultural Surveys Hawai'i (CSH) humbly requests your *mana'o* and *'ike* (experience, insights, and perspectives) regarding past and ongoing cultural, practices, beliefs, and resources within Pālā'au and Ho'olehua Ahupua'a.

Consultation with traditional cultural practitioners, *kūpuna*, *kama'āina*, and Hawai'i's diverse ethnic communities is an important and deeply valued part of our work and the environmental review process for proposed projects in Hawai'i. Your contributions will revitalize and keep alive knowledge of cultural practices, storied places, and life experiences that will remind Hawai'i's children of their history for generations to come.

Project Description

At the request of Munekiyo Hiraga on behalf of the Department of Hawaiian Home Lands (DHHL), CSH is conducting a cultural impact assessment (CIA) for the DHHL Ho'olehua Scattered Lots Subdivision and Improvements, Pālā'au Ahupua'a, Moloka'i District, Moloka'i Island, TMKs: [2] 5-2-005:031, Lot 17 and [2] 5-2-026:014, Lot 104D-1. The location and boundaries of the proposed project are delineated on a 1993 Kaunakakai and Molokai Airport U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1) and a 2013 ESRI aerial map (Figure 2) attached to this invitation. The purpose of the project is to create additional homesteading opportunities for DHHL beneficiaries on the Moloka'i Agriculture Waitlist. The DHHL proposes improvement and subdivision of two (2) parcels. The improvements include clearing, grading, and installation of roadway, electrical, and irrigation water utilities. The proposed plan calls for ground-disturbing activities to be confined to the two (2) subject parcels, but will extend to existing roadways for access and connection for utilities.

Purpose of this Study

The purpose of a CIA is to gather information on Hawai'i's cultural resources, practices, or beliefs that have occurred or still occur within the proposed project area and Pālā'au and Ho'olehua Ahupua'a. This is accomplished through consultation and background research using previously written documents, studies, and interviews. This information is used to assess potential impacts by the proposed project to the specific identified resources, practices, and beliefs in the project area and throughout Pālā'au and Ho'olehua Ahupua'a. As a traditional cultural practitioner and holder of long-term knowledge, your insight, input, and perspective provide a valuable contribution to the assessment of potential effects of this project and an understanding of how to protect these resources and practices.

Insights focused on the following topics in the project area (shown on the attached Figures 1 and 2) are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and Pālā'au and Ho'olehua Ahupua'a

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- Your specific traditional cultural practice and its connection to the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- The different natural resources associated with your specific traditional cultural practice
- Legends, stories, or chants associated with your specific traditional cultural practices and their relationships to the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Referrals to other *kūpuna*, *kama'āina*, and traditional cultural practitioners knowledgeable about the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on your ongoing traditional cultural practices and natural resources within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and Pālā'au and Ho'olehua Ahupua'a

Consultation Information

Consultation is an important and deeply valued part of the CIA and environmental review process. Your contributions will revitalize and keep alive our combined knowledge of past and ongoing cultural practices, historic places, and experiences, reminding our children of their history generation after generation.

With your agreement to participate in this study, your contributions will become part of the comprehensive understanding of traditions of the area, and part of the public record; they will be available for future access through the Office of Environmental Quality Control (<https://health.hawaii.gov/oeqc/>) and at the State Historic Preservation Division Library (<https://dlnr.hawaii.gov/shpd/about/research-resources-library>).

As a part of this process, your knowledge may be used to inform future CIAs and other heritage studies of cultural practices and resources that need protection from impacts of proposed future projects. If you engage in consultation, and the *mana'o* and *'ike* you provide appears in the study, we would like to recognize your contribution by including your name. If you prefer not to allow your name to be included, your information can be attributed to an anonymous source.

The consultation interview structure and format are flexible. We will accommodate your preference on how to get together; talk story, over the phone, by email correspondence, remotely via Zoom, MS Teams, Google Chat or other remote meeting platforms.

Your knowledge of the resources and potential effect of the project on traditional practices in the project area and Pālā'au and Ho'olehua Ahupua'a focusing on the topics in the bullet points above can also be submitted in a written statement. CSH will provide return postage of your written statement on request.

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CSH is happy to provide a list of topics for discussion, a more structured questionnaire of interview questions, or any other assistance that might be helpful.

If you have questions regarding consultation, or are interested in participating in this study, please contact CSH Cultural Researchers, Kellen Tanaka, by email at ktanaka@culturalsurveys.com or Chantellee Spencer at cspencer@culturalsurveys.com phone at (808) 262-9972.

Mahalo nui loa for your time and attention to this request for consultation.

Yours with much aloha and appreciation,

Kellen Tanaka

CSH Cultural Researcher

Appendix B Consultee Interview Transcripts

B 1 Kilia Purdy-Avelino and Justin Avelino Summary

On 5 November 2021, Cultural Surveys Hawai'i (CSH) reached out to Kilia Purdy-Avelino regarding the cultural impact assessment (CIA) for the DHHL Ho'olehua Scattered Lots Subdivision and Improvements project. She granted CSH permission to reuse information she previously shared for a cultural impact assessment pertaining to the Pālā'au and Ho'olehua Ahupua'a. The information was gathered from Mrs. Purdy Avelino and her husband, Justin Avelino.

Mrs. Purdy-Avelino was originally born on O'ahu but lived in Ho'olehua, Moloka'i for most of her life. She is the fourth generation of her family to live in the Ho'olehua-Pālā'au Homestead. Her grandmother was one of the first Native Hawaiians to move into the Ho'olehua-Pālā'au Homestead. Now an educator, Mrs. Purdy-Avelino teaches multiple grade levels (K-12), college-level courses, and is currently obtaining her doctoral degree.

Mr. Avelino was born and raised in Hilo, but has lived in Moloka'i for many years with his wife, raising their children on the homestead. Mr. Avelino is dedicated to Hawaiian cultural protocols, which he first learned from his grandfather. He is an avid hunter and the unofficial caretaker of the lands in Ho'olehua-Pālā'au Homestead, helping out his fellow neighbors when they are in need, farming their lands, and guarding knowledge of various sacred sites and *mo'olelo* (stories) of Moloka'i.

On their current 5-acre homestead property (located in the *mauka* [toward the mountain] region of the Ho'olehua-Pālā'au Homestead), you will find various fruits and vegetables such as 'ulu (breadfruit), *kalo* (taro), papaya, *mai'a* (banana), mango, and macadamia nut trees. These produce yields not only feed the family, but also their livestock of pigs and chickens. Mrs. Purdy-Avelino shared that her grandmother grew various floral plants on their property such as 'ākulikuli (*Sesuvium portulacastrum*), 'awapuhi (wild ginger, *Zingiber zerumbet*), *kīkā* (cigar flower, *Cuphea ignea*), *kīkānia* (*Solanum capsicoides*), and *kupaloka* (tuberose), which are used to make *lei* (garland). On their homestead today, her father grows *gardenia*, orchids (*Orchidaceae*), bird-of-paradise (*Strelitzia reginae*), and *anthuriums*.

Mrs. Purdy-Avelino shared that the original lease contained 40 acres of land, and not just the 5 acres they currently have today. The original lease owner, Aunty Gladys (Mrs. Purdy-Avelino's relative), leased her lands to aid the pineapple company (either Dole or Del Monte). When the pineapple company pulled out, instead of obtaining her lands, Aunty Gladys returned a portion of her lands back to DHHL and kept the current 5 acres. In 1980, Mrs. Purdy-Avelino's father obtained the land from his cousin Frank Kupau, who was the successor of his mother, Gladys. When he got the land, although he needed to clean and clear the area, there was an acre of approximately 50 macadamia nut trees already planted and mature. Mrs. Purdy-Avelino believes they were planted during the 1920s. Now, there is a grove of macadamia nut trees that cover roughly 5 acres. Mrs. Purdy-Avelino shared that her family was able to receive the remaining 35 acres of land in the original lease just a few months ago. With their increased land acreage, their plans are to help reforest the lands, which will in turn help the rain return to the area.

Both Mrs. Purdy-Avelino and Mr. Avelino shared some *mo'olelo* that were passed down from *kūpuna* (elders) and some they acquired themselves.

Mrs. Purdy-Avelino shared a *mo'olelo* told to her by her cousin about how the land of Nā'iwa received its name. The *mo'olelo* starts off with a mother from Kalaupapa (located east of Pālā'au), who was a very skilled *lei* maker. Her son wanted to compete in a *lei* making competition held at the Makahiki festival as well as to impress a *wahine* (woman) he was admiring. His mother, the skilled *lei* maker, made a *lei* out of the 'iwa'iwa (maidenhair fern) fern. The boy ended up giving this *lei* to the *wahine* and she loved it. She would wear it wherever she went. As she traveled, the spores from the 'iwa'iwa ferns in the *lei* would fall and scatter across the land. Hence the name, Nā'iwa.

Mrs. Purdy-Avelino also recalled that during her childhood days, her dad would take her down *makai* of Nā'iwa (toward the project area) to pick up 'uala from an 'ohana who lived in the area and she remembers eating it raw in the back of the truck.

Mr. Avelino shared some of his experiences while traversing through the *mauka* region of Nā'iwa and the importance of understanding and respecting the spirituality and history of the land. One of the lessons Mr. Avelino learned while hunting is to open yourself to your surroundings. There are many ways in which nature and spirits communicate with us and when you are open to receiving such information, you will gain a deeper connection to the land.

While passing through the lands of Ho'olehua, Mr. Avelino came across certain areas and/or certain objects, like *pōhaku* (stone) that he knew were sacred. While following a buck on one of his hunting missions, Mr. Avelino came across two *pōhaku* in the shape of a chair. On various hunting missions, Mr. Avelino would come across areas in which he could "feel the mana of the land" or sense that the area was "not pono."

Another significant area in Nā'iwa is known as the *makahiki* (ancient festival) ground. It was shared that in the past, one of the chiefs of Moloka'i looked toward the mountains of Nā'iwa and noticed a cloud shaped like a finger. The finger was pointing to a piece of land. A council of chiefs gathered and deemed the area as the place where Makahiki ceremonies would occur. To this day, Makahiki ceremony and activities continue to take place. In this area, items such as 'ulu *maika* (stone used in *maika* [ancient Hawaiian game suggesting bowling] game) have been discovered. Mr. Avelino shared that it is vital that no work be done to this area.

When asked about any concerns regarding the proposed project, Mrs. Purdy-Avelino shared valid concerns about the project as well as the overall process of reaching out to Native Hawaiians for their 'ike and *mana'o* (opinion). The concerns directly related to the proposed project include the following:

- 1) Remember that *kūpuna* are always here in spirit and they will show themselves in various ways. It is up to us to make sure that we open ourselves up to receive their information.
- 2) Be mindful of sacred sites within and around the vicinity of work.
- 3) Do not *hana 'ino* (harm) the land or anything that may be disturbed.

In order to help with these concerns, Mrs. Purdy-Avelino recommends that a cultural monitor should be on site during any work to help provide guidance in regard to Hawaiian sense of place, protection of sacred areas and objects, and to be a voice for *kūpuna*. Mrs. Purdy-Avelino is

supportive of more homestead lots being developed so that more homesteaders can get off the waitlist and into homes, however, as more homestead developments occur (whether it may be from DHHL or homesteaders developing their own plots), we all need to make sure to continue to protect sacred sites.

As mentioned, Mrs. Purdy-Avelino shared concerns that may not be directly related to the proposed project but are in regard to the overall process of outreach to Native Hawaiian communities and how information is shared.

- 1) Please make sure to reach out to Native Hawaiian communities in multiple ways and not just by an announcement in a newspaper or on the internet. That way, *kānaka* (Native Hawaiians) can be more *maka'ala* (aware) of proposed projects that are happening in their community.
- 2) Please do not utilize Native Hawaiians and the *'ike* that is shared just to “check a box.” Native Hawaiians are sharing their *'ike* of their ancestors to help with the proposed projects and to provide a Hawaiian perspective of the land, its history, and its spirit. Our words and concerns carry *mana*, and it is important that they are heard and the suggestions given are followed through.
- 3) Full disclosures of project and project details are a must. Developers need to provide transparency to work that will be conducted as well as any other supplemental or follow-up work that may be conducted.

B 2 Malia Lani Forbes Greaney Summary

Informant, Ms. Malia Lani Forbes Greaney for the proposed DHHL Nā'iwa/Pālā'au Agricultural Subdivision Project: Cultural Surveys Hawai'i, Inc., (CSH). Cultural Surveys Hawai'i, Inc. (CSH) conducted an interview via Zoom (a video conferencing platform) with Ms. Greaney on 14 September 2021 with content summarized by CSH. In 2022, Ms. Greaney provided *'ike, no'ono'o, no'ono'omua, ho'oka'ina mana'o* (knowledge and experience hence learning, thoughts, considerations, anticipations, composed ideas) on Hawaiian traditions and history of Ho'olehua, and Pālā'au and Nā'iwa in context of ancient Hawaiians, recent past, current situation, and future possibilities for Hawaiians living on homesteads in central Moloka'i. Ms. Greaney relayed information on continuous native practices of the area, and some areas of concern related to the proposed project.

Ms. Greaney's immediate family resided on the same homestead for near a century, where she continues to live and farm with her children who are fifth generation homesteaders. Ms. Greaney's *'ohana* (family) is almost to the middle of a two-hundred-year lease of Ho'olehua Lot #1, Mo'omomi Ave., which is off of Lihipali and Farrington Avenues. It is shown on many maps as a “finger” of land outstretched below the larger portion of Pālā'au, with Ho'olehua *ahupua'a* on the West and Nā'iwa on the East.

Ms. Greaney recognizes her *kupuna* as her main source of Moloka'i knowledge and traces her genealogy on Moloka'i for centuries through both maternal grandparents who helped raise her. Ms. Greaney inherited her homestead through her manaleo (Hawaiian is the 1st language) *tutu* lady (grandmother) who was a high school English teacher and rarely used Hawaiian diacritical markers as early written Hawaiian used context for pronunciation and meaning. Ms. Greaney uses them

less in common words and notes that translations into English provide partial definitions for complex Hawaiian meanings.

In the past, Ms. Greaney's *'ohana* lived in various regions of Moloka'i determined largely by fresh water sources. Her grandmother was born in Waialua Valley in Mana'e, also known as East End. Waialua's river still flows after sustaining many generations of her *'ohana* on extensive *lo'i* (terraced ponds for taro cultivation) that produced high yields and quality of *kalo* (taro plants). King Kamehameha the Great shared the name of his uncle, known by Kamehameha'aialuau, who was safely raised on this abundance. Hawaiians intimately understood the relationship of people and *wai* (fresh water) with a necessity to maintain and protect clean water systems for health, wealth and survival. The importance of traditional Hawaiian knowledge and practice cannot be overstated to the current general public just beginning to realize our interdependence.

Moloka'i was of the highest spiritual importance to ancient Hawaiians as recognized in one of the island's nicknames, Moloka'i Pule O'o (Moloka'i of powerful prayer). On similar par with the most highly elevated places for rulers; members of the House of Kamehameha saw Moloka'i as the physical *piko* (naval, center, source) centralizing Hawai'i's spiritual power which united people and place. Following loss of land control, finalized in overthrow of the Hawaiian Kingdom, Moloka'i was selected as the birthplace of the Hawaiian Homelands initiative. It was a last effort by Prince Kūhiō to reunite Hawaiians suffering from physical and cultural separation from their *'āina* (land). One hundred years ago, Ms. Greaney's pure Hawaiian maternal great-grandmother found herself raising children alone with the opportunity to have land in her own name. Though a dry, barren place compared lush Waialua Valley, Emily Lani Cathcart (Maliu) moved her young family to the shores of Kalamaula, and became a participant in the pilot project for the first homesteads in Hawai'i.

Kalamaula was the test site for what would soon expand to Ho'olehua, then be replicated throughout Hawai'i after passage of the Hawaiian Homes Commission Act, a federal project in the Territory. Documents and family photos from the 1920's and forward record DHHL's earliest farmers raising pigs and planting crops, in the arid conditions of central Moloka'i. *Mo'olelo* (traditional stories, oral history) tell of *puna* (fresh water spring) once located behind the house of a third-generation homesteader on very dry Olo'olo Lane. There and nearby, Ms. Greaney's *'ohana* still have their first homesteads. Her grandma's mother settled at the shoreline approximately 100 yards from Kapuāiwa Coconut Grove, which her grandpa's grandfather had planted for King Kamehameha V. In this protected place of royalty, *puna* fill small clear pools and shift close underground in continuous flow ending offshore.

Ms. Greaney's grandfather was born in the central *mauka* lands (upland, inland regions toward the mountains) of Kala'e. It is usually mispronounced without the *okina* (glottal stop). Kala'e includes the uppermost portions of Nā'iwa and other of *ahupua'a*, shown on some family maps as long land divisions with typical tracts from mountain top to wider shoreline and sea. These *ahupua'a* are also mapped as three detached parcels, when combined they provide varied environments common within *ahupua'a* boundaries and allow sustainable land and ocean-based living with proper stewardship. Her grandfather's pure Hawaiian grandmother, High Chiefess Kalama Waha was raised near 'Ili'ili'ōpae, Hawai'i's second largest *heiau* (a traditional Hawaiian sacred site of religious practice and worship, shrine) which is located in Mapulehu, another river

valley in Mana'e. She moved to Kalua'aha where she met and wed R.W. Meyer. He was from Germany via Tahiti, and they later created a settlement in Kala'e with their eleven children.

R.W. Meyer was also fluent in Hawaiian, English and other languages. He held many Moloka'i leadership roles and was instantly appointed Superintendent of Health when the government suddenly began forcibly removing anyone suspected of possibly having Hanson's Disease from their homes and society for quarantine. Family severance was often immediate and usually against their will so Hawaiians called it the separating disease. Sick and healthy people were dumped off boats and made to swim ashore to Kalaupapa Peninsula, also known as Makanalua where escape was difficult. Hiding elsewhere was nearly impossible. R.W. worked frantically to obtain basic supplies from government officials in Honolulu who gave little to no forethought or concern for the human suffering of terminally ill people forced to survive with nothing, even shelter. Formerly called Lepers, and today, patients made their first settlement in Kalawao near where they were sent overboard. Above the sheer, towering cliffs of Kalaupapa sits the uppermost regions of several *ahupua'a* including Pālā'au and Nā'iwa.

Meyer served Kamehameha IV, Kamehameha V, Princess Ruth Ke'elikolani, and King Kalakaua in various capacities such as managing Moloka'i Ranch. Princess Ruth Ke'elikolani selected Charles Reed Bishop and R.W. Meyer as co-executors of her Will which later made Princess Bernice Pauahi Bishop Hawai'i's largest private land owner and created Kamehameha Schools. Two-thirds of Kalama and R.W. Meyer's land including 285 acres in Nā'iwa and land in Kala'e, Kahanui, Kīpū, and nearby, came from the princesses because of family ties with extremely close relationships, trust and understanding of the *kuleana* (rights, responsibility) to oversee these places that sustain life and fruitfulness of Hawaiian land and people. This land includes wetter zones of the cliff line above Kalaupapa's Kalawao and prior to being assumed by the government to provide "Topside" with water, it also included parts of Waikolu Valley and Waihānau Valley, estimated to have been settled by earlier Hawaiians about a thousand years ago.

Situated in the middle of the island chain, Moloka'i is once again known as the *piko* (center, naval) of Hawai'i. There are three *wahipana* (sacred place) near the center of Moloka'i above the Kalaupapa cliff line, also called *piko*. Pu'uolelo (speaking hill) is sometimes mapped at Nā'iwa of the highest elevation. It is easy to identify from lower lands of Ho'olehua and Nā'iwa by a grove with of pines trees Mr. Meyer planted at the summit in the early 1800's. To the east is the high precipice, Kaohu (adorned in fog) and in the middle is one of few naturally occurring freshwater lakes in Hawai'i. Ms. Greaney grew up with many oral traditions about Keālia Lake, publicly called Meyer Lake. The three *wahipana* form a line, westward it passes procreative Ka'ule o Nanahoa (Phallic Rock), the female fertility partner *pōhaku* (rock) sometimes called Waihuehue, and other sites of regeneration. Birthing stones for delivery of babies are still located in the area.

Keālia is a name for the wooden sticks carried by *kahuna* (priests) in protocol for the religious season of Makahiki. To this day the processional moves east to west to the sacred grounds of the god Lono, publicly known simply as Nā'iwa. The islands each had Makahiki grounds dedicated to Lono where offerings would be made in reverence, appreciation and hopes of an abundance of food in the coming year. The gifts would eventually be redistributed by rank, needs and contribution. Makahiki was so important that it marked time and regulated people's physical and religious life. The spiritual epicenter of Hawaii drew *ali'i* and champions from outer islands who would travel to this hallowed place to compete for top honors and recognition in annual

competitions. All manner of strength and skill were tested in physical, strategic, intelligence, talent, and metaphysical challenges. Makahiki was an integral part of life that allowed for peace, shared abundance, and continuation of the Hawaiian race. Ms. Greaney insists that no one can authentically recognize or celebrate the true spirit of Makahiki, and the peace and abundance it symbolizes for all of Hawai'i, without also recognizing what began, endured and exists in this particular physical space. It is a critical part of Moloka'i's roll and record in history prior to contact, including land use, religious culture, and the daily lives of the Hawaiian people. It played an important part in continuance of intergenerational and communal practices near extinction at the time of the Hawaiian Renaissance; and because of Moloka'i it is again firmly rooted in annual calendars and celebrations statewide.

In the months of Makahiki, southerly Kona storms are associated with Lono. Winter storms are stronger and more frequent, bringing rains to much dryer Leeward sides of southwest shores including the low elevations of Nā'iwa and Pālā'au. Most months of the year, prevailing trade winds blow from the northeast windward side, carrying rains of Kahanui, Nā'iwa, and Pālā'au in upland Kala'e inland from the cliff tops to the upper regions of the Ho'olehua homesteads at mid-elevation of Nā'iwa and Pālā'au. These rains lighten as they travel to the Pālā'au and Nā'iwa foothills of Ms. Greaney's homestead. The windward rains largely dissipate before reaching homesteads in the south and west halves of the slowly sloping lowlands. In early morning hours, *ua poko* (passing showers) often travel along a small gulch along the length of her homestead. Ms. Greaney's homestead lies on eastern edge of Ho'olehua, west of privately owned land of Kualapu'u.

A large *hau* tree (*Hibiscus tiliaceus*) at the gulch edge supports oral and written histories on the origins of Ho'olehua in connection with the Nā'iwa Makahiki grounds. Highly respected for their cultural practice and knowledge of Moloka'i, *Kupuna* (elders) recorded that an ancient *hau* tree identifies where a beloved *ali'i* named Lehua lived in Ho'olehua. Some believe she became the namesake of the area she overlooked. A special type of fern is credited in a more well-known naming history in which a beautiful *hula* dancer named Lehua was given a lei made of Nā'iwa fern by a Makahiki champion. They married and the fern which had only grown in his Kalaupapa home continued to spread from the cliff line, giving Nā'iwa its name. Near above Ms. Greaney's homestead is an ancient *hula* site remaining in the Nā'iwa Makahiki grounds. Moloka'i is the birthplace of the enduring ancient traditions of Kapo and Laka. *Hula* is celebrated in Ka Hula Piko, and Lua for defense is sometimes referred to as a twin or sibling. Neither practice was restricted to one gender and both perpetuated Hawaiian philosophies of spiritual and physical existence.

Hawaiian naming practices often include multiple meanings and another noted source of Ho'olehua's name is for the soldiers leading the advance in war. Ms. Greaney heard old stories of Night Marchers (spirits of dead Hawaiian warriors) traveling their path from mountains in Kala'e toward the Makahiki grounds. They then make their way along the same boundary gulch toward the high school gym on Farrington Avenue. Some Hawaiians still testify having seen them in this area as children. Kamehameha rested his troops in the food abundant spiritual Moloka'i uplands while recuperating and training in this area before going on to successfully capture O'ahu. Initiation of war was bound to spiritual guidance, and branches of *hau* were placed in front of advancing armies by a *kahuna* while others prayed throughout the battle. In the end the victor's *hau* remained standing. *Hau* is also used in other spiritual practices, being important in *heiau* and

hula. So integral was it to Hawaiian ritual and daily life that permission from *ali'i* was required to cut one down.

Hau is included in Hawaiian creation stories involving the great mother of Molokai island, Hina, and two of her demi-god sons, Maui and Kamapua'a. In native religion, Kamapua'a (the pig-God) oversees fertility, he is recognized on (pig alters) that mark *ahupua'a* boundaries that are visited by priests in Makahiki protocol, and recounted in many stories with Lono. Lono is one of the four main Hawaiian gods with Kū (God of war), Kāne (creator of man) and Kanaloa (God of the ocean) with influences on time, spiritual and physical realms; inanimate things, plants, animals and people; lesser gods and each other. Varying powers and characteristics of each god has great complexity, as with their relationships, and in different ways and times may be oppositional, parallel, complementary, and overlapping. In the belief system overarching native Hawaiian life, influences of Lono were life sustaining, including for abundant agricultural crops.

Old Hawaiian historians recorded genealogies tied to the original Makahiki grounds. This includes the *ali'i* credited for starting all Makahiki practices in Hawai'i. He was called by the name of Lonoikamakahiki. One account says he came to Moloka'i from Hawai'i Island and from among all areas in Hawai'i identified much earlier as high holy places, he decided this specific area was to be the primary place in the islands for honoring Lono. Early land records specify Lono descendants as *konohiki* (person in charge of an *ahupua'a*) and title holders in the region through the 19th century. The final third of the regional lands owned by R.W. Meyer and Kalama Waha, beyond the Nā'iwa land, did not come from the Princesses but rather 1,060 acres came from Lonowahine *ali'i* in 1883. Ms. Greaney serves on the volunteer board of directors overseeing all remaining Meyer family land and is working toward collaboration with island farmers to create a more sustainable island future.

Ms. Greaney sees a critical importance in continuance of native practices. They are grounded in a belief system developed on astute Polynesian knowledge gained over thousands of years of scientific observation of the environment, and continued to grow for hundreds more, specific to places in Hawai'i. Much has already been verified with modern science, instrumental innovation and other recent developments. Traditional land use identified areas for specific purposes that supported sustainable provision for a healthy population and ecosystem. To preserve traditional land use in her area, Ms. continues to raise animals and consistently pigs, grow crops, and many other cultural practices important to physical and spiritual wellness. She professes many influences on her spiritual faith which is rooted in the Christian beliefs she was raised in. She sees her Hawaiian spiritual beliefs and practices as complementary. She acknowledges daily influences of God, her *'ohana* who have passed, ancestors, all of nature, and an unseen manifesting power specific to Moloka'i and certain locations including the area of her homestead which had also been recognized by Hawaiians throughout history

Nā'iwa was widely known as an area of physical and spiritual healing. In the past, it attracted injured, sick, and dying Hawaiians with their caregivers and loved ones. Hawaiians placed the first Medical Doctor's clinic as closely as possible to the ancient healing area at the start DHHL's development. Dr. Alsoberry Kaumuali'i Hanchett was educated at Harvard Medical School, and as the very first Hawaiian MD to return to practice medicine in Hawai'i, he built and held his clinic here. Moloka'i's first hospital, Shingle Hospital, opened a decade after the clinic and was also located as closely as possible to Ho'olehua's northern most side approximating the middle of the

Nā'iwa *ahupua'a*. Yola Forbes, Ms. Greaney's mother was raised in the same home of Hawaiian healers in the Nā'iwa foothills and was compelled to enroll in medical school the early 1960's. On track to be the first female Hawaiian MD, she left medical school and her plans to practice obstetrics on Moloka'i when planning for the birth of her first child and still on the mainland. Remaining in the health field, she attained a UC Davis PhD in endocrinology and was a physiology professor over a decade before returning, and later grew food and medicinal trees on Ho'olehua Lot 1.

Ms. Greaney credits being raised in the place of centuries of Hawaiian healing in her teen choice of a health career and decades as an RN. Ms. Greaney learned traditional medicine, receiving some of her grandmother's Hawaiian knowledge and continued under many other Hawaiian health practitioners and *kauka* (doctors). Her Auntie Charlene Tinau, a pure Hawaiian traditional healer with shared genealogical ties in Mana'e came nearly every week for years, uniquely blending Hawaiian and western healthcare. She tended their plants, cultivated near a century, shared her knowledge of what to gather here and elsewhere for common ailments and emergency applications. She successfully healed bone fractures and many conditions using *la'aulapa'au* (plant-based medicine) for Hawaiians without insurance or preferring traditional medicine.

Ms. Greaney was taught starting at ten years old by her experienced Hawaiian grandfather, later her auntie and many expert Hawaiian healers. Her grandpa was first to teach her how to applying traditional techniques of *lomilomi* (body manipulation) to maintain health and for more effective healing. She was taught by Hawaiian elders in the practice of *Ho'oponopono* (Hawaiian conflict resolution), a guided technique for spiritual, self and interpersonal relationship healing. Unresolved conflict causes stress, physical inflammation and may lead to severe illness. She received intensive instruction on how to provide this service for Hawaiian families seeking reconciliation when facing terminal illness. A necessary part of all Hawaiian healing methods are prayer and meditation during preparation like planting or gather medicine and during application, through the healing process until it finishes. Powerful prayers effect body, mind and spirit, and are strengthened by connectedness to the spiritual nature of the place, plants, person being healed, and the healer.

Ms. Greaney passed on some health knowledge she learned working on her master's in Community Public Health. She taught basic *la'aulapa'au* and *lomilomi* techniques at Windward Community College, and expanded the Health Sciences' food garden by starting a *la'aulapa'au mala* to teach students of the Native Hawaiian Nursing Pathway to provide more culturally appropriate care for *kupuna* patients. She sees her homestead as the perfect place to promote indigenous health knowledge and continues to identifying medicinal plants in the area which can be gathered or cultivated. Slightly higher altitude and rainfall, and a little less sun and lower temperatures in the foothill region and the homesteads to the northwest, varies some from lower Nā'iwa and close by areas to the south and south west where most of Ho'olehua is located. In the same way, most of Ho'olehua and lowest Nā'iwa varies from regions to west and southeast. Particular flora varieties tend to fair a little differently, with ideal growing conditions for specific food and medicinal plants.

Ms. Greaney sees great potential in reducing disproportionately high Hawaiian mortality and morbidity rates with traditional native diet, lifestyle and healing techniques. All of which she believes will be eagerly adopted by residents of this area when it is affordable and readily available,

as more Hawaiians are looking to the past for knowledge on how to have a high quality of life. Homesteaders interested in growing medicinal plants as crops have the benefit of high demand from people of all cultures who seeking alternatives to “big pharma” and are willing to invest in their health by purchasing products offering more natural healing methods. Increasing homesteader’ income generation this way has the potential to raise socio-economic status and quality of life, continue cultural practices of this area, and maintain a rural community and traditional lifestyles.

Experiences as Moloka‘i General Hospital’s community cancer program coordinator, a hospice nurse, with bereavement groups, added to Ms. Greaney’s interest in end-of-life beliefs and practices. She spent years seeking out information and documenting oral histories from Moloka‘i *kupuna*. She noted that Homelani and Ho‘olehua Cemeteries, both chosen by Hawaiians as the final resting place for their beloved *‘ohana* are located in proximity to *wahipana*. She was informed by *kupuna* about a *lele* (place of transition to the afterlife for souls/spirits) above her homestead where the physical and spiritual realm connect. A mapped *heiau* exists in that location. A continuum of traditions for the most significant of all human experiences, from reproduction of life until after death, was focused in this *piko* for potentially half a Millenia.

An immense *hau* tree has thrived in Nā‘iwa/Pālā‘au for unknown generations, including the last four of her family, and helped them to flourish, also. It is a living linkage to the past allowing continuation of endangered native practices and accompanying understanding. Hawaiian ways of knowing and interacting with all things on a deep and conscious level is reflected in specific behaviors. Now called protocol, instruction on correct actions, including when to do what and how were a routine part of being raised by *kupuna*. Standard actions include specific words, ways of speaking them, and also silence to convey necessary gratitude, humility and respect for all things. This is especially true towards everything that is older, including almost all of nature. It was critical not to waste or cause unnecessary damage to any resource. There is inherent value in all things so no matter how much you had, waste or avoidable damage was unacceptable. Such wrong action resulted from not being taught, taught incorrectly, or not following what you were taught. All you do or don’t do is based on *‘ike* and *‘imi* (knowledge and understanding), and is a direct reflection of your teacher and your family. Behaving wrongly resulted in repercussions that could imperil sustainability of life. Part of Native Hawaiian traditional practice of this understanding was correct access of natural resources for immediate, necessary use. Overharvesting, improper timing, and incorrect techniques and carelessness can injure resources and surroundings, and reduce the ability to reproduce and replentish.

The *hau* provides obvious examples providing a windbreak, helping new crops grow without damage, reducing erosion from water coming down the gulch, and many more provisions. It is an irreplaceable source for medicinal properties of plant parts for *La ‘aulapa ‘au*, her tools for *lomilomi* (Hawaiian healing utilizing massage technique) from *hau*’s strong, light branches with beneficial bends. It is her family’s main main resource to make *ko ‘i* for for hand carving *papa he ‘e nalu* (surfboards). It is significant for them because surfing was always their most enjoyed family bonding activity. It is a source of pride to make surfboards in the way they were first made. It involves several plants found in this area of Moloka‘i and there are very few families that still know and can pass on this traditional practice. Significance continues to grow as the sport created by Hawaiians became known throughout the world as an Olympic sport with a Hawaiian first gold medalist, who also calls Moloka‘i home. The family also all have a hand carving *papa ku ‘i ‘ai*

(pounding board such as to make *poi*) with handmade pohaku *ku'i 'ai* (food pounding stone) for preparation of many traditional and common foods. It is very important that appropriate prayers are offered in creation of both types of *papa*, *pōhaku* and all other implements. Emotions and interactions must be positive because it is imbued in the creation process and will have according effect on people using the product.

The ancient tree is located at the lower Makahiki grounds. It can be used for building fires, and is located rather close to the cliff line. *Hau's* straight branches provide light, strong wood for making spears. Among numerous Makahiki games of sportsmanship is a game of throwing flaming spears of *hau* wood over a cliff. Ms. Greaney's son loves the sport of throwing and blocking spears which he was taught by Hawaiian *lua* elders, and he makes them from *hau* and other homestead trees. Young branches are flexible enough to make the excellent kites flown during Makahiki. In this area of Nā'iwa/Pālā'au, Ms. Greaney frequently flew such kites as a girl upon the reliable trade winds over their rolling hills. Cordage made of *hau* was also used to make bows for hunting and sport, and for sling shots, the most preferred weapon of war for its long range and lethal power.

To many Hawaiians it is no surprise that the original Makahiki lands are also the only place of continuous practice of the social, physical, emotional and spiritual ritual, healing and enlightenment associated with Makahiki in existence. Cultural experts on Moloka'i still observe Makahiki with formal protocol, and all youth learn the traditional practices of their ancestors. When other islands ceased to honor these practices while the ancient knowledge continued only on Moloka'i. School students throughout Hawai'i have traveled for nearly a decade to participate in our Makahiki competitions, including decades of annual representatives from Kamehameha Schools. It remains one of the island's main annual social celebrations with generations carrying memories of Hawaiian sportsmanship as competitors and spectators.

Much physically remains in this area from the old days when the Hawaiian people are ready. Much knowledge was lost, but it can be relearned from all that is still left through written and physical remains, with dedication to reviving ancient ways of knowing and being. She cited Hokulea as a recent example of changing the future of a people by reviving ancient knowledge and practices. The science of wayfinding navigation was recovered a little at a time until it was brought back to a living art allowing circumnavigation based on learned observation of nature. Hawaiians regained pride as individuals knowing that they descend from a people with a great past of accomplishment. They see their part in the larger group of Polynesians whose knowledge of the natural world was in many ways unparalleled among all people. Modern science provides further evidence of the brilliant science of the past which has been lost for a period of time. Discoveries in archeology verified and continues to inform knowledge of the Pacific, like voyaging, and can continue to produce priceless keys of relearning ancient knowledge.

Many *pōhaku* implements (stone artifacts) such as *ulumaika* (wheel shaped stones) for ceremonial competitions and *ma'a* (slingshot stones) for battles of sport and war have always been found in the area of Ms. Greaney's homestead and unearthed to this day. More artifacts have been found recently and numerous more are likely to be present because of past heavy use of the area. They may not be immediately recognized if they do not have the obvious shape of *ulumaika*. An expert on Polynesian stone artifacts visited through Bishop Museum some years ago and borrowed a hammer stone that was found in order to scan it because he said it was the finest example he'd ever seen in Hawai'i. It was not returned.

Due to the special significance of this place to Hawaiian culture, historically and continuously, the homestead community should be notified well in advance of any proposed developments that will occur on the Makahiki lands. Ms. Greaney also expressed concerns homesteaders be individually consulted if it involves their land since many lots have been occupied by the same family for a century. If there are any future developments, it is important that in depth archaeological inventory surveys be conducted as it is known that many artifacts still exist in the mauka and central regions of Nā'iwa and Pālā'au. Though not inhabited by such a large constant population year around like other areas near the coast and freshwater, this area supported thousands of Hawaiians who regularly occupied it for seasonal, ceremonial, celebratory, and other prime purposes. The primary use of this land was uncommon for other areas of Hawai'i.

Ms. Greaney shared that at the time residents knew most of the land in Ho'olehua was dry and lacked access to water and it would both challenging and difficult to be self-sufficient in the homestead. Ms. Greaney mentioned a letter between her grandfather and Charles Reed Bishop, stating concerns about the location of the homestead and that this pilot program was not setting up Native Hawaiians for success. The letter also questioned the purpose of those in charge and why the Native Hawaiians were receiving land that would be difficult to live on instead of land in areas with greater access to water and more natural abundance. There was a general lack of interest early on from Moloka'i residents who did not want to live in the Ho'olehua-Pālā'au area due to lack of fresh water and distance from family and the coastline which was not quick to travel. Maui residents who didn't have access to land on that island moved to fill remaining vacant lots becoming many of the first settlers of Ho'olehua's homesteads. Determined to create the prosperity they had lacked, the new homesteaders were called the "Moloka'i Miracle" and provided needed evidence that Hawaiians could be rehabilitated through farming which allowed for continuation and expansion of the Hawaiian Homes project. Ms. Greaney sees ten decades of Moloka'i homesteaders who have proven their dedication to making their lease lands productive through continuous investment of their resources and by pushing through natural and man-made barriers.

Moloka'i Irrigation System was built specifically for residents of the Ho'olehua homesteads and she stressed has been central to all planned land usage and settlement areas for Native Hawaiians, possibly no more important than on Moloka'i. Ho'olehua, including Nā'iwa, is historically known for its dry and barren land, with little to no water available. Originally, the Moloka'i Irrigation System was built specifically for residents of the homestead. In later years, the irrigation system expanded to serve other regions such as Kualapu'u, lower Pālā'au, as well as areas toward the west, like Moloka'i Ranch and the golf courses. With the expansion of irrigation water, the homestead residents have been faced with high cost of water and limited access. The proposed project is important as it will provide homestead residents the opportunity to use land for agricultural purposes, however, it is also important to ensure access to the appropriate amount of water is available and at a reasonable cost. If this is not possible, residents who move into these agricultural lots may have difficulty growing crops

Ms. Greaney recalls stories of Pu'u Pe'elua (Caterpillar Hill) in Ho'olehua, and Kualapu'u (Sweet Potato Hill) in the community named after the landmark. Her mother shared that in certain years in the 1940's and 1950's, the entire lower area of Nā'wa would be covered with caterpillars to the extent they could not walk to school as children without crushing them underfoot. *Mo'olelo* about this area of central Moloka'i include large caterpillars, indicating they have come at various times during history. When Ms. Greaney was in school the whole area around Kualapu'u was

planted in pineapple, and from fifty years before that nearly all of Ho'olehua's homestead area was also used for growing pineapples. In the 1980's, there were so many small black beetles called "pineapple bugs", electric zappers were placed in the school cafeterias to keep the numbers down, but students still had to cover their plates or have them in their food. They disappeared in the years after the pineapple companies left.

Fruit flies caused serious damage to fruit crops for decades, and her family participated in research to reduce their numbers in the 1980's and early 2000's. Over the past decade, there have been years when locusts and large black moth populations exploded such that a hundred could easily end up in the house and cover the lights if any doors were opened after dark. They caused major agricultural damage by eating and stinging the fruit, and significantly reduced viable crop yields. She isn't sure if the more recent spikes in pest populations have been explained, if they occurred naturally, were exacerbated by man's actions, or if any of the infestations will occur cyclically.

Most people on Moloka'i know the history of food abundance that gave it the enduring name, *Moloka'i 'Āina Momona* (rich, fat land). As recently as a hundred and fifty years ago Moloka'i was known for large quantities of agricultural and value-added exports such as *kalo* grown in *lo'i* and dry land *māla* along with *'uala* and other food sources. This includes aquaculture, and fish grown in the largest number of *loko'ia* (fishponds, ocean aquaculture enclosures) in Hawai'i, numbered over 60 that are still recognizable. Ms. Greaney was first taken to fishponds alone by her grandfather who was proud to share this purely Hawaiian innovation to feed the people. As an adult she worked for many years with restoration efforts. Her family has a tropical fruit orchard, and has grown and processed many diversified crops such as sugar, coffee, corn, potatoes. In Kala'e, their family had *lo'i kalo*, a peach orchard, a vineyard, a ranch, and a dairy. With very limited irrigation from catchment and a past small well, the crops were productive due to high levels of rainfall, allowing for regular export to O'ahu and the Mainland, including butter preserved in banana leaves for transport. Similar to current population numbers, in the past Moloka'i routinely produced food in excess of its own needs and helped feed the other islands. An elder explained to Ms. Greaney that so abundant was food on Moloka'i that for hundreds of years Moloka'i sent food grown in back valleys over the mountains to Kamalō and across the channel to Maui. Today only 2% of food purchased on island is from Moloka'i, showing the island is capable of providing much more of Hawaii's agriculture if resources like water prioritized accordingly.

Ms. Greaney voiced some hesitation in terms of agricultural and housing development in the proposed project areas related to assuring new lessees would be aware of past use of the land and any possible health effects it may have directly on those using the land as well as for those who consume food grown in these and nearby areas. Hawaiian Home Lands were leased to plantations for a century and a half, and land continues to be leased in all areas to private companies, as in Ho'olehua. Here it was utilized by sugar, pineapple, and coffee plantations, as well as for research by large agricultural bioscience companies for designing products for pest control. Ms. Greaney's master's thesis in 2001 looked at possible public health effects of the copious pesticide use of chemicals that were made illegal in the U.S. which she found were applied by the pineapple plantations. She does not know what harsh chemicals may have been used by the other agribusinesses. Ms. Greaney strongly suggests the soil is well tested by third party professionals for any presence of harmful chemical residue possibly remaining in the soil. This is a good safety

precaution for farmers. Future studies may also look at nearshore areas off of Pālā'au to assess for the presence of chemicals from runoff and any impacts.

A common Hawaiian saying is, *Ola i ka Wai* (water is life). Everywhere safe drinking water is necessary to sustain life. Above Ho'olehua's irrigation water storage, access and affordable usage; is safe drinking water storage, delivery, access for homesteader use. Her public health background in community health and nursing raised concern over the safety of the drinking water system for the homesteads. The current aged pipes were installed at the time the area was leased to Hawaiians with creation of the Ho'olehua Water System early last century. Ho'olehua's drinking supply runs through pipes on Ms. Greaney's homestead. Adverse impacts of asbestos on health have since become well known. Waterlines eventually degrade and asbestos shears off in splinters in old pipes, entering the water supply. DHHL is aware of the asbestos but current plans for improvement do not include budgeting for changing Ho'olehua's water storage tank and lines. Ms. Greaney and other homesteaders are working with DHHL, to discontinue use of water lines with asbestos and use safer materials for delivering drinking water to homesteaders. They think this budgeting adjustment can be made for Ho'olehua because private lands in nearby *ahupua'a* like Nā'iwa and Kīpū are changing out asbestos pipes.

Ho'olehua Lot #1 is the boundary that separates Hawaiian Home Lands from privately owned land in Kualapu'u. Ms. Greaney's homestead is the boarder marking the end of the public lands in long term leases to individual Hawaiians with restricted successor rights based on their family's maintenance of specified Hawaiian blood quantum. All homestead lands are in trusted by the US government Department of the Interior (US DOI) to the State of Hawai'i, managed by the Department of Hawaiian Home Lands under the Hawaiian Homes Commission with representatives from each island that is headed by a Chair Cabinet Member selected by the sitting governor. It is through this system that homesteaders will live and perpetuate Hawaiian culture through generational connection to their land. Agricultural Leases homesteaders have made concerted effort as individuals, families, and groups, with expert Ag. assistance, to return to historic cultivation of native plants, despite difficulty obtaining public water access. Ho'olehua homesteaders are again successfully growing plants vital to Hawai'i culture and bringing back to larger scale crops like dryland *kalo*, *'uala*, and *'awa* (called Pepper Plant in English) through continued propagation. These and other plant resources are critically important because they necessary in Hawaiian cultural traditions. Ms. Greaney believes the highest percentage of Hawaiians on Moloka'i Island has helped residents perpetuate endangered plant-based interest, knowledge and practices.

Ms. Greaney sees a deep desire among many Hawaiians who want to reconnect with ancestral knowledge and believes the growing interest in traditional practices will lead more Hawaiians to live their culture and aid a return to the health and wellness that Hawaiians once had. Hawaiians were *pili* (cleave to as a close relationship) to the land knowing their own health was inexplicable tied to environmental health. Understanding the ecosystem as a whole was critical and acutely observed everything in the sky, from clouds over the mountain tops extending to the shoreline and out to into the ocean. Hawaiian lifestyle, cultural practices and beliefs, including religion and world view guided individual behavior and society. She believes the traditions Hawaiians developed from generations of knowledge of the connectedness and people's interdependence with nature, created educated caretakers and skilled cultural practitioners' which are able to provide sustainable health vital to both. This is only possible if the resources are still available and accessible to

Hawaiians. Ms. Greaney's hope is more people will join restoration efforts for abundance through restoration of aquaculture in Moloka'i *loko 'ia* (fishponds) and help support current *mahiai* (farmers) of Ho'olehua Homesteads, and development of the next generations.



APPENDIX F-2.

**CULTURAL IMPACT
ASSESSMENT REPORT WITH
KA PA‘AKAI ANALYSIS**



DRAFT
Cultural Impact Assessment for the
Department of Hawaiian Homelands (DHHL) Ho‘olehua
Scattered Lots Expanded Project Area Project,
Pālā‘au and Ho‘olehua Ahupua‘a,
Moloka‘i District, Moloka‘i Island
TMKs: (2) 5-2-026:003, 016, and 017

Prepared for
Munekiyo Hiraga
on behalf of the
Department of Hawaiian Home Lands

Prepared by
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(Job Code: PALAAU 15)

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Management Summary

Reference	Cultural Impact Assessment for Department of Hawaiian Home Lands Ho'olehua Scattered Lots Expanded Project Area Project, Pālā'au and Ho'olehua Ahupua'a, Moloka'i District, Moloka'i Island, TMKs: (2) 5-2-026:003, 016, and 017 (Baculpo and Hammatt 2026)
Date	January 2026
Project Number(s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: PALAAU 15
Agencies	Department of Hawaiian Home Lands (DHHL); State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP)
Land Jurisdiction	DHHL
Project Location	These three scattered subdivision project area parcels are within the DHHL Ho'olehua-Pālā'au Homesteads and located within the north portion of the Ho'olehua plain of central Moloka'i, approximately 2.2 km northwest from Moloka'i (Ho'olehua) Airport. The contiguous parcels are bounded on the north by Pu'ukapele Avenue and on the other sides by other DHHL parcels. The project area is depicted on a portion of the 2024 Molokai Airport U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1) and on the 2013 ESRI satellite photograph (Figure 4).
Project Description	<p>The project entails subdividing five lots on DHHL-owned lands in the Ho'olehua area on Moloka'i into 12 lots to be designated for subsistence agriculture use and improving them for lease to DHHL beneficiaries. The five lots are hereafter referred to as "subject properties." Two of these five lots—TMKs: (2) 5-2-005:031, Lot 17 and 5-2-026:014, Lot 104D-1 were the subject of a prior cultural impact assessment (CIA) done by Kaapana et al. in September 2023. This current study is intended as a companion report to the CIA done by Kaapana et al. (2023a). This companion study addresses three additional lots (TMKs: [2] 5-2-026:003, 016, and 017) in the immediate vicinity of one of the lots previously addressed (TMK: [2] 5-2-026:014), as well as adjacent roadway and drainage improvements within portions of Pu'u Kapele Avenue, Farrington Avenue, and Mo'omomi Avenue.</p> <p>Improvements to be undertaken include creating access driveways to each of the newly created lots with connections for domestic water and irrigation water for each lot provided within the access driveways from existing systems in the neighboring roadways. The lots will be made available to DHHL beneficiaries currently on the waitlist for an agricultural lease on Moloka'i. Once awarded, lessees will be able to</p>

	<p>construct homes on the lots, in addition to utilizing the lots for agricultural purposes.</p>
<p>Project Acreage</p>	<p>The project parcel size is as follows: TMK: (2) 5-2-026:003 is 4.72 acres (1.91 hectares). TMK: (2) 5-2-026:016 is 4.73 acres (1.91 hectares). TMK: (2) 5-2-026:017 is 5.83 acres (2.36 hectares).</p> <p>The roadway and drainage improvements portion of the project area includes an addition of approximately 5.9 acres (2.4 hectares).</p> <p>The total project area is 21.18 acres (8.58 hectares).</p>
<p>Document Purpose and Regulatory Context</p>	<p>This CIA supports compliance for the DHHL Ho‘olehua Scattered Lots Expanded Project Area project with:</p> <ul style="list-style-type: none"> • <i>Ka Pa‘akai O Ka‘aina v. Land Use Commission</i> (94 Hawai‘i 31), in which the Hawai‘i Supreme Court established a three-part analytical framework to assist the state and counties in fulfilling their constitutional obligation to preserve and protect traditional and customary practices (TCP [“TCP” is used here as it is used in the Kaua‘i Planning Department Worksheet for Ka Pa‘akai Assessment to refer to “traditional and customary practices]) exercised by Native Hawaiians, to the extent feasible; • the mandate set forth by the Hawai‘i State Constitution (Articles IX and XII), courts, Hawai‘i Revised Statutes (HRS), and Hawai‘i Administrative Rules (HAR) and other Hawai‘i State laws requiring government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups; • the State of Hawai‘i’s environmental review process under HRS §343, which requires consideration of the proposed project’s potential effects on cultural practices and cultural features to “promote responsible decision making” (HRS §343); • and the State of Hawai‘i’s historic preservation review process under HAR §13-275-6 and §13-284-6, which requires the identification and mitigation of adverse effects proposed by a potential project in order to “promote the use and conservation of historic properties for the education of the citizens of Hawai‘i” (HAR §13-275-6). <p>This CIA contains information gathered from archival research and consultation, compiled to “analyze the impact of a proposed action on cultural practices and features associated with the project area” (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State of Hawai‘i significance</p>

	<p>Criterion e, pursuant to HAR §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6).</p> <p>This project also includes a Ka Pa‘akai Analysis (KPA) study. In <i>Ka Pa‘akai v. Land Use Commission</i>, 94 Hawai‘i (2000) the Court held the following analysis must also be conducted:</p> <ul style="list-style-type: none"> • The identity and scope of valued cultural, historical, or natural resources in the petition area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the petition area; • the extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and • the feasible action, if any, to be taken by the state to reasonably protect Native Hawaiian Rights if they are found to exist.
<p>Results of Background Research</p>	<p>Background research for the proposed project yielded the following information:</p> <ol style="list-style-type: none"> 1. Traditionally, Moloka‘i was divided into two <i>moku</i>, or districts: Kona and Ko‘olau. In 1859, the traditional <i>moku</i> of Kona and Ko‘olau were dropped and the island as a whole was referred to as the Moloka‘i District. In 1909, the island was again divided into two districts: Kalawao District, containing the lands of Kalaupapa, Kalawao, and Waikolu, and Moloka‘i District, comprising the remainder of the island (Coulters in Summers 1971:2), including the current project area. 2. The winds of Pālā‘au are Ho‘olua, Moa‘e, Ka‘ele, and Hauialialia (Ka Hae Hawaii 1861; Nakuina 1995:64). The rain of the area is known as Nāulu (Akana and Gonzalez 2015:175). 3. The prominent <i>ka‘ao</i> (legends) of Pāka‘a and Kū-a-Pāka‘a originate from Moloka‘i (Handy 1922:76). Chief Ho‘olehua was married to ‘Īloli and they had a daughter named Hikauhi, who later became wife of Pāka‘a and mother of Kū-a-Pāka‘a, the caretakers of the wind gourd of La‘amaomao (Nakuina 1992:29–30). 4. Pu‘u Pe‘elua, or Caterpillar Hill, is located in Ho‘olehua and named after the <i>pe‘elua</i> (caterpillar). This <i>pe‘elua</i> was a <i>kupua</i> (demigod), who took the form of a caterpillar in the day and a handsome man at night. The <i>pe‘elua</i> became an <i>‘aumakua</i>

	<p>(family or personal gods, deified ancestors) for the district of Ho'olehua (Ne et al. 1992:49–50).</p> <ol style="list-style-type: none"> 5. Four <i>heiau</i> (pre-Contact place of worship) were recorded in the Pālā'au and Ho'olehua <i>ahupua'a</i> including Lepekaheo Heiau and three unnamed <i>heiau</i> (Summers 1971:37–38). 6. Historical anecdotes and environmental data for this region indicate a possible substantial pre-Contact population (Fornander 1880; Summers 1971), which would have subsisted on dryland agriculture consisting mostly of sweet potatoes. 7. Historic properties previously identified in the vicinity are limited to a few sites recorded by Summers (1971), including the legendary Kape'elua Complex (State Inventory of Historic Places [SIHP] # 50-60-03-00011). There appears to have been a locus of traditional Hawaiian activity in Anahaki Gulch north of the western project area, but this is suggested to relate to the micro-environment of that gulch and greater proximity to the coast. 8. In the 1790s, Kamehameha I reportedly “drilled his warriors on the Hoolehua plain near where the airport is now” (Cooke 1949:112). These training grounds may have included the current project area. 9. Following the Māhele in 1848, the entire <i>ahupua'a</i> (traditional land division usually extending from the mountains to the sea) of Ho'olehua was given to the government, and all of Pālā'au Ahupua'a (including the western and central project areas) was “Crown lands” owned by Kamehameha III (Dodge et al. 1897). 10. Cattle were introduced to Moloka'i in the 1840s (de Loach 1975:68). In the second half of the nineteenth century, cattle, sheep, and goat ranching expanded greatly. By 1866, there were “2,586 head of cattle, 13,332 sheep and 196 goats on the island” (de Loach 1975:86). 11. Molokai Ranch was formed in 1897 when a <i>hui</i> (group) of investors purchased approximately 70,000 acres of central and western holdings from the Bishop Estate (Cooke 1949; Stearns and Macdonald 1947). By 1905, the ranch had transitioned from an open country system to the paddock system (Henke 1929). The western and eastern project areas are within the Momomi Paddock. In the 1920s, Molokai Ranch lands consisted of about 10,000 acres leased for pineapple cultivation, 8,000 acres of forest reserves, and 50,000 acres utilized for ranching (Henke 1929:52). Cattle ranching remains an important industry on Moloka'i. 12. In 1920, the U.S. Congress passed the Hawaiian Homes Commission Act to administer and manage some 200,000 acres of land that belonged to the government of the Kingdom of
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	<p>Hawai'i or was recognized as Crown lands. The following year, the program began attracting people to Moloka'i. Overall, the program succeeded and was expanded to include 11,400 acres of Pālā'au-Ho'olehua beginning in 1924. Parcels 31 and 14 consist of approximately 36.4 acres (14.7 hectares) of these Pālā'au-Ho'olehua Homestead lands and include Lots 17 and 104D-1.</p> <p>13. The Moloka'i homestead program initially was impacted by many problems, including drought and high winds (McGregor 1990:37–38). Despite such difficulties, people managed to cultivate their plots (McGregor 1990:37–38). Farming was diversified and successful crops included corn, watermelons, cucumbers, sweet potatoes, eggplant, and papaya (Keesing 1936; Wiebke 1940). In addition to agricultural pursuits, the Hawaiian Homes Commission encouraged raising livestock and ranching. Raising pigs brought the most revenue and economic value; however, a few families sold eggs and every family owned some cattle (Keesing 1936).</p> <p>14. According to Handy (1940:157), “in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua” and “Hoolehua and Palaaau were noted for sweet potatoes in olden days.” However, Handy and Handy (1972:283) note homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.</p> <p>15. A civilian airfield was established in Ho'olehua in 1919. In 1931, the U.S. Army Air Corps established a portion of this field as “Homestead Field” (Horvat 1966:38, 40–47). By the time the United States entered World War II in 1941, aircraft of the Fifth Bombardment Group were stationed at Homestead Field. A complex of World War II bunker sites was identified on the airport property well south of the present project areas in 1980 by AECOS Inc. (1980).</p> <p>16. Fifteen archaeological studies were previously conducted within the project area vicinity, two of which included the project area (Pfennig et al. 2011; Shideler and Hammatt 2021). No historic properties have been identified within the project area, however, there are two terrace alignments (no SIHP # assigned) identified by Shideler and Hammatt (2021) within the southern portion of TMK: (2) 5-2-026:014, adjacent to the northern lots of the current project area.</p> <p>17. Seven previous cultural studies were conducted within the project area vicinity. The following cultural practices were mentioned by previous informants: agricultural practices and gathering practices for sustenance and <i>lei</i> making purposes, <i>mo'olelo</i></p>
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	(stories) and <i>wahi pana</i> (storied places), healing practices, cultural and historic properties, and burial sites.
Results of Community Consultation	CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 38 individuals or groups; seven responded, two of which were interested in participating, with one individual allowing CSH to include a previous interview summary. Unfortunately, we were unable to schedule an interview before the deadline with the other interested individual. Mrs. Kilia Purdy-Avelino and her husband Mr. Justin Avelino, participated in consultation for the previous companion CIA (Kaapana et al. 2023a) and granted CSH permission to include their testimony with additional revisions in the current study.
Identification of Cultural Practices	Based on the results of background research and community consultation conducted as part of this CIA, CSH has identified the following cultural resources and practices within Pālā'au and Ho'olehua <i>ahupua'a</i> : <ol style="list-style-type: none"> 1. Agricultural and gathering practices 2. Marine resources 3. <i>Mo'olelo</i> and <i>wahi pana</i> 4. Healing practices 5. Religious activities 6. Burial practices <p>CSH has determined that no ongoing cultural practices were identified within the project area during background research and community consultation. However, the project area is located in the general vicinity of ongoing cultural practices such as agricultural and gathering activities, ceremonial activities, and traditional burial practices.</p>
Identification of Impacts to Cultural Practices	No impacts to ongoing cultural practices were identified within the project area during background research and community consultation for this CIA. Consultation from the prior companion CIA (Kaapana et al. 2023a) and current study identified a number of concerns related to the environment and the broader community: <ol style="list-style-type: none"> 1. Availability of water 2. Soil quality 3. Impacts to <i>'uhane</i> (spirits) and <i>'iwi kūpuna</i> (ancestral remains) 4. Impacts to <i>wahi pana</i> (storied places)
Mitigation Possibilities Identified During Background	The results of background research and community consultation conducted for this CIA inform the following mitigation possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups:

<p>Research and Consultation</p>	<ol style="list-style-type: none"> 1. A number of concerns expressed by the community during consultation from the prior CIA (Kaapana et al. 2023a) and current study, do not relate specifically to ongoing cultural practices within the project area, but nonetheless should be considered during project planning and development. These concerns include the following: <ol style="list-style-type: none"> a. Ms. Malia Lani Forbes Greaney expressed concern regarding the availability of water. She noted that Ho'olehua, including Nā'iwa, is historically known for its dry and barren land, with little to no water available. She stressed it is also important to ensure access to the appropriate amount of water is available and at a reasonable cost (Kaapana et al. 2023a). b. Ms. Greaney strongly suggests the soil be well tested by third party professionals for any presence of harmful chemical residue possibly remaining in the soil. This is a good safety precaution for farmers (Kaapana et al. 2023a). c. Ms. Greaney also suggested future studies may also look at nearshore areas off Pālā'au to assess for the presence of chemicals from runoff and any impacts (Kaapana et al. 2023a). d. Mrs. Purdy-Avelino expressed concerns about sacred sites located in the vicinity of the project area. She supports the development for more homestead lots for homesteaders on the waitlist, however, she emphasized the need for continuous protection of sacred sites. e. Mr. Avelino stated it is vital that no work be done to the Makahiki Grounds. 2. Consultants from the prior CIA (Kaapana et al. 2023a) have recommended the following: <ol style="list-style-type: none"> a. Ms. Greaney insists the homestead community should be notified well in advance of any proposed developments that will occur on the Makahiki lands (Kaapana et al. 2023a). b. Ms. Greaney also stated that if there are any future developments, it is important that in depth archaeological inventory surveys be conducted as it is known that many artifacts still exist in the <i>mauka</i> (toward the mountains) and central regions of Nā'iwa and Pālā'au (Kaapana et al. 2023a). c. Mrs. Purdy-Avelino recommends a cultural monitor be present on site during any work to help provide guidance regarding Hawaiian sense of place, protection of sacred areas and objects, and to be a voice for <i>kūpuna</i>.
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	<p>3. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. Should any potential historic properties be identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3.</p> <p>4. Non-Native Hawaiian human remains will undergo the process laid out under state law (HAR §13-300), however, Native Hawaiian human remains and cultural items found on DHHL lands are subject to the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3001 et seq and its implementing regulations (43 CFR Part 10). As 43 CFR § 10.2 provides, tribal lands include “All lands administered by the Department of Hawaiian Home Lands (DHHL) under the Hawaiian Homes Commission Act of 1920 (HHCA, 42 Stat. 108) and Section 4 of the Act to Provide for the Admission of the State of Hawai‘i into the Union (73 Stat. 4), including ‘available lands’ and ‘Hawaiian home lands.’” Under NAGPRA, DHHL must prepare a plan of action (POA) prior to any planned activity that will likely result in a discovery or excavation of human remains or cultural items. If not part of a planned activity, a POA is required after the discovery of human remains or cultural items. In developing a POA, DHHL will initiate consultation with lineal and cultural descendants, consult on the POA, and approve and sign the POA, and provide a copy to all consulting parties. The three-step process for drafting a POA pursuant to NAGPRA can be found in 43 CFR § 10.4(b).</p>
<p>Ka Pa‘akai Analysis</p>	<p>Based on information gathered from cultural and historical background, and community consultation for this project, traditional Hawaiian activity in this area of Pālā‘au and Ho‘olehua was focused along the coast or east, toward Nā‘iwa. There were no native tenant LCAs identified within the current project area or its immediate vicinity. No traditional Hawaiian sites have been identified within the project area. No impacts on traditional and customary practices are anticipated as traditional and customary practices were not identified within the current project area and its immediate vicinity.</p> <p>The accompanying literature review and field inspection (LRFI) archaeological study (Shideler and Hammatt 2021) conducted for the prior CIA (Kaapana et al. 2023a) that addressed Lot 17 (TMK: [2] 5-2-005:031) and Lot 104D-1 (TMK: [2] 5-2-026:014) identified two terrace alignments (no SIHP # assigned) within the southern portion of Lot 104D-1, which is located adjacent to the northern lots of the current</p>

	<p>project area. The LRFI recommended preservation in the form of avoidance and protection of the two boulder alignments. Other historic properties are located along the coast and east, toward Nā'iwa.</p> <p>At present, no documentation or testimony indicates traditional or customary Native Hawaiian rights are currently being exercised “for subsistence, cultural and religious purposes and possessed by ahupua‘a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778” (Hawai‘i State Constitution, Article XII, Section 7) within the specific project area. While no cultural resources, practices, or beliefs were identified as currently existing within the project area, Pālā‘au and Ho‘olehua Ahupua‘a maintain a rich cultural history in the exercise of traditional or customary Native Hawaiian rights within the project <i>ahupua‘a</i>.</p>
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Section 1 Introduction

1.1 Project Description

At the request of Munekiyo Hiraga, and on behalf of the Department of Hawaiian Home Lands (DHHL), CSH is conducting a cultural impact assessment (CIA) for the proposed DHHL Ho'olehua Scattered Lots Expanded Project Area Project, Pālā'au and Ho'olehua Ahupua'a, Moloka'i District, Moloka'i Island, TMKs: (2) 5-2-026:003 (4.72 acres or 1.91 hectares), 016 (4.73 acres or 1.91 hectares), and 017 (5.83 acres or 2.36 hectares). The project area includes three "Scattered Lots" parcels and adjacent portions of Pu'u Kapele Avenue, Farrington Avenue, and Mo'omomi Avenue (approximately 5.9 acres or 2.4 hectares) located in the north portion of the Ho'olehua plain of central Moloka'i. The project area is within the DHHL Ho'olehua-Pālā'au Homesteads, and is located approximately 2.2 km northwest from the Moloka'i (Ho'olehua) Airport. The project area is depicted on a portion of the 2024 Molokai Airport U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), tax map plats (Figure 2 and Figure 3), and aerial photograph (Figure 4).

The project entails subdividing five lots on DHHL-owned lands in the Ho'olehua area on Moloka'i into 12 lots to be designated for subsistence agriculture use and improving them for lease to DHHL beneficiaries. The five lots are hereafter referred to as "subject properties." Two of these five lots—TMKs: (2) 5-2-005:031, Lot 17 and (2) 5-2-026:014, Lot 104D-1—were the subject of a prior CIA conducted by Kaapana et al. in September 2023. This current study is intended as a companion report to the Kaapana et al. (2023a) CIA. This companion study addresses three additional lots (TMKs: [2] 5-2-026:003, 016, and 017) in the immediate vicinity of one of the lots previously addressed (TMK: [2] 5-2-026:014), as well as adjacent roadway and drainage improvements within portions of Pu'u Kapele Avenue, Farrington Avenue, and Mo'omomi Avenue.

Improvements to be undertaken include creating access driveways to each of the newly created lots with connections for domestic water and irrigation water for each lot provided within the access driveways from existing systems in the neighboring roadways. The lots will be made available to DHHL beneficiaries currently on the waitlist for an agricultural lease on Moloka'i. Once awarded, lessees will be able to construct homes on the lots, in addition to utilizing the lots for agricultural purposes.

Additionally, it is noted there is an existing abandoned home on Parcel 14 that records indicate was constructed in the 1970s as well as a greenhouse on Parcel 16 constructed in the early 2000s. Both the abandoned home on Parcel 14 and the greenhouse on Parcel 16 will be demolished as part of the proposed project. It is further noted that there is a third structure, a home that records indicate was built in the early 2000s, located on a portion of Parcel 16 and a portion of Parcel 3. The proposed subdivision action will revise the lot lines so the existing home is located in one TMK. The home will be reviewed for future lease as part of the lot where it is located.

