STATE OF HAWAIʻI
DEPARTMENT OF HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION MEETING/WORKSHOP AGENDA

Hale Ponoʻī, 91-5420 Kapolei Parkway, Kapolei, Oʻahu, 96707, and Zoom Meeting ID: 609 754 2925
Tuesday, February 17, 2026, at 9:30 a.m. to be continued, if necessary,
on Wednesday, February 18, 2026, at 9:30 a.m.
Livestream available at www.dhhl.hawaii.gov/live
Note: Commission Meeting Packets will be available at dhhl.hawaii.gov by Wednesday, February 14, 2026.

I. ORDER OF BUSINESS

A. Roll Call
B. Approval of Agenda
C. Approval of Minutes:
   a. January 20 & 21, 2026 Regular Meeting
D. Public Testimony on Agendized Items – see information below

Public testimony on any item **relevant to this agenda** may be taken at this time, or a testifier may wait to testify when the agenda item is called for discussion. Pursuant to section 92-3, Hawaiʻi Revised Statutes, and section 10-2-11(c), Hawaiʻi Administrative Rules, the Chair of the Commission has the authority to impose reasonable conditions to ensure an orderly and efficient meeting.

II. ITEMS FOR DECISION MAKING

A. CONSENT AGENDA

Homestead Services Division

D-2 Approval of Consent to Mortgage (see exhibit)
D-3 Approval of Homestead Application Transfers / Cancellations (see exhibit)
D-4 Approval to Certify Applications of Qualified Applicants for the month of January, 2026 (see exhibit)
D-5 Commission Designation of Successors to Application Rights-Public Notice 2024 (see exhibit)
D-6 Approval of Assignment of Leasehold Interest (see exhibit)
D-7 Approval of Amendment of Leasehold Interest (see exhibit)
D-8 Approval to Issue Non-Exclusive Licenses for Rooftop Photovoltaic Systems for Certain Lessees (see exhibit)
D-9 Commission Designation of Successor – **DAVID KEALOHA** Residential Lease No. 11111, Lot No. UNDV110, Anahola, Kauai

B. REGULAR AGENDA

Office of the Chairman

C-1 Acceptance of the 2026-2027 Native Hawaiian Housing Block Grant Annual Housing Plan

Land Development Division

E-1 Approval of Lease Award and Cancellation of Corresponding Application –Kaūmana Subdivision Residential Lots - Hilo, Hawaiʻi (see exhibit)
E-2 Approval of Lease Award and Cancellation of Corresponding Application - Puʻuhona Subdivision Residential Lots - Waikapū, Maui (see exhibit)

E-3 Approval of Lease Award and Cancellation of Corresponding Application - Kamalani Subdivision Residential Project Lease – Kīhei, Maui (see exhibit)
E-4 Approval of Lease Award and Cancellation of Corresponding Application - Villages of Lealiʻi 1B Subdivision Residential Project Lease – Lahaina, Maui (see exhibit)

Land Management Division

F-1 Approval to Issue Seven (7) Non-Benefit Licenses for Telecommunications Sites Formerly Administered Under License Agreement No. 372 (Statewide)
F-2 Approval to Issue Right of Entry Permit, Gentry Builders, LLC, Kalaeloa, Oʻahu TMK No. (1) 9-1-013:117 (por)
F-3 Approval to Issue General Lease to Keaukaha Panaʻewa Farmers Association, Waiakea, Island of Hawaiʻi TMK NO.: (3)-2-1-025:091

Planning Office

G-1 Report of the Public Hearing for Administrative Rules to Establish a Pilina-based Priority Waitlist and Adoption of Proposed Amendments Related to a Pilina-based Priority Waitlist.
G-2 Adopt the Final Molokaʻi Coastal Homestead Community Resilience Plan, Molokaʻi Island, Hawaiʻi.
G-3 Declare a Finding of No Significant Impact (FONSI) for the Final Environmental Assessment for the North Kona Wells – Keauhou Well Site & Kahaluʻu Water Storage Tanks, TMKs: portions of [3] 7-8-004:013, 014, and 015; & portions of [3] 7-8-009:014, 032, 054 and 077, Kona, Hawaiʻi.

III. ITEMS FOR INFORMATION/DISCUSSION

A. WORKSHOP

Office of the Chairman

C-2 For Information Only – Status Report of DHHL Enforcement Unit Efforts and Statistics (January 12, 2026 – February 8, 2026)

Homestead Services Division

D-1 HSD Status Reports
A. Homestead Lease Totals & Monthly Activity Reports
B. Delinquency Report

Land Development Division

E-5 For Information Only: Waiohuli Water Development Memorandum of Agreement with County of Maui DWS
E-6 For Information Only: DHHL Partnership with University of Hawaiʻi School of Architecture to Provide Practical Educational Opportunities for University of Hawaii Architecture Students and to Improve DHHL Housing and Community through Design.
E-7 For Information Only: Act 279 Working Group Annual Report (January 21, 2026)

Planning Office

G-4 Status Update on Plan Implementation in ʻEwa Moku, Oʻahu Island Plan and Kapolei Regional Plan.

IV. ANNOUNCEMENTS AND RECESS

1. DHHL Community Meeting is Scheduled for February 17, 2026, 6:30 PM – Kapolei Middle School, 91-5335 Kapolei Parkway, Kapolei, Oʻahu, 96707.

STATE OF HAWAIʻI
DEPARTMENT OF HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION MEETING/WORKSHOP AGENDA

Hale Ponoʻī, 91-5420 Kapolei Parkway, Kapolei, Oʻahu, 96707,
and Zoom Meeting ID: 609 754 2925
Wednesday, February 18, 2026, at 9:30 a.m.
Livestream available at www.dhhl.hawaii.gov/live

I. ORDER OF BUSINESS

A. Roll Call
B. Public Testimony on Agendized Items - see information below

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II. ITEMS FOR INFORMATION/DISCUSSION

General Agenda

Requests to Address the Commission

J-1 James Maioho – Emergency Transition Pilot Concept
J-2 Kalaniakea Wilson, John McBride, Kepa Kaeo - Koa Kiai Aina Mauna Legacy Mauna Kea Program
J-3 Germaine Toguchi – Kaupeʻa Concerns
J-4 Louis Vera Cruz – Lease Transfer
J-5 Yama Kaholoaa – Property Taxes
J-6 Annie Aea – Homestead Concerns
J-7 Kapua Keliikoa-Kamai – Waianae Homestead
J-8 Iwalani McBrayer – Kaupeʻa Homestead
J-9 Kainoa MacDonald – SCHHA Mokupuni Council
J-10 Kekoa Enomoto – Paupena Community Development Corporation
J-11 Homelani Schaedel – Maluohai
J-12 Jojo Tanimoto – Kawaihae Homestead Issues
J-13 De Mont Manaole – Various Concerns
J-14 Hiwahiwa Kaheaku, Danelle Medeiros – Nanakuli Lease Concern
J-15 Kenna Stormogipson – Waipouli Courtyards

III. ANNOUNCEMENTS AND ADJOURNMENT

A. Next Regular HHC Meeting –March 16 & 17, 2026, Hale Ponoʻī, 91-5420 Kapolei Parkway, Kapolei, Oʻahu, 96707
B. Adjournment

Kali Watson, Chairman
Hawaiian Homes Commission

COMMISSION MEMBERS

Pauline Namuʻo, Oʻahu	Michael Kaleikini, East Hawaiʻi
Makai Freitas, West Hawaiʻi	Sanoe Marfil, Oʻahu
Walter Kaneakua, Oʻahu	Lawrence Lasua, Molokaʻi
Archie Kalepa, Maui	Shaylyn K. Ornellas, Kauaʻi

If you need an auxiliary aid/service or other accommodation due to a disability, contact Michael Lowe at 730-0298 or michael.l.lowe@hawaii.gov as soon as possible, preferably by February 16, 2026. If a response is received after that, we will try to obtain the auxiliary aid/service or accommodation, but we cannot guarantee that the request will be fulfilled. Upon request, this notice is available in alternate formats.

Public Testimony on Agendized Items can be provided either as (1) in person at the meeting location by filling out a form at the reception table, (2) written testimony mailed to *Commission Testimony, P.O. Box 1879, Honolulu, HI, 96815*, or emailed to *DHHL.icro1@hawaii.gov* by February 16, 2026, or (3) live, oral testimony online by joining the Zoom meeting and relabeling your profile to include the agenda item you wish to testify on. Please keep your computer muted and your camera off until you are called. You will need a computer with internet access, a video camera, and a microphone to participate if you would like to be visible to Commission members and other meeting participants.

Disruption of Interactive Technology – If all participating Commissioners cannot maintain audiovisual communication and a quorum is lost, the meeting will automatically be recessed for 30 minutes. During that time, an attempt to restore audiovisual communication will be made. If such an attempt to restore is unsuccessful within 30 minutes, all Commissioners, public members, staff, and other interested individuals shall log on again to the Zoom link on this Notice, whereby audio communication will be established for all participants, and the meeting will continue. If reconvening the meeting is impossible because audio and visual communication cannot be re-established, the meeting will be terminated.

ITEM D-2 EXHIBIT

APPROVAL OF CONSENT TO MORTGAGE

LESSEE	LEASE NO.	AREA
GOODWIN, Tracy K.	7948	Anahola, Kauai
ARIAS, Germaine	5928	Waiehu Kou, Maui
MATHIAS, Ivanhoe	13236	Puuhona, Maui
NAAUAO, Mark	13102	Puuhona, Maui
KEANU, Austin	12073	Kaupea, Oahu
KAAIALII, Andrea J.K.Y.	5918	Nanakuli, Oahu
AKAHI, Leeward	3492	Paukukalo, Maui
DRIVER, Cynthia	7549	Waimanalo, Oahu
PAI, Bruce D.M.	9376	Kaniohale, Hawaii
CLARKE, Israel K.M.	12792	Maluohai, Oahu
AHSING, Chelsea L.K.	12393	Kauluokahai, Oahu
KEAWEAMAHI-HOOVLER, Rose	7889	Anahola, Kauai
SMYTHE, Thomas	4650	Waianae, Oahu
TEHOTU, Gerard K.	9763	Maluohai , Oahu
LINKEE, Jo Ann	12980	Kauluokahai, Oahu
NAONE, JR., Glen L.	4371	Nanakuli, Oahu
NAONE, Christine N.	4371	Nanakuli, Oahu
VESPOLI, Domonic	11572	Kanehili, Oahu
ROZET, Bernard	10476	Puuhona, Maui
KUAILANI, Tanya	7639	Waiohuli, Maui
KALANI, Lee-Ann	13108	Puuhona, Maui
PAA, Jamie J.	13237	Puuhona, Maui
CASTRO, Meinette	5619	Lualualei, Oahu
AKINA, JR., Steven	4504	Nanakuli, Oahu
HOUPO, Kenneth	5935	Waiehu Kou, Maui
YAMAMOTO, Amy	9881	Maluohai, Oahu

ITEM D-3 EXHIBIT

HOMESTEAD APPLICATION TRANSFERS / CANCELLATIONS

APPLICANT	AREA
AIWOHI, Darryl K.	Maui IW Agr
ARANIO, Mary N.	Oahu IW Res to Kauai IW Res
BYRD, Twila K.	Oahu IW Res
COSTA, George L., III	Oahu IW Res
DEMIROVIC, Evelyn K.M.	Maui IW Res
DUDOIT, Dustin K.	Molokai IW Res
DUMAYAS, Felisita F.	Hawaii IW Res to Maui IW Res
GARCIA, Charlene K.	Hawaii IW Res to Oahu IW Res
HAALILIO, Theresa Lynn K.	Hawaii IW Pas
HAALILIO, Theresa Lynn K.	Hawaii IW Res

ITEM D-3 EXHIBIT - Continued
HOMESTEAD APPLICATION TRANSFERS / CANCELLATIONS

APPLICANT	AREA
KAAA, Roy S.	Oahu IW Res
KAMAI-PASTOR, Janet M.	Oahu IW Res
KAWELO, Wendell W.	Maui IW Res to Oahu IW Res
KEALOHA, Daniel K., III	Oahu IW Res
KEOHOKAPU, Laraline L.	Oahu IW Res
KEOHOKAPU, Ty A.K.	Oahu IW Res
KEOHULOA, Jerilyn M.	Nanakuli Area / Oahu IW Res
KEOLANUI, Tamaia	Oahu IW Res
KEOMAKA, Dwayne K.	Oahu IW Res
KEONE, Jeremy M.	Oahu IW Res
KEOPUHIWA, Puanani N.	Oahu IW Res
KEPAA, Mary Jean	Oahu IW Res
KEPOO, Jerrilene N.	Oahu IW Res
KIA, Josiah N., Jr.	Hawaii IW Res
KIAAINA, Holly-Ann Kawaihae	Oahu IW Res
KIHEWA, Patrick	Oahu IW Res
KIKILA, Joseph K.	Oahu IW Res
KINILAU, Daniel K.	Oahu IW Res
KINILAU, Emma M.	Oahu IW Res
KINILAU, Rodney D.	Oahu IW Res
KINILAU, Sean J.	Oahu IW Res
KINILAU, Sherran K.	Oahu IW Res
KO, Robbie H.	Oahu IW Res
KON, Darlene M.	Oahu IW Res
KON, Darlene M.	Hawaii IW Agr
KON, Wendy K.	Oahu IW Res
KONG KEE, Theresa Anne K.	Oahu IW Res
KUAKINI, Annie P.	Oahu IW Res
KUAMOO, Michele K.	Oahu IW Res
KUAMOO-CASTRO, Wenda K.	Oahu IW Res
KUKAHIKO, Germaine Janel	Oahu IW Res
KUPO-LONOAEA, Roberta Lee L.	Oahu IW Res
KWAN, Melvin K.	Molokai IW Agr
KYLE, Corinna	Oahu IW Res
LAGMAY, Patrick D.	Oahu IW Res
LAI, Josette K.	Oahu IW Res
LAI, Lily K.M.	Oahu IW Res
LAIMANA, Frank D.K.	Maui IW Pas
LEAR, Annette L.	Hawaii IW Agr

ITEM D-3 EXHIBIT - Continued

HOMESTEAD APPLICATION TRANSFERS / CANCELLATIONS

APPLICANT	AREA
LEE, Gwendolyn Puaena	Oahu IW Res
LEE LOY, Blase	Hawaii IW Agr
LINDSEY, Florence Z.	Hawaii IW Pas
LOA, Tia M.	Oahu IW Res
MAIOHO, George W.	Molokai IW Agr
MAKEKAU, Emerson H.	Molokai IW Res
MOKUAHI, Doris J.	Oahu IW Res
NACARIO, Victoria L.	Oahu IW Res
NAUKA, Sunsiree S.U.K.	Oahu IW Res
PAUOLE, Candice U.	Oahu IW Res
PELEKAI, Derrick L.K.	Oahu IW Res
SOLIZ, Shanda E.	Oahu IW Res
SPENCER, Joshua M.	Oahu IW Res
SPILLANE-BRYSON, Sheila K.M.	Oahu IW Res
STANT, Ivan M.	Oahu IW Res
UMIAMAKA, Angel L.	Oahu IW Res
WAKINEKONA, Summer H.	Oahu IW Res
WINCHESTER, Ian P.K.	Oahu IW Res
YIN, William E., Jr.	Oahu IW Res
YOUNG, Joseph C., III	Oahu IW Res
ZUKEVICH, Bernadine A.	Oahu IW Res

*IW = Islandwide

ITEM D-4 EXHIBIT

APPROVAL TO CERTIFY APPLICATIONS OF QUALIFIED APPLICANTS FOR JANUARY 2026

APPLICANT	AREA
BURNS, Dwight K.	Maui IW Pas
BURNS, Dwight K.	Maui IW Res
CRAWFORD-KAPANUI, Punawai K.	Oahu IW Res
GOMES, Pomaikai K.P.	Molokai IW Agr
GOMES, Pomaikai K.P.	Molokai IW Res
KAHALEWAI, Joseph K., III	Oahu IW Agr
KAHALEWAI, Joseph K., III	Oahu IW Res
KANEAKUA, Hope K.K.K.N.O.	Maui IW Res
KAULIA, Charity M.	Oahu IW Agr
KAULIA, Charity M.	Oahu IW Res
KEAHI, Kalei-Earl K.	Maui IW Res
KEAHI, Kyle-Lee U.N.	Maui IW Agr
KEAHI, Kyle-Lee U.N.	Maui IW Res

ITEM D-4 EXHIBIT - Continued

APPROVAL TO CERTIFY APPLICATIONS OF QUALIFIED APPLICANTS FOR JANUARY 2026

APPLICANT	AREA
KEAHI, Mary E.	Maui IW Agr
KEAHI, Mary E.	Maui IW Res
KIESLING, Agnes E.M.	Oahu IW Res
KINCAID, James K.	Maui IW Res
KUHIIKI, Davelynn M.	Oahu IW Res
KUHIIKI, James David L.	Maui IW Agr
LANDFORD, Shane K.	Oahu IW Agr
LANDFORD, Shane K.	Oahu IW Res
MAKAENA, Ash-Lynn A.M.	Oahu IW Agr
MAKAENA, Ash-Lynn A.M.	Oahu IW Res
MAKAENA, Elysia M.K.O.P.K.	Oahu IW Res
MOKIAO, Travis T.	Oahu IW Res
NAHINU, Thomas A.W., Jr.	Oahu IW Res
NISHIOKA–DE MELLO, Seena L.H.	Maui IW Pas
NISHIOKA–DE MELLO, Seena L.H.	Maui IW Res
PAU, Robert K.P.	Maui IW Agr
PAU, Robert K.P.	Maui IW Res
PAUOLE, Lokahi P.	Hawaii IW Agr
VAUGHAN, Joshua L.	Maui IW Agr
VAUGHAN, Joshua L.	Maui IW Res

*IW = Islandwide

ITEM D-5 EXHIBIT

COMMISSION DESIGNATION OF SUCCESSORS-PUBLIC NOTICE 2024

HAALILIO, Theresa Lynn K.	Hawaii IW Pas
HAALILIO, Theresa Lynn K.	Hawaii IW Res
KIA, Josiah N., Jr.	Hawaii IW Res
NII, Ran Li L.	Hawaii IW Agr
OHELO, Amber U.	Hawaii IW Agr

* IW = Islandwide

ITEM D-6 EXHIBIT

APPROVAL OF ASSIGNMENT OF LEASEHOLD INTEREST

LESSEE	LEASE NO.	AREA
AKAU-MARTIN, Claudine M.	9819	Maluohai, Oahu
CHOY FOO, Ted H.	8358	PKE, Oahu
HALEMANO, Michelle P.	12757	Maluohai, Oahu
HIAPO, Jon K.	1009	Keaukaha, Hawaii
HIPA, William H. K. A. A.	11572	Kanehili, Oahu
BENTKOWSKI, Ruby K.	11572	Kanehili, Oahu
HAPAKUKA, Dayneen L. O.	7639	Waiohuli, Maui

ITEM D-6 EXHIBIT - Continued

APPROVAL OF ASSIGNMENT OF LEASEHOLD INTEREST

LESSEE	LEASE NO.	AREA
HULAMA, Rosemarie L.	4371	Nanakuli, Oahu
PEARSON, Kelly L.	12239	Waiehu 4, Maui
MALUO, Patricia-Helen K. L.	12239	Waiehu 4, Maui
OLIVEIRA-MEDEIROS, Mavis I.	12239	Waiehu 4, Maui
RAPOZO, Lani G. W.	4342	Anahola, Kauai
ROSA, Jaeshardez K.	3813	Nanakuli, Oahu
SIMMONS, Wendilyn I.	6285	Keaukaha, Hawaii
SYLVA, Ikaikakane A.	5619	Lualualei, Oahu
WAIAU, Elizabeth K.	10841	Laiopua, Hawaii
IOKIA, Zelii K.	10476	Puuhona 1, Maui
KAALOA, Janice K.	6238	Panaewa, Hawaii
KALELEIKI, Oscar K.	12073	Kaupea, Oahu
KAMAKA, Vincent D.	15343	Kaupea, Oahu
KEAO, Wallace K.	15022	Kauluokahai, Oahu
KINI, Shawna M.	7198	Puupulehu, Hawaii
SPENCER-KENNEDY, Shaela L.	7198	Puupulehu, Hawaii
LAPILIO, Winona H.	15258	Kauluokahai, Oahu
MAHI, Ricky K.	13020	Kuhio Village, Hawaii
NAUKA, Sunsiree S. U. K.	15617	Kauluokahai, Oahu
RENKEN, Karen M.	15109	Kauluokahai, Oahu
SHON, Milton K.	15184	Kauluokahai, Oahu
WONG, Annette K.	15256	Kauluokahai, Oahu

ITEM D-7 EXHIBIT

APPROVAL OF AMENDMENT OF LEASEHOLD INTEREST

LESSEE	LEASE NO.	AREA
AKIMSEU, Larry A. K.	3303	Keaukaha, Hawaii
FARIAS, Williamette K.	289	Nanakuli, Oahu
FARIAS, William, Jr.	289	Nanakuli, Oahu
UEHARA, Keoni K.	289	Nanakuli, Oahu
HULAMA, Louis, Jr.	4371	Nanakuli, Oahu
JACOBS, Grace	3002-A	Hoolehua, Molokai
KAALOA, Janice K.	6238	Panaewa, Hawaii
KAIKUANA, Dinah L.	3519	Keaukaha, Hawaii
KANAKANUI, Kevin K. C.	635	Papakolea, Oahu
KEKAHUNA, Jaemarlene H.	2514	Kewalo, Oahu
KELIIKULI-PETERS, Julia	225	Hoolehua, Molokai
LOW, Rose P.	7893	Anahola, Kauai
RAPOZO, George F.	4342	Anahola, Kauai
SILVA, Hattie P.	45	Kalamaula, Molokai
SPALDING, Daisy M.	3268	Waiakea, Hawaii

ITEM D-8 EXHIBIT

APPROVAL TO ISSUE A NON-EXCLUSIVE LICENSE FOR ROOFTOP PHOTOVOLTAIC SYSTEMS FOR CERTAIN LESSEES

LESSEE	LEASE NO.	AREA
BASSO, Clyde	1699	Nanakuli, Oahu
BADAYOS, Aiolani P.	6717	Waianae, Oahu
ELLIOTT, Debbie-Deene K.	11428	Kaupea, Oahu
GANER, Alfred K.	13117	Puuhona, Maui
GOMES, Irene U. K.	12191	Waiehu 4, Maui
HEMA, Alika K.	7342	Nanakuli, Oahu
KAHEA, James K., III	9903	Waianae, Oahu
KALILI, Wade Alan K., Jr.	6325	Keaukaha, Hawaii
KEKIPI, Ruth A. B. L.	12307	Waiohuli, Maui
KIDO, Roy S. A.	9959	Waianae, Oahu
LINDSEY, Pete	4912	Kuhio Village, Hawaii
SOUZA, Leona L.	11284	Kumuhau, Oahu
WICKES, Anthony	13118	Puuhona, Maui
WRIGHT, Wayne W.	10418	Waiohuli, Maui

ITEM NO. E-1 EXHIBIT

APPROVAL OF LEASE AWARD – KAUMANA SUBDIVISION
RESIDENTIAL LOTS – HILO, HAWAII

NAME	APPL DATE	LOT NO	TMK	LEASE NO
GWENDOLYN -GAIL P. K. ISHIBASHI	07/05/1988	1	3-2-5-004-060	16617

ITEM NO. E-2 EXHIBIT

APPROVAL OF LEASE AWARD – PU‘UHONA SUBDIVISION
RESIDENTIAL TURNKEY - WAIKAPŪ, MAUI

NAME	APPL DATE	LOT NO	TMK	LEASE NO
NAEHU K.S.K. KAHALEHAU	03/20/2018	68	2-3-5-044-068	16974
MELINA K MINDORO	01/30/2019	37	2-3-5-044-067	16975
JARRETT T.K. AH MOOK SANG	10/14/2019	22	2-3-5-044-022	16976
GEORGE NAMAUU JR	10/01/2020	155	2-3-5-044-155	16977

ITEM NO. E-3 EXHIBIT

APPROVAL OF LEASE AWARD – KAMALANI SUBDIVISION
RESIDENTIAL PROJECT LEASE - KIHEI, MAUI

NAME	APPL DATE	LEASE NO
BARRY L. MAILOU	3/17/2022	16966
CAMELOT K. KAINA	3/1/2013	16357
GREGORY ANI	11/19/2021	16973
HAWEOOKALANI T. JOHNSON	3/8/2022	16969
JOBY M.H.K. FREITAS	11/22/2019	16968
JOHN MAHI III	11/6/2006	16970
JON-GABRIEL K. AKO	9/3/2015	16960
KAHEALANI M.K. VALDES	1/19/2023	16965
KOANUI P.J. JOHNSON	1/17/2024	16967
LESLEY K. TASINI	2/7/2007	16972
NALANI L. HASOSO	12/11/2014	16962
NOEL K. KAINA	5/21/2021	16794
SHAWNTE T.L. CREMER-KAALAKEA	8/12/2020	16964
SU-LYNE K.P. GALIZA	10/17/2017	16963
TOM W. SELLERS JR.	7/5/2016	16958
TONY K. KEAU	10/15/1987	16971
WAYLENE H. WATARI	7/15/2016	16959

ITEM NO. E-4 EXHIBIT

APPROVAL OF LEASE AWARD – VILLAGES OF LEALII 1B SUBDIVISION
RESIDENTIAL PROJECT LEASE – LAHAINA, MAUI

NAME	APPL DATE	LEASE NO
KAENA H. KEAHI	11/23/2016	16961

ITEM NO. F-1 EXHIBIT

Approval to Issue Seven (7) Non-Benefit Licenses for Telecommunications Sites Formerly Administered Under License Agreement No. 372 (Statewide)

LICENSEE	TELCOM SITE	TMK
Crown Castle GT Company LLC	Humuula, Hawaii	(3) 3-8-001:007
AT&T Corp.	Humuula, Hawaii	(3) 3-8-001:007
PBS Hawai‘i	Keaukaha, Hawaii	(3) 2-1-013:149
Educational Media Foundation / K-LOVE, INC.	Keaukaha, Hawaii	(3) 2-1-013:149
Crown Castle GT Company LLC	Keaukaha, Hawaii	(3) 2-1-013:149
T-Mobile	Anahola, Kauai	(4) 4-8-015:022
AT&T Corp.	Kamehame Ridge, Oahu	(1) 4-1-014:015

Hawaiian Homes Commission Meeting Packet
February 17 & 18, 2026
Hale Ponoʻī, Kapolei, Oahu

C ITEMS

STATE OF HAWAI'I
DEPARTMENT OF HAWAIIAN HOME LANDS

February 17-18, 2026

To: Chairman and Members, Hawaiian Homes Commission

From: Lehua Kinilau-Cano, NAHASDA Government Relations Program Manager

Subject: Acceptance of the 2026-2027 Native Hawaiian Housing Block Grant Annual Housing Plan

RECOMMENDED MOTION/ACTION:

The Hawaiian Homes Commission accept the 2026-2027 Native Hawaiian Housing Block Grant (NHHBG) Annual Housing Plan.

DISCUSSION

Each year, as part of its compliance with 24 CFR Part 1006, Title VIII of the Native American Housing Assistance and Self-Determination Act (NAHASDA), DHHL must file an annual housing plan (AHP) with the U.S. Department of Housing and Urban Development (HUD). As part of that process, the Department releases the attached housing plan.

Fiscal Year 2026-2027 Projected Expenditures by AHP Activity:

Program #	Program Name	Budget
AHP I	2026 Capital Improvement Projects	300,000
AHP II	Developer Financing	2,400,000
AHP III	Homeowner Financing	32,165,000
AHP IV	Home Assistance Program	1,470,500
AHP V	Waimanalo Kupuna Housing Rental Asst.	871,500
AHP VI-A	Rental Vouchers for Temporary Relocation	150,000
AHP VI-B	DHHL Kupuna Rental Subsidy Program	1,700,000
AHP VI-C	Rental Vouchers for DHHL Units	120,000
AHP VII	Housing Counseling	1,000,000
AHP VII-A	Housing Counseling (NLI)	100,000
AHP VIII	Homeowner Assistance	300,000
AHP IX	Water Infrastructure Improvements	250,000
AHP X	Housing Conversion	0
AHP XI	Single-Family Modular Constructed Units	0
AHP XII	Operation & Maintenance	582,628
AHP XIII	Down Payment/Closing Cost (NLI)	225,000
AHP XIV	Model Activities	0
	Planning and Administration	3,000,000

For DHHL's Use: July 1, 2026 thru June 30, 2027 Annual Housing Plan

NATIVE HAWAIIAN HOUSING PLAN/ANNUAL PERFORMANCE REPORT

(NAHASDA §§ 803(b)(1), 803(c)(1) and 820(a)(2))

This form meets the requirements for a Native Hawaiian Housing Plan (NHHP) and Annual Performance Report (APR) required by the United States Department of Housing and Urban Development (HUD). The information requested does not lend itself to confidentiality.

Regulatory and statutory citations are provided throughout this form as applicable. The Department of Hawaiian Home Lands (DHHL) is encouraged to review these citations when completing the NHHP and APR sections of the form.

Under Title VIII of the Native American Housing Assistance and Self-Determination Act of 1996 (NAHASDA) (25 U.S.C. 4221 et seq.), HUD will provide grants under the Native Hawaiian Housing Block Grant (NHHBG) program to DHHL to carry out affordable housing activities for Native Hawaiian families who are eligible to reside on the Hawaiian Home Lands. To be eligible for the grants, DHHL must submit a NHHP that meets the requirements of the Act. To align the NHHBG program with recent improvements made to the Indian Housing Block Grant program, HUD is requiring DHHL to submit the NHHP to HUD at least 75 days prior to the start of its 12-month fiscal year. The APR is due no later than 60 days after the end of DHHL's fiscal year (24 CFR § 1006.410).

The NHHP and the APR (previously two separate forms) are now combined into one form. The sections pertaining to the NHHP are submitted **before** the beginning of the 12-month fiscal year, leaving the APR (shaded) sections blank. If the NHHP has been updated or amended, use the most recent version when preparing the APR. After the 12-month fiscal year, enter the results from the 12-month fiscal year in the shaded sections of the form to complete the APR. More details on how to complete the NHHP and APR sections of the form can be found in the body of this form. In addition, DHHL may find it helpful to refer to the IHP/APR form guidance available at http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/codetalk/nahasda/guidance until a guidance specific to the NHHP/APR form is made available.

FORM COMPLETION OPTIONS: The NHHP/APR form may be completed either in hard copy or electronically. Hard copy versions may be completed either by hand or typewriter. Alternatively, the form may be completed electronically as it is a Word document. It is recommended that the form be completed electronically because it is more efficient to complete, submit, and review the form. Furthermore, electronic versions of the form may be submitted to HUD as an email attachment. To document official signatures on the electronic version, you should sign a hard copy of the pages and either fax (808-457-4694) that signed page or email (claudine.c.allen@hud.gov) it as an attachment to the Office of Native American Programs – Attention: Claudine Allen in the HUD Honolulu Field Office. The sections of the NHHP that require an official signature are the Cover Page and Sections 13 and 14, if applicable. For the APR, the Cover Page requires an official signature.

The NHHP data is used to verify that planned activities are eligible, expenditures are reasonable, and DHHL certifies compliance with related requirements. The APR data is used to audit the program accurately and monitor DHHL's progress in completing approved activities, including reported expenditures, outputs, and outcomes. This form is exempt from OMB Approval pursuant to 5 CFR 1320.3(4)(c).

TABLE OF CONTENTS

SECTION PAGE NUMBER

COVER PAGE 3
SECTION 1: FIVE YEAR PLAN 5
SECTION 2: HOUSING NEEDS 11
SECTION 3: PROGRAM DESCRIPTIONS 16
SECTION 4: AFFORDABLE HOUSING RESOURCES 52
SECTION 5: BUDGETS 59
SECTION 6: OTHER SUBMISSION ITEMS 62
SECTION 7: NATIVE HAWAIIAN HOUSING PLAN CERTIFICATION OF COMPLIANCE 64
SECTION 8: SELF-MONITORING 65
SECTION 9: INSPECTIONS 66
SECTION 10: AUDITS 67
SECTION 11: PUBLIC AVAILABILITY 68
SECTION 12: JOBS SUPPORTED BY NAHASDA 69
SECTION 13: NHHP WAIVER REQUESTS 70
SECTION 14: NHHP AMENDMENTS 71

Note: The page numbers in the Table of Contents can update automatically as the NHHP or APR is completed. To update the page numbers, right-click anywhere in the table, select "Update Field" and select "update page numbers only."

COVER PAGE

(1) Grant Number: **24HBGHI0001; 25HBGHI0001; 26HBGHI0001**

(2) Recipient Fiscal Year: **2027**

(3) Federal Fiscal Year: **2026**

(4) ☒ Initial Plan (Complete this Cover Page then proceed to Section 1)

(5) ☐ Amended Plan (Complete this Cover Page and Section 14)

(6) ☐ Annual Performance Report (Complete items 24-27 and proceed to Section 3)

(7) Name of Recipient: Department of Hawaiian Home Lands		
(8) Contact Person: Lehua Kinilau-Cano, NAHASDA Government Relations Program Manager		
(9) Telephone Number with Area Code: 808-730-0172		
(10) Mailing Address: PO Box 1879		
(11) City: Honolulu	**(12) State**: HI	**(13) Zip Code**: 96805
(14) Fax Number with Area Code (if available): N/A		
(15) Email Address (if available): Nicole.L.Kinilau-Cano@hawaii.gov		

(16) Tax Identification Number: 99-0266483
(17) UEI Number: GVV8DG3H8GK1
(18) CCR/SAM Expiration Date: 02/19/2026
(19) NHHBG Annual Grant Amount: $22,300,000
(20) Name of Authorized NHHP Submitter: Kali Watson
(21) Title of Authorized NHHP Submitter: Chairman, Hawaiian Homes Commission
(22) Signature of Authorized NHHP Submitter:
(23) NHHP Submission Date: 02/27/2026
(24) Name of Authorized APR Submitter:
(25) Title of Authorized APR Submitter:
(26) Signature of Authorized APR Submitter:
(27) APR Submission Date:

Certification: The information contained in this document is accurate and reflects the activities actually planned or accomplished during the program year. Activities planned and accomplished are eligible under applicable statutes and regulations.

Warning: If you knowingly make a false statement on this form, you may be subject to civil or criminal penalties under 18 U.S.C 1001. In addition, any person who knowingly and materially violates any required disclosure of information, including intentional disclosure, is subject to a civil money penalty not to exceed $10,000 for each violation.

SECTION 1: FIVE YEAR PLAN

The Five Year Plan is intended to cover the Department of Hawaiian Home Lands' (DHHL) long range plans for affordable housing. Each housing plan must contain, for the five-year period beginning with the fiscal year for which the plan is first submitted, the following information.

Five Year Period: **2024** through **2028**

MISSION STATEMENT (NAHASDA § 803(b)(2)(A))

A Mission Statement describes the mission of the DHHL to serve the needs of Native Hawaiian low-income families.

Enter the DHHL's Mission Statement here:

DHHL's mission is to manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians. We will partner with others toward developing self-sufficient and healthy communities.

GOALS, OBJECTIVES AND PROGRAMS/ACTIVITIES (NAHASDA § 803(b)(2)(B) and (C))

DHHL must provide a statement of the goals, objectives, and programs/activities planned for the beneficiaries over the five year period. The goals are the intended result of the NHHBG activity and are based on the types of outcomes that the DHHL will report in the APR. The objectives are the means or approach that the DHHL will use to reach the goal. The programs/activities are the specific programs/activities that will be funded in order to achieve the goal and the objective.

Goals May Include:

(1) Reduce over-crowding
(2) Assist renters to become homeowners
(3) Improve quality of substandard units
(4) Address homelessness
(5) Create new affordable rental units
(6) Assist affordable housing for college students
(7) Provide accessibility for disabled/elderly persons
(8) Improve energy efficiency
(9) Reduction in crime reports
(10) Other

Objectives May Include:

(1) [RESERVED – DO NOT USE THIS NUMBER]
(2) [RESERVED – DO NOT USE THIS NUMBER]
(3) Acquisition of rental housing
(4) Construction of rental housing
(5) Rehabilitation of rental housing
(6) Acquisition of land for rental housing development
(7) Development of emergency shelters
(8) Conversion of other structures to affordable housing
(9) Other rental housing development
(10) Acquisition of land for homebuyer unit development
(11) New construction of homebuyer units
(12) Acquisition of homebuyer units
(13) Downpayment/Closing cost assistance
(14) Lending subsidies for homebuyers
(15) Other homebuyer assistance activities
(16) Rehabilitation assistance to existing homeowners
(17) Tenant based rental assistance
(18) Other Housing Service
(19) Housing Management Services
(20) Operation and maintenance of NHHBG units
(21) Crime Prevention and Safety
(22) Model Activities
(23) [RESERVED – DO NOT USE THIS NUMBER]
(24) Infrastructure to support housing
(25) [RESERVED – DO NOT USE THIS NUMBER]

Use the sections below to describe the DHHL's goals, objectives, and programs/activities during the five year period.

Goal(s) Number: I.	(2) Assist renters to become homeowners

Select from the goals listed above.

Objective(s) Number: Ia.	(24) Infrastructure to support housing

Select from the objectives listed above.

Program/Activity Description: Infrastructure Development (Statewide)	To develop lots statewide.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: II.	(5) Create new affordable rental units

Select from the goals listed above.

Objective(s) Number: IIa.	(4) Construction of rental housing

Select from the objectives listed above.

Program/Activity Description: Developer Financing	This activity provides NAHASDA funding as part of a capital stack for vertical construction of rental units.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: III.	(2) Assist renters to become homeowners

Select from the goals listed above.

Objective(s) Number: IIIa.	(14) Lending subsidies for homebuyers

Select from the objectives listed above.

Program/Activity Description: Homeowner Financing (Statewide)	To provide NHHBG-funded home loans to lessee families for new construction or home purchase.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: IV.	(3) Improve quality of substandard units

Select from the goals listed above.

Objective(s) Number: IVa.	(16) Rehabilitation assistance to existing homeowners

Select from the objectives listed above.

Program/Activity Description: Home Assistance Program (Statewide)	This activity provides three types of assistance: (1) a deferred, no payment loan up to $100,000; (2) a small repayment loan (up to $100,000) for costs exceeding the original $100,000 amount; or (3) a demolition/new build loan for properties where cost to repair exceed the appraised or tax assessed value.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: V.	(4) Address homelessness

Select from the goals listed above.

Objective(s) Number: Va.	(18) Other Housing Service

Select from the objectives listed above.

Program/Activity Description: Waimanalo Kupuna Housing Rental Assistance	The use of NHHBG funds is for project-based rental assistance to supplement tenants rent at the Waimanalo Kupuna Housing so their maximum contribution does not exceed 30% of their gross monthly income. Built in 2002 utilizing Low Income Housing Tax Credits, this subsidy will assist in stabilizing rental increases over the remainder of the project's LIHTC existence.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: VI.	(4) Address homelessness

Select from the goals listed above.

Objective(s) Number: VIa-b.	(17) Tenant based rental assistance

Select from the objectives listed above.

Program/Activity Description: Rental Vouchers	This activity establishes the use of rental housing vouchers for eligible beneficiaries for temporary relocation assistance or as rental subsidies for kupuna (elders) so their maximum contribution does not exceed 30% of their gross monthly income to ensure housing stability.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: VI.	(4) Address homelessness

Select from the goals listed above.

Objective(s) Number: VIc.	(18) Other Housing Service

Select from the objectives listed above.

Program/Activity Description: Rental Vouchers	The use of NHHBG funds is for project-based rental assistance to supplement tenants rent for rental units developed for DHHL so their maximum contribution does not exceed 30% of their gross monthly income to ensure housing stability.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: VII.	(10) Other

Select from the goals listed above.

Objective(s) Number: VIIa-b.	(18) Other Housing Service

Select from the objectives listed above.

Program/Activity Description: Housing Counseling	At minimum, every family that receives NHHBG assistance will be offered financial literacy education; case management assistance; and servicing by housing counseling vendor.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: VIII.	(10) Other

Select from the goals listed above.

Objective(s) Number: VIIIa.	(18) Other Housing Service

Select from the objectives listed above.

Program/Activity Description: Homeowner Assistance	This activity is aimed at mitigating financial hardships to prevent lease cancellation and promote housing stability by providing financial assistance for mortgage arrears; utilities and energy costs arrears; property taxes; homeowner, hurricane, and/or flood insurance; or association/common area fees.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: IX.	(3) Improve quality of substandard units

Select from the goals listed above.

Objective(s) Number: IXa.	(24) Infrastructure to support housing

Select from the objectives listed above.

Program/Activity Description: Potable Water Development (Statewide)	This activity will support the development and delivery of potable water to new and existing homesteads.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: X.	(4) Address homelessness

Select from the goals listed above.

Objective(s) Number: Xa.	(8) Conversion of other structures to affordable housing

Select from the objectives listed above.

Program/Activity Description: Housing Conversion	This activity supports the conversion of existing land and structure to affordable housing.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: XI.	(2) Assist renters to become homeowners

Select from the goals listed above.

Objective(s) Number: XIa.	(11) New construction of homebuyer units

Select from the objectives listed above.

Program/Activity Description: Single-family modular constructed units	This activity will support the purchase and installation of single-family modular constructed units.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: XII.	(4) Address homelessness

Select from the goals listed above.

Objective(s) Number: XIIa.	(20) Operation and maintenance of NHHBG units

Select from the objectives listed above.

Program/Activity Description: Operation and Maintenance of NHHBG-Assisted Units	This activity will support the operation and maintenance of NHHBG units.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: XIII.	(2) Assist renters to become homeowners

Select from the goals listed above.

Objective(s) Number: XIIIa.	(13) Downpayment/Closing cost assistance

Select from the objectives listed above.

Program/Activity Description: Down Payment/Closing cost assistance	This activity will provide down payment/closing cost assistance and/or to buy down the interest rate to subsidize turn key housing.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

Goal(s) Number: XIV.	(10) Other

Select from the goals listed above.

Objective(s) Number: XIVa.	(22) Model Activities

Select from the objectives listed above.

Program/Activity Description: Community facilities	This activity will provide for construction and rehabilitation of community facilities including day care centers, community buildings, and job training centers.

Describe the planned program/activity and indicate how it will enable DHHL to meet its mission, goals, and objectives.

SECTION 2: HOUSING NEEDS

(NAHASDA § 803(c)(2)(B))

(1) Type of Need: Check the appropriate box(es) below to describe the estimated types of housing needs and the need for other assistance for low-income Native Hawaiian families (columns B and C) and non-low-income Native Hawaiian families, including non-Native Hawaiian essential families [809(a)(2)(B) and (C)] (column D) eligible to be served by DHHL.

(A) Type of Need	Check All That Apply		
	(B) Low-Income Native Hawaiian Families on Hawaiian Home Lands	(C) Low-Income Native Hawaiian Families on Wait List	(D) Non-Low-Income Native Hawaiian Families
(1) Overcrowded Households	☒	☒	☐
(2) Renters Who Wish to Become Owners	☒	☒	☒
(3) Substandard Units Needing Rehabilitation	☒	☒	☒
(4) Homeless Households	☐	☒	☐
(5) Households Needing Affordable Rental Units	☐	☒	☒
(6) College Student Housing	☒	☒	☒
(7) Disabled Households Needing Accessibility	☒	☒	☒
(8) Units Needing Energy Efficiency Upgrades	☒	☒	☒
(9) Infrastructure to Support Housing	☒	☒	☐
(10) Other (specify below)	☐	☐	☐

(2) Other Needs. *(Describe the "Other" needs below. Note: this text is optional for all needs except "Other."):*

The Hawaiian Homes Commission Act of 1920, as amended, established the Hawaiian Home Lands Trust and defined the population eligible to reside on Hawaiian home lands as those native Hawaiians with no less than 50% Hawaiian blood and their successors or assignees of less than 50% Hawaiian blood. With approximately 9,391 leases on homesteads stretching from Hawaii Island to Kauai, the Department of Hawaiian Home Lands was created at statehood to assist the commission in meeting its fiduciary obligations.

DHHL, through SMS Research, completed its 2020 Beneficiary Survey detailed in the *DHHL Beneficiaries Study Lessee Report, 2020* and the *DHHL Beneficiaries Study Applicant Report, 2020.*

The native Hawaiian subset for the purpose of this plan is determined as follows:

9,391	Lessees residing on the DHHL lands — as of July 31, 2025[1]
29,596	Unduplicated waitlist as of August 1, 2025[2]
16,898	Estimated Potential Applicants based on SMS 2024 respondents[3]
55,885	**Total native Hawaiian individuals/households**

The *DHHL Beneficiaries Study Lessee Report, 2020* detailed the following about HUD Median Income: "While the median household income has consistently increased, the percentage of Lessee households classified as earning 80 percent or less of the Department of Housing and Urban Development (HUD) Area Median Income (AMI) has risen. In 2008, 46 percent of Lessee households were considered low income according to the HUD guidelines. By 2014, this had increased to 55 percent. The percentage of Lessee households considered low income stayed about the same at 56 percent in 2020."

The *DHHL Beneficiaries Study Applicant Report, 2020* noted the following about HUD Income Categories: "In 2020, the percent of applicant households below 80 percent of HUD AMI level is back up to 51 percent."

5,259	Lessees residing on the DHHL Lands – 9,391 x 56%
15,094	Applicants – 29,596 x 51%
9,632	Potential Applicants – 16,898 x 57% (SMS 2024 Study)
29,985	**Total native Hawaiian households eligible for NAHASDA**

If we extrapolate and say that the average DHHL turnkey home is $500,000, then the sufficient funding amount for NAHASDA would look like this:

15,094 Applicants – 29,596 x 51%
9,632 Potential Applicants – 16,898 x 57% (SMS 2024 Study)
24,726 x $500,000 = **$12,363,000,000.00 sufficient funding for NAHASDA**

Additional Research - 2017 HUD Report

Some of the key findings of *the Housing Needs of Native Hawaiians: A Report From the Assessment of American Indian, Alaska Native, and Native Hawaiian Housing Needs* prepared for HUD and dated May 2017 include the following:

- Native Hawaiian households tend to be larger. In 2010, the average size of a Native Hawaiian's household was 4.1 people compared with 2.7 people for residents of Hawaii households.

1 Homestead Services Division, 8/18/25 Commission submittal. Includes lessees residing on residential, agricultural and pastoral lots, one lessee per lease, one house per lease/lot, as applicable. 729 Undivided Interest lessees omitted.
2 *Ibid.*
3 The SMS Hawaii Housing Policy Study, 2024 included a category for native Hawaiians with at least 50% blood quantum and not DHHL lessees or applicants.

- Although improvements were made during the 2000-to-2010 decade, Native Hawaiians living in Hawaii continue to be more economically disadvantaged: they have lower incomes, higher rates of assistance receipt, and higher poverty rates than do other residents of Hawaii.

- Native Hawaiian households also experience higher rates of overcrowding (15 percent) compared with residents of Hawaii households (8 percent).

- Homelessness among Native Hawaiians is prevalent. Although not typically chronically homeless, they are overrepresented in Hawaii's homeless population. Homeless Native Hawaiians often have jobs but cannot afford housing, so they double up (hidden homeless) or live in tents, shelters, cars, or garages.

- HHCA beneficiary households on the waiting list are more economically disadvantaged than are Native Hawaiian households overall, residents of Hawaii households, and Native Hawaiian households living on the home lands.
  - HHCA beneficiary households on the waiting list have the lowest median income of all four groups by a substantial margin: $48,000 compared with more than $60,000 for all other groups.
  - HHCA beneficiaries on the waiting list also receive public cash assistance at more than twice the rate of the other groups: about 20 percent of households on the waiting list received public cash assistance compared with about 7 percent of Native Hawaiians and those living on the home lands and 3 percent for residents of Hawaii.

- HHCA beneficiary households on the waiting list face more significant housing challenges across all dimensions than do the other groups.
  - Nearly 40 percent of HHCA beneficiary households on the waiting list were overcrowded compared with only 19 percent of households on sampled Hawaiian home lands, 15 percent of the state's Native Hawaiian households, and 8 percent of residents of Hawaii households.
  - About 10 percent of HHCA beneficiary households on the waiting list lack complete plumbing compared with 1 percent for all other groups.
  - Nearly one-half (46 percent) of HHCA beneficiary households on the waiting list experience cost burden compared with 40 percent of Native Hawaiian households, 42 percent of residents of Hawaii households, and only 21 percent of households on the sampled Hawaiian home lands. The much lower rate of cost burden among home lands households is due, at least in part, to the financial benefits of home lands leases, which reduce monthly housing costs, including minimal lease payments for the land and a 7-year exemption from real estate property tax.

2024 Hawaii Housing Planning Study

The Executive Summary of the 2024 Hawaii Housing Planning Study (HHPS) explains that "an estimated 8,508 housing units are needed statewide for DHHL-eligible households from 2023-2027, calculated using a distinct methodology due to limited DHHL pipeline data, combining HHPS survey response from households with 50%+ Native Hawaiian ancestry and DHHL applicant data, and reflecting households planning to move within five years. This includes 4,650 ownership units (4,144 single-family, 506 multi-family) and 3,858 rental units (2,207 single-family, 1,651 multi-family). Nearly half (4,788 units) target households earning below 60% of Area Median Income (AMI), reflecting acute need among the lowest income brackets. The 2023 DHHL Beneficiary Demand Survey

further highlights the importance of investing in DHHL developments, which by their nature both help to address the unique needs of this community – rooted in historical displacement and economic pressures – while also addressing county and AMI-level needs where demand is greatest, offering a strategic opportunity to align housing solutions with market shortages."

Native Hawaiian Rehabilitation

The statistics shared in preceding paragraphs are not new to the native Hawaiians. Over 100 years ago, moved by the poor living conditions and low incomes of his people, Prince Jonah Kuhio Kalanianaole created the Ahahui Puuhonua o Na Hawaii, an organization comprised of royal men of lesser rank than himself who collectively served as the catalyst toward the chronicling of the despair and destitution of the makaainana (commoner) in 1911.

The work of the Ahahui Puuhonua o Na Hawaii and its members provided Prince Kuhio the much-needed data to create support, both in Hawaii and abroad in Washington, D.C. to pass the HHCA. Through the Prince's leadership and participation in each of these community endeavors, the legacy of the Prince lives on for us today. This housing plan, a descendant of Kuhio's legacy thru the HHCA, is but a small piece of a much broader articulation of need in the State of Hawaii today. By focusing on housing, this most basic of needs acknowledged in the Western world, the department attempts to participate in the rehabilitation of the Hawaiian people. Should every Hawaiian have a safe, affordable, decent home, with fresh water for bathing and eating and cooking and food grown or gathered nearby, we could claim success. But with over $12 billion in need and as the average 59-year-old applicant dies on the waiting list, it does not seem likely we will be able to make such a claim without immediate and swift monetary assistance in the next few years or at minimum satisfying the 8,508 housing units needed statewide for DHHL-eligible households from 2023-2027, nearly half of which or 4,788 units that target households earning below 60% of AMI.

(3) Planned Program Benefits. *(Describe below how your planned programs and activities will address the needs of low income families identified above. Also describe how your planned programs will address the various types of housing assistance needs. NAHASDA § 803(c)(2)(B)):*

The planned programs and activities are aimed at assisting as many native Hawaiian households that earn 80% or less of HUD AMI to realize homeownership as part of the ongoing lot awards and production. The 2017 HUD Report noted that "many renters (63 percent) on the HHCA beneficiary waiting list who would prefer to own a home are unable to do so because they cannot afford a downpayment or save enough for a house." Thus, focus will be on homeowner financing to provide new awardees with the opportunity for safe, affordable and decent housing as well as down payment/closing cost assistance for those who earn between 80-100% of HUD AMI who finance the purchase of a turn key housing unit with non-NHHBG funds.

While the 2017 HUD Report noted that HHCA beneficiary households on the waiting list face more significant housing challenges, lessees, especially in our older homestead communities face aging substandard housing. The 2020 Beneficiary Study Lessee Report identified 2,538 lessees that earn 80% or less of HUD AMI with a house needing either minor or major repairs. The planned home assistance program is geared to addressing this need.

DHHL recognizes the need for increased housing stability for families experiencing financial hardships. The planned rental voucher program is built upon the initial temporary relocation

assistance and for kupuna (elders) who are on the waiting list in an effort to provide financial assistance for those at risk of homelessness.

The 2017 HUD Report identified homelessness among Native Hawaiians as a significant problem, but also acknowledged that data is not available for only Native Hawaiians. In an effort to fill this gap, DHHL entered into a Memorandum of Understanding with Partners in Care – Oahu Continuum of Care to understand how pervasive the situation of homelessness might be among its beneficiaries and especially those on its homestead applicant waiting list. The conversion of an existing structure to a transitional housing facility is intended to begin addressing this need.

Infrastructure to support housing on land currently under DHHL's jurisdiction is a separate program activity. In addition to existing developments, these areas will likely be expanded to cover lands transferred to DHHL in Ewa, Oahu. Water is just as critical to homestead development as land. DHHL secured approved water reservations for DHHL's foreseeable groundwater needs statewide and the potable water infrastructure improvements would allow for improved and increased potable water service delivery. NAHASDA funding for developer financing will supplement the cost to construct affordable housing.

All NAHASDA assisted activities will be supported by housing counseling for both homeowners and renters.

(4) Geographic Distribution. (*Describe below how the assistance will be distributed throughout the geographic area and how this geographic distribution is consistent with the needs of low income families, including the needs for various categories of housing assistance. NAHASDA § 803(c)(2)(B)(i)):*

The 2020 Beneficiary Study Applicant Report provided HUD Income Categories by Island as follows:

80%	Oahu		Maui		Hawaii		Kauai		Molokai		Lanai		Total	
or >	#	%	#	%	#	%	#	%	#	%	#	%	#	%
AMI	6824	61%	1282	12%	2048	18%	600	5%	368	3%	36	.3%	11,158	99.3%

This distribution is similar to the % of DHHL Applicants by Island:

	Oahu	Maui	Hawaii	Kauai	Molokai	Lanai	Total
% App	57%	12%	21%	6%	3%	.3%	99.3%

NAHASDA-Assisted units by island align closely to this distribution and is expected to continue, but notes that assistance to neighbor islands is above the percent of households classified as earning 80 percent or less of the HUD AMI:

	Oahu	Maui	Hawaii	Kauai	Molokai	Lanai	Total
% Assisted	49%	15%	19%	8%	7%	2%	100%

SECTION 3: PROGRAM DESCRIPTIONS

(NAHASDA § [803(c)(2)(A)], [802(c)], [820(b)], 24 CFR §1006.410(b)(2) and (3)])

Planning and Reporting on Program Year Activities

For the NHHP, the purpose of this section is to describe each program that will be operating during the 12-month fiscal year. Each program must include the eligible activity, its planned outputs, intended outcome, who will be assisted, and types and levels of assistance. Each of the eligible activities has a specific, measurable output. The first column in the table below lists all eligible activities, the second column identifies the output measure for each eligible activity, and the third column identifies when to consider an output as completed for each eligible activity. Copy and paste text boxes 1.1 through 1.10 as often as needed so that all of your planned programs are included.

For the APR, the purpose of this section is to describe your accomplishments, actual outputs, actual outcomes, and any reasons for delays.

Eligible Activities May Include (citations below reference sections in NAHASDA)

Eligible Activity	Output Measure	Output Completion
(1) RESERVED – DO NOT USE THIS NUMBER		
(2) RESERVED – DO NOT USE THIS NUMBER		
(3) Acquisition of Rental Housing [810(b)(1)]	Units	When recipient takes title to the unit
(4) Construction of Rental Housing [810(b)(1)]	Units	All work completed and unit passed final inspection
(5) Rehabilitation of Rental Housing [810(b)(1)]	Units	All work completed and unit passed final inspection
(6) Acquisition of Land for Rental Housing Development [810(b)(1)]	Acres	When recipient takes title to the land
(7) Development of Emergency Shelters [810(b)(1)]	Households	Number of households served at any one time, based on capacity of the shelter
(8) Conversion of Other Structures to Affordable Housing [810(b)(1)]	Units	All work completed and unit passed final inspection
(9) Other Rental Housing Development [810(b)(1)]	Units	All work completed and unit passed final inspection
(10) Acquisition of Land for Homebuyer Unit Development [810(b)(1)]	Acres	When recipient takes title to the land
(11) New Construction of Homebuyer Units [810(b)(1)]	Units	All work completed and unit passed final inspection
(12) Acquisition of Homebuyer Units [810(b)(1)]	Units	When recipient takes title to the unit
(13) Down Payment/Closing Cost Assistance [810(b)(1)]	Units	When binding commitment signed
(14) Lending Subsidies for Homebuyers (Loan) [810(b)(1)]	Units	When binding commitment signed
(15) Other Homebuyer Assistance Activities [810(b)(1)]	Units	When binding commitment signed
(16) Rehabilitation Assistance to Existing Homeowners [810(b)(1)]	Units	All work completed and unit passed final inspection
(17) Tenant Based Rental Assistance [810(b)(2)]	Households	Count each household once per year

(18) Other Housing Service [810(b)(2)]	Households	Count each household once per year
(19) Housing Management Services [810(b)(3)]	Households	Count each household once per year
(20) Operation and Maintenance of NHHBG-Assisted Units [810(b)(3)]	Units	Number of units in inventory at Fiscal Year End
(21) Crime Prevention and Safety [810(b)(4)]	Dollars	Dollars spent (report in Uses of Funding Table only)
(22) Model Activities [810(b)(5)]	Dollars	Dollars spent (report in Uses of Funding Table only)
(23) RESERVED – DO NOT USE THIS NUMBER		
(24) Infrastructure to Support Housing [810(b)(1)]	Improved Lots	All work completed and lot passed final inspection
(25) RESERVED – DO NOT USE THIS NUMBER		

Outcome May Include:

(1) Reduce over-crowding	(7) Create new affordable rental units
(2) Assist renters to become homeowners	(8) Assist affordable housing for college students
(3) Improve quality of substandard units	(9) Provide accessibility for disabled/elderly persons
(4) Improve quality of existing infrastructure	(10) Improve energy efficiency
(5) Address homelessness	(11) Reduction in crime reports
(6) Assist affordable housing for low income households	(12) Other – must provide description in boxes 1.4 (NHHP) and 1.5 (APR)

NHHP: PLANNED FISCAL YEAR ACTIVITIES (NAHASDA § 803(c)(2)(A))

For each planned activity, complete all the non-shaded sections below. It is recommended that for each program name you assign a unique identifier to help distinguish individual programs. This unique number can be any number of your choosing, but it should be simple and clear so that you and HUD can track tasks and results under the program and collect appropriate file documentation tied to this program.

- One way to number your programs is chronologically. For example, you could number your programs 2024-1, 2024-2, 2024-3, etc.
- Or you may wish to number the programs based on type. For example, rental 1, rental 2, homebuyer 1, homebuyer 2, etc. This type of numbering system might be appropriate if you have many programs that last over several years.
- Finally, you may wish to use an outline style of numbering. For example, all programs under your first eligible activity would start with the number 1 and then be consecutively numbered as 1.1, 1.2, 1.3, etc. The programs under the second eligible activity would be numbered as 2.1, 2.2., 2.3, etc.

APR: REPORTING ON PROGRAM YEAR PROGRESS (NAHASDA § 820(b))

Complete the shaded section of text below to describe your completed program tasks and actual results. Only report on activities completed during the 12-month fiscal year. Financial data should be presented using the same basis of accounting as the Schedule of Expenditures of Federal Awards (SEFA) in DHHL's annual audit report. For unit accomplishments, only count units when the unit was completed and occupied during the year. For households, only count the household if it received the assistance during the previous 12-month fiscal year.

1.1 Program Name and Unique Identifier: 2026 Capital Improvement Projects (AHP I)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity develops lots for residential use on Trust Lands statewide.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.)*:

(24) Infrastructure to Support Housing [810(b)(1)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.)*:

(2) Assist renters to become homeowners

Describe Other Intended Outcome *(Only if you selected "Other" above.)*:

1.5 Actual Outcome Number (*In the APR identify the actual outcome from the Outcome list.*):

Describe Other Actual Outcome *(Only if you selected "Other" above.)*:

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.)*:

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Undivided interest lessees/project lessees and applicants meeting the 80% AMI income guidelines will receive vacant or improved lots for new home construction.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

This activity covers the cost of the infrastructure for projects, including planning, design, engineering, construction, and construction management services. The level of NAHASDA funding for this activity is expected to remain at current levels with existing contracts for engineering services in East Kapolei II, Oahu, and planning for the lands transferred to DHHL in Ewa, Oahu. Planning is underway for projects statewide that may require infrastructure funding.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Improved Lots	0	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Developer Financing (AHP II)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity will provide funding as part of a capital stack for vertical construction of rental housing or rent with the option to purchase housing on Trust Lands statewide.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.)*:

(4) Construction of Rental Housing [810(b)(1)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.)*:

(7) Create new affordable rental units

Describe Other Intended Outcome *(Only if you selected "Other" above.)*:

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.)*:

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.)*:

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Undivided interest lessees/project lessees and applicants meeting the 80% AMI income guidelines will have the opportunity to rent or rent with an option to purchase their unit. NAHASDA guidelines for rental projects keep the unit rents at or below 30% of the family's monthly adjusted income.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

The assistance being provided will go directly to the developer as part of the capital stack for vertical construction financing of approximately 110 single-family rent with option to purchase units – 30 in the Villages of Lai Opua, Hawaii Island, 40 in Hanapepe, Kauai, and 40 in Palamanui, Hawaii Island and 92 multifamily rental units in Palamanui, Hawaii Island, 28 of which are designated for kupuna housing and 64 units ranging from one-bedroom to three-bedroom layouts. If the unit purchase price at the end of the rental period is reduced in direct proportion to the amount of NHHBG developer financing provided, then the assistance will be in the form of a grant, otherwise the financing will be in the form of a loan that needs to be repaid. Other proposed developments may also require developer financing. 30 units in the Villages of Lai Opua, Hawaii Island and 24 units in Hanapepe, Kauai are expected to be completed by 6/30/2027.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Units	54	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Homeowner Financing (AHP III)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity provides homeowner financing to eligible NAHASDA families for new construction or home purchase. DHHL is working to identify families in upcoming project areas for direct loans.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.):*

(14) Lending Subsidies for Homebuyers (Loan) [810(b)(1)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.):*

(2) Assist renters to become homeowners

Describe Other Intended Outcome *(Only if you selected "Other" above.):*

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.):*

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.):*

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Molokai: 2 families

Maui: 12 families

Hawaii: 2 families

Oahu: 43 families

Kauai: 5 families

Lanai: 2 families

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*: Financing for 66 home loans statewide, primarily on Oahu utilizing NHHBG funds up to the appraised value for projects in areas listed in 1.6. Other upcoming project areas may also require direct loans to be available to eligible NAHASDA families. 50 of the 66 homes are projected to be completed by 6/30/2027.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Units	50	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Home Assistance Program (HAP) (AHP IV)

1.2 Program Description *(This should be the description of the planned program.)*:

This program covers the department's attempt to address substandard and/or aging housing on the homelands by providing assistance to low income households to repair their existing homes, including home replacement (demolition & construction), energy retrofit, building code compliance, and home repair.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.)*:

(16) Rehabilitation Assistance to Existing Homeowners [810(b)(1)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.)*:

(3) Improve quality of substandard units

Describe Other Intended Outcome *(Only if you selected "Other" above.)*:

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.)*:

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.)*:

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Lessee families at or below the 80% AMI income guidelines identified over the past few years are being assisted.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

Deferred, no-payment loans, subject to conditional recapture, as defined by HAP will be provided. NAHASDA eligible families will receive $100,000 to repair their home according to Housing Quality Standards that would prioritize repairs for the home. Those families whose homes have been identified as needing more than $100,000 to fix repairs are offered 1% loans on the amount that exceeds the first $100,000, up to an additional $100,000. A demolition/new build loan is the third option offered for properties where cost to repair exceed the appraised or tax assessed value.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Units	5	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Waimanalo Kupuna Housing Rental Assistance (AHP V)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity provides funds primarily to supplement tenants rent at the Waimanalo Kupuna Housing so their maximum contribution does not exceed 30% of their monthly adjusted income.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.):*

(18) Other Housing Service [810(b)(2)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.):*

(6) Assist affordable housing for low income households

Describe Other Intended Outcome *(Only if you selected "Other" above.):*

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.):*

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.):*

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

NAHASDA eligible elders whose income is at or below 80% AMI and who are tenants of this rental housing project, with up to 85 units, on Trust Lands in Waimanalo.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

This elderly housing project was first occupied in 2002 and constructed with funds from the state's Low Income Housing Trust Fund and Rental Housing Trust Fund along with funds from DHHL and the Office of Hawaiian Affairs. Many of the elderly are living on fixed income and cannot afford current rental rates under Hawaii Housing and Finance Development Corporation (HHFDC) which oversees the project and approves the rates from the developer. The monthly rental amount continues to remain affordable. Nevertheless, the subsidy has recently increased annually to adequately cover the difference between the NAHASDA required 30% cap on tenant's monthly adjusted income and the approved LIHTC rent.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Households	75	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Rental Vouchers for Temporary Relocation (AHP VI-A)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity provides funds for rental housing vouchers (first month rent/deposit/emergency rent) for temporary relocation assistance.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.):*

(17) Tenant Based Rental Assistance [810(b)(2)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.):*

(6) Assist Affordable Housing for Low-Income Households

Describe Other Intended Outcome *(Only if you selected "Other" above.):*

1.5 Actual Outcome Number (*In the APR identify the actual outcome from the Outcome list.*):

Describe Other Actual Outcome *(Only if you selected "Other" above.):*

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.):*

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Native Hawaiian families eligible to reside on Hawaiian Home Lands whose income is at or below 80% AMI.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

This activity will provide for temporary relocation assistance for duration of time to construct or repair primary residence.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Households	5	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: DHHL Kupuna Rental Subsidy Program (AHP VI-B)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity provides funds for rental housing vouchers (rent/security deposit) for kupuna (elders) who are sixty-two years of age or older and head of household starting with those who have been on DHHL's waiting list the longest to ensure housing stability.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.)*:

(17) Tenant Based Rental Assistance [810(b)(2)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.)*:

(5) Address homelessness

Describe Other Intended Outcome *(Only if you selected "Other" above.)*:

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.)*:

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.)*:

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Native Hawaiian kupuna (elders) who are sixty-two years of age or older and head of household starting with those who have been on DHHL's waiting list the longest that are eligible to reside on the Hawaiian Home Lands whose income is at or below 80% AMI.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

DHHL has a contract with a service provider to provide rental subsidies that will be reviewed on an annual basis subject to availability of funds. The monthly rental subsidy will be the difference between no more than 30% of the household's monthly adjusted income which will be paid by the kupuna (elder) of an eligible household and the Fair Market Rent within the zip code area.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Households	150	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Rental Vouchers for Units Developed for DHHL (AHP VI-C)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity provides funds for rental housing vouchers (rent/security deposit) for rental units developed or renovated for DHHL currently consisting of rent with option to purchase units in the Villages of Lai Opua upon entering into an agreement with the developer or property management company.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.):*

(18) Other Housing Service [810(b)(2)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.):*

(6) Assist Affordable Housing for Low-Income Households

Describe Other Intended Outcome *(Only if you selected "Other" above.):*

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.):*

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.):*

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Native Hawaiian families eligible to reside on Hawaiian Home Lands whose income is at or below 80% AMI and reside in a rental unit developed for DHHL.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

This activity will provide for rental assistance that will be reviewed on an annual basis subject to availability of funds. The monthly rental assistance will be the difference between no more than 30% of the household's monthly adjusted income which will be paid by the eligible household and the Fair Market Rent within the zip code area.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Households	5	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Housing Counseling (AHP VII)

1.2 Program Description *(This should be the description of the planned program.)*:

Independent, expert advice customized to the need of the Native Hawaiian lessee, applicant or household to address housing barriers in order to achieve housing goals through homeownership counseling or rental housing counseling and include the following processes: intake, financial and housing affordability analysis, an action plan, and a reasonable effort to have follow-up communication when possible.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.):*

(18) Other Housing Service [810(b)(2)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.):*

(6) Assist Affordable Housing for Low-Income Households

Describe Other Intended Outcome *(Only if you selected "Other" above.):*

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.):*

Describe Other Actual Outcome *(Only if you selected "Other" above.).*

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.):*

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Native Hawaiian lessee, applicants or households meeting the 80% AMI income guidelines who received or are eligible to receive NAHASDA assistance including but not limited to homeowner financing, home repair assistance, rental and homeowner assistance. Native Hawaiian families eligible to reside on Hawaiian Home Lands who utilize non-NHHBG funds for homeowner financing may also access housing counseling.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

Families who received NAHASDA assistance will receive either homeownership or rental housing counseling from a HUD-certified Housing Counselor. Homeownership counseling is housing counseling related to homeownership and residential mortgage loans that covers the decision to purchase a home, issues arising during or affecting the period of ownership of a home (including financing, refinancing, default, and foreclosure/lease cancellation, and other financial dispositions), and the sale/transfer or other disposition of a home. Rental housing counseling is counseling related to the rental of residential property, which may include counseling regarding future homeownership opportunities and may also include the

decision to rent, responsibilities of tenancy, affordability of renting and eviction prevention. At a minimum, initial contact will be made with lessee, applicants or households who received NAHASDA assistance informing them of the availability of housing counseling services.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Households	200	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Housing Counseling for Non-low Income Native Hawaiian Households (AHP VII-A)

1.2 Program Description *(This should be the description of the planned program.)*:

Independent, expert advice customized to the need of the Native Hawaiian lessee, applicant or household to address housing barriers in order to achieve housing goals through homeownership counseling and include the following processes: intake, financial and housing affordability analysis, an action plan, and a reasonable effort to have follow-up communication when possible.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.)*:

(18) Other Housing Service [810(b)(2)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.)*:

(2) Assist renters to become homeowners

Describe Other Intended Outcome *(Only if you selected "Other" above.)*:

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.)*:

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.)*:

☐ Low-income NH Households ☒ Non-low income NH Households ☐ Non-NH Households

NHHBG funds may be used to assist Native Hawaiian families eligible to reside on Hawaiian Home Lands whose income exceeds 80% and less than 100% of area median income and utilize non-NHHBG funds for homeowner financing may also access homeownership housing counseling.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

Families who received NAHASDA assistance will receive homeownership counseling from a HUD-certified Housing Counselor. Homeownership counseling is housing counseling related to homeownership and residential mortgage loans that covers the decision to purchase a home, issues arising during or affecting the period of ownership of a home (including financing, refinancing, default, and foreclosure/lease cancellation, and other financial dispositions), and the sale/transfer or other disposition of a home. At a minimum, initial contact will be made with lessee, applicants or households who received NAHASDA assistance informing them of the availability of housing counseling services.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Households	20	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Homeowner Assistance (AHP VIII)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity assists lessees who reside on Hawaiian Home Lands that are unable to pay mortgage arrears; utilities and home energy costs arrears; property taxes; homeowner, hurricane, and/or flood insurance; or association/common area fees to mitigate financial hardships to prevent lease cancellation and promote housing stability.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.):*

(18) Other Housing Service [810(b)(2)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.):*

(6) Assist Affordable Housing for Low-Income Households

Describe Other Intended Outcome *(Only if you selected "Other" above.):*

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.):*

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.):*

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Native Hawaiian families eligible to reside on Hawaiian Home Lands whose income is at or below 80% AMI. Native Hawaiian families eligible to reside on Hawaiian Home Lands who received NHHBG assistance may receive assistance with homeowner, hurricane, and/or flood insurance.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

DHHL has a contract with a service provider to provide homeowner assistance (mortgage arrears; utilities and home energy costs arrears; property taxes; homeowner, hurricane, and/or flood insurance; or association/common area fees) to mitigate financial hardships to prevent lease cancellation and promote housing stability subject to availability of funds. Different options will be considered including but not limited to payment of arrears or principal reduction up to approximately $30,000, as well as interest rate reduction, refinancing the loan, or a combination of these or other options.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Households	10	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Existing Potable Water Infrastructure Improvements (AHP IX)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity will utilize NHHBG funding for engineering, construction, and construction management services for the Molokai Water System Improvements. These funds will be leveraged with funding from USDA to improve potable water infrastructure for Hoolehua, Molokai.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.):*

(24) Infrastructure to Support Housing [810(b)(1)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.):*

(4) Improve quality of existing infrastructure

Describe Other Intended Outcome *(Only if you selected "Other" above.):*

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.):*

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.):*

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

New and existing lessees in homestead areas with approved USDA DHHL applications would be assisted with potable water infrastructure improvements.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

Improved potable water service delivery and/or new potable water service delivery for lessees in homestead areas with an approved DHHL USDA water application.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Improved Lots	0	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Housing Conversion (AHP X)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity involves the conversion of existing structures to transitional or affordable housing.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.):*

(8) Conversion of Other Structures to Affordable Housing [810(b)(1)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.):*

(5) Address homelessness

Describe Other Intended Outcome *(Only if you selected "Other" above.):*

1.5 Actual Outcome Number (*In the APR identify the actual outcome from the Outcome list.*):

Describe Other Actual Outcome *(Only if you selected "Other" above.):*

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.):*

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Native Hawaiian families eligible to reside on Hawaiian Home Lands whose income is at or below 80% AMI would be assisted through transitional or affordable rental housing.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

The assistance will provide funding for renovation of the Ulu Ke Kukui multi-family residential housing facility in Maili, Oahu, which will be made available to applicants on DHHL's wait list.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3)):*

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Units	39	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Single-Family Modular Constructed Units (AHP XI)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity provides funds for the purchase, transport, and installation of single-family modular units.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.)*:

(11) New Construction of Homebuyer Units [810(b)(1)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.)*:

(2) Assist renters to become homeowners

Describe Other Intended Outcome *(Only if you selected "Other" above.)*:

1.5 Actual Outcome Number (*In the APR identify the actual outcome from the Outcome list.*):

Describe Other Actual Outcome *(Only if you selected "Other" above.)*:

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.)*:

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Native Hawaiian families eligible to reside on Hawaiian Home Lands at or below the 80% AMI income guidelines will be assisted when single-family modular units are made available for purchase.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

Single-family modular units will be purchased, transported, and installed to increase affordable housing inventory.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3))*:

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Units	19	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Operation & Maintenance of NHHBG-Assisted Units (AHP XII)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity provides funds for the operation and maintenance of NHHBG-Assisted Units.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.)*:

(20) Operation and Maintenance of NHHBG-Assisted Units [810(b)(3)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.)*:

(5) Address homelessness

Describe Other Intended Outcome *(Only if you selected "Other" above.)*:

1.5 Actual Outcome Number (*In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.)*:

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.)*:

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Native Hawaiians eligible to reside on Hawaiian Home Lands whose income is at or below 80% AMI would be assisted through transitional or affordable rental housing.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

DHHL has a contract with a service provider to operate and maintain NHHBG-Assisted Units in Kalaeloa, Oahu for homeless native Hawaiian beneficiaries that are on DHHL's applicant wait lists whose income is at or below 80% AMI.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3))*:

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Units	18	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Down Payment/Closing Cost Assistance for Non-low Income Native Hawaiian Households (AHP XIII)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity provides down payment/closing cost assistance to non-low income Native Hawaiian households to subsidize turn key housing financed with non-NHHBG funds. DHHL is working to identify families in upcoming project areas.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.)*:

(13) Down Payment/Closing Cost Assistance [810(b)(1)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.)*:

(2) Assist renters to become homeowners

Describe Other Intended Outcome *(Only if you selected "Other" above.)*:

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.)*:

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.)*:

☐ Low-income NH Households ☒ Non-low income NH Households ☐ Non-NH Households

Undivided interest lessees/project lessees and applicants whose income exceeds 80% and less than 100% of area median income can use NHHBG funds for the down payment and/or to buy down the interest rate to subsidize turn key housing financed with non-NHHBG funds up to a certain amount of NHHBG funds subject to the applicable useful life/affordability period.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*: This activity will provide for the down payment and/or to buy down the interest rate to subsidize turn key housing financed with non-NHHBG funds up to a certain amount of NHHBG funds.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3))*:

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Units	5	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

1.1 Program Name and Unique Identifier: Model Activities (AHP XIV)

1.2 Program Description *(This should be the description of the planned program.)*:

This activity provides funds for the construction or rehabilitation of child or adult day care centers, community buildings, job training centers, agricultural resource centers or food hubs.

1.3 Eligible Activity Number *(Select one activity from the Eligible Activity list. Do not combine homeownership and rental housing in one activity, so that when housing units are reported in the APR they are correctly identified as homeownership or rental.)*:

(22) Model Activities [810(b)(5)]

1.4 Intended Outcome Number *(Select one outcome from the Outcome list. Each program can have only one outcome. If more than one outcome applies, create a separate program for each outcome.)*:

(12) Other

Describe Other Intended Outcome *(Only if you selected "Other" above.)*:

Construction or rehabilitation of child or adult day care centers, community buildings, job training centers, agricultural resource centers or food hubs.

1.5 Actual Outcome Number *(In the APR identify the actual outcome from the Outcome list.)*:

Describe Other Actual Outcome *(Only if you selected "Other" above.)*:

1.6 Who Will Be Assisted *(Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median should be included as a separate program within this section.)*:

☒ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

Native Hawaiian families eligible to reside on Hawaiian Home Lands whose income is at or below 80% AMI will be able to access services at child or adult day care centers, community buildings, job training centers, agricultural resource centers, or food hubs.

1.7 Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.)*:

DHHL will partner with nonprofit organizations and for-profit entities for the construction or rehabilitation of child or adult day care centers, community buildings, job training centers, agricultural resource centers or food hubs.

1.8 APR: *(Describe the accomplishments for the APR in the 12-month fiscal year in accordance with 24 CFR § 1006.410(b)(2) and (3))*:

1.9: Planned and Actual Outputs for 12-Month Fiscal Year

Type of Output to be Completed in Fiscal Year Under this Program. Enter one of following choices in accordance with the Eligible Activity: **Units; Households; Improved Lots; Acres**	Planned Number of **Outputs** to be completed in Fiscal Year Under this Program	APR: Actual Number of **Outputs** Completed in Fiscal Year
Dollars	0	

1.10: APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

1.11: APR: Describe the manner in which DHHL would change its housing plan as a result of its experiences. (24 CFR § 1006.410(b)(4)). NOTE: It is sufficient to provide one response to this item rather than an individual response for each NHHBG-funded program.

NOTE: Remember to complete all the text boxes in Section 3 for each NHHBG-funded program. If you are completing an electronic version of this form, you may copy and paste text boxes 1.1 through 1.11 as needed to describe each of your programs. If you are completing this form in hard copy, you may photocopy Section 3 as needed to describe each of your programs.

SECTION 4: AFFORDABLE HOUSING RESOURCES

This section of the NHHP is designed to provide the public with basic background information on the characteristics shaping DHHL's affordable housing programs. Each portion of the text below has several required components that must be discussed. DHHL is encouraged to carefully review the instructions for each section and provide text covering all required elements.

Housing Market (NAHASDA § 803(c)(2)(D)(i) and (ii)) *(Describe the key characteristics of the housing market in the State of Hawaii, currently, and in the period of time covered by the plan. Include a description of the availability of housing from other public sources and private market housing, and how this supply of housing affected the DHHL's program/activity choices.):*

The Hawaii Housing Planning Study (HHPS), 2024 revealed a housing market in crisis, with conditions worsening for residents across all counties. In 2022, Hawaii had 568,058 total housing units, with 516,242 (90.9%) available to residents. Of these, 494,827 were occupied, leaving just 21,415 vacant and available – a mere 4.1% of the housing stock. The remaining 51,816 units (9.1%), including 35,884 seasonal units, were unavailable, largely due to vacation rentals. Between 2017 and 2022, total units grew by 4.6% (25,103 units), yet vacant available units dropped 20.7% from 26,988 to 21,415. This shift reflects units moving into occupied status – potentially easing supply pressure – but leaves a critically low vacancy rate, tightening the market. Despite adding nearly 48,000 housing units statewide from 2010 to 2022 – an average of 4,000 new units per year – available stock for residents has shrunk. In Kauai County, for instance, nearly 4,900 units built between 2010 and 2020 resulted in a net loss of 334 available units, a trend driven by a 22.3% share of units classified as unavailable in 2022 (compared to Honolulu's 6.9%), highlighting how new construction often feeds the vacation market rather than resident needs. Despite these supply gains, an estimated **64,490 additional units are needed through 2027** to meet current and projected demand, including for special populations like DHHL-eligible households, emphasizing the scale of the ongoing shortage. **Of these needed units, 42,100 or 65% of the total needed through 2027 are at levels affordable for households earning 80% AMI and below.**

Hawaii's affordability crisis has deepened since the 2019 HHPS. In 2022, Hawaii had the nation's highest average rents, surpassing the District of Columbia and New York. The 2023 two-bedroom housing hourly wage is $41.83 – second only to California ($42.25) – reflecting the income needed to afford a median-priced two-bedroom unit while spending no more than 30% of income on housing. Yet, renter households earn just $24.37 on average, leaving a $17.46 hourly gap, the largest in the U.S. Statewide, renters face higher monthly costs than homeowners, amplifying affordability challenges for those without ownership stability. Rents rose 15.5% from 2019 to 2023, outpacing wage growth and widening the affordability divide. As a result, 57.8% of all renters are cost-burdened, spending over 30% of income on housing, with nearly a quarter of Maui County households paying 50% or more of their income on housing. This growing gap drives out-migration, as families seek affordable regions, with an **average of 214 residents leaving Hawaii every day**.

Hawaii currently faces a critical housing shortage of 64,490 units needed to meet current and pent-up demand through 2027. Of these needed units, 46.5% are for ownership and 53.5% for rentals, with 71.9% being single-family and 28.1% multi-family. Detailed analysis of housing needs by income level, tenure, and housing type reveals that Hawaii faces both an overall housing shortage and a complex affordability crisis. Of the 64,490 total units needed, 64% are needed to house households earning 80% or less AMI. Over a quarter of the needed units (26.7% or 17,242 units) are for

households earning 30% AMI or below. Members of this income group tend to be seniors on fixed incomes, single parents, those earning near the minimum wage, and individuals experiencing homelessness. This includes a specific need for 8,508 units to accommodate DHHL-eligible households, of which 55% are for ownership and 75% single-family units. The analysis shows particular strain in the multi-family rental market, where current supply and planned development fall significantly short of demand across lower and moderate income levels. This shortage is especially acute for households earning between 50-120% AMI – the workforce housing segment.

The significant portion of housing stock still unavailable to residents due to vacation and short-term rental use greatly compounds Hawaii's housing challenges. Of Hawaii's 568,058 total housing units in 2022, **35,884 units (over two thirds of unavailable units) are unavailable to meet resident demand due to seasonal, recreational, or occasional use**. The impact of seasonal units varies significantly by county, ranging from 3.6% of total units in the City and County of Honolulu up to 11.6% in Kauai County. This use of new and existing residential units for visitor accommodations further diminishes an already limited housing supply, particularly affecting the neighbor islands, where tourism pressure on this housing marker is most acute.

The data also reveals an important market imbalance: while the **greatest need exists at lower income levels, current development patterns show surpluses of units at higher income levels, particularly in the multi-family ownership category**. This mismatch between housing production and actual market needs suggests that addressing Hawaii's housing crisis requires not just increasing overall supply, but fundamentally realigning development priorities with resident needs.

Hawaii's housing market faces another unique challenge: while struggling to meet local housing needs, it simultaneously attracts significant demand from outside the state. For the last ten years, **nearly a quarter of all residential home sales in Hawaii were to persons who live outside the state**, exacerbating pressure on an already constrained market.

An estimated 8,508 housing units are needed statewide for DHHL-eligible households from 2023-2027, calculated using a distinct methodology due to limited DHHL pipeline date, combining HHPS survey responses from households with 50%+ Native Hawaiian ancestry and DHHL applicant data, and reflecting households planning to move within five years. This includes 4,650 ownership units (4,144 single-family, 506 multi-family) and 3,8585 rental units (2,207 single-family, 1,651 multi-family). Nearly half (4,788 units) target households earning below 60% of AMI, reflecting acute need among the lowest income brackets. The 2023 DHHL Beneficiary Demand Survey further highlights the importance of investing in DHHL developments, which by their nature both help to address the unique needs of this community – rooted in historical displacement and economic pressures – while also addressing county and AMI-level needs where demand is greatest, offering a strategic opportunity to align solutions with market shortages.

Affordability remains a stark barrier. Among DHHL lessees and applicants, 53% earn 80% or less of AMI, with 14% below 30% AMI; **for HHCA-eligible households, 66% earn 80% or less with nearly 30% below 30% AMI**. Cost burdens are pervasive – 50% of applicants, 44% of lessees, and 63% of HHCA-eligible households spend over 30% of income on housing, with 32% of the latter exceeding 50%. Overcrowding and doubling-up compound these pressures, affecting 30% of HHCA-eligible households. Homelessness disproportionately impacts Native Hawaiians, with the Homeless Management Information System (HMIS) reporting Native Hawaiian comprising 37% (3,089) of the 8,311 total households served, though only 11% (332) exited into permanent housing.

Cooperation (NAHASDA § 803(c)(2)(D)(iii) *(Describe the structure, coordination, and means of cooperation between DHHL and other relevant partners and organizations [including private nonprofit organizations experienced in the planning and development of affordable housing] in the development, submission, or implementation of its housing plan. In addition, DHHL must indicate if it plans to use loan guarantees under Section 184A of the Housing and Community Development Act of 1992 and any other housing assistance provided by the Federal Government.):*

The department currently partners with a number of housing agencies and organizations either thru subject matter meetings or formal MOUs or agreements.

The Section 184A Loan Guarantee Program, which is similar to the Section 184 Loan Guarantee Program giving Native Americans access to private mortgage financing by providing loan guarantees to lenders, was implemented in 2007. Currently, 1st Tribal Lending, American Savings Bank, Bank of Hawaii, CMG Financial, Cardinal Financial Company, Guardian Lending, DBA of Guardian One, HomeStreet Bank, LoanDepot, LLC, MLD Mortgage Inc. dba The Money Store, and Security National Mortgage are approved lenders for the Section 184A loan program.

DHHL has been utilizing the FHA 247 loan program since 1987. Over $534 million in mortgage loans are outstanding through the FHA 247 loan program to lessees on Hawaiian home lands. The Veterans Affairs direct loan, Rural Development (U.S. Department of Agriculture) loan programs, and low-income housing tax credits are other financing options and tools utilized on Hawaiian home lands.

Demolition and Disposition (NAHASDA § 803(c)(2)(D)(viii), 24 CFR 1006.101(b)(4)(viii)) *(Describe any planned demolition or sale of NHHBG-assisted housing units, or any other demolition or disposition that will be carried out with NHHBG funds. Be certain to include a financial analysis of the proposed demolition, the timetable for any planned demolition or disposition and any other information that is required by HUD with respect to the demolition or disposition.):*

There are no 1937 Act housing on Hawaiian home lands. The DHHL does not anticipate demolishing any units funded by the NHHBG.

Coordination (NAHASDA § 803(c)(2)(D)(ix) *(Describe how DHHL will coordinate with partners to promote employment and self-sufficiency opportunities for residents of affordable housing.):*

The State of Hawai'i Department of Human Services (DHS) administers individual and family financial assistance programs that provide cash payments to help individuals and families meet their basic needs. The programs include Temporary Assistance to Needy Families (TANF), Temporary Assistance to Other Needy Families (TAONF), General Assistance (GA), Aid to the Aged, Blind and Disabled (AABD) and the Food Stamps program. Medical assistance is provided through the Hawai'i QUEST and Medicaid fee-for-services programs. Vocational rehabilitation services are provided to persons with disabilities. Whenever the DHHL staff is made aware of a lessee in need, the families are referred to DHS or to an appropriate non-profit service provider.

Safety (NAHASDA § 803(c)(2)(D)(x)) *(Describe how DHHL will promote crime prevention and resident involvement in affordable housing.):*

The DHHL continues to coordinate efforts with County Police, the Sherriff's Office, the Attorney General's Office—Investigative Division, Department of Transportation – Homeless Coordinator, and the Department of Health – Solid Waste Section to do surveillance and evict offending occupants whenever there is evidence of trespassing or other crimes in homestead areas. DHHL's Enforcement Team and Honolulu Police Department (HPD) District 8, which includes DHHL homesteads in Kapolei, Nanakuli, and Waianae, established a pilot program regarding alleged lease violation investigations aimed at eliminating organized criminal activity in the homesteads with the intention of applying the pilot statewide. As part of this effort, DHHL is engaging beneficiaries/associations/neighborhood security watch programs statewide. If criminal activity is substantiated based on sworn testimony from HPD and written testimony is obtained from associations and NSWs about the effects of this activity, DHHL will initiate a contested case hearing for lease cancellation.

Capacity (NAHASDA § 803(c)(2)(D)(xi)) *(Describe the structure, capacity, and key personnel of the entities that will carry out the program/activities of the housing plan.):*

The DHHL was created by the State Legislature in 1964 to administer the Hawaiian home lands program and manage the Hawaiian home lands trust. The DHHL is one of eighteen principal agencies of the Executive Branch of the State of Hawai'i.

The DHHL serves native Hawaiians or individuals of no less than 50% Hawaiian blood, as defined by the Hawaiian Homes Commission Act of 1920, as amended, and their successors and assigns. These native Hawaiians are the beneficiaries of the Hawaiian home lands trust consisting of a land trust of over 200,000 acres, settlement monies from the State for the mismanagement of trust lands, funds received from the State general fund for operating costs, and revenues and earnings from the land leasing program.

The DHHL is governed by a nine-member board of commissioners headed by the Chairman, who also serves as the executive officer of the DHHL. The Governor of the State of Hawai'i appoints each commissioner and Chairman to a four-year term. The terms of the commissioners are staggered.

Currently, there are 159 full time employees in DHHL with six offices statewide. DHHL's main administrative office is located in Kapolei, Oahu and the five (5) district offices are located on neighbor islands. There are two (2) district offices on the Big Island, one in Hilo (East Hawaii) and one in Waimea (West Hawai'i), Hawai'i; one (1) district office in Lihue, Kauai; one (1) district office in Wailuku, Maui; and one (1) district office in Kalamaula, Molokai. DHHL is organized into five offices and three divisions under the Hawaiian Homes Commission and Office of the Chairman. The various offices and divisions are described as follows:

Office of the Chairman (OCH) — 32 staff members
The Office of the Chairman consists of the Chairman of the Hawaiian Homes Commission, who is also the Director of Department of Hawaiian Home Lands; the Deputy to the Chairman, the Executive Assistant; the NAHASDA Government Relations Program Manager, NAHASDA Government Relations Program Assistant Manager, NAHASDA Program Specialist, NAHASDA Compliance Specialist, NAHASDA Construction Specialist, NAHASDA Mortgage Specialist, NAHASDA Planner, NAHASDA Office Assistant, NAHASDA Government Relations Program Specialist; and executive staff.

Administrative Services Office (ASO) – 12 staff members
The Administrative Services Office provides DHHL staff support in the areas of personnel, budgeting, program evaluation, information and communication systems, risk management, facilities management, clerical services and other administrative services.

Fiscal Office (FO) – 12 staff members
The Fiscal Office provides accounting support for DHHL.

Planning Office (PO) –11 staff members
The Planning Office conducts research and planning studies required in the development of policies, programs, and projects to benefit native Hawaiians. The PO coordinates and develops the Regional Plans, administers the Native Hawaiian Development Program, provides capacity building training for

homestead organizations, and provides community based grants for the implementation of Regional priority projects, community based economic development, and membership development.

Information and Community Relations Office (ICRO) – 4 staff members
The Information and Community Relations Office disseminates information to the public on Department issues, oversees community relations with the various homestead communities and coordinates DHHL's ceremonies. They also publish DHHL's annual reports to the State Legislature.

Homestead Services Division (HSD) – 53 staff members
HSD is composed of three branches: 1) Homestead Applications, 2) District Operations, and 3) Loan Services. HSD is the largest division in DHHL, has staff on all islands, and services more than 25,000 applicants and 10,000 lessees on five islands.

Land Management Division (LMD) – 14 staff members
LMD is responsible for managing Hawaiian home lands that are not used for homestead purposes. Unencumbered lands are managed and disposed of for long and short term uses in order to generate revenues and keep the lands productive while minimizing the occurrence of vegetative overgrowth, squatting or illegal dumping. LMD is responsible for properly managing the lands in DHHL's inventory.

Land Development Division (LDD) – 20 staff members
LDD is charged with the responsibility of developing trust lands for homesteading and income-producing purposes. This is accomplished through the development of properties for residential, agricultural, pastoral, and economic development uses. LDD has three operating branches: 1) Design and Construction – concentrating on the design and construction of off-site and on-site improvements for the various subdivisions; 2) Master-Planned Community – expediting the construction of housing options through partnerships with private sector and exploring other housing opportunities; and, 3) Housing Project—providing turn-key homes and assisting lessees of vacant lots in arranging financing and in contracting with a builder, including self-help and Habitat programs.

The following is a listing of the key personnel responsible for the implementation of DHHL and NAHASDA assisted programs:

Hawaiian Homes Commission (HHC)
Kali Watson, Chairman
Makai Freitas, West Hawaii Commissioner
Michael Kaleikini, East Hawaii Commissioner
Archie Kalepa, Maui Commissioner
Lawrence Lasua, Molokai Commissioner
Pauline Namuo, Oahu Commissioner
Sanoe Marfil, Oahu Commissioner
Walt Kaneakua, Oahu Commissioner
Shaylyn Ornellas, Kauai Commissioner

Department of Hawaiian Home Lands
Kali Watson, Chairman
Katie Lambert, Deputy to the Chairman

Richard Hoke, Executive Assistant
Pearl Teruya, Fiscal Management Officer
Liliane Makaila, Acting Planning Program Manager
Lehua Kinilau-Cano, NAHASDA Government Relations Program Manager
Cynthia Rezentes, NAHASDA Government Relations Program Assistant Manager
Malia Cox, NAHASDA Compliance Specialist
Jennifer Keomaka, NAHASDA Construction Specialist
Annie Aarona, NAHASDA Mortgage Loan Specialist
Robert Fujita, NAHASDA Mortgage Loan Specialist
Kuupuamaeole Kiyuna, NAHASDA Planner
Richard Medeiros, NAHASDA Program Specialist
Oriana Leao, NAHASDA Government Relations Program Specialist
Juan Garcia, HSD Administrator
Piliwale Kailihiwa, East Hawaii Homestead District Supervisor
Mark Sayers, West Hawaii Homestead District Supervisor
Erna Kamibayashi, Kauai Homestead District Supervisor
Germaine Balino, Maui Homestead District Supervisor
David Hoke, Enforcement Administrator
Kalani Fronda, Acting Land Development Division Administrator
Loida Chun, Labor Compliance Specialist

SECTION 5: BUDGETS

(1) Sources of Funding (NAHASDA § 803(c)(2)(C)(i) and 820(b)(1)) *(Complete the **non-shaded** portions of the chart below to describe your estimated or anticipated sources of funding for the 12-month fiscal year.* ***APR Actual Sources of Funding -- Please complete the shaded portions of the chart below to describe your actual funds received. Only report on funds actually received and under a grant agreement or other binding commitment during the 12-month fiscal year.)***

	NHHP					APR					
SOURCE	(A) Estimated amount on hand at beginning of fiscal year	(B) Estimated amount to be received during 12-month fiscal year	(C) Estimated total sources of funds (A + B)	(D) Estimated funds to be expended during 12-month fiscal year	(E) Estimated unexpended funds remaining at end of fiscal year (C minus D)	(F) Actual amount on hand at beginning of fiscal year	(G) Actual amount received during 12-month fiscal year	(H) Actual total sources of funding (F + G)	(I) Actual funds expended during 12-month fiscal year	(J) Actual unexpended funds remaining at end of 12-month fiscal year (H minus I)	(K) Actual unexpended funds obligated but not expended at end of 12-month fiscal year
1. NHHBG Funds	22,300,000	22,300,000	44,600,000	44,469,628	130,372						
2. NHHBG Program Income	0	140,000	140,000	140,000	0						
LEVERAGED FUNDS											
3. Other Federal Funds	0	25,000	25,000	25,000	0						
4. LIHTC											
5. Non-Federal Funds											
TOTAL	22,300,000	22,465,000	44,765,000	44,634,628	130,372						

Notes:

a. For the NHHP, fill in columns A, B, C, D, and E (non-shaded columns). **For the APR, fill in columns F, G, H, I, J, and K (shaded columns).**

b. Total of Column D should match the total of Column N from the **Uses Table** on the following page.

c. Total of Column I should match the Total of Column Q from the Uses Table on the following page.

d. For the NHHP, describe any estimated leverage in Line 3 below. For the APR, describe actual leverage in Line 4 below (APR).

(2) Uses of Funding (NAHASDA § 803(c)(2)(C)(ii)) *(Note that the budget should not exceed the total funds on hand (Column C) and insert as many rows as needed to include all the programs identified in Section 3.* ***Actual expenditures in the APR section are for the 12-month fiscal year.)***

		NHHP			APR		
PROGRAM NAME (tie to program names in Section 3 above)	**Unique Identifier**	**(L) Prior and current year NHHBG (only) funds to be expended in 12-month fiscal year**	**(M) Total all other funds to be expended in 12-month fiscal year**	**(N) Total funds to be expended in 12-month fiscal year (L + M)**	**(O) Total NHHBG (only) funds expended in 12-month fiscal year**	**(P) Total all other funds expended in 12-month fiscal year**	**(Q) Total funds expended in 12-month fiscal year (O+P)**
2026 CIP	AHP I	300,000		300,000			
Developer Financing	AHP II	2,400,000		2,400,000			
Homeowner Financing	AHP III	32,000,000	165,000	32,165,000			
HAP	AHP IV	1,470,500		1,470,500			
Waimanalo Kupuna Housing Rental Asst	AHP V	871,500		871,500			
Rental Vouchers	AHP VI-A	150,000		150,000			
Kupuna Rental	AHP VI-B	1,700,000		1,700,000			
Rental Vouchers for DHHL Units	AHP VI-C	120,000		120,000			
Housing Counseling	AHP VII	1,000,000		1,000,000			
Housing Counseling (NLI)	AHP VII-A	100,000		100,000			
Homeowner Assistance	AHP VIII	300,000		300,000			
Water Infrastructure Improvements	AHP IX	250,000		250,000			
Housing Conversion	AHP X	0		0			
SF Modular	AHP XI	0		0			
Operation & Maintenance	AHP XII	582,628		582,628			
Down Payment/ Closing Cost (NLI)	AHP XIII	225,000		225,000			
Model Activities	AHP XIV	0		0			
Planning and Administration		3,000,000		3,000,000			
Loan Repayment – describe in 3 and 4 below.							
TOTAL		44,469,628	165,000	44,634,628			

Notes:

a. Total of Column L cannot exceed the NHHBG funds from Column C, Row 1 from the Sources Table on the previous page.

b. Total of Column M cannot exceed the total from Column C, Rows 2-10 from the Sources Table on the previous page.

c. Total of Column O cannot exceed total NHHBG funds received in Column H, Row 1 from the Sources Table on the previous page.

d. Total of Column P cannot exceed total of Column H, Rows 2-10 of the Sources Table on the previous page.

e. Total of Column Q should equal total of Column I of the Sources Table on the previous page.

(3) Estimated Sources or Uses of Funding *(NAHASDA § 803(c)(2)(C)). (Provide any additional information about the estimated sources or uses of funding, including leverage (if any). You must provide the relevant information for any planned loan repayment. The text must describe which specific loan is planned to be repaid and the NAHASDA-eligible activity and program associated with this loan):*

The department anticipates $140,000 in program income. The estimated $25,000 in other federal funds is the repayment of the NHHBG subsidy when the lessee transfers their interest in the lease to a non-income eligible Native Hawaiian purchaser.

(4) APR (NAHASDA § 820(b)(1)) *(Enter any additional information about the actual sources or uses of funding, including leverage (if any).*

SECTION 6: OTHER SUBMISSION ITEMS

(1) Useful Life/Affordability Period(s) (NAHASDA § 813, 24 CFR § 1006.305) *(Describe your plan or system for determining the useful life/affordability period of the housing assisted with NHHBG funds. A record of the current, specific useful life/affordability period for housing units assisted with NHHBG funds must be maintained in DHHL's files and available for review for the useful life/affordability period.):*

DHHL has established the following affordability periods to describe the term during which DHHL will keep the unit affordable:

NHHBG Funds Invested	Affordability Period
Less than $5,000	6 months
$5,000 to $50,000	5 years
$50,001 to $100,000	10 years
$100,001 to $200,000	20 years
$200,001 and above	30 years

The affordability period is based on the total amount of NHHBG funds invested in the housing unit. Resale and recapture provisions will be included as a condition of the Hawaiian homestead lease to enforce the affordability restriction for each assisted housing unit.

(2) Model Housing and Over-Income Activities (NAHASDA § 810(b)(5) and 809(a)(2)(B), 24 CFR § 1006.225 and 1006.301(b)) *(If you wish to undertake a model housing activity(ies) or wish to serve non-low-income households during the 12-month fiscal year, those activities may be described here. Each approved model activity must be included as a separate program in Section 3 (Program Descriptions) and the APR portions of Section 3 must be completed in the APR submission for any approved model activity.):*

DHHL intends to undertake model housing activities in partnership with nonprofit organizations and for-profit entities for the construction or rehabilitation of child or adult day care centers, community buildings, job training centers, agricultural resource centers or food hubs in the 12-month fiscal year. DHHL anticipates expending no more than 10 percent of its NHHP budget on Native Hawaiian families eligible to reside on Hawaiian Home Lands between 81 and 100 percent of the area median income for the down payment and/or to buy down the interest rate to subsidize turn key housing financed with non-NHHBG funds up to a certain amount of NHHBG funds subject to the applicable useful life/affordability period. Finally, DHHL anticipates expending no more than 10 percent of its NHHP budget on Native Hawaiian families eligible to reside on Hawaiian Home Lands between 81 and 100 percent of the area median income to fund homeownership counseling for those families who utilize non-NHHBG funds for homeowner financing. DHHL understands that HUD approval must be received to serve households above 100 percent of area median income or to spend more than 10 percent of its NHHP budget to assist households between 81 percent and 100 percent of area median income.

(3) Anticipated Planning and Administration Expenses (NAHASDA § 802(d), 24 CFR § 1006.230)

Do you intend to exceed your allowable spending cap for Planning and Administration? Yes ☐ No ☒

If yes, describe why the additional funds are needed for Planning and Administration.

(4) Actual Planning and Administration Expenses (NAHASDA § 802(d), 24 CFR § 1006.230)

Did you exceed your spending cap for Planning and Administration? Yes ☐ No ☐

If yes, did you receive HUD approval to exceed your spending cap on Planning and Administration? Yes ☐ No ☐

If you did not receive approval for exceeding your spending cap on Planning and Administration costs, describe the reason(s) for exceeding the cap.

SECTION 7: NATIVE HAWAIIAN HOUSING PLAN CERTIFICATION OF COMPLIANCE
(NAHASDA § 803(c)(2)(E))

By signing the NHHP, you certify that you have all required policies and procedures in place in order to operate any planned NHHBG programs.

(1) In accordance with applicable statutes, the recipient certifies that it will comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) or with the Fair Housing Act (42 U.S.C. 3601 et seq.) in carrying out the NHHBG program, to the extent that such Acts are applicable, and other applicable federal statutes.

Yes ☒ No ☐

The following certifications will only apply where applicable based on program activities.

(2) The recipient will require adequate insurance coverage for housing units that are owned and operated or assisted with grant amounts provided under NAHASDA, in compliance with such requirements as may be established by HUD.

Yes ☒ No ☐ Not Applicable ☐

(3) Policies are in effect and are available for review by HUD and the public governing the eligibility, admission, and occupancy of families for housing assisted with grant amounts provided under NAHASDA.

Yes ☒ No ☐ Not Applicable ☐

(4) Policies are in effect and are available for review by HUD and the public governing rents charged, including the methods by which such rents or homebuyer payments are determined, for housing assisted with grant amounts provided under NAHASDA.

Yes ☒ No ☐ Not Applicable ☐ and

(5) Policies are in effect and are available for review by HUD and the public governing the management and maintenance of housing assisted with grant amounts provided under NAHASDA.

Yes ☒ No ☐ Not Applicable ☐

SECTION 8: SELF-MONITORING

(NAHASDA § 819(b), 24 CFR § 1006.401)

(1) Do you have a procedure and/or policy for self-monitoring?

Yes ☐ No ☐

(2) Did you conduct self-monitoring, including monitoring sub-recipients?

Yes ☐ No ☐

(3) Self-Monitoring Results. *(Describe the results of the monitoring activities, including inspections for this program year.):*

SECTION 9: INSPECTIONS

(NAHASDA § 819(b))

(1) Inspection of Units *(Use the table below to record the results of inspections of assisted housing.)*

			Results of Inspections
(A) **Activity**		**(B)** **Total number of units inspected**	**(C)** **Total number of units (Inventory)**
NAHASDA-Assisted Units: Running inventory as of Fiscal Year Beginning (July 1) a 12-month total.			
a.	New Construction Completed		
b.	Rehab/Repair Completed		
c.	Rental Assistance (if applicable)		
d.	Other		
Total			

(2) Did you comply with your inspection policy: Yes ☐ No: ☐

(3) If no, why not:

SECTION 10: AUDITS

(24 CFR § 1006.375(d))

This section is used to indicate whether an audit is required in accordance with the Single Audit Act and 2 CFR part 200, subpart F, based on a review of your financial records.

Did you expend $750,000 or more in total Federal awards during the APR reporting period?

Yes ☐ No ☐

If Yes, an audit is required to be submitted to the Federal Audit Clearinghouse

If No, an audit is not required.

SECTION 11: PUBLIC AVAILABILITY

(NAHASDA § 820(d), 24 CFR § 1006.410(c))

(1) Did you make this APR available to the beneficiaries of the Hawaiian Homes Commission Act before it was submitted to HUD?

Check one: Yes ☐ No ☐

(2) If you answered "No" to question #1, provide an explanation as to why not and indicate when you will do so.

(3) Summarize any comments received from the beneficiaries (NAHASDA § 820(d)(2)).

SECTION 12: JOBS SUPPORTED BY NAHASDA
(NAHASDA § 820)

Use the table below to record the number of jobs supported with NHHBG funds each year (including DHHL staff, Subrecipient staff, Contractors, etc.).

Native Hawaiian Housing Block Grant Assistance (NHHBG)	
(1) Number of **Permanent** Jobs Supported	
(2) Number of **Temporary** Jobs Supported	

(3) Narrative *(optional):*

Section 3 of the HUD Act of 1968 Reporting Requirements:	
Reporting of Labor Hours for Section 3 Projects (Section 3 of the HUD Act of 1968) (24 CFR § 1006.375(e); § 75.25(a))	
(1) Total Number of **Labor Hours Worked**	
(2) Total Number of **Labor Hours Worked by Section 3 Workers**	
(3) Total Number of **Labor Hours Worked by Targeted Section 3 Workers**	

List Qualitative Efforts Made if Section 3 Benchmarks Are Not Met (24 CFR §§ 75.23, 75.25(b))	

SECTION 13: NHHP WAIVER REQUESTS

(NAHASDA § 802(b)(2), 24 CFR 1006.20(b))

THIS SECTION IS ONLY REQUIRED IF DHHL IS REQUESTING A WAIVER OF A NHHP SECTION. Fill out the form below if you are requesting a waiver of one or more sections of the NHHP. **NOTE**: This is NOT a waiver of the NHHBG program requirements but rather a request to waive some of the NHHP submission items because DHHL cannot comply due to circumstances beyond its control.

(1) List below the sections of the NHHP where you are requesting a waiver.
(*List the requested waiver sections by name and section number):*

(2) Describe the reasons that you are requesting this waiver (*Describe completely why you are unable to complete a particular section of the NHHP.):*

(3) Describe the actions you will take in order to ensure that you are able to submit a complete NHHP in the future.
(*This section should completely describe the procedural, staffing or technical corrections that you will make in order to submit a complete NHHP in the future.):*

(4) Recipient:	
(5) Authorized Official's Name and Title:	
(6) Authorized Official's Signature:	
(7) Date (MM/DD/YYYY):	

SECTION 14: NHHP AMENDMENTS

(24 CFR § 1006.101(d))

Use this section for NHHP amendments only.

Fill out the text below to summarize your NHHP amendment. Copy and paste Section 14 for each amendment. This amendment is only required to be submitted to the HUD Office of Native American Programs when the recipient is adding a new activity that was not described in the current One-Year Plan that has been determined to be in compliance by HUD. All other amendments will be reflected in the APR and do not need to be submitted to HUD.

NOTE: A Cover Page is strongly recommended but not required with a NHHP Amendment submission.

APR: REPORTING ON PROGRAM YEAR PROGRESS (NAHASDA § 820(b))

Complete the shaded section of text below to describe your completed program tasks and actual results. Only report on activities completed during the 12-month fiscal year. Financial data should be presented using the same basis of accounting as the Schedule of Expenditures of Federal Awards (SEFA) in the annual audit. For unit accomplishments, only count units when the unit was completed and occupied during the year. For households, only count the household if it received the assistance during the previous 12-month fiscal year.

(1) Program Name and Unique Identifier:
(2) Program Description (*This should be the description of the planned program.)*:
(3) Eligible Activity Number (*Select one activity from the Eligible Activities list in Section 3. Do not combine homeownership and rental housing in one activity, so that when units are reported in the APR they are correctly identified as homeownership or rental.)*:

(4) Intended Outcome Number (*Select one Outcome from the Outcome list in Section 3.*):

Describe Other Intended Outcome *(Only if you selected "Other" above.):*

(5) Actual Outcome Number (*Select one Outcome from the Outcome list in Section 3.*):

Describe Other Actual Outcome *(Only if you selected "Other" above.):*

(6) Who Will Be Assisted (*Describe the types of households that will be assisted under the program. Please note: assistance made available to families whose incomes exceed 80 percent of the median income should be included as a separate program within this Section.*):

☐ Low-income NH Households ☐ Non-low income NH Households ☐ Non-NH Households

(7). Types and Level of Assistance *(Describe the types and the level of assistance that will be provided to each household, as applicable.):*

(8). APR: *(Describe the accomplishments for the APR in the 12-month fiscal year. In accordance with 24 CFR § 1006.410(b)(2) and (3), provide an analysis and explanation of cost overruns or high unit costs.):*

(9). Planned and Actual Outputs for 12-Month Fiscal Year

Planned Number of **Units** to be Completed in Year Under this Program	Planned Number of **Households** To Be Served in Year Under this Program	Planned Number of **Acres** To Be Purchased in Year Under this Program	APR: Actual Number of **Units** Completed in Fiscal Year	APR: Actual Number of **Households** Served in Fiscal Year	APR: Actual Number of **Acres** Purchased in Fiscal Year

(10). APR: If the program is behind schedule, explain why. (24 CFR § 1006.410(b)(2))

(11) Amended Sources of Funding (NAHASDA § 803(c)(2)(C)(i)) *(Complete the **non-shaded** portions of the chart below to describe your estimated or anticipated sources of funding for the 12-month fiscal year.* ***APR Actual Sources of Funding -- Please complete the shaded portions of the chart below to describe your actual funds received. Only report on funds actually received and under a grant agreement or other binding commitment during the 12-month fiscal year.)***

	NHHP					APR					
SOURCE	(A) Estimated amount on hand at beginning of fiscal year	(B) Estimated amount to be received during 12-month fiscal year	(C) Estimated total sources of funds (A + B)	(D) Estimated funds to be expended during 12-month fiscal year	(E) Estimated unexpended funds remaining at end of fiscal year (C minus D)	(F) Actual amount on hand at beginning of fiscal year	(G) Actual amount received during 12-month fiscal year	(H) Actual total sources of funding (F + G)	(I) Actual funds expended during 12-month fiscal year	(J) Actual unexpended funds remaining at end of 12-month fiscal year (H minus I)	(K) Actual unexpended funds obligated but not expended at end of 12-month fiscal year
6. NHHBG Funds											
7. NHHBG Program Income											
LEVERAGED FUNDS											
8. Other Federal Funds											
9. LIHTC											
10. Non-Federal Funds											
TOTAL											

Notes:

a. For the NHHP, fill in columns A, B, C, D, and E (non-shaded columns). **For the APR, fill in columns F, G, H, I, J, and K (shaded columns).**

b. Total of Column D should match the total of Column N from the **Uses Table** on the following page.

c. Total of Column I should match the Total of Column Q from the Uses Table on the following page.

(12) Amended Uses of Funding (NAHASDA § 803(c)(2)(C)(ii)) *(Note that the budget should not exceed the total funds on hand and insert as many rows as needed to include all the programs identified in Section 3.* ***Actual expenditures in the APR section are for the 12-month fiscal year.)***

		NHHP			APR		
PROGRAM NAME (tie to program names in Section 3 above)	**Unique Identifier**	**(L) Prior and current year NHHBG (only) funds to be expended in 12-month fiscal year**	**(M) Total all other funds to be expended in 12-month fiscal year**	**(N) Total funds to be expended in 12-month fiscal year (L + M)**	**(O) Total NHHBG (only) funds expended in 12-month fiscal year**	**(P) Total all other funds expended in 12-month fiscal year**	**(Q) Total funds expended in 12-month fiscal year (O+P)**
Planning and Administration							
Loan repayment							
TOTAL							

Notes:

a. Total of Column L cannot exceed the NHHBG funds from Column C, Row 1 from the Sources Table on the previous page.

b. Total of Column M cannot exceed the total from Column C, Rows 2-10 from the Sources Table on the previous page.

c. Total of Column O cannot exceed total NHHBG funds received in Column H, Row 1 from the Sources Table on the previous page.

d. Total of Column P cannot exceed total of Column H, Rows 2-10 of the Sources Table on the previous page.

e. Total of Column Q should equal total of Column I of the Sources Table on the previous page.

(13) Estimated Sources or Uses of Funding *(NAHASDA § 803(c)(2)(C)). (Provide any additional information about the estimated sources or uses of funding, including leverage (if any). You must provide the relevant information for any planned loan repayment listed in the Uses Table on the previous page. The text must describe which specific loan is planned to be repaid and the NAHASDA-eligible activity and program associated with this loan):*

(14) APR (NAHASDA § 820(b)(1)) *(Enter any additional information about the actual sources or uses of funding, including leverage (if any). You must provide the relevant information for any actual loan repayment listed in the Uses Table on the previous page. The text must describe which loan was repaid and the NAHASDA-eligible activity and program associated with this loan.):*

(15) Recipient:	
(16) Authorized Official's Name and Title:	
(17) Authorized Official's Signature:	I certify that all other sections of the NHHP approved on are accurate and reflect the activities planned.
(18) Date (MM/DD/YYYY):	

STATE OF HAWAIʻI

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17 – February 18, 2026

To: Chairman and Members, Hawaiian Homes Commission

From: David Hoke, Administrator, Enforcement Unit

Subject: For Information Only – Monthly Enforcement Unit Efforts and Statistics (January 12, 2026 – February 8, 2026)

RECOMMENDED ACTIONS: For information only.

DISCUSSION:

Total requests received since last submittal: 6

- Oahu: 1 (Nanakuli)
- Maui: 0
- Kauai: 0
- East Hawaii: 0
- West Hawaii: 0
- Molokai: 0
- Lanai: 0
- LMD: 1 (Waianae)
- LDD: 2 (Waiahole x 1 / Waianae x 1)
- OCH: 0
- Self-Generated by EU: 0
- Skip Trace: 2 (Hoolehua 1 / Oahu x 1)

Total requests received in 2026: 11

Total reports submitted since the last submittal: 31

Total reports submitted in 2026: 32

Official correspondence sent related to EU investigations since the last submittal: 7

Events and Operations:

- 1/13/26 – Escort HOPE Outreach Services to site of upcoming homeless removal in Panaewa
- 1/13/26 – Escort vendor to two leased residences for upcoming work to secure homes of two vacant and unmanaged leased properties in Panaewa
- 1/14/26 - Homeless removal on unencumbered land clean up in Panaewa (Commissioner Kaneakua present)
- 1/15/26 – Meeting with Modernization Team for changes to Salesforce platform specific to unit
- 1/15/26 – Meeting with DLE Investigators
- 1/15/26 – Meeting with HIEMA for upcoming collaborative project
- 1/22/26 – Status conference for CCH in East Hawaii
- 1/23/26 – Follow Up Investigations/site visits on Kauai
- 1/26/26 – CPR and AED Training and certification
- 1/28/26 – Follow up investigations/site visits in East Hawaii
- 1/29/26 – Status conference for CCH (on Maui)
- 2/4/26 – Follow up investigations/site visits in East Hawaii
- 2/6/26 – Property inspection with Narco Vice and follow up site visit in East Hawaii

Beneficiary Engagement:

- 1/24/26 – Quarterly Meeting with KCDC
- 1/28/26 – Quarterly Keaukaha Panaewa Farmers Association NSW Meeting
- 1/29/26 – Participate in Kauluokahai Monthly NSW walk
- 2/2/26 – Monthly EU Check In via email (70 recipients)

Interagency Collaboration:

- County Police:
    - HPD – Narco/Vice, Records Division, D8 Community Police Team
    - HCPD – East Hawaii Community Police Team, Narco/Vice, Records Division
- State of Hawaii Department of Law Enforcement – Director Mike Lambert and Deputy Ernest Robello
- State of Hawaii Emergency Management – Emergency Management Lead, Francis Kau
- Maui Fire Department
- HOPE Outreach Services

Hawaiian Homes Commission Meeting Packet
February 17 & 18, 2026
Hale Ponoʻī, Kapolei, Oahu

D ITEMS

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17 - 18, 2026

TO: Chairperson and Members, Hawaiian Homes Commission

FROM: Juan Garcia, HSD Administrator
Homestead Services Division

SUBJECT: **Homestead Services Division Status Reports**

RECOMMENDED MOTION ACTION

None

DISCUSSION

The following reports are for information only:

EXHIBIT A: Homestead Lease and Application Totals and Monthly Activity Reports

EXHIBIT B: Delinquency Report

ITEM NO. D-1

Statewide Lease Application and Applicant Totals
as of February 1, 2026

ISLAND	AC	AREA / TYPE	1/1/2026 TOTALS	ADDS	DELETES	2/1/2026 TOTALS	
O'ahu	113	Nānākuli Res	148	0	5	143	0.95%
	123	Papakōlea / Kewalo Res	62	0	2	60	0.40%
	133	Waimānalo Res	490	0	9	481	3.15%
	143	Wai'anae Res	129	0	6	123	0.83%
	191	O'ahu Islandwide Agr	4,258	13	2	4,269	27.34%
	193	O'ahu Islandwide Res	10,485	21	207	10,299	67.33%
		Total O'ahu Apps	**15,572**	**34**	**231**	**15,375**	**100.00%**
Maui	213	Paukūkalo Res	49	0	0	49	0.52%
	221	Kula Agr	4	0	0	4	0.04%
	222	Kula Pas	3	0	0	3	0.03%
	291	Maui Islandwide Agr	4,840	3	4	4,839	51.09%
	292	Maui Islandwide Pas	627	0	0	627	6.62%
	293	Maui Islandwide Res	3,950	1	1	3,950	41.70%
		Total Maui Apps	**9,473**	**4**	**5**	**9,472**	**100.00%**
Hawai'i	313	Keaukaha / Waiākea Res	62	1	1	62	0.40%
	321	Pana'ewa Agr	11	0	0	11	0.07%
	333	Kawaihae Res	13	0	0	13	0.08%
	341	Waimea Agr	9	0	0	9	0.06%
	342	Waimea Pas	39	0	0	39	0.25%
	343	Waimea Res	44	0	0	44	0.28%
	391	Hawai'i Islandwide Agr	7,373	10	12	7,371	47.56%
	392	Hawai'i Islandwide Pas	1,986	3	1	1,988	12.83%
	393	Hawai'i Islandwide Res	5,959	10	7	5,962	38.47%
		Total Hawai'i Apps	**15,496**	**24**	**21**	**15,499**	**100.00%**
Kaua'i	511	Anahola Agr	3	0	0	3	0.07%
	512	Anahola Pas	19	0	0	19	0.43%
	513	Anahola Res	37	0	0	37	0.84%
	523	Kekaha Res	8	0	0	8	0.18%
	532	Pu'u 'Ōpae Pas	7	0	0	7	0.16%
	591	Kaua'i Islandwide Agr	2,330	0	2	2,328	52.77%
	592	Kaua'i Islandwide Pas	319	1	0	320	7.25%
	593	Kaua'i Islandwide Res	1,700	1	11	1,690	38.30%
		Total Kaua'i Apps	**4,423**	**2**	**13**	**4,412**	**100.00%**
Moloka'i	613	Kalama'ula Res	3	0	0	3	0.26%
	621	Ho'olehua Agr	15	0	0	15	1.29%
	622	Ho'olehua Pas	1	0	0	1	0.09%
	623	Ho'olehua Res	7	0	0	7	0.60%
	633	Kapa'akea Res	6	0	0	6	0.52%
	643	One Ali'i Res	1	0	0	1	0.09%
	691	Moloka'i Islandwide Agr	123	0	8	115	9.92%
	692	Moloka'i Islandwide Pas	201	1	0	202	17.43%
	693	Moloka'i Islandwide Res	811	0	2	809	69.80%
		Total Moloka'i Apps	**1,168**	**1**	**10**	**1,159**	**100.00%**
Lāna'i	713	Lāna'i Res	74	0	0	74	100.00%
		Total Lāna'i Apps	**74**	**0**	**0**	**74**	**100.00%**

O'AHU APP TYPE TOTALS

Agr		Pas		Res		
4,269	+	0	+	11,106	=	15,375
27.77%		0.00%		72.23%		100.00%

MAUI APP TYPE TOTALS

Agr		Pas		Res		
4,843	+	630	+	3,999	=	9,472
51.12%		6.65%		42.21%		99.99%

HAWAI'I APP TYPE TOTALS

Agr		Pas		Res		
7,391	+	2,027	+	6,081	=	15,499
47.69%		13.08%		39.23%		100.00%

KAUA'I APP TYPE TOTALS

Agr		Pas		Res		
2,331	+	346	+	1,735	=	4,412
52.83%		7.84%		39.32%		100.00%

MOLOKA'I APP TYPE TOTALS

Agr		Pas		Res		
130	+	203	+	826	=	1,159
11.22%		17.52%		71.27%		100.00%

LĀNA'I APP TYPE TOTALS

Agr		Pas		Res		
0	+	0	+	74	=	74
0.00%		0.00%		100.00%		100.00%

STATEWIDE TOTALS

1/1/2026	Adds	Deletes	2/1/2026
46,206	65	280	45,991

STATEWIDE APP TYPE TOTALS

Agr	Pas	Res
18,964	3,206	23,821

ITEM NO. D-1
EXHIBIT A

DHHL Applicant Summary as of February 1, 2026

Individuals with only **RESIDENTIAL** applications:	6,429	21.73%
Individuals with only **AGRICULTURAL** applications:	4,670	15.78%
Individuals with only **PASTORAL** applications:	742	2.51%
Individuals with **RESIDENTIAL and AGRICULTURAL** applications:	15,283	51.65%
Individuals with **RESIDENTIAL and PASTORAL** applications:	2,463	8.32%
***Total Number of DHHL APPLICANTS:**	**29,587**	100.00%

* The number of applicants in each category is determined by a "unique identifier" (*i.e.*, SSN) which ensures that each applicant is counted only once even if the individual holds the maximum two lease applications and appears twice on the DHHL waitlist.

ITEM NO. D-1
EXHIBIT A

Lease Report For the Month Ending January 31, 2026

	RESIDENCE				AGRICULTURE				PASTURE				TOTAL LEASES			
	Last Month	Add	Cancel	TOTAL	Last Month	Add	Cancel	TOTAL	Last Month	Add	Cancel	TOTAL	Last Month	Add	Cancel	TOTAL
OAHU																
Kakaina	44	0	0	**44**	0	0	0	**0**	0	0	0	**0**	44	0	0	**44**
Kalawahine	87	0	0	**87**	0	0	0	**0**	0	0	0	**0**	87	0	0	**87**
Kanehili	393	0	0	**393**	0	0	0	**0**	0	0	0	**0**	393	0	0	**393**
Kapolei	170	0	0	**170**	0	0	0	**0**	0	0	0	**0**	170	0	0	**170**
Kauluokahai	750	0	0	**750**	0	0	0	**0**	0	0	0	**0**	750	0	0	**750**
Kaupea	383	0	0	**383**	0	0	0	**0**	0	0	0	**0**	383	0	0	**383**
Kaupuni	19	0	0	**19**	0	0	0	**0**	0	0	0	**0**	19	0	0	**19**
Kewalo	235	0	0	**235**	0	0	0	**0**	0	0	0	**0**	235	0	0	**235**
Kumuhau	49	0	0	**49**	0	0	0	**0**	0	0	0	**0**	49	0	0	**49**
Lualualei	144	0	0	**144**	30	0	0	**30**	0	0	0	**0**	174	0	0	**174**
Maluohai	221	0	0	**221**	0	0	0	**0**	0	0	0	**0**	221	0	0	**221**
Nanakuli	1,027	0	0	**1,027**	0	0	0	**0**	0	0	0	**0**	1,027	0	0	**1,027**
Papakolea	60	0	0	**60**	0	0	0	**0**	0	0	0	**0**	60	0	0	**60**
Princess Kahanu Estates	266	0	0	**266**	0	0	0	**0**	0	0	0	**0**	266	0	0	**266**
Waiahole	0	0	0	**0**	16	0	0	**16**	0	0	0	**0**	16	0	0	**16**
Waianae	405	0	0	**405**	11	0	0	**11**	0	0	0	**0**	416	0	0	**416**
Waimanalo	692	0	0	**692**	2	0	0	**2**	0	0	0	**0**	694	0	0	**694**
TOTAL	**4,945**	**0**	**0**	**4,945**	**59**	**0**	**0**	**59**	**0**	**0**	**0**	**0**	**5,004**	**0**	**0**	**5,004**
MAUI																
Hikina	31	0	0	**31**	0	0	0	**0**	0	0	0	**0**	31	0	0	**31**
Honokowai	0	0	0	**0**	47	0	0	**47**	0	0	0	**0**	47	0	0	**47**
Kahikinui	0	0	0	**0**	0	0	0	**0**	99	0	0	**99**	99	0	0	**99**
Kamalani	2	0	0	**2**	0	0	0	**0**	0	0	0	**0**	2	0	0	**2**
Keokea	0	0	0	**0**	63	0	0	**63**	0	0	0	**0**	63	0	0	**63**
Leialii	107	0	0	**107**	0	0	0	**0**	0	0	0	**0**	107	0	0	**107**
Paukukalo	177	0	0	**177**	0	0	0	**0**	0	0	0	**0**	177	0	0	**177**
Puuhona	90	0	0	**90**	0	0	0	**0**	0	0	0	**0**	90	0	0	**90**
Waiehu 1	39	0	0	**39**	0	0	0	**0**	0	0	0	**0**	39	0	0	**39**
Waiehu 2	109	0	0	**109**	0	0	0	**0**	0	0	0	**0**	109	0	0	**109**
Waiehu 3	113	0	0	**113**	0	0	0	**0**	0	0	0	**0**	113	0	0	**113**
Waiehu 4	98	0	0	**98**	0	0	0	**0**	0	0	0	**0**	98	0	0	**98**
Waiehu Mauka	12	0	0	**12**	55	0	0	**55**	0	0	0	**0**	67	0	0	**67**
Wailuku	20	0	0	**20**	0	0	0	**0**	0	0	0	**0**	20	0	0	**20**
Waiohuli	541	0	0	**541**	0	0	0	**0**	0	0	0	**0**	541	0	0	**541**
TOTAL	**1,339**	**0**	**0**	**1,339**	**165**	**0**	**0**	**165**	**99**	**0**	**0**	**99**	**1,603**	**0**	**0**	**1,603**
EAST HAWAII																
Discovery Harbour	3	0	0	**3**	0	0	0	**0**	0	0	0	**0**	3	0	0	**3**
Honomu	0	0	0	**0**	15	0	0	**15**	0	0	0	**0**	15	0	0	**15**
Kamaoa	0	0	0	**0**	0	0	0	**0**	23	0	0	**23**	23	0	0	**23**
Kaumana	45	0	0	**45**	0	0	0	**0**	0	0	0	**0**	45	0	0	**45**
Keaukaha	445	0	0	**445**	0	0	0	**0**	0	0	0	**0**	445	0	0	**445**
Kurtistown	3	0	0	**3**	0	0	0	**0**	0	0	0	**0**	3	0	0	**3**
Makuu	0	0	0	**0**	149	0	0	**149**	0	0	0	**0**	149	0	0	**149**
Panaewa	13	0	0	**13**	256	0	0	**256**	0	0	0	**0**	269	0	0	**269**
Piihonua	16	0	0	**16**	0	0	0	**0**	0	0	0	**0**	16	0	0	**16**
Puueo	0	0	0	**0**	11	0	0	**11**	0	0	0	**0**	11	0	0	**11**
University Heights	4	0	0	**4**	0	0	0	**0**	0	0	0	**0**	4	0	0	**4**
Waiakea	266	0	0	**266**	0	0	0	**0**	0	0	0	**0**	266	0	0	**266**
TOTAL	**795**	**0**	**0**	**795**	**431**	**0**	**0**	**431**	**23**	**0**	**0**	**23**	**1,249**	**0**	**0**	**1,249**
WEST HAWAII																
Honokaia	0	0	0	**0**	0	0	0	**0**	24	0	0	**24**	24	0	0	**24**
Humuula	0	0	0	**0**	0	0	0	**0**	5	0	0	**5**	5	0	0	**5**
Kamoku	0	0	0	**0**	0	0	0	**0**	15	0	0	**15**	15	0	0	**15**
Kaniohale	222	0	0	**222**	0	0	0	**0**	0	0	0	**0**	222	0	0	**222**
Kawaihae	211	0	0	**211**	0	0	0	**0**	2	0	0	**2**	213	0	0	**213**
Laiopua	568	0	0	**568**	0	0	0	**0**	3	0	0	**3**	571	0	0	**571**
Lalamilo	30	0	0	**30**	0	0	0	**0**	0	0	0	**0**	30	0	0	**30**
Nienie	0	0	0	**0**	0	0	0	**0**	21	0	0	**21**	21	0	0	**21**
Puukapu/Waimea/Kuhio Vil	117	0	0	**117**	109	0	0	**109**	216	0	0	**216**	442	0	0	**442**
Puupulehu	32	0	0	**32**	0	0	0	**0**	0	0	0	**0**	32	0	0	**32**
TOTAL	**1,180**	**0**	**0**	**1,180**	**109**	**0**	**0**	**109**	**286**	**0**	**0**	**286**	**1,575**	**0**	**0**	**1,575**
KAUAI																
Anahola	558	0	0	**558**	45	0	0	**45**	0	0	0	**0**	603	0	0	**603**
Hanapepe	47	0	0	**47**	0	0	0	**0**	0	0	0	**0**	47	0	0	**47**
Kekaha	115	0	0	**115**	0	0	0	**0**	0	0	0	**0**	115	0	0	**115**
Puu Opae	0	0	0	**0**	0	0	0	**0**	1	0	0	**1**	1	0	0	**1**
TOTAL	**720**	**0**	**0**	**720**	**45**	**0**	**0**	**45**	**1**	**0**	**0**	**1**	**766**	**0**	**0**	**766**
MOLOKAI																
Hoolehua	142	0	0	**142**	313	0	0	**313**	18	0	0	**18**	473	0	0	**473**
Kalamaula	156	0	0	**156**	65	0	0	**65**	0	0	0	**0**	221	0	0	**221**
Kapaakea	43	0	0	**43**	0	0	0	**0**	3	0	0	**3**	46	0	0	**46**
Moomomi	0	0	0	**0**	2	0	0	**2**	0	0	0	**0**	2	0	0	**2**
One Alii	25	0	0	**25**	0	0	0	**0**	0	0	0	**0**	25	0	0	**25**
TOTAL	**366**	**0**	**0**	**366**	**380**	**0**	**0**	**380**	**21**	**0**	**0**	**21**	**767**	**0**	**0**	**767**
LANAI																
Lanai	75	1	0	**76**	0	0	0	**0**	0	0	0	**0**	75	1	0	**76**
TOTAL	**75**	**1**	**0**	**76**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**75**	**1**	**0**	**76**
STATEWIDE TOTAL	**9,420**	**1**	**0**	**9,421**	**1,189**	**0**	**0**	**1,189**	**430**	**0**	**0**	**430**	**11,039**	**1**	**0**	**11,040**

ITEM NO. D-1
EXHIBIT-A

DELINQUENCY REPORT - STATEWIDE
February 17, 2026
($Thousands)

	Total Outstanding		Total Delinquency		RISK 30 Days (low)		60 Days (Medium)		90 Days (High)		180 Days (Severe)		% of Totals 1/31/2026	
DIRECT LOANS	No.	(000s) Amt.	No.	(000s) Amt.	No.	(000s) Amt.	No.	(000s) Amt.	No.	(000s) Amt.	No.	(000s) Amt.	No.	$
OAHU	349	36,412	124	12,685	18	1,745	10	974	10	829	86	9,136	35.5%	34.8%
EAST HAWAII	174	10,050	49	3,583	3	114	1	36	5	441	40	2,992	28.2%	35.6%
WEST HAWAII	74	7,408	12	1,297	2	232	3	287	4	445	3	332	16.2%	17.5%
MOLOKAI	73	6,123	10	545	2	150	1	28	1	19	6	348	13.7%	8.9%
KAUAI	91	8,984	13	948	1	157	1	46	3	216	8	528	14.3%	10.6%
MAUI	136	27,512	21	3,270	1	33	1	132	4	631	15	2,473	15.4%	11.9%
TOTAL DIRECT	**897**	**96,488**	**229**	**22,326**	**27**	**2,431**	**17**	**1,504**	**27**	**2,581**	**158**	**15,809**	**25.5%**	**23.1%**
	100.0%	**100.0%**	**25.5%**	**23.1%**	**3.0%**	**2.5%**	**1.9%**	**1.6%**	**3.0%**	**2.7%**	**17.6%**	**16.4%**		
Advances (including RPT)	**226**	**5,508**	**226**	**5,508**	**0**	**0**	**0**	**0**	**226**	**5,508**			**100%**	**100%**
DHHL LOANS & Advances	**1,123**	**101,996**	**455**	**27,835**	**27**	**2,431**	**17**	**1,504**	**253**	**8,089**	**158**	**15,809**	**40.5%**	**27.3%**
LOAN GUARANTEES as of June 30, 2025														
SBA	2	67	0	0	0	0	0	0	0	0			0.0%	0.0%
USDA-RD	274	35,831	43	6,613	0	0	0	0	43	6,613			15.7%	18.5%
Habitat for Humanity	32	893	16	429	0	0	0	0	16	429			50.0%	48.0%
Maui County	5	74	0	0	0	0	0	0	0	0			0.0%	0.0%
Nanakuli NHS	1	7	1	7	0	0	0	0	1	7			100.0%	100.0%
City & County	10	204	10	204	0	0	0	0	10	204			100.0%	100.0%
FHA Interim	6	1,357	0	0	0	0	0	0	0	0			0.0%	0.0%
OHA	20	2,084	2	323	0	0	0	0	2	323			10.0%	15.5%
TOTAL GUARANTEE	**350**	**40,517**	**72**	**7,576**	**0**	**0**	**0**	**0**	**72**	**7,576**			**20.6%**	**18.7%**
PMI Loans	105	13,122	3	266	3	266	0	0	0	0			2.9%	2.0%
HUD REASSIGNED for Recovery	**109**	**11,282**	**89**	**9,830**	**1**	**78**	**2**	**120**	**3**	**158**	**83**	**9,473**	**81.7%**	**87.1%**
FHA Insured Loans	2,892	534,153	196	30,452	0	0	0	0	196	30,452			6.8%	5.7%
TOTAL INS. LOANS	**3,106**	**558,557**	**288**	**40,548**	**4**	**344**	**2**	**120**	**199**	**30,610**	**83**	**9,473**	**9.3%**	**7.3%**
OVERALL TOTALS(EXC Adv/RPT's)	**4,353**	**695,562**	**589**	**70,450**	**31**	**2,776**	**19**	**1,625**	**298**	**40,768**	**241**	**25,282**	**13.5%**	**10.1%**
ADJUSTED TOTALS	**4,579**	**701,071**	**815**	**75,959**	**31**	**2,776**	**19**	**1,625**	**524**	**46,276**	**241**	**25,282**		**10.8%**

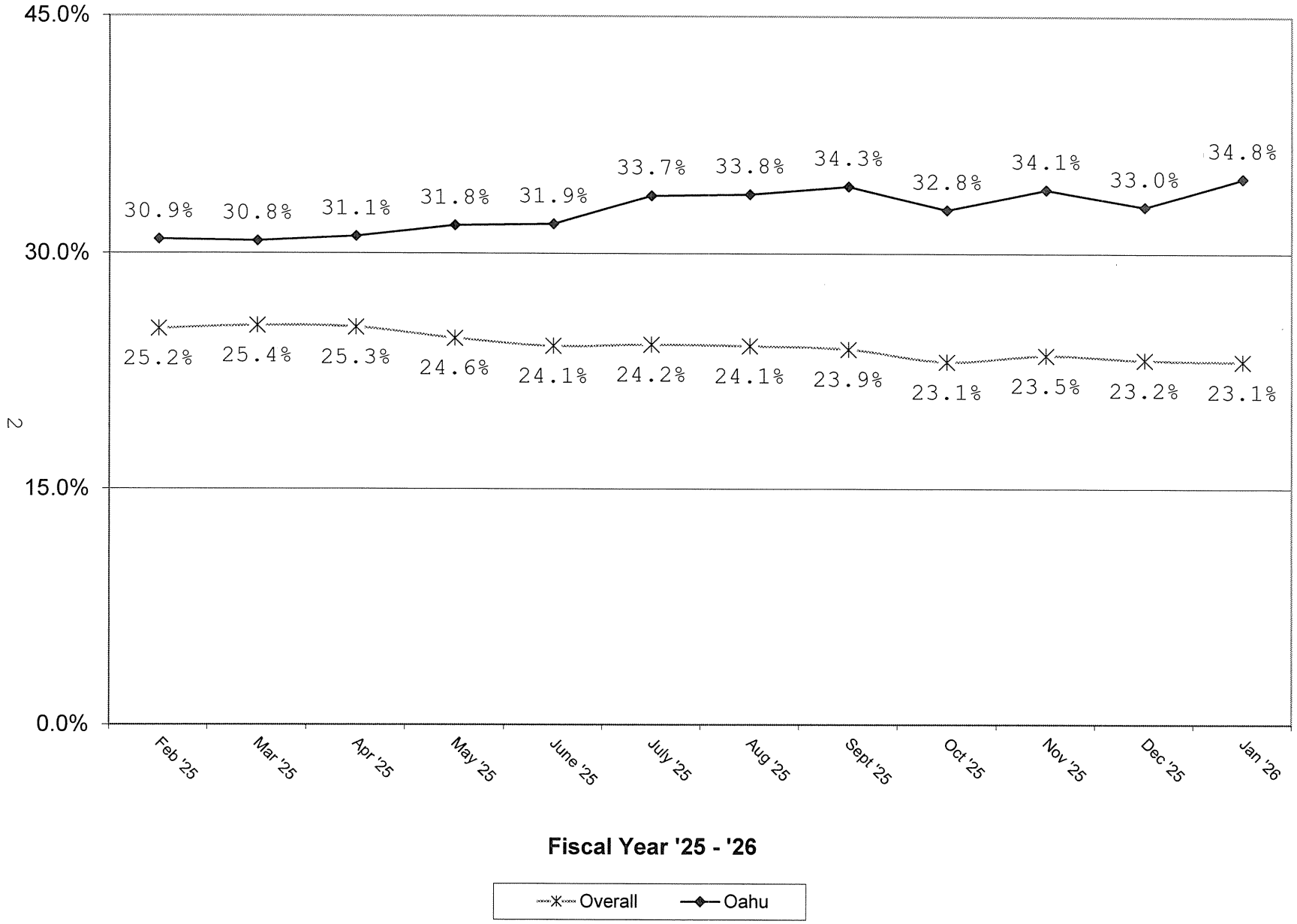
Note: HUD 184A loan program has 582 loans, with a total outstanding principal balance of $104,906,334.99 as of June 30, 2025. 3 Loans, totaling $634,723.85 are delinquent.

The deferred interest for 403 loans comes out to $1,813,992.14 as of 01/31/2026.