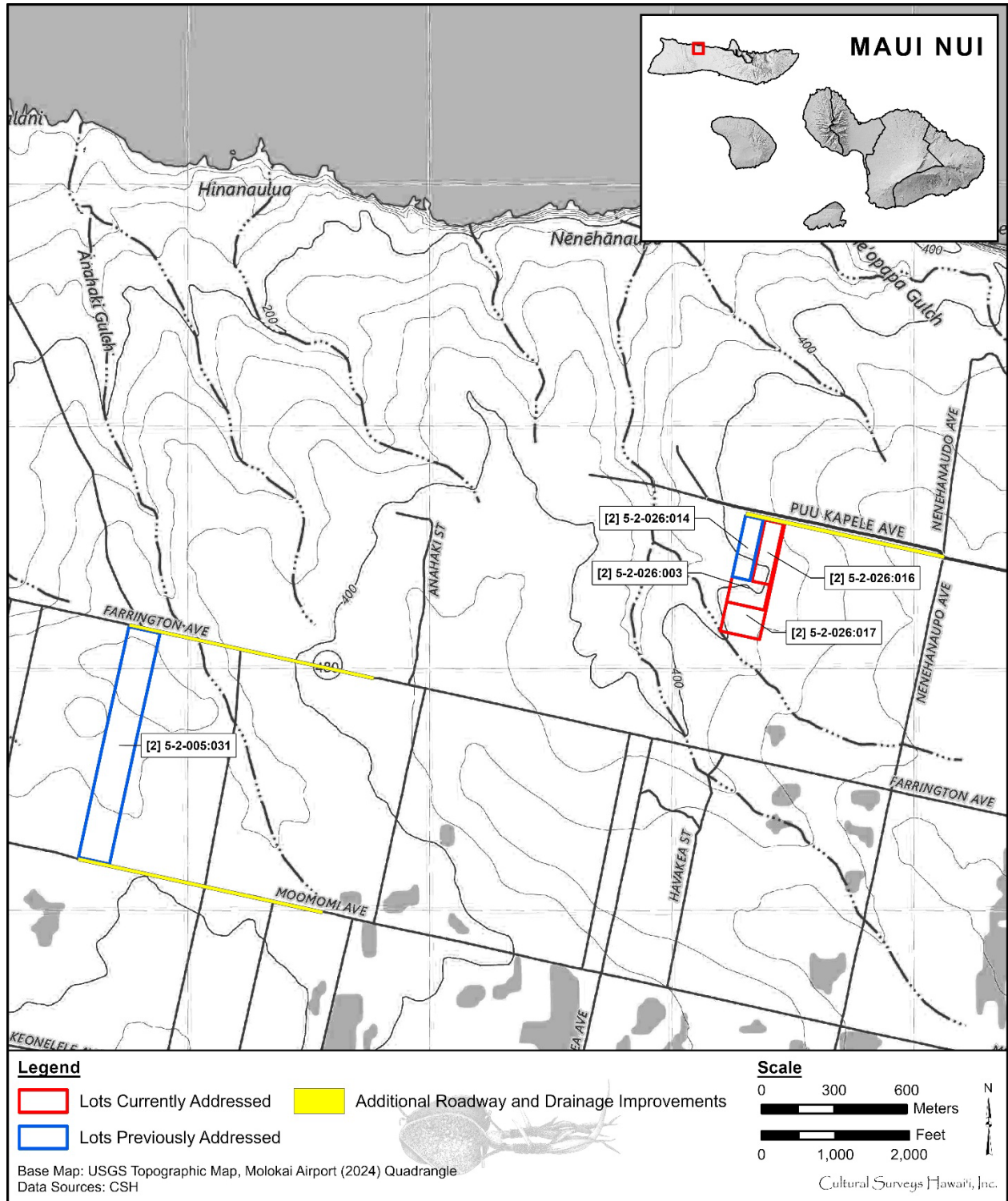


Figure 1. Portion of the 2024 Molokai Airport USGS 7.5-minute topographic quadrangle showing the location(s) of the three “Scattered Lots” currently addressed (in red), the additional roadway and drainage improvements (in yellow), and the two previously addressed “Scattered Lots” (in blue) (USGS 2024b)

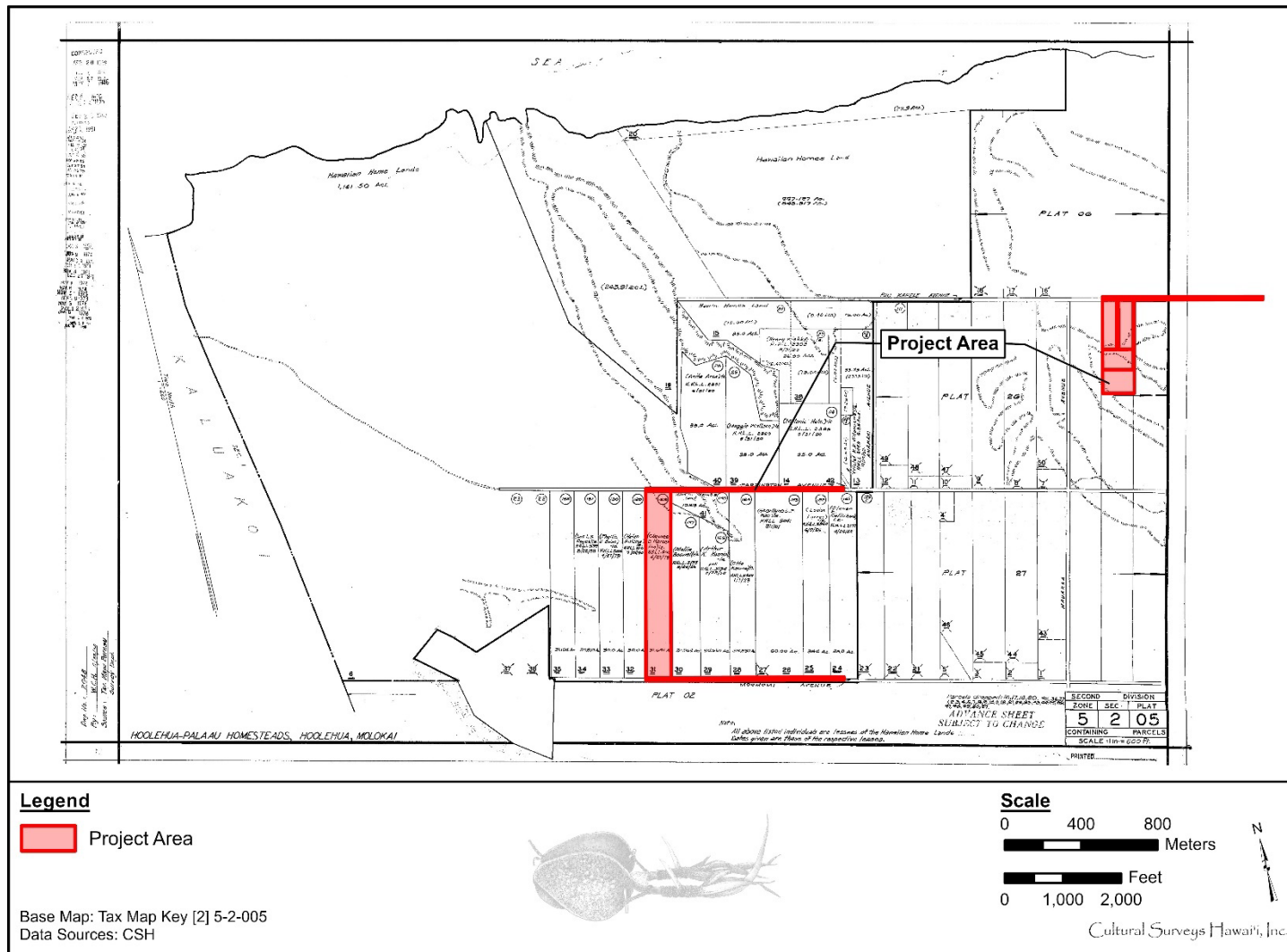


Figure 2. TMK: (2) 5-2-005 showing the location of the DHHL Ho'olehua Scattered Lots Subdivision and Improvements project area (Hawai'i TMK Service 2023)

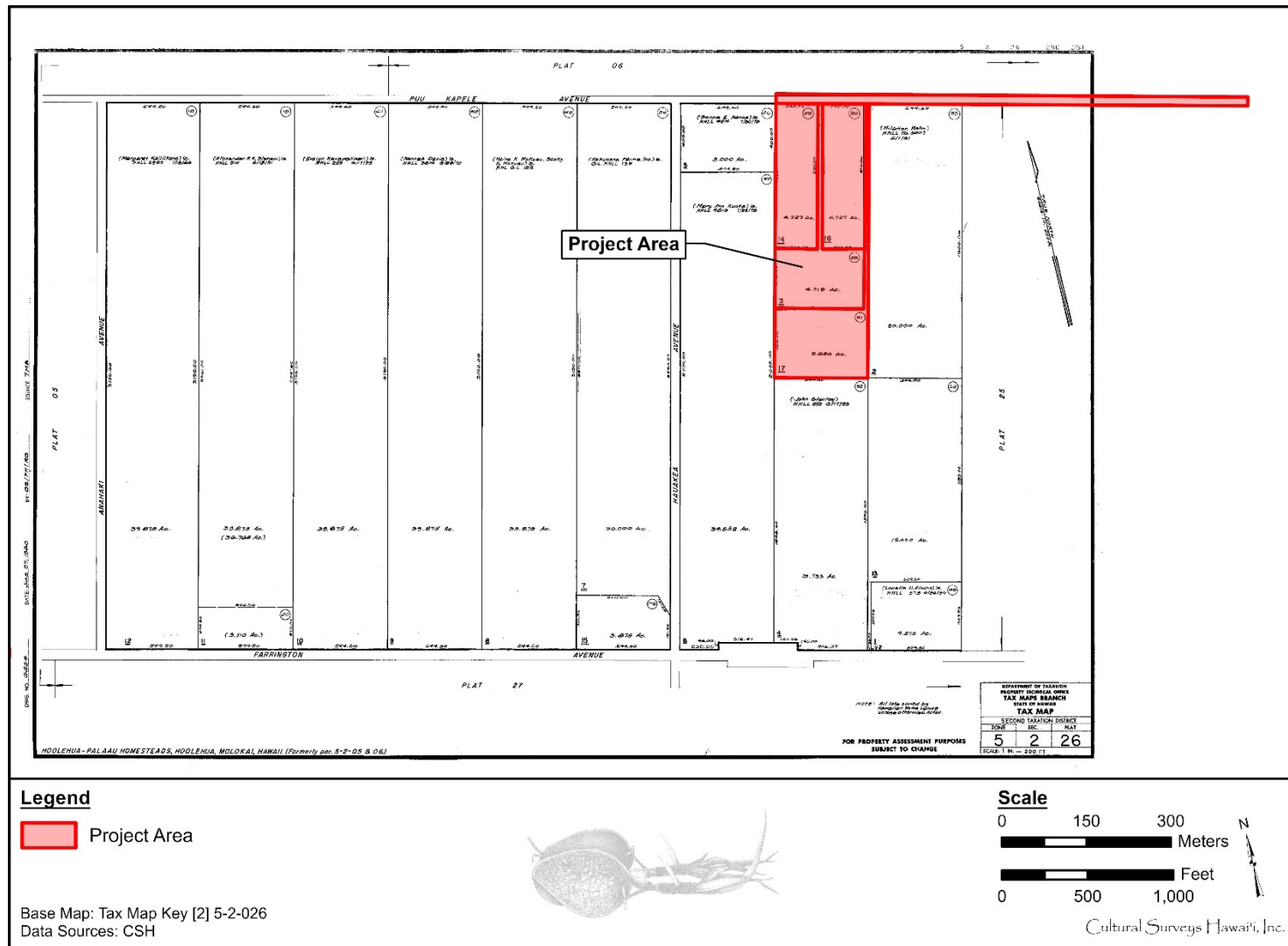


Figure 3. TMK: (2) 5-2-026 showing the location of the DHHL Ho'olehua Scattered Lots Subdivision and Improvements project area (Hawai'i TMK Service 2023)

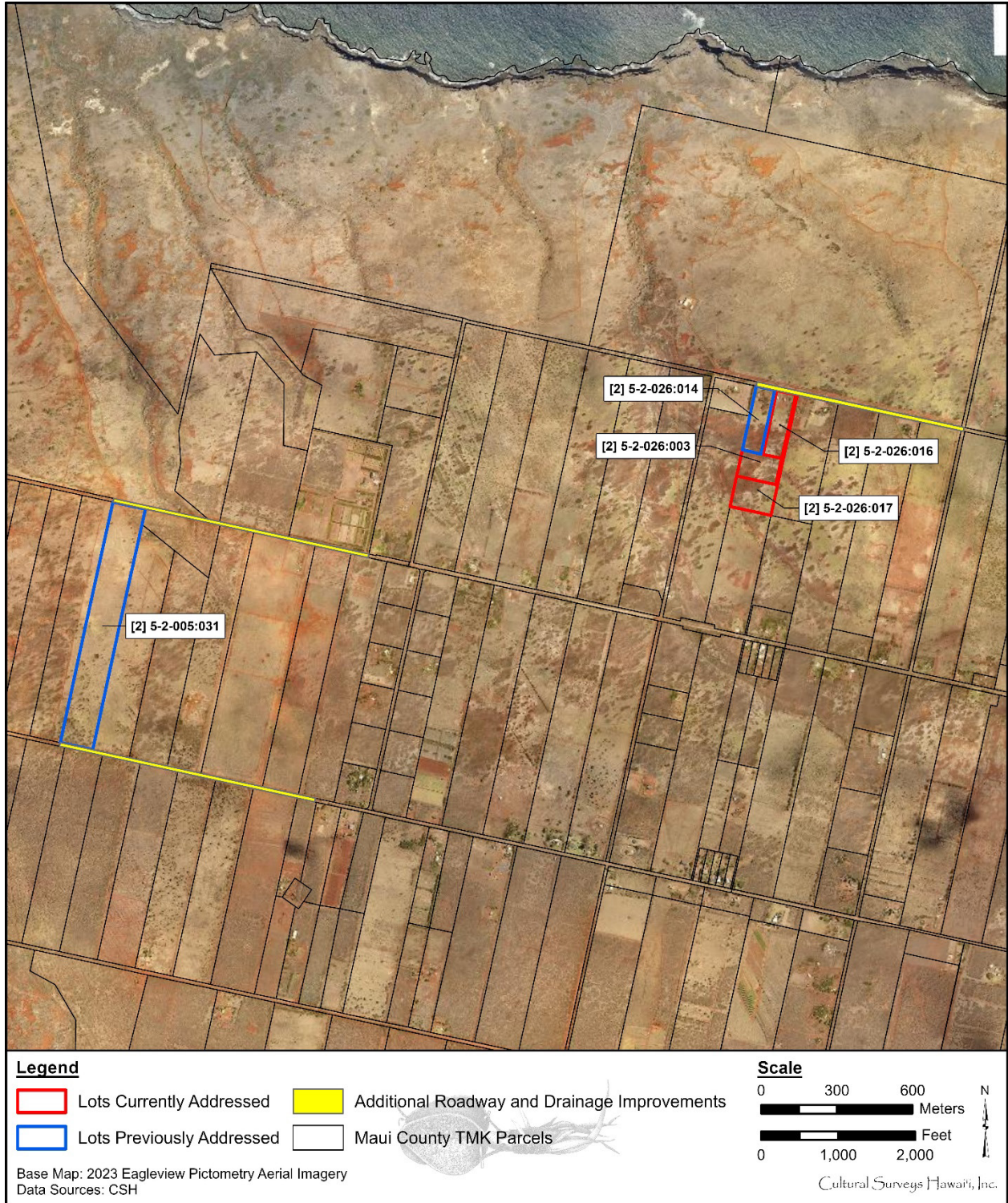


Figure 4. 2023 aerial image showing the location(s) of the three “Scattered Lots” currently addressed (in red), the additional roadway and drainage improvements (in yellow), and the two previously addressed “Scattered Lots” (in blue) (Eagleview Technologies Inc. 2023)

1.2 Regulatory Context

This CIA supports compliance for the DHHL Ho‘olehua Scattered Lots Expanded Project Area Project with:

- *Ka Pa‘akai O Ka‘aina v. Land Use Commission* (94 Hawai‘i 31), in which the Hawai‘i Supreme Court established a three-part analytical framework to assist the state and counties in fulfilling their constitutional obligation to preserve and protect traditional and customary practices (TCP refers to “traditional and customary practices”) exercised by Native Hawaiians, to the extent feasible;
- the mandate set forth by the Hawai‘i State Constitution (Articles IX and XII), courts, Hawai‘i Revised Statutes (HRS), and Hawai‘i Administrative Rules (HAR) and other Hawai‘i State laws requiring government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups;
- the State of Hawai‘i’s environmental review process under HRS §343, which requires consideration of the proposed project’s potential effects on cultural practices and cultural features to “promote responsible decision making” (HRS §343); and,
- the State of Hawai‘i’s historic preservation review process under HAR §13-275-6 and §13-284-6, which require the identification and mitigation of adverse effects proposed by a potential project in order to “promote the use and conservation of historic properties for the education of the citizens of Hawai‘i” (HAR §13-275-6).

1.3 Document Purpose

This CIA contains information gathered from archival research and consultation, compiled to “analyze the impact of a proposed action on cultural practices and features associated with the project area” (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State of Hawai‘i significance Criterion e, pursuant to HAR §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6).

This project also includes a Ka Pa‘akai Analysis study. In *Ka Pa‘akai O Ka ‘Aina v. Land Use Commission*, 94 Hawai‘i (2000), the Hawai‘i Supreme Court

[...] articulated an analytical framework to assist state agencies in balancing the State’s obligation to protect traditional and customary practices against private property (as well as competing public) interests, by requiring specific findings and conclusions about:

1. the identity and scope of ‘valued cultural, historical, or natural resources’ in the relevant area, including the extent to which traditional and customary native Hawaiian rights are exercised in relevant area;
2. the extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed action; and

3. the feasible action, if any, to be taken by the [agency] to reasonably protect native Hawaiian rights if they are found to exist. [*Ka Pa'akai O Ka 'Aina v. Land Use Comm'n*, 94 Hawai'i 31, 35, 47 and 52–53, 7 P.3d 1068, 1072, 1084 and 1089–90 (2000)]

1.4 Scope of Work

The scope of work for this CIA includes the following:

1. Examination of cultural and historical resources, including Land Commission documents, historic maps, and previous research reports, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal, and other resources or agricultural pursuits as may be indicated in the historic record.
2. Review of previous archaeological work at and near the subject parcel that may be relevant to reconstructions of traditional land use activities; and to the identification and description of cultural resources, practices, and beliefs associated with the parcel.
3. Conduct oral interviews with persons knowledgeable about the historic and traditional practices in the project area and region.
4. Preparation of a report that summarizes the results of these research activities and provides recommendations based on findings.

1.5 Natural Environment

The project area is on relatively flat lands at approximately 40 m (130 foot [ft]) elevation above sea level in the north central portion of Moloka'i Island, approximately 1.3 km (0.8 miles) inland (south) from Moloka'i's north shore sea cliffs. Due to its low elevation and partial shielding by the East Moloka'i volcano from trade winds, the vicinity is arid with only shallow, intermittent stream gulches (MacDonald et al. 1990:411). The project area is east of an unnamed gulch. It is believed that this gulch rarely runs with water and that there is no source of potable water nearby.

The project area receives an approximate mean annual rainfall of 802 mm (32.83 inches) at the neighboring "Gage 34" station, according to the University of Hawai'i Online Rainfall Atlas of Hawaii (Giambelluca et al. 2013) which is suggested to be insufficient for non-irrigated agriculture.

The project area vegetation consisted primarily of introduced species including exotic grasses, *koa haole* (*Leucaena leucocephala*), some *kiawe* (*Prosopis pallida*), *klu* (*Acacia farnesiana*), and lantana (*Lantana camara*). The only native species identified in the project area were *'ilima* (*Sida fallax*) and *'uhaloa* (*Waltheria indica*). The surrounding area was largely undeveloped with scattered DHHL homesteads.

1.5.1 Nā Lepo (Soils)

MacDonald et al. (1990:411) provide the following description for soil in West Moloka'i:

Long periods of weathering, accompanied by comparatively little stripping by erosion, have left a deep red soil cover over the top of West Molokai. In places recent erosion has cut through the upper horizon exposing the lower horizon, which

locally exhibits pronounced iron enrichment in the form of masses of lateritic iron oxide. [MacDonald et al. 1990:411]

The “deep, red soil” described by MacDonald et al. (1990:411) is characteristic of the current project area and vicinity and is apparent in recent aerial imagery (see Figure 4).

According to the 2006 United States Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (USDA 2006) and soil survey data gathered by Foote et al. (1972), the soils within the west project area consist of Molokai series soils including Molokai silty clay loam, 3 to 7% slopes (MuB), and Molokai silty clay loam, shallow variant, 15 to 25% slopes, severely eroded (MvD3) soils (Figure 5).

Molokai series soils are described as follows:

[...] well-drained soils on uplands on the islands of Maui, Lanai, Molokai, and Oahu. These soils formed in material weathered from basic igneous rock. They are nearly level to moderately steep. Elevations range mainly from nearly sea level to 1,000 feet [...]

These soils are used for sugarcane, pineapple, pasture, wildlife habitat, and homesites. The natural vegetation consists of kiawe, ilima, uhaloa, feather fingergrass, and buffelgrass. [Foote et al. 1972:96]

MuB soils are further described as, “On this soil, runoff is slow to medium and the erosion hazard is slight to moderate. Included in mapping were a few small areas that are eroded to soft, weathered rock [...]” (Foote et al. 1972:96).

MvD3 soils are further described as follows:

This soil occurs on the sides of drainageways. In most places all of the surface layer and part of the subsoil have been removed, and about 12 to 20 inches of dark reddish-brown soil overlies the soft, weathered rock. In some places the soil is eroded to soft, weathered, rock and, as a result, is grayer or browner than is typical of the Molokai series. There are few to common stones and boulders on the surface. These are unweathered rock cores that have been exposed by erosion. Runoff is rapid, and the erosion hazard is severe. Workability is difficult. [Foote et al. 1972:97]

1.5.2 *Nā Ua* (Rains)

Precipitation is a major component of the water cycle accountable for depositing fresh water on local flora. Pre-Contact *kānaka ʻōiwi* (Native Hawaiians) recognized two distinct annual seasons. The first, known as *kau* (period of time, especially summer) lasts typically from May to October and is a season marked by a high-sun period corresponding to warmer temperatures and steady trade winds. The second season, *ho ʻoilo* (winter, rainy season) continues through the end of the year from November to April and is a much cooler period when trade winds are less frequent, and widespread storms and rainfall become more common (Giambelluca et al. 1986:17). Typically, the maximum rainfall occurs in January and the minimum in June (Giambelluca et al. 1986:17).

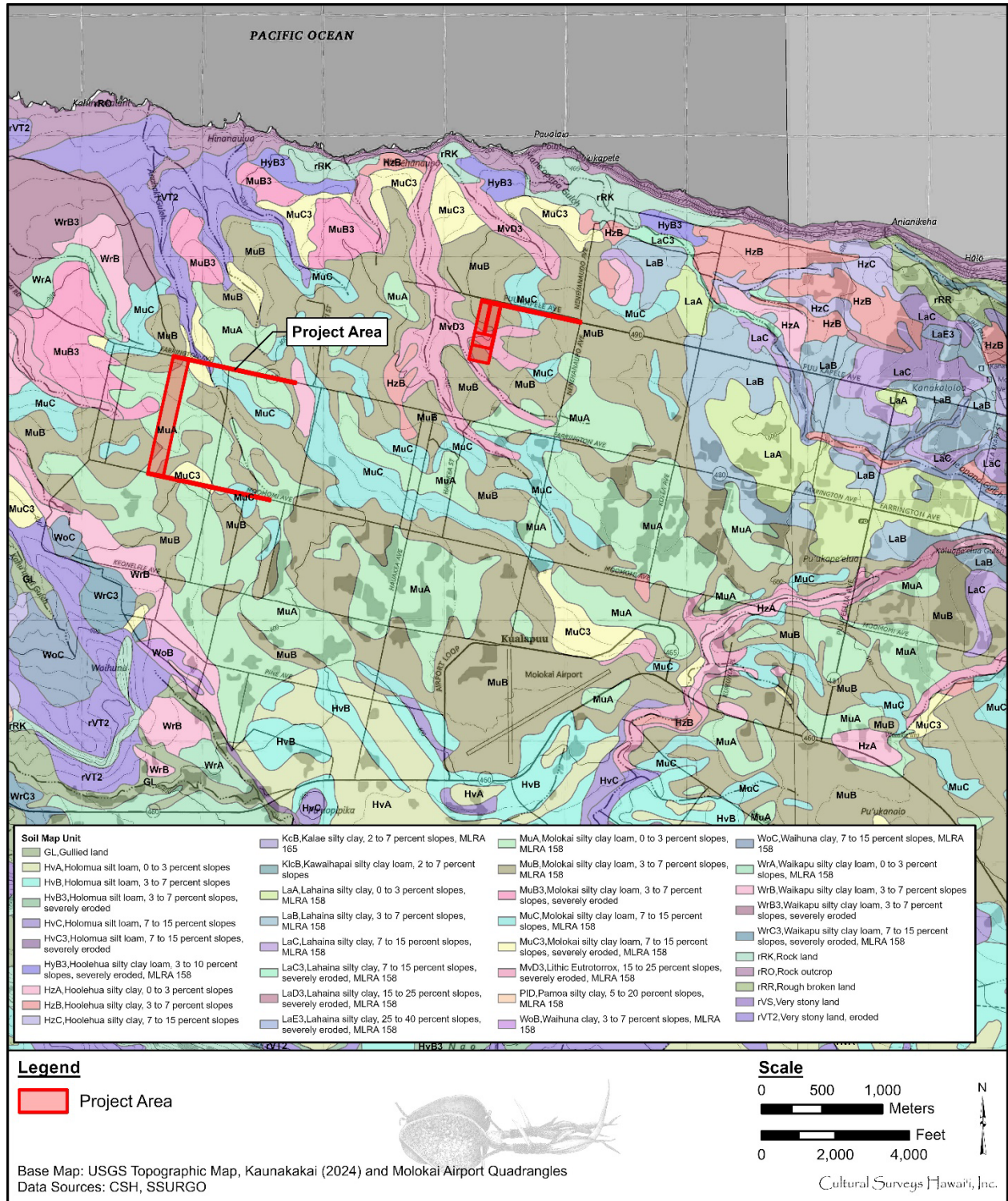


Figure 5. Portion of the 2024 Molokai Airport and Kaunakakai USGS 7.5-minute topographic quadrangles and overlay of Foote et al. (1972) *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*, indicating soil types within and surrounding the project area (USDA 2006)

Each small geographic area on Moloka'i had a Hawaiian name for its own rains. According to Akana and Gonzalez (2015):

Our kupuna had an intimate relationship with the elements. They were keen observers of their environment, with all of its life-giving and life-taking forces. They had a nuanced understanding of the rains of their home. They knew that one place could have several different rains, and that each rain was distinguishable from another. They knew when a particular rain would fall, its color, duration, intensity, the path it would take, the sound it made on the trees, the scent it carried, and the effect it had on people. [Akana and Gonzalez 2015:XV]

Pālā'au and Ho'olehua were no exception to this naming practice. The Nāulu rain is known to be associated with the *ahupua'a* (traditional land division usually extending from the mountains to the sea) of Pālā'au. Nāulu is a rain associated with different *wahi pana* (storied places) throughout Moloka'i. In a *kanikau* (lament) for a person named Nuholani, it states that this rain rumbles across the expansive land of Pālā'au.

<i>Nā lehua o Kā'ana</i>	The lehua of Kā'ana
<i>I ka noua e ka ua Nāulu</i>	Pelted by the Nāulu rain
<i>Kamumu akula i ke kaha o Pālā'au</i>	Rumbling across the expanse of Pālā'au

[Akana and Gonzalez 2015:176]

1.5.3 Nā Makani (Winds)

Similar to rain, *makani* (wind) were named for various reasons such as describing the intensity or direction of the wind, relating the wind to a story, or even relating the wind to the landscape. David Malo, a Native Hawaiian historian, explains some general terms related to wind:

[...] There was the *kona*, a wind from the south, of great violence and of wide extent. It affected all sides of an island, east, west, north, and south, and continued for many days [...] The *kona* wind often brings rain, though sometimes it is rainless [...] The *hoolua*, a wind that blows from the north, sometimes brings rain and sometimes is rainless [...] The *hau* is a wind from the mountains, and they are thought to be the cause of it, because this wind invariably blows from the mountains outwards towards the circumference of the island. [Malo 1951:14]

A'e loa is a term given to the prevailing northeasterly trade winds (Nakuina 1992:138) along with *A'e* (Pukui and Elbert 1986:3), *Moa'e*, and *Moa'e Lehua* (Pukui and Elbert 1986:249).

In the traditional story *The Wind Gourd of La'amaomao*, Pāka'a and his son Kūapāka'a are descendants of the wind goddess La'amaomao whose traditional home was in a gourd that also contained all the winds of Hawai'i. They control the winds of Hawai'i contained in the gourd by chanting their names. Pāka'a's chant traces the winds of and surrounding Ho'olehua and Pālā'au Ahupua'a. Pāka'a's chant is listed below:

<i>Ka hoolua o ka moae</i>	Ho'olua, Moa'e
<i>Kaele i Palaau</i>	Ka'ele are at Pālā'au
<i>Hauialia ilaila</i>	Hauialia is there

Ka iki aea i Hoolehua

[...]

Ma ke kuapā maluna mai o Mo'omomi

[*Ka Hae Hawaii* 1861]

Kaiki-aea is of Hoolehua

Laumaomao is at Punakou

Lawelawe-mālie is at Kekaha

Haleolono is at Kaluako'i

The Kuapā is at Mo'omomi

[Nakuina 1995:64]

Within this chant, various wind names mentioned are associated with Pālā'au and Ho'olehua. The first three lines of the chant indicated contain the four main winds of Pālā'au. These winds include Ho'olua, Moa'e, Ka'ele, and Hauali'ali'a, while Kaikiaea is of Ho'olehua. Another line, "*Ma ke kuapā ma luna mai o Mo'omomi*," indicates there is a wind called Kuapā at Mo'omomi. Mo'omomi is located within the Pālā'au Ahupua'a. Nakuina's (1995) version of the chant contains wind names that were not originally included in the *Ka Hae Hawaii* (1861) newspaper.

1.6 Built Environment

The built environment within and surrounding the project area is minimal. The project area vicinity mostly consists of undeveloped DHHL parcels. Active homesteads are sporadic throughout the vicinity, located particularly along the bounding roadways. The roadway portions of the project area are mostly undeveloped dirt roads with some previously paved portions. Molokai Airport and associated infrastructure is located approximately 2 km south of the project area.

Section 2 Methods

2.1 Archival Research

Research centers on Hawaiian activities including *ka 'ao* (legends), *wahi pana* (storied places), *'ōlelo no 'eau* (proverbs), *oli* (chants), *mele* (songs), traditional *mo'olelo* (stories), traditional subsistence and gathering methods, ritual and ceremonial practices, and more. Background research focuses on land transformation, development, and population changes beginning with the early post-Contact era to the present day.

Cultural documents, primary and secondary cultural and historical sources, historic maps, and photographs were reviewed for information pertaining to the study area. Research was primarily conducted at the CSH library. Other archives and libraries including the Hawai'i State Archives, the Bishop Museum Archives, the University of Hawai'i at Mānoa's Hamilton Library, Ulukau, The Hawaiian Electronic Library (Ulukau 2014), the State Historic Preservation Division (SHPD) Library, the State of Hawai'i Land Survey Division, the Hawaiian Historical Society, and the Hawaiian Mission Houses Historic Site and Archives are also repositories where CSH cultural researchers gather information. Information on Land Commission Awards (LCAs) were accessed via Waihona 'Aina Corporation's Māhele database (Waihona 'Aina 2021), the Office of Hawaiian Affairs (OHA) Papakilo Database (Office of Hawaiian Affairs 2015), and the Ava Konohiki Ancestral Visions of 'Āina website (Ava Konohiki 2015).

2.2 Consultation

Throughout the course of this assessment, an effort was made to contact and consult with Native Hawaiian Organizations (NHO), agencies, and community members including descendants of the area, to identify individuals with cultural expertise and/or knowledge of the *ahupua'a* of Pālā'au and Ho'olehua.

2.2.1 Community Outreach, Interview, and Transcription Methods

2.2.1.1 Scoping for Participants

We begin our consultation efforts with utilizing our in-house contact list from previous outreach efforts to facilitate the interview process. This list often includes *kūpuna* (elders), *kama 'āina* (native born), cultural practitioners, lineal and cultural descendants, Native Hawaiian Organizations (NHOs; includes Hawaiian Civic Clubs and those listed on the Department of Interior's NHO list), and community groups. We also contact agencies such as SHPD, OHA, and the appropriate Island Burial Council where the proposed project is located for their response to the project and to identify lineal and cultural descendants, individuals and/or NHO with cultural expertise and/or knowledge of the study area. CSH is also open to referrals and new contacts.

2.2.1.2 Talk Story Sessions

Prior to the interview, CSH cultural researchers explain the role of a CIA, how the consent process works, the project purpose, the intent of the study, and how their *'ike* (insight) and *mana 'o* (opinion) will be used in the report. The interviewee is given an Authorization and Release Form to read and sign.

“Talk Story” sessions range from the formal (e.g., sit down and *kūkākūkā* [consultation, discussion] in participant’s choice of place over set interview questions) to the informal (e.g., hiking to cultural sites near the study area and asking questions based on findings during the field outing). In some cases, interviews are recorded and transcribed later.

CSH may also conduct group interviews, which range in size. Group interviews usually begin with set, formal questions. As the group interview progresses, questions are based on interviewee’s answers. Group interviews are always transcribed and notes are taken. Recorded interviews assist the cultural researcher in 1) conveying accurate information for interview summaries, 2) reducing misinterpretation, and 3) providing missing details for *mo’olelo*.

CSH seeks *kōkua* (assistance) and guidance in identifying past and current traditional cultural practices of the study area. Those aspects include general history of the *ahupua’a*; past and present land use of the study area; knowledge of cultural sites (for example, *wahi pana*, archaeological sites, and burials); knowledge of traditional gathering practices (past and present) within the study area; cultural associations (*ka’ao* and *mo’olelo*); referrals; and any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the study area.

2.2.1.3 Interview Completion

After an interview, CSH cultural researchers transcribe and create an interview summary based on information provided by the interviewee. Cultural researchers give a copy of the transcription and interview summary to the interviewee for review and ask them to make any necessary edits. Once the interviewee has made those edits, we incorporate their *’ike* and *mana’o* into the report. When the draft report is submitted to the client, cultural researchers then prepare a finalized packet of the participant’s transcription, interview summary, and any photos taken during the interview. We also include a thank you card and honoraria. This is for the interviewee’s records.

It is important to CSH cultural researchers to cultivate and maintain community relationships. The CIA report may be completed, but CSH researchers continuously keep in touch with the community and interviewees throughout the year—such as checking in to say hello via email or by phone, volunteering with past interviewees on community service projects, and sending holiday cards to them and their *’ohana* (family). CSH researchers feel this is an important component to building relationships and being part of an *’ohana* and community.

“*I ulu no ka lālā i ke kumu*—the branches grow because of the trunk,” an *’ōlelo no’eau* (#1261) shared by Mary Kawena Pukui with the simple explanation: “Without our ancestors we would not be here” (Pukui 1983:137). As cultural researchers, we often lose our *kūpuna* but we do not lose their wisdom and words. We routinely check obituaries and gather information from other informants if we have lost our *kūpuna*. CSH makes it a point to reach out to the *’ohana* of our fallen *kūpuna* and pay our respects including sending all past transcriptions, interview summaries, and photos for families to have on file for genealogical and historical reference.

Section 3 Traditional Background

3.1 *Nā ka'ao a me Nā Mo'olelo (Legends and Stories)*

Hawaiian storytellers of old were greatly honored; they were a major source of entertainment and their stories contained teachings while interweaving elements of Hawaiian lifestyles, genealogy, history, relationships, arts, and the natural environment (Pukui and Green 1995:IX). According to Pukui and Green (1995), storytelling is better heard rather than read for much becomes lost in the transfer from the spoken to the written word and *ka'ao* are often full of *kaona* or “double meanings.”

Ka'ao are defined by Pukui and Elbert as a “legend, tale [...], romance, [and/or], fiction” (Pukui and Elbert 1986:108). *Ka'ao* may be thought of as oral literature or legends, often fictional or mythic in origin, and have been “consciously composed to tickle the fancy rather than to inform the mind as to supposed events” (Beckwith 1970:1). Conversely, Pukui and Elbert define *mo'olelo* as a “story, tale, myth, history, [and/or] tradition” (Pukui and Elbert 1986:254). The *mo'olelo* are generally traditional stories about the gods, historic figures or stories that cover historic events and locate the events with known places. *Mo'olelo* are often intimately connected to a tangible place or space.

In differentiating *ka'ao* and *mo'olelo* it may be useful to think of *ka'ao* as expressly delving into the *wao akua* (realm of the gods), discussing the exploits of *akua* (gods) in a primordial time. However, it is also necessary to note there are exceptions, and not all *ka'ao* discuss gods of an ancient past. *Mo'olelo* on the other hand, reference a host of characters from *ali'i* (royalty), to *akua* and *kupua* (supernatural beings), to finally *maka'āinana* (commoners), and discuss their varied and complex interactions within the *wao kānaka* (realm of man). Beckwith elaborates, “In reality, the distinction between *ka'ao* as fiction and *mo'olelo* as fact cannot be pressed too closely. It is rather in the intention than in the fact” (Beckwith 1970:1). Thus, a so-called *mo'olelo*, which may be enlivened by fantastic adventures of *kupua*, “nevertheless corresponds with the Hawaiian view of the relation between nature and man” (Beckwith 1970:1).

Both *ka'ao* and *mo'olelo* provide important insight into a specific geographical area, adding to a rich fabric of traditional knowledge. The preservation and passing on of these stories through oration remains a highly valued tradition. Additionally, oral traditions associated with the study area communicate the intrinsic value and meaning of a place, specifically its meaning to both *kama'āina* as well as others who also value that place.

The following section presents traditional accounts of ancient Hawaiians living in the vicinity of the DHHL Ho'olehua Scattered Lots Expanded Project Area project area. Many relate an age of mythical characters whose epic adventures inadvertently led to the Hawaiian race of *ali'i* (chiefs) and *maka'āinana* (commoners). The *ka'ao* in and around the project area shared below are some of the oldest Hawaiian stories that have survived. They still speak to the characteristics and environment of the area and its people.

3.1.1 Origin of Moloka'i

Mo'olelo provide varying accounts for the origin of Moloka'i. Paku'i, a historian in the time of Kamehameha I, wrote of the Hawaiian Islands having been born of Wākea and his wives. According to this version, Wākea's first wife, Papa, gave birth to Hawai'i, Maui, and Kaho'olawe before returning to Tahiti. Wākea took Kaulawahine as his second wife, and she gave birth to Lāna'i. He then took a third wife:

Hoi ae O Wakea loa Hina, Then Wakea turned around and found Hina,
Loaa Hina he wahine moe na Wakea, Hina was found as a wife for Wakea,
Hapai Hina ia Molokai, he moku, Hina conceived Molokai, an island;
O Molokai a Hinea he keiki moku. Hina's Molokai is an island child.

[Fornander 1916-1917:12-13]

The historian Kahako'ikamoana recorded a different lineage for Moloka'i:

Na Kuluwaiea o Haumea he kane, Kuluwaiea of Haumea as the husband,
Na Hinanuiakalana he wahine Of Hinanuiakalana as the wife
Loaa Molokai, ke akua, he kahuna, Was born Molokai, a god, a priest,
He Pualena no Nuumea, The first morning light from Nuumea,

[Fornander 1916-1917:2-3]

3.1.2 Hālena, the Yellowing

Ne (1992) tells of a story involving Kahekili, the ruling chief of Moloka'i who lived on Maui, in which Pālā'au is referenced. Although the story is about the naming of Hālena, a place on the southwest side of Moloka'i, Pālā'au is mentioned as a place known for its "fat" *āholehole* (Hawaiian flagtail, *Kuhlia sandvicensis*) and *'ō'io* (Ladyfish, bonefish, *Albula vulpes*). In the story, Kahekili sends one of his chiefs to Pālā'au to collect fish to supply his army as he made plans to invade O'ahu. The following is an excerpt from Ne:

When Kahekili was the ruling chief of Molokai, he lived on Maui. He made his plans and set out in his canoes to invade O'ahu, stopping at Molokai to get a supply of fish for his journey. He sent Hulu, chief of a village, in his canoe to Pūko'o for the fat mullet from the fishponds. He sent another canoe with another chief, Kuikai, to Pālā'au, noted for its fat *āholehole* and *'ō'io*. [Ne 1992:47]

3.1.3 Pā'aka'a and His Son Kū-a-Pā'aka'a

The following *mo'olelo* recounts two chiefs, Pālā'au and Ho'olehua, which are also the names of the *ahupua'a* in which the current project areas are located (Pālā'au) and the adjacent *ahupua'a* to the east (Ho'olehua).

On Molokai lived a very beautiful woman, Hikauhi, the daughter of Hoolehua [Ho'olehua] and Ilali [Īloli]. Now it happened that the girl's father had promised her hand to Palaau [Pālā'au], the chief of that part of the island. But as soon as she had seen Paakaa [Pāka'a], she forgot all about her former lover and demanded that

the stranger be given to her. Palaau very generously consented, and so they all lived in peace. Paakaa cultivated the lands well, fished skillfully, and brought great prosperity to his wife and her family. [Handy 1922:76]

Hikauhi and Pāka'a had a son, Kū-a-Pāka'a (Nakuina 1992:29–30). Pāka'a and Kuāpāka'a were the caretakers of the wind gourd of La'amaomao which could control and call forth the winds of Hawai'i.

3.1.4 Pele's Long Sleep

Westervelt's (1916) version of the story of Lohi'au, the king of Kaua'i, and his romance with Pele includes an ancient chant with a reference to Pālā'au:

Lohiau watched her while he partook of the feast with his chiefs, and she was resting on the couch of mats. He was thinking of her marvelous, restful beauty, as given in the ancient chant known as 'Lei Mauna Loa.'

Lei of Mauna Loa, beautiful to look upon.

The mountain honored by the winds.

Known by the peaceful motion.

Calm becomes the whirlwind.

Beautiful is the sun upon the plain.

Dark-leaved the trees in the midst of the hot sun

Heat rising from the face of the moist lava.

The sunrise mist lying on the grass,

Free from the care of the strong wind.

The bird returns to rest at Palaau.

He who owns the right to sleep is at Palaau.

I am alive for your love—

For you indeed. [Westervelt 1916:77]

3.1.5 Sorcery on Moloka'i

Kamakau (1991) recounts a story regarding the origin of sorcery use on Moloka'i, in which the Ho'olehua and Pālā'au plains are mentioned:

Kaiakea, a prominent man of Kala'e and its vicinity, was said to have been a man without a god. He built a large new household below Kahanui and provided all kinds of food, such as poi, pig, 'awa, bananas, fish, and everything else necessary for a 'house-warming' (*o ka hale komo*). When the day came, Kaiakea's wife and the other women were at the *hale noa*, the common house, and Kaiakea and the other men and the servers were at the *hale mua*, the men's house. The *hale noa* was apart from the *hale mua*, which was surrounded by a lanai. Kaiakea was in the doorway of the *hale mua*, and while the feast was being prepared, he saw a long procession of women coming over the plains of Ho'olehua to Pala'au. They were dressed in yellow tapa skirts and yellow tapa shoulder coverings (*kihei*), with variegated (*papahi*) leis of *ma'o* and 'ilima crowning their heads. There was one man among them. The procession went down to the spring, named Piliwale, and left their things (*he ukana*) there. These were a *puniu hulihuli*, or coconut-shell container, and the women's 'alae bird bodies. When Kaiakea saw the many

beautiful women in that company, he called out to them to come in on the lanai, but they remained outside. Only the man who was with them approached and stood at the door of Kaiakea's house and talked with him. Kaiakea offered them food, but the spirit man (*kanaka anela*) said they would not eat his food unless a leaf-thatched house, a *hale lau*, was built for them; then they would eat of his food. This man revealed that they were not humans, but 'angels,' and he told Kaiakea their names. Pua was his name, and Kauluimaunaloa (the-grove-at-Maunaloa, that is, Kapo) was the name of the chiefess who led the procession. He said they would become Kaiakea's gods if the *hale lau* was finished that day, and would give into his charge the *puniu hulihuli*, their visible form (*ko lakau kino 'ike maka 'ia*), and all the paraphernalia to do their work (*ka lakau mau hana a pau*), which was inside it. The 'alae birds were their bodies which they showed abroad (*kino ho 'ike 'ia iwaho*). After revealing these things to Kaiakea, the being vanished. Kaiakea went to the spring to look for the *puniu*, and got it; the 'alae birds were resting there at the spring. That very day Kaiakea erected the *hale lau* and filled it with poi, 'awa, bananas, and tapas appropriate to these gods; that same evening it was dedicated (*ke kapu no 'ia*). The food offerings (*ka 'ai me ka i'a*) and the 'awa were all consumed by the 'alae birds, and they were well content with the food provided for them.

It was in this way that Kaiakea became the *kahu* of gods, and he became known as a man who had gods. He was the *kahu* of Kapo (Kauluimaunaloa) and Pua. Kaiakea, however, just took care (*malama pono*) of these gods. He did no harm to others, and did not send his gods to bring death (*ho 'aunauna e make*) to any man or to any chief. He just took care of his *akua ho 'ola 'a* (the spirits who had been made gods by his consecration and offerings). Upon his death he commanded his children to take care of the gods against the days of trouble; the gods would repay them with life (*ola*). But they were not to seek wealth from the gods through sorcery. [Kamakau 1991:131–132]

3.2 *Nā Wahi Pana* (Storied Places)

Wahi pana are legendary or storied places in a landscape. These legendary or storied places can be a variety of natural or human-constructed features. Oftentimes dating to the pre-Contact period, many but not all *wahi pana* are connected to particular *mo 'olelo*. Dr. Davianna McGregor outlines the types of natural and human-made structures that may constitute *wahi pana*:

Natural places have mana or spiritual power, and are sacred because of the presence of the gods, the *akua*, and the ancestral guardian spirits, the 'aumakua. Human-made structures for the Hawaiian religion and family religious practices are also sacred. These structures and places include temples, and shrines, or heiau, for war, peace, agriculture, fishing, healing, and the like; pu'uhonua, places of refuge and sanctuaries for healing and rebirth; agricultural sites and sites of food production such as the lo'i pond fields and terraces slopes, 'auwai irrigation ditches, and the fishponds; and special function sites such as trails, salt pans, hōlua slides, quarries, petroglyphs, gaming sites, and canoe landings. [McGregor 1996:22]

As McGregor makes clear, *wahi pana* can refer to natural geographic locations such as streams, peaks, rock formations, ridges, offshore islands and reefs, or they can refer to Hawaiian land divisions such as *ahupua'a* or *'ili* (traditional land division smaller than an *ahupua'a*), and man-made structures such as fishponds. In this way, the *wahi pana* of Pālā'au and Ho'olehua tangibly link the *kama'āina* of Pālā'au and Ho'olehua to their past. It is common for places and landscape features to have multiple names, some of which may only be known to certain *'ohana* or even certain individuals within an *'ohana*, and many have been lost, forgotten, or kept secret through time. Place names also convey *kaona* and *huna* (secret) information that may even have political or subversive undertones. Before the introduction of writing to the Hawaiian Islands, cultural information was exclusively preserved and perpetuated orally. Hawaiians gave names to literally everything in their environment, including individual garden plots and *'auwai* (water courses), house sites, intangible phenomena such as meteorological and atmospheric effects, *pōhaku*, *pūnāwai*, and many others. According to Landgraf (1994:v), Hawaiian *wahi pana* “physically and poetically describes an area while revealing its historical or legendary significance.”

In the preface of *Place Names of Hawaii* (Pukui et al. 1974:x), Samuel Elbert offers the following description regarding place names:

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

Place names are far from static [...] names are constantly being given to new houses and buildings, land holdings, airstrips, streets, and towns and old names are replaced by new ones [...] it is all the more essential, then to record the names and the lore associated with them [the ancient names] now. [Pukui et al. 1974:x]

Inherent in Elbert's statements is knowledge that the oldest place names held meaning and told the story of an area prior to European Contact. Many place names in the vicinity of the project area are provided in Figure 6. Literal translations of place names for land areas and divisions near the project area are listed in Table 1 and may provide insight into the area prior to Western Contact.

3.2.1 Pu'u Ka Pe'elua, Caterpillar Hill

Pu'u Pe'elua, also known as Pu'u Kape'elua or Caterpillar Hill, is located above Ho'olehua. According to Harriet Ne (1992), the story of Pu'u Pe'elua involves Pele, the daughter of a chief of Pālā'au, who fell in-love with Pe'elua of Ho'olehua, the *'aumakua* of that district:

A beautiful young girl named Pele, the daughter of a chief in the Pālā'au area, encountered in the early twilight a handsome young man. They fell in love, and he courted her for almost a year. She concealed her love from her parents and lived only for the hours she spent with him.

She did not know that he was the *pe'elua* of the district, revered and loved by the people of Ho'olehua—even worshipped. Nor did she know that he had the form of a young man only at night but that in the day he returned to the form of a caterpillar.

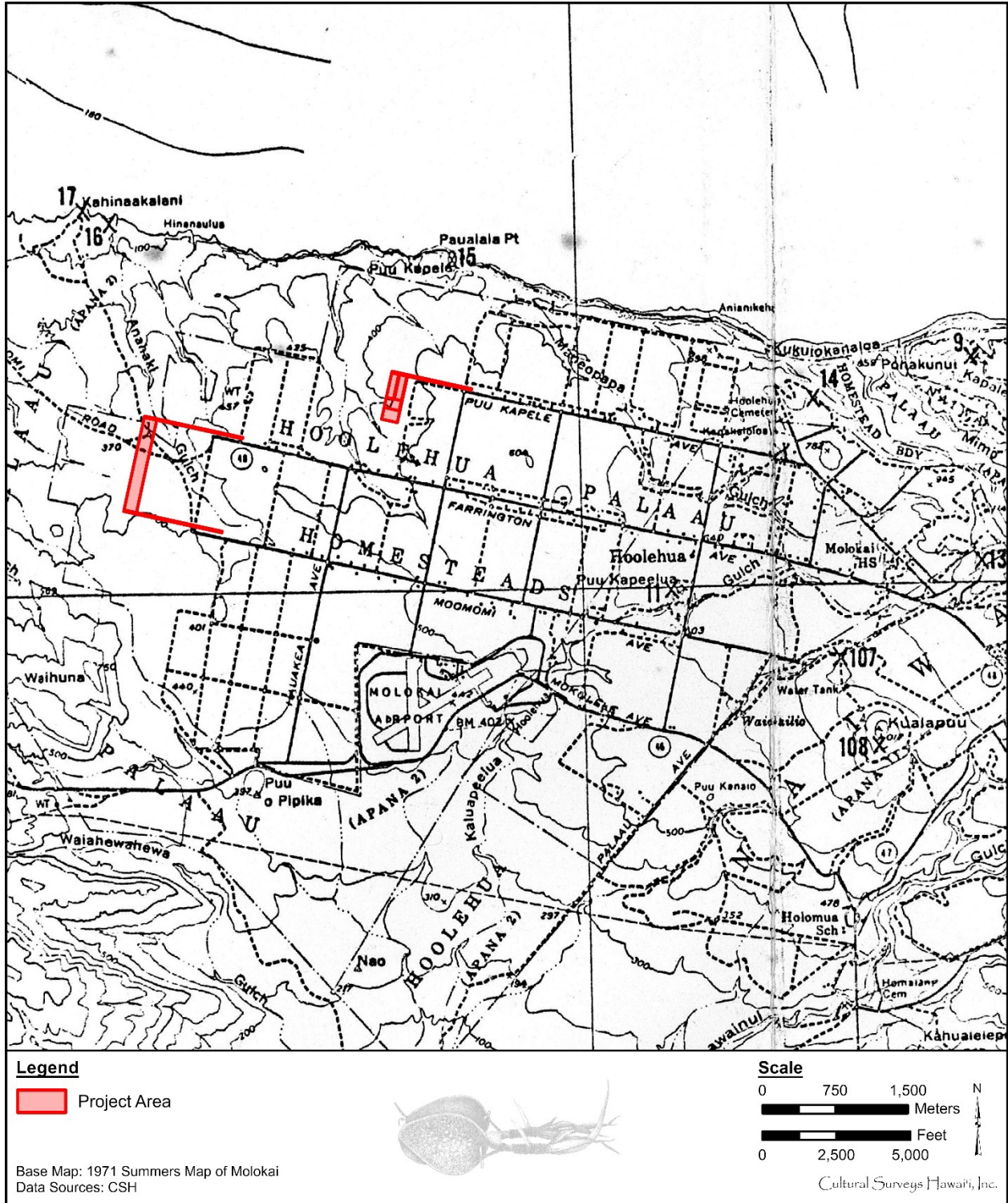


Figure 6. Map from Summers (1971) showing place names near the project area

Table 1. Place names within the vicinity of the project area

Place Name	Description
Anahaki	Name of a gulch on the north side of the west project area. <i>Lit.</i> “Broken cave” (Pukui et al. 1974:12)
Anianikeha	Place along the sea cliff NW of the eastern project area. <i>Lit.</i> “blowing [on the] heights” (Pukui et al. 1974:12)
Hinanaulua	A point on the sea cliff north of the western project area. <i>Lit.</i> “inspired [by a god] <i>hinana</i> [Young of ‘o‘ <i>opu</i> (Hawaiian freshwater goby; <i>Lentipes concolor</i>)] fish.” (Pukui et al. 1974:46)
Ho‘olehua	<i>Lit.</i> acting the expert. Village, land division, and Hawaiian homestead area near the Moloka‘i airport; said to be named for a chief (Pukui et al. 1974:51–52). Ho‘olehua Ahupua‘a encompasses most of the current project area.
Kahinaakalani	A point on the sea cliff NW of the western project area. <i>Lit.</i> “the grayness of the sky, heaven” (Pukui et al. 1974:65)
Kāluape‘elua	<i>Lit.</i> baked caterpillar. A caterpillar infestation was ended by baking the caterpillars (Pukui et al. 1974:79). Name of gulch within project area.
Kanakaloloa	Place NE of the eastern project area. <i>Lit.</i> “tall person” (Pukui et al. 1974:83)
Kualapu‘u	<i>Lit.</i> hill overturned. Hill, elementary school, reservoir, and Del Monte pineapple cannery village (Pukui et al. 1974:119). Summers Site 107, a <i>hōlua</i> (sled used on grassy slopes) slide, was documented on the SSW side of Kualapu‘u Hill (Summers 1971). This hill was formerly named Ka ‘Uala Pu‘u (the sweet potato hill) and appears on some maps as Mid Hill; the area had “many sweet potato patches [...] defined by rows of stones” (Summers 1971:80). Other maps label the hill as Middle Hill.
Kukuiokanaloa	Name of a stretch of sea cliff N of the eastern project area. <i>Lit.</i> “light of Kanaloa” (Pukui et al. 1974:122)
Lepekaheo	According to Summers (1971:37), “Monsarrat referred to Lepekaheo as an ‘old heiau.” This <i>heiau</i> , designated Summers Site 12, is located approx. 1.3 km north of the project area.
Manawainui	<i>Lit.</i> large water branch. Manawainui Gulch stream flows approx. 2.0 km SE of the project area. Manawainui also refers to an area S and adjacent to Ho‘olehua and Pālā‘au, which contains stone platforms used in the past by students of <i>hula</i> (dance), and a stone outcrop modified by Native Hawaiians in traditional times known as the “Sacrifice Stones” (Fowke 1922:181).
Mane‘opapa	Gulch NW of the western project area. Meaning uncertain.
Nā‘iwa	<i>Lit.</i> the frigate birds (perhaps named for the beauty of the birds) (Pukui et al. 1974:161). Nā‘iwa Ahupua‘a comprises three ‘ <i>āpana</i> (lots) in Moloka‘i. The largest section, Nā‘iwa 1, borders the project area E.

Place Name	Description
Pālā'au	<i>Lit.</i> wooden fence or enclosure (Pukui et al. 1974:176). Pālā'au comprises three land sections in north, central, and southwest Moloka'i and along with Ho'olehua, names the homesteads where the current project area is located. A western portion of the project area is in Pālā'au 2, the largest 'āpana, of Pālā'au Ahupua'a.
Paulalala	A point on the sea cliff N of the central project area. Meaning uncertain.
Pu'u Kanaio	<i>Lit.</i> the pinworm hill. Hill on the slopes of Kuala pu'u [hill] (Pukui et al. 1974:198). This hill is within 400 m E of the project area.
Pu'u-Ka Pe'elua	<i>Lit.</i> "hill of the caterpillar" (Pukui et al. 1974:198) (For <i>mo'olelo</i> see subsection 3.2.1). Location of Summers Sites 11A and 11B/ State Inventory of Historic Places (SIHP) # 50-60-03-00011, Kape'elua Complex (see subsection 5.2).
Pu'u ka Pele	Hill on the sea cliff N of the central project area. <i>Lit.</i> "the volcano hill" (Pukui et al. 1974:198).
Waiakailio	<i>Lit.</i> water used by the dog (Pukui et al. 1974:219). Area with a stream approx. 375 m northeast of the project area's NE corner.

As the days passed, Pele grew pale and listless. [...] The *kahuna* perceived the problem at once. 'She is in love with the supreme manifestation of the caterpillar-Pe'elua,' he told [her parents]. 'When he comes to her at night, it is in the form of a handsome young man; but his power is draining her strength. She is human. She cannot live with a magical being. To save her, you must kill him. You must destroy him completely.' [Ne 1992:49–50]

The same story is also told by Cooke (1949):

[...] this beautiful girl was visited each night by a lover who left before daylight. She was unable to discover who he was, this suspense told on her, and she began to waste away. A priest, consulted by her parents, advised the girl to attach a piece of white tapa to a wart on her lover's back. In the morning, shreds of tapa helped to trace the demi-god lover to the hill Puu Peelua, in the middle of Hoolehua. The *kahuna* [priest] and friends of the family found a large peelua [caterpillar] asleep on the hill. The *kahuna* ordered the people to collect wood which was placed around the sleeping peelua, and a fire was lit. As the heat of the fire increased, the caterpillar burst into myriads of small caterpillars which were scattered over the plain. That accounts for the army-worm pest, called peelua. [Cooke 1949:102]

3.2.2 Heiau

Summers (1971:37–38) recorded four *heiau* (pre-Christian place of worship) in the Pālā'au and Ho'olehua Ahupua'a including Lepekaheo Heiau and three unnamed *heiau*.

Lepekaheo Heiau, designated by Summers (1971:37) as Site 12, is located west of Kaluape'elua Gulch on the boundary between Ho'olehua 2 and Pālā'au 2, approximately 1.3 km north of the

project area. According to Summers (1971:37), “Monsarrat referred to Lepekaheo as an ‘old heiau.” Summers also mentions another *heiau* (Site 10) in Ho‘olehua 2 located on east side of the “crest of ‘Eleuweue” (Summers 1971:37).

In Pālā‘au 2, Summers (1971:38) mentions a *heiau* (Site 16) located at the west side of the mouth of Anahaki Gulch at an elevation of 35 ft above mean sea level and another *heiau* (Site 14) located east of Ho‘olehua Cemetery in the pineapple fields west of the gulch at an elevation of 800 ft (Summers 1971:38). Regarding Site 14, Summers (1971:38) states, “The structure was in ruins in 1957, however, traces of paving could still be found, and the remains of a wall, 35 ft long from SE to NE; 13 ft. from the NE side was an upright stone 2 ft. high, 2 ft. wide, and 1 ft. thick.”

3.2.3 *Loko I‘a* (Fishponds)

A *loko i‘a* is a fishpond. There were two types of *loko i‘a*, mentioned by Catherine Summers (1964). One is called a *loko kuapā* and the other is a *loko ‘umeiki*. The *loko kuapā* was made by building a wall on a reef (Pukui and Elbert 1986:171). *Kuapā* means wall, specifically for a fishpond which was entirely enclosed. The fishpond walls were usually built using coral or basalt. Within these types of fishponds, *mākāhā* or sluice gates (Pukui and Elbert 1986:225) were built into the rock walls made of sticks and beams. The purpose of a *mākāhā* was to create a gate-like contraption. This would allow gatekeepers to regulate the fishpond. The smaller fish were able to swim through the gate and dwell in the pond, while larger predators were kept outside the barriers (Summers 1964:8). These were exclusive to the Hawaiian Islands based on the physical features of its shores. As explained by Summers,

Loko kuapa were owned by the kings and chiefs, and at their command, were built by the common people. The building of a pond was a communal project of the chiefs who, from their individual land sections (*ahupua‘a*), furnished the large number of people required for this work. [Summers 1964:2, 6]

A *loko ‘umeiki* drastically differs from a *loko kuapā*. The walls of a *loko ‘umeiki* were much lower and it essentially functioned as a fish trap (Summers 1964:12). Emma Beckley mentioned that this type of shore pond was

[...] surrounded by a low wall that is submerged at high tide and has openings, walled on each side like lanes, leading in or out of the pond [...] At night when the tide was coming in, a man or a woman waded out to the end of an inward lane. Here he, or she, sat on a raised stone platform which was situated at the end of one side of a lane. The fisherman held a net which was just wide and deep enough to cover the opening of the lane. The mouth of the net was faced toward the sea. [Beckley 1883:20]

Summers (1971) gives a lengthy description of Poho‘ele pond also known as Pālā‘au fishpond:

This was the largest of the Moloka‘i fishponds: its size has been estimated as being from between 200 and 500 acres. Cobb referred to it as ‘Nameless extensive pond, in palaaui, filled with mud’ (1902:429). On the 1897 Hawaiian Government Survey Map of Molokai, the broken walls of the pond are shown, although the pond itself is labelled ‘mud’; it is not shown on later maps. In 1922 portions of the stone wall could still be seen, ‘...and traces of an old-fashioned sluice gate.’

A native writer gave the name of the pond as Poho'ele, 'Dark hollow,' and said that it was built by Ho'olepanui, a favorite of Kamehameha I, who came from Hawai'i to live on Moloka'i after Kamehameha had conquered O'ahu.

[...] the men of Hawai'i looked at the shoreline, the capes and nooks and then Ho'olepanui's 'engineers' planned to enclose some of the nooks from one point to another, thus converting them into fishponds [...]

The men arose at the command of Ho'olepanui and laid the stones along the sea from Pu'apo'o to Puhaka in Ho'olehua, and the pond was given the name of Poho'ele. This was a famous pond at Pala'au and had gates that were skillfully made. All kinds of fish were caught in this pond at the time when it was being well cared for.

The Hawai'i people were indeed skilled workers. Let us notice this, it was said that the deepest part in the pond had a depth of five fathoms and was somewhat like the harbor of Kou (now Honolulu) in depth.

Stokes was told the pond was a *loko po'oiki*, but he considered this as a local term for *loko umeiki* (1911). When he saw the pond in 1909, he found 27 lanes, all leading outward. The walls commenced on the W at the wall of Ho'olehua Pond, and extended for a distance of over 6100 ft. [Summers 1971:77]

3.3 Nā 'Ōlelo No'eau (Proverbs)

Hawaiian knowledge was shared by way of oral histories. Indeed, one's *leo* (voice) is oftentimes presented as *ho'okupu* ("a tribute or gift" given to convey appreciation, to strengthen bonds, and to show honor and respect); the high valuation of the spoken word underscores the importance of the oral tradition (in this case, Hawaiian sayings or expressions), and its ability to impart traditional Hawaiian "aesthetic, historic, and educational values" (Pukui 1983:vii). Thus, in many ways these expressions may be understood as inspiring growth within reader or between speaker and listener:

They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawai'i and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawai'i, they bring us closer to the everyday thoughts and lives of the Hawaiians who created them. Taken together, the sayings offer a basis for an understanding of the essence and origins of traditional Hawaiian values. The sayings may be categorized, in Western terms, as proverbs, aphorisms, didactic adages, jokes, riddles, epithets, lines from chants, etc., and they present a variety of literary techniques such as metaphor, analogy, allegory, personification, irony, pun, and repetition. It is worth noting, however, that the sayings were spoken, and that their meanings and purposes should not be assessed by the Western concepts of literary types and techniques. [Pukui 1983:vii]

Simply, *'ōlelo no'eau* may be understood as proverbs. The Webster dictionary notes it as "a phrase which is often repeated; especially, a sentence which briefly and forcibly expresses some practical truth, or the result of experience and observation." It is a pithy or short form of folk wisdom. Pukui equates proverbs as a treasury of Hawaiian expressions (Pukui 1995:xii).

Oftentimes within these Hawaiian expressions or proverbs are references to places. This section draws from the collection of author and historian Mary Kawena Pukui and her knowledge of Hawaiian proverbs describing *āina* (land), chiefs, plants, and places relative to Pālā'au and Ho'olehua Ahupua'a and the larger Moloka'i Moku. Several *ōlelo no'eau* mention Moloka'i. Other sayings regard powers associated with Moloka'i, which was traditionally known for its sorcery-like *mana* (divine power).

3.3.1 *Ōlelo No'eau* #1935

The following *ōlelo no'eau* mentions the *kioea* (Bristle-thighed curlew, *Numenius tahitiensis*) of Ho'olehua:

Ku'u manu lawelawe ō o Ho'olehua

My bird of Ho'olehua that cries out about food.

Said of the *kioea*, whose cry sounds like 'Lawelawe ke ō! Lawelawe ke ō!' (Take the food! Take the food!). The *kioea* is the bird that calls to the fishermen to set out to sea. [Pukui 1983:207]

3.3.2 *Ōlelo No'eau* #2164

The following *ōlelo no'eau* describes the hot plain of Ho'olehua:

Mo'a nupu ka lā i ke kula o Ho'olehua.

The sun scorches the plain of Ho'olehua

Refers to Ho'olehua, Moloka'i. [Pukui 1983:235]

3.3.3 *Ōlelo No'eau* #2193

The following *ōlelo no'eau* describes the medicinal expertise associated with the *kahuna* (priest) of Moloka'i.

Moloka'i ku'i lā'au

Moloka'i, pounder of medicine.

The *kahuna* of Moloka'i were said to be experts in compounding medicines and poisonous potions. Also, a stick dance bore this name. [Pukui 1983:239]

3.3.4 *Ōlelo No'eau* #2194

The following *ōlelo no'eau* references an origin story of the island of Moloka'i:

Moloka'i nui a Hina.

Great Moloka'i, land of Hina.

The goddess Hina is said to be the mother of Moloka'i. [Pukui 1983:239]

3.3.5 *Ōlelo No'eau* #2195

The following *ōlelo no'eau* describes the magical powers associated with Moloka'i.

Moloka'i pule o'o.

Moloka'i of the potent prayers.

Moloka'i is noted for its sorcery, which can heal or destroy. [Pukui 1983:239]

3.3.6 Pālā'au Lo'i

The following *ōlelo no 'eau* which appears in *Ka Nupepa Kuokoa* (1922) discusses the *lo 'i kalo* (taro terraces):

Kinikini wale na lo'i ai o Palaaau, ua like me na hoku o ka lani.

The taro patches of Pālā'au are in abundance, resembling the stars in the sky.

[*Ka Nupepa Kuokoa* 1922]

It was said that after climbing atop Kaana, one could glance below to Pālā'au and see the fertility of the soil through its numerous taro patches.

3.4 Nā Oli (Chants)

Oli, according to Mary Kawena Pukui (Pukui 1995:xvi–xvii), are often grouped according to content. Chants often were imbued with *mana* (divine power); such *mana* was made manifest through the use of themes and *kaona*. According to Pukui, chants for the gods (prayers) came first, and chants for the *ali'i*, “the descendants of the gods,” came second in significance. Chants “concerning the activities of the earth peopled by common humans,” were last in this hierarchy (Pukui 1995:xvi–xvii). Emerson conversely states,

In its most familiar form the Hawaiians—many of whom [were lyrical masters]—used the oli not only for the songful expression of joy and affection, but as the vehicle of humorous or sarcastic narrative in the entertainment of their comrades. The dividing line, then, between the oli and those other weightier forms of the mele, the inoa, the kanikau (threnody), the pule, and that unnamed variety of mele in which the poet dealt with historic or mythologic subjects, is to be found almost wholly in the mood of the singer. [Emerson 1965:254]

While *oli* may vary thematically, subject to the perspective of the *ho 'opa'a* (chanter), it was undoubtedly a valued art form used to preserve oral histories, genealogies, and traditions, to recall special places and events, and to offer prayers to *akua* and *'aumākua* (family gods) alike. Perhaps most importantly, as Alameida (1993:26) writes, “chants [...] created a mystic beauty [...] confirming the special feeling for the environment among Hawaiians: their *one hānau* (birthplace), their *kula iwi* (land of their ancestors).”

3.4.1 Ka Huaka'i

The following *oli* honors an “errand of mercy” in which Lot Kamehameha (Kamehameha V) delivered the “necessities of life, including native medicines as well as food,” to workers on his royal ranch at Hālawa on Moloka'i (Pukui and Korn 1973:83–85). The *oli* states Kamehameha V's ship, the *Kilauea*, stopped at Pālā'au to unload cargo.

Ka Huaka'i

Ia aloha ia Kilauea,

Lio kākele a o ka moana,

Errand

Kilauea, beloved ship, sea-roving steed

roams this ocean full-steam ahead

<i>Holo mamua holo mahope.</i>	backing and hauling, then the voyage home.
<i>Kau pono ka ihu i ka makani,</i> <i>Haki nu'a ka uwahi i ke kai,</i>	Now Kilauea's prow heads into the wind, smoke breaks from stack, ripples over the sea,
<i>Nome a'e ka huila malalo,</i> <i>Halaeka lae o Ka-lā'au,</i> <i>'Oni ana Moloka'i mamua,</i> <i>Huli a'e e eke alo i Lā-hainā,</i> <i>He ukana ka Kilauea,</i> <i>Lū a'e la i Pā-lā'au,</i>	paddle wheel slowly revolves, passes Ka-lā'au Point, Moloka'i up ahead, Lā-hainā yonder awaiting freight, and stops at Pā-lā'au to unload cargo, heave-ho and shove down below. Like a flock of seabirds upon a waste of sand
<i>Ho'okahi pahuna malalo.</i>	a hungry horde races along this salt-encrusted shore.
<i>Kohu 'āuna manu i ke one,</i> <i>Ka hoholo i ke ālialia.</i>	Were it not for Chief Ka-mehameha these creatures would be bereft of all supply,
<i>E 'oleo Ka-lani Mehameha</i>	would be as sheep without forage, no shepherd
<i>Ola ai nei pū'ā hipa,</i>	were it not for life-bringing Ka-ma'i-pu'u-pa'a the Kahuna,
<i>Nā hi pa a Ka-ma'i-pu'u-pa'a.</i> <i>'Ai ana i ka lau 'oliwa.</i>	wise in matters of sickness, life and death. Now let his famished flock feed on olive leaves given with a King's love.
<i>Há'ina 'ia mai ka puana,</i> <i>No Ka-lani Mehameha he inoa.</i>	This is the end of my song In praise of Chief Ka-mehameha.
[Pukui and Korn 1973:83-85]	

3.5 *Nā Mele* (Songs)

The following section draws from the Hawaiian art of *mele*, poetic song.

Words and word combinations were studied to see whether they were auspicious or not. There were always two things to consider the literal meaning and the *kaona*, or 'inner meaning.' The inner meaning was sometimes so veiled that only the people to whom the chant belonged understood it, and sometimes so obvious that anyone who knew the figurative speech of old Hawai'i could see it very plainly. There are

but two meanings: the literal and the *kaona*, or inner meaning. The literal is like the body and the inner meaning is like the spirit of the poem. [Pukui 1949:247]

The Hawaiians were lovers of poetry and keen observers of nature. Every phase of nature was noted and expressions of this love and observation woven into poems of praise, of satire, of resentment, of love and of celebration for any occasion that might arise. The ancient poets carefully selected men worthy of carrying on their art. These young men were taught the old *meles* and the technique of fashioning new ones. [Pukui 1949:247]

3.5.1 Aloha Moloka'i

This *mele* by an unknown author was found in “Johnny Noble’s manuscript collection of Hawaiian Songs” by Robert M. Mondoy and translated by Puakea Nogelmeier and Robert M. Mondoy. The *mele* states that Maunaloa, a mountain in West Moloka'i, “stands majestic” with the “broad expanse of Pālā'au” (Mondoy 2018:62–63).

<i>Nani wale ku 'u 'ike kūmaka 'eā</i>	It was glorious for me to behold
<i>I ka nani kaulana moku a 'o Hina 'eā</i>	The famed beauty of Hina's isle
<i>'O ke kai hone a 'o Nalulua 'eā</i>	The murmuring sea of Nalulua
<i>E pili a 'e nei me Kalama 'ula 'eā</i>	Joining with Kalama'ula there.
<i>Kūkīlakīla mai 'o Maunaloa 'eā</i>	Maunaloa stands majestic
<i>Ka waiho laulaha a 'o Pālā'au 'eā</i>	With the broad expanse of Pālā'au
<i>Heahea mai ana 'o Kala'e 'eā</i>	Kala'e is beckoning
<i>E ho 'i i ka poli o Maunahui 'eā</i>	To return to the embrace Maunahui (Originally “Maunahina,” a probably error)
<i>'Alawa i ka nani o Kalaupapa 'eā</i>	Gazing at the beauty of Kalaupapa
<i>Ke 'alohi a ke kai lana mālie 'eā</i>	The calm seas there sparkle
<i>Ha 'ina 'ia mai ana ka puana 'eā</i>	The story be told in the refrain
<i>Aloha Moloka 'i Nui a Hina 'eā</i>	Beloved is Great Moloka'i, isle of Hina
[Mondoy 2018:62–63]	Translation: Puakea Nogelmeier & Robert M. Mondoy

3.5.2 Ho'olehua

This *mele* was composed by Clarence Kinney; Ho'olehua was his home. This *mele* is in honor of Ho'olehua.

<i>Ha 'aheo no ku 'u home lā</i>	Proudly my home
<i>E ke kau mai la i ka la 'i</i>	Repose in the calm
<i>Ho 'opulu ia mai ka 'ehukai</i>	Dampened by the sea spray
<i>I ka nani o Ho 'olehua</i>	In the beauty of Ho'olehua

<i>Ku 'u home i ka uka</i>	My home is in the uplands
<i>I ka pā ka makani</i>	Where the wind blows
<i>Ko aloha pumehana</i>	The warmth of your love
<i>Mau ana no me ia 'u</i>	Will always be with you

<i>Hu 'i lā koni lā</i>	Chilling, throbbing
<i>I ka uka 'iu 'iu</i>	In the distant upland
<i>I ka pā kolonahe</i>	Where the wind wafts
<i>A ke kēhau</i>	with the dew

<i>Ku 'u home lā ho 'opulapula lā</i>	My home, my homestead
<i>Me ka nani o Ho 'olehua</i>	In the beauty of Ho'olehua
<i>Me ka nani o Ho 'olehua</i>	In the beauty of Ho'olehua
[Huapala n.d.a]	

Another *mele* titled *Ho 'olehua* [*'Āina Ho 'opulapula*] (*Ho 'olehua, The Homestead Land*) was written Robert Niau Kamaunu Sr. and published in *A Collection of Popular Hawaiian Melodies* in 1929 (Mondoy 2018:62).

<i>Kū kilakila mau 'o Ho 'olehua</i>	Ever-imposing and arising is Ho'olehua
<i>'Āina nani i ka ho 'opulapula</i>	A glorious land for the Hawaiian homestead

<i>He pula kau maka na ka lehulehu</i>	Although an insignificant mote to most
<i>Ka uluwehiwehi a 'o ia uka</i>	The countryside there is abundantly lush

<i>Ka uka 'iu 'iu me ke onaona</i>	A countryside distant and alluring
------------------------------------	------------------------------------

<i>A ka 'ano 'i a 'e lei mau nei</i>	With a longing like for a beloved child
<i>Ho 'ohihi ka mana 'o ke 'ike aku</i> <i>Ka waiho kāhela i ka la 'I</i>	A spreading hope is the vision there Of a vista vast and expansive in tranquility
<i>Ua la 'i ka nohona me ke aloha</i> <i>He home ho 'okipa i ka malihini</i>	Life is peaceful and filled with aloha A home hospitable to the new-comer
<i>Haina 'ia mai ana ka puana</i> <i>Ho 'olehua ē ka heke a 'o Moloka 'i</i>	Repeat the refrain, tell the story of Ho 'olehua and the great island of Moloka 'i
[Mondoy 2018:62]	(Translation: Robert Mondoy and Puakea Nogelmeier)

3.5.3 Moloka 'i Hula

This *mele* for Moloka 'i was composed by Mary Robins, with music by John Noble to honor the various *wahi pana* of Moloka 'i.

One verse in particular references Ho 'olehua Ahupua 'a with the lines “*Ho 'olehua he 'āina nani, kaulana ka inoa ho 'opulapula*. Ho 'olehua, a beautiful land, name of the famous Homestead” (Huapala n.d.b). The composer of this *mele* explains that Ho 'olehua means no seed. This name was given to the land as the wind blew away the seeds that were planted (Huapala n.d.b).

<i>Hanohano ka inoa a 'o Moloka 'i lā</i> <i>Lei ana i ka pua o ke kukui</i>	Distinguished, the name of Moloka 'i Adorned with a wreath of the kukui flower
<i>O ka wehi kaulana o ku 'u 'āina</i> <i>O Moloka 'i nui a Hina</i>	Famous symbol of my land Moloka 'i, born of Great Hina
<i>O Hālawa e 'alawa iho</i> <i>'Ālawa ka ulua e ma alo nei</i>	Hālawa, glance down Look quickly, see the ulua on the upper surface
<i>O Pūko 'o no 'u ko aloha</i> <i>Me ka ulu kukui o Lanikāula</i>	Pūko 'u, my love With the kukui grove of Lanikāula

<i>Ho'olehua he 'āina nani</i>	Ho'olehua, a beautiful land
<i>Kaulana ka inoa ho'opulapula</i>	Name of the famous homestead
<i>Kalama'ula a he home nani</i>	Kalama'ula, oh, beautiful home
<i>Ho mai ko lama 'ai ala no 'u</i>	Come, let us go there to eat
<i>Hea aku no wau e o mai 'oe</i>	I call to you, you answer
<i>Lei ana i ka pua o ke kukui</i>	Adorned with a wreath of the kukui flower.
[Huapala n.d.b]	

3.5.4 Nani Moloka'i

Composed by Helen Smythe Ayat and Ida Hanakahi, this *mele* honors various *wahi pana* throughout Moloka'i by showcasing attributes of these lands that make them so famous. In this *mele*, Ho'olehua is honored by being famous for its *hala* (*Pandanus odoratissimus*) grove. Please note that *hala* is commonly defined as “pandanus fruit.” However, the translator of this *mele* defined “hala” as pineapple.

<i>He nani Moloka'i</i>	Beautiful Moloka'i
<i>Nui a Hina</i>	Child of Hina
<i>I ka ulu kukui</i>	And is famous kukui grove
<i>A'o Lanaikāula</i>	of Lanikāula
<i>He nani Hālawa</i>	Beautiful Hālawa
<i>I ka[']ju 'ike</i>	In my sight
<i>He waialele</i>	The waterfall
<i>A'o Moa'ula</i>	Of Moa'ula
<i>He nani Kalama'ula</i>	Beautiful Kalama'ula
<i>I ka ulu o ka niu</i>	with its coconut trees
<i>He 'āina ho'opulapula</i>	Homestead land
<i>O Kalaniana'ole</i>	Of Kalaniana'ole
<i>He nani Ho'olehua</i>	Beautiful Ho'olehua
<i>I ka ulu o ka hala</i>	with the pineapple

He waiwai ui

Brings wealth

Ke loa 'a mai

To the community

He nani Kalaupapa

Beautiful Kalaupapa

Ho 'okipa malihini

Welcomes visitors

Hā 'ina mai ka puana

tell the refrain

A he nani Moloka'i

Beautiful Moloka'i

[Huapala n.d.c]

Section 4 Archaeological and Historical Narrative

4.1 Pre-Contact and Early Post-Contact Period

Traditionally, Moloka'i was divided into two *moku* (district): Kona and Ko'olau. Kona Moku was comprised of the lands of the southern and western sections of the island (which included Pālā'au and Ho'olehua *ahupua'a*) and the Ko'olau Moku which comprised the lands of the northeastern portion of the island from Hālawā Valley to the Kalaupapa Peninsula. In 1859, the traditional *moku* of Kona and Ko'olau were dropped and the island as a whole was referred to as the Moloka'i district. In 1909, the island was again divided into two districts: Kalawao District, containing the lands of Kalaupapa, Kalawao, and Waikolu, and Moloka'i District, comprising the remainder of the island (Coulter in Summers 1971:2), including the current project area.

The project areas are within Pālā'au Ahupua'a. Mrs. Pukui in Handy et al. (1991:47) described the subdistricts of Pālā'au on Moloka'i as *kalana* (division of land smaller than a *moku*). Today, the *kalana* of Pālā'au consists of one major land division and two *lele* (a detached part or lot of land belonging to one *'ili*, but located in another *'ili*). Pālā'au 1 is located at the southern shores of central Moloka'i, while Pālā'au 3 is in uplands, at the summit of the sea cliffs above Kalaupapa Peninsula. These two *lele* of Pālā'au Ahupua'a are significantly smaller than Pālā'au 2—which includes the present project areas. Pālā'au 2, the largest of the three land sections, is adjacent to the northwest of the *ahupua'a* of Ho'olehua (Dodge et al. 1897; Summers 1971:81).

4.1.1 Subsistence and Settlement

During his archaeological survey of Moloka'i in 1937, Southwick Phelps (1937) noted the following about West Moloka'i:

It is said that in former days western Molokai was not as devoid of forest as it is now. While this may be true to a limited extent, I think that the essential conditions have remained the same and that the western half was always a semi-arid region. One certainly finds there no extensive taro patches and no signs of dense population. We learn, furthermore, that it was traditionally a land of the sweet-potato, a plant that does not require much water. [Phelps 1937:6–7]

While exact boundaries for yam and sweet potato cultivation in Pālā'au and Ho'olehua are unknown, these tubers, along with fish, were staples of inhabitants in the area (Phelps 1937).

The region including Ho'olehua was a fertile plain known particularly for the cultivation of *'uala* (sweet potato). Summers (1971:38) cites Malihinihele who stated in 1876, "In the olden days this [Pālā'au 2] was a good land with a fertile plain where plants grew. The population was large but today it is uninhabited." Handy (1940:157) remarks, "In 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua. It is said that Hoolehua and Palaau were noted for sweet potatoes in olden days" although Handy and Handy (1972:283) note homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.

The importance of *'uala* to the area is further suggested by place names such as Pu'u Pe'elua (hill of the caterpillar) and Kāluape'elua (baked caterpillar), which illustrate the connection to the environment of the area (Pukui et al. 1974). The *pe'elua*, or the caterpillar, feeds on the sweet

potato and is considered a pest by *'uala* farmers of the region. Pukui et al. (1974) noted hilled sweet potatoes in the region south of Ho'olehua and Pālā'au known as Uala-pu'e, which is also the name of a fishpond in that area. In addition to sweet potato, *'olo* or *hokeo*, the long gourd used for holding fishing tackle and to make the *hula* drum, notably grew in Ho'olehua (Handy et al. 1991:213).

The actual size of the pre-Contact Hawaiian population tending and supported by crops in central and western portions of Moloka'i can only be conjectured. While the greater portion of the population resided on the eastern side of the island, a late nineteenth century anecdote by Abraham Fornander (1880) suggests a former substantial population that may have been widely dispersed:

As an instance of the dense population, even a few years previous to Kamehameha's death, the author has often been told by a grand-niece of Kekaulike, who was a grown-up girl at the time, that when the chiefs trumpetshell sounded, over a thousand able-bodied men would respond to the call, within a circle described by Palaaau, Naiwa, Kalae and Kaunakakai. Those lands together cannot muster a hundred men this day. [Fornander 1880:73 footnote]

4.2 Early Historic Period

Early historic accounts briefly mention Moloka'i. Summers (1971:18) relates that in 1779 when Captain Cook visited Hawai'i, the status of Moloka'i was uncertain. However, Kamakau (1992b) cites several reasons why Moloka'i was as important as O'ahu in the late 1700s, since both of the islands contained "rich lands, many walled fish-ponds, springs, and water taro patches. The island of Oahu was very fertile and Molokai scarcely less so" (Kamakau 1992b:132–133).

Captain George Vancouver (1798), sailing along the southern coast of Moloka'i in 1793, essayed a portrait of the island's geographic texture and distribution of Hawaiian population:

Early the next morning, with a pleasant breeze from the N.E., we stood over towards the east point of Morotai, [...] we sailed along to the westward, [...] About half a league south of the east point of Morotai [...] lies a small barren rocky islet, called by the natives Modooenete [...] In this direction east the land rises rather abruptly from the sea, towards the lofty mountains in the center of the east part of Morotai; and though the acclivity was great, yet the face of the country diversified by eminences and vallies; bore a verdant and fertile appearance. It seemed to be well inhabited, in a high state of cultivation, and presented not only a rich but a romantic prospect. To the westward of these cliffs, the shores terminated in the former direction, by a low point of land, called by the natives Crynoa [...] From Crynoa the country assumes a dreary aspect. The mountains, forming the eastern part of the island, gradually descend to the westward, and like those of Mowee, terminate on a low isthmus, which appears to divide the island into two peninsulas [...] the easternmost, which is far the largest is composed of very high land, but the westernmost does not rise to any elevation, beyond that of a mean height. The country from Crynoa rises from the sea by an ascent, uninterrupted with chasms, hills or vallies. This uniform surface, on advancing to westward, exhibited a gradual decrease in the population; it discovered an uncultivated barren soil, and a tract of land that gave residence only to a few of the lower orders of the islanders, who

resort to the shores for the purpose of taking fish, with which they abound. Those so employed are obliged to fetch their fresh water from a great distance; none but what is brackish being attainable on the western parts of Morotai. [Vancouver 1798:201–202]

Early visitors and Hawaiian historians confirm Vancouver's perception of a widespread Hawaiian population throughout the eastern portion of the island and a much smaller population clustered along the shoreline within the western portion.

After conquering the island of Maui in 1790, Kamehameha I advanced on to Moloka'i where he secured the allegiance of the chiefs. Archibald Menzies (1920), the naturalist who accompanied Captain George Vancouver to the Hawaiian Islands in the 1790s, relates that Kamehameha I “destroy[ed] the fields and plantations of the inhabitants” (Menzies 1920:115). He and his warriors remained on Moloka'i for a year to prepare the attack on O'ahu. He is said to have grown taro and “had all his canoes put in order. He drilled his warriors on the Hoolehua plain near where the airport is now” (Cooke 1949:112).

4.3 Early 1800s

The first Protestant missionaries arrived in Hawai'i in 1820. In the following years, the ruling Hawaiian chiefs and governors established a network of public schools throughout the villages of the Hawaiian Islands. In September 1828, a group of missionaries travelled to Moloka'i to determine the progress of the schools (Andrews 1829). After landing on the southeast side at Honomuni, they traveled west over the next two days to the villages of Hālawā, Halana, Makanalua (Kalaupapa Peninsula), and overland to Kaunakakai where they put up for the night:

During the whole night, the people continued to arrive; and, about sunrising, the chiefs made their appearance [...] Having examined a large school here, we walked on, and the chiefs followed, in canoes. We travelled along, on the sea shore, finding very little vegetation, on account of the drought. There is scarcely any water on this side of the island. [Andrews 1829:273]

They completed their examination of the schools on Moloka'i the following day, noting that they “numbered nearly 700 houses, and think there are about 1,000 on the island” (Andrews 1829:274).

The United States Navy Exploring Expedition under the command of Captain Charles Wilkes visited the island of Moloka'i in 1840 and described the island as follows:

[...] forty miles long, from east to west, and nine miles wide: the western portion, embracing about one third of the whole extent, is a barren waste; and the remaining two thirds is mountainous, in some places rising to the height of twenty-eight hundred feet, with the exception of a narrow strip of land on the south side, which has a most favorable exposure, and is highly productive. [Jenkins 1850:258]

4.4 The Māhele and the Kuleana Act

The Organic Acts of 1845 and 1846 initiated the process of the Māhele—the division of Hawaiian lands—that introduced private property into Hawaiian society. During the Māhele, all lands in the Kingdom of Hawai'i were divided among *mō'ī* (king), *ali'i*, *konohiki* (overseer of an

ahupua'a), and *maka'āinana* and passed into the western land tenure model of private ownership. In 1848, the crown and the *ali'i* received their land titles. On 8 March 1848, Kamehameha III (Kamehameha III) further divided his personal holdings into lands he would retain as private holdings (Crown Lands) and parcels he would give to the government. According to an 1897 Hawaiian Government Survey map of Moloka'i showing 1848 divisions of land, the entire *ahupua'a* of Ho'olehua was given to the government, and all of Pālā'au *Ahupua'a* (including the western and central project areas) was retained by the Crown (Figure 7).

Native Hawaiians claiming the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay a cash amount equal to one-third of the total land value or to pay that amount in unused land. Following this payment, a Royal Patent (RP) was issued giving full title of ownership to the tenant.

On 19 October 1849, the Hawaiian Privy Council adopted resolutions to protect the rights of Native tenants, the *maka'āinana*. The *maka'āinana* were offered fee-simple titles for their house lots and lands they cultivated for themselves. *Kuleana* awards for individual parcels within the *ahupua'a* were subsequently granted through a land commission. These awards were first presented to Native Hawaiian tenants followed by the naturalized foreigners (non-Hawaiians born in the Islands) or long-term resident foreigners who could prove occupancy on the parcels before 1845. No commutation fee was necessary to apply for a Royal Patent for a *kuleana* award as the commutation fee had presumably already been paid by *ali'i/konohiki* who had been awarded the entire *ahupua'a*, or an *'ili* (a land division within an *ahupua'a*) in which the Native tenant claimed his own small parcels (Chinen 1958:29–30).

No native tenant LCAs were awarded near the project area, and only one LCA and one Land Grant were awarded in the vicinity. Approximately 4.6 km southeast of the three lots presently addressed, LCA 11216 (LCA 11216*Mo) was awarded to Kekauonohi (see Figure 7 and Figure 8) a member of the House of Kamehameha and a wife to King Kamehameha II. This LCA included 5,803 acres comprising approximately half of the *ahupua'a* of Na'iwa. Approximately 4.8 km southwest of the three lots presently addressed, Grant 3146 was awarded to Charles R. Bishop (see Figure 8). No land use information is provided for Grant 3146 (Waihona 'Aina 2021).

4.5 Mid- to Late 1800s

4.5.1 Cattle Ranching

Cattle were introduced to Moloka'i in the 1840s. De Loach (1975) summarizes this first effort at commercial ranching:

Rudolph W. Meyer, who was, [...] responsible, along with [Reverend] Hitchcock, for the introduction of cattle on the island, had come to Moloka'i in the 1840s. He established a ranch stocked with longhorns in the Kala'e [north central Moloka'i] Area. A lucrative trade in cattle and hides was begun between Moloka'i and Honolulu. The cattle were exported from the village of Pālā'au on the southwestern shore, over the reef, and onto a waiting ship. Pālā'au grew wealthy on cattle and dry land taro. All this came to an end, however, in the 1850s, when Meyer

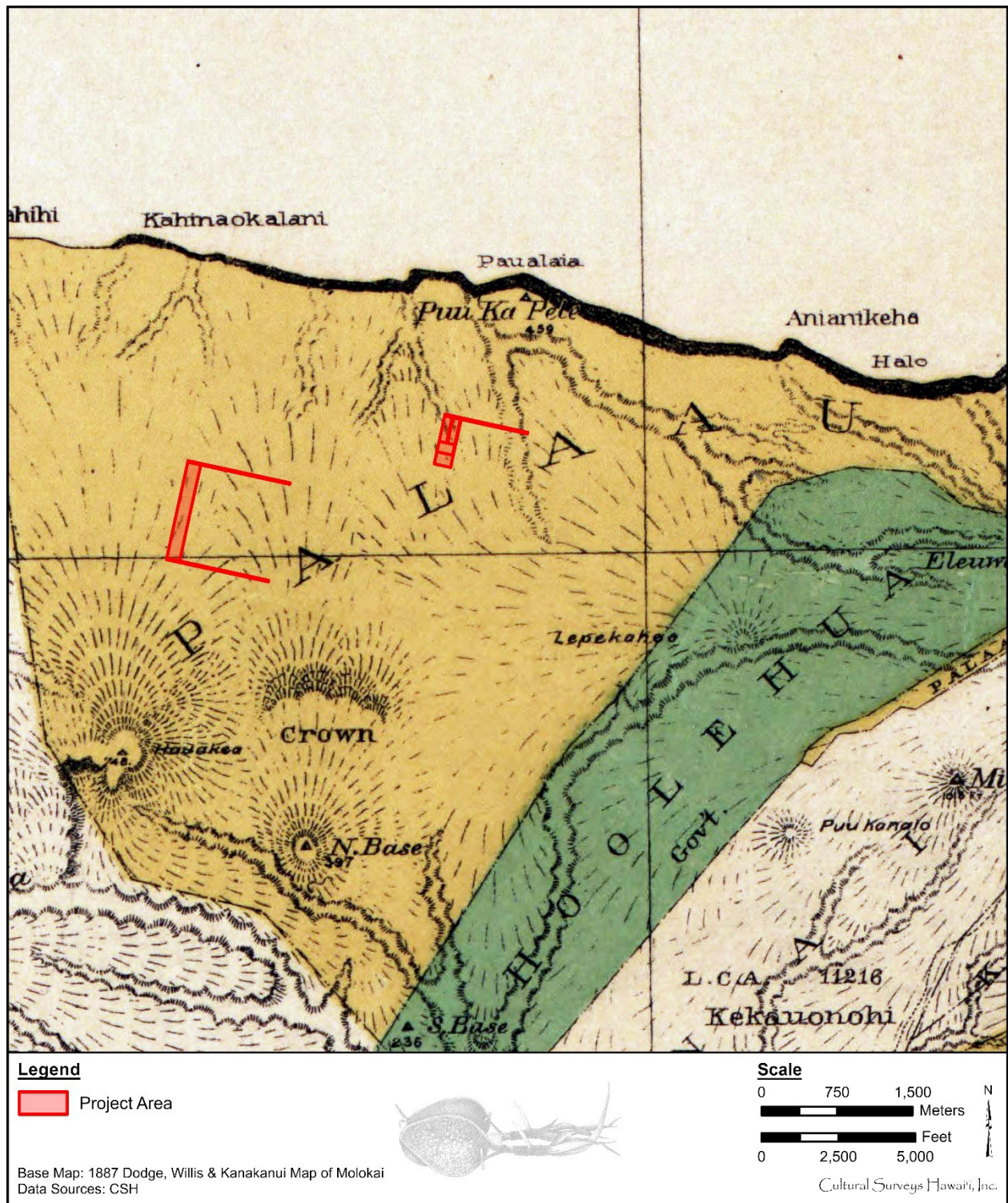


Figure 7. Portion of Dodge et al. (1897) map of Moloka'i showing 1848 land divisions (Crown [yellow], government [green], LCAs [no color]); the project area were within Crown lands

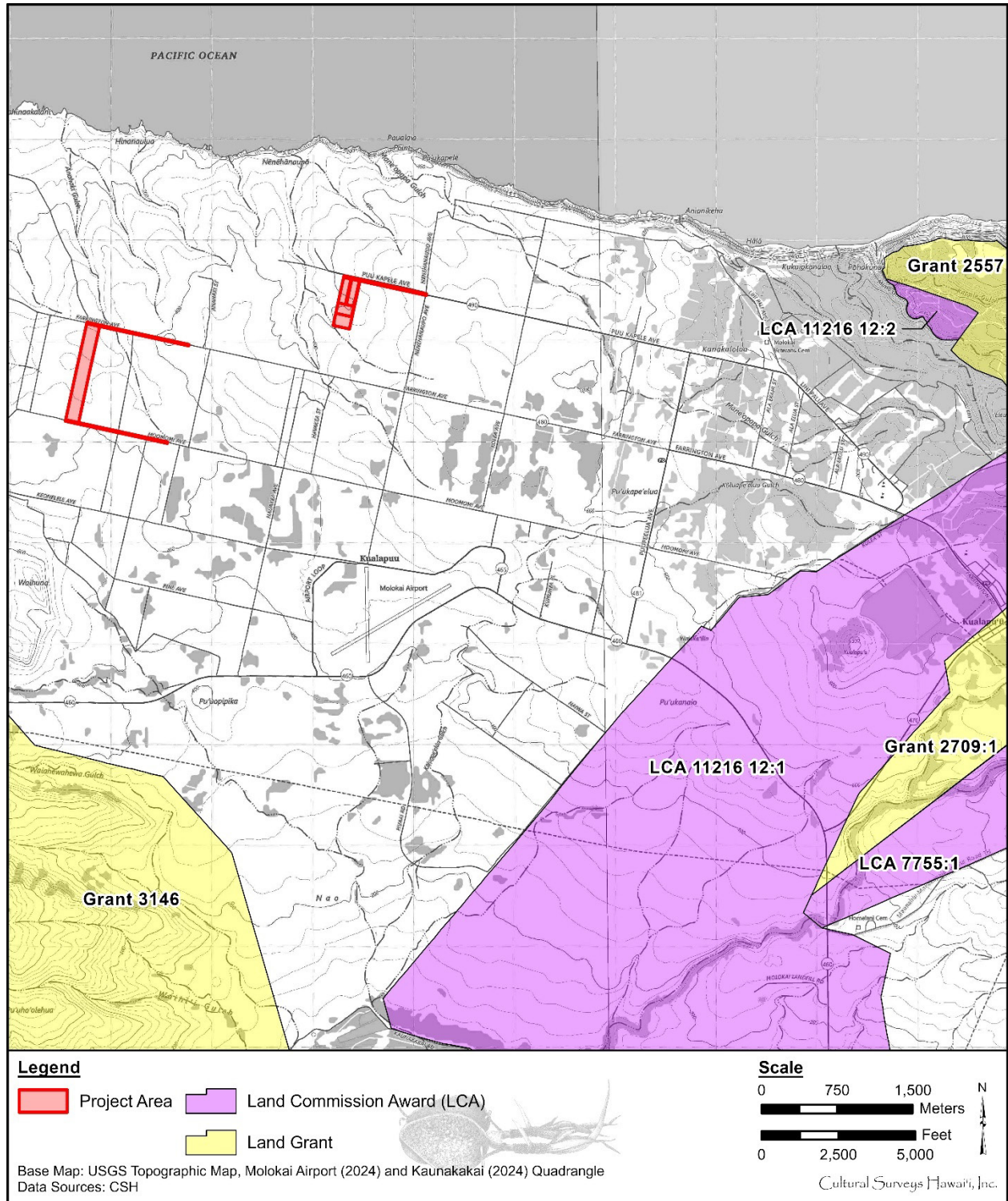


Figure 8. LCAs and Grants in the vicinity of the project area depicted on a portion of 2024 Molokai Airport and Kaunakakai USGS topographic quadrangles

discovered that the number of cattle in the herd had diminished considerably. He found that almost every male in the village was guilty of rustling, and so all the men were shipped off to jail in Honolulu. The men's families followed, And the village was deserted. Today Palaaau sits abandoned in a kiawe forest, as no one ever returned to live there. [de Loach 1975:68]

Despite these early setbacks, cattle (and sheep) ranching expanded greatly in the second half of the nineteenth century:

During this period, cattle, sheep and goats were imported to the island in ever-increasing numbers. According to Judd, there were no cattle on the island in 1832 and by 1853 there were only 200 head, The 1866 census, however, revealed 2,586 head of cattle, 13,332 sheep and 196 goats on the island. [...] In 1868, Kamehameha V released axis deer on the island. [de Loach 1975:86]

In 1855, Lot Kapuaiwa (King Kamehameha V) purchased the *ahupua'a* of Kaunakakai for two hundred dollars (Interior Department Letter, July 1885) to maintain the value of a sheep station established there by his brother, Alexander Liholiho (King Kamehameha IV) (Kuykendall 1953:152). Lot Kapuaiwa also actively sought to increase his Moloka'i holdings: "in the desire to have a country estate, he bought up land and cattle from the resident Hawaiians and used Moloka'i as a vacation ground from his cares of State" (Judd 1936:9–10).

In 1868, King Kamehameha V was sent seven live axis deer from Hong Kong as a gift (Tomich 1986:127). He released the deer, adding to the free-roaming game population on the island but, consequently, also to the destruction of vegetation by the flourishing population of foraging animals. In a 1902 talk given in Japan on Hawaiian Forests, E.M. Griffith (1902) remarked on the already alarmingly denuded state of Moloka'i:

Cattle, goats and deer have totally destroyed the forests upon the larger portion of the island of Molokai so that the western half is practically destitute of any tree growth. It is possible that the algaroba forests which have secured such a strong hold along the coast near Kaunakakai may gradually spread over this end of the island [...] The condition at present time is that the forest has been pushed back into the deeper and more inaccessible canyons and onto the highest slopes of the mountain. The effective watershed in respect to the conservation of the water supply has thus been greatly reduced and the careful protection of the remaining forests is an absolute necessity. [Griffith 1902:Appendix G]

An 1886 Government Survey map (Figure 9) depicts an approximate upper growth line of the algaroba (*kiawe*) forests approximately 3.5 km south of the present project areas. The western and eastern project areas are depicted as within the Momomi Paddock. Extensive pastureland is indicated with no other development suggested.

During the Māhele in 1848, Bernice Pauahi Bishop, daughter of Abner Pākī and Laura Konia and last descendant of the Kamehameha dynasty, inherited much of the lands which are now Molokai Ranch lands. Her husband, Charles R. Bishop, inherited the lands of Kaluako'i in 1875. The Molokai Ranch was formed in 1897 when a *hui* (group of investors) purchased approximately 70,000 acres of central and western holdings from the Bishop Estate (Cooke 1949; Stearns and Macdonald 1947).

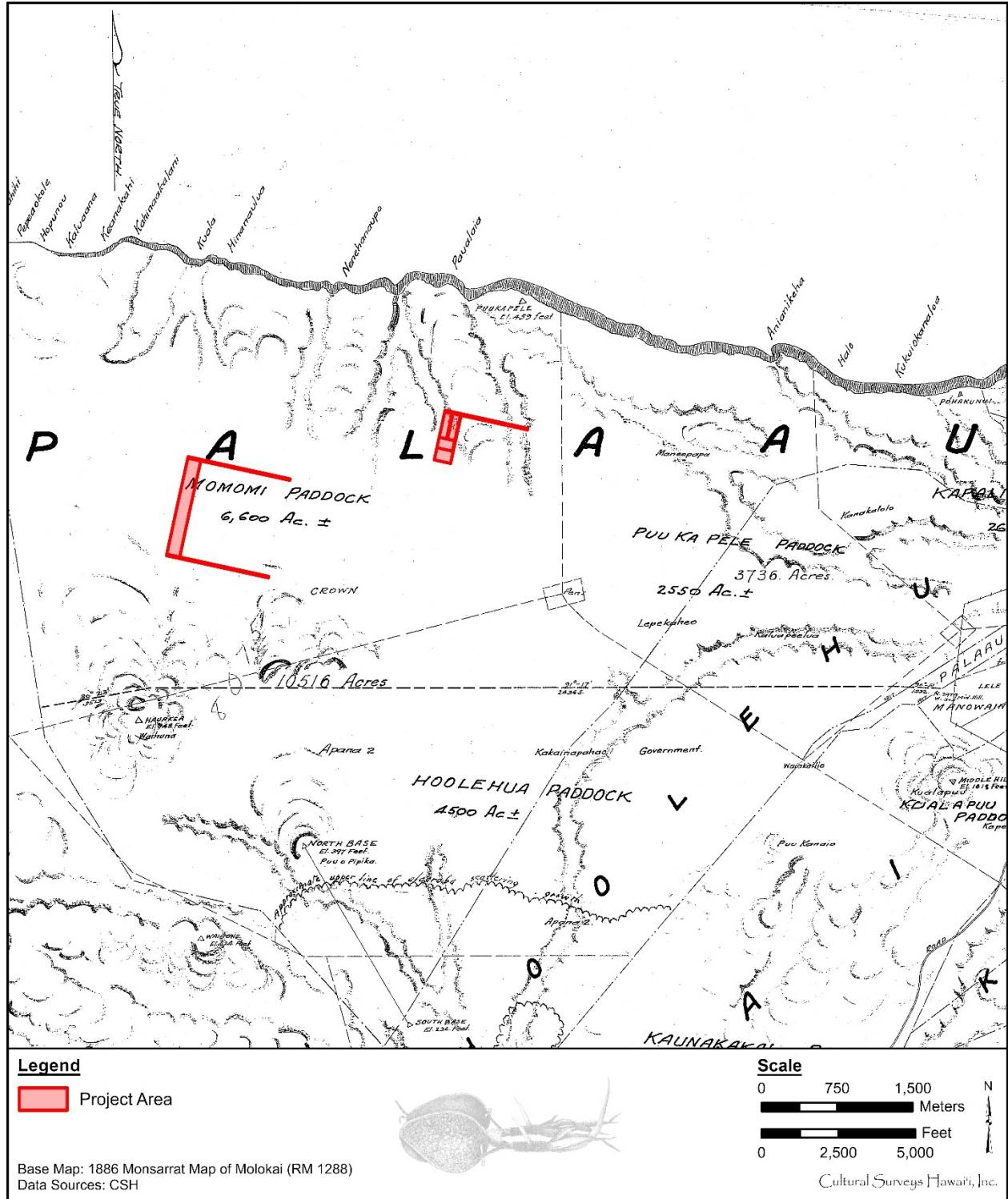


Figure 9. Portion of Monsarrat (1886) Hawaiian Government Survey map of Moloka'i, Middle and West Sections (RM 1288); showing the project area within the Momomi Paddock

4.5.1.1 Agriculture

Mr. Harvey R. Hitchcock and Mrs. Rebecca H. Hitchcock became the first permanent missionaries on Moloka'i. They established a Protestant church at Kalua'aha in 1832, at which point the only agricultural crops they noted were bananas and taro grown in the valleys where water was most readily available. No "regular schools, churches, houses of permanent nature, no garments, no cattle, only one horse, and home articles of the most primitive nature" were present then (Wiebke 1940). Twenty years later, the island had a number of churches, 1,000 students enrolled in 21 schools across the island, and livestock including goats, hogs, 400 horses, and cattle. Taro, potatoes, and grapes were "cultivated quite extensively" (Wiebke 1940:1).

In the early 1840s, the Meyer family in Kala'e was growing and exporting coffee, corn, wheat, and potatoes to the mainland. The Meyer family started a sugar mill at Kala'e in 1878 using 30 acres of land to grow cane. This was one of the few locations on Moloka'i that had adequate rainfall to grow cane, but problems stemmed from the cane being planted at an elevation of 1,500 ft above sea level. Sugarcane matured slower at higher elevations, so yields were lower. The Meyer plantation produced 50 tons of sugar annually (Wiebke 1940). The sugar mill was closed in 1894, because it was too small to compete with larger operations.

Two other large sugar plantations were developed on Moloka'i beginning in the late 1870s, one at Moa-nui in East Moloka'i and one at Kaunakakai. Both of these plantations quickly failed and were abandoned (Wiebke 1940).

In 1898, American Sugar Company, Limited (ASCO) was incorporated by Molokai Ranch, which leased an additional 30,000 acres (Cooke 1949). Following the incorporation, a full-scale cane operation in central and western Moloka'i began, including an attempt to develop the arid lands of the Ho'olehua plain. "On the Hoolehua plain 750 acres were prepared in parallel trenches following the contours. 500 acres were actually planted in young cane shoots" (Judd 1936:12). Due to an inadequate water supply, this sugar enterprise was also unsuccessful. The well pumps, which had been installed in surface wells, were of such large capacity that they soon exhausted the fresh water, and irrigation ditches 8 miles long brought pumped water with such a high salt content that it could not be used to grow sugarcane:

Wells were dug in the lowlands and water pumped into a system of irrigation ditches above. As the pumping increased, the salt content of the water gradually increased until it became detrimental to the cane. This plantation like the others was quickly abandoned. [Wiebke 1940:1]

The ASCO plantation at Kamalō was the only Moloka'i sugar plantation to invest money in a railroad. Railroad tracks were constructed from Kaunakakai harbor "up through Palaaau and Ilioli to the middle of the Hoolehua plateau" (Judd 1936:11). After failed sugar cultivation efforts, "graded railroad bed cutting through the gulches of Palaaau" and "irrigation ditches [...] on the Hoolehua plain" were all that remained (Judd 1936:11–12). No locomotives were ever shipped to Moloka'i. The tracks were removed and recycled into cattle guards. Today, stones mark the old railway route from Pālā'au to Mahana (Strazar 2000).

By 1900, all sugar production on Moloka'i had ceased (Stearns and Macdonald 1947:3). Regarding the ASCO plantation's demise, former Molokai Ranch manager, George C. Munro, recalled the following:

Hawaiians claimed that the plantation was doomed from the start, because as the company constructed the railroad along the shore to Palaau it tore down an ancient fishing heiau near Kahunui. It used the rocks for the railroad bed and ran the rails through the center of the heiau. [Morse 1953:6]

4.6 1900s

4.6.1 Molokai Ranch

Molokai Ranch became a more organized operation in the early 1900s. By 1905, the ranch had transitioned from an open country system to the paddock system (Henke 1929). During the transition, wild deer and feral goat populations were reduced, a water distribution system was implemented, and a breeding program begun. Water from the East Moloka'i mountains was gravity fed to a concrete reservoir and then piped down to the ranch. By 1929, Molokai Ranch had approximately 75 miles of water pipes and more than 100 miles of smooth wire fences. An 1886 Hawaiian Government Survey map shows several paddocks surrounding the three lots presently addressed (see Figure 9). These labels were most likely added after the map's original creation, since the paddocks appear to indicate land use by Molokai Ranch, which wasn't established until 1897 and then transitioned to the paddock system from 1898 to 1905 (Henke 1929). The western and eastern project areas are within the Momomi Paddock.

In the 1920s, Molokai Ranch lands consisted of about 10,000 acres leased for pineapple cultivation, 8,000 acres of forest reserves, and 50,000 acres utilized for ranching (Henke 1929:52). Most ranching activities were associated with cattle. Beginning in 1923, Molokai Ranch imported Hereford bulls from the Parker Ranch on Hawai'i Island, which resulted in a beef cattle population of over 4,500 head by 1929. In 1929, the ranch also had 400 swine and about 200 sheep. Sheep ranching was formerly more prevalent, with sheep numbers up to approximately 17,000 in 1907. However, the combination of sheep and cattle ranching caused over-pasturing, and since cattle ranching was more lucrative, sheep ranching began phasing out. In 1951, grazing land for sheep ranching remained a viable industry, despite its heyday being many decades prior (Carlson 1951). Cattle ranching remains a significant industry on Moloka'i.

Molokai Ranch also produced honey. In 1903, an Italian breed of bees was purchased and crossbred with the island's endemic species (Cooke 1949). In 1928, 350 tons of *kiawe* honey were produced on Molokai Ranch, most of which was sold to Germany (Henke 1929).

4.6.2 Hawaiian Homes Commission

In 1920, the U.S. Congress passed the Hawaiian Homes Commission Act to administer and manage some 200,000 acres of land that belonged to the government of the Kingdom of Hawai'i or was recognized as Crown lands. Agricultural homesteads were to be leased to Native Hawaiians, with leasehold terms generally lasting 99 years at one dollar a year. The following year, the program began attracting people to Moloka'i. Kalaniana'ole Colony was the first homestead established under the Hawaiian Homestead Act of 1920. The settlement is located in Kalama'ula Ahupua'a, near the southern shores of Moloka'i Island.

The Moloka'i homestead program initially was impacted by many problems, including drought and high winds (McGregor 1990:37–38). Insect pests were also a discouraging impediment, at one

point accounting for destruction of over 50% of many of the most desirable crops on the island (Wiebke 1940). A *Maui News* article from 1940 recounts the following:

With the birth of the Hawaiian Homes commission, Hawaiian homesteaders began pouring into the Kala'e and Ho'olehua sections. For a number of years extensive truck crops of every kind were raised successfully, but today this project has become a sorrowful enigma. [Wiebke 1940:1]

The 1922 USGS map (Figure 10) shows the area of the three lots presently addressed as relatively undeveloped. An unimproved Moomomi Road passed through the western project area and a Waihii Pipeline and adjacent unimproved road passed to storage tanks 1.3 km southeast of the three lots presently addressed. The pipelines reflect the burst of agricultural activity.

Despite such difficulties, people managed to cultivate their plots (McGregor 1990:37–38). For instance, at Kalaniana'ole Colony, water for “bathing, laundry, and farming” was originally supplied by wooden flume from a spring in Kaunakakai, with drinking water provided by a spring in Kalama'ula (Tomonari-Tuggle 1990:10). Farming was diversified and successful crops included corn, watermelons, cucumbers, sweet potatoes, eggplant, and papaya (Keesing 1936; Wiebke 1940). In addition, demand became high for Moloka'i alfalfa, and homestead tomatoes “controlled the Honolulu market” in 1924 (Keesing 1936:56).

Overall, the program succeeded and was expanded to include 11,400 acres of Pālā'au-Ho'olehua beginning in 1924. The current project area consists of approximately 36.4 acres (14.7 hectares) of these Pālā'au-Ho'olehua Homestead lands and includes Lots 17 and 104D-1. Due to the homestead program, the Pālā'au-Ho'olehua region had the largest population of Native Hawaiians in 1930. Of the 1,031 residents, 826 were Hawaiian (McGregor 1990:10).

In addition to agricultural pursuits, the Hawaiian Homes Commission encouraged raising livestock and ranching. Raising pigs brought the most revenue and economic value; however, a few families sold eggs and every family owned some cattle (Keesing 1936). In 1929, 54 homesteaders owned a total 358 cattle, including two Hereford bulls, 106 horses, 15 mules, and six donkeys (Henke 1929). Community pastures allowed each lot holder to graze up to 60 head of livestock. Additionally, three 250-acre pastures were reserved specifically for ranching. Pastures in Ho'olehua and Pālā'au totaled 6,630 acres.

In 1935, 979 cattle, 72 horses, and 25 mules utilized the community pastures though less than half Ho'olehua families had cattle on these lands.

The Hawaiian Homes Commission was also instrumental in the establishment and expansion of Moloka'i High School, approximately 5.5 km east of the current eastern project area. The school gym was constructed between 1931 and 1932 by the Hawaiian Homes Commission and the county. Moloka'i High School became the first and only high school on the island when it expanded from an intermediate school to a high school in 1939. Situated at Ho'olehua on Hawaiian Homes Commission land, it opened to all students on the island with an enrollment of over 400. In 1950, the board of supervisors approved negotiation of the purchase of 40 acres of Hawaiian Homes Commission lands adjacent to the extant campus for construction of a new high school site (*Maui News* 1950).

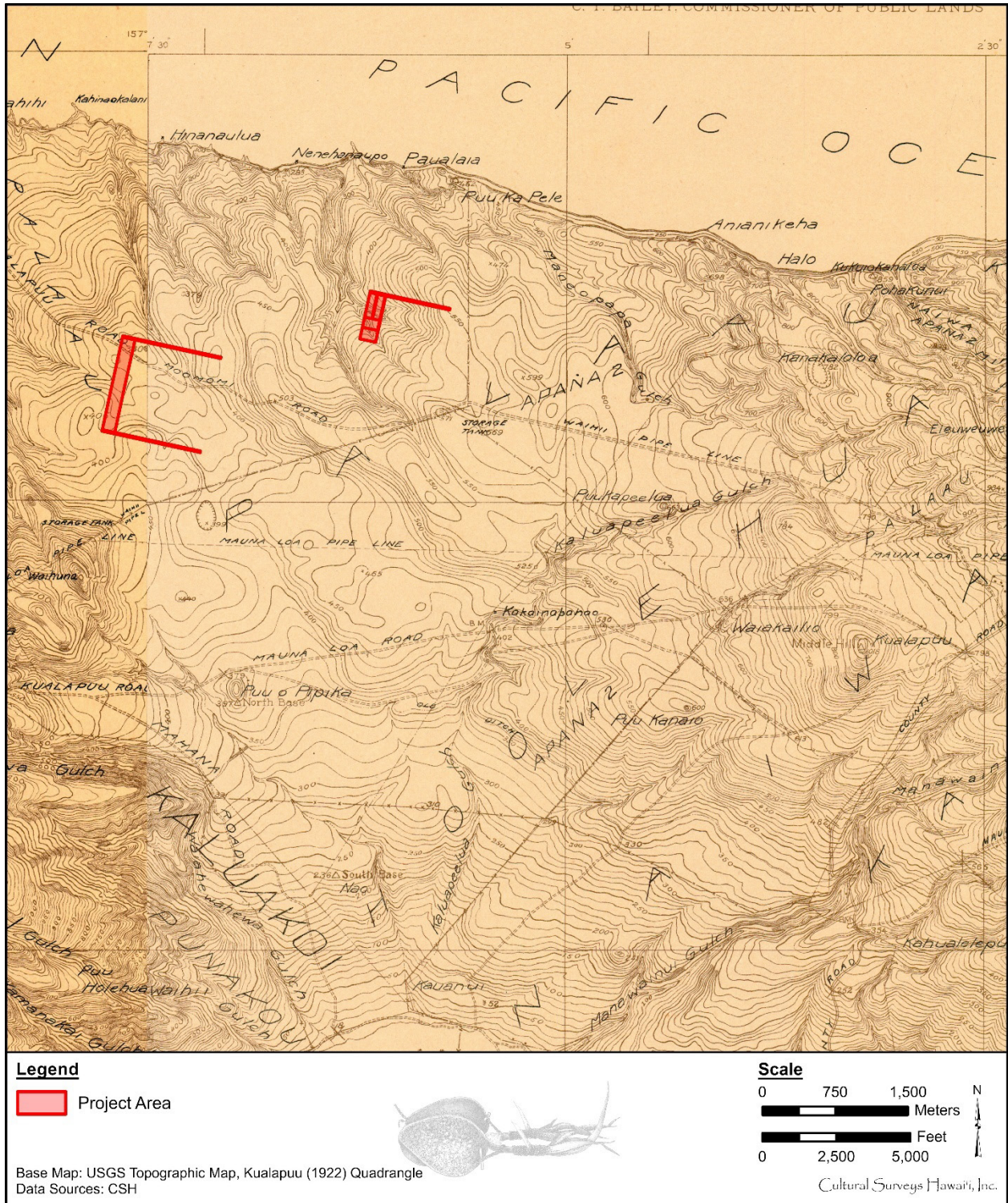


Figure 10. Portion of 1922 Kualapuu USGS topographic quadrangle, showing the project area as relatively undeveloped (an unimproved Moomomi Road passed through the area and a Waihi Pipeline and adjacent unimproved road extended east to storage tanks southeast of the project area)

4.6.3 Pineapple

Starting in 1918, independent pineapple growers tilled “the hillsides from Ualapua to Halawa, but due to high cost of operations these small plantations were short lived” (Wiebke 1940:1). The commercial pineapple industry arrived on Moloka'i in the early 1920s, with Molokai Ranch owning a majority of the leased pineapple lands (Lee-Greig and Hammatt 2008). Pineapple cultivation began in Pālā'au-Ho'olehua in 1926, when Libby, McNeill and Libby signed up some homesteaders to grow pineapple on homestead land operated in leased blocks of several 35-acre homesteads, which were cultivated by Libby.

By 1929, the California Packing Corporation (Calpac) had begun enlisting Native Hawaiian homesteaders in the Kualapu'u region, including areas near the current project area, to grow pineapple. The system adopted by both Libby McNeill & Libby and Calpac involved homesteaders growing pineapple in blocks of land leased by the plantation. Between 12 to 15 abutting homesteads were assembled by the pineapple plantation to form a contiguous area that was assigned a block number (Figure 11). Homesteaders under this block system planted, tended, and harvested to receive a proportionate share of the sale of fruit from each block. The harvested fruit was trucked by Calpac to a pier constructed at Kaunakakai, where it was crane-loaded onto barges and shipped to the Calpac cannery at Kahului, Maui (Larsen and Marks 2010:371–372). Homestead residents received almost two million dollars in cash payments for their efforts between 1929 and 1935.

Despite droughts, including one between 1944 and 1945 that caused the loss of the entire crop, pineapple production in the vicinity of the project area continued until the 1970s (Larsen and Marks 2010:379). Dole Pineapple, which had subsumed Libby, McNeill and Libby's operations, ceased pineapple cultivation in 1975. The California Packing Corporation had planned on closing the same year but continued cultivation until 1983, when a majority of its production ceased business on Moloka'i (Larsen and Marks 2010:382).

4.6.4 School Farm

In the early 1920s, Ho'olehua consisted of an undeveloped wide, grassy plain used for pasture with little development and no public school. Several families moved into the area when the land opened to Hawaiian homesteading and California Packing Corporation started their pineapple plantation at Kualapu'u, formerly a Molokai Ranch camp. Kalae School, a one-room schoolhouse at Kalae, eventually moved to the old recreation hall at Kualapu'u to better accommodate students coming from the ranch camp. As homesteads and pineapple cultivation expanded in the area, a new school was constructed at Ho'olehua to meet growing student enrollment; in 1926 the students at Kalae School moved to the new school. The staff originally consisted of three teachers, including an instructor of agriculture, but within three years the faculty grew to 15 (*Maui News* 1948).

The school established a progressive agricultural department in 1930, which rapidly developed into a highly reputable agricultural training center. Modern methods of farming and animal husbandry were taught to male vocational students (numbering 70 in 1939). Students cultivated crops designed to give them needed experience and experimented with plantings to test for possible improved crops or strains for use on the island. About half of the vocational boys came from homesteads and the other half from Calpac-employed families. A cooperative program between

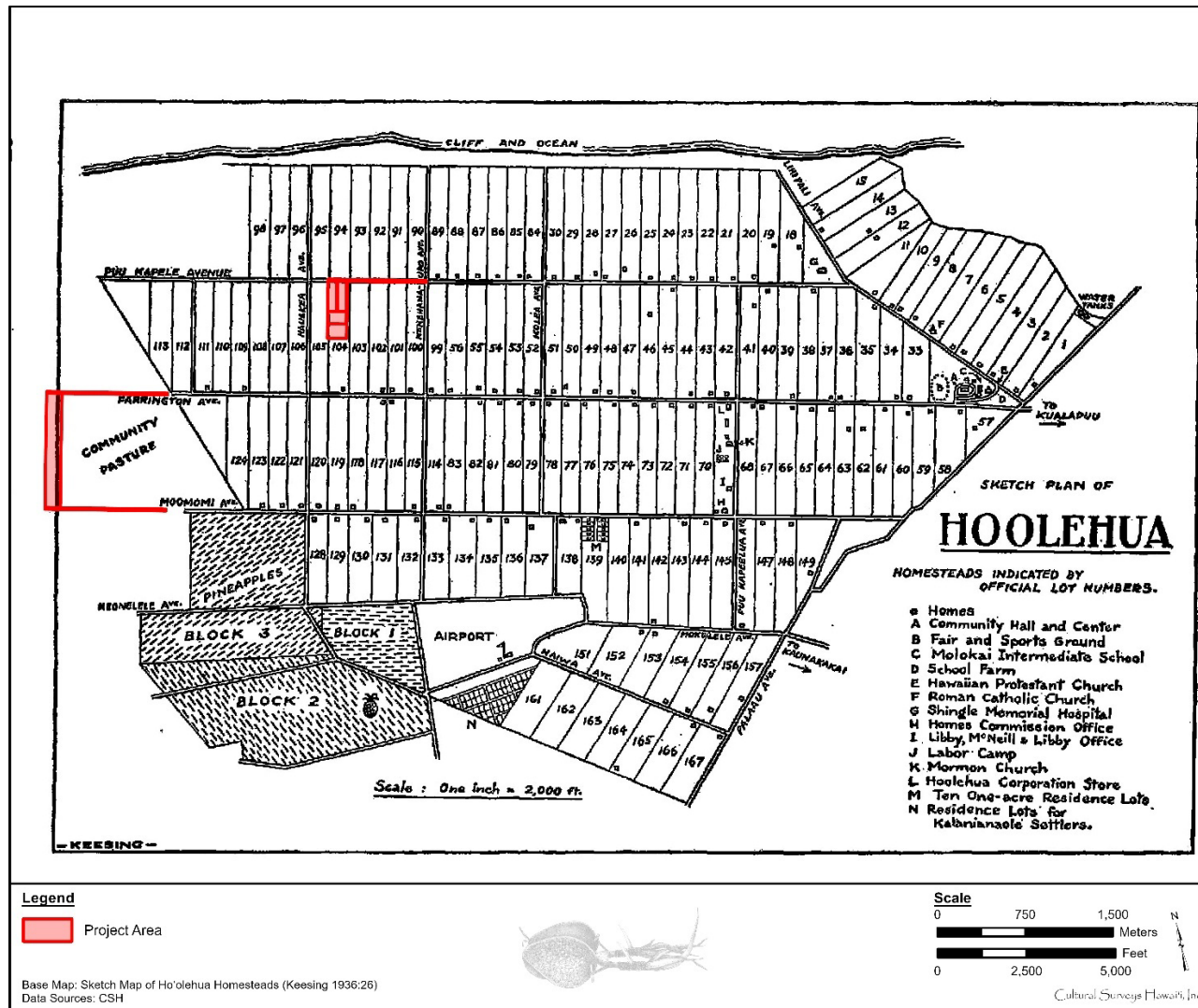


Figure 11. Sketch plan of Ho'olehūa Homesteads (Keesing 1936:26) showing the project area within the indicated Hoolehūa Homesteads

Moloka'i High School and Calpac was initiated in 1948, where boys from the vocational program worked at the plantation in the mornings before school for seniority consideration for employment post-graduation (*Maui News* 1948).

Hawaiian Homes Commission provided a 26-acre farm (Figure 12) to the department for educational purposes on “well selected land [...] makai of the Hawaiian Homes Commission office in Ho‘olehua” (*Maui News* 1940:1). The farm had chicken houses and pigpens built by the vocational students in the farm shop. “The instructor of agriculture and three classes of boys spent weeks with tractors and ropes clearing lantana” from the area to be cultivated (*Maui News* 1939:6).

A 1939 news article describes the farm:

The farm is up to date and well equipped. It serves the community as a practice ground for students; a source of improved livestock, poultry and plans; an example to the community of good landscaping and agricultural methods and is an experimental ground for new crops. Here the boys are receiving thorough instruction in the fundamentals of good scientific farming coupled with training to farm management—increasingly important because of the vital necessity that the modern tiller of the soil have a good working knowledge of farm economics in Hawaii if local small scale agrarian enterprises are to be operated at a profit. [*Maui News* 1939:6]

Figure 13 illustrates a typical resident homestead lot in Ho‘olehua during the 1930s. Families farmed a variety of crops in Ho‘olehua, including corn, melons, tomatoes, cucumbers, pumpkins, sweet potatoes, squash, peanuts, beans, onions, and cabbage (Keesing 1936). Pumpkin *poi* became a staple for these homesteaders. Though dryland agriculture had successes at Pālā‘au-Ho‘olehua Homesteads, constant care was needed to combat hardships caused by droughts, winds, and pests.

4.6.5 Corn

Corn was grown on Moloka'i from as early as the 1920s. In a letter to the editor of the *Honolulu Star-Bulletin* in 1922, the writer comments quite fondly on Moloka'i corn (Figure 14). In the 1940s, the Moloka'i corn project was intended to provide a local source of food for livestock, since all feed corn was being imported (*Honolulu Advertiser* 1944a). Approximately 1,400 acres of field corn and 1,000 acres of milo maize were planted and harvested by resident high-schoolers and homesteaders. Homesteaders also grew feed corn separate from the Moloka'i corn project (*Honolulu Advertiser* 1944b). In Ho‘olehua, large amounts of corn were sold or fed to livestock (Keesing 1936).

In 1967, Kaye Waldorf became a third partner in Hawaiian Research, Ltd. and moved from his 430-acre corn and soybean farm in Iowa to become resident manager of the company and grow corn on Moloka'i (Lynch 1968) (Figure 15). Hawaiian Research, Ltd. began experimenting with seed corn on Moloka'i in the winter of 1966; by autumn 1968, the company was growing over 900 strains of corn. Fertile soils, a year-long temperate albeit arid climate, a culturally diverse environment for his teenage children, and an “intellectual curiosity” attracted Waldorf to experimental agricultural farming on Moloka'i (Lynch 1968:B-1).

The same State Department of Land and Natural Resources (DLNR), Water and Land Development Division irrigation project that supplied water to about 14,500 acres of pineapple

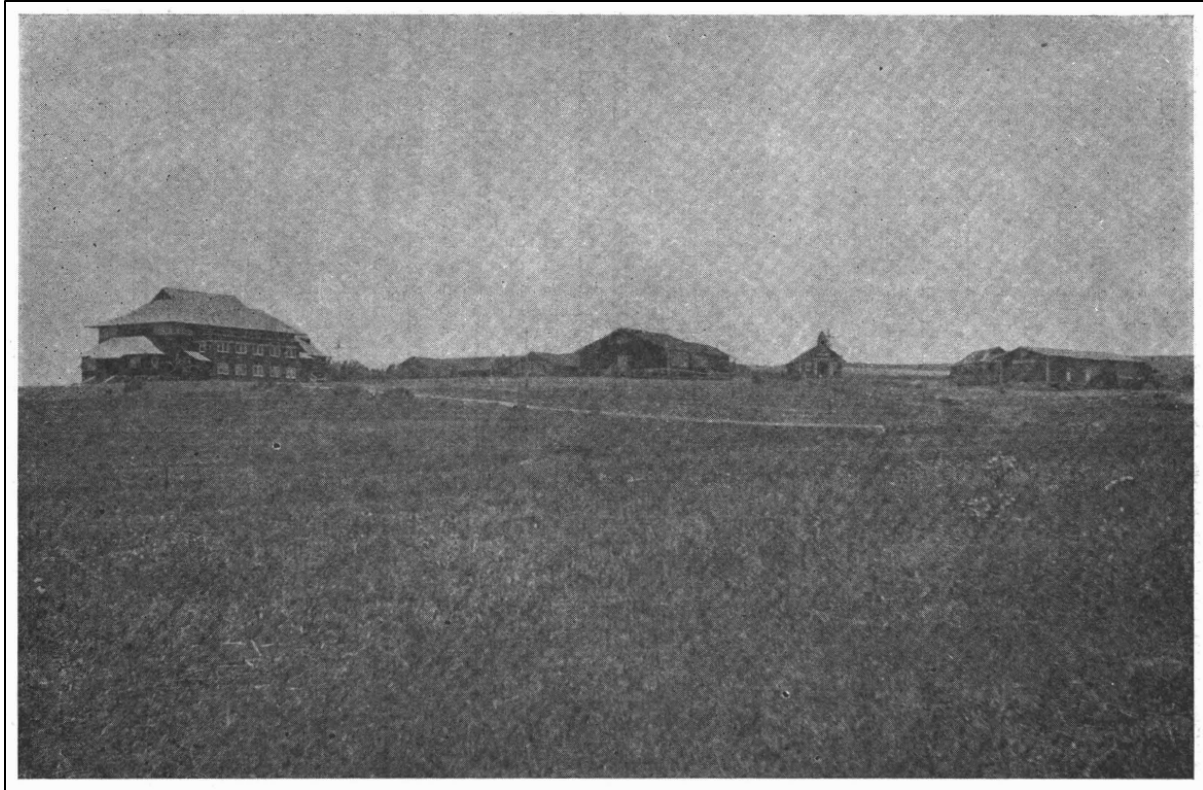


Figure 12. Community Center for Ho'olehua Homesteads including, from left to right, a hall, school, church, and farm, ca. 1939 (Keesing 1936:124)

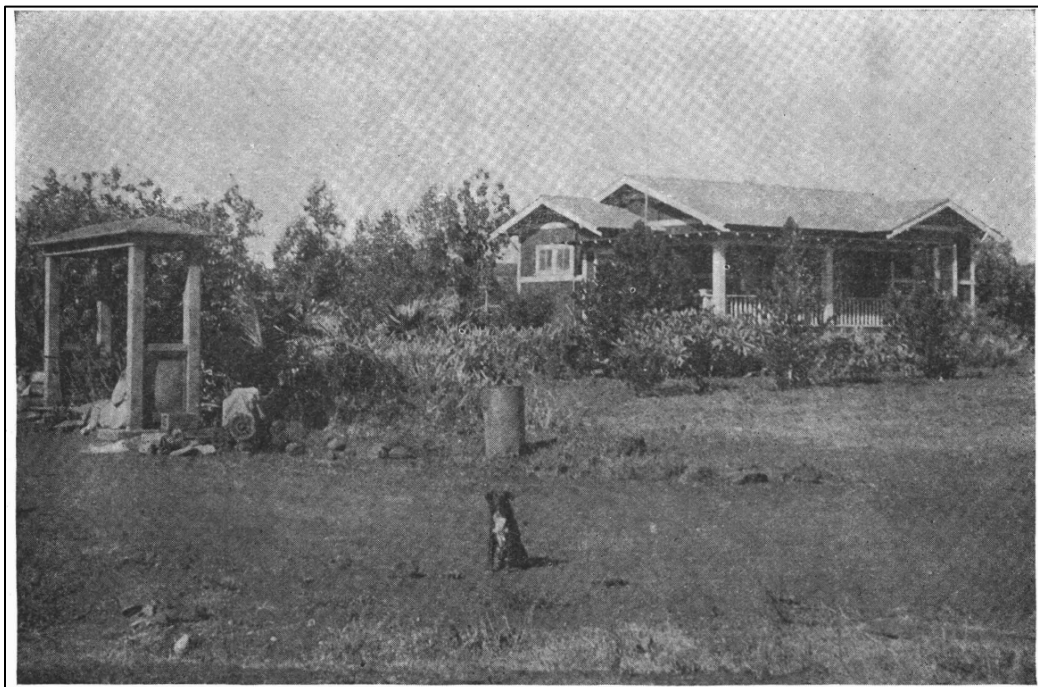


Figure 13. A Ho'olehua homestead in 1939 (Keesing 1936:59)

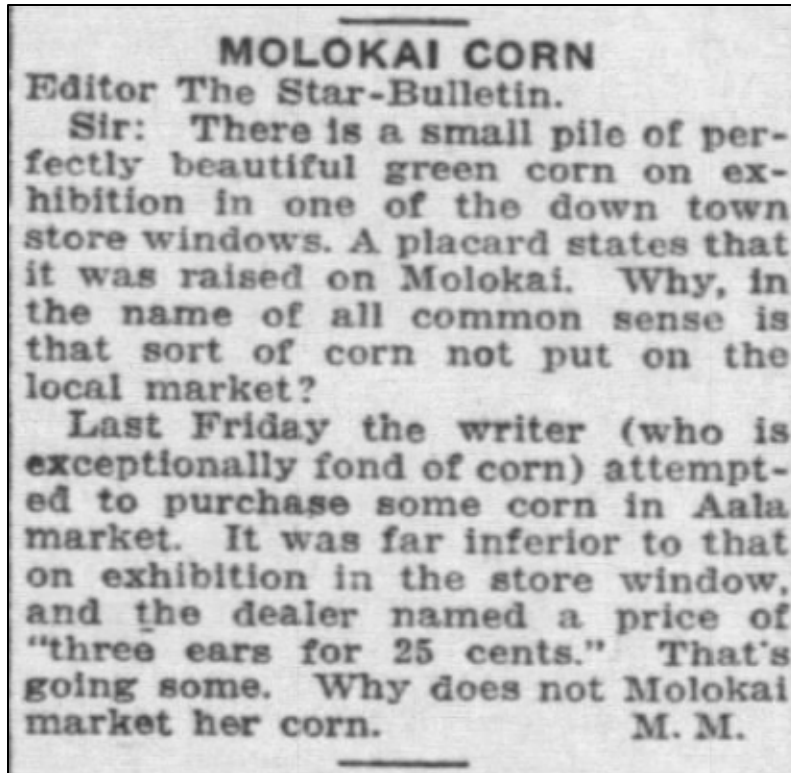


Figure 14. Letter to the editor praising the quality of Moloka'i corn in 1922 (*Honolulu Star-Bulletin* 1922:6)

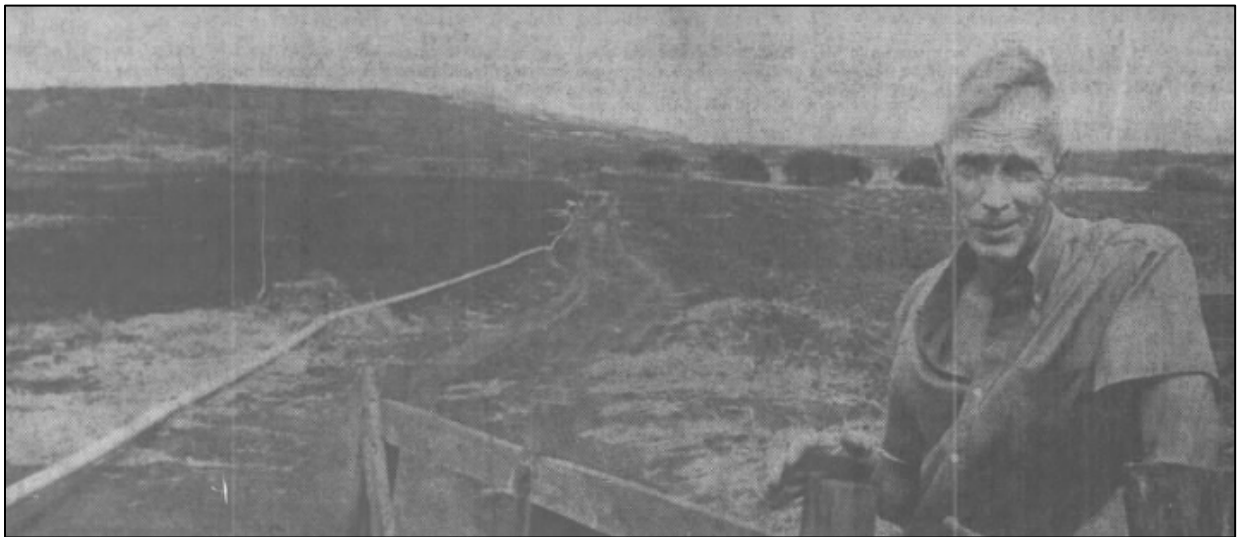


Figure 15. Experimental corn farmer, Kaye Waldorf, in West Moloka'i; pipeline (left) transported water to his crops (Roll 1968:B-1)

fields in West Moloka'i was also used to irrigate the corn fields, which comprised a portion of 1,500 acres of diversified agricultural land that also included "experimental potato plantings and some Hawaiian Homestead truck farm lands" (Lynch 1968:B-1). In October 1968, the final stages were underway for a project involving 5 miles of tunnel and additional miles of pipeline to transport water from the wet, northeastern Waikolu Valley to crops in West Moloka'i. In addition, a 1.4-billion-gallon earth reservoir was being constructed at a central location in Kualapu'u to store any excess water collected during the rainy winter season in order to provide a year-round supply of water to arid West Moloka'i's crops. Kualapu'u Reservoir is located approximately 6 km southeast of the current eastern project area. While the lack of a natural water supply certainly created obstacles, Waldorf preferred the more controlled distribution of water to his crops via a pipeline (see Figure 15) to the unpredictable rains he experienced as a corn farmer in Iowa.