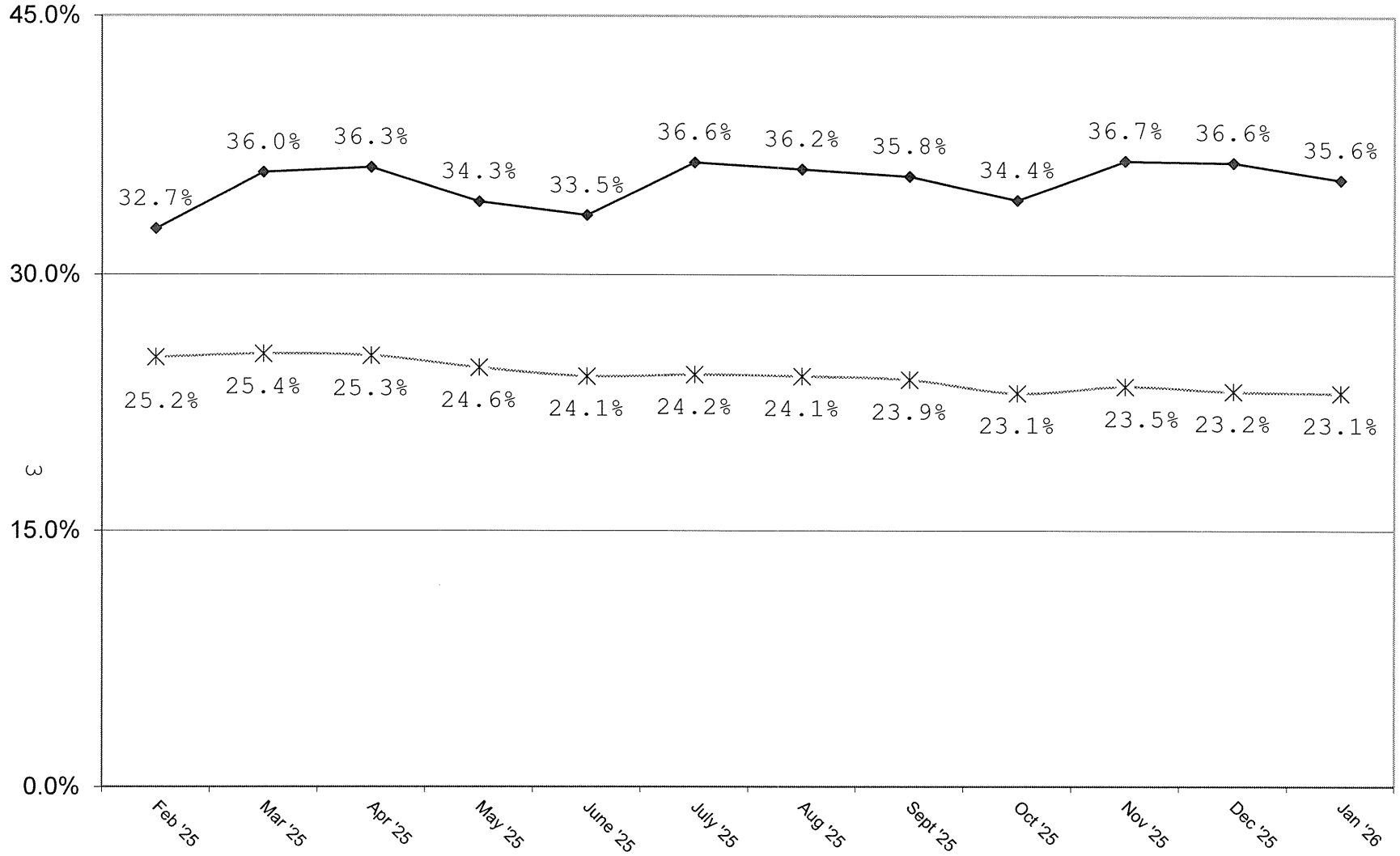
ITEM NO. D-1
EXHIBIT B

ITEM NO. D-1
EXHIBIT B

OAHU
Direct Loans
Delinquency Ratio Report



EAST HAWAII
Direct Loans
Delinquency Ratio Report



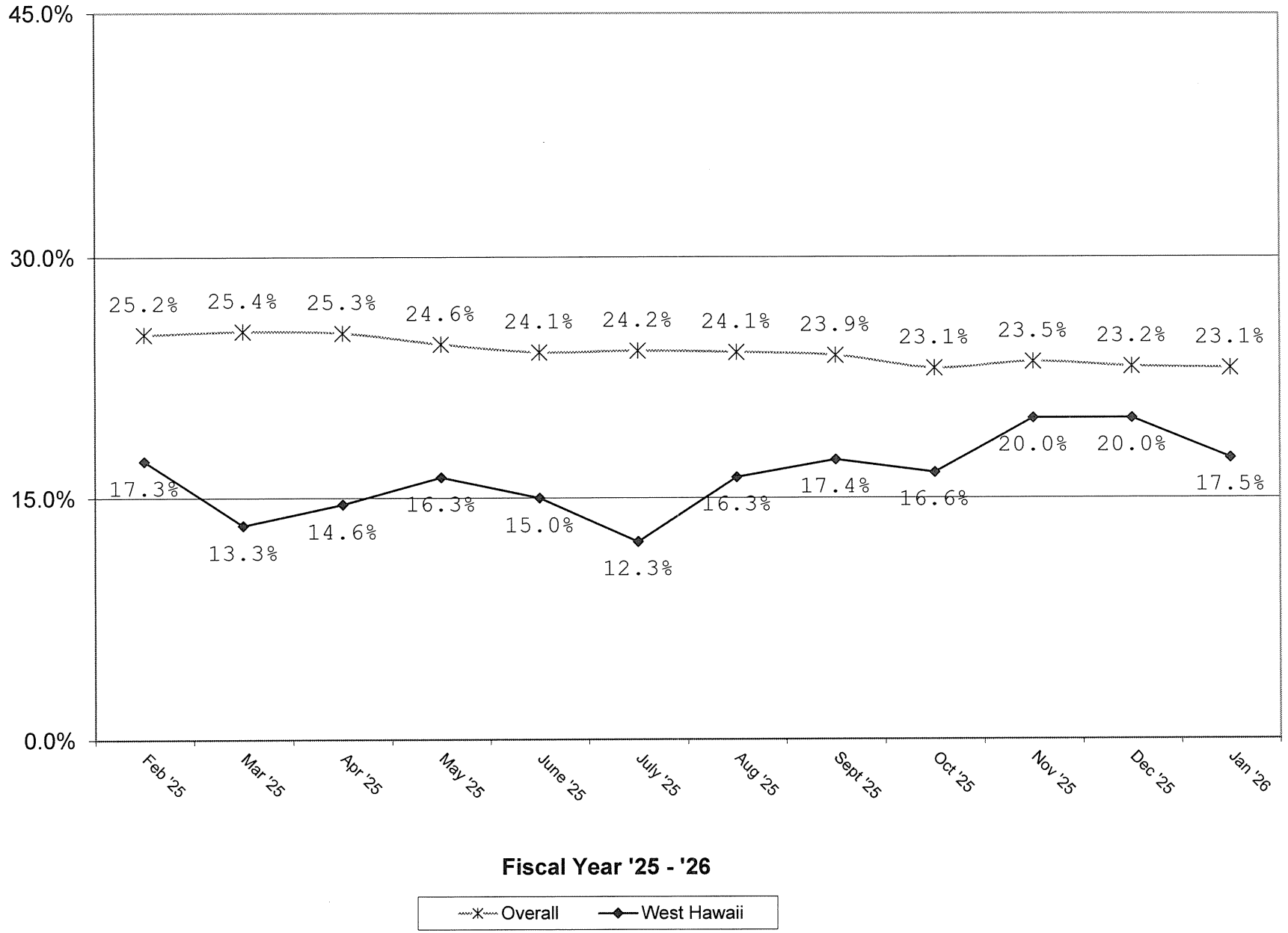
Fiscal Year '25- '26

Overall — East Hawaii

3

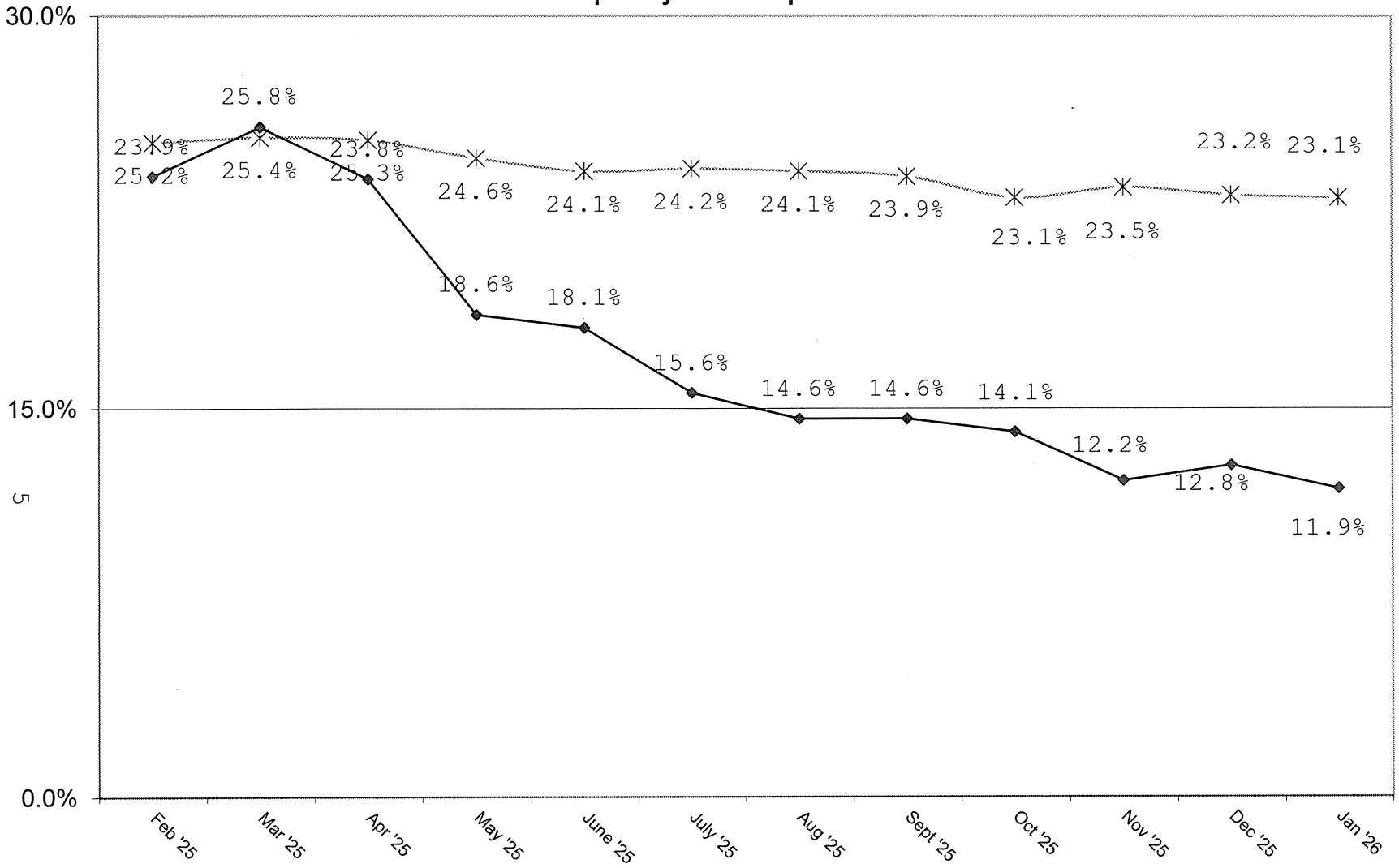
ITEM NO. D-1
EXHIBIT B

WEST HAWAII
Direct Loans
Delinquency Ratio Report



ITEM NO. D-1
EXHIBIT B

MAUI
Direct Loans
Delinquency Ratio Report



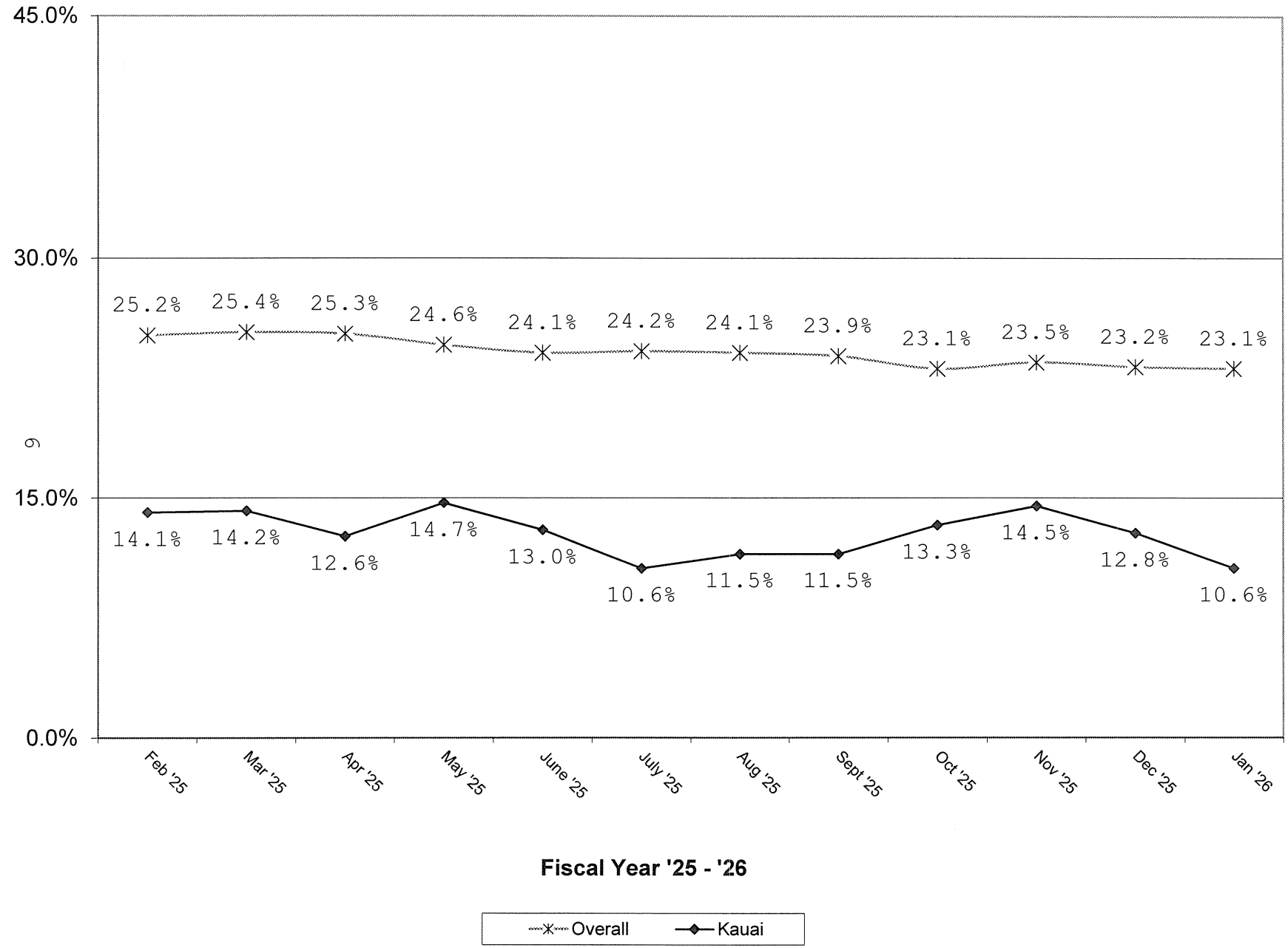
Fiscal Year '25 - '26

Overall — Maui

5

ITEM NO. D-1
EXHIBIT B

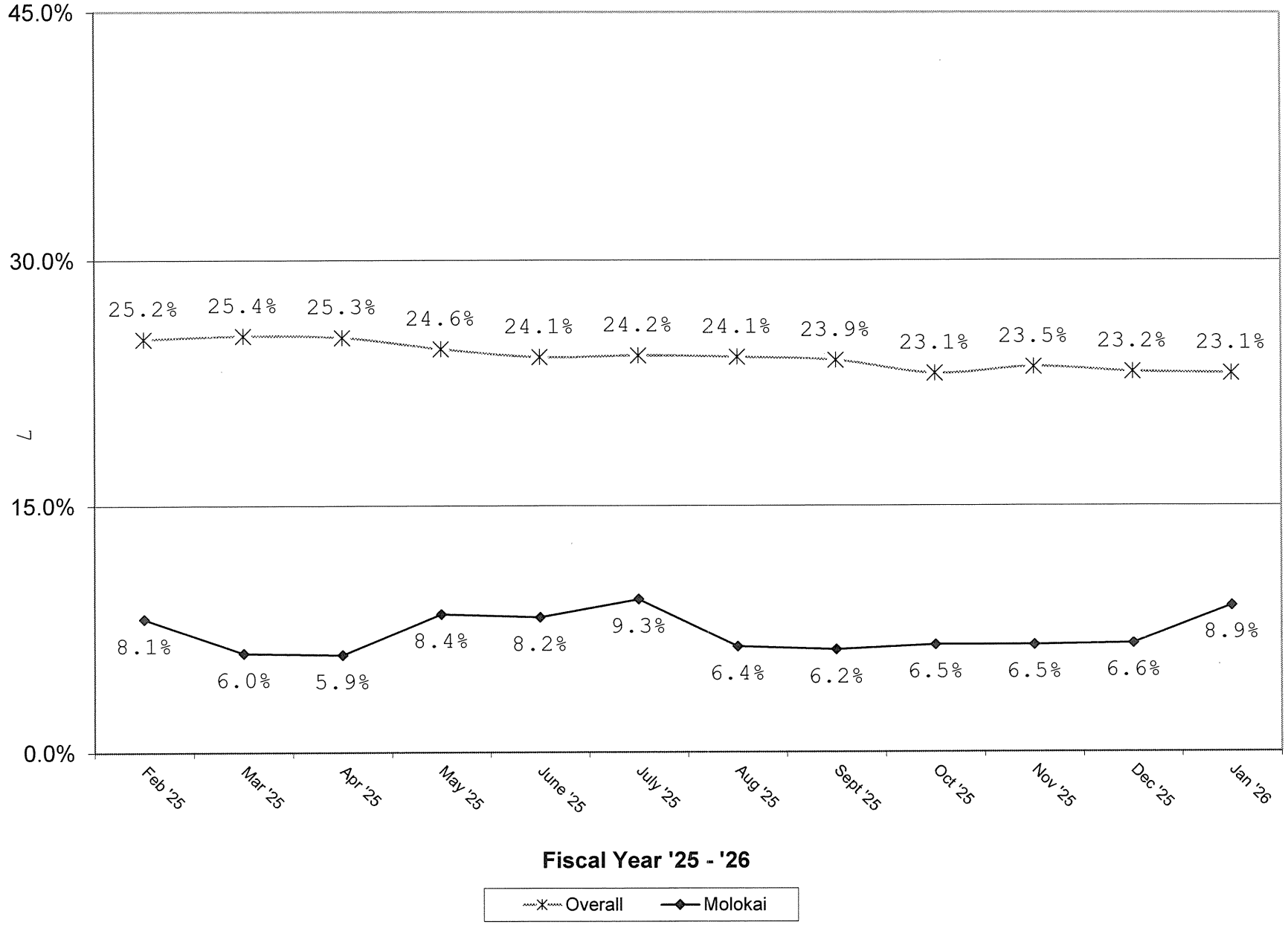
KAUAI
Direct Loans
Delinquency Ratio Report



Fiscal Year '25 - '26

ITEM NO. D-1
EXHIBIT B

MOLOKAI
Direct Loans
Delinquency Ratio Report



ITEM NO. D-1
EXHIBIT B

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator
Homestead Services Division

FROM: Darlene Fernandez, TA Loan Services Manager

SUBJECT: **Approval of Consent to Mortgage**

RECOMMENDED MOTION/ACTION

To approve the following consents to mortgages for Federal Housing Administration (FHA) insured loans, Department of Veterans Affairs (VA) loans, United States Department of Agriculture, Rural Development (USDA, RD) guaranteed loans, United States Housing and Urban Development (HUD 184A) guaranteed loans and Conventional (CON) loans insured by private mortgage insurers.

DISCUSSION

PROPERTY	LESSEE	LENDER	LOAN AMOUNT
OAHU			
Kaupea Lease No. 12073 TMK: 1-9-1-140-006	KEANU, Austin (Purchase) FHA	Click n' Close	$ 529,380
Nanakuli Lease No. 5918 TMK: 1-8-9-013:025	KAAIALII, Andrea J.K.Y. (Cash-out Refi) FHA	HighTech Lending Inc.	$ 352,800
Waimanalo Lease No. 7549 TMK: 1-4-1-029:081	DRIVER, Cynthia (Purchase) HUD 184A	CMG Mortgage Inc.	$ 267,650
Maluohai Lease No. 12792 TMK: 1-9-1-120:069	CLARKE, Israel K.M. (Cash-out Refi) FHA	Mechanics Bank	$ 504,664

Kauluokahai Lease No. 12393 TMK: 1-9-1-017:088	AHSING, Chelsea L.K. (Purchase) FHA	Guild Mortgage	$ 620,234
Waianae Lease No. 4650 TMK: 1-8-5-030-076	SMYTHE, Thomas (Cash-out Refi) FHA	Guild Mortgage	$ 290,640
Maluohai Lease No. 9763 TMK: 1-9-1-119:057	TEHOTU, Gerard K. (Purchase) FHA	Guild Mortgage	$ 228,360
Kauluokahai Lease No. 12980 TMK: 1-9-1-017:110	LINKEE, Jo Ann (Cash-out Refi) FHA	Cardinal Financial Company	$ 651,085
Nanakuli Lease No. 4371 TMK: 1-8-9-010:049	NAONE, JR., Glen L., and NAONE, Christine N. (Purchase) FHA	Guild Mortgage	$ 560,935
Kanehili Lease No. 11572 TMK: 1-9-1-152:115	VESPOLI, Domonic (Purchase) FHA	Guild Mortgage	$ 776,294
Lualualei Lease No. 5619 TMK: 1-8-6-023:024	CASTRO, Meinette (Purchase) FHA	Guild Mortgage	$ 342,000
Nanakuli Lease No. 4504 TMK: 1-8-9-010:107	AKINA, JR., Steven (Cash-out Refi) FHA	Guild Mortgage	$ 311,400
Maluohai Lease No. 9881 TMK: 1-9-1-120:039	YAMAMOTO, Amy (Cash-out Refi) FHA	Bank of Hawaii	$ 425,000

MAUI

Waiehu Kou Lease No. 5928 TMK: 2-3-2-021:039	ARIAS, Germaine(Cash-out Refi)FHA	loan- Depot.com, LLC	$ 335,000
Puuhona Lease No. 13236 TMK: 2-3-5-044:058	MATHIAS, Ivanhoe (Purchase)HUD 184A	loan- Depot.com, LLC	$ 665,000
Puuhona Lease No. 13102 TMK: 2-3-5-044:077	NAAUAO, Mark(Purchase) HUD 184A	American Savings Bank	$ 690,104
Paukukalo Lease No. 3492 TMK: 2-3-3-005:043	AKAHI, Leeward(Cash-out Refi)FHA	Pennymac	$ 373,680
Puuhona Lease No. 10476 TMK: 2-3-5-044:146	ROZET, Bernard(Purchase)VA	Department of Veterans Affairs	$ 715,000
Waiohuli Lease No. 7639 TMK: 2-2-2-027:149	KUAILANI, Tanya(Purchase)FHA	Cardinal Financial Company	$ 837,946
Puuhona Lease No. 13108 TMK: 2-3-5-044:030	KALANI, Lee-Ann (Purchase)FHA	American Savings Bank	$ 668,006
Puuhona Lease No. 13237 TMK: 2-3-5-044:152	PAA, Jamie J. (Purchase)FHA	American Savings Bank	$ 584,394
Waiehu Kou Lease No. 5935 TMK: 2-3-2-021:020	HOUPO, Kenneth(Cash-out Refi)FHA	Bank of Hawaii	$ 260,000

KAUAI

Anahola Lease No. 7948 TMK: 4-4-8-017:005	GOODWIN, Tracy K.(Cash-out Refi)HUD 184A	loan- Depot.com, LLC	$ 200,000
Anahola Lease No. 7889 TMK: 4-4-8-017:039	KEAWEAMAHI-HOOVLER, Rose(Purchase)FHA	Mechanics Bank	$ 456,125

HAWAII

Kaniohale Lease No. 9376 TMK: 3-7-4-023:063	PAI, Bruce D.M. (Purchase)FHA	Click n' Close	$ 430,718

RECAP	NO.		FHA AMOUNT	NO.		VA AMOUNT
FY Ending 6/30/25	139	$	60,617,861	21	$	9,415,801
Prior Months	71	$	35,264,374	11	$	6,061,000
This Month	20		9,538,661	1		715,000
Total FY '25-26	91	$	44,803,035	12	$	6,776,000

			HUD 184A AMOUNT			USDA-RD AMOUNT
FY ENDING 6/30/25	21	$	8,221,129	5	$	2,150,160
Prior Months	21	$	8,793,240	3	$	1,221,514
This Month	4		1,822,754	0		0
Total FY '25-26	25	$	10,615,994	3	$	1,221,514

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator

FROM: Jeremy Caneso-Bantolina, Application Branch Manager
Homestead Services Division

SUBJECT: **Approval of Homestead Application Transfers/Cancellations**

RECOMMENDED MOTION/ACTION

To approve the transfers and cancellations of applications from the Application Waiting Lists for reasons described below:

DISCUSSION

1. Requests of Applicants to Transfer

OAHU ISLANDWIDE RESIDENTIAL LEASE LIST

ARANIO, Mary N.	07/11/2001	KAUAI	RES	04/04/2025

MAUI ISLANDWIDE RESIDENTIAL LEASE LIST

KAWELO, Wendell W.	12/15/1989	OAHU	RES	03/24/2025

HAWAII ISLANDWIDE RESIDENTIAL LEASE LIST

GARCIA, Charlene K.	06/03/1986	OAHU	RES	03/24/2025
DUMAYAS, Felisita F.	06/30/2005	MAUI	RES	03/27/2025

2. Deceased Applicants

WAIANAE AREA / OAHU ISLANDWIDE RESIDENTIAL LEASE LIST

KIHEWA, Patrick	PN 2020	05/09/1972

OAHU ISLANDWIDE RESIDENTIAL LEASE LIST

KON, Darlene M.	PN 2015	06/22/2004

MAUI ISLANDWIDE AGRICULTURAL LEASE LIST

AIWOHI, Darryl K.	PN 2021	05/29/1985

MAUI ISLANDWIDE PASTORAL LEASE LIST

LAIMANA, Frank D.K.	PN 2023	12/14/1978

HAWAII ISLANDWIDE AGRICULTURAL LEASE LIST

KON, Darlene M.	PN 2015	06/22/2004
LEAR, Annette L.	PN 2019	03/17/1987

HAWAII ISLANDWIDE PASTORAL LEASE LIST

LINDSEY, Florence Z.	PN 2020	09/27/1984

MOLOKAI ISLANDWIDE AGRICULTURAL LEASE LIST

KWAN, Melvin K.	PN 2023	03/14/1986

3. Awards of Leases

NANAKULI AREA / OAHU ISLANDWIDE RESIDENTIAL LEASE LIST

KEOHULOA, Jerilyn M.	Awarded Kauluokahai Project Residential Lease #15032 dated 09/24/2025. Remove application dated 05/19/1976.

BYRD, Twila K.	Awarded Kauluokahai Project Residential Lease #15619 dated 10/07/2025. Remove application dated 01/16/2003.
COSTA, George L., III	Awarded Kauluokahai Project Residential Lease #15383 dated 10/07/2025. Remove application dated 07/22/1999.
KAAA, Roy S.	Awarded Kauluokahai Project Residential Lease #15623 dated 10/07/2025. Remove application dated 04/09/2003.
KAMAI-PASTOR, Janet M.	Awarded Kauluokahai Project Residential Lease #15653 dated 10/07/2025. Remove application dated 01/16/2004.
KEALOHA, Daniel K., III	Awarded Kauluokahai Project Residential Lease #15516 dated 10/07/2025. Remove application dated 09/04/2001.
KEOHOKAPU, Laraline L.	Awarded Kauluokahai Project Residential Lease #15245 dated 09/23/2025. Remove application dated 03/23/1995.
KEOHOKAPU, Ty A.K.	Awarded Kauluokahai Project Residential Lease #15319 dated 09/24/2025. Remove application dated 12/04/1997.
KEOLANUI, Tamaia	Awarded Kauluokahai Project Residential Lease #15506 dated 09/24/2025. Remove application dated 03/12/2001.
KEOMAKA, Dwayne K.	Awarded Kauluokahai Project Residential Lease #15160 dated 09/24/2025. Remove application dated 04/14/1987.

KEONE, Jeremy M.	Awarded Kauluokahai Project Residential Lease #15562 dated 09/24/2025. Remove application dated 02/11/2002.
KEOPUHIWA, Puanani N.	Awarded Kauluokahai Project Residential Lease #15546 dated 09/24/2025. Remove application dated 07/16/2001.
KEPAA, Mary Jean	Awarded Kauluokahai Project Residential Lease #15173 dated 09/24/2025. Remove application dated 05/08/1992.
KEPOO, Jerrilene N.	Awarded Kauluokahai Project Residential Lease #15087 dated 09/24/2025. Remove application dated 10/03/1983.
KIAAINA, Holly-Ann Kawaihae	Awarded Kauluokahai Project Residential Lease #15314 dated 09/24/2025. Remove application dated 03/19/1998.
KIKILA, Joseph K.	Awarded Kauluokahai Project Residential Lease #15139 dated 09/24/2025. Remove application dated 06/13/1991.
KINILAU, Daniel K.	Awarded Kauluokahai Project Residential Lease #15499 dated 09/24/2025. Remove application dated 08/22/2001.
KINILAU, Erma M.	Awarded Kauluokahai Project Residential Lease #15497 dated 09/24/2025. Remove application dated 08/03/2001.
KINILAU, Rodney D.	Awarded Kauluokahai Project Residential Lease #15318 dated 09/24/2025. Remove application dated 08/07/1998.

KINILAU, Sean J.	Awarded Kauluokahai Project Residential Lease #15513 dated 09/24/2025. Remove application dated 08/22/2001.
KINILAU, Sherran K.	Awarded Kauluokahai Project Residential Lease #15514 dated 09/24/2025. Remove application dated 10/08/2001.
KO, Robbie H.	Awarded Kauluokahai Project Residential Lease #15377 dated 09/24/2025. Remove application dated 07/14/1999.
KON, Wendy K.	Awarded Kauluokahai Project Residential Lease #15158 dated 09/24/2025. Remove application dated 04/23/1987.
KONG KEE, Theresa Ann K.	Awarded Kauluokahai Project Residential Lease #15486 dated 09/24/2025. Remove application dated 11/03/2000.
KUAKINI, Annie P.	Awarded Kauluokahai Project Residential Lease #15162 dated 09/24/2025. Remove application dated 07/01/1987.
KUAMOO, Michele K.	Awarded Kauluokahai Project Residential Lease #15457 dated 09/24/2025. Remove application dated 11/04/1999.
KUAMOO-CASTRO, Wenda K.	Awarded Kauluokahai Project Residential Lease #15191 dated 09/24/2025. Remove application dated 07/28/1994.
KUKAHIKO, Germaine Janel	Awarded Kauluokahai Project Residential Lease #15234 dated 09/24/2025. Remove application dated 07/18/1995.

KUPO-LONOAEA, Roberta Lee L.	Awarded Kauluokahai Project Residential Lease #15410 dated 09/24/2025. Remove application dated 07/20/2000.
KYLE, Corinna	Awarded Kauluokahai Project Residential Lease #15307 dated 09/24/2025. Remove application dated 07/03/1997.
LAGMAY, Patrick D.	Awarded Kauluokahai Project Residential Lease #15178 dated 09/24/2025. Remove application dated 01/22/1990.
LAI, Josette K.	Awarded Kauluokahai Project Residential Lease #15336 dated 09/24/2025. Remove application dated 07/15/1998.
LAI, Lily K.M.	Awarded Kauluokahai Project Residential Lease #15187 dated 09/24/2025. Remove application dated 07/15/1994.
LEE, Gwendolyn Puaena	Awarded Kauluokahai Project Residential Lease #15526 dated 10/07/2025. Remove application dated 01/18/2002.
LOA, Tia M.	Awarded Kauluokahai Project Residential Lease #15111 dated 10/07/2025. Remove application dated 01/28/2004.
MOKUAHI, Doris J.	Awarded Kauluokahai Project Residential Lease #15213 dated 10/07/2025. Remove application dated 01/06/1995.
NACARIO, Victoria L.	Awarded Kauluokahai Project Residential Lease #15238 dated 10/07/2025. Remove application dated 12/01/1994.

NAUKA, Sunsiree S.U.K.	Awarded Kauluokahai Project Residential Lease #15617 dated 10/07/2025. Remove application dated 01/23/2004.
PAUOLE, Candice U.	Assigned Residential Lease #11379, Lot 17180 in Kaupea, Oahu dated 09/27/2024. Remove application dated 03/11/2019.
PELEKAI, Derrick L.K.	Awarded Kauluokahai Project Residential Lease #15086 dated 10/07/2025. Remove application dated 04/18/1983.
SOLIZ, Shanda E.	Awarded Kauluokahai Project Residential Lease #15592 dated 10/06/2025. Remove application dated 07/21/2003.
SPENCER, Joshua M.	Awarded Kauluokahai Project Residential Lease #15612 dated 10/06/2025. Remove application dated 09/16/2003.
SPILLANE-BRYSON, Sheila K.M.	Awarded Kauluokahai Project Residential Lease #15630 dated 10/07/2025. Remove application dated 09/02/2003.
STANT, Ivan M.	Awarded Kauluokahai Project Residential Lease #15598 dated 10/07/2025. Remove application dated 11/20/2003.
UMIAMAKA, Angel L.	Awarded Kauluokahai Project Residential Lease #15659 dated 10/07/2025. Remove application dated 02/28/2003.
WAKINEKONA, Summer H.	Awarded Kauluokahai Project Residential Lease #15654 dated 10/07/2025. Remove application dated 03/06/2003.

WINCHESTER, Ian P.K.	Awarded Kauluokahai Project Residential Lease #15649 dated 10/07/2025. Remove application dated 12/05/2003.
YIN, William E., Jr.	Awarded Kauluokahai Project Residential Lease #15292 dated 10/07/2025. Remove application dated 10/23/1996.
YOUNG, Joseph C., III	Awarded Kauluokahai Project Residential Lease #15606 dated 10/07/2025. Remove application dated 10/30/2003.
ZUKEVICH, Bernadine A.	Awarded Kauluokahai Project Residential Lease #15614 dated 10/07/2025. Remove application dated 08/18/2003.

MAUI ISLANDWIDE RESIDENTIAL LEASE LIST

DEMIROVIC, Evelyn K.M.	Assigned Residential Lease #4006, Lot 72 in Kalamaula, Molokai dated 12/30/2025. Remove application dated 08/01/2001.

MOLOKAI ISLANDWIDE RESIDENTIAL LEASE LIST

DUDOIT, Dustin K.	Assigned Residential Lease #10258, Lot 50 in Hoolehua, Molokai dated 06/03/2025. Remove application dated 12/06/2017.
MAKEKAU, Emerson H.	Assigned Residential Lease #4006, Lot 72 in Kalamaula, Molokai dated 12/30/2025. Remove application dated 10/03/1985.

4. Native Hawaiian Qualification

NONE FOR SUBMITTAL

5. Voluntary Cancellation

NONE FOR SUBMITTAL

6. Successorship

HAWAII ISLANDWIDE PASTORAL LEASE LIST

HAALILIO, Theresa Lynn K.	Succeeded to Hawaii Islandwide Pastoral application of Spouse, Jeffrey K. Haalilio, Sr., dated 04/16/1992. Remove application dated 04/28/1992.

HAWAII ISLANDWIDE RESIDENTIAL LEASE LIST

HAALILIO, Theresa Lynn K.	Succeeded to Hawaii Islandwide Residential application of Spouse, Jeffrey K. Haalilio, Sr., dated 04/16/1992. Remove application dated 04/28/1992.
KIA, Joshiah N., Jr.	Succeeded to Hawaii Islandwide Residential application of Parent, Josiah N. Kia, dated 04/15/1993. Remove application dated 09/22/1997.

7. Additional Acreage

HAWAII ISLANDWIDE AGRICULTURAL LEASE LIST

LEE LOY, Blase	Transferred Agricultural Lease Assignment #4070, Lot 50 in Panaewa, Hawaii dated 10/04/2024. Remove associated application dated 02/21/1982.

MAIOHO, George W.	Transferred Agricultural Lease Assignment #4815, Lot 57B-1 in Hoolehua, Molokai dated 11/16/2015. Remove associated application dated 09/15/1986.

8. HHC Adjustments

NONE FOR SUBMITTAL

Cumulative FY 2024-2025 Transaction Total		662
Last Month's Transaction Totals		795
Transfers from Island to Island		4
Deceased		8
Cancellations:		
	Awards of Leases	53
	NHQ	0
	Voluntary Cancellations	0
	Successorship	3
	Additional Acreage	2
	HHC Adjustments	0
This Month's Transaction Total		70
This Month's Cumulative FY 2025-2026 Transaction Total		**865**

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator

FROM: Jeremy Caneso-Bantolina, Application Branch Manager
Homestead Services Division

SUBJECT: **Approval to Certify Applications of Qualified Applicants for the month of January 2026**

RECOMMENDED MOTION/ACTION

To approve the certification of applications of qualified applicants for the month of January 2026. The Department has verified the native Hawaiian blood quantum requirement of each applicant according to section 10-3-2 of the Hawaii Administrative Rules.

DISCUSSION

At its October 2020 regular meeting, the Hawaii Homes Commission adopted the recommendation of the HHC Investigative Committee on the Native Hawaiian Qualification Process to recall to the HHC, pursuant to Hawaii Administrative Rules § 10-2-16(a), the authority to accept the Native Hawaiian Quantum (NHQ) determination for an individual as a function requiring the exercise of judgement or discretion. The recommendation included a process to implement the Commission's review and acceptance of NHQ determinations. These applicants have been deemed by the Department to have met the native Hawaiian blood quantum requirement through the kumu ʻohana process.

OAHU ISLANDWIDE AGRICULTURAL LEASE LIST

KAULIA, Charity M.	04/01/2025
MAKAENA, Ash-Lynn A.M.	04/28/2025
LANDFORD, Shane K.	04/28/2025

ITEM NO. D-4

KAHALEWAI, Joseph K., III	04/30/2025

OAHU ISLANDWIDE RESIDENTIAL LEASE LIST

MOKIAO, Travis T.	03/28/2025
KAULIA, Charity M.	04/01/2025
KUHIIKI, Davelynn M.	04/02/2025
NAHINU, Thomas A.W., Jr.	04/02/2025
MAKAENA, Elysia M.K.O.P.K.	04/28/2025
MAKAENA, Ash-Lynn A.M.	04/28/2025
LANDFORD, Shane K.	04/28/2025
CRAWFORD-KAPANUI, Punawai K.	04/29/2025
KAHALEWAI, Joseph K., III	04/30/2025

MAUI ISLANDWIDE AGRICULTURAL LEASE LIST

VAUGHAN, Joshua L.	01/21/2025
KUHIIKI, James David L.	04/02/2025
KEAHI, Kyle-Lee U.N.	04/30/2025
KEAHI, Mary E.	04/30/2025
PAU, Robert K.P.	05/01/2025

MAUI ISLANDWIDE PASTORAL LEASE LIST

NISHIOKA-DE MELLO, Seena L.H.	03/17/2025
BURNS, Dwight K.	04/28/2025

MAUI ISLANDWIDE RESIDENTIAL LEASE LIST

VAUGHAN, Joshua L.	01/21/2025
KANEAKUA, Hope K.K.K.N.O.	01/23/2025

KIESLING, Agnes E.M.	03/10/2025
NISHIOKA-DE MELLO, Seena L.H.	03/17/2025
BURNS, Dwight K.	04/25/2025
KINCAID, James K.	04/25/2025
KEAHI, Kyle-Lee U.N.	04/30/2025
KEAHI, Mary E.	04/30/2025
KEAHI, Kalei-Earl K.	05/01/2025
PAU, Robert K.P.	05/01/2025

HAWAII ISLANDWIDE AGRICULTURAL LEASE LIST

PAUOLE, Lokahi P.	04/30/2025

MOLOKAI ISLANDWIDE AGRICULTURAL LEASE LIST

GOMES, Pomaikai K.P.	10/29/2025

MOLOKAI ISLANDWIDE RESIDENTIAL LEASE LIST

GOMES, Pomaikai K.P.	10/29/2025

Previous Cumulative Total for Current FY	266
Current Month's Total	33
Fiscal Year Total: July 2025-June 2026	**299**

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator

FROM: Jeremy Caneso-Bantolina, Application Branch Manager
Homestead Services Division

SUBJECT: **Commission Designation of Successors to Application Rights - Public Notice November 2024**

RECOMMENDED MOTION/ACTION

1. To designate the following individuals as successors to the application rights of deceased applicants who did not name a qualified successor.

2. To approve the certification of applications to successorship rights of qualified successors. The Department has verified the native Hawaiian blood quantum requirement of each prospective successor according to section 10-3-2 of the Hawaii Administrative Rules.

DISCUSSION

The following qualified applicants passed away on or after October 26, 1998, without naming qualified successors. Pursuant to 10-3-8(c) of the *Hawaii Administrative Rules*, a public notice listing the names of deceased applicants and calling for possible successors to their application rights was published in the Honolulu Star-Advertiser, The Maui News, Hawaii Tribune Herald, West Hawaii Today, and The Garden Island on the last two consecutive Sundays of November for the year the Department received notification. Requests to succeed to the decedents' application rights were submitted within the required 180 days following the last date of publication. Prospective successors were the sole respondents and are deemed by the Department to have met the requirements of successorship according to section 10-3-8(b) of the *Hawaii Administrative Rules*. HSD recommends approval of the following designees:

1. Deceased Applicant:	Ivon E. Ohelo
Date of death:	April 28, 2020
Successor to app rights:	Amber U. Ohelo
Relationship to decedent:	Child
Island:	Hawaii
Type:	Islandwide Agricultural
Date of Application:	May 17, 1990
Date of Public Notice:	November 2024
2a. Deceased Applicant:	Jeffrey K. Haalilio Sr.
Date of death:	January 8, 2018
Successor to app rights:	Theresa Lynn K. Haalilio
Relationship to decedent:	Spouse
Island:	Hawaii
Type:	Islandwide Pastoral
Date of Application:	April 16, 1992
Date of Public Notice:	November 2024
2b. Island:	Hawaii
Type:	Islandwide Residential
Date of Application:	April 16, 1992
3. Deceased Applicant:	Josiah N. Kia
Date of death:	June 28, 2021
Successor to app rights:	Josiah N. Kia Jr.
Relationship to decedent:	Son
Island:	Hawaii
Type:	Islandwide Residential
Date of Application:	April 15, 1993
Date of Public Notice:	November 2024
4. Deceased Applicant:	Randall Simeona, Jr.
Date of death:	September 13, 2022
Successor to app rights:	Ran Li L. Nii
Relationship to decedent:	Sibling
Island:	Hawaii
Type:	Islandwide Agricultural
Date of Application:	June 17, 1983
Date of Public Notice:	November 2024

Previous Cumulative Total for Current FY	53
Current Month's Total	5
Fiscal Year Total: July 2025-June 2026	**58**

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, Administrator
Homestead Services Division

FROM: Ross K. Kapeliela, ODO Supervisor
Homestead Services Division

SUBJECT: **Approval of Assignment of Leasehold Interest**

RECOMMENDED MOTION/ACTION

1. To approve the assignment of the leasehold interest, pursuant to Section 208, Hawaiian Homes Commission Act, 1920, as amended, and subject to any applicable terms and conditions of the assignment, including but not limited to the approval of a loan.

2. To approve and accept that the transferees are of no less than the required 25% or 50% Hawaiian ancestry as appropriate pursuant to Section 208, Hawaiian Homes Commission Act, 1920, as amended.

DISCUSSION

Twenty-seven (27) assignments of lease.

1. Lessee Name: Claudine M. Akau-Martin
Res. Lease No. 9819, Lot No. 13829
Lease Date: 11/15/2001
Area: Maluohai, Oahu
Property Sold & Amount: Yes, $760,000.00
Improvements: 4 bedrooms, 3 bath dwelling

Transferee Name: Adrian O. P. Kaheaku
Relationship: None
Loan Assumption: No
Applicant: Oahu IW Res., 1/31/2011

Reason for Transfer: "Moving off island." Special Condition: Transferee to obtain funds to pay purchase price.

2. Lessee Name: Ted H. Choy Foo
Res. Lease No. 8358, Lot No. 67
Lease Date: 11/1/1995
Area: PKE, Oahu
Property Sold & Amount: Yes, $530,000.00
Improvements: 3 bedrooms, 2-1/2 bath dwelling

Transferee Name: Aldalene A. K. Rodrigues
Relationship: None
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 7/27/2018

Reason for Transfer: "Selling home." Special Condition: Transferee to obtain funds to pay purchase price.

3. Lessee Name: Michelle P. Halemano
Res. Lease No. 12757, Lot No. 13778
Lease Date: 2/3/2017
Area: Maluohai, Oahu
Property Sold & Amount: Yes, $650,000.00
Improvements: 3 bedrooms, 2 bath dwelling

Transferee Name: Diamondlee K. H. I. Kealohanui
Relationship: None
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 10/20/2014

Reason for Transfer: "Selling home." Special Condition: Transferee to obtain funds to pay purchase price.

4. Lessee Name: Jon K. Hiapo
Res. Lease No. 1009, Lot No. 82-A
Lease Date: 12/16/1924
Area: Keaukaha, Hawaii
Property Sold & Amount: No, N/A
Improvements: 3 bedrooms, 2-1/2 bath dwelling

Transferee Name: Lori D. K. H. Hookano
Relationship: Cousin
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 12/20/2007

Reason for Transfer: "Giving lease to relative."

5. Lessee Name: William H. K. A. A. Hipa
Res. Lease No. 11572, Lot No. 18449
Lease Date: 11/26/2011
Area: Kanehili, Oahu
Property Sold & Amount: Yes, $775,000.00
Improvements: 4 bedrooms, 2 bath dwelling

Transferee Name: Ruby K. Bentkowski
Relationship: None
Loan Assumption: No
Applicant: No

Reason for Transfer: "Selling home." Special Condition: Transferee to obtain funds to pay purchase price. See simultaneous transfer below.

6. Lessee Name: Ruby K. Bentkowski
Res. Lease No. 11572, Lot No. 18449
Lease Date: 11/26/2011
Area: Kanehili, Oahu
Property Sold & Amount: Yes, $775,000.00
Improvements: 4 bedrooms, 2 bath dwelling

Transferee Name: Domonic K. P. Vespoli
Relationship: Son
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative." Special Condition: Transferee to obtain funds to pay purchase price.

7. Lessee Name: Dayneen L. O. Hapakuka
Res. Lease No. 7639, Lot No. 327
Lease Date: 2/7/2002
Area: Waiohuli, Maui
Property Sold & Amount: Yes, $838,276.50
Improvements: 4 bedrooms, 2 bath dwelling

Transferee Name: Tanya An Kuailani
Relationship: None
Loan Assumption: No
Applicant: Yes, Maui IW Res., 2/24/2005

Reason for Transfer: "Selling home." Special Condition: Transferee to obtain funds to pay purchase price.

8. Lessee Name: Rosemarie L. Hulama
Res. Lease No. 4371, Lot No. 47
Lease Date: 2/7/1978
Area: Nanakuli, Oahu
Property Sold & Amount: Yes, $560,000.00
Improvements: 4 bedrooms, 2 bath dwelling

Transferee Name: Glen L. Naone, Jr. & Christine N. Naone
Relationship: None
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 8/20/2003(Glen & Christine)

Reason for Transfer: "Medical and financial reasons."
Special Condition: Transferee to obtain funds to pay purchase price.

9. Lessee Name: Kelly L. Pearson & Patricia-Helen K. L. Maluo
Res. Lease No. 12239, Lot No. 60
Lease Date: 3/19/2008
Area: Waiehu 4, Maui
Property Sold & Amount: Yes, $775,000.00
Improvements: 4 bedrooms, 3 bath dwelling

Transferee Name: Mavis I. Oliveira-Medeiros
Relationship: None
Loan Assumption: No
Applicant: Yes, Maui IW Res., 6/12/2007

Reason for Transfer: "Selling home." Special Condition: Transferee to obtain funds to pay purchase price. See simultaneous transfer below.

10. Lessee Name: Mavis I. Oliveira-Medeiros
Res. 12239, Lot No. 60
Lease Date: 3/19/2008
Area: Waiehu 4, Maui
Property Sold & Amount: Yes, $775,000.00
Improvements: 4 bedrooms, 3 bath dwelling

Transferee Name: John-Bull P. English
Relationship: Son
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative." Special Condition: Transferee to obtain funds to pay purchse price.

11. Lessee Name: Lani G. W. Rapozo
Res. Lease No. 4342, Lot No. 4
Lease Date: 9/20/1977
Area: Anahola, Kauai
Property Sold & Amount: No, N/A
Improvements: 3 bedrooms, 2 bath dwelling

Transferee Name: George F. N. Rapozo
Relationship: Son
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative"

12. Lessee Name: Jaeshardez K. Rosa
Res. Lease No. 3813, Lot No. 315
Lease Date: 9/18/1970
Area: Nanakuli, Oahu
Property Sold & Amount: No, N/A
Improvements: 2 bedrooms, 1 bath dwelling

Transferee Name: Diann B. K. M. Rosa
Relationship: Grandmother
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative"

13. Lessee Name: Wendilyn I. Simmons
Res. Lease No. 6285, Lot No. 15-B
Lease Date: 7/23/1997
Area: Keaukaha, Hawaii
Property Sold & Amount: No, N/A
Improvements: 4 bedrooms, 3 bath dwelling

Transferee Name: Dakoda K. Simmons
Relationship: Son
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative"

14. Lessee Name: Ikaikakane A. Sylva
Res. Lease No. 5619, Lot No. 24
Lease Date: 7/1/1985
Area: Lualualei, Oahu
Property Sold & Amount: Yes, $360,000.00
Improvements: 2 bedrooms, 1 bath dwelling

Transferee Name: Meinette K. Castro
Relationship: None
Loan Assumption: No
Applicant: Yes, Oahu IW
Res., 9/26/2018

Reason for Transfer: "Selling home." Special Condition: Transferee to
obtain funds to pay purchase price.

15. Lessee Name: Elizabeth K. Waiau
Res. Lease No. 10841, Lot No. UNNDV215
Lease Date: 12/3/2005
Area: Laiopua, Hawaii
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Natasha H. Waiau
Relationship: Granddaughter
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative."

16. Lessee Name: Zelii K. Iokia
Res. Lease No. 10476, Lot No. 146
Lease Date: To be determined
Area: Puuhona 1, Maui
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Bernard K. Rozet
Relationship: Brother
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative."

17. Lessee Name: Janice K. Kaaloa
Agr. Lease No. 6238, Lot No. 28-B
Lease Date: 11/1/1985
Area: Panaewa, Hawaii
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Julie K. Kaaloa
Relationship: Daughter
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative."

18. Lessee Name: Oscar K. Kaleleiki
Res. Lease No. 12073, Lot No. 16946
Lease Date: 7/13/2007
Area: Kaupea, Oahu
Property Sold & Amount: Yes, $650,000.00
Improvements: 3 bedrooms, 2 bath dwelling

Transferee Name: Austin R. K. Keanu
Relationship: None
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 2/1/2006

Reason for Transfer: "Moving off island." Special Condition: Transferee to obtain funds to pay purchase price.

19. Lessee Name: Vincent D. Kamaka
Res. Lease No. 15343, Lot No. To be determined
Lease Date: To be determined
Area: Kaupea, Oahu
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Joel K. Kamaka
Relationship: Son
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative."

20. Lessee Name: Wallace K. Keao
Res. Lease No. 15022, Lot No. To be determined
Lease Date: To be determined
Area: Kauluokahai, Oahu
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Tasha Ann M. I. Keao
Relationship: Granddaughter
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 12/4/2024

Reason for Transfer: "Giving lease to relative."

21. Lessee Name: Shawna M. Kini & Shaela L. Spencer-Kennedy
Res. Lease No. 7198, Lot No. 5
Lease Date: 10/1/1999
Area: Puupulehu, Hawaii
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Shannon P. Esber
Relationship: Sister
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative."

22. Lessee Name: Winona H. Lapilio
Res. Lease No. 15258, Lot No. To be determined
Lease Date: To be determined
Area: Kauluokahai, Oahu
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Summer K. Lapilio
Relationship: Granddaughter
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 6/7/2018

Reason for Transfer: "Giving lease to relative."

23. Lessee Name: Ricky K. Mahi
Res. Lease No. 13020, Lot No. 7-B
Lease Date: 7/14/2025
Area: Kuhio Village, Hawaii
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Sedrick K. A. Mahi
Relationship: Son
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative."

24. Lessee Name: Sunsiree S. U. K. Nauka
Res. Lease No. 15617, Lot No. To be determined
Lease Date: To be determined
Area: Kauluokahai, Oahu
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Catheryn H. M. U. Nauka
Relationship: Niece
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 10/11/2013

Reason for Transfer: "Giving lease to relative."

25. Lessee Name: Karen M. Renken
Res. Lease No. 15109, Lot No. To be determined
Lease Date: To be determined
Area: Kauluokahai, Oahu
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Mercedes K. Renken
Relationship: Daughter
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 7/15/2022

Reason for Transfer: "Giving lease to relative."

26. Lessee Name: Milton K. Shon
Res. Lease No. 15184, Lot No. To be determined
Lease Date: To be determined
Area: Kauluokahai, Oahu
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Charmaine L. K. S. Shon
Relationship: Sister
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 4/20/2016

Reason for Transfer: "Giving lease to relative."

27. Lessee Name: Annette K. Wong
Res. Lease No. 15256, Lot No. To be determined
Lease Date: To be determined
Area: Kauluokahai, Oahu
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Kevin M. K. Wong
Relationship: Son
Loan Assumption: No
Applicant: Yes, Kauai IW Res., 8/6/2008

Reason for Transfer: "Giving lease to relative."

Assignments for the Month of February `26	27
Previous FY '25 - '26 balance	293
FY '25 - '26 total to date	320
Assignments for FY '24 - '25	183

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, Administrator
Homestead Services Division

FROM: Ross K. Kapeliela, ODO Supervisor
Homestead Services Division

SUBJECT: **Approval of Amendment of Leasehold Interest**

RECOMMENDED MOTION/ACTION

To approve the amendment of the leasehold interest listed below.

DISCUSSION

Thirteen (13) amendments of lease.

1.	Lessee:	Larry A. K. Akimseu
	Res. Lease No.:	3303
	Lot No., Area, Island:	203-A, Keaukaha, Hawaii
	Amendment:	To extend the lease term to an aggregate term of 199 years, and to incorporate the currently used terms, conditions, and covenants. (Amendment)
2.	Lessee:	Williamette K. Farias, William Farias, Jr. & Keoni K. Uehara
	Res. Lease No.:	289
	Lot No., Area, Island:	70, Nanakuli, Oahu
	Amendment:	To amend the lessor's name and to incoporate the currently used terms, conditions, and convenants to the lease. (Amendment)

3. Lessee: Louis Hulama, Jr.
Res. Lease No.: 4371
Lot No., Area, Island: 47, Nanakuli, Oahu
Amendment: To amend the tenancy from joint tenant to tenant in severalty due to the death of the joint tenant. (Transfer)

4. Lessee: Grace Jacobs
Agr. Lease No.: 3002-A
Lot No., Area, Island: 181, Hoolehua, Molokai
Amendment: To amend the lease title, create a new lease, extend the lease term to an aggregate term of 199 years, and to incorporate the currently used terms, conditions, and covenants to the lease and update the property description. (Successorship)

5. Lessee: Janice K. Kaaloa
Agr. Lease No.: 6238
Lot No., Area, Island: 28-B, Panaewa, Hawaii
Amendment: To amend the property description. (Transfer)

6. Lessee: Dinah L. Kaikuana
Res. Lease No.: 3519
Lot No., Area, Island: 235, Keaukaha, Hawaii
Amendment: To amend the property description. (Successorship)

7. Lessee: Kevin K. C. Kanakanui
Res Lease No.: 635
Lot No., Area, Island: 37, Papakolea, Oahu
Amendment: To amend the lease title, extend the lease term to an aggregate term of 199 years, and to incorporate the currently used terms, conditions, and covenants. To release life interest. (Amendment)

8. Lessee: Jaemarlene H. Kekahuna
Res. Lease No.: 2514
Lot No., Area, Island: 136, Kewalo, Oahu
Amendment: To amend the lease tenancy to reflect tenant in severalty due to the death of a joint tenant. (Amendment)

9. Lessee: Julia Keliikuli-Peters
Agr. Lease No.: 225
Lot No., Area, Island: 136-A-1, Hoolehua, Molokai
Amendment: To amend the lease title, extend the lease term to an aggregate term of 199 years, and to incorporate the currently used terms, conditions, and covenants. To release life interest. (Successorship)

10. Lessee: Rose P. Low
Res. Lease No.: 7893
Lot No., Area, Island: 16, Anahola, Kauai
Amendment: To amend the lease title, and to incorporate the currently used terms, conditions, and covenants to the lease and update the property description. (Successorship)

11. Lessee: George F. Rapozo
Res. Lease No.: 4342
Lot No., Area, Island: 4, Anahola, Kauai
Amendment: To amend the lease title, and to incorporate the currently used terms, conditions, and covenants to the lease and update the property description. (Successorship)

12.	Lessee:	Hattie P. Silva
	Res. Lease No.:	45
	Lot No., Area, Island:	58, Kalamaula, Molokai
	Amendment:	To amend the lease title, extend the lease term to an aggregate term of 199 years, and to incorporate the currently used terms, conditions, and covenants. (Successorship)
13.	Lessee:	Daisy M. Spalding
	Res. Lease No.:	3268
	Lot No., Area, Island:	56, Waiakea, Hawaii
	Amendment:	To extend the lease term to an aggregate term of 199 years, and to update the property description. (Successorship)

Amendments for the Month of February '26	13
Previous FY '25 - '26 balance	415
FY '25 - '26 total to date	428
Amendments for FY '24 - '25	112

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, Administrator
Homestead Services Division

FROM: Ross K. Kapeliela, ODO Supervisor
Homestead Services Division

SUBJECT: **Approval to Issue a Non-Exclusive License for Rooftop Photovoltaic Systems for Certain Lessees**

RECOMMENDED MOTION/ACTION

To approve the issuance of a non-exclusive license to allow the Permittee to provide adequate services related to the installation, maintenance, and operation of a photovoltaic system on the premises leased by the respective Lessees.

The non-exclusive license is necessary as the Lessee can not issue his/her own licenses.

DISCUSSION

Fourteen (14) non-exclusive licenses.

1. Lessee: Clyde Basso
Res. Lease No.: 1699
Lot No., Area, Island: 98, Nanakuli, Oahu
Permittee: Sunrun Installation Services, Inc.

2. Lessee: Aiolani P. Badayos
Res. Lease No.: 6717
Lot No., Area, Island: 49, Waianae, Oahu
Permittee: Sunrun Installation Services, Inc.

3. Lessee: Debbie-Deene K. Elliott
Res. Lease No.: 11428
Lot No., Area, Island: 17155, Kaupea, Oahu
Permittee: Sunrun Installation Services, Inc.

4. Lessee: Alfred K. Ganer
Res. Lease No.: 13117
Lot No., Area, Island: 35, Puuhona, Maui
Permittee: Sunrun Installation Services, Inc.

5. Lessee: Irene U. K. Gomes
Res. Lease No.: 12191
Lot No., Area, Island: 91, Waiehu 4, Maui
Permittee: Sunrun Installation Services, Inc.

6. Lessee: Alika K. Hema
Res. Lease No.: 7342
Lot No., Area, Island: 111, Nanakuli, Oahu
Permittee: Sunrun Installation Services, Inc.

7. Lessee: James K. Kahea, III
Res. Lease No.: 9903
Lot No., Area, Island: 68, Waianae, Oahu
Permittee: Sunrun Installation Services, Inc.

8. Lessee: Wade Alan K. Kalili, Jr.
Res. Lease No.: 6325
Lot No., Area, Island: 77-B, Keaukaha, Hawaii
Permittee: Sunrun Installation Services, Inc.

9. Lessee: Ruth A. B. L. Kekipi
Res. Lease No.: 12307
Lot No., Area, Island: 4, Waiohuli, Maui
Permittee: Sunrun Installation Services, Inc.

10.	Lessee:	Roy S. A. Kido
	Res. Lease No.:	9959
	Lot No., Area, Island:	10, Waianae, Oahu
	Permittee:	Sunrun Installation Services, Inc.
11.	Lessee:	Pete Lindsey
	Res. Lease No.:	4912
	Lot No., Area, Island:	35-B, Kuhio Village, Hawaii
	Permittee:	Sunrun Installation Services, Inc.
12.	Lessee:	Leona L. Souza
	Res. Lease No.:	11284
	Lot No., Area, Island:	13, Kumuhau, Oahu
	Permittee:	Sunrun Installation Services, Inc.
13.	Lessee:	Anthony Wickes
	Res. Lease No.:	13118
	Lot No., Area, Island:	23, Puuhona, Maui
	Permittee:	Sunrun Installation Services, Inc.
14.	Lessee:	Wayne W. Wright
	Res. Lease No.:	10418
	Lot No., Area, Island:	101-A, Waiohuli, Maui
	Permittee:	Sunrun Installation Services, Inc.

Non-Exclusive License for the Month of February '26	14
Previous FY '25 - '26 balance	113
FY '25 - '26 total to date	127
Non-Exclusive License for FY '24 - '25	166

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator
Homestead Services Division

FROM: Erna A. Kamibayashi, Kauai District Office
Supervisor
Homestead Services Division

SUBJECT: **Commission Designation of Successor -**
David Kealoha
Residential Lease No. 11111, Lot No. UNDV110,
Anahola, Kauai

RECOMMENDED MOTION/ACTION

1. To approve the designation of David O. Kealoha (David) and Davlynn L. Kealoha (Davlynn) as successors to Residential Lease No. 11111, Lot No. UNDV110, Anahola, Kauai (Lease), for the remaining term of the Lease;

2. To approve and accept that David and Davlynn are no less than the required 25% Hawaiian ancestry and therefore are qualified successors pursuant to Section 209 of the Hawaiian Homes Commission Act of 1920;

3. To stipulate that David and Davlynn's successorship rights and interest in the Lease does not vest until David and Davlynn has signed that: (i) Transfer Through Successorship of Lease and such necessary and appropriate instruments; and that if David and Davlynn does not sign all such documents on or before **April 30, 2026** (the Deadline) that the Commission's selection of David and Davlynn as successors is automatically revoked;

4. To authorize the Department to extend the Deadline up to 60 days for good cause; and

5. To declare that if David and Davlynn's selection as successors are revoked; then under Section 209(a) of the Hawaiian Homes Commission Act, 1920, as amended, "…the land subject to the lease shall resume its status as unleased Hawaiian home lands and the department is authorized to lease the land to a native Hawaiian as provided [by the] Act;"

6. To approve the amendment of the Lease to incorporate the currently used terms, conditions, and covenants to the lease.

DISCUSSION

David Kealoha (Decedent) received the Lease by way of Residential Lot Lease No. 11111 dated May 13, 2006.

On September 11, 2016, the Decedent passed away without naming a qualified successor.

In compliance with Administrative Rule 10-3-63, the Department published legal ads in the Honolulu Star Advertiser, the Hawaii Tribune Herald, the West Hawaii Today, The Maui News, and The Garden Island newspapers on December 11, 18, 25, and 31, 2024, to notify all interested, eligible and qualified heirs of the Decedent, to submit their successorship claims to the Lease.

The Department received successorship claims from the Decedent's children, David and Davlynn, who have been determined to be at least 25% of Hawaiian ancestry and are eligible for successorship to the Lease.

Pursuant to Section 209 of the Hawaiian Homes Commission Act of 1920, as amended (Act), when a lessee fails to designate a successor, the commission is authorized to terminate this lease or to continue the lease by designating a successor. Section 209 states in part that the department may select from only the following qualified relatives of the decedent:

1. Husband or wife; or

2. If there is no husband or wife, then the children; or

3. If there is no husband, wife, or child, then the grandchildren; or

4. If there is no husband, wife, child, or grandchild, then the brothers or sisters; or

5. If there is no husband, wife, child, grandchild, brother, or sister, then from the following relatives of the lessee who are native Hawaiian: father and mother, widows or widowers of the children, widows or widowers of the brothers and sisters, or nieces and nephews.

There are no improvements to the homestead lot.

David and Davlynn have agreed to accept the obligations should they be designated as successors.

The Department requests approval of its recommendation.

Hawaiian Homes Commission Meeting Packet
February 17 & 18, 2026
Hale Ponoʻī, Kapolei, Oahu

E ITEMS

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: R. Kalani Fronda, Acting Administrator
Land Development Division

FROM: Michelle Hitzeman, Housing Project Branch Manager
Land Development Division, Housing Project Branch

SUBJECT: E-1 Approval of Lease Award – Kaumana Subdivision Residential Vacant Lots - Hilo, Hawai‘i

RECOMMENDED MOTION/ACTION

Approve the award of Department of Hawaiian Home Lands Lot Lease to the applicant listed below for ninety-nine (99) years, and approval of the cancellation of the residential application upon conveyance of the lease award

DISCUSSION

Kaumana Subdivision Residential Vacant Lots – Hilo, Hawai‘i

NAME	APPL DATE	LOT NO	TAX MAP KEY	LEASE NO
GWENDOLYN –GAIL PK ISHIBASHI	7/5/1988	1	(3) 2-5-004-060	16617

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: R. Kalani Fronda, Acting Administrator
Land Development Division

FROM: Michelle Hitzeman, Housing Project Branch Manager
Land Development Division, Housing Project Branch

SUBJECT: E-2 Approval of Lease Award - Puʻuhona Subdivision Residential Offering
Waikapū, Maui

RECOMMENDED MOTION/ACTION

Approve the award of Department of Hawaiian Home Lands Lot Lease to the applicant listed below for ninety-nine (99) years, and approval of the cancellation of the residential application upon conveyance of the lease award

DISCUSSION

Puʻuhona Subdivision Residential Offering – Waikapū, Maui

NAME	APPL DATE	LOT NO	TAX MAP KEY	LEASE NO
NAEHU K.S.K. KAHALEHAU	3/20/2018	68	(2) 3-5-044-068	16974
MELINA K MINDORO	1/30/2019	37	(2) 3-5-044-037	16975
JARRETT T.K. AH MOOK SANG	10/14/2019	22	(2) 3-5-044-022	16976
GEORGE NAMAUU JR	10/1/2020	155	(2) 3-5-044-155	16977

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: R. Kalani Fronda, Acting Administrator
Land Development Division

FROM: Michelle Hitzeman, Housing Project Branch Manager
Land Development Division, Housing Project Branch

SUBJECT: E-3 Approval of Lease Award - Kamalani Subdivision
Residential Project Lease – Kihei, Maui

RECOMMENDED MOTION/ACTION

Approve the awards of Department of Hawaiian Home Lands Lot Leases to the 17 applicants listed below for ninety-nine (99) years, and approval of the cancellation of their residential applications upon conveyance of the lease awards.

DISCUSSION

Kamalani Subdivision – Residential Project Lease – Kihei, Maui

NAME	APPL DATE	LEASE NO
BARRY L. MAILOU	3/17/2022	16966
CAMELOT K. KAINA	3/1/2013	16357
GREGORY ANI	11/19/2021	16973
HAWEOOKALANI T. JOHNSON	3/8/2022	16969
JOBY M.H.K. FREITAS	11/22/2019	16968
JOHN MAHI III	11/6/2006	16970
JON-GABRIEL K. AKO	9/3/2015	16960
KAHEALANI M.K. VALDES	1/19/2023	16965
KOANUI P.J. JOHNSON	1/17/2024	16967
LESLEY K. TASINI	2/7/2007	16972
NALANI L. HASOSO	12/11/2014	16962
NOEL K. KAINA	5/21/2021	16794
SHAWNTE T.L. CREMER-KAALAKEA	8/12/2020	16964
SU-LYNE K.P. GALIZA	10/17/2017	16963
TOM W. SELLERS JR.	7/5/2016	16958

TONY K. KEAU	10/15/1987	16971
WAYLENE H. WATARI	7/15/2016	16959

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: R. Kalani Fronda, Acting Administrator
Land Development Division

FROM: Michelle Hitzeman, Housing Project Branch Manager
Land Development Division, Housing Project Branch

SUBJECT: E-4 Approval of Lease Award - Villages of Leali'i 1B Subdivision
Residential Project Lease – Lahaina, Maui

RECOMMENDED MOTION/ACTION

Approve the award of Department of Hawaiian Home Lands Lot Lease to the 1 applicant listed below for ninety-nine (99) years, and approval of the cancellation of their residential applications upon conveyance of the lease award.

DISCUSSION

Villages of Leali'i 1B Subdivision – Residential Project Lease – Lahaina, Maui

NAME	APPL DATE	LEASE
KAENA H. KEAHI	11/23/2016	16961

WAIOHULI WELLS
DRAFT MEMORANDUM OF AGREEMENT

E-5 For Information Only
February 17, 2026

DEPARTMENT OF HAWAIIAN HOME LANDS
dhhl.hawaii.gov

Prepared by Land Development Division

BENEFICIARY NEEDS

WATER LIMITATIONS

The current water supply is limited and tied to existing systems.

CURRENT DHHL DEVELOPMENT

Without new water sources, projects may face delays or remain unbuilt.

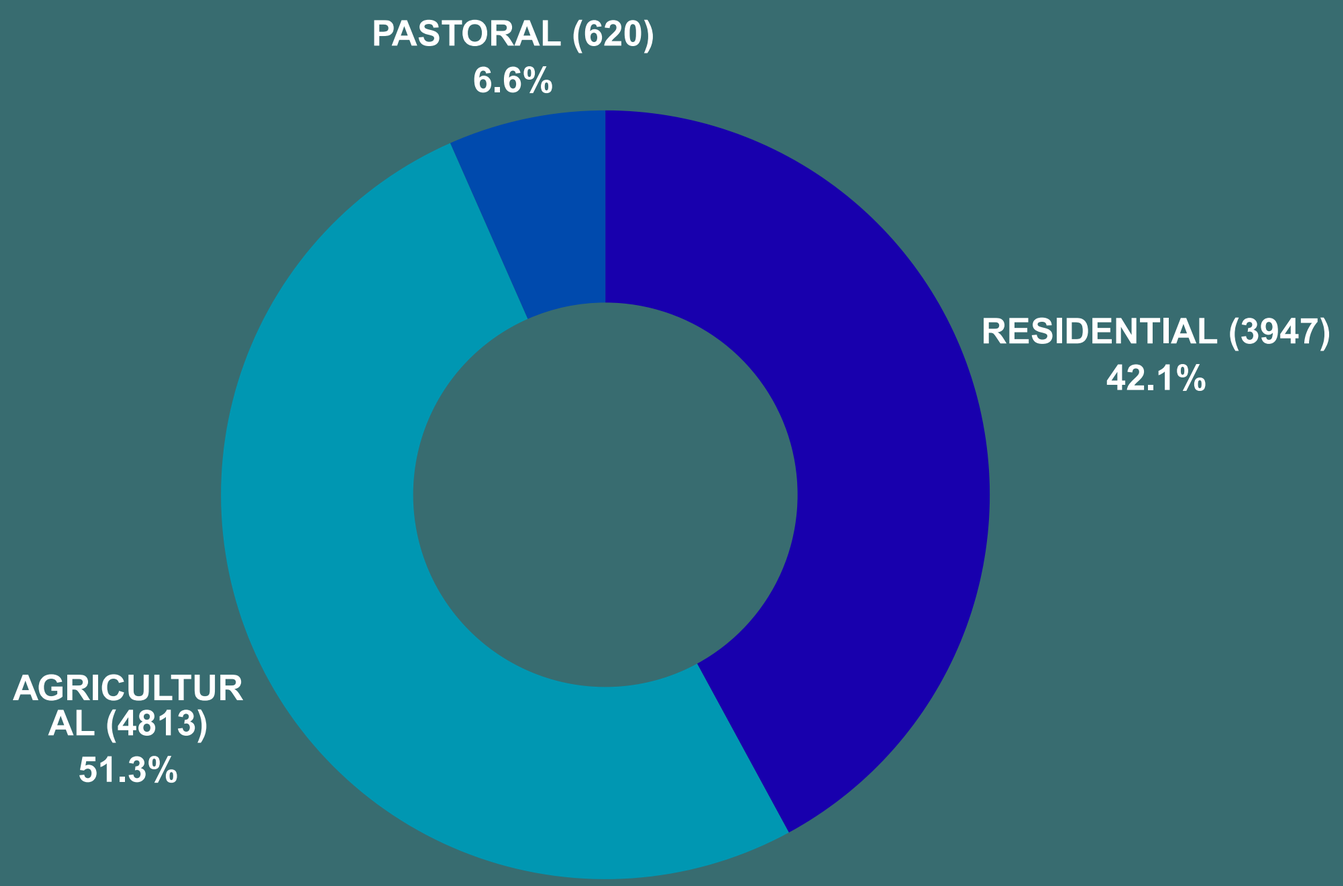
FUTURE DHHL PROJECTS

Future DHHL housing on Maui cannot proceed without securing additional water.

DHHL WAITLIST

MAUI

MAUI WAITLIST



AVERAGE WAITLIST AGE

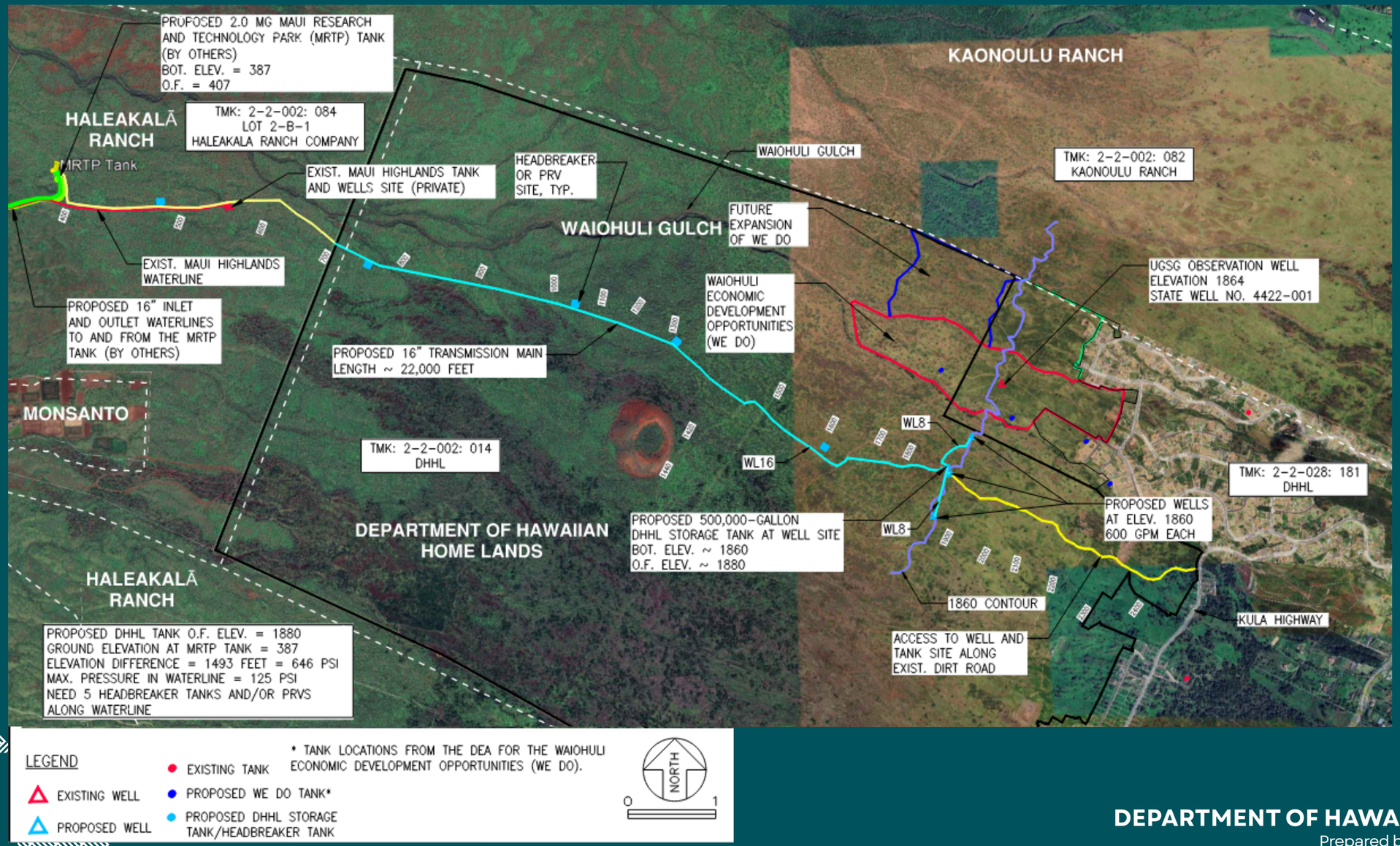
>60 YEARS OLD

TOTAL WAITLIST

9,380

PROJECT LOCATION

VICINITY MAP



DEPARTMENT OF HAWAIIAN HOME LANDS
Prepared by Land Development Division

PROJECT OVERVIEW

Proposed development of three wells and a water transmission system in Upcountry Maui.

This critical water infrastructure will not only secure DHHL's long-term water access but also **directly support the development of over a thousand homestead lots for native Hawaiian families now**, instead of waiting for additional water to become available. The system is expected to generate **advanced water credits**, which will unlock the ability to provide:

- Support to the Waiohuli Economic Development Opportunity area
- **950** single-family residential lots in Waiehu Mauka, Wailuku, and Kamalani
- **55** agricultural lots to support ʻohana farming and self-sufficiency
- Additional future lots in all of Pulehunui and surrounding areas

In total, this system could serve an estimated **2,880** residential units for Hawaiian Home Land beneficiaries.

DRAFT MEMORANDUM OF AGREEMENT WITH MAUI DWS

ESTIMATED OPERATING CAPACITY

1,728,000 GPD

FOR ALL 3 WELLS

SOURCE CREDITS TO DHHL

1,728,000 GPD

COMPLETION OF WELLS

WHO BENEFITS?

DHHL

NOT GENERAL PUBLIC

ADVANCED WATER CREDITS

39.5%

OF DHHL NEED

AGREEMENT WITH DWS MAUI

TRANSMISSION LINES

The agreement will allow DHHL to use existing transmission lines to supply water for developments in Central, South, and Upcountry Maui.

ADVANCED WATER CREDITS

The agreement will provide advanced water credits for DHHL to begin future homestead projects now.

OPERATING COSTS

The agreement will save DHHL on operating costs that would otherwise cost the department millions of dollars a year.

PURPOSE

Faster Housing Development:
These water credits enable DHHL to begin home construction sooner by removing one of the biggest development hurdles, water availability.

Supports Economic Opportunities:
The wells will enable various uses in the Waiohuli Economic Development Opportunity area, creating new avenues for local business, farming, and community investment.

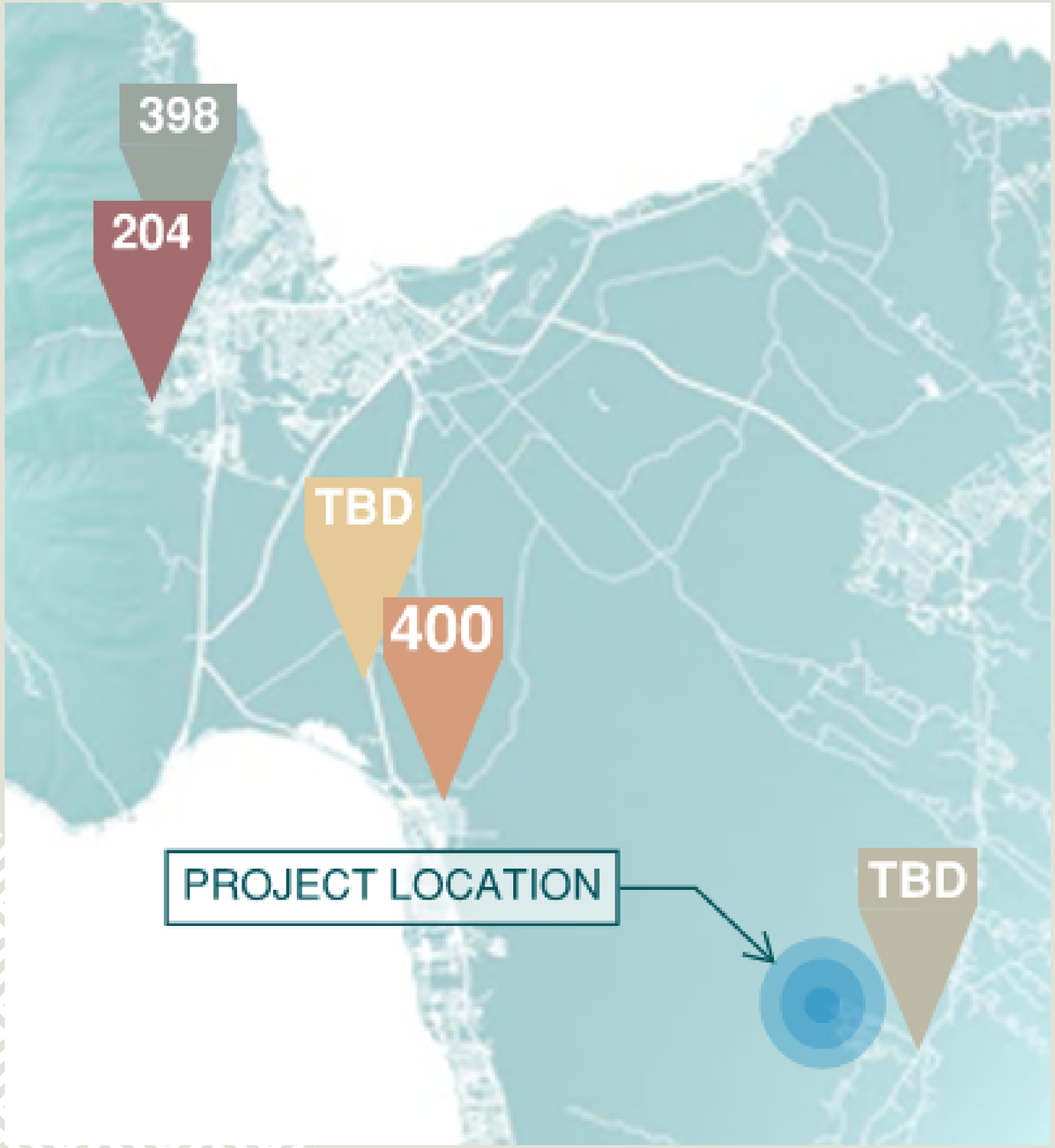
Strengthens Water Sovereignty:
Developing our own water sources protects DHHL from reliance on private systems and affirms our ability to steward Hawaiian lands for Hawaiian people.

Future Generations:
This system lays the foundation for long-term homestead expansion and sustainability.

PROJECT BENEFIT (NOW)

PROJECT SITES

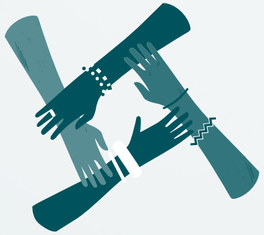
RES:	AG:	FUTURE PROJECTS:
TBD		WAIOHULI ECONOMIC DEVELOPMENT
400		KAMALANI
TBD		PULEHUNUI
204		WAILUKU SINGLE FAMILY
343	55	WAIEHU MAUKA



RESPECTING LAND AND CULTURE

ENVIRONMENTAL COMPLIANCE

The Proposed Water Agreement accounts for DHHL's requirement to comply with HRS Chapter 343.



HISTORIC SITES COMPLIANCE

The Proposed Water Agreement accounts for DHHL's requirement to comply with HRS Chapter 6E.

KA PAʻAKAI FRAMEWORK

The Proposed Water Agreement accounts for DHHL's requirement to comply with Article 12, Section 7.

Waiohuli Water Working Group

BENEFICIARY REPRESENTATIVES:
BOBBY PAHIA • PERRY ARTETAS • BOBBY HALL • DANIEL ORNELLAS • DONNA STERLING • ROBIN NEWHOUSE • BLOSSOM FEITEIRA • KEKAI KAPU • KAINOA MCDONALD

FACILITATORS:
ARCHIE KALEPA • GERMAINE BALINO • LILLIE MAKAILA • KALANI FRONDA

RECORDERS & PROJECT SUPPORT:
ELIJAH DAVIDSON • CHERIE KAANANA

COUNTY OF MAUI - DEPARTMENT OF WATER SUPPLY:
KIMO LANDGRAF

MEETING #1
DECEMBER 4, 2025

MEETING #2
JANUARY 27, 2026

DRAFT MOA

AGREEMENT CONCERNING THE DEVELOPMENT AND DEDICATION OF WAIOHULI WELLS

THIS AGREEMENT, made and entered into this _____ day of _____, 20___, by and between the **DEPARTMENT OF HAWAIIAN HOME LANDS** (hereinafter referred to as "DHHL"), whose principal place of business and mailing address is 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707 and the **DEPARTMENT OF WATER SUPPLY** (hereinafter referred to as "DWS"), an agency of the County of Maui a body politic and corporate, and a political subdivision of the State of Hawaii, whose principal place of business and mailing address is 200 South High Street, Wailuku, Hawaii 96793, (collectively, the "Parties").

WITNESSETH:

WHEREAS, Article XI Section 1 of the Hawaii State Constitution recognizes that all water is held in trust by the government for the benefit of the people; and

WHEREAS, there is an affirmative duty of the State and its political subdivisions to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible; and

WHEREAS, the reservations and uses of water by DHHL and its beneficiaries are one of the four public trust uses of water recognized by the Hawaii Supreme Court; and

WHEREAS, DHHL wishes to develop its lands for homesteading and associated purposes in Central and South Maui including a proposed development in Upcountry Maui, Hawaii; and

WHEREAS, DWS has advised DHHL that there currently is a lack of available water source capacity to service its proposed developments in Central Maui, South Maui and Upcountry Maui; and

WHEREAS, DHHL needs to move forward with its proposed developments in Central Maui, South Maui, and Upcountry and is proposing to develop three water wells on its lands in Waiohuli, Maui ("Waiohuli Wells") to provide the water source needed for its proposed developments in Waiohuli and to connect the wells via water transmission lines to DWS's Central Maui Water System to service its Central and South Maui developments ("Project"); and

WHEREAS, Exhibit A and Exhibit B contain a location map and conceptual plan of the proposed water system improvements; and

DEPARTMENT OF HAWAIIAN HOME LANDS
Prepared by Land Development Division

MAHALO

dhhl.hawaii.gov

DEPARTMENT OF HAWAIIAN HOME LANDS

Prepared by Land Development Division

AGREEMENT CONCERNING THE DEVELOPMENT AND DEDICATION OF WAIOHULI WELLS

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WITNESSETH:

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WHEREAS, the reservations and uses of water by DHHL and its beneficiaries are one of the four public trust uses of water recognized by the Hawaii Supreme Court; and

WHEREAS, DHHL wishes to develop its lands for homesteading and associated purposes in Central and South Maui including a proposed development in Upcountry Maui, Hawaii; and

WHEREAS, DWS has advised DHHL that there currently is a lack of available water source capacity to service its proposed developments in Central Maui, South Maui and Upcountry Maui; and

WHEREAS, DHHL needs to move forward with its proposed developments in Central Maui, South Maui, and Upcountry and is proposing to develop three water wells on its lands in Waiohuli, Maui ("Waiohuli Wells") to provide the water source needed for its proposed developments in Waiohuli and to connect the wells via water transmission lines to DWS's Central Maui Water System to service its Central and South Maui developments ("Project"); and

WHEREAS, Exhibit A and Exhibit B contain a location map and conceptual plan of the proposed water system improvements; and

WHEREAS, DWS is supportive of DHHL's development of three water wells on its Waiohuli lands as it will assist DWS in providing additional and reliable water source for its Central Maui Water System as well as provide a water source for DHHL's proposed development on its Waiohuli lands located in Upcountry Maui; and

WHEREAS, the DHHL improvements will be licensed to DWS in perpetuity (for purposes of this Agreement, and in consideration of Sections 204, 205, and 207 of the Hawaiian Homes Commission Act, DHHL and DWS agree that reference to "dedication" in the WSDF Rules is equivalent to a "license in perpetuity"); and

WHEREAS, DHHL will be pursuing the necessary funding for this Project from various sources including the Federal Government, State of Hawaii, and County of Maui; and

WHEREAS, DWS will assist, support, and cooperate with DHHL in pursuing and obtaining the necessary funding for the Project including the pursuit of County of Maui funding if available; and

WHEREAS, DHHL will be preparing an Environmental Assessment and all related studies required in accordance with HRS Chapter 343 for the proposed well development, water storage tanks and transmission waterlines; and

WHEREAS, DWS will assist, support and cooperate with DHHL in the preparation of the Environmental Assessment and all related studies required; and

WHEREAS, DHHL will be applying for Well Construction/Pump Installation Permits with the State of Hawaii Commission on Water Resource Management (hereinafter referred to as "CWRM"); and

WHEREAS, DWS will assist, support and cooperate with DHHL in the pursual of the Well Construction/Pump Installation Permits with CWRM; and

WHEREAS, the Parties desire to set forth all of the terms and conditions of the foregoing matters in this Agreement.

NOW THEREFORE, in consideration of the mutual promises and benefits of the Parties hereto, it is hereby understood and agreed by and between DHHL and DWS that:

1. Development of Wells, Pump Control and Storage Tank and Transmission Pipeline;

1.01. Planning and Design. DHHL will engage Tom Nance Water Resource Engineering and Intera Incorporated as its Well Consultants and Austin, Tsutsumi and Associates, Inc. as its well system, transmission lines, and water storage tank engineer (the "Project Engineer") to plan, design and engineer the Project. The Project Engineer will prepare detailed plans and specifications for the Project. The plans and specifications shall be subject to DWS's review and approval which will be expedited by DWS. The plans and specifications shall provide for the construction of the wells and shall include the construction requirements for the well drilling, testing, casing, pump/motor, the pump controls and storage tank, control buildings, emergency generator, electrical and SCADA design, transmission pipeline, and all other appurtenances and facilities necessary to connect to DWS's water system.

1.02. Construction. DHHL shall construct the Wells, Pump Control and Storage Tank, and Transmission Pipeline including all pumps, pipes, power, utility extensions, and other appurtenances to make the Waiohuli Wells operational and connected to DWS's existing water system by the Transmission Pipeline in close proximity to DWS's Maui Research and Technology Park Water Storage Tank, all in accordance with all applicable laws, regulations and standards, including without limitation DWS's construction standards and applicable regulations of DWS, the State of Hawaii Department of Health ("DOH"), and the federal Safe Drinking Water Act (42 U.S.C. §§ 300F – 300J), if and as applicable.

1.03 Capacity of Waiohuli Wells. The maximum capacity of the three Waiohuli Wells combined is anticipated to produce approximately 2,592,000 gallons per day. The pump installed in each well is anticipated to supply 864,000 gallons in 24 hours of continuous pumping. The DWS operating capacity of each well is based on 16 hours of pumping which is approximately 576,000 gallons per day for a combined total of 1,728,000 gallons per day for the three wells. It is understood and agreed that all of the operating capacity from the Waiohuli Wells, including water capacity produced due to expansion, shall be used solely for Hawaiian Home Lands; and is not for the benefit of the general public (the "Use Restriction").

DHHL and/or its designee shall have the right to inspect DWS's records and facilities to confirm that the capacity of water from the Waiohuli Wells is being accounted for and used consistently with the Use Restriction. DHHL shall have the right to demand the immediate cessation of any use of water in violation of the Use Restriction and DWS shall be responsible for immediately complying with such demand. If DWS fails to cure the violation within thirty-six (36) hours, DHHL may undertake corrective action at DWS's cost and expense.

1.04 Quality of Well Water/Contamination. The water quality of the Waiohuli Well water is anticipated to have chloride levels of approximately 66 mg/L. If chloride levels are in excess of the allowable DWS chloride standards, DHHL must install treatment facilities to lower the chloride levels to below DWS standards. Further, if any other contaminants regulated by DWS or DOH are found in excess of DOH maximum contaminant level ("MCL"), DHHL must install treatment facilities to lower the level of such contaminants to below the MCL. DHHL's obligations under this paragraph shall cease upon DWS's Acceptance under paragraph 5.

1.05 Contingencies. This Agreement is contingent on completion by DHHL of the construction of the Project within six (6) years of the date of this Agreement (unless extended by force majeure under Section 10.06 below, or by delays caused by actions or inaction of DWS, or otherwise by mutual agreement of DHHL and DWS). In the event any of these contingencies or other provisions in this Section 1 are not satisfied, this Agreement shall terminate and the Parties shall have no further obligations hereunder and DWS shall have no further rights to or interest in the Waiohuli Wells or its production or appurtenances.

2. Scope of DHHL's Obligation. The intent of this Agreement is that DHHL will proceed promptly and with diligence to perform all tasks necessary to develop the Project, make it operational, and commence delivery of water (collectively referred to as the "Work"), all at no cost to the DWS. The Work includes, in addition to all of the requirements in the plans and specifications, and without limitation, the following:

(i) Obtaining all design and construction engineering services;

(ii) Obtaining all necessary contracts with third parties for the development, construction and equipping of the Project;

(iii) Obtaining all necessary governmental approvals for construction of the Project (for which DWS will provide reasonable assistance, cooperation, and support for);

(iv) Completing all work specified in the plans and specifications;

(v) Performing all trials and tests necessary to render Waiohuli Wells operational and to confirm and document the quality and quantity of Waiohuli Wells' water production and capacity;

(vi) Obtaining all CWRM and DWS approvals to put water into DWS's system (which the DWS will provide reasonable assistance, cooperation, and support for);

(vii) Installation of necessary electrical, SCADA, and communication line extensions;

(viii) Obtaining final subdivision approval of the Well and Tank Sites or perpetual exclusive easements for the sites and obtaining the necessary Transmission Pipeline Easements;

(ix) Complying with all environmental requirements including the preparation of environmental assessments (which DWS will provide reasonable assistance, cooperation and support for);

(x) Obtaining the necessary funding for the Project (which DWS will provide assistance, cooperation, and support for including the pursual of County of Maui funding if available).

3. DWS Oversight. DWS shall be entitled to oversee all aspects of the Work and shall make periodic inspections of the Work as it deems appropriate or upon DHHL's request. DHHL and/or the Project Engineer shall promptly provide DWS with such information regarding the Work as they may reasonably request. DHHL shall not deviate materially from the approved plans and specifications without first securing DWS's approval and such approval shall not be unreasonably withheld by DWS.;

4. Review and Inspection by DWS. Promptly, but no later than thirty (30) days after receiving written notice from DHHL that construction and all necessary trials and tests for the Work have been completed, and the DOH has approved use of the water generated by Waiohuli Wells, DWS will (a) promptly inspect the Work and review all such tests and trial results; and (b) if DWS determines that the Work has not been completed in accordance with the approved plans and specifications, DWS will promptly notify DHHL in writing of the reasons for said non-approval in sufficient detail to enable DHHL to correct any and all such deficiencies. Upon receiving written notice from DHHL that all such deficiencies have been corrected, DWS will promptly re-inspect the Work.

5. Wells, Pump Control and Storage Tank, Transmission Pipeline, and Associated Improvements Dedication. Upon completion and approval of the Wells as provided above, DHHL shall license - to DWS the Wells/Well Sites, Pump Control Tank/Storage Tank Site, Transmission Pipeline,

and all associated improvements, including but not limited to warranties and as-built drawings, waterline easements reasonably needed for the Transmission Pipeline, and necessary access (the "License"), subject to approval by the Maui County Council pursuant to Chapter 3.44, Maui County Code, or any other successor or applicable law. The license agreement and other related documents shall be prepared by DHHL at no cost to DWS. The license to the Well Site, Pump Control Tank Site, Transmission Pipeline Site, and associated improvements shall be free and clear of all liens and encumbrances, except for encumbrances which would not have any material, adverse effect on DWS's use and operation of such. Upon approval by the Maui County Council as aforesaid, and the execution of the license agreement and other appropriate conveyance documents ("DWS's Acceptance"), DWS will operate, and maintain the Wells/Well Sites, Pump Control and Storage Tank Site, Transmission Pipeline, and all associated improvements for its own use, subject to the terms of this Agreement.

6. Warranty. DHHL shall cause the contractor who completed the Work to provide DWS with a written warranty guaranteeing the workmanship and materials incorporated and used in the construction of the Work. The warranty shall be enforceable by DWS for a period of one (1) year from the date of DWS's Acceptance.

7. Source Credit and Issuance of Water Meters. Upon the completion, final inspection, and dedication and acceptance of the Waiohuli Wells by DWS and completion of the License, DWS shall grant DHHL Source Credits and the appurtenant source availability on a first priority basis (collectively the "Source Credit"), of not less than 1,728,000 gallons per day which is the total DWS operating capacity of the three wells. The 1,728,000 gallons per day is sufficient source capacity for DHHL's proposed developments in Central, South and Upcountry Maui.

Recognizing DHHL's need to continue development of its parcels in the interim while the Waiohuli Wells are being completed, after a well construction permit has been filed with the Commission on Water Resources pursuant to § 174C-84(a), Hawaii Revised Statutes, and Subchapter 3 of Chapter 13-168, Hawaii Administrative Rules, DWS will, upon requestion from DHHL, issue water meters up to a maximum of 683,400 gallons per day which represents approximately 39.5% of the water source needed by DHHL, provided that DHHL, i) has commenced with the development of the Waiohuli Wells and ii) subject to Section 9, below DHHL and/or Beneficiaries who are issued a lease to a homestead that benefits from the Agreement pays in cash the water source, storage, and transmission components of DWS's Water System Development Fee in force for the meter size at the time the water meter is installed. Upon completion and acceptance of the Waiohuli Wells, DWS shall reimburse DHHL and/or applicable

Beneficiaries the amounts it has paid for the source, storage, and transmission components of the water meters. No additional water meters for water service, over and above said 683,400 gallons per day allocation, shall be installed until the Wells are completed and accepted by DWS.

The Source Credit may be used by DHHL in perpetuity from the date of DWS's acceptance of the Wells for developments in Upcountry, Central and South Maui. The term "used" shall mean in each case the application for a water meter has been approved by DWS under its normal meter approval criteria (water meter reservation) and the water meter(s) has been installed by DWS.

When the Source Credit is used to secure water meters for a property, the Source Credit shall be reduced by an amount equal to the average daily use of water as set forth in Exhibit C.

9. Source, Transmission, and Storage Credits.

9.01. Source Credits. Without limiting the generality of Section 8 above, Source Credits to be used by DHHL shall be applied to the source component of the DWS's Water System Development Fee that would have been charged to DHHL in connection with the issuance of new meters.

9.02. Transmission Credits. Upon dedication of the Transmission Line to DWS and submission and approval by DWS of an affidavit itemizing the costs incurred to construct it, DHHL shall receive dollar-for-dollar Transmission Credits which may be applied to the transmission component of DWS's Water System Development Fees that would have been charged to DHHL in connection with issuance of new meters for the DHHL Parcels. Transmission Credits shall be available for meters installed after the Project is completed and accepted by the DWS. The Transmission Credits shall be limited to constructions costs and costs associated with easements required for the improvements. No compensation shall be made for the cost of design and development, engineering, land, subdivision or other non-construction and non-easement related costs.

9.03. Storage Credits. Upon dedication of the Storage Tank to DWS, DHHL shall receive storage capacity Credits which may be applied to the storage component of DWS's Water System Development Fees that would have been charged to DHHL in connection with issuance of new meters for the DHHL Parcels that are serviced by the Storage Tank. Storage Credits shall be available for meters installed after the Project is completed and accepted by DWS. Storage capacity credits shall be available for use by DHHL in perpetuity for developments in Upcountry, Central and South Maui.

9.04. Credit Recipient. All source, transmission and storage fee credits earned under this Agreement may be claimed solely by DHHL and may not be claimed by any other party.

9.05. DHHL Responsible for Balance of Transmission and Storage Fee Component. When water meters are requested to be installed, DHHL must pay for the balance of the transmission fee component of the Water System Development Fees if the transmission credits is less than the Water System Development Fees transmission component effective at the time the water meter is applied for and the water meter is installed. Similarly, if DHHL's available storage capacity is insufficient or not in the location where DHHL's storage credits can be used when water meters are requested, DHHL must pay for the storage fee component effective at the time the water meter is applied for and the water meter is installed.

9.06. Documenting Credit Use. Whenever DHHL elects to use any of the Source, Transmission and Storage Credits, DWS will be notified by a signed notice in substantially the forms attached as Exhibit D. DWS shall promptly sign and acknowledge the credit allocation and tally of remaining credits.

9.07. Application of Credits. The provision for Source Credits does not in and of itself constitute a pre-approval by DWS of any subdivision application, building permit application or water service application for any project that may utilize the Source Credits, as the applicant of any such project will be required to complete all requirements of DWS (other than requirements restricting service for lack of source capacity if the source credits allocated to such project is adequate to provide the water demands of the project) pursuant to its current rules and regulations. This Agreement does not exempt any applicant from DWS's rules and regulations for subdivisions and other developments.

10. Default; Remedies.

10.01. Default. A party shall be in default of this Agreement if it fails to observe or perform any of such party's covenants or agreements contained herein, the other party gives written notice that such default must be cured, and (i) the defaulting party fails to cure within thirty (30) days of such notice, or (ii) in the case of a covenant or agreement that cannot reasonably be cured within thirty (30) days, the defaulting party fails to continuously and diligently prosecute cure to completion.

10.02. Remedies. If a party is in default of this Agreement, the other party may seek any remedies available in law or equity, including without limitation damages and specific performance.

10.03. Rights and Remedies Cumulative. Each right and remedy provided for in this Agreement shall be cumulative and shall be in addition to every other right or remedy that may be available at law or in equity. The exercise of any one or more of such rights or remedies shall not preclude the simultaneous or later exercise of any or all other rights or remedies provided for in this Agreement, or now or hereafter existing at law or in equity, or by statute or otherwise.

10.04. No Waiver. No failure by any party to insist upon strict performance by the other party of any of the terms and provisions of this Agreement shall be deemed to be a waiver of any such terms or provisions or of the other party's obligation to comply with such terms or provisions; and notwithstanding such failure, each party shall have the right thereafter to insist upon the other party's strict performance of such terms and provisions. Any waiver of the terms of this Agreement shall not be effective unless given in writing.

10.05. Intentionally deleted.

10.06. Force Majeure. A party's failure to meet its obligations under this Agreement shall be excused if and to the extent that such failure was the direct result of earthquake, fire, hurricane, flood, or other Acts of God, strikes, insurrection, litigation, court order, governmental action or inaction, or other events or occurrences beyond such party's control.

10.07. Approvals. Any approval by either party called for by this Agreement shall not be unreasonably or arbitrarily withheld or delayed.

11. Other Terms and Conditions.

11.01. Governing Law. This Agreement shall be governed by the laws of the State of Hawaii.

11.02. Amendments. This Agreement may not be amended unless mutually agreed to in writing and signed by the Parties hereto.

11.03. Notices. All notices or other communications shall be in writing and any written notice or other communication given by either party hereto shall be deemed to be duly given and received by the other party by the earlier to occur of (a) actual receipt by a duly elected or appointed officer, director or authorized employee of said other party, either by mail, courier or hand delivery, or (b) three (3) business days after having been deposited in the United States mail postage prepaid sent by registered or certified mail (whether or not actually received by the other party), addressed to the other party at the address set forth at the top of this Agreement, or to such other address as such other party may have given notice of to the sending party in accordance with the foregoing provision.

11.04. No Third-Party Beneficiary. No third-party beneficiaries are intended to be created by this Agreement or by any of the terms hereof. No person or entity other than DHHL or DWS, shall be entitled to claim any rights under, or to enforce any of the provisions hereof.

11.05. Counterparts. This Agreement may be executed in counterparts, and said execution shall have the same effect as if all Parties executed the same original copy hereof. Either party shall be authorized to combine all signed original pages and notary acknowledgements within a single copy of this document for purposes of recording in the State of Hawaii Bureau of Conveyances and submission to any tribunal in any proceeding.

11.06 Exhibits.

Exhibit A: Location Map of Well Site and Transmission Lines

Exhibit B: Map of Well Site

Exhibit C: Department of Water Supply Domestic Consumption Guidelines

Exhibit D: Notice of Exercise of Credits Source, Transmission, and Storage

11.07 Incorporation of Recitals. The recitals to this Agreement are incorporated as if fully set forth herein.

12. Agreement contingent of Maui County Council Approval. The Parties herein SPECIFICALLY UNDERSTAND, AGREE, AND ACKNOWLEDGE that this Agreement, and any and all rights, obligations, and/or benefits resulting therefrom is SUBJECT TO AND CONTINGENT UPON the review and approval, by resolution, by the Maui County Council, in accordance with Chapter 2.20, Maui County Code.

13. Agreement contingent on Hawaiian Homes Commission Approval. The Parties herein SPECIFICALLY UNDERSTAND, AGREE, AND ACKNOWLEDGE that this Agreement, and any and all rights, obligations, and/or benefits resulting therefrom is SUBJECT TO AND CONTINGENT UPON the review and approval, by resolution, by the Hawaiian Homes Commission.

[REMAINDER OF PAGE IS INTENTIONALLY BLANK;
SIGNATURE PAGE TO FOLLOW.]

IN WITNESS WHEREOF, the Parties hereto have executed this agreement on the date first above written.

DEPARTMENT OF HAWAIIAN HOME LANDS

By _____

Its _____

APPROVAL RECOMMENDED:

_____

JOHN STUFFLEBEAN
Director, Department of Water Supply

COUNTY OF MAUI

_____

RICHARD BISSEN
Mayor

APPROVED AS TO FORM
AND LEGALITY:

_____

Deputy Corporation Counsel
County of Maui

_____

Deputy Attorney General

Dated: _____

STATE OF HAWAII)
) SS.
COUNTY OF MAUI)

On this _____ day of _____, 20___, before me personally appeared _____, to me personally known, who, being by me duly sworn or affirmed, did say that such person executed the foregoing instrument as the free act and deed of such person, and if applicable, in the capacity shown, having been duly authorized to execute such instrument in such capacity.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

Signature:_____

Print Name:_____
Notary Public, State of Hawaii

My commission expires:_____

NOTARY PUBLIC CERTIFICATION

Doc. Date: # Pages:

Notary Name: Judicial Circuit:

Doc. Description:

_____

_____

_____

Notary Signature:

Date:

STATE OF HAWAII)

) SS.
COUNTY OF MAUI)

On this _____ day of _____, 20___, before me personally appeared _____, to me personally known, who, being by me duly sworn or affirmed, did say that such person executed the foregoing instrument as the free act and deed of such person, and if applicable, in the capacity shown, having been duly authorized to execute such instrument in such capacity.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal.

Signature:_____

Print Name:_____
Notary Public, State of Hawaii

My commission expires:_____

NOTARY PUBLIC CERTIFICATION

Doc. Date: # Pages:

Notary Name: Judicial Circuit:

Doc. Description:

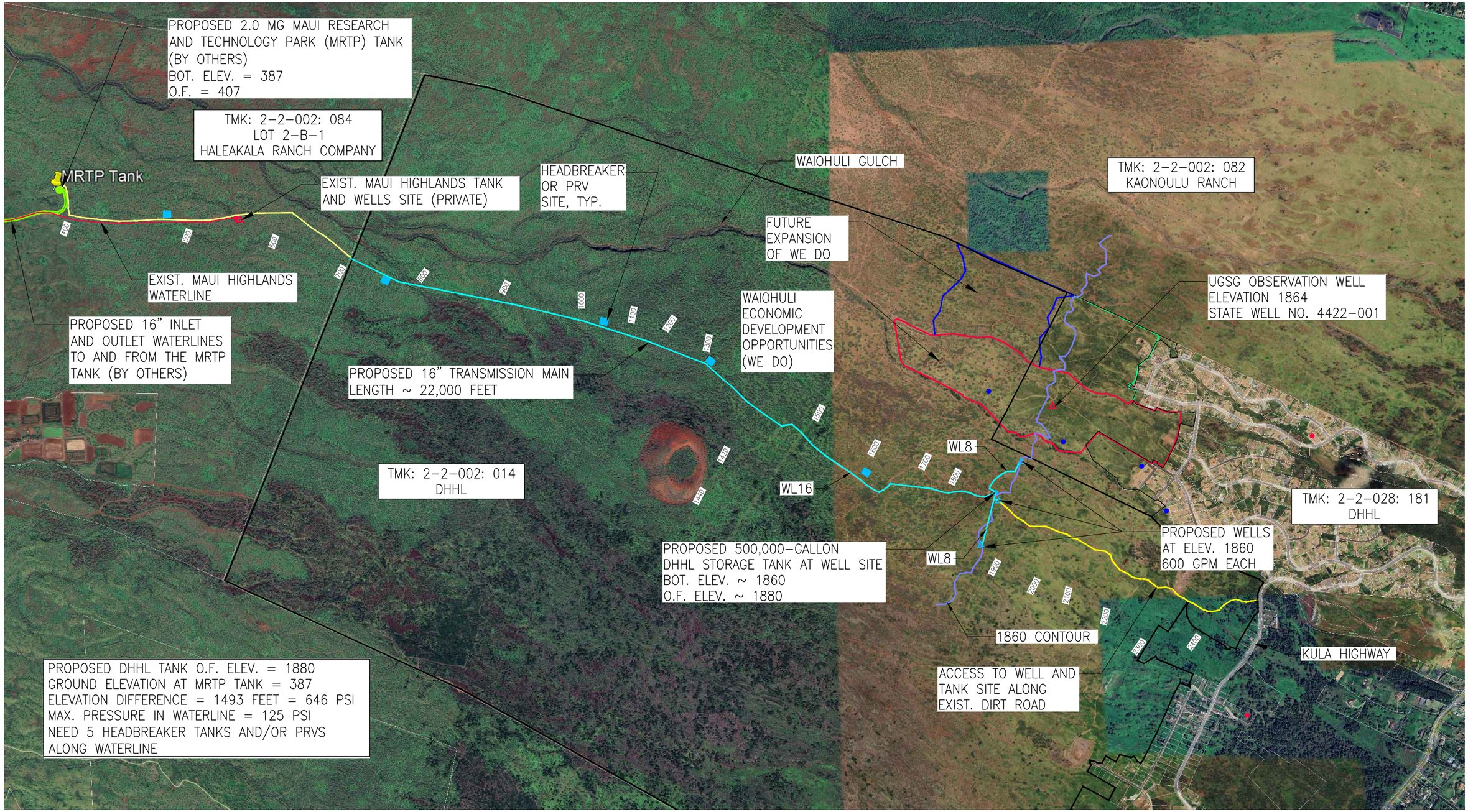
_____

_____

_____

Notary Signature:

Date:



LEGEND

- EXISTING WELL
- PROPOSED WELL
- EXISTING TANK
- PROPOSED WE DO TANK*
- PROPOSED DHHL STORAGE TANK/HEADBREAKER TANK

* TANK LOCATIONS FROM THE DEA FOR THE WAIOHULI ECONOMIC DEVELOPMENT OPPORTUNITIES (WE DO).

VICINITY MAP

SCALE: 1"=2000'

NORTH

0 1

1 INCH AT FULL SIZE

WATER SYSTEM STUDY

DHHL WATER SYSTEM

MAUI, HAWAII

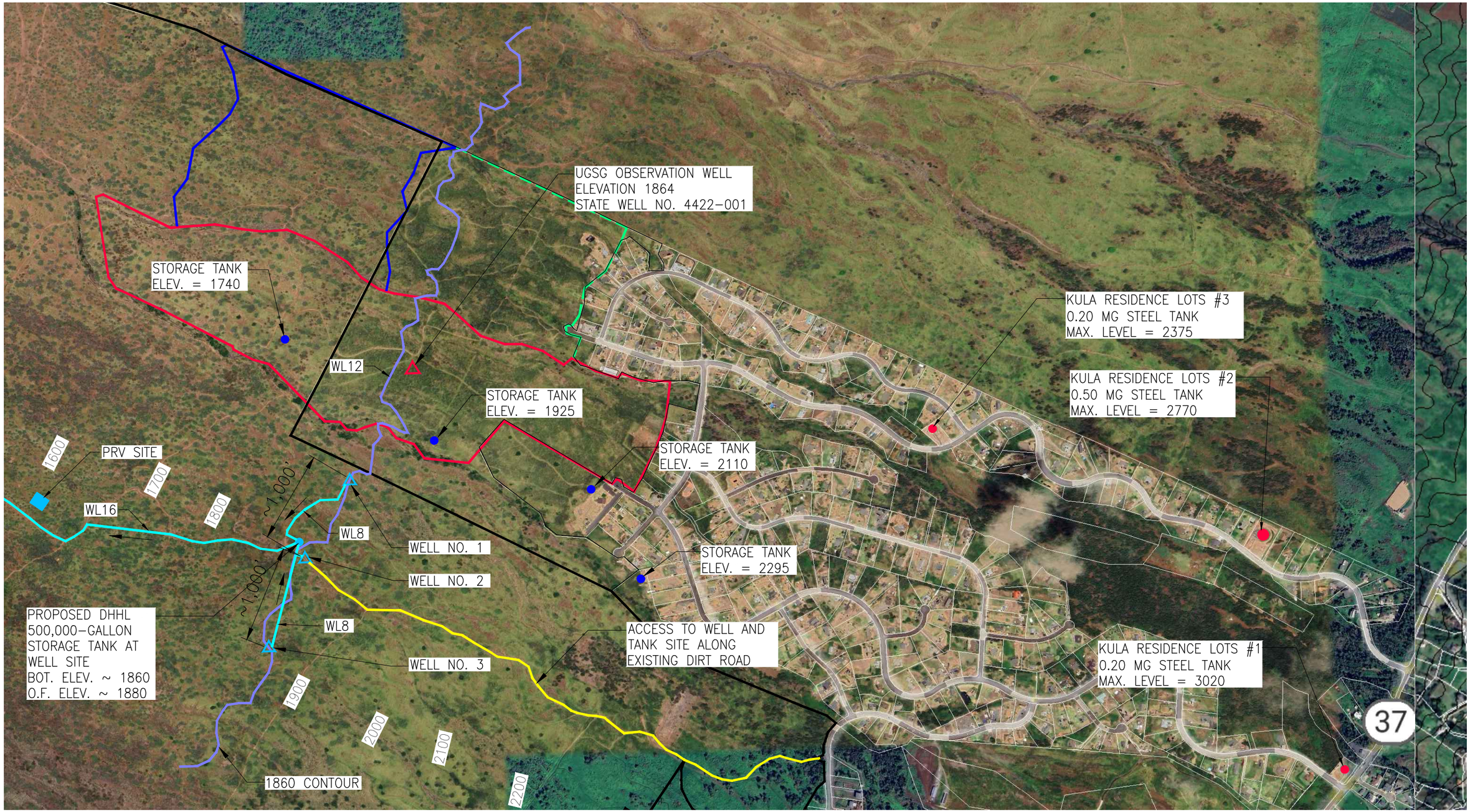
AUSTIN, TSUTSUMI & ASSOCIATES, INC.
HONOLULU • WAILUKU • HILO, HAWAII

VICINITY MAP

EXHIBIT

A

FILENAME: Y:\2024\24-006.06 DHHL WAIOHULI WELLS AND WL\ENGINEERING\DWG\EXHIBITS\WAIOHULI\EXH - WAIOHULI WATER (2025-10-09).DWG Oct 09, 2025-1:37 PM



LEGEND

- EXISTING WELL
- PROPOSED WELL
- EXISTING TANK
- PROPOSED WE DO TANK*
- PROPOSED DHHL STORAGE TANK/HEADBREAKER TANK

* TANK LOCATIONS FROM THE DEA FOR THE WAIOHULI ECONOMIC DEVELOPMENT OPPORTUNITIES (WE DO).

NORTH

0 1

1 INCH AT FULL SIZE

WATER SYSTEM MAP

SCALE: 1"=1000'

WATER SYSTEM STUDY

DHHL WATER SYSTEM

MAUI, HAWAII

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
HONOLULU • WAILUKU • HILO, HAWAII

WATER SYSTEM MAP

EXHIBIT

B

FILENAME: Y:\2024\24-006.06 DHHL WAIOHULI WELLS AND WL\ENGINEERING\DWG\EXHIBITS\WAIOHULI\EXH - WAIOHULI WATER (2025-10-09).DWG Oct 09, 2025-1:39 PM

Table 100-18 - DOMESTIC CONSUMPTION GUIDELINES

AVERAGE DAILY DEMAND*

ZONING DESIGNATION	HAWAII	KAUAI	MAUI	OAHU
RESIDENTIAL:				
Single Family or Duplex	400 gals/unit	500 gals/unit	600 gals/unit or 3000 gals/acre	500 gals/unit or 2500 gals/acre
Multi-Family Low Rise	400 gals/unit	350 gals/unit	560 gals/unit or 5000 gals/acre	400 gals/unit or 4000 gals/acre
Multi-Family High Rise	400 gals/unit	350 gals/unit	560 gals/unit	300 gals/unit
COMMERCIAL:				
Commercial Only	3000 gals/acre	3000 gals/acre	6000 gals/acre	3000 gals/acre
Commercial/Industrial Mix	--	5000 gals/acre	140 gals/1000 sq. ft.	100 gals/1000 sq. ft.
Commercial/Residential Mix	--	3000 gals/acre	140 gals/1000 sq. ft.	120 gals/1000 sq. ft.
RESORT (To include hotel for Maui only)	400 gals/unit (1)	350 gals/unit	350 gals/unit or 17000 gals/acre	350 gals/unit or 4000 gals/acre
LIGHT INDUSTRY:	4000 gals/acre	4000 gals/acre	6000 gals/acre	4000 gals/acre
SCHOOLS, PARKS:	4000 gals/acre or 60 gals/student	4000 gals/acre or 60 gals/student	1700 gals/acre or 60 gals/student	4000 gals/acre or 60 gals/student
AGRICULTURE:		2,500 gals/acre	5000 gals/acre	4000 gals/acre

* - Where two or more figures are listed for the same zoning, the daily demand resulting in higher consumption use shall govern the design unless specified otherwise.

(1) - Subject to special review and control by the Manager.

EXHIBIT "C"

EXIHBIT "D"

Notice of Exercise of Water Source Credits No. ( )

Pursuant to the Agreement between the COUNTY OF MAUI DEPARTMENT OF WATER SUPPLY and the STATE OF HAWAII DEPARTMENT OF HAWAIIAN HOME LANDS dated _____ concerning the development and dedication of Waiohuli Wells, the undersigned hereby requests water source credits be allocated under said Agreement as set forth below:

		SOURCE CREDITS (gpd)
1.	Water source credits allocated to the undersigned:	0
2.	Water source credits allocated prior to the date of this excercise:	(0)
3.	Water source credits allocated and exercised by this notice:	(0)
4.	Water source credits remaining after this exercise:	0

Submitted by:
State of Hawaii
Department of Hawaiian Home Lands

_____
By: _____
Its: Chairman

Request Date: _____

Acknowledgment:
County of Maui
Department of Water Supply

_____
By: _____
Its: Director

Acknowledgment Date: _____

Credits exercised by this notice is for the following Project:

EXIHBIT "D"

Notice of Exercise of Water Transmission Credits No.( )

Pursuant to the Agreement between the COUNTY OF MAUI DEPARTMENT OF WATER SUPPLY and the STATE OF HAWAII DEPARTMENT OF HAWAIIAN HOME LANDS dated _____ concerning the development and dedication of the Waiohuli Wells, the undersigned hereby requests water transmission credits be allocated under said Agreement as set forth below:

		TRANSMISSION CREDITS ($)
1.	Water transmission credits allocated to the undersigned:	$0.00
2.	Water transmission credits allocated prior to the date of this exercise:	($0.00)
3.	Water transmission credits allocated and exercised by this notice:	($0.00)
5.	Water transmission credits remaining after this exercise:	$0.00

Submitted by:
State of Hawaii
Department of Hawaiian Home Lands

_____
By: _____
Its: Chairman

Request Date:_____

Acknowledgment:
County of Maui
Department of Water Supply

_____
By: _____
Its: Director

Acknowledgment Date: _____

Credits exercised by this notice is for the following project:

EXIHBIT "D"

Notice of Exercise of Water Storage Credits No. ( )

Pursuant to the Agreement between the COUNTY OF MAUI DEPARTMENT OF WATER SUPPLY and the STATE OF HAWAII DEPARTMENT OF HAWAIIAN HOME LANDS dated _____ concerning the development and dedication of the Waiohuli Wells, the undersigned hereby requests water storage credits be allocated under said Agreement as set forth below:

		STORAGE CREDITS (gals)
1.	Water storage credits allocated to the undersigned:	0
2.	Water storage credits allocated prior to the date of this exercise:	(0)
3.	Water storage credits allocated and exercised by this notice:	(0)
4.	Water storage credits remaining after this exercise:	0

Submitted by:
State of Hawaii
Department of Hawaiian Home Lands

_____
By: _____
Its: Chairman

Request Date: _____

Acknowledgment:
County of Maui
Department of Water Supply

_____
By: _____
Its: Director

Acknowledgment Date: _____

Credits exercised by this notice is for the following Project:

PARTNERSHIP

Department of Hawaiian Home Lands
University of Hawai'i

ITEM E-6 For Information Only

February 17, 2026

Prepared by Land Development Division

PURPOSE

To formalize a partnership between the **Department of Hawaiian Home Lands** and the **University of Hawai'i** that will bring student innovation to support DHHL projects through culturally grounded design, sustainable housing concepts, and landscape strategies, advancing native Hawaiian housing outcomes while providing experiential learning opportunities.

BENEFITS

PARTNERSHIP

Strengthened relationship with the University of Hawai'i, building a long-term pipeline for future collaboration

CULTURE

Culturally grounded design and landscape strategies that reflect Native Hawaiian values and practices

MISSION

Support for DHHL's mission to deliver housing that is efficient, affordable, and rooted in place

INNOVATION

Access to innovative design thinking and emerging architectural research

COMMUNITY

Strengthened community and beneficiary engagement

DESIGN

Early-stage concept designs to inform housing, site planning, and community development decisions

Memorandum of Agreement

Purpose of an MOA
- DHHL and UH are developing 4 seperate MOAs to formalize a partnership supporting planning, design exploration, and decision making on specific projects.

Why Four MOAs
- Each project has unique sites, scopes, and timelines.
- Separate MOAs provide flexibility while maintaining a consistent partnership framework.

How the Framework Works
- One course → one project → defined deliverables.
- Students work within academic schedules while DHHL provides real-world constraints.

DHHL Role
- DHHL sets project focus, level of engagement, and use of deliverables.
- No obligation to build – this supports exploration and decision-making.

Value to DHHL
- Explore multiple solutions simultaneously.
- Low risk, high value, mission-aligned innovation.

Big Picture
- Establishes a repeatable partnership model – not a one-time class exercise.

MAHALO

dhhl.hawaii.gov

DEPARTMENT OF HAWAIIAN HOME LANDS
Prepared by Land Development Division

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

FEBRUARY 17, 2026

TO: Chairman and Members, Hawaiian Homes Commission
FROM: Land Development Division
SUBJECT: E-7 Act 279 Working Group Annual Report (January 21, 2026)

PURPOSE

This proposal is submitted for informational purposes.

DISCUSSION

The first nine pages attached constitute the Annual Activity Report for Act 279, which was submitted to President Kouchi, Speaker Nakamura, and the members of the Senate and House. The remaining pages include a copy of the presentation that will be shared at the Commission meeting scheduled for February 17, 2026.

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
CHAIRMAN, HHC
Ka Luna Ho'okele

KATIE L. LAMBERT
DEPUTY TO THE CHAIRMAN
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 21, 2026

The Honorable Ronald D. Kouchi
President, Hawai'i State Senate
State Capitol, Room 409
Honolulu, HI 96813

The Honorable Nadine Nakamura
Speaker, Hawai'i State House of Representatives
State Capitol, Room 439
Honolulu, HI 96813

Aloha President Kouchi, Speaker Nakamura, and Members of the Senate and House,

On behalf of the Hawaiian Homes Commission and the Department of Hawaii Home Lands, I am transmitting the Annual Activity Report as required under Act 125/24 (Act 279, Sessio Laws of Hawai'i 2022). In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed online at **https://dhhl.hawaii.gov/act279/**.

Mahalo,

Kali Watson

Kali Watson
Chairman

Department of Hawaiian Home Lands
Annual Activity Report

As required by:
Act 125/24
(Act 279, Session Laws of Hawai'i 2022)

HAWAIIAN HOME LANDS TRUST

Department of Hawaiian Home Lands

In 2022, the Hawai'i State Legislature appropriated $600 million through Act 279 to the Department of Hawaiian Home Lands. The purpose of this funding is to reduce the Hawaiian Homes waitlist. To this end, the Department has been actively pursuing new lot development projects as well as awarding all available lots to beneficiaries on the waitlist.

EXECUTIVE SUMMARY

This Annual Report summarizes implementation of **Act 279** during **Calendar Year 2025** and is submitted for the Hawai'i State Legislature's information, oversight, and policy consideration. The report highlights fiscal execution, infrastructure readiness, innovative financing strategies, and housing delivery outcomes achieved by the Department of Hawaiian Home Lands (DHHL).

Homestead development has never been simple. Today, delivery is further constrained by escalating construction costs, labor shortages, and complex, multi-year approval processes that limit how many homes can be built and how quickly families can return to their 'āina. These challenges reflect systemic pressures affecting Hawai'i's broader housing landscape.

As of **December 31, 2025**, DHHL had **fully encumbered approximately $600 million** in Act 279–related funding and **expended approximately $120 million** on planning, infrastructure development, land acquisition, and beneficiary-focused financing and services.

The **$600 million encumbrance** reflects a strategic allocation aligned with housing delivery priorities:

- **Infrastructure: $511.2 million**, supporting water, wastewater, roadways, drainage, and related on-site and off-site improvements;
- **Acquisition: $52.8 million**, resulting in approximately **555.94 acres of new acreage** to expand and strategically reposition DHHL's land inventory; and
- **Financing and Beneficiary Services: $36.0 million**, supporting beneficiary access to financing tools and housing pathways.

Together, these investments established a committed statewide development pipeline and reduced long-standing infrastructure barriers on trust lands.

During the reporting period, DHHL awarded **2,472 project leases statewide**, translating infrastructure and planning investments into tangible beneficiary outcomes. Importantly, Act 279 infrastructure investments also functioned as **catalytic capital**, unlocking approximately **$2 billion in private vertical construction financing** contributed by development partners as part of their capital stacks.

For transparency and ongoing legislative oversight, DHHL maintains a public-facing Act 279 webpage that provides an updated summary of funding status, project progress, and implementation milestones **as of December 31, 2025**, available at: **https://dhhl.hawaii.gov/act279/**

Statutory Authority and Purpose

Act 279 directs the Department to address systemic barriers that delay housing delivery on DHHL lands, including infrastructure financing gaps, regulatory sequencing challenges, land acquisition constraints, and limited delivery capacity. While land availability remains a core asset, the statute recognizes that **infrastructure readiness, financing alignment, and delivery coordination** are the primary determinants of production.

When DHHL succeeds, **Hawai'i succeeds**. Each home developed on DHHL lands reduces demand on county and state housing programs, eases pressure on infrastructure and social services, and allows other agencies to focus on their most vulnerable populations. DHHL is not only responding to beneficiary need—it is **helping carry Hawai'i's housing burden** and remains a critical component of the statewide housing solution.

Program Implementation Overview

During Calendar Year 2025, DHHL implemented Act 279 through coordinated planning, infrastructure execution, and project sequencing. Implementation emphasized:

- Infrastructure-first delivery to reduce downstream risk and cost escalation;
- Early technical coordination with county, state, and utility partners;
- Diversified financing and acquisition strategies; and
- Clear accountability for funding execution and project milestones.

This approach transitioned Act 279 from planning and assessment into **active execution**, strengthening DHHL's delivery capacity while avoiding rushed or inefficient spending.

KEY ACTIVITIES AND TRENDS (CALENDAR YEAR 2025)

Infrastructure as the Primary Driver

Across all counties, **water, wastewater, roadways, and drainage infrastructure** remain the largest cost components and the most frequent sources of delay. Projects with secured and sequenced infrastructure funding advanced more quickly toward lease awards and construction readiness.

Funding Execution Ahead of Vertical Construction

Full encumbrance of Act 279 funding reflects strong fiscal execution and establishes a multi-year development pipeline. Infrastructure delivery necessarily precedes vertical construction and stabilizes long-term schedules, reduces risk, and improves affordability outcomes.

Capacity and Coordination Constraints

Sequential agency reviews, limited staffing capacity, and inconsistent requirements across jurisdictions continue to affect timelines. Projects benefiting from early and parallel coordination experienced fewer redesigns and delays.

INNOVATIVE FUNDING, ACQUISITION, AND LEVERAGE STRATEGIES

Strategic Land Acquisition Alternatives

Rather than expending limited funds to purchase land with existing infrastructure, DHHL is pursuing **smarter acquisition alternatives** that improve beneficiary outcomes while preserving capital. These strategies include:

- **Land acquisitions and dispositions with county and state agencies** to reposition DHHL inventory closer to schools, healthcare facilities, employment centers, and essential services;
- Leveraging **Act 14** to bring whole the acreage still owed to DHHL, strengthening the trust land base without new acquisition costs;
- Pursuing **federal surplus lands** where feasible; and
- Exploring opportunities to **monetize approximately 2,300 affordable housing credits** to acquire strategically located private lands.

These approaches allow DHHL to expand development capacity without depleting infrastructure or housing funds, while stewarding trust assets with long-term strategy and purpose.

Diversified Financing Toolkit

DHHL's housing strategy relies on a **blended financial model**, recognizing that no single funding source is sufficient to deliver housing at scale. Act 279 implementation incorporates state and county appropriations, federal grants, developer and private financing, Low-Income Housing Tax Credits (LIHTC), future revenue bond financing, and targeted beneficiary financing tools.

Revolving Loan Fund – Empowering Owner-Builders

In partnership with **Hawaii Community Lending (HCL)**, HCL established a **$41 million Revolving Loan Fund** to support DHHL beneficiaries holding **owner-built vacant lot leases**. This program empowers beneficiaries to finance construction, transition from land award to completed homes, and turn opportunity into reality—complementing Act 279's infrastructure investments.

County Partnership Model – Maui GET Set-Aside

The **County of Maui General Excise Tax (GET) Set-Aside** represents a leading model of **shared responsibility and intergovernmental partnership**.

- As of Calendar Year 2025, DHHL has accrued approximately **$33 million**.
- By **2030**, the program is projected to generate approximately **$90 million**.

This predictable, multi-year revenue stream supports infrastructure investment and aligns county resources with DHHL's housing delivery pipeline.

Act 279 as Catalytic Capital

Although Act 279 funds are primarily deployed for infrastructure—representing **$511.2 million of the $600 million encumbered**—their impact extends well beyond direct expenditures. By sequencing infrastructure early and at scale, DHHL reduced project risk, improved development certainty, and enabled developers to advance vertical construction financing.

As a result, Act 279 infrastructure investments have **unlocked approximately $2 billion in private vertical construction financing**, contributed by development partners through equity, private debt, and tax credit structures. This leverage effect demonstrates that Act 279 funds multiply housing production capacity while reducing reliance on additional State appropriations.

PERFORMANCE OUTCOMES AS OF DECEMBER 31, 2025

Project Lease Awards by County

County / Location	Project Leases Awarded (as of 12/31/25)
Hawai'i Island	408

County / Location	Project Leases Awarded (as of 12/31/25)
Maui	1,212
O'ahu (Honolulu)	725
Kaua'i	82
Statewide / Scattered Sites	45
Total	**2,472**

Summary of Key Funding and Leverage Outcomes

Strategy	Amount / Impact
Total Act 279 Funds Encumbered (as of 12/31/25)	**$600 million**
Act 279 Funds Expended (as of 12/31/25)	**$120 million**
Key Funding Outcomes: Infrastructure	**$511.2 million**
Key Funding Outcomes: Acquisition	**$52.8 million**
Key Funding Outcomes: New Acreage Acquired (near infrastructure, educational facilities, and medical facilities)	**555.94 acres**
Key Funding Outcomes: Financing & Beneficiary Services	**$36.0 million**
Leverage Outcomes: Hawaii Community Lending Revolving Loan Fund	**$41 million**
Leverage Outcomes: Maui GET Set-Aside (accrued)	**$33 million**
Leverage Outcomes: Maui GET Set-Aside (2030 projection)	**$90 million**
Leverage Outcomes: Private Vertical Financing Leveraged	**$2 billion**

FY25 Encumbrances & Expenditures

Item	Total Amount
Contracts	**$143,408,521.97**
Purchase Orders	$138,540,077.84
Expenditures	$ 74,359,895.20
Total E&E	$356,308,495.01

FY25 Accounting of Expenditures

Amount	Vendor Name
$ 1,599,879.92	Austin, Tsutsumi & Assoc., Inc.
$ 987,946.14	Bowers + Kubota Consulting Inc
$30,317,395.87	DDC2 LLC
$ 1,169,157.74	DDC3 LLC
$ 1,858,841.11	Gentry Kapolei Development
$ 825,961.35	Goodfellow Bros., LLC
$ 422,600.00	Hawaiian Community Assets, Inc
$ 9,152,065.52	Hawaiian Dredging Construction Company, Inc.
$ 333,818.90	Isemoto Contracting Co., LTD.
$ 150,000.00	Mark Development, Inc.
$ 9,037,790.91	Maui Kupono Builders, LLC
$ 20,000.00	Title Guaranty of Hawaii
$55,875,457.46	**Total**

Policy and Legislative Considerations

Based on implementation during Calendar Year 2025, the Department respectfully offers the following considerations:

- Support **multi-year infrastructure funding mechanisms** aligned with DHHL pipelines;
- Enable **concurrent and coordinated agency reviews**;
- Continue support for **county revenue partnerships**;
- Provide flexibility for **innovative acquisition and financing strategies**; and
- Invest in staffing and technical capacity tied directly to housing delivery.

CONCLUSION

The Act 279 updates for Calendar Year 2025 reflect a **focused and steady commitment to maximizing the $600 million investment** entrusted to the Department and advancing real progress in addressing Hawai'i's housing crisis. Strategic, sustained planning is strengthening DHHL's capacity, reducing costly rushed spending, and supporting consistent delivery of homes, infrastructure, and services.

At the same time, urgency remains. DHHL must accelerate its efforts, work closely with service providers to ensure homes align with what beneficiaries can afford, and continue partnering with the development community—whose **$2 billion in vertical financing capacity** significantly expands the reach of public investment.

With flexibility as needs evolve and a long-term focus on generational outcomes, DHHL is advancing sustainable progress toward reducing waitlists and fulfilling its trust obligations. Ultimately, it will take all of us—every partner and every shared commitment—to turn this momentum into lasting change and ensure Native Hawaiian families have access to housing, stronger communities, and enduring opportunity.

E-7

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Act 279 Working Group Annual Report

HHL Commission Meeting

February 17-18, 2026

E-7 Act 279 Annual Report (eff. January 21, 2026)

Executive Summary

Key Activities and Trends

Innovative Funding, Acquisition, & Leverage Stratgies

Performance Outcomes

Executive Summary

Location/Site		Project	Cost	Total Leases	Total Lots	Construction (FY)		Occupancy (FY)	
		28	$ 600,000,000	5,792	2,103	Start	End	Start	End
Hawaii County	**Sub-Total**	**6**	**$52M**	**1,684**	**280**				
	La'i 'Ōpua Villages	Residential Subdivision	$39.2M	580	280	2022	2028	2026	2028
	Honomu	Subsistence Agricultural Lots		40	0	2025	2026	2028	2028
	Kaumana	Land Acquisition	$2.0M	168	n/a	2026	2030	2030	2030
	Honokaa	Land Acquisition	$8.8M	n/a	n/a	2026	2031	n/a	n/a
		Residential Subdivision	$1.3M	200	0	2026	2031	2029	2031
	Panaewa	Residential Lots	$1.0M	600	0	2026	2031	2031	2031
Maui County	**Sub-Total**	**12**	**$297.6M**	**1,514**	**1,139**				
	Lāna'i	Residence Lots	$2.0M	75	0	2026	2028	2028	2028
	Hoolehua	Scattered Agricultural Lots	$3.5M	20	20	2025	2027	2027	2027
	Nā'iwa	Agricultural Lots	$6.0M	16	16	2025	2027	2027	2027
	Pu'uhona	Water Tank	$5.5M	n/a	n/a	2023	2026	n/a	n/a
		Residential Subdivision	$17.2M	161	161	2023	2026	2025	2026
	Honokōwai	Subsistence Agricultural Lots	$1.5M	50	0	2025	2027	2027	2027
	Leiali'i	Offsite Water Development	$15.0M	n/a	n/a	2024	2026	n/a	n/a
		Residential Subdivision	$68.0M	181	181	2025	2029	2027	2029
	Wailuku	Residential Subdivision	$39.5M	207	207	2026	2031	2029	2031
	Waiehu Mauka	Residential Subdivision	$93.9M	404	404	2027	2032	2030	2032
	Kamalani	Land Acquisition	$10.5M	n/a	n/a	2024	2025	n/a	n/a
		Residential Subdivision	$35.1M	400	150	2026	2031	2029	2031
City and County of Honolulu	**Sub-Total**	**5**	**$169M**	**1,190**	**380**				
	Kaupe'a	Acquisition	$8.3M	n/a	n/a	2024	2025	n/a	n/a
	Kaupe'a	Residential Subdivision	$13.7M	60	0	2026	2030	2028	2030
	East Kapolei	Mixed-Use Subdivision	$1.0M	350	0	2026	2031	2026	2031
	East Kapolei	Residential Subdivision	$143.2M	700	380	2026	2031	2029	2031
	Maunalua	Land Acquisition & Multifamily Units	$2.5M	80	0	2026	2027	2027	2027
Kauai County	**Sub-Total**	**4**	**$43.5M**	**1,297**	**197**				
	Hanapēpē	Residential Subdivision	$17.8M	82	82	2022	2027	2026	2027
	Anahola	Agricultural Lots	$5.0M	115	115	2025	2027	2027	2027
	Līhu'e	Land Acquisition	$20.7M	n/a	n/a	2024	2025	n/a	n/a
		Residential Subdivision	$0.0M	1,100	0	2026	2035	2029	2035
	Sub-Total	**1**	**$38M**	**107**	**107**				
	Scattered Lots	Residential Subdivision	$2.0M	107	107	2024	2026	2025	2026
	Other	Residential Subdivision	$36.0M	107	107	2024	2026	2025	2026

Breakdown of $600M Encumbered

- Infrastructure: $511.2M
- Acquisition: $52.8M (new acreage: 555.94ac)
- Financing & Beneficiary Services: $36M
- Encumbered as of 12/31/25: $600M

DHHL COMMISSION APPROVED BUDGET

Spent as of 12/31/2025

- $120M

DHHL by the Numbers

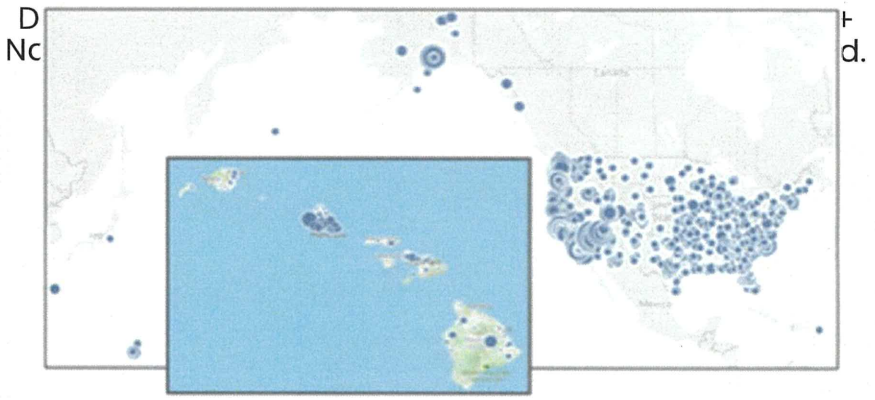
1921

President Harding signs the Hawaiian Homes Commission Act, setting aside approximately 200,000 acres of land to lease to native Hawaiians.

99 Years @ $1 per Year

DHHL Beneficiaries lease residential, agricultural, or pastoral lands homesteads for 99-years at $1 per year.

29,572 aaplicants on the waitlist in all 50 states and internationally



1959

State obtains ability to directly administer homes

100Years extension

Renewable for an additional 100-year term

~10,000 Current Leases

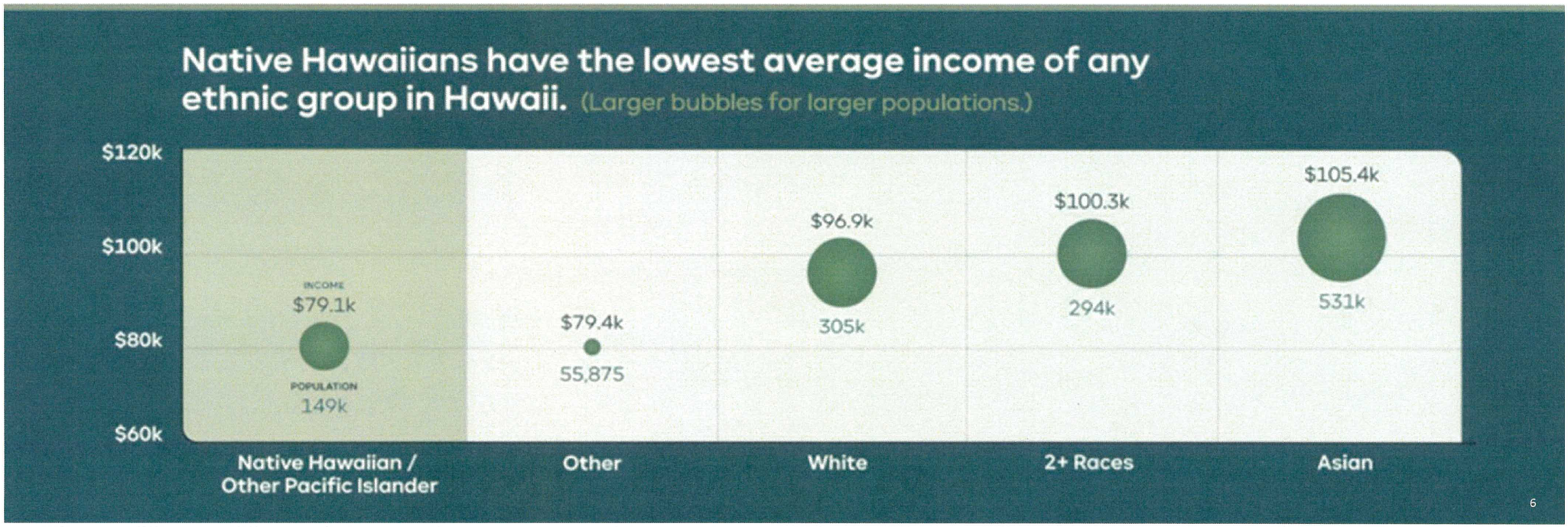
Nearly 10,000 active homestead leases across 58 developments on six (6) islands.

>7,300 New Lots Under Development

DHHL has more than 7,300 properties in various stages of development to be leased to DHHL Beneficiaries in the coming years

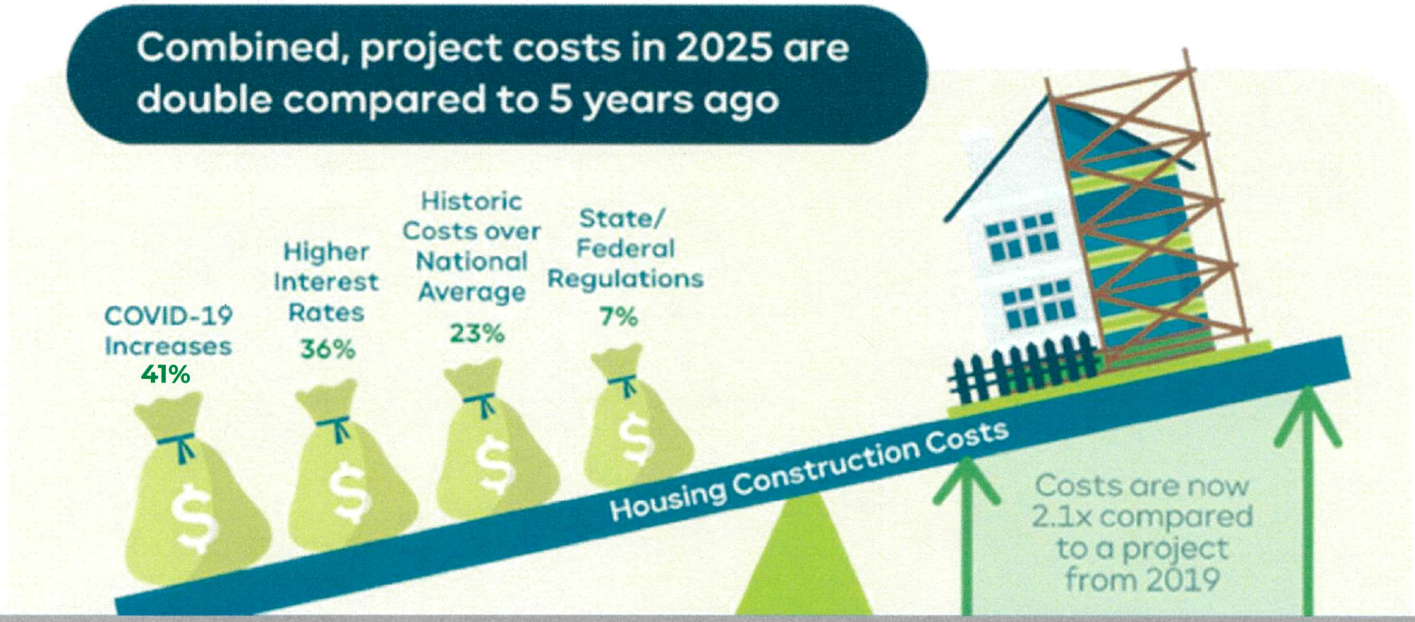
The Affordable Housing Gap in Hawaii

- Hawaii is the only state where the **average mortgage** costs more than **50%** of the **median income**.
- Native Hawaiian households face disproportionately lower income level.
- Homeownership is unattainable for many due to high material, labor, and borrowing costs.



The Situation has worsened since 2019

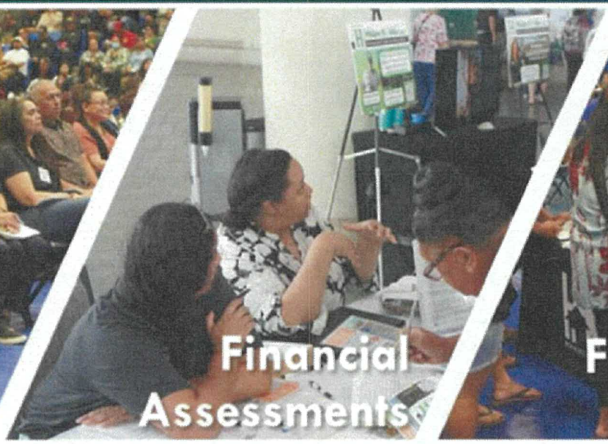
- Building on Hawaii has always been **more expensive**
- Material costs have **increased significantly** in the past **five years**
- **High borrowing costs** make homeownership and construction more expensive
- **State** and **federal regulations** add additional costs



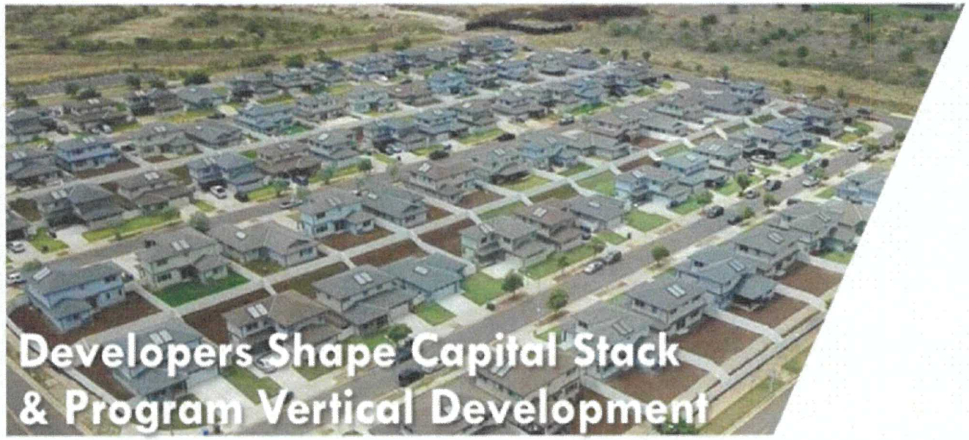
Key Activities and Trends

New Approach

Project Leases

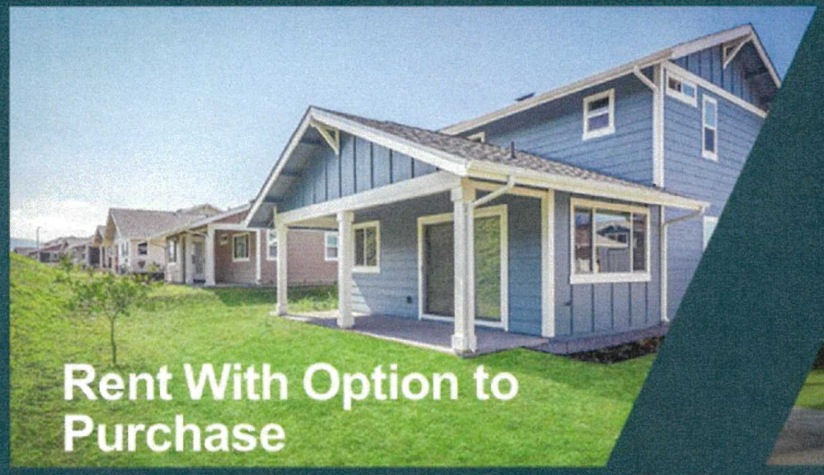

Financial Assessments

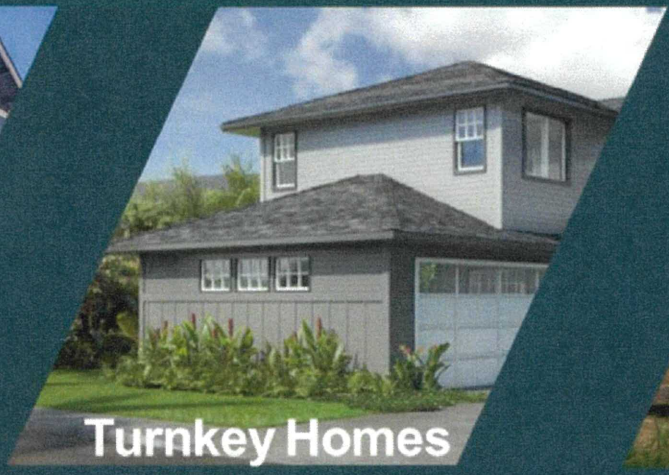
Financial Literacy & Preparation

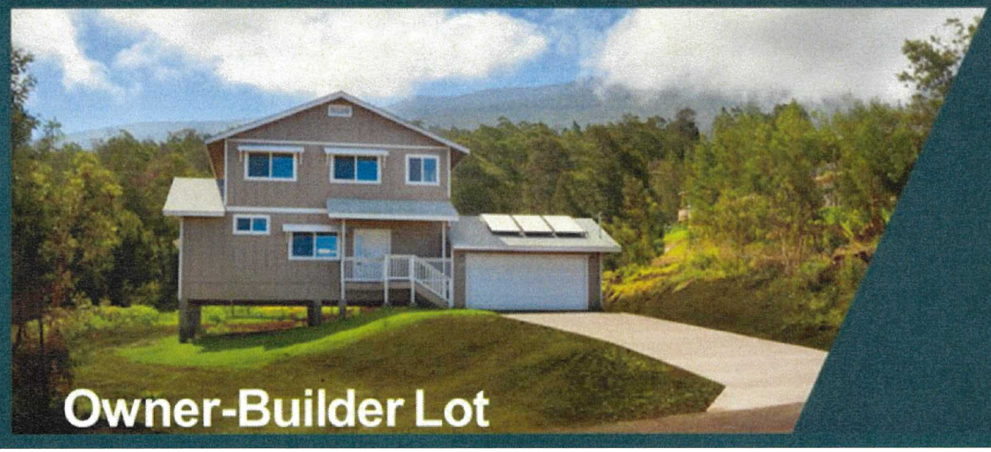

Developers Shape Capital Stack & Program Vertical Development

- Transforming Development to Better Serve Our Beneficiaries

Options & Opportunities







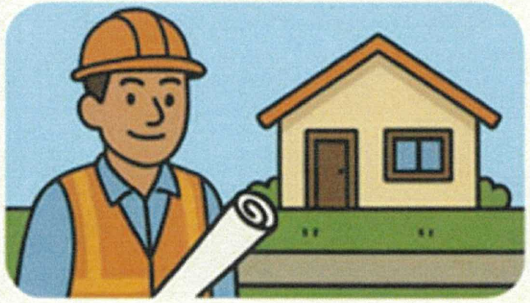
Housing Options

Creating Pathways of Choice for Our Beneficiaries

Process

1. DHHL **acquires** the land

2. DHHL builds **Site Infrastructure**



3. Private Developer **builds housing**

4. DHHL Beneficiary **pays for house, land lease at $1/year**

ʻŌlelo Noʻeau: "Aʻohe hana nui ka aluʻia."

No task is too big when done together.

Meaning: United we stand, divided we fall.

Innovative Funding, Acquisitions, & Leverage Strategies

Acquisition Alternatives

EXCHANGE OF STATE LANDS
50k acres

EXCHANGE OF COUNTIES LANDS
250 acres

MONETIZING AFFORDABLE HOUSING CREDITS
2,300

EXCHANGE OF FEDERAL LANDS
1,040 acres

Instead of spending limited funds to purchase land with existing infrastructure, we are exploring smarter acquisition alternatives that place beneficiaries closer to schools, health facilities, and essential services. By exchanging parcels with counties and state agencies — including leveraging Act 14 to bring whole the acreage still owed to DHHL — we can reposition our inventory to serve our people better, pursue federal surplus lands, and even monetize our 2,300 affordable housing credits to acquire private lands. This approach allows us to build capacity without depleting funding, while stewarding our trust assets with strategy and purpose.

These strategies diversify DHHL's future land base and ensure sustainable long-term development.

Innovative Funding

June 2025
- USDOT – Regional Infrastructure Accelerator Program
- $2M for East Kapolei

September 2025
- USDA – Rural and Tribal Assistance Pilot Program
- $2.5M for Maui projects
- $2.5M for East Kapolei TOD

September 2025
- USDA – Water and Environmental Program Application
- $5M for Molokaʻi water

October 2025
- USDOT – Innovative Finance & Asset Concession Grant Program
- $2M for East Kapolei

DHHL's funding strategy uses a mix of public- and private-sector mechanisms to amplify every dollar—leveraging federal grants as accelerators and maximizing the GET exemption to stretch resources.

Through this strategic approach, we achieved an impressive $6 million in savings in FY2025, followed by a projected $9 million in savings in FY2026.

Combined with the County of Maui's $90 million GET Set-Aside through 2030 for housing infrastructure and homestead development, this forward-looking model demonstrates how innovative financial stewardship can unlock transformative support for beneficiaries.

Innovative Funding

DHHL will also consider innovative partnerships with other county and state entities that could expedite development schedules for DHHL projects. An example could be upsizing an ongoing county off-site infrastructure project and sharing in the cost. Public private partnerships may also be considered, to the extent they do not violate any statute, regulation, or procurement code.

DHHL's housing strategy requires a diversified financial toolkit – no single source is enough – and success will come through the blend of state and county appropriations, federal grants, developer financing, private capital, LIHTC, and future revenue bonds. The Maui GET Set-Aside stands as a model of shared responsibility, and revenue bonds offer a powerful path to scale homestead development by leveraging future project revenues to fund infrastructure today.

Partnerships multiply funding.

Multiplied funding accelerates homesteads.

Importance of Relationships

Partnerships with County and State Entities

- Purpose: expedite development schedules for DHHL projects
- Example:
  - shared infrastructure
  - upsizing an ongoing county off-site infrastructure project and sharing in the cost

Public and Private Partnerships

- Financial assessments, financial literacy, and homebuyer education
- Leverage compensation of access easements in return for shared Infrastructure with neighboring landowners and developers

Pilina is the foundation that allows our partnerships with HCA, Helen Wai LLC, and the Hawai'i HomeOwnership Center to thrive, ensuring **7,000 beneficiaries** receive trusted financial assessments, homebuyer education, and financial literacy that strengthen their path to housing.

Through Act 279, our investment in infrastructure unlocks more than **$2 billion in vertical development**, as private developers bring the full capital stack needed to actually build homes

In parallel, the **$41 million revolving loan fund** with Hawai'i Community Lending empowers beneficiaries on owner-built vacant lots to finance construction and turn opportunity into reality.

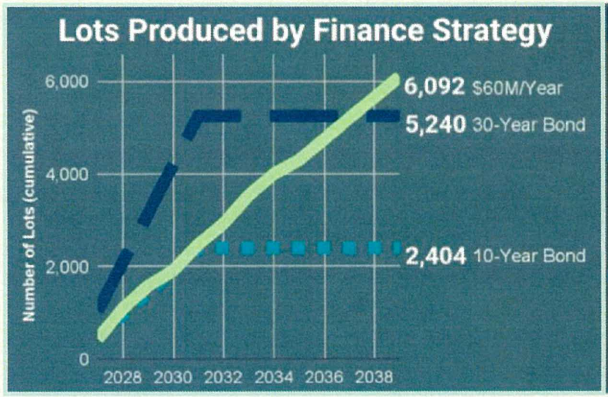
Innovative Funding

PROJECT PORTFOLIO BREAKDOWN

Project Name	Developer	FY	Units	DHHL LAND ($175K/LOT)	TOTAL DEV COST	Leverage	LIHTC VALUE (FED + STATE)
MARK DEVELOPMENT (1 Project, 30 Units)							
Hanapepe Residence Lots - IIA	Hanapepe RLP 2 Ekahi, LLC	2024	30	**$5,250,000**	**$29,271,150**	**5.58x**	**$21,000,000**
KALANIANA'OLE DEVELOPMENT (1 Project, 30 Units)							
Lai Opua V4 Hema RP	V4 Hema LP	2025	30	**$5,250,000**	**$28,787,021**	**5.48x**	**$20,939,625**
PORTFOLIO TOTAL			**60**		**$58,058,171**	**5.53x**	**$41,939,625**

ANNUAL LIHTC AWARDS

Project Name	ANNUAL FEDERAL LIHTC	ANNUAL STATE LIHTC	10-YEAR FED CREDITS	5-YEAR STATE CREDITS	TOTAL LIHTC VALUE
Hanapepe Residence Lots - IIA (2024)	$1,400,000	$1,400,000	$14,000,000	$7,000,000	$21,000,000
Lai Opua V4 Hema RP (2025)	$1,395,975	$1,395,975	$13,959,750	$6,979,875	$20,939,625
TOTAL	$2,795,975	$2,795,975	$27,959,750	$13,979,875	$41,939,625



Bond Period:	10-Years	30-Years
Total Borrowed	$505.3M	$1,103.5M
Interest Rate:	3.25%	3.50%
Term (Years):	10	30
Annual Debt Service:	$60M	$60M
Annual Principal:	$43.6M	$21.4M
Annual Interest:	$16.4M	$38.6M
Total Payments	$600.0M	$1,800M
Interest Payments:	$94.7M	$696.5M
Principal Payments	$505.3M	$1,103.5M

DHHL considered a comprehensive range of financial options for Phase 2 Act 279 funding and deliver developed lots to beneficiaries, with a focus on balancing speed of development with long-term Departmental stability.

Recently, DHHL considered using annual state funding as a dedicated source for debt-service payments. This would provide a significant influx of funds for construction activities.

Analysis of Bonding and Debt Financing

To determine the optimal finance strategy, DHHL considered the Return on Investment (ROI) for general obligation bonds. The results favor a direct cash-based approach. The findings were:

- High Cost, Reduced Output:
  - 10-Year Financing: This option would yield 60% fewer lots (only 2,404 developed vs. 6,092 projected), making it financially unviable.
  - 30-Year Financing: This option would produce 15% fewer lots (5,240 developed vs. 6,092 projected) while simultaneously incurring long-term debt.
- Bonding would require DHHL to allocate significant funds towards interest and financing costs instead of directly investing that capital into site construction and infrastructure development.

Ultimately, the analysis demonstrated that while debt financing might offer an upfront capital injection, its long-term cost drastically reduces the total number of lots DHHL can deliver, making it a poor fit for maximizing the program's impact.

INNOVATIVE FUNDING

Revenue Bond Financing	**501(C)(3) Bond Structure**
LIHTC Structuring & Syndication	**Braiding LIHTC, bonds, CDFIs, & impact investment**

Performance Outcomes

Lot Development Completed With the $600M

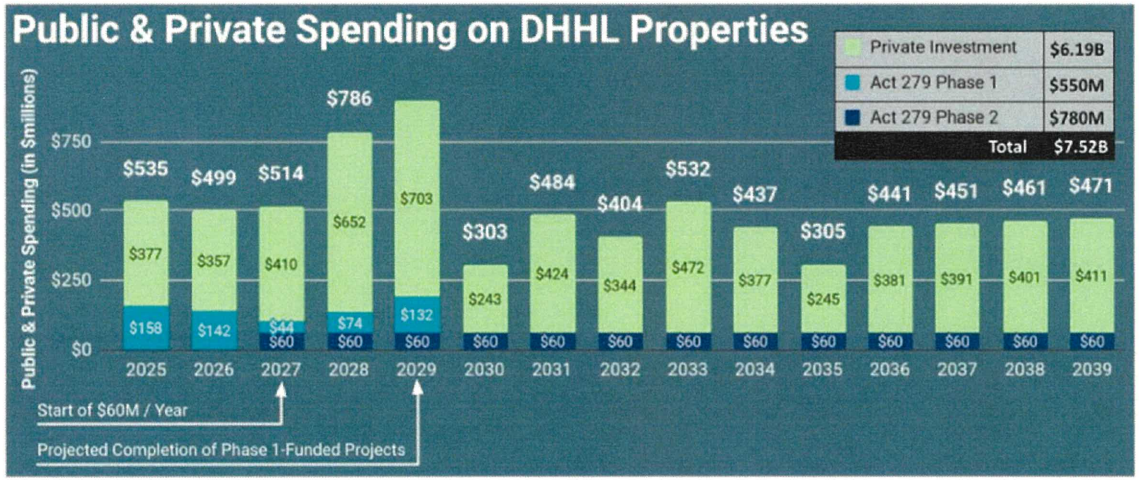
Statewide Lot Development Projects Leases			
County	2022 Leases	2024 HHC	2025 Completed
Hawai'i	440	1,684	408
Maui	572	1,514	1,212
Honolulu	1,520	1,790	725
Kauai	190	1,297	82
Scattered Lots Statewide	0	107	45
TOTAL	2,722	6,392	2,472

**$600M encumbered by 12/31/2025. Currently $120M expended.*

PHASE 2		
COUNTY	**LOTS DEVELOPED (3,858)**	**NEW FUNDING ($871M)**
HAWAII RES: 1634 / HAWAII AG: 50	1,276	$315M
MAUI RES: 1105 / MAUI AG: 298 MOLOKAI RES: 20 / MOLOKAI AG: 16 / LANAI RES: 75	302	$182M
KAUAI RES: 1082 / KAUAI AG: 215	1,215	$229M
OAHU RES: 1790	1,065	$145M

Island / Project	Lots Developed (2,230)	Waitlist (23,849/ 8,257)
Hawaii RES/ LaiOpua	380	5991
Maui RES / Puuhona, Wailuku SF, Waiehu Mauka, Kamalani, LeiAlii	1017	3947
Maui AG / Waiehu Mauka, Honokowai	105	4813
Molokai RES / Hoolehua Scattered	20	815
Molokai AG / Naiwa	16	1133
Kauai RES / Hanapepe	82	1726
Kauai AG / Anahola	50	2311
Oahu RES / Kauluokahai	560	11370

Annual Appropriation will enable DHHL to deliver more lots and enable $5.2B in Private Funding



Phase 1: Infrastructure Development (2029 Completion)

Based on internal projections, DHHL will exhaust the initial $600 million from Act 279, used for site infrastructure for approximately 2,100 lots, by 2029.

Housing Construction & Financial Model

Once site infrastructure is complete, private developers will build single- and multi-family units.

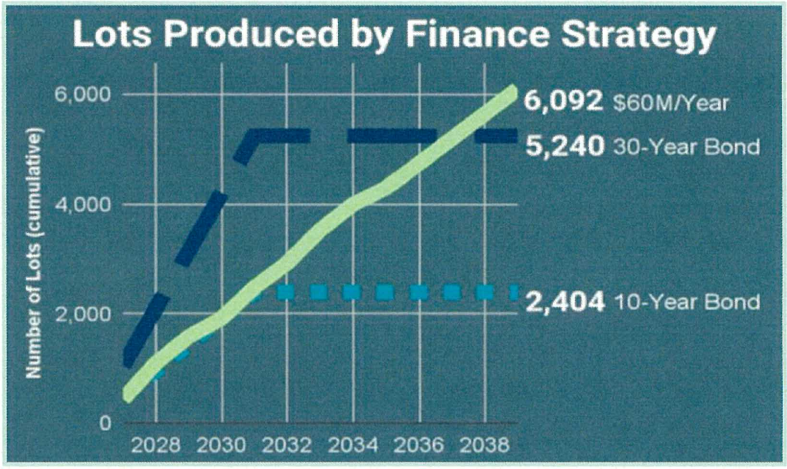
- **Average Vertical Construction Cost:** $630,000* per unit
- **Total Projected Private Development Cost:** $6.19 billion

Phase 2: Portfolio Completion (FY 2039 Projection)

With an additional $60 million per year (starting in Fiscal Year 2027), DHHL expects to prepare site infrastructure for its entire portfolio, adding approximately 6,100 lots. All site infrastructure is projected to be complete by the end of Fiscal Year 2039.

*Calculations assume 2.5% annual inflation for years 2026 and beyond.

- **High Cost, Reduced Output:**
  - 10-Year Financing: This option would yield 60% fewer lots (only 2,404 developed vs. 6,092 projected), making it financially unviable.
  - 30-Year Financing: This option would produce 15% fewer lots (5,240 developed vs. 6,092 projected) while simultaneously incurring long-term debt.



MAHALO PIHA!

808-620-5900

dhhl.hawaii.gov

Hawaiian Homes Commission Meeting Packet
February 17 & 18, 2026
Hale Ponoʻī, Kapolei, Oahu

F ITEMS

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17-18, 2026

To: Chairperson and Members, Hawaiian Homes Commission

Through: Frank Joseph Hall, Administrator
Land Management Division

From: Andrew Sante, Land Agent
Land Management Division

Subject: Approval to Issue Seven (7) Non-Benefit Licenses for Telecommunications Sites Formerly Administered Under License Agreement No. 372 (Statewide)

RECOMMENDED MOTION/ACTION

Land Management Division requests the Hawaiian Homes Commission grant approval of the issuance of non-benefit licenses to the following carriers (See Exhibit "A") for the continued operation of existing tower facilities located on Hawaiian Home Lands formerly administered under License Agreement No. 372, which was terminated effective November 2025, subject to the following conditions:

1. The term shall be for two (2) years, or until execution of a longer-term disposition approved by the Hawaiian Homes Commission, whichever occurs first.

2. The non-benefit licenses shall be issued to the following former License Agreement No. 372 sublicensees, for the continued operation of existing telecommunications facilities at the sites identified below:

   - Crown Castle GT Company LLC – Humu'ula, Hawaii (TMK (3) 3-8-001:007)
   - Crown Castle GT Company LLC – Keaukaha, Hawaii (TMK (3) 2-1-013:149)
   - AT&T Corp. – Humu'ula, Hawaii (TMK (3) 3-8-001:007)
   - AT&T Corp. – Kamehame Ridge, Oahu (TMK (1) 4-1-014:015)
   - PBS Hawai'i – Keaukaha, Hawaii (TMK (3) 2-1-013:149)
   - Educational Media Foundation / K-LOVE, INC. – Keaukaha, Hawaii (TMK (3) 2-1-013:149)
   - T-Mobile – Anahola, Kauai (TMK (4) 4-8-015:022)

   Monthly license fees for each site shall be as set forth in **Exhibit "A."**

3. The Licensee is authorized to continue the operation, maintenance and replacement of existing telecommunications facilities and equipment located on the premises, including infrastructure supporting public safety and emergency communications. This authorization is limited to existing facilities and does not permit expansion or new uses.

4. No expansion of the facilities shall be permitted without the Licensor's prior approval and consent. Approval of any request for expansion shall be contingent upon the availability of

additional land and the willingness of the Licensee to pay additional rent in an amount acceptable to the Licensor.

5. The license may include a non-exclusive right of access over existing accessways for maintenance and utility purposes, subject to DHHL access requirements and coordination.

6. The Licensee shall, at its sole cost and expense, acquire and maintain insurance coverage in such types and amounts as deemed acceptable by the Department, including commercial general liability insurance naming the Department of Hawaiian Home Lands as additional insured, and shall provide proof of such insurance request thereafter.

7. The Licensee shall be responsible for maintaining its own telecommunications equipment in safe and operable condition.

8. Such other terms and conditions deemed prudent and reasonable by the Chairperson and/or the Hawaiian Homes Commission to protect the best interests of the trust and its beneficiaries.

DISCUSSION

Prior to the termination of License Agreement No. 372, multiple telecommunications carriers operated towers and related facilities on Hawaiian Home Lands pursuant to communication site use agreements with assignees of Waimana Enterprises, Inc. These agreements governed the carriers' continued presence and operation at the affected sites while Waimana served as the primary licensee under License Agreement No. 372.

License Agreement No. 372 was terminated effective November 2025. As a result, Waimana Enterprises, Inc. no longer holds any right or authority to administer, manage, or receive rents for telecommunications facilities located on Hawaiian Home Lands under that license. Notwithstanding the termination, the affected tower sites remain active and continue to support essential telecommunications services to surrounding communities, including infrastructure supporting public safety and emergency communications. Regular communication between the Department and the telecommunication carriers has been conducted to ensure uninterrupted services.

The proposed non-benefit licenses are intended to authorize the continued operation of existing telecommunications facilities by the carriers currently occupying the sites and to preserve terms similar to those reflected in the original communication site use agreements, including applicable rent, during the term of the licenses. The proposed licenses replace the prior administrative arrangement under Waimana and establish DHHL as the licensor for purposes of site administration and rent collection.

The proposed licenses are limited to the continued operation and maintenance of existing facilities and do not authorize expansion or new uses. They are intended to function as a transitional licensing mechanism while inspections, inventories, and longer-term disposition planning are completed. Approval of this item provides a clear licensing basis for continued service and rent collection while avoiding disruption to critical telecommunications infrastructure.

AUTHORIZATION

Section 10-4-22, Hawaii Administrative Rules, as amended

Section 207(c), Hawaiian Homes Commission Act, 1920, as amended

RECOMMENDATION

Land Management Division recommends approval of the requested motion/action as stated.

List of Exhibits:

- Exhibit A: TELECOMMUNICATIONS SITE RENT SCHEDULE

EXHIBIT A - TELECOMMUNICATIONS SITE RENT SCHEDULE

Telcom Site	TMK	Licensee	Monthly License Fee
Humuula, Hawaii	(3) 3-8-001:007	Crown Castle GT Company LLC	$2,650.00
Humuula, Hawaii	(3) 3-8-001:007	AT&T Corp.	$1,818.47
Keaukaha, Hawaii	(3) 2-1-013:149	PBS Hawai'i	$1,089.00
Keaukaha, Hawaii	(3) 2-1-013:149	Educational Media Foundation / K-LOVE, INC.	$1,983.75
Keaukaha, Hawaii	(3) 2-1-013:149	Crown Castle GT Company LLC	$3,636.00
Anahola, Kauai	(4) 4-8-015:022	T-Mobile	$2,567.64
Kamehame Ridge, Oahu	(1) 4-1-014:015	AT&T Corp.	$2,000.00

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17-18, 2026

To: Chairman and Members, Hawaiian Homes Commission

Through: Frank J. Hall, Administrator
Land Management Division

From: Kalei Young, Supervising Land Agent
Land Management Division

Subject: Approval to Issue Right of Entry Permit, Gentry Builders, LLC, Kalaeloa, Oahu
TMK No. (1) 9-1-013: 117 (por)

APPLICANT:
Gentry Builders, LLC (Permittee)

LOCATION:
Hawaiian Home Lands in Kalaeloa, Island of Oahu. TMK No. (1) 9-1-013: 117 (por)
(see exhibit "A" attached)

AREA:
Approximately 27,000.00 *sf* of land.

RECOMMENDED MOTION/ACTION:

That the Hawaiian Homes Commission (HHC) authorize the issuance of a Right of Entry Permit to Gentry Builders, LLC (Permittee) covering the subject area as previously identified and described to screen and stockpile material from a nearby parcel owned by the Permittee in Kalaeloa, Oahu. No other use shall be allowed without DHHL's prior written approval.

The approval to the issuance of this Right of Entry (ROE) shall be subject to the following conditions:

1. Permittee shall use the subject land to screen soil, and temporarily stockpile earth that will be used at their nearby construction site.

2. The monthly rental fee shall be **$2,970.00 per month**, or **$35,640.00 annually**. Permittor reserves the right to increase the permit fee upon renewal.

3. Permittee shall pay non-refundable processing and documentation fees totaling $175.00.

2. Remove abandoned vehicles near the site that Gentry will be using.

PLANNING AREA:

TMK No. TMK No. (1) 9-1-013: 117 (p), Kalaeloa, Oahu (See Exhibit "A")

LAND USE DESIGNATION:

Industrial– see Oahu Island Plan (2014) handout_page. 1 (See Exhibit "B")

CHARACTRER OF USE:

City & County Zoning Code I-2 Intensive Industrial District

CHAPTER 343 – ENVIRONMENTAL ASSESSMENT:

Triggers:

Use of State Lands

Exemption Class No. & Description:

Pursuant to the comprehensive exemption list approved by the Environmental Council on April 6, 2021 under Part 1, De Minimis Acitivites, Type 1

RECOMMENDATION:

Land Management Division respectfully requests approval of the motion as stated.

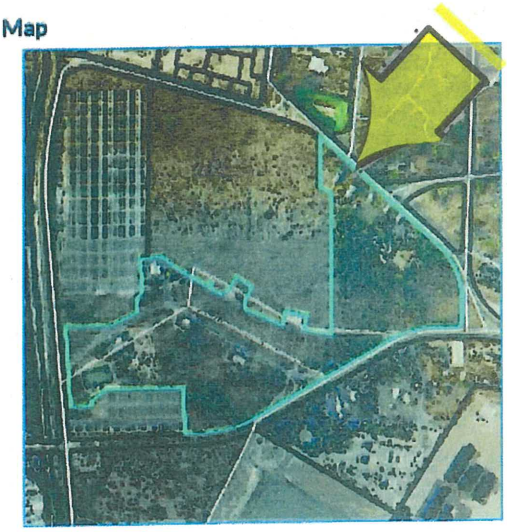
Pay online at www.rphnlpay.com
Other Payment Options Click Here

Please contact Treasury Division at bfstreasmailbox@honolulu.gov or (808) 768-3980 if you have questions on your balance.

How to calculate real property taxes

The Historical Tax Information section displays records for the last 10 years. For real property tax information inquiries over 10 years, please contact the Treasury division at bfstreasmailbox@honolulu.gov or (808)768-3980.

Map



No data available for the following modules: Condominium/Apartment Unit Information, Dedications, Appeal Information, Agricultural Assessment Information, Residential Improvement Information, Residential Additions, Commercial Improvement Information, Sketches, Other Building and Yard Improvements, Permit Information, Current Tax Bill Information, Historical Tax Information.

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EXHIBIT "A"

EXHIBIT "A"

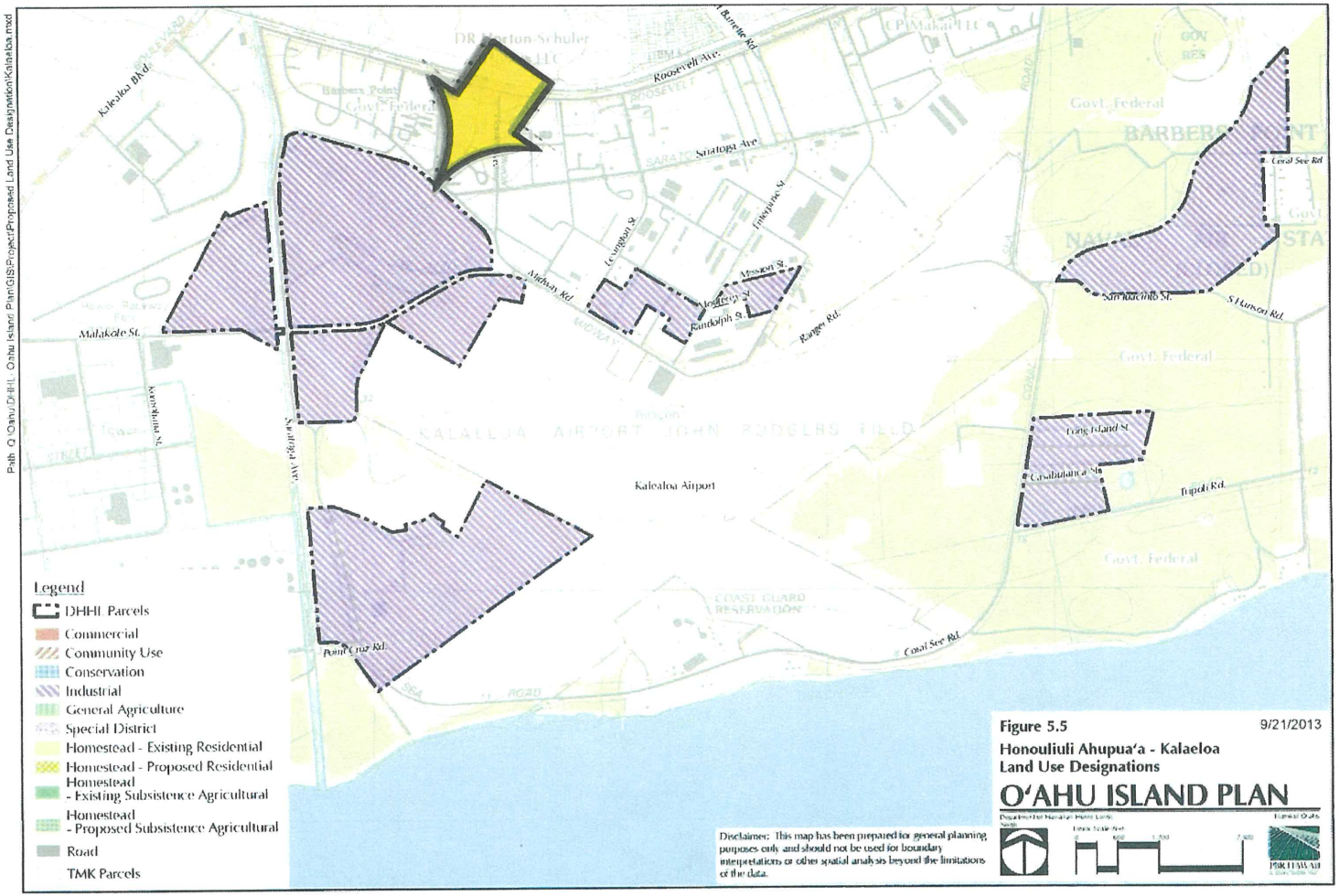


Figure 5-5 Honouliuli Ahupua'a- Kalaeloa Land Use Designations

EXHIBIT "B"

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

February17-18 2026

To: Chairperson and Members, Hawaiian Homes Commission

Thru: Frank Hall, Administrator
Land Management Division

From: Cheyenne Kapua, Land Agent
Land Management Division

Subject: Approval to Issue a General Lease to Keaukaha Panaewa Farmers Association, Keaukaha, S. Hilo, Island of Hawaii, TMK No. (3)2-1-025:091

APPLICANT:

Keaukaha Panaewa Farmers Association ("KPFA")

RECOMMENDED MOTION/ACTION:

That the Hawaiian Homes Commission (HHC) grant its approval to issue a sixty-five (65) year general lease to the Keaukaha Panaewa Farmers Association, ("KPFA") for use of approximately 10.63 acres of Hawaiian home lands located in Panaewa Island of Hawaii, further identified by TMK No. (3)2-1-025:091, for the purpose of development and implementation of the Pana'ewa Hub Multipurpose Center (Pana'ewa Hub) to provide a safe space & place for community events rentals, meetings, and keiki to kupuna programming/activities, and to also create a space for private and nonprofit partnerships that focus on the Pana'ewa homestead community, South Hilo homestead communities and other community stakeholders.

Approval of this issuance of General Lease is subject to the following terms & conditions:

1. LESSEE: Keaukaha Panaewa Farmers Association ("KPFA")

2. TERM: Sixty-five (65) year term that shall commence effectively on the date that the LEASE document is fully executed by the LESSEE and LESSOR.

3. LAND AREA: Approximately 10.63 acres of Hawaiian Home Lands in Keaukaha Hawaiian Homestead on the Island of Hawai'i, more specifically identified by TMK No. (3)2-1-025:091 as more specifically delineated in Exhibit "A"

4. LESSEE shall allow LESSOR to reserve a portion of the 10.63 acres for future extension of Maka'ala Street.

5. PERMITTED USE: Lessee shall use the premises for Community Use

6. ENVIRONMENTAL COMPLIANCE: LESSEE must complete the required HRS Chapter 343, Environment Assessment, and compliance with HRS Chapter 6E, Historic Preservation prior to any ground disturbance to the subject leased premises.

1. BASE RENT: The fee for the term of the lease shall be GRATIS.

7. LESSEE shall inform LESSOR immediately if it loses its tax-exempt status or if any revenue generated from activities on the premises is deemed subject to taxation.

8. LESSOR shall have the right to terminate the lease, or any portion of it, if LESSEE loses its tax-exempt status or is determined to be conducting unrelated trade or business activities on the Premises.

9. As part of LESSOR's regular review of LESSEE activities, LESSEE shall submit an ANNUAL PROGRESS REPORT to LESSOR each year on the anniversary date of lease commencement. The ANNUAL PROGRESS REPORT shall document LESSEE'S activities of the previous lease year and shall include but not be limited to the following:

    a. Pre-construction and construction progress report that provides a description of preconstruction and construction milestones completed in the respective year of the ANNUAL PROGRESS REPORT. LESSEE shall also provide LESSOR with an anticipated schedule of completion of pre-construction and construction milestones for the following lease year.

    b. Upon completion of the construction of the infrastructure and facilities necessary to implement LESSEE's programs, a narrative program report that describes LESSEE's progress on achieving its charitable purpose as articulated in its IRS 1023 Form shall be included in the ANNUAL PROGRESS REPORT. LESSEE shall work with LESSOR to identify specific reporting requirements and applicable metrics to monitor progress towards achieving the LESSEE's charitable purpose. Minimum reporting requirements shall include number of beneficiaries served and a description of how LESSEE has been serving beneficiaries.

    c. A financial report that includes standard annual financial statements and the LESSEE's IRS 990 Form for the preceding fiscal year, as well as a budget for the following lease year, shall be included in the ANNUAL PROGRESS REPORT.

    d. Letters from the board of Panaewa and the boards of other current or future beneficiary membership organizations in the Panaewa region indicating whether the LESSEE has satisfactorily provided programs and services to its respective organization's members in the respective year of the ANNUAL PROGRESS REPORT.

10. No revenue generated by the LESSEE on the Premises shall be used to pay dividends or make payments, beyond reasonable salary or contract payments, to any individual or organization. No remuneration shall be paid to any officer or director of "LESSEE" or by any third party, sublessee or beneficiary membership organizations utilizing any portion of the premises.

11. LESSEE shall at no time own less than 51% of leasehold interest in all facilities located on the Premises.

12. LESSEE may only sublease the premises with the consent of the LESSOR, and the LESSOR shall have the right to review and approve rent to be charged to the proposed sub-lessee and revise the rent charged to the LESSEE based on the rental rate charged to the proposed sublessee.

13. Any subletting of the premises initiated by the LESSEE shall include a condition in which the sublease will be terminated upon the termination of this lease agreement.

14. LESSOR shall have the right to withdraw portions of the premises from this lease agreement if, after an 18-year period, such portions of the premises are not being used by the LESSEE for purposes permitted by the lease.

15. Upon review of LESSEE'S activities, if the LESSOR determines that the LESSEE'S activities are not adequately servicing DHHL beneficiaries, LESSOR shall have the right to charge LESSEE rent in an amount equal to the fair market rental of the property. Fair market rent shall be determined by an independent appraiser selected by the LESSOR. LESSOR shall also reserve the right to place this lease on a "probationary status" if upon review of LESSEE's activities, the LESSOR determines that the LESSEE'S activities are not adequately servicing DHHL beneficiaries. If after one year on "probation", LESSEE does not demonstrate improvement in providing adequate services to DHHL beneficiaries, then LESSOR reserves the right to terminate this lease.

Standard General Lease Terms and Conditions

16. Pursuant to HHCA § 204(a)(2), Lessor shall have the right to withdraw the premises, or any portion thereof, from the lease at any time for the purposes of the Hawaiian Homes Commission Act.

17. LESSEE shall comply with all federal, state and county regulations or requirements regarding environmental issues and the safe handling and disposal of toxic or hazardous materials. Upon termination of this lease, LESSEE shall be responsible for environmental cleanup of any contamination or hazardous materials brought onto the site or caused by LESSEE'S activities on the site.

    LESSEE shall pay all property taxes that the LESSOR or LESSEE may be assessed during the term of this lease. Failure of the LESSEE to pay all property taxes in a timely manner shall trigger the termination of this lease.

18. LESSEE shall maintain commercial property insurance, general liability insurance, worker's compensation and employers' liability insurance, and other types of insurance as may be required by LESSOR. LESSOR shall be named as an additional insured on any required insurance policy. Types and amounts of required coverage shall be specified in the general lease document.

19. The non-refundable processing ($200.00) and documentation ($75.00) fee of $275.00 shall be waived.

20. LESSEE shall comply with all federal, state and county statutes, regulations, codes, and ordinances applicable to LESSEE'S use of the premises.

21. LESSEE agrees to pay for all the costs of establishing utility services for the property and pay for all consumption of utilities on the Premises, should LESSEE'S use require such utility services.

22. LESSEE shall obtain LESSOR'S prior approval for any alteration of the topography except surface grubbing to remove vegetation. LESSEE shall be responsible for any flooding or erosion caused by LESSEE'S use or alteration of the property.

23. Prior to vacating the Premises, LESSEE shall remove, at LESSEE'S sole cost, all of the LESSEE'S equipment, constructed improvements, trash, goods and materials and restore the area to a condition as good as or better than that which existed prior to LESSEE'S use.

24. LESSEE shall also notify LESSOR to do a site inspection when LESSEE has completed removal.

25. LESSEE shall always keep the Premises neat and clean and shall not allow its trash to spread to other surrounding areas.

26. LESSEE shall be responsible for the security of the Premises and all of LESSEE'S personal property thereon.

27. The lease document is subject to the approval of the State of Hawaii Department of Attorney General.

28. Other terms and conditions deemed prudent by the Hawaiian Homes Commission may be added.

DISCUSSION:

KPFA is a Hawaiian Homes Commission Act Beneficiary Association controlled by beneficiaries, as defined by the Hawaiian Home Land Recovery Act, 109 §537, and is registered with the U.S. Department of the Interior, 43 CFR §§47.10 and 48.6. KPFA is also recognized by the State of Hawai'i Department of Hawaiian Home Lands as the representative organization for DHHL beneficiaries and their 'ohana on Pana'ewa Agricultural Hawaiian Home Land Trust Lands.

In July 2014, KPFA was granted Right of Entry Permit No. 482 for a one-acre Farmers Market and community area. In 2023, KPFA the Right of Entry Permit was amended to include 10.6 acres. The site is called the Pana'ewa Hub.

Pursuant to the attached Non-Profit Organization Application for Long-Term Use of DHHL Lands, dated January 22, 2026 (Exhibit "B"), KPFA is requesting a long-term General Lease for the development and implementation of the Pana'ewa Hub Multipurpose Center ("Pana'ewa Hub"). The Pana'ewa Hub will provide a safe and accessible space for community event rentals, meetings, and programming and activities serving keiki through kūpuna. In addition, it will create opportunities for private and nonprofit partnerships that focus on the Pana'ewa Homestead Community, South Hilo Homestead Communities, and other community stakeholders.

Panaewa Regional Plan (2017)

This project is a Priority Project in the Pana'ewa Regional Plan

LAND USE DESIGNATION:

Commercial Use, Hawaii Island Plan (May 2002), Figure 4 – East Hawaii – Hawaii Land Inventory

CURRENT STATUS:

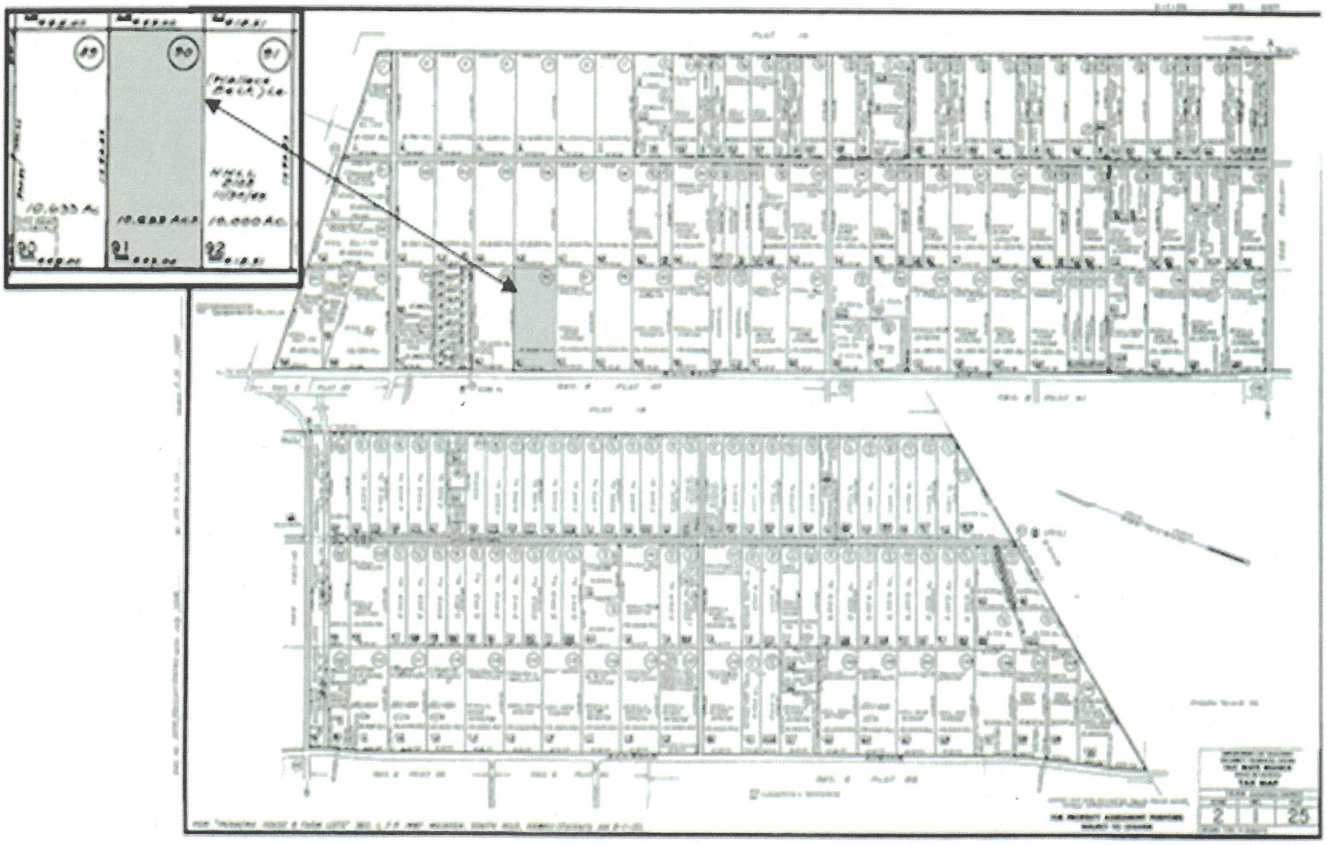
Portion of parcel used by KPCA for its Farmers Market and Agricultural use purposes

AUTHORIZATION

§171-43.1 of the Hawaii Revised Statutes, as amended, titled Lease to eleemosynary organizations, authorizes the commission to lease, at nominal consideration or any rental amount the commission deems appropriate; by direct negotiation and without recourse to the public auction, public lands to an eleemosynary organization which has been certified to be tax exempt under sections 501(c)1 or 501 (c)3 of the Internal Revenue Code of 1986, as amended; and on such other terms and conditions as the commission may determine. The lands shall be used by such eleemosynary organizations for the purposes which their charter was issued and for which they were certified by the Internal Revenue Service.

RECOMMENDATION

Land Management Division respectfully recommends approval of the requested motion as stated.



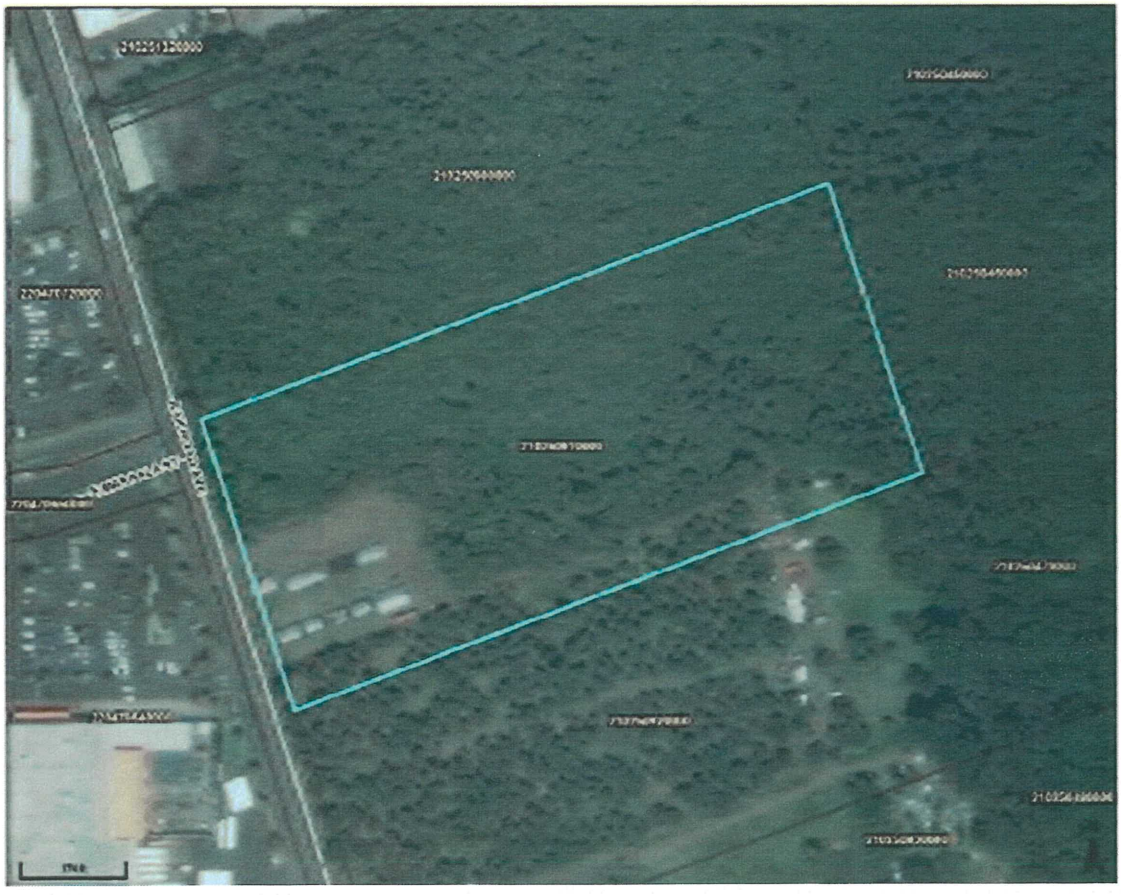


EXHIBIT "A"

ITEM NO. F-3
Exhibit "B"

Non-Profit Organization Application for Long-Term Use of DHHL Lands

Department of Hawaiian Home Lands
NON-PROFIT ORGANIZATION APPLICATION FOR LONG-TERM USE OF DHHL LANDS
Application
INSTRUCTIONS

PURPOSE OF APPLICATION

The Hawaiian Homes Commission Act (HHCA) Section 204(2) and 207(c) authorizes DHHL to dispose of lands for non-homesteading purposes on the same terms, conditions, restrictions, and uses applicable to the disposition of public lands as provided in Hawaii Revised Statutes (HRS) Chapter 171. HRS 171-43.1 authorizes DHHL to dispose of lands to eleemosynary organizations by direct negotiation without requiring a competitive solicitation process.

Per HRS 171-43.1, eleemosynary organizations must be certified to be tax exempt under sections 501(c)(1) or 501(c)(3) of the Internal Revenue Code of 1986, as amended. The lands shall be used by such eleemosynary organizations for the purposes for which their charter was issued and for which they were certified by the Internal Revenue Service.

This application is meant for IRS 501(c)(1) or IRS(501)(c)(3) non-profit organizations that are interested in long-term utilization of DHHL land for the purposes of providing programs and services to DHHL beneficiaries to further their rehabilitation and well-being.

This application is NOT meant for:

- For-profit entities and for-profit purposes. For-profit proposals must go through a different process that requires a competitive solicitation process as outlined in HRS Chapter 171.
- Individual use of Hawaiian Home Lands
- Organizations and individuals that are interested in use or access of Hawaiian Home Lands for less than 30-days (short-term use). Interested organizations or individuals interested in short-term use of Hawaiian Home Lands should contact the DHHL Land Management Division for a Limited Right-of-Entry Permit application.

APPLICATION PROCESS

There are two main parts to this application process: (1) Completion of Pre-Application Form and (2) Application.

Part I -- Pre-Application Form

Pre-application intended to minimize risk of investing significant time and resources for the applicant and give DHHL a better idea about proposal and applicant potential capacity to implement.

The Pre-Application Project Proposal Form also ensures that the proposed area of use is consistent with DHHL Island Plan Land Use Designations. DHHL Island Plans can be found at: http://dhhl.hawaii.gov/po/island-plans/ DHHL will **only** be accepting proposals for its lands that

are designated for (1) Community Use, (2) General Agriculture, (3) Conservation, or (4) Special District.

The Pre-Application Project Proposal Form will also help DHHL determine whether the proposed project requires a DHHL beneficiary consultation meeting. Project proposals that are identified as priority projects in DHHL Regional Plans do **not** require additional DHHL beneficiary consultation.

NOTE TO POTENTIAL APPLICANTS: DHHL funding and staff technical assistance is NOT guaranteed. DHHL might consider providing funding assistance to projects that can attract other sources of funding. Projects that rely primarily on DHHL resources (other than land) for implementation will not be considered.

Submitting the Pre-Application Packet

There are questions on the Pre-Application Form that can be filled out on the form. However, the majority of the questions on the form will require typed written responses on a separate page. When answering questions on a separate page, please indicate the question number and question you are responding to prior to your written response.

Overview of the Pre-Application Form

There are four sections to the Pre-Application Form:

1. **Applicant Information** – This section helps DHHL identify **who** the applicant organization is and the applicant organization's history and experience with providing programs and services to DHHL beneficiaries.

2. **Project Information** – This section helps DHHL identify **what** the project is, **why** the project is needed, and **how** it will benefit DHHL and its beneficiaries. The section also asks whether the proposed project is a DHHL Regional Plan Priority Project to determine beneficiary support for the project. If it is not a DHHL Regional Plan Priority Project, additional beneficiary consultation is needed to determine beneficiary support for the project.

3. **Project Location** – This section helps DHHL identify **where** the project is located. DHHL will make determinations whether the proposed project is consistent with its Island Plan Land Use Designation and whether the proposed project is a compatible use with the surrounding area.

4. **Timeframe** – This section helps DHHL identify **when** and **how long** the applicant's proposed project will take to implement. More importantly, it helps DHHL and the applicant to identify major benchmarks and phases in the proposed project.

Department of Hawaiian Home Lands
NON-PROFIT ORGANIZATION APPLICATION FOR LONG-TERM USE OF DHHL LANDS
Application

A completed Pre-Application Packet must include:

- Signed Application Instructions Form (See the bottom of this form)
- Filled-out and signed Pre-Application Form
- Enclosed with the filled-out and signed Pre-Application Form, on separate pages, applicant responses to the information requested on the Pre-Application Form.

Please submit your pre-application packet either via mail to:

DHHL Land Management Division
91-5420 Kapolei Parkway
Kapolei, HI 96707

Part II --APPLICATION

After DHHL review of a completed Pre-Application Project Proposal and positive recommendation by staff is made, and if comments from beneficiary consultation meetings are positive, staff will make a recommendation to the Hawaiian Homes Commission to approve a Right-of-Entry Permit for the applicant to access DHHL land to conduct further due diligence work. Terms and conditions of the ROE permit will also be negotiated with the applicant at this time. The due diligence work is project dependent but typically consists of:

- Master Plan
- Business Plan
- HRS Chapter 343 Environmental Assessment or Environmental Impact Statement

NOTE TO POTENTIAL APPLICANTS: DHHL funding and staff technical assistance is NOT guaranteed to complete any of the above due diligence work. DHHL might consider providing funding assistance to projects that can attract other sources of funding. Projects that rely primarily on DHHL resources (other than land) for implementation will not be considered.

Department of Hawaiian Home Lands
NON-PROFIT ORGANIZATION APPLICATION FOR LONG-TERM USE OF DHHL LANDS
Application

ISSUANCE OF A LONG-TERM DISPOSITION (License or General Lease)

After successful completion of the due diligence studies, DHHL will negotiate terms and conditions of a long-term disposition with the applicant and make a recommendation to the HHC for approval of a long-term disposition. Please note, each disposition will most likely include a set of special conditions that must be fulfilled by the applicant. Special conditions will be unique for each project and will be negotiated between DHHL and the applicant.

In addition to special conditions, **standard conditions** that will be included in every disposition instrument include:

- Requiring the licensee or lessee to possess a valid limited liability insurance policy that can cover up to $1 million in damages to DHHL property or persons that are accidently injured on DHHL land;
- Requiring the licensee or lessee to comply with all applicable federal, state, and county laws;
- Realistic project milestones that demonstrate the growing capacity of the licensee or lessee; this may include limiting the size of the area that was originally requested by the applicant in the pre-application form to a smaller more manageable size in the first several years of the license or lease and gradually increasing the size of the area in the license or lease over time as project milestones are reached.
- Requiring the licensee or lessee to demonstrate that it is proactively making its best effort to recruit more DHHL beneficiaries to participate in the programs and services being provided on the DHHL property for which it has a license or lease to.

DHHL has a fiduciary responsibility to ensure that the applicant's use of DHHL property does not harm DHHL's ability to help other current and future beneficiaries. Please note that the special conditions and standard conditions that are included in dispositions are meant to mitigate harm to the DHHL Trust from unforeseen and/or unfortunate incidences that may occur on the licensed or leased property and ensure that all interested DHHL beneficiaries may participate in programs or services being offered through the use of DHHL property by the applicant.

Department of Hawaiian Home Lands
NON-PROFIT ORGANIZATION APPLICATION FOR LONG-TERM USE OF DHHL LANDS
Application

APPLICATION PROCESS ESTIMATED TIMEFRAME

Application Step	Timeframe	Responsible Entity
1. DHHL receives pre-application packet and notifies applicant if pre-application packet is complete	Up to 30 days	LMD
2. DHHL reviews completed project proposal and schedules review meeting with applicant to review questions, concerns, staff may have	Up to 90 days	PO & LMD
3. DHHL schedules beneficiary consultation meeting if project is not a regional plan priority project. The applicant's pre-application will be placed on the DHHL Land Management Division webpage for public review.	Meeting scheduled 3 months before on island HHC meeting. For example, if you are applying for DHHL land on Kauai, the beneficiary consultation meeting would be scheduled 3 months before the HHC meeting on Kauai. HHC meeting calendar go to: http://dhhl.hawaii.gov/hhc/	PO & Applicant
4. HHC ROE approval for due diligence	3 months after beneficiary consultation meeting	LMD & HHC
5. Conduct due diligence studies*	12-24 months	Applicant*
6. HHC approves FONSI	TBD	PO & HHC
7. HHC approves long-term disposition	TBD	LMD & HHC
8. Monitoring and reporting	TBD	Applicant & PO & LMD

[To be signed by person identified in Pre-Application Form Question #1] I hereby acknowledge that I have read and understand the above application instructions. I understand that this form is being submitted electronically and my typed name on the signature line will qualify as my signature for purposes of the above certification.

Signature: Maile Lu'uwai
Printed Name: Maile Lu'uwai
Organization: Keaukaha Pana'ewa Farmers Association

Date: 01/22/2026
Title: President

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

Department of Hawaiian Home Lands

NON-PROFIT ORGANIZATION APPLICATION FOR LONG-TERM USE OF DHHL LANDS

PRE-APPLICATION FORM

This form should be used by non-profit organizations who are interested in securing a long-term license agreement for the use of DHHL lands to better serve native Hawaiian beneficiaries, their families, and the homestead community. Please review the Pre-Application Guidelines and Instructions document before you fill out this form because it provides detailed instructions and it explains all the steps involved in securing a long-term license agreement.

APPLICANT INFORMATION

Name of Organization: Keaukaha Pana'ewa Community Alliance
Date of Incorporation: Nov. 16, 2012 IRS Tax-Exempt #: _____

1. Please identify one individual who will be the point of contact for this application:
   Contact Name: Maile Lu'uwai Title: President, Keaukaha Pana'ewa Farmers Association
   Email Address: maile@luuwailaw.com Phone: 808-280-0083

2. What is the mission/vision of your organization?
   [Please provide your typed responses on a separate page]

3. Please describe the history of your organization.
   [Please provide your typed responses on a separate page]

4. How has your organization previously served beneficiaries of the Hawaiian Homes Commission Act?
   [Please provide your typed responses on a separate page]

5. Describe past experiences, projects, or programs in the last five years that illustrate consistency with your organization's mission/vision statement.
   [Please provide your typed responses on a separate page]

6. Please provide references (name and contact information) and/or Letters of Support for this application for non-homestead use of Hawaiian Home Lands.
   [Please provide your typed responses on a separate page]

7. If you are developing your project in partnership with another organization(s), please describe the roles and responsibilities of each organization during project development, implementation, and long-term management.
   [Please provide your typed responses on a separate page]

PROJECT INFORMATION

8. Describe the project. What are your project goals and objectives? What kinds of activities, programs, and/or services will you provide? Describe the need for your project and how it will benefit the DHHL trust, homestead lessees, and/or waitlist applicants.
[Please provide your typed responses on a separate page]

9. Please share your current thinking about the following project elements:
   a. The planning process and your efforts to include beneficiaries.
   b. Beneficiary involvement throughout the duration of the project.
   c. Design and construction costs for major improvements (if any).
   d. Long-term management and operation of project facilities and the requested land area.
   e. Long-term maintenance and repairs.
   [Please provide your typed responses on a separate page]

10. Is the proposed project a Regional Plan Priority Project? YES O NO □

11. How do you intend to secure funding and other needed resources for the project?
[Please provide your typed responses on a separate page]

PROJECT LOCATION

12. Identify the parcel(s) of land your organization is requesting.
Tax Map Key Number(s): _____ Acres: _____
Homestead Area: _____ Regional Plan Area: _____
Island Plan Land Use Designation: *check all that apply below*
Community Use □ General Agriculture □ Conservation □ Special District □ Other O

13. Please attach a map that marks the boundaries of the area of land you are requesting. Please also identify on a separate map the conceptual layout and siting of proposed uses.

14. What are the existing uses in the surrounding area? Please describe how your proposed use is consistent with the existing surrounding uses.
[Please provide your typed responses on a separate page]

15. Why do you want to implement your project at this site? Describe the characteristics of the site and surrounding area that make it an ideal location for your project.
[Please provide your typed responses on a separate page]

TIMEFRAME

16. What is the general timeframe for implementing the project (estimated years)? Please identify major benchmarks and phases.
[Please provide your typed responses on a separate page]

I hereby acknowledge that I have read this application and certify that the information provided in our responses are correct. I understand that this form is being submitted electronically and my typed name on the signature line will qualify as my signature for purposes of the above certification.

Signature: Maile Lu'uwai Date: 01/22/2026
Printed Name: Maile Lu'uwai Title: President
Organization: Keaukaha Pana'ewa Farmers Association

NON-PROFIT ORGANIZATION APPLICATION FOR LONG-TERM USE OF DHHL LANDS

Name of Organization: Keaukaha Pana'ewa Farmers Association

APPLICANT INFORMATION

1. Please identify one individual who will be the point of contact for this application:

Contact Name: Maile Lu'uwai Title: President, Keaukaha Pana'ewa Farmers Association
Email Address: maileluuwai@gmail.com Phone: 808.280.0083

2. What is the mission/vision of your organization?

Keaukaha Pana'ewa Farmers Association (KPFA): KPFA's mission is to support a sustainable and resilient Native Hawaiian community in the Keaukaha Pana'ewa region that is inclusive of the Hawai'i Island extended community and to provide programs and services for 'ohana enrichment, economic sustainability, food security, and land management practices adapted to our island environment that encompasses traditional Hawaiian values, promotes self-sufficiency, respect for the 'aina and strengthens cultural identity.

3. Please describe the history of your organization.

Located in South Hilo, the Keaukaha Hawaiian Homestead was the first residential homestead developed on Hawai'i Island in 1921.

The first agricultural land awards for the Pana'ewa Agricultural Homestead were awarded to fifty Keaukaha native Hawaiians, who were forced to relinquish their homes and relocate due to the construction of the Hilo International Airport. In the 1970's, the Keaukaha Pana'ewa Farmers Association was established to serve Keaukaha Pana'ewa Homestead lessees on DHHL agricultural lands in Pana'ewa.

KPFA is a Hawaiian Homes Commission Act Beneficiary Association controlled by beneficiaries, as defined by the Hawaiian Home Land Recovery Act, 109 §537, and is registered with the U.S. Department of the Interior, 43 CFR §§47.10 and 48.6. KPFA is also recognized by the State of Hawai'i Department of Hawaiian Home Lands as the representative organization for DHHL beneficiaries and their 'ohana on Pana'ewa Agricultural Hawaiian Home Land Trust Lands.

In July 2014, KPFA was granted Right of Entry Permit No. 482 for a one-acre Farmers Market and community area. In 2020, KPFA the Right of Entry Permit was amended to include 10.6 acres. The site is called the Pana'ewa Hub.

4. How has your organization previously served beneficiaries of the Hawaiian Homes Commission Act (HCCA)?

KPFA currently manages and provides programs/services at the Pana'ewa Hub, which includes a Farmer's Market, and a community and workshop meeting areas, and Kea'ahuli O Pana'ewa, a two-acre Polyforestry project. Programs, services and resources are support by grants and established partnerships.

5. Describe past experiences, projects, or programs in the last five years that illustrate consistency with your organization's mission/vision statement.

KPFA programs and services illustrate consistency with KPFA's mission and vision, *see* Attachment- KPFA Programs and Services 2020-2025.

6. Please provide references (name and contact information) and/or Letters of Support for this application for non-homestead use of Hawaiian Home Lands.

Not applicable. This application is for homestead community use of Hawaiian Home Lands.

7. If you are developing your project in partnership with another organization(s), please describe the roles and responsibilities of each organization during project development, implementation, and long-term management.

KPFA is developing this project via its 501c3 fiscal sponsor Homestead Community Development Corporation. KPFA's attorney is submitting KPFA's 501c3 application to the IRS is March 2026. KPFA should receive the 501c3 IRS designation by October 2027.

PROJECT INFORMATION

8. Describe the project. What are your project goals and objectives? What kinds of activities, programs, and/or services will you provide? Describe the need for your project and how it will benefit the DHHL trust, homestead lessees, and/or waitlist applicants.

KPFA is building the Pana'ewa Hub Multipurpose Center (Pana'ewa Hub) on the 10.63-acre parcel on Hawaiian Home Lands, identified as Tax Map Key (3) 2-1-025:091.

The Pana'ewa Agricultural Homestead community does not have a community owned and driven facility. The only community facility in Pana'ewa is located in the residential homestead and is own and managed by the County of Hawai'i. As a result, county programs and services take precedence over homestead needs and restrictive county policies to not provide the flexibility to provide agricultural and other 'aina based programs.

The Pana'ewa Hub is aligned with KPFA's Conceptual Master Plan (Master Plan) that was completed with consultant G70 in October 2021. In 2025, the concept plan was updated by architect Blaise Caldeira of Hilo Direct Consultants and has been updated again to accommodate DHHL's plan for a four lane Maka'ala road extension on the makai site boundary.

The Environment Assessment/FONSI (2023, *see the attached publication notice*), Historic Preservation Review (2025), Topographic & Boundary Map (2025, *attached*) have been completed. The Pana'ewa Hub architectural and engineering schematic plans will be completed in March 2026. The Pana'ewa Hub architectural and engineering schematic plans and construction documents are estimated to be completed by August-September 2026.

The Pana'ewa Hub will consist of a pavilions connected by a lanai deck. The pavilions will be designed as flexible spaces that can accommodate a range of programs. A large pavilion will be used for event rentals, workshops and education classes. A service kitchen and restrooms with showers will be provided under an additional pavilion. The grounds surrounding the hub will be utilized for parking, outdoor rental event spaces, a certified imu and innovative agricultural

demonstration areas.

The Pana'ewa Hub purpose is twofold. First, the Pana'ewa Hub will be the homestead communities own 'space and place'; a community serving facility with a service kitchen and facilities for keiki to kūpuna programming; technology education, agricultural training; and include an agricultural demonstration area to support 'ohana enrichment, community economic sustainability, and economic food security.

Second, the Pana'ewa Hub, in its design and capacity, will be activated to support the community, coordinate communication and resources, and ensure that physical and social needs can be met in preparation of, during, and post-recovery of a natural disaster or pandemic related event. The primary resources will include water, food security, off-grid energy production, access to clean drinking water, emergency communication technologies, storage for emergency equipment, and training for disaster preparedness and response.

The primary goals for the Pana'ewa Hub are:

- Provide a safe space & place for community events rentals, meetings, and keiki to kupuna programming/ activities;
- Provide space for private and nonprofit partnerships that focus on the Pana'ewa homestead community, South Hilo homestead communities and other community stakeholders; and
- Be a financially self-sustaining facility.

9. Please share your current thinking about the following project elements:

a. The planning process and your efforts to include beneficiaries.

In 2015, DHHL invited a small select group of KPFA community leaders to participate in DHHL's Pana'ewa Regional Planning process. The group selected the Agricultural Capacity Building-Marketing and Training Center as its regional plan priority project.

Since the planning process did not include input from the broader Pana'ewa Ag community, KPFA invited KPFA agricultural beneficiaries and their 'ohana to two all-day strategic planning workshops in 2018 and 2019. Via these strategic planning workshops, the community refined the marketing/training center concept into a multipurpose community facility, the Pana'ewa Hub. The Pana'ewa Hub facility was selected as the #1 strategic priority by KPFA community members at the final strategic planning workshop.

In 2020, KPFA secured G70 to lead KPFA beneficiary visioning workshops to create a Design Charette for the Pana'ewa Hub. The Design Charette was completed in November 2020.

In 2021, KPFA secured G70 to lead KPFA beneficiary workshops and develop a Conceptual Master Plan based on KPFA beneficiary driven strategic priorities and incorporating the Design Charette. The Master Plan, a 299-page document, was completed in October 2021. A summary of the Master Plan is attached.

G70 to completed the Environmental Assessment (343 HRS) which was approved and published in July 2023. G70 also completed the Historic Preservation Review (6E HRS) in 2025.

Pana'ewa Ag beneficiaries received formal updates on the Pana'ewa Hub progress throughout this planning period via email and in person community meetings.

KPFA hired Hilo Direct Consultants (HDC) and its subcontractor Engineering Partners Inc (EPI) to complete an updated Pana'ewa Hub concept plan and the Topographic & Boundary Map for the 10.6 acre site. Both projects were completed in 2025. The Pana'ewa Hub concept plan was revised in January 2026 to accommodate DHHL's proposed Maka'ala Street four lane extension.

HDC and EPI will complete architectural/engineering schematic plans by March 2026 and architectural/engineering plans and construction documents by August-September 2026.

b. Beneficiary involvement throughout the duration of the project.

See above.

c. Design and construction costs for major improvements.

HDC provided an updated conceptual design and shared with beneficiaries at the KPFA July 2025 Community Meeting. To accommodate, DHHL's proposed Maka'ala Street four lane extension, HDC revised the Pana'ewa Hub conceptual plan and building layout.

In August 2025, J.Uno & Associates completed a cost estimate for the Pana'ewa Hub based on the conceptual plan. The estimated cost for the civil site and facilities is $8,925,000. The cost estimate includes direct markups for escalation to midpoint of construction and design contingency. The cost estimate also includes prime contractor markups, bonds, insurance and G.E.T. taxes.

d. Long-term management and operation of project facilities and the requested land area.

The Pana'ewa Hub Business Plan (Business Plan) provides information on the long term management of the project facilities which also includes the requested maintenance of the requested land area. Future plans includes an equipment warehouse and high tech grow facility. The Business Plan is provided as a separate attachment. KPFA asks that the Business Plan be reviewed by DHHL internally and not be provided to the HHC as a public document.

e. Long-term maintenance and repairs.

The Business Plan includes annual revenue set aside for long-term maintenance and repairs.

10. Is the proposed project a Regional Plan Priority Project? YES ☒ NO ☐

11. How do you intend to secure funding and other needed resources for the project?

KPFA have secured funding to complete the architectural/engineering plans and construction documents. KPFA has also secure 5.5M in construction funds. In January 2026, KPFA submitted a 1M construction grant. In March, KPFA will be submitting another 1M construction grant. We also anticipate a 2M line item in the State House budget.

12. Identify the parcel(s) of land your organization is requesting.

Tax Map Key Number(s): (3) 2-1-025:091
Acres: 10.63
Homestead Area: Pana'ewa
Regional Plan Area: Pana'ewa
Island Plan Land Use Designation: *check all that apply below*

Community Use □General Agriculture □ Conservation □ Special District □Other 0

Tax Map Key (TMK)	(3) 2-1-025:091
Ahupua'a	Waiākea
Island	Hawai'i Island
State Land Use District	Urban
Hawai'i County Zoning	MG-1a (General Industrial District)
Department of Hawaiian Home Lands(DHHL) Land Use Classification	Commercial
Land Use Pattern Allocation Guide(LUPAG)	Urban Expansion
Topography	Relatively flat, undulating ground with anelevation change of 6 ft
Rainfall	About 140 inches per year
Soils	Papai extremely cobbly highly decomposedplant material, 2 to 10 percent slopes
Land Study Bureau (LSB)	No Classification
Agricultural Lands of Importance to theState of Hawai'i (ALISH)	**Prime**
Flood Hazard	Zone X, minimal flood hazard
Sea Level Rise Exposure Area (SLR-XA)	This parcel is located outside of the SLR-XA
Tsunami Evacuation Zone	This parcel is located outside of the tsunami evacuation zone
Lava Hazard Zone	2

13. Please attach a map that marks the boundaries of the area of land you are requesting. Please also identify on a separate map the conceptual layout and siting of proposed uses.

See the attached Topographic & Boundary Map completed by Engineering Partners, Inc. in March 2025.

14. What are the existing uses in the surrounding area? Please describe how your proposed use is consistent with the existing surrounding uses.

The surrounding area includes commercial uses and the adjacent property is a homestead agricultural lot.

The project is consistent with surrounding uses. The Pana'ewa Hub is located within the DHHL Commercial district, which is designated for retail, business, and commercial activities. This allows for revenue generation to the DHHL Trust and/or Homestead Community Associations. Mixed uses are allowed. Permitted uses and minimum infrastructure on DHHL Commercial land must meet county standards. The programming is also applicable to Hawai'i State and County

zoning. State Urban districts include activities or uses as provided by ordinances or regulations of the respective county. Likewise, permitted uses in the County MG-1a district include, but are not limited to: agricultural products processing, aquaculture, broadcasting stations, catering establishments, commercial parking lots, community buildings, food manufacturing, and greenhouses.

15. Why do you want to implement your project at this site? Describe the characteristics of the site and surrounding area that make it an ideal location for your project.

In 2012, this site was identified by KPFA as an exceptional site to locate KPFA's Farmers Market and for community workshops and activities. Via KPFA community driven strategic planning, the community refined the facility concept in the Pana'ewa Regional Plan and identified the Pana'ewa Hub multipurpose center as its #1 priority. As stated previously, this site is in a prime location for the community center and for revenue generation which will provide financial sustainability for the Pana'ewa Hub.

16. What is the general timeframe for implementing the project (estimated years)? Please identify major benchmarks and phases.

	Estimated Timeframe
March 2026	Architectural and Engineering Schematics
August-Sept 2026	Architectural and Engineering Plans/Construction Documents
Sept-Oct 2026	Prepare Bid Package & Procurement Process
Nov-Dec 2026	Submit construction documents for permits
January-Feb 2027	Select Bids & Execute Contracts
Feb-March 2027	Site Preparation
March 2027 to Dec 2028	Construction
Jan-March 2029	Post Construction – landscaping, facility equipment and furniture

THE FOLLOWING DOCUMENTS ARE ATTACHED TO THIS APPLICATION:

- KPFA Programs/Services 2020-2025
- Master Plan Summary
- Final EA FONSI
- Site Topographic & Boundary Survey

THE FOLLOWING DOCUMENT HAS BEEN SUBMITTED SEPARATELY AND IS NOT FOR PUBLIC DISTRIBUTION:

- Pana'ewa Hub Business Plan

KPFA PROGRAMS/SERVICES 2020-2025

YEAR	PARTICIPANTS	NATIVE HAWAIIAN	DHHL LEESEE	VOLUNTEERS	VOLUNTEER HRS
2020	3627	2924	2616	286	986
2021	698	470	372	83	864
2022	908	619	502	134	245
2023	524	277	284	173	450
*2024	246	124	114		
*2025	145	110	101		
TOTAL	6148	4524	3989	676	2545

* 2024-2025 participant numbers are unduplicated. KPFA did not have a Project Director that tracked our volunteers and volunteer hours.

2020
Pana'ewa Hub Farmers Market (1 day per wk.), Hydroponics Two 18-Week Workshops, Distribution of Keiki Care Packs, COVID Meal Distribution & Deliveries (2X per wk.), COVID Hygiene Bag Distribution (face masks, hand sanitizer, PPE), Earth Day Community Plant Giveaway, Show Aloha Challenge, Ho'oili 'Aina Community Project, CPR Training, Volunteer Work Day. KPFA implemented COVID community safety rules and procedures during this period: mandated masks, hand sanitizer etc.

2021
Pana'ewa Hub Farmers Market (2 days per wk.), KPFA Neighborhood Watch Mtgs (each quarter), Vibrant Hawaii Grant Onboarding (4 days), Vibrant Hawaii Leadership Cohort, Hydroponics One 18-Week Workshop, Plant Donation Receipt & Community Distributions: Huli - 3 varieties, Kou, Kupukupu, Leafy Green Starts, Lemongrass, Ma'o Hau Hele, Māmaki, Niu and 'Uala - 2 varieties (, Community General Membership & Board Committee Meetings, Hydroponics Food Distribution, Community Distribution-Pots & Seedling Trays, Kūpuna Produce Boxes (Partnership with Hawaii Rise Foundation, Hawaii Eco Experiences), Community Distribution: 20 sets of Hydroponic Pot Systems, 'Āina Mauna Legacy Program Meat Distribution, Community Volunteer Work days: Harvesting of 'Ōlena, Site Maintenance

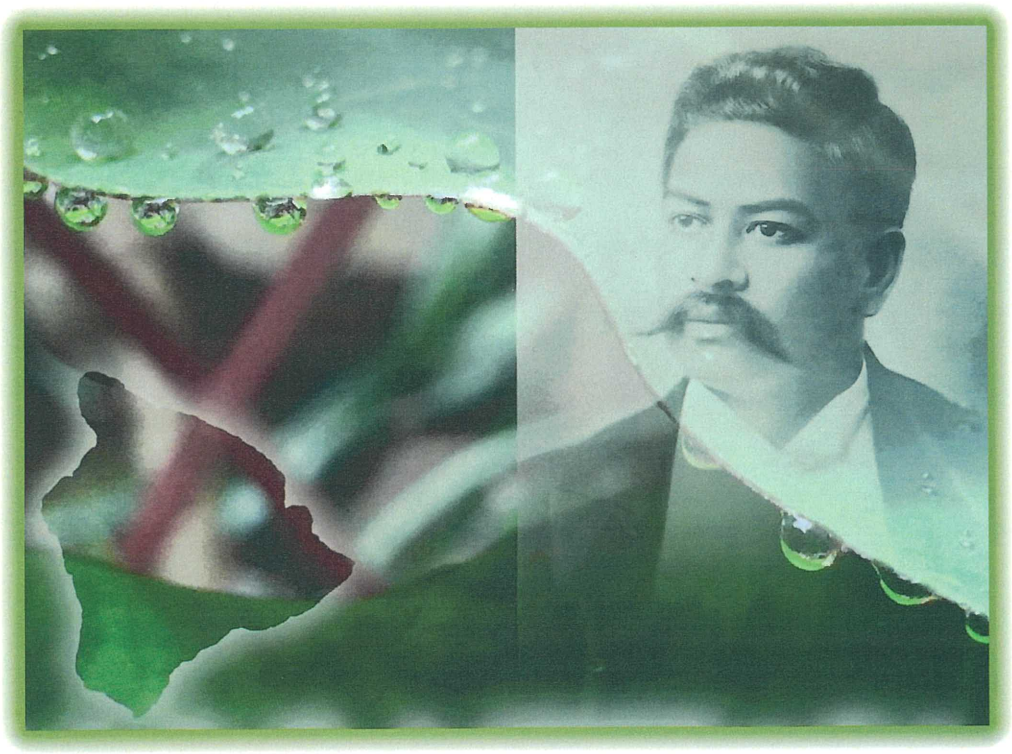
2022
Pana'ewa Hub Farmers Market (2 days per wk.), Community General Membership & Board Committee Meetings, KPFA Neighborhood Watch Mtgs (each quarter)Community Distributions: COVID Test Kits (1,200), Pots, Growing Trays, 'Olena, Huli-3 varieties, Plants, Produce, green onion, chives, 'uala, miniature pomeranate, peace lily, Kūpuna Produce Box Distribution, Volunteer Days: Community Nursery, Potting Plants, Harvesting, Site Maintenance, Hydroponics, Hosted Sustainable Molokai

2023
Pana'ewa Hub Farmers Market (2 days per wk.), Community General Membership & Board Committee Meetings, KPFA Neighborhood Watch Mtgs (each quarter), Ke'a'huli O Pana'ewa Polyforestry workshops, Ag workshops- Grow Your Own Food Forest, etc., Community Plant Distributions: 'Uala, Huli 'Olena.

2024
Pana'ewa Hub Farmers Market (2 days per wk.), Community General Membership & Board Committee Meetings, KPFA Neighborhood Watch Mtgs (each quarter), 2 Ulu Agroforestry Workshops, Grow Your Own Workshops, Ulu Air Layering Workshops, Free Plant Distribution: Kou, Kupukupu, Leafy Green Starts, Lemongrass, Māmaki, Niu and 'Uala - 2 varieties,

2025
Pana'ewa Hub Farmers Market (2 days per wk.), Community General Membership & Board Committee Meetings, KPFA Neighborhood Watch Mtgs (each quarter), 2 Ulu Agroforestry Workshops, Grow Your Own Workshops, La'au Lapa'au Workshops, Free Plant Distribution: Huli- 2 varieties, 'Olena, Mamaki, Ke'a'huli O Pana'ewa Polyforestry education and volunteer days.

PANA‘EWA HUB MASTER PLAN
EXECUTIVE SUMMARY
KEAUKAHA PANA‘EWA FARMERS ASSOCIATION



Waiākea, Hawai‘i Island, Hawai‘i
Tax Map Key: (3) 2-1-025:091

Prepared By:

G70

111 S. King Street, Suite 170
Honolulu, Hawai‘i 96813
October 2021

Updated By:
Maile Lu‘uwai
Keaukaha Pana‘ewa Farmers Association
August 2025

Executive Summary

Table of Contents

PROJECT DESCRIPTION 3
- Resiliency Hub 4
- Methodology and Timeline 5

CONCEPTUAL MASTERPLAN AND PROGRAMMING 6
- SUMMARY OF REPORTS 8
- Archaeological Reconnaissance Survey 8
- Biological Assessment 8
- Traffic Assessment Report 9
- Utilities & Infrastructure 9

PLANNING & DESIGN 10

SUMMARY 12

LIST OF TABLES AND FIGURES

Table 1. Summary of Environmental Conditions 5
Table 2. Consultations 5
Table 3. Site Features & Programming 7

Figure 1. Concept Plan 13

PROJECT DESCRIPTION

In 1976, the Keaukaha Pana'ewa Homestead was established in Pana'ewa. The first agricultural land leases for this homestead were awarded to fifty Keaukaha native Hawaiians, who were forced to leave their homes after DHHL transferred the trust land under their homes for the construction of the Hilo International Airport. The Keaukaha Pana'ewa Farmer's Association (KPFA) was established to represent this agricultural homestead community.

KPFA is a Hawaiian Homes Commission Act Beneficiary Association controlled by beneficiaries, as defined by the Hawaiian Home Land Recovery Act, 109 §537, and is registered with the U.S. Department of the Interior, 43 CFR §§47.10 and 48.6. KPFA is also recognized by the State of Hawai'i Department of Hawaiian Home Lands as the representative organization for beneficiaries and their 'ohana on Pana'ewa agricultural homestead lands.

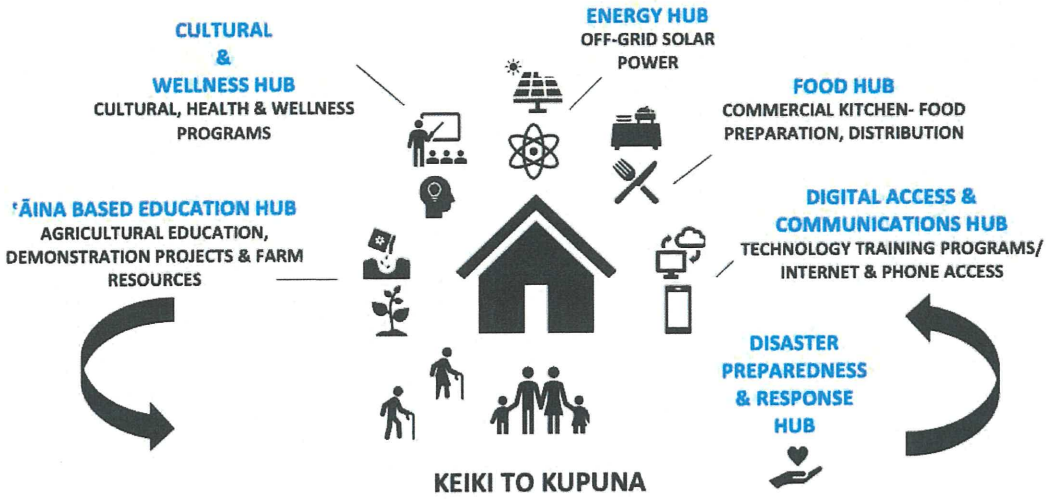
KPFA manages the Pana'ewa Hub 10.63-acre site on Hawaiian Home Lands, identified as Tax Map Key (3) 2-1-025:09. The Pana'ewa Hub is located on Railroad Avenue in South Hilo and includes a Farmer's Market and Kea'ahuli O Pana'ewa, a two-acre food security demonstration project. Through grants and partnerships, KPFA provides resources, agricultural workshops, community programs, and engagement activities to its community members and to the wider Hilo community. During the height of the COVID pandemic, KPFA coordinated the distribution and delivery of food, PPE, and COVID testing kits to the community. From 2017-present, the Pana'ewa Hub served 9,250+ participants and contributed over 8,500 volunteer hours to KPFA's programs and services.

KPFA is proposing to develop a Pana'ewa Resiliency Hub (Pana'ewa Hub). The Pana'ewa Hub will consist of a series of pavilions connected by a lanai deck encompassing a central mound (piko). The pavilions will be designed as flexible spaces that can accommodate a range of programs. A kitchen and equipment storage area will also be included to support KPFA operations. The grounds surrounding the hub will be utilized for parking, outdoor learning spaces, innovative agricultural demonstration areas, and a community garden.

Community Strategic Planning

The KPFA homestead community was directly engaged in developing the Pana'ewa Hub via a series of community strategic planning workshops which began in 2016 with the Department of Hawaiian Home Land (DHHL) Regional Plan meetings and continued via KPFA-facilitated homestead community strategic planning workshops in 2018 and 2019. The KPFA workshops included broader community participation than the 2016 DHHL-led meetings.

PANAʻEWA HUB



During the KPFA 2018-2019 strategic planning workshops, 94% of community participants identified the Panaʻewa Hub Center as their top priority. A service kitchen was selected as their first top facility use.

The Panaʻewa Hub Center's purpose is twofold. First, the Panaʻewa Hub will be a community-serving multi-purpose center for keiki to kūpuna programming; digital access, technology, and agricultural training; and include an agricultural demonstration area to support ʻohana enrichment, community economic sustainability, and economic food security.

Second, the Panaʻewa Hub Center, in its design and capacity, will be activated to support the community, coordinate communication and resources, and ensure physical and social needs are met in preparation for, during, and post-recovery of a natural disaster or pandemic-related event. The primary resources will include food, off-grid energy production, access to clean drinking water, emergency communication technologies, and emergency equipment.

After a tumultuous hurricane season several years ago, Kīlauea's destruction in Puna, and the government's response to these events, the community recognized that it needed a resilient 'place and space', as well as a safe haven to prepare for, during, and post-recovery from a natural disaster.

In September 2023, Panaʻewa was designated as a FEMA community disaster resilience zone. FEMA used National Risk datasets to designate Panaʻewa as disadvantaged and at high risk due to potential hazards, including hurricanes. The Panaʻewa Hub is core to our climate adaptation and community resilience strategy to reduce natural hazard risk and vulnerability while at the same time advancing community cohesion, self-sufficiency, and self-determination.

Table 1: Summary of Environmental Conditions

Tax Map Key (TMK)	(3) 2-1-025:091
Ahupua'a	Waiākea
Island	Hawai'i Island
State Land Use District	Urban
Hawai'i County Zoning	MG-1a (General Industrial District)
Department of Hawaiian Home Lands (DHHL) Land Use Classification	Commercial
Land Use Pattern Allocation Guide (LUPAG)	Urban Expansion
Topography	Relatively flat, undulating ground with an elevation change of 6 ft.
Rainfall	About 140 inches per year
Soils	Papai extremely cobbly highly decomposed plant material, 2 to 10 percent slopes
Land Study Bureau (LSB)	No Classification
Agricultural Lands of Importance to the State of Hawai'i (ALISH)	Prime
Flood Hazard	Zone X, minimal flood hazard
Sea Level Rise Exposure Area (SLR-XA)	This parcel is located outside of the SLR-XA
Tsunami Evacuation Zone	This parcel is located outside of the tsunami evacuation zone
Lava Hazard Zone	3
Wildfire Ignition Density	High (2.18 sq. mi/yr.)

Methodology and Timeline

The Project was scoped for site condition analysis, conceptual master plan, infrastructure, and utilities assessment, three technical studies (Flora/Fauna, Traffic, Archaeology), and four workshops with KPFA community members (beneficiaries) and stakeholders. See Table 2 below.

Table 2: Initial Consultation

Date	Name	Affiliation
Oct. 17, 2020	Charrette #1	KPFA Community Members & Stakeholders
Aug. 11, 2021	Justine Kamelamela	Ho'oulu 'Āina Community Project
Aug. 21, 2021	Charrette #2	KPFA Community Members & Stakeholders
Sept.17, 2021	Dotty Kelley-Paddock	Hau'ula Community Association (HCA), KPFA Community Members & Stakeholders
Sept.17, 2021	Sean Naleimaile	State Historic Preservation Division (SHPD)
Sept. 25, 2021	Charrette #3	KPFA Community Members & Stakeholders

CONCEPTUAL MASTER PLAN AND PROGRAMMING

In October 2021, a Conceptual Master Plan (Master Plan) was completed with KPFA community input aligned with KPFA's mission and community-driven strategic priorities for the site. The Master Plan is a 299-page document that includes site programming, schematics, a biological assessment, traffic assessment, archeological report, and a preliminary utilities and infrastructure assessment.

The Master Plan was formed through the process of collecting community foundational words and stories. A vision statement was created to describe the project:

Our Keaukaha Pana'ewa Farmers community honors the first Pana'ewa Nui homesteaders by carrying on the vision of a sovereign and thriving people committed to the guardianship of our resources in this pu'uhonua of well-being, gratitude, and growth.

Within the balance between the existing site (abundance of water, sun, and life) and the origins of the site (ancestors who pioneered the land) legacy and honor. This vision is translated into the project's very own masterplan DNA where the spirit of the community coming together is embraced through creating a space for resiliency, agriculture, digital access, and technological innovation. Additionally, honoring the importance of Mauna Kea and Mauna Loa was incorporated into the site design. This simple, yet powerful, relationship anchors the hub and the natural landscape of the site.

Masterplan DNA

The Pana'ewa Resiliency & Agricultural Innovation Hub Masterplan DNA:

1. **Resilience**
   The Pana'ewa Hub Center represents shelter and the unique feeling of being safe; a Resiliency Hub that serves the community with protection and provision when they are in need. As a resilient strategy against hurricanes, natural disasters and community crisis's, the Pana'ewa Hub focuses on nature-based solutions that help mitigate wind and water. Within the property are native tree species that are resilient to strong winds, and the property will be landscaped to divert water and prevent flooding; all natural barriers that protect the site. Innovative agricultural areas will be located behind and intertwined around the Pana'ewa Hub. As a result, the Pana'ewa Hub and innovative agricultural areas will remain safe and protected throughout all seasons.

2. **Central Mound**
   A Central Mound creates a communal space that establishes connection and unity. The space will accommodate small to large group activities and performances. A central location for demonstration activities such as Hula, Kilo Hōkū, Kilo Honua, Lā'au Lapa'au (native plants), and Ho'okani Pila (music) - an open space for amphitheater and stepped seating. The Central Mound offers an open view and visual alignment with Mauna Kea.

3. **Pana'ewa Hub Center Lumi (Pavilion)**
   An extension to the Central Mound, is the Lumi (pavilion). Depending on its use, each Lumi can grow and be flexible using sliding walls and screens.
   a. LUMI 1: Community Digital Access Pavilion, Kūpuna/Keiki engagement activities, 'ohana gatherings, technology training and access & agricultural workshops (i.e., Indigenous Polyforestry)
   b. LUMI 2: Service Kitchen, Restrooms, Storage, Office,
   c. LUMI 3: Equipment Storage & Warehouse
   d. LUMI 4 & 5: Spaces for educators to host Kilo and Agriculture programs.

KPFA's community-driven strategic direction, programming, and demographic workshops encompassed the understanding that the Pana'ewa Hub will meet a variety of community needs. Applying the strategy of flexibility and modularity, the conceptual masterplan incorporates large indoor-outdoor gathering spaces built on a structural grid; most of which are covered for protection and integrated with sustainable systems, such as photovoltaic panels for power, and rain collection for water.

The Pana'ewa Hub site features and programming can be found in Table 3 below. The features and program areas were updated from the original Masterplan to align with anticipated funding and construction costs. The **priority** features and program areas will be constructed in the first phase of development.

Table 3. Site Features and Programming

[Square footage may be revised due to construction costs]

Site Features	Area
In Progress - Agriculture Innovation Projects (Green)	3+Acres
Central Mound	700 sf
Priority 1 - Parking #1/ 50 Stalls (Standard + ADA) Two Drop- Offs	21,000 sf
Parking #2 – Overflow Parking	3,000 sf
Others (Paving & Decks)	TBD

Program	Area
Priority 1- Community Digital Access Pavilion Building (150 people max) Conference Room Extended Covered Lanai Total	 2,200 sf 600 sf 1,600 sf 4,400 sf
Priority 2 - Service Kitchen & Restroom Pavilion Extended Covered Lanai Total	1,600 sf 600 sf 3,200 sf
Priority 2 - Equipment & Storage Pavilion	1,200 sf
Imu Facility (Outdoor)	1,300 sf
Office / Storage Files	400 sf
Equipment Storage/ Warehouse	2,220 sf

Farm Dwelling	835 sf
Open (Kipuka) Pavilions Community Use Educational Use	1,900 sf

The Pana'ewa Hub is located within the DHHL Commercial district, which is designated for retail, business, and commercial activities. This allows for revenue generation to the DHHL Trust and/or Homestead Community Associations. Mixed uses are allowed. Permitted uses and minimum infrastructure on DHHL Commercial land must meet county standards. The programming is also applicable to Hawai'i State and County zoning. State Urban districts include activities or uses as provided by ordinances or regulations of the respective county. Likewise, permitted uses in the County MG-1a district include, but are not limited to: agricultural products processing, aquaculture, broadcasting stations, catering establishments, commercial parking lots, community buildings, food manufacturing, and greenhouses.

Summary of Reports

Archaeological Reconnaissance Survey

An Archaeological Reconnaissance Survey (ARS) was conducted by Keala Pono Archaeological Consulting on July 12-13th, 2021. The pedestrian survey covered approximately 91% of the study area. One acre (9%) of the parcel was not walked due to impenetrable brush. One archaeological site (Site 1) was identified and consists of three abandoned cars, structural remains, and historic artifacts. The site as a whole likely dates to the 1960s or later, with the cars and at least one artifact probably dating to the 1950s. The site is in fair to poor condition, with all features heavily deteriorated. An archaeological inventory survey or data recovery program is recommended to document the site and more fully identify the cars and artifacts.

Biological Assessment

A walk-through survey was completed by Hui Kū Maoli Ola and G70 on July 21st, 2021. The perimeter survey identified 59 plant taxa and three fungi taxa, of which seven species (~11%) may be considered native (either indigenous to Hawai'i or of Polynesian introduction). Eight species of avifauna and four species of terrestrial fauna were identified, all of which have been introduced to Hawai'i. There were no proposed or endangered species observed. Strawberry guava dominated the vegetation of the project's forested area. See Figure 3. Other abundant plant species include octopus tree, gunpowder tree, fruit trees, miconia, and bingabing. Indigenous plants include pockets of 'ōhia lehua, pepeiao, pōpolo, forked fimbry, and moa. Avifauna observed include cattle egret, red cardinal, zebra dove, spotted dove, red-billed leiothrix, house sparrow, saffron finch, and common mynah. Of the terrestrial fauna, green anole lizards and feral pigs were observed, and coqui frogs could be heard from the project area.

The report recommends the removal of invasive plant species to the extent possible, primarily, strawberry guava, miconia, bingabing, and a patch of juvenile gunpowder trees. Cleared areas should immediately be replanted and/or monitored to prevent invasive plants from reestablishing presence. The planting of traditionally cultivated plants that are compatible with the parcel, such

as kukui, maiʻa (banana), niu (coconut), noni, ʻōhiʻa ʻai (mountain apple), ʻulu (breadfruit), ʻawa, kalo (taro), kī, kō (sugarcane), māmaki, ʻōlena (tumeric), ʻuala (sweet potato), and uhi (yam), is recommended. Furthermore, invasive species control is recommended for feral pigs and little fire ants. Project site should be monitored for possible Rapid ʻŌhiʻa Death (ROD) and potential ʻŌpeʻapeʻa (Hawaiian Hoary Bat) populations.

Traffic Assessment Report

A Traffic Assessment Report (TAR) was conducted from August 11th, 2021, to August 15th, 2021, by Traffic Management Consultants to analyze the existing peak hour traffic in vicinity of the project site. Turning movement traffic count surveys were conducted at the intersections of:

a) Makaʻala Street and Railroad Avenue
b) The Home Depot Driveway and Railroad Avenue
c) Puʻainako Street and Railroad Avenue

A highway capacity analysis was used to determine Levels of Service (LOS) ranging from best LOS "A" to the worst LOS "F". LOS "D" is the minimum acceptable LOS according to Hawaiʻi County Code "Concurrency Requirements". A traffic count survey was conducted on Railroad Avenue to determine peak periods of traffic. Peak weekday traffic hours occur from 7:15 AM to 8:15 AM and again from 3:15 PM to 4:15 PM. During peak AM traffic, Maka'ala Street and Railroad Avenue operated at LOS "D". Puʻainako Street and the Home Depot Driveway operated at LOS "C" and "D", respectively. During peak PM hours, Makaʻala Street and Railroad Avenue operated at LOS "D". Puʻainako Street and the Home Depot Driveway operated at LOS "C". Weekend traffic was higher on Saturday, and the peak hour of traffic on Saturday is from 10:45 AM to 11:45 AM. During this hour, Makaʻala Street operated at LOS "D". Pu'ainako Street and the Home Depot Driveway operated at LOS "C" and "B", respectively.

Utilities and Infrastructure

Proposed Site Access, Parking and Safety

The property will continue to be accessed off of Railroad Ave. Proposed improvements will include three new driveway aprons off of the public roadway, including a driveway in and a driveway out of the proposed parking lot. A third driveway will be located across the intersection with Maka'ala Street, which will function as a service entry to the farm. Pedestrian access will continue to be limited with no surrounding public sidewalks serving the project site.

Proposed Water Infrastructure

The property is currently serviced by the County of Hawaiʻi Department of Water Supply (DWS). The existing 5/8-inch domestic water meter and lateral would likely be replaced with a larger service to meet the needs of the Panaʻewa Hub center. In addition, it is expected that the center may need to have a fire sprinkler, which will require a new fire service lateral and backflow preventor to be installed off of the existing 12" public water main on Railroad Avenue.

Proposed Wastewater Infrastructure

Municipal wastewater service is currently available from the County. The County advised KPFA that wastewater capacity is limited and on a first come, first served basis.

Proposed Electrical/Telecom

The site does not currently have electrical or telecom service. However, at the appropriate time, a service request can be submitted to the utilities to bring in service to the proposed building and other facilities. The new service would likely come from the existing pole on the northwest corner of the property and run overhead to the building.

Proposed Drainage Infrastructure

The project site generally slopes from south to north and is heavily vegetated, except in the area currently cleared for the farmer's market and Kea'ahuli. There is no existing drainage infrastructure onsite. The proposed drainage infrastructure for the project will be limited to swales, culverts, rain gardens, and drainage sumps. Runoff will flow overland to swales and through culverts, then into landscape or farm areas. Rain gardens and sumps will be created in these areas to manage runoff, allowing for evapotranspiration and infiltration into the ground. Improvements will be designed and constructed as required by County Standards.

PLANNING & DESIGN UPDATE

In 2022, KPFA initiated the Planning & Design Phase for the Pana'ewa Hub Center. The following planning and design components are completed, in progress and are planned.

Completed

HRS 343 Environmental Assessment

In 2023, a Final Environmental Assessment (EA) and Finding of No Significant Impacts (FONSI) was prepared for the Pana'ewa Hub in compliance with Hawai'i Revised Statutes HRS 343. The Final EA and FONSI were approved by the Hawaiian Homes Commission in June 2023 and published in the July 8, 2023 edition of the State of Hawaii Environmental Review Program's "The Environmental Notice."

HRS 6E 42 Historic Preservation Review

KPFA has completed the Historic Preservation Review Process. The archeological assessment was completed and submitted to State Historic Preservation Division (SHPD). In September 2024, DHHL issued a determination of "no historic properties affected" letter to SHPD. In response to SHPD's comments, an Archeological Monitoring Plan for the Pana'ewa Hub was completed in January 2025.

Topographic & Boundary Surveys

Engineering Partners, Inc. completed the boundary survey and topographic survey for the Pana'ewa Hub Site in March 2025.

In Progress

Concept Plan

Hilo Direct Consultants, LLC (HDC) was retained to provide an updated Concept Plan for the Pana'ewa Hub Center with a smaller footprint than provided in the original Masterplan. The final Concept Plan will be aligned with anticipated construction funding. The first Concept Plan was approved by the KPFA Board in June 2025. Based on the cost estimate, the KPFA Board directed HDC to revise the Concept Plan. The revised Concept Plan was approved by the KPFA Board in July 2025.

Construction Cost Estimate

J. Uno and Associates, Inc. (J. Uno) was retained to complete an estimated construction budget based on the building size parameters of the Concept Plan. The estimate includes a projected cost of starting construction within approximately 18-24 months from the date the budget is completed. J. Uno completed the first cost estimate in May 2025. A second cost estimate based on the revised Concept Plan was submitted to the KPFA Board in August 2025

Planned

Architectural and Engineering Plans

The estimated completion timeline for the Pana'ewa Hub design and planning components are:

- Architectural Schematics – to be completed by Nov 2025
- Design Development – to be completed by Jan 2026
- Construction Documents – to be completed by April 2026

Permits & Construction Bids

It is anticipated that permit applications will be submitted by April 2026 and construction bids to three select bidders will be issued by May 2026.

SUMMARY

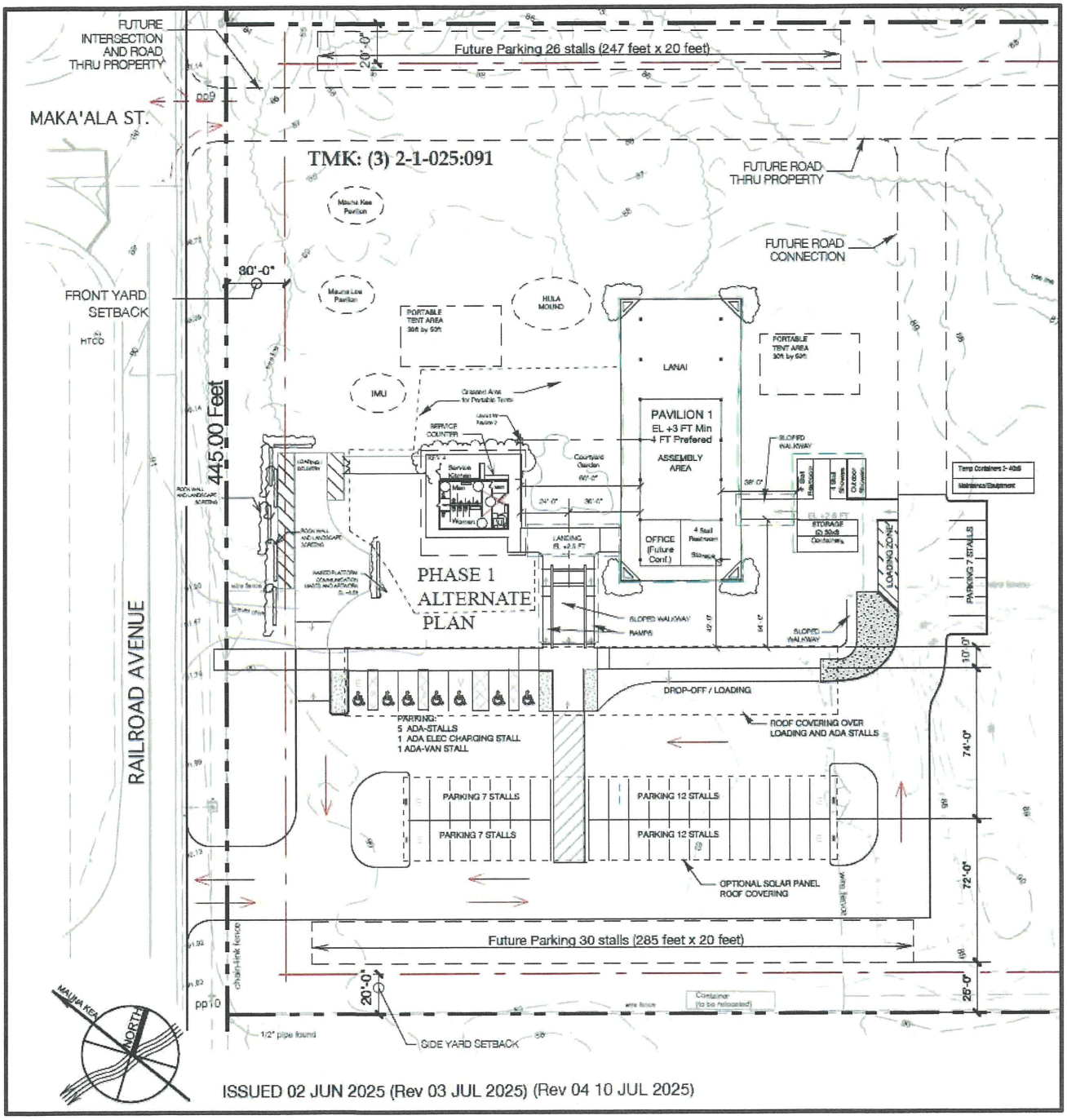
The Keaukaha Pana'ewa Farmers Association is proposing to develop the Pana'ewa Hub on a 10.63-acre parcel on Hawaiian Home Trust Lands located on Railroad Avenue in South Hilo, Hawaii.

The Pana'ewa Hub was envisioned by the community starting with the 2016 DHHL Pana'ewa Regional Plan and evolved with strategic planning as the community's #1 strategic priority.

The Pana'ewa Hub Program DNA embodies resiliency through central components, including a central mound or piko, lumi pavilions, and agricultural areas encompassing the site. The pavilions will be designed as flexible spaces that can accommodate a range of agricultural, technology, digital access, cultural, and educational programs for keiki to kupuna. Through partnerships, programs, services, and disaster readiness and support, the Pana'ewa Hub will elevate KPFA's vision of uplifting and caring for the Pana'ewa Hawaiian Homestead community in its own pu'uhonua.

Pana‘ewa Hub Concept Plan

Updated July 2025



OFFICE OF PLANNING AND SUSTAINABLE DEVELOPMENT

The Environmental Notice

July 8, 2023

Josh Green, M.D., Governor
Mary Alice Evans, Interim Director

The Environmental Notice provides public notice for projects undergoing environmental review in Hawai'i as mandated under Section 343-3, Hawai'i Revised Statutes, the Environmental Impact Statement Law. Along with publishing Environmental Assessments and Environmental Impact Statements for projects in Hawai'i, *The Environmental Notice* also includes other items related to the shoreline, coastal zone, and federal activities.

A proposed new tower would replace some older structures and reinvigorate Ala Moana Boulevard as the primary 'Ewa gateway to Waikīkī

235 South Beretania Street, Suite 702 • Honolulu, Hawai'i 96813 • (808) 586-4185 • dbedt.opsd.erp@hawaii.gov • https://planning.hawaii.gov/erp/

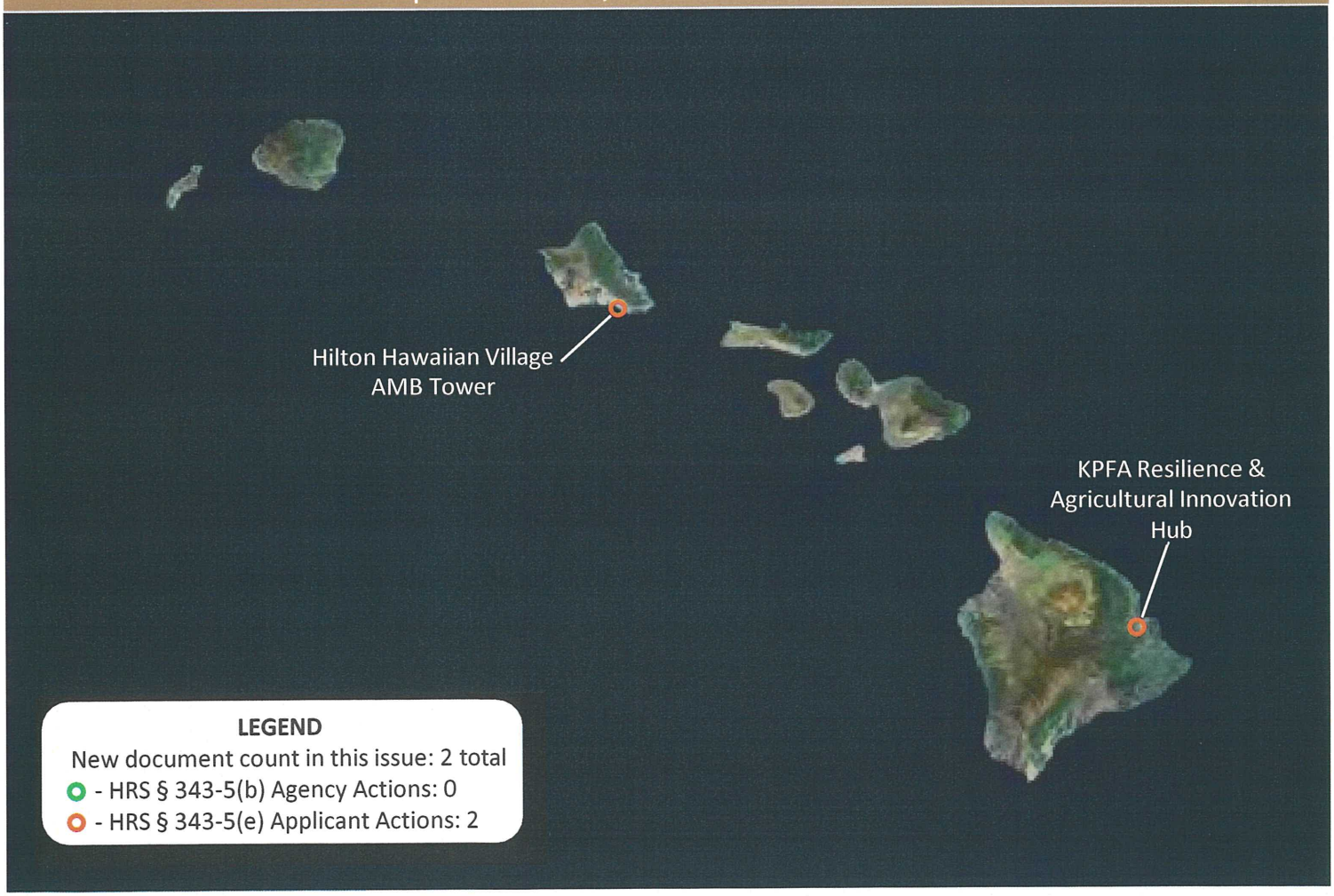
Table of Contents

Announcements ---- 2
Statewide Map of New EA/EIS Documents & Determinations ---- 2
Hawai'i EAs/EISs
Keaukaha Pana'ewa Farmers Association Resiliency and Agricultural Innovation Hub--Final EA (FONSI) ---- 3
O'ahu EAs/EISs
Hilton Hawaiian Village - Village Master Plan Improvements, AMB Tower--Final Supplemental EIS ---- 3
Previously Published Documents Open for Comment ---- 4
Lists of Exemption Notices ---- 4
Shoreline Notices
Applications for Shoreline Certification ---- 4
Coastal Zone Management Notices
Special Management Area (SMA) Minor Permits ---- 5
Glossary of Terms and Definitions ---- 6

Announcements

Even with the current staff shortage in the Environmental Review Program, we still wish to provide trainings on the HEPA (HRS Chapter 343) process. Please contact our office with specific questions or with requests for trainings for your agency or group. We can not guarantee that we will be able to accomodate all requests, but we look forward to engaging with the community.

Statewide Map of New EA/EIS Documents & Determinations



Hawai'i EAs/EISs

KPFA Resiliency and Agricultural Innovation Hub--Final EA (FONSI)

HRS §343-5(a) Trigger	(1) Propose the use of state or county lands or the use of state or county funds
District(s)	South Hilo
TMK(s)	(3) 2-1-025:91
Permit(s)	Long-term lease with DHHL; State Historic Preservation Division Chapter 6E-42 and 6E-08; Various Site, Grading, Building and Infrastructure Permits
Approving Agency	State of Hawai'i, Department of Hawaiian Home Lands Lilliane Makaila, (808) 620-9279, lilliane.k.makaila@hawaii.gov 91-5420 Kapolei Pkwy, Kapolei, HI 96707
Applicant	Keaukaha Pana'ewa Farmers Association; P. O. Box 6844, Hilo, HI 96720-8935 Maile Lu'uwai, (808) 959-5026, maile@luuwailaw.com
Consultant	G70; 111 S. King Street, Suite 170, Honolulu, HI 96813 Kawika McKeague, (808) 441-2120, kawikam@g70.design
Status	Finding of No Significant Impact (FONSI) determination

To further support local agricultural education and build community resilience, the Keaukaha Pana'ewa Farmers Association (KPFA) is developing the Resilience and Agriculture Innovation Hub project in Hilo, Hawai'i. This project involves the construction of six ADA accessible pavilions complete with one certified kitchen. The improvements proposed in this Environmental Assess-ment provide the community an opportunity to engage in sustainable farming practices, keiki and kūpuna care, and resilience before, during and after natural disasters. The project will also house farming, and debris removal equipment as well as edu-cational materials to support KPFA's operations in agricultural education, and community resiliency.

O'ahu EAs/EISs

Hilton Hawaiian Village - Village Master Plan Improvements, AMB Tower--Final Supplemental EIS

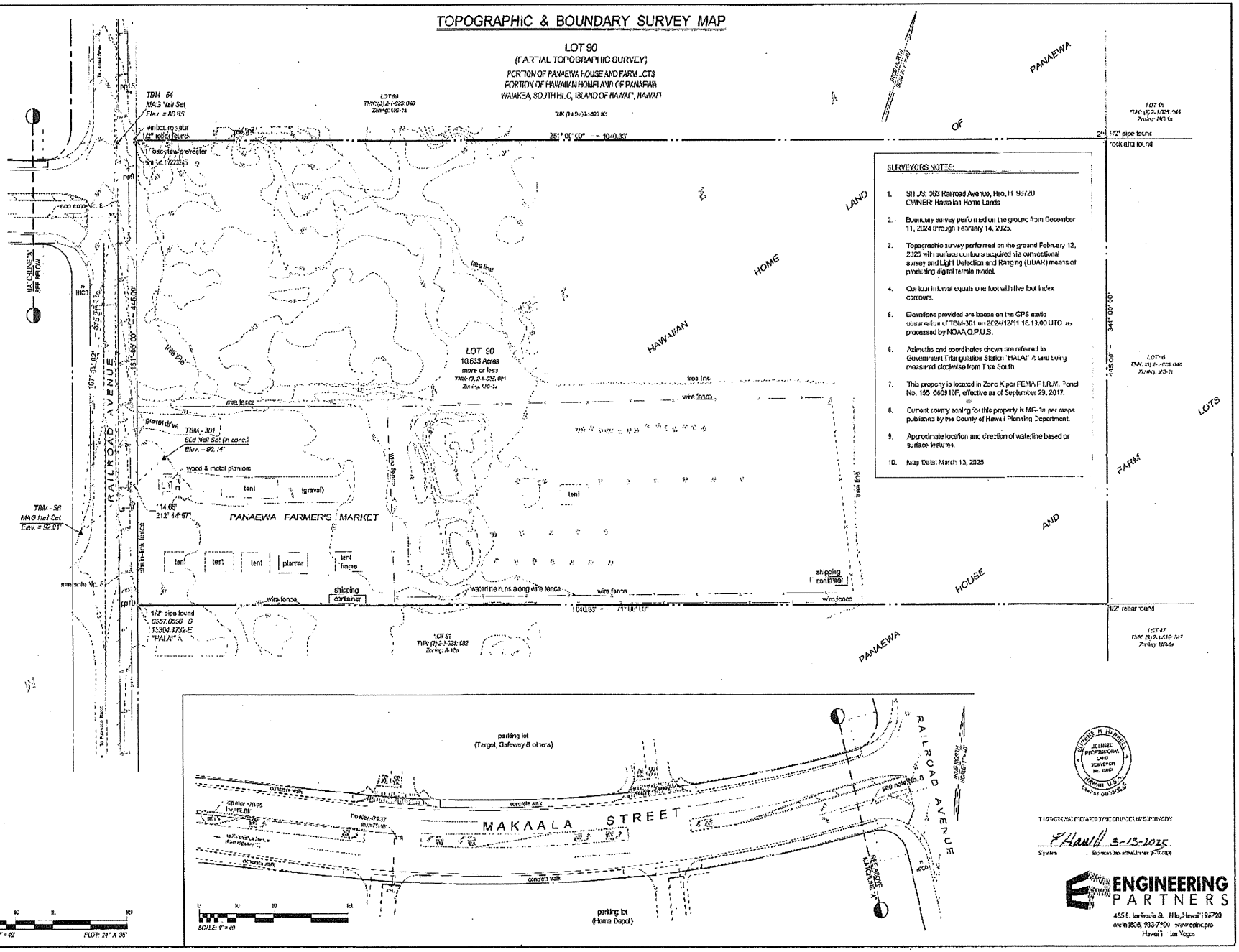
HRS §343-5(a) Trigger	(5) Propose any use within the Waikīkī area of O'ahu
District(s)	Honolulu
TMK(s)	Various (see document)
Permit(s)	Various (see document)
Approving Agency/ Accepting Authority	City and County of Honolulu, Department of Planning and Permitting Laura Mo, (808) 768-8025, laura.mo@honolulu.gov 650 S King St. 7th Floor, Honolulu, HI 96813
Applicant	Hilton Hawaiian Village Beach Resort & Spa and Park Ala Moana LLC Jonathan Fuisz, (571) 302-5757, ambtower@g70.design c/o Park Hotels & Resorts, 1775 Tysons Blvd., 7th Floor, Tysons, VA 22102
Consultant	G70; 111 S. King Street, Suite 170, Honolulu, HI 96813 Jeffrey Overton, (808) 523-5866, ambtower@g70.design
Status	The Final Supplemental Environmental Impact Statement has been submitted and is pending acceptance by the approving agency/accepting authority, which has 30 days from date of receipt to determine acceptability.

In 2011, the Hilton Hawaiian Village (HHV) Master Plan was designed as the next chapter of HHV's continuing dedication to support Waikīkī as a premier visitor destination. The Applicant proposes to expand the HHV Master Plan to include a 0.46-acre site along Ala Moana Boulevard (AMB). This expansion includes replacing existing structures at the site with the new AMB Tower, which will provide hotel lodging accommodations that will reflect Hawai'i's rich heritage and cultural diversity in a contemporary form. The AMB

Tower will reinvigorate and revitalize Ala Moana Boulevard as the primary 'Ewa gateway to Waikīkī, and enhance the Village experience for both Waikīkī visitors and local residents. The new tower will include a lobby area, porte cochere, ground floor retail accessible to pedestrians, landscaping, pedestrian walkways, food and beverage offerings, pool and recreation area, fitness center, and parking. The project is anticipated to produce new jobs through construction and operation.

TOPOGRAPHIC & BOUNDARY SURVEY MAP

LOT 90
(PARTIAL TOPOGRAPHIC SURVEY)
PORTION OF PANAEWA HOUSE AND FARM LOTS
PORTION OF HAWAIIAN HOME LAND OF PANAEWA
WAIAKEA, SOUTH HILO, ISLAND OF HAWAII, HAWAII



SURVEYORS NOTES:

1. SITUS: 363 Railroad Avenue, Hilo, HI 96720
   OWNER: Hawaiian Home Lands
2. Boundary survey performed on the ground from December 11, 2024 through February 14, 2025.
3. Topographic survey performed on the ground February 12, 2025 with surface contours acquired via conventional survey and Light Detection and Ranging (LIDAR) means of producing digital terrain model.
4. Contour interval equals one foot with five foot index contours.
5. Elevations provided are based on the GPS static observation of TBM-301 on 2024/12/11 16:19:00 UTC as processed by NOAA O.P.U.S.
6. Azimuths and coordinates shown are referred to Government Triangulation Station "HALA" & and being measured clockwise from True South.
7. This property is located in Zone X per FEMA F.I.R.M. Panel No. 155 660910F, effective as of September 29, 2017.
8. Current county zoning for this property is MG-1a per maps published by the County of Hawaii Planning Department.
9. Approximate location and direction of waterline based on surface features.
10. Map Date: March 13, 2025

JOHNSON PROFESSIONAL LAND SURVEYOR NO. 10001 HAWAII U.S.A. EXPIRES 04/30/25

THIS NOTE WAS PREPARED BY SECRETARY OF SURVEYORS

P Hawill 3-13-2025
Signature Professional Land Surveyor

ENGINEERING PARTNERS
455 E. Lanikaula St. Hilo, Hawaii 96720
Main (808) 933-7900 www.epinc.pro
Hawaii Las Vegas

Hawaiian Homes Commission Meeting Packet
February 17 & 18, 2026
Hale Pono‘ī, Kapolei, Oahu

G ITEMS

STATE OF HAWAI'I
DEPARTMENT OF HAWAIIAN HOME LANDS

February 17-18, 2026

To: Chairman and Members, Hawaiian Homes Commission

Thru: Lillie Makaila, Acting Planning Program Manager

From: Julie-Ann Cachola, Planner

Subject: Report of the Public Hearing for Administrative rules to Establish a Pilina-Based Priority Waitlist and Adoption of Proposed Amendments Related to a Pilina-based Priority

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission adopt the Proposed Amendments Related to a Pilina-based Priority and Approve Proceeding to Compilation of Hawaii Administrative Rules Chapter 10-3 and Promulgation.

DISCUSSION: REPORT OF PUBLIC HEARING

Rulemaking Process and Activities:

In December 2024, the Department of Hawaiian Home Lands (DHHL) began its process for administrative rulemaking for proposed rule amendments related to homestead lease awards to applicants who are lineal descendants or existing or long-term residents in the area where homestead leases are being awarded. The rulemaking process takes an average of 24-months to complete. However, due to the Department's unprecedented number of lease awards projected over the next 2-years, this rulemaking process was expedited and could be completed in 14-months.

Table 1 below provides a summary of the actions taken by the Hawaiian Homes Commission (HHC) and DHHL in this rulemaking process. It also identifies activities required after approval to secure the Governor's approval. Once approved, Chapter 10-3 will be compiled and transmitted. Focus would then turn to the implementation of the rule, creating forms, procedures, verification criteria, acceptable documentation, and user-friendly educational/instructional materials to facilitate

creation of Pilina-based Priority Waitlists for projected awards.

Table 1: Rule Amendment Process and Timeline

DATE	RULE AMENDMENT ACTIVITY
December 2024	• Draft Rule prepared by staff and presented to HHC. • HHC approval to proceed to beneficiary consultation. • HHC Submittal Item G-2: Approval to proceed to beneficiary consultation for a proposed administrative rule amendment to establish a priority waitlist for applicants with a connection to a place
February-June 2025	Island-specific postcards sent to all beneficiaries, including out-of-state beneficiaries, regarding Beneficiary Consultation meetings on administrative rule amendments
March-June 2025	Statewide Beneficiary Consultation Meetings (17 in-person meetings and 4 virtual meetings)
September 2025	HHC Submittal Item G-1: For information: Accept the Beneficiary Consultation Report on proposed amendments to Hawai‘i Administrative Rules relating to Pilina-Based Priority and Lessee Leave of Absence. HHC Submittal Item G-2: Approval to proceed to Public Hearing for a Proposed Administrative Rule to establish a priority waitlist for applicants with a connection to a place (Pilina-based Priority)
December 2025	Statewide publication of public notices for public hearings pursuant to Chapter 91, HRS.
Jan. 28, 2026	Public Hearings Conducted: • 12:00 p.m. via video conferencing technology • 6:00 p.m. via video conferencing technology and in-person at Hale Pono‘ī, DHHL Headquarters, Kapolei
February 2026 (Current)	HHC Submittal Item G-1: Report of the Public Hearing for Administrative rules to Establish a Pilina-Based Priority Waitlist and Adoption of Proposed Amendments Related to a Pilina-based Priority.
March 2026 (Approvals and Transmittal)	• Department of the Attorney General’s (AG) approval • Department of Budget and Finance (B&F) approval

DATE	RULE AMENDMENT ACTIVITY
	• Small Business Regulatory Review Board (SBRRB) review • Governor's (GOV)approval • Compilation of Chapter 10-3, HARS Native Hawaiian Rehabilitation Program • Transmittal of Compiled Chapter 10-3, HARS to HHC, GOV, Lieutenant Governor's Office (LG), AG, Legislative Reference Bureau (LRB), DHHL Staff, Homestead Associations, Participants in rulemaking process. The rules become effective 10-days after filing with the LG.
April 2026 (Implementation)	• Establish in-house working group to develop Pilina-based Priority Waitlist application, submittal requirements, evaluation criteria, application and verification process, and instructional guides.

Commission Amendments and Approval to Proceed to Public Hearings

At its September 2025 meeting, the Hawaiian Homes Commission (HHC) accepted the Beneficiary Consultation Report (Item G-1) and under a separate submittal (Item G-2), the HHC approved further amendments to the original administrative rule proposal to respond to comments and concerns raised in the Beneficiary Consultation meetings. The submittal also gave approval for staff to proceed to conduct public hearings, pursuant to Chapter 91, HRS. **Exhibit A** provides excerpts from the approved Minutes of the September 2025 HHC Meeting pertaining to Items G-1 and G-2.

Table 2 identifies the amendments to the original rule proposal that the HHC approved in its September meeting. For each amendment, the table identifies the related concerns or comments raised in Beneficiary Consultation meetings that the amendment is addressing. The table also provides the rationale/justification for the amendment to the original rule.

Notices of Public Hearings:

Following approval of the Hawaiian Homes Commission (HHC) at its September 2025 regular meeting, staff conducted two public hearings pursuant to Chapter 91, Hawai'i Revised Statutes, which included one virtual public hearing and one hybrid public hearing (conducted in-person and virtually at the

same time). Both hearings covered the same information relating to the administrative rule amendments.

TABLE 2: HHC Amendments that Responded to Beneficiary Concerns

HHC Amendment to Rule Proposal	Beneficiary Consultation Comments	Rationale for Amendment
1. The HHC clarified that applying for the Pilina-based Priority Waitlist is optional.	Beneficiaries noted that the application process to qualify for the Pilina-based Priority Waitlist is onerous and creates another means to disqualify applicants when they have already qualified for the Islandwide Waitlist.	Comments received indicated that the rule was unclear as to whether applicants were required to apply for this priority waitlist if they met the requirements. Therefore, staff recommends the additional language in HAR §10-3-12(b) to clarify that the waitlist is optional and applying for the waitlist is at the beneficiary's discretion.
2. The HHC clarified that an applicant may only be awarded one homestead lease through the Pilina-Based Priority Waitlist process.	Beneficiaries noted that an applicant could claim connection to multiple places through lineal descendancy and/or residency.	The HHC acknowledged that applicants could claim connection to multiple places, however, if an applicant is claiming their pilina to place, the applicant must choose one place to apply for Pilina priority and may only do so once.
3. To qualify for residency, the applicant must prove residency in the area for at least 18-years.	Beneficiaries commented that the rule lacked clarity regarding how long an applicant needs to live in a place to claim residency as their connection to place. Beneficiaries noted that it would take at least 20-years for an applicant to	The HHC agreed that it would take at least one generation to understand and apply place-based knowledge. The HHC determined that one generation could be quantified as 20-years, but upon further discussion, they agreed to a residency requirement of 18-years to prevent delays in accessing the Pilina-based

HHC Amendment to Rule Proposal	Beneficiary Consultation Comments	Rationale for Amendment
	become familiar with the place and its resources. They noted that place-based information and management practices are passed from generation to generation. They felt that the residency requirement should correspond to at least one generation. Without this residency requirement, many worried that it would unfairly prioritize an applicant who recently moved to the area over applicants who have waited for decades on the Waitlist.	Priority Waitlist for those reaching eligibility (age), which also aligns with mortgage eligibility requirements.
4. Eliminated residency qualification which allowed applicants to qualify through a family member's residency.	Beneficiaries noted that an applicant who has a relative who lives in the area does not mean that the applicant is knowledgeable about the area's resources or that the applicant has established a pilina to that place.	This was 1 of 3 pathways to qualify for residency. It was eliminated because it diluted the intent of the rule amendment which valued applicants with place-based knowledge. The HHC determined that the applicant needs to be one who meets the residency requirement; residency cannot be met through a 3rd party relative.
5. The term "wahi" was removed and replaced with "place." It was	Beneficiaries commented that administrative rules should not use Hawaiian	The original rule amendment used the term "wahi" (place) to broadly define the area where

HHC Amendment to Rule Proposal	Beneficiary Consultation Comments	Rationale for Amendment
clarified that "place" will be used to define the area that would be used to qualify lineal descendants and long-term residency. "Place" would be larger than the homestead area being awarded and will be defined by each community as DHHL engages beneficiaries in the area to develop the respective homestead settlement/master plan.	words because they have multiple meanings which could be interpreted in different ways.	applicants would have to reside or where applicants would have to prove an ancestor resided. The intent of using the broad definition was to allow flexibility in the area definition which would be clarified as homestead master/settlement plans are being developed with beneficiaries who reside in the area. The amendment responds to beneficiary concerns about Hawaiian words having many meanings. It also responds to concerns about special considerations that should be given to Niʻihau beneficiaries and their relationship to Puʻu ʻŌpae. The amendment maintains the premise that members of a community should define their own boundaries. Therefore, the term "wahi" was replaced with "place," and it was clarified that the definition of the area for the application of the Pilina rule will be determined by each community as beneficiaries engage in the planning process for each new homestead area.

HHC Amendment to Rule Proposal	Beneficiary Consultation Comments	Rationale for Amendment
6. The HHC expanded the application of the Pilina-Based Priority Waitlist from Kuleana Homestead lease awards to all homestead awards.	Beneficiaries supported the Pilina concept, but noted that there were only a small number of Kuleana homestead areas (Pu‘u ‘Ōpae, Anahola, ‘Ualapu‘e, Wākiu-Hāna, Ke‘anae-Wailuanui, King’s Landing). Beneficiaries were concerned that their area (Waimānalo, Ka‘ū, Kona, Wai‘anae-Nānākuli) was excluded from the kuleana homestead list which meant that the Pilina Based Priority would not apply, despite being born and raised in older, established homestead communities. Beneficiaries expressed despair and concern that they were unfairly excluded and would not be able to utilize the Pilina based priority policy to secure their homelands and to secure continuity of generational place-based knowledge. The deep connection to the land is one way to ensure sustainable management of	Staff clarified that the Pilina Waitlist rule amendment was limited to kuleana lots as a practical compromise to manage staff workload. The HHC discussed the need to expand the Pilina Waitlist rule to other areas in addition to the Kuleana homesteads. The Chair noted that DLNR and OHA had approached DHHL about transferring lands to DHHL. OHA lacks leasing authority and DLNR lessees lack entitlements and survivorship rights. DHHL can offer better terms for beneficiaries who are holding DLNR leases. The Chair noted that the Pilina rule should be expanded beyond kuleana areas to include improved lots, allowing for broader application to ensure that communities with existing infrastructure are not excluded. He expressed an urgency to expand the Pilina administrative rule to broader rural Hawaiian communities.

HHC Amendment to Rule Proposal	Beneficiary Consultation Comments	Rationale for Amendment
	lands and its resources. If homesteads in their area were not planned for Kuleana leases, they wanted to know how they could get Kuleana homesteads to be planned in the areas where they had lineal descendancy or where they had pilina to place.	

Public notices were published in newspapers statewide pursuant to Chapter 91, HRS on December 27, 2025 (West Hawai‘i Today and The Garden Island); December 28, 2025 (Honolulu Star-Advertiser and Hawai‘i Tribune Herald); December 31, 2025 (Molokai Dispatch); and January 1, 2026 (Maui News). **Exhibit B** provides the information provided in each published public notice.

In addition to the public notices, on January 27, 2026, a reminder email (**Exhibit C**) was sent directly to 189 beneficiaries who attended a Beneficiary Consultation meeting and provided a legible, working email address.

A dedicated page was created on DHHL's website with information about the rule amendment proposal (https://dhhl.hawaii.gov/administrative-rules-pilina-based-priority-waitlist/). All forms of notification included meeting links, what to expect at the hearing, and how to submit testimonies.

Informational Briefing and the Public Hearing

Two public hearings were held on January 28, 2026: a virtual public hearing was held at 12:00 p.m. and a hybrid public hearing offering both in-person and virtual attendance was held at 6:00 p.m. at Hale Pono‘ī, located at DHHL's Main Office located at 91-5420 Kapolei Parkway, Kapolei, Hawai‘i 96707. An informational briefing was held immediately before the hearing. The briefing and the hearing were open to beneficiaries and public members.

The informational briefing consisted of a powerpoint presentation that explained the purpose of the public hearing which was to receive oral and written testimony from beneficiaries and the public on proposed administrative rule amendments. It explained that State law requires the Department to receive testimony; staff and Commissioners cannot respond to questions or engage in any dialogue or discussion during the public hearing. As a result, the agenda for the meeting was separated into two distinct parts.

Part 1 was an informational briefing where staff presented a powerpoint presentation (**Exhibit D**) that covered:

- The Process – What we did, Where we are now, What's next?

- The Origin of the Rule Amendment: As the Planning Office was developing homestead master plans in rural Hawaiian communities (ʻUalapuʻe, Keʻanae-Wailuanui, Wākiu-Hāna, and King's Landing), beneficiaries raised similar issues and arrived at the same conclusion that lineal descendants and long-terms residents should be the ones to receive homestead awards in that area.
- What Beneficiaries Told the Department During Beneficiary Consultation meetings
- Key Changes that the HHC made based on input provided during the Beneficiary Consultation meetings.
- The current proposed rule amendment to HAR §10-3-7 and §10-3-12 (**Exhibit E**)
- How to submit written testimony after the public hearings. What happens after the public hearings?
- Questions and Answers

Part 2 was the formal public hearing, pursuant to Chapter 91, HRS, during which time:

- The Hearing Officer called on participants to present their testimonies in the order of registration
- Participants presented their testimony (we requested that testifiers limit their testimonies to 3 minutes).
- There was no dialogue or discussion

Public Hearing Record

The oral testimonies provided during the formal Public Hearing and the written testimonies submitted after the Public Hearings constitute the official public hearing record (**Exhibit F)**. In total, 12 testimonies were submitted. There were 7 testimonies in support of the rule amendment, and 5 testimonies were opposed or expressed concern about the rule amendment. The list below captures the main points raised in each testimony.

Testimony Points in Support of the Rule Amendment

- Pilina ensures generational Ike. It ensures that what my grandfather taught my dad about the coastline of Kings Landing is passed down to me and then to my keiki. It ensures that the connection I have to King's Landing through my kupuna, my great grandfather, lives and breathes on through my experiences and my ohana practices.

- Pilina gives preference to kupa of the aina. It gives me preference to my homeland, to the sands of births, to the aina that raised me, because being a kupa of the aina is what makes us Hawaiian. It is a Hawaiian legacy. It is a Hawaiian way of life. It is a Hawaiian way of thought. Knowing your Aina is what makes us an expert of our place.
- The same fear that people share of someone getting their lease before someone else, is the same amount of fear that I feel about not being able to go home.
- Applicants should not be transported from where they are kupa`āina to other ahupua`a where they never lived.
- Pilina would award homestead Leases to families who have long relationships with the ahupua'a with which they are connected.
- I am aina. Alohaaina Waika'alulu Ioane. I was named for the deep-rooted aloha that my ohana has practiced with the 'āina of Waika'alulu, Kings Landing. My name is a reflection of our multi-generational stewardship pilina to our Aina of Waika'alulu.
- 100% support this pilina based priority as it will ensure our legacy as stewards of the aina
- In favor of creating a Pilina-Based Policy that awards homestead leases to native Hawaiian beneficiaries (100% and 50% of Hawaiian Lineage) who have a connection to that wahi. I agree that it is essential to maintain continuity of settlement by beneficiaries and their families to their success and need to build positive connections during times of need and the understanding to live a self-sufficient lifestyle.
- I understand the concerns raised by others, but I believe the Commission is being very fair in setting guidelines for qualifying Applicants, i.e., 18 years of living in the wahi, 100% or 50% of Hawaiian lineage requirements. I believe it is essential that we not uproot people of Hawaiian descent who have lived on the land alongside their parents, played there, raised cattle, pigs, chickens, vegetable gardens, ulu trees, avocado trees, lychee, mangoes, fished in our rivers, etc., and who grew up into a self-sufficient lifestyle.
- We need to be able to bring our children and grandchildren back home who have been priced out of the ability to carry on generations of living here. We are being priced out of

our land by millionaires who purchase acres by the hundreds and block our ability to farm, fish, swim on the land that once wasw ours.

- It is essential that we stand in unity and provide a place where it can be done for the generations who were, are, and will be.

Testimony Points in Opposition to the Rule Amendment

- Rule amendments directly conflict with the actual Beneficiary Consultation conducted by the Planning Office from March through June 2025, which clearly indicated the Pilina Priority Waitlist would apply to Kuleana awards only.
- At its September meeting, the HHC removed the term "Kuleana." This action allows the Pilina process to be applied to all leases. This change affects all of the 29,000+ on the Waitlists.
- Implementing this amendment without proper consultation and without respecting the island-wide waitlist system disregards the thousands of beneficiaries who have patiently waited for homestead opportunities,
- Changes of this magnitude require full transparency, equitable access, and meaningful input from all affected beneficiaries.
- This Pilina-based priority waitlist rule expands beyond what beneficiaries were consulted on, yet the DHHL did not consult with the Office of Native Hawaiian Relations (ONHR) to ensure alignment under and with the federal trust standards.
- At the September 2025 HHC meeting, the chairman proposed amending the rule to remove the term "kuleana." Well, it's not a term. Kuleana is an award category. This amendment drastically altered what was presented to our beneficiaries over the several months and many meetings that we had this discussion.
- The HHC Submittal was to accept the report and the proposed amendments to the HAR, not to change what was presented to the beneficiaries. This action by the commission is a discredit to the expertise of the planning department and inappropriate and disrespectful to our beneficiaries.

- Auntie's husband was on the list for 50 years, and now somebody else that just got on the list can get land before he does? That doesn't seem fair to me. It just feels like we should just put people on the land.
- I really believe that the meaningful consultation to include the right organizations, as well as reaching out to the ONHR, has been missed. The pathway to our lands cannot be rewritten without that voice or Leo of the people it serves. This is kuleana, our rights, and our legacy. You cannot change the pathway to a homestead award without fully informing beneficiaries and ensuring the rules meet trust obligations.
- Applies rules that go beyond the requirements of the Hawaiian homelands waitlist system, further disadvantaging those who have waited for decades on the original island-wide waitlist

Testimony Points that are Based on Misinformation

- I question whether this amendment has been approved by the Department of the Interior, given its significant impact on beneficiary rights and the original provisions of the HHCA.
    - The DOI has no authority over DHHL's rulemaking as rulemaking is captured in the Hawaii Administrative Rules (HAR) and not in the Hawaiian Homes Commission Act of 1921, as amended.
- Over the years, not one notification was sent to me regarding meetings or applications for the Pilina-Based Priority program. This lack of notification and outreach undermines transparency and prevents beneficiaries like myself from participating in decisions that directly affect our opportunities for homestead lands. Wants to know what it takes to be on the Pilina-Based Priority Waitlist. Request by the applicant to place her and her son on the Pilina-Based Priority Waitlist for Waimanalo.
    - Commenter thinks that the Pilina Priority Waitlist has been in effect and she was not properly informed, therefore she is submitting an official request for her and her son to be placed on the Waimānalo Pilina Priority Waitlist.
- The HHCA established an island-wide waitlist system, and it is unlawful to allow a separate application system to be implemented that favors certain demographics while disadvantaging long-waiting beneficiaries like myself.

- The proposed rule does not favor certain demographics as it may be utilized by current and future applicants on the Waitlist.

Testimony Requests/Demands on the Department

- Formal request to conduct a new round of Beneficiary Consultation on all islands to include all waitlist applicants.
- Provide clear justification for the amendment's authority and compliance with the HHCA.
- Explain how waitlist priorities are being altered.
- Ensure full disclosure of beneficiary notification efforts.
- Confirm whether this amendment was reviewed and approved by the Department of the Interior.
- Allow meaningful opportunity for all beneficiaries to provide input before any further action.
- I am requesting that the department conduct another full beneficiary consultation with the Commission's modifications to the rule or remove the amendment. We got to have our cards out front and tell people what we're doing. We spent all this money, all this time, and we had 900 people, and we have 29,000 people on the wait list. If you would have said this was for all of it, you'd have more people providing their mana'o.

DISCUSSION: PROPOSED AMENDMENTS

In December 2024, DHHL began its process for administrative rulemaking for the proposed rules related to establishing a Pilina-based Priority Waitlist. See Table 2 above for a summary of the important actions taken by the HHC and DHHL in the process.

Based upon comments received during the public hearing process, staff recommends the following changes for clarification and consistency. Staff believes these changes are not substantive nor do they alter the meaning or impact of the proposed rules. Rather, the changes are administrative in nature and respond to comments by clarifying existing language. Refer to **Exhibit E** for the current proposed amendment to HAR §10-3-7 and §10-3-12.

Staff recommended changes

§10-3-7 Priority and preference for award of leases. (a) Except as otherwise provided in sections 10-3-11, ~~relating to Lanai awards,~~ and 10-3-12, applicants shall be considered for award in the order in which their completed applications were received by the department; provided that awards shall first be made according to ranking in existing priority I, II, and III waiting lists in that order until those waiting lists are exhausted. Thereafter, awards shall be based on numerical designation by date of completed application on the area waiting list, then on the island-wide waiting list, except as otherwise provided in this chapter.

§10-3-12 Awards to Applicants Who are Lineal Descendants or Previous or Existing Residents. (a) As used in this section: "Familial connection" means an established relationship between the applicant and the place where the department is planning ~~kuleana~~ homestead lease awards that is proven by the applicant's documented genealogy to biological or legal ancestors who resided in that place prior to 1900. "Residency" means the act of living in a particular place for a minimum of eighteen years. "Resident" means an eligible applicant who previously resided or currently resides in the place in which the award is being made for a minimum of eighteen years and can verify his or her residency acceptable to the department.

(b) The Pilina-Based Priority Waitlist shall be applicable ~~only~~ in places where the department is planning ~~kuleana~~ homestead lease awards. ~~Applicants may apply for the Pilina-Based Priority Waitlist for any lease awards in a place the homestead community where the department is also offering kuleana homestead leases.~~ The Pilina-Based Priority Waitlist is an optional waitlist that applicants on the respective Island-wide Waitlist may choose to be ~~listed on~~ a part of if the applicant can establish:

(1) a former or current residency in the place; or

(2) a familial connection to the place.

If the applicant can establish his or her former or current residency or familial connection to multiple places where the department is planning ~~kuleana~~ homestead lease awards, the applicant may only choose one place to apply to be part of the Pilina-Based Priority Waitlist for.

(c) The area where applicants must establish their residency or familial connection to may be larger than the footprint of the planned ~~kuleana~~ homestead settlement. The specific areas to which this rule applies shall be defined in the settlement plan that is developed for the ~~kuleana~~ homestead. For existing ~~kuleana~~ homesteads, the area shall be defined by

the location and description of the tract of land included in the master plan or settlement plan that was approved by the commission.

(d) The department will provide notice to applicants on the respective island-wide waitlists that the department is accepting applications for the Pilina-Based Priority Waitlist. Applicants on the Pilina-Based Priority Waitlist shall be considered for award in their existing rank order on the island-wide waiting list. For places where an area waiting list exists, awards shall be made first on the area waiting list, then the Pilina-Based Priority Waitlist, then the island-wide waiting list, except as otherwise provided in this chapter.

(e) Applicants interested in being on the Pilina-Based Priority Waitlist shall complete an application form wherein the applicant must establish their former or current residency in the place or establish a familial connection to the place to the satisfaction of the department.

(1) To prove former or current residency, the applicant shall submit with their application any of the following pieces of information:

(A) A government issued identification card with picture and home address;

(B) School district records;

(C) Utility bill with a home address;

(D) Bank statement with a home address; or

(E) Any other applicable information that helps establish current or former residency.

(2) To prove an applicant's familial connection to the place in which the ~~kuleana~~ homestead lease award is being made, the applicant shall submit documentation establishing his or her connection to the place through the applicant's lineal descendancy. To prove lineal descendancy, the applicant shall provide with their application any of the following pieces of information:

(A) Documented genealogy to biological or legal ancestors who resided in the place prior to 1900;

(B) Birth certificates;

(C) Death certificates;

(D) Obituaries;

(E) Marriage certificates;

(F) Probate records;

(G) Church records;

(H) Census records;

(I) Tax records;

(J) Land conveyance documents, including but not limited to deeds and land commission awards;

(K) Oral family history; or

(L) Any other applicable information that helps establish a familial connection between the applicant and the place.

(3) The department will verify the applicant's connection to place by utilizing existing resources, records, and information already collected by the department to the extent feasible.

(f) If the department confirms the applicant's former or current residency of the place or familial connection to the place, the applicant will be placed on the Pilina-Based Priority Waitlist.

(g) In making subsequent awards, until the Pilina-Based Priority Waitlist is exhausted, applicants will be considered in the order of preference established in HAR § 10-3-12(c).

(h) The Pilina-Based Priority Waitlist shall expire when all the lots in the ~~kuleana~~ homestead development are awarded. Once an applicant on the Pilina-Based Priority Waitlist becomes a lessee, he or she will be removed from the respective island-wide waitlist for the type of lot awarded.

(1) If the Pilina-Based Priority Waitlist has been exhausted and there are remaining lots to award, then the department will utilize the respective island-wide waitlist to award the remaining lots until all lots have been awarded.

(2) If all lots have been awarded and there are still applicants on the Pilina-Based Priority Waitlist, the remaining applicants who did not receive an award will return to the respective island-wide waitlist in their original rank order by date of application. Those applicants may apply for a Pilina-Based Priority Waitlist for another area if he or she meets the qualifications established in HAR § 10-3-12(b).

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission adopt the Proposed Amendments Related to a Pilina-based Priority and Approve Proceeding to Compilation of Hawaii Administrative Rules Chapter 10-3 and Promulgation.