4.6.6 Infrastructure

In conjunction with agricultural, residential, and economic changes, the twentieth century also brought infrastructure improvements to the island of Moloka'i. On 13 May 1909, a telephone line was authorized for Moloka'i Island (*Maui News* 1926). In 1925, construction began on a road connecting Kaunakakai to Ho'olehua, which was used regularly during Moloka'i's pineapple era to transport loads for export. Access roads within the homesteads were established and have been maintained by the Hawaiian Homes Commission without charge to homesteaders or Maui County (Keesing 1936:49). Aerial photographs and topographic maps show unpaved roads in the general vicinity in the 1950s and 1960s (Figure 16 through Figure 19). It appears Pu'u Kapele Avenue was extended west on the north side of TMK: (2) 5-2-026:016 between 1952 (Figure 17) and 1964 (Figure 18). The three lots presently addressed were something of an undeveloped island with significantly more development to the west, south, and east. The 1950 and 1964 aerial photographs (see Figure 16 and Figure 18) show pineapple cultivation neighboring, but not within, the three lots.

In 1932, Molokai Electric Company was incorporated and established an electric generating station in Kaunakakai with one 200-horsepower diesel generator, which first supplied electricity to 59 customers in Kaunakakai Village that year (Young 1961). By the 1960s, the company serviced the entire island with nine generators channeling electricity through 80 miles of transmission lines (Young 1961).

Following the development of aerial combat in the First World War, the availability of war-surplus aircraft for civilian aviation in the Hawaiian Islands led to the establishment of a civilian airfield at Ho'olehua in 1919 named Moloka'i Field. In the 1930s, improvements were made at Moloka'i Field including the construction of a terminal building for the use of Inter-Island Airways, the first commercial inter-island carrier. The segregation of part of the civilian airfield at Ho'olehua for military use occurred when the U.S. Army Air Corps established a portion of the field as "Homestead Field," beginning in September 1931 (Horvat 1966:38,40-47). By the time the United States entered World War II in 1941, aircraft of the Fifth Bombardment Group were stationed at Homestead Field. Heavy rains caused water and mud to flow into the operating area of the airport until a drainage ditch was completed in 1953. In 1954, the sod-on-sand runway was replaced by a paved runway and the airport terminal was built in 1957. Figure 16 shows the airport

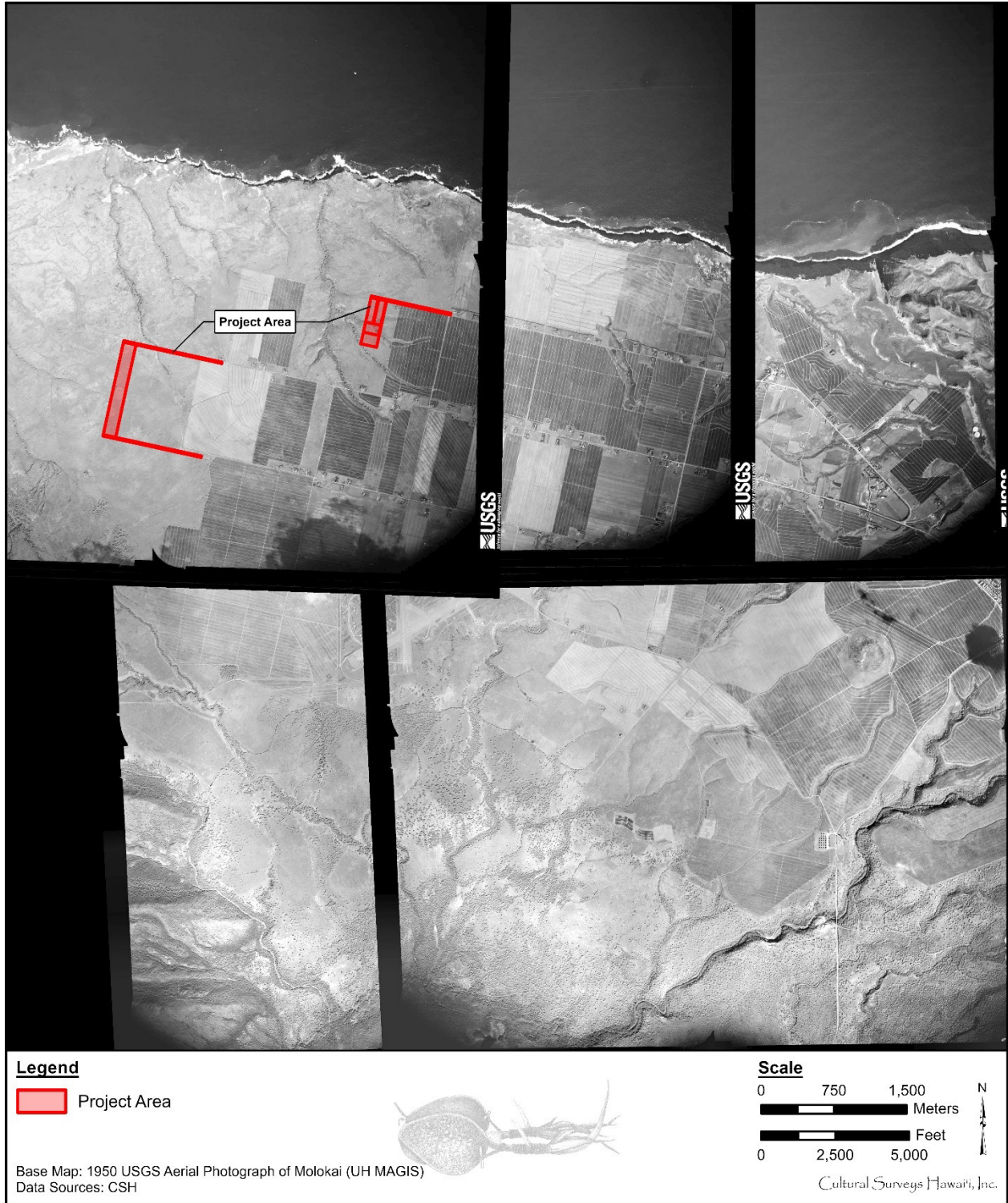


Figure 16. 1950 USGS aerial photograph of Moloka'i showing pineapple cultivation neighboring, but not within, the project area

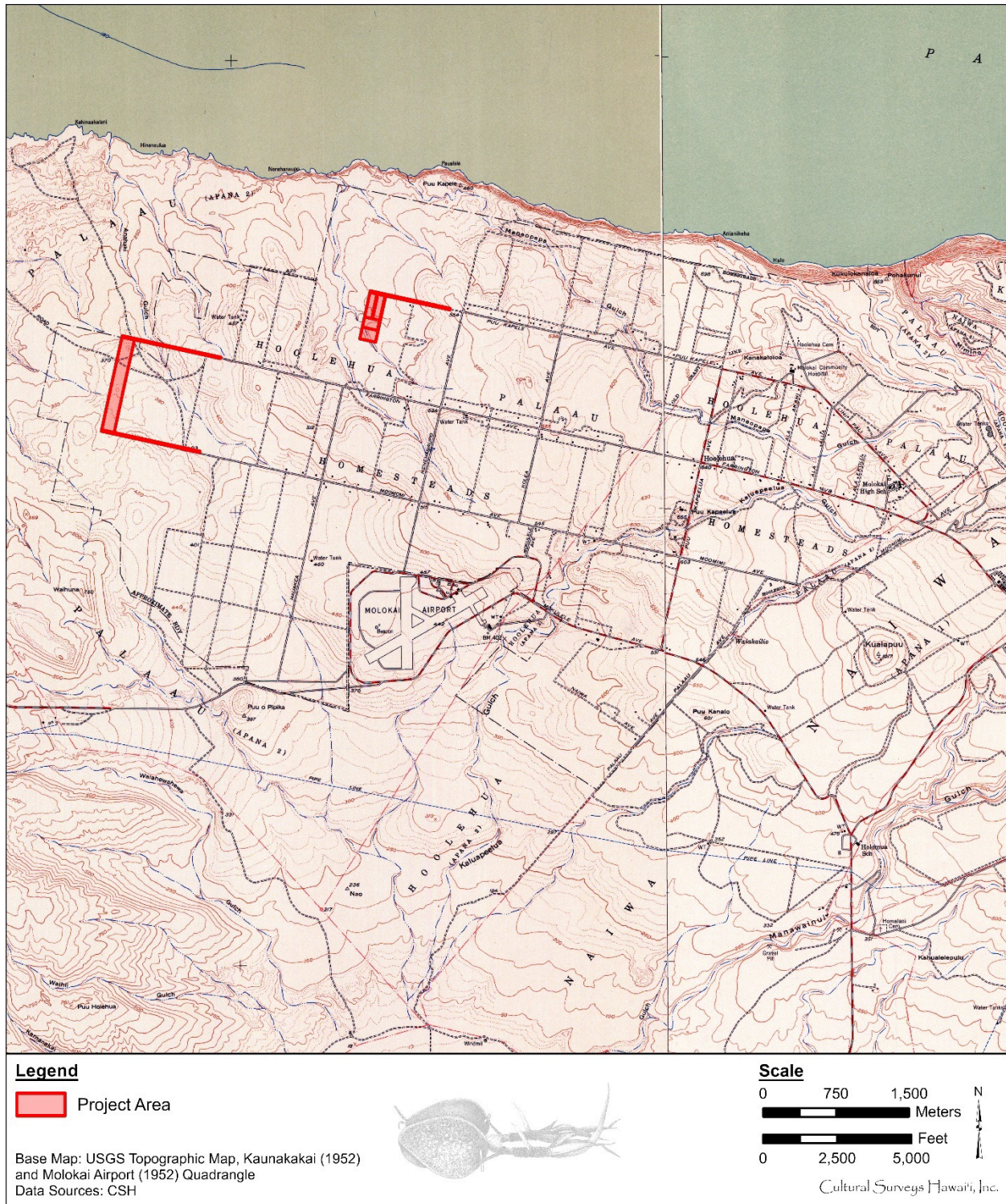


Figure 17. Portion of 1952 Kaunakakai and Molokai Airport USGS topographic quadrangles showing unpaved roads in present surrounding, but not immediately adjacent, to the three lots presently addressed

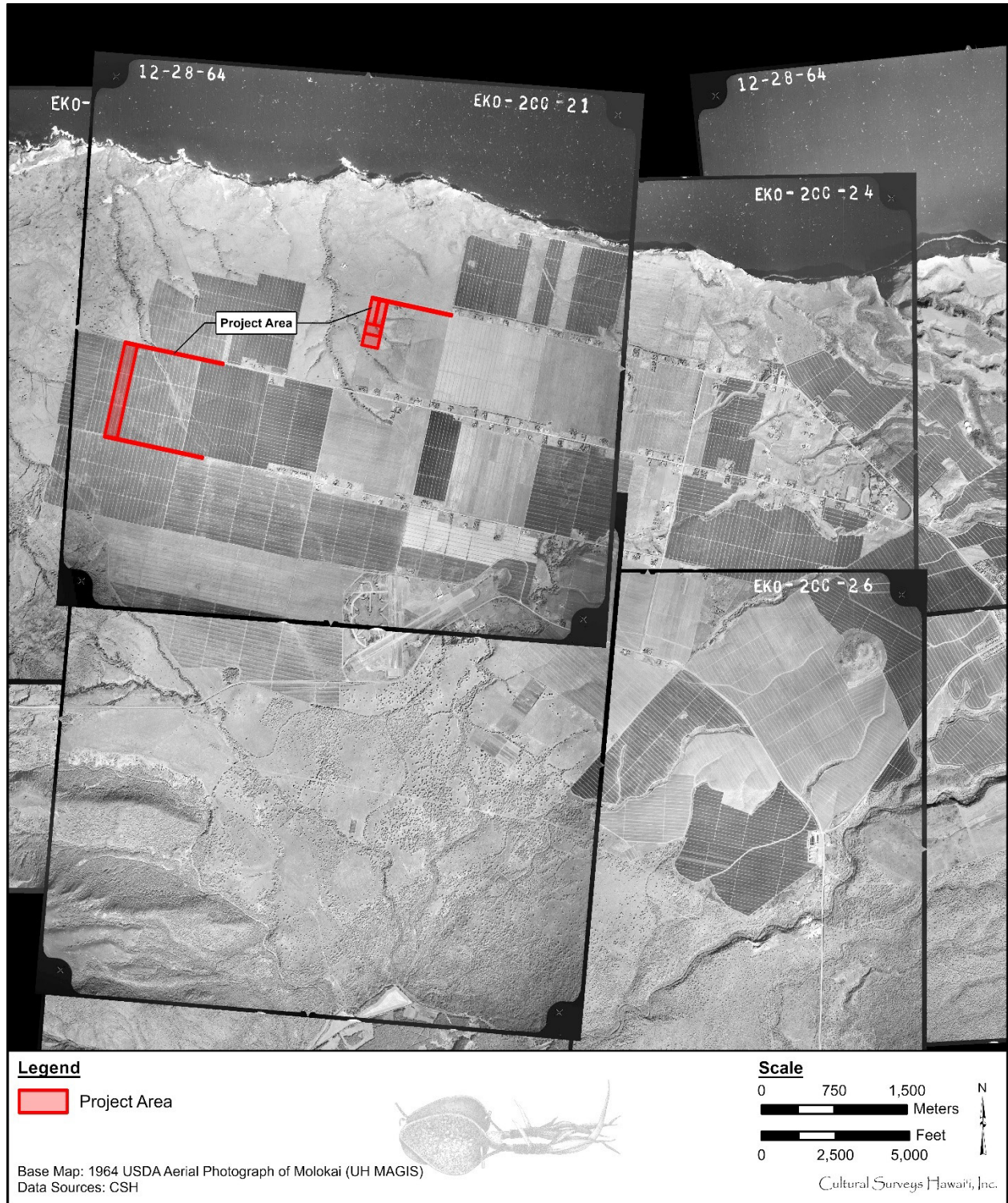


Figure 18. 1964 USDA aerial photograph of Moloka'i showing pineapple cultivation within a portion of the project area (note the general absence of trees in the project area)

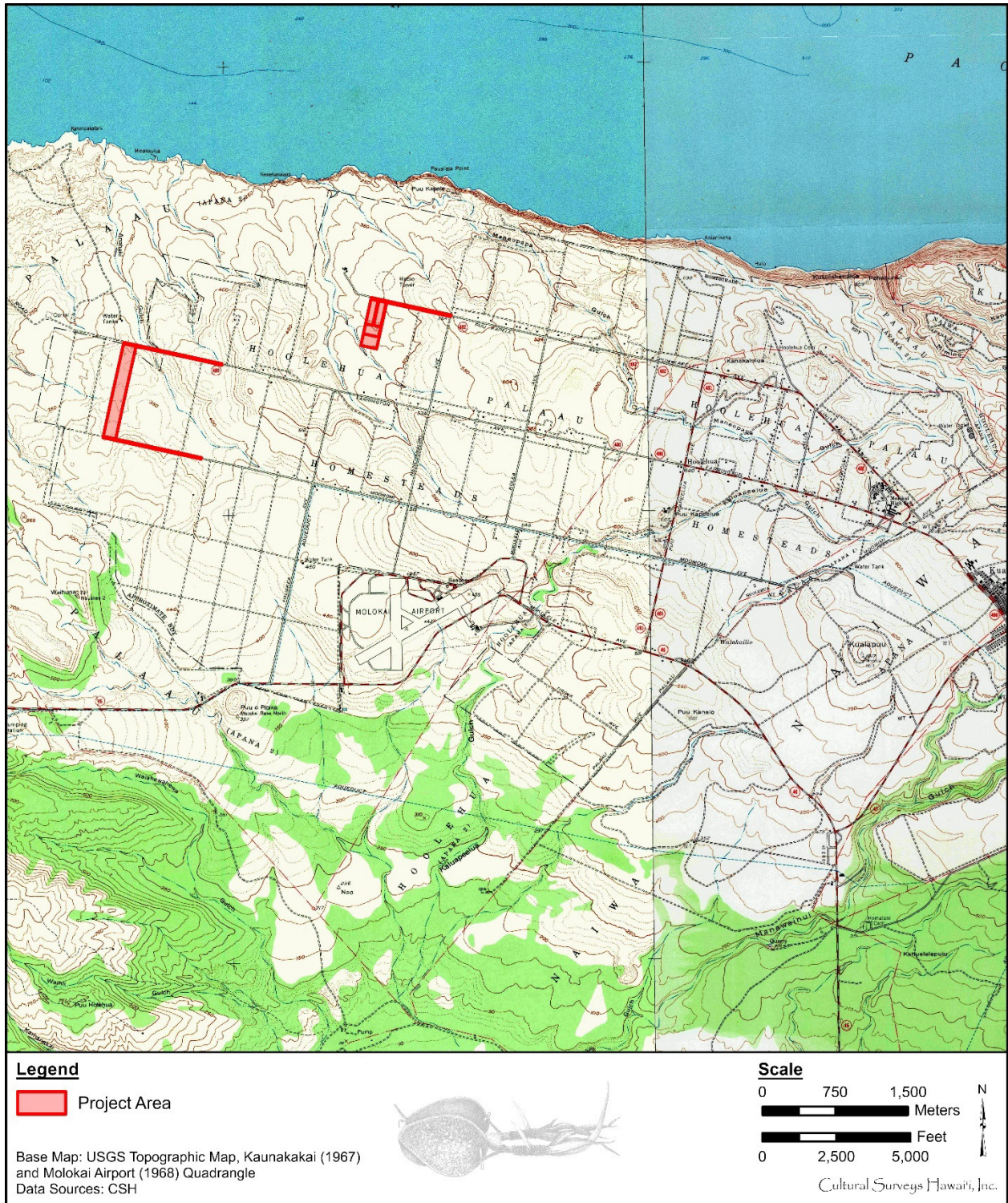


Figure 19. Portion of the 1967 Kaunakakai and 1968 Molokai Airport USGS topographic quadrangles showing unpaved roads in the general vicinity of the project area

during the 1950s prior to the construction of the terminal. Improvements to the airport continued from 1969 through 1993, including terminal expansions, perimeter security fence installation, a new FAA air traffic control tower, a fire protection system, and a maintenance base yard (State of Hawai'i 2008).

A heliport associated with the United States Navy reservation appears on a 1983 topographic map (Figure 20) and 1993 topographic map quadrangles (see Figure 1).

4.7 Contemporary Land Use

Pineapple production on Moloka'i phased out during the 1970s, with complete abandonment by the early 1980s. Tourism and service-related industries replaced commercial agriculture as the economic foundation of urban areas. The towns of Maunaloa and Kualapu'u have continued to support sizeable populations, though Kaunakakai has remained the island's major urban center.

The development history of large land holdings on the island of Moloka'i includes Molokai Ranch Company lands, some

55,575 acres, or 35 percent of the entire island. This ranch includes 20 miles of coastline and two hotel properties, the former Molokai Lodge and the former Kaluakoi Hotel, two golf courses, residential, agricultural and conservation land, as well as nearly 30 acres of commercial land near Kaunakakai and 85 acres of industrial land at Maunaloa and Kualapuu. [Magin 2017]

The company that owned all these properties, Molokai Properties Limited, ceased all operations on the island in 2008 (Mangieri 2019). These holdings have been listed for sale since 2017. While community interests actively desire purchasing the lands for residents and/or the state, the fate of these lands, and consequently Moloka'i in general, is still unknown.

DHHL proposes to construct infrastructure improvements including clearing, grading, and installation of roadway, electrical, connections to domestic water, and irrigation water utilities. The proposed plan calls for ground-disturbing activities to be confined to the two subject parcels but will extend to existing roadways for access and connection for utilities. These improvements will support DHHL beneficiaries through the provision of essential services necessary for agricultural homesteading. While installation of wastewater treatment systems will be the responsibility of the lessee, the environmental impacts are being considered as part of this action.

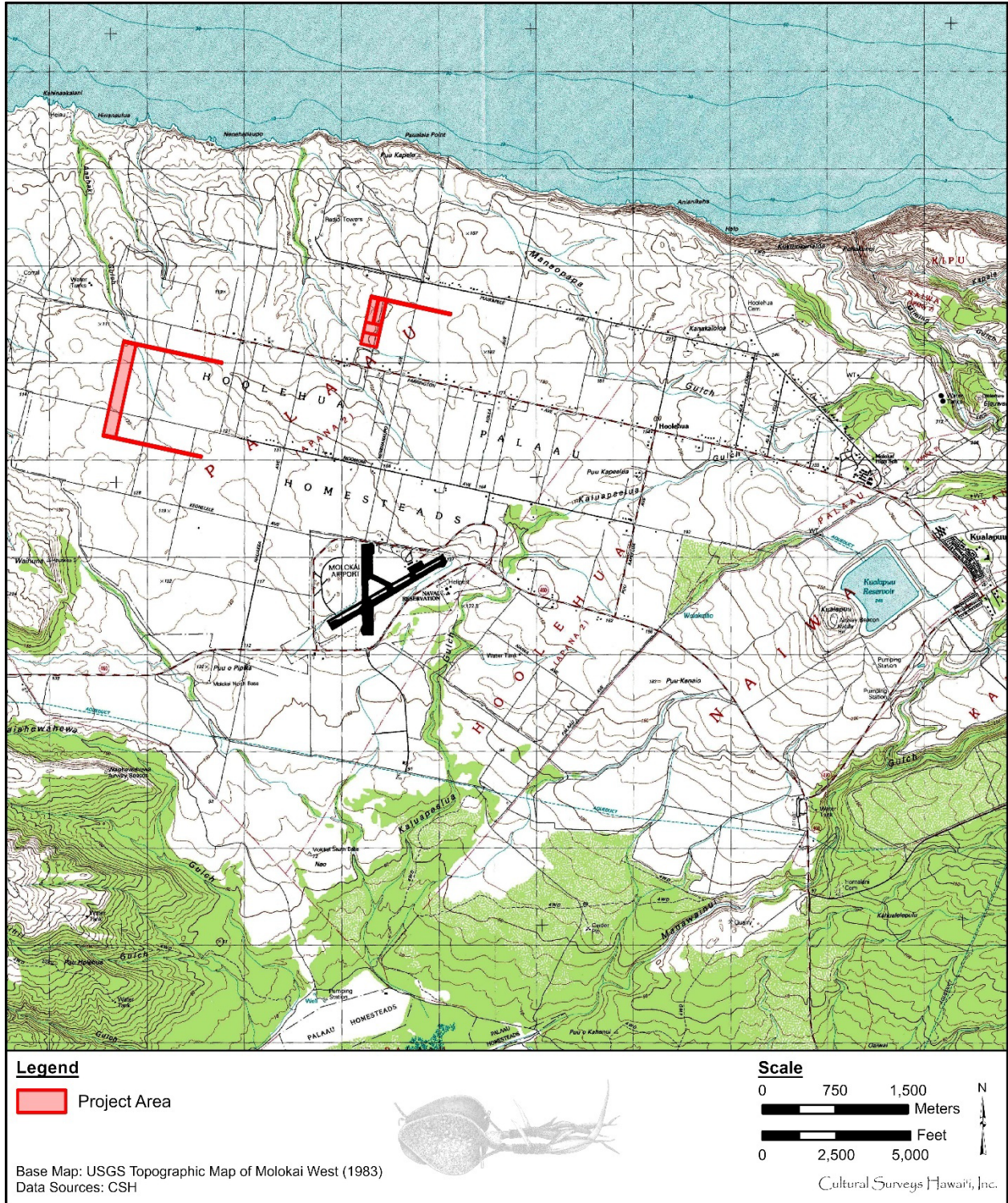


Figure 20. Portion of 1983 Molokai West USGS topographic quadrangle showing an aqueduct crossing the Ho'olehua Plain to the south and the Kualapuu Reservoir well to the southeast of the project area

Section 5 Previous Archaeological Research

5.1 Overview

Previous archaeological studies conducted within approximately 3.0 km (1.9 miles) of the three lots presently addressed include archaeological reconnaissance, field inspections, inventory surveys, and monitoring programs (Figure 21 and Table 2). Fifteen archaeological studies were previously conducted within the project area vicinity, two of which included the project area (Pfennig et al. 2011; Shideler and Hammatt 2021). No historic properties have been previously identified within the three lots presently addressed, and few have been identified within the vicinity (Figure 22 and Table 3).

5.2 Previous Archaeological Studies within the Project Area (Pantaleo and Rotunno-Hazuka 2003; Pfennig et al. 2011; Shideler and Hammatt 2021)

Between September 2002 and February 2003, Archaeological Services Hawaii, LLC (ASH) conducted on-call archaeological monitoring and weekly site inspections for the Sandwich Isles Communications, Inc. (SIC) Moloka'i Rural Fiber Optics Duct Lines project, which connected DHHL properties to a modern, high-speed broad band telecommunications system (Pantaleo and Rotunno-Hazuka 2003). The study area was divided into six sections extending along state, DHHL, and county road rights-of-way from Ho'olehua uplands to coastal Kalama'ula. Sections 1 and 2 are in the current project area vicinity (see Figure 21) and it appears their project area extended along the north side of the eastern and western present project areas (although again the monitoring was only on-call with weekly spot-checks). No historic properties were encountered during the monitoring program; no additional archaeological work was recommended.

Pacific Legacy, Inc. (Pfennig et al. 2011) produced an archaeological literature review of 8,955 acres of DHHL Moloka'i lands including 8,055 acres at Ho'olehua Ahupua'a, including the three lots presently addressed. They discuss four sites discussed by Summers (1971): State Inventory of Historic Places (SIHP) # 50-60-03-00011A, the caterpillar stones; SIHP # -00011B, the stone at Pu'u Kape'elua; SIHP # -00013, the Kahua Maika at a place called Akani; and SIHP # -00014, a *heiau* near the Ho'olehua Cemetery (Pfennig et al. 2011:73).

The authors note,

[...] archaeological sites appear more sparse on the Ho'olehua Plain, as the area lacks adequate rainfall to support the same population density as the southeast coastal region of Moloka'i. However, this vast plain contains several zones, particularly in the north and northeast, which boast a high concentration of religious sites and places associated with Traditional mythology. [Pfennig et al. 2011:81]

CSH (Shideler and Hammatt 2021) carried out an archaeological field inspection and literature review for a prior DHHL Ho'olehua Scattered Lots Subdivision project that included two widely separated lots (TMKs: [2] 5-2-005:031, Lot 17 and 5-2-026:014, Lot 104D-1). The TMK: (2) 5-2-026:014 parcel studied is in the immediate vicinity of the three lots presently addressed. No potential historic properties were identified at the more distant parcel (TMK: [2] 5-2-005:031). At

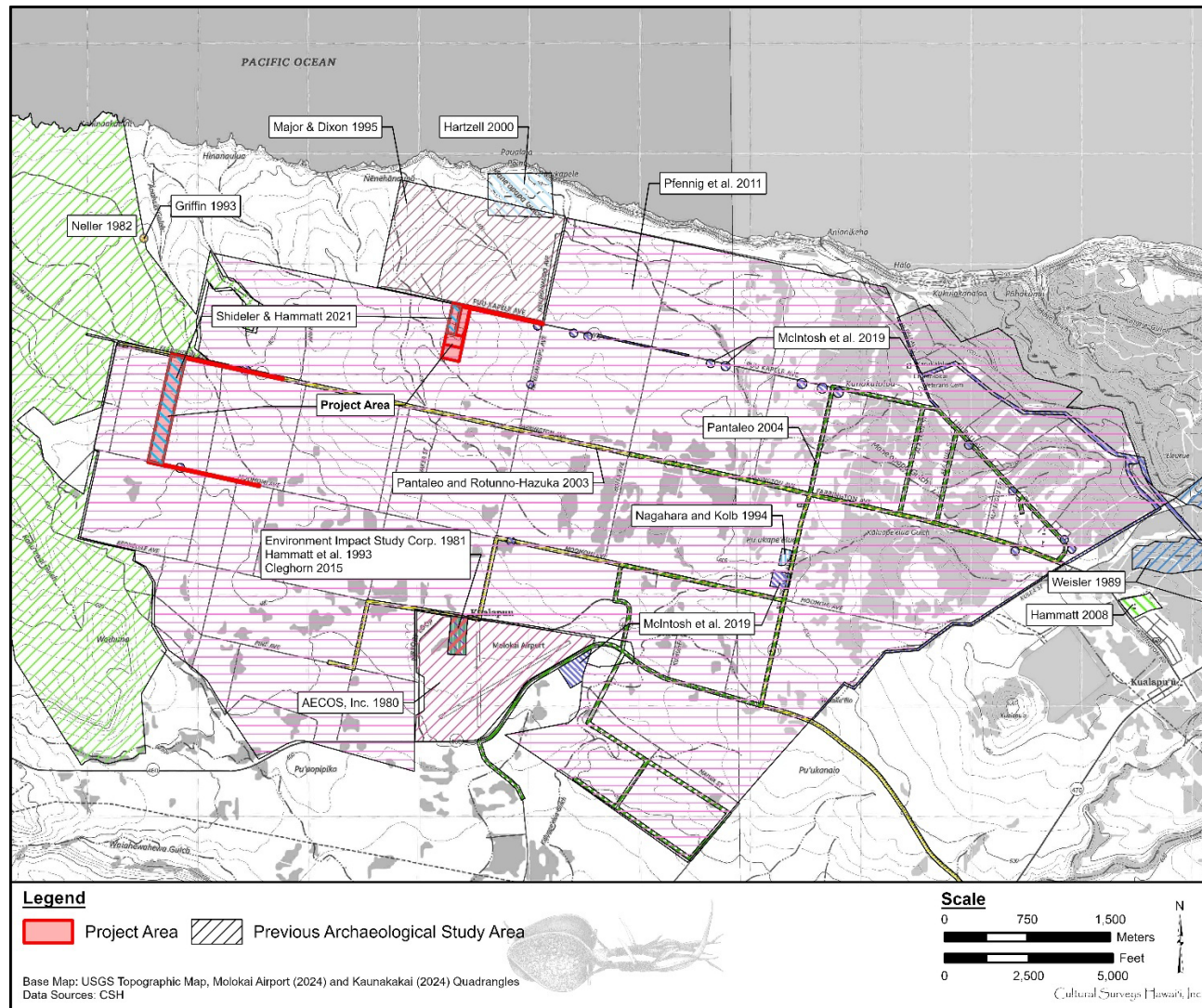


Figure 21. Previous archaeological studies in the vicinity of the project area depicted on a portion of the 2024 Kaunakakai and Molokai Airport USGS topographic quadrangles

Table 2. Previous archaeological studies conducted in the vicinity of the three lots presently addressed

Reference	Type of Study	Location	Results
Summers 1971	Site survey	Island-wide	Documented four sites in vicinity: 11A (SIHP # 50-60-03-00011A), Caterpillar Stones; Site 11B, Stone at Pu'u Kape'elua; Site 12, Lepekaheo Heiau; and Site 16, Heiau at Anahaki
AECOS Inc. 1980	Archaeological reconnaissance survey	Molokai Airport and proposed airport site near Mo'omomi Beach	No historic properties identified in vicinity; however, complex of WWII-era (not historic at time of study) bunker sites identified near Molokai Airport, south of three lots presently addressed
Environmental Impact Study Corp. 1981	Biological and archaeological reconnaissance survey	90 acres by Cooke Land Co., Inc., TMK: (2) 5-2-011:007 por.	Failed to locate Summers Site 106 (petroglyphs) within their study area (likely buried or destroyed) but observed two remnant features that indicate possible agricultural use of seasonal stream flow in gulch
Neller 1982	Archaeological aerial reconnaissance	Ho'olehua training Area, particularly north coastal Pālā'au	Documented Summers Site 16 <i>heiau</i> at Anahaki and numerous stone walls and platforms near Kahinaokalani Point Neller associated with Summers Site 17
Weisler 1989	Archaeological reconnaissance and intensive archaeological survey	Kipu, Moloka'i	Three previously recorded sites (SIHP #s 50-60-03-111, -109A, and -1098)
Griffin 1993	Archaeological reconnaissance	North/central Ho'olehua uplands	Griffin notes, "sites consisting of enclosures, L-shapes, U-shapes on the low promontories along the coast, in addition to the shelter sites noted by Summers between sites 16 and 17"; main focus associated with anomalous growth of ti plants in area with a wall segment, and lithic scatter and featuring a boulder that showed evidence of human modification as a "basin"

Reference	Type of Study	Location	Results
Hammatt et al. 1993	Archaeological inventory survey	One parcel in Pālā'au 2 adjacent to airport, and two parcels in Na'iwa	No historic properties identified
Nagahara and Kolb 1994	Field inspection	Kape'elua complex, Ho'olehua-Pālā'au Homesteads	Confirmed and GPS mapped Kape'elua Complex, SIHP # 50-60-03-00011 (Summer Sites 11A and 11B)
Major and Dixon 1995	Archaeological inventory survey	364-acre (147.4-hectare) USAF Receiver Station near Ho'olehua	Two previously unrecorded historic properties documented consisting of pre-Contact dwelling (SIHP # 50-60-02-01624) and another structure of unknown function (SIHP # 50-60-02-01623); SIHP # -01624 consisted of enclosure with marine shell deposits, fire-cracked rocks, and reworked basalt flake; SIHP # -01623 included two enclosures, each with minor amounts of marine shell and some modern refuse and 20th century rubbish dumps
Hartzell 2000	Archaeological inventory survey (supplemental)	USAF Molokai Receiver Station	Recorded 37 surface features for SIHP # 50-60-02-00843 (Pu'ukaPele Rock Wall complex), consisting of 26 stacked-faced walls, five alignments, four enclosures, a depression, and a prominent, massive natural boulder; boundary or possibly religious function posited for 15 features with other features associated with water control/ diversion, habitation and a planting area
Pantaleo and Rotunno-Hazuka 2003	Archaeological monitoring	Ho'olehua uplands to coastal Kalama'ula	No historic properties identified (but monitoring on-call with spot-checks)
Pantaleo 2004	Archaeological monitoring	Ho'olehua uplands	No historic properties identified

Reference	Type of Study	Location	Results
Hammatt 2008	Field inspection and literature review	DOE Molokai schools including Kualapu'u Elementary School	No historic properties identified but monitoring program recommended
Pfennig et al. 2011	Archaeological literature review	8,955 acres of DHHL Molokai lands including 8,055 acres at Ho'olehua Ahupua'a and present three-lot project area	Discusses four sites mentioned by Summers (1971): SIHP # 50-60-03-00011A, caterpillar stones; SIHP # -00011B, stone at Pu'u Kape'elua; SIHP # -00013, Kahua Maika at a place called Akani; and SIHP # -00014, <i>heiau</i> near Ho'olehua Cemetery
Cleghorn 2015	Archaeological field inspection	Nā'iwa, Kaunakakai, Moloka'i	Previously recorded stone mounds and concentrations
McIntosh et al. 2019	Archaeological inventory survey	DHHL lands, including in Ho'olehua	No historic properties identified in project area vicinity; of note identifications of SIHP # 50-60-03-02521, concrete tank stands associated with ranching and Isolated Find (IF)-01, an <i>'ulu maika</i> (game stone)
Shideler and Hammatt 2021	Archaeological literature review and field inspection	Two DHHL scattered lots including one adjacent to three lots presently addressed	No historic properties identified in more distant lot; in neighboring lot, two terrace alignments documented on south side of a natural drainage swale and interpreted as agricultural features to retain moisture; antiquity of these boulder alignments uncertain; and no SIHP # assigned

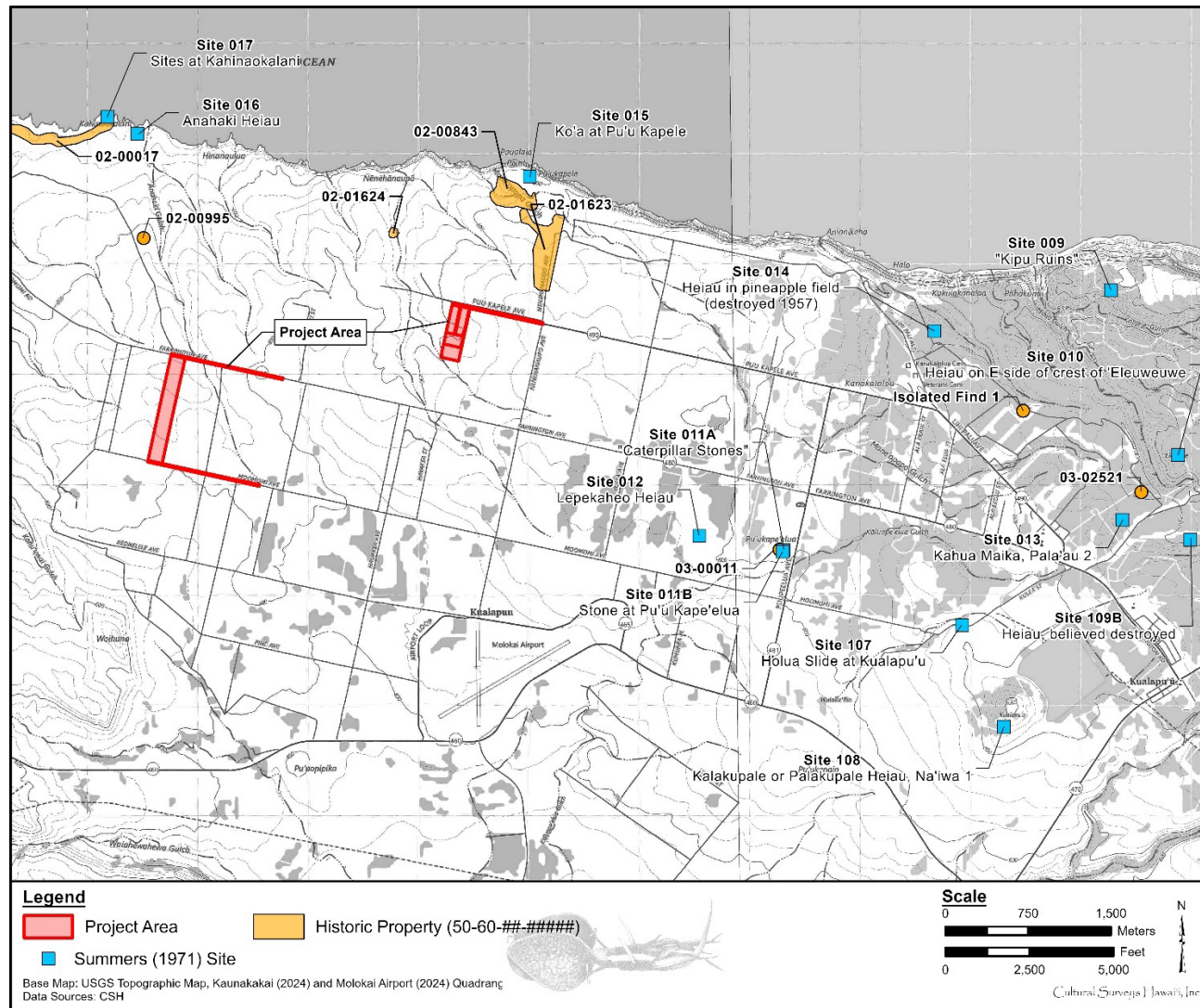


Figure 22. Previously identified historic properties in the vicinity of the project area depicted on a portion of the 1993 Kaunakakai and Molokai Airport USGS topographic quadrangles

Table 3. Previously identified historic properties in the vicinity of the three lots presently addressed

SIHP # 50-60-	Source	Site Type	Description
02-00843	Hartzell 2000:47	Rock wall complex	The Pu'u ka Pele rock wall complex consists of 37 surface features: 26 stacked-faced walls, five alignments, four enclosures, a depression, and a prominent, massive natural boulder; traditional Hawaiian construction technique extensively used slabs of basalt boulders, either on-edge or upright, in construction of walls that form significant landscape features between natural outcrops of bedrock boulders
02-00995	Griffin 1993	Agricultural shrine	Notes "sites consisting of enclosures, L-shapes, U-shapes on the low promontories along the coast," in addition to shelter sites noted by Summers between sites 16 and 17 but main focus associated with anomalous growth of ti plants and described as including a wall segment, basalt flakes, and a fragment of an adze blank and a rock with a flat surface, with rectangular "basin" measuring about 8" x 14" pecked into it; posits "In addition to the practical purpose of the boulders for collecting rain water, it is possible that this site was an agricultural shrine for the worship of the god Lono."
02-01623	Major and Dixon 1995	Two enclosures and dumps	SIHP # -01624, regarded as a pre-Contact dwelling consisted of an enclosure with marine shell deposits, fire-cracked rocks, and a re-worked basalt flake
02-01624	Major and Dixon 1995	An enclosure and an artifact	SIHP # -01623, a site of unknown function, included two enclosures, each with minor amounts of marine shell and some modern refuse and 20th century rubbish dumps

SIHP # 50-60-	Source	Site Type	Description
03-00011A	Summers 1971:37	"Caterpillar Stones," Ho'olehua 2	<p>The stones are on top of the hill; Pu'u Kape'elua, "The Caterpillar Hill." Cooke gave the following legend about these stones:</p> <p>"[...] this beautiful girl was visited each night by a lover who left before daylight. She was unable to discover who he was. This suspense told on her, and she began to waste away. A priest, consulted by her parents, advised the girl to attach a piece of white tapa to a wart on her lover's back. In the morning, shreds of tapa helped to trace the demi-god lover to the hill Pu'u Pe'elua, in the middle of Ho'olehua. The kahuna (priest) and friends of the family found a large <i>pe'elua</i> (caterpillar) asleep on the hill. The kahuna ordered the people to collect wood which was placed around the sleeping <i>pe'elua</i>, and a fire was lit. As the heat of the fire increased, the caterpillar burst into myriads of small caterpillars which were scattered over the plain. That accounts for the army-worm pest, called <i>pe'elua</i>" (Cooke 1949:102).</p> <p>Akana (n.d.) told a similar legend and added, "Today, about January to the first of March, many caterpillars are seen around Pu'u Pe'elua."</p>

SIHP # 50-60-	Source	Site Type	Description
03-00011B	Summers 1971:37	Stone at Pu'u Kape'elua Ho'olehua 2	Stone located just S of Caterpillar Stones (Site 00011A) on Pu'u Kape'elua; when seen in 1959, fairly flat stone measured 6 ft N to S, and 7 ft E to W and stood about 22 inches high on N and 18 inches high on S; hollowed-out basin on face of stone, 21 inches E to W, 8.5 inches N to S, and 3 inches deep; leading from N side of surface into either side of basin two grooves 1 inch wide and 2.5 inches deep; two more grooves led from S side of basin to another basin located on shelf 5 inches below face, on S side of stone; basin measured 1.75 inches deep, 18 inches E to W and 6 inches N to S; numerous sea shells found in vicinity of site; G.P. Cooke (personal communication) said stone used for sharpening adzes. K.P. Emory felt because this is an arid region, stone may have been for collecting water
03-02521	McIntosh et al. 2019	Ranching infrastructure	Concrete tank stands associated with ranching
Summers Site 9	Summers 1971:34–36	“Kipu Ruins, Kipu”	Site located on headland about 800 ft S of cliffs and N of Kapale Gulch, at elevation of 1000 ft; several structures distributed over area about 500 ft long and 250 (describes Structures “A” through “I”)
Summers Site 10	Summers 1971:37	<i>Heiau</i>	Located on east side of crest of 'Eleuweue
Summers Site 12	Summers 1971:37	<i>Heiau</i> (Lepekaheo <i>Heiau</i>)	Site located on boundary of Ho'olehua 2 and Pala'au 2, W of Kaluape'elua Gulch; Monsarrat referred to Lepekaheo as “old heiau”
Summers Site 13	Summers 1971:38	“Kahua Maika, Pala'au 2” (<i>'ulu maika</i> bowling course)	<i>Kahua maika</i> situated on rise at place called Akani; Monsarrat referred to it as “old <i>kahua maika</i> ”

SIHP # 50-60-	Source	Site Type	Description
Summers Site 14	Summers 1971:38	" <i>Heiau</i> , Pala'au 2"	"The site is located E of the Ho'olehua Cemetery in the pineapple fields W of the gulch, at an elevation of 800 ft. Cartwright reported this (in 1922) as being a <i>heiau</i> . The structure was in ruins in 1957, however, traces of paving could still be found, and the remains of a wall, 35 ft long NE to SE; 13 ft from the NE side was an upright stone 2 ft high, 2 ft wide, and 1 ft thick."
Summers Site 15	Summers 1971:38	<i>Ko'a</i>	Small <i>ko'a</i> on top of Pu'u Kapele
Summers Site 16	Summers 1971:38	<i>Heiau</i> and house site	<i>Heiau</i> located on W side of mouth of Anahaki Gulch at elevation of about 50 ft above sea level; Cartwright (1922) reported site as a <i>heiau</i> ; originally structure was enclosure; exterior measurements in 1964 were 43 ft N to S 36 ft E to W; maximum height of eastern wall was 5 ft; northern wall probably this same height originally, but wall on S lower; both S and W walls badly damaged; inner division on N side of enclosure measured 17 ft E to W and extended entire width of structure; southern portion of enclosure paved; on crest of hill to S of above site a house site or shelter stood, which had 5-ft-high wall running N to S; rest of site open; adjoining northern portion of wall on E side small, paved terrace
Summers Site 17 (02-0017)	Summers 1971:38	"Sites at Kahinaokalani, Pala'au 2"	"Emory reported seeing two house sites and a <i>ko'a</i> [fishing shrine] at Kahinaokalani; the <i>ko'a</i> was at the edge of the cliff. Phelps described a structure, which he called a canoe <i>halau</i> , which was on a bluff about 30 ft above the sea"

SIHP # 50-60-	Source	Site Type	Description
Summers Site 107	Summers 1971:80	“Holua slide at Kualapu‘u, Na‘iwa”	Slide on SSW side of Kualapu‘u hill, traces of it can still be seen; no indications of paving could be found in 1966; apparently similar to [...] Site 3; on S and W slopes of Kualapu‘u hill, used to be many sweet potato patches, defined by rows of stones (Cooke 1949:121); according to Sophie J. Cooke (1964:58), former name of Kualapu‘u was Ka ‘Uala Pu‘u, “The Sweet Potato Hill”; on some maps called “Mid Hill”
Summers Site 108	Summers 1971:80	<i>Heiau</i>	Monsarrat described Palaukupale <i>Heiau</i> as small; name given by Cartwright
Summers Site 109B	Summers 1971:80	<i>Heiau</i>	Reported by Cartwright and believed to be destroyed
Isolated Find (IF)-01	McIntosh et al. 2019	Bowling game stone	An <i>‘ulu maika</i>
No SIHP # assigned	Shideler and Hammatt 2021	Terraces	Two terrace alignments documented on south side of natural drainage swale and interpreted as agricultural features to retain moisture; antiquity of these boulder alignments uncertain and no SIHP # assigned

the neighboring parcel field inspection identified two terrace alignments on the south side of a natural drainage swale. These short sections of boulder alignments were interpreted as agricultural features to retain moisture, perhaps of an exploratory nature. The potential for subsurface deposits associated with these two terrace alignments was evaluated in the field to be very low. The antiquity of these boulder alignments was uncertain; it was posited they could be pre-Contact but might date to as late as the occupation of an adjacent abandoned house ca. 1980. No SIHP # was assigned.

5.3 Discussion of Historic Properties within the Project Area Vicinity

No historic properties have been identified by previous archaeological studies within the current project area. However, one historic property (no SIHP # assigned; two terrace alignments) was previously identified by Shideler and Hammatt (2021:77) within the southern portion of TMK: (2) 5-2-026:014, adjacent to the northern lots of the current project area. Shideler and Hammatt (2021) described the function of these two terrace alignments as retaining “[..] the slope on the south side of this small drainage swale and likely to retain moisture for plant propagation.” They further stated these terraces were possibly “experimental in nature to assess the utility of possible further terracing prior to significant investment in labor” (Shideler and Hammatt 2021:77). It was located relatively far from the access road and likely location of any home development. They recommended preservation in the form of avoidance and protection of the two boulder alignments.

Historic properties previously identified in the vicinity are limited to a few sites recorded by Summers (1971) including the legendary Kape‘elua Complex (SIHP # 50-60-03-00011). There appears to have been a locus of traditional Hawaiian activity in Anahaki Gulch, 2.5 km west of the three lots presently addressed (see Figure 22) but this is suggested to relate to the micro-environment of that gulch and greater proximity to the coast.

Section 6 Previous Cultural Research

6.1 Overview

A review of previous cultural studies has been conducted for the project area. Unlike archaeological inventory survey reports, the study areas for cultural studies include the immediate project area and extend to the wider land regions which can include the entire *ahupua'a* and possibly the *moku*. Since Native Hawaiian traditions recognize and value the relationship with land from *mauka* to *makai*, the project area denotes the location of the project, however, the term “study area” denotes the larger context of land that is critical in any cultural study. An effort was made to locate community members with ties to Pālā‘au and Ho‘olehua, who live or had lived in the region or who, in the past, used the area for traditional and cultural purposes. Seven previous cultural studies were conducted in close proximity to the project area and are shown in Figure 23 and summarized below in Table 4.

6.2 Ka‘uhane et al. 2009

CSH conducted a CIA for the Molokai Airport Aircraft Rescue and Firefighting Station Improvements (ARFF) project in Pālā‘au Ahupua‘a at Molokai Airport in 2009. Seventeen individuals/groups were contacted, and four individuals participated in an in-depth interview. No cultural practices were identified within the Molokai Airport ARFF project area. Concerns primarily focused on how this project could encourage future development or expansion of the Molokai Airport.

6.3 Notman 2012

Steve Notman conducted a CIA for a private hanger project at Molokai Airport in 2012. Twelve community members were contacted for this project and only three participated in a more in-depth interview. There were no cultural practices or resources identified within the project area, as it is an operating airport. However, one *kupuna* did state that:

Pala‘au Molokai has significant historical and cultural importance. Anciently it was a training site used by Kamehameha to train his warriors prior to his battle at Nu‘uana O‘ahu. Many cultural as well as spiritual activities were practiced anciently however no known cultural activities and or rites are practiced at this time. [Notman 2012]

6.4 McElroy et al. 2015

Keala Pono Archaeological Consulting, LLC conducted a CIA for the Kanakaloloa Cemetery in Pālā‘au and Ho‘olehua Ahupua‘a in 2015. Four interviews were conducted for this project. Cultural practices in the area consisted of fishing and gathering *‘opihi* (limpet) at the coast, hunting in the region, and *mo‘olelo*. According to McElroy et al. (2015:46), “One story attributes the name Kanakaloloa to a thief who stole a special shell and was later caught and stretched his body in an attempt to escape. The cemetery is also associated with menehune and lapu.” Concerns largely focused on security issues. Recommendations included allowing the community an opportunity to partake in the design of the pavilion and parking areas as well as allowing access to the graves.

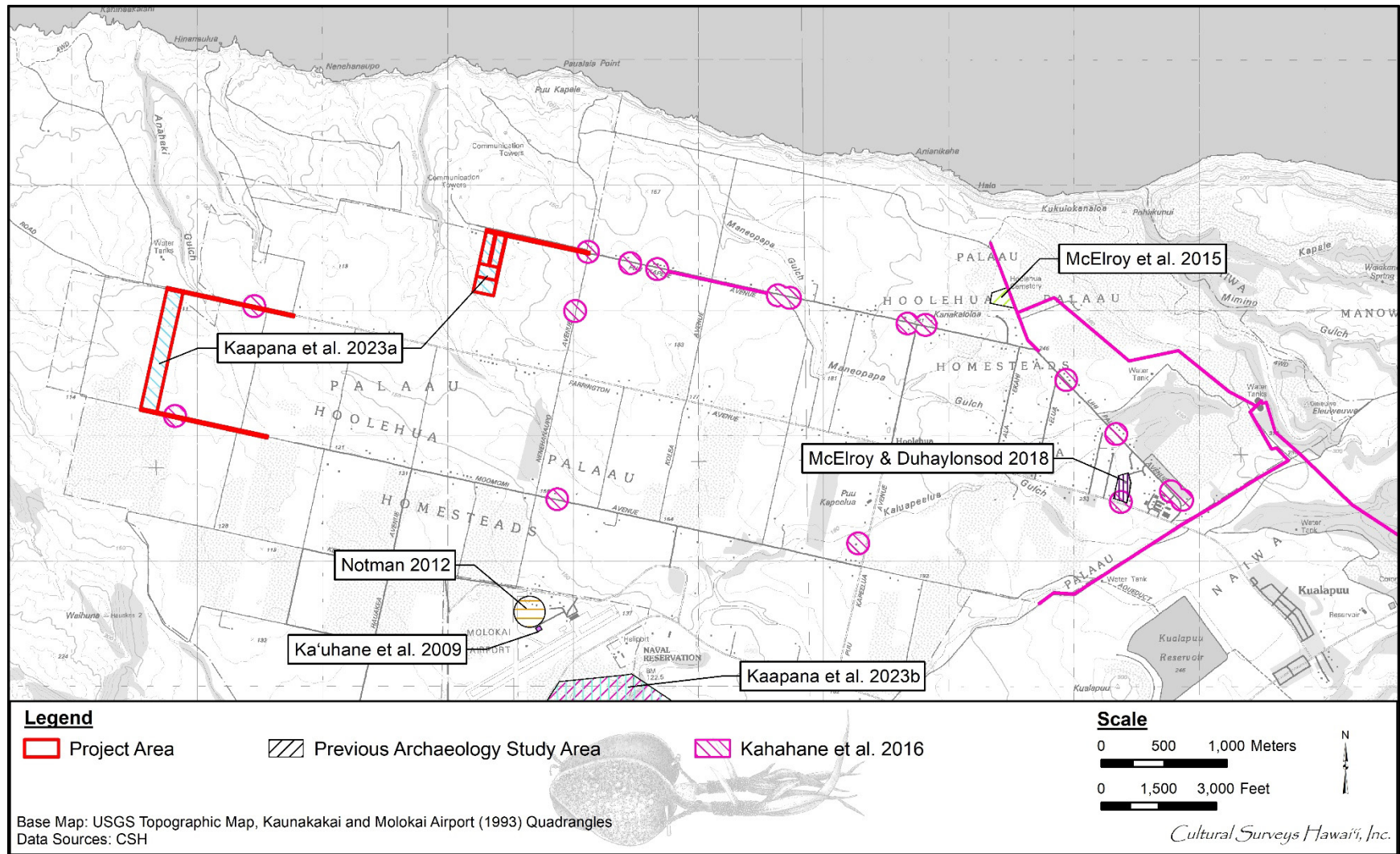


Figure 23. Previous cultural studies within the project area vicinity

Table 4. Summary of the previous cultural studies within the project area vicinity

Reference	Location	Community Participants	Traditional Cultural Practices Identified
Ka'uhane et al. 2009	Molokai Airport	Halona Ka'opuiki, James Keli'ipio Kahea Mawae, Vanda Hanakahi, 'Ōpu'ulani Albino	N/A
Notman 2012	Molokai Airport	3	Ancient training site
McElroy et al. 2015	Kanakaloloa Cemetery; TMK: (2) 5-2-017:003	Geri Adolpho, Alex Bishaw, Nani Kawa'a, and Mikiala Pescaia	Gathering <i>'opihi</i> and fishing; hunting; <i>mo'olelo</i>
Kahahane et al. 2016	Pālā'au, Ho'olehua, Nā'iwa, Kahanui, and Kalama'ula Ahupua'a	N/A	Based on previous CIAs: gathering practices, marine resources, and plant resources
McElroy and Duhaylonsod 2018	Veteran's and Resident's Community Center; TMK: (2) 5-2-015:053; Ho'olehua Ahupua'a	Mikiala Pescaia, Pilipo Solatorio, Henry Tancayo Sr., and Pat Tancayo	N/A
Kaapana et al. 2023a	Ho'olehua-Palā'au Hawaiian Homesteads	Kilia Purdy-Avelino and Malia Lani Forbes Greaney	Agricultural and gathering practices, marine resources, <i>mo'olelo</i> and <i>wahi pana</i> , healing practices, religious activities, and burial practices
Kaapana et al. 2023b	Nā'iwa subdivision portion of Hawaiian Ho'olehua-Pālā'au Homesteads; TMKs: (2) 5-2-003:001, 5-3-004:001, 002, 004, 007, and 046	Louella 'Ōpu'ulani Albino, Kilia Purdy-Avelino and Justin Avelino, and Malia Lani Forbes Greaney	Agricultural and farming practices, marine resources, <i>mo'olelo</i> and <i>wahi pana</i> , religious activities, and burial practices

6.5 Kahahane et al. 2016

Pacific Legacy, Inc. conducted a CIA for the proposed DHHL Water System Improvements project in the *ahupua'a* of Pālā'au, Ho'olehua, Nā'iwa, Kahanui, and Kalama'ula in January 2016. No interviews were conducted for this project, however, previous CIAs have revealed that fishing, the gathering of ocean resources, hunting, raising animals, gardening, as well as forest and stream gathering occur within the vicinity of this study's project area. It was recommended, based on various *mo'olelo*, that any major event or construction-related activity be preceded by a traditional Hawaiian blessing ceremony by a *kahuna* (priest or priestess) or *kahu pule* (minister/preacher) (Kahahane et al. 2016:46).

6.6 McElroy and Duhaylonsod 2018

In 2018, Keala Pono Archaeological Consulting conducted a CIA for the proposed Veteran's and Resident's Center in Ho'olehua Ahupua'a. Four individuals participated in an interview for this project and it was concluded there were no traditional cultural practices in the project area. However, there is the possibility of archaeological or cultural sites if the project area is undisturbed. Concerns and recommendations focused on how this project would benefit the community. This included scoping out more community members, gaining a better understanding of the *'āina* (land), constructing the building so that it doubles as a hurricane or bomb shelter, and keeping open areas for outdoor activities.

6.7 Kaapana et al. 2023a

This current study is intended as a companion report to the CIA done by Kaapana et al. (2023a) in September 2023. CSH reached out to 20 individuals or groups and only three individuals, Mrs. Kilia Purdy-Avelino and her husband Mr. Justin Avelino as well as Ms. Malia Lani Forbes Greany, participated in an in-depth interview. Cultural practices and resources identified include agricultural and gathering practices, marine resources, *mo'olelo* and *wahi pana*, recreational activities, healing practices, religious activities, and burial practices. Community participants were concerned with impacts on cultural and archaeological sites. In-depth archaeological inventory surveys (AIS), having an on-site cultural monitor, and full disclosure of information about the project for the community were recommended. Mrs. Purdy-Avelino and Mr. Avelino's testimony is included in the current CIA and KPA study and can be found in its entirety in Section 7.4.

Mrs. Purdy-Avelino and Mr. Avelino have mentioned growing various fruits and vegetables such as *'ulu*, *kalo*, papaya, *mai'a*, mango, and macadamia nut trees for sustenance purposes. Mrs. Purdy-Avelino's grandmother also grew various floral plants such as *'ākulikuli*, *'awapuhi*, *kīkā*, *kīkānia*, and *kupaloka* which are used to make *lei*. On their homestead today, Mrs. Purdy-Avelino's father also grows gardenia, orchids, bird-of-paradise, and anthuriums. During her childhood, her father also took her down *makai* of Nā'iwa to pick up *'uala* from an *'ohana* who lived in the area.

Mrs. Purdy-Avelino shared a *mo'olelo* about how the land of Nā'iwa received its name. According to Mrs. Purdy-Avelino,

[...] a mother from Kalaupapa, who was a very skilled *lei* maker, made a *lei* out of the *'iwa'iwa* fern for her son who wanted to compete in a *lei* making competition that was held at the Makahiki festival and to impress a *wahine* that he admired. The son gave this *lei* to the *wahine*. She would wear it wherever she went and the spores

from the *'iwa 'iwa* ferns in the *lei* would fall and scatter across the land. [Kaapana et al. 2023a:91]

Mr. Avelino shared a *mo 'olelo* about how the Makahiki Grounds were selected. According to Mr. Avelino,

[...] a chief of Moloka'i looked towards the mountains of Nā'iwa and noticed a cloud shaped like a finger which was pointing to a piece of land. A council of chiefs gathered and decided that the Makahiki ceremonies would be held in that area. To this day, Makahiki ceremony and activities continue to take place there and items such as *ulu maika* have been encountered in this area. [Kaapana et al. 2023a:91]

Ms. Greaney mentioned Ho'olehua homesteaders are successfully growing dryland *kalo*, *'uala* (sweet potato; *Ipomoea batatas*), and *'awa* (kava; *Piper methysticum*). She noted that as recently as 150 years ago, Moloka'i was known for large quantities of agricultural and value-added exports such as *kalo* grown in *lo 'i* and dry land *māla* (gardens) along with *'uala* and other food sources. *Hau* (pandanus; *Hibiscus tiliaceus*) was another plant resource mentioned that was utilized for a variety of purposes. For agricultural purposes, it was used to provide a windbreak and reduce erosion. For medicinal purposes, it is used for *lā 'au lapa 'au* (plant-based medicine) and tools for *lomilomi* (body manipulation). Another purpose is for tool production such as *ko 'i* (adze) for hand carving *papa he 'e nalu* (surfboards) and to make spears for *lua* (a type of dangerous hand-to-hand fighting).

She also mentioned that on her homestead she “continues to identify medicinal plants in the area which can be gathered or cultivated. Her mother, Yola Forbes, also grew food and medicinal trees on their homestead” (Kaapana et al. 2023a:67). In her interview she mentioned she would use *lā 'au lapa 'au*, *lomilomi*, and *ho 'oponopono* (Hawaiian conflict resolution) as traditional healing methods.

According to Ms. Greaney, an ancient *hula* site is located in the Nā'iwa Makahiki grounds. She further explained that “*Hula* is celebrated in Ka Hula Piko, and *Lua*, for defense is sometimes referred to as a twin or sibling of dance. Ms. Greaney noted that neither practice was restricted to one gender and both perpetuate Hawaiian philosophies of spiritual and physical existence” (Kaapana et al. 2023a:69). A *mo 'olelo* mentioned by Ms. Greaney discusses a “*puna* (fresh water spring) once located behind the house of a third-generation homesteader on very dry Olo'olo Lane” (Kaapana et al. 2023a:67).

6.8 Kaapana et al. 2023b

CSH conducted a CIA and Ka Pa'akai Analysis for the proposed Nā'iwa Agricultural Subdivision located at the Nā'iwa subdivision portion of the Hawaiian Ho'olehua-Pālā'au Homesteads in November 2023. Twenty individuals/groups were contacted for this project and three did in-depth interviews. There are no valued cultural practices or resources within the proposed Nā'iwa Agricultural Subdivision project area, however, ongoing agricultural practices for sustenance, gathering practices for *lei* making and medicinal purposes, cultural sites, *mo 'olelo* and *wahi pana*, and religious/burial practices occur within the vicinity of the current project area. Concerns were largely focused on the possibility of coming across *'ilina* (burials) and cultural sites as well as full disclosure of past land use and project details. Ms. Albino recommended cultural protocols be in place throughout the entire process of development.

As information from the previous CIA study (Kaapana et al. 2023a) was included in this study, the only difference would be information from Ms. Albino. A cultural practice that occurred in Nā'iwa Ahupua'a included the traditional agricultural practice of harvesting and planting crops based on the different phases of the Hawaiian moon cycle. Ms. Albino stated that "Usually after planting their harvest, many of the farmers would head *makai*, toward the sea to Mo'omomi to fish and relax while they waited for their produce to grow" (Kaapana et al. 2023b:72).

There were also many *mo'olelo* shared by Ms. Albino in relation to Ho'olehua. Within the vicinity of Ho'olehua, there are several stories of *pōhaku* (stone) and people experiencing the effects of *'uhane* (spirit). According to Kaapana et al. (2023b):

Ms. Albino also noted that 'Ho'olehua was also the wife of 'Ili of Moloka'i.' Ho'olehua and 'Ili were ali'i of Moloka'i. Their daughter, Hikauhi, married Pāka'a and they had a son, Kuāpāka'a. Pāka'a and Kuāpāka'a are descendants of the wind goddess La'amaomao.

Ms. Ablino shared another *mo'olelo* regarding the meaning of Ho'olehua in which two armies would meet in battle. Instead of the entire army engaging in war, each side would select their best warrior (their *lehua*) to represent their army and then engage in battle. [Kaapana et al. 2023b:72]

Section 7 Community Consultation

7.1 Introduction

Throughout the course of this assessment, an effort was made to contact and consult with NHO, agencies, and community members including descendants of the area, to identify individuals with cultural expertise and/or knowledge of the *ahupua'a* of Pālā'au and Ho'olehua. CSH initiated its outreach effort in March 2024 through letters, emails, and/or telephone calls. CSH completed community consultation in June 2024. CSH reached out to 38 individuals/organizations; seven responded, two of which were interested in participating, with one allowing CSH to include their previous interview summary. In June 2025, the project area was slightly modified to include adjacent roadway and drainage improvements within portions of Pu'u Kapele Avenue, Farrington Avenue, and Mo'omomi Avenue. Participating consultants were notified of the change and given the opportunity to modify their testimony. CSH was requested by Munekiyo Hiraga, on behalf of DHHL, to include a Ka Pa'akai Analysis (KPA) for this CIA study. CSH reinitiated consultation in December 2025 and completed community outreach in January 2026. As the proposed project has not been altered since the addition of adjacent roadway and drainage improvements in June 2025, no further comments were made.

7.2 Community Outreach Letter

Initial letters along with maps and aerial photographs (Appendix A) of the project area were sent with the following text:

Aloha mai kāua,

With this letter, Cultural Surveys Hawai'i (CSH) humbly requests your *mana'o* and *'ike* (experience, insights, and perspectives) regarding historical and ongoing cultural practices, and resources within the Pālā'au and Ho'olehua Ahupua'a.

Consultation with traditional cultural practitioners, *kūpuna*, *kama'āina*, and Hawai'i's diverse ethnic communities is an important and deeply valued part of our work and the environmental review process for proposed projects in Hawai'i. Your contributions will revitalize and keep alive knowledge of cultural practices, storied places, and life experiences that will remind Hawai'i's children of their history for generations to come.