HAWAIIAN HOMES COMMISSION
Minutes of Monday, September 15, 2025, at 9:30 a.m.
Grand Naniloa Hotel, Sandalwood Ballroom, 93 Banyan Drive, Hilo, Hawaii, 96720,
and Interactive Conferencing Technology (ICT) Zoom

PRESENT Kali Watson, Chairperson
Makai Freitas, West Hawai'i Commissioner (ICT)
Sanoe Marfil, O'ahu Commissioner
Lawrence Lasua, Moloka'i Commissioner
Michael L. Kaleikini, East Hawai'i Commissioner
Shaylyn Ornellas, Kauai Commissioner
Pauline N. Namu'o, O'ahu Commissioner (ICT)
Walter Kaneakua, O'ahu Commissioner

EXCUSED Archie Kalepa, Maui Commissioner

COUNSEL Hokulei Lindsey, Deputy Attorney General

STAFF Katie Lambert, Deputy to the Chairman
Richard Hoke, Executive Assistant to the Chairperson
Leah Burrows-Nuuanu, Secretary to the Commission
Juan Garcia, Homestead Services Division Administrator
Russell Kaupu, Property Development Agent to the Office of the Chair
Kalani Fronda, Land Development Division Acting Administrator
Michelle Hitzeman, LDD Homestead Housing Development Manager
David Hoke, Enforcement Administrator
Kahana Albinio, Land Management Income Property Manager
Lilliane Makaila, Planning Office Acting Administrator
Lehua Kinilau-Cano, NAHASDA Government Relations Officer
Oriana Leao, NAHASDA Government Relations Program Specialists

ORDER OF BUSINESS

CALL TO ORDER
The meeting was called to order at 9:40 am by Chair Kali Watson. Six (6) members were present in person, two (2) on Zoom, and one (1) excused, establishing a quorum.

Chair Watson announced a request from HSD to amend the agenda to include item D7, Assignment of Leasehold Interest number 55, transferring from Warrick Aiwohi to Kimberly Abe. Commissioner Kaneakua moved to approve the amendment, seconded by Commissioner Lasua, and the motion passed unanimously.

J. Garcia informed the Chairman that due to an administrative oversight, Exhibit A was missing from item D10 in the consent agenda packet, and he had now distributed the missing exhibit to the Commissioners.

APPROVAL OF AGENDA
Chair Watson confirmed changes to the agenda, including rescheduling item H1 to 11 a.m., moving item G3 to follow F1, and noting the Commission would enter executive session and break for lunch at noon. He announced community meetings at 6:30 p.m. that evening at Keaukaha Elementary and the next night in Ka'u at Pahala Community Center. The amended agenda was approved unanimously.

MOTION/ACTION
Moved by Commissioner Kaleikini, seconded by Commissioner Kaneakua, to approve the agenda. Motion carried unanimously.

APPROVAL OF MINUTES
Chair Watson asked if there were edits or amendments to the August 18 &19 minutes. There were none.

MOTION/ACTION
Moved by Commissioner Kaleikini, seconded by Commissioner Kaneakua, to approve the August HHC Mintutes. Motion carried unanimously.

PUBLIC TESTIMONY ON AGENDIZED ITEMS

PT-1 Kenna Stormogibson – Item C-4: Ewa Land Donation

K. Stormogibson, executive director of the Hawaii Housing Policy Foundation, expressed concern over the land's condition, citing photos from 2001 and 2002 that showed signs of heavy industrial activity, including trucks and barrels, suggesting possible contamination. She criticized the current memorandum of agreement (MOA) for failing to address cleanup responsibilities, warning that beneficiaries could be liable for potentially costly remediation, estimated between $500,000 and $1 million. Although the MOA included an environmental assessment clause, it focused only on surrounding community impacts, not the land itself. She urged the Commission to conduct a site assessment for soil contamination and revise the MOA to ensure the developer, not beneficiaries, covers cleanup costs. She emphasized the importance of due diligence before accepting land donations and referenced a prior meeting where R. Kaupu advised verifying land suitability to avoid burdening the trust. She then concluded by requesting amendments to the MOA and noted concern that such critical information had not been disclosed earlier.

PT – 2 Jojo Tanimoto – Item C-5

Tanimoto expressed deep frustration over Hawaiian Homes' inaction on a long-promised evacuation road from Kawaihae. She said no progress had been made despite assurances in March about installing a gate and completing an archaeological review. With the Ironman Triathlon closing the only highway access for 12 hours, she stressed the urgent need for an alternate route through Kailapa subdivision. She noted the fire department had previously used this path for emergencies, yet it remains unpaved and blocked by Kohala Ranch. Tanimoto urged Hawaiian Homes to support the emergency road, improve transparency, and communicate more openly with the community.

PT-3 De Mont Manaole – Item C1 & C2

D. Manaole submitted a formal letter of support for C2. He emphasized his desire to be on record and shared a personal saying from his mother, "niele oukou," meaning people should refrain from speaking on matters that are not their kuleana, especially without accurate facts. He then objected to the comments made by the first testifier, suggesting her criticism stemmed from losing the Waipouli issue and was now unfairly targeting others. He defended the deal as beneficial and urged individuals to research before commenting. He voiced frustration over non-trust beneficiaries creating conflict among Native Hawaiians and reaffirmed that such matters are the kuleana of the beneficiaries. He concluded by reiterating his strong support for C1 and C2 and stated he would speak further when those items were addressed.

PT-4 Kalei Kailikini – ITEM G-2

K. Kaleikini expressed deep concern over the waitlist. She had been on the list since 1986, was 77 years old, and was part of the Kalima lawsuit, yet she still had not received a lease. She criticized the Department for prioritizing other developments like Pōhakuloa and Panaʻewa while neglecting elderly beneficiaries. She also emphasized the financial hardship faced by retirees, noting that many cannot afford homes priced at $200,000 and that monetary compensation from the lawsuit was insufficient due to Hawaii's high cost of living. She urged the Commission to prioritize elderly applicants fairly, provide lots without cost, and uphold the Homestead Act of 1920, which she argued was being violated by selling undeveloped lots. She called for

compassion, transparency, and immediate action, speaking on behalf of many seniors who could not attend hearings and were burdened by stress and disappointment.

PT-5 Iwalani McBrayer – Item C-1

McBrayer voiced strong support for agenda item C1, noting that the Native Hawaiian beneficiary developer's donation would add a valuable, income-producing property to DHHL's portfolio and strengthen the trust's financial base without tapping existing funds. She confirmed that DHHL leaders have been in contact with the donor. On item C2 involving Legacy Ventures LLC, she expressed concern that Kapolei homestead leaders were not consulted despite claims of beneficiary support. McBrayer warned that excluding homestead leadership from such major decisions undermines transparency and sets a poor precedent. She urged the Commission to defer C2 until genuine consultation with Kapolei homestead leaders occurs.

PT-6 Homelani Schaedel – Item C-1

H. Schaedel expressed concern that the project appeared to have been approved before being presented to the Commission and beneficiaries. She emphasized the importance of beneficiaries documenting their support or opposition to projects that may affect the Trust. Referring to the January 21, 2025 meeting minutes, she cited Commissioner Neves' confirmation that the 19-acre parcel included R5 residential zoning and R. Kaupu's statement that the developer must comply with Chapter 343 environmental review, including securing a Finding of No Significant Impact (FONSI) at their own cost. She reiterated that the developer should bear all costs. She requested that the last line of page 3, item 7 of the MOA be amended to explicitly state that KHL would be responsible for all FONSI-related expenses.

PT-7 Kama Keone – Item C1 & C-2

K. Keone expressed support for agenda item C1 and opposition to item C2. He celebrated the Department of Hawaiian Homes being projected as the largest homestead in Hawai‘i and was pleased with the recent lease and lot selections. Regarding C1, he acknowledged concerns about soil and debris, but supported the project, noting the land had been used for farming for decades and cleanup was expected. For C2, involving Legacy Ventures LLC, he voiced opposition due to the lack of transparency and communication, stating the company was from the mainland and had not reached out to local beneficiaries despite plans to become neighbors. He questioned whether they shared Hawaiian values and criticized the absence of consultation, likening it to strangers entering a home uninvited. He emphasized that beneficiaries deserved to know who would be part of their community and called for open dialogue, stating that his homestead currently opposed the project

II. ITEMS FOR DECISION MAKING

A. CONSENT AGENDA

HOMESTEAD SERVICES DIVISION

D-2 Approval of Consent to Mortgage (see exhibit)
D-3 Approval of Streamline Refinance of Loans (see exhibit)
D-4 Approval of Homestead Application Transfers / Cancellations (see exhibit)
D-5 Approval to Certify Applications of Qualified Applicants for the month of August, 2025 (see exhibit)
D-6 Commission Designation of Successors to Application Rights – Public Notice 2024 (see exhibit)
D-7 Approval of Assignment of Leasehold Interest (see exhibit)
D-8 Approval of Amendment of Leasehold Interest (see exhibit)
D-9 Approval to Issue Non-Exclusive Licenses for Rooftop Photovoltaic Systems for Certain Lessees (see exhibit)

PLANNING OFFICE

ITEM G-1 Accept the Beneficiary Consultation Report on Proposed Amendments to Hawai‘i Administrative Rules relating to Pilina-Based Priority and Lessee Leave of Absence.

RECOMMENDED MOTION/ACTION

Acting Planning Program Manager Lillianne Makaila and Planner V Julie Cachola presented the following: Motion the Hawaiian Homes Commission to Accept the Beneficiary Consultation Report on Proposed Amendments to Hawai‘i Administrative Rules relating to Pilina-Based Priority and Lessee Leave of Absence.

J. Cachola explained that the beneficiary consultation process involved 17 in-person and five virtual meetings, each documented in detailed reports she distributed to the Commissioners. The reports included meeting dates, attendance, number of comments, and categorized feedback. She emphasized that comments were often more meaningful than attendance numbers and noted that the reports also contained participant status and visual data like pie charts to show composition.

She highlighted strong conceptual support for the Pilina-based priority wait list, which gives preference to lineal descendants, aligning with Hawaiian values of kuleana and ancestral connection to land. Beneficiaries understood and agreed with the intent, though concerns remained about implementation details, especially regarding the existing wait list. One proposed method to prove Pilina was to trace genealogy through historical records, a process that would be explained further by Kaipo.

The Pilina proposal outlined three ways to demonstrate connection to a homestead: current or past residency, ancestral ties through a living relative, or genealogical lineage. While beneficiaries supported the concept, many felt the process was too complex and worried it would unfairly prioritize new applicants over those already on the waitlist. To address this, a 20-year residency requirement was proposed to ensure genuine community ties, and amendments were suggested to limit applicants to one Pilina claim and apply the Pilina waitlist only to kuleana homesteads. The strong demand for kuleana homesteads across communities reflected indirect support for the Pilina concept.

Regarding the leave of absence rule, beneficiaries expressed strong opposition, viewing it as invasive and overly restrictive. Concerns included privacy, caretaker qualifications, and the broader issue of abandoned homes leading to unauthorized occupancy and community disruption. Beneficiaries urged DHHL to conduct audits to identify which lessees were actively occupying their lots and to use data-driven enforcement rather than imposing blanket rules. They emphasized that the issue was not just enforcement but lease management, and that future proposals should be backed by clear rationale and community impact data.

Chair Watson explained that the rule amendments were designed to give Native Hawaiians preference in homesteading areas like Hana, King’s Landing, Miloli‘i, and Kahana Valley. He noted that agencies like DLNR and OHA had approached DHHL about transferring lands, but OHA lacked leasing authority. He emphasized that many DLNR lessees lacked entitlements and survivorship rights, and DHHL could offer better terms, including long leases and access to resources. Chair Watson recommended changing the residency requirement from 20 to 18 years to align with mortgage eligibility. Additionally, the rules would be expanded beyond kuleana areas to include improved lots, allowing for broader application in future homestead communities.

He further stressed that these rule changes were not yet finalized and would require further beneficiary consultation. He acknowledged that some ideas were new and might be received differently across communities. He highlighted that Native Hawaiians with expired DLNR leases were sometimes treated unfairly and that transferring lands to DHHL could correct this by offering proper leases and support. J. Cachola asked if the rules would apply beyond kuleana areas, and Chair Watson confirmed they should include improved lots to ensure communities with existing infrastructure were not excluded.

L. Makaila clarified that the pushback received during consultations was specifically related to rulemaking for leave of absence and caretaker provisions. At the same time, there was overwhelming support for moving forward with rulemaking based on Pilina. She explained that beneficiaries questioned the necessity of formal rules for leave of absence, noting that the current process, handled on a case-by-case basis at the Chair's discretion, was sufficient and not overly burdensome. Most beneficiaries preferred to approach the department when needed rather than have the department impose rules. Chair Watson agreed, stating that the leave of absence process should remain administrative, with decisions made quickly and simply at his discretion to avoid unnecessary complications.

J. Garcia explained that the current rules under section 10-2-16 delegate authority to the Chairperson to approve leave of absence requests. Still, they do not provide any criteria or conditions for making such decisions. He noted that this lack of guidance could be problematic for future Chairs. Chair Watson responded that he did not feel burdened by responsibility and preferred to keep the process simple and efficient rather than shifting it to the Commission, which would require a rule change. L. Makaila asked about the frequency of such requests, and Garcia confirmed they were very rare, indicating it was not a significant administrative issue. He expressed comfort with maintaining the current process unless the Commissioners preferred otherwise.

DISCUSSION

Commissioner Kaleikini explained that the Leave of Absence (LOA) rule discussion stemmed from beneficiary complaints about non-lessees occupying homestead homes, prompting the creation of a Permitted Interaction Group. Chair Watson noted that such concerns were more about enforcement than rulemaking, and consultation feedback showed beneficiaries opposed new LOA rules. J. Cachola added that while beneficiaries valued the ability to retain their lease during absences, they wanted a simple process. Commissioner Kaleikini supported that but pointed out the lack of formal criteria, as decisions were solely at the Chair's discretion.

Commissioner Kaleikini emphasized that lessees are required to occupy their homes, and violations were common. J. Garcia added that past practice focused on the lessee being directly affected. Still, consultations supported expanding leave eligibility to include family members listed in section 209, allowing lessees to request leave to accompany impacted relatives.

Commissioner Ornellas shared her concerns about the Pilina-based proposal, drawing from her attendance at meetings in Anahola and Kekaha. She noted that the initiative stemmed from communities like Hana, King's Landing, and possibly Puʻuʻopae, which have unique but similar dynamics. She emphasized that there is already a waitlist with tens of thousands of names and questioned the need to create a new Pilina-based list, which could complicate the process and potentially unintentionally exclude groups.

She specifically highlighted the impact on the Niʻihau ʻohana, many of whom have been transient between islands for generations and may not be able to claim Pilina to areas like Kekaha or Waimea. Commissioner Ornellas advocated for community-specific Pilina policies rather than broad legislation, warning that sweeping rules could exclude long-standing Native Hawaiian families and expose the department to legal challenges. She stressed that while the intent was to include, the result could be exclusion, and urged careful consideration to avoid unintended harm, especially to the Niʻihau community.

L. Makaila acknowledged the difficulty in summarizing the diverse perspectives from 21 beneficiary consultations and commended Julie for providing a comprehensive overview. She highlighted Waimānalo on Oʻahu as an area with a unique response, noting that residents were disheartened by their exclusion from kuleana homesteading opportunities despite being born and raised in older homestead communities. This reaction contrasted with the views of the Niʻihau ʻohana in Kekaha, illustrating the wide range of sentiments surrounding the issue. Lehua Makaila emphasized the complexity of the topic and noted that further administrative rule amendments and testimonies were forthcoming.

J. Garcia explained that the Pilina-based administrative rule was originally intended only for kuleana lots, and expanding it to all awardable lots would place a significant burden on HSD staff due to the increased research required to verify applicant eligibility. He emphasized that limiting the rule to kuleana lots was a practical compromise to manage workload.

Public Testimony – Skippy Ioane- expressed deep appreciation for the department, saying it had taught him patience through years of waiting. He strongly supported the Pilina-based proposal, viewing it as a lifeline for struggling communities like Niʻihau and the Big Island, which he described as "dying together." He emphasized the emotional toll of waiting and urged leaders to take bold action, comparing leadership to fishing, saying one must jump in the water, not wait on shore. He closed with heartfelt support for Pilina as a way to stop the decline, shared personal reflections, and warmly acknowledged Linda Chinn.

Public Testimony – Ainaaloha Ioane - thanked the department for supporting Kuleana subsistence homesteading and emphasized that the Pilina-based administrative rule change would help preserve their rural lifestyle, cultural traditions, and generational connection to the ʻāina. He explained that the change would strengthen their community's settlement plan, offer comfort to kupuna, and ensure successors could return home. She stressed that expanding paper leases would protect King's Landing from non-beneficiary encroachment and confirmed strong support from residents, naming several who wished to attend but couldn't stay through the meeting.

Public Testimony - Gracie Flores - testified in support of Items G1 and G2, urging preference for King's Landing residents in lease awards. She shared her family's deep ties to the ʻāina, noting her grandfather William Kulakauka Pakani had stewarded the land since the 1960s and helped found the association in 1982. Flores, now a grandmother, emphasized her kuleana to pass down traditional practices and protect the sacred land. She quoted her grandfather's 1977 statement detailing years of labor to develop the land for subsistence, and called for continued support of the rule change.

Public Testimony – Sherri Cummings - who had been vocal during Kauaʻi consultations, advocated for Niʻihau's inclusion due to her lineal ties and Pilina to the island. She cited historical records from 1853 linking Niʻihau to the Kona Moku and Hanapepe River region, emphasizing her kupuna's subsistence practices across those lands. She challenged assumptions about Niʻihau's barrenness, highlighting its past agricultural success, and stressed that Niʻihau and Puʻu ʻOpae were geographically distinct.

MOTION/ACTION

Moved by Commissioner Kaneakua, seconded by Commissioner Lasua to approve the motion as stated in the submittal.						
Commissioner	1	2	AYE (YES)	A'OLE(NO)	KANALUA	EXCUSED
Commissioner Freitas			X			
Commissioner Kaleikini	X		X			
Commissioner Kalepa						X
Commissioner Kaneakua			X			
Commissioner Lasua		X	X			
Commissioner Marfil			X			
Commissioner Namu'o			X			
Commissioner Ornellas			X			
Chairman Watson			X			
TOTAL VOTE COUNT			8			1
MOTION: [X] UNANIMOUS [ ] PASSED [ ] DEFERRED [ ] FAILED Motion passed unanimously, Eight (8) Yes votes, One (1) Excused						

ITEM G-2 Approval to Proceed to Public Hearing for a Proposed Administrative Rule to Establish a Priority Waitlist for Applicants with a Connection to a Place (Pilina-based Priority)

RECOMMENDED MOTION/ACTION
Acting Planning Program Manager Lillianne Makaila and Cultural Resource Specialists Ku'upua Mossman presented the following:
Motion the Hawaiian Homes Commission to Approval to Proceed to Public Hearing for a Proposed Administrative Rule to Establish a Priority Waitlist for Applicants with a Connection to a Place (Pilina-based Priority).

K. Mossman presented a detailed overview of the Pilina-based administrative rule amendment, explaining that it was developed in response to five years of DHHL planning and extensive beneficiary consultations. The rule aimed to prioritize Native Hawaiian beneficiaries with deep connections to rural communities, particularly in areas designated for Kuleana homesteads. She noted that the initial draft left the definition of "wahi" (place) broad, but due to varied interpretations and feedback, the term was removed and replaced with a process allowing each community to define its place through settlement plans. This change was intended to better include communities like Niʻihau in areas such as Puʻu ʻŌpae.

She addressed three major themes from the consultations: connection to place, residency qualifications, and application clarity. She explained that the rule was revised to eliminate the pathway allowing applicants to qualify through a family member's residency, as it diluted the intent of place-based knowledge. Residency was further defined to require at least one generation, later clarified as 18 years. The application process was clarified to show that the Pilina-based wait list was optional, tied to specific settlements, and limited to one application per offering. If an applicant was not awarded a lot, they could return to the general wait list and reapply elsewhere. K. Mossman concluded by outlining the next steps, including internal reviews, legal evaluations, and eventual submission for public hearing and publication.

Chair Watson shared a personal experience from before his time with the department, when he tried to help a Waimānalo resident living in a bus by building a home, but was blocked due to the absence of formal rules. He expressed concern about limiting oversight and emphasized the urgency of expanding the administrative rule to include not just Kuleana homesteads but broader rural Hawaiian communities, some of which already had infrastructure but were restricted by DLNR leases that lacked succession rights and homesteading benefits. He noted DLNR's receptiveness to conversion and highlighted the advantages of longer leases and access to loan products. To expedite support and avoid tragic delays, he proposed amending the rule to remove the term "Kuleana," apply it to all homesteads, and reduce the residency requirement from 20 to 18 years. He then made a motion to approve these changes, which was seconded by Commissioner Kaleikini.

DISCUSSION
Commissioner Lasua raised the issue of the Niʻihau people, prompting Chair Watson to clarify that the Commission must identify specific areas for applying the lineal descent criteria. He questioned whether places like Keʻanae and Hana had been officially designated. K. Mossman responded that only areas slated for Kuleana homesteads had been identified, not those outside that scope. Chair Watson then asked whether lineal descent for Niʻihau beneficiaries would be tied specifically to Hanapepe or extend beyond it.

Commissioner Kaneakua emphasized the importance of including individuals with direct ties to Kauaʻi, stating they should not be excluded from opportunities. Chair Watson agreed and suggested that this concern be addressed through an amendment. Commissioner Kaneakua recommended formally including Niʻihau in the motion related to Kuleana homesteads. Chair Watson supported the idea and proposed adding a catch-all provision to the rules to cover other areas like Kahuna Valley and any additional regions not yet identified but deemed suitable for homesteading.

L. Makaila explained that settlement plans typically defined areas and their connection to place, making them suitable for implementing homesteading policies. Chair Watson noted that the areas he referred to were

already settled with infrastructure and proposed converting DLNR leases in Hawaiian villages into homestead leases to provide better terms and succession rights. He emphasized that non-Native Hawaiians could retain their DLNR leases until expiration, at which point conversion could occur, as in the Waimānalo case.

MOTION/ACTION to AMEND
Commissioner Ornellas moved, and Commissioner Kaneakua seconded to amend the motion that the Pilina-based waitlist would apply to all homestead awards. The motion on the amendment was approved unanimously. Chair Watson asked for a vote on the main motion as amended.

MOTION/ACTION

Moved by Chair Watson, seconded by Commissioner Kaleikini to approve the motion as stated in the submittal.						
Commissioner	1	2	AYE (YES)	A'OLE(NO)	KANALUA	EXCUSED
Commissioner Freitas			X			
Commissioner Kaleikini		X	X			
Commissioner Kalepa						X
Commissioner Kaneakua			X			
Commissioner Lasua			X			
Commissioner Marfil			X			
Commissioner Namu'o			X			
Commissioner Ornellas			X			
Chairman Watson	X		X			
TOTAL VOTE COUNT			8			1
MOTION: [X] UNANIMOUS [ ] PASSED [ ] DEFERRED [ ] FAILED Motion passed unanimously, Eight (8) Yes votes, One (1) Excused						

ITEM G-4 Adopt the Final Waimea Nui Regional Plan Update 2025

RECOMMENDED MOTION/ACTION
Acting Planning Program Manager Lillianne Makaila presented the following:
Motion the Hawaiian Homes Commission to Adopt the Final Waimea Nui Regional Plan Update 2025.

L. Makaila noted that the previous plan was over 15 years old and that the Waimea Nui region had worked diligently to revise it. The planning process included a leadership meeting early in the year, followed by four beneficiary consultations held between April and August, with strong community participation and input. Priority project voting occurred in late June, and feedback from the consultations was incorporated into the final version. She reminded Commissioners that the draft had been presented the previous month and confirmed that the plan was now ready for approval. A motion was made by Commissioner Marfil and seconded by Commissioner Kaleikini, with one public testimony scheduled.

Public Testimony – Mike Hodson - agreed with Skippy Ioane about the lengthy nature of the regional planning process. He explained that the original intent of the regional plan, based on HART 10-6, was focused on rehabilitating Native Hawaiians, but over time, it became cluttered with unrelated issues like land management and development due to the department's limited involvement. He emphasized that infrastructure and land placement were the department's kuleana, while beneficiaries were responsible for shaping the regional plan to support self-sufficiency and self-determination. He also noted that updating such extensive plans every two years was unrealistic and that the process had become convoluted. He praised planner L. Makaila for her exceptional organization and ability to keep meetings focused and timely. He highlighted the vast scope of their region, covering nearly 85,000 acres with diverse land types and an active homestead community, and closed by commending the planning staff for their dedication.

STATE OF HAWAIʻI
DEPARTMENT OF HAWAIIAN HOME LANDS
NOTICE OF PUBLIC HEARINGS ON PROPOSED
ADMINISTRATIVE RULE AMENDMENTS
PILINA-BASED PRIORITY WAITLIST

Pursuant to Chapter 91, Hawaiʻi Revised Statutes, and Title 10, Hawaiʻi Administrative Rules, notice is hereby given that the Department of Hawaiian Home Lands (DHHL) will conduct a **virtual public hearing** and a **hybrid public hearing** that provides both in-person and virtual participation. The purpose of the public hearings is for DHHL to receive oral and/or written comments on proposed administrative rule amendments that will establish a **Pilina-Based Priority Waitlist** for Hawaiian Home Lands homestead lease awards.

An **Informational Briefing** will be held as an introduction, before the formal public hearing begins, in order to explain the proposed amendments and answer questions. DHHL will then start the public hearing to receive testimonies. During the public hearing, DHHL can only receive testimony.

Description of Proposed Amendments: DHHL is proposing amendments to Hawaiʻi Administrative Rules (HAR) Section 10-3-7 Priority and Preference for Award of Leases, and is adding a new Section 10-3-12 Awards to Applicants Who are Lineal Descendants or Previous or Existing Residents. The proposed rule amendments establish a "Pilina-Based Priority Waitlist" for each homestead area where homestead leases will be awarded. Before DHHL awards homestead leases, it will notify all applicants on the respective islandwide waitlist (agricultural, residential, pastoral) that the Department is accepting applications for the Pilina-Based Priority Waitlist for the homestead area. To qualify for the Pilina-Based Priority Waitlist, existing applicants must document and DHHL must verify that the applicant is:

1. A former or current resident who has resided in the area for at least 18 years; **or**
2. A Lineal Descendant with ancestors who resided in the area prior to 1900.

If the applicant's documents are verified by DHHL, the applicant will be placed on the Pilina-Based Priority Waitlist by date of application. When DHHL awards homestead leases, if an "Area Waiting List" exists, homestead leases would be awarded first to those on the Area Waitlist. When the Area Waitlist is exhausted or if there is no Area Waitlist, DHHL will award homestead leases to applicants on the Pilina-Based Priority Waitlist. If the Pilina-Based Priority Waitlist is exhausted, DHHL will award homestead leases to applicants on the respective Island-wide Waitlist.

This rule amendment gives preference to lineal descendants and long-term residents of the homestead area when homestead leases are awarded. This rule is intended to award 99-year homestead leases to applicants who have ancestral ties to the homestead area. This amendment supports the continued presence of family lines on their ancestral lands so they may strengthen their pilina to place, exercise their kuleana and knowledge of natural

and cultural resources, wahi pana, cultural traditions, and practices. Maintaining family ties to their ancestral lands strengthens family networks, preserves cultural knowledge, and promotes successful homestead settlement.

Hearing Dates and Times (HST):

Virtual Public Hearing: Wednesday, January 28, 2026, 12:00 p.m.

- Via Zoom, Meeting ID: 879 5786 7412 Passcode: 121

Hybrid Public Hearing: Wednesday, January 28, 2026, 6:00 p.m.

- In-person at Hale Pono'ī, DHHL Headquarters, 91-5420 Kapolei Prkwy, Kapolei, HI 96707; or
- Via Zoom, Meeting ID: 890 2031 9272 Passcode: 121

The proposed rule, meeting links, and testimony instructions are available online at **dhhl.hawaii.gov/administrative-rules-pilina-based-priority-waitlist/** or in person at any DHHL District Office.

How to Submit Testimony: Provide your name, resident address, status (Lessee, Applicant, or General Public). Oral and/or Written testimony may be given in person or virtually by attending one of the public hearings (3-minute limit). In addition, written testimony will be received after the Public Hearings. Email comments to: dhhl.planning@hawaii.gov or mail comments to: **DHHL-Planning Office, 91-5420 Kapolei Parkway, Kapolei, HI 96707. Deadline for submittal of comments: Wednesday, February 4, 2026.**

For more information, please contact the DHHL Planning Office at:

dhhl.planning@hawaii.gov

(808) 730-0347

Exhibit C:

Reminder Email to BC Participants Regarding Public Hearings

Outlook

Reminder: Public Hearings on Pilina-Based Priority Proposed Administrative Rule — January 28, 2026

From Cachola, Julie-Ann <julie-ann.cachola@hawaii.gov>
Date Tue 1/27/2026 1:32 PM
To Cachola, Julie-Ann <julie-ann.cachola@hawaii.gov>
Cc Makaila, Lilliane K <lilliane.k.makaila@hawaii.gov>
Bcc [redacted]

Aloha Hawaiian Home Lands Beneficiaries:

Mahalo again for participating in one of the 22 Beneficiary Consultation meetings we held regarding proposed administrative rule amendments. Your time, mana'o, and engagement were invaluable in shaping the draft administrative rule now moving forward to public hearing. Based on your input, the Leave of Absence rule amendment is NOT moving forward, however, the Pilina-Based Priority Waitlist, giving preference to lineal descendants and previous and existing residents of an area, is moving forward, with some changes.

We hope that you saw the legal notices that DHHL published in all local newspapers at the end of December, announcing the public hearings at the end of January. Since the public hearings are open to the general public, we wanted to send this friendly reminder directly to the beneficiaries who attended our Beneficiary Consultation meetings. As the public notices stated, the public hearings will take place **tomorrow, January 28, 2026**.

Public Hearing Schedule – January 28, 2026
12:00 p.m. (HST) – Virtual Public Hearing
Virtual Meeting Link: https://dhhl-hawaii-gov.zoom.us/j/87957867412?pwd=bJybW9afa0geURMiLsKrra49MrqVKA.1

- Meeting ID: 879 5786 7412
- Passcode: 121

6:00 p.m. (HST) – Hybrid (in-person and virtual) Public Hearing
In-Person Location: Hale Pono'ī, 91-5420 Kapolei Parkway, Kapolei, HI 96707
Virtual Meeting Link: https://dhhl-hawaii-gov.zoom.us/j/89020319272?pwd=Y7eKXakpdndOY6vhhQG8OyjSfWePqi.1

- Meeting ID: 890 2031 9272
- Passcode: 121

What to Expect at the Hearing
The hearing will begin with an **Informational Briefing**. During this first portion, DHHL staff will:

- Explain the proposed administrative rule changes

- Provide background and rationale
- Explain the changes that the HHC made based on beneficiary comments
- Answer questions

After the briefing concludes, we will formally open the **Public Hearing**. During the formal hearing:

- We can **only accept testimonies (oral or written)—3 minutes please**
- We **cannot** answer questions or engage in discussion
- All comments will be recorded for the official hearing record

Submitting Written Testimony After the Pubic Hearing

We will accept written comments after the public hearing. Deadline for written comments: **February 4, 2026.** Written testimony may be submitted by:

- **Email:** dhhl.planning@hawaii.gov
- **Regular mail:** DHHL-Planning Office, 91-5420 Kapolei Parkway, Kapolei, HI 96707

More Information

- Current version of the proposed rule amendments
- Background information on the rule amendment

Mahalo again for your participation and continued engagement. Your voice is essential in shaping policies that reflect the needs and values of our homestead communities.

Mahalo,

Julie-Ann Cachola, AICP
Planner
Department of Hawaiian Home Lands
(808) 779-5084

DEPARTMENT OF HAWAIIAN HOME LANDS
BENEFICIARY CONSULTATION

PUBLIC HEARING ON PROPOSED AMENDMENTS TO THE DEPARTMENT OF HAWAIIAN HOME LANDS ADMINISTRATIVE RULES

January 28, 2026 – 12:00 pm (Virtual)

January 28, 2026 – 6:00 pm (Hybrid)

Virtual attendees: Go to Chat to register; enter all your info then hit enter.
Register with your first and last name; identify whether you are a lessee, applicant, both, or other public member; identify the City where you reside and the State if not in Hawai‘i. State: I want to testify; or I don’t want to testify; or Not sure about testifying. This will establish the order of testifiers.

Public Hearing

- The public hearing is conducted pursuant to Chapter 91, HRS.

- The purpose of the Public Hearing:
  - To receive oral and written testimony from beneficiaries and the public on proposed administrative rule amendments.
  - To formally place testimony into the administrative rulemaking record.

- Public Hearing Protocol:
  - DHHL staff and Commissioners cannot respond to questions or testimony during the hearing.
  - Testimony may express support, concerns, or recommend changes.
  - State law requires us to receive testimony without responding, but every comment becomes part of the official record.
  - No dialogue, no discussion.

Agenda

Part 1: Informational Briefing on Pilina Priority

- The Process – What we did, Where we are now, What's next?
- What were the main points that beneficiaries raised during the consultation meetings? How did the HHC address them?
- What is the current proposed rule amendment?
- Questions and Answers

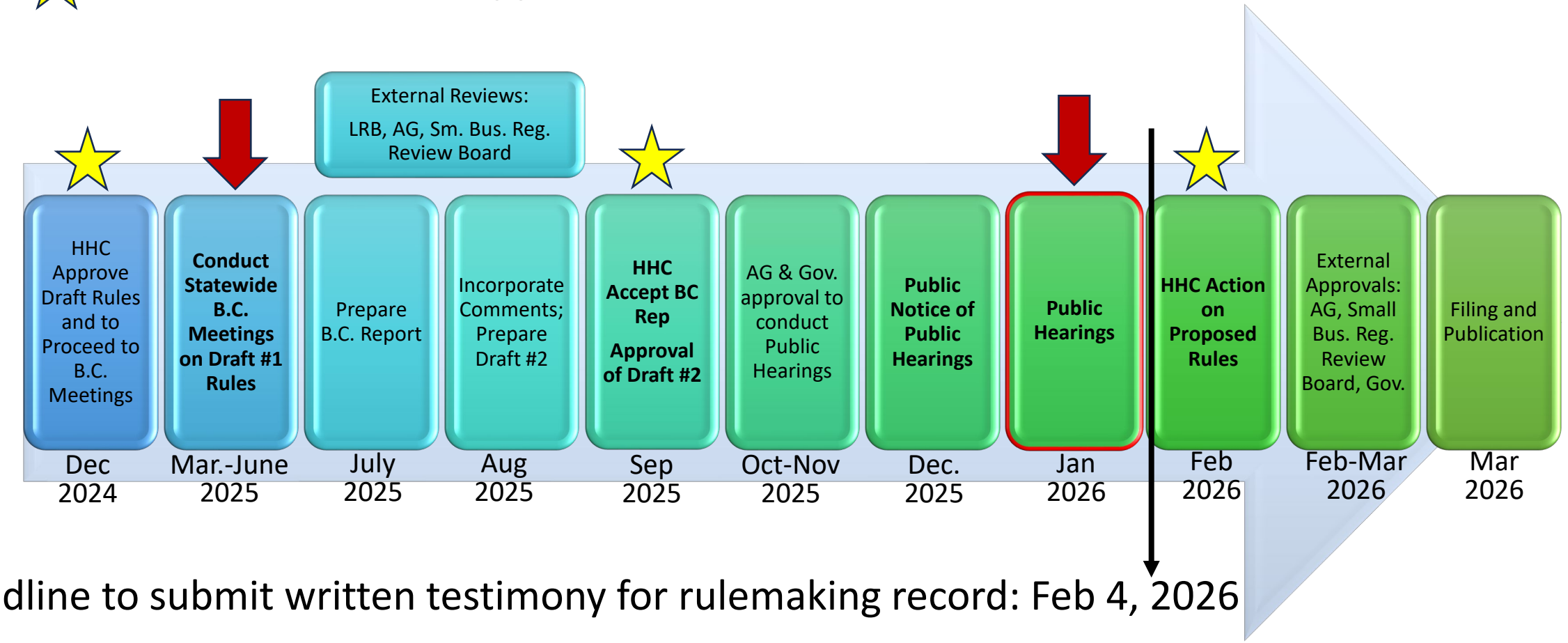
Part 2: Formal Public Hearing, Chapter 91, HRS

- Hearing Officer will call testifiers in the order of registration
- There is no dialogue; we cannot answer questions
- Please limit testimony to 3 minutes.
- DHHL will accept written testimony after the Public Hearing—Feb. 4

RULE AMENDMENT PROCESS

= **Opportunities for Beneficiary Review and Comment**

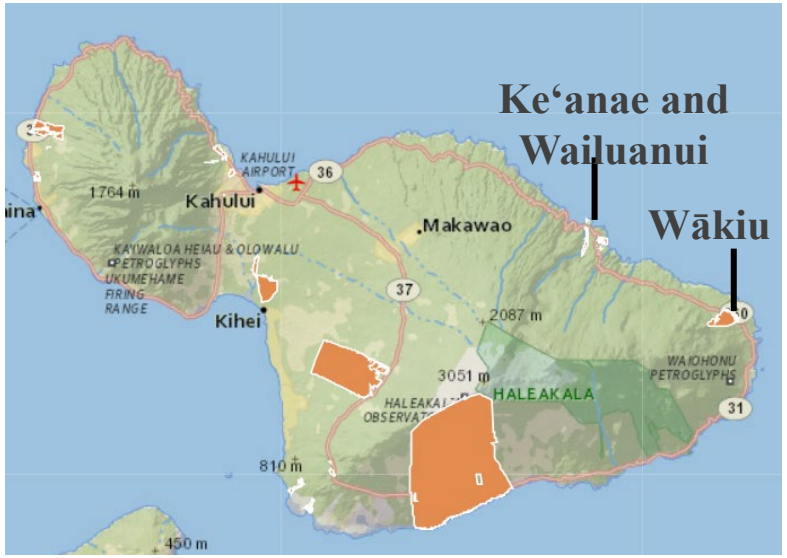
= **HHC Review and Approval**



Deadline to submit written testimony for rulemaking record: Feb 4, 2026

BENEFICIARY ISSUES AND CONCERNS

Developing Homestead Master Plans with Beneficiaries



- Native Hawaiian communities
- “Cultural Kīpuka”-- Community held fast to cultural traditions and practices.
- Subsistence economies rely on sustainable management of resources.

THE PLIGHT OF RURAL HAWAIIAN COMMUNITIES

- Each community was dealing with the depletion of habitat--Resources were not in balance and it was affecting their ability to feed their families.

- They were losing the ability to manage their natural and cultural resources—affecting their ability to practice and pass-on traditional knowledge, ‘ike kupuna of managing resources to support generations of thriving Hawaiian families.

- As their families grew, the supply of housing shrunk, prices soared. Priced out of paradise, family members were forced to leave the community to find affordable housing, which made room for more outsiders to come into their community. The tight-knit fabric of the community was changing.

- When we asked beneficiaries in these rural Hawaiian communities to plan for a new homestead, they all arrived at the same question:

“Who are we planning for? Our mo‘opuna or more outsiders?”

PROPOSED RULE AMENDMENT WITH HHC CHANGES

- Establishes a Pilina-Based Priority Waitlist for areas where DHHL is awarding ~~Kuleana~~ Homestead leases.
- When notified by DHHL, Applicants on the respective Islandwide Waitlist can apply for the Pilina-Based Priority Waitlist for the specific homestead if the Applicant can document that he/she is:
  - A former or current resident who has lived in the area* for at least ~~20~~ 18 years; OR
  - A lineal descendant of an ancestor who lived in the area* prior to 1900.
  - ~~Related to a current resident of the wahi~~
- The qualifying area* around the homestead being awarded that the Applicant or the Applicant's ancestor would have to reside within to qualify for the Pilina Priority Waitlist will be determined in the planning process for the particular homestead.
- While Applicants could potentially qualify for the Pilina Priority Waitlist for a number of homesteads, Applicants are restricted

PROPOSED RULE AMENDMENT WITH HHC CHANGES

- Establishes the process:
  - When DHHL publishes the Final Environmental Assessment for a new homestead, DHHL shall notify applicants on the respective Islandwide Waitlist(s) that it is accepting applications for the Pilina-Based Priority Waitlist for the new homestead.
  - Applying to the Pilina-Based Priority Waitlist is optional. If the Applicant chooses to submit an application, the Applicant is responsible to secure and submit to DHHL, all documents needed to verify the Applicant's former or existing residence in the area for at least 18-years, or the Applicant's ancestor's residence in the area prior to 1900.
  - DHHL verifies documentation, notifies applicant, puts applicant on Pilina Waitlist by date of application.
  - DHHL awards homestead leases. First to those on the Area Waitlist (if one exists), then to those on the Pilina Waitlist, then to those on the Islandwide Waitlist.
  - When all leases have been awarded for the homestead, if applicants still exist on the Pilina Waitlist, they return to their original position on the respective Islandwide Waitlist(s) and the Pilina Waitlist for that homestead is finished/eliminated.

Top Reasons for Support

- **Strengthening community pilina**
  – Keeping families, relationships, and networks intact
- **Honoring genealogy and place**
  – Recognizing ancestral ties and kuleana to ʻāina
- **Protecting cultural continuity**
  – Maintaining Hawaiian practices, ʻike, and values in homestead areas
- **Improved stewardship of land**
  – Belief that lineal/community-connected beneficiaries will better care for DHHL lands
- **Keeping homesteads rooted locally**
  – Preventing displacement and absentee residency

Top Issues & Concerns Raised in BC Meetings

- **Equity / Fairness concerns**
  – Fear of perceived favoritism or exclusion of otherwise qualified beneficiaries
- **Need for clearer definitions**
  – Requests to clearly define “lineal descendant,” “community ties,” and verification standards
- **Legal / constitutional risk**
  – Worries about legal challenges or rule vulnerability
- **Implementation burden**
  – Questions about how DHHL would verify ancestry or residency without slowing awards
- **Risk of exclusion or community division**
  – Concern about unintended tension between beneficiaries

What Beneficiaries Told Us During Consultation

- Beneficiaries expressed strong support for the concept of Pilina-based priority:
  - Preference for lineal descendants and those with deep ties to place
  - Alignment with Hawaiian values of kuleana, genealogy, and stewardship
- At the same time, beneficiaries raised important concerns:
  - Fairness to those already on the waitlist
  - Risk of exclusion if rules were too rigid
  - Need for clear, simple, and transparent criteria
  - Desire to avoid over-regulation and unnecessary complexity

Key Changes Made Based on Beneficiary Input

Based directly on beneficiary feedback, the Hawaiian Homes Commission:

- Expanded applicability to include all homestead awards
- Clarified Pilina qualifications to focus on lived connection to place
- Reduced the residency requirement to 18 years (one generation)
- Removed eligibility based solely on a family member's residency
- Limited applicants to one Pilina-based application per offering
- Made Pilina-based priority optional, not mandatory
- Shifted from fixed definitions of "place" to community settlement plans

Why The Changes Were Made

The Commission refined the rules to:

- Honor beneficiary support for Pilina-based preference
- Protect fairness and integrity of the existing waitlist
- Avoid unintended exclusion of long-standing Hawaiian communities
- Respect differences among communities and islands

Chair Watson explicitly framed Pilina Priority as a tool to:

- Stabilize rural Hawaiian communities
- Prevent continued displacement and loss of cultural continuity

The proposed rule reflects both beneficiary values and beneficiary concerns.

Submitting Written Testimony After the Public Hearing

- DHHL will be accepting written testimony until the close of business on Wednesday, Feb. 4, 2026
- Email Testimony to: dhhl.planning@hawaii.gov
- Or Mail to: DHHL-Planning Office, 91-5420 Kapolei Parkway, Kapolei, HI 96707

Mahalo

DEPARTMENT OF HAWAIIAN HOME LANDS

Item G-1

For view Exhibits E & F, please visit:

https://dhhl.hawaii.gov/administrative-rules-pilina-based-priority-waitlist/

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

February 17 – 18, 2026

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Lilliane Makaila, Acting Planning Program Manager

FROM: Nancy M. McPherson, Planner *Nancy M. McPherson*

SUBJECT: Adopt the Final Molokaʻi Coastal Homesteads Community Resilience Plan

Recommended Action

That the Hawaiian Homes Commission adopt the Final Molokaʻi Coastal Homesteads Community Resilience Plan (February 2026) as presented.

Discussion

The Molokaʻi Coastal Homesteads Community Resilience Plan project (MCH-CRP), originated from requests by homestead lessees in Kalamaʻula, Kapaʻakea and Kamiloloa-One Aliʻi, situated along Molokai's southern coastline, for DHHL to address the impacts they were experiencing due to shoreline erosion, inundation during extreme high tides, and flooding of low-lying coastal areas during heavy rain events, which were increasing in frequency and intensity. Learning from the shared community knowledge and results and recommendations from the South Molokai Shoreline Erosion Management Plan (SM-SEMP, 2022), the DHHL Planning Office initiated its first comprehensive, community- and ecosystem-based Community Resilience planning effort designed be scale up resilience and restoration efforts to an ahupuaʻa level.

The National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund (NCRF) approved a Community Capacity Building & Planning grant in 2021. DHHL contracted with the planning firm G70 in 2023 to develop a Community Resilience Plan for the Kalamaʻula, Kapaʻakea and Kamiloloa One Aliʻi coastal homestead communities located along the southern coast of the island of Molokaʻi, which commenced in June 2023. See Fig. 1, MCH-CRP Planning Areas, and Fig. 2, NFWF NCRF Focus Areas, below.

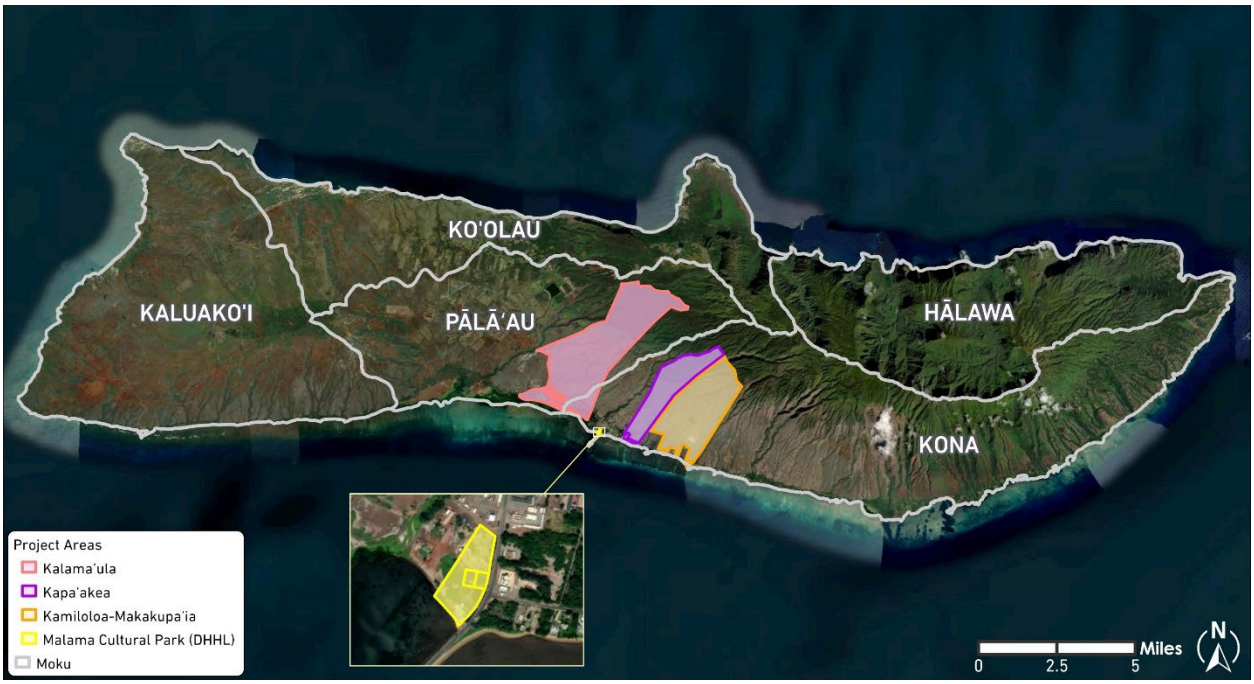


Fig. 1 MCH-CRP Planning Areas

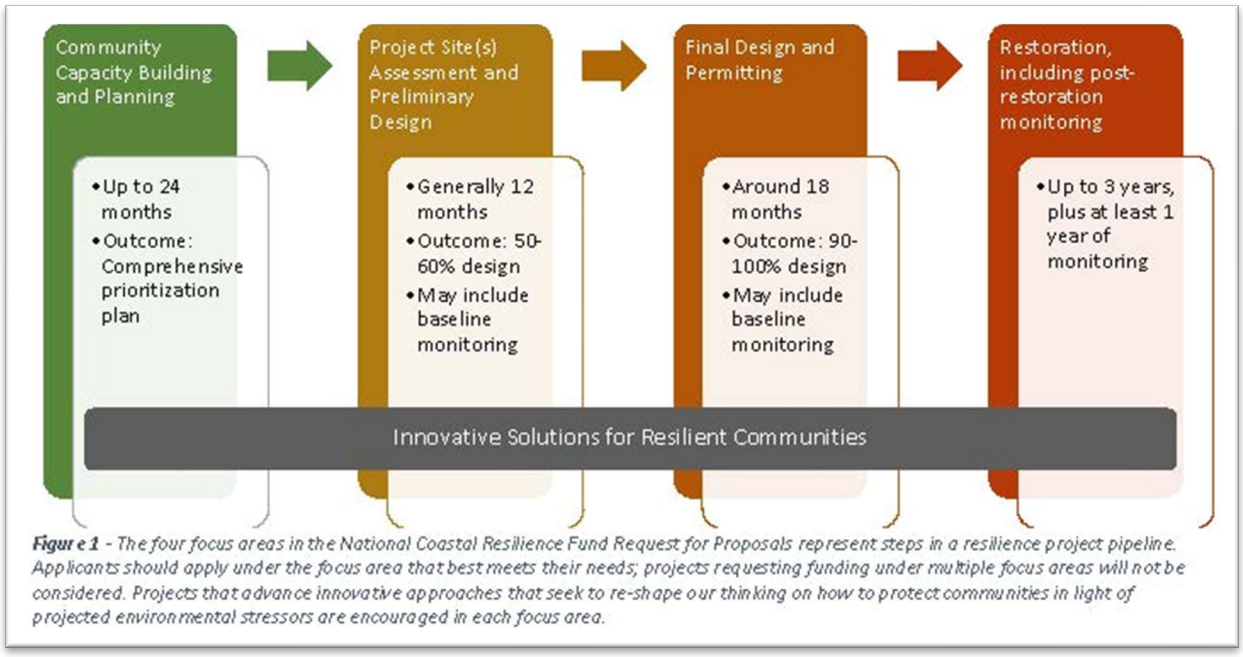


Fig. 2 NFWF NCRF Focus Areas

Progress updates on the Moloka'i Coastal Homesteads Community Resilience Plan (MCH-CRP) were provided to the Hawaiian Homes Commission (HHC) within the Planning Office Plan Implementation Update for Molokai at the April HHC Meetings starting in 2023. The Planning Office brought a Review Draft to the Hawaiian Homes Commission (HHC) for information at the HHC's regular meeting in

November 2025. Item G-2, For Information Only – Draft Molokaʻi Coastal Homesteads Community Resilience Plan (HHC Review Draft). Subsequently, the Draft MCH-CRP was posted to the DHHL website on January 5, 2026 and presented to the beneficiaries in a combination Open House and Presentation format on January 7, 2026 at Kūlana ʻŌiwi Conference Room and Halau in Kalamaʻula. See Fig. 3, Mtg #5 Invitation Postcard.

A 30-day comment period began on January 5 and comments were accepted through January 31, 2026. Revisions to the Draft MCH-CRP were made based on beneficiary comments and feedback during the Open House, Presentation Q&A, and comment period, and are reflected in the Final MCH-CRP being brought to the HHC for adoption. See Exhibit A, Final Molokaʻi Coastal Homesteads Community Resilience Plan.

Fig. 3 Mtg #5 Invitation Postcard

OUTREACH, PROCESS & METHODOLOGY

The project design for the *Molokai Coastal Homesteads Community Resilience Plan (MCH-CRP)* was to develop a plan for improving resilience to multiple natural hazards for coastal homestead communities on the island of Molokaʻi through scientific analyses and Geographic Information Systems (GIS) modeling of projected sea-level rise, flooding, groundwater upwelling and other increasing coastal hazards. The data on existing and historical

conditions were verified and refined by participatory mapping workshops, interviews with kupuna, and huakaʻi, or site visits, with cultural practitioners and lifelong residents of each homestead area. Hazard and vulnerability assessments were also verified by technical experts knowledgeable of Molokai conditions as well as other Molokai large landowners conducting ecosystem restoration and natural resource management activities.

This beneficiary-driven planning process, methodology and beneficiary outreach strategy were previously outlined in the November 17-18 HHC submittal, Item G-2 Draft MCH-CRP. Please refer back to that submittal for more detailed information. The MCH-CRP was developed through a beneficiary-driven process guided by a resilience planning framework. The process followed four key steps:

1. Identification of assets — the natural, cultural, social, and infrastructural resources that strengthen the community
2. Identification of hazards — the environmental and climate-related threats facing the homesteads
3. Assessment of vulnerabilities — understanding where people, places, and systems are most at risk
4. Determining risks — prioritizing which issues require the most urgent attention.

RESULTS OF BENEFICIARY OUTREACH AND PARTICIPATORY MAPPING

Based on the vulnerability assessment and beneficiary manaʻo, the MCH-CRP identified five key challenges that represent the most significant and overlapping risks for the South Molokaʻi homestead communities. In the discussion for each challenge, the plan highlights the hazards facing the homestead communities, the vulnerabilities that increase their exposure, and the resulting risks to people, place, and resources:

1. Sea Level Rise, Coastal Erosion, and Coastal Flooding
2. Heavy Rainfall, Ravine Flooding, and Drainage Overflows
3. Drought, Wildfire, and Mauka Degradation
4. Sedimentation, Pollution, and Marine Ecosystem Decline
5. Severe Storms, Hurricanes, and Tsunami

Beneficiary Meeting #5, held at Kūlana ʻŌiwi in Kalamaʻula in early January 2026, was a two-part meeting designed to present the Draft MCH-CRP to the beneficiaries and gather feedback. The first session was held in an open house format in the conference room, where informational stations were set up to share key elements of the plan, hard copies were available for review, and comment cards were provided for written input. The second portion was a formal

presentation of the Draft Plan held in the Hālau and was offered in a hybrid format to allow both in-person and virtual participation. Following the presentation, beneficiaries were invited to ask questions and provide oral and written comments, offering an opportunity for direct dialogue and clarification prior to finalizing the plan. See Figure 5, Meeting #5 Presentation, below.

Some of the concerns, questions and comments expressed by beneficiaries in Beneficiary Meeting #5 and subsequent comments received via email included:

- What would adoption of the MCH-CRP mean for practical action on the ground?
- Does completion of the plan mean that site assessments are already done or no longer required?
- What is the implementation timeline? Beneficiaries fear that homes could be lost to flooding if actions are delayed.
- Clearly identify sources of strategies and concepts – were they directly from beneficiaries, or from technical experts?
- ʻOhana with generational knowledge of the land should be recognized as subject matter experts alongside professional consultants.
- Need clearer identification of agency kuleana, so beneficiaries can better understand which agencies have jurisdiction and responsibility at different stages.
- There is frustration with past planning efforts that have not translated into visible action.
- Need to incorporate existing hazard mitigation and resilience-related projects already going on that are island-wide and community-vetted and that support a vision of self-governance and self-determination.
- How will this planning process leverage beneficiary involvement in future planning efforts? Specifically, how will beneficiaries be engaged, have their feedback integrated, and have their leadership supported in shaping long-term resilience and development strategies?

Responses included the reinforcing participation in the upcoming Molokaʻi Island Plan update and the DHHL Disaster and Climate Risk Reduction Plan process as well as future Molokaʻi Regional Plan updates, and acknowledging the needs to pursue relationships with other agencies, to pursue funding and to participate in implementation of other Molokai resilience plans and programs. See Exhibit A, Appendix B, Consultation Summary for detailed responses to beneficiary comments and questions.

Fig. 5 Meeting #5 Presentation

KEY FINDINGS AND A FRAMEWORK FOR ACTION

The MCH-CRP identifies numerous interconnected threats to the homestead communities and coastal ecosystems. These hazards compromise the health of both people and ecosystems, from mauka forests to nearshore reefs:

- Sea level rise and coastal flooding threatening homes, roadways, and fishponds
- Ravine and stormwater flooding from poorly maintained drainage channels and erosion
- Wildfire and drought due to invasive grasses and unmanaged mauka lands
- Erosion and sedimentation filling wetlands, springs, and fishponds, degrading reefs and coastal residential homesteads
- Invasive species such as deer, kiawe, and mangroves altering native habitats
- Aging infrastructure and limited evacuation access along the single coastal highway

Resilience Goals And Strategies

Through this planning process, beneficiaries identified five primary resilience goals to be implemented by specific, community-based strategies, and designed to address the risks and vulnerabilities described in the MCH-CRP. These five goals are:

A. Emergency Evacuation and Public Safety – Improve access and coordination for disaster preparedness.
B. Mauka Restoration – Restore upland forests and reduce erosion and wildfire risk.
C. Water Flow Maintenance and Flood Prevention – Maintain and restore natural drainageways, ravines, and wetlands.
D. Residential Hale Retrofits and/or Relocation – Strengthen and/or relocate homes vulnerable to flooding and coastal hazards.
E. Makai Restoration – Restore fishponds, wetlands, and coastal ecosystems to support fisheries, cultural practices, and natural buffers.

A matrix of resilience strategies, which also identifies responsible entities, timelines, funding possibilities, workforce development opportunities, and preliminary cost estimates, was then developed, and cross-referenced to color-coded maps that identify potential locations for implementation of resilience strategies. See Exhibit A, Table 5-1, Hawaiian Homestead Communities Priority Projects Implementation Matrix.

Potential resilience strategies and projects include pre-disaster emergency response and evacuation planning, evacuation routes and sites, fire breaks, a Drainage Master Plan, mauka and makai restoration plans, managing invasive species, and restoration of springs, fishponds and wetlands. See Table 1, MCH-CRP Priority Project Summary, below.

Priority Project	Kalamaʻula	Kapaʻakea	Kamiloloa
1	D2: Create an Ahupuaʻa Residential Hale Restoration and Relocation Study	A1: Create a Pre-Disaster Emergency Response and Evacuation Plan	A1: Create a Pre-Disaster Emergency Response and Evacuation Plan
2	A3: Develop Resilience Hubs or Evacuation Sites	A2: Develop and Maintain Emergency Evacuation Routes	B1: Develop Mauka Restoration & Maintenance Plan
3	B1: Develop Mauka Restoration & Maintenance Plan	B1: Develop Mauka Restoration & Maintenance Plan	C1: Develop a Drainage Master Plan
4	A4: Fire Break Construction & Maintenance	C1: Develop a Drainage Master Plan	C2: Green-Grey Drainage Improvements & Maintenance Program
5	E7: Maintain Kupuāiwa Coconut Grove and Kiowea Park	D3: Adapt Structures and Systems to Better Withstand Coastal Hazards	E1: Develop Makai Restoration & Maintenance Plan

Table 1 MCH-CRP Priority Project Summary

RELATIONSHIP TO THE DHHL PLANNING SYSTEM

Over the last ten years, the DHHL Planning Office has been developing a planning and policy framework to better address coastal and other natural hazards, mitigate vulnerabilities, and strengthen community resilience on Hawaiian Home Lands, starting with Molokai. DHHL plans that support and inform the MCH-CRP, either currently or once updated, are listed below and in Exhibit A, Appendix A, Summaries of Plans, Documents, and Initiatives Informing the MCH-CRP.

- (2005) Moloka‘i Island Plan
- (2014) HHC Water Policy Plan
- (2018) DHHL Moloka‘i Potable/Non-Potable Water Management Plan
- (2019) Moloka‘i Regional Plan
- (2022) South Moloka‘i Shoreline Erosion Management Plan
- (2022) Malama Cultural Park Special Area Plan
- (2022) DHHL General Plan Update
- (2023) DHHL Moloka‘i Cesspools Conversion Study
- (2025) DHHL Moloka‘i Dry Stream Beds H&H Studies

The most pertinent plans for the MCH-CRP are the DHHL General Plan update, the South Moloka‘i Shoreline Erosion Management Plan (SM-SEMP) and the Malama Cultural Park Special Area Plan, all approved by the HHC in 2022. In addition, the Molokai Island Plan update and the DHHL Disaster and Climate Risk Reduction Plan, planning for both which will start in 2026, will play key roles in this resilience planning framework and will be greatly informed by the MCH-CRP.

DHHL General Plan (2022 Update)

The DHHL General Plan comprises Tier 1 of the DHHL Planning System. Adopted by the HHC in 2022, this update includes climate change and natural hazard considerations throughout the plan, as well as a Climate Change White Paper, Appendix H. The General Plan directs DHHL to include climate change and natural hazards in land suitability analyses when updating its island plans, acquiring lands and doing master plans and environmental reviews. In the MCH-CRP, significant attention is given to addressing the policies in the General Plan regarding climate change and sea level rise, hazard mitigation, natural & cultural resources, water & drought resilience, community resilience, built environment resilience and emergency preparedness.

South Molokai Shoreline Erosion Management Plan (SM-SEMP, 2022)

The SM-SEMP, a focused type of Special Area Plan, falls on Tier 3 of the DHHL Planning System and was prepared in order to respond to years of community concerns about shoreline loss and coastal and lowland flooding affecting Molokai's homestead communities along Molokai's southern coastline. While studying the shoreline and coastal homesteads and formulating mitigation measures to address shoreline erosion impacts, the beneficiaries and planning team concluded that the environmental and coastal hazard issues the SM-SEMP identified could not be resolved without including the entire ahupua'a, because conditions up mauka were impacting the makai areas. This awareness prompted the application for and award of the NFWF NCRF grant for the project referred to as "Developing Community Resilience for Molokai Coastal Homesteads" by the grantor.

Malama Park Special Area Plan (2022)

Special Area Plans (SAP's) are on Tier 3 of the Planning System. This plan provides detailed goals and strategies required for implementation of the Special District land use designation approved by the HHC for DHHL's 4.58 acres of land at Malama Park in Kaunakakai ahupua'a. The SAP analyzed coastal hazards and issues such as sea level rise. Strategies include invasive species removal and restoration of native coastal plant species, creation of a vegetated berm along the shoreline, and monitoring, which reinforce the kinds of makai restoration and erosion mitigation measures that the MCH-CRP is recommending for the eroding shorelines in this project area.

Molokai Island Plan (2005, to be updated in 2026)

A primary vehicle for reevaluating land suitability and developing new and better land use plans, including identifying areas for relocation of homesteaders affected by increasing coastal hazards due to rising sea levels, will be the update of the Moloka'i Island Plan. Projected sea level rise and natural hazards will play a significant role in land suitability analysis, as will the information in the SM-SEMP and the MCH-CRP.

Beneficiary consultation is crucial to a successful island plan update, so the mana'o and 'ike already provided in the SM-SEMP, Malama Park SAP and the MCH-CRP provide a firm starting point for land use analysis and homesteading priorities for the planning regions in the MCH-CRP project area. Potential timelines for relocations of vulnerable lessees to safer areas within the 20-year

planning timeframe, and the community-based processes by which those decisions will be made, will be explored with existing lessees and their ʻohana during the land suitability and infrastructure analysis phases of the update. This phase will identify areas that are subject to current and future hazards and apply appropriate land use designations such as the Special District Coastal Hazard designation. The design standards phase should also ensure that any uses or development within vulnerable areas are designed to be resilient to anticipated hazards and incorporate mitigation measures to minimize risk to life and property.

Integrating Coastal Zone Management in Hawaiian Home Lands

DHHL is also pursuing a pathway for clarifying authority for the Hawaiian Homes Commission in coastal zone management on Hawaiian Home Lands via a NOAA-funded Project of Special Merit being conducted by the State Office of Planning and Sustainable Development, Coastal Zone Management division (OPSD-CZM). The intention of this project is to support DHHL in fulfilling the Hawaiian Homes Commission Act while protecting beneficiaries, lessees, and licensees from future impacts of climate change and sea level rise and protecting the marine environments that are vital to the community as a source of nutritional, cultural and spiritual sustenance.

The hope is that implementing a system within DHHL to streamline project review and authorize restoration work in and along the shoreline will facilitate resiliency efforts like the priority projects being proposed in the MCH-CRP and support efforts to mitigate shoreline erosion and flooding in a more efficient and less costly manner. The outcome of this project is tentatively scheduled to be presented to the HHC at its meeting in March 2026.

NEXT STEPS & IMPLEMENTATION

For the medium- and long-term, the intention is that having a comprehensive prioritization plan for community resilience will lead to eligibility for additional NFWF NCRF grants and/or grants from other sources, such as the Act 196 “Green Fees,” for project site assessments and preliminary design, final design and permitting, and implementation in partnership with beneficiaries, which is DHHL’s long-term implementation strategy.

Exhibit A, Chapter 6 Community-Based Implementation Strategy outlines beneficiary and DHHL roles and responsibilities and emphasizes the importance of homestead association and cultural practitioner leadership in implementation of the MCH-CRP. Because

the plan is rooted in self-determination, implementation must follow a process where beneficiaries guide decisions at every stage: planning, design, implementation, and long-term monitoring. Within this framework, a "beneficiary-led project" is defined as a project where beneficiaries

- set the project goals,
- identify preferred designs,
- select or advise on project partners,
- participate in monitoring, and
- hold a primary voice in how the work moves forward.

These projects strengthen community ownership, elevate traditional ecological knowledge, and reinforce the principle that resilience begins with the beneficiaries. The MCH-CRP recommends the creation of a standing Implementation Hui that brings together homestead association boards and key representatives, beneficiary-led organizations,DHHL divisions, and key partner agencies referred to in the Detailed Resilience Strategy Matrix (Exhibit A, Appendix E). This hui will serve as the central coordinating body responsible for tracking progress, advancing priority actions, and maintaining alignment with beneficiary priorities over time.

Effective coordination between Homestead Associations and DHHL will also be central to moving resilience projects from planning into action. The MCH-CRP is structured to allow Homestead Associations to take a lead role in advancing projects, while working closely with the DHHL Planning Office and Land Management Division to streamline access to land, approvals, and implementation. Homestead Associations may pursue grant funding directly to support coordination activities with DHHL, including staff time, technical assistance, and administrative support needed to carry out Tier I and Tier II actions identified in this plan. Participation in the upcoming Native Hawaiian Development Program Plan update will ensure that Priority Projects in the MCH-CRP will be eligible for funding via the DHHL Grants Program.

There is also a matrix of projects that will facilitate and support the homesteaders' Priority Projects which are under DHHL's kuleana, such as updating plans to include hazard mitigation and resilience actions; water, drainage and stormwater-related feasibility studies; archaeological inventory surveys and developing the Kalama'ula Mauka Ag Lots. Additional information on these projects can be found in Exhibit A, page 5-17 and Appendix F, Detailed DHHL Resilience Strategy Matrix.

In addition, in 2026 the Planning Office will be starting the planning process for the Molokaʻi Island Plan update and the statewide DHHL Disaster & Climate Risk Reduction Plan. Both of these planning processes will incorporate what has been learned through the MCH-CRP process and by building a strong policy foundation and framework based on beneficiary input and participation, will strengthen DHHL's ability to pursue implementation of the resilience strategies in the MCH-CRP.

Next Steps:

- Request HHC approval of Final Plan (February 2026)
- Identify funding sources and methods for implementation of resilience strategies.
- Organize the Implementation Hui and begin scheduling regular meetings.

Recommendation

That the Hawaiian Homes Commission adopt the Final Molokaʻi Coastal Homesteads Community Resilience Plan (February 2026) as presented.

FINAL MOLOKA‘I COASTAL HOMESTEADS COMMUNITY RESILIENCE PLAN

FEBRUARY 2026

HAWAIIAN HOME LANDS
HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

ITEM G-2
EXHIBIT A

FINAL MOLOKA‘I COASTAL HOMESTEADS COMMUNITY RESILIENCE PLAN

FEBRUARY 2026

HAWAIIAN HOME LANDS
HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

PREPARED BY:

G70

MAHALO ALL!

Your kōkua in this planning process and plan was instrumental. Your manaʻo, insights, kūleana, critiques and aloha of your ahupuaʻa, this space and place are evident in your passion and continued work for this ʻāina and lāhui.

We would like to mahalo the following:

The late Aunty Irene Pauole Kaʻahanui & Aunty Hattie Keliiaea Peelua Silva

Kalamaʻula Homesteaders Association: Lehua Kauka (President), Brent Nakihei (VP), Uncle Lawrence Lasua (Treasurer), Hamau Howe (Secretary), Stacy Crivello (Board of Director), Mike Kahinu (Board of Director), Kalani Johnston (Board of Director), Kaleo Crivello (Representative), Kekama Helm & Ane Bakutis (Representative), Nani Kahinu (Representative), Uncle Mango Stevens (Mauka Representative)

Kapaʻakea Homestead Association (KHA): Kahekili Pa-Kala (President),
Enoka Naho'opi'i (Vice President), Tina Schonely (Treasurer), Marissa Poaipuni (Secretary),
Sumu Asano (Sergeant of Arms), Bridgett Mowat (Representative)

Kamiloloa One Aliʻi Homestead Association (KOHA): Hala Pa-Kala (President), Todd Ragsdale (Representative)

SCHHA Molokai Mokupuni (SCHHA): Sybil Lopez (Molokai Mokupuni Councilmember)

Hui Hoʻokahua o Molokai (HHM): Aunty Liko Wallace (President),
Aunty Bridget Mowat (Vice President), Hala Pa-Kala (Secretary)

ʻIke Kupuna: The late Aunty Irene Pauole Kaʻahanui, Judy Caparida, Uncle Winnifred Lopez,
Jessie "Aunty Leilani" Wallace, Aunty Bridget Mowat

All beneficiaries who attended meetings and huakaʻi: Monique Ocampo, Gayla Haliniak, Kazen Dela Cruz, Winnifred Lopez, Miriam Kikukawa, Adeline Isamura, Carla DeAngelo, Cora Sanchez, Raymond Kalilikane, Malia Nishihira, Maverick Kaulia, Kapua Lauifi, Henry Paleka, Lorena Atchison, Kawika Domingo, Dwayne Kala, Carla DeAngelo, Marina Lafaele, Councilmember Keani Rawlins-Fernandez, Pelekane Tamashiro, Vana Naehu

Executive Summary

Executive Summary

The Molokaʻi Coastal Homesteads Community Resilience Plan (MCH-CRP) is a community-driven planning effort prepared by the Department of Hawaiian Home Lands (DHHL) in partnership with the beneficiaries that live within the Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi homesteads, as well as those that have an interest in Malama Cultural Park. Funded through the National Fish and Wildlife Foundation's (NFWF) National Coastal Resilience Fund (NCRF), this plan represents the first stage (Community Capacity Building and Planning) of a multi-phase process to strengthen the resilience of Hawaiian Home Lands communities located along Molokaʻi's southern shoreline.

Purpose

The MCH-CRP provides a roadmap for adapting to and preparing for climate change impacts such as sea level rise, flooding, erosion, wildfire, drought, and invasive species. Building upon prior planning efforts and technical studies, the plan integrates both Traditional Ecological Knowledge (TEK) and modern science to identify threats, assess community and natural assets, and develop nature-based solutions that enhance community, cultural, and ecological resilience.

The plan views resilience through a Hawaiian lens, grounded in values of aloha ʻāina (love for the land), Malama ʻāina (care for the land), and self-determination. The planning approach follows the traditional moku and ahupuaʻa system of managing land and sea as one connected whole.

Planning Area

The MCH-CRP planning area includes four DHHL areas on the south shore of Molokaʻi: the homestead communities of Kalamaʻula, Kapaʻakea, and Kamiloloa, as well as the Malama Cultural Park. Together, the planning area covers approximately 10,238 acres. Collectively, these lands extend from mauka areas through residential homesteads to makai coastal environments, encompassing dry and upland landscapes, drainage corridors, shoreline areas, and important cultural and community resources.

Beneficiary-driven Process

Guided by DHHL beneficiaries, the MCH-CRP was shaped through workshops, site visits, and interviews that drew upon community knowledge and the lived experience of homesteaders. Kūpuna, lineal descendants, and practitioners shared moʻolelo (stories), historical observations, and cultural practices that informed strategies for future stewardship. Technical experts contributed data and analysis on hazards, drainage, ecosystems, and infrastructure.

Key Findings

The plan identifies numerous interconnected threats to the homestead communities and coastal ecosystems, including:

- Sea level rise and coastal flooding threatening homes, roadways, and fishponds
- Ravine and stormwater flooding from poorly maintained drainage channels and erosion
- Wildfire and drought due to invasive grasses and unmanaged mauka lands
- Erosion and sedimentation filling wetlands, springs, and fishponds, degrading reefs and coastal residential homesteads
- Invasive species such as deer, kiawe, and mangroves altering native habitats
- Aging infrastructure and limited evacuation access along the single coastal highway

These hazards compromise the health of both people and ecosystems, from mauka forests to nearshore reefs.

Framework for Action

The MCH-CRP establishes five Resilience Goals supported by specific, community-based strategies:

A. Emergency Evacuation and Public Safety – Improve access and coordination for disaster preparedness.

B. Mauka Restoration – Restore upland forests and reduce erosion and wildfire risk.

C. Water Flow Maintenance and Flood Prevention – Maintain and restore natural drainageways, ravines, and wetlands.

D. Residential Hale Retrofits and/or Relocation – Strengthen and/or relocate homes vulnerable to flooding and coastal hazards.

E. Makai Restoration – Restore fishponds, wetlands, and coastal ecosystems to support fisheries, cultural practices, and natural buffers.

Each goal includes conventional and nature-based solutions that provide dual benefits of protecting communities while restoring ecosystems vital to fish and wildlife.

A total of 26 resilience strategies were identified across the planning area. These strategies reflect priorities raised by beneficiaries and are intended to be carried forward by the Homestead Associations over time as capacity, funding, and partnerships allow. While all 26strategies remain viable for future implementation, the planning process focused on helping each homestead community identify a small set of near-term priorities that respond to their most urgent risks.

Each of the three homestead areas was asked to identify five priority projects that are critical to advance in the near term. These priority projects are organized in the table below, followed by a description of each.

Priority Project	Kalamaʻula	Kapaʻakea	Kamiloloa
1	D2: Create an Ahupuaʻa Residential Hale Restoration and Relocation Study	A1: Create a Pre-Disaster Emergency Response and Evacuation Plan	A1: Create a Pre-Disaster Emergency Response and Evacuation Plan
2	A3: Develop Resilience Hubs or Evacuation Sites	A2: Develop and Maintain Emergency Evacuation Routes	B1: Develop Mauka Restoration & Maintenance Plan
3	B1: Develop Mauka Restoration & Maintenance Plan	B1: Develop Mauka Restoration & Maintenance Plan	C1: Develop a Drainage Master Plan
4	A4: Fire Break Construction & Maintenance	C1: Develop a Drainage Master Plan	C2: Green-Grey Drainage Improvements & Maintenance Program
5	E7: Maintain Kupuāiwa Coconut Grove and Kiowea Park	D3: Adapt Structures and Systems to Better Withstand Coastal Hazards	E1: Develop Makai Restoration & Maintenance Plan

A1. Create a Pre-Disaster Emergency Response and Evacuation Plan

Develops a community specific emergency plan that identifies risks, roles, responsibilities, evacuation routes, and communication systems. Supports shared coordination between DHHL, Homestead Associations, and emergency partners.

A3. Develop Resilience Hubs or Evacuation Sites

Establishes safe mauka gathering sites equipped with backup power, water, emergency supplies, and communications. These hubs serve as community centers during normal times and evacuation sites during emergencies.

A4. Fire Break Construction and Maintenance

Creates and maintains fire breaks around communities to reduce wildfire risk and improve access for firefighting and emergency crews. Includes community training and stewardship.

B1. Develop a Mauka Restoration and Maintenance Plan

Creates a comprehensive plan to restore mauka lands using mapping, LiDAR, ecological studies, and traditional knowledge. Identifies priority restoration zones, fencing needs, fire management strategies, and long term stewardship plans.

C1. Develop a Drainage Master Plan

Creates a comprehensive plan to guide drainage improvements across the homestead ahupuaʻa. Includes mapping, hydrologic modeling, inventory of canals and culverts, TEK integration, and engineered alternatives for long term water management.

C2. Green–Grey Drainage Improvements and Maintenance Program

Implements both natural and engineered drainage solutions, including sediment removal, canal clearing, erosion control, and native planting. Establishes a coordinated maintenance program across agencies and the Homestead Associations.

D2. Create an Ahupuaʻa Residential Hale Restoration and Relocation Study

Evaluates which residential areas face long term hazards such as flooding, sea level rise and erosion, and identifies options for retrofitting or relocating homes. The study will inform the Molokaʻi Island Plan Update and help guide future homestead development to safer locations.

D3. Adapt Structures and Systems to Better Withstand Coastal Hazards

Supports home retrofits such as elevation, hardening, hurricane resilience, utility protection, and floodproofing. Builds partnerships with experts for Firewise assessments and homeowner training on hazard preparedness.

E1. Develop a Makai Restoration and Management Plan

Creates a comprehensive plan to guide restoration of shoreline areas, integrate traditional ecological knowledge, identify priority projects, and build long term stewardship partnerships. Serves as the foundation for future coastal restoration work.

In addition to the Homestead Association-led strategies, the MCH-CRP identified 10 resilience strategies that fall under the responsibility of DHHL. These DHHL-led strategies address system-level needs that individual homesteads cannot advance on their own. They focus on improving coordination across agencies, filling technical and planning gaps, and advancing foundational studies, policies, and land management actions that support long term resilience. Some of these strategies may occur before homestead-led projects, while others may move forward in parallel. Together, the homestead-led and DHHL-led strategies create the conditions needed for coordinated, effective, and culturally grounded implementation across the Molokaʻi homestead communities.

A Path Forward

Upon completion, the Final MCH-CRP will be presented to the Hawaiian Homes Commission for consideration and adoption. Adoption of the MCH-CRP positions DHHL and the homestead communities to pursue future NFWF and other community resilience-related funding for design, permitting, and implementation. The plan sets the foundation for continued collaboration, workforce development, and education that empowers beneficiaries to lead the stewardship of their lands.

Through this plan, DHHL and its beneficiaries reaffirm Molokaʻi's legacy as a rich, thriving, and abundant land where community resilience and cultural sovereignty are strengthened for generations to come.

Table of Contents

Table of Contents

Table of Contents

1. Introduction
Background 1-1
Planning Approach 1-3
Project Funding 1-4
Planning Process 1-5
Summary of Beneficiary Workshops and Huakaʻi 1-5
Expert Meetings 1-8
Additional Outreach 1-9
How Beneficiary Input Shaped the Plan 1-10

2. Foundations of Resilience
Community Resilience 2-1
Disaster Cycle 2-2
Hawaiian Models of Resource Management and Resilience 2-2

3. South Shore Community Profiles
Regional Setting and Land Use History 3-1
Homestead Profiles 3-3
Climate and Hydrology 3-3

4. Assets, Hazards, Vulnerabilities and Risks
Community Assets 4-1
Hazards 4-2
Vulnerabilities and Risks 4-12
Social Vulnerability 4-15
Social Capital 4-15
Adaptive Capacity 4-15

5. Resilience Goals and Strategies
Process for Identifying the Resilience Strategies and Priority Projects ... 5-1
Five Resilience Goals 5-2
A: Emergency Evacuation and Public Safety 5-2
B: Mauka Restoration 5-4
C: Water Flow Maintenance and Flood Prevention 5-5
D: Residential Hale Retrofits and/or Relocation 5-6
E: Makai Restoration 5-6
Workforce Development 5-8
Summary Matrix of Hawaiian Homestead Association-Led Resilience Strategies and Priority Projects 5-8
DHHL-Led Resilience Strategies 5-17
Goal A: Emergency Evacuation and Public Safety 5-17
Goal B: Mauka Restoration 5-17
Goal C: Water Flow Maintenance and Flood Prevention 5-17
Goal D: Residential Hale Retrofits and/or Relocation 5-17
Goal E: Makai Restoration 5-17
Summary Matrix of Hawaiian Homestead Association-led Resilience Strategies and Priority Projects .....

6.Community-Based Implementation Strategy 6-1
Beneficiary Roles and Leadership in Implementing the MCH-CRP 6-1
Beneficiary-Led Organizations Participation 6-2
Native Hawaiian Development Program Plan Update 6-2
Technical Assistance Framework 6-2
Partnership Roles, Jurisdiction, and Responsibilities 6-2
MCH-CRP Implementation Hui 6-2

7. References

Appendix List
A: Summaries of Plans, Documents, and Initiatives Informing the MCH-CRP
B: Consultation Summary
C: Table of Partnerships, Roles, Jurisdiction and Responsibilities
D: Preliminary Goals Matrix
E: Detailed Resilience Strategy Matrix
F: Detailed DHHL Resilience Strategy Matrix
G. Comments on the Draft Plan
H. Priority Project Fact Sheets

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Chapter 1

Introduction

Chapter 1

Introduction

Background

Rooted in extensive multi-generational history, intertwining both native Hawaiian makai (seaward) fishing and mauka (inland) ranching lifestyles, the homestead communities of Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi (Kamiloloa) make up the DHHL lands on the south shore of Molokaʻi *(Figure 1-2)*. For generations, native Hawaiians in these communities have shared a symbiotic relationship with both the land and ocean, using them as food and medicinal resources while also practicing responsible stewardship to preserve their natural functions over the long term. This reciprocal relationship allowed for the residents of south Molokaʻi to fuel and drive a strong, stable, and long-lasting population.

The south shore of Molokaʻi remains a uniquely rural and culturally intact place, characterized by its fringing reef (the longest continuous reef in the United States), rich marine life, sandy beaches, wetlands, ancient loko iʻa (fishponds), native forests, and homestead communities nestled between the mauka hillsides and the ocean plain *(Figure 1-1)*. Churches, gathering halls, and parks serve as anchors of community life, while the rolling mauka lands used for ranching now face challenges of erosion, wildfire, and invasive species. The strength of these communities lies in their connection to place and in the persistence of a lifestyle grounded in aloha ʻāina. Yet these low-lying lands with limited evacuation routes and aging infrastructure make the homesteads particularly vulnerable to natural and climate-related hazards.

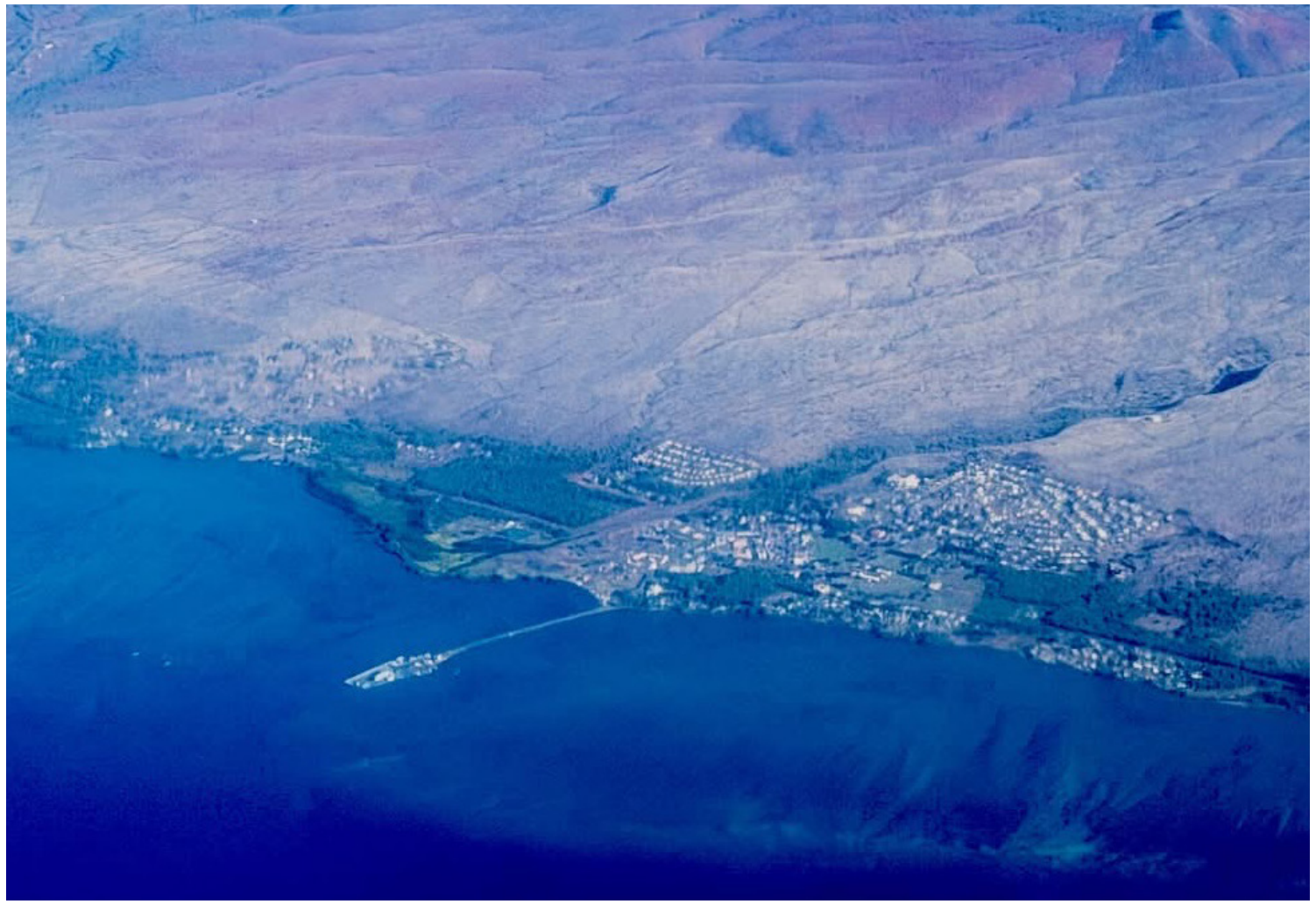


Figure 1-1 Aerial Image of South Molokaʻi

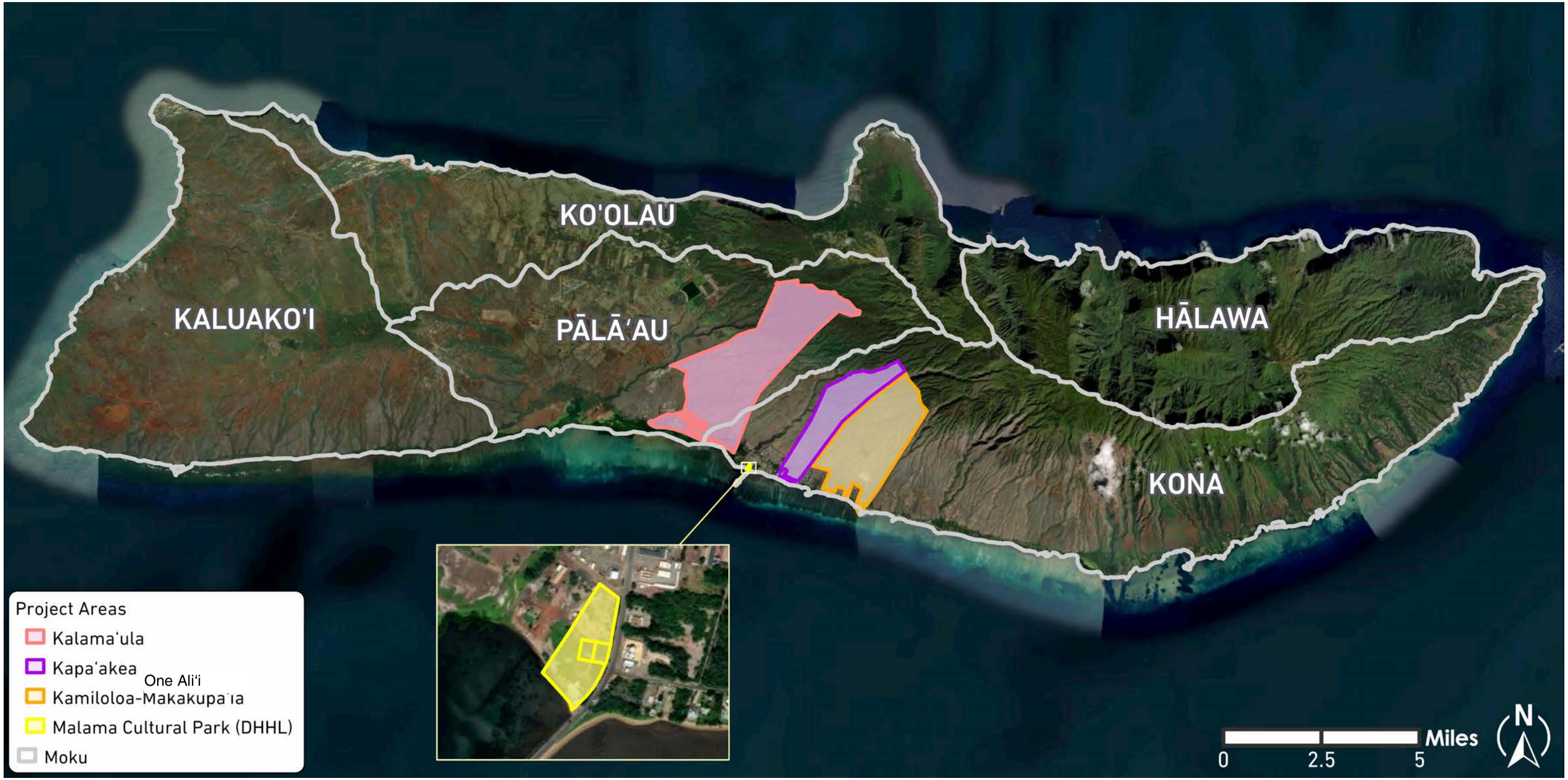


Figure 1-2 Planning Areas

In recent years, the south shore homestead communities of Molokaʻi have experienced more frequent and intense natural events including flooding, erosion, and high surf. Hurricanes, tropical storms, and heavy rain have damaged roads, filled drainage ditches, and flooded homes. When Kamehameha V Highway is blocked or eroded, it cuts off access to schools, medical care, and essential services. These events show how every part of the island is deeply connected. When one system fails, many parts of the community are affected. These communities can be flooded for days and cut off from normal transportation and evacuation routes.

Traditional Ecological Knowledge (TEK)
is the deep understanding of the environment passed down through generations of Indigenous peoples through observation, experience, and practice. It reflects how communities live with and care for the land, water, and resources in ways that maintain balance and cultural connection.

In response to these growing coastal challenges, DHHL prepared the South Molokaʻi Shoreline Erosion Management Plan (SM-SEMP) in 2022 *(Figure 1-3)*. The plan was developed by Planning Consultants Hawaiʻi, LLC, and Coastal Planners, LLC. The SM-SEMP built upon years of community concerns about shoreline loss and coastal flooding affecting the Molokaʻi south shore homestead communities. Beneficiary input was gathered through meetings, interviews, and workshops with homesteaders, lineal descendants, and local experts. Their knowledge and experiences helped identify erosion hotspots, flood-prone areas, and culturally significant shoreline resources. Technical studies of shoreline change, wave energy, and sea level rise were also completed to guide strategies that balance Traditional Ecological Knowledge (TEK) with modern science.

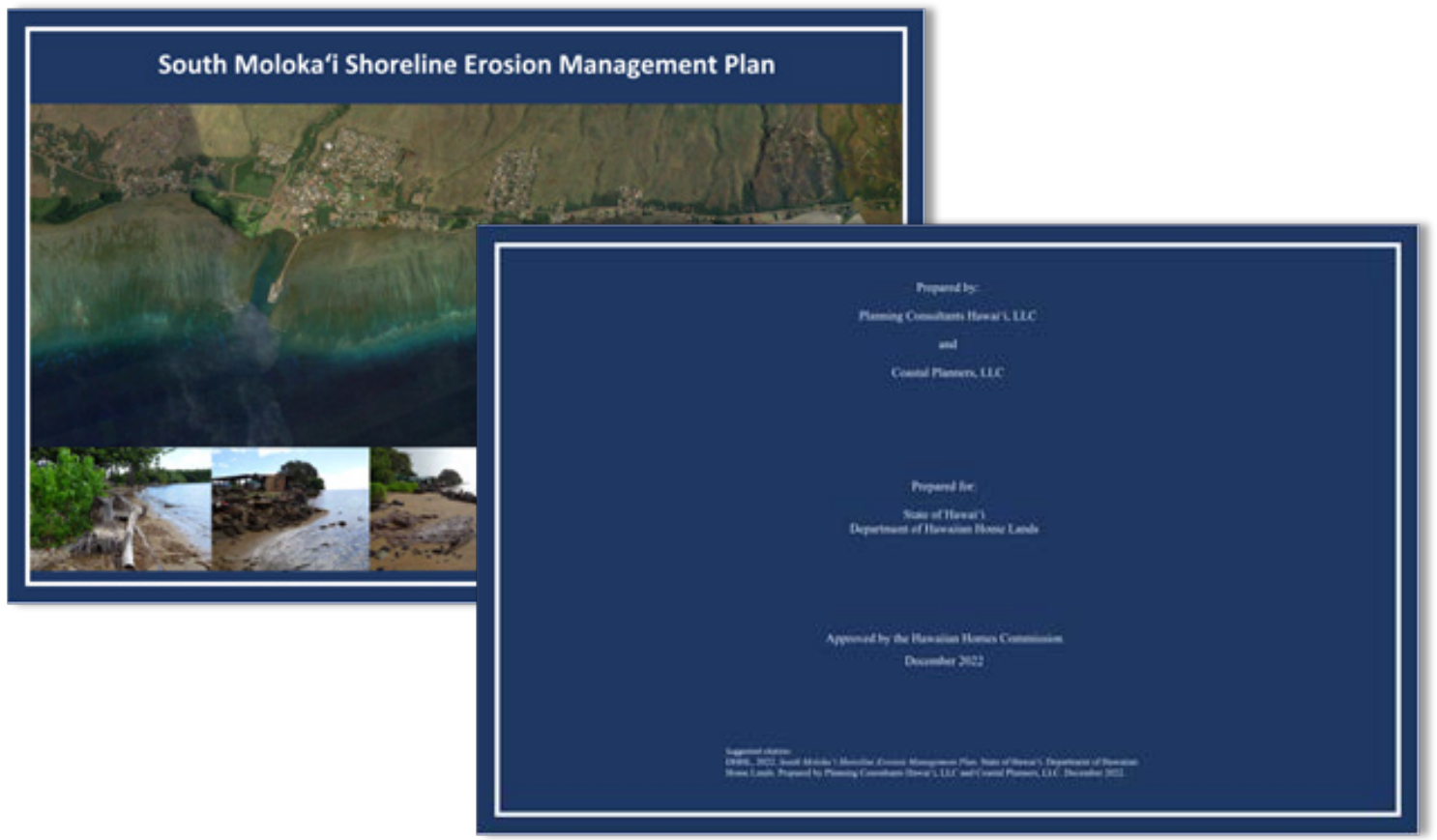


Figure 1-3 South Molokaʻi Shore Erosion Management Plan (2022)

Several beneficiaries who participated in the SM-SEMP process emphasized that shoreline management alone would not be enough to address the broader impacts of climate change affecting their communities. They called for a comprehensive and coordinated effort to strengthen resilience from mauka to makai inclusive of the entire ahupuaʻa. In response, DHHL partnered with beneficiaries to develop resilience strategies that apply nature-based solutions to reduce risk, restore ecosystems, and protect community assets. This effort led to the creation of this report, the Molokaʻi Coastal Homestead Community Resilience Plan (MCH-CRP), which expands on the SM-SEMP and several other ongoing or proposed initiatives *(see Appendix A)* by addressing multiple climate-related hazards through an integrated, beneficiary-driven, and culturally grounded approach.

Nature-Based Solutions
are actions that use natural processes and ecosystems to address environmental and community challenges.

Planning Approach

The MCH-CRP is the first plan of its kind for the DHHL homesteads on Molokaʻi and represents a bold step toward an integrated, culturally grounded model of resilience. Building on the foundation laid by the SM-SEMP, the MCH-CRP expands the focus beyond the shoreline to address a full range of stressors through nature-based and community-led solutions. The plan also responds to chronic, interconnected challenges such as housing, food security, and economic opportunity, acknowledging that true resilience requires both ecological and social stability.

Rooted in the community's deep knowledge of place, the plan honors the enduring relationship between people and ʻāina shaped through generations of lived experience. It recognizes that resilience is not new to these homesteads but a continuation of adapting to changing conditions while applying ancestral knowledge to meet today's challenges. This plan weaves traditional wisdom with modern science to guide how the community continues to thrive over time.

The 2022 DHHL General Plan comprises Tier 1 of the DHHL Planning System, and includes discussion of climate change and natural hazard considerations throughout the plan, as well as a Climate Change White Paper in the appendix. The General Plan directs DHHL to include climate change and natural hazards in land suitability analyses when creating or updating its plans. Significant attention is given to addressing the policies in the General Plan regarding climate change and sea level rise, hazard mitigation, natural & cultural resources, water & drought resilience, community resilience, built-environment resilience and emergency preparedness. Within the DHHL planning framework, the MCH-CRP functions as a Special Area Plan (SAP), which is a type of Tier 3 plan (Figure 1-4). SAPs are place-based planning documents prepared for specific homestead communities or geographic areas to address unique conditions, priorities, and opportunities that are not fully captured in island-wide or district-level plans.

In 2026, the DHHL Planning Office will be starting the planning process for the DHHL Molokaʻi Island Plan update and the statewide DHHL Disaster & Climate Risk Reduction Plan. Both of these planning processes will incorporate what has been learned through the Tier 3 MCH-CRP process; and by building a strong policy foundation and framework based on beneficiary input and participation, incorporating it by reference, will strengthen DHHL's ability to pursue implementation of the resilience strategies in the MCH-CRP.

The planning process followed the framework of the U.S. Climate Resilience Toolkit (2023), integrating local knowledge, anecdotal evidence, and scientific analysis *(Figure 1-5)*. From the start, this plan was guided by beneficiaries through workshops, huakaʻi (site visits), and small group meetings *(see Appendix B for notes)*. Participants shared moʻolelo to identify climate threats and community assets. Through collaborative discussions and lived experiences, they helped assess vulnerabilities, explore possible solutions, and prioritize resilience actions. Beneficiary guidance informed each step of the planning process, from defining issues to developing strategies and identifying near term actions for implementation. Collaboration and partnerships were emphasized throughout the planning process.

The following table *(Table 1-1)* outlines the partnerships and their roles in the process. A detailed table of partnership roles, jurisdiction and responsibilities is located in *Appendix C*.

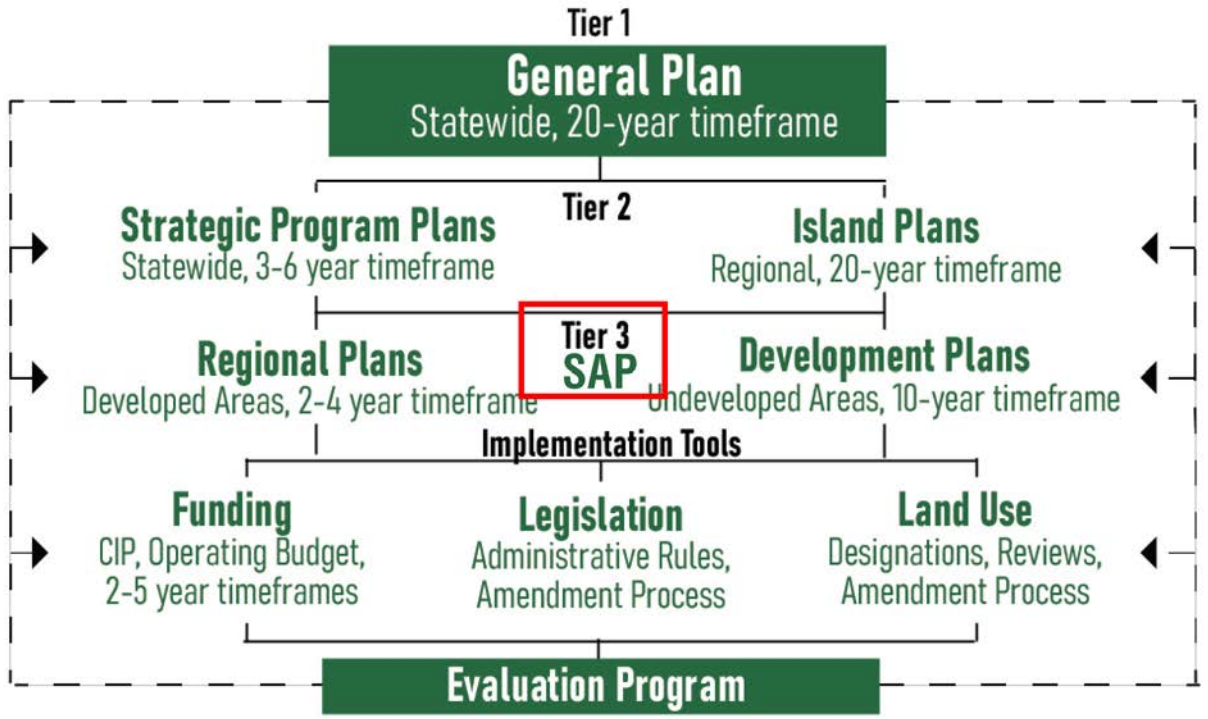


Figure 1-4 DHHL Planning System

Table 1-1: Partnerships

Term	Who It Refers To	Activities
Beneficiaries	Homestead lessees & associations	Cultural and community knowledge, identifying needs, prioritization
Experts	Non-profit, Private, County, State, and Federal organizations	Technical expertise, jurisdictional roles
Sustʻāinable Molokai	Subcontractor	Community engagement support and facilitation
Keliʻa Design	Subcontractor	Community engagement support and facilitation
G70	Consultants	Technical analysis, mapping, report writing
DHHL	DHHL Planning Office staff	Grant writing, coordination, consultant oversight

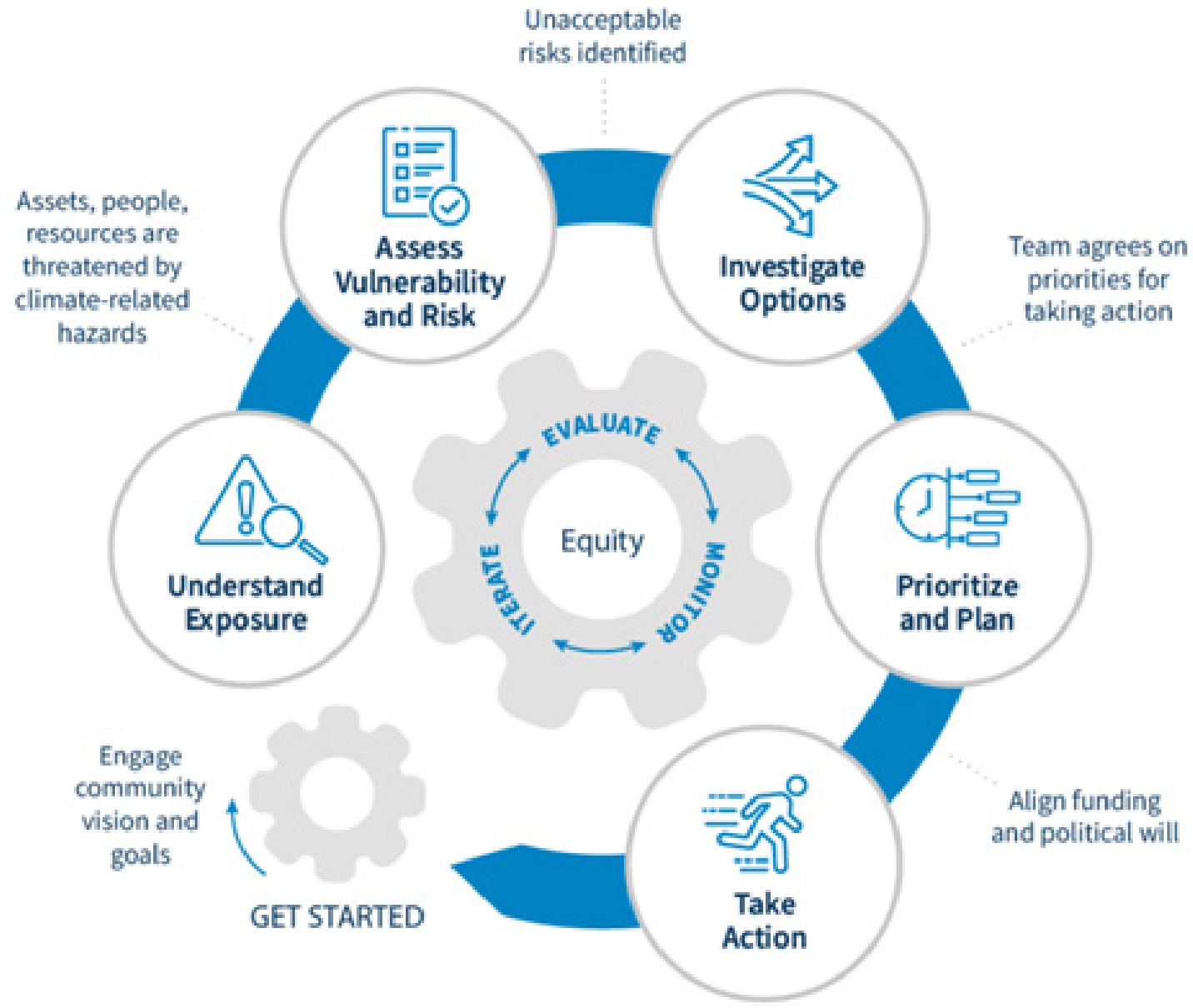


Figure 1-5 Steps for Developing a Climate Resilience Plan *(U.S. Climate Resilience Toolkit, NOAA)*

Project Funding

The MCH-CRP is funded through the National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund (NCRF). The NCRF has multiple stages of funding. DHHL is currently in the first stage, which is focused on Community Capacity Building & Planning.

Funding in this stage was granted for DHHL to develop a resilience plan with nature-based solutions that provide both a community resilience benefit and a fish and wildlife benefit. Upon completion of this stage with the adoption of this MCH-CRP by the Hawaiian Homes Commission, additional funding opportunities can be accessed to implement the solutions. Future funding stages include Site Assessment & Preliminary Design, Final Design & Permitting, and Implementation. To progress the project forward to these stages, it is anticipated that grant applications will be submitted to NFWF through the NCRF program as well as by accessing other state governmental and non-governmental, and federal funding mechanisms.

Planning Process

Planning for the MCH-CRP began in June 2023 when DHHL contracted with G70 to lead the process, with Sustʻāinable Molokai and Keliʻa Design supporting community engagement and Planning Consultants Hawaiʻi providing technical analysis. Background studies and hazard assessments were conducted in late 2023 to document existing conditions, community assets, and vulnerabilities. A series of meetings, huakaʻi, interviews, and workshops were held with homestead beneficiaries and technical experts to identify issues, explore resilience strategies, and prioritize nature-based solutions. Beneficiary guidance has been central at every stage, shaping the plan's goals, strategies, and early actions toward a more resilient future for Molokaʻi's south shore homestead communities.

Table 1-2: MCH-CRP Planning Timeline

Date	Event / Milestone
2018 - 2022	DHHL completes the SM-SEMP
May 2022	NFWF NCRF Grant Agreement executed
June 2023	DHHL initiates MCH-CRP planning process
Dec. 2023 - March 2024	Background research, geospatial analysis, and technical analysis of community assets, hazards, and vulnerabilities
March 2024	Initial meeting with Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi Association leaders
April - June 2024	Series of Planning Hui meetings, beneficiary meetings, and talk story sessions to identify problems and opportunities. The initial Hui meetings helped to shape the All beneficiary meetings structures, process & pilina which would span throughout the whole project's outreach process
May 2024	Beneficiary Meeting #1 to introduce MCH-CRP
June 2024	Beneficiary Meeting #2 to identify Issues and Opportunities
Aug. 2024	Beneficiary Meeting #3 to explore resilience strategies; Huakaʻi with beneficiaries to observe mauka conditions; voting and ranking for top 5 potential resilience strategies
Sept. - Dec. 2024	Technical expert consultations; ʻŌhiʻapilo Wetland huakaʻi with beneficiaries
Jan. - Feb. 2025	Continued coordination with homestead associations and mauka to makai huakaʻi
April 2025	Beneficiary Meeting #4 to review strategies and early actions; Informational briefing to the Hawaiian Homes Commission on Molokaʻi
May - Dec. 2025	Develop Draft MCH-CRP
Dec. 2025	Homestead Board Meetings to confirm priority projects and review current matrix
Jan. 2026	Beneficiary Meeting #5 to review Draft MCH-CRP and provide comments
Jan. 5 - Jan. 30 2026	Beneficiary comment period
Feb. 2026	Publish Final Plan and seek HHC approval for adoption

Summary of Beneficiary Workshops and Huakaʻi

For the MCH-CRP, "beneficiaries" refers to DHHL homestead lessees and their households and associations *(see Table 1-1)* within the Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi homestead communities. These are the communities living within the project area and experiencing the hazards—erosion, flooding, king tides, drought, wildfire, and shoreline change—that led to the request for DHHL to initiate the planning effort. Participation included homestead association leadership, board representatives, kūpuna, long time residents, cultural practitioners, lineal descendants who remain engaged with their ʻāina, and other homestead lessees who attended open beneficiary meetings. In addition, residents directly affected by coastal hazards participated through one-on-one interviews and talk story sessions. These groups collectively provided the manaʻo that shaped the plan.

Initial meetings with Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi Hawaiian Homestead Association (HHA) Presidents and Representatives in March 2024 *(Table 1-2)* grounded the planning team in the demographic scale of each homestead community, association leadership structure, and the need to involve two to four representatives per association in a Planning Hui. The Planning Hui provided input that helped to shape both process and content for the beneficiary workshops. These early sessions emphasized the need for the planning process to "come from the beneficiaries from the beginning," with repeated communication loops. The pilina building (connection to place) with the HHA Presidents and Representatives was an essential part of the foundation of this plan, and led to a collaborative approach throughout the whole process.

The Planning Hui meetings were held prior to the initial beneficiary workshops, and identified the following:

- The need for access road maps, mauka to makai water restoration focus areas, jurisdiction clarification, and evacuation planning details.
- Land use questions connecting mauka and makai, including restoration, cattle management, fire breaks, and housing/resilience hub considerations.
- Recommendations for how project options should be organized in maps, presentations, and workshop materials.
- Topics requiring expert consultation (e.g., drainage jurisdiction, water system constraints, invasive species, wildfire prevention, fishpond and wetland management, shoreline strategies).

These meetings clarified that resilience could not be addressed solely at the shoreline, and that mauka conditions, including water flow, vegetation management, invasive species, and ungulate pressure, were integral to solutions.

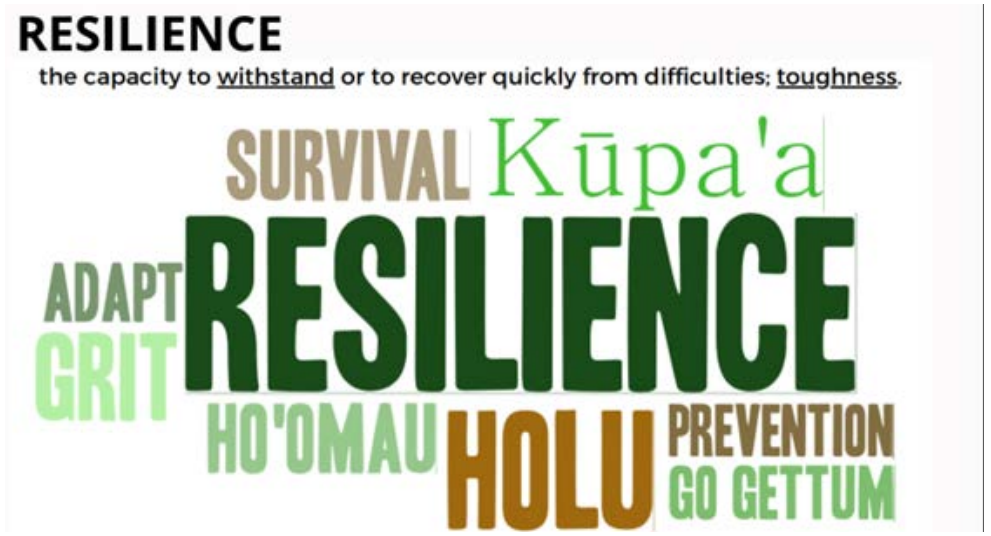
A total of four beneficiary workshops have been conducted to date.

Beneficiary Workshop #1

The first workshop, held at the DHHL Kūlana ʻŌiwi Hālau in May 2024, was attended by 14 beneficiaries from all three homesteads. The workshop served as an introduction to the MCH-CRP and the planning process. Its purpose was to bring beneficiaries together to learn about the intent of the plan, the stages of work, and how their knowledge and guidance would shape the outcomes.

The beneficiary responses to "What does resilience mean to you?" reveal a deep sense of strength, adaptability, and perseverance rooted in both Hawaiian values and lived experience. Words like Kūpaʻa and Hoʻomau reflect a collective understanding that resilience means standing firm through adversity and being unwavering in commitment to ʻāina, culture, and one another. These words express that resilience is not just about surviving challenges but doing so with purpose and loyalty to community and place.

Holu brings in the idea that strength also comes from flexibility, and the ability to bend, move, and adapt without breaking. Combined with words like Adapt, Grit, and Go Gettum, it shows that beneficiaries see resilience as both mental toughness and the ability to evolve in response to change. Survival and Prevention highlight a pragmatic awareness of the risks faced by their communities and a desire to act proactively to protect lives, homes, and resources.



Holu: Springy, pliable, resilient, as a mattress; to sway, as palm fronds; to ripple, as waves; to play back and forth; bumpy, as an airplane ride.

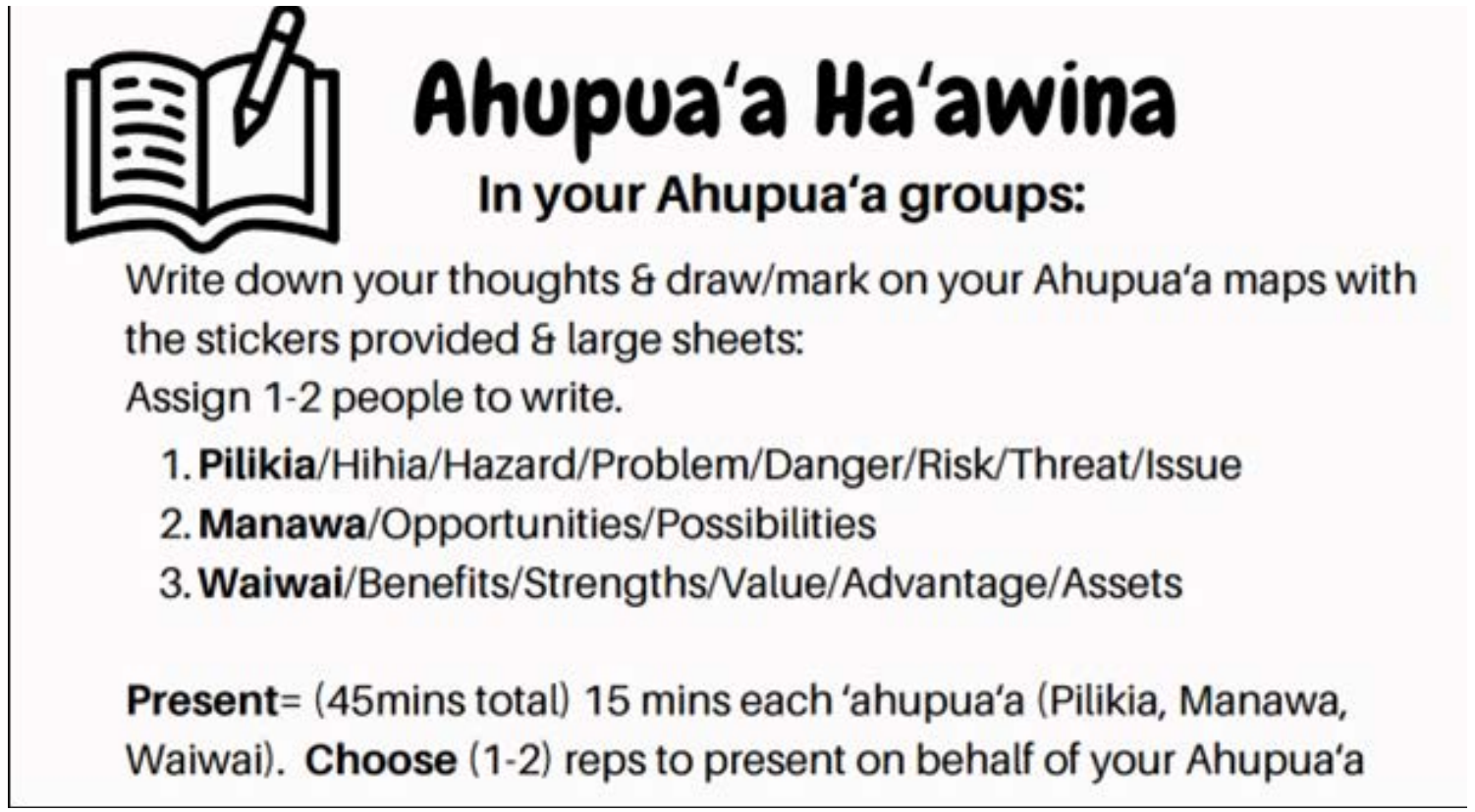
Hoʻomau: Always, steady, constant, ever, unceasing, permanent, stationary, continual, perpetual; to continue, persevere, preserve, endure, last; preservation, continuation.

Kūpaʻa: Steadfast, firm, constant, immovable; loyal, faithful; determined; loyalty, allegiance, firmness.

Workshop 1: Beneficiaries were asked "What does resilience mean to you?"

Beneficiaries worked in ahupuaʻa-based groups to identify Pilikia (hazards, challenges), Manawa (opportunities), Waiwai (community assets), as defined and facilitated by Sustʻāinable Molokai. The Pilikia identified during Workshop #1 centered on long-standing issues with flooding, drainage failures, shoreline erosion, invasive species, and the degradation of both mauka and makai ecosystems. Beneficiaries described recurring flooding caused by the elevated Kūlana ʻŌiwi campus and chronic blockage at Third River, tying these problems to sediment moving from the uplands, unmanaged gulches, and inadequate culvert maintenance. They also emphasized how mauka conditions, including overgrazing by deer, wildfire risk, and poor land stewardship, directly affect coastal homesteads through increased runoff and sedimentation. Traditional ecological knowledge appeared throughout these discussions: kupuna and long-time residents explained that vegetation stabilizes land and shoreline features, illustrating this with examples such as the punawai (freshwater springs) where the shrimp live; areas planted with native vegetation remained intact while unplanted areas eroded, affecting shrimp habitat. They also shared observations of how mangrove expansion, gorilla ogo accumulation, and disease in historic niu groves are altering coastal processes and cultural landscapes. Together, these insights revealed interconnected vulnerabilities spanning hydrology, ecology, and cultural resources, which became foundational to the plan's understanding of community risk.

From these discussions also emerged a clear sense of Manawa—opportunities rooted in traditional practice, community cooperation, and local environmental knowledge. Beneficiaries described how planting native vegetation, restoring fishpond and punawai function, managing invasive species, and reestablishing mauka to makai health could strengthen both ecological and cultural resilience. They also identified Waiwai, or enduring assets, such as generational knowledge of the land, practices of sharing and mutual aid, significant cultural sites like Aliʻi Pond, and the community's strong sense of place and responsibility for ʻāina. Practical solutions grounded in this traditional knowledge, such as fencing revegetation areas, selecting deer-resistant plants, creating detention basins, and adapting food cultivation to increasingly saline soils, demonstrated how cultural and ecological understanding could be applied to modern hazards. Taken together, the Pilikia, Manawa, and Waiwai expressed in Beneficiary Meeting #1 reflected beneficiaries' deep relationship to their environment and provided the conceptual and practical framework upon which subsequent resilience strategies were built.



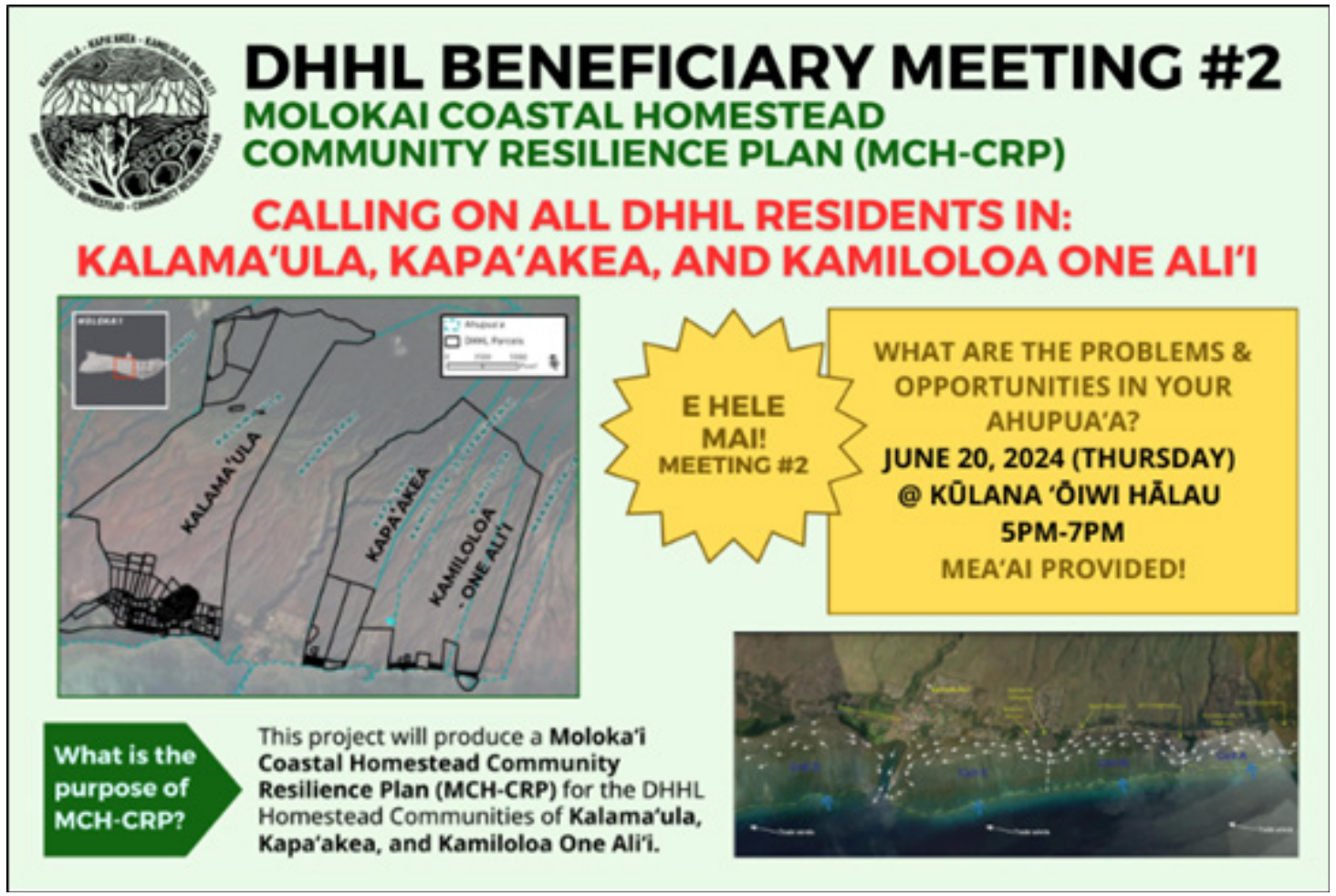
Beneficiaries were notified of consultation meetings through multiple outreach methods designed to reach as many homestead residents as possible. Prior to each meeting, the project team met with homestead leaders to share information and request their support in spreading the word throughout their communities. Postcards were mailed directly to beneficiaries living within each homestead, and project team members went door to door to personally invite residents and answer questions.

Beneficiary Workshop #2

The second beneficiary workshop was held at Kulana ʻŌiwi Hālau in June 2024. This workshop was attended by 30 self-identified beneficiaries from all three Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi homesteads. The purpose of this workshop was to build on the foundation of the first meeting by identifying what is most important to the homestead communities and understanding the specific challenges they face within their ahupuaʻa. Through a participatory mapping activity, each group located Pilikia, Manawa, and Waiwai on maps of their community to visualize where vulnerabilities and opportunities exist. The documentation of this interactive mapping was central to shaping how vulnerabilities and opportunities were spatially understood and later incorporated into the plan's technical analyses and project lists. This process encouraged open discussion, sharing of lived experiences, and collective problem solving. Each group selected a representative to present their findings on behalf of the group.

The group representatives presented detailed problem statements—flooding, drainage failures, sedimentation, invasive species pressures, shoreline erosion, cesspools, wildfire risks, and loss of cultural sites—which closely aligned with and expanded upon Workshop #1 findings. These inputs added to the plan in several ways.

First, the mapping exercise revealed patterns of watershed-driven hazards that beneficiaries consistently identified across ahupuaʻa, reinforcing the shift to a mauka to makai framework rather than a shoreline-only focus. This connection appears repeatedly, such as the identification of mauka erosion, gulch sediment flows, and the need to restore water pathways and diversions.



Workshop #3: Beneficiaries met with subject matter experts and prioritized resilience strategies

Workshop #3: Beneficiaries ranked potential resilience strategies/projects

Second, beneficiaries elevated jurisdictional confusion—especially regarding culverts, stream maintenance, and road rights-of-way—which led to the plan including explicit next steps such as a meeting with State of Hawai'i Department of Transportation (DOT) and County of Maui about culvert and stream maintenance responsibilities.

Third, multiple traditional and practical insights shared during Workshop #2 shaped early resilience solutions, such as the importance of revegetating dunes and gulches to hold sand and soil, selecting deer-resistant native species, fencing restoration areas, and recognizing the stabilizing role of restoring fishpond walls which help to reduce sedimentation into the ocean as well as provide nutrients for the fishpond. Beneficiaries also highlighted cultural assets—Kapuāiwa Grove, punawai, fishponds, cemeteries, mo'olelo of place—which reinforced the plan's emphasis on protecting sites of cultural significance. Through these contributions, Workshop #2 served as a pivotal moment where beneficiary reasoning, cultural knowledge, and spatial insight materially shaped both the technical and values-based direction of the MCH-CRP. A compilation of key assets and hazards identified during these meetings are discussed in Chapter 4 Assets, Hazards, and Vulnerabilities.

Beneficiary Workshop #3

Beneficiary Workshop #3, held at the Office of Hawaiian Affairs conference room at Kūlana 'Ōiwi in August 2024, included nine beneficiaries from all homesteads. This workshop focused on developing and refining potential resilience strategies. Building on the priorities identified in earlier workshops, beneficiaries worked together to explore practical projects and actions that address community vulnerabilities and strengthen resilience. Subject-matter experts from the DOT, State Department of Land and Natural Resources (DLNR) Division of Aquatic Resources (DAR), County of Maui Emergency Operations Center, Maui Department of Water Supply, Maui Public Works, Maui Police Department, University of Hawai'i (UH) Sea Grant, Ka Honua Momona, Moloka'i Island Burial Council, and Moloka'i Homestead Livestock Association joined the discussion to share technical insight, answer questions, and support the community in shaping informed strategies.

Although this workshop was smaller in number than Workshop #2, the presence of subject-matter experts (of whom some are also beneficiaries) created a setting where beneficiaries could directly question agency representatives, verify the feasibility of ideas raised in earlier workshops, and refine project concepts in real time. This structure gave beneficiaries significant decision-making authority: they were not simply reacting to a presentation, but actively shaping which resilience strategies would be carried forward.

The process of participation for workshop #3 differed from earlier meetings by focusing on strategy development and project refinement, rather than hazard identification. See *Chapter 5* to this discussion of matrix evolution. During the meeting, beneficiaries were briefly advised on the purpose of the session—to "rank and choose priority sites/options available"—and were provided with maps, aerials, and draft project lists developed from Workshops #1 and #2. After this short orientation, the workshop shifted into a beneficiary-led working session. Each participant evaluated proposed projects, asked technical experts targeted questions about feasibility and jurisdiction, and discussed trade-offs and priorities across themes such as mauka restoration, emergency access, shoreline management, cultural site protection, and housing and land use. This meeting format gave beneficiaries both the information and the authority needed to advance or eliminate project options.

This workshop clarified that mauka restoration would require specific tools—such as historic aerial photos, detailed maps, and coordinated data collection—to guide gulch stabilization and revegetation efforts, elevating these from general concepts in earlier workshops into actionable next steps. Beneficiaries also gained clearer understanding of jurisdictional boundaries for roads, culverts, and drainage features, which confirmed the need for inter-agency coordination first raised in Workshop #2 and solidified it as a priority action. The session further introduced practical considerations for emergency access, including evacuation staging areas, communication gaps, and site-specific safety constraints that had not surfaced in earlier discussions. Expert dialogue also validated community observations about how fishpond, wetland, and dune systems respond to vegetation and hydrology, strengthening support for nature-based shoreline strategies.

Workshop #2: Beneficiaries worked in groups to map out identified Pilikia (Challenges) and Manawa (Opportunities)

Workshop #2: Beneficiaries engaged in an interactive mapping activity

Beneficiaries emphasized the historical mauka-to-makai flow paths with greater specificity, identifying where water once traveled, where springs historically fed the wetlands and fishponds, and how modern blockages have altered these dynamics. Cultural practitioners described changes in water clarity, fish behavior, and sediment patterns that serve as traditional indicators of ecosystem health, offering observational tools to guide future monitoring and restoration. The workshop also confirmed that restored areas will require continued protection through fencing and coordinated grazing management, linking cultural stewardship practices with practical land management needs that experts affirmed as feasible.

Projects that tended to be advanced addressed mauka-to-makai restoration, drainage and culvert maintenance, shoreline and fishpond ecosystem repair, emergency access and evacuation improvements, and housing and land-use strategies—particularly those involving potential mauka relocation and resilience hubs. Beneficiaries, supported by expert input, elevated solutions that focused on restoring natural water flow, stabilizing gulches and dunes with native vegetation, improving road and access safety, reducing sediment and flooding impacts, and strengthening culturally grounded shoreline stewardship. At the same time, projects involving extensive coastal armoring, interventions that did not address upstream watershed issues, and highly regulated, high-cost structural fixes that lacked community support were not carried forward. This workshop refined the project list substantially, emphasizing feasible, culturally aligned, and community-driven strategies that align with beneficiary priorities and that can be supported by strong partnerships with key agencies and organizations. The most impactful and achievable strategies are further discussed in Chapter 5 Resilience Goals and Strategies.

Beneficiary Workshop #4

Beneficiary Workshop #4, held in April 2025, consisted of two separate meetings where the project team joined the regularly scheduled homestead association meetings in Kalamaʻula and Kapaʻakea. The purpose of these meetings was to review and refine a draft Detailed Resilience Strategy Matrix, which summarized proposed projects, potential partners, project details, and preliminary cost estimates. Beneficiaries provided thoughtful feedback on each strategy, offering local insight on priorities, feasibility, and community needs. The outcome of this review, the Detailed Resilience Strategy Matrix and DHHL Resilience Strategy Matrix, are presented in *Appendix E and Appendix F*, respectively, of this plan.

Beneficiary Workshop #5

Beneficiary Workshop #5 was held on January 7, 2026 at the Kulana ʻŌiwi Conference Room and Hālau as a two-part meeting designed to review the Draft Molokaʻi Coastal Homestead Community Resilience Plan and gather beneficiary feedback. The first portion was an open house format in the conference room, where informational stations were set up to share key elements of the plan, hard copies were available for review, and comment cards were provided for written input. The second portion was a formal presentation of the Draft Plan held in the Hālau and offered in a hybrid format to allow both in-person and virtual participation. Following the presentation, beneficiaries were invited to ask questions and share oral comments, providing an opportunity for direct dialogue and clarification prior to finalizing the plan.

During the discussion period, beneficiaries asked clarifying questions about what adoption of the MCH-CRP would practically mean for action on the ground. There was interest in whether completion of the plan meant that site assessments were already done or no longer required. DHHL clarified that site specific analysis would still be needed, but the plan is intended to streamline future work by pre-identifying and pre-approving resilience strategies that homestead associations can advance more efficiently. Questions were also raised about the implementation timeline, with DHHL explaining that plan adoption is being sought in February, after which Tier I actions focused on site assessments and preliminary design could begin immediately.

Several questions and comments reflected a strong sense of urgency and concern about ongoing hazards. Beneficiaries shared fears that homes could be lost to flooding if actions are delayed, underscoring the real and immediate impacts already being experienced. DHHL acknowledged this concern and noted that hazard mitigation is being prioritized, and that flooding, wildfire, and other climate related hazards are being addressed through the plan.

Feedback also focused on transparency, kuleana, and accountability. Beneficiaries requested clearer differentiation between strategies and concepts that originated from technical experts versus those that were directly sourced from beneficiaries, and asked for greater clarity on who the experts were that informed the plan. There was also a request to recognize ʻohana with generational knowledge of the land as subject matter experts alongside professional consultants. DHHL explained that Appendix B of the MCH-CRP provides detailed summaries of the engagement process conducted throughout plan development. These summaries document beneficiary workshops, small group meetings, and technical consultations, along with dates, locations, discussion topics, and lists of participants.

In addition, beneficiaries expressed a need for clearer identification of agency kuleana, so families can better understand which agencies have jurisdiction and responsibility at different stages. DHHL noted that Appendix C includes a consolidated list of agencies referenced in the plan and a description of each agency's primary jurisdiction and role.

Finally, several comments expressed frustration with past planning efforts that have not translated into visible action, as well as concern about proposed partners such as the Molokaʻi hunting club and broader issues like sea level rise and cesspools. DHHL emphasized that the plan is intended to create an expedited pathway for implementation, with Chapter 6 outlining mechanisms to move projects forward, and that homestead associations retain primary authority to decide if and when outside partners are involved. With respect to wastewater and sea level rise, DHHL highlighted that the plan includes a specific strategy to address cesspools in high risk coastal areas, aligning with state and county programs and prioritizing homestead areas already identified as high priority for conversion to approved wastewater systems.

Expert Meetings

By request, an additional meeting with beneficiaries and experts from various fields was held in September 2024. This was a hybrid meeting, held online for those that were unable to attend the in-person meeting being held at the Sustʻāinable Molokai office. This allowed for a broader reach of experts across the State, as well as another chance for beneficiaries to attend that were unable to attend Beneficiary Workshop #3. Prior to the workshop, both experts and beneficiaries were emailed a Preliminary Goals Matrix categorizing previously identified projects. This was to help provide a framework and allow the experts to better understand how their technical background could assist those projects.

After technical difficulties were settled, a presentation of the project status and outreach was given by Sustʻāinable Molokai. Breakout groups were created based on topics in the Preliminary Goals Matrix and fields of expertise in attendance (Mauka–Makai Hydrology, Mangrove & Wetland Management, Drainage & Infrastructure, Conservation & Marine Monitoring). Beneficiaries moved through these breakout groups to ask questions

and gather technical insight and cross-validation for priority projects drafted by each homestead community. The attendees re-grouped at the end and shared their takeaways for each homestead community.

For Kalamaʻula, beneficiaries described recurring flooding and sedimentation tied to mauka erosion, blocked culverts, and stream management challenges; experts reinforced the importance of mauka restoration, clarified jurisdictional complexities around drainage maintenance, and discussed tools such as aerial surveys and targeted monitoring to better understand sediment movement. In Kapaʻakea, beneficiaries highlighted persistent flooding in wetland areas, limited drainage capacity, and concerns around evacuation and wastewater infrastructure, while experts emphasized the need for coordinated inter-agency agreements and hydrologic studies to support fishpond and wetland restoration. For Kamiloloa One Aliʻi, beneficiaries reported severe makai flooding, shoreline instability, and sediment impacts, and expert input helped frame these issues within a mauka-to-makai hydrologic context, including the use of soft shoreline stabilization approaches and consideration of longer-term adaptation options such as improved evacuation routes and managed retreat.

Individual meetings also held between DHHL, the consultants, and experts from County of Maui, DOT, DLNR/DOFAW, DAR, TNC, UH, OHA, NRCS, and others provided technical explanations and feasibility insights in response to beneficiary questions. Topics included: jurisdiction over culverts, water system pressures, mauka restoration, mangrove management, deer and ungulate impacts, sediment basins, wildfire mitigation, reef and estuary restoration, cesspool conversion, and hydrologic data collection. Experts confirmed the need for mauka interventions, informed potential engineering and ecological solutions, and validated community observed hazards.

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Additional Outreach

Talk story sessions with two residents from Kapaʻakea provided detailed, place-based knowledge of flooding patterns, sediment movement, drainage blockages, shoreline change, and cultural site impacts. These interviews helped verify problems documented in earlier planning stages, while adding household-level stories, specific hazard experiences, and community-held historical knowledge. This information influenced the framing of priority problems and validated the need for mauka-makai analysis.

A meeting held on August 26, 2024, with large landowners and Right-of-Entry (ROE)/Licensed Lessees (including Kalaiakamanu Hou, Hou Congregational Church, Molokai Church of God, and Molokai Nazarene) revealed parallel issues faced by churches and other land users in the area, including flooding, shoreline erosion, septic failure, and the need to plan for relocation mauka. These groups echoed beneficiary calls for mauka restoration, vegetation management, and equipment/resources to support drainage and wildfire mitigation. Their perspectives confirmed the wider geographic relevance of challenges experienced by homestead communities. The churches and ROE/lessees present at the meeting expressed a strong interest in collaborating with beneficiaries on resilience projects. There was repeated emphasis on shared stewardship—such as their ongoing efforts to revegetate rocky hillsides, maintain drainage paths, and respond directly to flood events—as well as recognition that solutions require coordinated action across homestead and non-homestead lands.

In addition to the beneficiary consultation workshops, beneficiaries were invited to participate in a Huakaʻi, a site visit to DHHL lands in the mauka and makai regions of the ahupuaʻa. The purpose of the Huakaʻi was to provide beneficiaries an opportunity to experience these areas firsthand, to reconnect with place, and to share stories, memories, and insights that could guide the planning process. Participants observed the current conditions of the lands, discussed historical and cultural connections, and reflected on how the health of these areas affects the adjacent homestead communities.

At Kalamaʻula, participants viewed mauka water systems, cattle operations, wildfire history, and land suitability for future residential or resilience hub areas. At Kamiloloa, participants examined roadway access, drainage paths, and shoreline conditions. At ʻŌhiʻapilo Wetland, participants observed flooding dynamics, native plant restoration areas, historical shoreline changes, and cultural significance. The Huakaʻi also served as a working session to brainstorm restoration, evacuation and management strategies for inclusion in the plan. Through this collective experience, beneficiaries contributed valuable traditional knowledge and practical ideas that helped shape the resilience strategies within the MCH-CRP.

Huakaʻi - Potential Evacuation Site in Kalamaʻula

Huakaʻi - DHHL water reservoir in Kalamaʻula

Huakaʻi to mauka lands in Kamiloloa

Huakaʻi to mauka grazing lands in Kalamaʻula

Huakaʻi to mauka lands in Kalamaʻula

How Beneficiary Input Shaped the Plan

The pilina building with the HHA Presidents and Representatives was an essential part of the foundation of this plan and led to a collaborative approach throughout the whole process. They helped shape the process by guiding the team on how to explain and translate technical language and goals into cultural, place-based concepts.

Building pilina with the board members helped both the beneficiaries and the consultants strategize together to adjust the process as they went. Some of the more technical and detailed meetings were held within the standing Homestead Association Member meetings, where beneficiaries typically had good turn outs and went to the homesteads places instead, which helped maintain consistency of attendance and knowledge throughout the planning process along with deep, historical and cultural knowledge of the issues & history within their spaces.

Beneficiary input has shaped the plan by redefining its scope, priorities, and implementation pathways. Early workshops made it clear that coastal hazards could not be addressed in isolation; beneficiaries consistently traced flooding, erosion, and sedimentation to upland conditions such as degraded gulches, overgrazing, altered water pathways, and wildfire-driven landscape changes. This repeated emphasis reinforced the necessity for the plan to be a comprehensive mauka-to-makai resilience strategy, integrating watershed restoration, hydrologic reconnection, invasive species control, and upland vegetation management as essential components of coastal protection. Input from the workshops also clarified that drainage failures and unclear jurisdiction over culverts and roadways were central barriers to resilience. These concerns led to the inclusion of drainage system assessments, inter-agency coordination steps, and the development of jurisdiction maps and maintenance responsibilities as concrete next actions.

Beneficiaries also played a definitive role in shaping project priorities, feasibility considerations, and the sequencing of resilience actions. Through mapping exercises, ranking activities, and dialogue with experts, they advanced projects that aligned with cultural values, practical experience, and community safety needs—such as shoreline revegetation, fishpond and wetland restoration, emergency access and evacuation improvements, and resilience hubs. Workshop #3, in particular, helped refine these priorities by converting broad concepts into actionable measures, including the need for historic aerial data to guide mauka restoration, protective fencing for revegetated areas, detailed evacuation planning, and partnerships for managing gulch and shoreline systems.

Additionally, traditional knowledge shared throughout the process shaped both the technical direction and cultural grounding of the plan. Beneficiaries identified environmental indicators such as changes in water clarity, sediment behavior, fish activity, storm-driven debris movement, and vegetation health, that provide ongoing monitoring tools rooted in long-standing observation. These insights reinforced the need for nature-based solutions, culturally informed stewardship, and ongoing engagement with homestead associations, practitioners, and local organizations. Together, these contributions lend to resilience strategies that reflect the lived experience, priorities, and cultural relationships of the communities they are designed to serve.

Draft Plan Comment Period

The Draft MCH-CRP was published on January 5, 2026, initiating a beneficiary comment period that extended through January 30, 2026. The Draft Plan was made available electronically on the DHHL website and in hard copy at the DHHL Molokaʻi District Office.

Beneficiaries were invited to provide comments through multiple channels. These included providing oral comments or submitting written comment forms during Beneficiary Workshop #5, submitting written comments via the project email address, or delivering written comments directly to the Molokaʻi District Office.

Oral comments shared during Beneficiary Workshop #5 were documented in the detailed meeting summary included in Appendix B. In addition, written comments were received during the formal comment period. The written submissions are included in Appendix G, which also contains a summary table categorizing the comments received and documenting responses provided by the project team and DHHL.

Chapter 2

Foundations of Resilience

Chapter 2

Foundations of Resilience

Community Resilience

Resilience is the ability of a community to adapt, recover, and grow stronger when faced with challenges. For the homestead communities of Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi, resilience is not a new concept. It has been practiced for generations through self-reliance, cooperation, and the stewardship of ʻāina. In the context of this plan, community resilience refers to the collective capacity of people, place, and culture to anticipate, absorb, and recover from disruptions such as flooding, erosion, drought, wildfire, and other climate-related hazards while maintaining the well-being and identity of the community. A list of key terminology used throughout this plan is provided in *Table 2-1* below.

Table 2-1: Key Terminology

Term	Definition
Hihia	Entangled, interwoven, involved, perplexed, hampered, rank, snarled, obscure and difficult to understand (Kep. 167); snarl, entanglement, kink, thicket, difficulty, problem, trouble
Pilikia	Trouble of any kind, great or small; problem, nuisance, bother, distress, adversity, affliction, accident, difficulty, inconvenience, perturbation, tragedy, lack; in trouble, troubled, bothered, cramped, crowded
Waiwai	Goods, property, assets, valuables, value, worth, wealth, importance, benefit, estate, use; useful, valuable, rich, costly, financial
Impact	Adverse consequences caused by a hazard or threat
Risk	Likelihood of a hazard or threat occurring and the magnitude of the impact
Vulnerability	Degree of susceptibility to adverse effects of hazards and threats
Adaptation	Actions taken to adjust to conditions so that risk to assets is reduced
Mitigation	Actions taken to prevent or reduce the likelihood or magnitude of a hazard and consequently, the risk associated with a hazard

"Stick together and try to agree to the best of your ability to meet the most important problem: the rehabilitation of our race."

- Prince Jonah Kūhiō Kalanianaʻole (1922)

Resilience is more than a response to emergencies. It is an ongoing process that strengthens social connections, supports cultural practices, and promotes sustainable management of land and water. For homesteaders, resilience reflects the Hawaiian value of kuleana, a shared responsibility to care for one another and for the ʻāina that sustains life.

Community resilience relies on the interconnection of four main systems: social, cultural, ecological, and economic.

- Social resilience grows from strong relationships and collective action. Families, neighbors, and community organizations form networks of support that are essential before, during, and after a disaster.

- Cultural resilience comes from maintaining Native Hawaiian identity, values, and traditional knowledge. Cultural practices such as caring for fishponds, gathering limu, or planting kalo strengthen both community pride and the health of the land and sea.

- Ecological resilience depends on restoring and protecting natural systems that buffer against hazards. Healthy mauka forests absorb rainfall and reduce flooding. Wetlands filter runoff. Healthy coral reefs and vegetated sand dunes protect shorelines from storm surge and erosion.

- Economic resilience is built by supporting local livelihoods, small businesses, and food security that can withstand disruptions in supply chains. Economic diversity and local production create stability during emergencies.

When these systems work together, the community becomes more adaptable and self-reliant, able to recover faster and more sustainably after a disturbance.

Disaster Cycle

The disaster cycle is a continuous process that illustrates how communities prepare for, respond to, and recover from hazardous events *(Figure 2-1)*. The cycle is made up of four connected phases: mitigation, preparedness, response, and recovery. Mitigation includes the actions taken before a disaster to lessen its impacts. Preparedness focuses on building the knowledge, skills, and systems needed to respond quickly and effectively. The response phase begins when a hazard strikes and the community must act to protect life, property, and essential services. It depends on coordination, clear communication, and the ability to adapt under pressure. Recovery follows, as the community repairs damage, restores services, and begins to rebuild. It is both a physical and social process that provides an opportunity to reflect, improve, and strengthen what was damaged or lost.