At the request of Munekiyo Hiraga, and on behalf of the Department of Hawaiian Home Lands (DHHL), CSH is conducting a cultural impact assessment (CIA) for the proposed DHHL Ho'olehua Scattered Lots Expanded Project Area Project, Pālā'au and Ho'olehua Ahupua'a, Moloka'i District, Moloka'i Island, including three parcels, TMK: (2) 5-2-026:003 (4.72 acres or 1.91 hectares), TMK: (2) 5-2-026:016 (4.73 acres or 1.91 hectares), and TMK: (2) 5-2-026:017 (5.83 acres or 2.36 hectares). These three scattered subdivision project area parcels are within the DHHL Ho'olehua-Pālā'au Homesteads, and located within the north portion of the Ho'olehua plain of central Moloka'i, approximately 2.2 km northwest from Moloka'i (Ho'olehua) Airport. The contiguous parcels are bounded on the north by Pu'ukapele Avenue and on the other sides by other DHHL parcels. The project area

is depicted on a portion of the 1993 Molokai Airport and Kaunakakai U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1) and on the 2013 ESRI satellite photograph (Figure 2).

The Project entails subdividing five (5) lots on DHHL-owned lands in the Ho'olehua area into twelve (12) lots to be designated for subsistence agriculture use and improving them for lease to DHHL beneficiaries. The five (5) lots are hereafter referred to as "subject properties". Two of these five lots TMKs: (2) 5-2-005:031, Lot 17 and (2) 5-2-026:014, Lot 104D-1 were the subject of a prior CIA done by Kaapana et al. in September 2023. This current study is intended as a companion report to the CIA done by Kaapana et al. (2023a).

Improvements to be undertaken include creating access driveways to each of the newly created lots with connections for domestic water and irrigation water for each lot provided within the access driveways from existing systems in the neighboring roadways. The lots will be made available to DHHL beneficiaries currently on the waitlist for an agricultural lease on Moloka'i. Once awarded, lessees will be able to construct homes on the lots, in addition to utilizing the lots for agricultural purposes. Additionally, it is noted that there is an existing abandoned home on Parcel 14 that records indicate was constructed in the 1970's as well as a greenhouse on Parcel 16 that was constructed in the early 2000's. Both the abandoned home on Parcel 14 and the greenhouse on Parcel 16 will be demolished as part of the proposed project. It is further noted that there is a third structure, a home that records indicate was built in the early 2000's, that is located on a portion of Parcel 16 and a portion of Parcel 3. The proposed subdivision action will revise the lot lines so the existing home is located in one (1) TMK. The home will be reviewed for future lease as part of the lot it is located on.

Purpose of the CIA

The purpose of a CIA is to gather information on Hawai'i's cultural resources, practices, or beliefs that have occurred or still occur within the proposed project area and the Pālā'au and Ho'olehua Ahupua'a. This is accomplished through consultation and background research using previously written documents, studies, and interviews. This information is used to assess potential impacts of the proposed project to the specific identified resources, practices, and beliefs in the project area and throughout the Pālā'au and Ho'olehua Ahupua'a. As a traditional cultural practitioner and holder of long-term knowledge, your insight, input, and perspective provide a valuable contribution to the assessment of potential effects of this project and an understanding of how to protect these resources and practices.

Insights focused on the following topics in the project area (shown on the attached Figure 1 and Figure 2) are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your specific traditional cultural practice and its connection to the proposed project area and Pālā'au and Ho'olehua Ahupua'a

- The different natural resources associated with your specific traditional cultural practice
- Legends, stories, or chants associated with your specific traditional cultural practices and their relationships to the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Referrals to other *kūpuna*, *kama'āina*, and traditional cultural practitioners knowledgeable about the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on your ongoing traditional cultural practices and natural resources within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and Pālā'au and Ho'olehua Ahupua'a

Consultation Information

Consultation is an important and deeply valued part of the CIA and environmental review process. Your contributions will revitalize and keep alive our combined knowledge of past and ongoing cultural practices, historic places, and experiences, reminding our children of their history generation after generation.

With your agreement to participate in this study, your contributions will become part of the comprehensive understanding of traditions of the area and will be part of the public record. The study will be included as an appendix of the Environmental Assessment (EA), which is being prepared for the proposed project; the EA and CIA will be available for future access through the State Office of Planning and Sustainable Development (OPSD) Environmental Review Program (ERP) (<https://planning.hawaii.gov/erp>) and at the State Historic Preservation Division Library (<https://dlnr.hawaii.gov/shpd/about/research-resources-library>).

As a part of this process, your knowledge may be used to inform future CIAs and other heritage studies of cultural practices and resources that need protection from impacts of proposed future projects. If you engage in consultation, and the *mana'o* and *'ike* you provide appears in the study, we would like to recognize your contribution by including your name. If you prefer not to allow your name to be included, your information can be attributed to an anonymous source.

The consultation interview structure and format are flexible. We will accommodate your preference on how to get together: talk story, over the phone, by email correspondence, remotely via Zoom, MS Teams, Google Chat, or other remote meeting platform.

Your knowledge of the resources and potential effect of the project on traditional practices in the project area and Pālā'au Ahupua'a focusing on the topics in the bullet points above can also be submitted in a written statement. CSH will provide return postage for your written statement on request.

CSH is happy to provide a list of topics for discussion, a more structured questionnaire of interview questions, or any other assistance that might be helpful.

When CSH informed participating consultants of the change in the project area in June 2025, the only modification made to the consultation letter was the following text (in bold) at the end of the second paragraph in the "Project Description" section:

The Project entails subdividing five (5) lots on DHHL-owned lands in the Ho'olehua area on Moloka'i into twelve (12) lots to be designated for subsistence agriculture use and improving them for lease to DHHL beneficiaries. The five (5) lots are hereafter referred to as "subject properties". Two of these five lots—TMKs: (2) 5-2-005:031, Lot 17 and (2) 5-2-026:014, Lot 104D-1 were the subject of a prior CIA done by Tanaka and Hammatt in September 2023. This current study is intended as a companion report to the CIA done by Tanaka and Hammatt (2023). **This companion study addresses three additional lots (TMKs: [2] 5-2-026:003, 016, and 017) in the immediate vicinity of one of the lots previously addressed (TMK: [2] 5-2-026:014), as well as adjacent roadway and drainage improvements within portions of Pu'u Kapele Avenue, Farrington Avenue, and Mo'omomi Avenue.**

For the inclusion of the KPA, the project description had not been modified since June 2025, however, CSH did include information in the community outreach letter describing the reason for reinitiating consultation for the proposed project. This information included a quick summary of the consultation process since it initially began in March 2024, as well as the purpose of a KPA.

7.3 Community Outreach Table

Cultural consultation outreach was initiated in March 2024 and completed in June 2025. Participating consultants were then contacted once more in June 2025 to be informed of the slight modification in the project area and given the chance to modify their testimony. Cultural consultation outreach was reinitiated in December 2025 and completed in January 2026 to include a KPA. In most cases, two or three attempts were made to contact individuals, organizations, and agencies. Community outreach letters were sent to 38 individuals or groups. The results of the community consultation process are presented in Table 5.

Table 5. Summary of community consultation efforts

Name	Affiliation	Notes
Ainoa, Vivian L.	President, Kamiloloa One Ali'i Homestead Association	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024
Akutagawa, Malia	Hui 'Aina Momona; <i>kama 'āina</i>	Letter and figures sent via email on 4 March 2024

Name	Affiliation	Notes
		Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Alapa, Luana	OHA Moloka'i-Lāna'i Trustee	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Albino, 'Ōpu'ulani (Louella)	<i>Kama'āina</i>	Letter and figures sent via email on 4 March 2024 with previous interview summary Second round letter and figures sent via email on 8 April 2024 with previous interview summary Updated letter and figures sent via email on 16 December 2025 with previous interview summary
Brown, Samson	President, Au Puni O Hawaii	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Buchanan, Lori L.	Coordinator at Molokai/Maui Invasive Species Committee	Letter and figures sent via email on 4 March 2024 Ms. Buchanan responded on 11 March 2024: <i>Please include me in consultation.</i> CSH responded same day requesting availability and preference for method of interview. CSH sent a follow-up email on 8 April 2024 Ms. Buchanan responded on 9 April 2024: <i>Thank you Tehani, Yes I would like to provide comments via zoom. Can you please send the latest proposal so I can review. This has been years now and I am not sure if changes have occurred to the project proposal. I could possibly meet tomorrow. Not sure how large the docs to review are?</i> CSH responded same day: <i>Sounds good! I will be available all day tomorrow, please let me know what time works best for you. Also, please see the attached consultation letter which includes the project details.</i> <i>If you have any questions, please don't hesitate to reach out to me.</i> CSH sent a follow-up email on 3 June 2024

Name	Affiliation	Notes
		<p>Updated letter and figures sent via email on 16 December 2025</p> <p>Ms. Buchanan responded same day: <i>Tehani are u holding an on island meeting and can you/DHHL provide a site visit?</i></p> <p>CSH responded on 15 January 2025 with information to a Hawaiian Homes Commission meeting where the project will be presented</p>
Busby-Neff, Luana	Hawaiian Force – Hawaiian Clothing Company	<p>Letter and figures sent via email on 4 March 2024</p> <p>Second round letter and figures sent via email on 8 April 2024</p> <p>Updated letter and figures sent via email on 16 December 2025</p>
Cook, Tiani	Executive Director, Ka Honua Momona	<p>Letter and figures forwarded by Tate Keli'ihō'omalū from Maui Nui Makai Network on 5 March 2024</p> <p>Second round letter and figures sent via email on 8 April 2024</p> <p>Updated letter and figures sent via email on 16 December 2025</p>
Corpuz, Iolana	<i>Kama'āina</i>	<p>Letter and figures sent via email on 4 March 2024</p> <p>Second round letter and figures sent via email on 8 April 2024</p> <p>Second round letter and figures sent via USPS on 10 April 2024</p>
Evans, Chelsie	Executive Director, Hawaiian Community Assets, Inc.	<p>Letter and figures sent via email on 4 March 2024;</p> <p>Letter and figures sent via USPS 6 March 2024</p> <p>Mail returned</p> <p>Second round letter and figures sent via email on 8 April 2024</p> <p>Updated letter and figures sent via email on 16 December 2025</p>
Feiteira, Blossom	President, Association of Hawaiians for Homestead Lands	<p>Letter and figures sent via email on 4 March 2024</p> <p>Second round letter and figures sent via email on 8 April 2024</p> <p>Updated letter and figures sent via email on 16 December 2025</p>
Ferreira, Kamakana	Compliance Lead, OHA – Compliance & Enforcement Unit	<p>Letter and figures sent via email on 4 March 2024</p> <p>Second round letter and figures sent via email on 8 April 2024</p> <p>Updated letter and figures sent via email on 16 December 2025</p>

Name	Affiliation	Notes
Gaspar, Doreen Pinky	Former President, Ahupua'a o Moloka'i	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Greaney, Malia	<i>Kama'āina</i>	Letter and figures sent via email on 4 March 2024 with previous interview summary Second round letter and figures sent via email on 8 April 2024 with previous interview summary Updated letter and figures sent via email on 16 December 2025 with previous interview summary
Haase, William "Butch"	Executive Director, Molokai Land Trust	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025 Mr. Haase responded on 24 December 2025: <i>I have no information pertinent to your project, Mahalo for reaching out.</i> CSH responded on 29 December 2025 thanking Mr. Haase for his response
Ka'ahanui, Charles	President, Ho'olehua Homesteaders Association	Letter and figures sent via email on 4 March 2024 Letter and figures sent via USPS 6 March 2024 Second round letter and figures sent via USPS on 10 April 2024. Updated letter and figures sent via email on 16 December 2025
Keli'ipa'akaua, J. Kepo'o	'Ohana Keaweamahi	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Kong, Leinoa	Maui, Lana'i, and Moloka'i Burial Sites Specialist, SHPD	Updated letter and figures sent via email on 16 December 2025
Kupu A'e	Native Hawaiian-owned business	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Second round letter and figures sent via USPS on 10 April 2024 Updated letter and figures sent via email on 16 December 2025

Name	Affiliation	Notes
Lauifi, Shaye	Executive Assistant, Ka Honua Momona	Letter and figures forwarded by Tate Keli'ihō'omalū from Maui Nui Makai Network on 5 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Lee, Wade	Aha Moku Moloka'i Pule 'O'o, Pālā'au/Ko'olau Rep	Letter and figures sent via email on 4 March 2024 Email Undeliverable Second round letter and figures sent via USPS on 10 April 2024 Mail undeliverable Unable to find updated contact info
Lima, Pūlama	Executive Director, Ka Ipu Makani	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Nakahashi, Ikaika	Cultural Historian for Maui, Lanai, Molokai, Kahoolawe, and Hawaii	Letter and figures sent via email on 4 March 2024 Mr. Nakahashi responded on 8 March 2014: <i>Aloha Tehani, Mahalo for contacting me regarding the Cultural Impact Assessment for the DHHL Ho'olehua Scattered Lots Expanded Project Area Project, Kaluako'i Ahupua'a, Moloka'i. I recommend CSH to utilize the media (e.x. OHA's Ka Wai Ola, etc.) to solicit additional information for this CIA. I recommend CSH minimally to meet with any native tenants and people that currently live or previously lived in the ahupua'a listed above on Moloka'i for information about the cultural resources and cultural practices for this CIA.</i> <ul style="list-style-type: none"> • <i>Walter Ritte</i> • <i>Malia Akutagawa</i> <i>Koe nae ke kuleana o na kanaka ma loko = reserving the rights of native tenants. Please let me know if I can assist with anything else. A hui hou CSH responded on 10 March 2024:</i>

Name	Affiliation	Notes
		<p><i>Mahalo nui Ikaika for your response and recommendations! We have already reached out to Walter Ritte and Malia Akutagawa and hopefully will hear from them soon.</i></p> <p><i>Take care</i> Updated letter and figures sent via email on 16 December 2025</p>
Nekaifes, Maraea	Nekaifes Ohana	Letter and figures sent via USPS 6 March 2024; Second round letter and figures sent via USPS on 10 April 2024
Norman, Carolyn Keala	'Ohana Keaweamahi	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Opunui, Landon	Executive Director and Medical Director, Nā Pu'uwai	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Pā-Kalā, Hala	President, Kamiloloa One Ali'i Homestead Association	Updated letter and figures sent via email on 16 December 2025
Pā-Kalā, Kahekili	Kia'i Loko I'a - 'Āina Momona	Letter and figures forwarded by 'Āina Momona on 9 April 2024 Letter and figures sent via email on 9 April 2024 Updated letter and figures sent via email on 16 December 2025
Phillips, Kealana	Burial Sites Specialist for Maui, Moloka'i, and Lana'i	Letter and figures sent via email on 4 March 2024 Mr. Phillips responded on 6 March 2024: <i>I will forward to members of the molokai burial council. Mahalo, Kealana</i> CSH responded on 7 March 2024: <i>Mahalo Kealana!</i> <i>Take care</i> Updated letter and figures sent via email on 16 December 2025 Mr. Phillips responded same day to contact Leinoa Kong, Burial Sites Specialist
Poepoe, Kamalu	Aha Moku Moloka'i Pule 'O'o	Letter and figures sent via email on 4 March 2024 Letter and figures sent via USPS 6 March 2024

Name	Affiliation	Notes
		CSH sent a follow-up email on 8 April 2024 Second round letter and figures sent via USPS on 10 April 2024
Poepoe, Kelson "Mac"	Director and Resource Manager, Hui Mālama O Mo'omomi; Subsistence Fisherman; <i>Kama'āina</i>	Letter and figures sent via email on 4 March 2024 Tate Keli'ihō'omalū, Coordinator for Maui Nui Makai Network, responded on 5 March 2024: <i>Aloha e Tehani,</i> <i>Mahalo nui for reaching out. I've cc'd Uncle Mac on this email along with Tiani and Shaye. They work closely with Uncle Mac and would be great to get in contact with.</i> CSH responded same day: <i>Mahalo nui tate! Hopefully I hear from them soon.</i> <i>Take care!</i> CSH sent a follow-up email on 8 April 2024 Second round letter and figures sent via USPS on 10 April 2024 Updated letter and figures sent via email on 16 December 2025
Poepoe, Mahina M.	Board President, Kupeke Ahupua'a	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Purdy, Kammy	President, Ahupua'a o Moloka'i	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 Updated letter and figures sent via email on 16 December 2025
Purdy-Avelino, Kilia	<i>Kama'āina</i> , daughter of Aunty Kammy	Interviewed for PALAAU 9; Allowed CSH to use interview summary from PALAAU 9 for PALAAU 11; Request to use previous interview summary* Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on April 2024 with previous interview summary Mrs. Purdy-Avelino responded on 21 April 2024: <i>Aloha e Tehani,</i> <i>I am so sorry for my delayed response. There has been a whirlwind of kuleana and I finally had a</i>

Name	Affiliation	Notes
		<p><i>chance to read over your email and my our previous consultation. I don't know how I missed it the last time - probably busy as usual and just skimmed over it - but, there is a discrepancy in one of the ancient mo'olelo that I am quoted on, the story of Na'iwa about the boy. He was not entering a lei competition, he was entering the Makahiki events. There is a huge difference there, but apparently, I missed correcting it the first time. His mom was a skilled lei maker and so, made him a lei po'o made of iwaiwa fern and left it in his puolo without him knowing. This is the lei he then gives to a girl at the event to wear and while she does, the spores from the iwaiwa fern falls about causing more of the fern to sprout in the area - hence the name Naiwa. This is one of the mo'olelo of this place.</i></p> <p><i>If you can change that portion, yes, you may use what we shared.</i></p> <p><i>Mahalo nui for asking and again, I'm sorry for the delay.</i></p> <p><i>ke aloha nui</i> <i>CSH responded on 22 April 2024:</i> <i>Mahalo nui Kilia! Also, no problem at all!</i></p> <p><i>I attached the revised version of the interview summary with the section mentioned highlighted for you to review. I also highlighted the sections that discuss your concerns and recommendations from previous projects. Please let me know if you would like to keep what's already stated or if you would like any revisions made since this is a new project.</i></p> <p><i>I attached an authorization form that will need to be signed to have your approval to include your interview summary in our report.</i></p> <p><i>Please let me know if you have any questions.</i></p> <p><i>Mahalo</i></p>

Name	Affiliation	Notes
		<p>Mrs. Purdy-Avelino responded same day: <i>Aloha e Tehani,</i></p> <p><i>When is this due? As I re-read and things have taken place since, there are a few things I'd like to revise. We are at the DHHL commission meeting today, in which there is a decrease in the area we requested, though, we are still satisfied with the decision. But, with that, there are some things I need to amend.</i></p> <p><i>Please let me know your deadline.</i></p> <p>CSH responded same day: <i>Of course! We were hoping to wrap up consultation by the end of May or beginning of June if you need more time. If anything, I will make sure to check-in towards the end of May.</i></p> <p><i>Take care!</i></p> <p>CSH sent a follow-up email on 3 June 2024 CSH sent another follow-up email on 27 June 2024 Mrs. Purdy-Avelino responded on 5 September 2024: <i>It's been a busy summer!! I'm sorry I wasn't able to get back to you. I'm sure the majority of the feedback echoed my own.</i></p> <p>CSH responded on 26 September 2024 with authorization form: <i>No problem at all and I apologize for responding to you so late! It's great to hear back from you.</i></p> <p><i>Although the deadline has passed, the client has agreed to include your interview summary as an appendix to the CIA. If you would like us to still include your interview and if you approve of your attached summary, please sign the attached authorization form.</i></p> <p>Mrs. Purdy-Avelino responded on 29 September 2024 with revisions made to interview summary: <i>Please see the attached revisions - words crossed out and/or highlighted w/ notes. If the company is able to accept my changes, could you re-type and share back as it will be shared & printed and then I</i></p>

Name	Affiliation	Notes
		<p><i>will sign the release form. I was careless the first time not giving my time and full attention to it before I acknowledged and these would have been the changes I would have made from the get-go.</i></p> <p>CSH responded on 30 September 2024 with revised interview summary</p> <p>CSH sent a follow-up email on 7 October 2024</p> <p>Mrs. Purdy-Avelino responded on 8 October 2024 with revisions and signed authorization form: <i>Attached is my permission form. I did realize a few other minor parts if you could change it.</i></p> <p><i>1) the part that my husband mentions, "where he could feel the place was not pono..." I think should actually be, "...he felt it wasn't pono to be there..." because we don't believe that the place itself is not pono, but more that it's not pono/we shouldn't be in certain areas.</i></p> <p><i>2) at the time of our initial interview, we were told just a few months before at the DHHL commission meeting that we would be awarded the original acreage with a 3-acre parcel cut out for use for another beneficiary on the waitlist. Today, that deal was revoked and a new deal settled for only 17 more acres due to the gulch that breaks up the original parcel that according to DHHL, it's a liability! Ugh! Not sure if you need/want to change that section as well due to the changes by the Department.</i></p> <p><i>Otherwise, I think that is it.</i></p> <p>CSH responded on 9 October 2024 thanking Mrs. Purdy-Avelino for participating and sent the final draft of her interview summary.</p> <p>Mrs. Purdy-Avelino responded on 21 October 2024 thanking CSH.</p> <p>CSH sent the updated consultation letter on 9 June 2025:</p> <p><i>I am reaching out to you because you participated in consultation for the Ho'olehua Scattered Lots Expanded Project Area Project (PALAAU 15), located in Pālā'au and Ho'olehua Ahupua'a, Moloka'i District, on the island of Moloka'i in 2024. Since our interview with you, the project area</i></p>

Name	Affiliation	Notes
		<p><i>has been updated to include adjacent roadway and drainage improvement within portions of Pu'u Kapele Avenue, Farrington Avenue, and Mo'omomi Avenue. This has prompted the drafting of an updated consultation letter. For detailed information regarding the location, as well as the scope of work for this project, please refer to the consultation letter and GIS maps (attached).</i></p> <p><i>I have attached your interview summary for your review. Please feel free to revise your interview summary to address the new changes for this project.</i></p> <p><i>If possible, please respond by 23 June 2025. I will follow-up once more next week.</i></p> <p>CSH sent a follow-up email on 17 June 2025 CSH sent a follow-up email on 23 June 2025 Mrs. Purdy-Avelino responded same day: <i>Yes, it's okay. It looks good.</i> CSH responded same day thanking Mrs. Purdy-Avelino</p> <p>Updated letter and figures sent via email on 16 December 2025 with interview summary Mrs. Purdy-Avelino responded on 28 December 2025: <i>Mahalo nui for reaching out about the additions to the project. Since my testimony was pretty general to the broader Ho'olehua-Pala'au area, it should still be okay with the additional roadway and drainage improvements added to the project.</i> CSH responded on 29 December 2025 thanking Mrs. Purdy-Avelino for her response and participating in consultation for this project.</p>
Ritte, Kalaniua	Executive Director, 'Āina Momona	<p>Letter and figures sent via email on 4 March 2024 requesting contact info for Mr. Kahekili Pā-Kalā and Mr. Kamaki Ritte-Managan</p> <p>Second round letter and figures sent via email on 8 April 2024 requesting contact info for Mr. Pā-Kalā and Mr. Ritte-Managan</p> <p>'Āina Momona responded on 9 April 2024 with Mr. Pā-Kalā and Mr. Ritte-Managan's contact</p>

Name	Affiliation	Notes
		information as well as forwarded the letter and figures to them. CSH responded same day thanking 'Āina Momona Updated letter and figures sent via email on 16 December 2025
Ritte, Walter	<i>Kama'āina, Kupuna, Advocate</i>	Letter and figures sent via email on 4 March 2024 Second round letter and figures sent via email on 8 April 2024 with previous interview summary Updated letter and figures sent via email on 16 December 2025 Email undeliverable
Ritte-Managan, Kamaki	<i>Kama'āina</i>	Letter and figures forwarded by 'Āina Momona on 9 April 2024 Letter and figures sent via email on 9 April 2024 Updated letter and figures sent via email on 16 December 2025
Soares, Niles	Central Molokai Representative, Molokai Island Burial Council	Mr. Phillips forwarded letter and figures on 6 March 2024

7.4 Mrs. Kilia Purdy-Avelino and Mr. Justin Avelino's Testimony

On 4 March 2024, Cultural Surveys Hawai'i (CSH) reached out to Kilia Purdy-Avelino regarding the cultural impact assessment (CIA) for the proposed DHHL Ho'olehua Scattered Lots Expanded Project Area project. She granted CSH permission to reuse information she previously shared for a CIA pertaining to the Pālā'au and Ho'olehua Ahupua'a (Kaapana et al. 2023a). The information was gathered from Mrs. Purdy-Avelino and her husband, Justin Avelino.

Mrs. Purdy-Avelino was originally born on O'ahu but lived in Ho'olehua, Moloka'i for most of her life. She is the fourth generation of her family to live in the Ho'olehua-Pālā'au Homestead. Her grandmother was one of the first Native Hawaiians to move into the Ho'olehua-Pālā'au Homestead. Now an educator, Mrs. Purdy-Avelino teaches multiple grade levels (K-12), college-level courses, and is currently obtaining her doctoral degree.

Mr. Avelino was born and raised in Hilo, but has lived in Moloka'i for many years with his wife, raising their children on the homestead. Mr. Avelino is dedicated to Hawaiian cultural protocols, which he first learned from his grandfather. He is an avid hunter and helps to steward their Ho'olehua-Pālā'au Homestead.

On their current 5-acre homestead property (located in the *mauka* [toward the mountain] region of the Ho'olehua-Pālā'au Homestead), you will find various fruits and vegetables such as *'ulu* (breadfruit), *kalo* (taro), *'uala* (sweet potato), papaya, *mai'a* (banana), *liliko'i* (passion fruit), mango, *kukui* (candlenut), and macadamia nut trees. These produce yields not only feed the family, but also their livestock of pigs and chickens. Mrs. Purdy-Avelino shared that her grandmother

grew various floral plants on their property, 2 lots over to the West, such as gardenia, *'ākulikuli* (*Sesuvium portulacastrum*), yellow and white ginger *'awapuhi* (wild ginger; *Zingiber zerumbet*), *kīkā* (cigar flower, *Cuphea ignea*), *kīkānia* (*Solanum capsicoides*), and *kupaloka* (tuberose), which are used to make *lei* (garland). On their homestead today, her father grows *gardenia*, orchids (*Orchidaceae*), bird-of-paradise (*Strelitzia reginae*), and *anthuriums*.

Mrs. Purdy-Avelino shared that the original lease contained 40 acres of land, and not just the 5 acres they currently have today. The original lease owner, Aunty Gladys (Mrs. Purdy-Avelino's relative), leased her lands to aid the pineapple company (either Dole or Del Monte). When the pineapple company pulled out, instead of obtaining her lands, Aunty Gladys returned a portion of her lands back to DHHL and kept the current 5 acres. In 1980, Mrs. Purdy-Avelino's father obtained the land from his cousin Frank Kupau, who was the successor of his mother, Gladys. When he got the land, although he needed to clean and clear the area, there was an acre of approximately 50 macadamia nut trees already planted and mature. He believes they were planted during the 1920s. Since then, Mrs. Purdy-Avelino's father has planted more macadamia trees in small orchards that cover roughly 5 acres scattered throughout the original parcel. At the time of the initial interview, Mrs. Purdy-Avelino was told at the DHHL commission meeting that they would be awarded the original acreage with a 3-acre parcel cut out to be used for another beneficiary on the waitlist. However, today that deal has been revoked and a new deal was settled for only 17 more acres due to the gulch that breaks up the original parcel.

Both Mrs. Purdy-Avelino and Mr. Avelino shared some *mo'olelo* that were passed down from *kūpuna* (elders) and others.

Mrs. Purdy-Avelino shared a summarized version of a *mo'olelo* told to her by her cousin about how the land of Nā'iwa received its name. The *mo'olelo* starts off with a mother from Kalaupapa (located east of Pālā'au), who was a very skilled *lei* maker. Her son was entering the Makahiki festival events and so his mother made him a *lei po'o* (*lei* worn on the head) of the *'iwa'iwa* (maidenhair fern) fern and left it in his *pū'olo* (bag) without him knowing. The boy ended up giving this *lei* to a girl at the Makahiki events to wear and while she does, the spores from the *'iwa'iwa* fern falls about causing more of the fern to sprout in the area. Hence the name, Nā'iwa.

Mrs. Purdy-Avelino also recalled that during her childhood days, her dad would take her down *makai* of Nā'iwa (toward the project area) to pick up *'uala* (sweet potato) from an *'ohana* who lived in the area and she remembers eating it raw in the back of the truck.

Mr. Avelino shared some of his experiences while traversing through the *mauka* region of Nā'iwa and the importance of understanding and respecting the spirituality and history of the land. One of the lessons Mr. Avelino learned while hunting is to open yourself to your surroundings. There are many ways in which nature and spirits communicate with us and when you are open to receiving such information, you will gain a deeper connection to the land.

While passing through the lands of Ho'olehua, Mr. Avelino came across certain areas and/or certain objects, like *pōhaku* (stone) that he knew were sacred. While following a buck on one of his hunting missions, Mr. Avelino came across two *pōhaku* in the shape of a chair. On various hunting missions, Mr. Avelino would come across areas in which he could "feel the mana of the land" or he felt it wasn't *pono* to be there.

Another significant area in Nā'īwa is known as the *Makahiki* (ancient festival) ground. It was shared that in the past, one of the chiefs of Moloka'i looked toward the mountains of Nā'īwa and noticed a cloud shaped like a finger. The finger was pointing to a piece of land. A council of chiefs gathered and deemed the area as the place where Makahiki ceremonies would occur. To this day, Makahiki ceremony and activities continue to take place. In this area, items such as *'ulu maika* (stone used in *maika* [ancient Hawaiian game suggesting bowling] game) have been discovered. Mr. Avelino shared that he understood that work needs to be done and emphasized his support for work that is *pono*. He further shared that it is vital that no "thoughtless" development be done to this area, as in development just for the sake of completing a project by a timeline.

When asked about any concerns regarding the proposed project, Mrs. Purdy-Avelino shared valid concerns about the project as well as the overall process of reaching out to Native Hawaiians for their *'ike* and *mana'o* (opinion). The concerns directly related to the proposed project include the following:

1. Remember that *kūpuna* are always here in spirit and they will show themselves in various ways. It is up to us to make sure that we open ourselves up to receive their information.
2. Be mindful of sacred sites within and around the vicinity of work.
3. Do not *hana 'ino* (harm) the land or anything that may be disturbed.

In order to help with these concerns, Mrs. Purdy-Avelino recommends that a cultural monitor should be on site during any work to help provide guidance in regard to Hawaiian sense of place, protection of sacred areas and objects, and to be a voice for *kūpuna*. Mrs. Purdy-Avelino is supportive of more homestead lots being developed so that more homesteaders can get off the waitlist and into homes, however, as more homestead developments occur (whether it may be from DHHL or homesteaders developing their own plots), we all need to make sure to continue to protect our *'āina* and its resources. Mrs. Purdy-Avelino further stated that developers need to look at the long-term effects of what they're doing and the state they will leave the *'āina* in for future generations.

As mentioned, Mrs. Purdy-Avelino shared concerns that may not be directly related to the proposed project but are in regard to the overall process of outreach to Native Hawaiian communities and how information is shared.

1. Please make sure to reach out to Native Hawaiian communities in multiple ways and not just by an announcement in a newspaper or on the internet. That way, *kānaka* (Native Hawaiians) can be more *maka'ala* (aware) of proposed projects that are happening in their community.
2. Please do not utilize Native Hawaiians and the *'ike* that is shared just to "check a box." Native Hawaiians are sharing their *'ike* of their ancestors to help with the proposed projects and to provide a Hawaiian perspective of the land, its history, and its spirit. Our words and concerns carry *mana*, and it is important that they are heard and the suggestions given are followed through.

3. Full disclosures of project and project details are a must. Developers need to provide transparency to work that will be conducted as well as any other supplemental or follow-up work that may be conducted.

7.5 Community Outreach Results

Community outreach letters were sent to 38 individuals or groups and seven responded. Of the seven that responded, two individuals expressed interest in participating, and four have provided recommendations or forwarded the consultation letter to others who may be interested in participating. Another individual stated that they did not have information pertinent to the project. Please see below for a summary of the responses received.

The four individuals/organizations that responded include 'Āina Momona, Mr. Ikaika Nakahashi, the Maui Nui Makai Network, and Mr. Kealana Phillips. 'Āina Momona responded on 9 April 2024 providing the contact information for Mr. Kahekili Pā-Kalā and Mr. Kamaki Ritte-Managan, Kia'i Loko I'a (Fishpond Guardians) for 'Āina Momona. They also recommended contacting Mr. Walter Ritte, a *kama 'āina*, *kupuna*, and advocate for Moloka'i. Mr. Nakahashi, Cultural Historian for Maui, Lāna'i, Moloka'i, Kaho'olawe, and Hawai'i Island, recommended "CSH to utilize the media (e.x. OHA's Ka Wai Ola, etc.) to solicit additional information for this CIA." He further recommended contacting Mr. Ritte and Malia Akutagawa, a *kama 'āina* and member of Hui 'Āina Momona. Ms. Tate Keli'ihō'omalū, Coordinator of Maui Nui Makai Network, responded on 5 March 2024 providing the contact information for Mr. Mac Poepoe, a Native Hawaiian fisherman and community leader on Moloka'i, and recommended Ms. Tiani Cook, Executive Director of Ka Honua Momona, and Ms. Shaye Lauifi, Executive Assistant of Ka Honua Momona, who both work closely with Mr. Poepoe. All three individuals were forwarded the consultation letter. Mr. Phillips responded on 6 March 2024 and forwarded the consultation letter to members of the Moloka'i Burial Council. On 16 December 2025, Mr. Phillips responded and told CSH to contact Leinoa Kong, the Burial Sites Specialist for Maui, Moloka'i, and Lāna'i. CSH sent the updated letter and figures on 16 December 2025. No response was received before the deadline.

Ms. Lori Buchanan, Coordinator for the Moloka'i/Maui Invasive Species Committee, responded on 11 March 2024 that she wants to participate in consultation. On 9 April 2024, Ms. Buchanan requested the project details before conducting an interview via Zoom. CSH sent the project details on the same day via email. Unfortunately an interview was not scheduled in time before the deadline. CSH also sent Ms. Buchanan the updated letter and figures on 16 December 2025. Ms. Buchanan responded the same day inquiring if there will be an on-island meeting and if a site visit would be possible. CSH responded on 15 January 2026 with information to a Hawaiian Homes Commission meeting where the project will be presented.

The other individual, Mrs. Kilia Purdy-Avelino, a *kama 'āina*, participated in the consultation for the previous companion CIA (Kaapana et al. 2023a). Mrs. Purdy-Avelino granted CSH approval to include her previous testimony from Kaapana et al. (2023a) in the current CIA study with minor revisions. Mrs. Purdy-Avelino and Mr. Avelino's testimony can be found above in Section 7.4. Mrs. Purdy-Avelino expressed concerns about sacred sites located in the vicinity of the project area. She supports the development for more homestead lots for homesteaders on the waitlist, however, she emphasized the need for continued protection of sacred sites. Mr. Avelino

stated it is vital that no work be done to the Makahiki Grounds. Mrs. Purdy-Avelino recommends a cultural monitor be on site during any work to help provide guidance in regard to Hawaiian sense of place, protection of sacred areas and objects, and to be a voice for *kūpuna*.

In June 2025, Mrs. Purdy-Avelino was sent the updated community outreach letter and had no further comments. Once again in December 2025, Mrs. Purdy-Avelino was informed of CSH reinitiating consultation for the inclusion of a KPA to the CIA. Mrs. Purdy-Avelino approved her testimony on 29 December 2025 and had no further comments.

Section 8 Traditional Cultural Practices

Timothy R. Pauketat succinctly describes the importance of traditions, especially in regard to the active manifestation of one's culture or aspects thereof. According to Pauketat,

People have always had traditions, practiced traditions, resisted traditions, or created traditions [...] Power, plurality, and human agency are all a part of how traditions come about. Traditions do not simply exist without people and their struggles involved every step of the way. [Pauketat 2001:1]

It is understood that traditional practices are developed within the group, in this case, within the Hawaiian culture. These traditions are meant to mark or represent aspects of Hawaiian culture that have been practiced since ancient times. As with most human constructs, traditions are evolving and prone to change, resulting from multiple influences including modernization as well as other cultures. It is well known that within Hawai'i, a "broader 'local' multicultural perspective exists" (Kawelu 2015:3). While this "local" multicultural mix is deservedly celebrated, it must be noted that it often comes into contact with "traditional Hawaiian culture." This contact among cultures and traditions has undoubtedly resulted in numerous cultural entanglements. These cultural entanglements have prompted questions regarding the legitimacy of newly evolved traditional practices. The influences of "local" culture are well noted throughout this section and understood to represent survival or "the active sense of presence, the continuance of native stories, not a mere reaction, or a survivable name. Native survivance stories are renunciations of dominance, tragedy and victimry" (Vizenor 1999:vii). Acknowledgement of these "local" influences helps to inform nuanced understandings of entanglement and of a "living [Hawaiian] contemporary culture" (Kawelu 2015:3). This section strives to articulate traditional Hawaiian cultural practices practiced within the *ahupua'a* in ancient times, and the aspects of these traditional practices that continue to be practiced today; however, this section also challenges "tropes of authenticity" (Cipolla 2013) and acknowledges the multicultural influences and entanglements that may "change" or "create" a tradition.

This section integrates information from Sections 1–7 in examining cultural resources and practices identified within or in proximity of the project area in the broader context of the encompassing Pālā'au and Ho'olehua landscape.

8.1 Agricultural and Gathering Practices

Archaeological sites identified in the vicinity of the project area provide evidence that lands of Pālā'au Ahupua'a were utilized for habitation, agricultural endeavors, and ceremonial purposes. Archaeological studies (Griffin 1993; Major and Dixon 1995; Summers 1971) have identified pre-Contact dwellings and enclosures (SIHP #s 50-60-02-01624, -01623, Summers Site 9, 16, 17), *heiau* and shrines (Summers Site 12, 14, 16, 17), a *kahua maika* (Summers Site 13), and a *holua* slide (Summers Site 107).

Historic accounts indicate a possible substantial pre-Contact population (Fornander 1880; Summers 1971), which would have subsisted on dryland agriculture consisting mostly of sweet potatoes. Phelps (1937:6–7) mentioned West Moloka'i is a semiarid region and traditionally a land of sweet potato, which does not require much water. According to Handy (1940:157), "in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua" and "Hoolehua

and Palaau were noted for sweet potatoes in olden days.” However, Handy and Handy (1972:283) note homesteaders in Ho‘olehua were growing the sweet potatoes on land that had not been planted in ancient times.

Craighill Handy and Elizabeth Handy suggest the *ahupua‘a* of Pālā‘au was among the “many parts of the *kula* [plain, field, open country, pasture] land [that] used to be planted with both sweet potato and dry taro.” They note that:

Kualapu‘u (sweet potato hill), the name of a hill [...] [located in Nā‘iwa], probably refers to sweet potato planting.

It is said that Ho‘olehua and Pala‘au were noted for sweet potatoes in olden days. Any part of the pineapple lands westward from this section may have been used for sweet potatoes. However, much of western Molokai was formerly covered with trees. [Handy and Handy 1972:517]

Mrs. Purdy-Avelino and Mr. Avelino have mentioned growing *‘ulu*, *kalo*, papaya, *mai‘a*, mango, and macadamia nut trees for sustenance. Pigs and chickens are also grown on the homesteads for sustenance. For *lei* making purposes, the following plant resources are gathered: *ākulikuli*, *‘awapuhi*, *kīkā*, *kīkānia*, and *kupaloke*. Other plant resources include gardenia, orchids, bird-of-paradise, *hau*, and anthuriums. According to Ms. Greaney, Ho‘olehua Homesteaders grow the crops mentioned by Mrs. Purdy-Avelino and Mr. Avelino, as well as *‘uala* and *‘awa*. For agricultural purposes, *hau* was used to provide windbreaks and reduce erosion. Ms. Albino shared that within Nā‘iwa Ahupua‘a, there is the traditional agricultural practice of harvesting and planting crops based on the different phases of the Hawaiian moon cycle.

8.2 Coastal and Marine Resources

Traditional accounts mention Pālā‘au was known for its fat *āholehole* and *‘ō‘io*. According to *mo‘olelo*, the ruling chief of Moloka‘i, Kahekili, sent one of his chiefs, Kuikai, to Pālā‘au to collect fish for his army as they prepared to invade O‘ahu (Ne 1992:47).

Catherine Summers (1971:77) noted Poho‘ele pond (Site 99), also known as Pālā‘au fishpond, was “the largest of the Moloka‘i fishponds.” The pond had “gates that were skillfully made” and contained “[a]ll kinds of fish” (Summers 1971:77). Summers also reported a *ko‘a* observed “at the edge of the cliff” at Kahinaokalani (Site 17) (Summers 1971:38).

Previous informants have mentioned gathering *‘opihi* and salt, as well as fishing (Alex Bishaw and Mikiala Pescaia; McElroy et al. 2015:35; Henry Tancayo Senior; McElroy and Duhaylonsod 2018:31). Ms. Greaney mentioned Moloka‘i has the largest number of *loko i‘a* in Hawai‘i including over 60 that are still recognizable. She recalled being taken to fishponds alone by her grandfather who was proud to share this purely Hawaiian innovation to feed the people.

8.3 Mo‘olelo and Wahi Pana

Many *mo‘olelo* and *wahi pana* were mentioned by previous informants. Many of these *mo‘olelo* contain valuable *‘ike* on/about the land, its naming, and the countless events that have transpired on these lands. Moloka‘i in general has been recognized as a highly spiritual island where many *mo‘olelo* mention sorcery. Pālā‘au and Ho‘olehua are mentioned in a *mo‘olelo* discussing the origins of sorcery on Moloka‘i. Kamakau (1991:131–132) shared that Kaiakea saw women coming

over the plains of Ho'olehua to Pālā'au with a man named Pua who told Kaiakea to build a *hale lua* for them and in exchange they would become his gods and give him their visible form and all the paraphernalia to do their work. Kaiakea built the *hale lua*, provided offerings, and became the *kahu* of the gods, Pua and Kapo.

Regarding Ho'olehua, Ms. Albino mentioned Ho'olehua was the name of the wife of 'Iloli of Moloka'i and the meaning of Ho'olehua is a situation where instead of the entire army engaging in battle, each side would select their best warrior (their *lehua*) to represent them and engage in battle (Kaapana et al. 2023b:72). Another informant, Ms. Greaney, shared another story on the origins of Ho'olehua in connection with the Nā'iwa Makahiki grounds. The story recalls an ancient *hau* tree located where Lehua, an *ali'i*, lived in Ho'olehua and became the namesake of the area she overlooked.

Based on previous consultation, Nā'iwa is where the Makahiki Grounds are located. There are many *mo'olelo* relating to the Makahiki Grounds and the origin of the name Nā'iwa. According to Mr. Avelino, the Makahiki Grounds were chosen to be located in Nā'iwa due to a chief of Moloka'i who looked toward the mountains of Nā'iwa and noticed a finger-shaped cloud pointing to a piece of land. Mrs. Purdy-Avelino shared an origin story of Nā'iwa where a *lei* maker from Kalaupapa made a *lei* out of *'iwa'iwa* ferns for her son. The son gave the *lei* to the *wahine* he admired and the spores from that *lei* fell and scattered across the land. Ms. Greaney further elaborated on this story by adding that the *lei* was given to a *hula* dancer named Lehua (Kaapana et al. 2023b:85).

Other *wahi pana* mentioned by previous informants included Pu'ulelo, Kaohu, Keālia Lake, Ka'ule o Nanahoa, and Pu'u Pe'elua. Pu'uolelo (speaking hill) is located at the highest elevation of Nā'iwa where a grove of pine trees were planted by Mr. Meyer in the early 1800s. Kaohu (adorned in fog) is located to the east and Keālia Lake, also known as Meyer Lake, is one of the few naturally occurring freshwater lakes in Hawai'i. Ka'ule o Nanahoa (Phallic Rock) is the female fertility partner *pōhaku*. Pu'u Pe'elua (Caterpillar Hill) is located in Ho'olehua and there are many references in *mo'olelo* of Central Moloka'i having large caterpillars.

8.4 Healing Practices

Kahuna of Moloka'i were also "said to be experts in compounding medicine" (Pukui 1983:239). This expertise is described in the saying, "Moloka'i ku'i lā'au. *Moloka'i, pounder of medicine*" (Pukui 1983:239). Previous informants have mentioned the following traditional healing methods are ongoing: *la'au lapa'au*, *lomilomi*, and *ho'oponopono*. Although no specific plants were mentioned, Ms. Greaney did state that she grows and gathers medicinal plants on her homestead property. She also mentioned that Nā'iwa was widely known as an area of physical and spiritual healing, attracting injured, sick, and dying Hawaiians with their caregivers and loved ones in the past.

8.5 Cultural and Historic Properties

Previous informants have mentioned various cultural sites in Nā'iwa, Pālā'au, and Ho'olehua Ahupua'a. In Nā'iwa Ahupua'a, there is the Makahiki Grounds where the Makahiki ceremonies and activities take place, such as *'ulu maika*. Informants have also mentioned an ancient *hula* site at the Makahiki grounds. In Pālā'au Ahupua'a, informants have shared that it was an ancient training site used by Kamehameha to train his warriors prior to his battle at Nu'uana, O'ahu

(Notman 2012). In Ho'olehua Ahupua'a, Mr. Avelino mentioned coming across two *pōhaku* in the shape of a chair while he was hunting.

Based on historical and archaeological research, there are four *heiau* (Sites 10, 12, 14, and 16) in Pālā'au and Ho'olehua. This included Lepekaheo Heiau and three unnamed *heiau*. Lepekaheo Heiau (Site 12) is located southeast of the project area on the west side of Kaluape'elua Gulch. Regarding the other three unnamed *heiau*, Site 10 is located in Ho'olehua 2 and Site 14 is located in Pālā'au 2. The third unnamed *heiau* is located on the west side of the mouth of Anahiki Gulch, northwest of the project area along the coast (Site 16).

Other historic and cultural properties located northwest of the project area include an agricultural shrine for Lono (SIHP # 50-60-02-00995) as well as two house sites and a *ko'a* at Kahinaokalani (Site 17). North of the project area is a pre-Contact dwelling (SIHP # -02-01623) and two enclosures with unknown function (SIHP # -02-01624). Northeast of the project area are the Kipu Ruins (Site 9), *Kahua maika* (Site 13), *'ulu maika* stone (Isolated Find 1), and a ranching infrastructure (SIHP # -03-02521). Southeast of the project area are the Caterpillar Stones on top of Pu'u Kape'elua (SIHP # -03-00011A), a stone on top of Pu'u Kape'elua possibly used for sharpening adzes or collecting water (SIHP # -03-00011B), and a *hōlua* slide on the southwest side of Kualapu'u Hill (Site 107).

8.6 Burials

Native Hawaiians are protective of their *iwi kūpuna*. As stated by SHPD,

When departing kupuna was laid to rest there was never a doubt that their remains would empower their descendants until they themselves were reduced to earth. Some kupuna were covered by stacked stones while others were buried with no surface markers at all, frequently in sand dunes. [SHPD n.d.]

It is believed that the *mana* of a person is held within the *iwi* (bones). Therefore, *iwi kūpuna* were treated with upmost respect. For example, remains of a passing *ali'i* were usually buried under cover of night to protect the *iwi* from possible poachers, or those who might steal them to utilize the *mana* of the passing *ali'i* (SHPD n.d.).

Northeast of the project area are two cemeteries, Kanakalola and Ho'olehua. Ms. Greaney noted Homelani (located in Kalama'ula Ahupua'a in southern central Moloka'i) and Ho'olehua cemeteries, both chosen by Hawaiians as the final resting place for their beloved *'ohana*, are located in proximity to *wahi pana*. She was also informed by *kūpuna* about a *lele* above her homestead where the physical and spiritual realms connect.

Section 9 Ka Pa'akai Analysis

9.1 Overview

In *Ka Pa'akai vs Land Use Commission*, 94 Hawai'i (2000) the Court held the following analysis must also be conducted:

1. The identity and scope of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area;
2. The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and
3. The feasible action, if any, to be taken by the LUC to reasonably protect Native Hawaiian Rights if they are found to exist.

Based on information gathered from cultural and historical background, and community consultation for this project, traditional Hawaiian activity in this area of Pālā'au and Ho'olehua was focused along the coast or east, toward Nā'iwa. There were no native tenant LCAs identified within the current project area or its immediate vicinity. No traditional Hawaiian sites have been identified within the project area. No impacts on traditional and customary practices are anticipated as traditional and customary practices were not identified within the current project area and its immediate vicinity.

The accompanying literature review and field inspection (LRFI) archaeological study (Shideler and Hammatt 2021) conducted for the prior CIA (Kaapana et al. 2023a) that addressed Lot 17 (TMK: [2] 5-2-005:031) and Lot 104D-1 (TMK: [2] 5-2-026:014) identified two terrace alignments (no SIHP # assigned) within the southern portion of Lot 104D-1, which is located adjacent to the northern lots of the current project area. The LRFI recommended preservation in the form of avoidance and protection of the two boulder alignments. Other historic properties are located along the coast and east, toward Nā'iwa.

At present, no documentation or testimony indicates traditional or customary Native Hawaiian rights are currently being exercised “for subsistence, cultural and religious purposes and possessed by *ahupua'a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778” (Hawai'i State Constitution, Article XII, Section 7) within the specific project area. While no cultural resources, practices, or beliefs were identified as currently existing within the project area, Pālā'au and Ho'olehua Ahupua'a maintains a rich cultural history in the exercise of traditional or customary Native Hawaiian rights within the project *ahupua'a*.

9.2 Archaeological Resources

Based on previous archaeological research, there are no historic properties located within the current project area. A LRFI archaeological study was conducted by CSH for the proposed project in 2021 (Shideler and Hammatt 2021) as an accompanying report with the prior CIA study (Kaapana et al. 2023a) that addressed two other lots, Lot 17 (TMK: [2] 5-2-005:031) and Lot 104D-1 (TMK: [2] 5-2-026:014). One historic property (no SIHP # assigned; two terrace alignments) was identified by Shideler and Hammatt (2021:77) within the southern portion of

Lot 104D-1, which is located adjacent to the northern lots of the current project area. Shideler and Hammatt (2021) described the function of these two terrace alignments as possibly “experimental in nature to assess the utility of possible further terracing prior to significant investment in labor” (Shideler and Hammatt 2021:77). It was located relatively far from the access road and likely location of any home development. They recommended preservation in the form of avoidance and protection of the two boulder alignments.

There are four *heiau* (Sites 10, 12, 14, and 16) located in Pālā‘au and Ho‘olehua Ahupua‘a, which included Lepekaheo Heiau and three unnamed *heiau*. Lepekaheo Heiau (Site 12) is located southeast of the project area, on the west side of Kaluape‘elua Gulch. Regarding the other three unnamed *heiau*, Site 10 is located in Ho‘olehua 2 and Site 14 is located in Pālā‘au 2. The third unnamed *heiau* is located on the west side of the mouth of Anahiki Gulch, northwest of the project area along the coast (Site 16).

Other historic and cultural properties located northwest of the project area include an agricultural shrine for Lono (SIHP # 50-60-02-00995,) as well as two house sites and a *ko‘a* at Kahinaokalani (Site 17). North of the project area is a pre-Contact dwelling (SIHP # -02-01623) and two enclosures of unknown function (SIHP # -02-01624). Northeast of the project area are the Kipu Ruins (Site 9), *kahua maika* (Site 13), *‘ulu maika* stone (Isolated Find 1), and a ranching infrastructure (SIHP # -03-02521). Southeast of the project area are the Caterpillar Stones on top of Pu‘u Kape‘elua (SIHP # -03-00011A), a stone on top of Pu‘u Kape‘elua possibly used for sharpening adzes or collecting water (SIHP # -03-00011B), and a *hōlua* slide on the southwest side of Kualapu‘u Hill (Site 107).

Based on previous cultural studies, previous informants have mentioned Pālā‘au was used as an ancient training site used by Kamehameha to train his warriors prior to his battle at Nu‘uanu, O‘ahu (Notman 2012). In Ho‘olehua Ahupua‘a, Mr. Avelino mentioned coming across two *pōhaku* in the shape of a chair while he was hunting.

9.3 Burials

Based on previous archaeological research, no burials were identified within or in close proximity to the current project area. Previous informants have noted Kanakalola and Ho‘olehua cemeteries are located northeast of the current project area and residents continue to bury their *‘ohana* there.

9.4 Faunal Resources

No faunal resources were identified within the proposed project area.

Based on background research, the northern coast of Moloka‘i is known for its abundance in marine resources. The *mo‘olelo*, “Hālena, the Yellowing,” mentioned Pālā‘au as a place known for its fat *āholehole* and *‘ō‘io* (Ne 1992:47). Previous informants have also mentioned ongoing and past gathering practices, including gathering *‘opihi* and fishing along the coast (Alex Bishaw and Mikiala Pescaia; McElroy et al. 2015:35; Henry Tancayo Senior; McElroy and Duhaylonsod 2018:31). Catherine Summers (1971:77) noted Poho‘ele pond (Site 99), also known as Pālā‘au fishpond, was “the largest of the Moloka‘i fishponds.” The pond had “gates that were skillfully made” and contained “[a]ll kinds of fish” (Summers 1971:77). Traditional accounts have also

associated the *kioea* bird with Ho'olehua Ahupua'a. According to Pukui (1983:207), the *kioea* bird calls to the fishermen to set out to sea.

9.5 Earth Resources

No traditional use of stones (or soft sediments) within the project area has been documented.

Based on previous archaeological research, an *'ulu maika* was found on the eastern end of Ho'olehua Ahupua'a. McIntosh et al. (2019:103) describes the *'ulu maika* as an "isolated sandstone *'ulu maika* located on the surface of an abandoned agricultural field." McIntosh et al. (2019) goes on further to state the following:

The *'ulu maika* appears to have been manufactured and utilized during the pre-Contact or early post-Contact periods. Halealoha Ayau posits that this isolated find may be down slope of the traditional makahiki grounds known a Naiwa (pers. comm. 1/20/2016). [McIntosh et al. 2019:103]

Summers (1971:37) identified Site 11A and 11B, which are stones found on the top of Pu'u Kape'elua, also known as "The Caterpillar Hill." Site 11A is known as the "Caterpillar Stones" and Site 11B is a stone located just south of Site 11A on Pu'u Kap'elua. Site 11B is described in the following:

When seen in 1959, this fairly flat stone measured 6 ft N to S, and 7 ft E to W. It stood about 22 in. High on the N and 18 in. high on the S. On the face of the stone was a hollowed-out basin, 21 in. E to W, 8.5 in. N to S, and 3 in. deep. Leading from the N side of the surface into either side of the basin were two grooves 1 in. wide and 2.5 in. deep. Two more grooves led from the S side of the basin to another basin located on a shelf 5 in. below the face, on the S side of the stone. This basin, which was 1.75 in. deep, measured 18 in. E to W and 6 in. N to S. Numerous sea shells were found in the vicinity of the site. [Summers 1971:37]

According to Summers (1971:37), G.P. Cooke believed Site 11B was used for sharpening adzes, while K.P. Emory believed that as a result of the region being arid, the stone may have been used for collecting water.

Along the coast various structures included *ko'a*, *heiau*, a *holua* slide, terraces, and house structures.

Based on community consultation, while passing through the lands of Ho'olehua, Mr. Avelino came across certain areas and/or certain objects, like *pōhaku* (stone), that he knew were sacred. While following a buck on one of his hunting missions, Mr. Avelino came across two *pōhaku* in the shape of a chair.

9.6 Plant Resources

The project area vegetation consisted primarily of introduced species including exotic grasses, *koa haole* (*Leucaena leucocephala*), some *kiawe* (*Prosopis pallida*), *klu* (*Acacia farnesiana*), and lantana (*Lantana camara*). The only native species identified in the project area were *'ilima* (*Sida fallax*) and *'uhaloa* (*Waltheria indica*). Although both native species are known to have been gathered for *lei* making and *lā'au lapa'au* (traditional herbal medicine) purposes, there is no documentation of these plants being gathered for these purposes within the proposed project area.

Based on background research, Pālā'au was known for its numerous taro patches due to its fertile soil. Ho'olehua was also known as a "fertile plain" and for the cultivation of *'uala*. Various *wahi pana* are associated with caterpillars in Pālā'au and Ho'olehua, which feed on the sweet potatoes. According to Handy et al. (1991:213), *'olo* or *hokeo*, the long gourd used for holding fishing tackle and to make the *hula* drum, notably grew in Ho'olehua.

During consultation, Mrs. Purdy-Avelino and Mr. Avelino have mentioned growing various fruits and vegetables such as *'ulu*, *kalo*, papaya, *mai'a*, mango, and macadamia nut trees for sustenance purposes on their homestead. Mrs. Purdy-Avelino's grandmother also grew various floral plants such as *'ākulikuli*, *'awapuhi*, *kīkā*, *kīkānia*, and *kupaloka* which are used to make *lei*. On their homestead today, Mrs. Purdy-Avelino's father also grows gardenia, orchids, bird-of-paradise, and anthuriums. During her childhood, her father also took her down *makai* of Nā'iwa to pick up *'uala* from an *'ohana* who lived in the area.

Ms. Greaney mentioned Ho'olehua homesteaders are successfully growing dryland *kalo*, *'uala* (sweet potato; *Ipomoea batatas*), and *'awa* (kava; *Piper methysticum*). She noted that as recently as 150 years ago, Moloka'i was known for large quantities of agricultural and value-added exports such as *kalo* grown in *lo'i* and dry land *māla* (gardens) along with *'uala* and other food sources. *Hau* (pandanus; *Hibiscus tiliaceus*) was another plant resource mentioned that was utilized for a variety of purposes. For agricultural purposes, it was used to provide a windbreak and reduce erosion. For medicinal purposes, it is used for *lā'au lapa'au* (plant-based medicine) and tools for *lomilomi* (body manipulation). Another purpose is for tool production such as *ko'i* (adze) for hand carving *papa he'e nalu* (surfboards) and to make spears for *lua* (a type of dangerous hand-to-hand fighting).

She also mentioned that on her homestead she "continues to identify medicinal plants in the area which can be gathered or cultivated. Her mother, Yola Forbes, also grew food and medicinal trees on their homestead" (Kaapana et al. 2023a:67). In her interview she mentioned she would use *lā'au lapa'au*, *lomilomi*, and *ho'oponopono* (Hawaiian conflict resolution) as traditional healing methods.

9.7 Trails

No trails were documented within the proposed project area.

9.8 Nā Wahi Pana

There are no *wahi pana* identified within the proposed project area.

As mentioned in previous sections, there are various *wahi pana* located in Pālā'au and Ho'olehua Ahupua'a, some of which are associated with caterpillars, such as Pu'u Pe'elua (hill of the caterpillar) and Kāluape'elua (baked caterpillar). Other *wahi pana* include *heiau* and *loko i'a*. Of the four *heiau* identified by Summers (1971) in Pālā'au and Ho'olehua Ahupua'a, only Lepekaheo Heiau was named. Regarding *loko i'a*, Summers (1971:77) mentioned Poho'ele Pond in Pālā'au and described it as the largest of the Moloka'i fishponds.

9.9 Valued Cultural, Historical, or Natural Resources in the Project Area

No cultural, historical, or natural resources were identified within the current project area.

The LRFI archaeological study conducted by CSH for the proposed project in 2021 (Shideler and Hammatt 2021), as an accompanying report with the prior CIA study (Kaapana et al. 2023a), addressed two other lots, Lot 17 (TMK: [2] 5-2-005:031) and Lot 104D-1 (TMK: [2] 5-2-026:014). One historic property (no SIHP # assigned; two terrace alignments) was identified by Shideler and Hammatt (2021:77) within the southern portion of Lot 104D-1, which is located adjacent to the northern lots of the current project area. Shideler and Hammatt (2021) described the function of these two terrace alignments as possibly “experimental in nature to assess the utility of possible further terracing prior to significant investment in labor” (Shideler and Hammatt 2021:77). It was located relatively far from the access road and likely location of any home development.

The background research conducted for this project, including cultural and historical data, indicated the vicinity of the project area has a long and rich history of Native Hawaiian use and modification. Pālā'au and Ho'olehua were known for sweet potato cultivation. Based on community consultation, Ho'olehua homesteaders are successfully growing dryland *kalo*, *'uala*, and *'awa*.

9.10 The Extent to which Traditional and Customary Native Hawaiian Resources will be Affected by the Proposed Action

No impacts on traditional and customary practices are anticipated because they were not identified within the project area.

9.11 Feasible Action, if any, to be Taken to Reasonably Protect Native Hawaiian Rights

Regarding the two terrace alignments identified within the previous lots addressed by the LRFI (Shideler and Hammatt 2021), CSH recommended preservation in the form of avoidance and protection of the two boulder alignments.

Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. Should any potential historic properties be identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3. Should *iwi kūpuna* be identified, all earth-moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended.

Should *iwi kūpuna* and/or cultural finds be encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

Section 10 Summary and Recommendations

CSH undertook this CIA at the request of Munekiyo Hiraga, and on behalf of the DHHL. The research broadly covered the *ahupua'a* of Pālā'au and Ho'olehua.

10.1 Results of Background Research

Background research for this project yielded the following information (presented in approximate chronological order):

1. Traditionally, Moloka'i was divided into two *moku*, or districts: Kona and Ko'olau. In 1859, the traditional *moku* of Kona and Ko'olau were dropped and the island as a whole was referred to as the Moloka'i district. In 1909, the island was again divided into two districts: Kalawao District, containing the lands of Kalaupapa, Kalawao, and Waikolu, and Moloka'i District, comprising the remainder of the island (Coulters in Summers 1971:2), including the current project area.
2. The winds of Pālā'au are Ho'olua, Moa'e, Ka'ele, and Hauialia (*Ka Hae Hawaii* 1861; Nakuina 1995:64). The rain of the area is known as Nāulu (Akana and Gonzalez 2015:175).
3. The prominent *ka'ao* of Pāka'a and Kū-a-Pāka'a originates from Moloka'i (Handy 1922:76). Chief Ho'olehua was married to 'Īloli and they had a daughter named Hikauhi, who later became wife of Pāka'a and mother of Kū-a-Pāka'a, the caretakers of the wind gourd of La'amaomao (Nakuina 1992:29–30).
4. Pu'u Pe'elua, or Caterpillar Hill, is located in Ho'olehua and named after the *pe'elua*. This *pe'elua* was a *kupua* (demigod), who took the form of a caterpillar in the day and a handsome man at night. The *pe'elua* became an *'aumakua* for the district of Ho'olehua (Ne et al. 1992:49–50).
5. Four *heiau* were recorded in the Pālā'au and Ho'olehua Ahupua'a including Lepekaheo Heiau and three unnamed *heiau* (Summers 1971:37–38).
6. Historical anecdotes and environmental data for this region indicate a possible substantial pre-Contact population (Fornander 1880; Summers 1971), which would have subsisted on dryland agriculture consisting mostly of sweet potatoes.
7. Historic properties previously identified in the vicinity are limited to a few sites recorded by Summers (1971), including the legendary Kape'elua Complex (SIHP # 50-60-03-00011). There appears to have been a locus of traditional Hawaiian activity in Anahaki Gulch north of the western project area but this is suggested to relate to the micro-environment of that gulch and greater proximity to the coast.
8. In the 1790s, Kamehameha I reportedly “drilled his warriors on the Hoolehua plain near where the airport is now” (Cooke 1949:112). These training grounds may have included the current project area.
9. Following the Māhele in 1848, the entire *ahupua'a* of Ho'olehua was given to the government, and all of Pālā'au Ahupua'a (including the western and central project areas) was “Crown lands” owned by Kamehameha III (Dodge et al. 1897).
10. Cattle were introduced to Moloka'i in the 1840s (De Loach 1975:68). In the second half of the nineteenth century, cattle, sheep, and goat ranching expanded greatly. By 1866,

- there were “2,586 head of cattle, 13,332 sheep and 196 goats on the island” (de Loach 1975:86).
11. Molokai Ranch was formed in 1897 when a *hui* of investors purchased approximately 70,000 acres of central and western holdings from the Bishop Estate (Cooke 1949; Stearns and Macdonald 1947). By 1905, the ranch had transitioned from an open country system to the paddock system (Henke 1929). The western and eastern project areas are within the Momomi Paddock. In the 1920s, Molokai Ranch lands consisted of about 10,000 acres leased for pineapple cultivation, 8,000 acres of forest reserves, and 50,000 acres utilized for ranching (Henke 1929:52). Cattle ranching remains an important industry on Moloka'i.
 12. In 1920, the U.S. Congress passed the Hawaiian Homes Commission Act to administer and manage some 200,000 acres of land that belonged to the government of the Kingdom of Hawai'i or was recognized as Crown lands. The following year, the program began attracting people to Moloka'i. Overall, the program succeeded and was expanded to include 11,400 acres of Pālā'au-Ho'olehua beginning in 1924. Parcels 31 and 14 consist of approximately 36.4 acres (14.7 hectares) of these Pālā'au-Ho'olehua Homestead lands and include Lots 17 and 104D-1.
 13. The Moloka'i homestead program initially was impacted by many problems, including drought and high winds (McGregor 1990:37–38). Despite such difficulties, people managed to cultivate their plots (McGregor 1990:37–38). Farming was diversified and successful crops included corn, watermelons, cucumbers, sweet potatoes, eggplant, and papaya (Keesing 1936; Wiebke 1940). In addition to agricultural pursuits, the Hawaiian Homes Commission encouraged raising livestock and ranching. Raising pigs brought the most revenue and economic value; however, a few families sold eggs and every family owned some cattle (Keesing 1936).
 14. According to Handy (1940:157), “in 1931 there were many flourishing patches on the Hawaiian homesteads at Hoolehua” and “Hoolehua and Palaau were noted for sweet potatoes in olden days.” However, Handy and Handy (1972:283) note homesteaders in Ho'olehua were growing the sweet potatoes on land that had not been planted in ancient times.
 15. A civilian airfield was established in Ho'olehua in 1919. In 1931, the U.S. Army Air Corps established a portion of this field as “Homestead Field” (Horvat 1966:38, 40–47). By the time the United States entered World War II in 1941, aircraft of the Fifth Bombardment Group were stationed at Homestead Field. A complex of World War II bunker sites was identified on the airport property well south of the present project areas in 1980 by AECOS Inc. (1980).
 16. Fifteen archaeological studies were previously conducted within the project area vicinity, two of which included the project area (Pfennig et al. 2011; Shideler and Hammatt 2021). No historic properties have been identified within the project area, however, there are two terrace alignments (no SIHP # assigned) identified by Shideler and Hammatt (2021) within the southern portion of TMK: (2) 5-2-026:014, adjacent to the northern lots of the current project area.
 17. Seven previous cultural studies were conducted within the project area vicinity. The following cultural practices were mentioned by previous informants: agricultural and

gathering practices for sustenance and *lei* making purposes, *mo'olelo* and *wahi pana*, healing practices, cultural and historic properties, and burial sites.

10.2 Results of Community Consultation

CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 38 individuals or groups; seven responded, two of which were interested in participating, with one completing an in-depth interview with CSH staff. Unfortunately, we were unable to schedule an interview before the deadline with the other interested individual. Mrs. Kilia Purdy-Avelino and her husband Mr. Justin Avelino, participated in consultation for the previous companion CIA (Kaapana et al. 2023a) and granted CSH permission to include their testimony with additional revisions in the current study.

10.3 Identification of Cultural Practices

Based on the results of background research conducted as part of this CIA, CSH has identified the following cultural resources and practices within Pālā'au and Ho'olehua Ahupua'a:

1. Agricultural and gathering practices
2. Marine resources
3. *Mo'olelo* and *wahi pana*
4. Healing practices
5. Religious activities
6. Burial practices

CSH has determined that no ongoing cultural practices were identified within the project area during background research. However, the project area is located in the general vicinity of ongoing cultural practices such as agricultural and gathering activities, ceremonial activities, and traditional burial practices.

10.4 Identification of Impacts to Cultural Practices

No impacts to ongoing cultural practices were identified within the project area during background research and community consultation for this CIA. Consultation from the prior companion CIA (Kaapana et al. 2023a) and current study identified a number of concerns related to the environment and the broader community:

1. Availability of water
2. Soil quality
3. Impacts to *'uhane* (spirits) and *'iwi kūpuna* (ancestral remains)
4. Impacts to *wahi pana*

10.5 Mitigation Possibilities Identified During Background Research and Consultation

The results of background research and community consultation conducted for this CIA inform the following mitigation possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups:

1. A number of concerns expressed by the community during consultation from the prior CIA (Kaapana et al. 2023a) and current study do not relate specifically to ongoing cultural practices within the project area, but nonetheless should be considered during project planning and development. These concerns include the following:
 - a. Ms. Malia Lani Forbes Greaney expressed concern regarding the availability of water. She noted Ho'olehua is historically known for its dry and barren land, with little to no water available. She stressed that it is also important to ensure access to the appropriate amount of water is available and at a reasonable cost (Kaapana et al. 2023a).
 - b. Ms. Greaney strongly suggests the soil be well tested by third party professionals for any presence of harmful chemical residue possibly remaining in the soil. This is a good safety precaution for farmers (Kaapana et al. 2023a).
 - c. Ms. Greaney also suggested future studies may also look at nearshore areas off Pālā'au to assess for the presence of chemicals from runoff and any impacts (Kaapana et al. 2023a).
 - d. Mrs. Purdy-Avelino expressed concerns about sacred sites located in the vicinity of the project area. She supports the development for more homestead lots for homesteaders on the waitlist, however, she emphasized the need for continued protection of sacred sites.
 - e. Mr. Avelino stated it is vital that no work be done to the Makahiki Grounds.
2. Consultants from the prior CIA (Kaapana et al. 2023a) have recommended the following:
 - a. Ms. Greaney insists the homestead community should be notified well in advance of any proposed developments that will occur on the Makahiki lands (Kaapana et al. 2023a).
 - b. Ms. Greaney also stated that if there are any future developments, it is important that in depth archaeological inventory surveys be conducted as it is known that many artifacts still exist in the *mauka* and central regions of Nā'iwa and Pālā'au (Kaapana et al. 2023a).
 - c. Mrs. Purdy-Avelino recommends a cultural monitor be on site during any work to help provide guidance in regard to Hawaiian sense of place, protection of sacred areas and objects, and to be a voice for *kūpuna*.
3. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3.
4. Non-Native Hawaiian human remains will undergo the process laid out under state law (HAR §13-300), however, Native Hawaiian human remains and cultural items found on DHHL lands are subject to the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3001 et seq and its implementing regulations (43 CFR Part 10). As 43 CFR § 10.2 provides, tribal lands include "All lands administered by the Department of Hawaiian Home Lands (DHHL) under the Hawaiian Homes Commission Act of 1920 (HHCA, 42 Stat. 108) and Section 4 of the Act to Provide for the Admission of the State of Hawai'i into the Union (73 Stat. 4), including 'available

lands' and 'Hawaiian home lands.'" Under NAGPRA, DHHL must prepare a plan of action (POA) prior to any planned activity that is likely to result in a discovery or excavation of human remains or cultural items. If not part of a planned activity, a POA is required after the discovery of human remains or cultural items. In developing a POA, DHHL will initiate consultation with lineal and cultural descendants, consult on the POA, and approve and sign the POA and provide a copy to all consulting parties. The 3-step process for drafting a POA pursuant to NAGPRA can be found in 43 CFR § 10.4(b).

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Appendix A Community Outreach Letter

CULTURAL SURVEYS HAWAI'I

ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL DOCUMENTATION SERVICES - SINCE 1982



P.O. Box 1114

Kailua, Hawai'i 96734

Ph: (808) 262-9972

Fax: (808) 262-4950

Aloha mai kāua,

With this letter, Cultural Surveys Hawai'i (CSH) humbly requests your *mana'o* and *'ike* (experience, insights, and perspectives) regarding historical and ongoing cultural practices, and resources within the Pālā'au and Ho'olehua Ahupua'a.

Consultation with traditional cultural practitioners, *kūpuna*, *kama'āina*, and Hawai'i's diverse ethnic communities is an important and deeply valued part of our work and the environmental review process for proposed projects in Hawai'i. Your contributions will revitalize and keep alive knowledge of cultural practices, storied places, and life experiences that will remind Hawai'i's children of their history for generations to come.

At the request of Munekiyo Hiraga, and on behalf of the Department of Hawaiian Home Lands (DHHL), CSH is conducting a cultural impact assessment (CIA) for the proposed DHHL Ho'olehua Scattered Lots Expanded Project Area Project, Pālā'au and Ho'olehua Ahupua'a, Moloka'i District, Moloka'i Island, including three parcels, TMK: (2) 5-2-026:003 (4.72 acres or 1.91 hectares), TMK: (2) 5-2-026:016 (4.73 acres or 1.91 hectares), and TMK: (2) 5-2-026:017 (5.83 acres or 2.36 hectares). These three scattered subdivision project area parcels are within the DHHL Ho'olehua-Pālā'au Homesteads, and located within the north portion of the Ho'olehua plain of central Moloka'i, approximately 2.2 km northwest from Moloka'i (Ho'olehua) Airport. The contiguous parcels are bounded on the north by Pu'ukapele Avenue and on the other sides by other DHHL parcels. The project area is depicted on a portion of the 1993 Molokai Airport and Kaunakakai U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1) and on the 2013 ESRI satellite photograph (Figure 2).

The Project entails subdividing five (5) lots on DHHL-owned lands in the Ho'olehua area into twelve (12) lots to be designated for subsistence agriculture use and improving them for lease to DHHL beneficiaries. The five (5) lots are hereafter referred to as "subject properties". Two of these five lots TMKs: (2) 5-2-005:031, Lot 17 and (2) 5-2-026:014, Lot 104D-1 were the subject of a prior CIA done by Tanaka and Hammatt in September 2023. This current study is intended as a companion report to the CIA done by Tanaka and Hammatt (2023).

Improvements to be undertaken include creating access driveways to each of the newly created lots with connections for domestic water and irrigation water for each lot provided within the access driveways from existing systems in the neighboring roadways. The lots will be made available to DHHL beneficiaries currently on the waitlist for an agricultural lease on Moloka'i. Once awarded, lessees will be able to construct homes on the lots, in addition to utilizing the lots for agricultural purposes. Additionally, it is noted that there is an existing abandoned home on Parcel 14 that records indicate was constructed in the 1970's as well as a greenhouse on Parcel 16 that was constructed in the early 2000's. Both the abandoned home on Parcel 14 and the greenhouse on Parcel 16 will be demolished as part of the proposed project. It is further noted that there is a third structure, a home that records indicate was built in the early 2000's, that is located on a portion of Parcel 16 and a portion of Parcel 3. The proposed subdivision action will revise the lot lines

Figure 24. Community outreach letter page one

CIA for the DHHL Ho'olehua Scattered Lots Expanded Project Area Project

Page 2

so the existing home is located in one (1) TMK. The home will be reviewed for future lease as part of the lot it is located on.

Purpose of the CIA

The purpose of a CIA is to gather information on Hawai'i's cultural resources, practices, or beliefs that have occurred or still occur within the proposed project area and the Pālā'au and Ho'olehua Ahupua'a. This is accomplished through consultation and background research using previously written documents, studies, and interviews. This information is used to assess potential impacts of the proposed project to the specific identified resources, practices, and beliefs in the project area and throughout the Pālā'au and Ho'olehua Ahupua'a. As a traditional cultural practitioner and holder of long-term knowledge, your insight, input, and perspective provide a valuable contribution to the assessment of potential effects of this project and an understanding of how to protect these resources and practices.

Insights focused on the following topics in the project area (shown on the attached Figure 1 and Figure 2) are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your specific traditional cultural practice and its connection to the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- The different natural resources associated with your specific traditional cultural practice
- Legends, stories, or chants associated with your specific traditional cultural practices and their relationships to the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Referrals to other *kūpuna*, *kama'āina*, and traditional cultural practitioners knowledgeable about the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on your ongoing traditional cultural practices and natural resources within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and Pālā'au and Ho'olehua Ahupua'a
- Your comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and Pālā'au and Ho'olehua Ahupua'a

Consultation Information

Consultation is an important and deeply valued part of the CIA and environmental review process. Your contributions will revitalize and keep alive our combined knowledge of past and ongoing cultural practices, historic places, and experiences, reminding our children of their history generation after generation.

Figure 25. Community outreach letter page two

CIA for the DHHL Ho'olehua Scattered Lots Expanded Project Area Project

Page 3

With your agreement to participate in this study, your contributions will become part of the comprehensive understanding of traditions of the area and will be part of the public record. The study will be included as an appendix of the Environmental Assessment (EA), which is being prepared for the proposed project; the EA and CIA will be available for future access through the State Office of Planning and Sustainable Development (OPSD) Environmental Review Program (ERP) (<https://planning.hawaii.gov/erp>) and at the State Historic Preservation Division Library (<https://dlnr.hawaii.gov/shpd/about/research-resources-library>).

As a part of this process, your knowledge may be used to inform future CIAs and other heritage studies of cultural practices and resources that need protection from impacts of proposed future projects. If you engage in consultation, and the *mana'o* and *'ike* you provide appears in the study, we would like to recognize your contribution by including your name. If you prefer not to allow your name to be included, your information can be attributed to an anonymous source.

The consultation interview structure and format are flexible. We will accommodate your preference on how to get together: talk story, over the phone, by email correspondence, remotely via Zoom, MS Teams, Google Chat, or other remote meeting platform.

Your knowledge of the resources and potential effect of the project on traditional practices in the project area and Pālā'au Ahupua'a focusing on the topics in the bullet points above can also be submitted in a written statement. CSH will provide return postage for your written statement on request.

CSH is happy to provide a list of topics for discussion, a more structured questionnaire of interview questions, or any other assistance that might be helpful.

If you have questions regarding consultation, or are interested in participating in this study, please contact Tehani Baculpo by email at tbaculpo@culturalsurveys.com or phone at (808) 965-6478.

Mahalo nū loa for your time and attention to this request for consultation.

Tehani Baculpo

CSH Cultural Researcher

Figure 26. Community outreach letter page three

CIA for the DHHL Ho'olehua Scattered Lots Expanded Project Area Project

Page 4

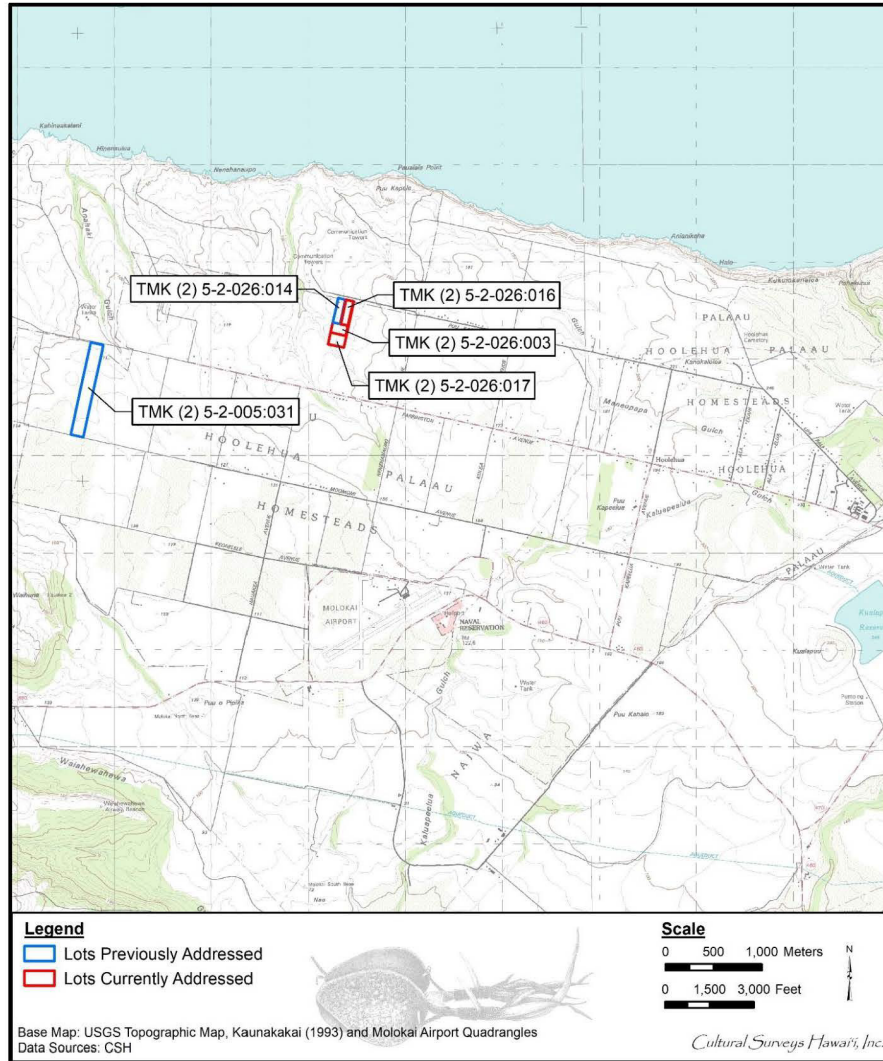


Figure 1. Portion of the 1993 Molokai Airport and Kaunakakai USGS 7.5-minute topographic quadrangles showing the location(s) of the three “Scattered Lots” presently addressed (in red) as well as the two previously addressed “Scattered Lots” (in blue)

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Figure 27. Community outreach letter page four

CIA for the DHHL Ho'olehua Scattered Lots Expanded Project Area Project

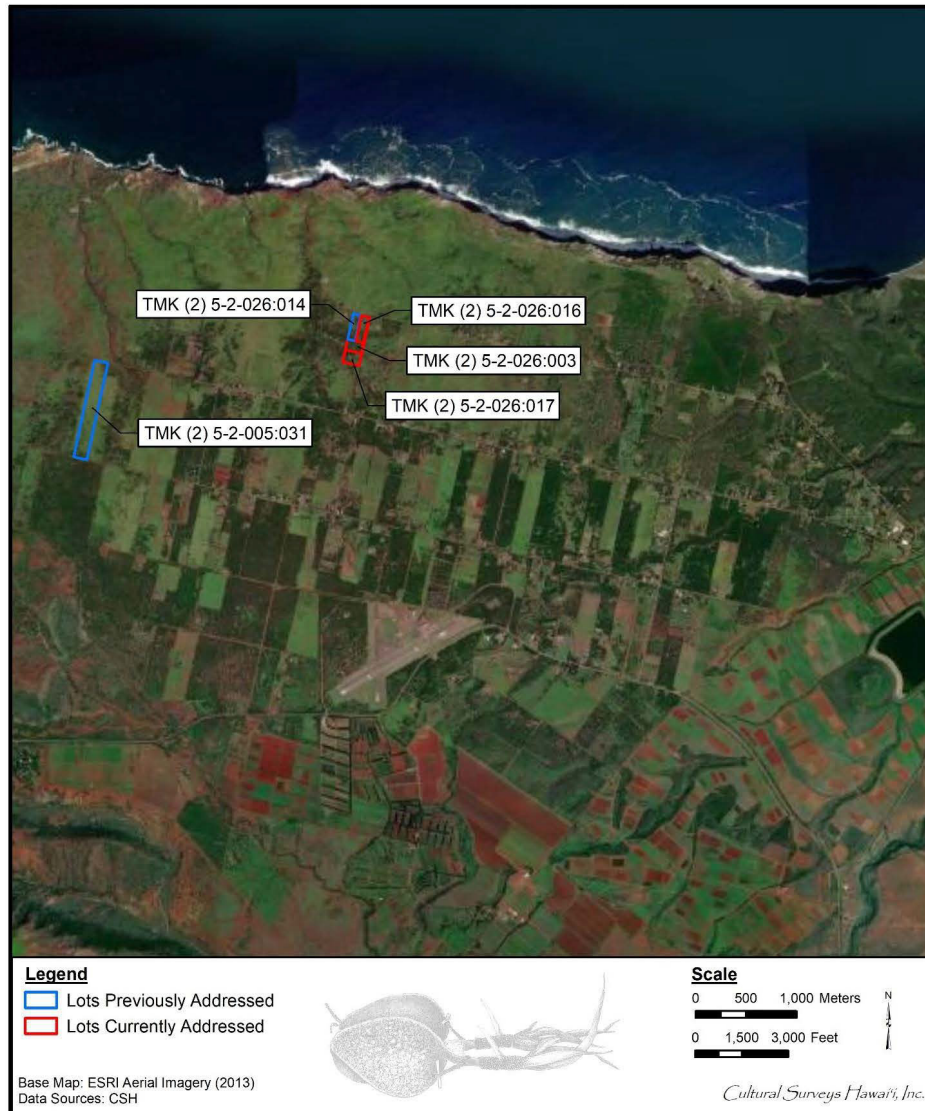




Figure 2. 2013 satellite photograph (ESRI 2013) showing the three lots presently addressed (in red) and the two lots previously addressed (in blue)

Figure 28. Community outreach letter page five



APPENDIX G.
LIMITED HAZARDOUS
MATERIAL SURVEY



Letter Report

Limited Hazardous Materials Survey



September 2023



PREPARED FOR:
State of Hawaii, Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, Hawaii 96707



UNDER SUBCONTRACT TO:
R.M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaii 96819



element environmental llc
environmental · engineering · water resources

PREPARED BY:
Element Environmental, LLC
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element environmental llc
environmental · engineering · water resources

September 21, 2023

Mr. Gordon Ring, P.E.
R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaii 96819

Subject: **Letter Report: Limited Hazardous Materials Survey
Old Residence and Greenhouse, 4011 Puu Kapele Avenue
Kaunakakai, Molokai, Hawaii**

Dear Mr. Ring:

Element Environmental, LLC (E2) is pleased to submit this Limited Hazardous Materials Survey letter report describing the targeted activities completed to evaluate the presence/absence of select hazardous materials within the old residence and greenhouse (to be demolished) located at 4011 Puu Kapele Avenue in Kaunakakai, Molokai, Hawaii (hereinafter referred to as *the project site*). E2 was subcontracted by R.M. Towill Corporation (RMTC), who is contracted by the State of Hawaii, Department of Hawaiian Home Lands (DHHL). E2 conducted fieldwork on June 29, 2023. Site access was granted by the DHHL through coordination with the RMTC.

Aside from real property assessment records for the new residence (to remain) and greenhouse, no pertinent documents and available previous survey reports were provided by the DHHL or RMTC. The greenhouse, primarily constructed with wood, was listed as being approximately 3,196 square feet (sf) in size with a 596-sf Storage and 84-sf Refrigerator (walk-in type).

The limited hazardous materials survey included sampling and testing of suspect asbestos-containing materials (ACM), arsenic in suspect canec panels, and lead in paint; and visual inventory for polychlorinated biphenyls (PCBs) and mercury in fluorescent light fixtures. The survey was limited to samples that could be collected from only readily observable and safely accessible materials. Invasive inspections, such as opening up wall cavities or the destruction of materials to access hidden materials, were not performed. E2 did not enter confined spaces, or any areas deemed to present a risk to health and safety. Only construction materials incorporated into the structure of the buildings were surveyed. Much of the roofing at the old residence had caved in, so areas under the unstable roofing were not accessed. The fieldwork did not include the inspection or inventory of any of the debris (e.g., machinery, tires, containers, etc.) or any soil sampling at the project site.

Sample data tables, location figures, and photographs are provided in Appendices A, B, and C, respectively. Analytical laboratory reports are provided in Appendix D.

1.0 ASBESTOS SURVEY

The limited asbestos survey was conducted in general accordance with U.S. Environmental Protection Agency (EPA) 40 Code of Federal Regulations (CFR) 763 Asbestos and the State of Hawaii, Department of Health (HDOH), Hawaii Administrative Rules (HAR) 11-501 Asbestos Requirements. The asbestos survey consisted of the collection of bulk samples from observed accessible suspect building components. HAS,

which are suspect ACM that appear uniform in color, texture, and function, were identified. The asbestos inspectors (Joshua Agpaoa [HIASB-4791] and Bernice Balete [HIASB-0449]) are certified in accordance with the inspector training requirements of the Asbestos Hazard Emergency Response Act (AHERA) and the HDOH Asbestos Inspector Certification Program HAR 11-504. E2 is registered with the HDOH, Asbestos Section, as an asbestos entity (#A-0120).

SGS Forensic Laboratories (SGS) in Carson, California, who analyzed the bulk samples, is registered with the HDOH, Asbestos Section, as an asbestos laboratory (#L-06-002). SGS is accredited by the American Industrial Hygiene Association (AIHA, #101629) under the Industrial Hygiene Laboratory Accreditation Program (IHLAP) for asbestos/fiber microscopy core, and the National Voluntary Laboratory Accreditation Program (NVLAP, #101459-1) for bulk asbestos fiber analysis. Samples were analyzed by polarized light microscopy (PLM) with dispersion staining, in accordance with EPA Method 600/R-93/116, Visual Area Estimation, for standard building materials.

Results were compared to the standard presence/absence criteria for asbestos, i.e., materials containing over 1% asbestos are considered ACM. No asbestos was detected in the samples collected from the following eight HAs.

- concrete floors and pads at the Old Residence and Greenhouse Storage
- concrete cover on the Septic Tank
- walls sealant at the Greenhouse Storage
- wall (and ceiling) insulation (labeled Thermal and Sound Control) in the walk-in Refrigerator at the Greenhouse Storage
- fiberboard walls (fallen) at the Old Residence
- asphalt shingle roofing/tar paper at the Old Residence and Greenhouse Shed

Inaccessible and/or hidden suspect materials not sampled during this field effort, or uncovered during the demolition work, should be assumed ACM and managed as such until sampled and proven otherwise. ACM that will be encountered and/or generated during future demolition at the project site will require proper handling, removal, and/or disposal by trained workers in accordance with the Occupational Safety and Health Administration (OSHA) Asbestos Standard 29 CFR 1926.1101, Hawaii Occupational Safety and Health (HIOSH) rules and regulations, EPA National Emission Standard for Asbestos 40 CFR 61-Subpart M, and 40 CFR 763 Asbestos. At least ten (10) working days before demolition or disturbance of friable asbestos above reportable quantities, a "Notification of Demolition and Renovation" must be sent to the HDOH. The proposed landfill should be consulted as to their requirements and procedures for the disposal of ACM at their facility.

2.0 LEAD PAINT SURVEY

The limited paint survey was conducted in general accordance with U.S. Department of Housing and Urban Development (HUD) Guidelines for the Evaluation and Control of lead-based paint (LBP) Hazards in Housing and HAR Chapter 11-41. The limited lead paint survey consisted of the collection of paint samples of building components with paint in poor condition only. Five paint chip samples were collected. The paint inspectors (Joshua Agpaoa [PB-1137] and Bernice Balete [PB-0449]) are certified by the HDOH Lead Activities Inspector Certification Program. E2 is registered with the HDOH as an LBP activities entity (#PBF-0032).

SGS Carson, California, who analyzed the paint chip samples, is accredited by the AIHA under the Environmental Laboratory Accreditation Program (ELAP, #1366). Samples were analyzed for total lead by Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP-AES), in accordance with EPA Methods 3050B/6010B.

Results were compared to standard presence/absence criteria for lead, i.e., paint containing 0.5% or more by weight or 5,000 milligrams per kilogram (mg/kg) or more of total lead were considered LBP. Paint with any detectable amount of lead is considered lead-containing paint (LCP). Both LBP and LCP are worker protection issues. The paint samples, collected from paint in poor condition, contained detectable concentrations of lead ranging from 0.009 to 2 mg/kg and are considered LCP. (For comparison, the U.S. Consumer Product Safety Improvement Act, 16 CFR 1303.101 allows no more than 100 mg/kg or 0.01% of total lead content in accessible parts of children's products.)

Lead paint/debris that will be encountered and/or generated at the project site will require proper handling, removal, and/or disposal in accordance with OSHA Lead in Construction Standard 29 CFR 1926.62 and HIOSH rules and regulations. Appropriate worker protection measures for lead should be taken during the demolition work to limit lead exposure of personnel and releases to the environment.

Metal debris (with intact paint) should be recycled when possible to decrease the amount of waste taken to the landfill and to possibly minimize the likelihood of the Toxicity Characteristic Leaching Procedure (TCLP) samples exceeding leaching criteria, 40 CFR 261 Identification and Listing of Hazardous Waste. A representative TCLP sample(s) of the remaining waste stream(s) will need to be collected and analyzed prior to landfill acceptance. The landfill should be consulted as to their requirements and procedures for the disposal of lead-contaminated waste and debris at their facility.

3.0 CANEC SURVEY

Canec is the common name for a fiberboard building material that was made from sugar cane bagasse, the residual fiber that remains after the juice has been extracted from the sugar cane. Canec contains arsenic in the range of approximately 1,000 to 4,000 mg/kg. Canec was not observed at the project site at the time of the field effort.

Inaccessible and/or hidden suspect arsenic-containing materials not sampled during this field effort should be presumed arsenic-containing until sampled and proven otherwise. Prior to demolition, arsenic-containing canec should be removed whole, segregated, wrapped in plastic or placed in plastic bags during transportation, and disposed of similarly to asbestos at a permitted landfill facility. Canec building materials are exempt from State laws requiring a hazardous waste determination to be made prior to disposal. As a result of this exemption, testing canec for arsenic content or leaching characteristics is not required by the State for disposal. The exemption applies whenever canec building materials are segregated from other building materials and disposed of separately. When canec is mixed with other building demolition waste, the combined waste could be subject to hazardous waste determination before disposal. The permitted landfill should be notified prior to disposal of canec materials so the canec can be appropriately segregated or handled in a manner to prevent landfill employees from being exposed during their operations.

4.0 FLUORESCENT LIGHT FIXTURE VISUAL INVENTORY

The Toxic Substances Control Act (TSCA) banned the production of PCBs in 1976 in the U.S. In fluorescent light fixtures, PCBs are usually found in ballasts either within small capacitors or in the form of a black tar like compound. The following guidelines are used to determine if the ballasts contain PCBs:

- All ballasts manufactured before July 1, 1978 are assumed to contain PCBs;
- Ballasts manufactured after July 1, 1978 that do not contain PCBs should be labeled “No PCBs” by the manufacturer in accordance with the federal regulations; and
- If a ballast is not labeled “No PCBs”, it is best to assume that it contains PCBs.

E2 conducted a visual inventory for suspect PCBs in fluorescent light fixture ballasts and the accompanying mercury-containing fluorescent lamps or compact fluorescent light (CFL) bulbs. Only one fluorescent light fixture was observed in the greenhouse; it contained a ballast that was labeled “No PCBs” and one green-banded lamp, which has lower amounts of mercury than regular fluorescent lamps.

If a ballast is not labeled “No PCBs”, it is assumed to contain PCBs. PCB debris encountered and/or generated at the project site will require proper handling, removal, and/or disposal in accordance with OSHA PCB Standards 29 CFR 1910.1000 and 40 CFR 761. Appropriate worker protection measures should be taken during the demolition work to limit PCBs and mercury exposure of personnel and releases to the environment. In general, materials containing 50 mg/kg or greater PCBs are regulated under TSCA.

5.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

The following provides a brief summary of findings and recommendations:

- **Asbestos** was not found in the samples collected during this field effort. No further action is required regarding asbestos unless suspect asbestos materials are uncovered during demolition. Suspect asbestos should be assumed ACM and managed as such until sampled and proven otherwise. Asbestos can be accepted at the Molokai Landfill by appointment only.
- **Lead** levels were very low, ranging from 0.009 to 2 mg/kg, and are considered LCP. Although the paint was peeling, the majority of building components were not painted. Painted metal components can be recycled at Molokai Metals Facility at Molokai Landfill. Otherwise, the demolition debris can be disposed of at Molokai Landfill after TCLP sampling and testing concentrations pass thresholds listed in 40 CFR 261.
- **Canec** was not found in the samples collected during this field effort. No further action is required regarding canec unless uncovered during demolition. Canec should be removed whole, segregated, wrapped in plastic or placed in plastic bags during transportation, and disposed of similarly to asbestos at the Molokai Landfill.
- **Light ballasts** without "No PCBs" labels were not observed during the field effort. Fluorescent lamps and CFLs should be triple bagged and taken to the Molokai Landfill.
- **Other debris:** Propane tanks, tires, auto batteries, and appliances/white goods can be taken to the Molokai Metals Facility at the Molokai Landfill. Used motor oil, paint, computers and TVs, and household batteries can be taken to Recycle Molokai at the Molokai Landfill.

APPENDIX A
Tables

Laboratory Asbestos Results

Homogeneous Area	Material Type	Material Description	Sample Location	Friable	Condition	Sample ID	Layer (% of Combined Sample)	Asbestos %
4011PKA-F-01	Miscellaneous	Concrete Floor/Pads	Greenhouse Storage	NF	Damaged	4011PKA-F-01A	100% Grey Cementitious Material with Debris	ND
						4011PKA-F-01B		
						4011PKA-F-01C		
4011PKA-F-02	Miscellaneous	Concrete Cover	Septic Tank	NF	Intact	4011PKA-F-02A	100% Grey Cementitious Material with Debris	ND
						4011PKA-F-02B		
						4011PKA-F-02C		
4011PKA-F-03	Miscellaneous	Concrete Floor/Pads	Residence	NF	Damaged	4011PKA-F-03A	100% Grey Cementitious Material with Debris	ND
						4011PKA-F-03B		
						4011PKA-F-03C		
4011PKA-W-01	Miscellaneous	Fiberboard Interior Wall	Residence	Friable	Significantly Damaged	4011PKA-W-01A	100% Tan Fibrous Material with Debris	ND
						4011PKA-W-01B		
						4011PKA-W-01C		
4011PKA-M-01	Miscellaneous	Wall Sealant (orange foam)	Greenhouse Storage	Friable	Significantly Damaged	4011PKA-M-01A	100% Yellow Foam with Debris	ND
						4011PKA-M-01B		
						4011PKA-M-01C		
4011PKA-M-02	TSI	Wall Insulation (plastic liner over white foam)	Greenhouse Storage	Friable	Significantly Damaged	4011PKA-M-02C	97% White Fibrous Material	ND
							3% Tan Fibrous Mat'l with Tar	ND
						4011PKA-M-02A	97% White Fibrous Material	ND
							3% Tan Fibrous Mat'l with Tar	ND
						4011PKA-M-02B	95% White Fibrous Material	ND
							5% Tan Fibrous Mat'l with Tar	ND
4011PKA-R-01	Miscellaneous	Asphalt Shingle Roofing/Tar Paper (gray)	Greenhouse Shed	NF	Intact	4011PKA-R-01A	100% Black Roof Shingle	ND
						4011PKA-R-01B	75% Black Roof Shingle	ND
							25% Black Felt	ND
						4011PKA-R-01C	93% Black Roof Shingle	ND
							7% Black Tar	ND
						4011PKA-R-02	Miscellaneous	Asphalt Shingle Roofing/Tar Paper (gray over tan)
30% Black Felt	ND							
4011PKA-R-02A	2% Black Tar	ND						
	70% Red-Brown Roof Shingle	ND						
4011PKA-R-02B	30% Black Tar	ND						
	70% Red-Brown Roof Shingle	ND						
						30% Black Tar	ND	

Residence & Greenhouse,
4011 Puu Kapele Avenue
Kaunakakai, Molokai, Hawaii

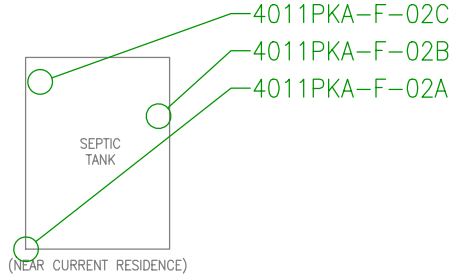
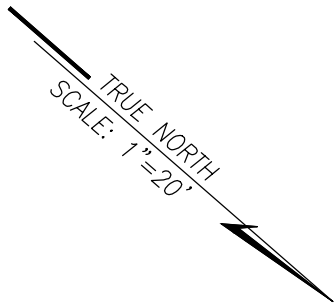
Laboratory Lead Results

Limited Hazardous Material Survey
Survey Date: June 29, 2023

Sample ID	Sample Location	Sample Description	Condition	Lead (wt%)
4011PKA-P01	Greenhouse	White wood window frame	Poor	ND (< 0.002)
4011PKA-P02	Greenhouse	White fiberboard sump/floor panel	Poor	2
4011PKA-P03	Greenhouse	White wood wall frame	Poor	0.0047
4011PKA-P04	Residence	Yellow wood exterior siding	Poor	0.0009
4011PKA-P05	Residence	Yellow wood exterior siding	Poor	0.002

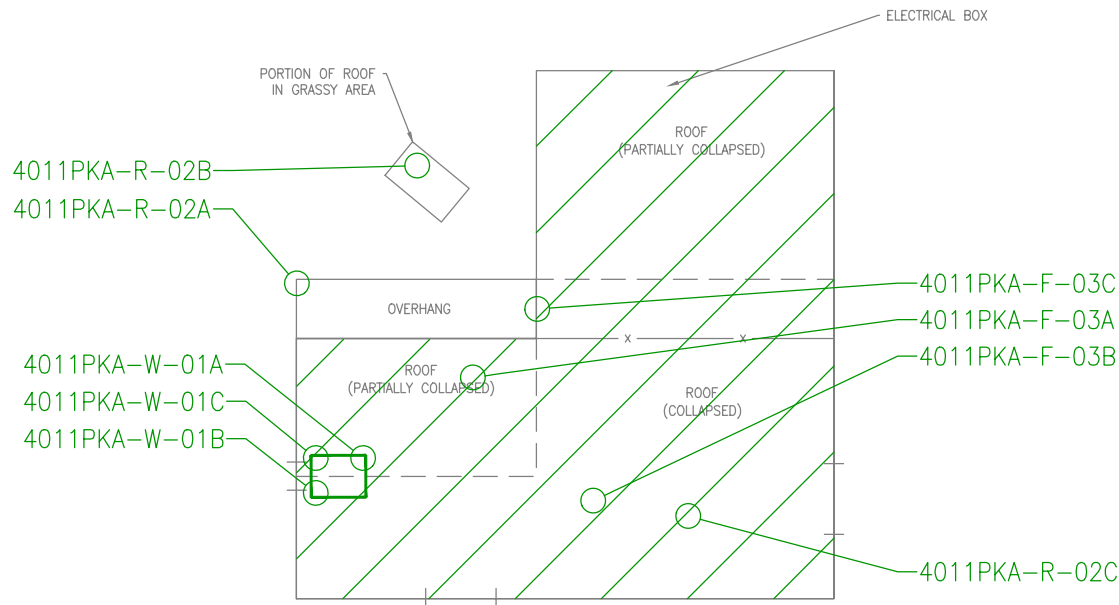
APPENDIX B

Figures



HOMOGENEOUS AREAS.

N/A	F-02	CONCRETE COVER FOR SEPTIC TANK
	F-03	CONCRETE FLOOR/PADS
	W-01	FIBERBOARD INTERIOR WALL (FALLEN ON FLOOR)
N/A	R-02	ASPHALTIC SHINGLE ROOFING AND TAR PAPER (GRAY OVER TAN)



SAMPLE LOCATIONS
 NEGATIVE ASBESTOS


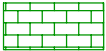
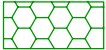


	SURVEY DATE: JUNE 29, 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY 4011 PUU KAPELE AVENUE KAUNAKAKAI, MOLOKAI, HAWAII
	FIGURE TITLE: RESIDENCE & SEPTIC TANK APPROXIMATE ASBESTOS BULK SAMPLE LOCATIONS & RESULTS	
		FIGURE NO.: 1-1

TRUE NORTH
SCALE: 1"=20'




HOMOGENEOUS AREAS.

	F-01	CONCRETE FLOOR/PADS
N/A	M-01	WALL SEALANT (ORANGE FOAM)
	M-02	WALL & CEILING INSULATION (PLASTIC LINER OVER WHITE FOAM)
	R-01	ASPHALTIC SHINGLE ROOFING AND TAR PAPER (GRAY)

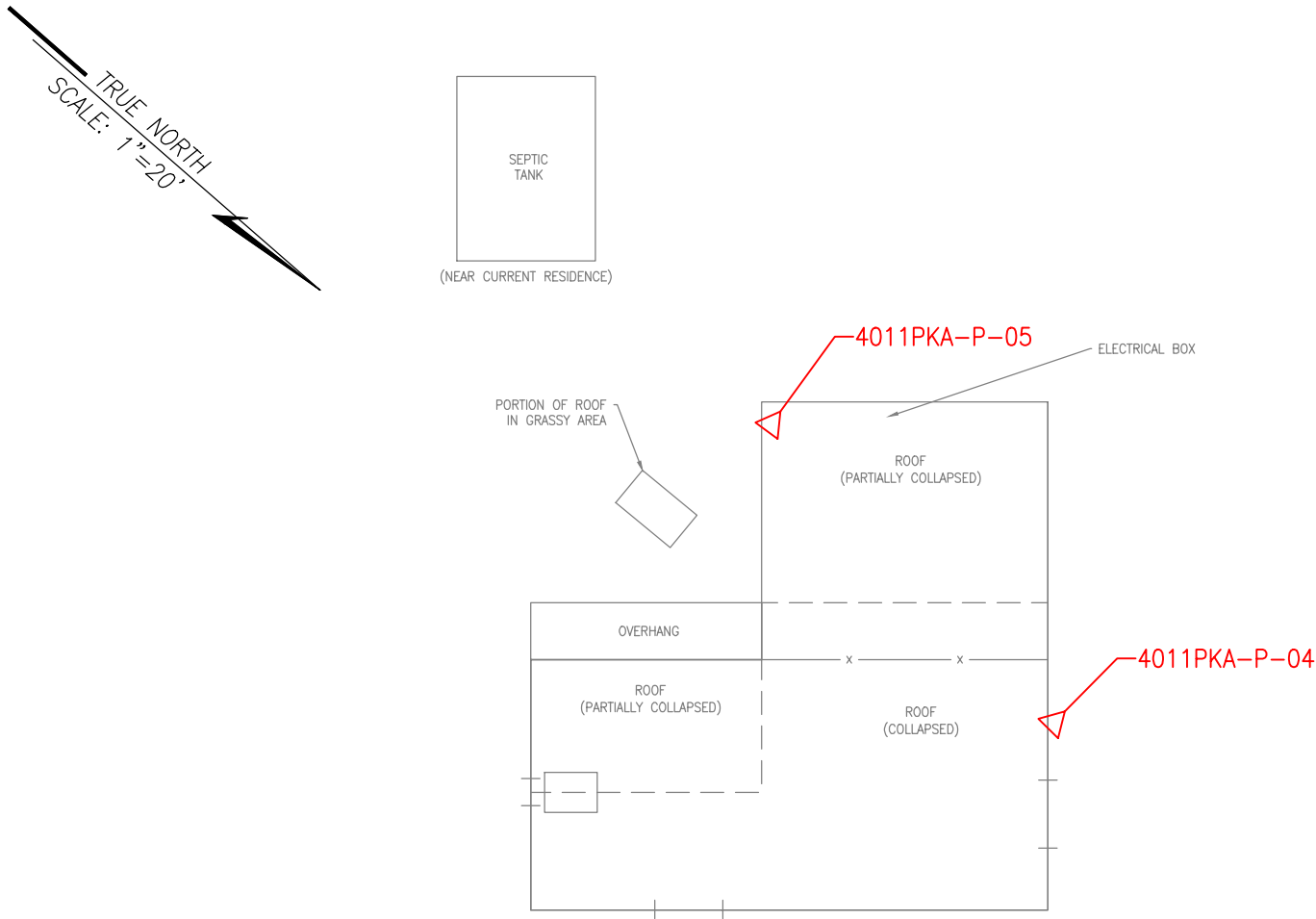
SAMPLE LOCATIONS
○ NEGATIVE ASBESTOS



	SURVEY DATE: JUNE 29, 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY 4011 PUU KAPELE AVENUE KAUNAKAKAI, MOLOKAI, HAWAII
	FIGURE TITLE: GREENHOUSE APPROXIMATE ASBESTOS BULK SAMPLE LOCATIONS & RESULTS	
		FIGURE NO.: 1-2

PAINT SAMPLES

- P-04 YELLOW WOOD EXTERIOR SIDING
- P-05 YELLOW WOOD EXTERIOR SIDING



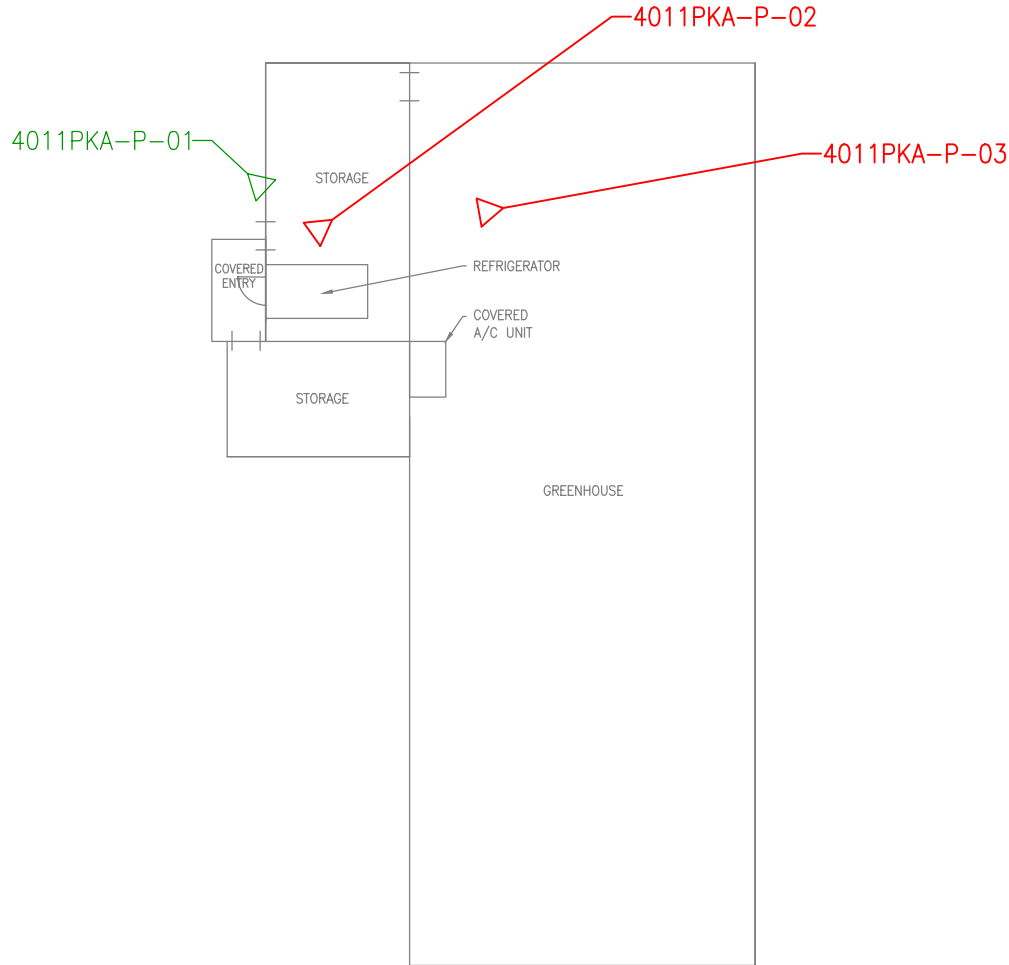
SAMPLE LOCATIONS

△ LEAD-CONTAINING PAINT



	SURVEY DATE: JUNE 29, 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY 4011 PUU KAPELE AVENUE KAUNAKAKAI, MOLOKAI, HAWAII
	FIGURE TITLE: RESIDENCE APPROXIMATE PAINT CHIP SAMPLE LOCATIONS & RESULTS	

TRUE NORTH
SCALE: 1"=20'



PAINT SAMPLES

- P-01 WHITE WOOD WINDOW FRAME
- P-02 WHITE FIBERBOARD PANEL SUMP/FLOOR PANEL
- P-03 WHITE WOOD WALL FRAME

SAMPLE LOCATIONS

- △ NON-LEAD
- △ LEAD-CONTAINING PAINT



	SURVEY DATE: JUNE 29, 2023	PROJECT TITLE: LIMITED HAZARDOUS MATERIALS SURVEY 4011 PUU KAPELE AVENUE KAUNAKAKAI, MOLOKAI, HAWAII
	FIGURE TITLE: GREENHOUSE APPROXIMATE PAINT CHIP SAMPLE LOCATIONS & RESULTS	
		FIGURE NO.: 1-4

APPENDIX C

Photographs

Greenhouse, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 1 - 4011PKA-F-01A (Close-up)
[JA\JA003521.JPG]



Photo 2 - 4011PKA-F-01A (Panoramic)
[JA\JA003523.JPG]



Photo 3 - 4011PKA-F-01B (Close-up)
[JA\JA003524.JPG]



Photo 4 - 4011PKA-F-01B (Panoramic)
[JA\JA003526.JPG]



Photo 5 - 4011PKA-F-01C (Close-up)
[JA\JA003529.JPG]



Photo 6 - 4011PKA-F-01C (Panoramic)
[JA\JA003530.JPG]

Septic Tank, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 7 - 4011PKA-F-02A (Close-up)
[JA\JA003552.JPG]



Photo 8 - 4011PKA-F-02A (Panoramic)
[JA\JA003553.JPG]



Photo 9 - 4011PKA-F-02B (Close-up)
[JA\JA003554.JPG]



Photo 10 - 4011PKA-F-02B (Panoramic)
[JA\JA003556.JPG]



Photo 11 - 4011PKA-F-02C (Close-up)
[JA\JA003558.JPG]



Photo 12 - 4011PKA-F-02C (Panoramic)
[JA\JA003559.JPG]

Residence, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 13 - 4011PKA-F-03A (Close-up)
[JA\JA003580.JPG]



Photo 14 - 4011PKA-F-03A (Panoramic)
[JA\JA003581.JPG]

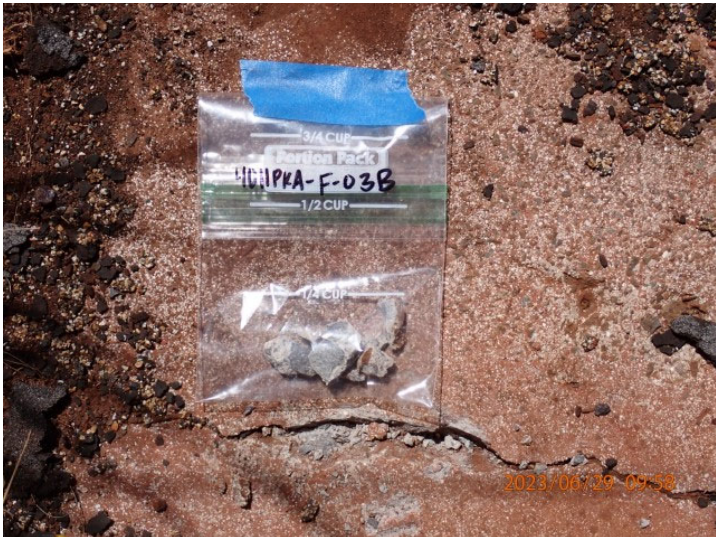


Photo 15 - 4011PKA-F-03B (Close-up)
[JA\JA003563.JPG]



Photo 16 - 4011PKA-F-03B (Panoramic)
[JA\JA003565.JPG]



Photo 17 - 4011PKA-F-03C (Close-up)
[JA\JA003567.JPG]



Photo 18 - 4011PKA-F-03C (Panoramic)
[JA\JA003569.JPG]

Residence, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 19 - 4011PKA-W-01A (Close-up)
[BB\DSCN9838.JPG]



Photo 20 - 4011PKA-W-01ABC (Panoramic)
[BB\DSCN9842.JPG]



Photo 21 - 4011PKA-W-01B (Panoramic)
[BB\DSCN9839.JPG]



Photo 22 - 4011PKA-W-01C (Close-up)
[BB\DSCN9840.JPG]

Greenhouse, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 23 - 4011PKA-M-01A (Close-up)
[BB\DSCN9805.JPG]



Photo 24 - 4011PKA-M-01A (Panoramic)
[BB\DSCN9808.JPG]



Photo 25 - 4011PKA-M-01B (Close-up)
[BB\DSCN9809.JPG]



Photo 26 - 4011PKA-M-01B (Panoramic)
[BB\DSCN9810.JPG]



Photo 27 - 4011PKA-M-01C (Close-up)
[BB\DSCN9812.JPG]



Photo 28 - 4011PKA-M-01C (Panoramic)
[BB\DSCN9813.JPG]

Greenhouse, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 29 - 4011PKA-M-02A (Close-up)
[JA\JA003538.JPG]



Photo 30 - 4011PKA-M-02ABC (Panoramic)
[JA\JA003541.JPG]



Photo 31 - 4011PKA-M-02B (Close-up)
[JA\JA003539.JPG]



Photo 32 - 4011PKA-M-02C (Close-up)
[JA\JA003540.JPG]

Greenhouse, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 33 - 4011PKA-R-01A (Close-up)
[JA\JA003545.JPG]



Photo 34 - 4011PKA-R-01ABC (Panoramic)
[JA\JA003551.JPG]



Photo 35 - 4011PKA-R-01B (Close-up)
[JA\JA003546.JPG]



Photo 36 - 4011PKA-R-01C (Close-up)
[JA\JA003547.JPG]

Residence, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 37 - 4011PKA-R-02A (Close-up)
[JA\JA003578.JPG]



Photo 38 - 4011PKA-R-02A (Panoramic)
[JA\JA003577.JPG]



Photo 39 - 4011PKA-R-02B (Close-up)
[JA\JA003572.JPG]



Photo 40 - 4011PKA-R-02B (Panoramic)
[JA\JA003573.JPG]



Photo 41 - 4011PKA-R-02C (Close-up)
[JA\JA003575.JPG]



Photo 42 - 4011PKA-R-02C (Panoramic)
[JA\JA003579.JPG]

Greenhouse, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 43 - 4011PKA-P-01 (Close-up)
[BB\DSCN9796.JPG]



Photo 44 - 4011PKA-P-01 (Panoramic)
[BB\DSCN9797.JPG]

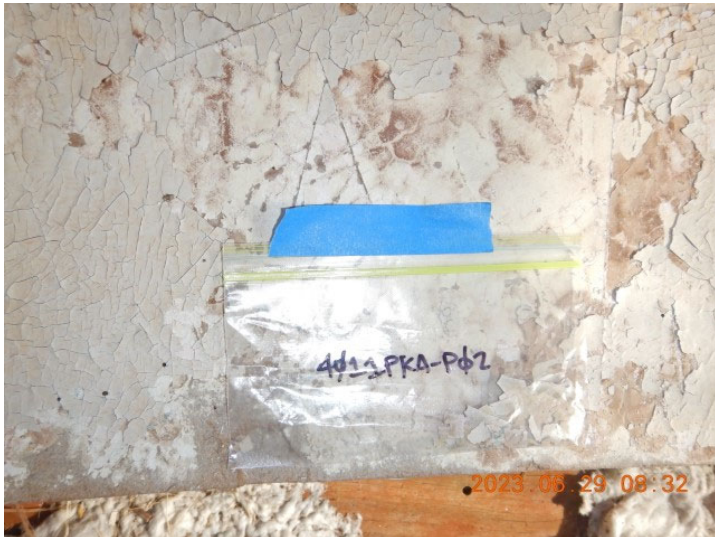


Photo 45 - 4011PKA-P-02 (Close-up)
[BB\DSCN9798.JPG]



Photo 46 - 4011PKA-P-02 (Panoramic)
[BB\DSCN9799.JPG]



Photo 47 - 4011PKA-P-03 (Close-up)
[BB\DSCN9802.JPG]



Photo 48 - 4011PKA-P-03 (Panoramic)
[BB\DSCN9803.JPG]

Residence, 4011 Puu Kapele Avenue,
Molokai, Hawaii (June 29, 2023)



Photo 49 - 4011PKA-P-04 (Close-up)
[BB\DSCN9834.JPG]



Photo 50 - 4011PKA-P-04 (Panoramic)
[BB\DSCN9835.JPG]



Photo 51 - 4011PKA-P-05 (Close-up)
[BB\DSCN9836.JPG]



Photo 52 - 4011PKA-P-05 (Panoramic)
[BB\DSCN9837.JPG]

APPENDIX D
Laboratory Reports

Bulk Asbestos Analysis

(EPA Method 40CFR, Part 763, Appendix E to Subpart E and EPA 600/R-93-116, Visual Area Estimation)
NVLAP Lab Code: 101459-1

Element Environmental, LLC
Bernice Baleté
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: B350008
Date Received: 07/17/23
Date Analyzed: 07/31/23
Date Printed: 07/31/23
First Reported: 07/31/23

Job ID/Site: 230035; 4011 Puu Kapele Avenue, Molokai, Hawaii

SGSFL Job ID: L1617
Total Samples Submitted: 24
Total Samples Analyzed: 24

Date(s) Collected: 06/29/2023

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
4011PKA-F-01A	51677663						
Layer: Grey Cementitious Material with Debris			ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
4011PKA-F-01B	51677664						
Layer: Grey Cementitious Material with Debris			ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
4011PKA-F-01C	51677665						
Layer: Grey Cementitious Material with Debris			ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
4011PKA-F-02A	51677666						
Layer: Grey Cementitious Material with Debris			ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
4011PKA-F-02B	51677667						
Layer: Grey Cementitious Material with Debris			ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
4011PKA-F-02C	51677668						
Layer: Grey Cementitious Material with Debris			ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
4011PKA-F-03A	51677669						
Layer: Grey Cementitious Material with Debris			ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					
4011PKA-F-03B	51677670						
Layer: Grey Cementitious Material with Debris			ND				
Total Composite Values of Fibrous Components: Cellulose (Trace)		Asbestos (ND)					

Client Name: Element Environmental, LLC

Report Number: B350008

Date Printed: 07/31/23

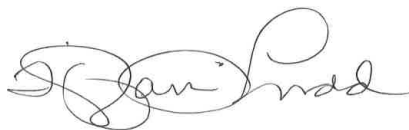
Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
4011PKA-F-03C	51677671						
Layer: Grey Cementitious Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
4011PKA-W-01A	51677672						
Layer: Tan Fibrous Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (95 %)							
4011PKA-W-01B	51677673						
Layer: Tan Fibrous Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (95 %)							
4011PKA-W-01C	51677674						
Layer: Tan Fibrous Material with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (95 %)							
4011PKA-M-01A	51677675						
Layer: Yellow Foam with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
4011PKA-M-01B	51677676						
Layer: Yellow Foam with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
4011PKA-M-01C	51677677						
Layer: Yellow Foam with Debris			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)							
4011PKA-M-02C	51677678						
Layer: White Fibrous Material			ND				
Layer: Tan Fibrous Mat'l with Tar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (3 %) Fibrous Glass (95 %)							
4011PKA-M-02A	51677679						
Layer: White Fibrous Material			ND				
Layer: Tan Fibrous Mat'l with Tar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (3 %) Fibrous Glass (95 %)							
4011PKA-M-02B	51677680						
Layer: White Fibrous Material			ND				
Layer: Tan Fibrous Mat'l with Tar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (3 %) Fibrous Glass (95 %)							

Client Name: Element Environmental, LLC

Report Number: B350008

Date Printed: 07/31/23

Sample ID	Lab Number	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer	Asbestos Type	Percent in Layer
4011PKA-R-01A	51677681						
Layer: Black Roof Shingle			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (Trace)	Fibrous Glass (45 %)						
4011PKA-R-01B	51677682						
Layer: Black Roof Shingle			ND				
Layer: Black Felt			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (15 %)	Fibrous Glass (30 %)						
4011PKA-R-01C	51677683						
Layer: Black Roof Shingle			ND				
Layer: Black Tar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (3 %)	Fibrous Glass (40 %)						
4011PKA-R-02C	51677684						
Layer: Red-Brown Roof Shingle			ND				
Layer: Black Felt			ND				
Layer: Black Tar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (40 %)							
4011PKA-R-02A	51677685						
Layer: Red-Brown Roof Shingle			ND				
Layer: Black Tar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (40 %)							
4011PKA-R-02B	51677686						
Layer: Red-Brown Roof Shingle			ND				
Layer: Black Tar			ND				
Total Composite Values of Fibrous Components:		Asbestos (ND)					
Cellulose (40 %)							



Tiffani Ludd, Laboratory Supervisor, Carson Laboratory

Note: Limit of Quantification ('LOQ') = 1%. 'Trace' denotes the presence of asbestos below the LOQ. 'ND' = 'None Detected'.

Analytical results and reports are generated by SGS Forensic Laboratories (SGSFL) at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by SGSFL to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by SGSFL. The client is solely responsible for the use and interpretation of test results and reports requested from SGSFL. This report must not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government. SGSFL is not able to assess the degree of hazard resulting from materials analyzed. SGS Forensic Laboratories reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified. All samples were received in acceptable condition unless otherwise noted.

Metals Analysis of Bulks - TTLC

(AIHA-LAP, LLC Accreditation, Lab ID #101629)

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

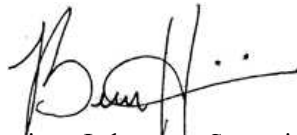
Client ID: L1617
Report Number: M253437
Date Received: 07/17/23
Date Analyzed: 09/05/23
Date Printed: 09/05/23
First Reported: 09/05/23

Job ID / Site: 230035; 4011 Puu Kapale Avenue, Molokai, Hawaii
Date(s) Collected: 06/26/2023

SGSFL Job ID: L1617
Total Samples Submitted: 1
Total Samples Analyzed: 1

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
4011PKA-W-01A	LM254874	As	< 4	mg/kg	4	EPA 3050B/6010B

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.



Beatriz Hinojosa, Laboratory Supervisor, Carson Laboratory

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Note* Sampling data used in this report was provided by the client as noted on the associated chain of custody form.



**FORENSIC
LABORATORIES**

Analysis Request Form (COC)

Client Name & Address: Element Environmental, LLC 98-030 Hekaha Street, Unit 9 Aiea, Hawaii 96701		Client No.: L1617	PO / Job#: 230035	Date: 6/29/2023
Contact: Bernice Balete		Phone: (808) 389-4792	Turn Around Time: Same Day / 1Day / 2Day / 3Day / 4Day / 5Day <input checked="" type="checkbox"/>	
E-mail: bbalete@e2hi.com		<input type="checkbox"/> PCM: <input type="checkbox"/> NIOSH 7400A / <input type="checkbox"/> NIOSH 7400B <input type="checkbox"/> Rotometer <input checked="" type="checkbox"/> PLM: <input checked="" type="checkbox"/> Standard / <input type="checkbox"/> Point Count 400 - 1000 / <input type="checkbox"/> CARB 435		
Site Name: 4011 Puu Kapele Avenue		<input type="checkbox"/> TEM Air: <input type="checkbox"/> AHERA / <input type="checkbox"/> Yamate2 / <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> TEM Bulk: <input type="checkbox"/> Quantitative / <input type="checkbox"/> Qualitative / <input type="checkbox"/> Chatfield <input type="checkbox"/> TEM Water: <input type="checkbox"/> Potable / <input type="checkbox"/> Non-Potable / <input type="checkbox"/> Weight % <input type="checkbox"/> TEM Dust: <input type="checkbox"/> D5755 (microvac) / <input type="checkbox"/> D6480 (wipe)		
Site Location: Molokai, Hawaii		<input type="checkbox"/> IAQ Particle Identification (PLM LAB) <input type="checkbox"/> PLM Opaques/Soot <input type="checkbox"/> Particle Identification (TEM LAB) <input type="checkbox"/> Special Project <input type="checkbox"/> Metals Analysis Matrix: Method: Analytes:		
Comments: See attached asbestos table for sample information.		<input type="checkbox"/> Silica in Air <input type="checkbox"/> w/Gravimetry <input type="checkbox"/> Quartz Only		

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: Josh Agpaoa, BB	Date/Time: 6/29/2023	Shipped Via: <input checked="" type="checkbox"/> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> US Mail <input type="checkbox"/> Courier <input type="checkbox"/> Drop Off <input type="checkbox"/> Other:
Relinquished By: Bernice Balete	Relinquished By:	Relinquished By:
Date / Time: 7/15/2023 @ 1400	Date / Time:	Date / Time:
Received By: <i>Wahine</i>	Received By:	Received By:
Date / Time: 7-17-23 9:30am	Date / Time:	Date / Time:
Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No

SGS Forensic Laboratories may subcontract client samples to other SGSFL locations to meet client requests.
 San Francisco Office: 3777 Depot Road, Suite 409, Hayward, CA 94545-2761 • Phone: 510/887-8828 • 800/827-3274
 Los Angeles Office: 20535 South Belshaw Ave., Carson, CA 90746 • Phone: 310/763-2374 • 888/813-9417
 Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, NV 89119 • Phone: 702/784-0040
 Chicago Office: 3020 Woodcreek Drive, Suite C, Downers Grove, IL 60515 • Phone: 341/465-2464

4011 Puu Kapele Avenue,
Molokai, Hawaii
(Asbestos Bulk Samples)

Sample ID	Sample Date	Sample Location	Sample Description
4011PKA-F-01A	6/29/2023	Greenhouse Storage	Concrete Floor/Pads
4011PKA-F-01B	6/29/2023	Greenhouse Storage	Concrete Floor/Pads
4011PKA-F-01C	6/29/2023	Greenhouse Storage	Concrete Floor/Pads
4011PKA-F-02A	6/29/2023	Septic Tank	Concrete Cover
4011PKA-F-02B	6/29/2023	Septic Tank	Concrete Cover
4011PKA-F-02C	6/29/2023	Septic Tank	Concrete Cover
4011PKA-F-03A	6/29/2023	Residence	Concrete Floor/Pads
4011PKA-F-03B	6/29/2023	Residence	Concrete Floor/Pads
4011PKA-F-03C	6/29/2023	Residence	Concrete Floor/Pads
4011PKA-W-01A	6/29/2023	Residence	Fiberboard Interior Wall
4011PKA-W-01B	6/29/2023	Residence	Fiberboard Interior Wall
4011PKA-W-01C	6/29/2023	Residence	Fiberboard Interior Wall
4011PKA-M-01A	6/29/2023	Greenhouse Storage	Wall Sealant (orange foam)
4011PKA-M-01B	6/29/2023	Greenhouse Storage	Wall Sealant (orange foam)
4011PKA-M-01C	6/29/2023	Greenhouse Storage	Wall Sealant (orange foam)
4011PKA-M-02C	6/29/2023	Greenhouse Storage	Wall Insulation (plastic liner over white foam)
4011PKA-M-02A	6/29/2023	Greenhouse Storage	Wall Insulation (plastic liner over white foam)
4011PKA-M-02B	6/29/2023	Greenhouse Storage	Wall Insulation (plastic liner over white foam)
4011PKA-R-01A	6/29/2023	Greenhouse Shed	Asphalt Shingle Roofing/Tar Paper (gray)
4011PKA-R-01B	6/29/2023	Greenhouse Shed	Asphalt Shingle Roofing/Tar Paper (gray)
4011PKA-R-01C	6/29/2023	Greenhouse Shed	Asphalt Shingle Roofing/Tar Paper (gray)
4011PKA-R-02C	6/29/2023	Residence	Asphalt Shingle Roofing/Tar Paper (gray over tan)
4011PKA-R-02A	6/29/2023	Residence	Asphalt Shingle Roofing/Tar Paper (gray over tan)
4011PKA-R-02B	6/29/2023	Residence	Asphalt Shingle Roofing/Tar Paper (gray over tan)

Metals Analysis of Paints

(AIHA-LAP, LLC Accreditation, Lab ID #101629)

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

Client ID: L1617
Report Number: M252611
Date Received: 07/17/23
Date Analyzed: 08/01/23
Date Printed: 08/02/23
First Reported: 08/02/23

Job ID / Site: 230035;4011 PUU Kapele Avenue; Molokai, Hawaii
Date(s) Collected: 06/29/2023

SGSFL Job ID: L1617
Total Samples Submitted: 5
Total Samples Analyzed: 5

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
4011PKA-P01	LM252894	Cd	< 0.002	wt%	0.002	EPA 3050B/6010B
		Cr	< 0.004	wt%	0.004	EPA 3050B/6010B
		Pb	< 0.002	wt%	0.002	EPA 3050B/6010B
Comment: Insufficient sample mass submitted for Hg analysis.						
4011PKA-P02	LM252895	Cd	< 0.04	wt%	0.04	EPA 3050B/6010B
		Cr	< 0.1	wt%	0.1	EPA 3050B/6010B
		Hg	N/A	N/A	N/A	
		Pb	2.0	wt%	0.05	EPA 3050B/6010B
4011PKA-P03	LM252896	Cd	< 0.0003	wt%	0.0003	EPA 3050B/6010B
		Cr	0.0033	wt%	0.0008	EPA 3050B/6010B
		Pb	0.0047	wt%	0.0004	EPA 3050B/6010B
Comment: Insufficient sample mass submitted for Hg analysis.						
4011PKA-P04	LM252897	Cd	< 0.0003	wt%	0.0003	EPA 3050B/6010B
		Cr	0.0009	wt%	0.0006	EPA 3050B/6010B
		Pb	0.0009	wt%	0.0003	EPA 3050B/6010B
Comment: Insufficient sample mass submitted for Hg analysis.						
4011PKA-P05	LM252898	Cd	< 0.0008	wt%	0.0008	EPA 3050B/6010B
		Cr	< 0.002	wt%	0.002	EPA 3050B/6010B
		Pb	0.002	wt%	0.001	EPA 3050B/6010B
Comment: Insufficient sample mass submitted for Hg analysis.						

Metals Analysis of Paints

(AIHA-LAP, LLC Accreditation, Lab ID #101629)

Element Environmental, LLC
Bernice Balete
98-030 Hekaha Street
Unit 9
Aiea, HI 96701

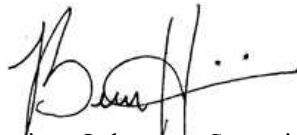
Client ID: L1617
Report Number: M252611
Date Received: 07/17/23
Date Analyzed: 08/01/23
Date Printed: 08/02/23
First Reported: 08/02/23

Job ID / Site: 230035;4011 PUU Kapele Avenue; Molokai, Hawaii
Date(s) Collected: 06/29/2023

SGSFL Job ID: L1617
Total Samples Submitted: 5
Total Samples Analyzed: 5

Sample Number	Lab Number	Analyte	Result	Result Units	Reporting Limit*	Method Reference
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* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.



Beatriz Hinojosa, Laboratory Supervisor, Carson Laboratory

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Note* Sampling data used in this report was provided by the client as noted on the associated chain of custody form.



Client Name & Address: Element Environmental, LLC 98-030 Hekaha Street, Unit 9 Aiea, Hawaii 96701		Client No.: L1617	PO / Job#: 230035	Date: 6/29/2023
Contact: Bernice Balete		Phone: (808) 389-4792	Turn Around Time: Same Day / 1Day / 2Day / 3Day / 4Day / 5Day <input checked="" type="checkbox"/>	
E-mail: bbalete@e2hi.com		<input type="checkbox"/> PCM: <input type="checkbox"/> NIOSH 7400A / <input type="checkbox"/> NIOSH 7400B <input type="checkbox"/> Rotometer <input type="checkbox"/> PLM: <input type="checkbox"/> Standard / <input type="checkbox"/> Point Count 400-1000 / <input type="checkbox"/> CARB 435		
Site Name: 4011 Puu Kapele Avenue		<input type="checkbox"/> TEM Air: <input type="checkbox"/> AHERA / <input type="checkbox"/> Yamate2 / <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> TEM Bulk: <input type="checkbox"/> Quantitative / <input type="checkbox"/> Qualitative / <input type="checkbox"/> Chatfield <input type="checkbox"/> TEM Water: <input type="checkbox"/> Potable / <input type="checkbox"/> Non-Potable / <input type="checkbox"/> Weight % <input type="checkbox"/> TEM Microvac: <input type="checkbox"/> Qual / <input type="checkbox"/> D5755(str/area) / <input type="checkbox"/> D5756(str/mass)		
Site Location: Molokai, Hawaii		<input type="checkbox"/> IAQ Particle Identification (PLM LAB) <input type="checkbox"/> PLM Opaques/Soot <input type="checkbox"/> Particle Identification (TEM LAB) <input type="checkbox"/> Special Project <input checked="" type="checkbox"/> Metals Analysis Matrix: Paint Chip Method: EPA 3050B/7000B Analytes: Lead, Cadmium, Chromium, Mercury		

Comments: Page 1 of 1 Silica in Air w/Gravimetry Quartz Only

Sample ID	Date / Time	Sample Location / Description	FOR AIR SAMPLES ONLY				Sample Area / Air Volume
			Type	Time On/Off	Avg LPM	Total Time	
4011PKA-P01	6/29/23	Greenhouse / White wood window frame	A P C				
4011PKA-P02	6/29/23	Greenhouse / White fiberboard sump/floor panel	A P C				
4011PKA-P03	6/29/23	Greenhouse / White wood wall frame	A P C				
4011PKA-P04	6/29/23	Residence / Yellow wood exterior siding	A P C				
4011PKA-P05	6/29/23	Residence / Yellow wood exterior siding	A P C				
			A P C				
			A P C				
			A P C				
			A P C				

Sampled By: BB, Josh Agpaoa Date/Time: 6/29/2023 Shipped Via: Fed Ex UPS US Mail Courier Drop Off Other:

Relinquished By: Bernice Balete <i>bbalete</i>	Relinquished By:	Relinquished By:
Date / Time: 7/15/2023 @ 1400	Date / Time:	Date / Time:
Received By: <i>Jasmine Co Niceran</i>	Received By:	Received By:
Date / Time: 7/17/23 01:30am <i>PK</i>	Date / Time:	Date / Time:
Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No	Condition Acceptable? <input type="checkbox"/> Yes <input type="checkbox"/> No



APPENDIX H-1.