Figure 2-1 The Disaster Cycle

Resilience planning requires the consideration of the entire disaster cycle, not just reacting after an event occurs. Each phase is connected, and decisions made before a disaster directly affect how well a community can respond and recover. By integrating resilience into every stage of the cycle, homestead communities can adapt to changing conditions while protecting their people, lands, and way of life for future generations.

Hawaiian Models of Resource Management and Resilience

For Kānaka ʻŌiwi (Native Hawaiian), resilience is rooted in the reciprocal relationship between kānaka (people) and ʻāina (land, that which feeds). Long before "resilience" entered planning and scientific vocabularies, Hawaiian land and resource governance systems were deliberately designed to sustain abundance, balance, and community wellbeing. These systems affirm that the health of people and the health of ʻāina are indivisible.

Figure 2-2 envisions a homestead community committed to advancing the United Nations (UN) Sustainable Development Goals (particularly SDG 3 – Health and Well-being, SDG 6 – Clean Water and Sanitation, SDG 11 – Sustainable Cities and Communities, SDG 13 – Climate Action, SDG 14 – Life Below Water, and SDG 15 – Life on Land) through a Hawaiian worldview.

In this adapted model, ola (individual well-being) and kaiāulu (community-level well-being) are seen as embedded parts of the ʻāina, or biosphere. Contemporary research with Native Hawaiian communities affirms that connection to ʻāina is directly linked to physical, mental, and community health, and that ʻāina-based practices can buffer stress and trauma, including climate-related stressors. For Molokaʻi homesteads, resilience planning must therefore protect and expand opportunities for ʻāina-based living and practice, not only reduce exposure to hazards.

Traditional Hawaiian land management organized each mokupuni (island) into large regions called moku, which were further subdivided into community-managed land sections known as ahupuaʻa. Typically extending from mauka to makai *(Figure 2-3)*, each ahupuaʻa encompassed the full range of resources needed for food, water, materials, and shelter (Minerbi, 1999). This mauka to makai design was not simply geographic; it expressed an understanding of islands as integrated social–ecological systems, where water, nutrients, species, and people are connected across elevation and habitat. Governance extended down to ʻili and other

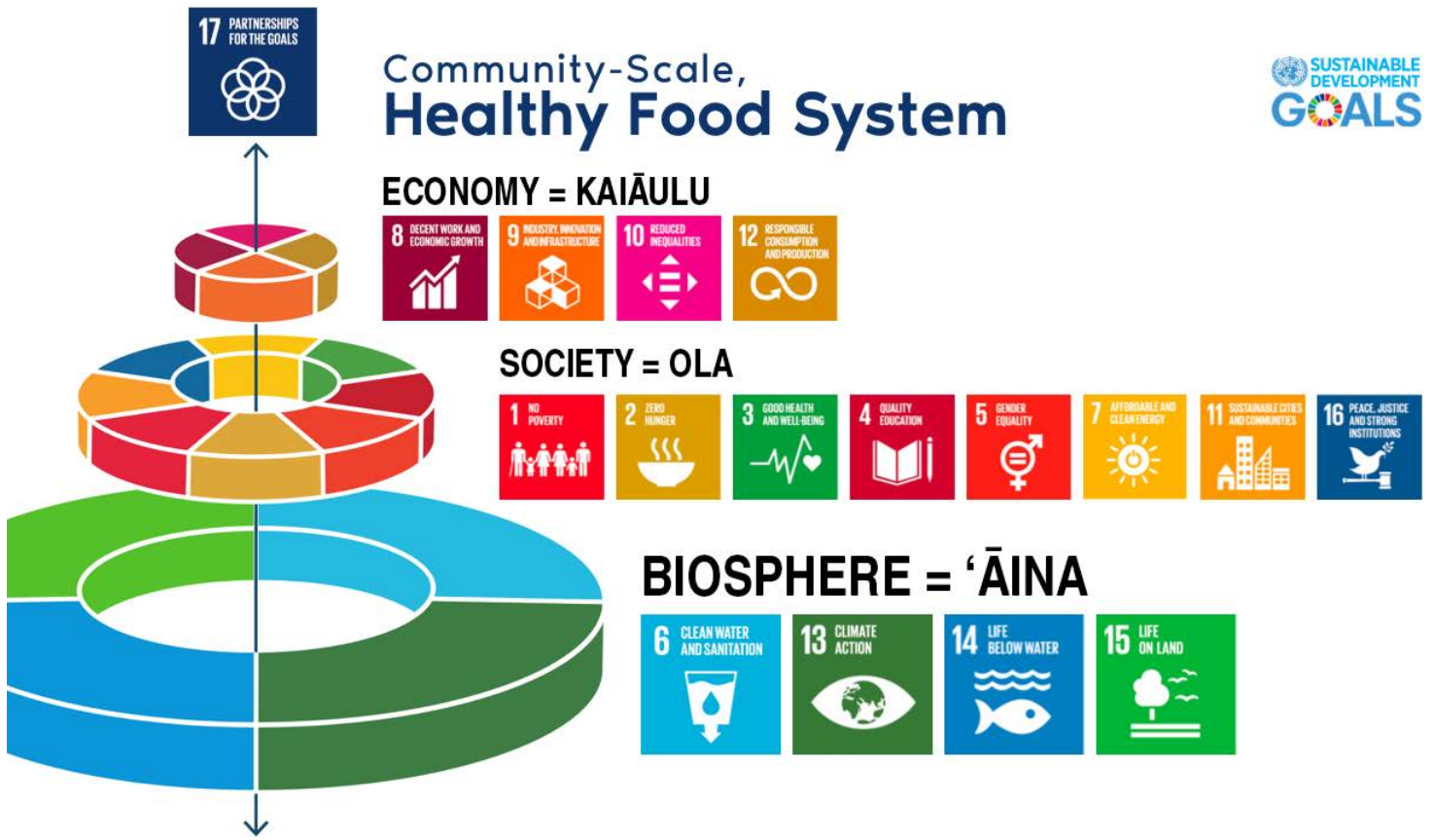

Figure 2-2 Community-Scale Adaptation of UN Sustainable Development Goals

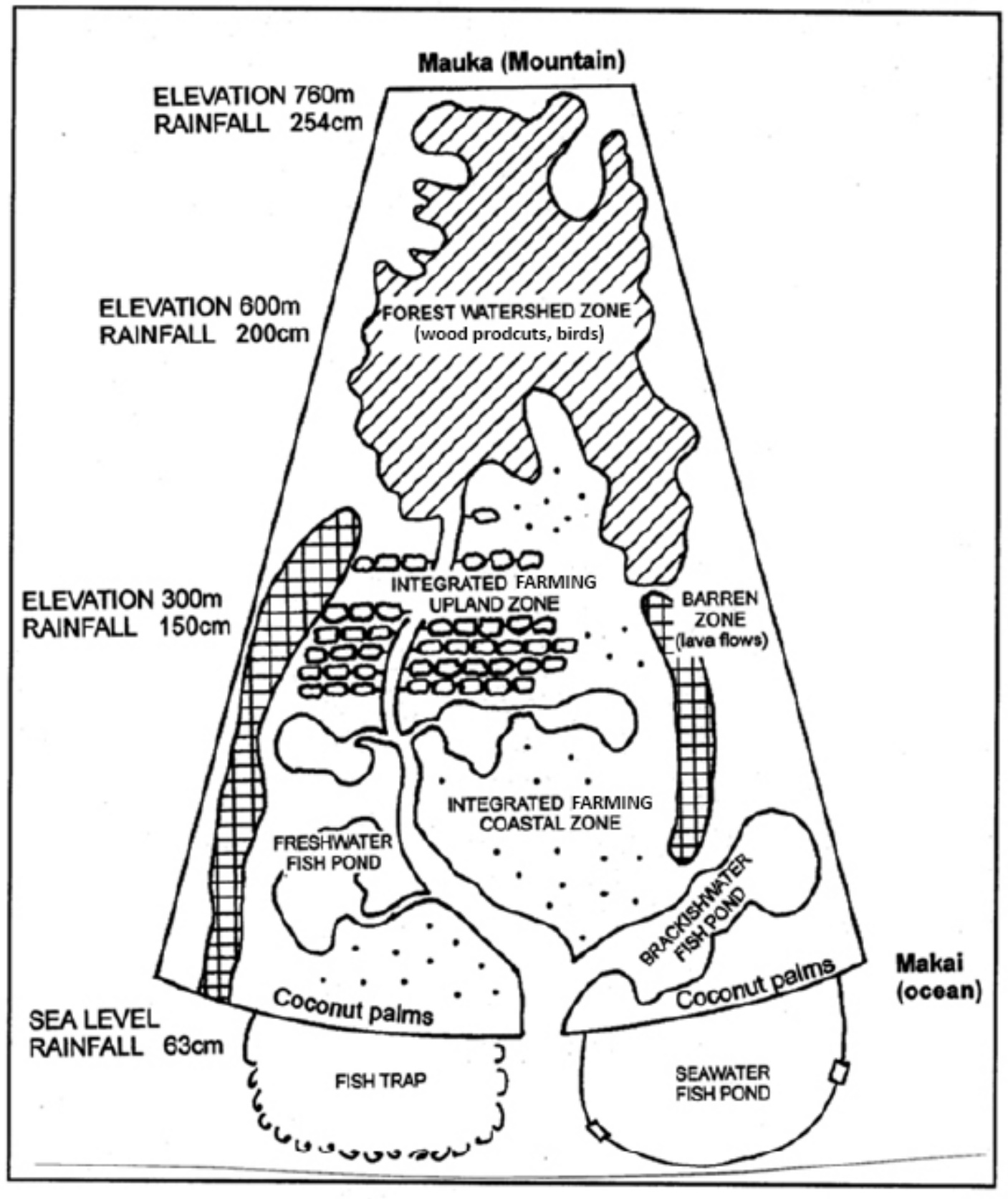

Figure 2-3 Illustration of Ahupuaʻa Concept (Minerbi after Apple, 1999)

nested units, enabling management at multiple scales while maintaining coherence across the whole moku.

The ahupuaʻa of Kalamaʻula ("the red rays" or "red torch/red lama tree") was historically recognized for its freshwater springs, wetlands, and fishponds—including Kapuāiwa's springs and multiple loko iʻa—that once supported abundant native fish, limu, and agriculture *(Figure 2-4)*. These resources made Kalamaʻula an important center for freshwater access and coastal food production, reflected today in the remaining springs and cultural sites documented in this plan.

Kapaʻakea ("coral/limestone surface") was historically a landscape of wetlands, fishponds, and estuarine resources, famous for its loko puʻuone and coastal fisheries, while Kamiloloa ("the long/tall milo tree") and its partner ahupuaʻa, Makakupaʻia, were known for extensive coastal fisheries, multiple large fishpond complexes such as Kalokoʻeli and Aliʻi, and inland agricultural terraces that formed a significant habitation and farming complex. Oral histories and archival notes describe rich nearshore limu, octopus grounds reserved for aliʻi, and productive ʻauwai-fed agriculture, illustrating these ahupuaʻa as places of integrated mauka to makai food systems that supported thriving populations.

These Indigenous governance systems are not just historical context; they function as a proven, place-based resilience framework. Because moku and ahupuaʻa boundaries follow watershed, reef, and resource patterns, they align closely with contemporary priorities in hazard mitigation, climate adaptation, and land-use planning. For Molokaʻi homestead communities, building on this foundation can strengthen existing efforts to reduce flood risk, protect water supplies, secure food systems, and safeguard coastal resources.

Management within each ahupuaʻa was guided by kuleana (responsibility, ancestral obligation, jurisdiction, and authority). Aliʻi (chiefs) and konohiki (land managers) exercised kuleana to set kapu, manage access to key resources, and ensure that the needs of the community and the health of the ʻāina were balanced, while ʻohana and individual residents fulfilled kuleana for the specific lands and waters they used. Resource use was regulated through seasonal kapu and customary protocols that allowed time for natural systems to replenish, linking daily practices such as when to fish, plant, or harvest to the long-term abundance and security of the community. Today, kuleana is expressed through homestead associations, ʻohana-based stewardship groups, kiaʻi loko iʻa and kiaʻi wai, and other community institutions that are central partners in resilience planning.

Within each ahupuaʻa, Kānaka ʻŌiwi also recognized horizontal bands of elevation and associated ecosystems called wao (realms) *(Figure 2-5)*. Wao are social–ecological zones that share climate, vegetation, biodiversity, and patterns of use *(Table 2-1)*. These realms are not uniform across the islands; their boundaries and functions reflect local environmental conditions and management practices. Generally, these realms include the following zones: wao akua (remote, sacred cloud-forest associated with akua), wao kele (rain belt, wet upland forest), wao nāhele (inland remote forest region), wao lāʻau (managed agro-forest), and wao kānaka (zones where people live, cultivate, and directly manage resources). In the kai (seaward) direction, zones such as ka poʻina nalu (inner reefs) and kai koholā (outer reef frequented by humpback whales) connect coastal communities to nearshore and offshore resources (Winter et al., 2018).

The lands above the wao kānaka, specifically wao akua, wao kele, wao nāhele, and wao lāʻau, were commonly held and managed for the benefit of the ahupuaʻa. These upper wao functioned as critical recharge and biodiversity zones, generating and maintaining cultural, biological, and spiritual balance. Wao kānaka zones in the interior supported loʻi kalo, māla, habitation areas, and other forms of intensive management. When stewarded together, the wao and kai zones supported clean and abundant freshwater, fertile soils, healthy fisheries, and ʻāina momona (a state of thriving ecological and community abundance) *(Figure 2-5)*.

Figures 2-6 and 2-7 illustrate how the ahupuaʻa of Kalamʻula, Kapaʻakea, Kamiloloa, and Makakupaʻia are organized across distinct socio-ecological zones that extend from the upland wao akua and wao kele through the wao kānaka and into the nearshore kai lūheʻe and kai koholā. These figures visually demonstrate that each ahupuaʻa contains a full suite of interconnected ecological functions, with upland forest and recharge areas positioned directly upslope of inhabited and cultivated lands, and coastal ecosystems forming the terminal receiving environments for freshwater, sediment, and nutrients moving downslope.

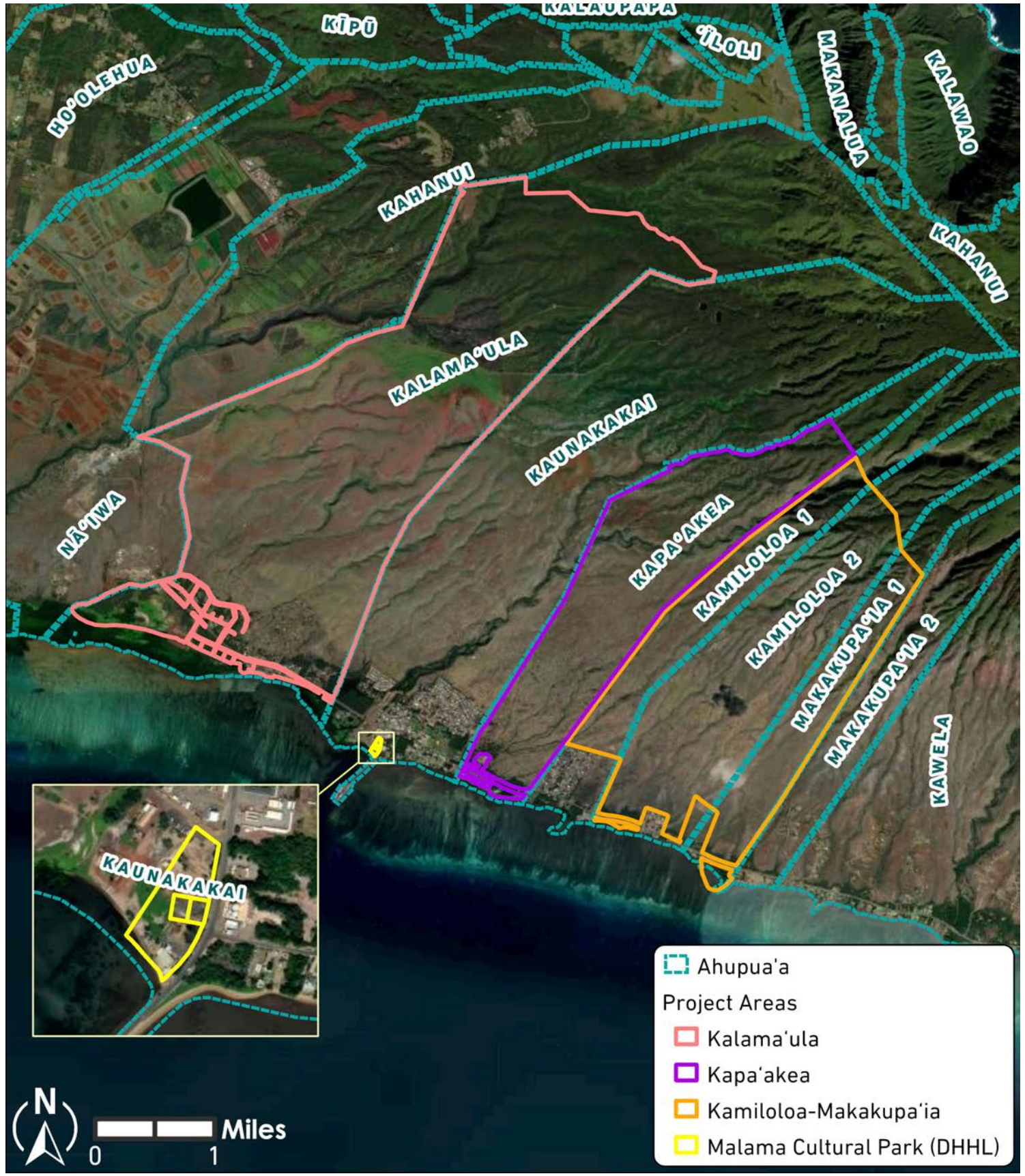

Figure 2-4 Moloka'i Coastal Homestead Ahupua'a Map

Table 2-1: Social Ecological Regions

Socio-Ecological Zone	Translation	Land and Water Management Implications
Wao Akua	Sacred Forest	Primary function: Perpetual source population for endemic biodiversity. Designated as "sacred forest", making it a restricted forest zone for a native-only plant community, accessed only under strict protocols. Associated with montane cloud forest, elfin forest.
Wao Kele	Wet Forest	Primary function: Maximize aquifer recharge. An untended forest zone associated with core watershed areas (remote upland, wet forest below the clouds) which was left as a native-dominant plant community. Impractical for access except for transit through via trails.
Wao Nāhele	Remote Forest	Primary function: Maximize habitat for native birds. A forest zone that was minimally-tended (generally remote upland, mesic forest) and left as a native-dominant plant community. Impractical for access except by bird catchers and feather gatherers.
Wao Lā'au	Agro-Forest	Primary function: Maximize the availability of timber and non-timber forest products. A zone allowing for the management of a highly-tended forest via an integrated agroforestry (native and introduced plants) regime: Native and introduced hardwood timber, Introduced food trees, Native and introduced biofuel sources, Maximization of native biodiversity for non-timber forest products, Cordage and weaving material, Medicine and dyes, Ceremonial and adornment plants
Wao Kānaka	Habitation Zone	Primary function: landscape-scale augmentation to maximize the availability of food, medicine, and housing. A zone allowing for (but not mandating) the conversion of forest to field agriculture, aquaculture, habitation, recreation, and/or temple worship. Native and introduced trees tended, individually or in groves, for regular and specific cultural services.
Kai Lūhe'e	Inner Reef	Fringing reef with breaking waves (representing the seaward boundary of ahupua'a)
Kai Koholā	Outer Reef	Sea frequented by humpback whales (Megaptera novaeangliae) (submerged volcanic shelves)

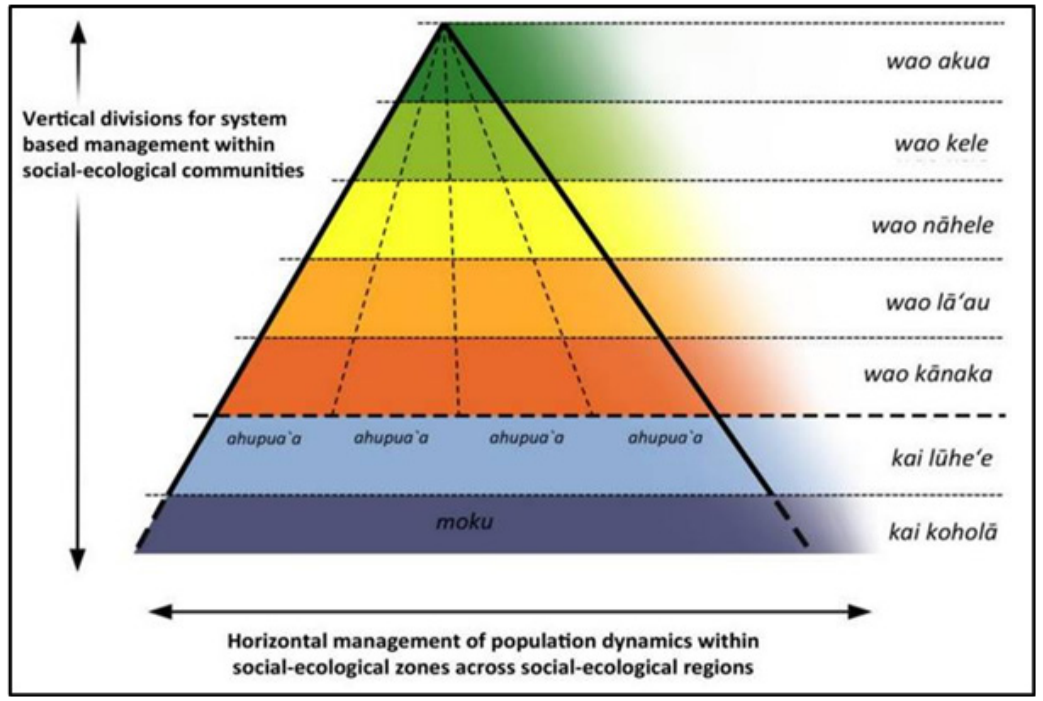

Figure 2-5 Model of Single Social-Ecological Region (Source: Winter, 2018)

KALAMA‘ULA HAWAIIAN SOCIO-ECOLOGICAL ZONES

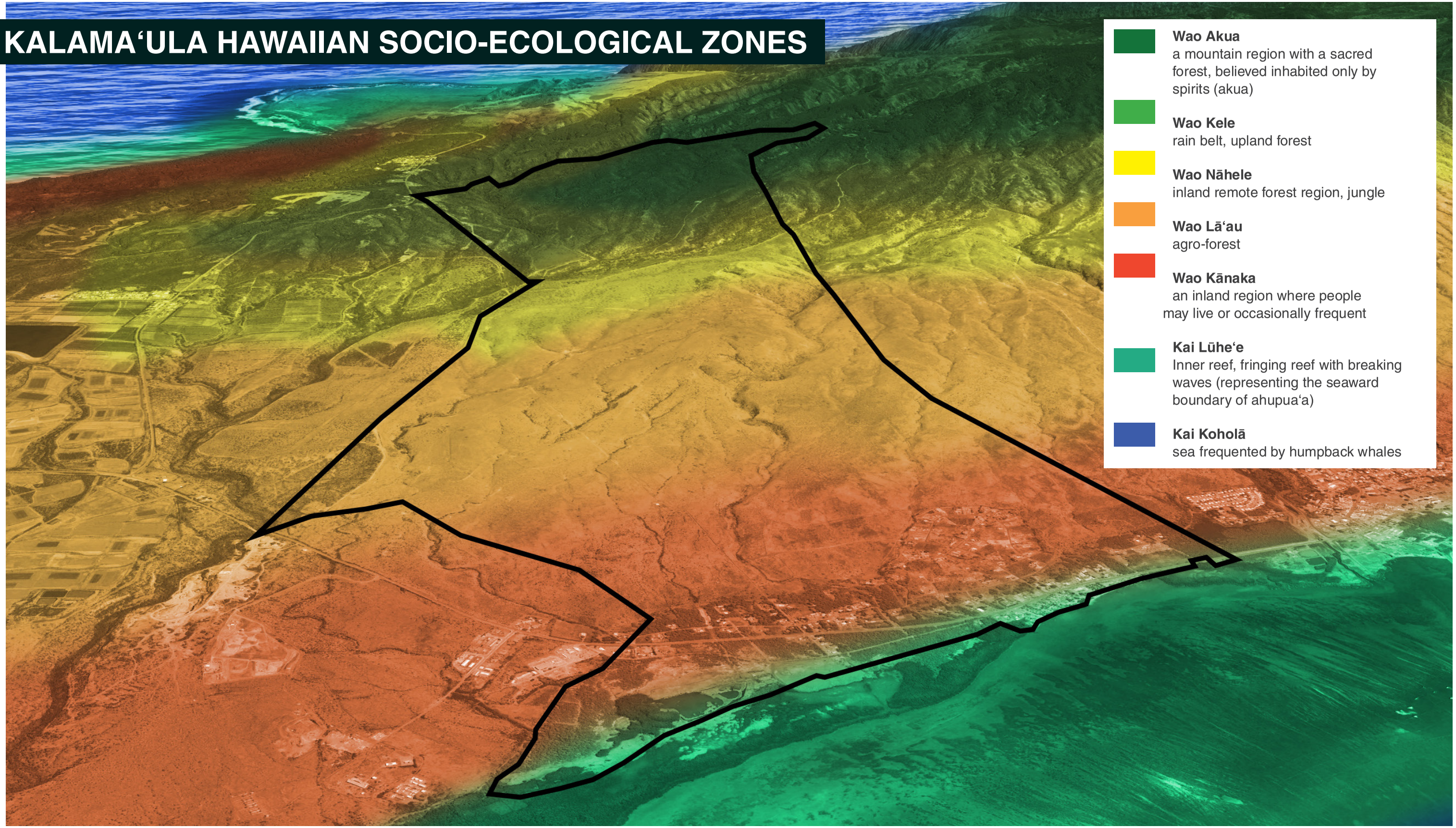

Figure 2-6 Illustration of Socio-Ecological Zones of Kalama’ula Ahupua‘a

KAPA‘AKEA, KAMILOLOA, AND MAKAKUPA‘IA HAWAIIAN SOCIO-ECOLOGICAL ZONES

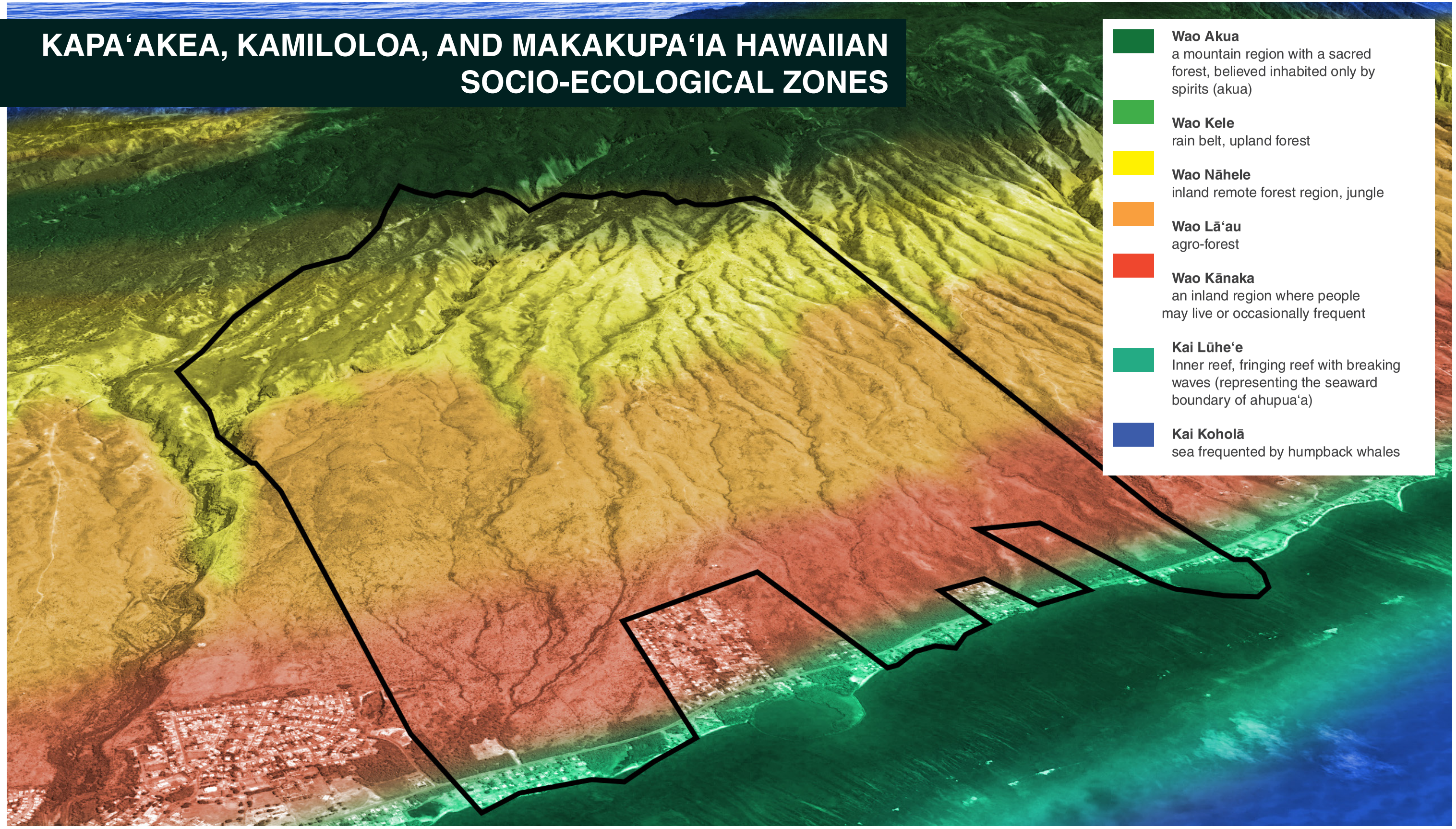

Figure 2-7 Illustration of Socio-Ecological Zones of Kapa’akea and Kamiloloa Ahupua‘a

In both figures, the steep mauka gradients transition rapidly into broad mid-slope and coastal zones, reflecting the physical reality of south Molokaʻi where water moves quickly through gulches during storm events. The spatial arrangement of the wao lāʻau and wao kānaka zones highlights where historical agroforestry, loʻi kalo, habitation, and contemporary homestead development are concentrated, often directly within drainage pathways that connect upland watersheds to fishponds, wetlands, and reefs. This configuration helps explain why changes in mauka vegetation cover, grazing pressure, and wildfire impacts have immediate consequences for flooding, erosion, and sedimentation in coastal homesteads and nearshore waters. The figures also show that the kai lūheʻe zone, where fringing reefs and fishponds are located, functions as a critical buffer and indicator of upstream conditions, reinforcing the ahupuaʻa principle that coastal resilience depends on the health and management of upland zones as much as shoreline conditions.

From a Native Hawaiian perspective, resilience is relational: when people fulfill their kuleana to care for ʻāina, ʻāina in turn sustains social, cultural, ecological, and economic wellbeing.

Effective watershed management brings these relationships into practice. Mauka forests capture and store rainfall, filter and slowly release water, and reduce the intensity of flooding during heavy rains. Healthy gulches, floodplains, and wetlands slow and absorb runoff, reducing sediment and pollutants that would otherwise impact coastal homes, fishponds, and reefs. When forests, streams, wetlands, and reefs are managed as a single connected system, they reduce disaster risk while sustaining fisheries, nearshore ecosystems, and community safety. The moku and ahupuaʻa frameworks remain powerful because they align with the natural movement of water, sediment, species, and people, and therefore provide a culturally grounded basis for resilience planning across the entire disaster cycle.

During mitigation and preparedness, restoring native forests, restoring and maintaining loʻi and wetlands, and protecting coastal ecosystems reduces risks of flooding, erosion, drought, and saltwater intrusion. In response, the strong social networks and governance structures built through Malama ʻāina (care for the land) enable neighbors to mobilize quickly, share knowledge, and care for one another. In recovery, cultural practices, ʻāina-based workdays, and the restoration of damaged ecosystems support healing for both people and place.

Over the last two centuries, these integrated systems of kuleana and ʻāina-based governance were significantly disrupted by land privatization, plantation and ranching economies, military activities, and centralized state and county regulations. These shifts fragmented social–ecological relationships, weakened community decision-making over ʻāina and kai, and contributed to present-day vulnerabilities such as flooding, erosion, and food insecurity. At the same time, homestead communities and other Native Hawaiian organizations are actively revitalizing ʻāina-based governance through community-driven watershed initiatives, restoration of loʻi kalo and loko iʻa, and co-management of nearshore resources. Resilience planning in this context must therefore address not only ecological conditions but also questions of jurisdiction, authority, and community control over land and water.

Through this Indigenous model, resilience is not confined to reacting to hazards; it is a living, intergenerational practice that weaves environmental health, social cohesion, cultural continuity, and self-determination, by restoring and managing Molokaʻi's watersheds through the integrated lens of the moku system, combining ancestral knowledge with appropriate contemporary science. Accordingly, the homestead communities are continuing a legacy of resilient people caring for resilient lands and seas, while advancing locally grounded contributions to global resilience and sustainability goals.

For Molokaʻi homesteads, the long-term goal is ʻāina momona—a condition in which land, waters, and people are thriving together. In this context, resilience is measured not only by reduced losses from disasters, but also by community-defined indicators such as the level of ʻohana access to ʻāina and kai, the abundance of native species and productive loko iʻa, the continuity of cultural practices, and the strength of ʻohana and kaiāulu networks in times of stress. These measures can complement agency metrics and guide implementation and monitoring of this plan.

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Chapter 3

South Shore Community Profiles

Chapter 3

South Shore Community Profiles

Regional Setting and Land Use History

Molokaʻi is the fifth largest of the six developed islands in the southern Hawaiian Island chain, measuring about ten miles wide and thirty-eight miles long. The island has roughly eighty-eight miles of shoreline surrounding its 260 square miles of land. Sections of these shorelines are dynamic and can shift quickly in response to natural forces such as storms, strong winds, and large surf events.

Molokaʻi's south shore is protected from waves, storms, and swells by the neighboring islands of Lānaʻi and Kahoʻolawe and is not exposed to the prevailing northwest ocean swells and storms like the northern cliffs *(Figure 3-1)*. These conditions led to the formation of a coastal plain and the longest continuous fringing reef in the United States, with some of best coral coverage sites in the developed Hawaiian Islands. However, both manmade and climate driven shoreline processes and sea level rise have led to erosion and sedimentation challenges in southern Molokaʻi.

The construction of fishponds along Molokaʻi's southern coast by early Hawaiian settlers, starting around 1,000 A.D., originally led to the altering and disruption of the natural flow of southern Molokaʻi's ocean waves and currents. The terrestrial environment also saw significant change as settlers constructed extensive ʻauwai (irrigation ditches), taro loʻi (ponded terraces) and habitat sites to sustain the growing population. These human interventions began to alter the natural flow of stream water from the mauka reaches to the shoreline and marine environment. However, this system not only helped feed people but supported a wide array of wildlife as well. Both the loʻi and fishponds offered prime habitat for native waterbirds, freshwater fish and invertebrates. The water would drain back into the stream from the loʻi and continue to the sea, delivering nutrients to the estuaries and fishponds, where juvenile marine species flourished.

Besides providing the nutrient-rich staples of the Hawaiian diet, taro loʻi and fishponds also functioned as filtration systems, absorbing floodwater during storms and mitigating the impact of runoff into the ocean. Although the ahupuaʻa system sustained the Hawaiian people for generations, many converging factors, including the sandalwood trade and foreign colonization in the 1800s with the imposition of private land ownership systems and diversion of water, drove Hawaiians out of their ancestral spaces. Many of these loʻi and fishponds were abandoned and either filled or now include mangroves and sediment.

In the early 19th century, Molokaʻi's native ʻiliahi became central to the burgeoning sandalwood trade between Hawaiʻi and China. The Chinese highly prized sandalwood for its aromatic qualities, using it in incense, medicine, and fine woodworking. Hawaiian chiefs, recognizing its value, directed commoners to harvest vast quantities of ʻiliahi, often at the expense of tending to their own crops. This intensive exploitation led to the rapid depletion of sandalwood forests across the Hawaiian Islands, including Molokaʻi, resulting in significant ecological and economic impacts.

In 1859, Kamehameha IV (Alexander Liholiho) established a sheep ranch on the west end of Molokaʻi at Kaluakoʻi. His brother Kamehameha V (Lot Kapuāiwa) expanded the ranch by acquiring additional lands, and augmented them with the introduction of cattle. In 1868, Kamehameha V received a diplomatic gift of eight axis deer (native to India) from Hong Kong (a British-ruled colony at the time). This was the founding of Molokaʻi Ranch, later purchased in 1897 by the American Sugar Company. The sugar enterprise did not last long as their wells, with the sustained pumping required, produced saline water, which soon killed the cane in the fields. The ranch again reverted to a livestock venture.

Foot trails in Molokaʻi transporting goods and people, windward to kona, were gradually turned to horse paths, then later widened to accommodate animal-drawn wagons or buggies. Eventually when the automobile was introduced to Molokaʻi, the trails became western-style roads. This new mode of transportation required not only better roads, but supplies of oil and gasoline for fuel, which were transported by ship. The harbors on Molokaʻi were shallow and vulnerable to shifts in the gusty winds. As larger ships with deep drafts came to the islands, they required wider openings in the reefs and deeper, well-protected waters for anchorage. Several wharves were constructed during the 1880s at Kaunakakai, Pukoʻo, Kamaloʻo, Kalaupapa and Pelekunu. Of the five original wharves, only Kaunakakai remains, having been rebuilt several times as a pier.

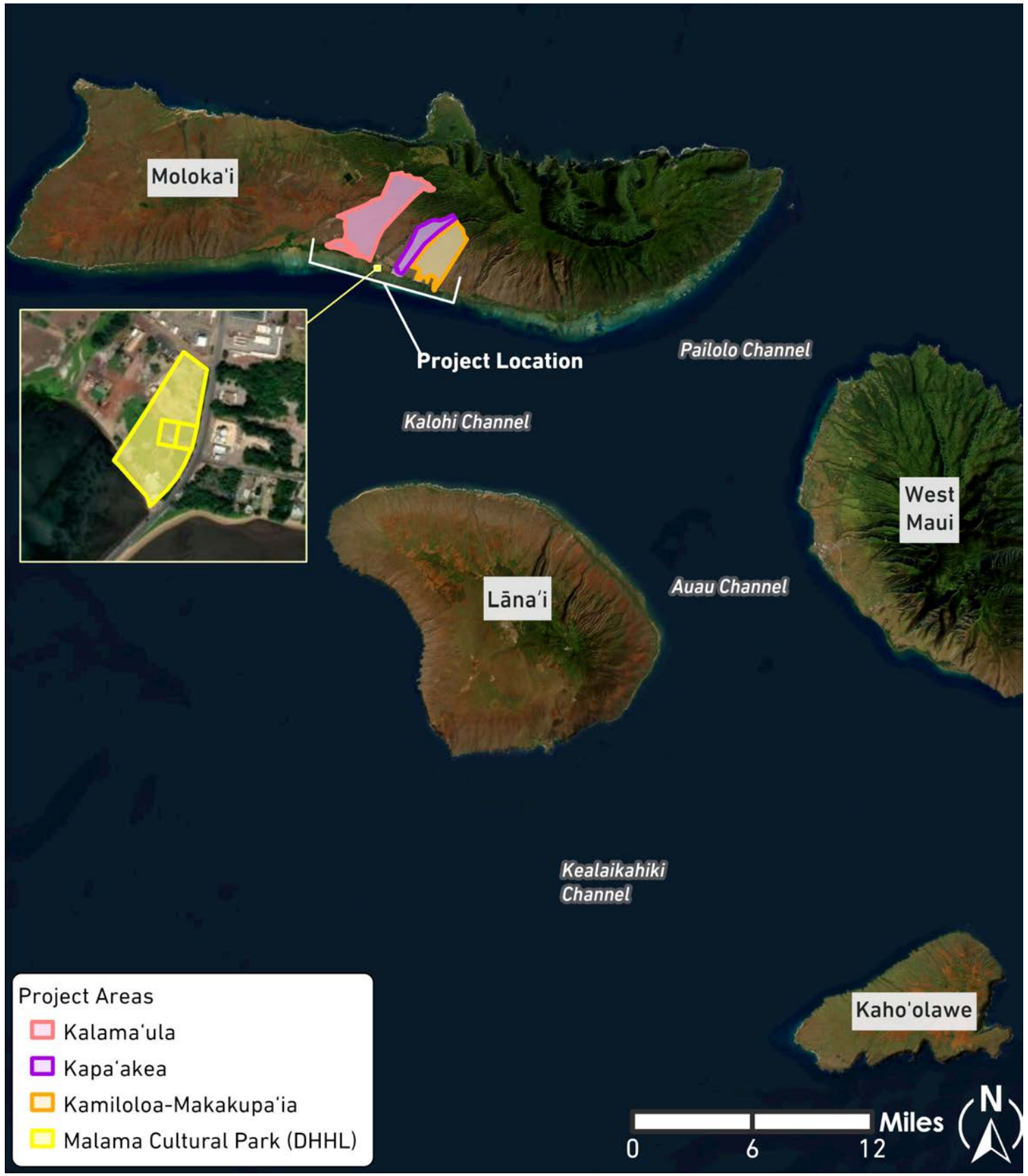


Figure 3-1 Regional Setting

The construction of Kaunakakai wharf in 1889 and its several extensions and improvements over the years (particularly when the wharf road culverts were removed), disrupted along-shore currents, waves and sediment transport *(Figure 3-2)*, robbing the shoreline bordering Malama Cultural Park of its sandy beach. Sand and mud tend to build up in the harbor, resulting in high spots. Shallow areas are a safety concern for vessels. The increased build-up of sand and mud is also kicked up and carried to the surrounding marine ecosystems, such as the coral reef. Maintenance dredging by the U.S. Army Corps of Engineers was completed in 1973 and 2024.Before the introduction of ranching and invasive ungulate populations, the Kalamaʻula, Kapaʻakea, and Kamiloloa areas were dominated by native dryland forests, woodlands, and shrublands, which played a crucial role in stabilizing the soil and supporting the island's watersheds. The region was covered with native species such as lama *(Diospyros sandwicensis)*, ʻiliahi *(Santalum spp.)*, naio *(Myoporum sandwicense)*, ʻaʻaliʻi *(Dodonaea viscosa)*, and milo *(Thespesia populnea)*, along with ground-covering species like ʻuhaloa *(Waltheria indica)* and pua kala *(Argemone glauca)*. These plants were deeply adapted to Molokaʻi's dry, leeward environment, helping to retain soil moisture, prevent erosion, and sustain biodiversity.

The American Sugar Company introduced red mangroves *(Rhizophora mangle)* in 1902, to stabilize the coastal mudflats of Pālāʻau in south central Molokaʻi from eroding. Mangroves have since become an invasive problem, spreading eastward and taking over much of the coastline. The invasive nature of the mangroves causes them to reduce the wetland habitat important for endemic water birds, and encroach onto reef flats, coastal beaches, and fishponds, disrupting traditional fisheries and reducing biodiversity. However, mangroves have also reduced the amount of sediment transport from the watershed to coastal waters and the reef, and reduced the erosion caused by coastal wind and wave energy.

Non-native limu (algae) species, such as *Gracilaria salicornia* (gorilla ogo) and *Acanthophora spicifera* (spiny prickly seaweed), have proliferated in Molokaʻi's coastal waters. *Acanthophora spicifera* was unintentionally introduced to Hawaiʻi in 1950, likely through hull fouling on a barge arriving in Pearl Harbor. From there, it spread rapidly across the main Hawaiian Islands, including Molokaʻi. *Gracilaria salicornia* was intentionally introduced to Hawaiʻi in the 1970s for experimental aquaculture aimed at agar production. Initial plantings occurred on Oʻahu, and the species was later translocated to Molokaʻi's Pukoʻo Fishpond in the 1980s to see if it could support fishpond restoration efforts on Molokaʻi. These aquaculture projects were eventually abandoned, but the algae had already established themselves in the local marine environments. The ability of both species to reproduce vegetatively through fragmentation, and the absence of natural herbivores that specifically target these non-native algae, allowed them to grow unchecked in their new environments. These invasive limu species outcompete native limu and corals, leading to declines in reef health and associated marine life.

Although land management and the control of grazing animal populations have been in effect since the late 1800s, overgrazing by feral animals and cattle still causes much of the present soil erosion problems on Molokaʻi. Extended periods of drought and recurring wildfires have also contributed to the loss of native ecosystems and further accelerated erosion. The widespread loss of vegetation has altered the island's rainfall patterns, leading to reduced precipitation and the conversion of many perennial streams into intermittent flows.

The combination of overgrazing and low annual rainfall limits the ability of grazed lands to recover naturally. Open and disturbed areas are often invaded by non-native grasses that create dense fuel loads, increasing the frequency and severity of wildfires. After fire, the absence of vegetation leaves the ground exposed, reducing soil formation and water retention across the watershed. When short and intense rain events occur, flash flooding can rapidly erode these bare slopes, carrying sediment downslope, clogging streams and drainageways, and causing flooding in the coastal communities below.

Figure 3-3 provides a conceptual illustration of the existing mauka-to-makai conditions described in above. The figure depicts upland forest areas draining through intermittent streams and gulches into lands historically used for agriculture and ranching, before reaching low-lying homestead areas, wetlands, fishponds, and nearshore reef systems. It also shows how roadways, grazing activities, and shoreline modifications intersect with natural drainage pathways, influencing the movement of freshwater and sediment across the ahupuaʻa.

These ahupuaʻa are now facing additional threats

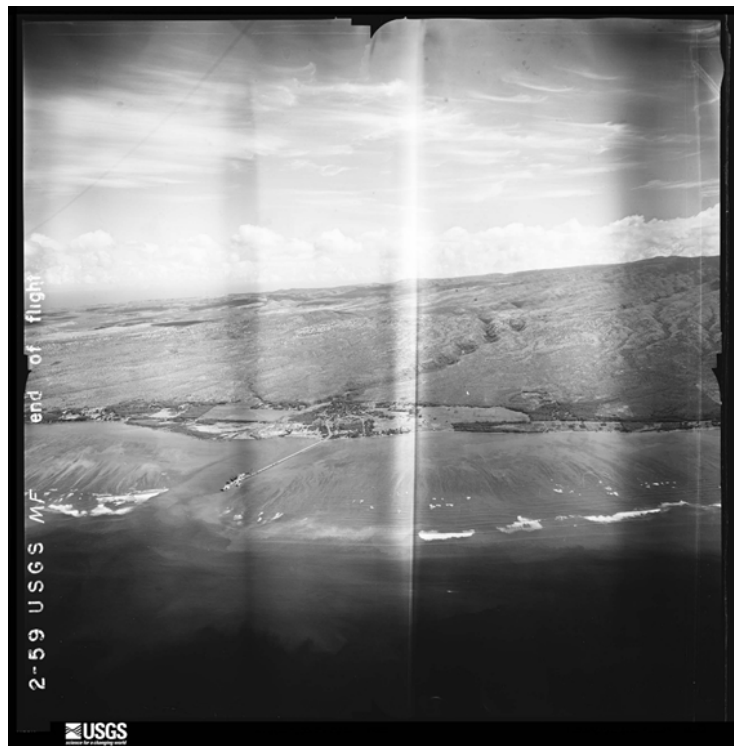


Figure 3-2 Photo of Kaunakakai Wharf (1949)

from the increasing frequency and intensity of climate-driven natural hazards. More powerful storms are producing severe and dangerous floods, placing greater stress on mauka watersheds and increasing the amount of sediment that flows into coastal waters. The continuing changes in climate patterns and hazardous events pose a serious threat not only to the lives and homes of multigenerational families, but also to private property, businesses, critical infrastructure, cultural sites and practices, and essential ecosystem resources and services.

Homestead Profiles

The following pages provide an overview of the homestead communities and areas that are the focus of this plan: Kalamaʻula, Kapaʻakea, Kamiloloa, One Aliʻi, and Malama Cultural Park. These areas are located along the south shore of Molokaʻi within the moku of Kona and Pālāʻau and span several ahupuaʻa, including Kalamaʻula, Kapaʻakea, Kamiloloa, Makakupaʻia, and Kaunakakai. As shown in *Figure 3-4*, the homestead areas vary considerably in size, ranging from approximately 4.6 acres at Malama Cultural Park to more than 5,000 acres at Kalamaʻula, and together form a continuous coastal planning area linked by the coastal highway and shared shoreline and watershed systems.

Information is also presented on the DHHL land use designations and existing homestead land use patterns within each community. As illustrated in *Figure 3-5*, Kalamaʻula is the largest and most diverse homestead area, containing 160 residential lots, 69 agricultural lots, and 3 pastoral lots, supporting an estimated 322 residents across 232 active leases. Kapaʻakea includes 47 residential lots and 3 pastoral lots, with approximately 166 residents and 50 total leases, while Kamiloloa contains 27 residential lots, approximately 75 residents, and 27 active leases. Mālama Cultural Park is designated as a Special District and does not contain residential homesteads, but plays an important role as a community, cultural, and shoreline resource within the planning area. Together, these figures illustrate differences in population density, land use mix, and development patterns that influence how climate impacts, flooding, coastal change, and access to resources are experienced across the homestead communities.

Climate and Hydrology

The south shore of Molokaʻi is characterized by a warm, dry climate shaped by limited rainfall and persistent trade winds for most of the year. Rainfall patterns exhibit a strong mauka–makai gradient, with the highest precipitation occurring in the upland forest reserve and sharply decreasing toward the coast. Average rainfall near the shoreline is approximately one to two inches per month, increasing to nine to ten inches per month in the mauka forested areas. These contrasts create a landscape of dry coastal grasslands and shrublands transitioning to wetter upland forests, with water moving downslope through a network of gulches and intermittent streams. As illustrated in *Figures 3-6 and 3-7*, these drainage systems transport freshwater, sediment, and nutrients from the uplands to coastal wetlands, fishponds, and nearshore waters, directly linking mauka watershed health to coastal conditions and community wellbeing.

Despite overall arid conditions, short-duration, high-intensity rain events periodically generate flooding in gulches and low-lying coastal areas. This combination of prolonged dry periods punctuated by heavy rainfall contributes to erosion, sediment transport, wildfire risk, and stress on water resources. Wind exposure further exacerbates evapotranspiration and vegetation loss in the coastal plain. Together, these climatic and hydrologic dynamics create a system that is highly sensitive to changes in land cover, drainage obstruction, and watershed degradation—conditions that are increasingly influenced by climate change and land use pressures.

Freshwater availability along the south shore has historically depended not only on surface runoff, but also on punawai (springs) fed by the shallow coastal groundwater lens. Groundwater flowing from the uplands emerges naturally near the shoreline where impermeable layers and gentle topography force freshwater to the surface. These springs historically sustained coastal vegetation, wetlands, loʻi, and loko iʻa, even during dry periods. Nearshore plant communities such as kiawe, milo, and wetland vegetation are closely tied to this shallow water table, which continues to influence coastal ecology today.

Historical accounts and planning documents identify multiple freshwater discharge zones and spring-fed systems associated with Kalamaʻula, Kapaʻakea, Kamiloloa, and Kaunakakai. Springs and groundwater seepage supported extensive fishpond complexes (including Aliʻi, Kalokoʻeli, and other loko iʻa) by providing a steady source of cool, low-salinity water essential for fish growth and productivity. These systems relied on careful management of water exchange between freshwater inputs, brackish ponds, and the nearshore ocean. Disruptions to groundwater flow, whether through fill, road construction, blocked culverts, or altered drainage, have reduced spring expression and impaired fishpond function over time.

Loko iʻa along the south shore were engineered to function as integrated hydrologic systems, capturing freshwater from streams and punawai while allowing controlled exchange with ocean waters. Fishpond walls, sluice gates, and channels were designed to regulate water depth, salinity, and sediment movement. Healthy mauka watersheds were essential to these systems: upland vegetation reduced erosion, moderated runoff, and ensured consistent groundwater recharge. When upland areas were degraded, increased sediment loads and altered flow patterns directly affected fishpond productivity and coastal water quality—a relationship that remains evident today.

Sea level rise adds an additional layer of complexity to this hydrologic system. Rising ocean levels elevate the coastal water table, increasing groundwater emergence in some areas while causing chronic flooding and saltwater intrusion in others. This phenomenon is already observable in low-lying coastal zones between Kalamaʻula and Kamiloloa, where groundwater upwelling, ponding, and reduced drainage capacity are becoming more frequent. These changes have implications not only for infrastructure and housing, but also for wetlands, fishpond restoration potential, and nearshore ecosystems.

EXISTING CONDITIONS

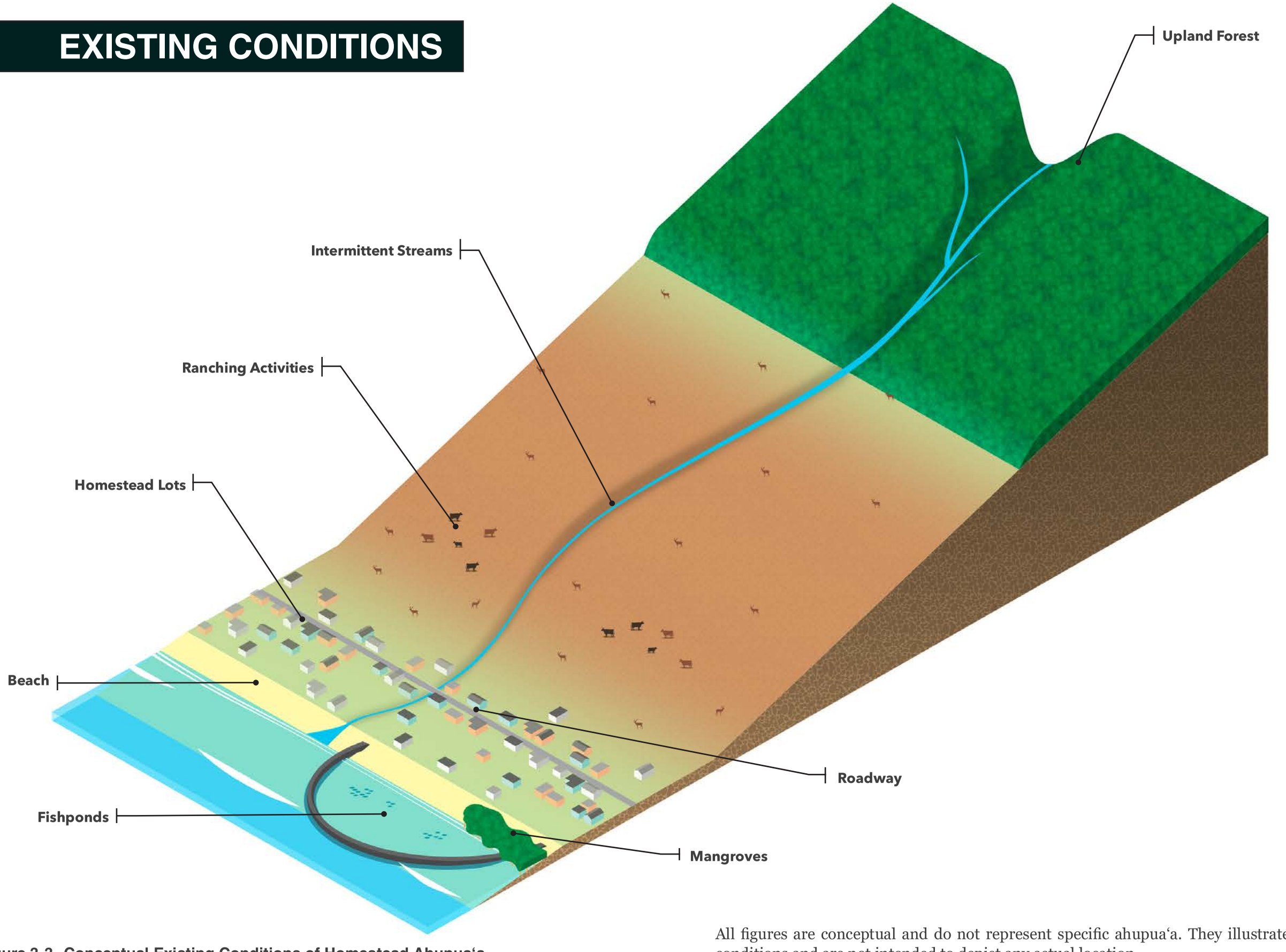


Figure 3-3 Conceptual Existing Conditions of Homestead Ahupua‘a

All figures are conceptual and do not represent specific ahupua‘a. They illustrate generalized conditions and are not intended to depict any actual location.

Kalamaʻula

Moku: Pālāʻau & Kona

Ahupuaʻa: Kalamaʻula

Area: 5,042 Acres

Kapaʻakea

Moku: Kona

Ahupuaʻa: Kapaʻakea

Area: 1,942 Acres

Kamiloloa

Moku: Kona

Ahupuaʻa: Kamiloloa & Makakupaʻia I

Area: 3,249 Acres

Malama Cultural Park

Moku: Kona

Ahupuaʻa: Kaunakakai

Area: 4.58 Acres

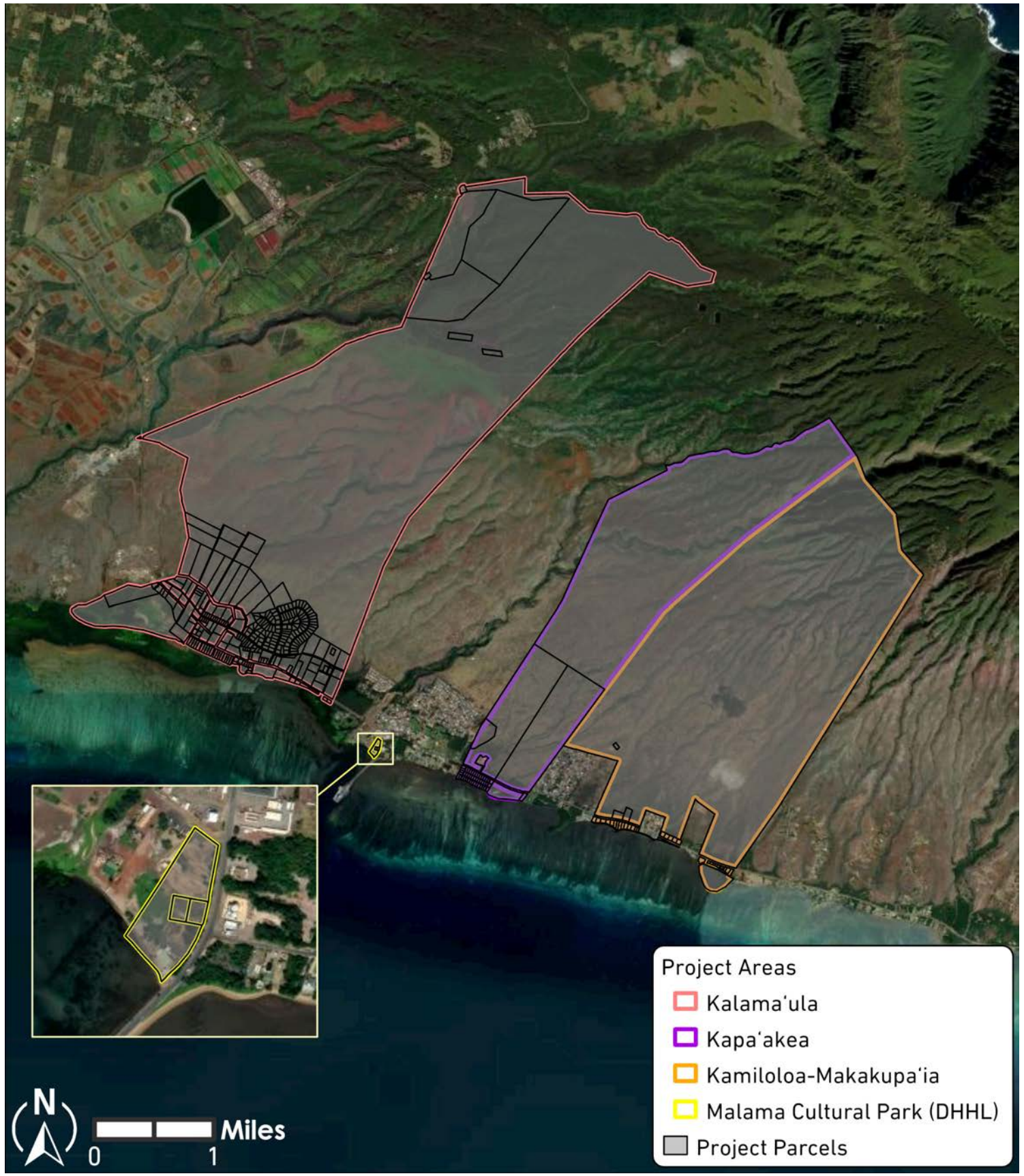


Figure 3-4 Homestead TMK Map

Kalama‘ula

160 Residential Lots

69 Agriculture Lots

3 Pastoral Lots

322 Residents

232 Total Leases

Kapa‘akea

47 Residential Lots

3 Pastoral Lots

166 Residents

50 Total Leases

Kamiloloa

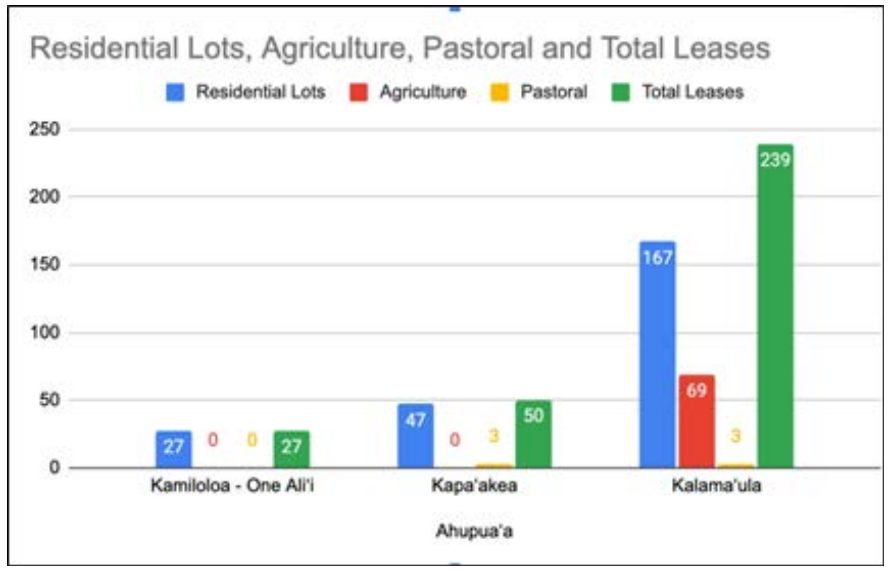
27 Residential Lots

75 Residents

27 Total Leases

Malama Cultural Park

Special District



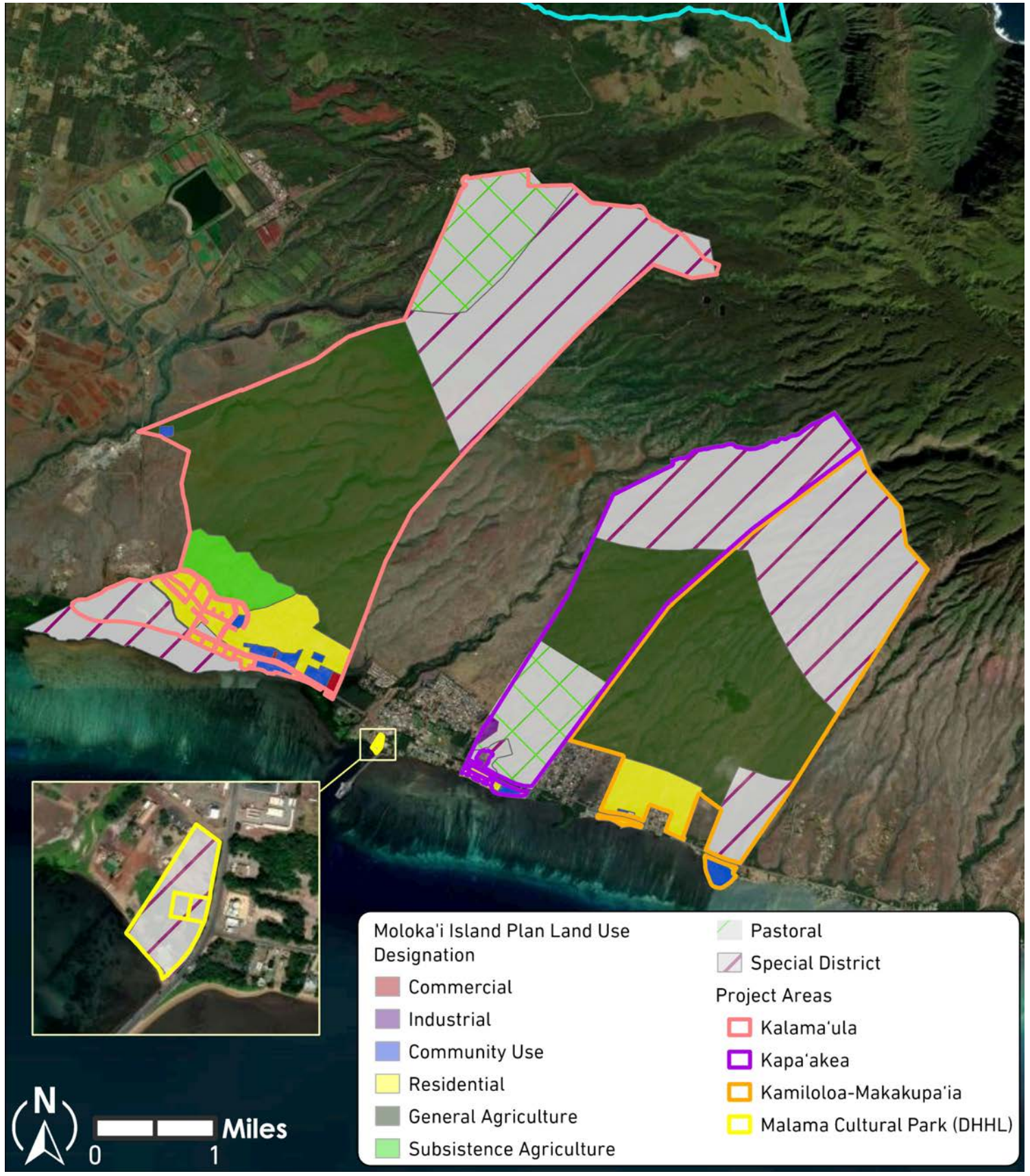


Figure 3-5 DHHL Land Use Designation Map

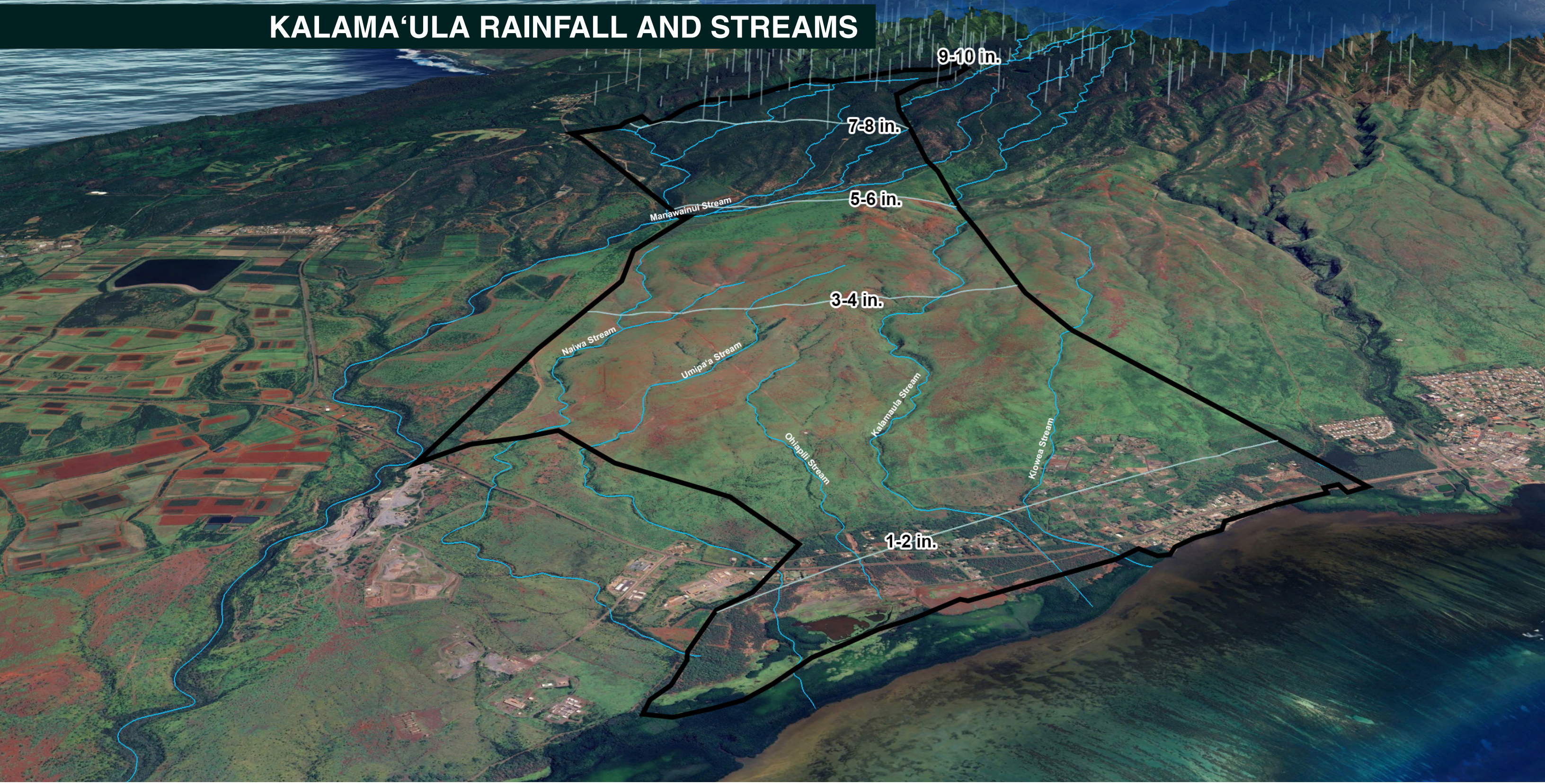


Figure 3-6 Kalamaula Rainfall and Streams

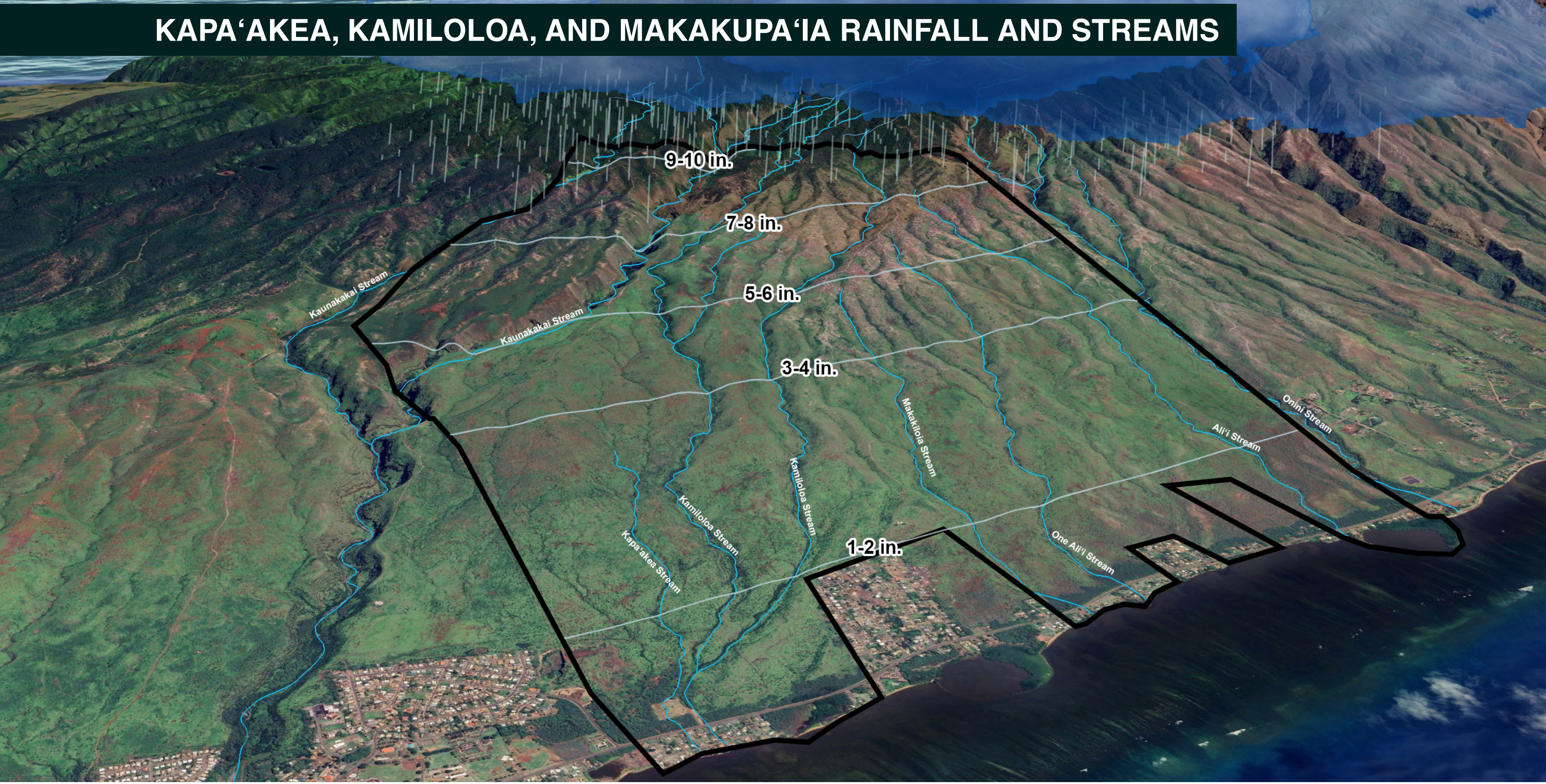


Figure 3-7 Kapa‘akea, Kamiloloa, and Makakupa‘ia Rainfall and Streams

Chapter 4

Assets, Hazards, Vulnerabilities and Risks

Chapter 4

Assets, Hazards, Vulnerabilities and Risks

The MCH-CRP was developed through a beneficiary-driven process guided by a resilience planning framework. The process followed four key steps: first, the identification of assets—the natural, cultural, social, and infrastructural resources that strengthen the community; second, the identification of hazards—the environmental and climate-related threats facing the homesteads; third, an assessment of vulnerabilities—understanding where people, places, and systems are most at risk; and fourth, determining risks—prioritizing which issues require the most urgent attention.

Community Assets

Community assets are the places, resources, and systems that sustain daily life, identity, and well-being in the homestead communities. They include both physical infrastructure and the cultural and natural landscapes that support subsistence, ʻohana connections, and ʻāina based practices. These assets were identified by DHHL beneficiaries through community consultations, site visits, and small group discussions, and they reflect the priorities and lived experiences of homesteaders.

Together, these fifteen assets form the foundation of community safety, food and water security, cultural continuity, and resilience. They are the starting point for understanding how hazards affect the homesteads and where investments in protection, restoration, and adaptation will have the greatest impact.

The following describes the fifteen key assets that were identified.

1. Makai Homesteads

The makai homesteads are the approximately 90 DHHL residential lots located on the coastal plain between Kamehameha V Highway and the shoreline, between the Kalamaʻula bridge and the eastern edge of Kamiloloa One Aliʻi. These small parcels house beneficiary families in modest homes that reflect the rural character of southern Molokaʻi. Ground elevations range from about 1.5 ft to 6 ft, and no lot is more than about 590 ft from the annual high-water line. The area is shaped by open views of the ocean, relatively flat elevation, and proximity to sandy shorelines and traditional fishing and gathering grounds. Beneficiaries value these homesteads for their close relationship to the sea and for the sense of community that comes from generations of families living along the coast.

2. Mauka Homesteads

The mauka homesteads are medium-sized (approximately 1-acre) DHHL residential lots located in the Kalamaʻula Homestead on gently sloping land above Kamehameha V Highway. The area has a small-town rural character with modest homes, open yards, ocean views, and family gardens. Beneficiaries described these lots as peaceful and community oriented, with easy access to Kaunakakai and nearby facilities.

3. Kamehameha V / Maunaloa Highway

The two highways going east and west from Kaunakakai are the main routes is the main route that connects all of the southern Molokaʻi communities. Beneficiaries described it as their lifeline for daily access to schools, health care, and Kaunakakai town. It is also the only corridor for emergency evacuation and delivery of goods and services.

4. Reef and Marine Life

The nearshore reef system provides food, cultural identity, and education for keiki and ʻohana. It supports subsistence fishing, limu gathering, and canoe practice. Beneficiaries described the reef as a source of nourishment and pride that connects them to their ancestors and traditional practices.

5. Gulches and Waterways

Natural gulches carry fresh water from the mountains to the sea. They are vital to agriculture and help recharge wetlands and fishponds. Beneficiaries noted that these gulches once supported kalo and sweet potato cultivation and remain important pathways for the health of the entire ahupuaʻa.

6. Wetlands

Wetlands along the shoreline, including ʻŌhiʻapilo, support native birds, filter runoff, and store floodwaters. They were once abundant food gathering areas and remain important for education, habitat, and restoration. Beneficiaries recognize their role in both ecological balance and flood protection.

7. Fishponds

Loko iʻa such as Aliʻi and Kalokoʻeli are living examples of ancestral knowledge and sustainable food systems. Beneficiaries value these loko iʻa for their cultural, educational, and food producing importance. There are smaller loko iʻa and loko puʻuone that are in various stages of restoration and are cared for by lessees. Community groups continue restoration efforts that provide hands on learning and stewardship opportunities.

8. Beaches

The beaches and shoreline areas are cherished for recreation, canoe launching, fishing, limu gathering, and community gatherings. They are open spaces that bring people together and provide a sense of peace, belonging, and connection to the ocean.

9. Agricultural and Pastoral Land

The mauka lands were once areas of sweet potato and agroforest cultivation and are now used for ranching and hunting. Beneficiaries see them as essential for food security and the renewal of traditional land management practices.

10. Native Forests

The upper forested areas provide habitat, water, and cultural materials such as plants for medicine, hula, and weaving. Beneficiaries identified these forests as a source of life that supports hunting, resource gathering, and watershed protection.

11. Drainage Infrastructure

Ditches, culverts, and outfalls help move stormwater through the communities. Beneficiaries view them as essential for protecting homes, roads, and property from flooding. Regular maintenance and coordination among agencies were identified as community priorities.

12. Parks

Places such as Malama Cultural Park, Kapuāiwa Coconut Grove, and Kiowea Park serve as community gathering spaces and cultural sites. They are used for events, recreation, canoe paddling, and small business activities. Beneficiaries emphasized their historical and cultural significance as well as their role in bringing people together.

13. Community Centers

Facilities such as Kalaniana‘ole Hall, Kūlana ʻŌiwi Multi Service Center, and the churches along Church Row are essential meeting and service spaces. They support cultural education, celebrations, funerals, and access to programs and resources that strengthen the community.

14. Roadways

Neighborhood streets, shoreline access paths, and rural mauka roads connect residents to homes, gardens, cultural sites, and hunting areas. Beneficiaries identified the need to maintain these routes for daily travel, community connection, and emergency access.

15. Kapa‘akea Cemetery

This cemetery, owned and managed by County of Maui, is the resting place of many kūpuna and is regarded as a sacred and historical site. Beneficiaries expressed strong commitment to its care, noting its importance as a space for remembrance, reflection, and continuity of family and community heritage.

Hazards

Hazards are natural or human-caused events that have the potential to harm people, property, cultural resources, or ecosystems. In the context of the MCH-CRP, hazards include both long-term environmental changes and short-term events that threaten the safety, health, and livelihoods of DHHL beneficiaries. These hazards are intensified by climate change, which is increasing sea levels, extreme rainfall, drought, and coastal flooding. Understanding these hazards is essential to identifying where the homestead communities are most vulnerable and to guide strategies that strengthen community resilience from mauka to makai.

The MCH-CRP conducted a spatial analysis of these hazards to better understand exposure within the DHHL homestead areas. *Figures 4-1 and 4-2* illustrate hazard conditions in Kalama‘ula, *Figures 4-3 and 4-4* illustrate Kapa‘akea, and *Figures 4-5 and 4-6* illustrate Kamiloloa. Each map identifies key community assets and overlays multiple hazard layers using GIS data, including FEMA Special Flood Hazard Zones, projected 1 percent coastal flood zones with 3.2 feet of sea level rise, and known cesspool locations. This mapping approach allows the community to visualize where assets intersect with overlapping hazards.

Fourteen primary hazards were identified by beneficiaries as described below:

1. Rising Sea Levels

Flooding in January 2023 compromising Maunaloa Highway (Sust‘āinable Moloka‘i)

Sea levels along Moloka‘i’s south shore are projected to increase by more than three feet this century, resulting in chronic coastal flooding and permanent inundation of low-lying areas. Rising seas threaten coastal homes, roads, and cultural sites, and allow saltwater to intrude into wetlands and groundwater systems. The SM-SEMP 2022 study estimates 2,590 acres of southern Moloka‘i will be flooded at 3.2 ft SLR, including 780 structures—54 of them are makai homestead lots located between the Kalama‘ula bridge and the western edge of Kamiloloa One Ali‘i.

2. Coastal Erosion and Land Loss

Looking east along an eroding shoreline fronting Kamiloloa (DHHL)

Erosion is steadily eating away at the shoreline area along Moloka‘i coasts. Loss of beach sand and scouring around seawalls and informal armoring expose properties to flooding and remove habitat for coastal plants and nesting birds.

Alluvial layers of red clay can pollute nearshore waters with fine silt and sediment that smothers coral reefs (SM-SEMP, 2022)

3. Storm Surge, Wave Overtopping, and King Tide Flooding

High-energy wave events and seasonal king tides regularly push seawater inland, flooding yards, roads, and septic systems. These events are becoming more frequent as sea level rises and reef conditions decline.

Kaunakakai Gulch Flooding, January 2023 (Sustʻāinable Molokaʻi)

Flooding in January 2023 compromising Maunaloa Highway (Katy Mokuau)

4. Intense Rainfall Events and Flash Flooding

Heavy downpours overwhelm natural and built drainage systems. When rainfall is concentrated over short periods, runoff from mauka slopes moves rapidly through gulches, flooding residential areas and depositing sediment into wetlands and fishponds.

5. Blocked or Undersized Drainage Infrastructure

Many drainage ditches and culverts in the homestead areas are filled with debris, are too close to sea level, or are too small to handle large storm flows. This leads to ponding in streets and yards, backflow through outfalls, and flooding of nearby homes.

Kapaʻakea Channel 2 During and After Rainstorm

6. Sediment Buildup in Streams and Culverts

Eroded soil from mauka lands and gulch slopes settles in channels and culverts, reducing their capacity and causing them to overflow during heavy rains. Sediment carried to the coast smothers fishponds and coral reef habitats.

Kapaʻakea Channel 1 During and After Rainstorm

7. Extended Drought Periods

Periods of drought stress crops, native plants, and water supplies. Dry vegetation increases the risk of wildfire and limits opportunities for reforestation and agriculture on mauka lands *(Figure 4-7)*.

Drought exposed soil showing deep surface cracking after extended dry conditions (Heather Place)

8. Wildfire Ignition and Spread

Dry grasslands and unmanaged deer browse create continuous fuel loads that allow fires to spread rapidly across slopes. Wildfire threatens homes, forests, and utilities, and accelerates erosion when rains follow burned areas.

Brush Fire Burns 50-Acres Near Kaunakakai (Hawaii News Now, 2020)

9. Overgrazing and Browsing by Invasive Deer

Axis deer populations have expanded across southern Molokaʻi. Their overgrazing removes vegetation that stabilizes soil, damages crops, and worsens erosion and sediment runoff into coastal waters.

Axis deer grazing in open grassland, contributing to vegetation loss and increased erosion risk (Molokai Dispatch, 2025)

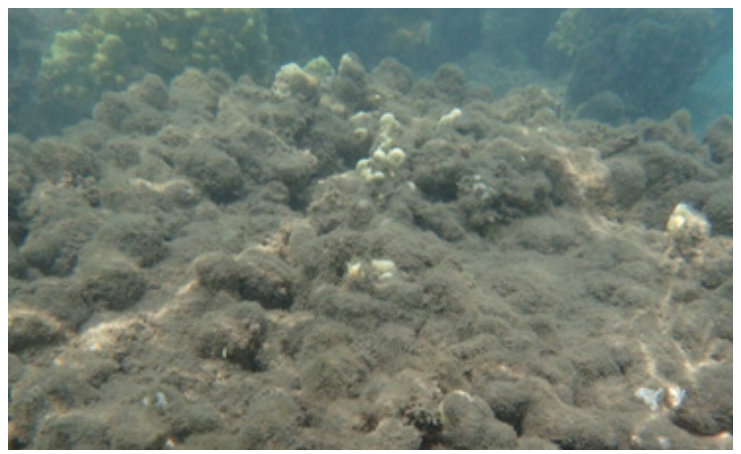
10. Erosion and Sediment Runoff from Mauka Areas

Unmanaged mauka lands with bare or degraded soils release large volumes of sediment during storms. This sediment clogs waterways, fills fishponds, and degrades coral reefs that protect the shoreline.

Sediment laden coastal waters off Molokaʻi, reducing water clarity and stressing reefs and marine life (Civil Beat, 2022)

11. Contamination from Cesspools and Stormwater

Untreated wastewater from cesspools and runoff from roads carry bacteria and nutrients into streams and the ocean. This degrades water quality, harms marine life, and poses health risks for residents and beach users.



Runoff an smother coral reefs and prevent sunlight from reaching corals (Maui Nui Marine Resource Council)

12. Invasive Mangrove Encroachment

Non-native mangroves have colonized sections of the coast, trapping sediment and altering natural water flow. Their spread threatens fishpond walls, overwhelms native habitats, and changes the character of historic shoreline areas.

Invasive mangrove between Kalama‘ula and Kaunakakai Wharf (SM-SEMP)

In invasive Kiawe impeding access along the shoreline (SM-SEMP, 2022)

13. High Winds from Tropical Storms or Hurricane

Strong winds associated with tropical storms or hurricanes *(Figure 4-8)* can damage roofs, topple trees, and disrupt electrical utilities and communication systems.

14. Tsunami and Large Swell Events

Although infrequent, tsunamis and large south swells can inundate the low-lying shoreline, damaging infrastructure and endangering lives. Coastal residents are particularly exposed due to limited elevation and evacuation routes.

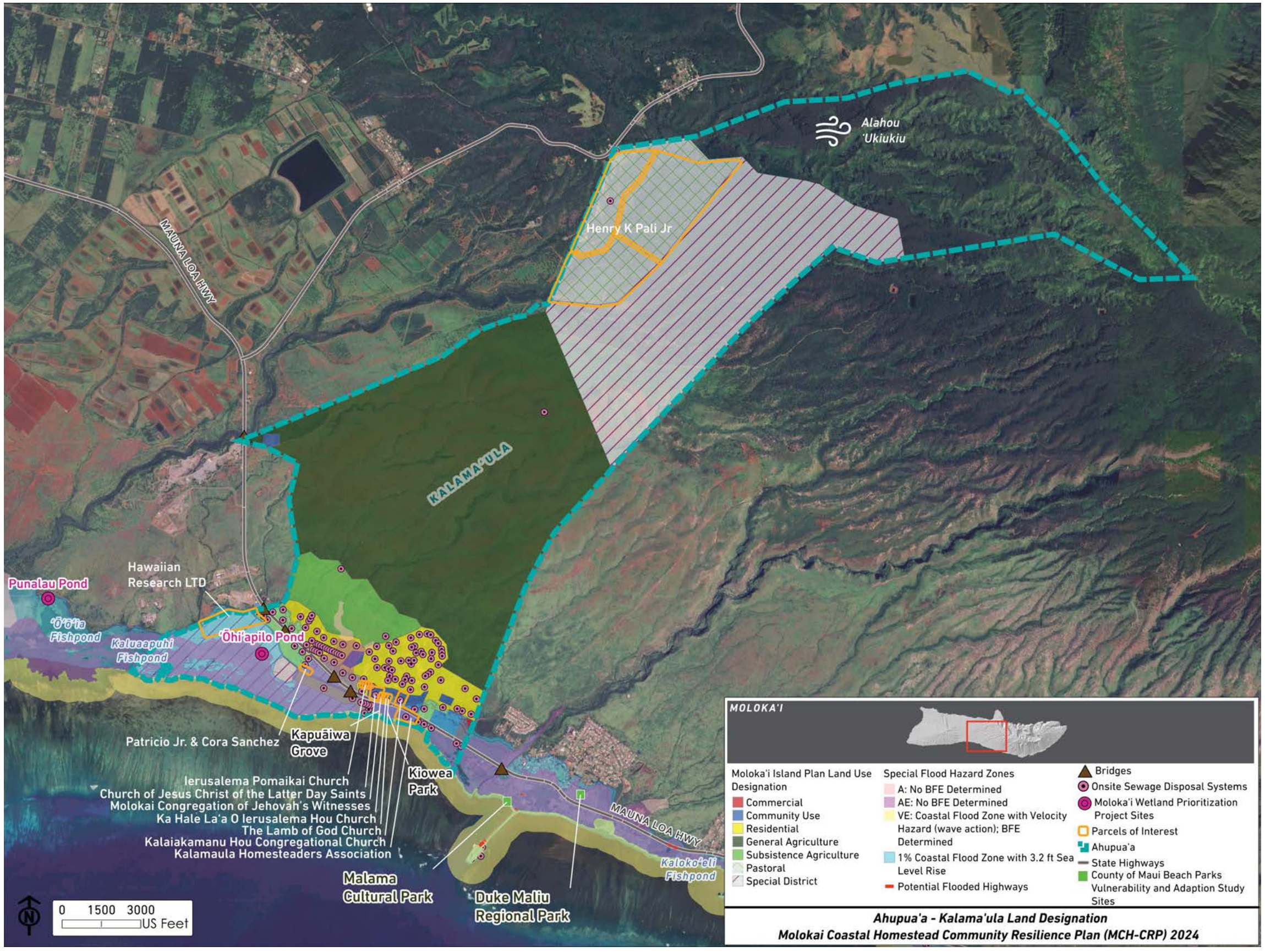


Figure 4-1 Kalama'ula Ahupua'a Hazard Exposure

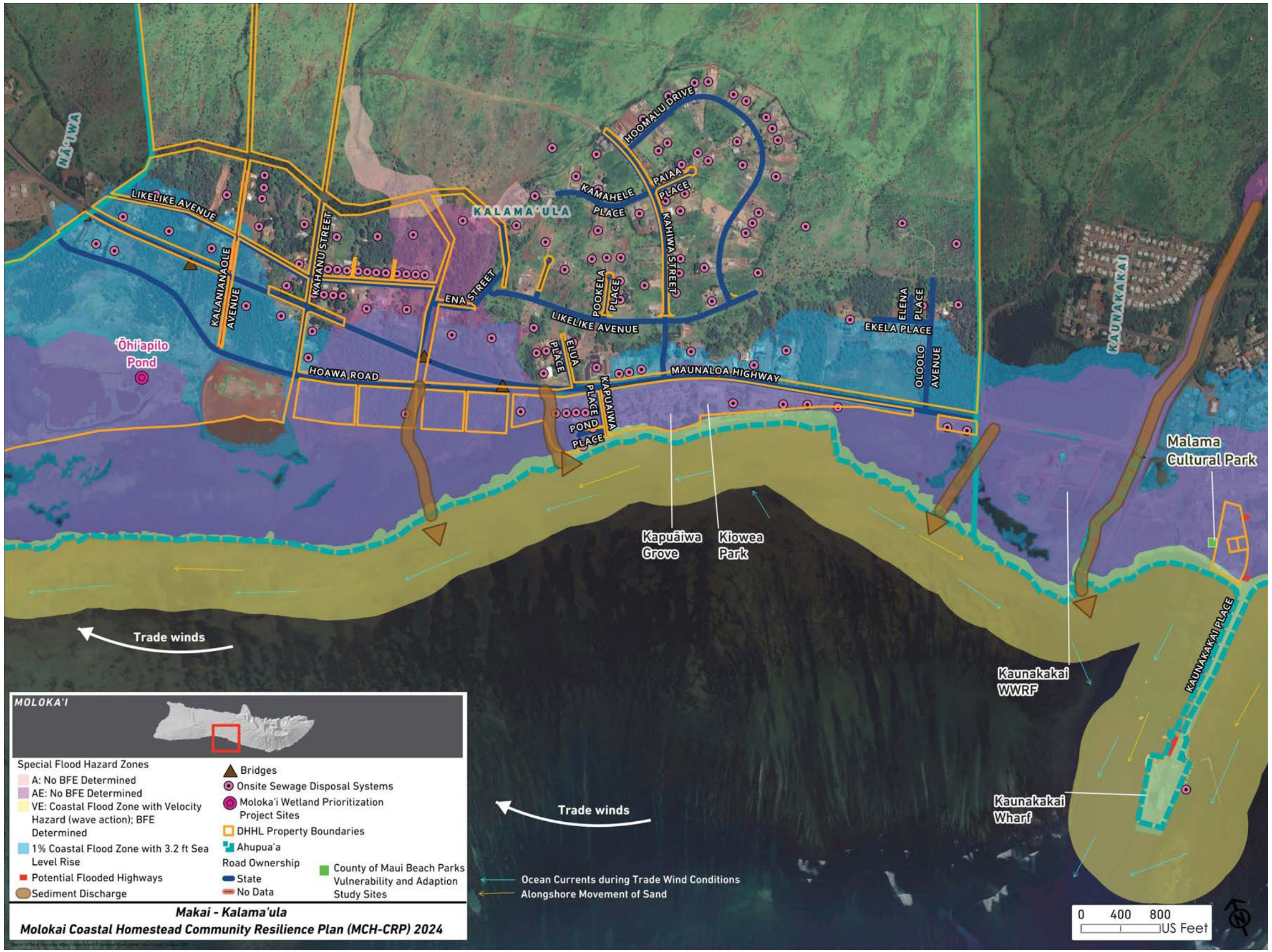


Figure 4-2 Kalama'ula Makai Hazard Exposure

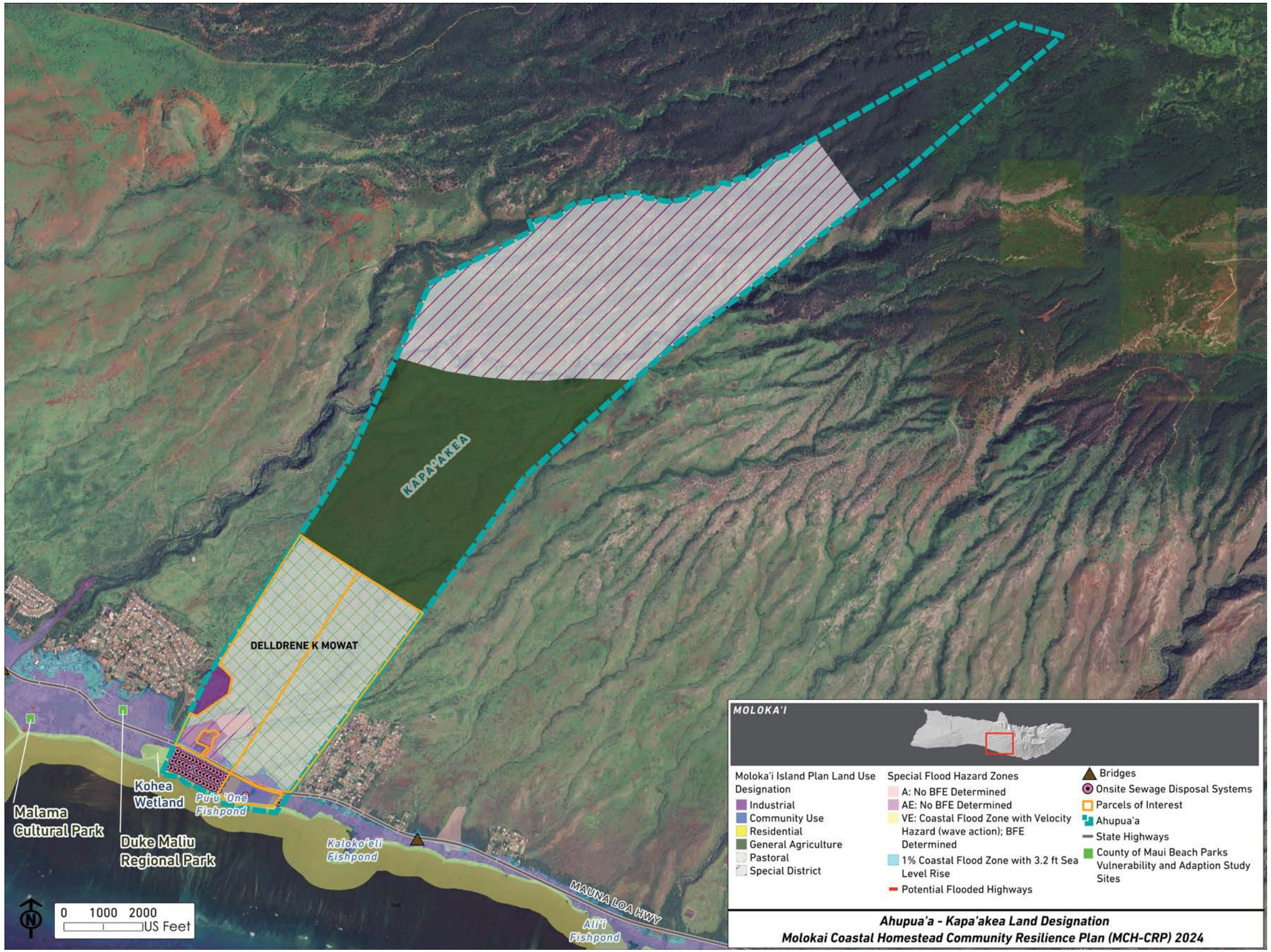


Figure 4-3 Kapa‘akea Ahupua‘a Hazard Exposure

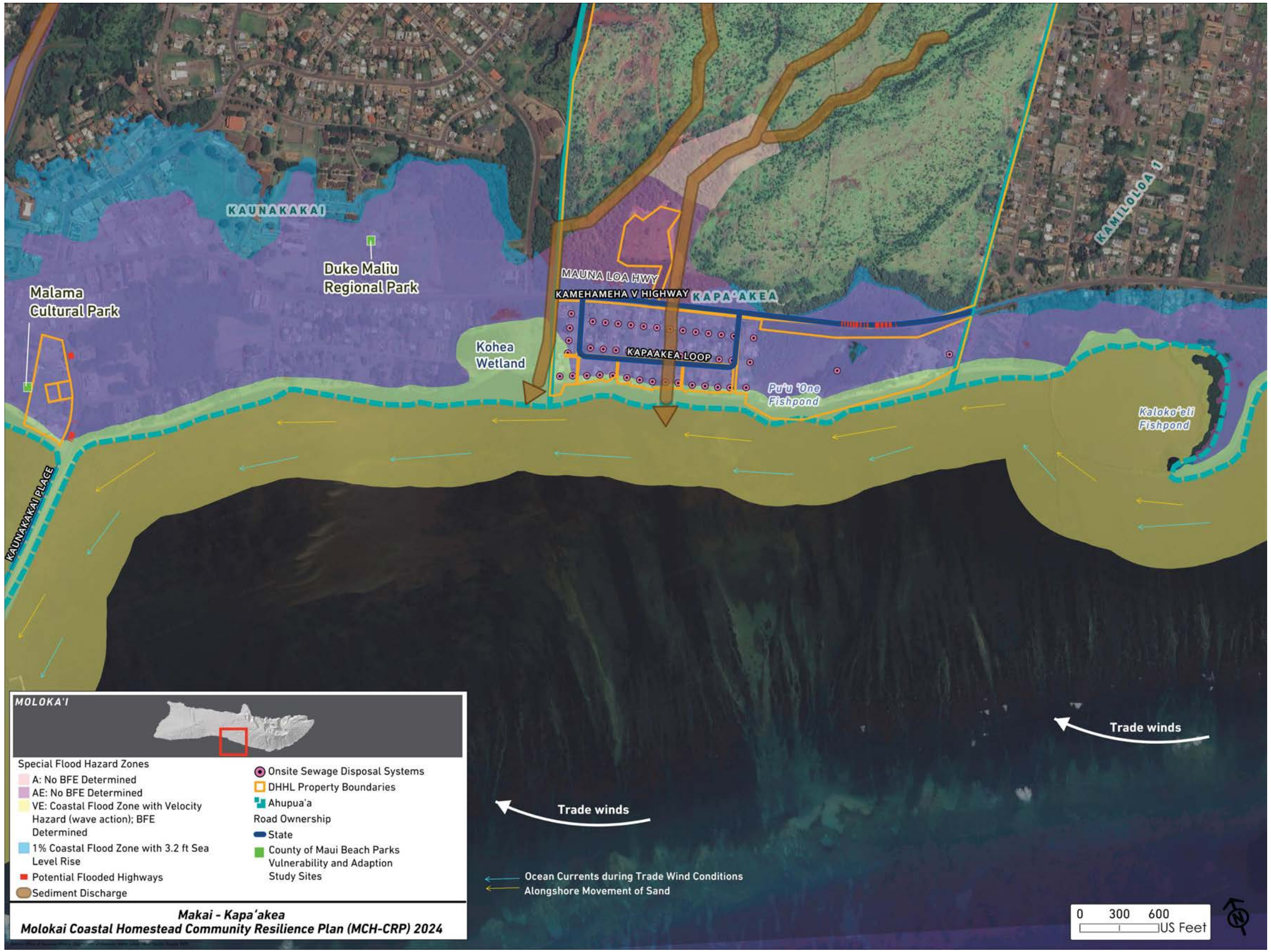


Figure 4-4 Kapaʻakea Makai Hazard Exposure

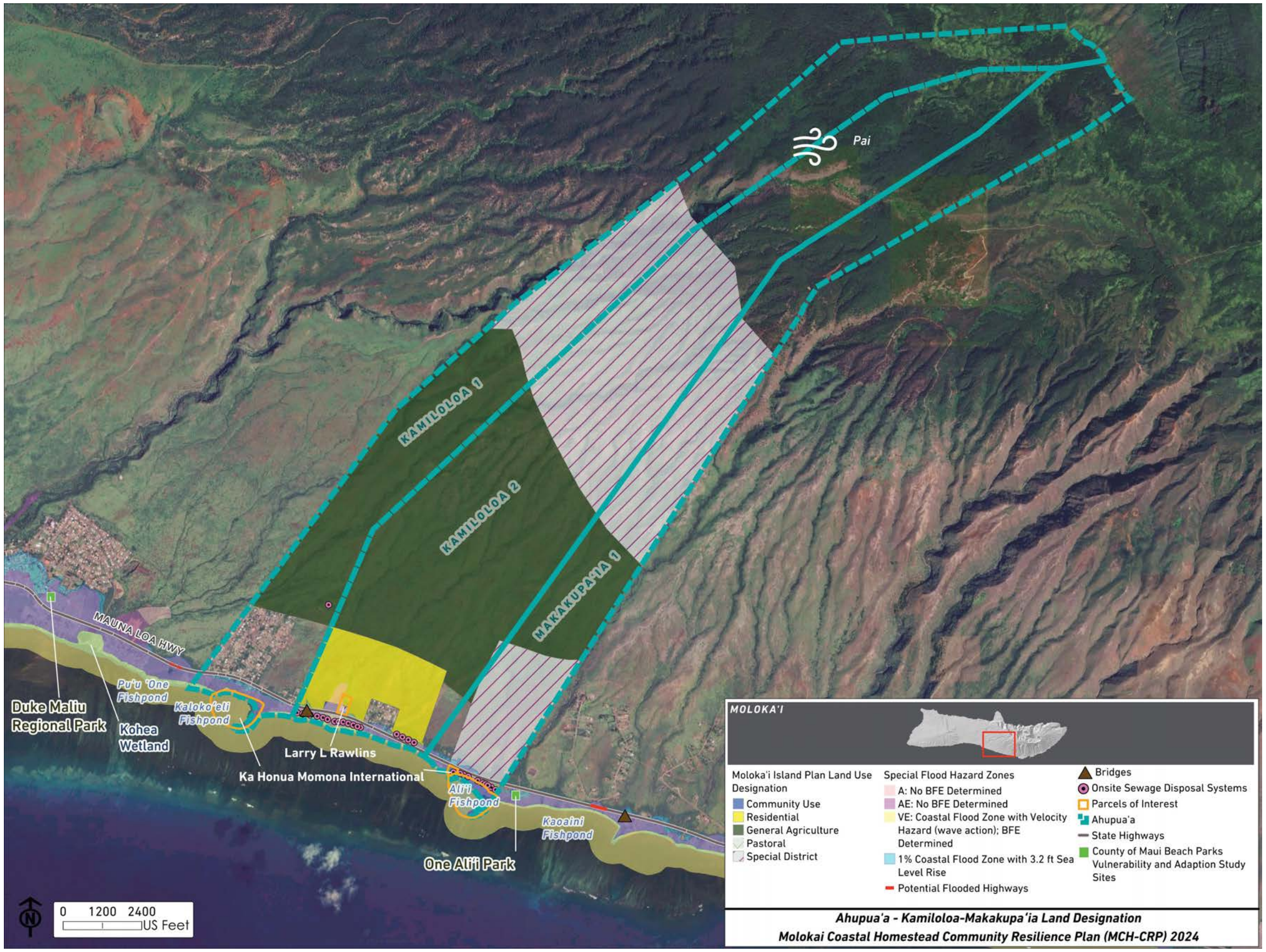


Figure 4-5 Kamiloloa Ahupua‘a Hazard Exposure

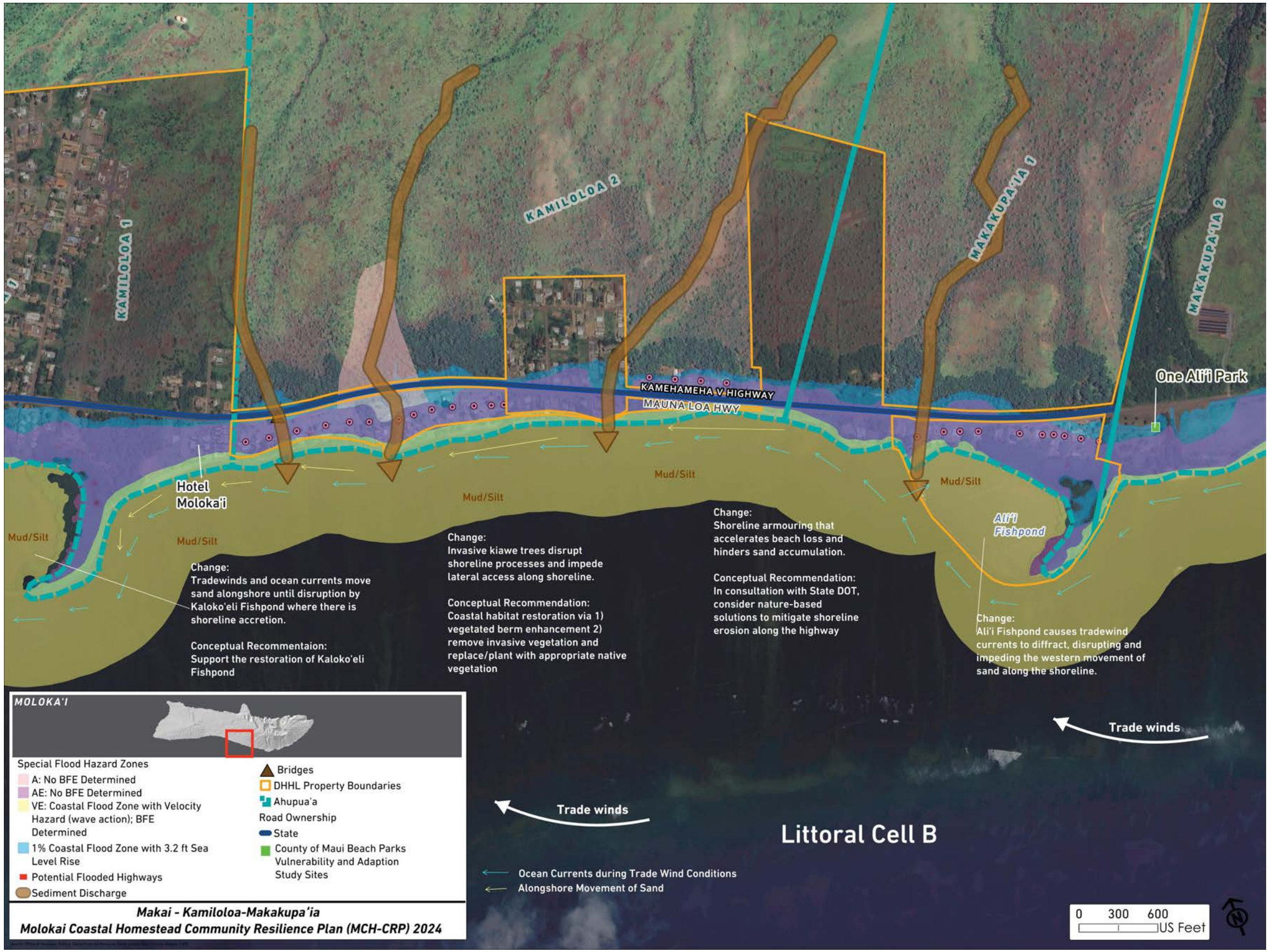


Figure 4-6 Kamiloloa Makai Hazard Exposure

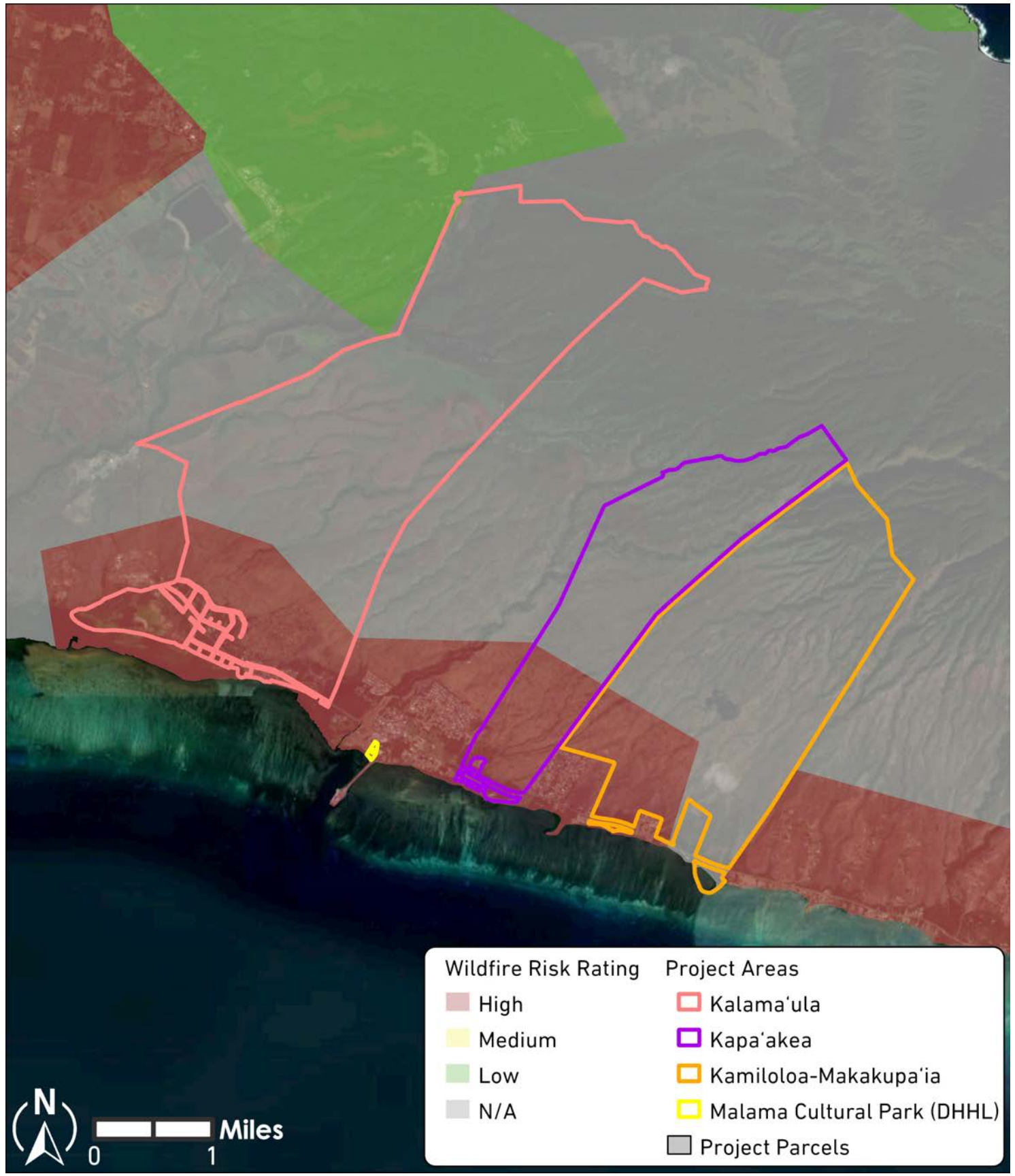


Figure 4-7 Wildfire Risk Rating (HWMO 2024)i

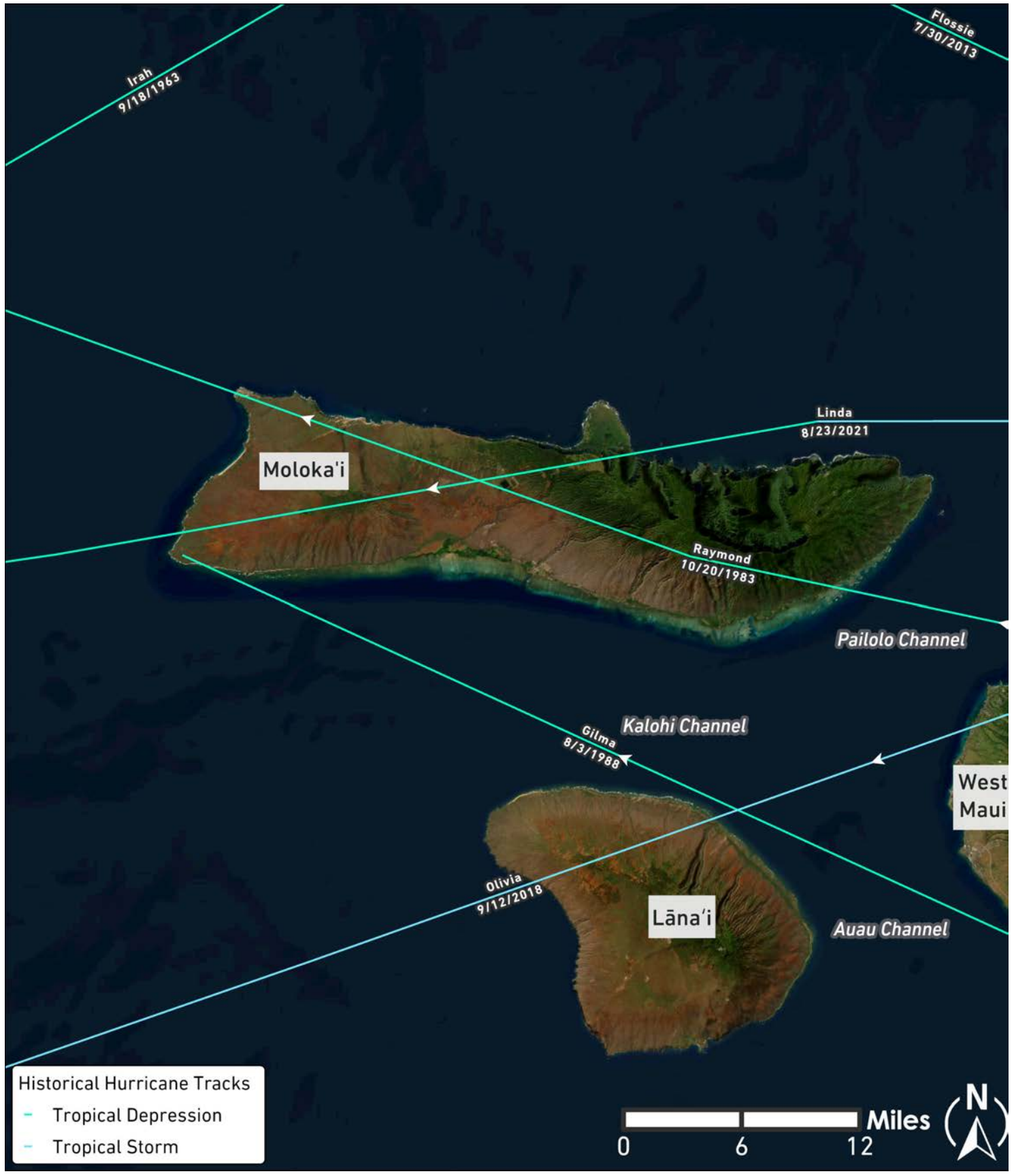


Figure 4-8 Historical Hurricane Tracks Near Moloka'i

Vulnerabilities and Risks

Vulnerability describes how likely a person, place, or system is to be harmed by a hazard. It reflects three main factors: exposure (the degree of contact with a hazard), sensitivity (how strongly the hazard affects the asset), and adaptive capacity (how well a community or system can respond and recover). Within the MCH-CRP, vulnerability represents how susceptible community assets such as homes, roads, or natural systems are to the range of coastal and climate related hazards identified by beneficiaries.

Risk refers to the potential consequence that occurs when a vulnerable asset is exposed to a hazard. It combines both the likelihood of the hazard and the severity of its impact. Understanding risk helps beneficiaries decide where to focus adaptation, restoration, and emergency preparedness actions.

For the MCH-CRP, vulnerability was assessed for each of the fifteen identified assets in relation to the fourteen hazards described in the previous section. This evaluation used a five-tier scale ranging from Very High (red) to Very Low (blue), summarized in *Table 4-1* below . Each category reflects a combination of exposure, sensitivity, and adaptive capacity. *Table 4-2* presents the vulnerability measurement of each community asset to the identified hazards using this color-coded scale.

Table 4-1: Vulnerability Ratings

Vulnerability Level	Description	Color Code
Very High	Directly exposed and highly sensitive with limited capacity to respond or adapt	Red
High	Exposed to hazard with some protective measures but still significant sensitivity	Orange
Moderate	Some exposure and sensitivity with partial ability to mitigate or recover	Yellow
Low	Limited exposure with effective protection or adaptive capacity	Green
Very Low	Minimal exposure with strong adaptive capacity	Blue

Table 4-2: Vulnerability of Community Assets

Hazard / Asset	Rising sea levels	Coastal erosion and land loss	Storm surge, wave overtopping, and king tide flooding	Intense rainfall events and flash flooding	Blocked or undersized drainage infra-structure	Sediment buildup in streams and culverts	Extended drought periods	Wildfire ignition and spread	Overgrazing and browsing by ungulates	Erosion and sediment runoff from mauka areas	Contamination from cesspools and stormwater	Invasive mangrove encroachment	High winds from tropical storms or hurricane	Tsunami and large swell events
Makai Homesteads														
Mauka Homesteads														
Kamehameha V Hwy														
Reef / Marine Life														
Gulches														
Wetlands														
Fishponds														
Beach														
Agricultural / Pastoral Land														
Native Forests														
Drainage Infrastructure														
Parks														
Community Centers														
Mauka Roads														
Neighborhood Roads														
Cemetery														

Based on the vulnerability assessment, the MCH-CRP identified five key challenges that represent the most significant and overlapping risks for the South Moloka‘i homestead communities. Each challenge highlights the hazards facing the homestead communities, the vulnerabilities that increase their exposure, and the resulting risks to people, place, and resources. Identified risks are illustrated conceptually on *Figure 4-9*.

1 Sea Level Rise, Coastal Erosion, and Coastal Flooding

HAZARDS
- Rising sea levels
- Coastal erosion and land loss
- Storm surge, wave overtopping, and king tide flooding

+ VULNERABILITIES
- Homes and infrastructure (including coastal highways) built in flood and erosion zones
- Sea level rise reduces drainage capacity in systems designed for lower sea levels
- Limited coastal protection and failing seawalls
- Loss of natural buffers (dunes, wetlands, and vegetation)
- Cesspools and septic systems near shoreline
- Lack of alternate evacuation routes inland

= RISKS
- Permanent inundation and displacement of homesteads
- Damage or loss of property, utilities, and roads
- Contamination of nearshore waters from flooded cesspools
- Threats to public safety and isolation during floods
- Cultural site loss (e.g., fishponds, Kapuāiwa Coconut Grove, springs)

2 Heavy Rainfall, Ravine Flooding, and Drainage Overflows

HAZARDS
- Intense rainfall events and flash flooding
- Blocked or undersized drainage infrastructure
- Sediment buildup in streams and culverts

+ VULNERABILITIES
- Poorly maintained drainage canals and culverts
- Ravines and drainageways filled with sediment and vegetation
- Sea level rise causes coastal inundation by limiting where stormwater can drain
- Homes and roads constructed within floodplains
- Filled wetlands reducing flood storage capacity

= RISKS
- Flood damage to homes, roads, and property
- Isolation of communities due to impassable roads
- Erosion and debris flows damaging nearshore ecosystems
- Increased maintenance and repair costs for DHHL and residents

3 Drought, Wildfire, and Mauka Degradation

HAZARDS
- Extended drought periods
- Wildfire ignition and spread
- Overgrazing and browsing by invasive deer leading to native vegetation and soil exposure

+ VULNERABILITIES
- Deforested mauka lands caused by decades of overgrazing from cattle and invasive deer populations
- Invasive grasses and shrubs increasing fire fuel loads
- Lack of active land management or fire breaks
- Reduced watershed recharge capacity

= RISKS
- Wildfire threats to mauka homes and critical infrastructure
- Post-fire erosion and sediment runoff into coastal waters
- Long-term decline in native forest regeneration
- Increased flooding and sedimentation risk downslope

4 Sedimentation, Pollution, and Marine Ecosystem Decline

HAZARDS
- Erosion and sediment runoff from mauka areas
- Contamination from cesspools and stormwater
- Invasive mangrove encroachment

+ VULNERABILITIES
- Degraded mauka slopes and unmaintained ravines
- Filled wetlands and fishponds losing filtering capacity
- Outdated wastewater systems
- Limited environmental monitoring or enforcement

= RISKS
- Decline in coral reef health and fish populations
- Sediment filling historic fishponds (loko i‘a)
- Poor water quality affecting gathering and fishing practices
- Loss of traditional food sources and cultural identity

5 Severe Storms, Hurricanes, and Tsunami

HAZARDS
- High winds and wave surge from tropical storms
- Tsunami and large swell events

+ VULNERABILITIES
- Aging Housing Stock
- Coastal homes not designed to modern wind/flood standards
- Critical infrastructure (roads, utilities) located in low-lying areas
- Lack of formal emergency evacuation routes and shelters
- Limited communication and coordination during emergencies

= RISKS
- Damage to homes and community facilities
- Injury or loss of life during major storm events
- Extended loss of utilities and access to essential services
- Economic and emotional stress for residents

CHALLENGES

Ranching activities, particularly overgrazing by cattle, have stripped the land of vegetation that would normally stabilize the soil.

Erosion causes sediments to accumulate in gulches, reducing their capacity to channel water away during rain.

Invasive ungulates like deer and goats contribute to habitat loss and erosion by overgrazing native vegetation, destabilizing soils, and accelerating ecosystem degradation.

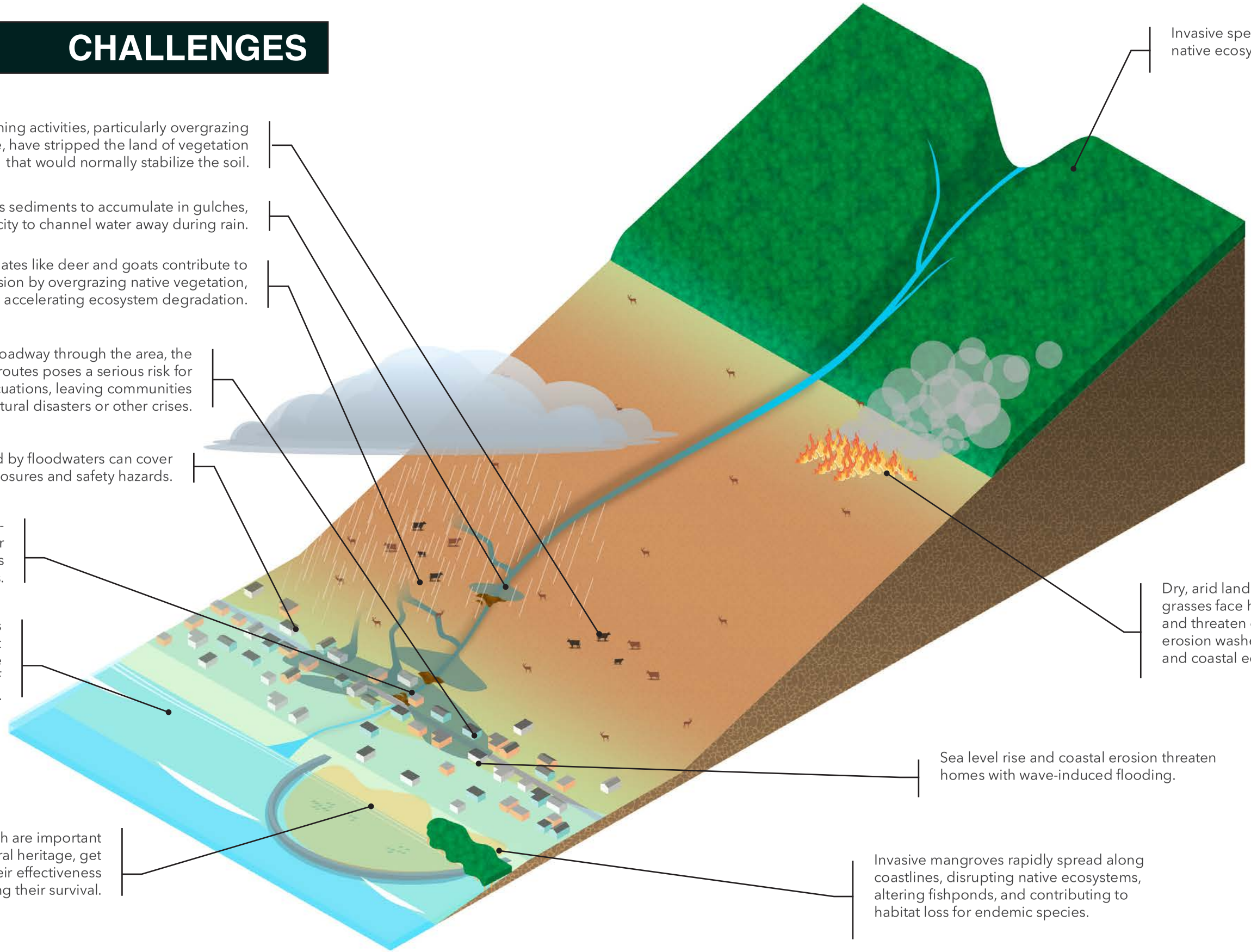
With only a single roadway through the area, the lack of alternative routes poses a serious risk for emergency evacuations, leaving communities vulnerable during natural disasters or other crises.

Sediment carried by floodwaters can cover highways, causing road closures and safety hazards.

Flooding from sediment-filled gulches leads to water damage to homes, sometimes necessitating costly repairs.

Sediment from erosion blankets coral reefs, blocking sunlight and stifling the growth of marine ecosystems, threatening reef health and ocean biodiversity.

Historic Hawaiian fishponds, which are important for local fish production and cultural heritage, get filled with sediment, reducing their effectiveness and threatening their survival.



Invasive species threaten native ecosystems.

Dry, arid lands dominated by invasive grasses face heightened wildfire risk and threaten communities. Post-fire erosion washes sediment into streams and coastal ecosystems.

Sea level rise and coastal erosion threaten homes with wave-induced flooding.

Invasive mangroves rapidly spread along coastlines, disrupting native ecosystems, altering fishponds, and contributing to habitat loss for endemic species.

Social Vulnerability

Social vulnerability refers to the characteristics of a person or community that influence their ability to anticipate, respond to, and recover from hazards. Social vulnerability is shaped by social, economic, cultural, and health conditions (Cutter et al., 2003).

Common SVI factors that influence risk include:

- Household income
- Crowded or multigenerational housing
- Reliance on a single transportation route
- Limited access to medical care
- Percentage of households with elders or young children
- Language barriers
- Housing located in flood prone or coastal areas

While detailed Social Vulnerability Index (SVI) mapping for Molokaʻi is conducted through state and federal sources, census based indicators show that the DHHL homestead communities experience several vulnerability stressors associated with lower income, limited transportation options, and coastal exposure. Key social vulnerability factors in the homestead communities include lower household incomes, a higher number of kupuna and residents with health challenges, and reliance on a single coastal highway that is easily disrupted by flooding or erosion. Limited resources make housing maintenance and retrofits difficult. Households with lower incomes may delay roof repair, foundation elevation, or replacement of old infrastructure.

Social Capital

Strengthening resilience for DHHL homestead communities requires understanding both the challenges that increase vulnerability and the strengths that support community response and recovery. These communities hold deep ancestral connections to the land, long standing relationships among families, and cultural practices passed down for generations. These qualities reduce risk and support resilience even when material resources may be limited.

Social capital refers to the relationships, trust, shared values, and cooperation within a community. These connections influence how people support one another, share information, and recover after disasters. Communities with strong social capital often respond more quickly in emergencies, experience fewer losses, and recover faster than communities that rely mostly on external assistance.

Social capital is one of the greatest strengths of Molokaʻi's homestead communities. Hawaiian approaches to kuleana, reciprocity, and cooperation create a strong foundation for collective action during emergencies. When hazards occur, community relationships support the rapid sharing of supplies, caregiving, transportation, and reliable information, often reducing the need for outside intervention.

Adaptive Capacity

Adaptive capacity refers to the ability of a community to adjust to hazards, lessen harm, and recover after a disruptive event. The Molokaʻi homestead communities hold deep adaptive capacity grounded in cultural identity, generational knowledge, and strong place-based stewardship that guides daily living and resource management. Tight social networks and a long history of self-reliance allow families to mobilize quickly, share what they have, and support one another through difficult times. Subsistence practices strengthen food security, while spiritual and genealogical ties to land and sea provide grounding, purpose, and a clear sense of kuleana during recovery. These strengths help the community bounce back even when financial resources are limited.

Factors Contributing to Adaptive Capacity of Homestead Communities

Tough and Rugged Community Identity
Homesteaders describe themselves as tough, self-reliant, and accustomed to limited external support. Many families prepare by storing food, maintaining tools, and knowing how to respond without waiting for county, state or federal aid.

Strong Family Networks
Many large families live close to one another, which creates an immediate support system during storms and other emergencies. These networks allow households to share childcare, food, and other essential resources, while also providing regular help for kupuna and individuals with limited mobility. This everyday interdependence becomes especially important during crises, allowing families to respond quickly and recover together.

Subsistence Knowledge and Food Production
Many homestead families rely on local fishing, gathering, hunting, and food cultivation, which reduces dependence on imported food and provides a stable source of nourishment during emergencies. These subsistence practices also strengthen cultural identity and pass intergenerational knowledge from kūpuna to keiki. Community interviews highlight deep traditional ecological knowledge about seasonal patterns, storm behavior, nearshore ecology, and the relationships between land and water. This lived understanding supports daily decision making and enhances the community's ability to adapt and respond to changing conditions.

Community Organized Response
Molokaʻi residents often mobilize quickly and independently during emergencies. People check on neighbors, clear debris, relay information, and volunteer for community safety.

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Chapter 5

Resilience Goals and Strategies

Chapter 5

Resilience Goals and Strategies

Through the planning process, five primary planning goals were identified to address the risks and vulnerabilities described in Chapter 4. These goals reflect a comprehensive, place-based approach to building resilience across the ahupuaʻa. The five goals include:

A. Improve Emergency Evacuation and Public Safety,

B. Mauka Restoration,

C. Water Flow Maintenance and Flood Prevention,

D. Restoration and Relocation of Residential Hale, and

E. Makai Restoration.

Each goal is discussed in detail in this chapter. Additionally, workforce development emerged as a key priority across all strategies, emphasizing the importance of empowering DHHL beneficiaries to lead and carry out the work of resilience. By investing in local training, skills development, and employment opportunities, the plan aims to strengthen community capacity, build economic stability, and reinforce self-determination.

This chapter also presents a series of resilience strategies designed to achieve each goal through coordinated, community-led action. The plan includes twenty-seven resilience strategies that homestead associations and beneficiary-led organizations may pursue, along with ten resilience strategies for DHHL to implement. Every strategy represents a planning effort, project, or program that could be developed and supported through future funding.

Among the twenty-seven homestead association strategies, each homestead community identified five "priority projects" to pursue in the near term. These priority projects highlight actions that beneficiaries see as most urgent and most likely to strengthen community resilience.

The following sections describe the planning process that supported the identification of the planning goals, resilience strategies, and the sets of five priority projects for each homestead community. Next, each of the five resilience goals is explored in detail. The chapter concludes with a Priority Project Implementation Matrix

The resulting matrix is a simple tool that shows the strategies the community and DHHL can take to strengthen resilience in the homestead areas. For decision makers, the matrix serves as the main roadmap for what happens next. It highlights the short list of near-term pilot projects that DHHL and the homestead associations are ready to pursue, along with the longer-term investments needed to support the communities over time.

Process for Identifying the Resilience Strategies and Priority Projects

The identification of resilience strategies and the selection of the top five priority projects for each homestead community came through an extended, community guided planning process grounded in both technical analysis and traditional ecological knowledge.

Beneficiary Workshop #3 marked a major step in this process. Beneficiaries and technical experts participated in a hands-on mapping exercise that focused on identifying practical, resilience-building strategies for each homestead ahupuaʻa. Participants worked together to highlight actions that address vulnerabilities and strengthen community resilience from mauka to makai directly on maps of their ahupuaʻa. Following the workshop, the planning consultants organized all ideas into a Preliminary Goals Matrix *(see Appendix D)*.

The Homestead Associations reviewed the Preliminary Goals Matrix in several phases, causing it to grow and evolve. At this early stage, the matrix was organized by the five overarching planning goals and did not yet assign strategies or priority projects to individual ahupuaʻa. Its purpose was to group related concepts so both beneficiaries and technical experts could more easily review and refine them. The Preliminary Goals Matrix included planning goals, key issues, options, traditional ecological knowledge, literature references, and potential partnerships. This version was shared with technical experts during a series of Expert and Resource Meetings held in September 2024. Their review helped validate concepts and led to updates based on lessons learned from prior efforts on Molokaʻi and across the pae ʻāina.

In April 2025, the engagement consultants met with the Kalamaʻula and Kapaʻakea Homestead Associations during their regularly scheduled meetings to share an updated matrix as part of Beneficiary Workshop #4.

Because Kamiloloa does not hold regular association meetings, its leaders were invited to participate in the Kapaʻakea session. These meetings served as working discussions where beneficiaries further refined the matrix. Many community members continued to send written updates afterward. This version of the matrix grew to include information on funding opportunities, workforce development, roles and responsibilities, scopes of work, and community priorities.

From late 2024 through mid-2025, DHHL and the consultant team continued to refine the Preliminary Goals Matrix. Edits focused on organizing beneficiary's ideas into clear resilience strategies and aligning the matrix with state funding criteria such as Act 96, which supports climate resilience and natural resource recovery.

In Fall 2025, the project team reorganized, reformatted, and relabeled the matrix while preparing for an informational briefing to the Hawaiian Homes Commission (HHC) and the beneficiaries, forming the Detailed Resilience Strategy Matrix. Strategy descriptions were expanded, and new columns were added for implementation partners, funding sources, approximate costs, and timelines *(Appendix E)*. *Figure 5-1* was generated to provide a conceptual illustration of how the strategies may be implemented to restore ʻāina and improve resilience. Additionally, within each ahupuaʻa *(pages 5-9 to 5-11)*. Map figures were also created for commissioners and beneficiaries to visualize where each strategy would occur.

In December 2025, the updated Detailed Resilience Strategy Matrix was reviewed with each Homestead Association board to confirm their selections for the top five priority projects. Beneficiaries also determined that the matrix should be reorganized to clearly distinguish strategies for DHHL implementation from those intended for homestead associations. This separation strengthened transparency, clarified roles, and supported more realistic implementation planning for both DHHL and community partners.

To further support decision making, new columns were added to show each association's top five priority projects. Within each strategy, actions were also grouped into three tiers that align with prescribed NFWF funding stages:

- Tier 1 includes site assessment and preliminary design work.
- Tier 2 includes detailed design and permitting.
- Tier 3 includes implementation activities.

This tiered structure provides a clear pathway for project development and helps identify which efforts may be eligible for near term funding.

The final Priority Project Implementation Matrix *(Table 5-1)* also highlights where strategies are linked or dependent on one another, which helps identify opportunities to streamline efforts, reduce redundancy, and improve coordination across the homestead communities.

The Detailed Resilience Strategy Matrix, and the Detailed DHHL-Led Resilience Strategy Matrix are included in *Appendix E and Appendix F*, respectively. The Priority Project Implementation Matrix appears later in this chapter, along with a separate summary of strategies that fall under DHHL responsibility.

Five Resilience Goals

A: Emergency Evacuation and Public Safety

Emergency Evacuation and Public Safety was identified by beneficiaries as one of the most urgent resilience needs across Kalamaʻula, Kapaʻakea, and Kamiloloa. Homestead beneficiaries consistently voiced concerns about their ability to safely respond during emergencies such as wildfire, coastal flooding, king tides, heavy rain events, and roadway blockages. These hazards threaten lives, limit access to essential services, and place vulnerable residents at risk.

This goal focuses on improving community readiness, strengthening emergency communication, and creating safe and reliable routes for evacuation. It supports a coordinated approach between beneficiaries, DHHL, and emergency agencies so the homestead communities are better prepared before a hazard occurs and better able to respond when conditions change quickly.

Together, the strategies under this goal strengthen protection for people, homes, infrastructure, and natural resources. They also build leadership and capacity within the homesteads to guide emergency response in a culturally grounded and community driven way.

Key Beneficiary Manaʻo Informing Goal A

In Kalamaʻula, beneficiaries emphasized the vulnerability of existing main roads located near shorelines and flood-prone areas, calling for alternative inland evacuation routes that are elevated above flood zones, especially for rapid evacuation during tsunami warnings. Unique to Kalamaʻula was the proposal to establish helicopter landing areas specifically for emergencies such as fires and floods, accompanied by clearly defined water access points for firefighting. Beneficiaries recommended upgrading and regularly maintaining roads and culverts, particularly mentioning the need for improving the Third River bridge and culvert, which currently lacks capacity and becomes obstructed with sediment. The community further proposed extending existing access roads mauka beyond Kūlana ʻŌiwi, to enhance escape routes and reduce wildfire risks. Kalamaʻula residents strongly advocated for including kūpuna and other vulnerable groups in planning efforts, utilizing door-to-door surveys to ensure preparedness measures accurately reflect their specific needs. Lastly, Kalamaʻula beneficiaries recommended installing additional street lighting along critical routes, enhancing nighttime visibility and safety during evacuations.

Kapaʻakea beneficiaries uniquely highlighted the need for comprehensive drainage management as essential for public safety and effective evacuation. Beneficiaries recommended a coordinated approach to redesign culverts and manage wetlands to reduce flood risks that currently threaten evacuation routes. They suggested formal memorandum of understanding (MOUs) involving the Kapaʻakea Homestead Association, DHHL, County of Maui, and DOT to plan and maintain critical drainage infrastructure. Another unique emphasis was placed on establishing an emergency proclamation to directly address drainage and flooding risks. Beneficiaries also proposed establishing an emergency fund within the Homestead Association, supported by DHHL, specifically to manage community preparedness and resilience efforts. Additionally, Kapaʻakea community members prioritized conducting detailed water quality and geological assessments to identify the safest evacuation routes and resilience hub locations. Emphasis was also placed on educating residents, particularly youth, through an ʻOpio task force, engaging local schools and UH programs in developing community resilience certification programs to prepare and empower residents for emergency response.

Beneficiaries from Kamiloloa prioritized identifying and possibly paving existing roads to serve as reliable emergency evacuation routes. Unique to this community was the recommendation to establish gravel parking lots and designated "resiliency areas," strategically equipped with water tanks, spigots, and staging areas for firefighting equipment, including portable dipping ponds. Beneficiaries proposed that signage clearly mark these roads and staging areas for "Emergency Use Only," managed directly by the Homestead Association. Additionally, Kamiloloa emphasized maintaining updated inventories of vulnerable community members, medical providers, and available first-aid equipment, ensuring regular updates and management through local associations. The community specifically recommended biannual emergency preparedness workshops and drills, in collaboration with local high schools, to build human capacity and foster proactive resilience planning. Another distinctive recommendation from Kamiloloa beneficiaries was conducting an evacuation study addressing traffic flow, contraflow management, shuttle services for homebound residents, and integrating solar-powered resilience hubs with battery storage for power during disasters. Improving communication by installing broadband or Starlink substations/antennae was also uniquely emphasized for reliable emergency communication in partnership with DHHL.

Nature based and TEK-grounded approaches are woven into this goal so that emergency infrastructure supports the broader mauka to makai restoration ethic of the plan. Vegetated firebreaks, green drainage features, and water storage systems designed to serve both emergency needs and ecological restoration should be incorporated wherever possible. These design choices help reduce hazards while also healing the landscape.

Governance is also central to this goal. A Pre-disaster Emergency Plan must be convened and regularly updated by Homestead Associations in partnership with DHHL, with clear roles for emergency agencies and community volunteers. Homestead Associations and DHHL will

EXAMPLES OF POTENTIAL PRIORITY PROJECTS

Remove invasive species and restore mauka lands with native forests. Incorporating culturally significant plants supports traditional practices and fosters community involvement in environmental restoration.

Ungulate control.

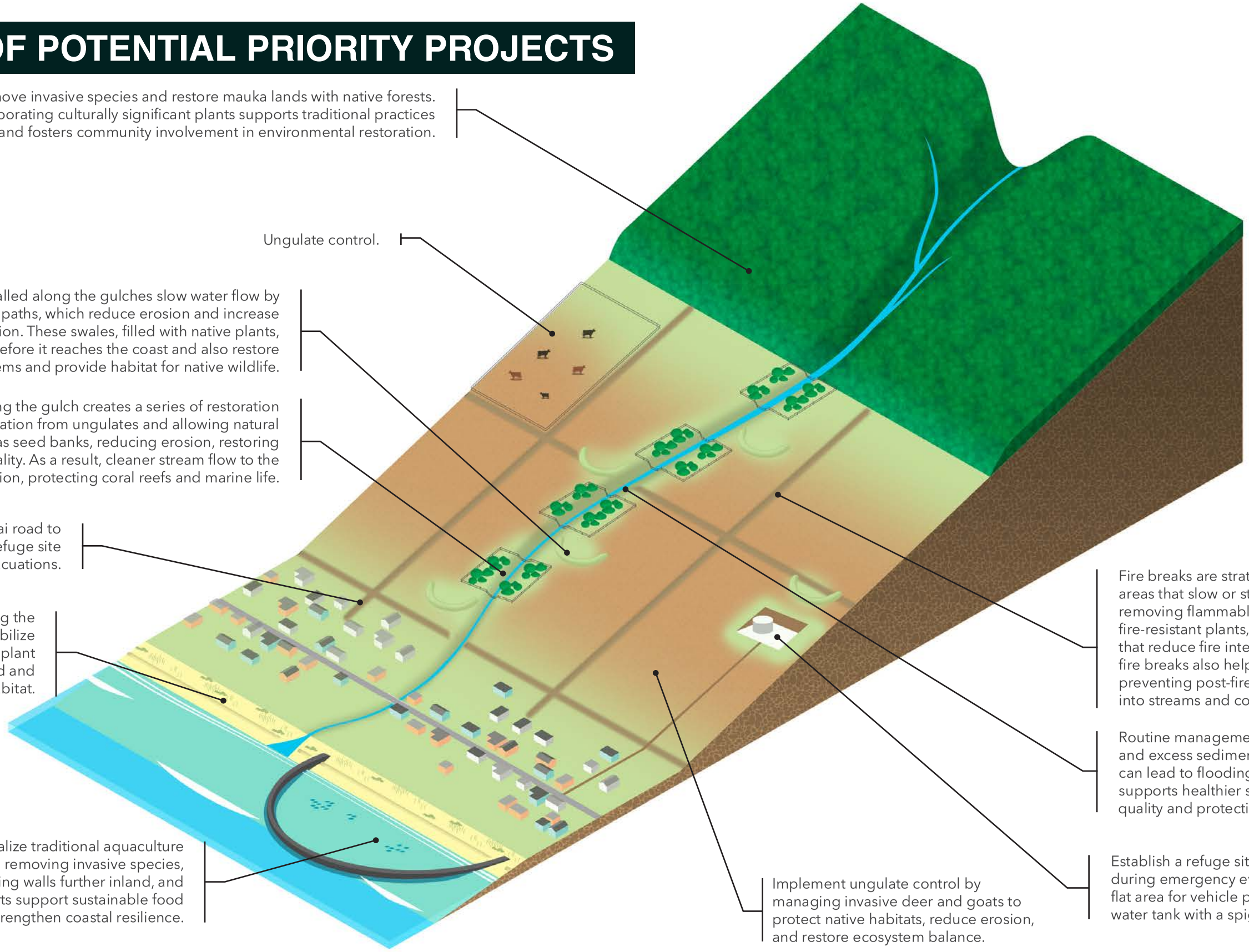
Bioswales installed along the gulches slow water flow by creating meandering paths, which reduce erosion and increase groundwater absorption. These swales, filled with native plants, capture sediment before it reaches the coast and also restore local ecosystems and provide habitat for native wildlife.