**ANALYSIS OF PROJECT
APPLICABILITY TO HAWAI'I
STATE PLAN**



APPENDIX H-1

Analysis of Project Applicability to Hawai'i State Plan

Chapter 226, HRS, also known as the Hawai'i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The Plan consists of three (3) parts. Part I includes the Overall Theme, Goals, Objectives, and Policies; Part II includes Planning, Coordination, and Implementation; and Part III establishes Priority Guidelines. Inasmuch as Part II of the State Plan covers its administrative structure and implementation process, discussion of the proposed project's applicability to Part II is not appropriate. Below is an analysis of the project's applicability to Part I and Part III of the Hawai'i State Plan.

The methodology for the analysis involves examining the project's applicability to the Hawai'i State Plan's goals, objectives, and policies. "Applicability" refers to a project's need, purpose and effects, and how these advance or promote a particular set of goals, objectives and priority guidelines. In assessing the relationship between a proposed action and the Hawai'i State Plan, an action may be categorized in one of the following groups:

1. **Directly applicable:** the action and its potential effects directly advance or promote the objective, policy or priority guideline.

Example: A county project to develop a new water source and related transmission facilities would be directly applicable to the objectives and policies for Facility Systems-Water (HRS 226-16) which states: *(5) Support water supply services to areas experiencing critical water problems.*

2. **Indirectly applicable:** the action and its potential effects indirectly support or advance the objective, policy or priority guideline.

Example: The county water source project cited above supports other related objectives and policies for the economy (HRS 226-6, General), which, by example, states: *(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.* In this case, the principle purpose of the project was not to create new construction activities, but nonetheless, supports this policy by creating temporary construction activity during the implementation of the project. In this instance, the proposed action may be deemed to be indirectly applicable to the objective and policy of the Hawai'i State Plan.

3. **Not applicable:** the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Hawai'i State Plan.

Example: That same county water source improvement project referenced above, may not have direct or indirect linkage to objectives and policies for the economy-Federal

Expenditures (HRS 226-9) which states: (1) *Encourage the sustained flow of federal expenditures in Hawaii that generates long-term government civilian employment.* From the standpoint of the agency proposing the water system improvement, and assuming no Federal Funding for the project, there is an unlikely intent that the proposed water source project would be connected to or reliant upon the foregoing policy. Hence, from the standpoint of judiciously applied policy analysis, the proposed action would be considered not applicable to the policy.

In general, a proposed action’s applicability to the objectives, policies and priority guidelines of the Hawai’i State Plan is judged on the basis of the action’s direct or indirect relationship to the respective objectives, policies and priority directions. It is recognized that the categorization of “applicability” is subject to interpretation and should be appropriately considered in the context of local and regional conditions.

Hawai’i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
HRS 226-1: Findings and Purpose			
HRS 226-2: Definitions			
HRS 226-3: Overall Theme			
HRS 226-4: State Goals. In order to ensure, for the present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self determination, it shall be the goal of the State to achieve: (1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii’s present and future generations. (2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people. (3) Physical, social, and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring, and of participation in community life.			
Analysis: The proposed project provides additional agricultural homestead opportunities for Department of Hawaiian Home Lands (DHHL) beneficiaries while maintaining the rural character of Moloka’i.			
Chapter 226-5 Objective and Policies for Population			
Objective:			
(a) It shall be the objective in planning for the State’s population to guide population growth to be consistent with the achievement of physical, economic and social objectives contained in this chapter.	X		
Policies:			
(b) To achieve the population objective, it shall be the policy of this State to:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii’s people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.	X		
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.	X		

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.	X		
(4) Encourage research activities and public awareness programs to foster an understanding of Hawaii's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaii's population.			X
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.			X
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			X
(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.		X	
Analysis: The proposed project directly supports the objectives and policies for population as it will be implemented in an area suitable for subsistence agricultural production, thus providing opportunities for DHHL beneficiaries to pursue their physical, social and economic aspirations.			
Chapter 226-6 Objectives and policies for the economy -- in general			
Objectives:			
(a) Planning for the State's economy in general shall be directed toward achievement of the following objectives:			
(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.	X		
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.			X
Policies:			
(b) To achieve general economic objectives, it shall be the policy of this State to:			
(1) Promote and encourage entrepreneurship within Hawaii by residents and nonresidents of the State.			X
(2) Expand Hawaii's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			X
(3) Promote Hawaii as an attractive market for environmentally and socially sound investment activities that benefit Hawaii's people.			X
(4) Transform and maintain Hawaii as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			X
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaii.			X
(6) Seek broader outlets for new or expanded Hawaii business investments.			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(7) Expand existing markets and penetrate new markets for Hawaii's products and services.			X
(8) Assure that the basic economic needs of Hawaii's people are maintained in the event of disruptions in overseas transportation.			X
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.	X		
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawaii's small scale producers, manufacturers, and distributors.			X
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.			X
(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawaii.			X
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii's employment and economic growth opportunities.			X
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			X
(15) Maintain acceptable working conditions and standards for Hawaii's workers.			X
(16) Provide equal employment opportunities for all segments of Hawaii's population through affirmative action and nondiscrimination measures.			X
(17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X
(18) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy, particularly with respect to emerging industries in science and technology.			X
(19) Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.			X
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new or innovative potential growth industries in particular.			X
(21) Foster a business climate in Hawaii—including attitudes, tax and regulatory policies, and financial and technical assistance programs—that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.			X
Analysis: The proposed action directly supports the general objectives and policies for the economy by supporting design and construction activity which contributes to increased employment opportunities, job choices, and living standards. Businesses positively affected by the project are those which support design and construction such as engineers and material suppliers.			
Chapter 226-7 Objectives and policies for the economy – – agriculture.			
Objectives:			
(a) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:			

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(1) Viability of Hawaii's sugar and pineapple industries.			X
(2) Growth and development of diversified agriculture throughout the State.	X		
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.	X		
Policies:			
(b) To achieve the agriculture objectives, it shall be the policy of this State to:			
(1) Establish a clear direction for Hawaii's agriculture through stakeholder commitment and advocacy.	X		
(2) Encourage agriculture by making the best use of natural resources.	X		
(3) Provide the governor and the legislature with information and options needed for prudent decision-making for the development of agriculture.			X
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			X
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawaii's economy.			X
(6) Seek the enactment and retention of federal and state legislation that benefits Hawaii's agricultural industries.			X
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawaii's food producers and consumers in the State, nation, and world.			X
(8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency, and enhance the development of new products and agricultural by-products.			X
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			X
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.	X		
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.	X		
(12) In addition to the State's priority on food, expand Hawaii's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.	X		
(13) Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency, including the increased purchase and use of Hawaii-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104.			X
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			X
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			X
(16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.	X		
(17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i'a, māla, and irrigated lo'i, and growth of traditional Hawaiian crops, such as kalo, 'uala, and 'ulu.	X		

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(18) Increase and develop small-scale farms.			X
Analysis: The proposed project directly supports the objectives and policies for the agricultural economy through the subdivision of land for subsistent agricultural use. The proposed action also includes the construction of infrastructure to access irrigation water, allowing for the land's agricultural use.			
Chapter 226-8 Objective and policies for the economy – – visitor industry.			
Objective:			
(a) Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy.			X
Policies:			
(b) To achieve the visitor industry objective, it shall be the policy of this State to:			
(1) Support and assist in the promotion of Hawaii's visitor attractions and facilities.			X
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.			X
(3) Improve the quality of existing visitor destination areas by utilizing Hawaii's strengths in science and technology.			X
(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.			X
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people.			X
(6) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry.			X
(7) Foster a recognition of the contribution of the visitor industry to Hawaii's economy and the need to perpetuate the aloha spirit.			X
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaii's cultures and values.			X
Analysis: The proposed action is neither directly or indirectly applicable to the objective and policies for the visitor industry. The proposed action has no implications for enhancement or growth of the visitor industry.			
Chapter 226-9 Objective and policies for the economy – – federal expenditures.			
Objective:			
(a) Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawaii's economy.			X
Policies:			
(b) To achieve the federal expenditures objective, it shall be the policy of this State to:			
(1) Encourage the sustained flow of federal expenditures in Hawaii that generates long-term government civilian employment;			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(2) Promote Hawaii's supportive role in national defense, in a manner consistent with Hawaii's social, environmental, and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development, and related dual-use technology sectors in Hawaii's economy;			X
(3) Promote the development of federally supported activities in Hawaii that respect statewide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawaii's environment;			X
(4) Increase opportunities for entry and advancement of Hawaii's people into federal government service;			X
(5) Promote federal use of local commodities, services, and facilities available in Hawaii;			X
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaii; and			X
(7) Pursue the return of federally controlled lands in Hawaii that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			X
Analysis: The proposed action is not reliant on federal funding, and does not directly or indirectly advance the objective and policies for strengthening or increasing federal expenditures for the betterment of Hawai'i's economy.			
Chapter 226-10 Objective and policies for the economy – – potential growth and innovative activities.			
Objective:			
(a) Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawaii's economic base.	X		
Policies:			
(b) To achieve the potential growth and innovative activity objective, it shall be the policy of this State to:			
(1) Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawaii's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors;	X		
(2) Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawaii through the export of services or products or substitution of imported services or products;			X
(3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements;			X
(4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity;			X

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(5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus;			X
(6) Expand Hawaii's capacity to attract and service international programs and activities that generate employment for Hawaii's people;			X
(7) Enhance and promote Hawaii's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts;			X
(8) Accelerate research and development of new energy-related industries based on wind, solar, ocean, underground resources, and solid waste;			X
(9) Promote Hawaii's geographic, environmental, social, and technological advantages to attract new or innovative economic activities into the State;			X
(10) Provide public incentives and encourage private initiative to attract new or innovative industries that best support Hawaii's social, economic, physical, and environmental objectives;			X
(11) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research;			X
(12) Develop, promote, and support research and educational and training programs that will enhance Hawaii's ability to attract and develop economic activities of benefit to Hawaii;			X
(13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawaii;			X
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawaii's social, economic, physical, and environmental objectives;			X
(15) Increase research and development of businesses and services in the telecommunications and information industries;			X
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation; and			X
(17) Recognize and promote health care and health care information technology as growth industries.			X
Analysis: The proposed project is directly applicable to the objective and policy for growth and innovative activities through investment and encouragement of small-scale agricultural activity.			
Chapter 226-10.5 Objectives and policies for the economy -- information industry.			
Objective:			
(a) Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawaii as a leader in broadband and wireless communications and applications in the Pacific Region.			X
Policies:			
(b) To achieve the information industry objective, it shall be the policy of this State to:			
(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawaii and between Hawaii and the world, and make high speed communication available to all residents and businesses in Hawaii;			X

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(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawaii to accommodate future growth and innovation in Hawaii's economy;			X
(3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawaii;			X
(4) Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawaii, using technology to communicate with their headquarters, offices, or customers located out-of-state;			X
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry;			X
(6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people;			X
(7) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the information industry;			X
(8) Foster a recognition of the contribution of the information industry to Hawaii's economy; and			X
(9) Assist in the promotion of Hawaii as a broker, creator, and processor of information in the Pacific.			X
Analysis: The proposed action does not directly or indirectly affect Hawai'i's capacity to be a leader in the broadband wireless communication industries, nor does it affect innovative industries from advancing Hawai'i's economic position or influence in the Pacific Region.			
Chapter 226-11 Objectives and policies for the physical environment – – land based, shoreline, and marine resources.			
Objectives:			
(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:			
(1) Prudent use of Hawaii's land-based, shoreline, and marine resources.		X	
(2) Effective protection of Hawaii's unique and fragile environmental resources.			X
Policies:			
(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:			
(1) Exercise an overall conservation ethic in the use of Hawaii's natural resources.		X	
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.		X	
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.		X	
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.			X
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.			X

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(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.			X
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			X
(8) Pursue compatible relationships among activities, facilities, and natural resources.		X	
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.			X
Analysis: The proposed project will utilize Best Management Practices (BMPs) to ensure that natural resources such as the coastal environment is not impacted by construction activities. The use of BMPs also ensures compatibility between land-based and water-based functions, resources, and ecological systems.			
Chapter 226-12 Objective and policies for the physical environment – scenic, natural beauty, and historic resources.			
Objective:			
(a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.		X	
Policies:			
(b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:			
(1) Promote the preservation and restoration of significant natural and historic resources.			X
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.			X
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.			X
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.			X
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.		X	
Analysis: The proposed project indirectly supports the objective and policy for the enhancement of Hawai'i's natural beauty through the encouragement of agricultural development in an area near lands of similar use.			
Chapter 226-13 Objectives and policies for the physical environment – land, air, and water quality.			
Objectives:			
(a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives.			
(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.		X	
(2) Greater public awareness and appreciation of Hawaii's environmental resources.			X
Policies:			
(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:			

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(1) Foster educational activities that promote a better understanding of Hawaii's limited environmental resources.			X
(2) Promote the proper management of Hawaii's land and water resources.		X	
(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.		X	
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.		X	
(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.		X	
(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.			X
(7) Encourage urban developments in close proximity to existing services and facilities.			X
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawaii's people, their cultures and visitors.			X
Analysis: The proposed project indirectly advances the pursuit of improved land, air, and water quality through the use of construction BMPs to manage and control erosion to minimize downstream water quality impacts. Work on the project is not anticipated to be affected by natural hazards, and industry standard design and construction practices will be employed for the project.			
Chapter 226-14 Objective and policies for facility systems -- in general.			
Objective:			
(a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, sustainable development, climate change adaptation, sea level rise adaptation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.	X		
Policies:			
(b) To achieve the general facility systems objective, it shall be the policy of this State to:			
(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.		X	
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.		X	
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.		X	
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.			X
(5) Identify existing and planned state facilities that are vulnerable to sea level rise, flooding impacts, and natural hazards.			X
(6) Assess a range of options to mitigate the impacts of sea level rise to existing and planned state facilities.			X

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Analysis: The proposed action is directly applicable to the objective and policies for facility systems as it involves the construction of driveways to access the subdivided lots and will connect the lots to domestic and irrigation water.			
Chapter 226-15 Objectives and policies for facility systems – – solid and liquid waste.			
Objectives:			
(a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:			
(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.			X
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.			X
Policies:			
(b) To achieve solid and liquid waste objectives, it shall be the policy of this State to:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.			X
(2) Promote reuse and recycling to reduce solid and liquid wastes and employ a conservation ethic.			X
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			X
Analysis: The proposed project is neither directly or indirectly applicable to the objectives and policies for solid and liquid waste facility systems and will not affect the provision of sewerage facilities or the treatment of solid and liquid waste.			
Chapter 226-16 Objective and policies for facility systems – – water.			
Objective:			
(a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.	X		
Policies:			
(b) To achieve the facility systems water objective, it shall be the policy of this State to:			
(1) Coordinate development of land use activities with existing and potential water supply.	X		
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			X
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.			X
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.			X
(5) Support water supply services to areas experiencing critical water problems.			X
(6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.			X

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Analysis: The proposed project directly supports the objective and policies for the provision of domestic and agricultural water by connecting the affected lots to the DHHL Ho'olehua Water System and the Moloka'i Irrigation System.			
Chapter 226-17 Objectives and policies for facility systems – – transportation.			
Objectives:			
(a) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:			
(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.			X
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			X
Policies:			
(b) To achieve the transportation objectives, it shall be the policy of this State to:			
(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;			X
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;			X
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;			X
(4) Provide for improved accessibility to shipping, docking, and storage facilities;			X
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;			X
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;			X
(7) Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;			X
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			X
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			X
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment;			X
(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;			X
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and			X
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.			X
Analysis: The proposed project does not directly or indirectly support the objectives and policy for transportation systems.			
Chapter 226-18 Objectives and policies for facility systems – – energy.			
Objectives:			
(a) Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:			

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(1) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;			X
(2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawaii's dependence on imported fuels for electrical generation and ground transportation.			X
(3) Greater diversification of energy generation in the face of threats to Hawaii's energy supplies and systems;			X
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and			X
(5) Utility models that make the social and financial interests of Hawaii's utility customers a priority.			X
Policies:			
(b) To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonable prices, and dependable energy services to accommodate demand.			X
(c) To further achieve the energy objectives, it shall be the policy of this State to:			
(1) Support research and development as well as promote the use of renewable energy sources;			X
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;			X
(3) Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits;			X
(4) Promote all cost-effective conservation of power and fuel supplies through measures, including:			X
(A) Development of cost-effective demand-side management programs;			X
(B) Education;			X
(C) Adoption of energy-efficient practices and technologies; and			X
(D) Increasing energy efficiency and decreasing energy use in public infrastructure			X
(5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply option and maximizes efficient technologies; and			X
(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies;			X
(7) Promote alternate fuels and transportation energy efficiency;			X
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications;			X
(9) Support actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives;			X
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			X

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(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources; and			X
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawaii.			X
Analysis: The proposed project is neither directly or indirectly applicable to the objectives and policies for energy facility systems and will not be an energy generator. In addition, the proposed action does not lessen dependence on fossil fuels and does not further research for alternative energy sources.			
Chapter 226-18.5 Objectives and policies for facility systems -- telecommunications.			
Objectives:			
(a) Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.			X
Policies:			
(b) To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand.			X
(c) To further achieve the telecommunications objective, it shall be the policy of this State to:			
(1) Facilitate research and development of telecommunications systems and resources;			X
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;			X
(3) Promote efficient management and use of existing telecommunications systems and services; and			X
(4) Facilitate the development of education and training of telecommunications personnel.			X
Analysis: The proposed action does not directly or indirectly affect telecommunications systems dependability, efficiency, and cost parameters. In particular, the project does not promote research and development of telecommunications systems and resources and does not advance efficient management and use of existing telecommunications systems and services.			
Chapter 226-19 Objectives and policies for socio-cultural advancement -- housing.			
Objectives:			
(a) Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:	X		
(1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more rental and for sale affordable housing is made available to very low-, low-, lower-, moderate-, and above moderate-income segments of Hawaii's population.	X		

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(2) The orderly development of residential areas sensitive to community needs and other land uses.			X
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.			X
Policies:			
(b) To achieve the housing objectives, it shall be the policy of this State to:			
(1) Effectively accommodate the housing needs of Hawaii's people.	X		
(2) Stimulate and promote feasible approaches that increase affordable rental and for sale housing choices for extremely low-, very low-, lower moderate-, and above moderate-income households.	X		
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			X
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing rental and for sale housing units and residential areas.			X
(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.			X
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			X
(7) Foster a variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods that reflect the culture and values of the community.	X		
(8) Promote research and development of methods to reduce the cost of housing construction in Hawaii.			X
Analysis: The proposed project is directly applicable to the objectives and policies related to housing as it provides additional homestead opportunities to DHHL beneficiaries. Although the project does not provide physical housing, DHHL beneficiaries are able to reside on the subdivided lots, indirectly supporting the objective and policies for increased housing opportunities.			
Chapter 226-20 Objectives and policies for socio-cultural advancement -- health.			
Objectives:			
(a) Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:			
(1) Fulfillment of basic individual health needs of the general public.			X
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.			X
(3) Elimination of health disparities by identifying and addressing social determinants of health.			X
Policies:			
(b) To achieve the health objectives, it shall be the policy of this State to:			
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.			X
(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.			X
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			X

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(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			X
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.			X
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.			X
(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.			X
Analysis: The proposed action does not directly or indirectly affect the objectives and policies for health. The proposed action does not affect individual health needs, sanitation and health conditions, and health disparities.			
Chapter 226-21 Objectives and policies for socio-cultural advancement – – education.			
Objective:			
(a) Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.		X	
Policies:			
(b) To achieve the education objective, it shall be the policy of this State to:			
(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.		X	
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.		X	
(3) Provide appropriate educational opportunities for groups with special needs.			X
(4) Promote educational programs which enhance understanding of Hawaii's cultural heritage.		X	
(5) Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.			X
(6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.			X
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			X
(8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.			X
(9) Support research programs and activities that enhance the education programs of the State.			X

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Analysis: The proposed action indirectly supports the objectives and policies for education. The DHHL offers educational programs and assistance to DHHL agricultural lessees, which indirectly promotes policies for educational programs for Native Hawaiian beneficiaries.			
Chapter 226-22 Objective and policies for socio-cultural advancement – – social services.			
Objective:			
(a) Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.	X		
Policies:			
(a) To achieve the social service objective, it shall be the policy of the State to:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.	X		
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			X
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaii's communities.			X
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			X
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			X
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			X
Analysis: The objective and policies for improving public and private social services are directly supported by the proposed action through the provision of homestead opportunities to beneficiaries of the State DHHL, which allow Native Hawaiians to become more self-reliant and improve their wellbeing.			
Chapter 226-23 Objective and policies for socio-cultural advancement – – leisure.			
Objective:			
(a) Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.			X
Policies:			
(b) To achieve the leisure objective, it shall be the policy of this State to:			
(1) Foster and preserve Hawaii's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.			X
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.			X

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(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.			X
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.			X
(5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.			X
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.			X
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawaii's people.			X
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.			X
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawaii's population to participate in the creative arts.			X
(10) Assure adequate access to significant natural and cultural resources in public ownership.			X
Analysis: The project proposes the subdivision of agricultural lands for homestead opportunities and is, therefore, not directly or indirectly applicable to the objectives or policies for leisure.			
Chapter 226-24 Objective and policies for socio-cultural advancement – – individual rights and personal well-being.			
Objective:			
(a) Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.			X
Policies:			
(b) To achieve the individual rights and personal well-being objective, it shall be the policy of this State to:			
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			X
(2) Uphold and protect the national and state constitutional rights of every individual.			X
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			X
(4) Ensure equal opportunities for individual participation in society.			X
Analysis: The proposed action is not directly or indirectly applicable to the objective and policies for individual rights and personal well-being. Specifically, the proposed project does not provide services that protect individuals from criminal acts or assure access to legal assistance, consumer protection or related public services.			
Chapter 226-25 Objective and policies for socio-cultural advancement – – culture.			
Objective:			

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people.	X		
Policies:			
(b) To achieve the culture objective, it shall be the policy of this State to:			
(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.		X	
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii's people and which are sensitive and responsive to family and community needs.		X	
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaii.			X
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.			X
Analysis: A Cultural Impact Assessment (CIA) was prepared for this project as part of the environmental review process. The CIA fosters increased knowledge of Native Hawaiian cultural practices, as well as the history of the project area. In this context, the proposed action indirectly advances the objective and policies related to culture. The proposed action also indirectly supports conditions that enrich the lifestyles of Hawai'i's that is sensitive and responsive to community needs through the provision of homesteading opportunities for DHHL beneficiaries.			
Chapter 226-26 Objectives and policies for socio-cultural advancement -- public safety.			
Objectives:			
(a) Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:			
(1) Assurance of public safety and adequate protection of life and property for all people.			X
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.			X
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.			X
Policies (Public Safety):			
(b) To achieve the public safety objectives, it shall be the policy of this State to:			
(1) Ensure that public safety programs are effective and responsive to community needs.			X
(2) Encourage increased community awareness and participation in public safety programs.			X
Policies (Public Safety-Criminal Justice):			
(c) To further achieve public safety objectives related to criminal justice, it shall be the policy of this State to:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			X
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			X
Policies (Public Safety – Emergency Management):			
(d) To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:			
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.			X
(2) Enhance the coordination between emergency management programs throughout the State.			X
Analysis: The proposed action does not directly or indirectly affect the objectives and policies for public safety. In particular, the project does not address protection of life and property parameters, organizational readiness and capacity, and community responsibility for peoples' welfare and safety.			
Chapter 226-27 Objectives and policies for socio-cultural advancement – – government.			
Objectives:			
(a) Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:			
(1) Efficient, effective, and responsive government services at all levels in the State.	X		
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			X
Policies:			
(b) To achieve the government objectives, it shall be the policy of this State to:			
(1) Provide for necessary public goods and services not assumed by the private sector.			X
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.	X		
(3) Minimize the size of government to that necessary to be effective.			X
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawaii.			X
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.			X
(6) Provide for a balanced fiscal budget.			X
(7) Improve the fiscal budgeting and management system of the State.			X
(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.			X
Analysis: The proposed action has direct applicability to the objectives and policies for government. In particular, the project will comply with regulatory requirements which advance transparency in the flow of project-related information to the public. Such requirements include the Chapter 343, HRS environmental review process.			

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Chapter 226-101: Purpose. The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.			
Chapter 226-102: Overall direction. The State shall strive to improve the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.			
Chapter 226-103: Economic priority guidelines.			
(a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy:	X		
(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.			X
(A) Encourage investments which:			X
(i) Reflect long term commitments to the State;			X
(ii) Rely on economic linkages within the local economy;			X
(iii) Diversify the economy;	X		
(iv) Reinvest in the local economy;	X		
(v) Are sensitive to community needs and priorities; and			X
(vi) Demonstrate a commitment to provide management opportunities to Hawaii residents; and			X
(B) Encourage investments in innovative activities that have a nexus to the State, such as:			X
(i) Present or former residents acting as entrepreneurs or principals;			X
(ii) Academic support from an institution of higher education in Hawaii;			X
(iii) Investment interest from Hawaii residents;			X
(iv) Resources unique to Hawaii that are required for innovative activity; and			X
(v) Complementary or supportive industries or government programs or projects.			X
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			X
(3) Improve the quality, accessibility, and range of services provided by government to business, including data and reference services and assistance in complying with governmental regulations.			X
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.			X
(5) Streamline the processes for building and development permit and review, and telecommunication infrastructure installation approval and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where scientific evidence indicates that public health, safety and welfare would not be adversely affected.			X

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawaii's small-scale producers, manufacturers, and distributors.			X
(7) Continue to seek legislation to protect Hawaii from transportation interruptions between Hawaii and the continental United States.			X
(8) Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:			X
(A) An industry that can take advantage of Hawaii's unique location and available physical and human resources.			X
(B) A clean industry that would have minimal adverse effects on Hawaii's environment.			X
(C) An industry that is willing to hire and train Hawaii's people to meet the industry's labor needs at all levels of employment.			X
(D) An industry that would provide reasonable income and steady employment.			X
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawaii business.			X
(10) Enhance the quality of Hawaii's labor force and develop and maintain career opportunities for Hawaii's people through the following actions:			X
(A) Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.			X
(B) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.			X
(C) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.			X
(D) Promote career opportunities in all industries for Hawaii's people by encouraging firms doing business in the State to hire residents.			X
(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on-the-job training opportunities.			X
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			X
(b) Priority guidelines to promote the economic health and quality of the visitor industry:			X
(1) Promote visitor satisfaction by fostering an environment which enhances the aloha spirit and minimizes inconveniences to Hawaii's residents and visitors.			X
(2) Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.			X
(3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.			X
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawaii's significant natural, scenic, historic, and cultural resources.			X

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(5) Develop and maintain career opportunities in the visitor industry for Hawaii's people, with emphasis on managerial positions.			X
(6) Support and coordinate tourism promotion abroad to enhance Hawaii's share of existing and potential visitor markets.			X
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			X
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.			X
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.			X
(c) Priority guidelines to promote the continued viability of the sugar and pineapple industries:			X
(1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.			X
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawaii.			X
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			X
(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:	X		
(1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.	X		
(2) Assist in providing adequate, reasonably priced water for agricultural activities.	X		
(3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.	X		
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			X
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawaii's agricultural community.			X
(6) Seek favorable freight rates for Hawaii's agricultural products from interisland and overseas transportation operators.			X
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.	X		
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.	X		
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.	X		
(10) Support the continuation of land currently in use for diversified agriculture.			X
(11) Encourage residents and visitors to support Hawaii's farmers by purchasing locally grown food and food products.			X
(e) Priority guidelines for water use and development:	X		

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.			X
(2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.	X		
(3) Increase the support for research and development of economically feasible alternative water sources.			X
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			X
(f) Priority guidelines for energy use and development:			X
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.			X
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			X
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			X
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			X
(g) Priority guidelines to promote the development of the information industry:			X
(1) Establish an information network, with an emphasis on broadband and wireless infrastructure and capability that will serve as the foundation of and catalyst for overall economic growth and diversification in Hawaii.			X
(2) Encourage the development of services such as financial data processing, a products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.			X
(3) Encourage the development of small businesses in the information field such as software development; the development of new information systems, peripherals, and applications; data conversion and data entry services; and home or cottage services such as computer programming, secretarial, and accounting services.			X
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			X
(5) Encourage research activities, including legal research in the information and telecommunications fields.			X
(6) Support promotional activities to market Hawaii's information industry services.			X
(7) Encourage the location or co-location of telecommunication or wireless information relay facilities in the community, including public areas, where scientific evidence indicates that the public health, safety, and welfare would not be adversely affected.			X


Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Analysis: The proposed action directly supports the economic priority guidelines by supporting the growth and development of diversified agriculture through the creation of additional subsistence agricultural lots with connections to domestic water and irrigation water. In addition, the proposed project supports the economic priority guidelines by construction activity which contributes to increased employment opportunities, job choices, and living standards.			
Chapter 226-104: Population growth and land resources priority guidelines.			
(a) Priority guidelines to effect desired statewide growth and distribution:			X
(1) Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people.			X
(2) Manage a growth rate for Hawaii's economy that will parallel future employment needs for Hawaii's people.			X
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.			X
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.			X
(5) Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.			X
(6) Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.			X
(7) Support the development of high technology parks on the neighbor islands.			X
(b) Priority guidelines for regional growth distribution and land resource utilization:	X		
(1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures, and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.			X
(2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			X
(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.			X
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			X
(5) In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.			X
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.			X

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(7) Pursue rehabilitation of appropriate urban areas.			X
(8) Support the redevelopment of Kakaako into a viable residential, industrial, and commercial community.			X
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.			X
(10) Identify critical environmental areas in Hawaii to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.			X
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			X
(12) Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.	X		
(13) Protect and enhance Hawaii's shoreline, open spaces, and scenic resources.			X
Analysis: The subdivision of five (5) noncontiguous lots into twelve (12) lots and related improvements for lease to DHHL beneficiaries is directly supportive of the priority guideline for the sensible use of Hawai'i's limited resources and the provision of homesteading opportunities to meet the needs of DHHL beneficiaries and future generations.			
Chapter 226-105: Crime and criminal justice.			
Priority guidelines in the area of crime and criminal justice:			
(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			X
(2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.			X
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			X
(4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.			X
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			X
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			X
Analysis: The proposed action does not directly or indirectly support the priority guidelines for crime and criminal justice and will not affect law enforcement efficacy, conditions of correctional facilities, or provide alternative sanctions within the criminal justice system.			
Chapter 226-106: Affordable housing.			

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Priority guidelines for the provision of affordable housing:			X
(1) Seek to use marginal or nonessential agricultural land and public land to meet housing needs of extremely low-, very low-, lower-, moderate, and above and moderate-income households.			X
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.			X
(3) Improve information and analysis relative to land availability and suitability for housing.			X
(4) Create incentives for development which would increase home ownership and rental opportunities for Hawaii's low-, very low-, lower-, and moderate-income households and residents with special needs.			X
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawaii's people for the purchase of initial owner-occupied housing.			X
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.			X
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			X
(8) Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaii.			X
Analysis: The proposed action does not directly or indirectly support the priority guidelines for affordable housing. Although the proposed project involves the provision of homesteading opportunities, it does not involve the provision of housing.			
Chapter 226-107: Quality education.			
Priority guidelines to promote quality education:			X
(1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement;			X
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs;			X
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force;			X
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision making responsibilities;			X
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for:			X
(A) The electronic exchange of information;			X
(B) Statewide electronic mail; and			X
(C) Access to the Internet.			X
(6) Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;			X
(7) Pursue the establishment of Hawaii's public and private universities and colleges as research and training centers of the Pacific;			X
(8) Develop resources and programs for early childhood education;			X
(9) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and			X


Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(10) Strengthen and expand educational programs and services for students with special needs.			X
Analysis: The proposed action is not directly or indirectly applicable to the priority guidelines and principles for quality education and does not affect the improvement or development of educational programs and resources.			
Chapter 226-108: Sustainability			
Priority guidelines and principles to promote sustainability shall include:	X		
(1) Encouraging balanced economic, social, community, and environmental priorities;	X		
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State;	X		
(3) Promoting a diversified and dynamic economy;	X		
(4) Encouraging respect for the host culture;			X
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations;	X		
(6) Considering the principles of the ahupuaa system; and			X
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawaii.			X
Analysis: The proposed project directly supports the priority guidelines for sustainability by providing needed homestead opportunities to DHHL beneficiaries for subsistent agricultural use. The encouragement of agricultural activity indirectly promotes living within the natural resources and limits of the State and directly promotes a diversified economy.			
Chapter 226-109: Climate change adaptation priority guidelines			
Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy shall:			X
(1) Ensure that Hawaii's people are educated, informed, and aware of the impacts climate change may have on their communities;			X
(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;			X
(3) Invest in continued monitoring and research of Hawaii's climate and the impacts of climate change on the State;			X
(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;			X
(5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;			X
(6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;			X

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(7) Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;			X
(8) Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities;			X
(9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans; and			X
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.			X
Analysis: The proposed project does not directly or indirectly support the climate change priority guidelines.			



APPENDIX H-2.

**ANALYSIS OF PROJECT
APPLICABILITY TO
COUNTYWIDE POLICY PLAN**



APPENDIX H-2

Analysis of Project Applicability to Countywide Policy Plan

The Countywide Policy Plan was adopted in March 2010 and is a comprehensive policy document for the islands of Maui County to the year 2030. The plan replaces the General Plan of the County of Maui 1990 Update and provides the policy framework for the development of the forthcoming Maui Island Plan as well as for updating the nine detailed Community Plans.

The Countywide Policy Plan provides broad goals, objectives, policies and implementing actions that portray the desired direction of the County's future. Goals are intended to describe a desirable condition of the County by the year 2030 and are intentionally general. Objectives tend to be more specific and may be regarded as milestones to achieve the larger goals. Policies are not intended as regulations, but instead provide a general guideline for County decision makers, departments, and collaborating organizations toward the attainment of goals and objectives. Implementing actions are specific tasks, procedures, programs, or techniques that carry out policy.

Discussion of how the proposed project conforms to the relevant goals, objectives, policies, and implementing actions of the Countywide Policy Plan is provided below. The methodology for assessing a project's relationship to the Countywide Policy Plan involves examining the project's applicability to the Plan's goals, objectives, and policies. "Applicability" refers to a project's need, purpose and effects, and how they advance or promote a particular set of goals, objectives and policies. In assessing the relationship between a proposed action and the Countywide Policy Plan, an action may be categorized in one of the following groups:

1. **Directly applicable:** the action and its potential effects directly advance, promote or affect the relevant goal, objective, or policy.

Example: A County project to develop a new water source and related transmission facilities would be directly applicable to improving physical infrastructure. The relevant objective states: *"Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water"* (Objective I.1). A policy within this objective category states: *"Ensure that adequate supplies of water are available prior to approval of subdivision or construction documents"* (Policy I.1.a).

In this instance, the proposed action is considered to be directly applicable to the cited objective and policy.

2. **Indirectly applicable:** the action and its potential effects indirectly support, advance or affect the objective, policy or priority guideline.

Example: The county water source project cited above supports the objective to: *"Improve land use management and implement a directed-growth strategy"* (Objective J.1). A related policy encompassed by this objective states: *"Direct new development in and*

around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources” (Policy J.1.h). In this case, the principle purpose of the project is not to create a water source specifically intended to improve land use management. Nonetheless, the proposed action indirectly supports the Countywide Policy Plan’s directives relating to appropriate locations for new development.

3. **Not applicable:** the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Countywide Policy Plan.

Example: The county water source improvement project referenced above, may not have direct or indirect linkage to Objective D.1, which states: *“In cooperation with the Federal and State governments and nonprofit agencies, broaden access to social and healthcare services and expand options to improve the overall wellness of the people of Maui County”*. Hence, from a policy analysis and linkage standpoint, the proposed action would be considered not applicable to this set of objectives and policies.

It is recognized that policy analysis is subject to interpretation and is best considered in the context of the proposed action’s local and regional conditions.

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
A. PROTECT THE NATURAL ENVIRONMENT			
Goal: Maui County’s natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.	X		
Objective:			
(1) Improve the opportunity to experience the natural beauty and native biodiversity of the islands for present and future generations.	X		
Policies:			
(a) Perpetuate native Hawaiian biodiversity by preventing the introduction of invasive species, containing or eliminating existing noxious pests, and protecting critical habitat areas.			X
(b) Preserve and reestablish indigenous and endemic species’ habitats and their connectivity.			X
(c) Restore and protect forests, wetlands, watersheds, and stream flows, and guard against wildfires, flooding, and erosion.			X
(d) Protect baseline stream flows for perennial streams, and support policies that ensure adequate stream flow to support Native Hawaiian aquatic species, traditional kalo cultivation, and self-sustaining ahupua’a.			X
(e) Protect undeveloped beaches, dunes, and coastal ecosystems, and restore natural shoreline processes.			X
(f) Protect the natural state and integrity of unique terrain, valued natural environments, and geological features.			X
(g) Preserve and provide ongoing care for important scenic vistas, view planes, landscapes, and open-space resources.			X
(h) Expand coordination with the State and nonprofit agencies and their volunteers to reduce invasive species, replant indigenous species, and identify critical habitat.			X

COUNTYWIDE POLICY PLAN			
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable			
	DA	IA	NA
Implementing Actions:			
(a) Develop island-wide networks of greenways, watercourses, and habitat corridors.			X
Analysis: The proposed project is directly supportive of the goal and objective for the natural environment through the provision of subsistence agricultural lands for homesteading, thereby increasing opportunities for DHHL beneficiaries to experience the natural beauty and native biodiversity of the islands for present and future generations.			
Objective:			
(2) Improve the quality of environmentally sensitive, locally valued natural resources and native ecology of each island.	X		
Policies:			
(a) Protect and restore nearshore reef environments and water quality.			X
(b) Protect marine resources and valued wildlife.			X
(c) Improve the connection between urban environments and the natural landscape, and incorporate natural features of the land into urban design.			X
(d) Utilize land-conservation tools to ensure the permanence of valued open spaces.			X
(e) Mitigate the negative effects of upland uses on coastal wetlands, marine life, and coral reefs.	X		
(f) Strengthen coastal-zone management, re-naturalization of shorelines, where possible, and filtration or treatment of urban and agricultural runoff.			X
(g) Regulate the use and maintenance of stormwater-treatment systems that incorporate the use of native vegetation and mimic natural systems.			X
(h) Advocate for stronger regulation of fishing, boating, cruise ship, and ecotourism activities.			X
(i) Restore watersheds and aquifer-recharge areas to healthy and productive status, and increase public knowledge about the importance of watershed stewardship, water conservation, and groundwater protection.			X
Implementing Actions:			
(a) Develop regulations to minimize runoff of pollutants into nearshore waters and reduce nonpoint and point source pollution.			X
Analysis: The proposed project will utilize Best Management Practices (BMPs) to ensure that natural resources such as the coastal environment is not impacted by construction activities. The use of BMPs also ensures compatibility between land-based and water-based functions, resources, and ecological systems.			
Objective:			
(3) Improve the stewardship of the natural environment.	X		
Policies:			
(a) Preserve and protect natural resources with significant scenic, economic, cultural, environmental, or recreational value.			X
(b) Improve communication, coordination, and collaboration among government agencies, nonprofit organizations, communities, individuals, and land owners that work for the protection of the natural environment.			X
(c) Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments.	X		
(d) Improve efforts to mitigate and plan for the impact of natural disasters, human influenced emergencies, and global warming.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(e) Regulate access to sensitive ecological sites and landscapes.			X
(f) Reduce air, noise, light, land, and water pollution, and reduce Maui County's contribution to global climate change.			X
(g) Plan and prepare for and educate visitors and residents about the possible effects of global warming.			X
(h) Provide public access to beaches and shorelines for recreational and cultural purposes where appropriate.			X
(i) Educate the construction and landscape industries and property owners about the use of best management practices to prevent erosion and nonpoint source pollution.	X		
(j) Support the acquisition of resources with scenic, environmental, and recreational value, and encumber their use.			X
(k) Improve enforcement activities relating to the natural environment.			X
(l) For each shoreline community, identify and prioritize beach-conservation objectives, and develop action plans for their implementation.			X
Implementing Actions:			
(a) Document, record, and monitor existing conditions, populations, and locations of flora and fauna communities.			X
(b) Implement Federal and State policies that require a reduction of greenhouse-gas emissions.			X
(c) Establish a baseline inventory of available natural resources and their respective carrying capacities.			X
Analysis: The proposed project directly meets the objective of improving the stewardship of the natural environment. The project will employ BMPs to prevent impacts from construction, including temporary erosion control, storm water management, and dust control. In addition, the EA thoroughly evaluated the proposed action's potential impacts on the environment, and where applicable, advances measures aimed at reducing impacts to the environment.			
Objective:			
(4) Educate residents and visitors about responsible stewardship practices and the interconnectedness of the natural environment and people.			X
Policies:			
(a) Expand education about native flora, fauna, and ecosystems.			X
(b) Align priorities to recognize that the health of the natural environment and the health of people are inextricably linked.			X
(c) Promote programs and incentives that decrease greenhouse-gas emissions and improve environmental stewardship.			X
Analysis: The proposed project does not have direct or indirect relationships to the objective of educating residents and visitors about responsible stewardship practices and the interconnectedness of the natural environment and people. However, this objective is an integral value to Native Hawaiians who are beneficiaries of this project.			
B. PRESERVE LOCAL CULTURES AND TRADITIONS			
Goal: Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate its residents multi-cultural values and traditions to ensure that current and future generations will enjoy the benefits of their rich island heritage.	X		

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
(1) Perpetuate the Hawaiian culture as a vital force in the lives of residents.	X		
Policies:			
(a) Protect and preserve access to mountain, ocean, and island resources for traditional Hawaiian cultural practices.			X
(b) Prohibit inappropriate development of cultural lands and sites that are important for traditional Hawaiian cultural practices, and establish mandates for the special protection of these lands in perpetuity.	X		
(c) Promote the use of ahupua'a and moku management practices.			X
(d) Encourage the use of traditional Hawaiian architecture and craftsmanship.			X
(e) Promote the use of the Hawaiian language.			X
(f) Recognize and preserve the unique natural and cultural characteristics of each ahupua'a or district.			X
(g) Encourage schools to promote broader incorporation of Hawaiian and other local cultures' history and values lessons into curriculum.			X
(h) Ensure the protection of Native Hawaiian rights.			X
(i) Promote, encourage, and require the correct use of traditional place names, particularly in government documents, signage, and the tourism industry.			X
Implementing Actions:			
(a) Establish alternative land use and overlay zoning designations that recognize and preserve the unique natural and cultural characteristics of each ahupua'a or district.			X
(b) Develop requirements for all County applicants to perpetuate and use proper traditional place names in all applications submitted.			X
Analysis: The proposed project will directly benefit native Hawaiian people for generations and ensure the perpetuation of Hawaiian culture. This development is an appropriate development of lands for native Hawaiians. A Cultural Impact Assessment (CIA) was prepared for the proposed project as part of the environmental review process. The CIA fosters increased knowledge of Native Hawaiian cultural practices, as well as the history of the project area.			
Objective:			
(2) Emphasize respect for our island lifestyle and our unique local cultures, family, and natural environment.	X		
Policies:			
(a) Acknowledge the Hawaiian culture as the host culture, and foster respect and humility among residents and visitors toward the Hawaiian people and their practices.			X
(b) Perpetuate a respect for diversity, and recognize the historic blending of cultures and ethnicities.			X
(c) Encourage the perpetuation of each culture's unique cuisine, attire, dance, music, and folklore, and other unique island traditions and recreational activities.			X
(d) Recognize the interconnectedness between the natural environment and the cultural heritage of the islands.	X		
(e) Protect and prioritize funding for recreational activities that support local cultural practices, such as surfing, fishing, and outrigger-canoe paddling.			X

COUNTYWIDE POLICY PLAN			DA	IA	NA
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable					
Analysis: The project directly supports this objective and policy as the CIA acknowledges the relationship between the natural environment and cultural resources found in the project vicinity.					
Objective:					
(3) Preserve for present and future generations the opportunity to know and experience the arts, culture, and history of Maui County.					X
Policies:					
(a) Foster teaching opportunities for cultural practitioners to share their knowledge and skills.					X
(b) Support the development of cultural centers.					X
(c) Broaden opportunities for public art and the display of local artwork.					X
(d) Foster the Aloha Spirit by celebrating the Hawaiian host culture and other Maui County cultures through support of cultural-education programs, festivals, celebrations, and ceremonies.					X
(e) Support the perpetuation of Hawaiian arts and culture.					X
(f) Support programs and activities that record the oral and pictorial history of residents.					X
(g) Support the development of repositories for culture, history, genealogy, oral history, film, and interactive learning.					X
Implementing Actions:					
(a) Establish incentives for the display of public art.					X
(b) Establish centers and programs of excellence for the perpetuation of Hawaiian arts and culture.					X
Analysis: The proposed project does not have direct or indirect relationships to the objective of preserving the arts, culture, and history of Maui County for present and future generations. This is a subdivision project for Native Hawaiians that will provide additional homesteading opportunities.					
Objective:					
(4) Preserve and restore significant historic architecture, structures, cultural sites, cultural districts, and cultural landscapes.				X	
Policies:					
(a) Support the development of island-wide historic, archaeological, and cultural resources inventories.				X	
(b) Promote the rehabilitation and adaptive reuse of historic sites, buildings, and structures to perpetuate a traditional sense of place.					X
(c) Identify a sustainable rate of use and set forth specific policies to protect cultural resources.					X
(d) Protect and preserve lands that are culturally or historically significant.					X
(e) Support programs that protect, record, restore, maintain, provide education about, and interpret cultural districts, landscapes, sites, and artifacts in both natural and museum settings.					X
(f) Perpetuate the authentic character and historic integrity of rural communities and small towns.					X
(g) Seek solutions that honor the traditions and practices of the host culture while recognizing the needs of the community.					X
(h) Support the development of an Archaeological District Ordinance.					X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(i) Protect summits, slopes, and ridgelines from inappropriate development.			X
(j) Support the registering of important historic sites on the State and Federal historic registers.			X
(k) Provide opportunities for public involvement with restoration and enhancement of all types of cultural resources.			X
(l) Foster partnerships to identify and preserve or revitalize historic and cultural sites.			X
Implementing Actions:			
(a) Identify, develop, map, and maintain an inventory of locally significant natural, cultural, and historical resources for protection.		X	
(b) Prepare, continually update, and implement a cultural-management plan for cultural sites, districts, and landscapes, where appropriate.			X
(c) Enact an Archaeological District Ordinance.			X
(d) Nominate important historic sites to the State and Federal historic registers.			X
Analysis: The proposed action is indirectly applicable to these objectives and related policies and implementing actions. Historic preservation consultation and coordination for the proposed action are aimed at ensuring the preservation of historic resources, which may be impacted by the project.			
C. IMPROVE EDUCATION			
Goal: Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.		X	
Objective:			
(1) Encourage the State to attract and retain school administrators and educators of the highest quality.			X
Policies:			
(a) Encourage the State to provide teachers with nationally competitive pay and benefit packages.			X
(b) Encourage the State to ensure teachers will have the teaching tools and support staff needed to provide students with an excellent education.			X
(c) Explore Maui County district- and school-based decision making in public education.			X
Analysis: Indirectly, this project meets the goal of giving residents access to lifelong formal and informal educational options. This is a homestead development and improvements project in proximity to Moloka'i High School and Moloka'i Middle School, which are the only middle school and high school on island. DHHL beneficiaries and their children residing on the homesteads will be put closer to schools, allowing for easier access to education. However, the project is neither directly or indirectly applicable to the objective of attracting or retaining school administrators and educators.			
Objective:			
(2) Provide nurturing learning environments that build skills for the 21st century.			X
Policies:			
(a) Expand professional-development opportunities in disciplines that support the economic-development goals of Maui County.			X
(b) Plan for demographic, social, and technological changes in a timely manner.			X
(c) Encourage collaborative partnerships to improve conditions of learning environments.			X

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(d) Promote development of neighborhood schools and educational centers.			X
(e) Integrate schools, community parks, and playgrounds, and expand each community's use of these facilities.			X
(f) Support coordination between land use and school-facility planning agencies.			X
(g) Encourage the upgrade and ongoing maintenance of public-school facilities.			X
(h) Encourage the State Department of Education to seek reliable, innovative, and alternative methods to support a level of per-pupil funding that places Hawai'i among the top tier of states nationally for its financial support of public schools.			X
(i) Encourage the State to promote healthier, more productive learning environments, including by providing healthy meals, more physical activity, natural lighting, and passive cooling.			X
(j) Encourage the State to support the development of benchmarks to measure the success of Hawai'i's public-education system and clarify lines of accountability.			X
(k) Design school and park facilities in proximity to residential areas.			X
(l) Support technology- and natural-environment-based learning.			X
(m) Encourage the State to support lower student-teacher ratios in public schools.			X
(n) Encourage alternative learning and educational opportunities.			X
Implementing Actions:			
(a) Develop safe walking and bicycling programs for school children.			X
Analysis: The proposed project is neither directly or indirectly applicable to the objective or policies for environments that promote 21st century skills and does not impact conditions of learning environments.			
Objective:			
(3) Provide all residents with educational opportunities that can help them better understand themselves and their surroundings and allow them to realize their ambitions.		X	
Policies:			
(a) Encourage the State to improve Maui Community College as a comprehensive community college that will serve each community.			X
(b) Broaden the use of technology and telecommunications to improve educational opportunities throughout the County.			X
(c) Attract graduate-level research programs and institutions.			X
(d) Promote the teaching of traditional practices, including aquaculture; subsistence agriculture; Pacific Island, Asian, and other forms of alternative health practices; and indigenous Hawaiian architecture.		X	
(e) Integrate cultural and environmental values in education, including self-sufficiency and sustainability.			X
(f) Foster a partnership and ongoing dialogue between business organizations, formal educational institutions, and vocational training centers to tailor learning and mentoring programs to County needs.			X
(g) Ensure teaching of the arts to all ages.			X
(h) Expand and develop vocational learning opportunities by establishing trade schools.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(i) Encourage the State to integrate financial and economic literacy in elementary, secondary, and higher-education levels.			X
Implementing Actions:			
(a) Encourage the State to establish a four-year university, and support the development of other higher-education institutions to enable residents to obtain bachelor degrees and postgraduate degrees in Maui County.			X
Analysis: The proposed project indirectly supports the objective and policies as it will afford many Native Hawaiian families the opportunity to practice subsistence agriculture. Furthermore, the DHHL has partnered with the University of Hawai'i College of Agriculture and Human Resources (CTAHR) to provide technical assistance and training to DHHL agricultural lessees.			
Objective:			
(4) Maximize community-based educational opportunities.		X	
Policies:			
(a) Encourage the State and others to expand pre-school, after-school, and homebased (parent-child) learning.			X
(b) Support public-private partnerships to develop youth-internship, -apprenticeship, and -mentoring programs.			X
(c) Support the development of a wide range of informal educational and cultural programs for all residents.		X	
(d) Improve partnerships that utilize the skills and talents at Hawai'i's colleges and universities to benefit the County.		X	
(e) Support career-development and job-recruitment programs and centers.			X
(f) Attract learning institutions and specialty schools to diversify and enhance educational opportunities.			X
(g) Expand education of important life skills for the general public.			X
(h) Support community facilities such as museums, libraries, nature centers, and open spaces that provide interactive-learning opportunities for all ages.			X
Analysis: The project indirectly maximizes community-based educational opportunities. As mentioned, the DHHL has partnered with the University of Hawai'i CTAHR, thereby improving partnerships that utilize the skills and talents of Hawai'i's universities to benefit the County. In addition, the DHHL has established a community-based Agricultural Advisory Committee made of beneficiaries to advise the CTAHR agent on the curriculum and activities for agricultural training.			
D. STRENGTHEN SOCIAL AND HEALTHCARE SERVICES			
Goal: Health and social services in Maui County will fully and comprehensively serve all segments of the population.	X		
Objective:			
(1) In cooperation with the Federal and State governments and nonprofit agencies, broaden access to social and healthcare services and expand options to improve the overall wellness of the people of Maui County.			X
Policies:			
(a) Work with other levels of government and the nonprofit sector to expand services to address hunger, homelessness, and poverty.			X
(b) Support the improvement of opportunities for disadvantaged youth, encourage the tradition of hanai relatives, and support expanded opportunities for foster care.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(c) Support expanded long-term-care options, both in institutions and at home, for patients requiring ongoing assistance and medical attention.			X
(d) Encourage the expansion and improvement of local hospitals, facilitate the establishment of new healthcare facilities, and facilitate prompt and high-quality emergency- and urgent-care services for all.			X
(e) Support broadened access to affordable health insurance and health care, and recognize the unique economic challenges posed to families when healthcare services are provided off-island.			X
(f) Encourage equal access to social and healthcare services through both technological and traditional means.			X
Analysis: Directly, the proposed project will directly support access to services. By providing homestead opportunities to families near the central core of Ho'olehua and in proximity to the town center of Kaunakakai, they will have easier access to utilize social and healthcare services, if needed.			
Objective:			
(2) Encourage the Federal and State governments and the private sector to improve the quality and delivery of social and healthcare services.			X
Policies:			
(a) Strengthen partnerships with government, nonprofit, and private organizations to provide funding and to improve counseling and other assistance to address substance abuse, domestic violence, and other pressing social challenges.			X
(b) Encourage the State to improve the quality of medical personnel, facilities, services, and equipment.			X
(c) Encourage investment to improve the recruitment of medical professionals and the quality of medical facilities and equipment throughout Maui County.			X
(d) Promote the development of continuum-of-care facilities that provide assisted living, hospice, home-care, and skilled-nursing options allowing the individual to be cared for in a manner congruent with his or her needs and desires.			X
(e) Support improved social, healthcare, and governmental services for special needs populations.			X
(f) Plan for the needs of an aging population and the resulting impacts on social services, housing, and healthcare delivery.			X
(g) Improve coordination among the police, the courts, and the public in the administration of social and healthcare services.			X
(h) Support programs that address needs of veterans.			X
(i) Support programs that address the needs of immigrants.			X
Implementing Actions:			
(a) Invest in programs designed to improve the general welfare and quality of life of Native Hawaiians.	X		
(b) Assist and facilitate the State Department of Public Safety and others in efforts to strengthen programs and facilities that will improve the mental and social health of incarcerated people and assist in prison inmates' successful transition back into Maui County communities.			X
(c) Develop and maintain a comprehensive index that will measure the health and wellness needs of families.			X
(d) Provide heliports countywide for emergency health and safety purposes.			X

COUNTYWIDE POLICY PLAN			
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Analysis: While most of these policies are not directly or indirectly applicable to the project, one of the implementing actions of investing in programs designed to improve the general welfare and quality of life of Native Hawaiians holds merit. This project directly affects Native Hawaiians and aspires to improve their quality of life by providing additional homestead opportunities.			
Objective:			
(3) Strengthen public-awareness programs related to healthy lifestyles and social and medical services.			X
Policies:			
(a) Expand public awareness about personal safety and crime prevention.			X
(b) Encourage residents to pursue education and training for careers in the healthcare, social services, and community-development fields.			X
(c) Expand public awareness and promote programs to achieve healthy eating habits and drug-free lifestyles.			X
Analysis: The objective and policies related to strengthening public-awareness programs related to healthy lifestyles and social and medical services are not directly or indirectly applicable to this project.			
E. EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS			
Goal: Quality, island-appropriate housing will be available to all residents.	X		
Objective:			
(1) Reduce the affordable housing deficit for residents.			X
Policies:			
(a) Ensure that an adequate and permanent supply of affordable housing, both new and existing units, is made available for purchase or rental to our resident and/or workforce population, with special emphasis on providing housing for low- to moderate-income families, and ensure that all affordable housing remains affordable in perpetuity.			X
(b) Seek innovative ways to lower housing costs without compromising the quality of our island lifestyle.			X
(c) Seek innovative methods to secure land for the development of low- and moderate- income housing.			X
(d) Provide the homeless population with emergency and transitional shelter and other supportive programs.			X
(e) Provide for a range of senior-citizen and special needs housing choices on each island that affordably facilitates a continuum of care and services.			X
(f) Support the Department of Hawaiian Home Lands' development of homestead lands.	X		
(g) Manage property-tax burdens to protect affordable resident homeownership.			X
(h) Explore taxation mechanisms to increase and maintain access to affordable housing.			X
(i) Improve awareness regarding available affordable homeowner's insurance.			X
(j) Redevelop commercial areas with a mixture of affordable residential and business uses, where appropriate.			X
(k) Ensure residents are given priority to obtain affordable housing units developed in their communities, consistent with all applicable regulations.			X
(l) Establish pricing for affordable housing that is more reflective of Maui County's workforce than the United States Housing and Urban Development's median-income estimates for Maui County.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(m) Develop neighborhoods with a mixture of accessible and integrated community facilities and services.			X
(n) Provide alternative regulatory frameworks to facilitate the use of Kuleana lands by the descendants of Native Hawaiians who received those lands pursuant to the Kuleana Act of 1850.			X
(o) Work with lending institutions to expand housing options and safeguard the financial security of homeowners.			X
(p) Promote the use of the community land trust model and other land-lease and land- financing options.	X		
(q) Support the opportunity to age in place by providing accessible and appropriately designed residential units.			X
Analysis: The proposed project directly advances the policies for supporting DHHL’s development of homestead lands. Although the proposed project does not involve the construction of housing, it will add infrastructure that will make the homesteads suitable for lease to DHHL beneficiaries.			
Objective:			
(2) Increase the mix of housing types in towns and neighborhoods to promote sustainable land use planning, expand consumer choice, and protect the County’s rural and small town character.			X
Policies:			
(a) Seek innovative ways to develop ‘ohana cottages and accessory-dwelling units as affordable housing.			X
(b) Design neighborhoods to foster interaction among neighbors.			X
(c) Encourage a mix of social, economic, and age groups within neighborhoods.			X
(d) Promote infill housing in urban areas at scales that capitalize on existing infrastructure, lower development costs, and are consistent with existing or desired patterns of development.			X
(e) Encourage the building industry to use environmentally sustainable materials, technologies, and site planning.			X
(f) Develop workforce housing in proximity to job centers and transit facilities.			X
(g) Provide incentives to developers and owners who incorporate green building practices and energy-efficient technologies into their housing developments.			X
Implementing Actions:			
(a) Revise laws to support neighborhood designs that incorporate a mix of housing types that are appropriate for island living.			X
Analysis: The proposed project is neither directly or indirectly applicable to the objective and policies for increasing the housing types as it does not involve the construction of housing or dwelling units.			
Objective:			
(3) Increase and maintain the affordable housing inventory.		X	
Policies:			
(a) Recognize housing as a basic human need, and work to fulfill that need.			X
(b) Prioritize available infrastructure capacity for affordable housing.			X
(c) Improve communication, collaboration, and coordination among housing providers and social-service organizations.			X
(d) Study future projected housing needs, monitor economic cycles, and prepare for future conditions on each island.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(e) Develop public-private and nonprofit partnerships that facilitate the construction of quality affordable housing.			X
(f) Streamline the review process for high-quality, affordable housing developments that implement the goals, objectives, and policies of the General Plan.			X
(g) Minimize the intrusion of housing on prime, productive, and potentially productive agricultural lands and regionally valuable agricultural lands.	X		
(h) Encourage long-term residential use of existing and future housing to meet residential needs.			X
Implementing Actions:			
(a) Develop policies to even out the peaks and valleys in Maui County's construction-demand cycles.			X
Analysis: The proposed project will create additional subsistence agricultural lots on prime and valuable agricultural lands, maintaining the land for agriculture. Housing structures will not be constructed as part of this project, however, residential occupancy is optional.			
Objective:			
(4) Expand access to education related to housing options, homeownership, financing, and residential construction.		X	
Policies:			
(a) Broaden access to information about County, State, and Federal programs that provide financial assistance to renters and home buyers.			X
(b) Expand access to information about opportunities for homeownership and self-help housing.			X
(c) Educate residents about making housing choices that support their individual needs, the needs of their communities, and the health of the islands' natural systems.			X
(d) Improve home buyers' education on all aspects of homeownership.		X	
Analysis: Indirectly, this project will help to educate the DHHL beneficiaries' knowledge about housing options and financing. The DHHL provides educational programs for beneficiaries regarding financing and financial planning. If lessees choose to reside on the property, they will need to educate themselves about home ownership thereby increasing their knowledge base.			
F. STRENGTHEN THE LOCAL ECONOMY			
Goal: Maui County's economy will be diverse, sustainable, and supportive of community values.	X		
Objective:			
(1) Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of economic growth.		X	
Policies:			
(a) Support economic decisions that create long-term benefits.		X	
(b) Promote lifelong education, career development, and technical training for existing and emerging industries.			X
(c) Invest in infrastructure, facilities, and programs that foster economic diversification.		X	
(d) Support and promote locally produced products and locally owned operations and businesses that benefit local communities and meet local demand.			X

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(e) Support programs that assist industries to retain and attract more local labor and facilitate the creation of jobs that offer a living wage.			X
(f) Encourage work environments that are safe, rewarding, and fulfilling to employees.			X
(g) Support home-based businesses that are appropriate for and in character with the community.			X
(h) Encourage businesses that promote the health and well-being of the residents, produce value-added products, and support community values.			X
(i) Foster an understanding of the role of all industries in our economy.			X
(j) Support efforts to improve conditions that foster economic vitality in our historic small towns.			X
(k) Support and encourage traditional host-culture businesses and indigenous agricultural practices.		X	
(l) Support public and private entities that assist entrepreneurs in establishing locally operated businesses.			X
Implementing Actions:			
(a) Develop regulations and programs that support opportunities for local merchants, farmers, and small businesses to sell their goods and services directly to the public.			X
(b) Monitor the carrying capacity of the islands' social, ecological, and infrastructure systems with respect to the economy.			X
Analysis: The proposed project is directly supportive of the County's goal, objective, and policies for a diversified and sustainable economy through the promotion of agriculture and indigenous agricultural practices and the provision of land to Native Hawaiians that is suitable for agricultural use.			
Objective:			
(2) Diversify and expand sustainable forms of agriculture and aquaculture.	X		
Policies:			
(a) Support programs that position Maui County's agricultural products as premium export products.			X
(b) Prioritize the use of agricultural land to feed the local population, and promote the use of agricultural lands for sustainable and diversified agricultural activities.	X		
(c) Capitalize on Hawai'i's economic opportunities in the ecologically sensitive aquaculture industries.			X
(d) Assist farmers to help make Maui County more self-sufficient in food production.	X		
(e) Support ordinances, programs, and policies that keep agricultural land and water available and affordable to farmers.	X		
(f) Support a tax structure that is conducive to the growth of the agricultural economy.			X
(g) Enhance County efforts to monitor and regulate important agricultural issues.			X
(h) Support education, research, and facilities that strengthen the agricultural industry.			X
(i) Maintain the genetic integrity of existing food crops.			X
(j) Encourage healthy and organic farm practices that contribute to land health and regeneration.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(k) Support cooperatives and other types of nontraditional communal farming and efforts.			X
(l) Encourage methods of monitoring and controlling genetically modified crops to prevent adverse effects.			X
(m) Work with the State to ease the permitting process for the revitalization of traditional fish ponds.			X
Implementing Actions:			
(a) Redirect efforts in the Office of Economic Development to further facilitate the development of the agricultural section and to monitor agricultural legislation and issues.			X
(b) Publicly identify, with signage and other means, the field locations of all genetically modified crops.			X
(c) Create agricultural parks in areas distant from genetically modified crops.			X
Analysis: The proposed project directly advances the objective and policies for diversified and sustainable agriculture by providing DHHL beneficiaries with land for subsistent agriculture. The project supports agricultural activity and encourages self-sufficiency through farming.			
Objective:			
(3) Support a visitor industry that respects the resident culture and the environment.			X
Policies:			
(a) Promote traditional Hawaiian practices in visitor-related facilities and activities.			X
(b) Encourage and educate the visitor industry to be sensitive to island lifestyles and cultural values.			X
(c) Encourage a spirit of welcome for residents at visitor facilities, such as by offering kama'aina incentives and discount programs.			X
(d) Support the renovation and enhancement of existing visitor facilities.			X
(e) Support policies, programs, and a tax structure that redirect the benefits of the visitor industry back into the local community.			X
(f) Encourage resident ownership of visitor-related businesses and facilities.			X
(g) Develop partnerships to provide educational and training facilities to residents employed in the visitor industry.			X
(h) Foster an understanding of local cultures, customs, and etiquette, and emphasize the importance of the Aloha Spirit as a common good for all.			X
(i) Support the diversification, development, evolution, and integration of the visitor industry in a way that is compatible with the traditional, social, economic, spiritual, and environmental values of island residents.			X
(j) Improve collaboration between the visitor industry and the other sectors of Maui County's economy.			X
(k) Perpetuate an authentic image of the Hawaiian culture and history and an appropriate recognition of the host culture.			X
(l) Support the programs and initiatives outlined in the Maui County Tourism Strategic Plan 2006-2015.			X
(m) Promote water conservation, beach conservation, and open-space conservation in areas providing services for visitors.			X
(n) Recognize the important contributions that the visitor industry makes to the County's economy, and support a healthy and vibrant visitor industry.			X

COUNTYWIDE POLICY PLAN		DA	IA	NA
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable				
Analysis: As a DHHL homestead project for DHHL beneficiaries, the proposed project will not impact the objectives and policies for the visitor and tourism industry.				
Objective:				
(4) Expand economic sectors that increase living-wage job choices and are compatible with community values.				X
Policies:				
(a) Support emerging industries, including the following: Health and wellness industry; Sports and recreation industry; Film and entertainment industry; Arts and culture industry; Renewable-energy industry; Research and development industry; High-technology and knowledge-based industries; Education and training industry; Ecotourism industry; and Agritourism industry.				X
Analysis: Although the proposed project supports the economic goals related to agriculture and sustainability, the project is neither directly or indirectly supportive of emerging industries.				
G. IMPROVE PARKS AND PUBLIC FACILITIES				
Goal: A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.				X
Objective:				
(1) Expand access to recreational opportunities and community facilities to meet the present and future needs of residents of all ages and physical abilities.				X
Policies:				
(a) Protect, enhance, and expand access to public shoreline and mountain resources.				X
(b) Expand and enhance the network of parks, multi-use paths, and bikeways.				X
(c) Assist communities in developing recreational facilities that promote physical fitness.				X
(d) Expand venue options for recreation and performances that enrich the lifestyles of Maui County's people.				X
(e) Expand affordable recreational and after-school programs for youth.				X
(f) Encourage and invest in recreational, social, and leisure activities that bring people together and build community pride.				X
(g) Promote the development and enhancement of community centers, civic spaces, and gathering places throughout our communities.				X
(h) Expand affordable access to recreational opportunities that support the local lifestyle.				X
Implementing Actions:				
(a) Identify and reserve lands for cemeteries, and preserve existing cemeteries on all islands, appropriately accommodating varying cultural and, faith-based traditions.				X
Analysis: The proposed action involves the subdivision of land and infrastructure improvements to provide homestead opportunities to DHHL beneficiaries and will not impact recreational opportunities, parks or public facilities for recreation and leisure activities.				