Strategically placed fencing along the gulch creates a series of restoration kīpuka, protecting native vegetation from ungulates and allowing natural regrowth. These fenced areas act as seed banks, reducing erosion, restoring habitat, and improving water quality. As a result, cleaner stream flow to the ocean helps prevent sedimentation, protecting coral reefs and marine life.

Improve mauka-makai road to provide access to refuge site during emergency evacuations.

Remove invasive species along the coast and deploy coir rolls to stabilize beach dunes and filter runoff. Replant native vegetation to stabilize sand and restore coastal habitat.

Restore coastal fishponds to revitalize traditional aquaculture practices. By repairing walls, removing invasive species, building higher walls, extending walls further inland, and improving water flow, these efforts support sustainable food systems and strengthen coastal resilience.



Fire breaks are strategically cleared and managed areas that slow or stop the spread of wildfires. By removing flammable vegetation and incorporating fire-resistant plants, these breaks create buffers that reduce fire intensity. Properly maintained fire breaks also help safeguard watersheds by preventing post-fire erosion and sediment runoff into streams and coastal ecosystems.

Routine management of gulches to remove debris and excess sediment, preventing blockages that can lead to flooding. Regular maintenance also supports healthier stream flow, improving water quality and protecting downstream ecosystems.

Establish a refuge site for beneficiaries during emergency evacuations by creating a flat area for vehicle parking and installing a water tank with a spigot for essential needs.

Implement ungulate control by managing invasive deer and goats to protect native habitats, reduce erosion, and restore ecosystem balance.

Figure 5-1 Conceptual Rendering of Resilience Strategies

share responsibility for maintaining evacuation routes, hubs, and communication systems, while making the hard land use and investment decisions needed over time as conditions change.

Goal A Resilience Strategies

The resilience strategies supporting Goal A are described below.

A1. Create a Pre-Disaster Emergency Response and Evacuation Plan

Develops a community specific emergency plan that identifies risks, roles, responsibilities, evacuation routes, and communication systems. Supports shared coordination between DHHL, Homestead Associations, and emergency partners.

A2. Develop and Maintain Emergency Evacuation Routes

Improves and maintains mauka access routes, staging areas, and safe evacuation paths. Supports wildfire response and emergency access for all homestead areas.

A3. Develop Resilience Hubs or Evacuation Sites

Establishes safe mauka gathering sites equipped with backup power, water, emergency supplies, and communications. These hubs serve as community centers during normal times and evacuation sites during emergencies.

A4. Fire Break Construction and Maintenance

Creates and maintains fire breaks around communities to reduce wildfire risk and improve access for firefighting and emergency crews. Includes community training and stewardship.

A5. Event Reporting and Documentation System

Creates an easy to use system for residents to report flooding, fire, erosion, and other hazard events. Helps track problem areas and improves maintenance and emergency response planning.

A6. Install Wildfire Detection Cameras

Adds early detection cameras across mauka and makai areas to identify wildfires quickly and support rapid response. Integrates with county and state emergency systems.

Key Partners Involved in Achieving Goal A

Partners who help advance this goal include:

- Homestead Associations
- DHHL Planning Office
- DHHL Land Management
- DHHL Land Development Divisions
- DHHL Molokaʻi District Office
- Hawaiʻi Wildfire Management Organization
- Hawaiʻi Emergency Management Agency
- Maui Emergency Management Agency
- Molokaʻi Emergency Operations Center
- County of Maui Department of Fire and Public Safety, and Fire Prevention Bureau
- Molokaʻi Livestock Cooperative
- Maui Electric Company (MECO)

B: Mauka Restoration

Mauka Restoration was identified by beneficiaries as a critical resilience goal due to the upper slopes above the homestead communities having experienced decades of damage from overgrazing, wildfire, drought, invasive species, and uncontrolled erosion. These mauka lands once played an essential role in supporting healthy forests, springs, ravines, and coastal ecosystems. Today, erosion from mauka areas sends sediment downslope into homesteads, fills drainageways, harms fishponds, and affects nearshore marine life.

Beneficiaries emphasized that restoring mauka areas is not only an environmental responsibility but also a cultural one. Healthy mauka forests and upland areas (Wao Akua, Wao Kele, Wao Nāhele, and Wao Lāʻau) support habitat, recharge water, reduce fire risk, stabilize soils, and strengthen the entire ahupuaʻa. This goal addresses the need to rebuild the natural systems that protect the homesteads and restore relationships with the land through stewardship, training, and traditional ecological knowledge.

Key Beneficiary Manaʻo Informing Goal A

In Kalamaʻula, beneficiaries expressed concerns primarily about sediment buildup and flooding, which are exacerbated by degraded mauka lands. Unique strategies suggested include rebuilding watersheds with native vegetation, creating vegetated firebreaks or green breaks, and establishing buffer zones around vulnerable culverts and stream areas to improve soil stability and reduce sediment runoff. Kalamaʻula residents specifically pointed to the detrimental effects cattle and deer populations have on mauka vegetation, thus prioritizing invasive species control and sustainable hunting practices, alongside native plant restoration. Regular maintenance activities, such as scheduled cleanups of culverts, gulches, and streams, were emphasized. Beneficiaries called for collaboration with ʻĀina Momona, Molokaʻi Land Trust, and the University of Hawaiʻi at Mānoa for expertise in watershed management and restoration projects. Kalamaʻula beneficiaries further proposed developing educational programs for residents, incorporating cultural perspectives on land management, and creating opportunities for community members to actively engage in stewardship activities.

Kapaʻakea beneficiaries emphasized managing drainage across the entire ahupuaʻa to mitigate flooding, particularly during heavy rains and king tides. Unique to this homestead is a strategic focus on revising culvert designs and improving mauka drainage infrastructure, calling for formal agreements (MOUs) among Kapaʻakea Association, DHHL, DOT, and County of Maui. Restoring the mauka watershed and maintaining culverts and drainage ditches were highlighted as critical steps to prevent flooding impacts. Beneficiaries from Kapaʻakea shared a unique approach to land management focused on identifying and restoring smaller, intact areas of cultural and ecological value as starting points for broader landscape recovery. This approach is based on the concept of a kīpuka, a place that remains relatively undisturbed and functions as a refuge for native species and ecological processes within a more degraded landscape. The concept builds on earlier work and teachings by Penny Martin, Kahekili Pa-Kala, and Wailana Moses.

Further, Kapaʻakea beneficiaries emphasized the importance of community education and stewardship, suggesting an ʻŌpio task force involving local schools for youth training in environmental and cultural resource management. Partnerships unique to Kapaʻakea include coordination with agencies such as DLNR, FEMA, UH Water Resource Center, and private environmental testing labs to provide comprehensive hydrological and environmental assessments.

Beneficiaries from Kamiloloa emphasized the importance of mauka restoration efforts, specifically highlighting the need for detailed aerial and map reviews to strategically identify restoration sites. Unique to Kamiloloa is a strong interest in employing native vegetation species, with a clear preference for milo trees over kou trees due to their lower water requirements. Beneficiaries suggested establishing test plots, setting up protective fencing, and creating drip irrigation systems alongside developing a dedicated plant nursery and supply storage container. Additionally, there was discussion around exploring opportunities for coastal homesteaders to participate economically in restoration by cultivating economically beneficial plants like blue agave. Engaging local lessees as members of restoration crews was specifically recommended to create economic and employment opportunities within the community. Key partners identified for Kamiloloa include The Nature Conservancy and Molokaʻi Land Trust, both of which bring critical expertise in ecological restoration and native species propagation.

Traditional ecological knowledge will inform the implementation of the Mauka Restoration strategies, particularly through the ahupuaʻa land management approach, which promotes resource stewardship. For example, traditional methods such as loʻi kalo (taro patches) can be reintroduced to serve as natural sediment basins, further reducing sediment runoff.

Goal B Resilience Strategies

The resilience strategies supporting Goal B are described below.

B1. Develop a Mauka Restoration and Maintenance Plan

Creates a comprehensive plan to restore mauka lands using mapping, LiDAR, ecological studies, and traditional knowledge. Identifies priority restoration zones, fencing

needs, fire management strategies, and long term stewardship plans.

B2. Implement Kipuka Waihona Concept

This concept draws inspiration from the Hawaiian idea of kīpuka, meaning a variation or opening, such as a calm place in a high sea, an opening in a forest or clouds, or an oasis of vegetation within a lava bed. Small fenced restoration sites are established along eroded ravines as these islands of renewal, where native species are replanted to stabilize soils, slow stormwater, reduce erosion, and form a growing network of restored areas that can expand over time.

B3. Reduce Fuel Loads

Removes invasive grasses, shrubs, and kiawe in high risk areas. Supports cultural and scientific fire management practices, including controlled burns, to reduce wildfire hazards and allow native ecosystems to recover.

B4. Expand Plant and Food Nursery

Expands the existing Kalamaʻula nursery to increase capacity for native plant propagation, food production, cultural plants, and community education. Provides plants needed for mauka and makai restoration projects.

B5. Feral Animal Management Program

Develops a coordinated program with hunters and agencies to manage deer, pigs, and other animals that damage vegetation, destabilize soils, and undermine restoration efforts. Integrates modern wildlife science with cultural practices.

Key Partners Involved in Achieving Goal B

Partners who help advance this goal include:

- Homestead Associations
- DHHL Planning Office
- DHHL Land Management Division
- DHHL Land Development Division
- County of Maui Department of Fire and Public Safety, and Fire Prevention Bureau
- Molokaʻi Hunting Club
- Department of Land and Natural Resources Division of Forestry and Wildlife
- DLNR Commission on Water Resource Management
- Molokaʻi Homestead Livestock Association
- Natural Resources Conservation Service
- Hawaiʻi Wildfire Management Organization
- Hawaiʻi Community Foundation

C: Water Flow Maintenance and Flood Prevention

Water Flow Maintenance and Flood Prevention was identified by beneficiaries as a major resilience priority across all three homestead communities. Residents consistently described chronic flooding during heavy rain events, blocked drainage canals, overflowing ravines, clogged culverts, and sediment buildup that damages homes, roads, and coastal environments. These issues are worsened by eroded mauka slopes, invasive vegetation, poor drainage maintenance, and loss of traditional waterways.

This goal responds to the community's call for safer and more reliable water flow from mauka to makai. Flooding affects public safety, home health, road access, cesspools and septic systems, cultural sites, and fishponds. Restoring natural and engineered drainage systems strengthens the ahupuaʻa and protects both people and ecosystems. Beneficiaries noted that earlier wetland areas were filled for development, canals and drainage ditches were never designed for today's storm events, and maintenance responsibilities have long been unclear. This goal helps clarify roles, strengthen partnerships, and bring both modern engineering and traditional water knowledge back into practice.

Key Beneficiary Manaʻo Informing Goal C

Beneficiaries from Kalamaʻula homestead strongly emphasized regular maintenance and improvements of culverts and drainage systems to prevent frequent flooding. Specific culverts, notably the bridge and adjacent culverts, were highlighted as having insufficient capacity and chronic sediment buildup. Kalamaʻula uniquely recommended regularly scheduled cleanups of debris and sediment from culverts, streams, and gulches, alongside establishing vegetated buffer zones around drainage infrastructure to reduce sediment accumulation and flooding. Beneficiaries also proposed replacing existing degraded cesspools with modern septic systems to reduce water contamination risks. Another significant concern raised by the DHHL Molokaʻi District Office was the need to replace the Maunaloa Highway water line, which is vulnerable to saltwater corrosion, with a more resilient pipeline. Beneficiaries further emphasized the importance of replanting native vegetation mauka to stabilize soils and reduce sediment runoff. Collaborative partnerships were recommended with organizations like ʻĀina Momona and Molokaʻi Land Trust to support reforestation and ecological restoration efforts, as well as addressing invasive species that exacerbate soil erosion.

The Kapaʻakea homestead community prioritized developing a coordinated drainage management plan to comprehensively address flooding across the entire ahupuaʻa. Beneficiaries uniquely recommended redesigning and upgrading undersized culverts, which frequently overflow, causing flood hazards in residential areas. They proposed formalizing maintenance agreements (MOUs) involving DHHL, County of Maui, DOT, and Army Corps of Engineers (USACE) to ensure regular and funded maintenance of drainage infrastructure. Beneficiaries specifically requested comprehensive surveys to assess water quality and hydrology in historically wetland areas, emphasizing the importance of testing stagnant water and groundwater contamination under existing homes. Another unique strategy for Kapaʻakea included exploring leases designed for pastoral or non-structural uses in areas prone to severe flooding, as an adaptive measure. Beneficiaries further recommended educational programs on traditional water management practices, involving community youth and local schools, to promote resilience and effective flood prevention management.

Beneficiaries in Kamiloloa highlighted the need for improving mauka drainage systems to better manage floodwaters. They specifically proposed installing bioswales, detention basins, and crescent shaped absorption beds filled with native vegetation along streams and gulches. These features would slow water flow, allow greater absorption into groundwater, and reduce flooding impacts during heavy rainfalls and king tide events. Kamiloloa residents also emphasized the importance of regularly maintaining and clearing channels and drainage ditches, specifically mentioning past instances where significant sediment buildup required immediate excavation. Establishing formal agreements (MOUs) with local stakeholders, including DHHL and the County of Maui, was recommended for ongoing channel maintenance. Kamiloloa residents further recommended conducting detailed hydrological studies, specifically for the south shore, to address groundwater contamination issues and guide future water flow restoration efforts.

Goal C Resilience Strategies

The resilience strategies supporting Goal C are described below.

C1. Develop a Drainage Master Plan

Creates a comprehensive plan to guide drainage improvements across the homestead ahupuaʻa. Includes mapping, hydrologic modeling, inventory of canals and culverts, TEK integration, and engineered alternatives for long term water management.

C2. Green–Grey Drainage Improvements and Maintenance Program

Implements both natural and engineered drainage solutions, including sediment removal, canal clearing, erosion control, and native planting. Establishes a coordinated maintenance program across agencies and the Homestead Associations.

C3. Watershed Participatory Mapping Workshops

Engages beneficiaries in hands-on learning about drainage maintenance, flooding risks, and nature-based solutions. Community members document problem areas, support data collection, and build stewardship skills.

C4. Restore Springs

Identifies and restores traditional and existing springs to improve water flow, cultural connection, and ecosystem health. Reopens blocked springs, reconnects waterways, and supports educational uses and stewardship within the community.

Key Partners Involved in Achieving Goal C

Partners who help advance this goal include:

- Homestead Associations
- DHHL Planning Office
- DHHL Land Management Division
- DHHL Land Development Division
- DHHL Molokaʻi District Office
- County of Maui Planning and Public Works Departments
- United States Army Corps of Engineers
- State Department of Transportation
- Hawaiʻi Community Foundation
- Molokaʻi Livestock Cooperative

D: Residential Hale Retrofits and/or Relocation

Restoration and Relocation of Residential Hale was identified by beneficiaries as an essential resilience goal because many homes in the homestead communities face long standing hazards that are becoming more severe with climate change. Beneficiaries described frequent flooding around homes, drainage issues caused by past grading and development, wildfire exposure, coastal erosion, and aging home structures that were not built for the conditions experienced today. Some homes are located in floodways or near the shoreline where water levels are already rising.

This goal focuses on making homestead homes safer by identifying which structures are most vulnerable, supporting retrofits that reduce risk, and planning for potential relocation if conditions worsen over time. It also helps improve awareness among homeowners and supports educational workshops on building safety and hazard readiness.

Addressing these challenges is essential for protecting homestead families, safeguarding investments, and supporting long term community stability. Beneficiaries emphasized that protecting homes is protecting the next generation, and that any resilience work must begin with the places where people live.

Key Beneficiary Manaʻo Informing Goal D

Beneficiaries in Kalamaʻula emphasized the importance of long-term residential planning with particular consideration for the aging population, noting a significant number of elderly residents currently living in flood-prone zones, such as makai of Kūlana ʻŌiwi. They recommended proactive engagement of kūpuna through door-to-door surveys to ensure relocation plans fully address their specific needs. Kalamaʻula uniquely proposed establishing buffer zones and green breaks around residential areas to reduce immediate hazards from wildfires and flooding while relocation strategies are developed. Residents also highlighted the need for careful integration of cultural and historical preservation into relocation plans, ensuring that future residential developments inland maintain strong connections to cultural sites and traditional practices. Beneficiaries specifically recommended long-term (50-year) planning horizons, ensuring relocation actions align with anticipated climate change impacts and community demographics. Collaborative partnerships with organizations such as ʻĀina Momona were suggested to leverage resources for land banking, identifying suitable mauka lands for future residential development, and securing necessary funding for infrastructure development.

Beneficiaries from Kapaʻakea uniquely highlighted the need for comprehensive water quality and geological surveys to accurately assess current risks to existing residential structures and determine suitable, safer areas for relocation. The community specifically discussed implementing interim solutions for vulnerable homes, such as floating-floor houses or leases without permanent structures (pastoral uses), to immediately reduce flood risks. Beneficiaries also emphasized the need for clear decommissioning plans for properties vacated due to relocation, ensuring safe and sustainable transitions. Additionally, Kapaʻakea residents recommended integrating regulatory compliance into relocation planning, specifically referencing the mandated conversion of existing cesspools by 2050. Education on relocation options and incorporating cultural knowledge into planning processes were emphasized as important steps in creating community acceptance and engagement in managed retreat planning.

Beneficiaries in Kamiloloa specifically expressed a strong interest in exploring inland (mauka) relocation options for residential lots currently situated in vulnerable coastal areas. They suggested that developing emergency evacuation roads could serve as an initial step toward broader managed retreat, eventually followed by the addition of critical infrastructure such as water and wastewater systems to support new residential lots. A distinctive recommendation from Kamiloloa was to consider innovative, resilient housing designs, such as dome-shaped houses that are fireproof and hurricane-resistant, as part of relocation planning. Beneficiaries emphasized the importance of creating clear incentives and economic opportunities, potentially involving coastal residents in restoration projects—such as planting economically viable species like blue agave—to encourage participation in the relocation process.

Goal D Resilience Strategies

The resilience strategies supporting Goal D are described below.

D1. Create an Ahupuaʻa Residential Hale Restoration and Relocation Study

Evaluates which residential areas face long term hazards such as flooding, sea level rise and erosion, and identifies options for retrofitting or relocating homes. The study will inform the Molokaʻi Island Plan Update and help guide future homestead development to safer locations.

D2. Conduct Vulnerability Assessments Survey

Completes parcel-level assessments of home conditions, structural risks, and exposure to hazards such as flooding, wildfire, and coastal erosion. Includes interviews, mapping, and documentation needed to guide future retrofit or relocation decisions.

D3. Adapt Structures and Systems to Better Withstand Coastal Hazards

Supports home retrofits such as elevation, hardening, hurricane resilience, utility protection, and floodproofing. Builds partnerships with experts for Firewise assessments and homeowner training on hazard preparedness.

D4. Maintain Home Ignition Zones

Reduces wildfire risk by clearing vegetation, creating defensible space around homes, and supporting fire safe landscaping. Includes workshops and demonstrations for residents.

Key Partners Involved in Achieving Goal D

Partners who help advance this goal include:

- Homestead Associations
- DHHL Planning Office
- DHHL Land Management Division
- DHHL Land Development Division
- Hawaiʻi Wildfire Management Organization
- National Disaster Preparedness Training Center
- Hawaiʻi Sea Grant
- County and State Hazard Mitigation Programs

E: Makai Restoration

Makai Restoration was identified by beneficiaries as an essential resilience goal because the coastal zone is central to the identity, health, and livelihood of the homestead communities. Beneficiaries emphasized that the shoreline, wetlands, fishponds, and reef system have been suffering from sedimentation, invasive species, reduced water quality, coastal erosion, and long-term impacts from historic land use. These issues are worsened by climate change, stronger storms, rising sea levels, and continued mauka erosion.

The makai landscape is a place of cultural practice, gathering, education, fishing, and family connection. When coastal systems decline, the entire ahupuaʻa suffers. Restoring makai areas strengthens food systems, protects cultural sites, improves water quality, and supports healthy marine ecosystems.

This goal focuses on restoring shoreline processes, enhancing native ecosystems, managing invasive species, and building community stewardship. Beneficiaries also stressed the importance of caring for fishponds, wetlands, and coastal springs that feed nearshore waters and support traditional practices.

Key Beneficiary Manaʻo Informing Goal E

In Kalamaʻula, beneficiaries addressed the restoration of coastal ecosystems by focusing on mangrove removal, which is intended to reveal freshwater springs that historically fed local fishponds. Techniques such as strategic weed-whacking of mangrove roots were suggested to prevent further spreading. Kalamaʻula beneficiaries highlighted the importance of removing invasive marine algae (gorilla ogo) from shoreline areas and fishponds. They recommended partnerships with organizations like ʻĀina Momona and DLNR's Division of Aquatic Resources (DAR) to implement effective algae management strategies, including the use of seine nets or hiring specialized contractors. Beneficiaries also discussed restoring historical sites, including reconstructing or improving features like historic fishpond walls and the Kaunakakai wharf, to enhance water circulation and ecological function.

The Kapaʻakea community recognized the restoration and management of fishpond and wetland ecosystems as central to makai restoration efforts. Beneficiaries discussed the historical significance of Kapaʻakea Puʻuone (inland fishpond) and highlighted its potential to support community food security through sustainable aquaculture practices. Removal and management of invasive mangroves were strongly recommended, with replacement by native coastal plants that effectively stabilize soil and prevent erosion. Beneficiaries identified the need for comprehensive water quality and hydrological surveys, emphasizing collaboration with Ka Honua Momona, Hui Malama, and Ka Ipu Makani for managing culturally significant wetland areas. Additionally, Kapaʻakea residents recommended formalizing agreements among local organizations, DHHL, DOT, and the County of Maui to implement effective drainage solutions to protect restored coastal and wetland habitats from flooding and contamination.

Beneficiaries from Kamiloloa homestead highlighted the importance of shoreline mitigation through vegetation restoration. They specifically recommended utilizing grass and coir rolls ("mesh bag rolls of seed starters") to stabilize shorelines, facilitate sediment movement, and provide natural protection against tsunami and wave events. A clear preference was given to native vegetation such as Milo, despite acknowledgment of its shedding seeds and pods. Beneficiaries also emphasized collaboration with Molokaʻi Land Trust and coastal restoration specialists to implement these restoration methods effectively.

Implementation of the Makai Restoration goal will be significantly informed by traditional ecological knowledge. Historically, Native Hawaiian practices included rotating seasonal restrictions (kapu) on harvesting fish and other marine resources, ensuring sustainable use and ecological balance. Fishpond restoration, an integral part of traditional Hawaiian land management, will also help filter sediment and nutrients from runoff, improving water quality. Wetland ecosystems were traditionally maintained and protected as vital components of the landscape, acting as natural buffers that protected nearshore ocean environments and habitats.

Goal E Resilience Strategies

The resilience strategies supporting Goal E are described below.

E1. Develop a Makai Restoration and Management Plan

Creates a comprehensive plan to guide restoration of shoreline areas, integrate traditional ecological knowledge, identify priority projects, and build long term stewardship partnerships. Serves as the foundation for future coastal restoration work.

E2. Implement Nature Based Coastal Protection Projects

Uses native vegetation, dune restoration, wetland enhancement, and traditional shoreline practices to reduce erosion and strengthen coastal resilience. Implements recommendations from the South Molokaʻi Shoreline Erosion Management Plan.

E3. Invasive Species Removal and Management

Removes invasive plants and marine species such as mangrove, kiawe, and gorilla ogo that disrupt ecosystems. Restores native coastal vegetation and supports community stewardship activities.

E4. Marine Ecosystem Restoration

Restores coral, limu, and marine habitats through science based and culturally grounded practices. Supports native species, improves water quality, and strengthens sustainable harvesting traditions.

E5. Restore ʻŌhiʻapilo Wetland

Improves water quality, habitat health, and cultural access through hydrologic restoration and invasive species removal. Builds on past studies and supports long term stewardship.

E6. Implement Special Area Plan for Malama Cultural Park

Restores habitat, improves trails and facilities, and enhances cultural and educational features at Malama Cultural Park through the Special Area Plan adopted in 2022.

E7. Maintain Kapuāiwa Coconut Grove and Kiowea Park

Supports long-term stewardship of Kapuāiwa Coconut Grove and Kiowea Park through coordinated pest management, soil and vegetation restoration, and routine maintenance. This integrated project protects culturally significant coconut trees, restores native coastal vegetation, stabilizes the shoreline, and improves park facilities while supporting cultural practices, public access, and ongoing community care of these important places.

Key Partners Involved in Achieving Goal D

Partners who help advance this goal include:

- Homestead Associations
- DHHL Planning Office
- DHHL Land Management Division
- DHHL Land Development Division
- Ka Honua Momona
- Molokaʻi Land Trust
- ʻĀina Momona
- Molokaʻi Wetland Partnership
- Molokaʻi Limu Hui
- University of Hawaiʻi Sea Grant
- Department of Land and Natural Resources
- United States Army Corps of Engineers
- Hawaiʻi Invasive Species Council
- Hawaiʻi Community Foundation

Workforce Development

Workforce development is a core component of the MCH-CRP and central to the long-term success of building community resilience. The plan envisions DHHL beneficiaries as the primary stakeholders and implementers of the resilience strategies identified, reflecting a commitment to self-determination and community-led action. Through this approach, beneficiaries are not only participants in planning but also leaders in carrying the work forward. The plan emphasizes creating opportunities for beneficiaries to gain training, develop technical and cultural skills, and carry out the work themselves.

During the consultation process for this plan, beneficiaries expressed a shared concern that too often, when projects are implemented on Molokaʻi, contracts and employment go to off-island companies, leaving limited benefits for local families. The MCH-CRP responds to this by prioritizing investment in local capacity building and workforce training that generates income within the community, creates stable jobs, and strengthens the local economy. By empowering beneficiaries to do the work, the plan helps to build community capital, sustain livelihoods, and reinforce a culture of stewardship.

Summary Matrix of Hawaiian Homestead Association-Led Resilience Strategies and Priority Projects

The Priority Project Implementation Matrix serves as the central framework for organizing and presenting the recommended actions of the MCH-CRP. It brings together the work of beneficiaries, technical experts, and DHHL into one clear structure that reflects the five planning goals of this plan. The matrix is color coded for ease of use and is organized so readers can see how each goal is advanced through a set of resilience strategies. Each strategy responds to the challenges and opportunities identified throughout the community planning process.

Three versions of the matrix are included in this plan. The Preliminary Goals Matrix captured actions that address vulnerabilities identified by beneficiaries in Beneficiary Workshop #3, and appears in *Appendix D*. The Detailed Resilience Strategy Matrix follows the and provides a complete overview of each strategy. It includes a short description of actions, primary and secondary responsibility for implementation, key partners and collaborators, potential funding sources, and rough order of magnitude cost estimates.

The Priority Project Implementation Matrix is presented in *Table 5-1* below. This summary highlights the specific actions associated with each of the three NCRF funding tiers. It also identifies the top five priority projects selected by each homestead area as the most urgent for near-term implementation.

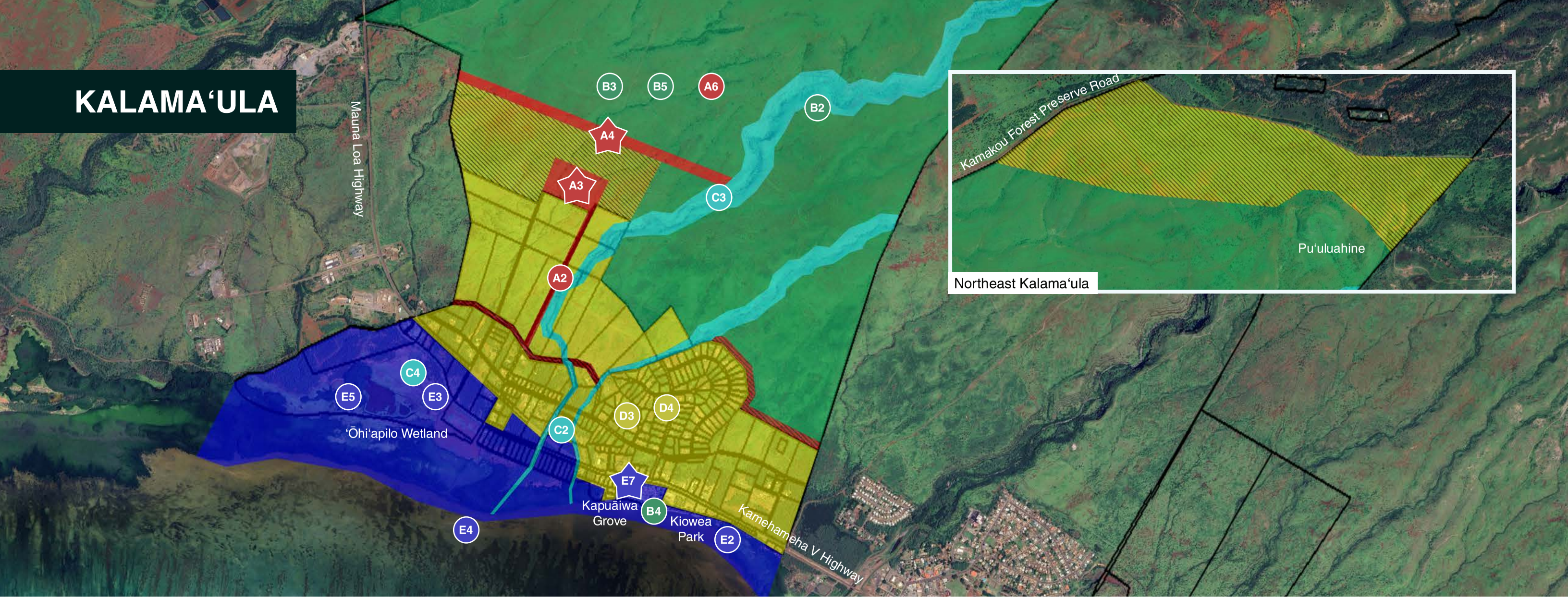
Table 5-2: Priority Project Summary Table

Priority Project	Kalamaʻula	Kapaʻakea	Kamiloloa
1	D1: Create an Ahupuaʻa Residential Hale Restoration and Relocation Study*	A1: Create a Pre-Disaster Emergency Response and Evacuation Plan	A1: Create a Pre-Disaster Emergency Response and Evacuation Plan
2	A3: Develop Resilience Hubs or Evacuation Sites	A2: Develop and Maintain Emergency Evacuation Routes	B1: Develop Mauka Restoration & Maintenance Plan
3	B1: Develop Mauka Restoration & Maintenance Plan	B1: Develop Mauka Restoration & Maintenance Plan	C1: Develop a Drainage Master Plan
4	A4: Fire Break Construction & Maintenance	C1: Develop a Drainage Master Plan	C2: Green-Grey Drainage Improvements & Maintenance Program
5	E7: Maintain Kupuāiwa Coconut Grove and Kiowea Park	D3: Adapt Structures and Systems to Better Withstand Coastal Hazards	E1: Develop Makai Restoration & Maintenance Plan

The spatial distribution of these strategies is illustrated in *Figures 5-1 (Kalamaʻula), 5-2 (Kapaʻakea), and 5-3 (Kamiloloa)*, showing where projects are generally located within each homestead area. Strategies marked with an asterisk (*) are non-spatial in nature and represent actions that apply broadly across the entire ahupuaʻa or community. The top five Priority Projects for each homestead are also summarized in *Table 5-2* below. Appendix H includes fact sheets for each identified priority project, providing a summary of the project and its key information.

Given the number of studies, pilots, and restoration actions proposed in the MCH-CRP, this matrix is intended to function as a living implementation roadmap rather than a one-time project list. DHHL and its partners will establish simple monitoring frameworks that track ecological change, hazard reduction, job creation, and training delivered. These indicators will provide a clear picture of progress and help guide future decisions. Periodic reviews of the matrix with homestead associations and technical partners will update priorities, incorporate lessons learned, and keep the roadmap aligned with community needs and changing conditions across the ahupuaʻa.

KALAMA‘ULA



A Emergency Evacuation and Public Safety

- A1 Create a Pre-Disaster Emergency Response and Evacuation Plan*
- A2 Develop and Maintain Emergency Evacuation Routes
- A3 Develop Resilience Hubs or Evacuation Sites
- A4 Fire Break Construction and Maintenance
- A5 Event Reporting and Documentation System*
- A6 Install Wildfire Detection Cameras

B Mauka Restoration

- B1 Develop Mauka Restoration and Maintenance Plan*
- B2 Implement Kipuka Waihona Concept
- B3 Reduce Fuel Loads
- B4 Expand Plant and Food Nursery
- B5 Feral Animal Management Program

C Water Flow Maintenance and Flood Prevention

- C1 Develop a Drainage Master Plan*
- C2 Green–Grey Drainage Improvements and Maintenance Program
- C3 Watershed Participatory Mapping Workshops
- C4 Restore Springs

D Residential Hale Retrofits and Relocation

- D1 Create an Ahupua‘a Residential Hale Restoration and Relocation Study*
- D2 Conduct Vulnerability Assessments Survey*
- D3 Adapt Structures and Systems to Better Withstand Coastal Hazards
- D4 Maintain Home Ignition Zones

E Makai Restoration

- E1 Develop a Makai Restoration and Management Plan*
- E2 Implement Nature-Based Coastal Protection Projects
- E3 Invasive Species Removal and Management
- E4 Marine Ecosystem Restoration
- E5 Restore Ohi‘apilo Wetland
- E7 Maintain Kapuāiwa Coconut Grove and Kiowea Park

* A1, B1, plans, etc. are not located on the map because they are full ahupua‘a focused plans

* Strategies are non-spatial in nature and represent actions that apply broadly across the entire ahupua‘a or community.

KAPA‘AKEA

A Emergency Evacuation and Public Safety

- A1 Create a Pre-Disaster Emergency Response and Evacuation Plan*
- A2 Develop and Maintain Emergency Evacuation Routes
- A3 Develop Resilience Hubs or Evacuation Sites
- A4 Fire Break Construction and Maintenance
- A5 Event Reporting and Documentation System*
- A6 Install Wildfire Detection Cameras

B Mauka Restoration

- B1 Develop Mauka Restoration and Maintenance Plan*
- B2 Implement Kipuka Waihona Concept
- B3 Reduce Fuel Loads
- B4 Expand Plant and Food Nursery
- B5 Feral Animal Management Program

C Water Flow Maintenance and Flood Prevention

- C1 Develop a Drainage Master Plan*
- C2 Green–Grey Drainage Improvements and Maintenance Program
- C3 Watershed Participatory Mapping Workshops
- C4 Restore Springs

D Residential Hale Retrofits and Relocation

- D1 Create an Ahupua‘a Residential Hale Restoration and Relocation Study*
- D2 Conduct Vulnerability Assessments Survey*
- D3 Adapt Structures and Systems to Better Withstand Coastal Hazards
- D4 Maintain Home Ignition Zones

E Makai Restoration

- E1 Develop a Makai Restoration and Management Plan*
- E2 Implement Nature-Based Coastal Protection Projects
- E3 Invasive Species Removal and Management
- E4 Marine Ecosystem Restoration
- E5 Restore Ohi‘apilo Wetland
- E7 Maintain Kapuāiwa Coconut Grove and Kiowea Park

* A1, B1, plans, etc. are not located on the map because they are full ahupua‘a focused plans

* Strategies are non-spatial in nature and represent actions that apply broadly across the entire ahupua‘a or community.

KAMILOLOA - MAKAKUPA‘IA

A Emergency Evacuation and Public Safety

- A1 Create a Pre-Disaster Emergency Response and Evacuation Plan*
- A2 Develop and Maintain Emergency Evacuation Routes
- A3 Develop Resilience Hubs or Evacuation Sites
- A4 Fire Break Construction and Maintenance
- A5 Event Reporting and Documentation System*
- A6 Install Wildfire Detection Cameras

B Mauka Restoration

- B1 Develop Mauka Restoration and Maintenance Plan*
- B2 Implement Kipuka Waihona Concept
- B3 Reduce Fuel Loads
- B4 Expand Plant and Food Nursery
- B5 Feral Animal Management Program

C Water Flow Maintenance and Flood Prevention

- C1 Develop a Drainage Master Plan*
- C2 Green–Grey Drainage Improvements and Maintenance Program
- C3 Watershed Participatory Mapping Workshops
- C4 Restore Springs

D Residential Hale Retrofits and Relocation

- D1 Create an Ahupua‘a Residential Hale Restoration and Relocation Study*
- D2 Conduct Vulnerability Assessments Survey*
- D3 Adapt Structures and Systems to Better Withstand Coastal Hazards
- D4 Maintain Home Ignition Zones

E Makai Restoration

- E1 Develop a Makai Restoration and Management Plan*
- E2 Implement Nature-Based Coastal Protection Projects
- E3 Invasive Species Removal and Management
- E4 Marine Ecosystem Restoration
- E5 Restore Ohi‘apilo Wetland
- E1 Maintain Kapuāiwa Coconut Grove and Kiowea Park

* A1, B1, plans, etc. are not located on the map because they are full ahupua‘a focused plans

* Strategies are non-spatial in nature and represent actions that apply broadly across the entire ahupua‘a or community.

Table 5-1: Hawaiian Homestead Communities Priority Projects Implementation Matrix

Resilience Goals	Resilience Strategy/ Project Name	Tier 1: Site Assessment and Preliminary Design	Tier 2: Detailed Design and Permitting	Tier 3: Implementation	Kalamaʻula Priority Project	Kapaʻakea Priority Project	Kamiloloa Priority Project	Notes
A: Emergency Evacuation and Public Safety	A1: Create a Pre-Disaster Emergency Response and Evacuation Plan	Risk assessment; traffic studies; evacuation modeling; stakeholder coordination; preliminary evacuation framework; community engagement	Final plan drafting, detailed route design, MOUs, training program development, compliance review	A2, A3, A4, A5, and A6		1	1	
	A2: Develop and Maintain Emergency Evacuation Routes	A1*	Engineering design; environmental review; historic preservation / biological reviews; signage design; maintenance MOUs; construction documentation; permits and approvals; workforce development	Procure equipment and materials; road upgrades; staging area construction; signage installation; community drills; long-term maintenance operations		2**		* A1 fulfills A2 Tier 1 ** Kapaʻakea requested combining A2 and A3, but due to their different design and permitting requirements, they must remain separate. Although A3 is not listed as a priority project, it is still a high community priority. Funding can be sought to implement A3 separately or concurrently with A2.
	A3: Develop Resilience Hubs or Evacuation Sites	A1*	Land dispositions, architectural / engineering design; environmental review; historic preservation & biological reviews; utilities planning; O&M plan; emergency operations protocols; permits and approvals; workforce development	Construction; equipping hub; community training; drills; maintenance; adaptive management	2			*A1 fulfills A3 Tier 1
	A4: Fire Break Construction & Maintenance	A1*	Land dispositions, engineering design; environmental review; historic preservation / biological reviews; maintenance plan; MOUs; cost estimating; permits and approvals; workforce development	Procure equipment and materials; fire break construction; vegetation removal; erosion control; community training; routine maintenance	4			*A1 fulfills A4 Tier 1
	A5: Event Reporting & Documentation System*	A1*	System architecture; GIS integration; dashboard design; SOPs; pilot testing; training materials	System launch; community training; integration with DHHL operations; real-time monitoring; long-term maintenance				*A1 fulfills A5 Tier 1
	A6: Install Wildfire Detection Cameras	A1*	Land dispositions, technical system design; communications / power engineering; environmental review; procurement; emergency integration; workforce training; detailed budget & phasing; permits or approvals	Camera installation; system testing; monitoring activation; maintenance; community education; inter-project integration; long-term operations and upgrades				*A1 fulfills A6 Tier 1

Table 5-1: Hawaiian Homestead Communities Priority Projects Implementation Matrix

Resilience Goals	Resilience Strategy/ Project Name	Tier 1: Site Assessment and Preliminary Design	Tier 2: Detailed Design and Permitting	Tier 3: Implementation	Kalamaʻula Priority Project	Kapaʻakea Priority Project	Kamiloloa Priority Project	Notes
B: Mauka Restoration	B1: Develop Mauka Restoration & Maintenance Plan	LiDAR and aerial mapping; TEK integration; AIS/biological studies; erosion and vegetation assessment; preliminary zone mapping; early fire management concepts; engineering studies	Draft and final mauka restoration master plan, Engineering for fencing/ irrigation; species prescriptions; fire suppression design; phasing plan; historic preservation / biological reviews; workforce plan; cost estimates; monitoring protocols	B2 and B3	3	3	2	
	B2: Implement Kipuka Waihona Concept	B1*	Land dispositions, permits and approvals; workforce development	Procure equipment and materials; invasive species removal; fencing installation; native planting; erosion control; micro-reservoirs; workforce employment; monitoring; education				*B1 fulfills B2 Tier 1
	B3: Reduce Fuel Loads	B1*	Land dispositions, permits and approvals; workforce development	Procure equipment and materials; mechanical clearing; cultural/ prescribed burns; native replanting; erosion control; workforce deployment; monitoring & adaptive management				*B1 fulfills B3 Tier 1
	B4: Expand Plant and Food Nursery	Assess existing Kalamaʻula nursery; identify species needs; conceptual layout; site evaluation; workforce and training needs	Update land disposition; develop engineered expansion plans; finalize propagation program; environmental review; design training program; prepare construction documents; permits and approvals; workforce development	Construct nursery upgrades; increase plant production; launch training programs; run community workshops; maintain and adapt operations; support B2, C4, D3, E2, and E3 actions				
	B5: Feral Animal Management Program	Population mapping; impact assessment; TEK integration; conceptual strategies; access/safety assessment; community outreach; regulatory and workforce planning	Land dispositions, develop management plan; identify partners and incentives; fencing designs; environmental/cultural review; safety protocols; training curriculum; monitoring plan; detailed budget & phasing	Procure equipment and materials, selective culling / controlled hunting; fence construction; ongoing monitoring; workforce deployment				

Table 5-1: Hawaiian Homestead Communities Priority Projects Implementation Matrix

Resilience Goals	Resilience Strategy/ Project Name	Tier 1: Site Assessment and Preliminary Design	Tier 2: Detailed Design and Permitting	Tier 3: Implementation	Kalamaʻula Priority Project	Kapaʻakea Priority Project	Kamiloloa Priority Project	Notes
C: Water Flow Maintenance and Flood Prevention	C1: Develop a Drainage Master Plan	Watershed mapping; hydrologic/ hydraulic modeling; inventory springs; infrastructure inventory and assessment; early hazard assessments; preliminary drainage concepts; community input; TEK integration	Engineered alternatives; phasing plans; cost estimates; environmental review; sediment control design; draft & final Drainage Master Plan; MOU's and policy setup	C2, C3, and C4		4	3	
	C2: Green–Grey Drainage Improvements & Maintenance Program	C1*	Land dispositions, detail design; historic preservation / biological reviews; USACE coordination; permits and approvals; workforce development; formal maintenance plan	Install drainage upgrades; green/grey solutions; sediment & erosion controls; procure equipment and materials; routine maintenance; stream guages monitoring; adaptive management			4	*C1 fulfills C2 Tier 1
	C3: Watershed Participatory Mapping Workshops	C1*	Land dispositions, identify education partners, curriculum development; MOUs; workforce development	Procure equipment and materials; community stewardship that supports C2; interactive GIS mapping; citizen science and education; integration with A5				*C1 fulfills C2 Tier 1
	C4: Restore Springs	C1*	Land dispositions, detailed surveys; engineering & ecological designs; maintenance plans; fencing & access design; workforce development; cost estimating, historic preservation / biological reviews; USACE coordination; permits and approvals	Procure equipment and materials; clearing blockages; hydrologic restoration; native planting; fencing; monitoring; community stewardship; adaptive management				*C1 fulfills C2 Tier 1
D: Residential Hale Retrofits and Relocation	D1. Create an Ahupuaʻa Residential Hale Restoration and Relocation Study*	Develop decision making tool; homesteader surveys; needs assessment; relocation site suitability assessment; opportunities and constraints mapping workshops	Report development; integrate findings with planning process for Molokaʻi Island Plan Update	D3 and D4	1			
	D2: Conduct Vulnerability Assessments Survey	Hazard modeling; parcel-level assessments; structural inspections; homesteader interviews; utility vulnerability surveys; preliminary retrofit concepts; regulatory screening; prioritization	Integrate with A1; vulnerability profiles; engineering designs; utility adaptation design; mitigation concepts; detailed cost estimates	D3 and D4				
	D3: Adapt Structures and Systems to Better Withstand Coastal Hazards	D1* & D2*	Detail design; material specifications; permits and approvals; workforce development	Procure equipment and materials; structural retrofits; utility protection; floodproofing; corrosion-resistant upgrades; monitoring; homeowner training		5		D1*& D2 fulfill D3 Tier 1
	D4: Maintain Home Ignition Zones	D1* & D2*	Coordination with HWMO / Firewise for home assessments; develop training programs; landscape plans; workforce development	Procure equipment and materials; vegetation clearing; landscaping; ember-hardening upkeep; community workdays; monitoring; reporting; ongoing training; adaptive management				D1*& D2 fulfill D4 Tier 1

Table 5-1: Hawaiian Homestead Communities Priority Projects Implementation Matrix

Resilience Goals	Resilience Strategy/ Project Name	Tier 1: Site Assessment and Preliminary Design	Tier 2: Detailed Design and Permitting	Tier 3: Implementation	Kalamaʻula Priority Project	Kapaʻakea Priority Project	Kamiloloa Priority Project	Notes
E: Makai Restoration	E1: Develop a Makai Restoration & Management Plan	Ecosystem assessments; hydrology; water quality; invasive mapping; marine habitat surveys; modeling; cultural consultation; threat identification; preliminary design concepts; prioritization	Draft and final makai restoration master plan; environmental reviews; USACE coordination; cost estimates, phasing plan	E2, E3, E4, E5, and E6			5	
	E2: Implement Nature-Based Coastal Protection Projects	E1*	Land dispositions, detailed engineered ecological designs; detailed management/ monitoring plans; historical preservation and biological reviews; USACE coordination; permitting and approvals	Procure equipment and materials; dune restoration; coir rolls, shoreline stabilization; landscaping; wetland enhancement; community stewardship programs; monitoring; adaptive management; long-term maintenance				*E1 fulfills E2 Tier 1
	E3: Invasive Species Removal & Management	E1*	Land dispositions, detailed management plans; compliance reviews; training design; integration with E2; detailed cost & phasing; USACE coordination; permitting and approvals;	Procure equipment and materials; removal operations; native planting; habitat enhancement; monitoring; community workforce deployment; cultural access support; long-term maintenance				*E1 fulfills E3 Tier 1
	E4: Marine Ecosystem Restoration	E1*	Land dispositions, detailed restoration plan; coral/limu protocols; environmental review, historic preservation / biological reviews; USACE coordination; permitting; workforce development	Procure equipment and materials; in-water invasive removal; limu restoration; coral/habitat enhancement; sediment reduction actions; community stewardship; monitoring and adaptive management				*E1 fulfills E4 Tier 1

Table 5-1: Hawaiian Homestead Communities Priority Projects Implementation Matrix

Resilience Goals	Resilience Strategy/ Project Name	Tier 1: Site Assessment and Preliminary Design	Tier 2: Detailed Design and Permitting	Tier 3: Implementation	Kalamaʻula Priority Project	Kapaʻakea Priority Project	Kamiloloa Priority Project	Notes
E: Makai Restoration	E5: Restore ʻŌhiʻapilo Wetland	E1*	Land dispositions, detailed ecological design; historic preservation / biological reviews, USACE coordination; permitting; access planning; monitoring framework; workforce development	Procure equipment and materials; invasive removal; hydrologic reconnection; native planting; habitat enhancement; fencing/ exclusion; monitoring; community stewardship; long-term maintenance				*E1 fulfills E5 Tier 1
	E6: Implement Special Area Plan for Malama Cultural Park	E1*	Capacity building, detailed design, of SAP management strategies and facilities, shoreline stabilization design; permitting, workforce development	Procure equipment and materials; invasive species removal; native planting; facility / infrastructure upgrades; coastal protection; cultural programming; ecological restoration; shoreline stabilization; workforce deployment; monitoring & adaptive management				*E1 fulfills E6 Tier 1
	E7: Maintain Kupuāiwa Coconut Grove and Kiowea Park	Condition assessment; cultural/ecological surveys; invasive population mapping; infrastructure & safety review; preliminary restoration concepts prioritization; early costs	Update / renew dispositions; maintenance & stewardship plan; landscape & drainage design; shoreline stabilization design; cultural protocol integration; infrastructure design; permitting; detailed cost & phasing; workforce development	Procure equipment and materials; invasive removal; coconut planting & maintenance; facility / infrastructure upgrades; access improvements; cultural stewardship; monitoring & long-term maintenance	5			

DHHL-Led Resilience Strategies

DHHL's trust responsibilities are established in the Hawaiian Homes Commission Act of 1920, as amended, and reaffirmed in the Hawai'i State Constitution. These legal foundations require DHHL to manage Hawaiian Home Lands and related resources for the exclusive benefit of native Hawaiian beneficiaries. As trustee, DHHL has a duty to protect the trust lands, support their productive use, administer homesteading programs, and steward revenues and resources in ways that advance beneficiary well-being now and for future generations.

In carrying out these obligations, DHHL also retains important decision-making authorities. These include land use approvals, leasing authority, infrastructure planning, compliance with state and federal regulations, and the responsibility to review, approve, and oversee projects that affect the trust corpus. These authorities cannot be delegated or transferred. They are central to DHHL's kuleana as trustee and will remain in place throughout implementation of this plan.

The MCH-CRP emphasizes beneficiary-led action, but this does not replace or diminish DHHL's legal responsibilities. Instead, it strengthens the partnership between DHHL and homestead communities by creating clear pathways for beneficiaries to propose, co-design, and carry out projects while DHHL continues to lead on trust stewardship, regulatory compliance, long-term planning, and protection of the land base. Beneficiary leadership operates within the framework of DHHL's trust duties, not outside of them.

In addition to the Homestead Association-led strategies, the MCH-CRP also identifies a set of actions that must be carried out directly by DHHL. That being said, partnership with and stewardship by beneficiaries is central to the concept of 'aina ho'opulapula and crucial for successfully addressing climate change adaptation and community resilience by and for DHHL's homestead communities. These DHHL-led strategies address system-level needs, fill gaps in agency coordination, and provide foundational studies, plans, and land management actions that support long-term community resilience. These strategies may occur before or at the same time as Homestead Association-led strategies. Together, they create the conditions needed for safe, effective, and well-coordinated implementation across the homestead ahupua'a.

The DHHL strategies use the same five planning goal codes (A through E) to show how each action supports the broader resilience goals. A complete version of the DHHL Matrix is included as *Appendix F*. The summary below highlights each DHHL strategy and provides a short description based on the Matrix.

Goal A: Emergency Evacuation and Public Safety

DHHL A1. Update DHHL Plans to Incorporate Hazard Mitigation and Resilience Strategies

Updates the Moloka'i Island Plan, Regional Plan, and Native Hawaiian Development Program Plan to include hazard mitigation and resilience actions. This allows future resilience projects to qualify for DHHL grants and creates pathways to leverage federal hazard mitigation funding.

DHHL A2. Water Delivery Technical and Feasibility Study

Evaluates engineering options to improve water access for fire protection, mauka restoration, agriculture, and homestead needs. The study explores possible expansion of the Moloka'i Irrigation System and assesses new pumping and storage alternatives to strengthen wildfire response and land management.

Goal B: Mauka Restoration

DHHL B1. Conduct Archaeological Inventory Survey for Ahupua'a

Completes an archaeological survey of DHHL mauka lands to identify historic and cultural sites. The results support cultural protection and help streamline future permitting for restoration and infrastructure projects.

Goal C: Water Flow Maintenance and Flood Prevention

DHHL C1. Conduct Historical Hydrological Study

Documents past and present water flow patterns, historic springs, stream networks, and water diversions. This hydrological baseline will guide future mauka restoration, water management, and spring restoration actions, combining traditional knowledge with scientific data.

DHHL C2. Develop MOU for Drainageway Maintenance and Improvements

Creates a multi-agency agreement between DHHL, the County of Maui, and the State Department of Transportation to clarify responsibilities and coordinate maintenance of streams, culverts, and drainage channels. This partnership strengthens flood prevention across the homestead communities.

DHHL C3. Conduct a Study of Kūlana 'Ōiwi Drainage and Flooding Impacts

Assesses how stormwater flows around the Kūlana 'Ōiwi complex and identifies factors contributing to flooding on adjacent homestead lots. The study provides recommendations to improve drainage and align solutions with the broader Drainage Master Plan.

Goal D: Residential Hale Retrofits and/or Relocation

DHHL D1. Develop Kalama'ula Mauka Agriculture Lots

Plans and develops improvements for Accelerated agricultural lots in Kalamaula Mauka, including subdivision design, environmental review, and required infrastructure. These lots support local food production, provide additional access routes, and provide long-awaited homesteading opportunities.

DHHL D2. Convert Cesspools

Reduces contamination and improves water quality by converting cesspools in high risk areas to approved wastewater systems. This strategy aligns with state and county programs and prioritizes areas identified through the Hawai'i Cesspool Prioritization Tool.

Goal E: Makai Restoration

DHHL E1. Evaluate Shoreline and Ecological Impacts of Kaunakakai Wharf

Assesses how the wharf has altered currents, alongshore sediment flow, springs, and marine habitat conditions. The study integrates traditional knowledge and scientific research to support future shoreline restoration and fishpond recovery.

DHHL E2. Provide Long-Term Maintenance for Kalaniana'ole Hall

Develop plans for stabilizing, assessing, and planning for the long-term stewardship of Kalaniana'ole Hall. DHHL will evaluate the future of the hall, with near-term efforts focused on preventing further deterioration and longer-term plans considering construction of a new facility that incorporates elements of the original building as part of historic preservation. Long-term management and maintenance would transition through a disposition with a homestead association or beneficiary-led organization.

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Chapter 6

Community-Based Implementation Strategy

Chapter 6

Community-Based Implementation Strategy

The Homestead Associations and beneficiary organizations will play a crucial role in implementing the identified priority projects. By involving the community in decision-making and execution, the projects become a collective effort, strengthening community bonds and fostering a sense of pride and responsibility.

Beneficiary organizations interested in actively participating in the projects and taking on stewardship of the designated lands may apply for a land disposition from the DHHL Land Division. Rather than a single, "one size fits all" approach, DHHL will co-design disposition types and terms (such as licenses, stewardship agreements, and limited term dispositions) so they are appropriately scaled to the project type, community capacity, and the level of management required.

Applications will describe the applicant's commitment to long-term care of the area, along with their initial plans for funding, staffing, liability, and carrying out stewardship activities. However, DHHL recognizes that long term stewardship cannot rely solely on volunteer labor or unrealistic expectations placed on community organizations. To support successful implementation, Native Hawaiian Development Program Plan (NHDPP) programs and DHHL technical assistance will support these dispositions, helping organizations strengthen management plans, prepare competitive grant applications, and navigate environmental review, permitting and compliance.

Because many resilience strategies require ongoing investment, DHHL will actively support beneficiaries in pursuing external funding. This may include grants, contracts, and other resources that allow community members to receive fair compensation for stewardship work. Restoration and management responsibilities should contribute to local economic opportunity and workforce development, not create financial strain.

Ongoing collaboration between DHHL and the beneficiary community will remain essential. Regular communication, joint planning, and feedback sessions will help maintain alignment between community priorities and project needs over time. Sufficient staff time will need to be allocated to support co-management and project implementation.

In essence, DHHL envisions beneficiaries not merely as participants but as leaders in the long-term stewardship of their land trust and legacy. The goal is to empower the community to take charge of these initiatives, creating a sustainable and resilient future for Molokaʻi where the people actively contribute to the restoration and preservation of their island.

Beneficiary Roles and Leadership in Implementing the MCH-CRP

Beneficiaries and their homestead associations will play a leadership role in carrying the MCH-CRP from planning into action. Because the plan is rooted in self-determination, implementation must follow a process where beneficiaries guide decisions at every stage: planning, design, implementation, and long-term monitoring. Within this framework, a "beneficiary-led project" is defined as a project where beneficiaries set the project goals, identify preferred designs, select or advise on project partners, participate in monitoring, and hold a primary voice in how the work moves forward. These projects strengthen community ownership, elevate traditional ecological knowledge, and reinforce the principle that resilience begins with the beneficiaries.

DHHL-led projects will prioritize beneficiary awareness and involvement by conducting timely outreach in a spirit of transparency, collaboration and mutual respect. Clear protocols will also guide how DHHL and homestead associations work through disagreements. If concerns arise, the parties will enter a facilitated discussion built on transparency, cultural grounding, and respectful communication. The goal is to identify points of alignment, surface community concerns, and adjust project direction in a way that honors both the mission of DHHL and the lived experience of beneficiaries.

Coordination Between Homestead Associations and DHHL

Effective coordination between Homestead Associations and DHHL is central to moving resilience projects from planning into action. The MCH-CRP is structured to allow Homestead Associations to take a lead role in advancing projects, while working closely with DHHL Land Management Division to streamline access to land, approvals, and implementation. Homestead Associations may pursue grant funding directly to support coordination activities with DHHL, including staff time, technical assistance, and administrative support needed to carry out Tier I and Tier II actions identified in this plan.

ROE Process Steps

1. Request: Submit a Land Use Request Form or make a direct request to DHHL Land Management Division
2. Review and Terms: Confirm short-term duration of 30 days or less and establish conditions, including no construction, indemnification, and submission of a certificate of liability insurance
3. Execution and Approval: ROE is signed and issued by DHHL

Benefit License Process Steps

1. Intake: Receive a Land Use Request Form or internal request from a DHHL program or beneficiary association
2. Eligibility Review: Confirm beneficiary status and compliance with the Hawaiian Homes Commission Act
3. Negotiation: Define scope of use, community benefits, and rent, which may be nominal or waived for resilience projects
4. Internal Review: Review by DHHL Legal, the Administrator, and Deputy
5. Commission Approval: Hawaiian Homes Commission approves license terms
6.. Execution and Approval: License is signed by the Chairperson

Funding secured by Homestead Associations may be used to support early project development, including site assessments, community coordination, and preliminary design under Tier I, as well as detailed design, permitting, and agency coordination under Tier II.

DHHL land disposition tools provide a clear pathway for Homestead Associations to access lands needed to implement resilience strategies. Different disposition types apply at different phases of project development.

During Tier I actions (Site Assessment and Preliminary Design), Homestead Associations may request a Right of Entry (ROE) to gain short-term access to DHHL lands for due diligence activities. An ROE allows temporary entry for surveys, environmental studies, inspections, and other limited, non-construction activities needed to evaluate project feasibility.

During Tier II actions, Homestead Associations may apply for a Benefit License to support more advanced project activities such as detailed design, permitting, and agency coordination. DHHL may also consider creating a new, specialized disposition category to support short-term emergency response or resilience coordination activities for projects identified in this and future community resilience plans.

A Benefit License allows beneficiary-controlled entities or Homestead Associations to use DHHL lands for community or homestead purposes and is well suited for resilience strategies that provide clear public and beneficiary benefits.

No additional formal beneficiary-wide consultation is required for Homestead Associations to carry forward projects that are identified and vetted through the MCH-CRP. Adoption of this plan is intended to streamline and facilitate implementation by establishing prior community support, defining eligible strategies, and clarifying coordination pathways with DHHL.

Homestead Associations are responsible for coordinating with residents within their homestead areas as projects move forward. As part of Tier I due diligence, community outreach and coordination may be included as a condition of an ROE. The level and format of community engagement is determined by each Association based on the nature of the project and community needs. Projects should include ongoing communication and outreach to residents to build understanding, address concerns, and strengthen support for implementation.

Beneficiary-Led Organizations Participation

In addition to Homestead Associations, several native Hawaiian beneficiary-led organizations on Moloka'i hold deep place-based knowledge and have demonstrated success in planning, resource management, cultural restoration, and community action projects. Under the Hawaiian Homes Commission Act, Sections 204(a)(2) and 207(c)(1)(a), DHHL has the authority to issue land dispositions for non-homesteading uses. The MCH-CRP uses this authority to support beneficiary-led management models, recognizing that beneficiaries who live, learn, and cultivate relationships in a specific place hold the knowledge needed to steward it responsibly. As such, Beneficiary-led organizations will be recognized as priority partners for design and implementation throughout the MCH-CRP. Their participation strengthens the plan's commitment to Indigenous governance, community stewardship, and long-term resilience.

Priority partnership opportunities include:

- Co-applicant status on grant applications
- Eligibility to receive technical assistance
- Opportunities for direct funding for implementation
- Clear communication of expectations, timelines, and responsibilities

As an example, Strategy E6 (Implement special area plan for Malama Cultural Park) demonstrates how beneficiary-led organizations can guide and carry out resilience actions. The Malama Cultural Park Special Area Plan was developed to shift day-to-day stewardship of the park's coastal cultural landscape to a community-based entity.

Beneficiary-led organizations may apply to become implementation partners through a competitive DHHL solicitation process. After the HHC adopts the MCH-CRP, DHHL may open a call for applications from interested organizations. Applicants submit proposals describing their qualifications, capacity, and pilina (connection to the place). DHHL evaluates each application based on the organization's ability to meet the goals of the specific resilience strategy and to manage the related lands and resources responsibly. The strongest applicant may be nominated for a land disposition. Before the disposition is issued, DHHL will conduct a consultation meeting to gather beneficiary feedback and seek final beneficiary approval of the nominated organization.

Native Hawaiian Development Program Plan Update

The NHDPP is one of DHHL's primary tools for supporting beneficiary advancement. The plan guides programs that expand economic self-sufficiency, cultural practice, health, and education. DHHL is currently updating the NHDPP. Resilience Strategy DHHL A1 of the MCH-CRP calls for DHHL plans to be updated to incorporate hazard mitigation, emergency preparedness, and community resilience strategies. The revised NHDPP will play a major role in preparing beneficiaries for successful implementation of the MCH-CRP by expanding island-specific training and support.

As part of this update, DHHL will seek to integrate a suite of resilience-related capacity building programs into the NHDPP. These programs include workforce development, project management and leadership training, cultural and ecological stewardship training, disaster preparedness and mitigation training, nonprofit strengthening, and hands-on volunteer and paid apprenticeship programs. Grant writing and project management support will also be offered to help homesteaders pursue future funding and lead their own restoration and resilience projects.

Technical Assistance Framework

DHHL commits to assisting beneficiaries in securing comprehensive technical assistance during the design, permitting, and implementation phases of priority projects. Technical assistance will be built directly into all future grant applications and funding sources. This assistance may include:

- Grant writing, budgeting, procurement, and reporting
- Environmental review and permitting support
- Hydrologic, ecological, cultural, and engineering expertise
- Project and construction management
- Community monitoring, maintenance, and stewardship protocols
- Long-term data collection and adaptive management

Technical assistance will be available to Homestead Associations and native Hawaiian beneficiary-led organizations, ensuring they can serve as primary implementers or co-implementers of resilience actions.

Partnership Roles, Jurisdiction, and Responsibilities

Successful implementation of the MCH-CRP requires clear coordination across federal, state, county, nonprofit, and beneficiary-led partners. Beneficiaries expressed a strong need to understand who holds jurisdiction over specific lands, hazards, systems, and regulatory processes, and how each partner's authority relates to the priorities expressed by homesteaders. See Appendix C which defines the roles and responsibilities of each group of partners involved in implementation.

MCH-CRP Implementation Hui

Successful resilience planning requires long term coordination, clear communication, and shared accountability. To support this, the MCH-CRP recommends creating a standing Implementation Hui that brings together homestead association boards and key representatives, beneficiary-led organizations, DHHL divisions, and key partner agencies referred to in the Detailed Resilience Strategy Matrix *(Appendix E)*. This hui will serve as the central coordinating body responsible for tracking progress, advancing priority actions, and maintaining alignment with beneficiary priorities over time.

The Implementation Hui will:

- Coordinate implementation across mauka, makai, drainage, housing, and emergency related strategies
- Maintain an organized schedule of project milestones and funding opportunities
- Identify cross agency needs and resolve barriers that require multi-jurisdictional action
- Create a regular forum for beneficiaries, DHHL, and partners to check in, share updates, and adjust course as conditions change
- Support beneficiary-led organizations as they build capacity, apply for funding, and take on stewardship kuleana

It is recommended for the Hui to meet on a set schedule (for example, quarterly), with additional working sessions convened as needed for technical topics such as permitting, wildfire planning, or coastal restoration design.

To support transparency and measurable progress, the Hui should maintain a simple tracking system that shows the status of each project by tier, such as "ready for implementation," "needing design and funding," or "requiring further planning." A small set of indicators could be used to monitor progress over time. These indicators may include number of projects being advanced, amount of training delivered, number of jobs created or supported, acres restored or under active stewardship, drainage or flooding issues addressed, partnerships formed, and funding secured. Together, these measures will help the community see where progress is being made and where additional support is needed.

DHHL will prepare and share regular public updates, such as annual summaries, that report on these indicators, describe milestones achieved, and outline next steps. Updates may be delivered at community and homestead association meetings, annual Hawaiian Homes Commission meetings on Molokaʻi, and through digital platforms, helping beneficiaries stay informed and actively engaged in shaping implementation over time.

This Implementation Hui becomes the backbone of a real implementation system. By meeting consistently, tracking measurable progress, and allowing for collaborative decision making, the Hui helps all parties remain accountable to the resilience goals identified by beneficiaries. This structure provides the support needed to move projects forward in a coordinated way, ensuring that the MCH-CRP remains an active, adaptive, and community-driven plan.

7. References

Chapter 7

REFERENCES

Chapter 7

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Topo: USGS 1983

Biome: USGS 2016

Summaries of Plans, Documents, and Initiatives Informing the MCH-CRP

Summaries of Plans, Documents and Initiatives Informing the Molokaʻi Coastal Homestead – Community Resilience Plan

Department of Hawaiian Home Lands (DHHL) Plans and Initiatives

- (2005) Molokaʻi Island Plan
- (2014) HHC Water Policy Plan
- (2018) DHHL Molokaʻi Potable/Non-Potable Water Management Plan
- (2019) Molokaʻi Regional Plan
- (2022) South Molokaʻi Shoreline Erosion Management Plan (SM-SEMP)
- (2022) Malama Cultural Park - Special Area Plan
- (2022) DHHL General Plan Update
- (2023) DHHL Molokaʻi Cesspools Conversion Study
- (2025) DHHL Molokaʻi Dry Stream Beds H&H Studies

Island-Specific Plans & Assessments

- (2023) Molokaʻi Clean Energy Resiliency Action Plan (Molokaʻi Clean Energy Hui)
- (2023) A Prioritization Plan for Coastal Wetland Restoration on Molokaʻi (USGS)
- (2024) Strategic Plan for Hawaiʻi Wetlands (PBHJV)
- (2024) Molokaʻi Community Wildfire Protection Plan (CWPP)

County of Maui Plans

- (2018) Molokaʻi Community Plan (COM)
- (2020) County of Maui Hazard Mitigation Plan Update
- (2021) COM Wastewater Infrastructure Inundation Study-MKK: KWRF
- (2021) Beach Parks Vulnerability and Adaptation Study (COM-DPR)
- (2022) Mitigate Maui Nui
- (2022) Molokaʻi Water Plan Preliminary Draft (Maui County DWS)
- (2022) COM Climate Action & Resiliency Plan (CARP)
- (2024) Molokaʻi Climate Change and Sea-Level Rise Adaptation and Resiliency Plan (CCSLAR)
- (2024) Hazard Mitigation Grant Program (HMGP) Projects for Maui County. Potential Molokaʻi Projects are:
    - Molokaʻi Pipeline Protection
    - Planning for Relocation of Kaunakakai Wastewater Facility
    - Re-establishment of Molokaʻi Emergency Response Working Group
    - Molokaʻi Disaster Response and Recovery Plan, including Resilience Hubs
    - FEMA Technical Assistance to Evaluate the CDRZ Program on Molokaʻi as a Case Study for Underserved and Indigenous Communities
- (2025) County of Maui 2025 Hazard Mitigation Plan (HMP)

Federal Plans and Initiatives

- Hawaiʻi Coastal Resilience Assessment (NFWF/NOAA)
- Resilience & Recovery Planning and Management (NPI)
- FEMA Policy: Tribal Mitigation Plan Review Guide (FEMA Policy #306-112-1)

Department of Hawaiian Home Lands (DHHL) Plans and Initiatives

- **(2005) Molokaʻi Island Plan**

The *2005 Molokaʻi Island Plan* document outlines various development plans and community concerns related to several DHHL communities on Molokaʻi.

Kalamʻaula

- Location and Description: Kalamʻaula lands are located mauka of Kamehameha Highway, featuring gentle slopes from sea level up to 1,800 feet. The area includes 161 residential, 76 agricultural, and three pastoral homestead leases.

- Land Use Plan: The plan proposes 57 new one-acre residential lots, community parks, kupuna (elderly) housing, and special districts for natural resource management and flood control. There is also a focus on general agriculture and commercial development.

- Infrastructure and Services: The community is supported by the Hoolehua Water System, but there are concerns about the water supply meeting future demand. Road improvements are also needed.

- Cultural Sites: Significant cultural sites in the area include Kapuāiwa Grove, ʻŌhiʻapilo Fishpond, and several heiau.

- Community Use: The area includes Church Row, Kulana ʻŌiwi Multi-Services Center, and plans for additional community park space and services for elders.

Kapaʻakea

- Location and Description: Kapaʻakea is situated along the southern portion of Molokaʻi, about one mile east of Kaunakakai town. It includes 286 new residential lots and designated areas for community parks, cultural centers, and fishponds .

- Land Use Plan: The plan includes significant infrastructure improvements, such as new storage and transmission facilities for potable water, a new wastewater treatment facility, and road improvements.

- Community Concerns: Key concerns include drainage issues, the expansion of the cemetery, and the need for adequate water supply .

Kamiloloa One Aliʻi

- Location and Description: The Kamiloloa One Aliʻi area is part of a larger tract that includes Makakupaʻia. This region is characterized by mild slopes and significant drainage channels.

- Land Use Plan: It includes 286 new residential lots, proposed community uses for parks, cultural centers, and fishpond restoration. Special district areas are designated for natural resource management and flood control.

- Community Concerns: Similar to Kapaʻakea, concerns include the need for new water sources, drainage, and flood control .

Malama Cultural Park

- Description and Use: While the document does not explicitly detail Malama Cultural Park separately, it highlights the importance of cultural resource preservation and community-based initiatives. The focus is on maintaining areas for community events, cultural activities, and educational uses.

- Community Initiatives: Emphasis is placed on the involvement of local residents in managing and restoring cultural and natural resources, such as fishponds and traditional sites.

Overall, the document stresses the importance of infrastructure improvements, water management, cultural site preservation, and community engagement across all these areas. The focus is on sustainable development that meets the needs of the community while preserving cultural and natural resources.

- **(2014) HHC Water Policy Plan**

The *HHC Water Policy Plan* establishes policies and priorities for the development, management, and protection of water resources serving Hawaiian Home Lands statewide. The plan emphasizes the importance of securing adequate and reliable water supplies for homestead communities, protecting Native Hawaiian water rights, and promoting conservation and efficient water use. For Molokaʻi, the plan provides policy support for DHHL's pursuit of groundwater reservations, surface water applications, and infrastructure investments needed to support existing and future homesteads while accounting for drought conditions and climate variability.

- **(2018) DHHL Molokaʻi Potable/Non-Potable Water Management Plan**

This plan evaluates potable and non-potable water systems serving DHHL lands on Molokaʻi, including system capacity, infrastructure condition, and future demand. It identifies challenges related to limited source capacity, aging infrastructure, and drought vulnerability, and recommends improvements to water storage, transmission, and alternative non-potable supplies for irrigation and other uses. The plan supports integrated water management strategies to improve long-term water security for homestead communities such as Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi.

- **(2019) Molokaʻi Regional Plan**

The *2019 Molokaʻi Regional Plan Update* provides detailed insights into various DHHL communities on Molokaʻi, specifically addressing the areas of Kalamʻaula, Kapaʻakea, Kamiloloa One Aliʻi, and Malama Cultural Park. Here is a summary of how the document relates to these communities:

Kalamʻaula

- Location and Description: Kalamʻaula is located west of Kaunakakai and includes a mix of residential, agricultural, and pastoral uses. It is known for its significant cultural and historical sites, including Kapuāiwa Grove and Church Row.

- Infrastructure and Services: The Kalamʻaula homestead area is served by the DHHL Hoʻolehua Water System. Efforts are made to maintain the infrastructure, with water from the 200,000-gallon Kalamʻaula concrete tank serving the community.

- Community Use: The area includes the Kulana ʻŌiwi Multi-Services Center, which houses offices for various organizations, reflecting the community's role as a central hub for services.

- Land Use Designations: Kalamʻaula's land use includes residential homesteads, agricultural lands, and areas designated for community use and conservation.

Kapaʻakea

- Location and Description: Kapaʻakea is situated along the southern section of Molokaʻi, approximately one mile east of Kaunakakai. The area is characterized by its coastal community setting and varying slopes and drainage channels.

- Land Use Designations: Kapaʻakea includes residential, agricultural, and special district lands. It also faces issues related to flood hazards and sea level rise, necessitating careful planning and management.

- Priority Projects: The community has prioritized projects that address infrastructure needs and environmental concerns, such as erosion management plans for coastal areas to mitigate the impacts of sea level rise.

Kamiloloa One Aliʻi

- Location and Description: Kamiloloa One Aliʻi, part of the southern section near Kapaʻakea, features a combination of residential and agricultural land uses. The area is known for its wetlands and drainage channels.

- Land Use Designations: Similar to Kapaʻakea, Kamiloloa includes residential and special district lands. It also faces significant flood risks and challenges related to climate change.

- Infrastructure Projects: Community meetings have highlighted the need for road improvements and other infrastructure projects to enhance safety and accessibility in the area.

Malama Cultural Park

- Description and Use: Malama Cultural Park is designated as a special district, reflecting its importance for cultural and community activities. The park is used for various cultural events and as a space for community gatherings.

- Community Initiatives: The park is part of broader efforts to preserve and promote Hawaiian cultural traditions and values. The community is actively involved in managing and utilizing this space for cultural education and activities.

- Environmental Considerations: The area is also subject to environmental assessments to ensure its sustainability and resilience against climate change impacts.

- **(2022) South Molokaʻi Shoreline Erosion Management Plan (SM-SEMP)**

The *South Molokaʻi Shoreline Erosion Management Plan (SM-SEMP)* document provides a comprehensive strategy for managing and mitigating shoreline erosion along the south shore of Molokaʻi, particularly in areas inhabited by DHHL beneficiaries. The plan is designed to address the impacts of climate change, including sea level rise and increased storm frequency, which exacerbate coastal erosion and threaten communities, infrastructure, and cultural sites.

For Kalamʻaula, the emphasis is on removing invasive mangrove and replacing it with native vegetation to restore coastal habitats. The project includes community-based efforts to reclaim land lost to mangrove infestation, which has hindered access to the ocean and along the shoreline. The preservation of historical sites such as heiau, house sites, and springs is also highlighted, ensuring these cultural landmarks are protected and integrated into the restoration plans.

In Kapa‘akea, the restoration focuses on managing coastal resources and reclaiming neglected ponds. The Kapa‘akea Pond, once a significant feature, is now filled with silt and overgrown with mangrove and kiawe. Efforts to restore this pond and other special places, like the Ka La‘i o Ke Kioea Bird Sanctuary, are crucial for maintaining the area's historical and ecological significance. Additionally, Kapa‘akea Cemetery and Pu‘umaninikolo hill are noted for their historical value and need for conservation.

For Kamiloloa One Ali‘i, the restoration projects include enhancing Kaloko‘eli Pond and other coastal features. This area was historically significant for its fishery, particularly for he‘e (octopus), which was a protected resource. The projects aim to repair pond walls and remove invasive species like mangrove to restore these habitats. The site known as Ka Lua Na Moku ‘Iliahi, a trench used historically for sandalwood storage, is also part of the conservation efforts .

At Malama Cultural Park, the focus is on improving wetlands and restoring the coastal environment through the removal of invasive species and the creation of vegetated sand berms to protect against erosion. The park, rich in Hawaiian history, serves as a hub for recreational activities and water sports. Enhancing these natural features will improve water quality and aesthetic appeal, supporting both ecological resilience and community use.

- **(2022) Malama Cultural Park - Special Area Plan**

The *Malama Cultural Park Special Area Plan* focuses on the management and preservation of Malama Cultural Park, emphasizing the values of the DHHL beneficiaries and Moloka‘i residents. The park holds historical and cultural significance as an ancestral land where King Kamehameha V built a vacation home and traditional Hawaiian activities took place. The plan sets goals to maintain the park as a community treasure, protect native species habitats, perpetuate cultural practices, and support community economic development through educational programs. Developed with extensive community consultation, the plan highlights the desire for community-led management and proposes actions such as managing vehicular access, improving water delivery, developing areas for elders and memorial gardens, controlling invasive species, and constructing facilities like a pavilion and bathrooms.

The plan also engages DHHL communities, including Kalam‘aula, Kapa‘akea, and Kamiloloa One Ali‘i, in the park's stewardship and management. Kalam‘aula residents, particularly the Kalam‘aula Homesteaders Association, have been active in the consultation process, reflecting their vested interest in the park. Kapa‘akea community members, consulted during the planning process, envision using the park for cultural and educational programs. Similarly, representatives from the Kamiloloa-One Ali‘i Homestead Association participated in stakeholder consultations, indicating their involvement in the park’s planning and management. The plan’s strategies for resource management and addressing environmental concerns are particularly relevant to these communities, ensuring that the park serves as a vibrant, educational, and culturally significant space for current and future generations.

- **(2022) DHHL General Plan Update**

The *2022 Department of Hawaiian Home Lands* General Plan Update establishes the highest-level policy framework for DHHL statewide and formally integrates climate change, natural hazards, and resilience considerations into land use and development decision-making. The plan directs DHHL to evaluate climate risks—including sea level rise, flooding, wildfire, drought, and erosion—when planning new homesteads, infrastructure, and land uses. It also emphasizes water security, protection of

natural and cultural resources, community resilience, and emergency preparedness. Within the DHHL Planning System, the Moloka‘i Coastal Homestead – Community Resilience Plan (MCH-CRP) functions as a Tier 2 Strategic Program Plan that advances and implements General Plan policies at the local level, providing a pathway for beneficiary-driven resilience actions to inform future DHHL planning efforts, including the upcoming Moloka‘i Island Plan update and statewide Disaster and Climate Risk Reduction Plan.

- **(2023) DHHL Moloka‘i Cesspools Conversion Study**

The *Moloka‘i Cesspools Conversion Study* was conducted to document wastewater conditions on DHHL lands, identify where cesspools remain in use, and recommend safe, modern replacement systems. It was undertaken to comply with Hawai‘i Act 125, which requires all cesspools statewide to be upgraded by 2050, and to protect coastal waters, groundwater, and community health on Moloka‘i. Kapa‘akea, One Ali‘i, and the coastal portions of Kalama‘ula are the highest-priority sites for cesspool replacement due to shoreline proximity, flooding, and environmental sensitivity. Upland Kalama‘ula parcels can often utilize septic systems, assuming adequate space and groundwater separation.

Kapa‘akea

Kapa‘akea is a shoreline homestead with small lot sizes, located within 100 yards of the coast. According to the study, it is highly vulnerable to flooding during rain events, which leads to saturated soils and compromised cesspool function. Because of its low elevation, shallow groundwater, and proximity to sensitive marine waters, Kapa‘akea is classified as a Priority 1 area for cesspool conversion.

The report recommends advanced treatment solutions: replacing cesspools with Aerobic Treatment Units (ATUs) capable of meeting NSF 245 nitrogen-reduction standards, paired with a site-specific subsurface disposal system. These systems are recommended because they provide higher water-quality effluent, reducing impacts to nearshore ecosystems, coral reefs, and groundwater.

Kamiloloa One Ali‘i

The One Ali‘i (Kamiloloa) homestead area, like Kapa‘akea, lies directly on the southern shoreline with many homes under 100 yards from the ocean. The area experiences regular flooding, substantial stormwater runoff from higher elevations, and constrained lot sizes. These conditions result in greater risk of untreated wastewater reaching coastal waters.

The report therefore places One Ali‘i into Priority 1, identical to Kapa‘akea. For this area, the study strongly recommends ATUs with advanced treatment (NSF 245), because rising groundwater and sea level conditions will continue to reduce soil absorption capacity over time. Disposal system type is to be chosen during design based on soil, groundwater depth, and available space.

Kalam‘aula

Kalama‘ula differs from the first two shoreline communities because its parcels are generally **larger**, and the majority are set back more than 100 yards from the coastline, though some lower-lying parcels closer to the shore do experience periodic flooding.

Because conditions vary across the homestead, Kalama‘ula is split in practice:

- Coastal/low-lying portions behave similarly to Kapa‘akea and One Ali‘i, warranting Priority 1 classification, concern for flooding, and the need for ATUs.

- Upland/larger parcels have better elevation, deeper groundwater separation, and more space, allowing the use of conventional septic systems where appropriate.

The study recommends choosing between septic systems and ATUs based on proximity to the shoreline, groundwater depth, and soil type. Some existing cesspools on larger lots may be replaced with septic + absorption fields or converted to seepage pits where conditions are safe.

Malama Cultural Park

Although the report does not identify the Malama Cultural Park as one of the four DHHL homestead areas evaluated, it is adjacent to the southern shoreline zone that includes Kamiloloa and Kapaʻakea. Therefore, the environmental findings that apply to coastal homestead lands—flooding vulnerability, shallow groundwater, proximity to marine resources, and high environmental sensitivity—are directly relevant to the broader area surrounding the park.

Because the park sits within the same low-elevation coastal band as the Priority 1 homestead areas, the report's conclusions indicate that any wastewater systems in or near the Malama Cultural Park area would require advanced treatment, similar to One Aliʻi and Kapaʻakea, to protect nearby ocean waters, cultural resources, and recreation areas.

- **(2025) DHHL Molokaʻi Dry Stream Beds H&H Studies**

The *2025 Molokaʻi Hydrology & Hydraulics Dry Stream Beds Study* was conducted to understand how stormwater moves through the dry gulches that drain the south shore DHHL communities and to determine where flooding risks threaten homestead lands. Because these gulches normally remain dry, sediment buildup, vegetation, erosion, and undersized culverts have gone largely unaddressed, leaving the channels unable to convey large storm events. The study finds that nearly all major gulches running from Kalamaʻula through Kapaʻakea to One Aliʻi lack the capacity to safely pass 100-year storm flows, creating overtopping hazards, backwater flooding, and sheet flow toward homes, roads, and coastal areas. The overall drainage health of the region is therefore rated poor, with clear needs for channel improvements, culvert upgrades, and better stormwater conveyance across multiple watersheds.

Kalamaʻula

Kalamaʻula contains the largest cluster of dry stream beds (Helms Stream, Paleka Stream, Lehua Stream, Poepoe Stream, and Kahinu Stream), all of which funnel stormwater rapidly downslope during heavy rain. The study shows that these channels are narrow, partially obstructed, and hydraulically limited, meaning they cannot reliably contain 100-year storm flows. As runoff concentrates from multiple ridges, floodwater can spread laterally toward homestead lots if channels overflow or culverts back up. Recommended actions include: clearing and reshaping portions of the channels; increasing capacity at road crossings; addressing erosion and sedimentation; and coordinating regional drainage so flows remain contained within defined corridors rather than spilling onto residential parcels.

Kapaʻakea

Kapaʻakea lies in a low-elevation coastal band with limited drainage pathways. The Kapaʻakea Cemetery Stream channel is shallow and constrained, and the study identifies culverts that may act as bottlenecks during major storms. Because the area is already vulnerable to ponding and coastal flooding, overtopping presents a direct risk to nearby homes. Recommended actions are: upsizing or improving culvert crossings; removing blockages; and regrading the channel to ensure peak storm flows can move efficiently toward the shoreline without diverting onto residential lands.

Kamiloloa One Aliʻi

The One Aliʻi Stream system (east and west channels) is the most analyzed in the study and exhibits some of the highest modeled flows in the region. Peak 100-year discharges exceed the capacity of both the east and west channels, especially near culverts and narrow sections. This creates a significant risk of overtopping that can send sheet flow toward homestead properties and public areas near One Aliʻi Beach Park. Recommended actions include: widening or deepening key segments of the channels; upgrading culverts to eliminate backwater effects; and providing additional conveyance or energy dissipation features to reduce flood impacts on the homestead.

Island-Specific Plans & Assessments

- **(2023) Molokaʻi Clean Energy Resiliency Action Plan (CERAP - Molokaʻi Clean Energy Hui)**

The *Molokaʻi CERAP* emphasizes that "Molokaʻi's renewable energy system should improve access to reliable clean electricity island-wide at all times, so residents are secure during and after an emergency or disaster". The critical connection between energy self-sufficiency and emergency preparedness should be reinforced by all organizations responsible for these life-saving services. Residents should not bear the burdens of brown-outs, black-outs, and damage to property caused by an insufficient system.

- **(2023) A Prioritization Plan for Coastal Wetland Restoration on Molokaʻi (USGS)**

This plan identifies and prioritizes coastal wetlands across Molokaʻi for restoration based on ecological value, cultural importance, vulnerability to sea level rise, and potential benefits to community resilience. The assessment highlights south shore wetlands as high-priority areas due to their historic role in flood attenuation, water quality improvement, and habitat for native waterbirds. The plan provides a science-based framework for targeting wetland restoration projects that align closely with DHHL homestead resilience goals.

- **(2024) Strategic Plan for Hawaiʻi Wetlands**

The *Strategic Plan for Hawaiʻi Wetlands* establishes statewide priorities for wetland conservation, restoration, and management, with an emphasis on protecting native waterbird habitat, improving hydrologic function, and increasing climate resilience. The plan identifies coastal wetlands on Molokaʻi as critical opportunities for nature-based solutions that reduce flooding and enhance ecosystem services, while also supporting cultural practices and community stewardship.

- **(2024) Molokaʻi Community Wildfire Protection Plan (CWPP)**

The *Molokaʻi Community Wildfire Protection Plan (CWPP)* identifies wildfire risks across the island and establishes priorities for fuel reduction, vegetation management, emergency access, and community preparedness. The plan highlights Molokaʻi's heightened wildfire vulnerability due to prolonged drought, strong winds, invasive fire-prone grasses, and extensive grazing lands, particularly in central, west, and south Molokaʻi. It emphasizes the importance of coordinated action among state, county, landowners, and community organizations to reduce wildfire threats to watersheds, homestead communities, infrastructure, and coastal ecosystems. The CWPP directly informs the MCH-CRP by supporting mauka restoration, grazing management, firebreak planning, improved emergency access, and cross-agency coordination as essential components of climate resilience and hazard mitigation for DHHL homestead communities.

County of Maui Plans

- **(2018) Molokaʻi Community Plan (County of Maui)**

The *2018 Molokaʻi Community Plan* addresses issues related to the Hawaiian homestead settlements in areas such as Kapaʻakea, Kamiloloa One Aliʻi, Makakupaʻia, and Kalamaʻula. It highlights the need for an integrated and environmentally sensitive stormwater management system due to flooding concerns near the Kaunakakai Fire Station, Education Center, and the nearly full Kapaʻakea Cemetery. The plan suggests involving DHHL as a key partner in various initiatives, including developing a cultural archive, cooperative agricultural programs, coordinated land use planning, establishing building codes, and housing rehabilitation programs. Additionally, it stresses the importance of protecting water rights and resources, and encourages the creation of a Molokaʻi Water Use and Development Plan, re-establishing the Molokaʻi Water Working Group, and improving water transmission and storage systems for better fire protection.

Furthermore, the plan outlines actions to improve stormwater management, such as developing a comprehensive plan using natural systems where possible, building dispersion and retention facilities, maintaining drainage infrastructure, and evaluating older swales and drains. It also proposes partnerships to restore historic wetlands, remove and recycle junk cars, resolve issues at Malama Park, and enforce proper property identification and address posting. The plan acknowledges that DHHL is not bound by Maui County regulations for housing development but currently requires lessees to obtain county building permit approvals, which has led to some confusion. Additionally, DHHL homesteads are served by individual septic tanks and cesspools, highlighting a need for improved waste management solutions.

- **(2020) County of Maui Hazard Mitigation Plan Update**

The *County of Maui Hazard Mitigation Plan* identifies natural hazards affecting Maui County, including flooding, coastal erosion, sea level rise, wildfire, and drought, and outlines mitigation actions to reduce risk to life, property, and infrastructure. The plan includes Molokaʻi-specific hazard profiles and mitigation priorities and serves as the basis for eligibility for FEMA Hazard Mitigation Assistance funding. Many of the hazards and vulnerabilities identified for Molokaʻi directly affect DHHL homestead communities.

- **(2021) COM Wastewater Infrastructure Inundation Study-MKK: KWRF**

This study evaluates the vulnerability of the Kaunakakai Wastewater Reclamation Facility to flooding and sea level rise. It identifies existing and future risks associated with groundwater rise, coastal flooding, and system capacity constraints, and provides adaptation recommendations including protective measures, alternative treatment approaches, and long-term relocation planning. The findings are particularly relevant for downstream DHHL homestead communities that rely on the facility and are exposed to similar coastal hazards.

- **(2021) Beach Parks Vulnerability and Adaptation Study**

This study assesses the vulnerability of Maui County beach parks to sea level rise, coastal erosion, and flooding, including parks along Molokaʻi's south shore. It evaluates exposure of park infrastructure and recreational resources and recommends adaptation strategies such as managed retreat, nature-based shoreline protection, and redesign of facilities. The findings inform broader shoreline management and resilience planning efforts that affect nearby homestead communities.

- **(2022) Mitigate Maui Nui**

Mitigate Maui Nui is a regional initiative to identify and prioritize hazard mitigation projects across Maui, Molokaʻi, Lānaʻi, and Kahoʻolawe. The program focuses on reducing risk from flooding, wildfire, coastal hazards, and other climate-driven threats. It supports project identification, interagency coordination, and pursuit of federal funding, including FEMA Hazard Mitigation Grant Program resources applicable to Molokaʻi homestead communities.

- **(2022) Molokaʻi Water Plan Preliminary Draft**

The document titled *Molokaʻi Water Plan Preliminary Draft* addresses water resources affecting the DHHL communities of Kalamʻaula, Kapaʻakea, Kamiloloa One Aliʻi in the following ways:

Kalamʻaula: The Kalamʻaula community receives water from the DHHL-owned and operated Ho'olehua Water System (HWS), which also services the Ho'olehua homestead area, the airport, Molokaʻi High School, and Kualapuʻu Elementary School. However, the current water system cannot meet the existing maximum daily demand due to a source capacity shortfall.

DHHL has a legally guaranteed reservation of 2.9 million gallons per day (MGD) from the Kualapuʻu aquifer, but the system's sustainable yield and existing withdrawals indicate that water supply challenges persist.

DHHL has also applied for a surface water reservation from the Waikolu Stream, which could potentially provide additional non-potable water, including 150,000 gallons per day that could be delivered to DHHL's Kalamʻaula tract.

Kapaʻakea: The Maui County Department of Water Supply (DWS) system provides potable water to Kapaʻakea from the Kualapuʻu well, with water lines running along Kamehameha V Highway and connecting to local loops within the community.

Kamiloloa One Aliʻi: Similar to Kapaʻakea, the Kamiloloa community receives its potable water from the Maui County DWS system, which sources water from the Kualapuʻu well.

Overall, the water resources for these communities are tightly linked to the Kualapuʻu Aquifer and the DHHL's reservations and applications for both ground and surface water. There are ongoing concerns about sustainable yields, water quality, and the ability of current infrastructure to meet growing demands. Additionally, the challenges of water transport, conservation, and future development needs are central themes in managing water resources for these DHHL communities.

- **(2022) COM Climate Action & Resiliency Plan (CARP)**

Molokaʻi, with a population of 7,345 residents, has maintained a culture that does not primarily depend on tourism for its economy. However, climate change poses significant threats to this traditional way of life. The island's landscape suffers from the effects of overgrazing, deforestation, drought, and contemporary agricultural practices, particularly in the lower elevations of west and south Molokaʻi, which are extremely dry and at high risk for fires. The feral ungulate population exacerbates erosion, landslides, and damages to farming, ranching, and coastal resources. Additionally, increased heat and drought create financial stress on households, while storms and flooding disrupt community connectivity and threaten critical infrastructure. Community collaboration with large landowners is essential for fire prevention and controlling the feral ungulate population.

Economic challenges are also present due to the loss of major employers and ongoing climate impacts. Sustʼāinable Molokaʻi, a nonprofit organization, is addressing these issues by restoring ʻāina momona (abundance) and developing plans to increase renewable energy and adapt to climate change. They aim to rebuild the local food system through a Food Sovereignty Program, supporting local farmers and improving food distribution. The community has identified needs such as relocating the main town Kaunakakai to higher ground, improving import methods, relocating sewage treatment facilities, addressing cesspools, and implementing water pollution and erosion control measures. High-priority actions include securing funding for wastewater reuse infrastructure and updating the wastewater management plan to mitigate climate change impacts.

- **(2024) Molokaʻi Climate Change and Sea-Level Rise Adaptation and Resiliency Plan (CCSLAR)**

The *Molokaʻi Climate Change and Sea-Level Rise Adaptation and Resiliency Plan (CCSLAR)* provides a comprehensive island-wide assessment of climate change impacts, including sea level rise, coastal flooding, groundwater rise, erosion, drought, and increasing storm intensity. The plan evaluates vulnerabilities of critical infrastructure, natural resources, and communities, with particular attention to low-lying coastal areas such as Kaunakakai and surrounding south shore regions. It identifies adaptation strategies ranging from short-term protective measures to long-term planning for infrastructure relocation, decentralized wastewater systems, and nature-based solutions. The CCSLAR informs the MCH-CRP by providing island-scale climate projections, vulnerability analyses, and adaptation pathways that align with beneficiary-identified priorities for flood reduction, water quality protection, emergency preparedness, and long-term community resilience in DHHL homestead areas.

- **(2024) Hazard Mitigation Grant Program (HMGP) Projects for Maui County**

Molokaʻi Pipeline Protection
  - The Molokaʻi pipeline along the Kaunakakai Pier is fully exposed to natural and human hazards. The pipeline provides all fuel for the island, and therefore is critical infrastructure for life and safety. A proposed project would build out protection of the pipeline through some kind of casing.

Planning for Relocation of Kaunakakai Wastewater Facility (KWRF)
  - The KWRF is already showing evidence of risk to sea level rise with saltwater infiltrating the groundwater causing salt to seep up and create a salt flat west of the facility. Projections show that most of the facility will be flooded with 3.2 feet of passive flooding. The KWRF is also already near treatment capacity. This is a critical infrastructure facility that serves the town of Kaunakakai, the largest population on Molokaʻi and an underserved community. Given the age and vulnerability of the site, the recent Molokaʻi Climate Change and SLR Adaptation and Resiliency Master Plan (CCSLR) recommends identifying alternative treatment systems as a short term adaptation, as well as long-term plan for decommissioning of the facility that might involve relocation and/or decentralized treatment facilities.

Re-establishment of Molokaʻi Emergency Response Working Group
  - A previous working group has recently been re-established to organize responses after emergencies such as flooding events. The informal working group has included Public Works, HDOT, Planning Department and Fire. An 89-Day hired position to formulate, organize, and re-establish the working group, and HMGP funding would be requested to support longer term planning and organization.

Molokaʻi Disaster Response and Recovery Plan, including Resilience Hubs

- HMGP funds would be requested for professional services to develop a locally informed and community specific Disaster Response and Recovery Plan. The Plan would include a Molokaʻi specific strategy for creating Resilience hubs and safe zones.

FEMA Technical Assistance to Evaluate the CDRZ Program on Molokaʻi as a Case Study for Underserved and Indigenous Communities

- The FEMA Community Disaster Resilience Zones (CDRZ) program is intended to build disaster resilience in communities by driving federal resources to the most at-risk and underserved communities. However, the methodology for the zone designations does not achieve this desired outcome in Hawaiʻi communities due to limitations of the underlying census tract data. The Molokaʻi community would like to request support from FEMA to use Molokaʻi as a case study to evaluate improved options for identifying zones in Hawaiʻi and other indigenous communities.

- **(2025) County of Maui 2025 Hazard Mitigation Plan (HMP)**

The *County of Maui 2025 Hazard Mitigation Plan (HMP)* establishes a countywide framework to reduce long-term risks to life, property, infrastructure, natural resources, and cultural assets from natural hazards. Updating the 2020 HMP, the Plan meets federal requirements under the Disaster Mitigation Act of 2000 and maintains the County's eligibility for FEMA mitigation funding.

The HMP identifies wildfire as the County's highest-risk hazard, with drought, high winds, flooding, and cascading post-fire impacts posing significant threats, particularly to rural and isolated communities. Molokaʻi's vulnerability is shaped by geographic isolation, limited emergency access, constrained energy and water systems, and reliance on community-based response. As a result, the Plan emphasizes localized preparedness, protection of critical lifelines, watershed management, and culturally grounded, community-led mitigation approaches. Mitigation Strategies that would be most effective within the MCH-CRP area are as follows:

Isolated Community Preparedness

- This strategy strengthens disaster readiness for geographically isolated communities like Molokaʻi, where outside assistance may be delayed. It prioritizes community-level emergency planning, local response training, communication systems, and access to food, water, shelter, and medical resources. For Molokaʻi homesteads and rural communities, preparedness is centered on self-sufficiency and trusted local networks.

Wildfire Mitigation in Non-CWPP Areas

- Recognizing that many Molokaʻi areas fall outside formal Community Wildfire Protection Plan boundaries, this strategy expands wildfire risk reduction to rural, agricultural, and cultural landscapes. Actions focus on fuel reduction, invasive grass management, defensible space education, and land stewardship practices to reduce ignition risk and wildfire spread near homes and community facilities.

Molokaʻi Energy Supply

- This strategy addresses Molokaʻi's vulnerability to power outages caused by wildfire and high winds affecting above-ground infrastructure. Priorities include vegetation management near power lines, system hardening, backup power for critical facilities, and exploration of distributed and renewable energy solutions to improve resilience and reduce reliance on centralized systems.

Stream Maintenance Plan

- The Stream Maintenance strategy reduces flooding, erosion, and post-fire debris impacts through regular inspection and maintenance of streams, culverts, and drainage systems. On Molokaʻi, proactive watershed management helps protect downstream communities and cultural resources while improving resilience to intense rainfall following drought or wildfire.

Molokaʻi Risk Assessment

- This strategy calls for improved, island-specific hazard and vulnerability assessments that better reflect Molokaʻi's terrain, infrastructure constraints, and social vulnerability. Enhanced data and mapping support more effective mitigation planning, prioritization of investments, and pursuit of hazard mitigation funding tailored to Molokaʻi communities.

Molokaʻi Working Group

- The Molokaʻi Working Group formalizes collaboration among County agencies, community organizations, and local leaders to guide mitigation planning and implementation. This approach ensures mitigation strategies reflect community priorities, cultural values, and on-the-ground conditions while strengthening coordination and long-term implementation capacity.

Axis Deer Mitigation

- To create a deer management plan designed to incorporate place-based knowledge and expertise interconnected with ʻOiwi Resources and Science so there is balance between the ecosystem and food sustainability within rural communities and those that are affected by the overpopulation of axis deer.

Federal Plans and Initiatives

- **Hawai‘i Coastal Resilience Assessment (NFWF/NOAA)**

The *Hawai‘i Coastal Resilience Assessment* report addresses the growing threats to Hawai‘i’s coastal communities from natural events such as coastal erosion, storm surge flooding, and sea level rise. The assessment combines Geographic Information System (GIS)-based data on land use, protected areas, human community assets, flooding threats, and fish and wildlife resources to identify and prioritize areas, termed Resilience Hubs, that could benefit from conservation and restoration efforts. This report defines Resilience Hubs as large areas of natural, open space or habitat where, if investments are made in conservation or restoration, there is potential for improved human community resilience and benefits to fish and wildlife habitats and species. These efforts aim to improve human community resilience and provide benefits to fish and wildlife habitats. The Coastal Resilience Evaluation and Siting Tool (CREST) accompanies the assessment, providing an interactive online interface for users to explore and utilize the data for informed decision-making.

The southern coast of Moloka‘i, near Kaunakakai, is highlighted as an area with medium to high values in both the Terrestrial and Marine indices. This region's high values are due to the combination of important marine and coastal habitats used by various marine and terrestrial species. Moloka‘i's southern coast features the longest and among the healthiest coral reefs in Hawaii, contributing to very high coral cover. The Marine Index values here are driven by moderate reef fish biomass and the presence of Essential Fish Habitat (EFH), critical habitat for the Hawaiian monk seal, and the Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS).

Furthermore, the wetlands on Moloka‘i’s southern coast, though highly degraded by invasive mangroves, were once vital habitats for threatened waterbird populations, indicating potential benefits from habitat restoration efforts in this area. The island's resilience hubs, formed through the Green and Blue Infrastructure analysis, show significant potential for implementing nature-based solutions to achieve benefits for fish and wildlife while reducing flooding risk to important human community assets. This makes Moloka‘i a prime candidate for conservation and restoration projects aimed at building human community resilience and supporting biodiversity.

- **Resilience & Recovery Planning and Management (NPI)**

The presentation titled *Resilience & Recovery Planning and Management* focuses on strategies for disaster and climate resilience planning specifically tailored for historic properties and cultural resources. It outlines the importance of organizing, assessing, planning, and implementing measures to enhance resilience against disasters and climate-related events. Key topics covered include definitions of climate and disaster resilience, disaster planning terminology, and the significance of integrating various planning efforts such as local preservation plans, hazard mitigation plans, and comprehensive planning.

The presentation emphasizes a multi-level approach to resilience planning, involving federal, state, and local frameworks. It highlights the role of federal agencies like FEMA in coordinating disaster response and the importance of local jurisdictions in managing incidents. Case studies from various cities such as St. Augustine, Annapolis, and Pensacola illustrate practical applications of resilience planning, showcasing efforts to protect cultural heritage from hazards through regulatory tools, comprehensive planning, and community engagement. The overarching message is that resilience planning requires collaboration across all levels of government and community stakeholders to effectively mitigate risks and ensure swift recovery from disasters.

- **FEMA Policy: Tribal Mitigation Plan Review Guide (FEMA Policy #306-112-1)**

The *Tribal Mitigation Plan Review Guide* from FEMA outlines essential guidelines for Indian tribal governments to develop, update, maintain, and implement hazard mitigation plans. These plans are a prerequisite for eligibility for certain non-emergency disaster assistance programs and must be updated every five years. The guide emphasizes fair and constructive reviews, recognizing tribal sovereignty and fostering partnerships to reduce disaster vulnerabilities. It details requirements for the planning process, hazard identification, risk assessment, mitigation strategy, plan updates, and formal adoption, ensuring plans are comprehensive and culturally relevant.

Enhanced tribal mitigation plans, demonstrating a comprehensive approach and effective resource utilization, are eligible for increased HMGP funding. FEMA commits to ongoing technical assistance and regular policy review, ensuring plans reflect current conditions and regulatory updates. The guide integrates other tribal planning efforts and FEMA programs, aiming to build resilient tribal communities through consistent and equitable implementation of hazard mitigation strategies.

Consultation Summary

MCH-CRP Beneficiary Outreach

Timeline:

- **3.25.24** - Introduce MCH-CRP plan to Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi Homestead Association Presidents and Representatives
- **4.22.24** - DHHL Hawaiian Homestead Commission Meeting - Introduce project to HHC
- **4.25.24** - 1 on 1 interview/Talk story session with Kapaʻakea Oceanside Resident
- **4.25.24** - MCH-CRP Planning Hui Meeting #1
- **4.26.24** - 1 on 1 interview talk story session with Kapaʻakea Oceanside resident
- **5.08.24** - MCH-CRP Planning Hui Meeting #2
- **5.13.24 - MCH-CRP Beneficiary Meeting #1 : Intro to plan & project**
- **6.12.24** - Kapaʻakea Homestead Assoc. Meeting: Project Intro, Discussion & Collected Manaʻo
- **6.17.24** - MCH-CRP Planning Hui Meeting #3
- **6.18.24** - Kalamaʻula Homestead Assoc. Meeting: Project Intro, Discussion & Collected Manaʻo
- **6.20.24 - MCH-CRP Beneficiary Meeting #2: What are the problems & opportunities?**
- **7.30.24** - MCH-CRP Planning Hui Meeting #4
- **8.08.24** – MCH-CRP Kalamaʻula & Kamiloloa Huakaʻi
- **8.08.24 - MCH-CRP Beneficiary Meeting #3**
- **8.26.24** - MCH-CRP Large Landowners & ROE/Lessee Meeting
- **8.27.24** - MCH-CRP Resource/Expert Meeting (DHHL Molokai District Office)
- **9.26.24** - MCH-CRP Resource/Expert Technical Advisor Meeting
- **10.18.24 -** MCH-CRP Resource/Expert Meeting (DHHL Molokai District Office)
- **10.19.24** - MCH-CRP Kalamaʻula & Kamiloloa Huakaʻi
- **11.13.24** – MCH-CRP Resource/Expert Meeting (Lee Marquez, DOT)
- **12.02.24** - MCH-CRP Resource/Expert Meeting (Debra Kelly, NRCS)
- **12.05.24** - Kalamaʻula Talk story session with Beneficiaries
- **12.11.24** - MCH-CRP Resource/Expert Meeting (Russell Kallstrom, TNC)
- **12.18.24** - MCH-CRP Resource/Expert Meeting (Lance DeSilva, DLNR)
- **01.14.25** - Kalamaʻula Homestead Association Meeting: Present Updates and Prep for Huakaʻi
- **02.14.25** - Kalamaʻula Huakaʻi Mauka & Makai
- **04.08.25 - MCH-CRP Beneficiary Meeting #4: Kapaʻakea & Kamiloloa**
- **04.16.25 - MCH-CRP Beneficiary Meeting #4: Kalamaʻula**
- **04.21.25** - Hawaiian Homes Commission Meeting on Molokai
- **11.20.25** - Hawaiian Homes Commission Meeting: Review Summary Report of Preliminary Draft
- **12.03.25** - Attend/Present at Kapaʻakea Homestead Association Meeting
- **12.09.25** - Attend/Present at Kalamaʻula Homestead Association Meeting
- **01.07.26 - MCH-CRP Beneficiary Meeting #5: Presentation of Draft Plan**
- **01.12.26** - MCH-CRP Resource/Expert Meeting (Kilia Purdy-Avelino, NOAA)
- **01.05-30.26 - Beneficiary Review Period-Submit Comments!**
- **02.17.2026 - HHC Final Review and Approval of MCH-CRP: PHASE 1 PAU!**

KEY:

- BROWN: HHC Meetings
- PURPLE: 1 on 1 or Talk Story Sessions
- ORANGE: Planning Hui Meetings
- RED: Beneficiary Meetings #1-#5
- GREEN: Huakaʻi
- PINK: Technical or Resource/Expert Meetings

MCH-CRP **Core Team**: The MCH-CRP Core Team consists of three entities: DHHL serves as the overarching head of the team with G70 and Sustainable Molokai providing the leg work to support the beneficiaries. Sustainable Molokaiʻs role as contracted by G70, is to be the beneficiary community outreach.
Nancy McPherson (DHHL), Cody Winchester & Barbara Natale (G70), Heather Place & Katy Mokuau (SM).

MCH-CRP **Planning Hui**: The MCH-CRP Planning Hui was designed to collaborate with the Homestead associations to prepare for Beneficiary Workshops and Huakaʻi. This beneficiary-based process insured active participation and engagement. Involves Core Team along with Homestead Association Presidents and Representatives from each ahupuaʻa.

Kalamaʻula Homesteaders Association (KHA): Lehua Kauka (President), Brent Nakihei(VP), Uncle Lawrence Lasua (Treasurer), Hamau Howe (Sec), Stacey Crivello (Board of Director), Mike Kahinu (Board of Director), Kalani Johnston (Board of Director), Kaleo Crivello (Rep), Kekama Helm & Ane Bakutis (Rep), Nani Kahinu (Rep), Uncle Mango Stevens (Mauka Rep)

Kapaʻakea Homestead Association (KHA): Kahekili Pa-Kala (President), Enoka Naho'opi'I (VP), Tina Schonely (Treasurer), Marissa Poaipuni (Secretary), Sumu Asano (Sgt of Arms), Bridgett Mowat (Rep),

Kamiloloa One Aliʻi Homestead Association (KOAHA): Hala Pa-Kala (President), Todd Ragsdale (Rep)

SCHHA Molokai Mokupuni (SCHHA): *Sybil Lopez* (Molokai Mokupuni Councilmember)

Hui Hoʻokahua o Molokai (HHM): Aunty Liko Wallace (President), Aunty Bridget Mowat (V.P.), Aunty Hala Pa-Kala (Secretary)

1 on 1 Interview Talk Story Session with Residents: 1 on 1 interviews were conducted throughout this planning process and have provided valuable and much needed information regarding the struggles, needs, and concerns of these beneficiaries.

- *ʻIke Kupuna: Aunty Bridgett Mowat, Aunty Stacy Crivello, Aunty Penny Martin*
- Beneficiaries: Kahekili Pa-Kala, etc.

Resource Expert/Technical Meeting:

Meetings with Experts and Technical resources were held to allow beneficiaries the opportunity to ask questions, hear ideas, and solutions that might be feasible in their specific ahupuaʻa. An example could be mitigation strategies regarding flooding, mauka restoration, and shoreline management.

Experts ranged from County of Maui (Water: Rodger Apuna; Road: County Council - Keani Rawlins-Fernandez, Keʻomailani Hirata; First Response: MPD - Jamie Winfrey, Parks & Recs - Darin Kimoto, Emergency Management - Zhantell Lindo, etc.), State (DOT - Lee Marquez & Pomai Simms, DAR - Edward Kekoa/Kristy Stone/Petrisha Alvarez, DHHL - David Bush, Myron Poepoe, Elroy Mollena, Andrew Choy, DOE - Daniel Espaniola, Will Carlson, Kim Kaai, Shona Pineda, DLNR - Justin Luafalemana, Lance DeSilva, DOFAW-James Espaniola,), Debra Kelly (NCRS), Harrison Togia (UH SOEST & CoM and State DoT Roads Assessments), Butch Haase (MLT), Helen Raine (Pacific Birds/Molokai Wetland Partnership), Thorne Abbott (SM SEMP Planner), Maile Naehu (Kumimi Fishpond Restoration), Juanita Colon (Rural Water), OHA, Ka Ipu Makani, The Nature Conservancy, State Representative Mahina Poepoe, UH Sea Grant-Chip Fletcher, Rosie Alegado, Kua Hawaii, Tara Owens.

3.25 & 4.25.24 - MCH-CRP Intro & Planning Hui Meeting #1

- **Who:** Which includes reps from all 3 ahupua'a
  - Lehua Kauka (Kalama'ula-President), Marissa Poaipuni (KHA-Sec.), Sumu Asano (KHA-Sgt of Arms), Mango Stephens (Kalama'ula Mauka), Sybil Lopez (SCHHA), Hala Pa Kala (KOHA-President), Liko Wallace (HHM-President) i, Bridget Mowat (HHM-V.P.)
- **What:** DHHL, SM, and G70 invited Association Presidents and Representatives to introduce plan and get information on planning approaches that would be best for beneficiaries
- **Where/When:** SM Office 4-6PM
- **Food:** Maka's Korner (Korean Chicken, Green Salad, Rice)
- **Purpose:** To build a relationship with associations & their representatives throughout this planning process.
- To gather input on better processes that fit the Molokai beneficiaries' concerns.
- **Materials Shared:** Powerpoint presentation slide deck, MCH-CRP Tri-fold brochure, Maps, Comment Cards
- **Format:**
  - Introduction to MCH-CRP Plan, recap for those who missed last meeting
  - Confirmed all Associations meeting dates for May & June and collected contact information for additional Planning Hui reps
  - Ongoing list of Stakeholder Interviews (see below)
  - Discussed **Workshop #1 Intro** slide edits & info to produce and edit for meeting (see below)
  - Brainstormed for **Workshop #2 & Expert Hui** (see below). Brainstorming/Planning to be continued at next few Planning hui meetings
  - Brainstormed for **Workshop #3 (see below)**. Brainstorming/Planning to be continued at next few Planning hui meetings
- **Outcome/Next Steps:** (Suggestions made)
  - Confirm all associations meeting dates for May & June and collected contact information for additional planning hui reps
  - Created an ongoing Stakeholder/Expert Interview list (suggested by Sybil Lopez)
  - Discussed Workshop #1 Intro slide edits & info to produce and edit for meeting
    - **Sign-ins**
      - Add Kūpuna / 'opi'o, # per 'ohana/households
      - Medical req, emergency services, needed per household, etc.
    - **Maps**
      - Island map
      - 3 Ahupua'a Maps (add land designation, erosion, streams, lessees, and large land use lessees
    - Use common terms to introduce series of Workshops ideas - Show examples of each: What are the Problems & Hazards? What are the Opportunities? What are the Assets? (Suggested by Sybil Lopez & Lehua Kauka)
  - Brainstormed for Workshop #2
    - **Start with an icebreaker/activity to engage audience**
      - What does Climate Resiliency or Resiliency mean to you?
    - **Background information**
      - Planning hui
      - Ahupua'a Primers: Make 1 pager, easy to read, maybe the last page of draft primer and other overall info for project.
    - **Overall Timeline:**
      - Add to show: Breakdown of each workshop & goals and total timeline through EO project, not just beneficiary engagement portion
      - NFWF Funding Pathway slide - specify that it's POSSIBLE funding for future NCRF priorities, and make it clearly different than overall Project timeline
    - **Maps** (Printed Large) (suggested by Sybil Lop
  - Brainstormed for Expert/Resource Hui
  - Brainstormed for Workshop #3
  - Agreed to continue this planning hui meetings throughout this planning process
  - Use CCSLAR as a resource only (suggested by Sybil Lopez)

Action Items:

1. Update Calendar, Association Reps, Meeting Dates,
   a. SCHHA - 3rd Wed | Kalama'ula - 3rd Tuesday | Kapa'akea - (quarterly 2nd Tuesday) | Kamiloloa One Ali'i-as needed
2. **MCH-CRP Planning Meeting #2** scheduled for **WEDNESDAY, MAY 08, 2024 @ SM Office @ 4-6PM**
3. Start building your resources: Contact Ka Honua Momona, MHLA, etc. and other entities we did not contact yet
4. Build your list for Subject Matter Experts.
5. **Schedule Workshop #2 Date: June 20, 5p-7p @ Kūlana Ō'iwi Halau-**confirmed
6. Add to list below of Kupuna and leaders your Ahupua'a
7. Look at date options for Workshop #3 & #4 in August 2024
8. Look at date options for Huaka'i in August 2024 for all ahupua'a.
9. Look at schedules with Homestead Associations for times on their meeting agenda

List of Stakeholder Interviews: (Ongoing)

Kalama'ula

1. Henry Paleka & Aunty Rose
2. Penny Martin
3. Brian Naeole
4. Helm 'Ohana
5. Crivello 'Ohana

Kapa'akea

1. Ron & Lucy Davis
2. Squeaky Greenleaf
3. Aunty Leilani Wallace
4. Oceanfront Kapa'akea residents*
5. Manitin Ohana
6. John Ocampo (Ocean Front)*
7. Aea 'Ohana (Ocean Front)*
8. Pelekane 'Ohana *
9. Asano ' 'Ohana*

Kamilola-One Ali'i

1. Mervin Dudoit
2. Aunty Vanny
3. Dennis & Haunani Kamakana
4. Elano Naki
5. Alberta Napoleon
6. Herbert Ho

5.08.24 - MCH-CRP Planning Hui Meeting #2

Follow up Meeting from 4/25 Planning Hui Mtg

Brainstormed for Workshop #2: - Jun 20, 2024 @ Kulana Oiwi Halau 5-7pm

- **Sign-ins**
  - Add Kūpuna / ‘opi‘o
  - # per ‘ohana/households
  - Medical, emergency services, plan, etc.
- **Association Leaders & Reps host tables by Ahupua‘a (Tables)**
- **Ice Breaker/Intro Activity**
  - What are the PROBLEMS & HAZARD?
    1. Def: Technical meaning & common terms
    2. Share by Ahupua‘a‘s (Kapa‘akea: what‘s yours?)
    3. Show examples with pictures by ‘Ahupua‘a
  - What are the OPPORTUNITIES?
    1. Def: Technical meaning & common terms
    2. Share by Ahupua‘a‘s (Kapa‘akea: what‘s yours?)
    3. Show examples with pictures by ‘Ahupua‘a
  - What are the ASSETS?
    1. Def: Technical meaning & common terms
       a. Benefits, Strengths, People
       b. i.e. Food Security, Resiliency, Water Access/Boats, Knowledge of all i.d. of households/kupuna‘s/medical,transportation,etc.
    2. Share by Ahupua‘a‘s (Kapa‘akea: what‘s yours?)
    3. Show examples with pictures by ‘Ahupua‘a
- **Hazard Historical Timeline**
- **What are the problems, opportunities, and assets?**
  - Define Hazards and Vulnerabilities
  - Assets: Benefits, Strengths, people
    1. What does that mean?
       a. Kupuna (resource), emergency prep,
- **Common terms to describe:**
  - Wastewater, king tides, SLR, floods, fire, hurricane, drought, tsunami, infrastructure, roads/evacuation routes.
  - Infrastructure and hazards need to be identified as different categories

    Per sybil: (For example, wastewater-cesspools should be identified as infrastructure vs. drought as a hazard). In the introduction phase, this may need to be defined so people will understand the differences so when solutions arise, it will be easier to target.
- **Resources/Plans to be available:**
  - DHHL Molokai Island Plan
  - DHHL Molokai Regional Plan
  - DHHL Malama Cultural Park Special Area Plan
  - COM Hazard Mitigation Action Plan (Mitigate Maui Nui)

- **MAPS**
  - Print Large scale (whole table sizes 2‘x6‘ or so), multiples per ‘ahupua‘a for each table
  - Base layers of:
    - Historical maps (show original uses)
    - Water (river, paths, streams)
    - Coastal homesteads (residences inc indiv. wastewater layer)
      1. Check into DHHL status of MKK Cesspool Assessment (inc. ground truthing)
    - Land-Use Designations
    - Historical hazards maps per ahupua‘a/over time
    - Ocean Currents (historical & current)
    - Winds (historical & current)
    - Roads/Infrastructure
    - CZM
    - Resiliency Hub/Emergency Shelters/Reference maps
    - Crest map layer
    - ROEs

5.13.24 - MCH-CRP Beneficiary Meeting #1
5:30-8PM @ Kūlana ʻŌʻiwi Hālau

- **Attendees**: Beneficiaries from Kalamaula, Kapaakea, and Kamiloloa One Alii: Lehua Kauka (Kalamaʻula-Pres.), Michael Kahinu (Kalamaʻula-Board of Director), Kalani Johnston Sr (Kalamaʻula-Board of Director)., Kaleo Crivello (Kalamaʻula), Marissa Poaipuni (KHA-Sec.) Todd Ragsdale (KOHA-Rep), Bridget Mowat (KHA-Rep), Carla DeAngelo, Adeline Isamura, Raymond Kalilikane; Malia Nishihira, Cora P Sanchez;
  MCH-CRP Team members: Nancy McPherson (DHHL), Katy Mokuau and Heather Place (SM), Barbara Natale (G70)
- **Dinner:** Ulu Chowder (Na ʻIke)
- **Purpose**: Discussing resilience and addressing current hazards in the DHHL homestead communities of Kalamaʻula, Kapaʻakea, and Kamiloloa One Alii.
- **Materials Shared:** Powerpoint presentation slide deck, MCH-CRP Tri-fold brochure, Maps, Comment Cards
- **Format:**

1. Introduction and Activity

- Heather and Katy facilitated an activity, asking "What does Resiliency mean to you?" Answers included prevention, ability to bounce back and adapt after stress, survival.

2. Presentation

- Heather and Katy reviewed previous DHHL plans that are being used and built upon, as well as other island-specific and applicable County of Maui plans.
- Funding for this project through National Fish and Wildlife Foundation (NFWF) National Coastal Resilience Fund (NCRF) was explained.
- The Project Team was introduced and discussed their roles in the project.
- The purpose of the Molokai Coastal Homestead Community Resilience Plan (MCH-CRP) was described.
- Heather provided additional information about each homestead community.
- The meeting process and timeline were presented.
- Workshop #2 scheduled for June 20, 2024.

3. Community Input on Hazards and Resilience

- Community members worked in ahupuaʻa groups (Kalamaʻula, Kapaʻakea, Kamiloloa One Aliʻi) to discuss specific challenges/issues and potential solutions.
- Identification of hazards (pilikia), opportunities (manawa), and assets (waiwai).
  - Problems (Pilikia)
    - Kalam'aula: Erosions, Flooding, Deer Population (Overgrazing), Wildfires, Water Diversion, Tides, Invasives Species
    - Kapaʻakea: Flooding causes damage to homes, Mauka restoration, mud & sediment flow straight to ocean, 1 road for community, evacuation areas are now in flood zone
    - Kamiloloa: Shoreline erosion, Flooding,
  - Opportunities (Manawa)
    - Kalamaʻula: Planting native vegetation to mitigate flooding and erosion, culvert maintenance, controlled burns, evacuation plans, Maintenance of Kalanianaole Hall, Coconut Planting projects, Shoreline coastal management
    - Kapaʻakea: Keeping streams open, Evacuation planning, protection of Kapaʻakea Cemetery from flooding and erosion
    - Kamiloloa: Soft/medium erosion controls, installation of temp inshore/offshore groins or jetties to manage water flow, creation of potable and non-potable water tank programs for residential farm uses, Evacuation plans and routes,

  - Assets (Waiwai)
    - Kalamaʻula: Sacred lands, ʻōhiʻapilo wetland, [Knowledge, history, moʻolelo, & being raised in Kalamaʻula]
    - Kapaʻakea: Mauka Restoration, Punawai restoration
    - Kamiloloa: Long time residents (over 70 years), Aliʻi pond has historical and cultural significance, Limu farming

Takeaways for Each Homestead Community:

Kalamaula

Pilikia:

· Kulana Oiwi and its original engineering (built 6-12 inches higher than surrounding) have caused flooding for nearby residents.
o Third River gets plugged up on makai side.
o This has been brought up time and time again without resolution.
· Erosion, deer population issues, overgrazing, wildfires, water diversion, tides, sediment.
· Invasive species:
  - Gorilla Ogo: plugging up the punawai
  - Mites and disease are attacking historical niu (coconut) in Kapuaiwa Grove / Kiowea Park. Lots of rats, health issue
  - Mangrove: out of control, piling up all the sand, all lepo. Kamalo used to have flow, could walk the beaches there. Salt marshes were not there.
· A lot of druggies - safety light should be placed on the power pole at the end of Kapuaiwa Road.
· Homesteads need to know who has jurisdiction so they know who to call and be empowered to take action. It is not clear – what county laws and what DHHL laws are in effect on my property?

Manawa:

· Planting native vegetation to mitigate flooding and erosion.
· Culvert maintenance needed for both mauka and makai sides of the highway.
· Controlled burns at Kapuaiwa.
· Development of evacuation plans and resilience hubs.
  - Townside vs. west side: plans on ETA, transportation (Spencer busses), river cutoffs
  - One staging area near Ranch Camp.
  - Resilience hub with shower, storage, tie this in with the programs you have now, like educational. Could be a community center to use for hula, cultural programs.
· Maintenance of Kalanianaole Hall for educational and historical purposes.
· Coconut planting projects.
· Shoreline coastal management to restore wildlife
o Looking at alternative plans to control the population of gorilla ogo - need to clear the punawai and create a hatchery for the ʻōpae.
· Look at other resilience plans in Hawaii – Kauai has done some, doing wetland restoration, bioswales to capture and hold water. Creates jobs.

Waiwai:

- Kapuaiwa is sacred.
- ʻŌhiʻapilo Wetland.
- Knowledge, History, Moʻolelo, & being raised in Kalamaʻula.
- They know where the punawai are, where breeding grounds, migration areas, and current cycles.
- Growing up with their kupuna and being raised by their elders first hand. They hold the knowledge!
- "Our people make us resilient"
- Just point us in the right direction. We want to be part of the solution.

Key Points:

- Importance of knowledge and history from kupuna.
- Need for better culvert and stream maintenance, particularly in the Kulana Oiwi area.
- Evacuation routes and plans, especially considering limited access points.
- Emphasis on preventive measures for resilience.
- Determine best course of action to save the niu at Kapuaiwa Grove.
- Restore punawai so that ʻōpae can reproduce.

Kapaʻakea

Pilikia:

- Flooding from overflowing streams, causing damage to homes and the environment.
- Biggest concern is mauka.
- Mud and sediment flow affecting the ocean and subsistence living.
- Only have one road in and out for the community.
- Evacuation areas are now in the flood zone.

Manawa:

- Keeping streams open and taking care of the mauka areas (need to plant).
- Disaster and evacuation planning, including helping kupuna.
- Protection of Kapaʻakea Cemetery from flooding and erosion.

Waiwai:

- Mauka restoration

Key Points:

- Importance of mauka restoration to prevent downstream flooding.
- Emphasis on resilience through preventive measures and preparation.
- Historical and cultural significance of the area, necessitating preservation efforts.
- Requirement for alternative access and evacuation routes.

Kamiloloa One Alii

Pilikia:

- Used to be coconut grove all along that shoreline - should have kept the trees.
- Fee simple lots on shoreline - new people came, cleared out the kiawe - caused erosion.
- Continued and escalating shoreline erosion and projected sea-level rise.

- **Outcome/Next Steps: (Suggestions made)**
  - Future Workshops: Scheduled workshops to further discuss resilience, options, and actionable plans and the creation of priority projects for each ahupuaʻa. (suggested by Sybil Lopez and Kalamaʻula Association)
  - Community Involvement: Continued engagement with community members to refine and prioritize projects.
  - Schedule future Huakaʻi for Mauka and Makai

6.17.24 - MCH-CRP Planning Hui Meeting #3

Brainstormed for Workshop #3 Planning

- Date options: August 1, 5-8, 2024
  - FEMA
    - Identify who/where
    - Community homestead areas (info + study site poss.)
  - Experts: Round robin throughout
    - MEMA (Gina Albanese)
    - HIEMA (Kelsey Yamanaka)
    - FEMA-identify which divisions
  - Training and Educations
  - Resilience Hubs + partnerships (COM Office, Melani Swicke)
    - Baja
    - Keʻeaumoku w/ FEMA, Red Cross & Army Corp of Engineers
    - Napili-Noho Hub (moved from Kahana to Napili)
    - Implementation
    - Look @ County Assessment
  - **Experts Hui:** (Ongoing) To go around to Ahupuaʻa tables to answer questions & give advice per hazards/problems

Expert Specialty	Names
UH SOEST Climate and Resilience **Expertise:** Building a Climate Resilient Community: Let's End the Age of Destruction and Forge a Just and Sustainable Future	Chip Fletcher, Interim Dean (Kammie Tavares)
Office of Planning & Sustainable Development - Coastal Zone Mgmt (OPSD-CZM) **Expertise:** CZM and establishing DHHL jurisdiction	CZM Project Analyst - Sarah Chang (Sofia Luczac)
Department of Health, EPA **Expertise:** Cesspool Conversions/Assessment	
DLNR - DAR **Expertise:** Work with the people of Hawaii to manage, conserve, and restore the state's unique aquatic resources and ecosystems for present and future generations	Kristy Stone & Luna Kekoa (Edward L) & (Patricia-MKK Rep)
CWRM/USGS **Expertise:** Water Reservations, In-stream flow standards: protecting our estuaries and establishing "Cultural Sustainable Yield."	Ayron Strauch or Rebecca Alakai - CWRM
Expertise: Water as a Public Trust and the link to the Water Use and Development Plan (WUDP)	Dr. Jonathan Likeke Scheuer
COM Public Works **Expertise: Water works system on Molokai**	Rodger Apuna
Rural Water & Cesspools	Juanita Colon
DHHL-Cesspools Assessments	(Kehaulani Quartaro)

MIS-DOA	
Expertise: Ka Huli Ao and the Water law training; meaning to Ka Pa'akai Analysis and Kauai Springs Test	Dr. Kapua'ala Sproat
DOT Highways	Lee Marquez
Hawaii Green Growth	Erin Derrington, Global Energy & Water Communities of Practice Coordinator
UH (Professors)	Dr. Rosie Alegado (Shows how mauka to makai systematic events affect others) Dr. Oceana Francis (CoM Roads Assessment) Harrison Togia (DOT Assess)
UH Sea Grant	Wesley Crile (Dunes and Wetlands) Shellie Habel (Coastal Geologist-Cesspool Specialist)
CoM Planners	Jim Buika (Disaster & Shoreline Planner) Tara Owens (Sea Grant & CoM Planning)
CoM-Molokai Planner	Sybil Lopez
CoM Parks & Recs	Darin Kimura
NOAA **Expertise:** Co-stewardship	Becky Lizama
Maui Nui Climate Change and Community Specialist	Melanie Swick, Geologist
National Disaster Preparedness Training Center (NDPTC)	Kirsten Turner Dr. Karl Kim
HI Wildlife Management Org	Elizabeth Pickett-ED
Director Office of Indigenous Innovation for the Office of the Vice President for Research and Innovation for UH System	Kamuela Enos
National Preservations Institute (NPI) **Expertise:** Continuing education and profession training in historic preservation and cultural resource management	Jere Gibber
ONHR-DOI **Expertise:** Kapapahuliau Climate Resilience Program	Cedric Duarte, Communications Officer
Expertise: Wildlife/Land Management	Dr. Craig Harper, Extension

	Wildlife Specialist
Hawaii Office of Homeland Security	Jimmie Collins
Ka Honua Momona	Tiana Puaa
MHLA	MP Kamakana (used to be Uncle Ron)-Katy ask Troy
TNC Molokai **Expertise:** Land management and native species restoration on Molokai	Russell Kallstrom
Molokai Land Trust **Expertise:** Land Management/Native species (Punalau, Kainalu, Mokio)	Butch Haase / Wailana Moses Lopez
Molokai Hunting Club **Expertise: Animal Management / Fencing as a tool**	Justin Luafalemana (background in fencing)
Soil Water Conservation District	Aunty Debbie Kelley
Natural Resources Conservation Service	
Maui Emergency Management Agency	Eric Neuhart Emergency.Management@mauicounty.gov
Molokai EOC	Hanale & Zhantell Lindo, First Responders, etc.
First Responders	Jamie Winfrey (Police) Kaina Alcon (Kalama'ula) or Noa Horner (Ho'olehua) (Fire Captains) Tabby Ching or Tita Maliu (Ho'olehua) (EMS)
'Aha Kiole-Moku o Pala'au	Kanoe Davis, Keani Rawlins-Fernandez, Lorilei Rawlins-Crivello, Kawika Crivello
'Aha Kiole-Moku o Kawela	Hanohano Naehu, La'a Poepoe, Mahina Poepoe, Malia Waits, Bronson Kalipi
OHA	Gayla Haliniak
Molokai Wetland Partnership	Kristen Helen Raine
Ka ipu Makani (KIM)	Pulama & Nahulu

To begin the MCH-CRP Process, after the Beneficiary Meeting #1-Intro, part of the Core Team attended the Homestead Association Meetings for Kapa‘akea and Kalama‘ula to recap the introduction to the project and let the beneficiaries know about the next steps and what was to come for Beneficiary Meeting #2 that will be happening soon. By attending the Homestead Association Meetings, additional Beneficiaries who don‘t like to attend the big DHHL/Planning meetings were reached. Also, by bringing the outreach to their ahupua‘a and their homestead communities, a more relaxed setting allowed for open discussion and dialogue between local Moloka‘i facilitators and the homestead beneficiaries.

MCH-CRP: Kapa‘akea Homestead Association Meeting
June 12, 2024-6pm
Katy Mokuau & Heather Place (SM) facilitated
Attendees: KHA Board and Beneficiaries.
Full Attendance list can be requested from KHA

- Handouts: Workshop #1 Presentation Print-out
- Talked through Workshop #1 Presentation print-out, this project’s planning process, SM-SEMP plan that came before, and next meeting-Beneficiary Meeting #2 to come in next week.
- Lots of questions from beneficiaries were expressed for the disdain for long drawn out planning processes & discussion of the NFWF funding and future funding tiers were shared by facilitators. Funding, Implementation and future steps were also of concern of beneficiaries. As the process was talked through as a whole and outcomes of the plan and 5 Priority Projects per ahupu‘a, understanding started.
    - The beneficiaries were very grateful that the facilitators came to their association meeting and community to explain more in depth in a smaller, more intimate and relaxed setting just within their ahupu‘a to allow for lots of open dialogue and question/answers.
    - Outcome: Many were going to plan to attend Beneficiary Meeting #2 now that they understood what the heck this plan was and why and invited the facilitators to come back throughout the process to association meetings.

MCH-CRP: Kalama‘ula Homesteaders Association Meeting
June 18, 2024-6pm
Katy Mokuau & Heather Place (SM) facilitated
Attendees: Kalama‘ula Board, Board of Directors and Beneficiaries
Full Attendance list can be requested from Kalama‘ula Board

- Handouts: Workshop #1 Presentation Print-out
- Talked through Workshop #1 Presentation print-out, this project’s planning process, SM-SEMP plan that came before, and next meeting-Beneficiary Meeting #2 to come in next week.
- This meeting was more concise as Kalama‘ula HA has many items on its agenda and lots of projects currently going on within their ahupua‘a. They are also very organized and knowledgeable with processes and planning. There were questions from beneficiaries & discussion of the NFWF funding and future funding tiers were shared by facilitators.
- Outcome: Those who did not attend the Beneficiary Meeting #1 were glad facilitators came and recapped them and they felt like they had a good understanding going into Beneficiary Meeting #2 and already started discussing and sharing about some of the pilikia shared by their ahupua‘a. They were glad to put these issues to paper and that there would be a step taken in the forward direction by DHHL.

6.20.24 - MCH-CRP Beneficiary Meeting #2
5-7PM @ Kūlana ‘Ō‘iwi Hālau

- **Attendees**: Community members from Kalama‘ula, Kapa‘akea, and Kamiloloa One Alii: Pinky Gaspar, Lehua Kauka (Kalama‘ula-Pres.), Lawrence Lasua (Kalama‘ula-Treasurer), Kalani Johnston (Kalama‘ula-BOD), Michael Kahinu, (Kalama‘ula-BOD) Kaleo Crivello (Kalama‘ula), Nani Kahinu (Kalama‘ula), Bridget Mowat (KHA-Rep), Sybil Lopez (SCHHA), Hala Pa Kala (KOHA-Pres.),Todd Ragsdale (KOHA-Rep), Marina Lafaele, Maverick Kaulia, Kapua Lauifi, Henry Paleka, Jessie Leilani Wallace, Irene Kaahanui, Judi Caparida, Monique Ocampo, Gayla Haliniak, Kazan Dela Cruz, Winnifred Lopez, Miriam Kikukawa, Phil Stephens, Lorena Atchinson, Kawika Domingo, Keani Rawlins, Dwayne Kala, Carla DeAngelo;
  MCH-CRP Team members: Nancy McPherson (DHHL), Katy Mokuau and Heather Place (SM), Cody Winchester (G70)
- **Dinner**: Na Ike provided
- **Purpose**: Discussing Problems in their Ahupua‘a that could be potential priority projects for MCH-CRP plan.
- **Materials Shared:** Powerpoint presentation slide deck, MCH-CRP Tri-fold brochure, Maps, Comment Cards

Format:

1. Recap of Introduction of MCH-CRP Plan (Project Slides from Workshop #1 May 13, 2024)
2. Ahupua‘a Ha‘awina:

a. Pilikia
b. Manawa
c. Waiwai
    i. Kalama‘ula:
        1. Erosion/Flooding: Shoreline erosion, wind erosion, swales up Mauka
        2. Drought: Animal Management, Land Management (swales), Vegetation management (native, invasive, intentional vegetation)
        3. Maintenance: Streams/Culverts (DOT/COM), Kapuaiwa, Kalanianaole
        4. Engineering: Kūlana ‘Ō‘iwi, Kaunakakai Wharf
    ii. Kapa‘akea:
        1. King Tides (High high tides), Drainage: mauka→Makai (sedimentation), Erosion, Cesspools, Pu‘u One Fishpond, Culvert/River Maintenance, Invasive Species(kiawe), Flooding, Water Diversions, Relocation,
    iii. Kamiloloa:
        1. Flooding, erosion, King tides, Emergency evacuation, Diversion of rivers
        2. Revegetate beach dunes to hold sand in place, revegetate mauka area to reduce erosion and runoff, Study waterflow of springs, Poor absorption and drainage
        3. Revegetate the mauka lands to reduce erosion, need mauka to makai solutions, Invasive species (limu, deer), Need a hydrologic data for Molokai south shore, restore water in ahupua‘a→restore stream diversions

Kalamaʻula:

Setting and Issues:

- Kapuaiwa Grove (Coconut Grove) is a historical and cultural place on Molokai
  - Mites are killing the coconut trees from the top→down
- Need to know jurisdiction of area for workforce or funding to do cleaning of mites of remaining coconuts, area maintenance, etc.
- Erosion (mauka, shoreline, wind, etc) in areas cause major flooding in low lying areas
- Culvert, stream, and river maintenance need to be considered to lessen the amount of water damage
- Throughout the years drought has been a big issue.
  - Axis Deer have been eating our crops, native plants, etc causing less vegetation holding the sediment.
- Kahinu ʻOhana has dealt with major flooding since the construction of Kūlana ʻŌiwi leaving all water to flow into the Kahinuʻs yard.
- Education is a big talk: Animal Management, Land Management, Native/Invasive Species,
- King Tides have been higher levels at a more frequent rate → causing shoreline erosion to increase
- Kaunakakai Wharf - Since the covering of culverts, the ocean/shoreline currents have altered drastically

Mitigation Strategies:

1. Kapuaiwa Grove: Mites are killing coconut trees
   a. Potential Solutions: Controlled burns or cutting
   b. WORKFORCE: Off-island contracts are getting these cleaning jobs. Need to keep the jobs local.
   c. JURISDICTION: County, State, Fire: for funding, workforce.
      i. Keeping work/funds in community
2. EROSION
   a. Shoreline erosion
   b. Wind Erosion
   c. Swales up Mauka
3. FLOOD
   a. Mauka to Makai
   b. Culvert Maintenance
4. DROUGHT
   a. Deer
      i. Animal Management
      ii. Land management
         1. Swales
      iii. Vegetation management
         1. Native species
         2. Invasive species
         3. Vegetation that deer like to eat so they won't eat crops, etc
5. MAINTENANCE
   a. Streams/Culverts: Jurisdiction?
   b. Kapuaiwa
   c. Kalanianaole
6. BAD ENGINEERING
   a. Kūlana ʻŌʻiwi
      i. engineering has caused many flooding for neighbors.
   b. Kaunakakai Wharf
      i. Causes ocean currents to build up sand/mud/silt and decreases the population of native limu. This causes increased population of invasive limu such as Gorilla Ogo.

What are some Manawa in your ʻAhupuaʻa?

8 Realms of Decision Making

1. MAINTENANCE:
   a. Kapuaiwa
   b. Kalanianaole
   c. Kiowea
   d. Including Rivers, streams, culverts, and parks.
2. RESTORATION
   a. Mauka
      i. Regenerate Management
      ii. Animal Management
         1. Education
      iii. Erosion
      iv. Native Planting
         1. Ohiʻa
      v. Kumu Laʻau Wao
   b. Makai
      i. Shoreline Erosion
      ii. Springs → Limu
      iii. Marine Life/Reef
   c. Moʻolelo
      i. Punawai
      ii.
3. EDUCATION
   a. Wao Aku
   b. Ae ʻĀina
   c. Stewardship of the ʻĀina - Kumu Lipo
   d. Management
      i. Animal Management
      ii. Land Management
      iii. Vegetation Management for Invasive and Native species

Kapaʻakea:

What is the pilikia?

- King Tides
- Drainage: Mauka to Makai-Floods, Sedimentation
- Erosion: itʻs different from east to west
- Cesspools
- Puʻuone Fishpond
  - walls need repair
  - Culverts blocked from feeding Puʻuone
- Culvert/River Maintenance
- Kiawe Trees soak up ground water for discharge, our native trees are gone
- Flooding and moving out of kapaʻakea
- Mauka Water Diversions: how do we fix and how do we fix?

Themes:
-**Hoʻopulapula:**
Working for all the people

-**ʻAi Aina:** Practice was that we have food from mauka to makai

-**Working on this together**
-Prompt: **Trust for the process** and start the projects

What are some Waiwai in your ‘Ahupua‘a?

- Fishing, Crabbing, and acts as buffer for Mangroves
- Fishponds to be restored
- Spring water/By culverts that may have blocked for this

Aunty Leilani (Shared):

- Relocation due to flooding conditions:
  - Homestead Relocation: She doesn‘t want her mo‘opuna to deal with this so she requested a relocation to Kalama‘ula homestead at the last Hawaiian Homes Commission meeting
  - Concerns:
    - who would be responsible for the new house costs and construction and what, She wants DHHL to build her a new house
    - What happens to the houses when they are left after move out from Kapa‘akea
    - Wonders how many of the others want to move and need to work on a plan and options available.
  - The rest of Aunty Leilani‘s comments were noted on the maps

Aunty Bridgett-(Shared):

From Aunty Gayla‘s side all the way to Rawlins side the erosion is different and may not be the same processes
-Our trees are gone
-Mangroves holds in the land & until we find out more then restore fishpond then removal
King tides come through the process and live in the middle row, middle stream
Water process:
-Backfill cemetery and fire dept to fill and water that comes will
Didn‘t want to wait and the water diversion has affected everyone and flooding
-County & DHHL:
Processes of removal or readjusting after flood then that affected more areas and lessees also and some of it my make it worse.
-Greenleaf beach areas king tides inundation
-Makai:

Manawa:
-Brackish water and need for mauka resilience:
-We can know what is the historical problems and diversions & opportunity to apply for grants and mālama

Kapa‘akea Resident (shared):

The process: others in Kapa‘akea will speak when they have no idea and that‘s not fair, other‘s shouldn‘t be talking to you about oceanside issues
-Feedback: That it felt we (facilitators) decided for us before we came here
Main concern: rights, livelihood,
-When asked “How can we remedy what she is feeling about others speaking from Kapa‘akea?”, her suggestion was to: Have Separate Meetings, don‘t put all of Kapa‘akea together: three rows of residential and have different issues, we all hold individual leases
-When asked for an issues or manawa? “I Don‘t need anything from this plan or the process, I took care of myself”
-My other neighbors want to come
-Have no issues with this so she doesn‘t have that concern for her property, etc.
-MOC: Kūpuna asked her for help & they camped out in her office.
-Roadway: DOT-There was a hump that Aunty Leilani fought against and that hump would have pushed water down and she wouldn’t flood.

Humps were installed in Kapa‘akea, etc.
-Talk story with other ahupua‘a

Kamiloloa Group:

Todd

Setting and Issues:

- Todd has a lease for the property furthest west along the coast.
- Home experiences flooding during heavy rain events. Flooding is typically caused by overflowing of the ravine.
  - Silt, branches, and detritus flow into the gulch, raising water levels and impeding stream flow
  - The mouth of the stream becomes obstructed branches and sediment, preventing the water from flowing out to the ocean. As a result, the gulch channels backs up and overflows
  - Floodwaters from Mauka inundate the highway with sediment and debris, obstructing access and complicating emergency evacuation efforts.
  - Residents are uncertain about jurisdiction and whether they are permitted to clear the gulches themselves. They are also unsure of whom to contact when the ravine channels become blocked or the roads are covered in sediment.
- Flooding does not occur during normal rains. Only during heavy rains and when the ravines are full of sediment and overflow.
- Wave induced flooding is less of a concern.
- King tides have been observed but water does not reach his house.
- 2011 Tsunami brought waves up to the makai edge of his home. The waves were very shallow, only one or two inches deep
- The direction of water flowing through the gulch adjacent to his home was diverted when the highway bridge was constructed. The water used to flow between the neighboring houses. Now when it overflows the flood water threatens his home.

Proposed Mitigations:

- Beach nourishment and berm enhancement in front of vulnerable houses. Use a geotextile mattress and overlay with sand to build up dunes. This could be a “soft solution” to protect homes.
- Revegetate the beach dunes to hold the sand in place
  - Do not use naupaka. It erodes faster and catches rubbish
  - Use grasses instead.
- Revegetate mauka area to reduce erosion and runoff. Use animal-proof plants that are drought tolerant
  - Todd is growing mezcal blue agave on his property, and they are doing great. This could be an option that would also provide economic benefits as a marketable product. Agave is a regenerate plant like kalo. Molokai could become known as the next big Tequila region - “molokai Moonshine”
- Study the waterflow of springs. Understand the mauka to makai connection
- Construct vertical evacuation area to a location out of flood zone
- A high point could be bulldozed to create a flat area for cars to park
- A simple building or pavilion could be constructed at the evacuation point to provide shelter and refuge for beneficiaries
- The evacuation road doesn‘t need to be paved. It can be just a simple unimproved road.
- Deployable solar-powered signs could be placed along highway before emergency events to inform residents of the evacuation route
- The mauka roads could serve as a first step for future managed retreat. Having the roads in place now would make it easier to relocate people when needed.