COUNTYWIDE POLICY PLAN					
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable			DA	IA	NA
Objective:					
(2) Improve the quality and adequacy of community facilities.					X
Policies:					
(a) Provide an adequate supply of dedicated shelters and facilities for disaster relief.					X
(b) Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures.					X
(c) Ensure that parks and public facilities are safe and adequately equipped for the needs of all ages and physical abilities to the extent reasonable.					X
(d) Maintain, enhance, expand, and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations.					X
(e) Redesign or retrofit public facilities to adapt to major shifts in environmental or urban conditions to the extent reasonable.					X
Analysis: The objective and policies for improving the quality or adequacy of community facilities is not applicable to the proposed project.					
Objective:					
(3) Enhance the funding, management, and planning of public facilities and park lands.					X
Policies:					
(a) Identify and encourage the establishment of regulated and environmentally sound campgrounds.					X
(b) Manage park use and control access to natural resources in order to rest sensitive places and utilize the resources in a sustainable manner.					X
(c) Provide public-recreational facilities that are clean and well-maintained.					X
(d) Develop partnerships to ensure proper stewardship of the islands' trails, public lands, and access systems.					X
(e) Ensure that there is an adequate supply of public restrooms in convenient locations.					X
Implementing Actions:					
(a) Encourage the State to allow for overnight fishing along the shoreline in accordance with management plans and regulations.					X
(b) Develop and regularly update functional plans, including those relating to public facilities, parks, and campgrounds.					X
(c) Develop and adopt local level-of service standards for public facilities and parks.					X
(d) Identify, acquire, and develop lands for parks, civic spaces, and public uses.					X
Analysis: The proposed agricultural homestead project is neither directly or indirectly applicable to the funding, management or planning of parks and public facilities.					
H. DIVERSIFY TRANSPORTATION OPTIONS					
Goal: Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.					X
Objective:					
(1) Provide an effective, affordable, and convenient ground-transportation system that is environmentally sustainable.					X
Policies:					
(a) Execute planning strategies to reduce traffic congestion.					X
(b) Plan for the efficient relocation of roadways for the public benefit.					X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(c) Support the use of alternative roadway designs, such as traffic-calming techniques and modern roundabouts.			X
(d) Increase route and mode options in the ground-transportation network.			X
(e) Ensure that roadway systems are safe, efficient, and maintained in good condition.			X
(f) Preserve roadway corridors that have historic, scenic, or unique physical attributes that enhance the character and scenic resources of communities.			X
(g) Design new roads and roadway improvements to retain and enhance the existing character and scenic resources of the communities through which they pass.			X
(h) Promote a variety of affordable and convenient transportation services that meet countywide and community needs and expand ridership of transit systems.			X
(i) Collaborate with transit agencies, government agencies, employers, and operators to provide planning strategies that reduce peak-hour traffic.			X
(j) Develop and expand an attractive, island-appropriate, and efficient public transportation system.			X
(k) Provide and encourage the development of specialized transportation options for the young, the elderly, and persons with disabilities.			X
(l) Evaluate all alternatives to preserve quality of life before widening roads.			X
(m) Encourage businesses in the promotion of alternative transportation options for resident and visitor use.			X
(n) Support the development of carbon-emission standards and an incentive program aimed at achieving County carbon-emission goals.			X
Implementing Actions:			
(a) Create incentives and implement strategies to reduce visitor dependence on rental cars.			X
(b) Establish efficient public-transit routes between employment centers and primary workforce residential areas.			X
(c) Create attractive, island-appropriate, conveniently located park-and-ride and ride- share facilities.			X
Analysis: The proposed action involves the construction of driveways to provide DHHL lessees access to homesteads, however, the objectives and policies for public ground transportation will not be impacted by this project.			
Objective:			
(2) Reduce the reliance on the automobile and fossil fuels by encouraging walking, bicycling, and other energy-efficient and safe alternative modes of transportation.			X
Policies:			
(a) Make walking and bicycling transportation safe and easy between and within communities.			X
(b) Require development to be designed with the pedestrian in mind.			X
(c) Design new and retrofit existing rights-of-way with adequate sidewalks, bicycle lanes, or separated multi-use transit corridors.			X
(d) Support the development of a countywide network of bikeways, equestrian trails, and pedestrian paths.			X
(e) Support the reestablishment of traditional trails between communities, to the ocean, and through the mountains for public use.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(f) Encourage educational programs to increase safety for pedestrians and bicyclists.			X
Implementing Actions:			
(a) Design, build, and modify existing bikeways to improve safety and separation from automobiles.			X
(b) Increase enforcement to reduce abuse of bicycle and pedestrian lanes by motorized vehicles.			X
(c) Identify non-motorized transportation options as a priority for new sources of funding.			X
Analysis: The proposed project is not directly or indirectly applicable to the objective and policies for reducing reliance on automobiles and fossil fuels and will not involve the design of pedestrian paths, bikeways or equestrian trails.			
Objective:			
(3) Improve opportunities for affordable, efficient, safe, and reliable air transportation.			X
Policies:			
(a) Discourage private helicopter and fixed-wing landing sites to mitigate environmental and social impacts.			X
(b) Encourage the use of quieter aircraft and noise-abatement procedures for arrivals and departures.			X
(c) Encourage the modernization and maintenance of air-transportation facilities for general-aviation activities.			X
(d) Encourage a viable and competitive atmosphere for air carriers to expand service and ensure sufficient intra-County flights and affordable fares for consumers.			X
(e) Continue to support secondary airports, and encourage the State to provide them with adequate funding.			X
(f) During Community Plan updates, explore the use of the smaller airports.			X
(g) Encourage the State to provide efficient, adequate, and affordable parking and transit connections within and around airports.			X
Analysis: The objective and policies for improving opportunities for affordable, efficient, safe, and reliable air transportation is not directly or indirectly applicable to the proposed project.			
Objective:			
(4) Improve opportunities for affordable, efficient, safe, and reliable ocean transportation.			X
Policies:			
(a) Support programs and regulations that reduce the disposal of maritime waste and prevent spills into the ocean.			X
(b) Encourage the upgrading of harbors to resist damage from natural hazards and disasters.			X
(c) Encourage the State to study the use of existing harbors and set priorities for future use.			X
(d) Explore all options to protect the traditional recreational uses of harbors, and mitigate harbor-upgrade impacts to recreational uses where feasible.			X
(e) Encourage the upgrading of harbors and the separation of cargo and bulk materials from passenger and recreational uses.			X
(f) Encourage the State to provide for improved capacity at shipping, docking, and storage facilities.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(g) Encourage the State to provide adequate parking facilities and transit connections within and around harbor areas.			X
(h) Encourage the redevelopment and revitalization of harbors while preserving historic and cultural assets in harbor districts.			X
(i) Encourage the State to provide adequate facilities for small-boat operations, including small-boat launch ramps, according to community needs.			X
(j) Support the maintenance and cleanliness of harbor facilities.			X
(k) Support the redevelopment of harbors as pedestrian-oriented gathering places.			X
Analysis: The proposed action will not directly or indirectly support the objective and policies for ocean transportation and will not impact harbor or boating facilities.			
Objective:			
(5) Improve and expand the planning and management of transportation systems.			X
Policies:			
(a) Encourage progressive community design and development that will reduce transportation trips.			X
(b) Require new developments to contribute their pro rata share of local and regional infrastructure costs.			X
(c) Establish appropriate user fees for private enterprises that utilize public transportation facilities for recreational purposes.			X
(d) Support the revision of roadway-design criteria and standards so that roads are compatible with surrounding neighborhoods and the character of rural areas.			X
(e) Plan for multi-modal transportation and utility corridors on each island.			X
(f) Support designing all transportation facilities, including airport, harbor, and mass- transit stations, to reflect Hawaiian architecture.			X
(g) Utilize transportation-demand management as an integral part of transportation planning.			X
(h) Accommodate the planting of street trees and other appropriate landscaping in all public rights-of-way.			X
Analysis: The proposed project is neither directly or indirectly applicable to the objective or policies for the planning and management of transportation systems and does not have implications for public transportation facilities or public right-of-ways.			
I. IMPROVE PHYSICAL INFRASTRUCTURE			
Goal: Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.	X		
Objective:			
(1) Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water.	X		
Policies:			
(a) Ensure that adequate supplies of water are available prior to approval of subdivision or construction documents.	X		
(b) Develop and fund improved water-delivery systems.	X		
(c) Ensure a reliable and affordable supply of water for productive agricultural uses.	X		

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(d) Promote the reclamation of gray water, and enable the use of reclaimed, gray, and brackish water for activities that do not require potable water.			X
(e) Retain and expand public control and ownership of water resources and delivery systems.			X
(f) Improve the management of water systems so that surface-water and groundwater resources are not degraded by overuse or pollution.			X
(g) Explore and promote alternative water-source-development methods.			X
(h) Seek reliable long-term sources of water to serve developments that achieve consistency with the appropriate Community Plans.			X
Implementing Actions:			
(a) Develop a process to review all applications for desalination.			X
Analysis: The proposed project involves infrastructure improvements to connect DHHL homesteads to domestic water and irrigation water, directly supporting the objective and policies for access to water systems. The State-owned Moloka'i Irrigation System (MIS) and the DHHL's Ho'olehua Public Water System No. 230 will provide irrigation and potable water to Ho'olehua. Coordination with the State and DHHL will be undertaken to ensure there is an adequate water supply to service the project.			
Objective:			
(2) Improve waste-disposal practices and systems to be efficient, safe, and as environmentally sound as possible.			X
Policies:			
(a) Provide sustainable waste-disposal systems and comprehensive, convenient recycling programs to reduce the flow of waste into landfills.			X
(b) Support innovative and alternative practices in recycling solid waste and wastewater and disposing of hazardous waste.			X
(c) Encourage vendors and owners of automobile, appliance, and white goods to participate in the safe disposal and recycling of such goods, and ensure greater accountability for large waste producers.			X
(d) Develop strategies to promote public awareness to reduce pollution and litter, and encourage residents to reduce, reuse, recycle, and compost waste materials.			X
(e) Pursue improvements and upgrades to existing wastewater and solid-waste systems consistent with current and future plans and the County's Capital Improvement Program.			X
Implementing Actions:			
(a) Establish recycling, trash-separation, and materials recovery programs and facilities to reduce the flow of waste into landfills.			X
(b) Study the feasibility of developing environmentally safe waste-to-energy facilities.			X
(c) Utilize taxes and fees as means to encourage conservation and recycling.			X
(d) Implement and regularly update the Integrated Solid Waste Management Plan.			X
(e) Phase out the use of injection wells.			X
Analysis: The proposed project does not involve improvements to waste-disposal practices and systems and is, therefore, not directly or indirectly applicable to the objective or policies for waste-disposal.			
Objective:			

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(3) Significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.			X
Policies:			
(a) Promote the use of locally renewable energy sources, and reward energy efficiency.			X
(b) Consider tax incentives and credits for the development of sustainable- and renewable-energy sources.			X
(c) Expand education about energy conservation and self-sufficiency.			X
(d) Encourage small-scale energy generation that utilizes wind, sun, water, biowaste, and other renewable sources of energy.			X
(e) Expand renewable-energy production.			X
(f) Develop public-private partnerships to ensure the use of renewable energy and increase energy efficiency.			X
(g) Require the incorporation of locally appropriate energy-saving and green building design concepts in all new developments by providing energy efficient urban design guidelines and amendments to the Building Code.			X
(h) Encourage the use of sustainable energy to power vehicles.			X
(i) Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts and devices.			X
(j) Encourage green footprint practices.			X
(k) Reduce Maui County's dependence on fossil fuels and energy imports.			X
(l) Support green building practices such as the construction of buildings that aim to minimize carbon dioxide production, produce renewable energy, and recycle water.			X
(m) Promote and support environmentally friendly practices in all energy sectors.			X
Implementing Actions:			
(a) Adopt an energy-efficiency policy for Maui County government as a model for other jurisdictions.			X
(b) Adopt a Green Building Code, and support green building practices.			X
Analysis: The proposed project is neither directly or indirectly applicable to the objective and policies for significantly increasing the use of renewable energy and will not impact the promotion of sustainable energy.			
Objective:			
(4) Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.	X		
Policies:			
(a) Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.	X		
(b) Planning for new towns should only be considered if a region's growth is too large to be directed into infill and adjacent growth areas.			X
(c) Utilize appropriate infrastructure technologies in the appropriate locations.			X
(d) Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.	X		
(e) Support catchment systems and on-site wastewater treatment in rural areas and aggregated water and wastewater systems in urban areas if they are appropriately located.			X

COUNTYWIDE POLICY PLAN					
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable			DA	IA	NA
Implementing Actions:					
(a) Develop a streamlining system for urban infill projects.					X
(b) Identify appropriate areas for urban expansion of existing towns where infrastructure and public facilities can be provided in a cost-effective manner.					X
Analysis: The project is located in Ho'olehua, which is serviced by existing water sources, directing growth in a way that makes efficient use of existing infrastructure capacity.					
Objective:					
(5) Improve the planning and management of infrastructure systems.			X		
Policies:					
(a) Provide a reliable and sufficient level of funding to enhance and maintain infrastructure systems.			X		
(b) Require new developments to contribute their pro rata share of local and regional infrastructure costs.					X
(c) Improve coordination among infrastructure providers and planning agencies to minimize construction impacts.					X
(d) Maintain inventories of infrastructure capacity, and project future infrastructure needs.					X
(e) Require social-justice and -equity issues to be considered during the infrastructure-planning process.					X
(f) Discourage the development of critical infrastructure systems within hazard zones and the tsunami-inundation zone to the extent practical.					X
(g) Ensure that infrastructure is built concurrent with or prior to development.			X		
(h) Ensure that basic infrastructure needs can be met during a disaster.					X
(i) Locate public facilities and emergency services in appropriate locations that support the health, safety, and welfare of each community and that minimize delivery inefficiencies.					X
(j) Promote the undergrounding of utility and other distribution lines for health safety, and aesthetic reasons.					X
Implementing Actions:					
(a) Develop and regularly update functional plans for infrastructure systems.					X
(b) Develop, adopt, and regularly update local or community-sensitive level-of service standards for infrastructure systems.					X
Analysis: The proposed project will connect DHHL agricultural lots to the existing MIS and the DHHL's Ho'olehua Public Water System No. 230, directly promoting the planning and management of infrastructure systems. The proposed project will also provide funding to enhance the wastewater system.					
J. PROMOTE SUSTAINABLE LAND USE AND GROWTH MANAGEMENT					
Goal: Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.			X		
Objective:					
(1) Improve land use management and implement a directed-growth strategy.			X		
Policies:					
(a) Establish, map, and enforce urban- and rural-growth limits.					X
(b) Direct urban and rural growth to designated areas.					X

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(c) Limit the number of visitor-accommodation units and facilities in Community Plan Areas.			X
(d) Maintain a sustainable balance between the resident, part-time resident, and visitor populations.			X
(e) Encourage redevelopment and infill in existing communities on lands intended for urban use to protect productive farm land and open-space resources.			X
(f) Discourage new entitlements for residential, resort, or commercial development along the shoreline.			X
(g) Restrict development in areas that are prone to natural hazards, disasters, or sea-level rise.			X
(h) Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.	X		
(i) Establish and maintain permanent open space between communities to protect each community's identity.			X
(j) Support the dedication of land for public uses.			X
(k) Preserve the public's rights of access to and continuous lateral access along all shorelines.			X
(l) Enable existing and future communities to be self-sufficient through sustainable land use planning and management practices.		X	
(m) Protect summits, slopes, and ridgelines from inappropriate development.			X
Implementing Actions:			
(a) Regularly update urban- and rural-growth boundaries and their maps.			X
(b) Establish transfer and purchase of development rights programs.			X
(c) Develop and adopt a green infrastructure plan.			X
(d) Develop studies to help determine a sustainable social, environmental, and economic carrying capacity for each island.			X
(e) Identify and define resort-destination areas.			X
Analysis: The proposed project directly supports the objective and policies for land-use management and directed growth by maintaining agriculturally zoned land for agricultural use. Additionally, the project will be implemented in area serviced by basic infrastructure. Improvements to the DHHL's agricultural lots for lease to beneficiaries directly enables self-sufficiency in the community.			
Objective:			
(2) Improve planning for and management of agricultural lands and rural areas.		X	
Policies:			
(a) Protect prime, productive, and potentially productive agricultural lands to maintain the islands' agricultural and rural identities and economies.		X	
(b) Provide opportunities and incentives for self-sufficient and subsistence homesteads and farms.			X
(c) Discourage developing or subdividing agriculturally designated lands when non- agricultural activities would be primary uses.			X
(d) Conduct agricultural-development planning to facilitate robust and sustainable agricultural activities.	X		

COUNTYWIDE POLICY PLAN					
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable			DA	IA	NA
Implementing Actions:					
(a) Inventory and protect prime, productive, and potentially productive agricultural lands from competing non-agricultural land uses.				X	
Analysis: The proposed project indirectly advances the goal, objective, and policies for maintaining community character and managing agricultural lands and rural areas. The DHHL's Ho'olehua agricultural lots on prime and productive agricultural lands will be preserved for agricultural use while maintaining the island's rural identity and economy.					
Objective:					
(3) Design all developments to be in harmony with the environment and to protect each community's sense of place.			X		
Policies:					
(a) Support and provide incentives for green building practices.					X
(b) Encourage the incorporation of green building practices and technologies into all government facilities to the extent practicable.					X
(c) Protect and enhance the unique architectural and landscape characteristics of each Community Plan Area, small town, and neighborhood.					X
(d) Ensure that adequate recreational areas, open spaces, and public-gathering places are provided and maintained in all urban centers and neighborhoods.					X
(e) Ensure business districts are distinctive, attractive, and pedestrian-friendly destinations.					X
(f) Use trees and other forms of landscaping along rights-of-way and within parking lots to provide shade, beauty, urban-heat reduction, and separation of pedestrians from automobile traffic in accordance with community desires.					X
(g) Where appropriate, integrate public-transit, equestrian, pedestrian, and bicycle facilities, and public rights-of-way as design elements in new and existing communities.					X
(h) Ensure better connectivity and linkages between land uses.			X		
(i) Adequately buffer and mitigate noise and air pollution in mixed-use areas to maintain residential quality of life.					X
(j) Protect rural communities and traditional small towns by regulating the footprint, locations, site planning, and design of structures.			X		
(k) Support small-town revitalization and preservation.					X
(l) Facilitate safe pedestrian access, and create linkages between destinations and within parking areas.					X
Implementing Actions:					
(a) Establish design guidelines and standards to enhance urban and rural environments.					X
(b) Provide funding for civic-center and civic-space developments.					X
(c) Establish and enhance urban forests in neighborhoods and business districts.					X
Analysis: The proposed project directly supports the objective and policies for protecting the community's sense of place and protecting rural communities by providing roadway access to subsistence agricultural lots for DHHL beneficiaries.					
Objective:					
(4) Improve and increase efficiency in land use planning and management.			X		

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Policies:			
(a) Assess the cumulative impact of developments on natural ecosystems, natural resources, wildlife habitat, and surrounding uses.	X		
(b) Ensure that new development projects requiring discretionary permits demonstrate a community need, show consistency with the General Plan, and provide an analysis of impacts.	X		
(c) Encourage public and private partnerships to preserve lands of importance, develop housing, and meet the needs of residents.		X	
(d) Promote creative subdivision designs that implement best practices in land development, sustainable management of natural and physical resources, increased pedestrian and bicycle functionality and safety, and the principles of livable communities.	X		
(e) Coordinate with Federal, State, and County officials in order to ensure that land use decisions are consistent with County plans and the vision local populations have for their communities.			X
(f) Enable greater public participation in the review of subdivisions.			X
(g) Improve land use decision making through the use of land and geographic information systems.			X
Implementing Actions:			
(a) Institute a time limit and sunseting stipulations on development entitlements and their implementation.			X
Analysis: The proposed project entails the subdivision of land for subsistent agricultural use to meet the needs of DHHL beneficiaries and will provide road access and access to water to create livable communities. In addition, the environmental review processes involved detailed analysis of the proposed project's potential impacts on the environment, infrastructure, and socio-economic conditions.			
K. STRIVE FOR GOOD GOVERNANCE			
Goal: Government services will be transparent, effective, efficient, and responsive to the needs of residents.	X		
Objective:			
(1) Strengthen governmental planning, coordination, consensus building, and decision making.	X		
Policies:			
(a) Plan and prepare for the effects of social, demographic, economic, and environmental shifts.			X
(b) Plan for and address the possible implications of Hawaiian sovereignty.			X
(c) Encourage collaboration among government agencies to reduce duplication of efforts and promote information availability and exchange.	X		
(d) Expand opportunities for the County to be involved in and affect State and Federal decision making.			X
(e) Plan and prepare for large-scale emergencies and contingencies.			X
(f) Improve public awareness about preparing for natural hazards, disasters, and evacuation plans.			X
(g) Improve coordination among Federal, State, and County agencies.			X
Implementing Actions:			
(a) Develop policies, regulations, and programs to protect and enhance the unique character and needs of the County's various communities.			X


COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(b) Evaluate and if necessary, recommend modifications to the County Charter that could result in a possible change to the form of governance for Maui County.			X
(c) Study and evaluate the feasibility and implications of voting in Maui County Council elections.			X
(d) Study and evaluate the feasibility of authorizing town governments in Maui County.			X
Analysis: The objective of strengthening governmental planning, coordination, consensus building, and decision making along with the policies that support this objective is directly applicable to the proposed project. DHHL and HHC meet regularly with beneficiaries and Homestead communities to review plans and receive comments on environmental assessments to promote good governance. It is important to note that continuing coordination between government entities is critical to the success of the project, directly strengthening governmental planning and collaboration.			
Objective:			
(2) Promote civic engagement.	X		
Policies:			
(a) Foster consensus building through in-depth, innovative, and accessible public participatory processes.	X		
(b) Promote and ensure public participation and equal access to government among all citizens.			X
(c) Encourage a broad cross-section of residents to volunteer on boards and commissions.			X
(d) Encourage the State to improve its community-involvement processes.			X
(e) Support community-based decision making.	X		
(f) Expand advisory functions at the community level.			X
(g) Expand opportunities for all members of the public to participate in public meetings and forums.	X		
(h) Facilitate the community's ability to obtain relevant documentation.			X
(i) Increase voter registration and turnout.			X
Implementing Actions:			
(a) Implement two-way communication using audio-visual technology that allows residents to participate in the County's planning processes.			X
(b) Ensure and expand the use of online notification of County business and public meetings, and ensure the posting of all County board and commission meeting minutes.			X
(c) Explore funding mechanisms to improve participation by volunteers on boards and commissions.			X
(d) Develop a project-review process that mandates early and ongoing consultation in and with communities affected by planning and land use activities.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Analysis: As mentioned previously, the design and environmental review processes involved opportunities for the public to provide input throughout the environmental review process. Public meetings and requests for comments were included to acquire community input to guide this project. Additionally, the Hawaiian Homes Commission meetings are open to the public.			
Objective:			
(3) Improve the efficiency, reliability, and transparency of County government's internal processes and decision making.			X
Policies:			
(a) Use advanced technology to improve efficiency.			X
(b) Simplify and clarify the permitting process to provide uniformity, reliability, efficiency, and transparency.			X
(c) Improve communication with Lana'i and Moloka'i through the expanded use of information technologies, expanded staffing, and the creation and expansion of government-service centers.			X
(d) Ensure that laws, policies, and regulations are internally consistent and effectuate the intent of the General Plan.			X
Implementing Actions:			
(a) Update the County Code to be consistent with the General Plan.			X
(b) Identify and update County regulations and procedures to increase the productivity and efficiency of County government.			X
(c) Develop local level-of-service standards for infrastructure, public facilities, and services.			X
(d) Implement plans through programs, regulations, and capital improvements in a timely manner.			X
(e) Expand government online services.			X
Analysis: The objective and policies as it relates to improving the efficiency, reliability, and transparency of County government's internal processes and decision-making is not applicable to the proposed project.			
Objective:			
(4) Adequately fund in order to effectively administer, implement, and enforce the General Plan.			X
Policies:			
(a) Adequately fund, staff, and support the timely update and implementation of planning policy, programs, functional plans, and enforcement activities.			X
(b) Ensure that the County's General Plan process provides for efficient planning at the County, island, town, and neighborhood level.			X
(c) Encourage ongoing professional development, education, and training of County employees.			X
(d) Encourage competitive compensation packages for County employees to attract and retain County personnel.			X
(e) Enable the County government to be more responsive in implementing our General Plan and Community Plans.			X
(f) Review discretionary permits for compliance with the Countywide Policy Plan.			X
(g) Strengthen the enforcement of County, State, and Federal land use laws.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Implementing Actions:			
(a) Establish penalties to ensure compliance with County, State, and Federal land use laws.			X
Analysis: The objective and policies regarding the funding of the General Plan do not apply to the proposed action.			
Objective:			
(5) Strive for County government to be a role model for implementing cultural and environmental policies and practices.			X
Policies:			
(a) Educate residents on the benefits of sustainable practices.			X
(b) Encourage the retention and hiring of qualified professionals who can improve cultural and environmental practices.			X
(c) Incorporate environmentally sound and culturally appropriate practices in government operations and services.			X
(d) Encourage all vendors with County contracts to incorporate environmentally sound and culturally appropriate practices.			X
Analysis: The objective and policies regarding the County of Maui implementing cultural and environmental practices does not apply to the proposed DHHL project.			
L. MITIGATE CLIMATE CHANGE AND WORK TOWARD RESILIENCE			
Goal: Minimize the causes and negative effects of climate change.			X
Objective:			
(1) Lower carbon emissions levels to mitigate climate change impacts and limit the rate of global warming.			X
Policies:			
(a) Increase reforestation efforts by encouraging residents and visitors to plant non-invasive gardens and trees.			X
(b) Improve communication, coordination, and collaboration among those that work to mitigate climate change impacts.			X
(c) Promote the teaching and use of regenerative agriculture.			X
(d) Invest in infrastructure that is not dependent on fossil fuels and utilizes renewable energy.			X
(e) Improve efforts to mitigate and plan for the impact of natural disasters and global warming.			X
(f) Encourage the building industry to use environmentally sustainable materials, technology, and site planning.			X
(g) Reduce air, noise, light, land, and water pollution, and reduce Maui County's contribution to global climate change.			X
(h) Plan and prepare for and educate visitors and residents about the possible effects of global warming.			X
(i) Promote programs and incentives that decrease greenhouse-gas emissions and improve environmental stewardship.			X
(j) Support the development of carbon-emission standards and an incentive program aimed at achieving County carbon-emission goals.			X
Implementing Actions:			
(a) Implement Federal and State policies that require a reduction of greenhouse-gas emissions.			X
(b) Establish a Countywide Climate Action Plan			X


COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(c) Develop programs that assist residents and businesses with obtaining access to renewable energy sources.			X
(d) Revise laws to support neighborhood designs that incorporate the use of renewable energy sources that are appropriate for island living.			X
(e) Incorporate planting of native and indigenous trees as a major component of Urban Design to both cool neighborhoods and reduce carbon dioxide.			X
(f) Coordinate with State, County, and private landowners in the development of forestry and prioritizing of native and indigenous trees to reduce carbon dioxide.			X
(g) Strongly support efforts to restore and improve Maui County's watersheds for the purpose of improving the water supply, controlling carbon dioxide levels, decreasing soil runoff, and reducing coastal flooding.			X
Analysis: DHHL acknowledges the importance of resiliency to the impacts of climate change. However, the proposed homestead improvements are not applicable to the goal and objectives to minimize causes and effects of climate change.			
Objective:			
(2) Reduce the impacts of sea-level rise by acknowledging climate change, adapting, mitigating, and planning accordingly.		X	
Policies			
(a) Evaluate development to assess potential short-term and long-term sea-level rise impacts on nearshore environments.		X	
(b) Improve efforts to mitigate and plan for the impact of sea-level rise.			X
(c) Protect undeveloped beaches, dunes, and ecosystems, and restore natural shoreline processes.			X
(d) Develop an inventory of private wastewater systems (septic systems, cesspools) that may be affected by sea-level rise.			X
(e) Strengthen coastal-zone management, re-naturalization of shorelines, where possible, and filtration or treatment of urban and agricultural runoff.			X
(f) Educate the construction and landscape industries and property owners about the use of best management practices to prevent erosion and nonpoint source pollution.			X
(g) Discourage beach hardening processes such as building sea walls and revetments that block movement of the shoreline and can accelerate erosion.			X
(h) Discourage new entitlements for residential, resort, or commercial development along the shoreline.			X
(i) Restrict development in areas that are prone to sea-level rise.			X
(j) Move or rebuild public facilities away from nearshore environments to account for sea-level rise to the extent reasonable.			X
(k) Move or rebuild roads that are in sea-level rise inundation zones to the extent reasonable.			X
(l) Ensure that public or affordable housing projects include siting and design standards that promote equity and resilience for vulnerable populations.			X
(m) Identify, research, and evaluate innovative and sustainable financing to support mitigation and adaptation to sea level rise.			X
Implementing Actions:			
(a) Develop programs to help transition shoreline property owners out of their nearshore locations and develop a long-term plan to stay out of the way of natural beach migration.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(b) Identify buildings, roads, and other infrastructure that are in sea-level rise inundation zones and assist in adaptive efforts, including nature-based solutions, elevation, or moving them away from such zones.			X
(c) Identify disaster redevelopment alternatives that support resilience-focused adaptation to sea level rise in the event of a catastrophic coastal event.			X
Analysis: This EA prepared for the proposed action acknowledges and evaluates the potential impacts of sea level rise to the project area, indirectly advancing the objective of planning for the impacts of climate change.			
Objective:			
(3) Significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.			X
Policies:			
(a) Promote the use of locally renewable energy sources, and reward energy efficiency.			X
(b) Consider tax incentives and credits for the development of sustainable- and renewable-energy sources.			X
(c) Expand education about energy conservation and self-sufficiency.			X
(d) Encourage small-scale energy generation that utilizes wind, sun, water, biowaste, and other renewable sources of energy.			X
(e) Expand renewable-energy production.			X
(f) Develop public-private partnerships to ensure the use of renewable energy and increase energy efficiency.			X
(g) Require the incorporation of locally appropriate energy-saving and green building design concepts in all new developments by providing energy-efficient urban design guidelines and amendments to the Building Code.			X
(h) Encourage the use of sustainable energy to power vehicles.			X
(i) Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts and devices.			X
(j) Encourage green footprint practices.			X
(k) Reduce Maui County's dependence on fossil fuels and energy imports.			X
(l) Support green building practices such as the construction of buildings that aim to minimize carbon dioxide production, produce renewable energy, and recycle water.			X
(m) Promote and support environmentally friendly practices in all energy sectors.			X
Implementing Actions:			
(a) Adopt an energy-efficiency policy for Maui County government as a model for other jurisdictions.			X
(b) Adopt a Green Building Code and support green building practices.			X
Analysis: The proposed action is not directly or indirectly applicable to the objective to significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.			



APPENDIX I.

**MEETING MEMO – NOVEMBER
12, 2025 BENEFICIARY
INFORMATION MEETING**





MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.

Karlynn K. Fukuda
PRESIDENT

Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT

Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

February 4, 2026

MEETING MEMORANDUM

Date of Meeting: November 12, 2025
Time of Meeting: 5:30 p.m. – 6:30 p.m.
Place: Kulana 'Ōiwi Hālau, 600 Maunaloa Hwy. Kaunakakai, HI 96748
Subject: State Department of Hawaiian Home Lands Ho'olehua Scattered Lots Project Beneficiary Information Meeting

Participants: **Department of Hawaiian Home Lands**
Robert Ing
Nancy McPherson
David Bush
Munekiyo Hiraga
Karlynn Fukuda
Patrick McCormic

Participants

(Online): **R.M. Towill**
Gordon Ring

Meeting Summary:

I. Presentation of Project Overview:

The project team sought input from Department of Hawaiian Home Lands (DHHL) beneficiaries on the proposed Ho'olehua Scattered Lots Subdivision and Improvements project. DHHL proposes to subdivide five (5) parcels within the Ho'olehua area on Moloka'i into twelve (12) lots to be designated for agricultural use and improving them for lease to DHHL beneficiaries. Tax Map Key (TMK) parcels involved are: (2) 5-2-05:031, (2) 5-2-026:003, 014, 016 and 017. Lots would help to address the need for subsistence agricultural lands for beneficiaries. The meeting began with an opening pule and introductions from DHHL and Munekiyo Hiraga, followed by an informational presentation on the Ho'olehua Scattered Lots project, and concluded with questions and comments from the beneficiary community. There were a total of 18 attendees (17 in-person and 1 online). 1 person attended both online and in-person. A copy of the presentation and attendance sign in sheet are provided as **Exhibit "A"** and **Exhibit "B"** respectively.

II. Key Questions, Comments, and Responses

Presentation Materials

Comment No. 1:

Printed handouts of the Beneficiary Information Meeting presentation requested

Response: DHHL to post Beneficiary Information Meeting presentation on the DHHL website.

Lot Development

Question No. 1:

What is the benefit of subdividing lots for the community?

Response: Subsistence agricultural lots will be available. Water laterals will be installed for each lot. DHHL will schedule lot selection in the near future.

Existing Project Lots

Question No. 2:

DHHL lots in the area that were previously assigned should be given back. Who had the lease for existing project lots?

Response: The project team is unsure. However, the Moloka'i Island Plan (MIP) shows that the lots are predominantly subsistence agricultural lots. There is a desire to have lots closer to roads and infrastructure to award to beneficiaries. The current Chair of the Hawaiian Homes Commission wants to get beneficiaries off the waitlist.

Question No. 3:

Why wasn't the house (referring to an abandoned home located on a portion of TMKs (2) 5-2-026:003 and (2) 5-2-026:16) given away sooner? If subdividing 5 lots to 12 lots, would this open the floor for lessees to subdivide further?

Response: The project team mentioned that there is no longer a moratorium to subdivide the agricultural lots, however the Hawaiian Homes Commission will review requests to subdivide the larger agricultural lots on a case by case basis. It was also noted that a beneficiary would need to pay for all the costs related to any subdivision action.

Proposed Project Lots

Comment No. 2:

If the beneficiary is not from Moloka'i and awarded, they should be able to submit a farm plan and start utilizing the property. The concern is if the lot

is awarded and remains vacant because someone doesn't live on the island.

Response: The project team said that supplemental agriculture lot agreements say that beneficiaries have one (1) year to start the agricultural use after lot award. DHHL has an agricultural specialist and an on-island agricultural extension agent who will be supporting subsistence agricultural lessees to utilize their lots as soon as possible.

Water:

Question No. 4

Will potable water meters be issued?

Response: The project team stated that DHHL has a water program specialist who is making progress to get more water meters available. The DHHL is also working to address a shortage of water meters across all homestead lots on Moloka'i.

Comment No. 3

There was a discussion about the Moloka'i Irrigation System and a recent break in the system.

Response: The project team addressed the beneficiaries concerns and suggested holding a separate future meeting to discuss the Moloka'i Irrigation System.

Project Lease Awards:

Question No. 5

How long is the agriculture wait list?

Response: The project team estimated that about 1,000 beneficiaries are on the DHHL agriculture wait list for Moloka'i. There are a lot of underutilized DHHL lands, but the Department needs to insure there is enough potable water and agricultural water to support the lessees. The project team later clarified that as of Oct, 1, 2025, there are 1,142 beneficiaries on the DHHL agriculture waitlist for Moloka'i.

III. Next Steps

DHHL beneficiaries were encouraged to share further comments with DHHL representatives and consultants so that they could be included in the Chapter 343 Final Environmental Assessment (EA). The project team noted the anticipated timelines for the review and determination by the Hawaiian Homes Commission for the Final EA and Finding of No Significant Impact (FONSI), publication of the Final EA determination in the State of Hawai'i, Environmental Review Program's *The Environmental Notice* as well as the ongoing preparation of construction plans of the project. It was noted that the project presentation would be shared via DHHL website, and questions can be directed towards Robert Ing, the Project Manager for DHHL as well as the project consultants Munekiyo Hiraga.

IV. Written Comments

Seven (7) written comments were provided by participants of the meeting. The following provides an overview of the comments received:

	Concerns	Comments
1	Project Lease Awards	<ul style="list-style-type: none"> Request to be awarded project lot lease because beneficiary had been on the waitlist for 30 years
2	Lot Development	<ul style="list-style-type: none"> Subdivision is possible Request that beneficiaries be informed of the problems pertaining to their awarded lot sites
3	Lot Development	<ul style="list-style-type: none"> Request of financial support from DHHL for lessees interested in the subdivision of their lots Desire that lots be awarded to beneficiaries from Moloka'i Request for beneficiary workshop focused on lot subdivision
4	Project Lease Awards	<ul style="list-style-type: none"> Question: When are more lots going to open up? Concern over the time for existing project lot leases to become available Request to award existing project lot leases to beneficiaries who live and farm on island
5	Lot Development	<ul style="list-style-type: none"> Question: Who will benefit off these lots? Moloka'i? Single family?
6	Water	<ul style="list-style-type: none"> Mention of the Moloka'i Irrigation System
7	Water	<ul style="list-style-type: none"> Desire to have DHHL control of Moloka'i Irrigation System Concern over the operational status of the Moloka'i Irrigation System

V. **Adjournment**

The meeting ended at 6:30 p.m.

Should you have any questions, please contact me at (808) 244-2015.



Patrick McCormic
Associate

PM:cnk

Attachments

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Exhibit A.

Beneficiary Informational Meeting Presentation



HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

Beneficiary Informational Meeting

HO'OLEHUA SCATTERED LOTS & KALANIANA'OLE HALL

November 12, 2025



AGENDA

- Opening and Introductions (Planning Office, Land Development Division, Consultants)
- Informational Presentation on Ho‘olehua Scattered Lots project
- Q & A / Discussion
- BREAK – 15 minutes
- Informational Presentation on Kalaniana‘ole Hall project
(start by 6:30 p.m.)
- Q & A / Discussion
- Pau

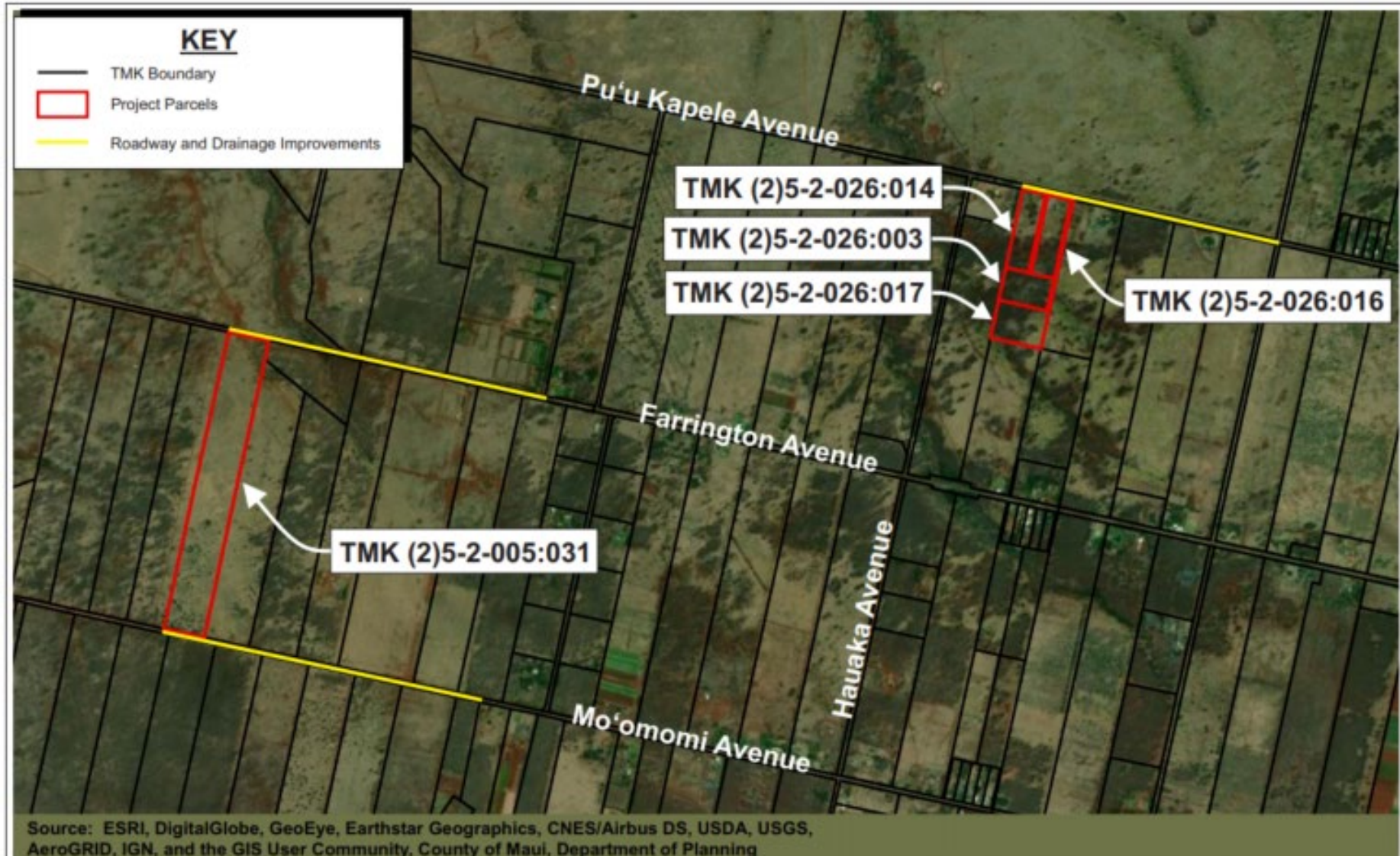


Ho'olehua Scattered Lots Project

- **Seeking input from beneficiaries on the proposed Ho'olehua Scattered Lots Improvements project**
- **DHHL proposes to subdivide five (5) parcels within the Ho'olehua area on Moloka'i into twelve (12) lots to be designated for agricultural use and improving them for lease to DHHL beneficiaries**
- **Tax Map Key parcels involved are: (2) 5-2-05:031, (2) 5-2-026:003, 014, 016 and 017**
- **Lots would help to address the need for subsistence agricultural lands for beneficiaries**



Ho'olehua Scattered Lots Project





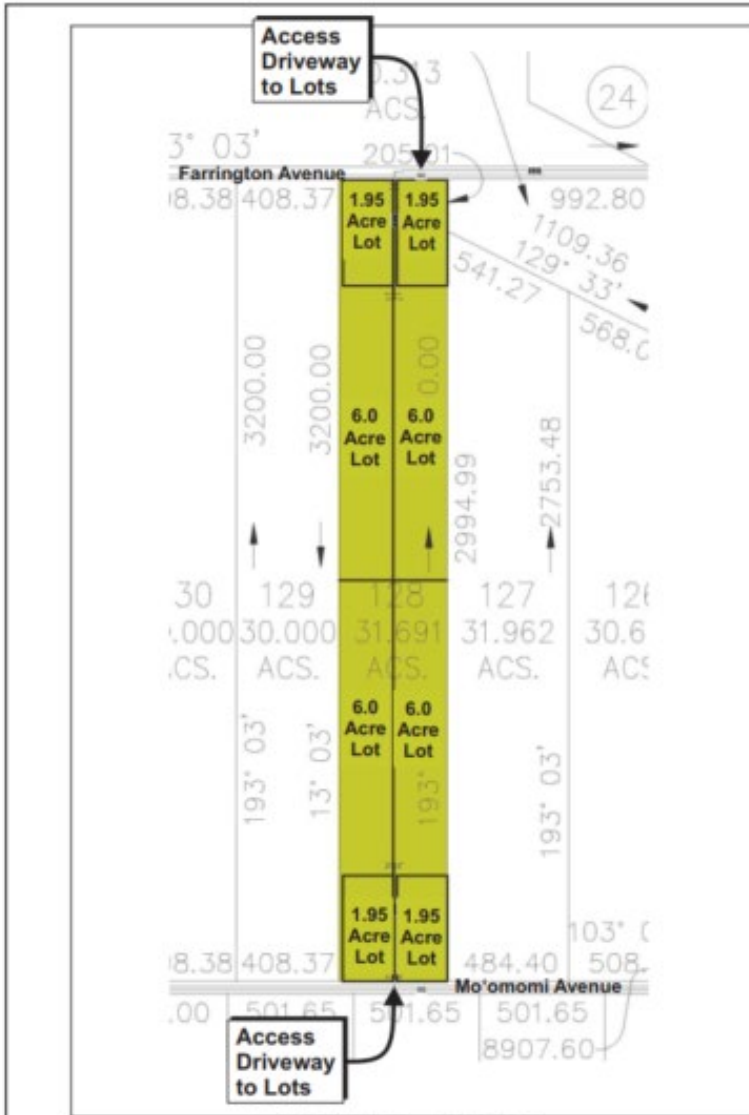
Ho'olehua Scattered Lots Project

Proposed project improvements include:

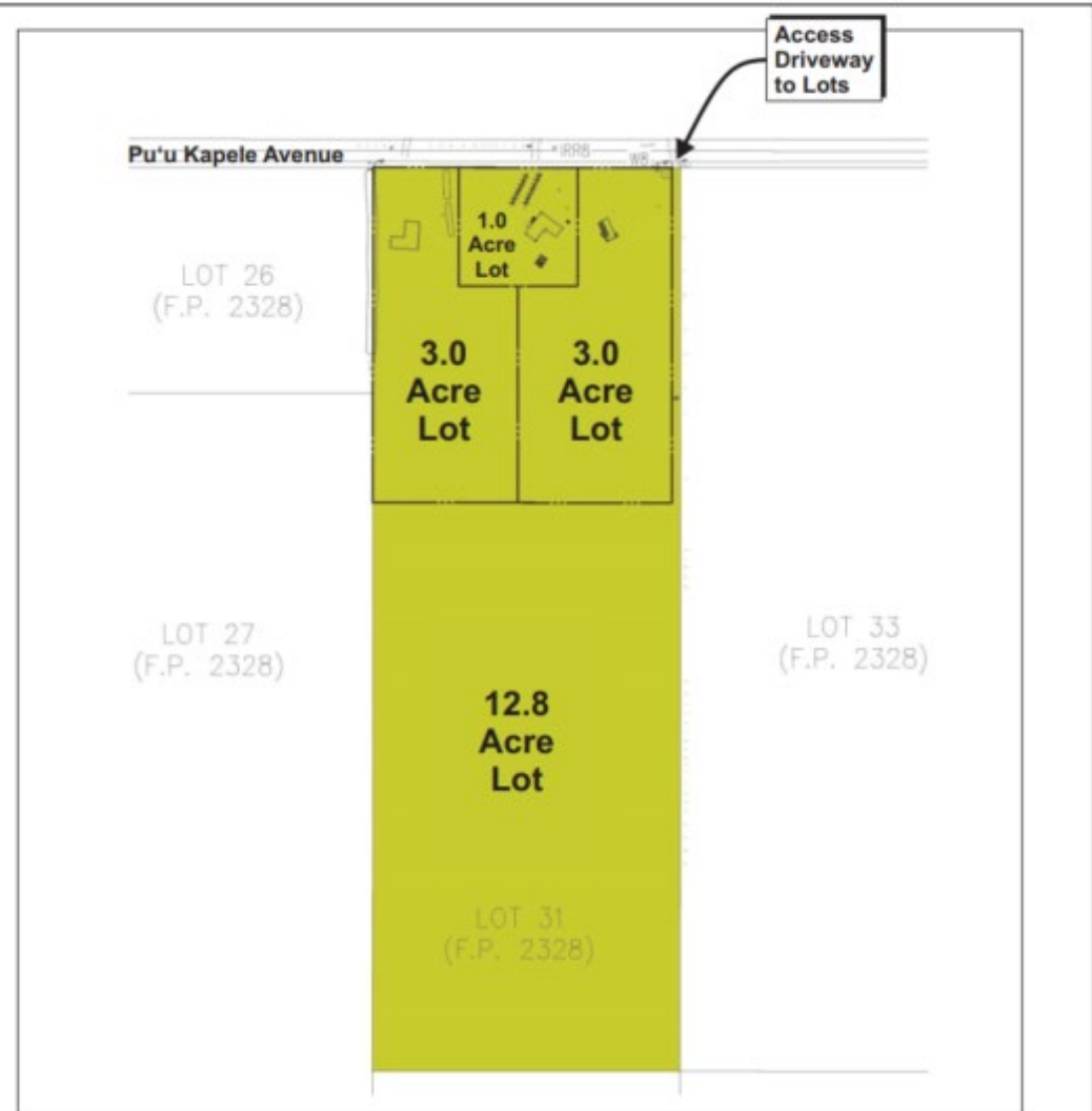
- **Subdivision (consolidation and resubdivision) of five (5) lots into 12 lots**
- **Driveway access for each of the 12 lots**
- **Roadway improvements on Mo'omomi Avenue, Farrington Avenue and Pu'u Kapele Avenue to provide access to the lots**
- **Infrastructure improvements for each lot including potable water and irrigation water improvements, drainage improvements and electrical services**
- **Project scope also includes the demolition of an abandoned home and cesspool on Parcel 14, demolition of an old greenhouse on Parcel 16 and assessment of a home on Parcel 3 and Parcel 16.**



Ho'olehua Scattered Lots Project



Source: R.M. Towill Corporation





Ho‘olehua Scattered Lots Project

- **Seven (7) of the lots, will be (3) acres or less, and will be leased as Subsistence Agriculture lots**
 - **Beneficiaries may live on and farm lots on a smaller scale per DHHL General Plan***
- **Five (5) subdivided lots, will be larger than three (3) acres, and will be designated and leased as Supplemental Agriculture lots**
 - **Beneficiaries will utilize parcels for agricultural production to supplement income and for home use, an agricultural plan required per the DHHL General Plan**
- **The lots are currently vacant, with the exception of several abandoned structures on Parcels 3, 14, and 16**

* https://dhhl.hawaii.gov/wp-content/uploads/2022/12/221123-DHHL-General-Plan-Final-Draft_Adopted.pdf



Ho'olehua Scattered Lots Project

- **If Beneficiaries choose to build a home on the lot, an individual wastewater system (IWS) would be needed**
- **Potable water improvements will be constructed to the lots for use in the home if one is built**
- **Agricultural water improvements will be constructed for farm use**



Ho'olehua Scattered Lots Project

Water System Information

Potable Water:

- **Potable water for the 12 lots will be provided by the Ho'olehua Water System, owned and operated by the DHHL. Water for the Ho'olehua System is provided by the Kualapu'u Aquifer**
- **New water meters will be provided for each lot, if it does not have one**

Agricultural Water:

- **Agricultural water for the 12 lots will be provided by the State Department of Agriculture's Moloka'i Irrigation System (MIS)**
- **There are existing connections to the MIS in the roadways (Mo'omomi Avenue, Farrington Avenue and Pu'u Kapele Avenue) fronting the parcels**
- **MIS connections will be installed for each lot, if it does not have one**
- **The MIS has capacity to serve the 12 lots**



Ho'olehua Scattered Lots Project

Federal, State and County agencies were invited to review the Draft EA and provide comments. Comments were received from various agencies including:

U.S. Fish and Wildlife Service	DLNR- Engineering, DOFAW	State Dept. of Transportation
State Office of Planning and Sustainable Development	County Dept. of Water Supply	County Dept. of Environmental Management

A Draft Final EA is being prepared for the project. A Finding of No Significant Impact will be requested from the Hawaiian Homes Commission. The Final EA will include responses to agency comments received. The Final EA will be scheduled for a future Hawaiian Homes Commission meeting agenda.



Ho'olehua Scattered Lots Project

Timeline and Next Steps:

- Beneficiary information meeting – November 12, 2025**
- Hawaiian Homes Commission Meeting to review and request determination on Draft Final EA – December 2025/January 2026**
- Publication of Final EA determination in the Environmental Notice – January / February 2026**
- Preparation of construction plans (ongoing)**



Ho'olehua Scattered Lots Project

Project Contact Information:

DHHL Contact - LDD

Robert Ing, Project Manager

Email: Robert.m.ing@hawaii.gov

Phone: (808) 730-0328

Munekiyo Hiraga

Patrick McCormic and Karlynn Fukuda

Email: Planning@munekiyohiraga.com

Phone: (808) 244-2015



Q & A -- DISCUSSION

NĪNAU?



MAHALO
15 MINUTE BREAK



Kalaniana'ole Hall Update



HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION • DEPARTMENT OF HAWAIIAN HOME LANDS



LAND DEVELOPMENT DIVISION
Beneficiary Informational Meeting
November 12, 2025



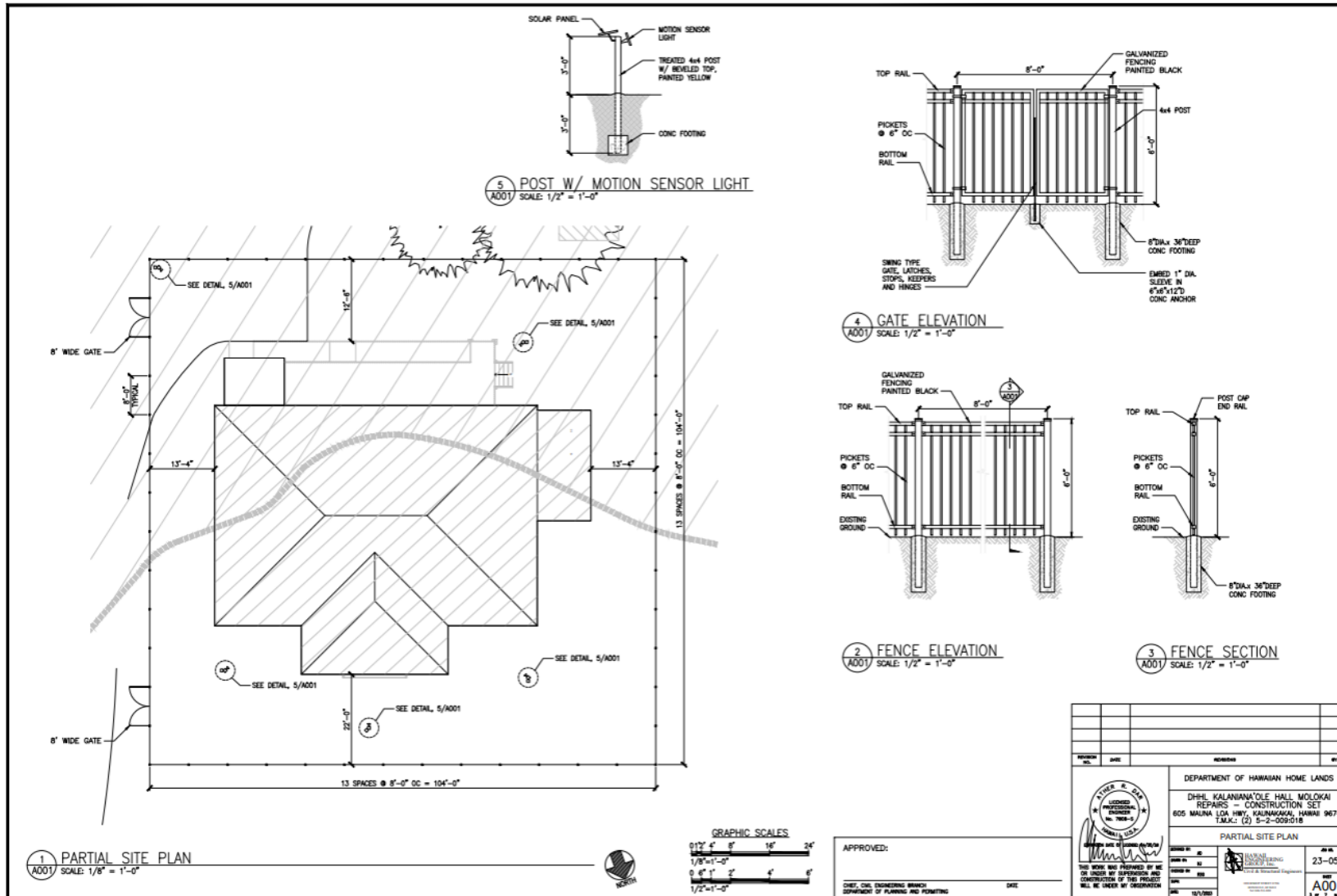
Enlarged Site Plan



605 Maunaloa Hwy,
Kaunakakai,
Hawaii, location
of existing
Kalaniana'ole
Hall.

Existing Kalaniana'ole Hall

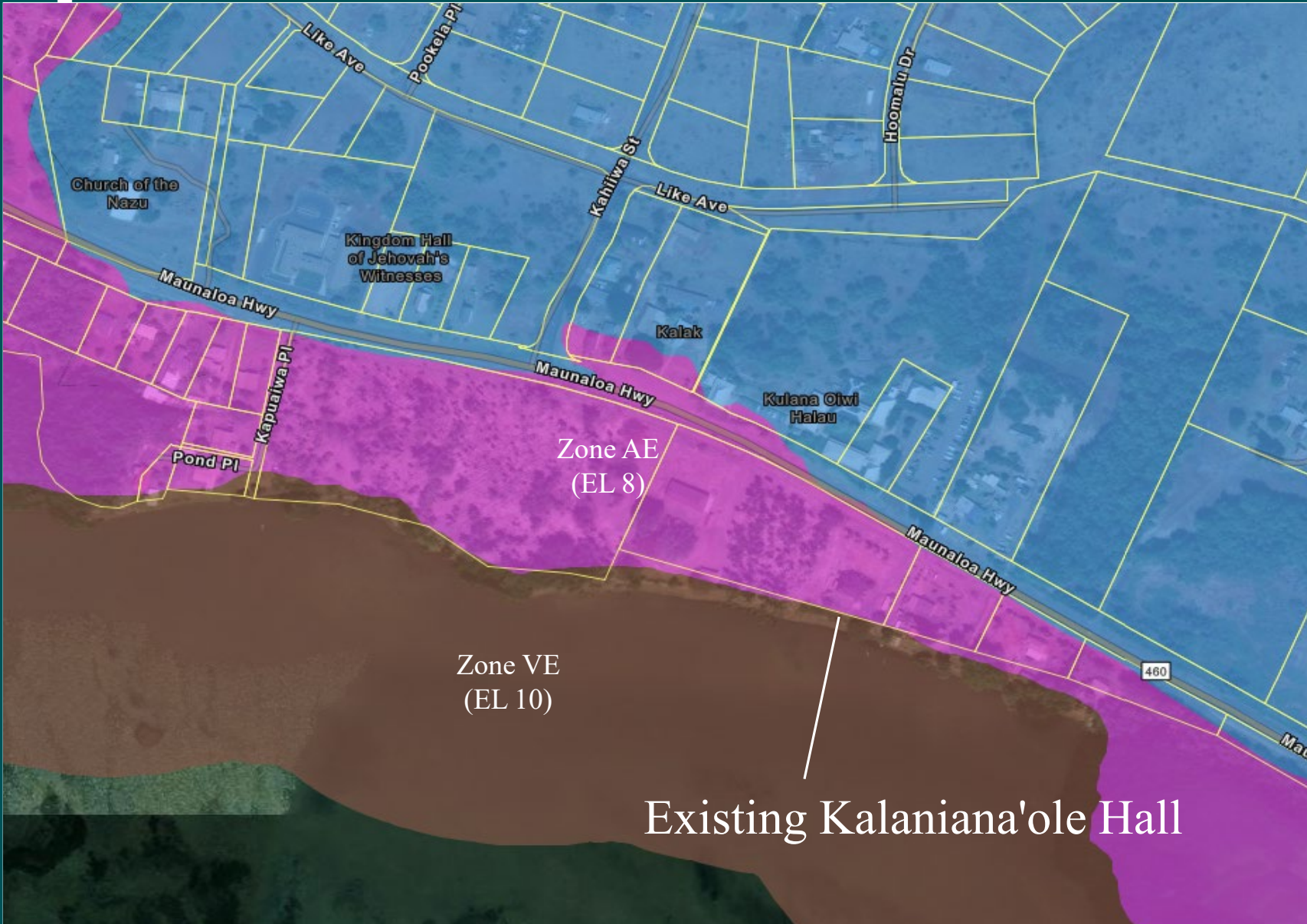
Preservation Of Kalaniana'ole Hall



1. Hall is structurally unsafe.
2. State Historical Preservation Division approved exterior repairs and restricted access.
3. Galvanized fencing to be installed to protect the Hall.
4. Other environmental concerns



Flood Hazard Map



Existing Hall is within the Flood Zone AE with BFE of 8 feet.

Shoreline is in Flood Zone VE with BFE of 10 feet.

Impacts:

1. Septic System
2. Insurance
3. Safety



Sea Level Rise

State of Hawaii Climate Portal and Sea Level Rise Guidance indicates that 3.2 feet sea-level rise in yellow.



Existing Kalaniana'ole Hall



Maui County Special Management Area (SMA)

The SMA was established under the Hawai'i Coastal Zone Management Act of 1977, in response to the federal Coastal Zone Management Act of 1972. Its main goals are to:

- Preserve and protect** the natural and cultural resources of Molokai's coastal zone.

- Restore** coastal areas where possible.
- Prevent permanent loss** of valuable shoreline resources due to unchecked development.

- Ensure public access** to beaches, recreational areas, and natural reserves.

- Manage development** to avoid environmental degradation and maintain long-term planning options.

Applicability of County SMA & Shoreline Rules to Hawaiian Home Lands is currently undergoing study and is TBD



Existing Kalaniana'ole Hall



Wetland Mapper

No impact to Wetlands within the area and critical habitat for threatened and endangered species (FWS).



Existing Kalaniana'ole Hall



Proposed New Location: 139 Likelike Ave



Existing Kalaniana'ole Hall

- ~5-acre DHHL-owned parcel
- ~4 acres available for redevelopment (remainder under ROE with Hawaiian Mission School)
- Outside flood zones, SMA, and sea-level rise areas
- Concept to develop a modern community center with shared church/community use and adequate parking
- Early planning stage — additional funding required to advance



Q & A -- DISCUSSION





Kalaniana'ole Hall Project

Project Contact Information:

DHHL Contact - LDD

Lokahi Pauole, Project Manager

Email:

lokahi.pauole.dhhl.consultant@

hawaii.gov

Phone: (808) 752-5450

Consultant – Roy Irei, Hawaii Engineering

Email: roy@hawaiiengineering.net

Phone: (808) 460-0006



Mahalo

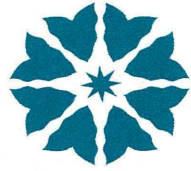


DEPARTMENT OF HAWAIIAN HOME LANDS

www.dhhl.hawaii.gov

Exhibit B.

Beneficiary Informational Meeting Sign-In Sheet



DEPARTMENT OF HAWAIIAN HOME LANDS

DEPARTMENT OF HAWAIIAN HOME LANDS
SIGN-IN SHEET

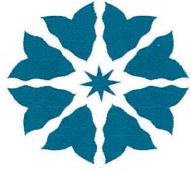
EVENT Kalaniana'ole Hall / Ho'olehua
Scattered Lots
DATE Wed. Nov. 12, 2025 Kūlana 'Ōiwi Halau

(Please print)

** (A=Applicant, L=Lessee, Both=Applicant and Lessee, O=Other) **

BENEFICIARY	NAME	MAILING ADDRESS	E-MAIL	TELEPHONE
(A) L B O	Christine Ward	[REDACTED]	[REDACTED]	[REDACTED]
(A) L B O	T. Dickenson Stone	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	Alma Comico	[REDACTED]	[REDACTED]	[REDACTED]
A (L) B O	Barbara Kalipi	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	Stacey Crivello	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	Monique Coanor	[REDACTED]	[REDACTED]	[REDACTED]
(A) L B O	Beatrice Leialoha Kalerkini	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	Walter Rite / Loretta Rite	[REDACTED]	[REDACTED]	[REDACTED]

****Please include email if you wish to receive future meeting notifications electronically****



DEPARTMENT OF HAWAIIAN HOME LANDS

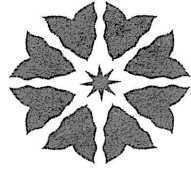
DEPARTMENT OF HAWAIIAN HOME LANDS
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BENEFICIARY	NAME	MAILING ADDRESS	E-MAIL	TELEPHONE
A (L) B O	Carla DeAngelo Carla	[REDACTED]	[REDACTED]	[REDACTED]
A (L) B O	KALANI JOHNSTON Sr.	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	Rufina Kaauwai	[REDACTED]	[REDACTED]	[REDACTED]
A (L) B O	Wayne Kaauwai	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	HK PURDY III	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	Lehua Kauka	[REDACTED]	[REDACTED]	[REDACTED]
A L B O				
A L B O				
A L B O				
A L B O				

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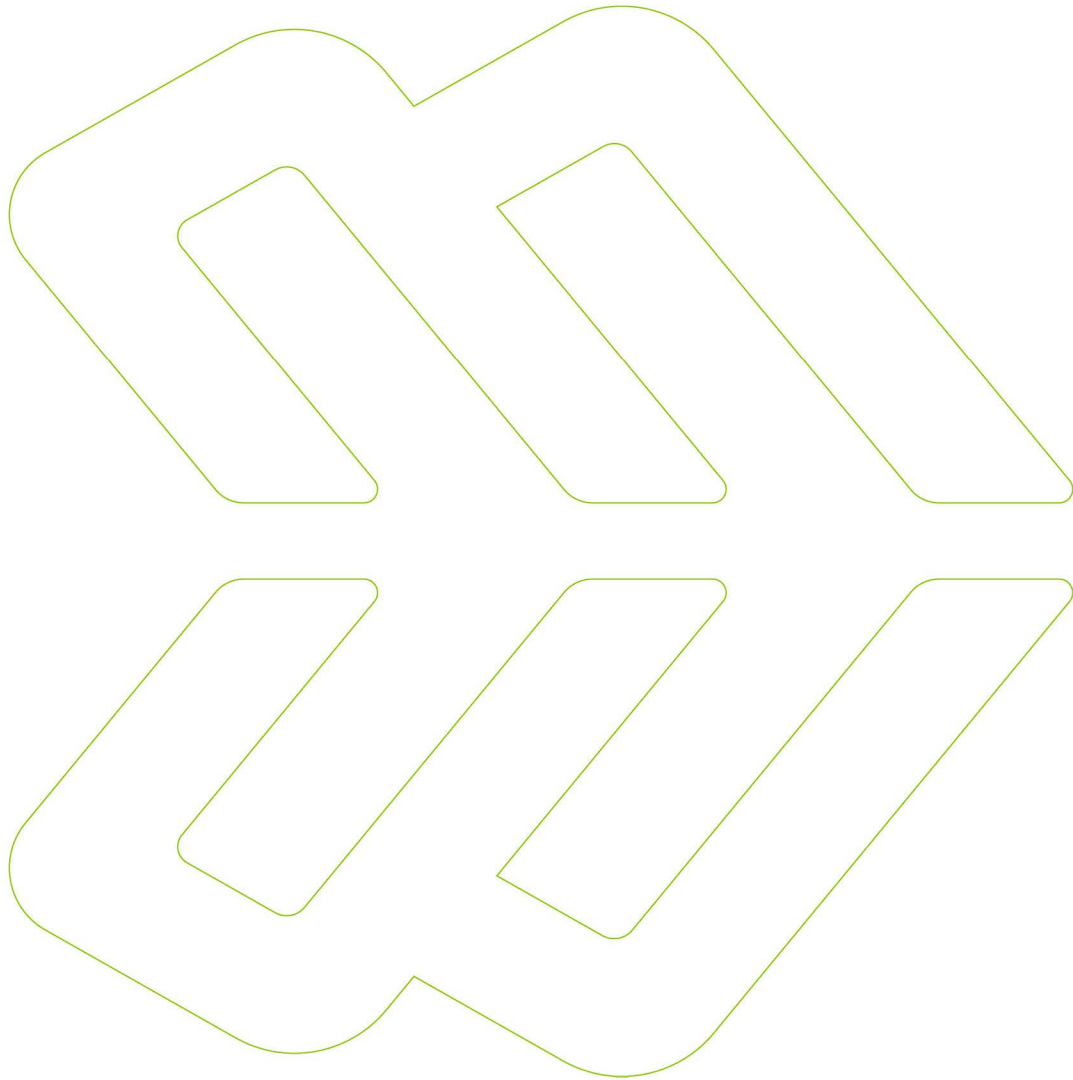
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BENEFICIARY	NAME	MAILING ADDRESS	E-MAIL	TELEPHONE
(A) L B O	JOE YAMAMOTO	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	Alma Garrido	[REDACTED]	[REDACTED]	[REDACTED]
A L B O	Kim's Kaiama	[REDACTED]	[REDACTED]	[REDACTED]
A L B O				
A L B O				
A L B O				
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A L B O				
A L B O				

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