Kawika Domingo
Setting and Issues:

- Kawika has a lease for a property along the coast. Has experienced flooding first hand
- He has had to use sandbags to protect his property from encroaching flood waters. He has needed sandbags stacked up to 3 ft high on occasions
- Very familiar and knowledgeable about the lands mauka Kamiloloa - Makakupa'ia. He has hunting in the area for many years
- He has observed the gulches getting worse over time. Chronic erosion has filled them with sediment, making them significantly shallower than they used to be
- Springs have been observed in the mauka area. Concern over springs getting clogged with sediment and pollution getting to ocean through groundwater

Proposed Mitigations:

- Dredge out the gulches to get the rubbish out
- Install silt fencing to reduce sediment from entering the gulch
- Construct vertical evacuation roads. He knows areas that would be safe gathering areas

Dwayne & Hala Pa Kala
Setting and Issues:

- Dwayne and Hala have a house along the coast
- General concern of poor absorption and drainage. Rainwater can't percolate into the ground. Concern for king tides causing coastal flooding of home
- The mauka lands experience chronic erosions
    - There are no trees or shrubs to hold the soil in place
    - Toxins are present in the soils from past ranching and agricultural use of the lands
- The highway regularly gets inundated with sediment. DOT comes to clear the road but it takes a long time and causes disruption

Proposed Mitigations:

- Revegetate the mauka lands to reduce erosions
    - Plant vegetation in the gulches to filter the water and retain soils. Create testing areas along the gulch with different kinds of plants to see what works best "Living Laboratory"
    - Hemp can remove toxins from the ground. Economic VALUE
- Leave the pickleweed in place along the shoreline. The pickleweed does a good job of holding sand in place and filtering water
- Need mauka to makai solutions
- A better process to clear covered roadways is needed. Community volunteers could be deployed to assist

What are the 2 issues that affect all of us? Don't Divide us.

- Gorilla Ogo
    - Smothering reef, fishponds, and shoreline
- Solutions: Dune Fences→catches ogo to keep out of fishponds and shoreline→ restore Punawai
- Need Hydrologic data for Molokai South Shore - UH Study
    - Figure out why it's so dry
- Restore Water in Ahupua'a → Restore stream diversions (70's+80's)
- DHHL dropped boulders in "spring" which is actually a lavatube.
- Bill Puleloa-told to plug it. Boy Puaoi - Compromised the flow → anaerobic smells bad
- Kamiloloa's sand is going down coast, building up at Kaloko'eli
- Need placed to go Mauka - Box Power - get small goals going.
- Plants are holding the sand and land. Look at Steve Chakins's shrimp ponds– the ones with vegetation are okay, the ones without are getting eroded.
- Revegetating the gulches and land.
- Accretion - Deer Poop after the Big Rain-Rubbish, Tires all washed down, carcasses.
- Papa covered with mud + debris
- State DOT - Hwys Pushed that soil down makai 15-20ft deep.
- Mauka Lands not Being taken cared of

- Need more detention basins (Retain storm water)
- Clean up land, control deer, Select Plants deer don't eat (Tiare, taro all over)
- Just fence the area you're revegetating
- DOFAW/TNC bring to next workshop - Pepe'opae Plants
- Drainage - Saltrate upwelling yards will get salties -
- 1 acre lots - fruit trees can't grow in salty soil
- Irrigation water trucked in - above raised bed, deep irrigation
- County water

ASSET/BENEFIT: DHHL have LV + Zoning authority can cut red tape in half, don't have to go through county SMA permitting.
Todd is a KS grad - asset
Larry Rawlin's ROE - that's where the water comes out

- **Outcome/Next Steps:** (Suggestions made)
    - Compile problems, opportunities, and assets into priority projects
    - Compile projects into maps
    - Future Workshops: Scheduled workshops to further discuss resilience, options, and actionable plans.
    - Schedule Huaka'i for mauka for 3 ahupua'a
    - Schedule a meeting with DOT and COM about jurisdiction on Culvert/stream maintenance (suggested by Lehua Kauka)

8.8.24 - MCH-CRP Beneficiary Meeting #3
@ OHA Conference Room Kūlana ʻŌʻiwi

- **Attendees**: Community members from Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi: Lehua Kauka (Kalamaʻula-Pres.), Kalani Johnston (Kalamaʻula-Board of Director), Mike Kahinu (Kalamaʻula-Board of Director), Tina Schonely (KHA-Treasurer), Todd Ragsdale (KOHA-Rep), Nani Kahinu (Kalamaʻula), Vana Naehu, Pelekane Tamashiro.
  Resource/Experts in their field: Zhantell Dudoit Lindo (COM Emergency Operations Center), Roger Apuna (COM Water), Keo Hirata (COM, MIBC), Petrisha Alvarez and Maria Angst (DAR), Lee Marquez and Pomai Simms (DOT), Shae Lauifi, Vana Naehu and Tiana Puaa (KHM), Edrian Apo and MP Kamakana (MHLA), Lani Caparida (MPD), Tara Owens (UH Sea Grant);
  MCH-CRP Team members: Nancy McPherson (DHHL), Katy Mokuau and Heather Place (SM), Barbara Natale and Cody Winchester (G70).
- **Dinner**: Na Ike
- **Purpose**: Discussing resilience and addressing current hazards in the DHHL homestead communities of Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi, with the attendance of the Resource/Experts on Molokai to attend per the discussion at the last Planning Hui Meeting
- **Materials Shared:** Powerpoint presentation slide deck, MCH-CRP Tri-fold brochure, Maps, Comment Cards
- **Format:**
  - Intro: (20 mins) Pule & Get Food
  - Intro (5 minutes)
  - Small 5 pages Printout Handout
    - Agenda
    - Brochure/Timeline
    - Next steps
- Priority Sites: (1 hr 10 mins)–(Have Maps with Priority Site Options on them numbered)
- 20 mins: SM/G70 Lead: Per Ahupuaʻa Priority Site Review and get any new ones missed or changes/edits?
- 20 mins: Association Members lead
  - What is your top 5?
    - Then Board Association Members will lead
    - Put 5 stickers on your choices on the priority sites on the maps
- 15mins: Final Priority Sites per each ahupuaʻa
  - Each ahupuaʻa shares (5 mins each)
- 15 mins: Priority Sites-Which overlap? Combo some?
- 1 hr: Options: What are the options?
- Experts around to visit each ahupuaʻa to give input
- Zoom: Experts in Break out rooms

Kamiloloa

- Mauka Restoration: Aerials & maps (Gather & review old aerials and maps to focus on mauka restoration
  - Restoration efforts, Plant selection, partnerships and resources
- Public Safety and Access
  - Evacuation roads, road management, signage and management, inventory needs, education and drills, evacuation study, resilience hubs, communication improvement
- Economic and Community Development
  - Housing and Land Use (Interest in Mauka Lots, Innovative Housing), Economic Aspects (Resilient Economic Models), Partnerships and Resources (Homestead Associations)

- Shoreline and Ocean/Makai Restoration
  - Aliʻi Fishpond and Walls, Mangrove Management/Replacement (Discussion on Removal Possibilities, Shoreline Vegetation, Resources and Techniques)
- Partnerships and Resources
  - Molokai Land Trust, Consultants and Data
- Drainage and Channel Maintenance
  - Drainage Management, Flooding, Channel Maintenance

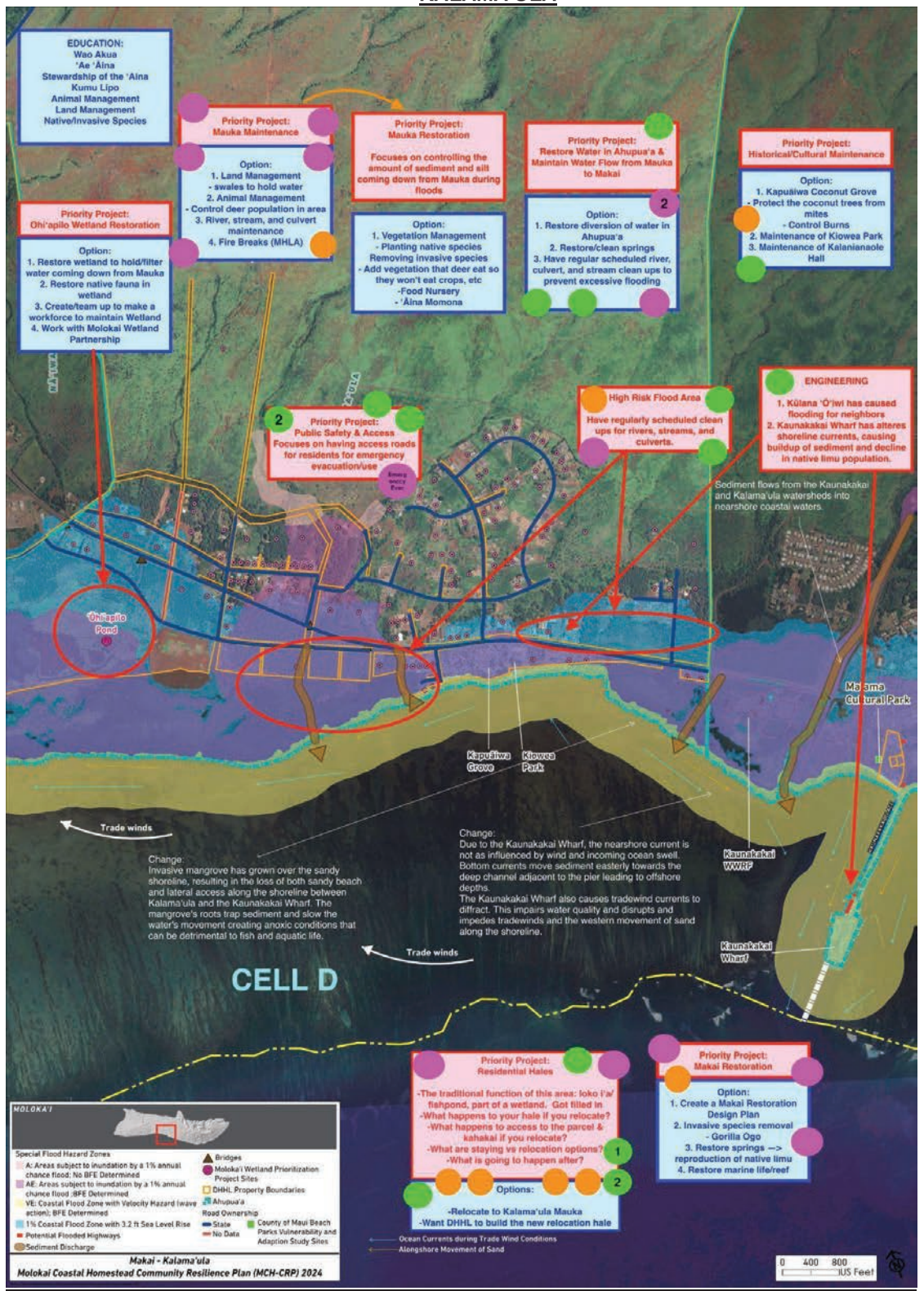
Kapaʻakea

- Jurisdiction and Site Management (Agencies and Jurisdiction)
- Fishpond and Wetland Management
  - Kapaʻakea Fishpond, Wetland and Loko Iʻa
- Flooding and Drainage
  - Makai Drainage
  - Mauka Drainage
- Residential and Infrastructure
- Emergency Preparedness and Resilience
  - Emergency Proclamation and Planning, Educational Component
- Partnership and Collaborations (Key Collaboration)
- Prioritized Objectives
  - Identifying priorities such as protecting life, improving the area, and determining whether to protect the shoreline or relocate inland (mauka).
  - Bringing information back to the board for decision-making on immediate and long-term objectives.
  - Enhancing the community's understanding and involvement in managing their environment, with an emphasis on self-reliance and cultural integration.

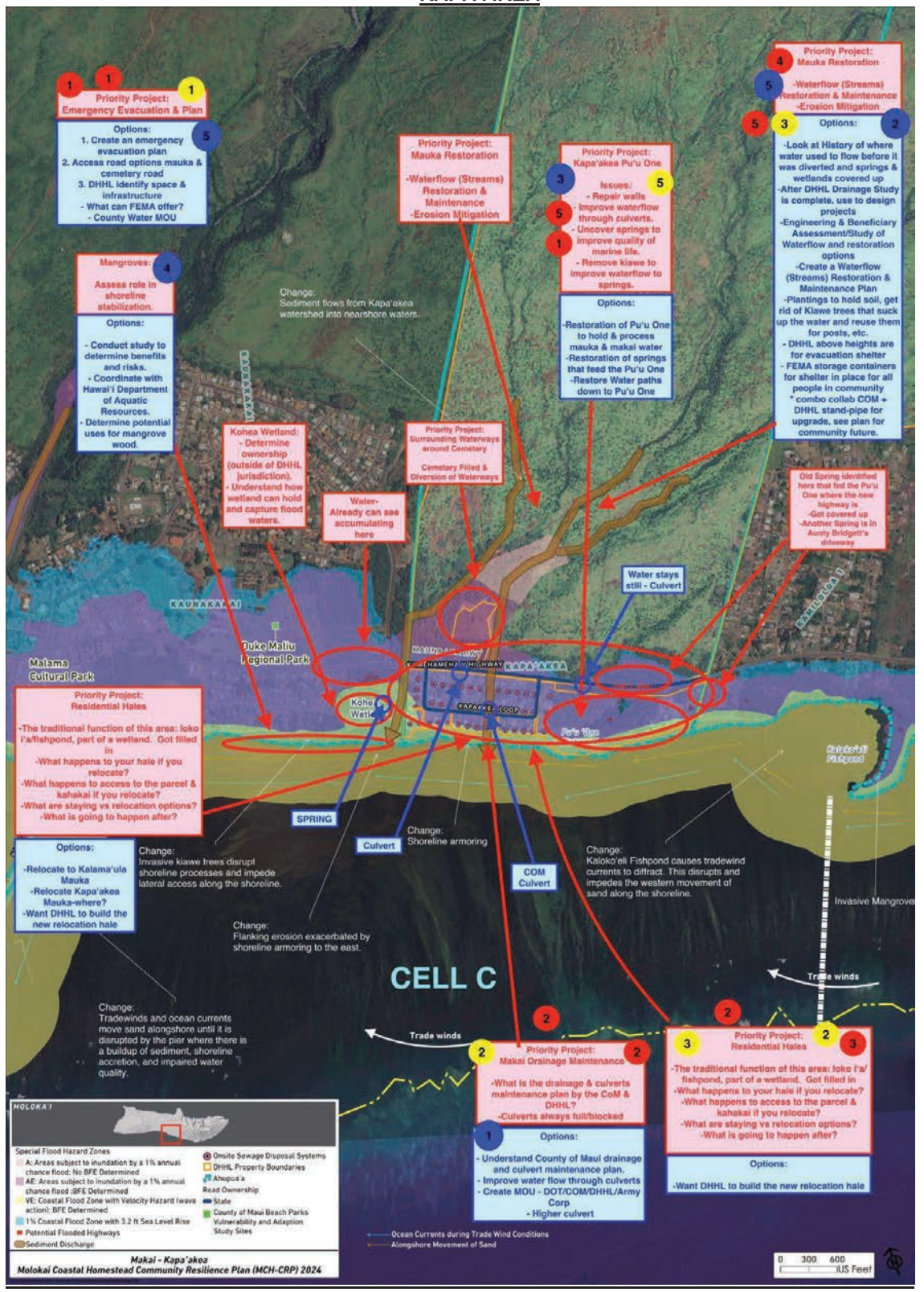
Kalamaʻula

- Public Safety and Access
  - Street Lighting and Safety Concerns, Emergency Services and Evacuation, Community Involvement in Planning
- Infrastructure and Maintenance (Roads and Culvert)
- Environmental Concerns
  - Mangrove and Invasive Species Management, Flooding and Vegetation
- Cultural and Historical Preservation
  - Historical Sites and Environmental Projects, Collaborations for Restoration
- Community Resilience and Education (Building Community Capacity, Long-Term Planning)
- Future Planning and Funding (Priority Projects, Funding and Resources)

KALAMA‘ULA



KAPA‘AKEA



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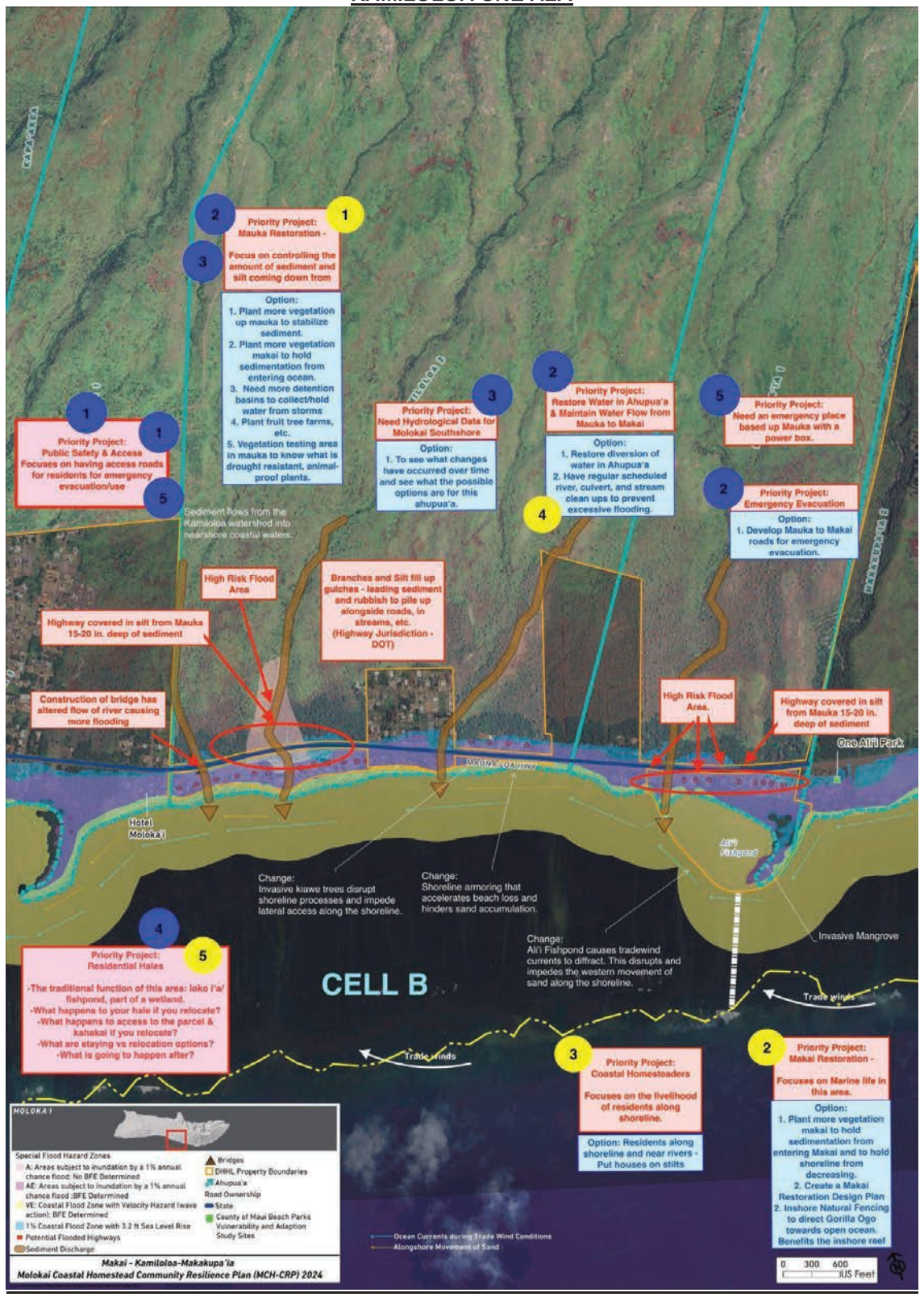


7.30.24 - MCH-CRP Planning Hui Meeting #4
Via Zoom 5pm-6pm

Attendees: Bridget Mowat, Mango Stephens, Sybil Lopez, Tina Schonely, Hala Pa Kala, Sumu Asano
MCH-CRP Team members: Katy Mokuau, Heather Place, Nancy McPherson, Cody Winchester

- Include in Plan that DHHL will apply for funding and be the funding mechanism that the funding will be funneled through and Implementation by Homestead Associations and DHHL
- In Options:
  - Add Policies per each priority project: need to add that onto priority project options
- Nancy will document DHHL/State DOT/CoM Public Works, changes over time and will go through that
- Need/Request: Create access/transportation maps for access roads
  - Check if G70 has the road maps they had done previously
  - Can G70 add in any more of the access roads that DHHL has for mauka that are dirt roads
    - Cinder Pit Road
    - Heights/Makakupa'ia-access is easier
      - has few road above heights goes up into the forest,
      - road up to makakupa'ia goes straight up into the forest
      - Above Pano place-mostly looking at for evacuation purposes
  - MHLA/Cattle - Lessee but haven't grazed above and were responsible for maintaining fire breaks, and needs to be addressed for effects now and how it affects the future
    - Need to figure out a better way to manage but what does that mean?
    - Uncle Mango–If cattle is moved every 2-3 days then the grass stays green and intact and still needs fences and firebreaks are also a water break
- Evacuation Needs:
  - Kapa'akea Emergency Evacuation & Plan with access road options mauka & cemetery road
    - Easier to access and relocate
    - And who would maintain and give access & clear road
  - Fire Dept access road
- Add to all Ahupua'a Priority Site: Public Safety and access
- Add in-Water Restoration to Kalama'ula & other, if it's not there
  - Kalama'ula - Restore Water and maintain waterflow
  - Kapa'akea - Mauka Restoration (restore water flow)
  - Kamiloloa One Alii- Mauka Restoration (restore water flow)

Planning for Ahupua'a Huaka'i:

Kalama'ula:

- Makai: Kiowea Inland Stream - Mangrove infestation. How much overgrowth of mangrove? How can we use mangrove as a cost benefit?
- Updated roads for access in case of emergency

Kapa'akea:

- Mauka: Road that takes you to the cinder pit leads to Mowat's gate
- Need a ROE for Deldrene Mowat
- Access to Mauka roads - there is a road that the fire department uses.
- Updated roads for access in case of emergency

Kamiloloa One Aliʻi:

- Mauka Roads are easier to access
- Kamiloloa Road
- Makakupaʻia Road
- Updated roads for access in case of emergency
- Emergency Evacuation area: Above Pano Place
    - Road after cemetery → look at all the different options

Jurisdiction: Include state entities, DOT, Gulch
Cattle history MHLA: Cattle is not a good way to prevent fire, unless done correctly. Need fire breaks. Bring water down to ocean. Mauka →Makai wai back to the people. Really need to add mauka attributes because it will affect on the bottom (makai).

8.26.24 - Lessees, ROE, License, Large Landowners @ OHA Conference Room Kūlana ʻŌʻiwi

Attendees: Lehua Kauka (Kalamaʻula-Pres.) & Mike Kahinu (Kalamaʻula-Board of Directors), Bridget Mowat (Kapaʻakea-Rep.), Janice Ogoshi (Kalaiakamanu Hou Congregational Church), Shirley Nanod (Molokai Church of God), Hauʻoli & Jamie Kalama (The Nazarene Church-Molokai),
MCH-CRP Team members: Nancy McPherson (DHHL), Heather Place & Katy Mokuau (SM)

What have they been experiencing throughout the years?

Flooding:

- When Kalamaʻula floods, the water comes up to the stairs of the church.
- Molokai Naz, On the hill so flooding does not affect them as much, But because the church is on a hill, this hill is full of rocks. They are working with the rock terrain they have, and with whatever water that they have to revegetate the land surrounding the church. Water is needed.
- Wildfire prevention may need to take action. Big heart behind restoring native plants, restoring mauka , keeping the sediment at a low for erosion. There have been conversations where members of the congregation have fear or worry about flooding.
- Mike Kahinu, Flooding is the main issue. The shoreline eroding away. Feel for their community that lives right on the shoreline.
- Church of God - Their church is lower, they live at the church. The area where the church is is like a bowl where it collects water and floods. The water comes up to the stairs. There is a spring underneath the church or in the area. The plants in that area are thriving, A group is coming to restore the church because of termites. Septic for Church of the God. But there is a septic between Church of God and Pomaikaʻi church.
- King tides have flooded Aunty Bridgetʻs Septic
- Looking at the water pipeline from oloolo to kalamaula needs to be replaced because it is corroding.

Plant Restoration:

- Lehua Kauka, as president of Kalamaula Homestead Association. Writing grants for Kalamaʻula Nursery - growing native plants, and restoring the ahupuaʻa. They know that everything that affects mauka will
- SLR and change of currents have altered shorelines of all the islands not just MKK.

Mauka Restoration:

- Go Mauka. When you relocate to mauka, they need to MALAMA. Let God and Nature do its course, buffer the land and sea, and move mauka. The aina cannot breathe. Move Mauka, maintain , malama, If people want to stay,
- To grow up mauka, What is still here that can be used. Have the studies done for mauka now.
- In 10 years from now, The churches are looking to eventually move mauka because there is no area or location that can have them be safe
- One time the parking lot was a lake. Now starting to think about relocating Mauka.
- Majority are saying that we need to spend our time and money wisely. Move mauka and stop spending so much time on shoreline whereas we can go up mauka, move residents mauka, and start malamaing the land up there. Let the shoreline go back to wetlands and be a buffer for land/sea.
- We need the funds to fund backhoes, tractors, etc. because we have the manpower just NOT the equipment.
- Hoʻolehua Water system, where they only have potable water. Whereas they can use ag water for Ag purposes.

8.27 & 10.18.24 - Resource/Expert Meeting
DHHL Molokai District Office
David Bush, Elroy Mollena, Myron Poepoe

Attendees: David Bush & Elroy Mollena & Myron Poepoe (DHHL-Water), Katy Mokuau & Heather Place (SM), Nancy McPherson (DHHL Planner)

Go over basics of MCH-CRP with DHHL Water Operations Team and share maps, Beneficiary Meeting #2 priorities and discuss water/flooding/hazards and current emergency planning. All shared upcoming timeline of Beneficiary Meetings and collaboration meetings.

Water - DHHL Lines:

- West: Did change the laterals going west way to HDPE (High Density) copper is easier to maintain and repair.
- East: Not able to maintain and repair going to east which is the last house before the wastewater plant.
- DHHL is the only line in the purveyors system: that can provide for all the 3–CoM & Kawela & MKK Ranch
- CoM interconnection above Kalamaʻula
- Every year, CoM needs assistance fr DHHL
    - Red hill is where the line splits for the water for town to Kawela.
    - Need to expand for the expansion of homestead.
- Well is 1500ft whereas Kawelaʻs well is only 250 ft
    - Kawela has been testing with more salinity in water. Need to move higher for well
- Emergency Preparedness with EOC: DHHL avail to work w/ CoM in terms of emergency
    - Havenʻt run through scenarios-should start with Zhan/EOC
- Every 5 years to do the copper testing
- Every Year-By product testing

Water by Ahupuaʻa:

Kalamaʻula

- By Aunty Kauila Reyes was in the water. It was in water and manhole was in water where the land used to be
    - Moved the pipeline up 20 ft away from the shoreline
- Kalaniʻs property is right by the shoreline and fishpond.
- Likelike: Drainage that comes from Brent Nakihei - 12in main line going through river bed, then a 6-8in higher up over river bed by Kalapanaʻs hale.
- Kalawe resident in Kalamaula Mauka - small river right there there is a water line going through that river

Kamiloloa

- CoM meter on DHHL Parcel up top lot
- County was supposed to drill a well up here years ago- nothing yet

Needs Going Forward:

- Extra Storage tank built up above Kalamaʻula so itʻs above people, not above in Kalae
    - In terms of emergency, the extra tank can be used for emergency distribution of water to the residents in that area.
    - Need larger pump from 200-500 pump

- In terms of evacuation, the paved road to the tank above Kalamaʻula would be the best bet and it connects with Kalamaʻula Mauka road (kalawʻs)
- MIS- DHHL
    - Need more manpower
    - Kalamaʻula-Potential to connect at blow out sections MIS
- Wells: Solar/PV project scratched, because MECO wouldnʻt allow
    - Solar/PV/ needed for the pumps
    - Have- Back Up Generators: 10-12 days generator
        - both pumps and both boosters running, 15 days generator ran, but refuel
        - MKK Ranch has generator so they can
        - DHHL has stub out for interconnection with CoM to help push that water to DHHL
    - MOU- with CoM & DHHL helps them all the time
        - CoM-35 gal/min & DHHL
        - CoM Pays Diesel and Water use-get billed
- Meyerʻs-DHHL Provides Meyerʻs lands

Wildfire:

- Kamiloloa: Myron has been going up and cutting back 30 ft on backside of the fenceline
- Kalamaʻula: County approached to do a back burn. Did one back 2014/2015 with Maui FD, and did firebreaks with controlled burn to train
    - MOU/Access needed.
    - The road up to the water tanks that will be the access for the Upper Kalamaʻula lot

Drainage/Flooding:

- Need more Staffing and Heavy Equipment to clear the drainageways.
- Current Equipment: Back Hoe, Mini Excavator, Mini Mini Ex.
- Equipment Needed: Big Excavator, 2 Polaris (Water system access & monitoring)

Water Resiliency:

- Need to build capacity for Resiliency (fire breaks, drainage, water access)

Dec/Jan 2023-Flooding

Kapaʻakea:

- Myron and David were able to go to Kapaʻakea the next morning after the flood. Took them the whole day to clean.
- The loop road was cleared. Went into the driveways
- Pushed debris and sediment on the side, and waited until it cleared up to clear debris
- DOT and CoM were responding down in Manaʻe, so only DHHL responded

Kalamaʻula

- Kekama/Helms had to respond
- The only one that Myron cleans on a regular

All Areas:

- DHHL Water System
    - The only water service on-island with back up electricity generation! CoM has no back up generators for their water supply/pump
    - NEED: Agreement/MOU with CoM/EoC/ for water use & aid
    - Alternative water sources are needed
        - More storage tanks
        - Water Catchment
        - Water/Air Generators, etc.

- Flood/Drainage Study
  - Update: H& H Hydraulics, contractor
  - CWRM- Water specialist with and Stream Diversions and History diversions need to be looked into for future flood planning
  - ‘Aina Momona is working on water diversions and should go look at their project for reference
  - Projectile/‘Opala Removal will be helpful to clear obstructions & hazards- contact CoM EP&S to schedule pickups/haul aways
- Mauka Restoration
  - Restore watershed Mauka Portion-in between Mauka restoration would be necessary. Nothing is being done outside of the fenceline for the watershed and extended restoration where animals/ungulates food sources are needed where all are in collaboration.
  - Lowland: Kipuka‘s at water sources needed also
- Emergency/Evacuation:
  - Coastal Homesteads could have options for portable boat ramps between designated house
  - HIEMA/MEMA: Emergency plan was submitted by Halealoha, need to request and probably update
  - Emergency Routes: Access Points & Gate access needed to be mapped and coordinated with HHA‘s.
  - Safety Zones/Evacuation sites with CoM & DHHL Partnership needed, as necessary for water use/access in some areas
    - Partnership/Designation/Perimeter for Wildfire & Defense space

Kalama‘ula:
- Water System/Emergency/Evacuation
  - Kalama‘ula: Water Tank, Can tap into for Emergency Service, has reserve, has paved emergency access road & has back up generators
  - DHHL/CoM Agreement in process for mutual aid
- Wildfire:
  - Firebreaks work in process, hold up was with machines CoM Molokai was waiting for

Kamiloloa/Kahinani:
- Water System/Emergency/Evacuation
  - Kamiloloa: CoM Water Tank, off dirt road that needs 4wheel drive. No backup generator power source, has makai booster.
    - This is the water storage for the heights.
    - NEED:
      - Access-Need better access to the Water Tank
      - Backup Energy source needed for use of tank/pump
      - DHHL/CoM Agreement in process for mutual aid & access to gate & water use at tank, may need to be installed
  - Above Kamiloloa & Makakupa‘ia and One Ali‘i there is no water source/storage tank for DHHL or CoM. There are old wells up there but no need for them to pump more
  - Evacuation Site
    - Kamiloloa had been identified by Kapa‘akea & Kamiloloa One Ali‘i as Emergency site above 4th Heights/Kahinani where there could be access to the CoM Water Tank.
      - Needs identified above
      - Need Emergency Plan for Kapa‘akea & Kamiloloa One Ali‘i homesteads and what that means for

Next Huaka‘i scheduled for: October 19 & November options for David/Elroy requested to attend

9.26.24 - Resource/Experts Technical Advisor Meeting
12-2PM @ SM Office

- **Attendees**: Kalani Johnston (Kalama‘ula-Board of Director), Mango Stephens (Kalama‘ula Mauka), Tina Schonely (KHA-Treasurer) & Jordan/Marissa Poaipuni (KHA-Secretary), Todd Ragsdale (KOHA-Rep.), Sybil Lopez (SCHHA), Zhantell Lindo (CoM EOC), Ke‘o Hirata (Molokai Burial Council), Councilmember Rawlins-Fernandez, Juanita Colon (Rural Water), David Bush & Elroy Mollena (DHHL-Molokai District Office-Water Operators), Harrison Togia (UH Seas, CoM County & State Roads Assessments Team), Tara Owens (CoM & UH SeaGrant-Coastal Process/Hazards Specialist), Butch Haase (Molokai Land Trust), Kristen Harmon & Helen Raine (MWP/Pacific Birds), Henry Lindo (CoM Fire), Thorne Abbott (DHHL SM-SEMP Planner),
  MCH-CRP Team members: Nancy McPherson (DHHL), Katy Mokuau and Heather Place (SM), Barbara Natale (G70).
- **Lunch**: Maka‘s Korner: Korean Chicken, Green Salad, Rice
- **Purpose**: Discussing resilience and brainstorming together to address current hazards in the DHHL homestead communities of Kalama‘ula, Kapa‘akea, and Kamiloloa One Ali‘i as presented by the Beneficiary Representatives by each ahupua‘a.
- **Materials Shared:** Powerpoint presentation slide deck, MCH-CRP Tri-fold brochure, Maps, Comment Cards

- **Kalamaula (Kalani report):**
  - Kalani highlighted issues with flooding, where sediment is carried down during heavy rains.
  - The state manages cleaning on the mauka (mountain) side of the culvert but not the makai (ocean) side, creating uncertainty about jurisdiction.
  - The insufficient management leads to water flowing to the sides, resulting in flooding of homes, and relief measures are needed.

- **Kapa‘akea (Tina):**
  - Jordan discussed the impact of continuous heavy rains and flooding in Kapaakea, emphasizing the need for an evacuation plan for events like tsunamis.
  - The region lacks adequate drainage, especially within the ahupua‘a (land division), contributing to flooding in this wetland area.
  - There is a need for assistance or grants for families to cover costs of renovations or potential relocation due to the flooding.
  - Restoration efforts should start from the mauka side to manage sedimentation effectively.

- **Kamiloloa One Alii (Uncle Todd):**
  - Todd noted that most homes are on the makai side of the road, where flooding is highly concentrated.
  - Emphasis was placed on understanding the relationship between mauka (mountain) and makai (ocean) areas for proper restoration of stormwater flow.
  - The plan should focus on mitigating shoreline damage and balancing the brackish water nursery crucial for fish.
  - Suggestions include using water storage tanks to reduce water costs and support agricultural activities.
  - Restoration efforts need to consider past changes in shoreline boundaries and sedimentation, as well as the impact of changing tides and currents on the environment.
  - Coir rolls were proposed as a solution to manage sand and wind, helping maintain natural slopes and stabilize the shoreline.

- **Outcomes/Suggestions per Breakout Groups by Priority Areas**
  - **Water Group:**
    - **Water Supply**: There is a need to bring in treated water. Water sources include wells that went down in 2009, relied upon by both the county and Molokai Ranch. There is a backup generator, but progress on using available funding for water issues is slow. Discussions include backup plans for water catchment systems and natural alternatives to conventional water infrastructure.
    - **Flooding and Stream Maintenance**: Flooding affects all ahupua'a, particularly Kalamaula. Stream maintenance involves working with land management and development to address stream elevation issues, supported by engineering studies and drone surveys.
    - **Stream Path and Drainage**: DHHL (Department of Hawaiian Home Lands) has equipment for stream maintenance but is cautious not to disrupt natural water flow without engineering expertise.
    - **Ololo Laterals**: High salinity is corroding pipes near coastal areas, necessitating replacement of main water lines.
    - **Water Agreements**: A water agreement with the county has expired, requiring renewal.
  - **Conservation Group – Kalama'ula:**
    - **Community Initiatives**: Efforts include plans for a community park and nursery aimed at multi-generational benefits for food security, education, and conservation.
    - **Deer Management**: A proposal is in place to manage deer populations, which could contribute to food security.
    - **Flooding Challenges**: Kalama'ula faces significant flooding from two main rivers. Blocked culverts and debris accumulation near mangrove areas worsen the situation, spreading water and causing damage.
    - **Historical Waterways**: Restoration efforts could involve studying old water channels (auwai) used by ancestors, which could guide current water management.
    - **Land Access Issues**: Access to certain homestead lots in Kalama'ula remains a challenge, with locked gates preventing residents from managing their lands. This is tied to unresolved jurisdictional issues with DHHL and the county.
    - **Limu (Seaweed) and Water Quality**: Community members have learned about limu, noting that freshwater flow is essential for healthy marine ecosystems, including fish habitats.
    - **Firebreaks and Planting**: Planting native species in strategic areas acts as a firebreak and helps prevent erosion.
    - **Reforestation**: Efforts include reforestation above Kalama'ula, with plans to use water sources from Kalai down to support these activities.
  - **Infrastructure Group – Kalama'ula:**
    - Road Management:
    - Deer Management is necessary for Holistic approach/planning
  - **Conservation Group:**
    - **Fish and Coral Monitoring**: Ongoing efforts by DAR focus on monitoring fish and coral health in areas like Kamalo, Kamiloloa, and Pala'au, with priority on marine areas from Kalama'ula to Pala'au.
    - **Erosion Management**: Community members, along with organizations like Molokai Land Trust and the Molokai Watershed Partnership, are addressing erosion concerns.
    - **Wetland and Mangrove Management**: The aim is to manage rather than remove mangroves as part of wetland restoration, focusing on stream restoration with community collaboration.
    - **Stream Team**: The Division of Aquatic Resources (DAR) has a team focusing on streams, seeking to work with homestead associations for data collection and community engagement in stream management.

- **Community Engagement**: Efforts are being made to include residents in conservation plans, emphasizing the importance of community knowledge and permissions for conservation activities along streams.

o **Summary/Recap by each Ahupua'a**

Kalama'ula (Kalani):

- **Mauka Restoration**: Focus on restoration efforts in the upland areas (mauka) to support water flow and conservation.
- **Mangrove Management**: Emphasizing managing mangroves rather than eradicating them to maintain balance in the ecosystem.
- **Jurisdiction Clarification**: Working to determine the appropriate jurisdiction for cleaning out a blocked culvert.
- **Auwai and Aerial Surveys**: Plans to utilize drones for aerial surveys of original water channels (auwai) to aid in restoration and land management.
- **Land Access**: Efforts to assist Wailana in regaining access to her land in Kalamaula, potentially aiding in local restoration and conservation efforts.

Kapa'akea (Tina):

- **Emergency Planning**: Plan to communicate with Nancy about developing an emergency plan.
- **Memorandum of Understanding (MOU)**: Working on an MOU involving the water department and landowners to secure agreements.
- **FEMA Funding**: Aiming to secure FEMA funding to support emergency management and mitigation efforts.
- **Cesspool Options**: Preparing for an upcoming meeting about cesspool management and exploring alternative solutions.

Kamiloloa One Alii (Uncle Todd):

- No specific next steps or actions were mentioned specifically for only Kamiloloa, but lots of the above summary/recap are related to Kamiloloa as well.

10.19.24 - Huakaʻi
Kalamaʻula & Kamiloloa

- **Attendees**: Sumu Asano (KHA-Sgt of Arms), Enoka Nahoʻopiʻi (KHA-VP), Wailana Moses (MLT), Dennis Kamakana (MHLA), Last minute emergency cancellations (Kalamaʻula Board-2)
  MCH-CRP Team members: Nancy McPherson, Katy Mokuau, Heather Place, Cody Winchester
- **Purpose**: To bring and show beneficiaries a different perspective of their Ahupuaʻa and visualize future projects.

- **NOTES:**
  - Water is a big issue in this area. MIS line runs right through this Ahupuaʻa. (Cattle drink from Potable Water lines whereas they could be drinking Ag Water.)
  - 200K Tank would be a perfect area used for an Emergency and Evacuation Area.
    - Water can be used in this area in times of emergency.
  - Land Use
    - Some parts of land are flat and hillsides, could be perfect for residential lands and maybe a resilience center for this community.
    - MHLA is above cattle gate→ Homelani Cemetery→ Puʻu Luahine
      - From 192, has 9 paddocks (rotate animals)
        - Usually had 700 head, but due to recent drought for the last 10 years herd has decreased → 200-300 head now
    - DHHL/COM in process for mutual aid
  - **Suggestions**:
    - Land use: Ag Lands closer to Road should be changed to Residential. Land is too rocky to produce any type of farming. Whereas more mauka can be used for Ag Land.

Location: Kalamaʻula Huakaʻi Attendees: Sumu Asano (KHA-Sgt of Arms), Enoka Nahoʻopiʻi (KHA-VP), Wailana Moses (MLT), Dennis Kamakana (MHLA)
MCH-CRP Team members: Nancy McPherson (DHHL), Katy Mokuau (SM), Heather Place (SM), Cody Winchester (G70)

- Water Tank
  - Tap in for service 200,000 gallon has reserve
  - DHHL Has 2 pumps and generators
  - COM - no generators / 1 pump
  - MIS Line
  - Extension needed
- SM x MHLA: AG lot for cattle feed– fiscal sponsor
- Kalaeloa: Ship to container of cattle
- Wildfires
  - 80ʻs Fire burned all the way up to Kalamaʻula (Red Hill)
  - 2009 Last fire
  - DHHL Options
  - Floating for portable boat ramps between designated houses
- Wildfire prevention (MHLA)
  - Firebreaks
  - USDA had continuous funds for firebreak

- Wildfire land task force
  - Hanalei Lindo, lessee
  - Lance DeSilva, DLNR
  - DOFAW
  - Zhan (Emergency)
- Roads
  - MHLA above cattle gate
- Molokai Homestead Livestock Association (MHLA)
  - From 1992, has 9 paddocks (rotate animals)
  - Usually 700 head
  - With drought for the last 10 years, ranchers have to rotate animals and use all pastures
  - Only 200-300 head now
  - Cow/Calf operation until 500lbs ship out
    - No TB, TB-free only @ this location
    - Need high fencing in areas to protect from deer
  - If drought continues, the amount in their herd will have to be cut down.
  - Dohna Bicoy, USDA
  - Potable Water is feeding to cattle
- For Big/Rain Events: Huge Catchment Systems: Bioswales, Tanks, to hold to grow crops in swales
  - MLT has done this in Kawela and it's working and can start with fencing small area in the
  - swales or bottom of the gulches where rain typically collects

Location: Kamiloloa Huakaʻi Attendees: Sumu Asano (KHA-Sgt of Arms), Enoka Nahoʻopiʻi (KHA-VP), Hala Pa Kala (Kamiloloa Board), Kahekili Pa Kala (Kapaʻakea Board), Wailana Moses (MLT)
MCH-CRP Team (Nancy McPherson, Katy Mokuau, Heather Place, Cody Winchester)

- Kahekili has background in Mauka Restoration with ʻĀina Momonaʻs efforts in Keawanui.
  - He believes filters in bigger rivers will help the amount of debris that reaches our south shore and residents.
    - Filters include big trees laying down perpendicular in river
  - Land looks promising due full coverage of grasses and low count of invasive tree species, i.e. Haole Koa and Kiawe.
  - Suggestion: Have a separate Huakaʻi to look at Keawanuiʻs Mauka Restoration Efforts. Compare the Keawanui to Kamiloloa and Kalamaʻula to see if viable in these areas.
- Water is the issue in this area. COM Water Tank above Kamiloloa- IF/WHEN DHHL moves residents in this area, will DHHL Beneficiaries pay County rates? Will the water come fr CoM?
- Kamiloloa (Above Kahinani Place) would be a viable area for Evacuation and Emergency Area.
  - Suggestion: To open up access gates from 1st, 2nd, and 3rd Heights for emergency access to Mauka.
- Aerial droning for 4WD Road Mapping, River Bed Studies, Erosion Studies, etc.
  - Makai Booster station for height
  - COM - no generator, 1 pump, no backup
  - CWORM: Water specialist with and stream diversions + history diversions
  - Access Points and Gates
    - Only 1 access at Kahinani. Option of opening up access and gates throughout Kamiloloa.
  - Create safety cones with COM & DHHL partnership and designation and perimeter wildfire/defensive space

- Create Evacuation Site with Emergency
- Projectile/‘Opala Removal
  - COM - Michell McLinden
- Mauka Restoration:
  - Restore watershed mauka portion (in between mauka restoration)
  - Elroy: Nobody is doing anything out of the fenceline watershed extended restoration where animal/deer/food sources are all in collaboration
  - Low land Kipukas by water sources
  - Game Management
    - Molokai Hunting Club MHC
      - Data from clubs
      - YR 2 of BY/MHC Collaboration
      - Education for hunting target management
- Water
  - No DHHL Water, COUNTY ONLY @ Kamiloloa & Makakupai‘a One Ali‘i
  - Has old wells up there that no need for them to pump more
  - COM/EOC/Zhan needed agreement for water use
  - Alternative Water Source Needed
  - More storage tanks
  - Water catchments
  - water/air capturers
- Kamiloloa / MHLA
  - Roads/Access needed for Kamiloloa for cattle, for restoration, etc.
  - Land designation

11.13.24 - Resource/Expert Meeting
Department of Transportation State Highways Division
Lee Marquez - Molokai Base

Where is DOT jurisdiction?
All of State Highways both sides until electric line, or private Above and below culverts 15 -20ft varying on area.

What is your process when it comes to road maintenance and culvert maintenance?
Regularly highway cleanup Monitor regular and yearly cleaning, contractors on call if need to address.
The culvert is undersized, they have been trying to figure how to get the flow of water with dealing with CC and SLR. Especially with restrictions. Cannot divert water.
Kalama‘ula Mauka cleaned DHHL paid private contractors to widen and removal of debris Palekas in the old Kalam‘ula troy, paleka, lauifi, poepoe, kahinu

Do you have a set schedule when preparing for flooding or future flood events?
Kalama‘ula - 20ft both side head clearance 7‘ under bridge. Inlet and outlet
Buffers in easements or culverts varies on road.
Boundary marker
Water meter, utility poles by water than it is in jurisdiction, if not it is out.

Kapa‘akea state jurisdiction

Is there a way for DOT to get a permit to do more clearing outside of their jurisdiction to help the island and community with maintenance?
They have the equipment, and the manpower and is willing to help.

Graveyard - state that has regular maintenance
Whatever passes DOT
- Uncle Lee has a database for State highways

Restrictions leave DOT to do less, COM can do more.
3rd river 75 total ft.
Willing to work with and for private lease or property owners to work higher up.
Send DHHL database to Uncle Lee

12.02.24 - MCH-CRP Resource/Expert Meeting
Natural Resources Conservation Service
Debra Kelly

Attendees: Debra Kelly (NRCS), Nancy McPherson (DHHL) Barbara Natale (G70), Heather Place (SM)

Soil Conservation -
EPA grant - identify hazards and vulnerabilities
Work completed to date - technical experts
Work with County

- Kapa'akea - went with homesteaders to identify culverts that trash was being thrown in. Gardens being planted in. asked them to keep them clean. Educate on importance of water ways. Not to be used as personal use. Old slaughter house. Sediment basins. National programs to help build sediment basins. 100 ft easement owned by county. No drainage across highway. Want water to flow to wetland. Goodfellow did not want to assist
- Cleaning waterways. Identify conversation practices that could be implemented. Filter strips, sediment basins,
    - She has maps and reports - 2 year study. Land restoration. Inland pond east of Kapa'akea wanted to restore. Clear out the pond. Inland fishponds were for - reduce sediment going to ocean.
    - Dumping of junk cars / trash
- Put in firebreaks. People using fire breaks for personal use / dumping trash. Easy to throw over the fence.
- Homestead pasture project - did fenceline. Overgrazed. Lots of erosion coming from here. Grass plantings.
- Projects identified previously - on the right track
- Debbie will pull records and send - hopefully this week.
- No final report - only quarterly reports and meeting notes. Lost staff before the final report could be made.
- Cultural resources study, talked to land owners. Entire south shore.
- DHHL looking to EPA and FEMA - good to document past efforts. Revive information and take to the next level.
- **Slow down stormwater and retain it mauka before ever reaching the highway. Sediment basins. Identified best places to do sediment basins.**
- **How to get ag water**
    - Historical records - who did what and when.
    - All reports went thru DOH - clean water act
- 2017 portrait of sediment …. Fringing reef
    - Reef is dying. Another level of protection that could be lost. Need to stop the sediment.
    - Takes a lot of partners
    - Malama Park - Wharf - not as bad as what people think. She has a study on it.
- Mimicking work happening at Lahaina - sediment control. Spent millions to construct structures. Maintenance will fall on landowner. Would fall on DhhL. Community groups / assoc will be able to assist. Need equipment. Need place to put the sediment.
    - Landowner issues in the past.
- Kapaakea - divert water around both sides. Clear mangroves. Direct water to wetland.
- Kaunakakai master drainage plan
    - Where to put floodwater - need outlet.

12.11.24 - MCH-CRP Resource/Expert Meeting
The Nature Conservancy, Molokai
Russell Kallstrom

Attendees: Russell Kallstrom (TNC), Katy Mokuau, Cody Winchester, Nancy McPherson, Heather Place

Kewelo intakes no longer operational. Noted that streams used to feed the fishponds. No longer do.

Native Plants:
Deer do not like to eat Pohinahina and Akia

- **Talk with Aunty Lori about Invasive species planning/MoMisc: dangers, threats etc, ask Aunty Lori to come to Workshop #4 for educational**
  MoMISC will be focusing 50% of their time on CRB threats for Molokai, starts in Jan
    - Invite one of KHHA board members to it Aunty lehua, Uncle Lawrence, Uncle Kalani or Uncle Kaleo that were the point ppl for Kapūaiwa Grove
    - Short Term Results:
        - Team help facilitate this educational
            - Workshop #4: Coconut Rhinoceros Beetle (CRB):
              Inter -island Transport is a danger, something to advertise and do education to the beneficiaries on, comes through soil & fertilizer, etc. with Gorilla Ogo additives
            - DAR Patricia

Gulches:
2023 -Fencing steep gulches in
-Need to get feedback from beneficiaries for what can be managed with community hunting & also, etc.
-Game Management
-MHLA has been really helpful in the past to keeping fuel down traditionally
-In recent years 2015 to present that
-Axis Deer Study through 2015-2020, drought and redistribution of animals, many went more mauka and away from west end &
-Collaborative work with MHC, Community hunters, etc.
-18% is maintaining population, and increase in happening
-Game Management: Need to do data collection &
-DHHL: has been doing drone flights and topo and can do infrared scan
** Do a separate combo

Deer/Ungulate Mitigation:
-Do a separate meeting
Community reluctance about fencing. Need education.
Food nurseries and provide feed for deer.
-Kawela area, multi prong approach of such
-following rim of gulch and coming back up and really steep and not really huntable
-flat lands can still be used for hunting
-Contour fencing hasn't been tried w/ TNC yet

Fire:
-Interviewing David & Zhan, etc. Fire task force
-DoFaw is supposed to get a new bulldozer, can that be helpful with fire breaks, etc? & is working on passable & driven
Key roads:
All areas are prone to burn. Things getting drier and hotter with higher winds. Witnessed unprecedented winds this year. 2009 fire started in the heights and burned west to Kalamaula and then turned back around. What would be helpful is to have fire break roads around the homestead areas to protect houses and create network that firefighters can work with and stop movement of fire.

-2nd Heights/Schafer roads
-Makakupaia

Build road system around areas where directing new development for managed retreat. Critical to stopping fire.
Road planning is critical - evacuation, redundant engross, fire breaks, emergency vehicles.
Condition of roads can be a factor to runoff. Design roads correct way - repairing, maintaining, and designing new roads is a mitigation.
-Fire breaks and Fire mitigation: David Hope @ DHHL

Reef & Makai restoration:
Sedimentation basins worth exploring.
Kipuka style restoration - fenced area that naturally collects water. Plantings.
Fencing gulches may be a good way to go. That is what TNC is trying in Kawelo. Fence gulch where large amounts of water are going. Allow them to revegetate on their own or supplement with plantings. Act as sieve to catch overland sediment. Prevent it from all flowing sediment on to the reef and causing flooding.
Have decreased the amount of sediment being dumped into stream by 4 fold in Kawelo. Response on reef hasn't been as hoped. Starting to see baby corals come back closer to land. 8% reduction to sediment on reef.
Animal control fencing does work. Area in Kawelo is too steep to hunt.
Annual Report to the 25th Legislature
https://www.nature.org/en-us/newsroom/makolelau-acquisition/

Criteria / configuration for fence design. What does community feel it can manage.
For Kawelo - fence followed rim of gulch. Flat lands can still be used for hunting. Could explore more contour planting. In that case divert from straight edge along rim. Gulch fencing can be more expensive and complicated. Get feedback from beneficiaries on how they see the network of fencing working and what they think can be managed by community / org (like hunting club).
-Need to have a separate meeting for this
-Speak to Uncle Mac
-Kim Salensky: TNC Estuaries & Wetland expert
-Cultural sites in water also, not just on land, like Kalokoloa
-Kamiloloa used to be a fishery and so the historical bounds go down into the water, get that ahupua‘a bounds into water, to outer edge of the reef
-Go to traditional boundaries of ahupua‘a
-Russel & Pūlama for traditional boundaries
-Ask for flyer for Jan video
Advertise for this with Homestead Associations:
Screening on Sedimentation Video: Jan 13th Matt video

12.18.24 - MCH-CRP Resource/Expert Meeting
Department of Land and Natural Resources, Division of Forestry and Wildlife
Lance De Silva

Attendees: Lance DeSilva (DLNR-DOFAW), Katy Mokuau & Heather Place (SM), Nancy McPherson (DHHL), Cody Winchester (G70)

Mauka to makai restoration
Funding: NOAA–Maui 10M

- restoration mauka to makai
- Sediment basins, remove deer from the top
- Mirror project, design process right now
- Working with TNC Maui with sediment basins easier to clean and restore
- Lance will send links for this type of work they are working on

Need to do animal removal and fencing-seeing a big difference of the removal of deer
Animal Maintenance, collecting water on the bottom, and seeing a way to utilize

- Sediment basins
- Animal control - by helicopter (on Maui area is not accessible and landlocked so no public access)
- Fencing gulches to help plants regrow and create buffers
- DLNR faced challenge on Molokai before. Residents only wanted molokai hunters to hunt lands. No DLNR workers.
- DHHL cannot hunt own land. Only DLNR can hunt land.
- Tradeoff / Concessions have to be made to allow state to hunt DHHL lands on Molokai.
- Julie Cachola working on fencing project at Kahikinui. It is a DLNR fence.

Address Impacts to reef from sedimentation-Utilize nature based solutions
Designing sediment basins so that they can be accessed and cleaned out after each storm
Lance will share information about project
Replanting erosion scars with low stature plants - not fire fuel
Paid positions for beneficiaries to do the work- partnership with other agencies that can help kokua the effort (hunting club, Molokai land trust, wetland partnership, ,etc.)
Fix the roads

Kahikinui Project on Maui - people against removing animals. Controversy and infighting between beneficiaries. Paralyzed project. One group wanted to restore area and other group was against removal of animals. Cattle, goat, deer, and pig (the big 4). Project didn't go anywhere because community couldn't make consensus on direction.

Fire is a big issue when restoring areas. Fuel breaks, grazing breaks in the right places.
Requesting Lance speak to beneficiaries at Molokai. Need clear agenda.

Waiohuli Project
Millions of dollars and years of conservation work can go up in smoke in one day.
Must consider fire. Powerline along highway beneath the project area. Fire started along highway from powerline. Whole area burned up.
Molokai did controlled burning in the past. Nancy has records.

MCH-CRP: Kalamaʻula Homesteaders Association Meeting
January 14, 2025-6 PM

Katy Mokuau & Heather Place (KD) facilitated
Attendees: KHA Board and Beneficiaries
Full Attendance list can be requested from KHA

- Talked through recapping where we were in, this project's planning process, the next steps and the rescheduling for a makeup Huakaʻi for KHA only.
- Details for the huakaʻi logistics were discussed and planning for the next steps of project.
    - Outcome: The board was going to ensure the other representatives from their association would be able to come and Commissioner Lasua was confirmed also. The agenda and locations and access were discussed also.

2.15.25 - Huakaʻi
Kalamaʻula

Repeat because the board members had to cancel last minute for 10/19/24 Huakaʻi due to emergencies/family etc.

Attendees: Lehua Kauka (Board president), Lawrence Lasua (Commissioner), Mike Kahinu (Board Member), Brent Nakihei (Board Member), Nani Kahinu, Shanna Willing & husband, MCH-CRP Team members: Nancy McPherson (DHHL) , Katy Mokuau (SM), Heather Place (SM), Hina Hirata (SM-Photos), Tehani Kaalekahi (SM), David Bush (DHHL)

Kalamaʻula Mauka (Water Tank Road-DHHL) → Puʻu Luahine:

- Emergency Planning: Water Tank-Evacuation Site & Emergency Water:
    - Identified by Kalamaʻula throughout project as an evacuation site, confirmed by District Supervisor that would be a great place for that.
    - Pressure Relief Valve Procedures & Policies need to be created btwnn DO & KHA Board.
        - Spigot accessible inside gate
        - Emergency Preparedness Plan Needed:
            - Access: could have combo lockbox/ or key access potentially, etc. District Office would regulate permission, etc.
            - Shelter: Could have something up here for emergencies- i.e. shed, storage container with supplies, etc.
                - Best to locate across road from water tank
- Fire:
    - DHHL working with 100ʻ Firebreak–Tancayo to Linkeeʻs to maintain
    - Havenʻt done anything yet
    - Timeline: Limited ROE 30 days pau Jan 1-31, so needs reapplication
    - Fire Hydrant accessible outside gate: best location of better flow and new relief valve.
        - Fire Hydrant comes from Kalae source
        - Not Tested, A. Lehua will notify the Fire Dept. for consult
        - Lines to hydrant are now 12" line, and need to text if hydrants can be run at the same time
        - CoM Fire: drops hoses for homesteaders and homesteaders fight fires because they donʻt put firefighters at risk for brush fires

- Recommendations
    - Hook up regulator on back tap on fire hydrant
    - Firewise training for Residents, Kalamaʻula HA has worked on Firewise projects, but arenʻt a registered community yet

Kalamaʻula Makai (Kapuaiwa):

- Erosion obvious at shoreline and uprooted trees along makai spring, getting worse
- Invasives: like Gorilla ʻOgo has been coming in with tides
    - Workshops by KHA want to be done periodically for Spring Clean-Ups
        - Aunty Lehua will reach out to Limu Hui and DAR Molokai
    - Mitigation Shoreline Measures:
        - Clearing park-David/DHHL will look into Contract w/ MoC and terms, etc.
            - Park was really bad, with green waste everywhere, buckets of water with coconuts breaking plastic near springs, etc.
            - On-Site controlled burning is allowed in very small sfʻs
            - Priorities:
                - 1. Manage Green Waste
                - 2. Clear out springs
                - Remove Invasive Species
                - 4. Shoreline: Gorilla ʻogo partnership/cleanups
            - Grants/Funding Sources:
                - Needed for DHHL Office or DO of Writer for Grants
        - Levels of Water/Filtration levels naturally should be used
            - Level 1- Swale above in mauka as first system
            - Level 2-Kalo/ʻUala terraces
            - Level 3-Mala that can withstand brackish/tidal waters

MCH-CRP Beneficiary Meetings #4: What can be done? What are possible implementation options?

04.08.25 - Kapa‘akea & Kamiloloa
6-8PM @ At Kapa‘akea Homestead-Greenleaf‘s Residence
Nancy McPherson (DHHL) & Heather Place (SM) facilitate
Attendees: Kapa‘akea Board and Beneficiaries
Member List can be requested from KHA Board

- Handouts: Priority Projects Matrix & prelim Potential Ahupua‘a figure/map
- Quick Recap of process & progress up until now
- Work all together: Go through Priority Projects Matrix of strategies and projects that pertain to Kalama‘ula one by one. Nancy/Heather facilitated and the board and beneficiaries went through each area in terms of details, funding, responsible parties, etc.
- Lots of questions and discussion on DHHL‘s role for implementation strategies, next steps, DHHL history and pilikia and talked through issues.
- Outcome: Clarity gained in the discussions and questions together. Asked the Board and reps to comb through the Priority Projects Matrix together in their next meeting to see what needed to be refined/added/etc. Gave beneficiaries all copies and time to review in more detail for additions/changes to come.

04.16.25 - Kalama‘ula Homesteaders Association Meeting
6-8PM @t Kulana ‘Oiwi-OHA/DHHL Conference Room
Katy Mokuau & Heather Place facilitate (SM)
Attendees: Kalama‘ula Board and Beneficiaries
Member List can be requested from Kalama‘ula Board

- Handouts: Priority Projects Matrix & prelim Potential Ahupua‘a figure/map
- Quick Recap of process & progress up until now
- Work all together: Go through Priority Projects Matrix of strategies and projects that pertain to Kalama‘ula one by one. Katy/Heather facilitate and board and beneficiaries made changes, comments, additions to each area in terms of details, funding, responsible parties, etc.
- Outcome: Very thorough review and additions and changes gained in the 2 hours work put in together to comb through the Priority Projects Matrix. Very collaborative meeting by all and very productive to get to more specificity for the Priority Projects and fleshing it all out

MCH-CRP: Kapa‘akea Homestead Board Meeting
December 3, 2025-5:30pm
Katy Mokuau (KD) facilitated
Attendees: KHA Board and Beneficiaries
Member List can be requested from KHA Board

- Handouts: Priority Strategies & Projects and Ahupua‘a Map & Table: 11x17 Print-outs
- Talked through recapping where we were in, this projects planning process, the summer pause/gap per contract/personnel changes, the Act 96 incorporations, confirming the top Strategies and the first 5 specific Priority Projects, and next and last meeting-Beneficiary Meeting #5 potential dates for January. The Jan 5 release date of the Draft Plan was also shared.
- The revised ahupu‘a map with the updated table for their area was shared and the previously voted on Priority Projects and Strategies were highlighted. Review of some of the projects that were broken out into multiple smaller projects & planning processes and the board confirmed the top 5 specific Priority Projects, based on the previous voting by their beneficiaries and other projects & initiatives that were coordinated with during this process or are happening simultaneously that could cover some of the priorities.
  - Outcome: Many were going to plan to attend Beneficiary Meeting #5 and would review their 5 Priority Projects Matrix details as they could prior to the Comment Period opening. Great discussion was had through the added details and shaping of the Priority Projects and requests were made by the board to ask other members of the Planning Dept to attend, as the Planning Director did attend for the 1st Beneficiary Meeting and they thought they should attend for the last meeting as well to close.

MCH-CRP: Kalama‘ula Homesteaders Board Meeting
December 9, 2025-6pm
Katy Mokuau (KD) facilitated
Attendees: Kalama‘ula Board and Beneficiaries
Member List can be requested from KHHA Board

- Handouts: Workshop #1 Presentation Print-out
- Talked through recapping where we were in, this project’s planning process, the summer pause/gap per contract/personnel changes, the Act 96 incorporations, confirming the top Strategies and the first 5 specific Priority Projects, and next and last meeting-Beneficiary Meeting #5 potential dates for January. The release date of the Draft Plan was also shared.
- There were discussions about the revised map showing the projects very well and appreciating seeing them all on the revised map within their area.
  - Outcome: The board was all going to plan to attend Beneficiary Meeting #5 and would review their 5 Priority Projects Matrix details as they could prior to the Comment Period opening. Great discussion was had about the other ongoing projects pertaining to their top Priority Projects, which they would mark up to include as comments for January’s comment period. Updates for Kalaniana‘ole Hall and Kiowea Park pavilion was shared as well as the request to combine some of the Historical/Cultural areas into one project. Also discussion was had that confirmed the projects that were switched to the DHHL List for their priorities.

1.7.26 - MCH-CRP Beneficiary Meeting #5: Draft Plan
Kulana ʻŌiwi Conference Room (Open House) & Hālau (Presentation)

Open House, Draft Plan and Review & Presentation

Attendees: Community members from Kalamaʻula, Kapaʻakea, and Kamiloloa One Aliʻi: Lehua Kauka (Kalamaʻula-Pres.), Mike Kahinu (Kalamaʻula-Board of Director), Lawrence Lasua (DHHL Commissioner & Kalamaʻula-Treasurer) Nani Kahinu (Kalamaʻula), Todd Ragsdale (KOHA-Rep), Sybil Lopez (SCHHA), Hala Pa-Kala (Kamiloloa One Aliʻi-Pres), Kehikili Pa-Kala (Kapaʻakea-Pres), Jordan/Marissa Poaipuni (Kapaʻakea-Sec), Keomailani Hirata (MHC), Leilani Chow (CERAP/Hoahu Co-Op), Carla DeAngelo, Online: Aunty Bridget Mowat (Kapaʻakea-Rep), Councilmember Rawlins-Fernandez (CoM)
MCH-CRP Team members: David Bush (DHHL-District Office), Nancy McPherson (DHHL-Planner), Jenna (DHHL-Disaster & Climate Risk Planner), Cody Winchester (G70), Heather Place & Katy Mokuau (KD)
Dinner: ʻUlu Kalo Curry (Vegan) & Beef Curry, with Jasmine Rice & Water (Naʻike)
Materials Shared: Presentation Slide Print-Outs, Comment Sheets, Draft Plan Hard Copies for Homestead Associations

Format:
Open House:
- Poster boards / larger prints with information at various stations. Comment sheets / sticky notes
  - Station 1: Intro Station (Katy / Heather)
    - TOC
    - Structure / Process
    - List of meetings / Feedback received
      - List of meetings on timeline
      - Word cloud
    - Key takeaways (hazards, vulnerabilities)
      - Challenges Figure
      - Pictures of flooding, fire, erosion, etc.
      - Photos of options Maps with Stickers
      - Pictures of meeting and huakai
    - Looping presentation station on laptop / Recording of HHC Meeting
  - Station 2: Resilience Strategies / Priority Project (Cody)
    - Maps as posters (spaced out by ahupuaʻa)
    - Matrix (17 by 11) displayed on table. Alternative sizing / fonts.
    - Image of Projects
  - Station 3: Implementation (Nancy)
    - Funding
    - Workforce Development
    - Phasing
    - Partnerships

Presentation (30-min presentation) Hybrid Portion:
Meeting/Presentation Notes:

- **Draft Resilience Plan:** Open for public comments; funded by National Fish and Wildlife Foundation grant for community resilience strategies.
- **Multi-Document Foundations:** Built on previous plans; key updates scheduled for 2026 to ensure future alignment and strategy integration.
- **Hazard Analysis:** Identified flooding risks and community vulnerabilities; informed by detailed technical and community consultations.
- **Cultural Integration:** Combined traditional knowledge with community input to develop sustainable, nature-based solutions and local ownership.
- **Priority Projects Established:** Five pre-approved projects per homestead to address urgent needs like evacuation and drainage, minimizing bureaucratic delays.
- **Infrastructure Improvements:** Road redesigns and new homesteading areas identified to balance growth with resilience, enhancing safety and community access.

Community Resilience Planning and Funding
The team finalized a draft coastal homesteads community resilience plan, opening it for public comments to ensure alignment with community needs and to secure future funding opportunities.

- The draft resilience plan funded by a National Fish and Wildlife Foundation grant enables the HHL homestead associations to apply for additional funds for site assessments, designs, permitting, and restoration implementation
  - The plan emphasizes nature-based shoreline solutions that boost community resilience and improve mauka areas.
  - Nancy McPherson stressed the importance of navigating permitting steps efficiently to accelerate project delivery.
  - Implementation depends on community feedback to refine strategies and identify partnerships or funding sources.
  - This approach positions the homesteads to lead restoration efforts while reducing bureaucratic delays.
- The planning process built on multiple prior efforts, including the 2022 General Plan update, the Malama Special Area Plan, and the South Molokai Shoreline Erosion Management Plan, with the Molokaʻi Island Plan update scheduled for 2026
  - These documents collectively reinforce resilience policies and are critical to embedding the plan's strategies in official frameworks.
  - Updating the Molokaʻi Island Plan is key to ensuring long-term implementation of these strategies.
  - Jenna (disaster planner) and Alana Chao (GIS specialist) will integrate this plan's outcomes into broader disaster and climate risk reduction frameworks.
  - Embedding community priorities in state disaster plans ensures alignment and improves funding and resource coordination.

Hazard and Vulnerability Analysis
The plan incorporates a detailed technical analysis revealing multiple natural hazards and community vulnerabilities, emphasizing interconnected flood risks and infrastructure challenges.

- **The hydrology analysis identified extensive flooding risks** caused by rainfall and mountain runoff flowing through multiple large gulches, threatening homes downstream if blocked or clogged
    - Cody Winchester highlighted that flooding extends beyond local rainfall, involving complex drainage systems from upland to coast.
    - The analysis integrated prior drainage studies and advanced GIS overlays including flood, topography, and sea level rise data.
    - Community consultations and site visits validated technical findings with local knowledge on changing land and water conditions.
    - This comprehensive hazard mapping guides prioritization of intervention areas.
- **Key vulnerabilities include homes in risky locations, poor drainage infrastructure, limited emergency access, and fire-prone dry lands**
    - Undersized or poorly maintained drainage worsens flooding and erosion risks.
    - Only one highway provides emergency access, increasing evacuation challenges.
    - Dry grasslands increase wildfire threat, compounding hazards.
    - Identification of these risks shapes targeted resilience strategies.

Integration of Traditional Ecological Knowledge and Community Engagement
The plan leverages traditional land management practices alongside extensive community input to develop culturally grounded, nature-based solutions.

- **Traditional ecological knowledge informed the design of socio-ecological zones**, showing historic land use and plant stewardship practices that can enhance modern resilience efforts
    - The model adapted from Dr. Kawika Winter emphasizes restoring native ecosystems that historically managed water and soil health.
    - Integrating these practices supports both ecological restoration and cultural preservation.
    - This approach aims to create sustainable, locally supported solutions rather than purely technical fixes.
    - It also strengthens community ownership and long-term stewardship of restored lands.
- **Community engagement was wide-ranging and adaptive**, starting in 2024 with workshops, homestead association meetings, one-on-one interviews, and multiple site visits
    - The process incorporated feedback continuously to improve participation and responsiveness.
    - Engagement included beneficiaries, technical advisors, county officials, and conservation partners.
    - Special focus was on restoring wetlands and fish ponds to improve stormwater management and protect reefs.
    - This ongoing dialogue ensured resilience projects reflect lived experiences and priorities.

Priority Projects and Implementation Pathways
The plan identifies pre-approved resilience projects with specific priorities for each homestead area, enabling streamlined execution without repeated beneficiary consultations.

- **Five priority projects for each homestead association were selected to address evacuation, restoration, drainage, fire prevention, and community hubs**
    - Kualamala’s priorities include conducting vulnerability surveys, creating resilience hubs, Malco restoration, firebreak maintenance, and park upkeep.
    - Kapahakea focuses on evacuation plans, Malco restoration, drainage improvements, and Ka‘a restoration.
    - Kamila Loa’s priorities cover emergency response planning, Malco restoration, drainage master planning, green-gray drainage maintenance, and Makai restoration.
    - These projects represent top community-identified needs to improve safety and resilience efficiently.
    - The plan allows homestead groups to implement projects directly, reducing bureaucratic barriers.
- **Implementation will begin with “low hanging fruit” projects to gain early wins and momentum**
    - Early focus on small, manageable projects builds confidence and demonstrates tangible benefits.
    - The strategy accelerates visible progress while preparing for larger, more complex interventions.
    - This phased approach balances resource constraints with community expectations.
    - It also helps secure further funding by showing initial success.

Infrastructure and Land Use Considerations
The plan highlights infrastructure conditions and potential growth areas to align resilience efforts with community development goals.

- **Road conditions vary significantly, with some roads causing erosion by channeling water into gullies**, degrading soil and vehicle access
    - Restoration and redesign of roads were identified as key mitigation steps to reduce erosion and improve access.
    - Improved roads will also support access to restoration sites and emergency routes.
    - These infrastructure upgrades are essential to the plan’s success and community safety.
    - Coordinated maintenance will prevent further degradation during storm events.
- **Potential new homesteading areas were identified based on flat terrain and views, supporting future growth aligned with resilience goals**
    - Areas near existing water tanks could serve as evacuation and resource hubs during floods.
    - The Moloka‘i Island Plan update will incorporate these growth zones to ensure coordinated land use planning.
    - Balancing new development with hazard mitigation is critical to avoid repeating past vulnerabilities.
    - This integration supports sustainable community expansion while enhancing resilience.

Visualization and User-Friendly Communication
The team prioritized clear, visual communication tools to make the plan accessible and actionable for community members.

- **Visual summaries illustrate existing conditions, identified hazards, and future scenarios post-implementation**
    - Conceptual diagrams show topography, water flow, and hazard zones to aid understanding.
    - Clear color-coded maps align projects spatially to resilience goals, helping communities see where efforts focus.
    - Nancy McPherson emphasized making the plan easy to grasp to encourage engagement and ownership.
    - Supporting materials, including handouts and recorded meetings, will be posted online for transparency and ongoing feedback.

Q&A (Throughout & Post Meeting):
Q: Because there is a plan, does that means assessments are done and no longer needed?
A: No. Site-specific analyses will still need to be conducted. The plan is intended to streamline how beneficiaries access and work on the land rather than replace future assessments. Department leadership committed to actively pushing implementation forward and maintaining momentum.

Q: What is the rough implementation timeline?
A: If the plan is adopted by the commission within the next few months, implementation can begin shortly thereafter.

Q: My house could be swept away by flooding if this doesn't get implemented soon enough. What is being done now?
A: The department is prioritizing hazard mitigation in response to recent disasters, including the Lahaina fires. While wildfire is a major focus, flooding and other hazards are also being treated as urgent priorities.

Q: Where did the Kīpuka Waihona concept come from, and what is its intent?
A: Kahekili Pa-Kala & 'Ohana (Kapa'akea-Pres), Aunty Penny Martin, and Wailana Moses (MLT) brought up these ideas. The concept is based on restoring and managing smaller, strategic areas to reduce larger downstream impacts across the ahupua'a. By focusing on smaller-scale restoration, the intent is to create cumulative, large-scale benefits.

Q: Request to differentiate what concepts came from professionals who analyzed these concepts vs beneficiary sourced concepts that are implemented within the plan
A: We will include a list of names and Ohana that contributed to this project, as well as who contributed to what concepts.

Q: Who takes on what kuleana at what point? In this report all agencies are listed but the kuleana of each agency is not listed and made clear to beneficiaries
A: We will include how the agencies can assist with what projects.

Q: Frustration not seeing any of these plans and strategies coming to fruition.
A: This is understandable. The Implementation Chapter of the plan outlines the process and what mechanisms are needed so that community doesn't get stuck in the right of entry process during emergency cases and emergency preparedness.

Q: Concerns about listing of Moloka'i hunting club in the draft plan. The homesteaders want to build up their own capacity from within.
A: It will be up to the homestead associations to determine whom they would like to partner with. The HHA may want to set up a meeting with Moloka'i hunting club to clearly understand what is being asked of them and that all the beneficiaries of these areas are on board with that direction.

Q: How is sea level rise and cesspool overflow on Moloka'i being addressed?
A: Moloka'i coastal homestead communities are now designated Priority 1 for cesspool concerns, making them eligible for Department of Health processes and funding. DHHL is pursuing technical assistance and studies to support homesteaders and reduce the burden on individual families, particularly where cesspools overflow during high tides.Progress to mitigate Kapaakea mauka flooding issue

Q: What about the old pastoral leases that should have been converted a long time ago?
A: In progress, Nancy to check on this issue.

Q: What progress is being made to mitigate flooding from Kapa'akea Mauka to the makai community?
A: That's a challenging situation, we have enforcement looking into it so we can't really discuss the details. It's an old lease and that has made it challenging. We know that we need to move forward with dealing with the situation and I will make sure to follow up.

Action items:

Nancy McPherson
- Collect and review additional community comments using provided comment sheets on the draft plan
- Coordinate updates to the Molokai island plan in 2026 to integrate resilience strategies
- Collaborate with disaster and hazard mitigation team to align the community resilience plan with the state disaster and climate risk reduction plan
- Facilitate posting of the draft plan and meeting materials on the DHHL website and ensure meeting recording and summaries dissemination

Cody Winchester
- Continue technical analysis and development of visual graphics to communicate resilience plan details
- Lead development of detailed hazard and flood risk mapping using GIS and incorporate traditional ecological knowledge into solution design

Homestead Associations and Beneficiaries
- Engage in ongoing feedback and participation through planned workshops, hui, and targeted interviews
- Pursue priority project implementation immediately upon plan adoption, particularly the identified top five projects per community
- Initiate restoration efforts focusing on road repair and design to prevent erosion and improve access for resilience projects
- Evaluate potential resilience hubs and emergency supply locations such as existing water tanks

Technical Advisors and County Agencies

- Provide continued technical guidance and support, including drainage master plan development and emergency evacuation planning

Nīnau? (Questions?)

Comments will be accepted online via email: dhhl.planning@hawaii.gov or submit in person at Molokai District Office. Comment sheets available included with Handouts and accepted throughout the meeting.
Comments due back: Jan. 31, 2026.

Hard Copies were given to each Homestead Association Board (KHHA, KHA, KOHA).
2 Hard Copies Available at Molokai District Office

Link to DHHL page with all material: www.https://dhhl.hawaii.gov/molokia-coastal-homestead-community-resiliency-plan/

1.12.26 - Resource/Expert Meeting
Pili Na Moku-Molokai
Kilia Purdy-Avelino

Attendees: Kilia Purdy-Avelino (Pili Na Moku-Molokai Coordinator & Hoʻolehua Homesteaders Association/Beneficiary), Nancy McPherson (DHHL), Sybil Lopez (SCHHA), Tehani Kaalekahi, Jennifer Yoshimura & Cat Diggs (SM), Barbara Natale (G70)

- Discussion regarding moku ʻāina based projects, would really like to do a homestead project
- Have the loko 'ia projects, beyond homestead. Although would really like to do as a homestead project to open up loko ia in Palaau. We have loko ia here, although people like to focus on the east end. Would like to focus on homesteads from One Alii towards west. That is where she sees a lot of need.
- Kilia appreciated the outcomes for potential projects that now will help for the future. Tomorrow Kilia will meet with Kalamaula Board to introduce her kuleana with Pili Na Moku. Already a member of Hoolehua HA. Still has yet to connect with other homesteads. Also met with Ho'o kahua board (does not want to have 501?3 as they are small, but working on that now). Only have about 2 KUPU volunteers a year. Want to make sure that small organizations have KUPU help.
- DAR is putting out 3 positions per island. Will be specific in Pili Na Moku projects.
- DAR spreads themselves out over the island, but Kilia would like to help direct their efforts so that they can see real change. Maybe Palaau and Kalanimoku area. Kilia looking forward to reviewing the projects we've put together in the plan, meeting with DAR tomorrow to see if they can support. Aina-based funding coming up. Created a funding hub. Alos looking at funding coming into every island (coming in April, then can disperse the funds at about that time). Then the research aspect, working with UH Manoa.
- Tehani - Sustainable Molokai did the CC-SLAR. From this, SM was able to work with DHHL and G70. OPSD then reached out to SM with funding available for CCSLAR. First meeting - thank you, but don't have a climate change group anymore. Sent them to Nancy. Tehani is working to connect the funders with those that will work with those that are doing it. Nancy said to just forward her the information. Cat Diggs - grant manager for SM. Tehani: Our recommendation to CZM on where funding makes sense was: DHHL/Nancy and MWP/Pulama
- Nancy doesn't want to recreate the wheel. This is where the idea for the funding hub came into fruition. So the small groups can just jump in and don't need to apply for the grant or struggle with managing the grant. Even SM lost some people and are trying to rebuild things. How can Pili Na Moku work so that things are easy and can work.
- The beneficiaries are ready to go now, are afraid the next rain will wash down the cemetery. Kapaakea is extremely vulnerable and need to do something quickly. DHHL will need to pick it up, may need assistance from DAR for the medium to long-range programs.
- UH Manoa/Office of Coastal Management. To bring together regional facilitation. The OCM is flexible for who would implement this planning. Also Pili Na Moku, which is a community funding hub, but is different than the regional NOAA program (but same names).
- Kilia met Helen Raine (of Molokai Wetlands Partnership) in Alaska.
- Here is the link to the overall program - https://seagrant.soest.hawaii.edu/moku-resilience-and-stewardship/
- Kilia sees that there are programs in the homestead areas, but the homestead associations have not been involved or even aware of what is happening. Kilia is doing her best to bridge the orgs that are in the homestead areas are aware of and partnering with the HAs. They need to be inclusive up front.
- Follow-up meetings to be scheduled

Table of Partnerships, Roles, Jurisdiction and Responsibilities

Partner Roles, Jurisdiction, and Responsibilities

Climate, Resilience, and Planning

Organization	Jurisdiction & Authority	Role in MCH-CRP
Department of Hawaiian Home Lands (DHHL)	State land trust agency	Lead agency; coordination, land management, implementation oversight
Office of Planning & Sustainable Development – Coastal Zone Management (OPSD-CZM)	State coastal management authority	CZM consistency review and coastal policy coordination
Federal Emergency Management Agency (FEMA)	Federal hazard mitigation authority	Mitigation guidance, preparedness, and resilience funding
Hawai‘i Emergency Management Agency (HI-EMA)	State emergency management authority	Statewide preparedness and mitigation alignment
Maui Emergency Management Agency (MEMA)	County emergency management authority	Local preparedness, evacuation planning, and coordination
University of Hawai‘i – SOEST / Climate & Resilience Programs	State university system	Climate science, hazard assessment, and resilience analysis
University of Hawai‘i Sea Grant	Federal–State cooperative program	Coastal resilience, erosion, and community adaptation
Maui Nui Climate Change Program	State–county climate coordination program	Climate resilience integration and technical support
County of Maui – Planning Department	County land use and shoreline planning authority	Land use, shoreline, and disaster planning coordination

Coastal, Marine, and Mauka–Makai Systems

Organization	Jurisdiction & Authority	Role in MCH-CRP
Department of Land and Natural Resources – Division of Aquatic Resources (DLNR-DAR)	State marine and aquatic resource authority	Loko i‘a, nearshore, and fisheries stewardship
DLNR – Office of Conservation and Coastal Lands (DLNR-OCCL)	State Conservation District and shoreline authority	Coastal permitting and shoreline regulation
National Oceanic and Atmospheric Administration (NOAA)	Federal coastal and climate science agency	Sea-level rise modeling and coastal restoration support
U.S. Army Corps of Engineers (USACE)	Federal flood risk and navigable waters authority	Flood modeling, technical review, and permitting guidance
Moloka‘i Land Trust	Local land conservation organization	Makai land stewardship and habitat protection
Ka Honua Momona	Community-based cultural organization	Loko i‘a restoration and cultural stewardship
National Fish and Wildlife Foundation (NFWF)	Federal grantmaking organization	Funding for nature-based and coastal resilience projects

Energy, Infrastructure, and Transportation

Organization	Jurisdiction & Authority	Role in MCH-CRP
Maui Electric Company (MECO)	Electric generation and distribution utility	Grid resilience, backup power, and system hardening
Hoʻāhu Energy Cooperative Molokaʻi	Community energy cooperative	Community-scale renewable energy resilience
Hawai‘i Green Growth	Public–private partnership	Energy and water communities of practice
Hawai‘i Department of Transportation – Highways Division	State highway authority, including Kamehameha V Highway	Evacuation routes and access improvements
Hawaiian Telcom	Telecommunications utility	Emergency communications reliability

Emergency Management and Public Safety

Organization	Jurisdiction & Authority	Role in MCH-CRP
Maui Fire & Public Safety	County fire suppression authority	Wildfire response and community risk reduction
Maui Police Department	County law enforcement authority	Public safety and emergency response
Maui Emergency Medical Services	County EMS authority	Emergency medical response
Molokaʻi Emergency Operations Center (EOC)	County emergency coordination	Local emergency response and communications
National Disaster Preparedness Training Center (NDPTC)	Federal training partner	Disaster preparedness and capacity building
Hawaiʻi Office of Homeland Security	State emergency preparedness authority	Statewide coordination and security planning

Water, Cesspools, and Public Trust

Organization	Jurisdiction & Authority	Role in MCH-CRP
Commission on Water Resource Management (CWRM)	State authority administering the Water Code and Public Trust Doctrine	Water reservations, instream flow standards, and water policy guidance
U.S. Geological Survey (USGS)	Federal science agency	Hydrologic, groundwater, and streamflow data and analysis
Maui County Department of Water Supply	County potable water authority	Water system planning and drought response
Maui County Department of Public Works	County drainage and stormwater authority	Culvert, drainage, and stormwater coordination
DHHL – Water Systems	State homestead water system authority	Potable water systems serving DHHL communities
Rural Water Programs	Nonprofit technical assistance providers	Cesspool conversion and rural water system support
Natural Resources Conservation Service (NRCS-USDA)	Federal conservation agency	Soil health, erosion control, and watershed restoration
Molokaʻi Irrigation System (MIS)	State agricultural water infrastructure	Agricultural water delivery and resilience

Land, Wildlife, and Stewardship

Organization	Jurisdiction & Authority	Role in MCH-CRP
DLNR – Division of Forestry and Wildlife (DOFAW)	State forestry and wildlife authority	Wildfire mitigation and invasive species control
Hawaiʻi Wildfire Management Organization (HWMO)	Statewide nonprofit organization	Firewise education and wildfire risk reduction
Molokaʻi Homestead Livestock Association	Beneficiary-led organization	Grazing management and fire risk reduction
Molokaʻi Hunting Club	Community-based organization	Axis deer and ungulate population management
The Nature Conservancy – Molokaʻi	Nonprofit conservation organization	Land management and native species restoration
Soil and Water Conservation District (SWCD)	State conservation district	Soil, water, and erosion control practices

Cultural, Community, and Indigenous Governance

Organization	Jurisdiction & Authority	Role in MCH-CRP
Hawaiian Home Lands Homestead Associations	Community-based governance bodies	Community prioritization and stewardship
Native Hawaiian Beneficiary-Led Organizations	Community organizations	Community-led resilience project delivery
ʻAha Kiole – Moku o Palaʻau	Traditional resource governance body	Ahupuaʻa-based stewardship
ʻAha Kiole – Moku o Kawela	Traditional resource governance body	Traditional and customary practice stewardship
Office of Hawaiian Affairs (OHA)	State agency supporting Native Hawaiian interests	Beneficiary advocacy and cultural stewardship
Molokaʻi Burial Council	State-recognized cultural authority	Protection of ancestral burials
Molokaʻi Wetland Partnership	Multi-agency partnership	Wetland restoration and management
Sustʻāinable Molokaʻi	Community-based nonprofit organization	Community engagement and coordination

Appendix D

Preliminary Goals Matrix

Priority Projects	Issues	Potential Options	Traditional Ecological Knowledge	Literature Review	Partnerships	Notes
Mauka Restoration	• Sediment and silt from mauka during floods; • Flooding due to blocked streams, rivers, and culverts • Invasive species • Unmanaged lands increase wildland fire risk	• Establish testing areas for native, drought-resistent, animal-proof, and economically viable plants • Plant vegetation to stabilize sediment • Create water retention planning, i.e. detention basins, etc. • Regular cleanup of streams and gulches & MOU/Agreements in place (see Makai) • Control deer population & planning • Conduct controlled burns	• Ahupuaa land management from mauka to makai, managed by konohiki • Eight resource realms model traditionally guided decisions on resource use: 1) Moana-Nui-Ākea: Far offshore fisheries. 2) Kahakai Pepeiao: Coastal zones. 3) Ma Uka: Mountainous zones. 4) Nā Muliwai: Freshwater systems. 5) Ka Lewalani: The sky, including weather patterns. 6) Kanaka Honua: Natural resources needed for human sustenance. 7) Papahelōlona: The wisdom of experts in fields like agriculture, fisheries, and healing. 8) Ke ʻIhiʻihi: wahi pana (storied places) and wahi kapu (sacred places) and their attributes and elements. • The use of social-ecological zones ("wao" and "kai") for resource management. Each zone had specific purposes like maintaining watershed health (wao kele) or maximizing biodiversity (wao lāʻau), which can guide land management strategies to mitigate deforestation, habitat degradation, and invasive species problems in coastal	• Support proper management of grazing domestic and wild ungulates, including fencing to exclude axis deer from watersheds rich in native habitat, and fencing to enclose axis deer within designated hunting areas • Support the development of a "Subsistence Management Plan for Deer" • Support sustainable agricultural and forestry management to protect Molokaʻi's land, water, and marine resources. • Support the goals, objectives and actions of the 2018 Molokai Community Wildfire Protection Plan.	• CoM Public Works • Nature Conservancy • Molokai Land Trust • Hawaii Wildfire Management Organization • Butch Haase • CWRM • USACE • Molokai Hunting Club • Ka Honua Momona • TNC Molokai • Ka Ipu Makani • ʻAina Pulapula • ʻAina Momona • Molokaʻi Homestead Farmers Alliance • Molokaʻi Ranch	
Makai Restoration	• Fishponds filled in with sediment • Degradation of marine habitat • Loss of beaches/shoreline (buffer for homes) from coastal erosion • Shoreline armoring accelerates beach loss and hinders sand accumulation • Invasive Species (Pests) threaten natural and cultural resources • Invasive mangrove and kiawe trees disrupt shoreline processes and lead to sediment buildup	• Create Makai Restoration Design Plan • Plant native vegetation to prevent erosion • Conduct marine life restoration • Protect fishponds • Deploy coir rolls to enhance beaches • Remove invasive species and replace with appropriate natives • Implement natural fencing to control Gorilla Ogo • Limu restoration • Uncover and restore springs • Assess how the Kohea Wetland can capture floodwater • Protect Kapuāiwa Coconut Grove from mites • Maintain Kiowea Park • Maintain Kalanianaʻole Hall	• Rotating seasonal restrictions (kapu) on harvesting certain species, ensuring their populations remained sustainable. Applying these practices can help manage fish populations, prevent overharvesting, and ensure the sustainability of other key marine resources • Regulate the harvesting of limu and protect freshwater sources that support limu growth. • Harvest only what is needed from the land and sea and share resources with neighbors.	• Remove and replace invasive plants and trees with climate-adapted, drought-tolerant native grasses, shrubs, and trees • Remove man-made debris between the high and low water line, such as tires, appliances, and rubble • Support the establishment of the island as a community-based subsistence fishing area (CBSFA) • Support the preservation of fishponds, along with any parts of a fishpond system complex such as hatcheiy, pond, or trap characteristics. • Support the protection and restoration of natured systems, such as wetlands and dunes, for flood mitigation and climate change adaptation.	• Hawai'i Department of Aquatic Resources • UH Sea Grant • Jim Buika (CoM Disaster and Shoreline Planner) • USACE • NOAA • ONHR-DOI • Ka Honua Momona • Molokai Wetland Partnership • Ka Ipu Makani • Sustainable Coastlines • Goodfellow Brothers	

Water Flow Maintenance and Flood Prevention	• Sediment flow from watersheds into nearshore waters • Lack of hydrological data • Clogged culverts & waterways lead to flooding	• Restore water flow from mauka to makai, including uncovering covered up or filled springs and wetlands/ʻAina wai • Immediate need for an MOU among the Homestead Associations, DHHL, DOT, and COM for maintaining culverts and planning drainage solutions • Regular river and culvert cleanups with responsible party mapped & documented & filed with all agencies. • Conduct Hydrological Studies • Drainage Master Plan	• The traditional system recognized the interconnectedness of freshwater sources (streams, springs) and the coastal environment. Ensuring that watershed areas are protected from development and that stream flow is maintained from mauka to makai can help mitigate flooding, reduce sedimentation in coastal areas, and preserve marine ecosystems • Acknowledging the connection between freshwater springs (such as ʻOloʻolo Spring) and coastal health. Ensuring these springs are maintained and clear of silt and invasive plants is crucial to supporting native fish populations such as mullet and crabs.	• Support actions that restore native upland habitat and reduce sediment-laden stormwater from reaching the shoreline • Reclamation and removal of soil runoff that has settled into the ocean, fishponds and streams will remove the soil from these areas and restore it to the land for agricultural use. • Encourage and support research that studies water quality, invasive species, and circulation issues around the Kaunakakai Wharf Road and Small Boat Harbor. • Manage surface water using green infrastructure and natural system drainage, retention, and filtration to reduce flooding and siltation of ocean waters. • Encourage DHHL compliance with County regulations on drainage. • Encourage development of an integrated, effective, and environmentally sensitive stormwater management system from Kalama'ula to Kamalo through a partnership of landowners mauka of Kamehameha V Highway. • Encourage the Hawai i Department of Transportation (HDOT) to reconstruct culverts to 100-year flood-design stemdards on all State roads. • Support policies that encourage private	• USACE • CoM Public Works • DOT • DHHL	
Managed Retreat	• Residential hales, yards & wastewater systems (cesspools) have been threatened & inundated due to sea level rise, king tides, flooding risks & groundwater inundation	• Explore relocation options with beneficiaries, explore which areas are viable for relocation options & which ahupuaʻa have potential for relocation placement • Assess implications for access and future impacts • Elevate hales on stilts, in short term (Policy involved)	• Hales were not typically built in areas where flooding occurred, wetlands/ʻaina wai and was only used for fishing and cultural practies.	• Prepare a community-based plan for the relocation of vulnerable buildings, infrastructure, and public facilities away from areas threatened by sea level rise and/or coastal erosion • Prioritize mitigation efforts that will provide potential funding opportunities to flood proof or retrofit vulnerable critical facilities and infrastructure.	• DHHL	

Emergency Evacuation and Public Safety	• Lack of emergency roads for resident evacuation; • Power outage risks in flood areas • Poor cellphone coverage	• Develop emergency evacuation plans • Involve the coImmunity, especially kūpuna, in emergency planning. Door-to-door surveys have been effective • Locate and/or Construct emergency evacuation roads from mauka to makai, Map and Identify evacuation routes and roadways • Develop homestead resilience hubs/shelters • Construct cell towers • Develop water tanks & system to provide emergency water and water for firefighting. MOU with CoM needed for emergencies, when DHHL system affected.		• DHHL should host and facilitate Community Work Days to install hurricane clips, add continuous load path straps, and take other house-strengthening and storm-resilient measures • There is a need for emergency shelters in Central Molokai. • Promote public education about natural and human-induced hazards to improve preparedness and response and to reduce hazard risk and impacts. • Support a more coordinated emergency response system that includes clearly defined and mapped evacuation routes and approved shelters located away from areas susceptible to natural hazards. • Support and advocate for better preparedness capacity by improving inter-agency planning, coordination, and implementation	• Police Department • Fire Depatment • Maui Emerency Management Agency • EMS • Verizon • Hawaiian Electric • Hawaii Energy	
Education and Awareness Campaign	• Need for stewardship of native species and understanding of water systems; • Loss of traditional cultural knowledge • Need for greater adaptive capacity to address risks	• Support education initiatives like Wao Akua and ‘Ae ‘Āina • Land Stewardship programs • Emergency response training • Identify and catelog community assets to leverage during disasters • Sustainable land management workshops • Cataglog vulnerable members • Phone tree (check on your neighbor program)	• Honor and respect traditional ‘ohana cultural values and customs to guide subsistence harvesting of natural resources. • Use the kaulana mahina (the Hawaiian lunar calendar) to understand when to plant which crops, good times for harvesting, fishing or mending gear, and establish kapu or sacred days for honoring the gods. • ‘Aha councils traditionally governed resources through collective knowledge. Leaders were selected based on their mastery of resource management practices, including fisheries, hydrology, and agriculture. Reviving this collective approach can help inform decisions about fisheries restoration, invasive species control, and erosion management	• Educate beneficiaries on the causes and consequences of sea level rise and coastal erosion, including providing maps of flood zones and sea level rise exposure • Provide beneficiaries with FEMA resources like the “Homeowners Handbook to Prepare for Natural Hazards” and “Answers to Questions about Substantially Improved / Substantially Damaged Buildings” • Support a significant increase in public outreach, education, and involvement events to build community-based stewardship and implementation capacity. • Support education for residents and visitors for culturally appropriate subsistence-based hunting, fishing, gathering, and protocol for respecting cultural and historic sites	• National Disaster Preparedness Training Center • Hawaii Green Growth • National Preservations Institute • Ka Honua Momona • Ka Ipu Makani	
Infrastructure and Public Facility Upgrades	• Clogged culverts • Highways covered in sediment • Poorly maintained drainage systems • Cesspools pollute nearshore waters • Kūlana ‘Ō‘iwi has caused flooding for neighbors • Saltwater intrustion corroding ‘Olo‘olo water line	• Improve water flow through culverts • Regular infrastructure maintenance • Implement a drainage maintenance plan • Reroute flood waters with drainage infrastructure • Preserve cemetery • Cesspool conversion • Replace ‘Olo‘olo water line with new resilient line		• Convert cesspools to septic systems wherever feasible to reduce the risk of contaminated water and protect beneficiary health • Initiate a groundwater inundation program by regularly testing the pH, salinity, and water level relative to the tide at specific sites • Complete a site selection study to identify a location for a new cemetery. • Encourage the location or relocation of all critical infrastructure, facilities, and development out of the evacuation and inundation zones vulnerable to coasted hazards.	• CoM Public Works • DOT- Highways • USACE • DOH - WWB • CoM Water Supply	

Appendix E

Detailed Resilience Strategy Matrix

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
A1	Create a Pre-Disaster Emergency Response and Evacuation Plan*	-Department of Hawaiian Home Lands Planning Office (DHHL PLO) -Hawaiian Homestead Associations (HHAs) - Hawai‘i Wildfire Management Organization (HWMO)	-HHAs - DHHL Moloka‘i District Office (MDO) - DHHL Land Management Division (LMD) - DHHL Land Development Division (LDD) - Hawai‘i Emergency Management Agency (HIEMA) - Maui Emergency Management Agency (MEMA) - Molokai Emergency Operations Center (EOC) HWMO	Short Term	- State or County/MEMA & HIEMA, Hazard Mitigation funding - Hawai‘i Community Foundation (HCF) - Climate Impact Fee (Act 96) - HWMO - Federal Funding for Community Wildfire Protection Projects	HHAs	A Pre-Disaster Emergency Management Plan will identify risks, vulnerable populations, and emergency routes within each ahupua‘a. The plan will coordinate roles and responsibilities among DHHL, homestead associations, emergency services, and community volunteers. It will also incorporate culturally grounded approaches to preparedness, training, and communication. Key Components: - Assess population size, household needs, and vulnerable groups (kupuna, keiki, people with disabilities). - Include pets, vehicles, and transportation needs in evacuation planning. - Use GIS data from DHHL’s Kalama‘ula Road Assessment and other mapping resources. - Incorporate the plan into State and County Hazard Mitigation Plans for consistency. - Coordinate with Fire Department and HWMO Firewise Support Specialists serving Moloka‘i. - Clarify responsibilities and communication between agencies and homestead communities. - Encourage participation in CERT (Community Emergency Response Team) and NDPTC (National Disaster Preparedness Training Center) programs for homestead boards and volunteers. - Conduct regular workshops and exercises to strengthen preparedness and build leadership capacity.	Yes	$800,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
A2	Develop and Maintain Emergency Evacuation Routes	- HHAs - DHHL PLO - DHHL Land Management Division (LMD) - HWMO	- DHHL LMD - DHHL Molokai District Office (MDO) - DHHL Land Development Division (LDD) - HHAs - MEMA - Molokaʻi EOC	Short Term	- Wildfire Mitigation Funds - Firewise Community - Act 96 - Federal Emergency Management Administration (FEMA)	HHAs	Plan, improve, and maintain safe emergency evacuation routes connecting homestead communities to designated mauka evacuation areas. This strategy focuses on preparedness, wildfire mitigation, and maintenance of rural and undeveloped roads to improve emergency access. Key Components: - Assess existing road conditions within homestead areas to identify gaps in emergency access. - Designate and plan for a safe evacuation area, including next steps for preparedness and response. - Improve mauka access routes for wildfire mitigation and emergency response. - Clear and maintain parking and staging areas for residents during evacuation events. - Maintain and upgrade rural and undeveloped roads using context-sensitive methods that protect the landscape (e.g., “A Good Road Lies Easy on the Land – Water Harvesting from Low-Standard Rural Roads”(Zeedyk,2006)). - Coordinate with DHHL, County agencies, and homestead associations for maintenance and access management.	Yes	$100,000
A3	Develop Resilience Hubs or Evacuation Sites	- DHHL - HHAs	- MEMA	Mid Term	- FEMA - Act 96	HHAs	Establish new resilience hubs and evacuation sites in mauka areas, safely outside of flood and coastal hazard zones. These hubs will serve as community gathering centers year-round and become activated during disasters to provide emergency support and resources for homesteads. Key Components: - Update DHHL land use designation to “Community Use” to allow development - Identify and develop a mauka site for a resilience hub and evacuation area.	Yes	$3,500,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
							- Equip hubs with back-up power, water, food storage, communication systems, and emergency supplies. - Serve dual purpose: community center during normal operations; evacuation and recovery site during disasters. - Host preparedness training, workshops, and community coordination meetings. - Incorporate community gardens or greenhouses to strengthen local food security. - Design facilities to be energy-efficient, climate-adapted, and culturally grounded.		
A4	Fire Break Construction & Maintenance	- DHHL - County of Maui (CoM) Department of Transportation (DOT) - HHAs	- Molokaʻi Livestock Association (MHLA) - DHHL LMD	Short Term	-Act 96	HHAs	Establish and maintain fire breaks around residential lots and along the wildland–urban interface to protect homes and community infrastructure from wildfire. Regular clearing and maintenance will improve safety, access, and long-term fire resilience. Key Components: - Identify and map fire break locations around homestead communities and along mauka boundaries. - Clear and maintain vegetation to reduce wildfire fuel loads. - Create and maintain access routes for firefighting and emergency vehicles. - Implement a schedule for routine inspection and upkeep to keep fire breaks functional over time. - Coordinate with land managers and agencies for shared maintenance across adjoining lands. - Provide community training and stewardship opportunities for fire prevention and land management.	Yes	$2,500,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
A5	Event Reporting & Documentation System*	- HHAs	- DHHL - MEMA - HIEMA	Short-term	- Act 96	HHAs	Develop an easy-to-use event reporting and documentation system for residents and homestead associations to record flooding, erosion, fire, or other hazard events. The system will help DHHL track recurring issues, improve maintenance and design, and strengthen community preparedness through education and data sharing. Key Components: - Create a simple reporting tool that records event details such as date, time, lot number, location, and description. - Develop an online dashboard to visualize data and metrics—showing reported events, maintenance responses, and trends over time. - Coordinate with DHHL's PLO staff to manage data and track follow-up actions. - Establish clear procedures for residents and association boards to collect and submit reports. - Use aggregated data to identify priority areas for infrastructure maintenance, design improvements, and resilience planning. - Provide education on hazard awareness, response, and flood insurance options for older homestead communities. - Support transparent communication and collaboration between residents, association boards, and DHHL.	Yes	$100,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
A6	Install Wildfire Detection Cameras	- DHHL - HHAs	MECO	Short Term	- FEMA - HWMO	HHAs	Install and expand a network of wildfire detection cameras to provide full visual coverage of the Molokaʻi south shore ahupuaʻa. These cameras will support early fire detection, real-time monitoring, and rapid response to protect homesteads and natural resources. Key Components: - Install cameras at key mauka and makai locations to achieve full coverage across DHHL lands to support wildfire prevention, rapid response, and public safety. - Integrate cameras with machine learning and thermal imaging systems for automatic wildfire detection and alerting. - Connect to County, State, and DHHL emergency management systems for coordinated response. - Provide live feeds and alerts accessible to fire agencies and trained community partners. - Incorporate renewable power sources (e.g., solar with battery backup) for remote sites. - Use data to inform long-term fire management and landscape restoration planning. - Incorporate renewable power sources (e.g., solar with battery backup) for remote sites. - Support wildfire prevention, rapid response, and public safety. - Use data to inform long-term fire management and landscape restoration planning.	No	$800,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
B1	Develop Mauka Restoration & Maintenance Plan*	-HHAs	- DHHL	Mid Term	-Act 96 - NFWF	- HHAs	Prepare a comprehensive Mauka Restoration and Maintenance Plan to restore degraded upper slopes, reduce erosion, and improve watershed health within the Molokaʻi coastal homestead ahupuaʻa. The plan will use aerial imagery, LiDAR, and field assessments to identify high-priority areas for restoration, fencing, and long-term land management that supports fire prevention, drainage, and native ecosystem recovery. Key Components: - Use aerial imagery and LiDAR analysis to map erosion hotspots, drainage corridors, and sediment pathways. - Develop a land management plan by ahupuaʻa for fire suppression, prevention, and fuels management. - Identify and design riparian buffer strips and restoration zones using native and drought-tolerant plants. - Plan for irrigation systems and fencing to protect reforestation and agroforestry areas. - Conduct biological and soil assessments to guide site-specific restoration design. - Provide workforce opportunities and define community employment needs for plan implementation: - Strengthen collaboration between homesteaders, DHHL, and partner agencies for long-term stewardship. - Integrate TEK with scientific monitoring for adaptive management.	Yes	$800,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
B2	Implement Kipuka Waihona Concept	- HHAs	- DHHL	Mid-Term	- NWFW - HCF	HHAs	The Kīpuka Waihona Concept combines Hawaiian ecological knowledge with practical land management. The word kīpuka refers to an “island” of life that remains within a lava flow. In this plan, it symbolizes small, fenced “islands of renewal” established along eroded ravines to restore native ecosystems, reduce erosion, and build long-term resilience. Key Components: - Construct small, fenced kīpuka restoration nodes at strategic mauka locations rather than fencing entire ravines. - Replant each site with native dryland and riparian species to stabilize soils, slow runoff, and restore forest structure. - Integrate vegetated swales and small reservoirs to slow and capture stormwater, recharge soil moisture, and support reforestation. - Test and cultivate native, drought-tolerant, and animal-resistant species that can withstand Moloka‘i’s dry conditions and ungulate pressure. - Remove kiawe and other invasive plants and replace them with resilient native vegetation. - Use each kīpuka as a seed source, wildlife refuge, and outdoor learning site for stewardship and education. - Create a network of restored sites that can be expand over time as funding becomes available. - Employ homesteaders in restoration work to build community capacity and local economic opportunity.	Yes	$1,500,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
B3	Reduce Fuel Loads	- HHAs	- DHHL - Molokai Fire Department - Maui County Fire Prevention Office - MHLA - DLNR DOFAW	Short Term	- USDA – Natural Resources Conservation Service (NRCS) - Environmental Quality Incentives Program (EQIP) - HWMO) - FEMA) – Pre-Disaster Mitigation Grants US Forest Service – Community Wildfire Defense Grant (CWDG)	- HHAs	Implement active, long-term land management to remove invasive species and reduce wildfire fuel loads across mauka and coastal areas. This strategy may include controlled or prescribed burns conducted in partnership with cultural practitioners and fire experts to restore native ecosystems, protect homes, and reduce the risk of catastrophic wildfires. Key Components: - Develop and implement a fuel management plan for high-risk mauka and wildland–urban interface areas. - Conduct controlled burns in coordination with fire professionals and cultural practitioners to safely reduce hazardous vegetation. - Integrate Native Hawaiian cultural fire management practices rooted in traditional ecological knowledge. - Remove invasive grasses, shrubs, and kiawe that increase fire intensity and spread. - Promote regrowth of native vegetation to improve soil health, watershed function, and habitat quality. - Establish ongoing maintenance schedules and monitoring to sustain reduced fuel loads over time. - Build local workforce capacity in fire management, land restoration, and monitoring.	Yes	$500,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
B4	Expand Plant and Food Nursery	- HHAs	- DHHL LMD - DHHL PLO	Short Term	-Act 96	HHAs	Expand the existing Kalama‘ula Nursery into a larger hub for native plant cultivation, food security, and community education. The nursery will support native ecosystem restoration, provide plants for reforestation and landscaping, and promote sustainable agriculture and cultural practices. Over time, the facility can evolve into a Resilience Food Hub, integrating plant propagation with food production and training programs. Key Components: - Expand the Kalama‘ula Native Plant Nursery to increase capacity for propagation of native, drought-tolerant, and culturally significant species. - Support mauka and makai restoration projects by supplying native plant materials. - Develop partnerships with schools, farmers, and conservation groups to expand education, workforce training, and community involvement. - Grow plants that support habitat restoration, food security, and traditional practices such as weaving, medicine, and ceremony. - Integrate food crops, greenhouses, and composting systems to build a self-sustaining Resilience Food Hub. - Offer hands-on education programs in native plant care, nursery management, and agroforestry. - Provide seedlings for community gardens and homestead landscaping to enhance biodiversity and reduce wildfire risk.	Yes	$25,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
B5	Feral Animal Management Program	- HHAs - DHHL	- Molokai hunters - Molokai Homesteaders Livestock Association (MHLA)	Short-Term	- EQIP - HCF	- HHAs	Develop and implement a coordinated program to manage populations of feral deer, pigs, and other ungulates that threaten forest health, agriculture, and community safety. The program will be built on collaboration between DHHL, hunters, and local agencies to create a balanced, culturally grounded approach to land stewardship and resource management. Key Components: - Conduct a planning and assessment process within DHHL lands to define management zones and population targets. - Review and integrate existing data from the Molokaʻi Hunting Club, State of Hawaiʻi DLNR–Division of Forestry and Wildlife (DoFAW), and other partners. - Develop a comprehensive management plan that includes population control, fencing priorities, and restoration linkages. - Coordinate with local hunters and beneficiaries to establish designated hunting areas and sustainable harvest protocols. - Implement monitoring systems to track population trends and ecosystem impacts. - Reduce damage to native vegetation, restoration sites, and agricultural areas caused by overgrazing and rooting. - Support community participation and training in wildlife management, monitoring, and safety practices. - Promote holistic, culturally informed stewardship integrating modern wildlife science and traditional knowledge. - Coordinate with USDA to obtain required inspection and certification to allow harvested wild game meat to be processed and sold through commercial markets, including restaurants and grocery stores	Yes	$200,000-$500,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
C1	Develop a Drainage Master Plan	- HHAs - DHHL	- CoM - United States Army Corps of Engineers (USACE)	Short-Term	- HCF	HHAs	Prepare a comprehensive Drainage Master Plan for the entire ahupuaʻa to address chronic flooding, erosion, and sedimentation issues. The plan will integrate traditional and modern watershed management approaches to improve drainage infrastructure, protect homes and roads, and restore natural water flow from mauka to makai. Key Components: - Assess existing drainage systems, including canals, culverts, and ravines, to identify maintenance and capacity issues. - Map natural drainage pathways and areas of sediment buildup or flood risk. - Incorporate nature-based solutions such as vegetated swales, sediment traps, and restored wetlands. - Coordinate drainage planning across all three homestead communities to manage stormwater collectively by ahupuaʻa. - Develop design standards and maintenance schedules for long-term performance and resilience. - Align with County and DHHL infrastructure planning, integrating recommendations into future capital projects. - Include community education and workforce opportunities for maintaining and monitoring drainage systems. - Reduce flooding risks to residential areas, roads, and nearshore ecosystems while improving water quality and aquifer recharge.	Yes	$800,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
C2	Green–Grey Drainage Improvements & Maintenance Program	- HHAs	- DHHL - COM - DOT - USACE - MHLA	Short Term	- NFWF	HHAs	Program to focus on keeping drainage canals, ravines, culverts, and natural waterways functioning properly to reduce flooding, erosion, and sediment impacts on homes, roads, and nearshore ecosystems. Combine regular, coordinated maintenance with targeted upgrades that blend green infrastructure and grey infrastructure approaches. Nature-based solutions such as native vegetation, bioengineering, and erosion control measures to be used alongside conventional drainage improvements to slow water, stabilize banks, and reduce sediment before it reaches the ocean. Regular maintenance of drainage canals, ravines, culverts, and waterways helps reduce flooding and sediment buildup that threaten homes, roads, and coastal ecosystems. This strategy strengthens community resilience by restoring natural water flow, reducing blockages, and protecting downstream areas and nearshore waters from erosion and pollution. Maintenance activities may also involve installation of stream gauges to monitor real-time water levels in key waterways to support early detection of flash flooding. Telemetric data collected from the gauges could be transmitted continuously and used to develop a flash flood warning system, including supporting software to analyze thresholds and trigger alerts. The system could be coordinated with State and County emergency management agencies to improve situational awareness, reduce response times, and support timely deployment of resources to areas at highest risk. Key Components: - Establish coordinated maintenance schedules for all drainage systems. - Remove sediment, debris, and invasive vegetation from canals and culverts. - Stabilize eroding banks with native vegetation and nature-based methods. - Train community members in safe maintenance practices and monitoring. - Installation of stream gauges - Develop early detection system	Yes	$1,200,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
C3	Watershed Participatory Mapping Workshops	- HHAs	- DHHL - State DOT - CoM	Short-Term	- DHHL Grants	HHAs	Host a series of community workshops to educate beneficiaries about drainageway maintenance, flooding risks, and nature-based solutions. These participatory mapping sessions will empower residents to identify problem areas, collect data, and take part in ongoing drainage management and restoration efforts across the Molokaʻi homestead ahupuaʻa. Key Components: - Conduct hands-on workshops to teach beneficiaries about proper drainageway maintenance, sediment removal, and vegetation management. - Facilitate participatory mapping to document flooding areas, clogged culverts, and potential sites for nature-based drainage improvements. - Integrate citizen science approaches for data collection and monitoring of stormwater and erosion conditions. - Encourage community stewardship through regular clean-up events and shared maintenance efforts. - Explore and design nature-based solutions such as vegetated swales, bioswales, and sediment traps in appropriate areas. - Collaborate with DHHL, County of Maui, and partner organizations to support training, materials, and data integration. - Build community capacity and awareness for long-term stormwater and watershed management.	Yes	

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
C4	Restore Springs	HHAs	DHHL	Mid-Long Term	-Act 96 -NFWF-NCRF - OHA	HHAs	Restore and reactivate traditional and existing springs within the Molokaʻi coastal homestead ahupuaʻa to improve water flow, cultural connection, and ecosystem health. Pending necessary permits and approvals, this work will reopen blocked springs, reconnect them to traditional waterways, and revitalize them as cultural and educational sites for the community. Key Components: - Identify and map traditional and existing spring sites using aerial imagery, archival research, and ʻohana moʻolelo. - Remove overgrowth, sediment, kiawe, and mangroves that block or alter natural spring flow. - Reconnect springs to fishponds, wetlands, and traditional ʻauwai (irrigation ditches) to restore natural hydrology. - Reestablish springs as cultural and educational spaces for intergenerational learning and community stewardship. - Monitor water quality, flow, and ecological response over time. - Collaborate with the County of Maui Planning Department and regulatory agencies for compliance with: • Hawaiʻi State Water Code • USACE Section 401 & 404 Clean Water Act permitting. - Support native habitat restoration and groundwater recharge while honoring traditional water management practices.	Yes	$1,200,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
D1	Create an Ahupua‘a Residential Hale Restoration/Relocation Study	- HHAs	- DHHL	Short-term	- Act 96	DHHL	Conduct a coordinated study to guide the restoration, retrofitting, or relocation of homes within each ahupua’a to reduce exposure to chronic flooding, sea level rise, and coastal erosion. Use findings to inform the Molokai Island Plan Update (2026) and direct future homestead growth toward safer, less hazard-prone areas. Key Components: - Identify residential areas vulnerable to flooding, sea level rise, and erosion. - Consult beneficiaries to guide planning, identify culturally and environmentally appropriate relocation sites, and prioritize community needs. - Explore managed retreat options and relocation opportunities for at-risk homes. - Develop assistance programs for beneficiaries to retrofit and protect existing homes. - Align recommendations with the 2026 Molokai Island Plan Update to support resilient land use and housing decisions.	Yes	$800,000
D2	Conduct Vulnerability Assessments Survey	- HHAs - DHHL	- NAHASDA	Short-term	-Act 96 - HWMO:	HHAs	Assess the vulnerability of homes and properties to coastal, flood, and wildfire hazards by conducting comprehensive surveys within each ahupua’a. Gather data on structural conditions, environmental risks, and household characteristics to guide future resilience investments and hazard mitigation planning. Key Components: - Survey home conditions including age, building materials, construction type, and location. - Evaluate exposure to hazards such as wildfire, Special Flood Hazard Areas (SFHA), and shoreline erosion. - Document socioeconomic factors such as demographics and household income. - Identify cesspool locations and conditions, noting overflow risk during king tides or proximity to water sources. - Secure funding for Homestead Association Coordinator positions per ahupua’a to manage and oversee survey efforts. - Employ two beneficiary contractors per ahupua’a to conduct the Vulnerability Assessment Survey.	Yes	$60,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
D3	Adapt Structures and Systems to Better Withstand Coastal Hazards	HHAs	- DHHL - NDPTC - HWMO / Firewise	Short-Term	- DHHL - OHA - Act 96 - HWMO	HHAs	Improve the physical resilience of homes and infrastructure in coastal areas to reduce vulnerability to flooding, erosion, fire, and storm impacts. Efforts include retrofitting and hardening existing structures, promoting community awareness through assessments and workshops, and leveraging partnerships with expert organizations. Key Components: - Retrofit Homes. Elevate, harden, and protect residential structures to withstand coastal and storm-related hazards. - Partnership with HWMO for Firewise Home Assessment Program. Conduct home assessments to identify vulnerabilities and provide recommendations for fire and hazard resilience. - Host sessions for lessees using Hwang's "Homeowner's Handbook to Prepare for Natural Hazards" to build knowledge of hazard mitigation techniques. - Request a Molokai-based workshop by UH Sea Grant to share best practices for coastal resilience and hazard adaptation.	Yes	$1,000,000
D4	Maintain Home Ignition Zones	- HHAs	- HWMO	Short-Term	- HWMO	HHAs	Reduce wildfire risk to residential homesteads by actively maintaining Home Ignition Zones through vegetation management, fuel reduction, and fire-safe landscaping. Encourage residents to create defensible space around homes and practice regular upkeep to prevent ignition and fire spread. Key Components: - Partner with HWMO to hold workshops and demonstrations. - Maintain buffer zones around homes to create defensible space. - Manage and reduce fire fuels near residential structures. - Use appropriate, fire-resistant plants and landscaping techniques.	Yes	$500,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
E1	Develop a Makai Restoration & Management Plan	- HHAs - DHHL	- Ka Honua Momona, - Molokai Land Trust - ʻĀina Momona - DAR - UH Sea Grant	Mid Term	- NWFW National Coastal Resilience Fund	HHAs	Create a comprehensive plan to restore and manage shoreline areas through culturally grounded and ecologically sound practices. The plan will identify priority restoration sites, integrate traditional ecological knowledge with modern coastal science, and strengthen stewardship partnerships to protect and enhance coastal ecosystems. It will also serve as a foundation for future implementation, funding, permit approvals, and community engagement efforts. Key Components: - Identify priority shoreline areas for restoration and management. - Provide education on native and cultural-based shoreline restoration methods (e.g., dry stack walls, native planting). - Establish and maintain Makai Community Use Areas through coordinated planning and upkeep. - Partner with Homestead Associations and beneficiary-led businesses for stewardship activities. - Assess shoreline erosion, sedimentation, and invasive species impacts. - Plan for the removal of invasive species (e.g., mangrove, gorilla ogo). - Restore native coastal vegetation such as pōhuehue and ʻakiʻaki. - Reconnect and enhance fishponds, wetlands, and freshwater springs. - Include culturally appropriate access paths, interpretive signage, and stewardship zones. - Use the plan as a foundation for future restoration projects, funding applications, and volunteer engagement..	Yes	$800,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
E2	Implement Nature-Based Coastal Protection Projects	- HHAs	- DHHL	Mid-Term	- NOAA Habitat Conservation or Coral Reef Conservation Program -Act 96 - OHA - HCF	HHA's	Protect and enhance coastal areas by implementing nature-based solutions identified in the Makai Restoration and Management Plan (E1) and the South Molokai Shoreline Erosion Management Plan. These projects will use natural systems and culturally grounded practices to reduce erosion, buffer storm impacts, and restore coastal resilience. Key Components: - Carry out restoration and protection actions identified in the Makai Restoration and Management Plan (E1). - Implement priority projects from the SM-SEMP - Utilize nature-based solutions such as native vegetation restoration, dune stabilization, and wetland enhancement. - Incorporate TEK and community stewardship in project design and implementation. - Monitor project effectiveness to inform adaptive management and long-term coastal resilience.	Yes	$2,200,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
E3	Invasive Species Removal & Management	- HHAs - DHHL	- Molokai Limu Hui, - KHM, - Molokai Land Trust - UH Sea Grant, Molokai Wetland Partnership	Short Term	- OHA - Hawai‘i Invasive Species Council (HISC) - National Fish and Wildlife Foundation (NFWF) - HCF - NOAA Coral Reef Conservation Program - Molokai Limu Hui	HHAs	Remove and manage invasive plant and marine species that threaten Moloka‘i’s coastal and terrestrial ecosystems. This strategy emphasizes collaborative, community-driven efforts to restore native habitats, reduce wildfire risks, and promote the return of native vegetation and limu along the shoreline. Key Components: - Collaborate with Moloka‘i Limu Hui and other local partners on coordinated invasive species removal. - Conduct site surveys to map infestation levels of invasive species such as gorilla ogo, mangrove, and kiawe. - Develop a community-friendly removal plan detailing tools, tides, timing, and safety practices. - Coordinate with local and state experts to apply effective, environmentally sound removal techniques. - Reintroduce native coastal plants (e.g., pōhuehue, ‘aki‘aki) in restored areas. - Engage community volunteers in hands-on removal, education, and stewardship activities. - Monitor shoreline and ecosystem recovery, including native limu population health. - Prioritize kiawe removal in both coastal and wildfire-prone zones to reduce hazards and restore native vegetation.	Yes	$160,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
E4	Marine Ecosystem Restoration	- HHAs - DHHL	- Ka Honua Momona - ʻĀina Momona - UH Sea Grant / Coral Resilience Lab - KIM	Short to Long	- NOAA Coral Reef Conservation Program - NFWF - OHA - HCF	HHA's	Restore and protect Molokai's nearshore marine ecosystems through community-led, culturally informed, and science-based actions. This strategy focuses on improving reef health, supporting native marine species, and integrating traditional stewardship practices to ensure long-term ecosystem resilience and sustainable use. Key Components: - Assess current reef health, including coral, fish, and limu populations, to identify key restoration zones. - Remove invasive marine species (e.g., gorilla ogo) that threaten native habitats. - Restore native limu beds and promote sustainable limu harvesting practices. - Reintroduce and protect native coral, urchins, fish, and limu species. - Incorporate traditional management practices such as kapu seasons and kilo (observation) to guide stewardship. - Conduct community-led snorkel surveys, water quality testing, and marine education programs. - Include Kilo i Moana (KIM) assessment of coastal springs as part of the Molokai Island Plan to link freshwater and marine ecosystem health.	Yes	$350,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
E5	Restore Ohi‘apilo Wetland	DHHL	HHAs	Mid-Term	- Act 96 - PI-CASC - NFWF	HHAs	Restore and enhance the ‘Ohi‘apilo Wetland to improve ecosystem health, water quality, and habitat for native species. This strategy builds on prior hydrological research and partnerships to guide restoration efforts, promote long-term stewardship, and strengthen community connection to this important cultural and ecological site. Key Components: - Review hydrological studies conducted by the Molokai Wetland Partnership under PI-CASC funding (2025). - Improve water quality through natural filtration, hydrological restoration, and invasive species management. - Remove invasive plants and animals to restore native wetland habitat. - Enhance public access and install educational and cultural signage. - Establish long-term stewardship programs involving local organizations and beneficiaries. - Create funded positions for maintenance and ongoing monitoring of wetland health.	Yes	$500,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
E6	Implement Special Area Plan for Malama Cultural Park	- Park Stewards	- DHHL	Mid-Term	- OHA Grants - DLNR Kaulunani Urban & Community Forestry Grants - Hawai'i Community Foundation (HCF) - HTA (Hawai'i Tourism Authority) – Kūkulu Ola or Aloha 'Āina - National Park Service – Tribal Heritage or Historic Preservation Grants - DHHL Capital Improvements or Site Management Funding	Park Stewards	Carry out the restoration and improvement projects outlined in the Mālama Cultural Park Special Area Plan (MCP-SAP), adopted by the Hawaiian Homes Commission on July 18, 2022. This strategy focuses on enhancing the park's cultural, ecological, and community value through environmental restoration, infrastructure upgrades, and public engagement features. Key Components: - Restore the coastal environment and wetland areas within the park. - Enhance the vegetated berm to strengthen natural buffers and improve aesthetics. - Install fencing, welcome signage, and interpretive exhibits to support visitor safety and education. - Construct an elevated walkway or boardwalk with wayside exhibits highlighting cultural and natural features. - Maintain and improve the Mālama platform for community and cultural use. - Demolish the dilapidated jailhouse and replace it with a new comfort station. - Develop a covered pavilion or visitor center for gatherings, education, and stewardship activities. - Implement native landscaping and remove invasive species (e.g., mangrove, pickleweed, gorilla ogo). - Upgrade utilities, improve parking areas, and conduct soil remediation where needed. - Support ongoing maintenance and stewardship to ensure the park remains safe, accessible, and culturally vibrant.	Yes	$5,000,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities	Funding Main Applicant	Details	Workforce Development	Cost Estimates
E7	Maintain Kapuāiwa Coconut Grove and Kiowea Park	- DHHL - HHAs	- Ka Honua Momona - Kualapuʻu Kaiapuni - Molokai Land Trust - MoMISC, - DLNR / DOFAW - UH CTAHR / UH Extension - MWP	Short-term	- HISC - OHA - USDA Forest Service HCF - DLNR – Kaulunani Urban and Community Forestry Program - National Park Service – Tribal Heritage or Historic Preservation Grants - DHHL Capital Improvements or Site Management Funding	HHAs	Restore, enhance, and sustain the historic Kapuāiwa Coconut Grove and Kiowea Park through ongoing maintenance, habitat restoration, and community stewardship. Improve tree health, prevent pest infestations, and ensure long-term cultural and environmental stewardship. This strategy supports cultural access, recreation, and environmental resilience by restoring native ecosystems, improving facilities, pest management, and ensuring the park remains a safe and welcoming community space while safeguarding one of Molokaʻi's most significant cultural landscapes. Key Components: - Develop a comprehensive pest prevention and management plan for coconut and other native trees. - Monitor and treat coconut trees affected by mites, disease, or other health threats. - Remove invasive species such as kiawe and manage overgrowth. - Establish early detection and response protocols for Coconut Rhinoceros Beetle (CRB) prevention. - Improve soil quality and irrigation to support the long-term vitality of the grove. - Engage the community in cultural restoration, education, and stewardship activities. - Install fencing to manage access and address safety and liability concerns. - Restore native vegetation and stabilize the shoreline to prevent erosion. - Improve park infrastructure, including bathrooms, benches, signage, and utilities. - Promote community-led maintenance, stewardship, and cultural education activities. - Utilize secured grant funding to complete the kitchen in the pavilion.	Yes	$2,000,000

Appendix F

Detailed DHHL Resilience Strategy Matrix

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities/Co-benefits (*)/Costing	Funding Main Applicant	Details	Workforce Development	Cost Estimates
DHHL A1	Update DHHL Plans on Molokaʻi to incorporate Hazard Mitigation, Emergency Preparedness and Community Resilience Strategies*	- DHHL-PLO - Homestead Planning Liaison - Grants Specialist	- HHAs	Short Term	- Hazard Mitigation grants - DHHL grants	DHHL	Update existing DHHL planning documents, including Molokaʻi General Plan, Island Plan, Regional Plans, and the Native Hawaiian Development Program Plan (NHDPP), to integrate hazard mitigation, emergency preparedness, and community resilience projects. This update will make resilience initiatives eligible for DHHL grants and provide local match funding opportunities for federal programs. Key Components: - Make resilience projects eligible for DHHL grant funding. - Position DHHL and homesteaders to leverage funds for implementation and future resilience stages. - Coordinate with service providers to identify suitable sites for a new cell tower to expand coverage and strengthen communications during emergencies.	Yes	$20,000
DHHL A2	Water Delivery Technical and Feasibility Study	- DHHL Water Specialist - DHHL LDD - HHAs	- State Department of Agriculture (DOA) - HHAs	Mid Term	- HCF	DHHL	Conduct a technical and feasibility study to evaluate options for improving water delivery systems that support wildfire protection, agriculture, and residential needs in fire-prone ahupuaʻa. The study will assess the potential for a Molokaʻi Irrigation System (MIS) interconnection and new pump infrastructure above Kalamaʻula to supply ag water for fire mitigation and homestead lots. Key Components: - Complete a technical and engineering feasibility study to evaluate MIS interconnection and pumping alternatives. - Identify potential water sources and conveyance routes to supply mauka areas along fire breaks. - Support wildfire mitigation, residential fire protection, and mauka restoration through improved water access. - Assess costs, maintenance, energy requirements, and environmental impacts of system upgrades. - Coordinate with DHHL, DOA, Maui County, and community associations to align with existing water infrastructure plans. - Develop conceptual designs and funding pathways for future implementation.	Yes	$100,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities/Co-benefits (*)/Costing	Funding Main Applicant	Details	Workforce Development	Cost Estimates
DHHL B1	Conduct Archaeological Inventory Survey for Ahupuaʻa*	- DHHL	- HHAs	Mid-Term	- OHA	DHHL	Complete an archaeological reconnaissance survey of DHHL mauka lands to identify and document historic and cultural sites. This proactive survey will support cultural resource protection and help streamline future restoration or infrastructure projects that may require State (HRS 6E) or Federal (Section 106) Historic Preservation review. Key Components: - Conduct field surveys to identify and map historic properties and cultural sites. - Evaluate each site's integrity and significance. - Prepare documentation to register eligible sites with the State or National Register of Historic Places. - Develop management recommendations to protect and steward identified sites. - Use findings to streamline environmental review and permitting for future resilience projects. - Collaborate with cultural practitioners, lineal descendants, and the State Historic Preservation Division (SHPD).	Yes	$200,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities/Co-benefits (*)/Costing	Funding Main Applicant	Details	Workforce Development	Cost Estimates
DHHL C1	Conduct Historical Hydrological Study	- DHHL - USGS	- HHAs - DLNR Commission on Water Resource Management (CWRM) - University of Hawai‘I (UH) Richardson School of Law, - OHA - Cultural Practitioners & Kupuna Council	Short-term	-USGS	DHHL	Undertake a comprehensive Historical Hydrological Study to document past and present water flow patterns, including historic diversions, springs, and stream networks across the ahupua‘a. This study will establish a scientific and cultural baseline for future watershed restoration, groundwater management, and climate resilience planning. Key Components: - Conduct research on historical and current water flow systems, including streams, springs, diversions, and irrigation channels. - Map and assess historic and existing springs and waterways to understand hydrologic change over time. - Develop a baseline dataset to guide mauka restoration, reforestation, and water management strategies. - Collaborate with DLNR, CoM, and other agencies in coordination with CoM’s Moloka‘i Water Use Development Plan. - Request USGS partnership to conduct hydrologic modeling and monitoring. - Reference existing studies such as the USGS Assessment from Kawela and the USGS 3D Model of the Kualapu‘u Aquifer. - Engage DHHL’s Water Resource Management Specialist to lead coordination, data management, and integration with DHHL planning. - Incorporate both traditional knowledge and scientific data to identify opportunities for spring restoration and sustainable water use.	Yes	N/A, defer to USGS

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities/Co-benefits (*)/Costing	Funding Main Applicant	Details	Workforce Development	Cost Estimates
DHHL C2	Develop MOU for Drainageway Maintenance and Improvements	- DHHL PLO - DHHL LMD	- CoM - Hawai'I DOT - HHAs	Short-Term	- Act 96	DHHL	Establish a Multi-Agency Memorandum of Understanding (MOU) between DHHL, the County of Maui (CoM), and the Hawai'i Department of Transportation (DoT) to coordinate drainageway maintenance and improvements. This partnership will create consistent protocols for cleaning and maintaining streams, culverts, and ravines to reduce flooding risks and protect homestead communities. Key Components: - Develop a formal MOU between DHHL, CoM, and DoT to clarify responsibilities and maintenance schedules for shared drainage systems. - Coordinate routine inspection, cleaning, and repair of streams, culverts, and drainage channels to prevent sediment buildup and overflow. - Conduct GIS mapping to document drainageway locations, easements, and right-of-way ownership across agencies. Align drainage management activities with DHHL leases and parcels for coordinated access and maintenance. - Establish clear communication procedures and contact lists for emergency and non-emergency maintenance needs. - Integrate Homestead Associations into the coordination process for reporting, monitoring, and local oversight. - Improve flood prevention, protect infrastructure, and strengthen agency-community collaboration.	No	$90,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities/Co-benefits (*)/Costing	Funding Main Applicant	Details	Workforce Development	Cost Estimates
DHHL C3	Conduct a Study of Kūlana ʻŌiwi Drainage and Flooding Impacts	- DHHL - HHAs	- CoM Public Works - MEMA	Mid-Term	- HCF - OHA - FEMA - USACE	DHHL	Undertake a focused hydrological study of Kūlana ʻŌiwi to understand how stormwater runoff and drainage patterns affect neighboring homestead lots. The study will identify causes of localized flooding, model water flow during storm events, and recommend solutions that integrate with island-wide flood prevention and drainage improvement strategies. Key Components: - Conduct hydrological flow mapping during major rain and storm events to understand drainage dynamics around Kūlana ʻŌiwi. - Assess impacts to adjacent homestead properties, including flooding depth, duration, and flow direction. - Identify infrastructure or design factors at Kūlana ʻŌiwi that may exacerbate flooding in surrounding areas. - Develop recommendations for drainage improvements or redesign, such as grading adjustments, stormwater detention, or green infrastructure. - Integrate findings with the broader Drainage Master Plan and flood prevention strategies for the Molokaʻi coastal homestead region. - Collaborate with DHHL, County of Maui, and local residents to share data and identify community-led solutions. - Support long-term planning for resilient land use and infrastructure design that reduces flood risk to homestead communities.	Yes	$600,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities/Co-benefits (*)/Costing	Funding Main Applicant	Details	Workforce Development	Cost Estimates
DHHL D1	Develop Kalamaʻula Mauka Agriculture Lots	- DHHL	- Lot Awardees	Mid Term	-Act 96	DHHL	Plan and implement the development of new agricultural lots in Kalamaʻula Mauka to expand homestead opportunities and support local food production. Complete all planning, design, and compliance steps necessary to ensure sustainable and legally compliant development with essential infrastructure in place. Key Components: - Prepare a Master Plan and subdivision design for the Kalamaʻula Mauka Agriculture Lots. - Complete an Environmental Assessment in compliance with HRS Chapter 343. - Obtain County subdivision approval and necessary permits. - Provide essential infrastructure including roads, drainage systems, and water service to support agricultural use and homestead development.	Yes	$5,500,000
DHHL D2	Convert Cesspools	- DHHL - HHAs	- Lessees	Mid Term	EPA Closing America's Wastewater Access Gap (CAWAG) - technical assistance. Clean Water State Revolving Fund (CWSFR) - funding for conversion. -Act 96/DHHL-CAT Projects Pg. 2, Project #2 Strengthen Hawaiʻi Homes Program, Statewide -SRF Clean Water State Revolving funds– DHHL working on with EPA (Timeline: Mid 2026 ETA-Waianae Valley as Priority Pilot Project, MCH-CRP can used to advocate for future priority project)	DHHL	Reduce water contamination and improve public and environmental health by converting existing cesspools to approved septic or alternative individual wastewater systems. Prioritize conversions in high-risk areas identified by the Hawaiʻi Cesspool Prioritization Tool and ensure alignment with county and state standards. Key Components: - Convert cesspools to septic systems or other approved alternative wastewater systems. - Prioritize Southshore Molokai, designated as a Priority 1 area in the Hawaiʻi Cesspool Prioritization Tool. - Reference the list of approved wastewater systems in the Maui County Code for compliance. - Align implementation with the Molokai Cesspools Conversion Study (2023) to ensure consistency with existing plans and data.	No	$5,000,000

#	Mitigation Strategies	Primary Responsible Entity/ies	Secondary Responsible Entity/ies	Timeline	Funding possibilities/Co-benefits (*)/Costing	Funding Main Applicant	Details	Workforce Development	Cost Estimates
DHHL E1	Evaluate Shoreline and Ecological Impacts of Kaunakakai Wharf	- DHHL - USACE - Hawai'I DOT - CoM	- UH Sea Grant / UH WRRC - HHAs	Mid-Term	- OHA - HCF - Pacific Islands Climate Adaptation Science Center (PI-CASC)	DHHL	Conduct a comprehensive assessment of the Kaunakakai Wharf to understand its long-term ecological and hydrodynamic impacts on the surrounding shoreline and marine environment. This strategy will combine scientific study with traditional knowledge to evaluate changes to currents, sediment flow, and habitat conditions, informing future restoration and management decisions. Key Components: - Examine how the wharf has altered shoreline currents, sediment transport, and erosion/sedimentation patterns. - Assess impacts on fishpond functionality, freshwater spring flow, and overall marine habitat health. - Evaluate effects on limu and fish populations, as well as water quality and turbidity. - Conduct site observations of areas west of the wharf, including clean sand zones and mangrove-influenced areas, to understand current dynamics. - Perform historical reviews and document traditional knowledge sources (e.g., Henry Paleka and other community historians). - Engage with kūpuna, shoreline residents, and local fishermen to incorporate community observations and cultural perspectives.	Yes	$1,200,000
DHHL E2.	Provide Long-Term Maintenance for Kalaniana'ole Hall	- DHHL	- HHAs - Licensee - Contractor	Short Term	- Act 88, SLH 2021, as amended by Act 248, SLH 2022	Licensee	Stabilize and maintain Kalaniana'ole Hall to preserve its structural integrity and cultural value while long-term plans are developed collaboratively with the community. This strategy ensures the building remains safe and secure until future restoration or reuse decisions are made through beneficiary consultation. Key Components: - Stabilize the existing structure to prevent further deterioration. - Install fencing around the site to ensure safety and manage liability. - Conduct regular maintenance and monitoring of the building's condition. - Hold community meetings with beneficiaries to determine long-term plans for restoration, use, or redevelopment. - Long-term management / maintenance of the facility would be determined through a disposition with Homestead Association or Beneficiary-Led Organization.	Yes	$1,500,000

Appendix G

Comments on the Draft Plan

From: Sybil Lopez
Sent: Wednesday, January 7, 2026 8:20 AM
To: Barbara Natale
Cc: McPherson, Nancy M; Cody Winchester
Subject: Re: DHHL MCH-CRP: Agenda for Sybil Meeting
Attachments: 2025 Maui County HMP full (1).pdf

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Filed in TonicDM, 223070-01 DHHL Molokai Coastal Resiliency Plan

Aloha Barbara;

Reviewing the Beneficiary Outreach page and identification of stakeholders, why do we not have Kalama'ula Mauka Homestead Association-President, Uncle Mango Stephens and SCHHA Molokai Mokupuni Director Sybil Lopez identified?-Reference Appendix B

Can someone please explain because you have our names as attendees, but do not have us as stakeholders? Why is that?

Who identified these subject matter experts (SMEs) and the interaction with its beneficiaries-the stakeholders to the trust? There needs to be more dialogue between the HBAs, beneficiaries, and the SMEs. There were many of this going on in Workshop #3 and many of the reports have been too vague to know what results actually came from the beneficiaries themselves and what came from the subject matter experts.

For instance, B-6 Feral Management is not what the Beneficiaries want! This has been an ongoing territorial battle between Homesteaders-hunters and the Molokai Hunting Club, DLNR, and TNC because of their poor communication and engagement with its people. According to the sustainability study that SM conducted, thirty five percent of us subsist on these lands and many of us have deer as our staple food. Many of us also consider deer as a cultural practice being such that it was a gift to our King from the King of India as a food source. The County Council also is finding ways for food security to occur utilizing the deer as a food source. We, as HBAs, would like to manage properly and what has been shared in B-6 is nothing that the Beneficiaries expressed! Its obvious that this portion has not been consulted with US! If you realize who is in the Community, we have a thriving business operating within Kalama'ula Mauka focusing on deer from food products to household items and more. We want the resources available to create a cottage industry and not only feed our people, but commoditized what was given to us centuries ago. Fencing is the biggest problem that only pushes the same problem to neighboring properties. It is time to do it right and not continue bad past practices.

Agriculture, Diversification, Environment, & Public Transportation Committee on 2025-08-07 9:00 AM

The 2025 COM Hazard Mitigation Plan includes six action items that focus on Molokai which I would want to be included in this plan.

Sybil

From: Sybil K. Lopez
Sent: Wednesday, January 7, 2026 11:57 AM
To: Barbara Natale; Cody Winchester; McPherson, Nancy M
Cc: Lisa Charette
Subject: 2025 HMP Update and 52 Mitigation Strategies
Attachments: 2025Update.HMP.Molokai.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Filed in TonicDM, 223070-01 DHHL Molokai Coastal Resiliency Plan

Aloha Barbara;

2025 Planning and MEMA along with the Consultant Tetra-Tech was able to submit mitigation strategies for the island of Molokai.
I attached the table that lists 52 mitigation strategies and highlighted those that pertain directly to Molokai. Within the document, I attached the following mitigation strategies that I would request be inserted within the Molokai Homestead Resilience Plan:

1. Isolated Community Preparedness
2. Wildfire Mitigation in Non-CWPP Areas
3. Molokai Energy Supply
4. Stream Maintenance Plan
5. Molokai Risk Assessment
6. Molokai Working Group
7. Axis Deer Mitigation

Please let me know if you need more assistance.

Mahalo;

Sybil K Lopez
Molokai Planner
COM-Department of Planning-Current Division

From: Sybil Lopez
Sent: Wednesday, November 19, 2025 8:38 AM
To: Iwalani Laybon-McBrayer
Cc: McPherson, Nancy M; Lehua Kauka; kalani.johnston@gmail.com; Tina Schonely; Hala Pa-Kala; Bridget Mowat; pearlkamakana@gmail.com; Sumu Asano; KHHA Secretary; Brent Nakihei; kaleo11crivello@gmail.com; anahaki@gmail.com; stacy.c63@gmail.com; naikeltd@gmail.com; Nani Kahinu; hoaainable@gmail.com; annapuaoi@gmail.com; kaahaainam@yahoo.com; Kahekili Pa-Kala; Cody Winchester; Barbara Natale; Katy Mokuau; heather.hfia@hawaiiforest.org; Eli, Stacelynn K; Carreira, Shelly P; Kai MacDonald; Kilia Purdy-Avelino; Kilia Purdy Avelino; Burrows-Nuuanu, Leatrice W; Ron Kodani; Patty; Pat Kahawaiolaa; Lawrence Lasua; Phillip Stephens
Subject: Re: FYI - HHC Meeting today - Item G-2 HHC Review Draft of MCH-CRP

Categories: Filed in TonicDM, 223070-01 DHHL Molokai Coastal Resiliency Plan

Mahalo Iwalani and Kainoa for supporting Molokai!

Nancy and Cody;

Thank you for your presentation at the Commission meeting. It has been very eye-opening, particularly in seeing how much of the work has been shaped without adequate beneficiary involvement and how selectively the presentation appears to have been vetted.

I would like to highlight several critical concerns that arose from your presentation:

1. Discrepancies in project information and priorities
There is a notable difference between the last information provided to beneficiaries dated **September 12, 2024**, which outlined the priority projects at that time, and the information presented at the Commission meeting. You mentioned that a series of "expert" meetings took place after that date; however, these meetings were not shared with beneficiaries, nor were the resulting changes brought back to us for confirmation or review. E kala mai if information has been shared after this date with other beneficiaries, but September 12, 2024 priority project spreadsheet was the last email that was sent to me. This discrepancy needs clarification so we can fully understand how and why the priorities shifted.

2. Clarification of your repeated use of the word "we"
Throughout the presentation you stated, *"We met with experts, we held meetings, we went on huaka'i, we identified the challenges,"* and *"we will be submitting grants for implementation."* Beneficiaries would appreciate clarity on who the "we" refers to in each of these statements. I believe the "we" shifted in references, but if "we" does not include beneficiaries or Homestead Beneficiary Associations, it's important that this distinction be made clear so there is no misunderstanding about who participated in these activities and who will be involved in future

actions such as grant submissions; full transparency. We all want to make sure that the Commission is not being misled.

3. Defining the exclusive role of Beneficiaries and Homestead Beneficiary Associations (HBAs)
It is important that the plan clearly establishes the role of the Beneficiaries and Homestead Beneficiary Associations. This includes:

- Creating a formal framework for HBA involvement, where they are now, where they want to be and how involved
- DHHL supported efforts to assist in building capacity within the associations, and
- Providing technical assistance to ensure they are fully equipped to lead and implement these projects.

HBAs play a critical role in every phase of the process, from initial planning to final implementation, and their central position should be clearly outlined within the plan.

4. Identification of partnership roles and jurisdictional responsibilities
The plan should clearly identify the roles and responsibilities of all "**partners**", including DHHL, state agencies, county departments, federal agencies, and outside organizations or resources. Without clearly defined jurisdictional roles, it becomes difficult for beneficiaries to understand who is accountable for decision-making, coordination, and implementation. It is also essential that the Trust and its Beneficiaries remain the top priorities throughout this process. As a perfect example and in line with Sumu's comments regarding meetings with OPSD and the consultants about CZM and other jurisdictional matters, these topics should be fully discussed, vetted, and incorporated into the planning framework to ensure clarity and alignment moving forward. How are these "partners" aligned with the beneficiary goals of this process?

5. Incorporating Beneficiary Initiated projects

Examples of beneficiary-initiated or beneficiary-aligned projects that should be prioritized and integrated into the current planning framework include:

- Road improvements
- A comprehensive deer management plan
- Resources to renovate Kūpuna homes
- A Kūpuna relocation program
- The Kalama'ula Mauka Passive/Ag Park
- Dedicated risk-reduction support for Native Hawaiians
- The Maui Fire Department Inspection Program
- Updating the Moloka'i Community Wildfire Protection Plan (CWPP)
- Moloka'i coastal resilience efforts
- A stream maintenance plan

- The FEMA Tribal Mitigation Plan

Incorporating these projects—many of which have already been identified, are currently underway, or are aligned with existing county, state, and federal planning efforts—would strengthen the overall strategy and ensure that beneficiary-driven priorities remain at the core of resilience and development planning. Many of these initiatives originate from established community processes such as the **2019 Moloka'i Regional Plan**, the **2024 CWPP**, the **2025 County of Maui Hazard Mitigation Plan update**, and the **Moloka'i Clean Energy Resilience Action Plan (CERAP)**.

Through island-wide, community-vetted efforts grounded in Moloka'i's value-based priorities, these initiatives support a vision of **self-governance and self-determination**. For example, the Moloka'i CERAP emphasizes that "Moloka'i's renewable energy system should improve access to reliable clean electricity island-wide at all times, so residents are secure during and after an emergency or disaster. The critical connection between energy self-sufficiency and emergency preparedness should be reinforced by all organizations responsible for these life-saving services. Residents should not bear the burdens of brown-outs, black-outs, and damage to property caused by an insufficient system." This type of guidance directly reflects the needs and priorities expressed by beneficiaries.

At the next meeting, I would like clarity on **why or how many of these solution-based, community-initiated, and ongoing projects—some of which are already embedded in other formal planning processes—were discussed more deeply or integrated into the current plan**. Specifically:

- Were these grassroots, boots-on-the-ground initiatives reviewed or considered?
- If so, what internal discussions were held about them?
- If not, what prevented their inclusion?
- And importantly, **were beneficiaries meaningfully involved in these conversations?**

Understanding this will help ensure that the planning process remains grounded in community leadership rather than a top-down approach, and that future decisions fully reflect the priorities and knowledge of Moloka'i beneficiaries.

5. Meaningful discussions with beneficiaries and clarity regarding future planning efforts
It is essential that beneficiaries have opportunities for meaningful and informed discussions throughout this process—opportunities that allow us to understand our roles and responsibilities clearly. Additionally, you mentioned that in **2026**, the Planning Office will begin the Moloka'i Island Plan update and the statewide DHHL Disaster & Climate Risk Reduction Plan. Both of these efforts should build on the lessons learned through the MCH-CRP.
By establishing a strong policy foundation rooted in authentic beneficiary input, DHHL will be better positioned to develop, support, and implement the resilience strategies outlined in the MCH-CRP.

Moving forward, we would like to understand **how this planning process will leverage beneficiary involvement in future planning efforts**—specifically, how beneficiaries will be engaged, how their feedback will be integrated, and how their leadership will be supported in shaping long-term resilience and development strategies.

The original intent of Prince Kūhiō Kalaniana'ole's legacy through the Hawaiian Homes Commission Act was to restore and rehabilitate Native Hawaiians by returning them to the land, enabling a path toward true self-determination and community resilience.

I have provided this information in hopes that as you prepare for the next meeting/workshop, these shall be addressed and incorporated through the rest of this process.

Mahalo for your time regarding this matter. I look forward to the next phase of this process.

Sybil

Appendix H

Appendix H

Project Fact Sheets

Priority

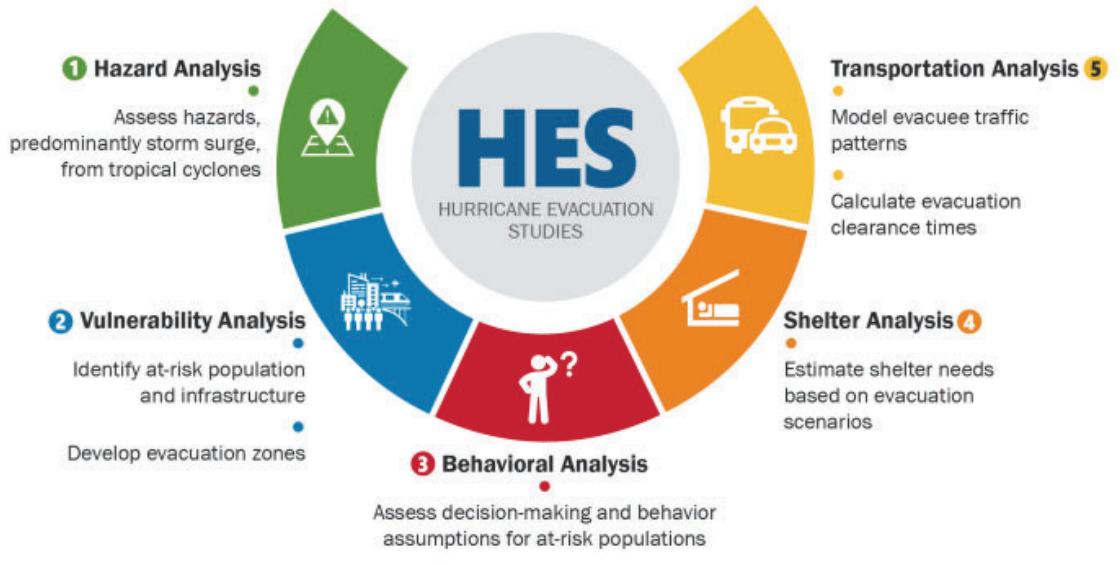
Project Name:
A1: Create a Pre-Disaster Emergency Response and Evacuation Plan

Project Lead: HHAs	**Partners:** - DHHL PLO - DHHL LMD - DHHL LDD - Molokai District Office - HWMO - HIEMA - MEMA - Molokai Emergency Operations Center
Applicable Homesteads: Kalamaʻula, Kapaʻakea, and Kamiloloa	**Priority Project Identification** Kapaʻakea (1) and Kamiloloa (1)
Cost: $800,000	**Funding Possibilities:** - State or County/MEMA & HIEMA Hazard Mitigation funding - Hawaiʻi Community Foundation (HCF) - Climate Impact Fee (Act 96) - HWMO - Federal Funding for Community Wildfire Protection Projects

Project Description:
A Pre-Disaster Emergency Management Plan will identify risks, vulnerable populations, and emergency routes within each ahupuaʻa. The plan will coordinate roles and responsibilities among DHHL, homestead associations, emergency services, and community volunteers. It will also incorporate culturally grounded approaches to preparedness, training, and communication.

Key Components:
- Assess population size, household needs, and vulnerable groups (kupuna, keiki, people with disabilities).
- Include pets, vehicles, and transportation needs in evacuation planning.
- Use GIS data, DHHL's Kalamaʻula Road Assessment, and other mapping resources.
- Clarify responsibilities and communication between agencies and homestead communities.
- Identify and document community assets that could support emergency response and recovery efforts, including residents, businesses, skills, equipment, and facilities. This inventory can be used to quickly mobilize local resources during events such as evacuations, debris removal, medical support, and damage assessment.
- Incorporate the plan into State and County Hazard Mitigation Plans for consistency.
- Coordinate with Fire Department and HWMO Firewise Support Specialists serving Molokaʻi.
- Encourage participation in CERT (Community Emergency Response Team) and NDPTC (National Disaster Preparedness Training Center) programs for homestead boards and volunteers.
- Conduct regular workshops and exercises to strengthen preparedness and build leadership capacity.

Implementation Phases / Funding Tiers:
<u>Tier 1 (Site Assessment and Preliminary Design)</u>
Risk assessment; traffic studies; site suitability study; evacuation modeling; stakeholder coordination; preliminary evacuation framework; and community engagement
<u>Tier 2 (Detailed Design and Permitting)</u>
Final plan drafting, detailed route design; MOUs; training program development; and compliance review
<u>Tier 3 (Implementation)</u>
Achieved through the implementation of subsequent, action-specific projects identified in the plan (A2, A3, A4,A5, and A6).



Source: FEMA Hurricane Evacuation Studies and Evacuation Planning Fact Sheet (2024)

Project Name:
A3: Develop Resilience Hubs or Evacuation Sites

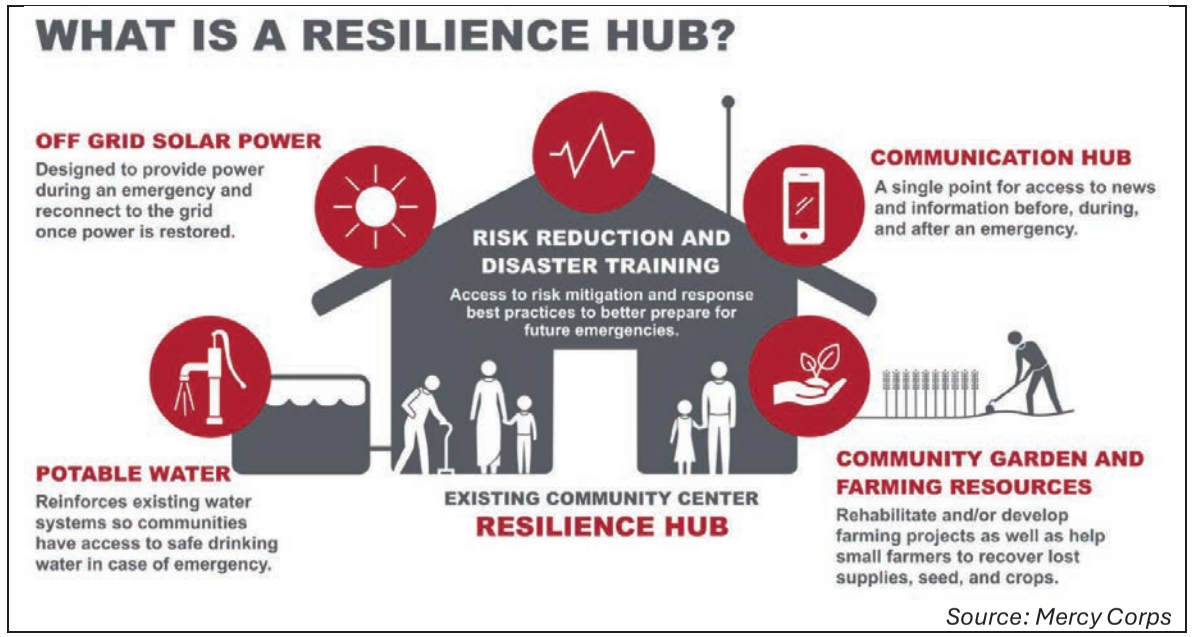
Project Lead: HHAs	**Partners:** - DHHL - MEMA
Applicable Homesteads: Kalamaʻula, Kapaʻakea, and Kamiloloa	**Priority Project Identification** Kalamaʻula (2)
Cost: $3,500,000	**Funding Possibilities:** - FEMA - Act 96

Project Description:
Establish new resilience hubs and/or evacuation sites in mauka areas, safely outside of flood and coastal hazard zones. These hubs will serve as community gathering centers year-round and become activated during disasters to provide emergency support and resources for homesteads.

<u>Key Components:</u>

- Update DHHL land use designation to “Community Use” to allow development
- Identify and develop a mauka site for a resilience hub and evacuation area.
- Equip hubs with back-up power, water, food storage, communication systems, and emergency supplies.
- Serve dual purpose: community center during normal operations; evacuation and recovery site during disasters.
- Host preparedness training, workshops, and community coordination meetings.
- Incorporate community gardens or greenhouses to strengthen local food security.
- Design facilities to be energy-efficient, climate-adapted, and culturally grounded.
-

Implementation Phases / Funding Tiers:
<u>Tier 1 (Site Assessment and Preliminary Design)</u>
Activities are fulfilled through the development of A1 (Pre-Disaster Emergency Management Plan), and funding will be pursued for Tier 2 and Tier 3 only.
<u>Tier 2 (Detailed Design and Permitting)</u>
Land dispositions, architectural / engineering design; environmental review; historic preservation & biological reviews; utilities planning; O&M plan; emergency operations protocols; permits and approvals; workforce development
<u>Tier 3 (Implementation)</u>
Construction; equipping hub; community training; drills; maintenance; adaptive management



Source: Mercy Corps

Project Name:
Fire Break Construction and Maintenance

Project Lead: HHAs	**Partners:** - DHHL LMD - County of Maui Department of Transportation - Molokai Homestead Livestock Association
Applicable Homesteads: Kalamaʻula, Kapaʻakea, and Kamiloloa	**Priority Project Identification** Kalamaʻula (4)
Cost: $2,500,000	**Funding Possibilities:** - State or County/MEMA & HIEMA Hazard Mitigation funding - Climate Impact Fee (Act 96) - HWMO - Federal Funding for Community Wildfire Protection Projects

Project Description:

Establish and maintain fire breaks around residential lots and along the wildland–urban interface to protect homes and community infrastructure from wildfire. Regular clearing and maintenance will improve safety, access, and long-term fire resilience.

Key Components:

- Identify and map fire break locations around homestead communities and along
- mauka boundaries.
- Clear and maintain vegetation to reduce wildfire fuel loads.
- Create and maintain access routes for firefighting and emergency vehicles.
- Implement a schedule for routine inspection and upkeep to keep fire breaks functional over time.
- Coordinate with land managers and agencies for shared maintenance across adjoining lands.
- Provide community training and stewardship opportunities for fire prevention and land management.

Implementation Phases / Funding Tiers:

Tier 1 (Site Assessment and Preliminary Design)
Activities are fulfilled through the development of A1 (Pre-Disaster Emergency Management Plan), and funding will be pursued for Tier 2 and Tier 3 only.

Tier 2 (Detailed Design and Permitting)
Land dispositions, engineering design; environmental review; historic preservation / biological reviews; maintenance plan; MOUs; cost estimating; permits and approvals; workforce development

Tier 3 (Implementation)
Procure equipment and materials; fire break construction; vegetation removal; erosion control; community training; routine maintenance

Source: HWMO 2025 Community Mitigation Funding Report

Project Name:
B1: Develop Mauka Restoration and Maintenance Plan

Project Lead: HHAs	**Partners:** DHHL PLO DHHL LMD
Applicable Homesteads: Kalamaʻula, Kapaʻakea, and Kamiloloa	**Priority Project Identification** Kalamaʻula (3), Kapaʻakea (3), and Kamiloloa (2)
Cost: $800,000	**Funding Possibilities:** - Climate Impact Fee (Act 96) - NFWF

Project Description:
Prepare a comprehensive Mauka Restoration and Maintenance Plan to restore degraded upper slopes, reduce erosion, and improve watershed health within the Molokaʻi coastal homestead ahupuaʻa. The plan will use aerial imagery, LiDAR, and field assessments to identify high-priority areas for restoration, fencing, and long-term land management that supports fire prevention, drainage, and native ecosystem recovery.

Key Components:

- Use aerial imagery and LiDAR analysis to map erosion hotspots, drainage corridors, and sediment pathways.
- Develop a land management plan by ahupuaʻa for fire suppression, prevention, and fuels management.
- Identify and design riparian buffer strips and restoration zones using native and drought-tolerant plants.
- Plan for irrigation systems and fencing to protect reforestation and agroforestry areas.
- Conduct biological and soil assessments to guide site-specific restoration design.
- Provide workforce opportunities and define community employment needs for plan implementation:
- Strengthen collaboration between homesteaders, DHHL, and partner agencies for long-term stewardship.
- Integrate TEK with scientific monitoring for adaptive management.

Implementation Phases / Funding Tiers:
Tier 1 (Site Assessment and Preliminary Design)
LiDAR and aerial mapping; TEK integration; AIS/biological studies; erosion and vegetation assessment; preliminary zone mapping; early fire management concepts; engineering studies
Tier 2 (Detailed Design and Permitting)
Draft and final mauka restoration master plan, Engineering for fencing/irrigation; species prescriptions; fire suppression design; phasing plan; historic preservation / biological reviews; workforce plan; cost estimates; monitoring protocols
Tier 3 (Implementation)
Achieved through the implementation of subsequent, action-specific projects identified in the plan (B2 and B3).

Source: Molokai Land Trust

Project Name:
C1: Develop a Drainage Master Plan

Project Lead: HHAs	**Partners:** - DHHL PO - DHHL LMD - County of Maui, Department of Public Works - U.S. Army Corps of Engineers
Applicable Homesteads: Kalamaʻula, Kapaʻakea, and Kamiloloa	**Priority Project Identification** Kapaʻakea (4) and Kamiloloa (3)
Cost: $800,000	**Funding Possibilities:** - HCF - State or County/MEMA & HIEMA Hazard Mitigation funding

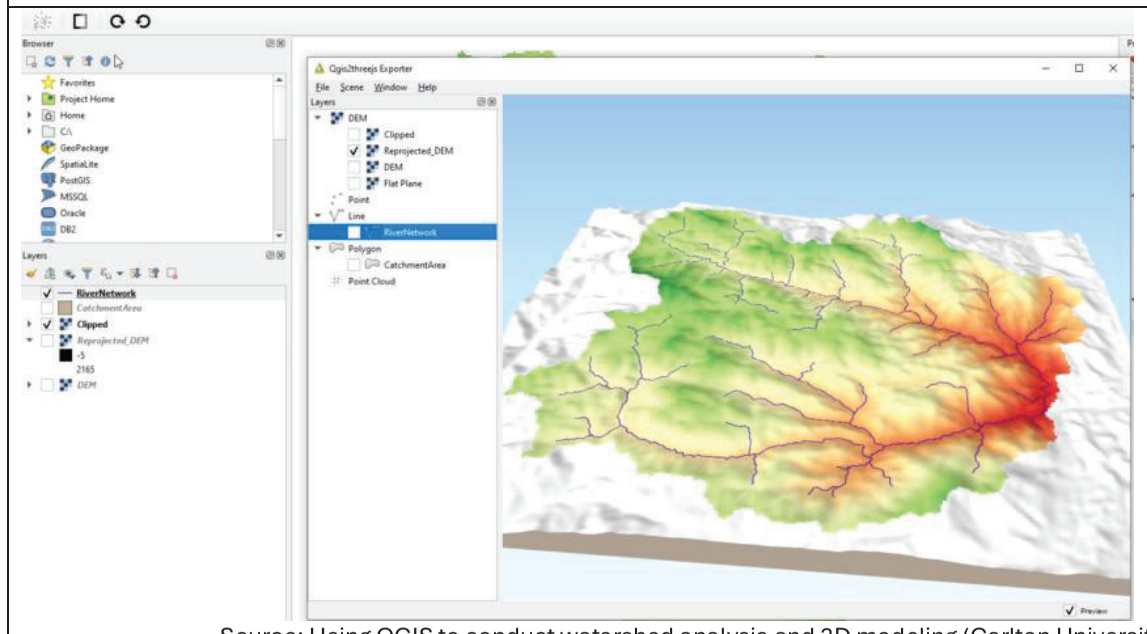
Project Description:

Prepare a comprehensive Drainage Master Plan for the entire ahupuaʻa to address chronic flooding, erosion, and sedimentation issues. The plan will integrate traditional and modern watershed management approaches to improve drainage infrastructure, protect homes and roads, and restore natural water flow from mauka to makai.

Key Components:

- Assess existing drainage systems, including canals, culverts, and ravines, to identify maintenance and capacity issues.
- Map natural drainage pathways and areas of sediment buildup or flood risk.
- Incorporate nature-based solutions such as vegetated swales, sediment traps, and
- restored wetlands.
- Coordinate drainage planning across all three homestead communities to manage stormwater collectively by ahupuaʻa.
- Develop design standards and maintenance schedules for long-term performance and resilience.
- Align with County and DHHL infrastructure planning, integrating recommendations into future capital projects.
- Include community education and workforce opportunities for maintaining and monitoring drainage systems.
- Reduce flooding risks to residential areas, roads, and nearshore ecosystems while improving water quality and aquifer recharge.

Implementation Phases / Funding Tiers:
Tier 1 (Site Assessment and Preliminary Design)
Watershed mapping; hydrologic/hydraulic modeling; inventory springs; infrastructure inventory and assessment; early hazard assessments; preliminary drainage concepts; community input; TEK integration
Tier 2 (Detailed Design and Permitting)
Engineered alternatives; phasing plans; cost estimates; environmental review; sediment control design; draft & final Drainage Master Plan; MOU's and policy setup
Tier 3 (Implementation)
Achieved through the implementation of subsequent, action-specific projects identified in the plan (C2, C3, and C4).



Source: Using QGIS to conduct watershed analysis and 3D modeling (Carlton University)

Project Name:
C2: Green-Grey Infrastructure and Maintenance Program

Project Lead:	**Partners:**
HHAs	- DHHL PLO - DHHL LMD - County of Maui, Department of Public Works - U.S. Army Corps of Engineers - Molokai Homesteads Livestock Association
Applicable Homesteads: Kalamaʻula, Kapaʻakea, and Kamiloloa	**Priority Project Identification** Kamiloloa (4)
Cost: $1,200,000	**Funding Possibilities:** - NFWF

Project Description:
Program to focus on keeping drainage canals, ravines, culverts, and natural waterways functioning properly to reduce flooding, erosion, and sediment impacts on homes, roads, and nearshore ecosystems. Combine regular, coordinated maintenance with targeted upgrades that blend green infrastructure and grey infrastructure approaches. Nature-based solutions such as native vegetation, bioengineering, and erosion control measures to be used alongside conventional drainage improvements to slow water, stabilize banks, and reduce sediment before it reaches the ocean. Regular maintenance of drainage canals, ravines, culverts, and waterways helps reduce flooding and sediment buildup that threaten homes, roads, and coastal ecosystems. This strategy strengthens community resilience by restoring natural water flow, reducing blockages, and protecting downstream areas and nearshore waters from erosion and pollution. Maintenance activities may also involve installation of stream gauges to monitor real-time water levels in key waterways to support early detection of flash flooding. Telemetric data collected from the gauges could be transmitted continuously and used to develop a flash flood warning system, including supporting software to analyze thresholds and trigger alerts. The system could be coordinated with State and County emergency management agencies to improve situational awareness, reduce response times, and support timely deployment of resources to areas at highest risk.

Key Components:
- Establish coordinated maintenance schedules for all drainage systems.
- Remove sediment, debris, and invasive vegetation from canals and culverts.
- Stabilize eroding banks with native vegetation and nature-based methods.
- Train community members in safe maintenance practices and monitoring.
- Installation of stream gauges
- Develop early detection systems

Implementation Phases / Funding Tiers:
Tier 1 (Site Assessment and Preliminary Design)
Activities are fulfilled through the development of C1 (Develop a Drainage Master Plan), and funding will be pursued for Tier 2 and Tier 3 only.
Tier 2 (Detailed Design and Permitting)
Land dispositions, detail design; historic preservation / biological reviews; USACE coordination; permits and approvals; workforce development; formal maintenance plan
Tier 3 (Implementation)
Install drainage upgrades; green/grey solutions; sediment & erosion controls; procure equipment and materials; routine maintenance; monitoring; adaptive management

Source: HWMO 2025 Community Mitigation Funding Report

Source: HWMO 2025 Community Mitigation Funding Report

Project Name:
D1: Create an Ahupua‘a Residential Hale Restoration and Relocation Study

Project Lead: HHAs	**Partners:** DHHL
Applicable Homesteads: Kalama‘ula, Kapa‘akea, and Kamiloloa	**Priority Project Identification** Kalama‘ula (1)
Cost: $800,000	**Funding Possibilities:** - Act 96

Project Description:
Conduct a coordinated study to guide the restoration, retrofitting, or relocation of homes within each ahupua’a to reduce exposure to chronic flooding, sea level rise, and coastal erosion. Use findings to inform the Molokai Island Plan Update (2026) and direct future homestead growth toward safer, less hazard-prone areas.

Key Components:
- Identify residential areas vulnerable to flooding, sea level rise, and erosion.
- Consult beneficiaries to guide planning, identify culturally and environmentally appropriate relocation sites, and prioritize community needs.
- Explore managed retreat options and relocation opportunities for at-risk homes.
- Develop assistance programs for beneficiaries to retrofit and protect existing homes.
- Align recommendations with the 2026 Molokai Island Plan Update to support resilient land use and housing decisions.

Implementation Phases / Funding Tiers:
Tier 1 (Site Assessment and Preliminary Design)
Develop decision making tool; homesteader surveys; needs assessment; relocation site suitability assessment; opportunities and constraints mapping workshops
Tier 2 (Detailed Design and Permitting)
Report development; integrate findings with planning process for Moloka‘i Island Plan Update
Tier 3 (Implementation)
Achieved through the implementation of subsequent, action-specific projects identified in the plan (D3 and D4).

Mauka land in Kamiloloa as potential relocation site

Mauka land in Kamiloloa as potential relocation site

Project Name:
D3: Adapt Structures and Systems to Better Withstand Coastal Hazards

Project Lead:	**Partners:**
HHAs	- DHHL PLO - NDPTC - HWMO / Firewise
Applicable Homesteads: Kalamaʻula, Kapaʻakea, and Kamiloloa	**Priority Project Identification** Kapaʻakea (5)
Cost: $1,000,000	**Funding Possibilities:** - DHHL - OHA - Act 96 - HWMO

Project Description:

Improve the physical resilience of homes and infrastructure in coastal areas to reduce vulnerability to flooding, erosion, fire, and storm impacts. Efforts include retrofitting and hardening existing structures, promoting community awareness through assessments and workshops, and leveraging partnerships with expert organizations.

Key Components:

- Retrofit Homes. Elevate, harden, and protect residential structures to withstand coastal and storm-related hazards.
- Partnership with HWMO for Firewise Home Assessment Program. Conduct home assessments to identify vulnerabilities and provide recommendations for fire and hazard resilience.
- Host sessions for lessees using Hwang's "Homeowner's Handbook to Prepare for Natural Hazards" to build knowledge of hazard mitigation techniques.
- -Request a Molokai-based workshop by UH Sea Grant to share best practices for coastal resilience and hazard adaptation.

Implementation Phases / Funding Tiers:

Tier 1 (Site Assessment and Preliminary Design)
Activities are fulfilled through the development of D1 (Create and Ahupuaʻa Residential Hale Restoration and Relocation Plan), and D2 (Conduct Vulnerability Assessments Survey). Funding will be pursued for Tier 2 and Tier 3 only.
Tier 2 (Detailed Design and Permitting)
Detail design; material specifications; permits and approvals; workforce development
Tier 3 (Implementation)
Procure equipment and materials; structural retrofits; utility protection; floodproofing; corrosion-resistant upgrades; monitoring; homeowner training

Source: Left: Homeowner's Handbook to Prepare for Natural Hazards (Hwang, 2019). Right: San Diego County Fire Protection District

Project Name:
E1: Develop Makai Restoration and Maintenance Plan

Project Lead: HHAs	**Partners:** - DHHL PLO - DHHL LMD - Ka Honua Momona - Moloka‘i Land Trust - ‘Āina Momona - -DLNR DAR - UH Sea Grant
Applicable Homesteads: Kalama‘ula, Kapa‘akea, and Kamiloloa	**Priority Project Identification** Kamiloloa (5)
Cost: $800,000	**Funding Possibilities:** - NWFW National Coastal Resilience Fund

Project Description:

Create a comprehensive plan to restore and manage shoreline areas through culturally grounded and ecologically sound practices. The plan will identify priority restoration sites, integrate traditional ecological knowledge with modern coastal science, and strengthen stewardship partnerships to protect and enhance coastal ecosystems. It will also serve as a foundation for future implementation, funding, permit approvals, and community engagement efforts.

Key Components:

- Identify priority shoreline areas for restoration and management.
- Provide education on native and cultural-based shoreline restoration methods (e.g., dry stack walls, native planting).
- Establish and maintain Makai Community Use Areas through coordinated planning and upkeep.
- Partner with Homestead Associations and beneficiary-led businesses for stewardship activities.
- Assess shoreline erosion, sedimentation, and invasive species impacts.
- Plan for the removal of invasive species (e.g., mangrove, gorilla ogo).
- Restore native coastal vegetation such as pōhuehue and ‘aki‘aki.
- Reconnect and enhance fishponds, wetlands, and freshwater springs.
- Include culturally appropriate access paths, interpretive signage, and stewardship zones.
- Use the plan as a foundation for future restoration projects, funding applications, and volunteer engagement.

Implementation Phases / Funding Tiers:

Tier 1 (Site Assessment and Preliminary Design)
Ecosystem assessments; hydrology; water quality; invasive mapping; marine habitat surveys; modeling; cultural consultation; threat identification; preliminary design concepts; prioritization

Tier 2 (Detailed Design and Permitting)
Draft and final makai restoration master plan; environmental reviews; USACE coordination; cost estimates, phasing plan

Tier 3 (Implementation)
Achieved through the implementation of subsequent, action-specific projects identified in the plan (E2, E3, E4, E5, and E6).

Source: Jack Kiyonaga (Molokai Dispatch, March 15, 2023)

Project Name:
E7: Maintain Kupuāiwa Coconut Grove and Kiowea Park

Project Lead:	**Partners:**
HHAs	- DHHL PLO - DHHL LMD
Applicable Homesteads: Kalamaʻula	**Priority Project Identification** Kalamaʻula (5)
Cost: $2,000,000	**Funding Possibilities:** - HISC - OHA - USDA Forest Service - HCF - DLNR – Kaulunani Urban and Community Forestry Program - National Park Service – Tribal Heritage or Historic Preservation Grants - DHHL Capital Improvements or Site Management Funding

Project Description:

Restore, enhance, and sustain the historic Kapuāiwa Coconut Grove and Kiowea Park through ongoing maintenance, habitat restoration, and community stewardship. Improve tree health, prevent pest infestations, and ensure long-term cultural and environmental stewardship. This strategy supports cultural access, recreation, and environmental resilience by restoring native ecosystems, improving facilities, pest management, and ensuring the park remains a safe and welcoming community space while safeguarding one of Molokaʻi's most significant cultural landscapes.

Key Components:

- Develop a comprehensive pest prevention and management plan for coconut and other native trees.
- Monitor and treat coconut trees affected by mites, disease, or other health threats.
- Remove invasive species such as kiawe and manage overgrowth.
- Establish early detection and response protocols for Coconut Rhinoceros Beetle (CRB) prevention.
- Improve soil quality and irrigation to support the long-term vitality of the grove.
- Engage the community in cultural restoration, education, and stewardship activities.
- Install fencing to manage access and address safety and liability concerns.
- Restore native vegetation and stabilize the shoreline to prevent erosion.
- Improve park infrastructure, including bathrooms, benches, signage, and utilities.
- Promote community-led maintenance, stewardship, and cultural education activities.
- -Utilize secured grant funding to complete the kitchen in the pavilion.

Implementation Phases / Funding Tiers:

Tier 1 (Site Assessment and Preliminary Design)
Condition assessment; cultural/ecological surveys; invasive population mapping; infrastructure & safety review; preliminary restoration concepts prioritization; early costs

Tier 2 (Detailed Design and Permitting)
Update / renew dispositions; maintenance & stewardship plan; landscape & drainage design; shoreline stabilization design; cultural protocol integration; infrastructure design; permitting; detailed cost & phasing; workforce development

Tier 3 (Implementation)
Procure equipment and materials; invasive removal; coconut planting & maintenance; facility / infrastructure upgrades; access improvements; cultural stewardship; monitoring & long-term maintenance

STATE OF HAWAI`I

DEPARTMENT OF HAWAIIAN HOME LANDS

February 17-18, 2026

To: Chairman and Members, Hawaiian Homes Commission

From: Lillie Makaila, Acting Planning Program Manager lkjm

Subject: Declare a Finding of No Significant Impact (FONSI) for the Final Environmental Assessment for the North Kona Wells – Keauhou Well Site & Kahaluʻu Water Storage Tanks, TMKs: portions of [3] 7-8-004:013, 014, and 015; & portions of [3] 7-8-009:014, 032, 054 and 077, Kona, Hawaiʻi.

Recommended Action

That the Hawaiian Homes Commission (HHC) issue a Finding of No Significant Impact (FONSI) declaration based on the Final Environmental Assessment (FEA) for the North Kona Wells Project – Keauhou Well Site & Kahaluʻu Water Storage Tanks, TMKs: portions of [3] 7-8-004:013, 014, and 015; & portions of [3] 7-8-009:014, 032, 054 and 077, Kona, Hawaiʻi.

Discussion

In both the 2009 and 2020 Regional Plans for Kealakehe/Laʻi ʻŌpua, water source development to support water supply for DHHL lands in North Kona was identified as a priority project for the region. These regional plans were developed through a regional planning process with beneficiaries and the plans were approved by the Hawaiian Homes Commission. The priority project, called "North Kona Water Source Development and Storage" focuses on working collaboratively with various stakeholders in the region to develop additional water sources in order to meet the needs of the Department to provide water for development of its lands in the region.

Currently, DHHL has approximately 1,400 acres in the North Kona Region. After the completion of Laʻi ʻŌpua Village 4 Phases I and II, DHHL will have exhausted its available water credits (equivalent units) on the County DWS water system to provide potable water, and will need additional credits to provide potable water for all planned future development in the region.

ITEM NO. G-3

Additional water credits are critical in order for DHHL to proceed with any of its planned development that requires water infrastructure in North Kona, including the construction of homesteads, community spaces, the expansion of existing community uses, etc. The unmet water demand for DHHL in North Kona is estimated to be 3.398 million gallons per day (MGD). In 2015, the Commission on Water Resource Management (CWRM) approved a water reservation for this need, 3.398 MGD, for North Kona. This water reservation is a kapu of water for DHHL's use, but does not mean immediate access to "wet water" to supply development.

The County DWS has advised DHHL that in order to access this water reservation, DHHL must develop additional groundwater well sources. It will likely take 3-4 groundwater wells with a capacity of 1MGD to supply the necessary water needed to fully develop the Department's lands in North Kona. County DWS has verbally told DHHL that it would give DHHL the "full amount" of water from groundwater well sources developed in the region. A groundwater well that has the capacity to pump 1MGD will pump that amount over the course of the 24-hour period. Best practices are to "rest" a well for an 8-hour period, or one-third of the pumping time. The County water credit allocation formula for a 1MGD well is as follows:

- 1,000,000 gallons x two-thirds = 666,666 gallons per day (this assumes that the well will not be pumping 24-hours, but will rest for 8-hours)
- 666,666 gallons per day/one water credit or 600 gallons per day = 1,111 water credits
- 1 water credit = 1 housing unit = 1 residential homestead

Therefore, a 1MGD well source can potentially supply 1,111 residential homesteads.

DHHL's existing lands in North Kona do not overlay a reliable water source, and the lands that are located mauka of the Kāloko-Honokōhau National Park are located within the National Park Service's area of concern for water source development. This area of concern is described as the four ahupua'a in the vicinity of the park where studies indicate that groundwater well development will negatively impact the park resources and the traditional and customary native practices that rely on the groundwater sources in this area (See Figure 1 below). For these reasons, DHHL has be tasked to look for potential groundwater well sites off DHHL lands.

DHHL has identified two potential groundwater well locations in the Kona region that could supply the necessary potable water needed (See Figure 1). One site is currently owned by the Kamehameha Schools Bishop Estate and located in Keauhou. The second site is referred to as the Gianulias property, and was recently acquired by the Department for water source development, with acquisition closing September 2025.

Negotiations for the acquisition of this parcel have been on-going since 2018. Beneficiaries in the Kona Region have encouraged the Department to move forward with land acquisition and water source development of this property throughout the on-going negotiations with the current landowners. Here is a table of the major milestones in the acquisition process:

Action	**Date**
Due diligence studies	Completed
Compliance (HRS CH.343)	In-progress
Compliance (HRS CH. 6E)	In-progress
Letter of Intent	In-progress
Purchase and Sales Agreement	Next step
Projected closing	2nd Quarter 2026

The Department of Hawaiian Home Lands (DHHL) is proposing to develop a new potable water well source, three concrete water storage tanks, associated water transmission piping, pumps, control building, fence, chlorination building, generator, transformer, electrical improvements, access road, and other appurtenant improvements necessary for the proper operation and maintenance of these facilities.

The proposed action consists of the Keauhou Well 2 site (Well Site) and the Kahaluʻu Tanks site (Tank Site). The well, tank and transmission line features will be developed on portions of the privately owned parcels identified above.

The Well Site improvements would consist of:
- A 2-million-gallon reinforced concrete storage tank
- A second well source
- Well pumps
- A pump control building
- Chlorination system
- Electrical improvements and site lighting
- Access road upgrades
- Chain-link fencing

• Water transmission line to connect to the existing Keauhou tank

The Tank Site improvements would consist of:
• Demolition of the existing 100,000-gallon, 50,000-gallon steel tanks, and 0.3 mg tank
• Construction of two new concrete tanks
• Pump improvements
• A pump control building
• Piping improvements, including valves and other appurtenances
• Electrical lines
• Access road upgrades
• Chain-link fencing
• Site grading, retaining walls

A Final Environmental Assessment (EA) has been prepared to study the affected environment, assess potential environmental and socio-economic impacts, and propose measures to mitigate potential impacts. Table 1 summarizes the findings and mitigation measures from the Final EA.

NORTH KONA WATER
POTENTIAL SOURCE DEVELOPMENT SITES

LEGEND

- DHHL Lands
- Gianulias Site
- KS Well Site
- Ahupua'a
- Kāloko-Honokōhau National Historical Park

HAWAIIAN HOME LANDS

Figure 1

Table 1:

Affected Resource	Short-term Impacts	Long-term Impacts	Cumulative Impacts	Mitigation Measures
Land Use	None Anticipated	None Anticipated	None Anticipated, all future growth resulting from the Proposed Action and other developments are within designated growth areas	Final well location will be outside areas classified as Agricultural Lands of Importance to the State of Hawai‘i
Geology, Topography, and Soils	Clearing, grading and grubbing	None Anticipated	None Anticipated	Grading, Grubbing and Stockpiling permits per Hawai‘i County Code, Chapter 10—Erosion and Sediment Control; soil loss and erosion Best Management Practices (BMPs)
Hydrologic Resources	None Anticipated	Greater groundwater withdrawal from the Keauhou Aquifer System Area within the aquifer’s sustainable yield	Greater groundwater withdrawal from the Keauhou Aquifer System Area within the aquifer’s sustainable yield	Soil loss and erosion BMPs; Well Construction and Pump Installation Permits; Engineering Report compliant with HAR §11- 20-29; NPDES permit
Biological Resources	Potential spread of invasive species; Temporary displacement of fauna species during construction phase	None Anticipated	None Anticipated	Invasive species control measures; fauna avoidance and impact reduction BMPs; biological resource training for crews; fauna resource buffers

Affected Resource	Short-term Impacts	Long-term Impacts	Cumulative Impacts	Mitigation Measures
Archaeological and Historic Properties	None Anticipated	None Anticipated	None Anticipated	Cultural resource training for construction crews; archaeological monitoring during construction; notify SHPD if cultural or historic resources are identified during construction; cease work immediately and contact SHPD, coroner and police if iwi kūpuna are identified during construction activities, and develop reinternment plan as appropriate

Cultural Resources and Practices	None Anticipated	None Anticipated	None Anticipated	DHHL will uphold its mandates as prescribed by law; site water source development within the same ahupua‘a as it will be consumed whenever possible; implement efficiency and conservation measures in transportation, storage and consumption in areas that are importing water; water recycling efforts; water conservation collaboration/partnership in public awareness campaign; culturally informed research, studies and monitoring to inform mitigation; appropriate thresholds identified and upheld; regional monitoring program with benchmarks and actions tied to those benchmarks; propose management options if the trend is towards detrimental effects; frequent, meaningful, and accessible updates regarding research, studies and monitoring practices should be available to stakeholders; DHHL will consider the formation of a hui open to stakeholders to advise water-related decision-making and aid in outreach to stakeholders at large; DHHL will make efforts to encourage more

				beneficiaries and members of the native Hawaiian community to be involved in the Boards of Water Supply meetings and to be members on the Boards of Water Supply so these important stakeholders are able to have more authority over water use; DHHL should commit financially and administratively to supporting community-managed water resource management; DHHL will advocate for and participate in the update of the Water Use and Development Plan for Hawai'i County; DHHL will support and advocate for Commission on Water Resource Management (CWRM) analysis of water availability and revised sustainable yields, including a process that has substantial opportunity for public input; DHHL will advocate for CWRM to share more rigorous summaries of existing state of knowledge as published; DHHL will advocate for and participate in the update of the Statewide Framework for Updating the Hawaii Water Plan (Framework); DHHL will aid in funing mālama 'āina/watershed management efforts in affected ahupua'a to

Affected Resource	Short-term Impacts	Long-term Impacts	Cumulative Impacts	Mitigation Measures
				increase water recharge and to allow for mālama of places and areas critical for the continuation of native practices; DHHL will create a clear pathway for long-term access for native rights and customary practices on DHHL's lands and will look into its current ROE/land disposition process for activities such as mālama ʻāina and stewardship; DHHL will collaborate with stakeholders in the creation of a preservation plan for Kealakowaa, the protection of cultural, historical and natural resources associated with the Kona field system, and stewardship of the Kona upland forests. These efforts include contributions or resources in other areas or in the project parcel itself, towards the restoration of these valued resources in collaboration with cultural practitioners, lineal descendants, native tenants, beneficiaries, etc.
Scenic and Aesthetics	None Anticipated	None Anticipated	None Anticipated	None Required
Air Quality	Fugitive dust and constructio	None Anticipated	None Anticipated	Air pollution control BMPs

Affected Resource	Short-term Impacts	Long-term Impacts	Cumulative Impacts	Mitigation Measures
	n related air pollutants			
Socioeconomics and Environmental Justice	None Anticipated	None Anticipated	Positively benefiting Native Hawaiian and low-income families by creating increased access to housing and economic opportunities	None Required
Acoustic Environment	Noise generated during construction	None Anticipated	None Anticipated	Community Noise permit; noise reduction BMPs; public informational meeting
Transportation and Traffic	Minor increase in traffic during construction phase	None Anticipated	Secondary impacts combined with reasonably foreseeable developments could result in increased traffic around La'i 'Ōpua	None Required
Natural Hazards	None Anticipated	None Anticipated	None Anticipated	Final well location will be outside the Special Flood Hazard Zone
Public Facilities and Infrastructure	None Anticipated	None Anticipated	Secondary impacts combined with reasonably foreseeable developments could increase demand on Keauhou Aquifer System Area, public facilities and infrastructure	None Required

ANTICIPATION OF FINDING OF NO SIGNIFICANT IMPACT

Based upon the analysis in the Final EA, staff recommends a finding of no significant impact (AFONSI) for this project. This determination is based upon the 13 criteria of significance that approving agencies must consider as specified in HAR, Section 11-200.1-13. An analysis of the 13 criteria of significance is presented below:

Potential impacts of the Proposed Action have been evaluated in accordance with the 13 significance criteria, pursuant to HAR §11-200.1-13. The following findings and reasons indicate that the Proposed Action will have no significant adverse impacts on the environment, and as a result, supports a Finding of No Significant Impact (FONSI) determination.

(1) Irrevocably commits a natural, cultural, or historic resource.

The Proposed Action would not irrevocably commit a natural, cultural, or historic resource. It is consistent with existing conditions and the surrounding environment and would not adversely affect the Keauhou Aquifer System Area (KASA) that services the North Kona region as discussed in Section 3.4.7. Contractors will adhere to mitigation measures described in Section 3.5.3 to avoid any potential impacts to federal- or state-listed species should they occur at the Project Site. HRS §6E consultation with SHPD will be completed prior to the start of construction. Mitigation measures discussed in Section 3.6.4 and any proposed by SHPD would be implemented to avoid or minimize impacts to any cultural resources or historic properties identified in the Project Site.

(2) Curtail the range of beneficial uses of the environment.

The Proposed Action would not curtail the range of beneficial uses of the environment. The wells will be sited in an area within the Project Site that produces the least amount of impacts on the site's environment. While it will result in reducing the amount of groundwater available within the KASA, the extraction rate would not cause the aquifer to exceed its sustainable yield as discussed in Sections 3.4.7. Nor would the Proposed Action contribute cumulatively to long-term adverse impacts on the KASA, as discussed in Section 3.14.2.

(3) Conflict with the State's environmental policies or long-term environmental goals established by law.

The Proposed Action would not conflict with the State's environmental policies or long-term environmental goals established by law as discussed in Chapter 5. BMPs and other mitigation measures discussed throughout Chapter 3 would be implemented to avoid or minimize potential impacts associated with the Proposed Action during its construction and operation.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.

The Proposed Action would not have direct substantial adverse effects on the economic welfare, social welfare or cultural practices of the community and State. It would create secondary positive impacts on the State's social and economic welfare by establishing a new potable water source for the development of La'i 'Ōpua. This would allow DHHL to provide over 1,000 single family homes, 300 multi-family units, multiple park spaces, a hospital, and commercial centers for native Hawaiian families. Thus, creating a long-term positive effect on the economic and social welfare of the community and State. However, these positive impacts would not be substantial enough to have a direct effect on the level of commerce in Kailua-Kona, the primary commerce center for the region.
The Proposed Action would not substantially impact traditional cultural practices. As discussed in Section 3.7, there are no traditional cultural properties onsite but there are cultural practices and associated resources in the vicinity of the Project Site. Mitigation measures discussed in Section 3.7.1 would be implemented to avoid or reduce any potential impacts to cultural or historic resources that may occur and protect the exercise of traditional and customary native Hawaiian rights in the Project Site.

(5) Have a substantial adverse effect on public health.

The Proposed Action would not have a substantial adverse effect on public health. A Well Construction and Pump Implementation Permit will be obtained for the Proposed Action prior to construction. An engineering report will be submitted to and approved by the DOH CWB before placing the Proposed Action online within the DWS's North Kona Water System. The report will identify all potential sources of contamination, evaluate alternative controls which could be implemented to reduce or eliminate contamination potential, and include a water quality

analysis for all regulated contaminants.
Short-term impacts on noise levels and air quality would be minimized by phasing construction of the wells and implementing BMPs to maintain compliance with applicable County and State policies and regulations as discussed in Sections 3.9 and 3.11.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities.

The Proposed Action would not result in adverse secondary impacts to the social environment or on public facilities. The Proposed Action would facilitate the development of La‘i ‘Ōpua with approximately 1,000 single family homes and 300 multi-family units for DHHL beneficiaries. This would result in secondary impacts such as potentially increasing the population within the Kealakehe Census Tract, which contains La‘i ‘Ōpua. As discussed within the *DHHL Kealakehe-La‘i ‘Ōpua Regional Plan*, the areas proposed for La‘i ‘Ōpua are consistent with the State Land Use Districts, County General Plan designations, and County Zoning Code. Where there may be land use inconsistencies, DHHL may preempt these pursuant to Hawaiian Homes Commission Act Section 204. Further, the areas are located within the North Kona CDP’s Urban Area, where the CDP directs Kona’s future growth. Therefore, secondary population change associated with the Proposed Action would be the result of planned and orderly development consistent with land use planning policies and ordinances.

The Proposed Action would positively affect the North Kona Water System by creating a redundant water source in case of pump failures at other nearby wells and would not impact other public facilities. As discussed in Section 3.14, the future development of La‘i ‘Ōpua would not adversely affect public facilities and infrastructure.

(7) Involve a substantial degradation of environmental quality.

The Proposed Action would not degrade environmental quality at the Project Site or surrounding area. The wells will be sited within the Project Site in an area that produces the least amount of impacts. Mitigation measures proposed throughout Chapter 3 would be implemented to avoid or minimize impacts on the site’s environment.
While the Proposed Action will result in reducing the amount of groundwater available within the KASA, the extraction rate would not cause the aquifer to exceed its sustainable yield as

discussed in Section 3.4 Nor would it contribute cumulatively to long-term adverse impacts on the KASA as discussed in Section 3.14.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions.

The Proposed Action will not contribute cumulatively to substantial adverse effects upon the environment, as discussed in Section 3.14. While the Proposed Action is intended to develop a new water source that would result in the future development of La‘i ‘Ōpua, one third of the resulting groundwater would be used by the DWS for municipal uses in the North Kona Water System. Additionally, water use within La‘i ‘Ōpua has been accounted for in the Hawai‘i Water Plan as discussed in Section 3.4. Thus, the Proposed Action would facilitate but does not involve a commitment for larger actions.

(9) Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat.

The Proposed Action would not have a substantial adverse effect on rare, threatened, or endangered species or their habitats. No critical habitat occurs within the Project Site, and mitigation measures and BMPs discussed in Section 3.5 would be implemented during construction and operation of the Proposed Action to minimize impacts to species observed or with the potential to occur at the Project Site.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels.

The Proposed Action would not have a substantial adverse effect on air or water quality or ambient noise levels. The Proposed Action will be constructed over two phases and a Well Construction and Pump Installation Permit will be obtained prior to construction. During Phase I, a single exploratory well will be drilled and then tested to ensure its water quality meets HAR §11-20-29 Rules Relating to Public Water Systems standards. If the quality and quantity of sampled water are satisfactory, then the Proposed Action will proceed to Phase II. Additional mitigation measures discussed in Section 3.4would be implemented to avoid impacts on water quality during construction and operation of the Proposed Action.
Short-term impacts to noise levels and air quality would be minimized by phasing construction of the wells, implementing

BMPs and obtaining a Community Noise Permit and Noise Variant Permit, if applicable, to maintain compliance with relevant County and State policies and regulations as discussed in Sections 3.9 and 3.11.

(11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

As discussed in Sections 3.3, 3.4 and 3.12, the Proposed Action will not have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive or naturally hazardous area. The Project Site is located between approximately 1 to 2 miles inland, outside the coastal zone, sea level rise exposure area, tsunami zone and erosion-prone areas. No surface water features are present within the Project Site, thus there is no risk for flooding under normal conditions. The entire island of Hawai‘i, including the Project Site, is located within the International Building Code (IBC) Seismic Zone 4 which have the highest potential for seismic induced ground movement. Therefore, the Proposed Action will comply with IBC Seismic Zone 4 building standards to reduce potential impacts created by earthquakes or seismic induced ground disturbances.

(12) Have a substantial adverse effect on scenic vistas and view planes, during day or night, identified in County or State plans or studies.

The Proposed Action would not have a substantial adverse effect on scenic vistas or viewplanes surrounding the Project Site. As discussed in Section 3.7, the Project Site is not in or near visually sensitive areas or areas of high scenic value. The tallest feature of the Proposed Action is less than 40 feet in height and would be surrounded by rows of coffee trees limiting its visibility mauka of the Project Site

(13) Require substantial energy consumption or emit substantial greenhouse gases.

The Proposed Action will not require substantial amounts of energy during construction or operation, nor will it emit substantial amounts of greenhouse gases. As discussed in Section 3.13.5 the Proposed Action may require between 537 and 4,540 kWh per day of operation which is anticipated to be within HELCO’s capacity without adversely affecting service to other customers.

Assuming 43 percent of this energy requirement is provided by renewable sources, the Proposed Action could potentially generate between 107 and 908 metric tons of C02 per year. This is close to the same amount as powering between 14 and 121 single-family homes during that same timeframe. However, this amount of C02 per year will likely be reduced over time as the county continues transitioning to a renewable energy resource portfolio standard to reach "net-negative" by 2045. Thus, the Proposed Action may generate little to no C02 within the project's lifespan.

V. NEXT-STEPS

Here are the anticipated next-steps for water source development following acquisition of the property:

- Final EA publication in The Environmental Notice on February 23, 2026.
- 30-Day legal challenge period (until March 25, 2026).
- Complete Purchase and Sales Agreement and bring to HHC for approval (Spring 2026).
- Finalize acquisition (2nd Quarter 2026).
- Move forward with permitting, design and construction.

Recommended Action

That the Hawaiian Homes Commission (HHC) issue a Finding of No Significant Impact (FONSI) declaration based on the Final Environmental Assessment (FEA) for the North Kona Wells Project – Keauhou Well Site & Kahalu'u Water Storage Tanks, TMKs: portions of [3] 7-8-004:013, 014, and 015; & portions of [3] 7-8-009:014, 032, 054 and 077, Kona, Hawai'i.

ITEM G-3 EXHIBIT A

DHHL NORTH KONA WELLS PROJECT – KEAUHOU WELL SITE & KAHALU'U WATER STORAGE TANKS

TMKs: portions of [3] 7-8-004:013, 014, and 015; & portions of [3] 7-8-009:014, 032, 054 and 077.
Moku of Kona, Island of Hawai'i

FINAL ENVIRONMENTAL ASSESSMENT

February 2026

Proposing Agency/Determining Agency:
State of Hawai'i
Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, Hawai'i 96707

Prepared by:
Bowers + Kubota Consulting, Inc.
94-408 Akoki Street, Suite 201-A
Waipahu, Hawai'i 96797

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ITEM G-3 EXHIBIT A

DHHL NORTH KONA WELLS PROJECT –

KEAUHOU WELL SITE & KAHALU'U WATER STORAGE TANKS

TMKs: portions of [3] 7-8-004:013, 014, and 015; & portions of [3] 7-8-009:014, 032, 054 and 077.

Moku of Kona, Island of Hawai'i

FINAL ENVIRONMENTAL ASSESSMENT

February 2026

Proposing Agency/Determining Agency:

State of Hawai'i

Department of Hawaiian Home Lands

91-5420 Kapolei Parkway

Kapolei, Hawai'i 96707

Prepared by:

Bowers + Kubota Consulting, Inc.

94-408 Akoki Street, Suite 201-A

Waipahu, Hawai'i 96797

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PROJECT SUMMARY TABLE

This Final Environmental Assessment (EA) has been prepared in accordance with the requirements of Chapter 343, Hawai'i Revised Statutes (HRS) and Hawai'i Administrative Rules (HAR) Title 11-200.1 Environmental Impact Statement Rules.

Project Name:	DHHL North Kona Wells Project – Keauhou Well Site & Kahalu'u Water Storage Tanks
Proposing Agency:	State of Hawai'i Department of Hawaiian Home Lands 91-5420 Kapolei Parkway Kapolei, Hawai'i 96707 Contact: Lilliane Makaila, Planner
Determining Agency:	Hawaiian Homes Commission 91-5420 Kapolei Parkway Kapolei, Hawai'i 96707 Contact: Kali Watson, Chairperson
Authorized Agent (EA Preparer):	Bowers & Kubota Consulting, Inc. 94-408 Akoki Street, Suite 201-A Waiaphu HI 96797 Contact: Malachi Krishok Phone: (808) 836-7787
HRS §343 Trigger:	HRS §343-5(a)(1), use of State funds.
Project Location:	Ahupua'a of Kahalu'u and Keauhou, moku of Kona, island of Hawai'i, Hawai'i
Tax Map Key(s):	Portions of [3] 7-8-004:013, 014, and 015; & portions of [3] 7-8-009:014, 032, 054 and 077.
Landowners:	B.P Bishop Trust Estate and County of Hawaii Department of Water Supply
Existing Use on Project site:	The Tank Site consists primarily of cleared open space to accommodate the existing DWS water infrastructure, bordered by non-native forest and private agriculture. Multiple single-family residences are present around the site. The Well Site is adjacent to an active coffee farm, other agricultural activities and single-family residences.
State Land Use District:	Agriculture
County of Hawai'i Zoning:	Agricultural District A-5a
Special Management Area (SMA):	Outside of SMA
Flood Zone:	Zone X (Area outside the 500-year floodplain)

Proposed Action:	The Department of Hawaiian Home Lands (DHHL) proposes to develop a new potable water well source, three concrete water storage tanks, associated water transmission piping, pumps, control building, fence, chlorination building, generator, transformer, electrical improvements, access road, and other appurtenant improvements necessary for the proper operation and maintenance of these facilities. The proposed action consists of the Keauhou Well 2 site (Well Site) and the Kahaluʻu Tanks site (Tank Site). The well, tank and transmission line features will be developed on portions of the privately owned parcels identified above. The new features will convey water to residents of the Villages of Laʻi ʻŌpua, a DHHL master planned community, and support the community's continued development as outlined in the DHHL Kealakehe – Laʻi ʻŌpua Regional Plan (Final 2020). The proposed action supports DHHL's mission and vision of creating vibrant and self-sufficient homestead communities by developing and delivering lands and homes to more native Hawaiian families. The Well Site improvements would consist of: • A 2-million-gallon reinforced concrete storage tank • A second well source • Well pumps • A pump control building • Chlorination system • Electrical improvements and site lighting • Access road upgrades • Chain-link fencing • Water transmission line to connect to the existing Keauhou tank The Tank Site improvements would consist of: • Demolition of the existing 100,000-gallon, 50,000-gallon steel tanks, and 0.3 mg tank • Construction of two new concrete tanks • Pump improvements • A pump control building • Piping improvements, including valves and other appurtenances • Electrical lines • Access road upgrades • Chain-link fencing • Site grading, retaining walls.

Permits and Approvals Needed for the Project:	HRS §343 Review; HRS §6E Review; Community Noise Permit and Noise Variance Permit; National Pollutant Discharge Elimination System Permit (NPDES); Well Construction Permit; Pump Installation Permit; and Grading, Grubbing and Stockpiling Permits
Determination:	Finding of No Significant Impact (FONSI)

TABLE OF CONTENTS

Chapter Description **Page**

1.0 PROJECT DESCRIPTION 1
1.1 Background 1
1.2 Purpose for Environmental Assessment 1
1.3 Project Purpose and Need 5
1.4 Regional Setting and Project Site 6
1.4.1 The Well Site 6
1.4.2 The Tank Site 7
1.4.3 Villages of Laʻi ʻŌpua 7
1.5 Description of the Proposed Action 8
1.5.1 Well Site 8
1.5.2 Tank Site 10
1.6 Preliminary Project Cost and Timeline 14
1.7 Approvals and Permits 14

2.0 ALTERNATIVES CONSIDERED 15
2.1 Alternative 1: No-Action 15
2.2 Alternative 2: Delayed Action 15
2.3 Alternative 3: Alternative Location 15

3.0 AFFECTED ENVIRONMENT, LIKELY IMPACTS, AND MINIMIZATION MEASURES 16
3.1 Summary of Impacts 16
3.2 Land Use 21
3.2.1 Existing Land Use 21
3.2.2 General Land Use Classifications 21
3.2.3 Agriculture Lands and Farm Lands 26
3.2.4 Formally Classified Lands 26
3.3 Geology, Topography and Soils 30
3.3.1 Geology 30
3.3.2 Topography 30
3.3.3 Soils 30
3.4 Hydrologic Resources 35
3.4.1 Rainfall 35
3.4.2 Watershed, Surface Waters and Floodplain 35
3.4.3 Wetlands 35
3.4.4 Coastal Waters 35
3.4.5 Aquifer System 40
3.4.6 Groundwater Contamination 42
3.5 Biological Resources 46
3.5.1 Flora 46
3.5.2 Fauna 46
3.6 Archaeological Resources and Historic Properties 48
3.7 Cultural Resources and Practices 62
3.7.1 Ka Paʻakai Framework Analysis 66
3.8 Scenic and Aesthetic Resources 69
3.8.1 Existing Conditions 69
3.9 Air Quality 70

3.9.1 Existing Conditions....70
3.10 Socioeconomic Characteristics....71
3.11 Acoustic Environment....74
3.11.1 Existing Conditions....74
3.12 Transportation and Traffic....75
3.12.1 Existing Conditions....75
3.13 Natural Hazards....76
3.13.1 Flooding....76
3.13.2 Earthquakes and Volcanoes....76
3.13.3 Tsunami....77
3.13.4 Hurricanes and Tropical Storms....77
3.13.5 Climate Change....77
3.14 Public Facilities and Infrastructure....81
3.14.1 Water Transmission....81
3.14.2 Sanitary Wastewater....81
3.14.3 Police, Fire Protection, Medical and Educational Facilities....81
3.14.4 Solid Waste....82
3.14.5 Electricity....82
3.14.6 Secondary Impacts....83
3.14.7 Cumulative Impacts....86

4.0 RELATIONSHIP TO STATE AND COUNTY PLANS AND POLICIES....89
4.1 The State Land Use Law (HRS §205)....89
4.2 The State Coastal Zone Management Program (HRS §205A)....89
4.3 Hawaiʻi State Plan (HRS §226)....90
4.3.1 The State Environmental Policy (HRS §344)....95
4.3.2 The Hawaiʻi State Water Code (HRS §174C)....96
4.4 Department of Hawaiian Home Lands (DHHL) Plans....97
4.4.1 DHHL General Plan....97
4.4.2 Hawaiian Homes Commission Water Policy Plan....98
4.4.3 Hawaiʻi Island Plan....99
4.4.4 Kealakehe- Laʻi ʻŌpua Regional Plan....100
4.5 County of Hawaiʻi Plans and Policies....101
4.5.1 County of Hawaiʻi General Plan....101
4.5.2 The Kona Community Development Plan – Amended 2019....103

5.0 FINDINGS AND DETERMINATION....104
5.1 Determination....104
5.2 Significance Criteria Findings....104

6.0 AGENCIES AND ORGANIZATIONS CONSULTED....109
6.1 Pre-Asessment Consultation....109
6.2 Draft EA Comments....110

7.0 REFERENCES....111

8.0 LIST OF PREPARERS....114

LIST OF FIGURES

Figure Description **Page**

Figure 1.1: Project Location - Well Site 2
Figure 1.2: Project Location - Tank Site 3
Figure 1.3: Villages of Laʻi ʻŌpua Full Build Out 11
Figure 1.4: Well Site Preliminary Site Plan 12
Figure 1.5: Tank Site Preliminary Site Plan 13
Figure 3.1: Site Photos 22
Figure 3.2: State Land Use 23
Figure 3.3: County Zoning Map – Well Site 24
Figure 3.4: County Zoning Map – Tank Site 25
Figure 3.5: ALISH Lands Map – Well Site 28
Figure 3.6: ALISH Lands Map – Tank Site 29
Figure 3.7: USDA Soils Map – Well Site 32
Figure 3.8: USDA Soils Map – Tank Site 33
Figure 3.9: LSB Soils Map – Both Sites 34
Figure 3.10: Rainfall on Hawai'i Island 36
Figure 3.11: Watershed and Project Location Map 37
Figure 3.12: Wetlands Map 38
Figure 3.13: Hawai'i County Aquifer System Areas 39
Figure 3.14: Groundwater Wells Map 43
Figure 3.15: NPDES Contamination Injection Map 44
Figure 3.16: Potential Historic Features near the Well Site 50
Figure 3.17: Locations of Previous Archaeological Studies Map – Well Site 51
Figure 3.18: Archaeological Sites Encountered in Well Site Area 52
Figure 3.19: Potential Historic Features near the Tank Site 57
Figure 3.20: Locations of Previous Archaeological Studies Map – Tank Site 58
Figure 3.21: Kahaluʻu Historic District in Relation to the Project Area 59
Figure 3.22: Archaeological Sites Encountered in Tank Site Area 60
Figure 3.23: Kona Field Diagram 63
Figure 3.24: Census Tracts and Project Site/ Laʻi ʻŌpua Map 73
Figure 3.25: FEMA FIRM Map 80
Figure 3.26: County Sewer Line Map 88

LIST OF TABLES

Table Description	Page
Table 1.1: Land ownership of Project Site	6
Table 1.2: Approvals and Permits	14
Table 3.1: Summary of Potential Impacts	17
Table 3.2: Existing Groundwater Wells*	41
Table 3.3: Proposed Potable Wells	42
Table 3.4: Summary of Previous Archaeological Studies	49
Table 3.5: Summary of Previous Archaeological Studies	53
Table 3.6: Socio-Economic Profiles at Kealakehe and Hualālai Census Tracts	72
Table 3.7: Hawaiʻi Administration Rules §11-46 Noise Limits	74
Table 4.1: Hawaiʻi State Plan Objectives and Policies	91
Table 4.2: Proposed Action's Conformance to the General Plan	101

LIST OF APPENDICES

Appendix A: Pre-Assessment Consultation and DEA Comments

Appendix B: Flora and Fauna Survey Report

Appendix C: Archaeological Literature Review and Field Investigation Report

Appendix D: Ka Paʻakai Framework Analysis Report

LIST OF ACRONYMS

AIS	Archaeological Inventory Survey
ALFRI	Archeological Literature Review and Field Inspection
amsl	above mean sea level
APE	Area of Potential Effect
BMP	Best Management Practice
CIA	Cultural Impact Assessment
CWRM	Commission on Water Resources Management
CZM	Coastal Zone Management
DHHL	Department of Hawaiian Homelands
DOH	State of Hawaiʻi, Department of Health
DWS	County of Hawaiʻi, Department of Water Supply
EA	Environmental Assessment
EPA	Environmental Protection Agency
FCL	Formally Classified Lands
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
HAR	Hawaiʻi Administrative Rules
HELCO	Hawaiian Electric Light Company
HRS	Hawaiʻi Revised Statutes
IAL	Important Agricultural Lands
IBA	Important Bird Area
KASA	Keauhou Aquifer System Area
KFS	Kona Field System
mg	Million gallons
mgd	Millions of gallons per day
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
RD RUS	Rural Development Rural Utilities Service
SFHA	Special Flood Hazard Area
SHPD	State Historic Preservation Division
State	State of Hawaiʻi
USDA	United States Department of Agriculture
USGS	United States Geological Survey

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1.0 PROJECT DESCRIPTION

1.1 BACKGROUND

The Department of Hawaiian Homelands (DHHL) proposes to develop a new potable water source with the installation of a new well, three storage tanks, and associated water transmission pipeline near the Kealakehe – Laʻi ʻŌpua Planning Area in the North Kona District, island and County of Hawaiʻi. The well, tank and transmission line features will be developed on portions of privately owned parcels identified as TMKs [3] 7-8-004:013, 014 & 015 and [3] 7-8-009:014, 032, 054 & 077 (the "Project Site"). See Figure 1.1. The new features will convey water to residents of the Villages of Laʻi ʻŌpua, a DHHL master planned community, and support the community's continued development as outlined in the 2020 DHHL Kealakehe – Laʻi ʻŌpua Regional Plan. The proposed action supports DHHL's mission and vision of creating vibrant and self-sufficient homestead communities by developing and delivering lands and homes to more native Hawaiian families.

The well will be installed in two phases. During Phase I, an exploratory well will be drilled and tested to determine its sustainable capacity and water quality. If the quantity and quality of sampled water is satisfactory, the project will proceed to Phase II. During Phase II, the exploratory well will be converted to a production well, a second existing well will receive a pump and be brought online, the concrete water storage tanks will be installed, and ancillary structures necessary for well operations will be constructed at the Project Site.

1.2 PURPOSE FOR ENVIRONMENTAL ASSESSMENT

Chapter 343 (Environmental Impact Statements), Hawaiʻi Revised Statutes (HRS), establishes a system of environmental review at the State and County levels to ensure that environmental concerns are given appropriate consideration in decision-making along with economic and technical considerations. The State of Hawaiʻi, Office of Planning and Sustainable Development's (OPSD) Environmental Review Program facilitates the environmental review process in Hawaiʻi.

This project triggers the State's environmental review process under HRS Chapter 343, as amended, and Title 11, Chapter 200.1 (Environmental Impact Statement Rules) of the State Department of Health's Hawaiʻi Administrative Rules (HAR), as amended (State of Hawaiʻi, 2019) because the action involves:

1. *Use of State Funds*. State funds would be used for the construction of the new well, tanks, and transmission lines.

As such, this Final Environmental Assessment (Final EA) document is being prepared pursuant to Hawaiʻi Revised Statutes (HRS) Chapter 343 (HRS §343). Pre-assessment consultation and Draft EA comments received as part of the preparation of this Final EA document are included in **Appendix A.**

Figure 1.1: Project Location - Well Site

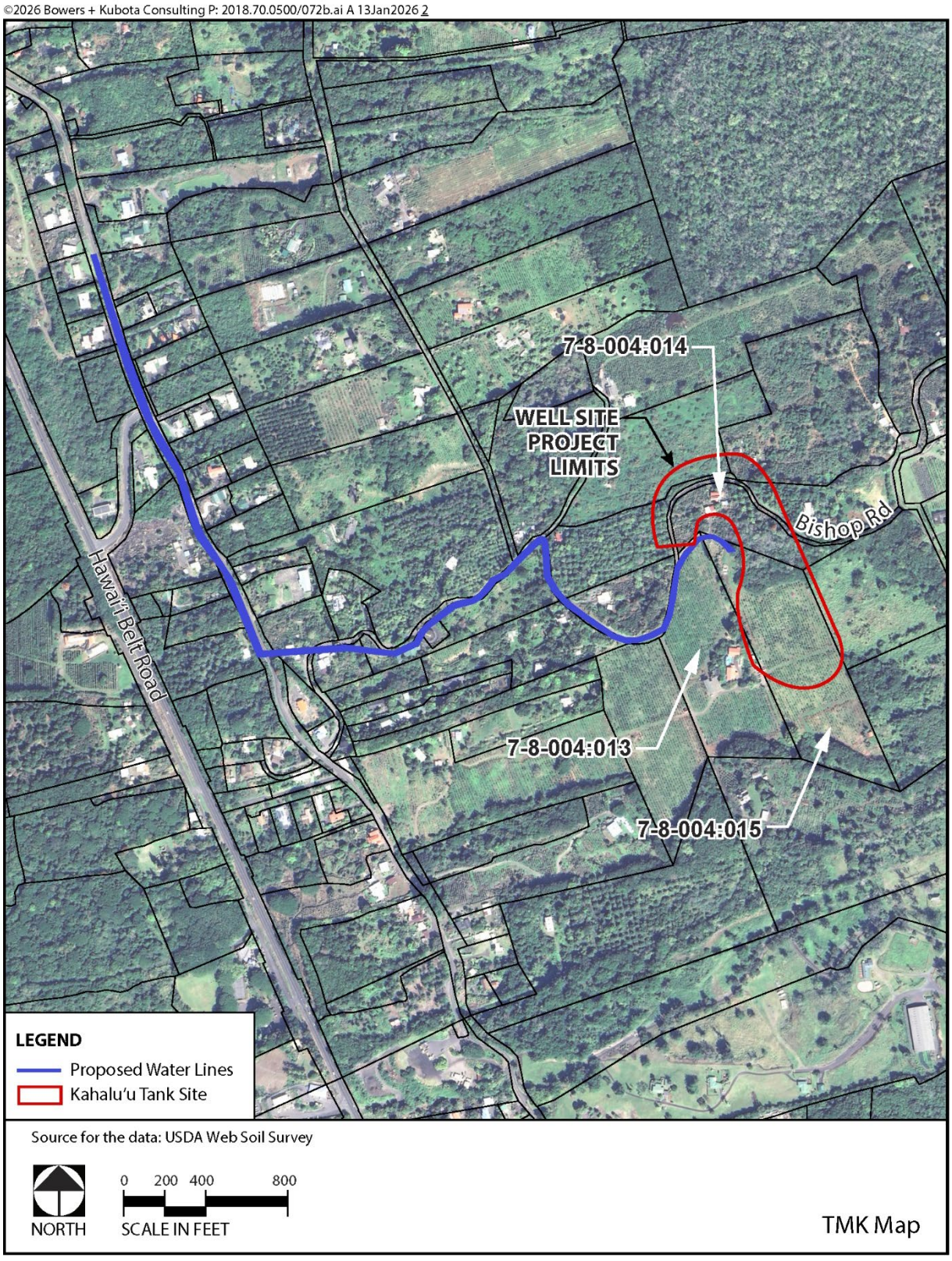
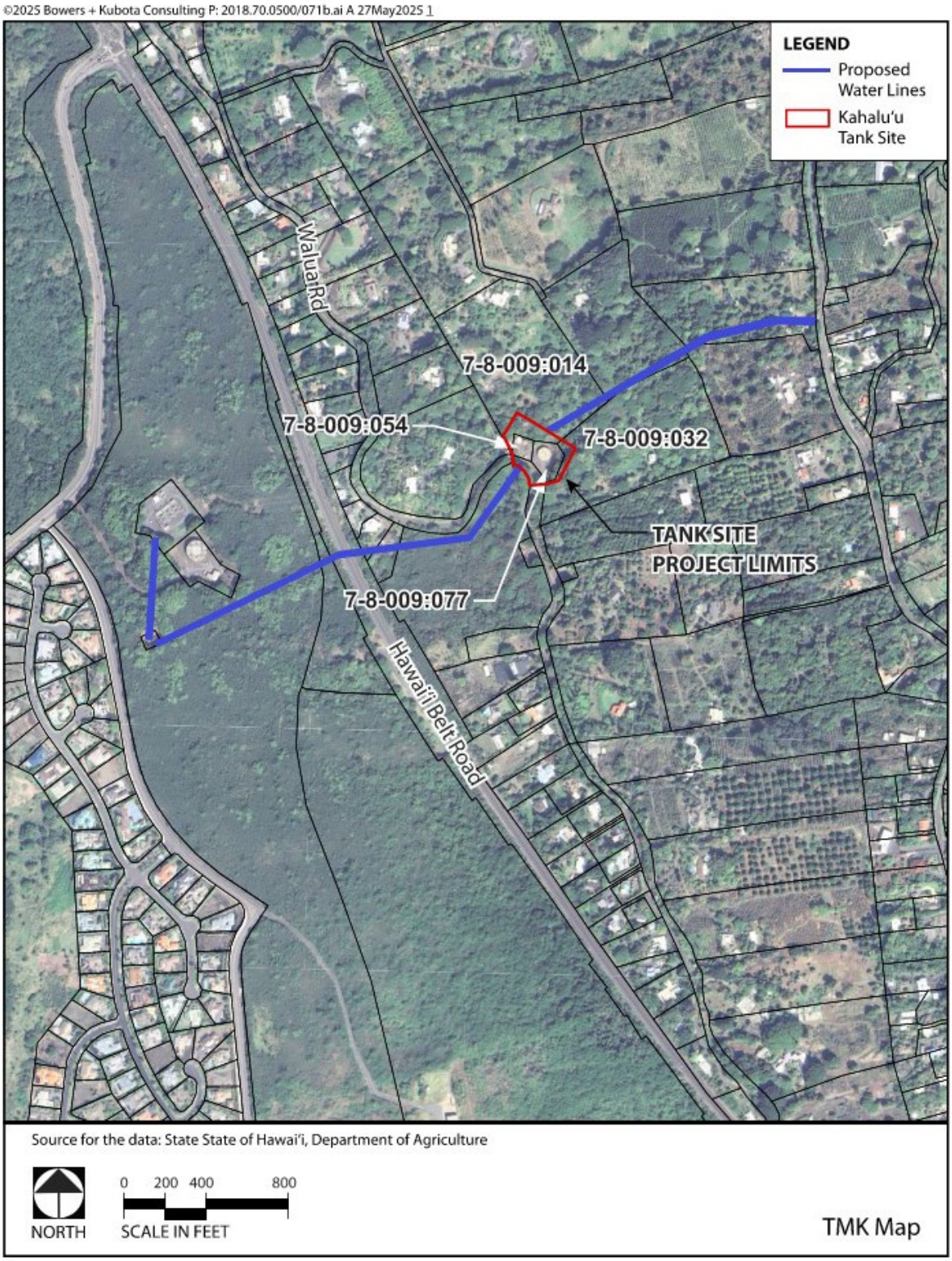


Figure 1.2: Project Location - Tank Site



Applicant Background

The Department of Hawaiian Home Lands is governed by the Hawaiian Homes Commission Act of 1920 (HHCA), enacted by the U.S. Congress to protect and improve the lives of native Hawaiians (defined as individuals having at least 50 percent Hawaiian blood). The HHCA created a Hawaiian Homes Commission to administer certain public lands, called Hawaiian home lands, for homesteads. The Act was incorporated as a provision in the State Constitution in 1959 when Hawai'i was granted statehood and responsibility for the Commission and the Hawaiian home lands was transferred to the State. In 1960, the State Legislature created the Department of Hawaiian Home Lands (DHHL) to manage Hawaiian home lands and administer the provisions of the HHCA. The primary responsibilities of DHHL are to implement the HHCA and the programs, policies, and direction established by the HHC on behalf of the native Hawaiian beneficiaries of the Trust.

The significance of water to the success of the HHCA has been recognized since the passage of the Act. Under HHCA §221 and Hawai'i Revised Statutes §174C-49, the State Commission on Water Resource Management (CWRM) shall "reserve" water for future DHHL needs when issuing water licenses, based on DHHL projections. DHHL last provided its current and future water needs projections to CWRM for approval in 2017, which includes project water demand for the Villages of La'i 'Ōpua and is included in the Department of Land and Natural Resources (DLNR) 2020 State Water Project Plan Update. Furthermore, in 1991 the state Legislature passed what became Act 325, which recognized that, "[s]ince the passage of the Hawaiian Homes Commission Act in 1921, the shortage of available water has been one of the primary reasons for the failure of Administrators to settle native Hawaiians on Hawaiian homesteads…" As a result, Act 325 modified other state laws regarding water further increasing the rights of water to the Hawaiian Home Lands Trust.

In 2014, the HHC approved the first DHHL Water Policy Plan, which is the first policy on managing the water kuleana of DHHL since the passage of the HHCA. The Water Policy Plan's mission is "to ensure the availability of adequate, quality water to fully support self-sufficiency and self-determination in the administration of the HHCA, and the preservation of Hawaiian values, traditions, and culture."

The DHHL has also implemented its own planning system consisting of a General Plan, Island Plans, Regional Plans, Program Plans, and Special Area Plans, which are discussed in relation to the Proposed Action in Section 4.3.

Determining Agency

The project is an "Agency Action" under the State's environmental review regulations because the project involves the use of State land and funds. The Hawaiian Homes Commission will serve as the "Approving Agency" for the processing of this environmental assessment document and currently anticipates a Finding of No Significant Impact (FONSI) determination.

Bowers + Kubota Consulting, Inc. (B+K) is serving as the "Authorized Agent" on behalf of DHHL (Applicant) in the preparation of this Final EA. This Final EA was prepared pursuant to Chapter 343, Environmental Impact Statements, HRS, as amended and the State

Department of Health's Title 11, Chapter 200.1, HAR (Environmental Impact Statement Rules) (State of Hawaiʻi, 2019).

1.3 PROJECT PURPOSE AND NEED

The purpose of the Proposed Action is to develop additional potable water supply sources from within the North Kona region to allow for the continued development of Laʻi ʻŌpua. By securing additional supply sources, DHHL can then secure the water credits needed for future residential, community and commercial uses. These uses would provide not only more homes for DHHL beneficiaries, but also parks, recreation spaces and economic opportunities towards fulfilling Laʻi ʻŌpua's vision of what the community sees for their homestead's future in the decades to come.

The need for the Proposed Action is based on limited water resources in and around the Laʻi ʻŌpua area. Limited water resources stem from the region's arid climate, limiting potable water supply available from the DWS. This limited supply has led DWS to require water entitlements through developer agreements, where the developer can install a well and/or other necessary infrastructure to be dedicated to DWS in exchange for a set allocation of water for the future development (the "water credits"). One water credit is equivalent to 600 gallons per day or one housing unit.

The result of these limitations is that following the completion of Laʻi ʻŌpua Village 4 Phase I ʻĀkau and Phase II Hema, DHHL will not have enough water credits available from DWS for future homestead or commercial development at Laʻi ʻŌpua from now into the foreseeable future. Therefore, DHHL needs to establish an additional water source to receive water credits from DWS for future development.

Developing additional water sources for the continued development of Laʻi ʻŌpua has been identified as a priority project for DHHL and stakeholders in both the 2009 and 2019 Kealakehe – Laʻi ʻŌpua Regional Plans as the North Kona Water Source Development Project. In November 2014, DHHL submitted a water reservation request to the Commission on Water Resources Management (CWRM). In August 2015, CWRM approved the water reservation for 3.398 mgd in the Keauhou Aquifer System Area (ASYA) that services the North Kona region. The water request amount should meet the water demands needed for the full build-out of Laʻi ʻŌpua.

While a water reservation credit safeguards DHHL's access to potable water, it neither identifies a location of the water source nor includes how the water will be transmitted. DHHL owned lands in North Kona are not suitable for potable water wells. Therefore, they must partner with other landowners to develop water sources in more suitable locations.

In establishing a suitable location to install the wells, DHHL had to locate areas at high enough elevations a minimum of 0.25 miles away from existing DWS well sites to reduce pressure on groundwater resources and interference between wells. Further, the DWS prefers areas containing "high-level" groundwater that meets federal and state drinking water standards and is not subject to saltwater intrusion. The areas must then have sufficient capacity to support a production well. Upon finding a suitable location, DHHL then needs to secure a water source development agreement with the landowner.

The Project Site is one of four potential well sites where DHHL could establish a water credit agreement with a landowner and DWS, while meeting the location and groundwater quality needs. A water credit agreement and source development partnership between the Landowners, DHHL and DWS will need to be finalized prior to well site development. As part of the agreement, DHHL will receive two-thirds of the potable water developed by the proposed action while the remaining one-third will be integrated into the DWS water system for municipal use.

1.4 REGIONAL SETTING AND PROJECT SITE

The Project Sites are located within the Kona moku, on the leeward (western) slope of the Hualālai Volcano, and span the adjoining ahupuaʻa of Kahaluʻu and Keauhou in the North Kona District. The project is divided into two distinct locations: the Well Site and the Tank Site, as illustrated in Figure 1.1 and Figure 1.2.

The proposed development footprint spans portions of multiple land parcels. The respective landowners (the "Landowners") for each parcel are identified in Table 1.1.

Table 1.1: Land ownership of Project Site

Project TMK	Owner	Total Parcel Acreage
[3] 7-8-009:014	Kamehameha Schools	9.15
[3] 7-8-009:032	Kamehameha Schools	8.89
[3] 7-8-009:054	County of Hawaiʻi	0.21
[3] 7-8-009:077	State of Hawaiʻi	0.52
[3] 7-8-004:013	Kamehameha Schools	8.80
[3] 7-8-004:014	Kamehameha Schools	3.2
[3] 7-8-004:015	Kamehameha Schools	10.50

1.4.1 The Well Site

The Well Site is located on portions of TMKs [3] 7-8-004:013, 014 & 015. It is approximately 2 miles inland from the coast and within the upland Kahalauʻu ahupuaʻa. The Well Site is located around 1,650 feet amsl and is situated along an unimproved access road off of Bishop Road on the edge of an active coffee farm. An existing potable water well, Keauhou-Kam #2 (KS Well 2), is present onsite. The area around the Well Site consists of active coffee farms, other agricultural uses, and single-family residences.

The Well Site is located near the town of Honalo outside the Kona Community Plan designated urban boundary on the mauka, or upland, side of Māmalahoa Highway. The Well Site abuts the mauka edge of the Heavenly Hawaiian Kona Coffee Farm and is approximately ten miles south of the Villages of Laʻi ʻŌpua, nine miles southeast of Kailua-Kona, and six miles north of Kealakekua Bay.

1.4.2 The Tank Site

The Tank Site is located on portions of TMKs [3] 7-8-009:014, 032, 054 & 077. The Tank Site is around 550 feet above mean sea level (amsl) and is approximately one mile inland within the upland Keauhou ahupuaʻa. The Tank Site encompasses the existing County of Hawaiʻi, Department of Water Supply (DWS) Kahaluʻu Reservoir and Well Site property on Wailua Road. As such, DHHL is actively coordinating with DWS on the proposed action.

The DWS property currently contains three existing water storage tanks ranging from 0.1 to 0.3 million gallons capacity, a pump house, a chlorination building, an electric transformer box, Kahaluʻu Well A and Kahaluʻu Well C production wells, and four booster pumps. Around the site are mostly coffee and macadamia orchards, disturbed forested areas and residential properties with scattered single-family residences.

The Tank Site is located near the unincorporated community of Keauhou within the Kona Community Plan designated urban boundary on the mauka side of Hawaiian Belt Road (Route 11) and makai, or seaward, of Māmalahoa Highway (Route 180). The site is approximately seven miles south of the Villages of Laʻi ʻŌpua, six miles southeast of Kailua-Kona, and seven miles north of Kealakekua Bay.

1.4.3 Villages of Laʻi ʻŌpua

The Villages of Laʻi ʻŌpua (Laʻi ʻŌpua) is a 980-acre master planned community that consists of fourteen villages that will include single and multifamily residential units, recreational and community facilities, parks and preserves, and neighborhood- commercial complexes. Laʻi ʻŌpua was initially planned by the Housing and Community Development Corporation of Hawaiʻi in the early 1990's as an affordable housing project using State land. In 1997, a total of 572 acres was transferred from the State to DHHL and the remaining 408 acres are currently owned by various other landowners. Along with the acreage, a total of 241 units in water commitments were transferred to DHHL for future development (Kealakehe-Laʻi ʻŌpua Regional Plan Update, 2020).

As part of the regional planning process, a vision statement was crafted based on DHHL beneficiary feedback during the 2020 Kealakehe-Laʻi ʻŌpua Regional Plan update. This vision is reflective of what the community sees for the future of their homestead in the decades to come:

> *"Kealakehe – Laʻi ʻŌpua is a community with a strong sense of aloha, pride in their homestead and appreciation for the place. The community and DHHL support its people by promoting education, self-sufficiency, and providing additional homesteading opportunities for more native Hawaiian families in the Kealakehe – Laʻi ʻŌpua region."*

Laʻi ʻŌpua includes lands designated for residential, community, commercial and conservation uses. There are over 260-acres of residential, 33-acres of community, 50- acres of commercial and 950-acres of conservation lands within the villages. The majority of the lands designated for residential use occur within Villages 1 through 6 and Village 10, and include development of single and multi-family homes. Laʻi ʻŌpua is one of two communities within the planning area that have lands designated for community uses, which include spaces for parks and recreation, cultural activities, community-based economic development and other public amenities. The full build out is included in Figure 1.3.

To date, Village 3 and the Community Hale have been completed. A total buildout of the remaining villages would potentially provide over 1,000 single family homes, 300 multi-family units, multiple park spaces, a hospital, and commercial centers. Villages 4 and 5 are in construction, and Villages 1 and 2 and have initiated environmental compliance and engineering designs.

1.5 DESCRIPTION OF THE PROPOSED ACTION

The Department of Hawaiian Home Lands (DHHL) is proposing to develop a new potable water well source, three concrete water storage tanks, associated water transmission piping, pumps, control building, fence, chlorination building, generator, transformer, electrical improvements, access road, and other appurtenant improvements necessary for the proper operation and maintenance of these facilities (the "Proposed Action").

The Proposed Action consists of the Keauhou Well site and the Kahaluʻu Tank site. The specific activities planned at each site are detailed in Sections 1.5.1 and 1.5.2.2.

1.5.1 Well Site

DHHL proposes to convert the existing KS Well 2 into a 1-million gallon per day (mgd) production well and install a new production well with a capacity of 1 mgd. The Proposed Action also includes appurtenant site improvements necessary for the operation and maintenance of the wells, including installation of a 1 mgd pump at the existing Keauhou Well 2 and a new concrete water tank at the existing site. DHHL is currently negotiating an agreement with the Landowners to acquire the area required to develop the well site. The overall improvements would generally consist of:

- A 2-million-gallon reinforced concrete storage tank
- A second well source
- Well pumps
- A pump control building
- Chlorination system
- Electrical improvements and site lighting
- Access road upgrades
- Chain-link fencing
- Water transmission line to connect to the existing Keauhou tank

The installation of the second well will occur in two phases. Phase I involves drilling an exploratory well with a casing diameter of approximately 20 to 24 inches. The well will

undergo testing to verify that its water quality complies with the standards outlined in HAR §11-20-29, Rules Relating to Public Water Systems. The results will be submitted to the State of Hawaiʻi Department of Health (DOH), Clean Water Branch. In addition, the well's production capacity will be evaluated to confirm it can yield up to 1 MGD. Nearby existing wells will be monitored to ensure the aquifer can sustain the additional withdrawal without adverse impacts. If both water quality and quantity meet the required standards, the Proposed Action will advance to Phase II.

Phase II will involve outfitting the exploratory well into a permanent production well, installing a well pump, and constructing the remaining site improvements necessary for the second well operation. Both wells will be equipped with 700-gallon-per-minute submersible pumps and motors, each capable of delivering up to 1 mgd. New electrical infrastructure will also be installed to support pump operation. The wells will comply with the CWRM Hawaiʻi Well Construction & Pump Installation Standards (rev. 2004) and DWS standards. Under the original proportional share agreement, DHHL would retain two-thirds of the water produced, while DWS would retain the remaining one-third for municipal use.

As depicted in Figure 1.4 in addition to the wells, a 2 million-gallon storage tank will be constructed to receive and store the extracted groundwater. The tank will be designed to comply with International Building Code Seismic Zone 4 and is anticipated to be approximately 103 feet in diameter and 36 feet high. A new dry well will be installed near the storage tank to capture any potential overflow from the tanks through a discharge line. A single-story control building will be constructed to house the well's electrical and chlorination systems.

During the installation of these features, excavation work will be conducted in compliance with Hawaiʻi County Code, Chapter 10—Erosion and Sedimentation Control. Grading, grubbing and stockpiling permits will be obtained as applicable, depending on the conditions of the well's final siting.

Upon completing the construction of the storage tank and control building, the tank will be connected to the DWS main line located along Māmalahoa Highway via a new 16-inch transmission line. Approximately 1.25 miles of water transmission line will be installed within existing utility easements along Bishop Road before connecting with the DWS main line on Māmalahoa Highway, approximately 0.6 miles north of Bishop Road. Effort will be made to install the new water lines within exiting easements within Māmalahoa Highway.

The transmission line will comply with DWS Rule 4 – Rules Regulating Water and Water System Requirements of Developments. These upgrades will ensure sufficient capacity to transmit potable water from the Project Site to DWS North Kona Water System for use throughout the region and Laʻi ʻŌpua.

Access to the Keauhou Well 2 site is available via an existing, unimproved private roadway from Bishop Road. Improvements to the existing private roadway or the construction of new private access roads within the Project Site will be included Any roadway improvements or construction within the Project Site will comply with County development standards for private roadways.

1.5.2 Tank Site

DHHL proposes to provide water system improvements at the Kahaluʻu Tank Site. The improvements would include replacement of the existing 100,000-gallon and 500,000-gallon steel tanks with a concrete storage tank and replacement of the existing 0.3 MG water tank with a larger concrete tank. Other appurtenant site improvements would include:

- Pump improvements
- A pump control building
- Piping improvements, including valves and other appurtenances
- Electrical lines
- Access road upgrades
- Chain-link fencing
- Site grading, retaining walls

The preliminary site plan is depicted in Figure 1.5.

As part of Phase II of the Proposed Action, the existing steel water storage tanks on-site will be decommissioned and removed. The DWS tank property will be expanded to accommodate two new, larger water storage tanks designed to enhance the reliability of the North Kona water system. The Kahaluʻu Tank Site improvements include the following activities:

- Demolition of the existing 100,000-gallon and 50,000-gallon steel tanks.
- Construction of a new concrete tank, approximate size 1.3 million gallons.
- Demolition of the existing 0.3-million-gallon tank.
- Installation of a new concrete tank at the site of the 0.3 million gallon tank, approximate size 2.0 million gallons.

Like the tank at the Keauhou Well Site, the tanks will be designed in accordance with International Building Code Seismic Zone 4 standards. The tanks will measure up to approximately 80-100 feet in diameter and 36 feet in height. The exact dimensions of the tanks will be finalized in coordination with DWS. A new dry well will be installed near the tanks to capture potential overflow via a discharge line. The control building will house the tanks' electrical and chlorination systems.

Upon completion, a new 16-inch transmission line, approximately 0.7 miles of pipeline will be installed, within existing utility easements, before connecting to the existing DWS water line located at Mamalahoa Highway approximately 0.4 miles northeast of the site.

Figure 1.3: Villages of La'i 'Ōpua Full Build Out

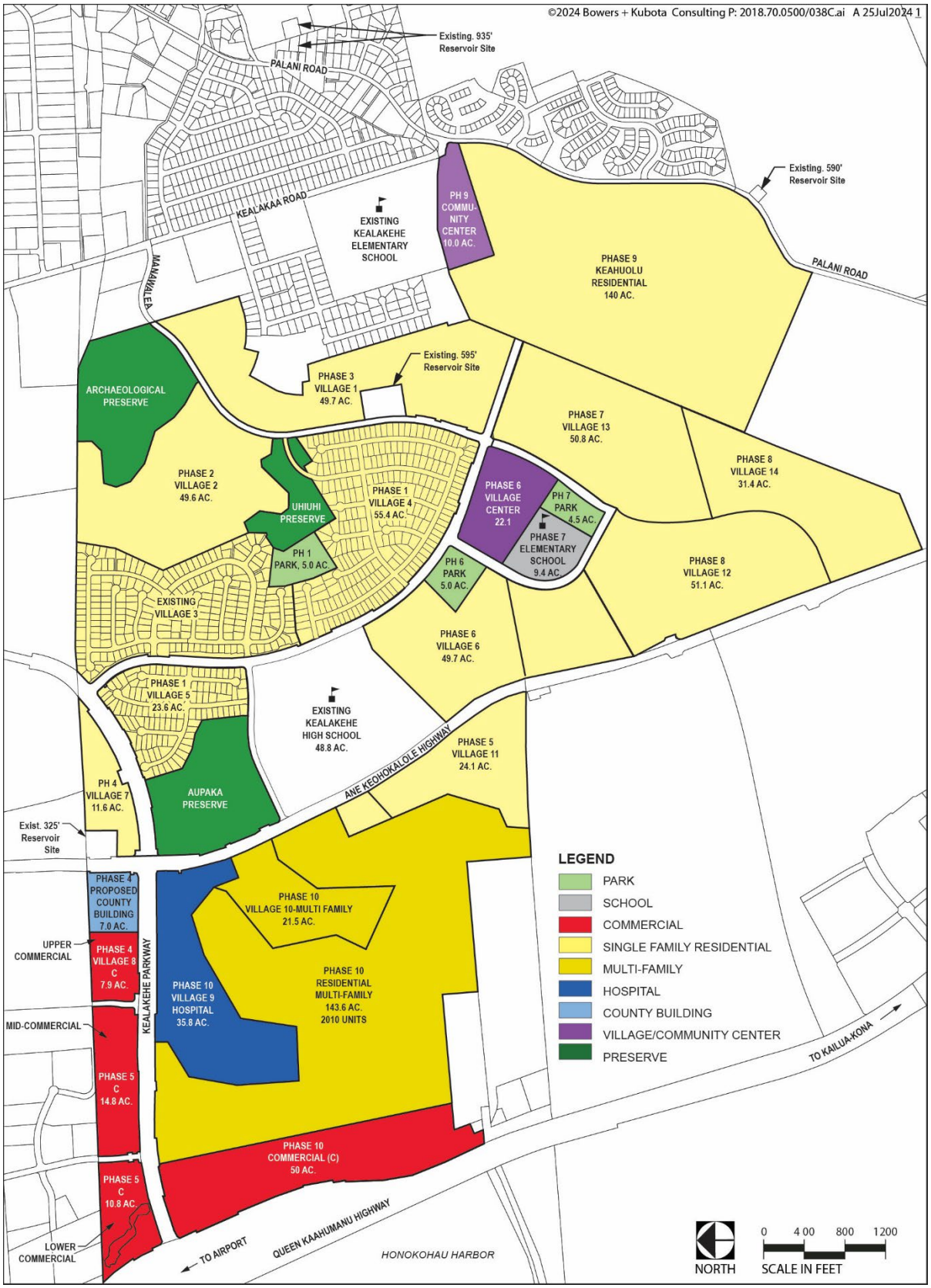


Figure 1.4: Well Site Preliminary Site Plan

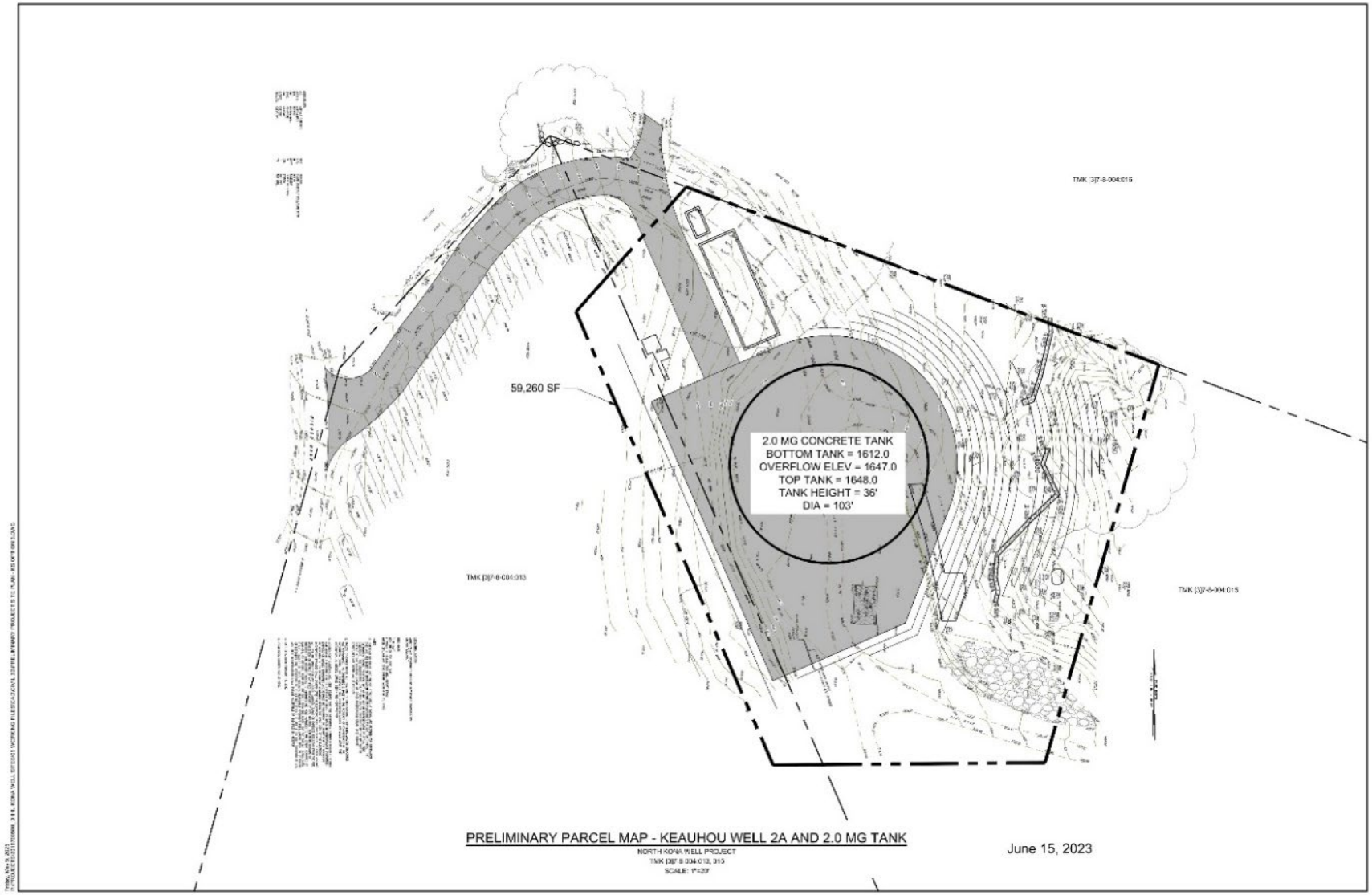
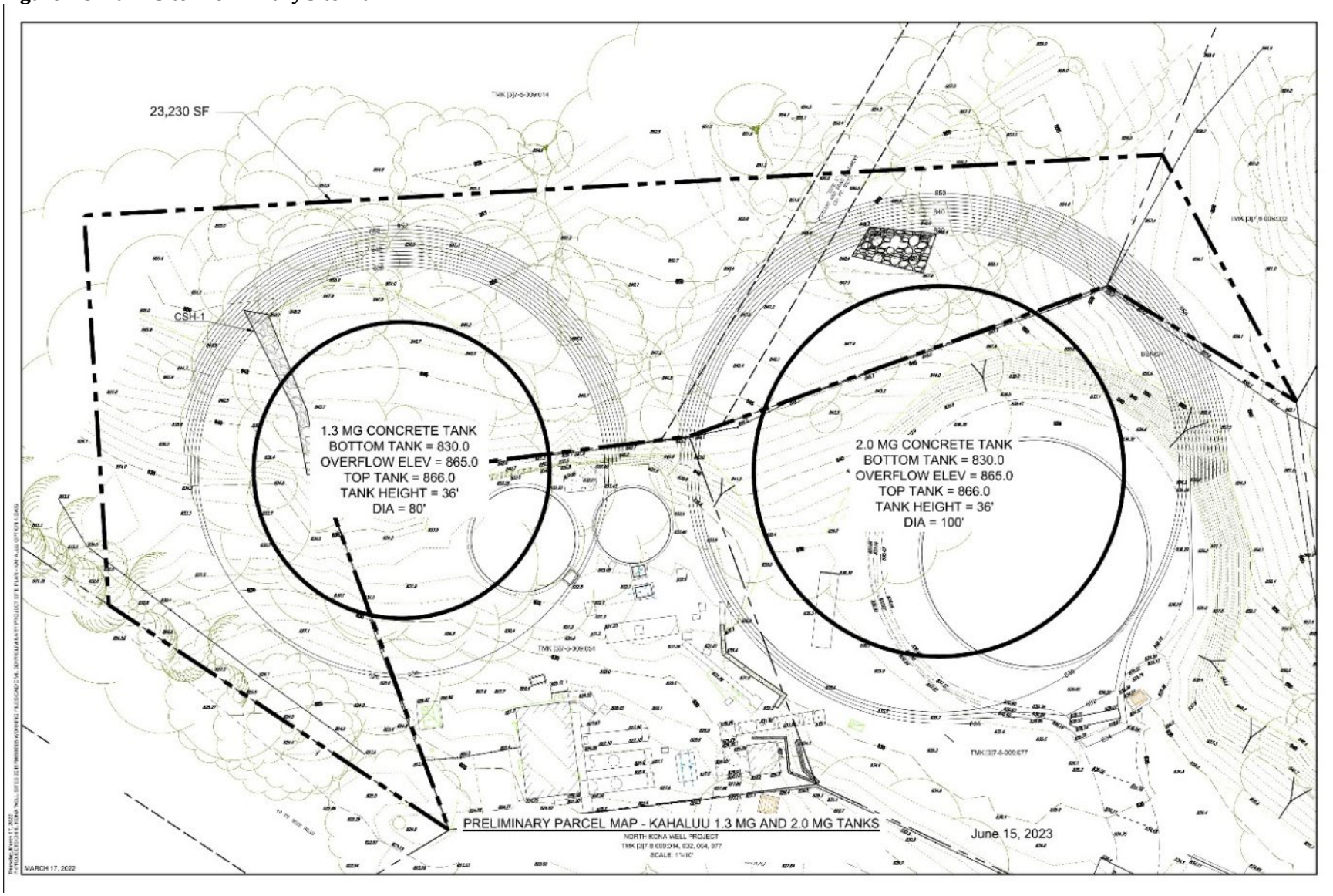


Figure 1.5: Tank Site Preliminary Site Plan



1.6 PRELIMINARY PROJECT COST AND TIMELINE

Phase 1 of the project will take approximately 18 months to complete. Phase 2 will require approximately 30 months to complete, beginning upon completion of Phase I well testing and approval.

Phase 1 is estimated to cost $9 Million and Phase 2 is estimated to cost $15 million.

1.7 APPROVALS AND PERMITS

The Proposed Action will be subject to the following list of permits and approvals to be completed prior to the start of construction.

Table 1.2: Approvals and Permits

Permits/Approvals	Approving Agency
State of Hawai'i	
HRS, §343 Review	DHHL; Hawaiian Homes Commission
HRS, §6E Review	DLNR, State Historic Preservation Division
Community Noise Permit and Noise Variance	DOH, Indoor and Radiological Health Branch
National Pollutant Discharge Elimination System Permit	DOH, Clean Water Branch
Well Construction Permit	CWRM
Pump Installation Permit	CWRM
County of Hawai'i	
Grading, Grubbing and Stockpiling permits	Department of Public Works

2.0 ALTERNATIVES CONSIDERED

As a requirement of HAR §11-200.1-18 (2019), this chapter identifies and considers alternatives to achieve the Purpose and Need of the Proposed Action. These alternatives are described in this section and include a No-Action Alternative.

2.1 ALTERNATIVE 1: NO-ACTION

Under the No Action Alternative, the Project Site's existing conditions would remain. No new water wells would be built, thereby leaving DHHL and DWS without a new water source. DHHL would run out of water credits upon completing Laʻi ʻŌpua Village 4 Phases I and II and would be unable to complete the build out the remainder of Laʻi ʻŌpua. With the No Action Alternative, the Project Site would continue to operate as a coffee plantation with no short-or long-term impacts on the existing resources found on the Project Site. Additionally, the Kahaluʻu tank site would not be improved with increased storage capacity.

However, this alternative fails to meet the purpose and need of the Proposed Action, which is to develop additional potable water supply sources within the North Kona region to support the continued development of Laʻi ʻŌpua. Further, it fails to meet DHHL's mission and vision of creating vibrant and self-sufficient homestead communities by developing and delivering lands and homes to more native Hawaiian families. Because of its failure to meet the purpose and need and DHHL's vision and mission, it is not a feasible alternative and was dismissed.

2.2 ALTERNATIVE 2: DELAYED ACTION

Developing additional water sources for the continued development of Laʻi ʻŌpua has been identified as a priority project for DHHL and stakeholders in both the 2009 and 2019 Kealakehe-Laʻi ʻŌpua Regional Plans. Additional water sources are needed to achieve DHHL's vision of creating a vibrant and self-sufficient community in the area and continuing to delay action would not meet DHHL's vision. Additionally, there are no existing activities or conditions in the Project Site or its vicinity that make delaying the Proposed Action more beneficial or reduce potential impacts. Because continuing to delay the Proposed Action would not meet DHHL's vision or the purpose and need, this alternative is not feasible and was dismissed.

2.3 ALTERNATIVE 3: ALTERNATIVE LOCATION

The lack of a suitable well site within existing DHHL land holdings and the need to partner with other landowners for the Proposed Action has been a constraint since 2009. DHHL has been working for over a decade to locate suitable sites for the Proposed Action and secure a water source development partnership. The Project Site is one of to two locations where DHHL has committed resources to develop partnerships and is suitable for the Proposed Action. As such, it is uncertain DHHL would be able to identify another location and secure a development agreement without continuing to delay or prevent the Proposed Action. Therefore, an alternative location would not meet the purpose and need and was dismissed.

3.0 AFFECTED ENVIRONMENT, LIKELY IMPACTS, AND MINIMIZATION MEASURES

As a requirement of HAR §11-200.1, an EA must include a description of the affected environment, identify and analyze potential impacts, and propose mitigation measures to minimize potential impacts. This chapter describes the Project Site's geographical and environmental setting, identifies potential impacts produced by the Proposed Action, and discusses mitigation measures for each affected resource to minimize or eliminate any adverse effects.

3.1 SUMMARY OF IMPACTS

Table 3.1 provides a summary of the affected environment, potential impacts, and proposed mitigation measures. Short-term impacts are those anticipated during construction, and long-term impacts are those anticipated during operation of the Proposed Action. Cumulative impacts are those resulting from the development of La'i 'Ōpua, which is a secondary action of the Proposed Action, combined with other housing development projects proposed or under development within the Keauhou Aquifer System Area and North Kona District.

Table 3.1: Summary of Potential Impacts

Affected Resource	Short-term Impacts		Long-term Impacts		Cumulative Impacts	Mitigation Measures
	Tank Site	*Well Site*	*Tank Site*	*Well Site*		
Land Use	None Anticipated	None Anticipated	None Anticipated	None Anticipated	None Anticipated, all future growth resulting from the Proposed Action and other developments are within designated growth areas	None Required
Geology, Topography, and Soils	Clearing, grading and grubbing	Clearing, grading and grubbing	None Anticipated	None Anticipated	None Anticipated	Grading, Grubbing and Stockpiling permits per Hawaiʻi County Code, Chapter 10—Erosion and Sediment Control; soil loss and erosion Best Management Practices (BMPs)
Hydrologic Resources	None Anticipated	None Anticipated	None Anticipated	Greater groundwater withdrawal from the Keauhou Aquifer System Area within the aquifer's sustainable yield	Greater groundwater withdrawal from the Keauhou Aquifer System Area within the aquifer's sustainable yield	Soil loss and erosion BMPs; Well Construction and Pump Installation Permits; Engineering Report compliant with HAR §11-20-29; NPDES permit
Biological Resources	Potential spread of invasive	Potential spread of invasive	None Anticipated	None Anticipated	None Anticipated	Invasive species control measures; fauna avoidance and impact reduction BMPs;

Affected Resource	Short-term Impacts		Long-term Impacts		Cumulative Impacts	Mitigation Measures
	Tank Site	*Well Site*	*Tank Site*	*Well Site*		
	species; temporary displacement of fauna species during construction phase	species; temporary displacement of fauna species during construction phase				biological resource training for crews; fauna resource buffers
Archaeological Resources and Historic Properties	None Anticipated	None Anticipated	None Anticipated	None Anticipated	None Anticipated	Cultural resource training for construction crews; archaeological monitoring during construction; notify SHPD if cultural or historic resources are identified during construction; cease work immediately and contact SHPD, coroner and police if iwi kūpuna are identified during construction activities and develop reinternment plan as appropriate.
Cultural Resources and Practices	None Anticipated	None Anticipated	None Anticipated	None Anticipated	None Anticipated	See Section 3.7.1 for a full list of feasible actions DHHL may take to reasonably protect cultural, historical, or natural resources, and exercise of traditional and customary native Hawaiian rights in the affected area.

Affected Resource	Short-term Impacts		Long-term Impacts		Cumulative Impacts	Mitigation Measures
	Tank Site	*Well Site*	*Tank Site*	*Well Site*		
Scenic and Aesthetics	None Anticipated	None Anticipated	None Anticipated	None Anticipated	None Anticipated	None Required
Air Quality	Fugitive dust and construction related air pollutants	Fugitive dust and construction related air pollutants	None Anticipated	None Anticipated	None Anticipated	Air pollution control BMPs
Socioeconomics and Environmental Justice	None Anticipated	None Anticipated	None Anticipated	None Anticipated	Positively benefiting Native Hawaiian and low-income families by creating increased access to housing and economic opportunities	None Required
Acoustic Environment	Noise generated during construction	Noise generated during construction	None Anticipated	None Anticipated	None Anticipated	Community Noise permit; noise reduction BMPs; public informational meeting if applicable
Transportation and Traffic	Minor increase in traffic during construction phase	Minor increase in traffic during construction phase	None Anticipated	None Anticipated	Secondary impacts combined with reasonably foreseeable developments could result in increased traffic around La'i 'Opua	None Required
Natural Hazards	None Anticipated	None Anticipated	None Anticipated	None Anticipated	None Anticipated	None Required
Public Facilities and Infrastructure	None Anticipated	None Anticipated	None Anticipated	None Anticipated	Secondary impacts combined with reasonably foreseeable	None Required

Affected Resource	Short-term Impacts		Long-term Impacts		Cumulative Impacts	Mitigation Measures
	Tank Site	*Well Site*	*Tank Site*	*Well Site*		
					developments could increase demand on Keauhou Aquifer System Area, public facilities and infrastructure	

3.2 LAND USE

3.2.1 Existing Land Use

Well Site

The existing land uses within the Well Site primarily consist of non-native forests, private agriculture, and landscaping. Linear rows of mature coffee trees interspersed with grass, some landscaped trees and shrubs cover most of the surrounding area. Two single-family homes are present within the site.

Tank Site

The Tank Site currently functions as the County of Hawaiʻi, Department of Water Supply Kahaluʻu Reservoir and Well Site. Existing water infrastructure features onsite include three water storage tanks ranging from 0.1 to 0.3 million gallons capacity, Kahaluʻu Well A and Kahaluʻu Well C production wells and associated pumps, four booster pumps[1], and two small, single-story buildings used as the chlorination and control buildings. Existing land uses within the Tank Site consist primarily of cleared open space to accommodate the existing water infrastructure, bordered by non-native forest and private agriculture. Multiple single-family residences are present around the site.

Site photos are included as Figure 3.1.

3.2.2 General Land Use Classifications

Figure 3.2 identifies both the Well and Tank Sites as within the State Land Use Commission Agricultural District.

As shown in Figure 3.3, the Well Site is located within Hawaiʻi County Code Agriculture District A-5a (minimum building site of five acres) Zone.

As shown in Figure 3.4, the Tank Site is identified as Hawaiʻi County Code Agriculture District A-5a (minimum building site of five acres) Zone. The makai edge of the site is bordered by State Land Use Commission Urban District zoned as RS-15 Single-Family Residential District (minimum building site are of 15,000 sq ft).

[1] Booster pumps are used to re-pressurize and move water from water storage tanks into a utility water system.

Figure 3.1: Site Photos

Mixed non-native forest near the Keauhou Well Site and water line.

Cultivated coffee fields near the Keauhou Well Site.

Existing steel water tanks at the Kahalu'u Tank Site.

Existing 0.3 MG water tank at the Kahalu'u Tank Site.

Portion of Bishop Road along the proposed pipeline route near the Keauhou Well Site.

Overview of the proposed water tank location at the Keauhou Well Site.

Figure 3.2: State Land Use

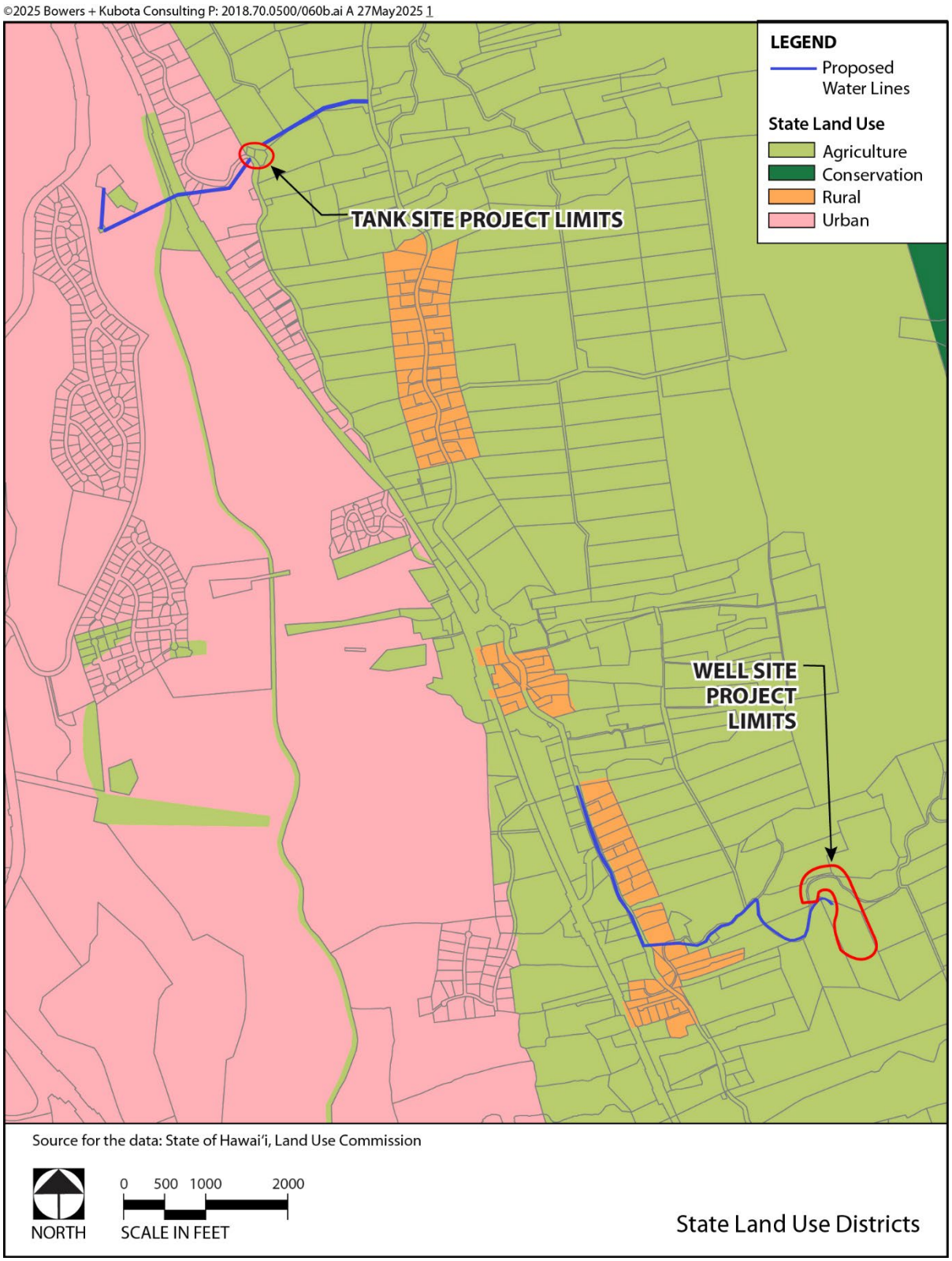


Figure 3.3: County Zoning Map – Well Site

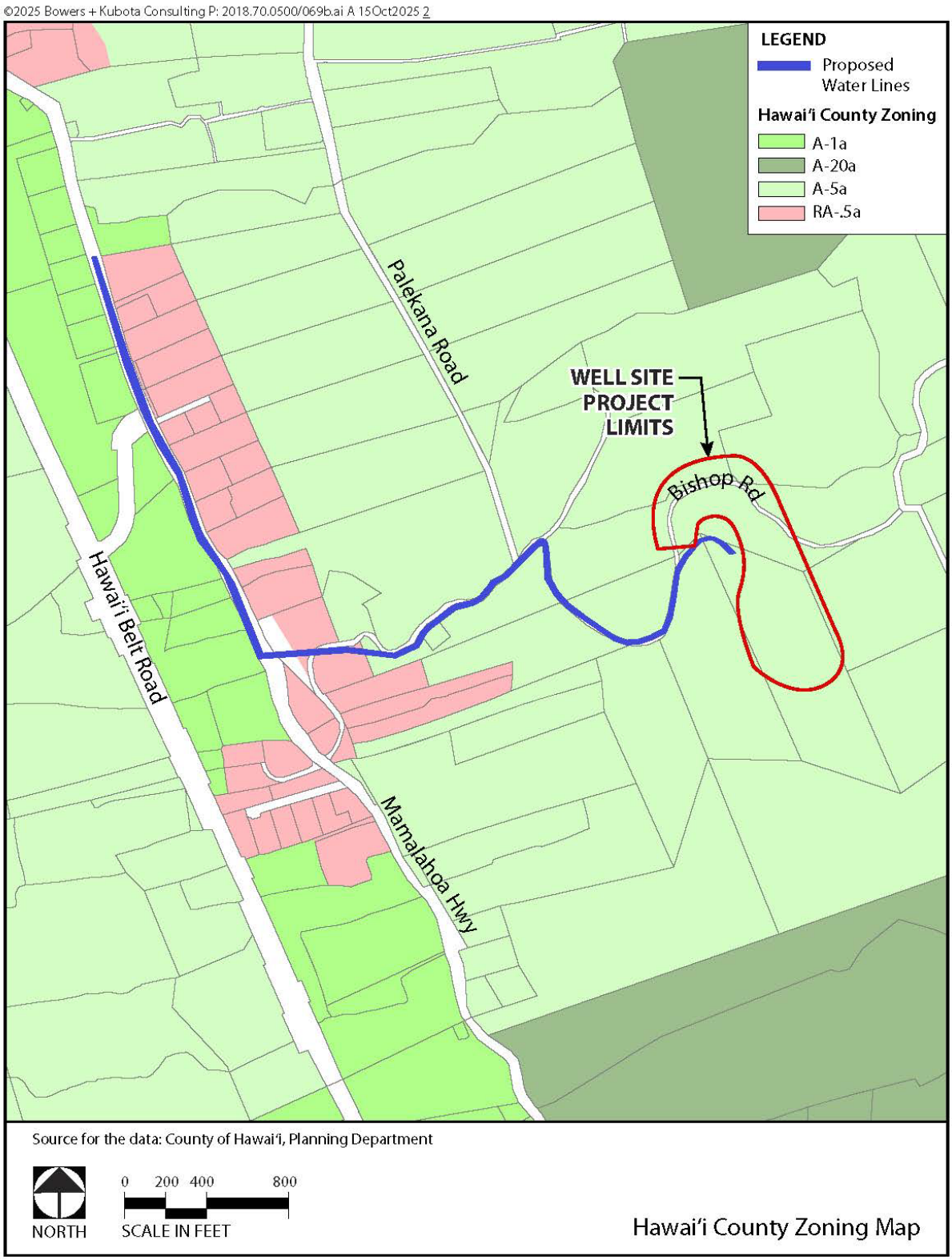
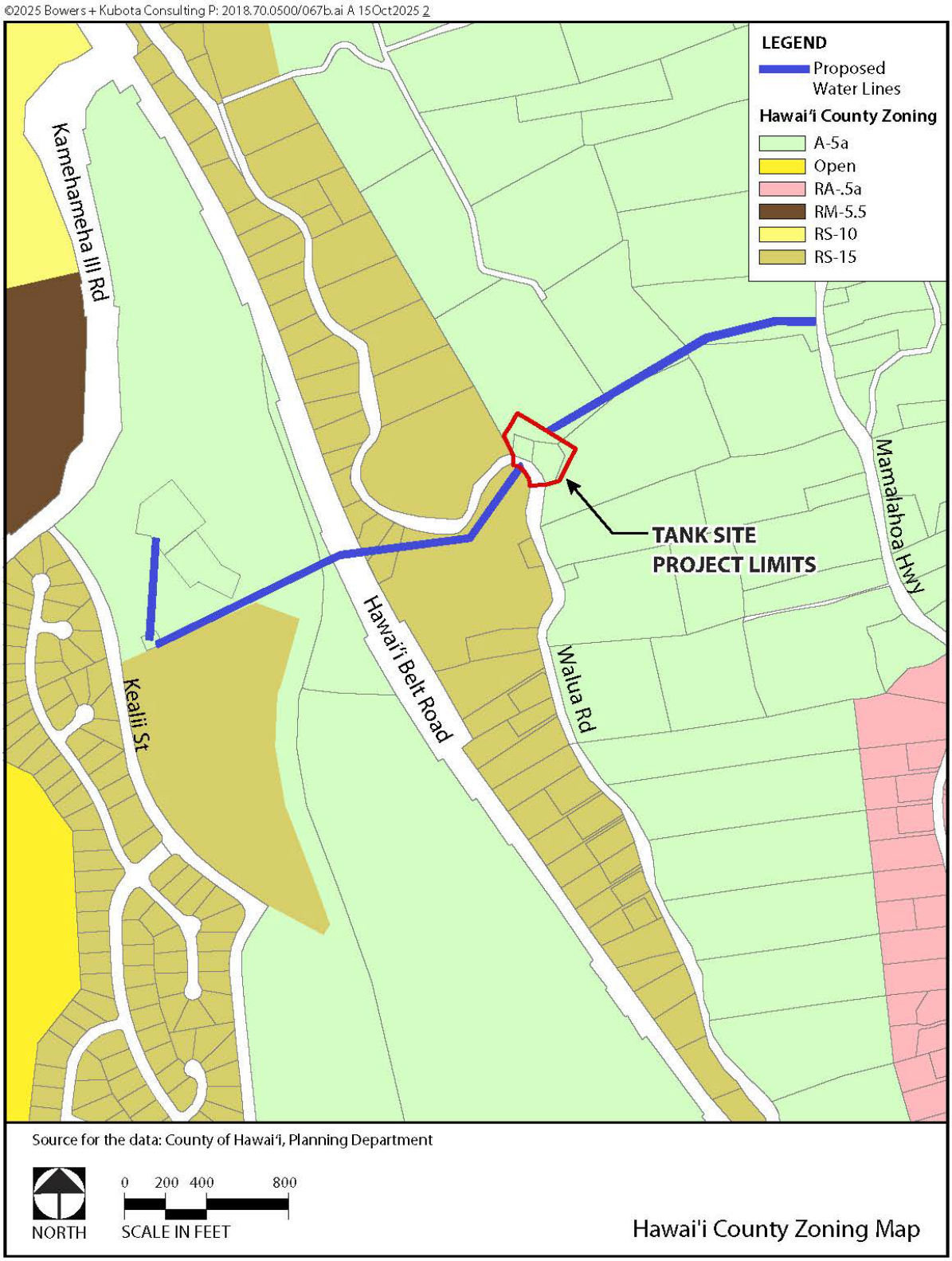


Figure 3.4: County Zoning Map – Tank Site



3.2.3 Agriculture Lands and Farm Lands

AGRICULTURAL LANDS OF IMPORTANCE TO THE STATE OF HAWAIʻI

The Hawaiʻi State Department of Agriculture, Soil Conservation Service (SCS), USDA, and University of Hawaiʻi have created a classification system to identify Agricultural Lands of Importance to the State of Hawaiʻi (ALISH). The system has three ratings for agricultural lands that correspond to the SCS's national equivalents3:

- *"Prime Agricultural Land"* which is best suited for the production of food, feed, forage, and fiber crops. The land has the soil quality, growing season, and moisture supply needed to sustain high yields of crops economically when treated and managed according to modern farming methods.
- *"Unique Agricultural Land"* which indicates agricultural land other than Prime that is valued for its unique high-value crops. In Hawaiʻi, some examples of high-value crops are coffee, taro, rice, watercress, and non-irrigated pineapple;
- *"Other Important Agricultural Land"* is any land other than "Prime or Unique Agriculture Land" that is of state-wide or local importance for the production of food, feed, fiber and forage crops.

Well Site

As shown in Figure 3.5, approximately 0.13 acres of Other Important Agricultural Land are present on the northern corner of the Well Site. This area currently contains single-family homes and residential landscaping. A small portion of the Well Site water transmission line passes through Other Important Agricultural Land. However, the water line will be placed within an existing utility easement.

Tank Site

The Tank Site does not overlap with any Agricultural Lands of Importance to the State of Hawaiʻi but, as shown in Figure 3.6 the Tank Site water transmission line passes through Other Important Agricultural Land on both the mauka and makai sides of the site. However, the water line will be placed within existing utility easements.

IMPORTANT AGRICULTURAL LANDS

Important Agricultural Lands (IAL) is a voluntary program where landowners can apply to the State Land Use Commission to designate their lands as IALs. IALs are intended to promote, conserve and protect agricultural lands, and assure the future availability of suitable agricultural lands. No IALs are present within or around the Tank or Well Sites, as the only IALs present on Hawaiʻi Island are located in South Kohala.

3.2.4 Formally Classified Lands

Federal, State, or local agencies, or have been given special protection through formal legislative designation." Examples of FCL include the National Park System, National Monuments, Coastal Zones, National Wildlife Refuges, and areas of state or local interest. No FCLs are present within or around the Tank or Well Sites. While not directly adjacent to the

Project Site, the Kaloko-Honokōhau National Historic Park is approximately 11 miles northwest of the Well Site and 9 miles northwest of the Tank Site.

Impacts and Mitigation Measures

Water storage tanks and associated accessory structures are permitted within the State Agricultural District and by the Hawaiʻi County Code Chapter 25—Zoning, so long as they do not pose a hazard or danger to the surrounding area and are approved by the Director of the Hawaiʻi County Planning Department. The Proposed Action will be installed in compliance with all relevant building codes to prevent any hazards to the surrounding area and construction would not begin prior to plan approval.

There will be no direct impacts to IAL or FCL, as neither land use occurs at or within proximity to the Well or Tank Sites. The Proposed Action is located between 9 and 11 miles away from Kaloko-Honokōhau National Historic Park and would therefore have no impact on the Park. However, the National Park Service previously had concerns regarding other groundwater resource uses near the Kaloko-Honokōhau National Historic Park. These concerns are discussed in Section 3.4.5.

The Proposed Action could affect approximately 0.13 acres of ALISH Other Important Agricultural Lands within the Well Site location. However, this area is currently utilized for residential purposes, and as such no agricultural uses would be lost. Since the associated water lines would be installed within existing utility easements at both the Well and Tank Site, no impacts to agricultural lands would occur from these features. Therefore, no short- or long-term adverse impacts to agricultural lands, IAL or FCLs are anticipated during construction or operation of the Proposed Action and no additional mitigation measures are required.

Figure 3.5: ALISH Lands Map – Well Site

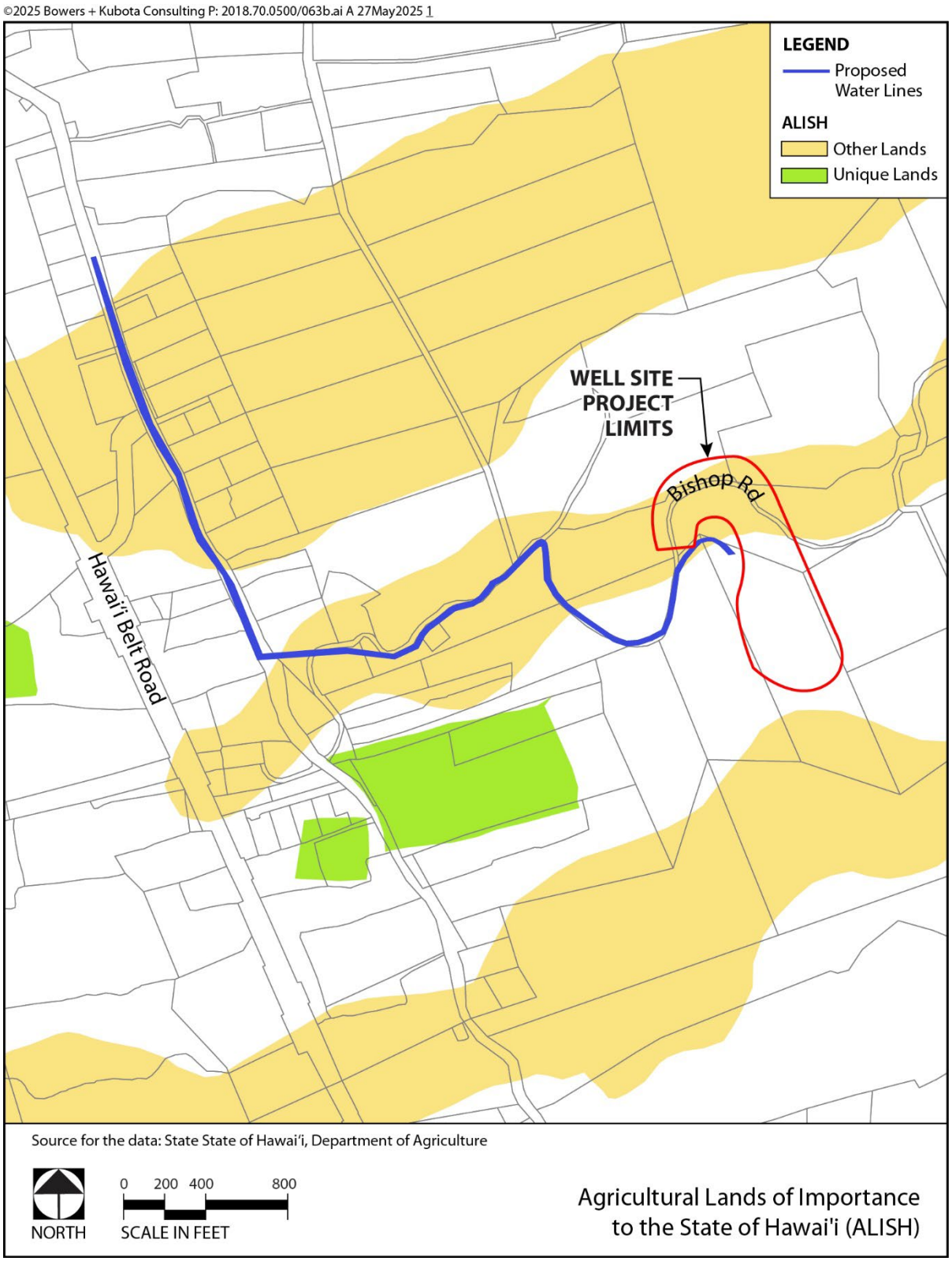
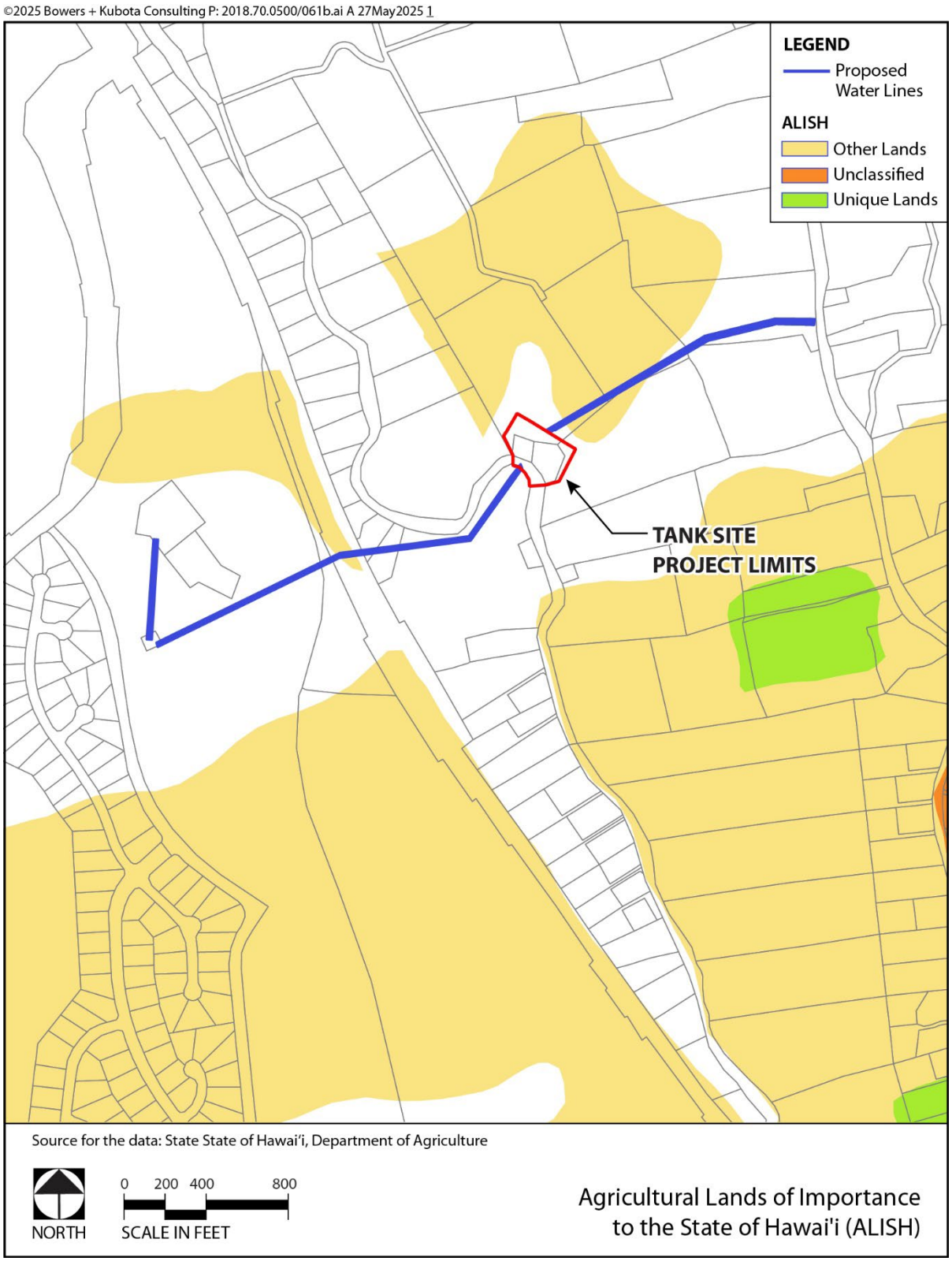


Figure 3.6: ALISH Lands Map – Tank Site



3.3 GEOLOGY, TOPOGRAPHY AND SOILS

3.3.1 Geology

Hawaiʻi Island is home to five volcanoes and is associated with volcanic eruptions and earthquakes. The Project Site is located on the western slope of the Hualālai Volcano, which last erupted between 1800-1801 and is now considered dormant. Flows from this last eruption originated on the northwestern ridge of the volcano at around 6,000 feet (the Kaʻūpūlehu flow) and at 1,500 feet (the Huʻehuʻe flow). These historic Hualālai flows extended from west of Kīholo Bay to Kaumoʻo Point and much of the lava in this area has been since colonized by hardy vegetation and used for agriculture lands (Macdonald, GA., Abbot, A.T., and Peterson, F.L., 1983).

The U.S. Geological Survey (USGS) has developed a Lava-Flow Hazard Zones map and divided the island into zones based on the probability of coverage from future lava flows, with Zone 1 having the greatest risk and Zone 9 the least. The Project Site is located within Zone 4. While Hualālai Volcano is now considered dormant, its historic flows have typically covered large areas including the Project site.

3.3.2 Topography

The Project Site is located between 550-800 feet amsl (the Tank Site) and 1,650 feet amsl (the Well Site). Both sites slope moderately west towards the ocean. The Tank Site was previously cleared to accommodate the existing DWS water utility infrastructure and decades of coffee production has altered the existing landscape and topography of the Well Site.

3.3.3 Soils

Figures 3.7 and 3.8 display the USDA National Resources Conservation Services, Web Soil Survey results of the Tank and Well Sites. The Tank Site is primarily comprised of Punaluʻu-Lava flows complex (10-20% slopes) and a small portion of the southern edge of the site contains Waiaha-Punaluʻu-Lava flows complex (10-20% slopes). There are areas of Kaimu extremely stony peat (7-25% slopes) along the pipeline routes. Punaluu series soils are well-drained, thin organic soils developed over pāhoehoe lava and primarily used for pasture. Kaimu series soils are also well-drained, thin organic soils and generally used for agricultural purposes.

The Well Site is primarily comprised of Nāpōʻopoʻo-Honaulu complex (10-20% slopes) except for the northern corner, which has Puna and Haplic Udarent soils (10-20% slopes). Nāpōʻopoʻo series soils consist of shallow, well drained soils formed over volcanic ash or lava used primarily for grazing and orchard crops.

The Land Study Bureau at the University of Hawaiʻi has developed a soils agricultural productivity rating system with the USDA. The system ranks soils within the State from A to E in terms of their over-all quality for agricultural productivity, with A being “very good” and E being “not suitable.” As shown in Figure 3.9, all the soils within the Tank and Well Sites are rated as “C”, which is considered moderately good for agricultural productivity.

The National Earthquake Hazard Reduction Program has developed a soil classification system defining five soil types that help identify areas that will be most significantly affected by an earthquake. Earthquakes associated with tectonic or volcanic activity occur frequently in Hawai'i County, although many are too small to cause noticeable effects. "A" ranked soils represent hard rock that are able to reduce ground motions or shaking from earthquakes and "E" represent soft soils that amplify and magnify ground shaking and increase building damages and loss. According to the State of Hawai'i Hazard Mitigation Plan (2018), the National Earthquake Hazard Reduction Program has identified the Project Site as having "C" soils, which are very dense soils and soft rock that experience a moderate amount of ground shaking.

Potential Impacts and Mitigation Measures

The Proposed Action would not change the Project Site's potential exposure to geological hazards or prevent the use of any significant geological resources in the area. It will be constructed in accordance with County requirements and building codes relating to the onsite seismic conditions, and the appropriate American Water Works Association and American Concrete Institute standards. The entire island of Hawai'i, including the Project Site, are located within the International Building Code (IBC) Seismic Zone 4 which have the highest potential for seismic induced ground movement. The Proposed Action will comply with IBC Seismic Zone 4 building standards to reduce potential impacts created by earthquakes or seismic induced ground disturbances.

The Proposed Action would preclude between one to three acres of the Well Site from its current agricultural use for coffee production. However, it would not impact any A "very good" or B "good" ranked soils or prime agricultural soils or other agricultural uses in the area. While the land surrounding the Tank Site is classified as moderately good for agricultural uses, the area consists of non-native mixed forest and landscaping as discussed in Section 3.5.1. Therefore, no agricultural uses would be impacted or lost.

Ground disturbance resulting from the Proposed Action will require clearing, grubbing, and grading and the necessary permits will be obtained per Hawai'i County Code, Chapter 10—Erosion and Sediment Control. Implementing construction of the Proposed Action in two phases will reduce surface disturbance and all excavation and grading activities will be regulated by the applicable provisions of the County's grading ordinances and any SHPD requirements for archaeological monitoring. Excavation and grading activities will incorporate best management practices (BMPs) to minimize soil loss and erosion, such as:

- Silt fences;
- Dust fences;
- Slope stabilization;
- Temporary sediment basins;
- Temporary diversion berms and swales to intercept runoff;
- Use of compost filter socks;
- Truck wash down areas; and
- Slope protection.

If applicable, permanent sediment control measures will be implemented once construction is complete. Therefore, no long-term adverse impacts to soils are anticipated during construction or operation of the Proposed Action and no additional mitigation measures are required.

Figure 3.7: USDA Soils Map – Well Site

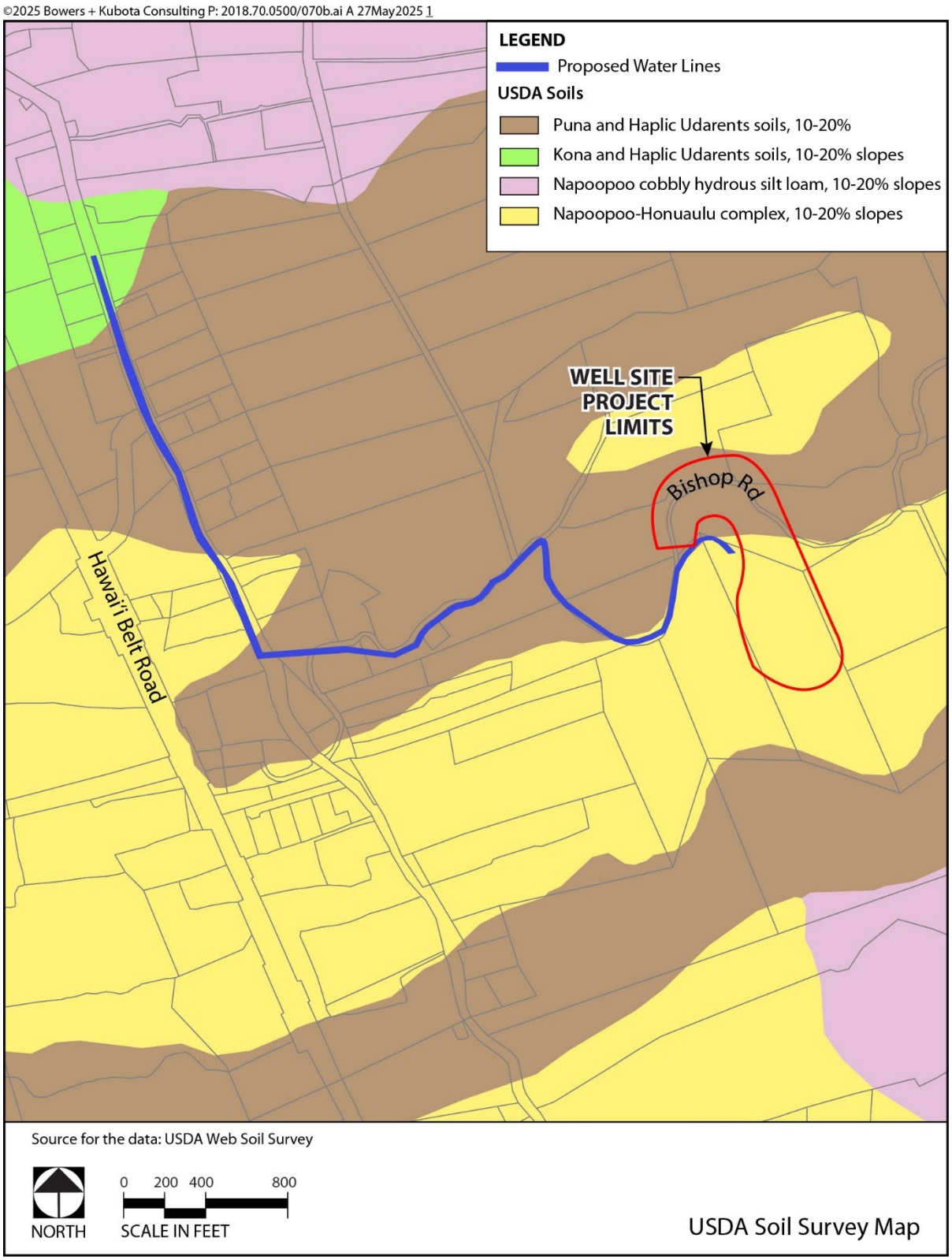


Figure 3.8: USDA Soils Map – Tank Site

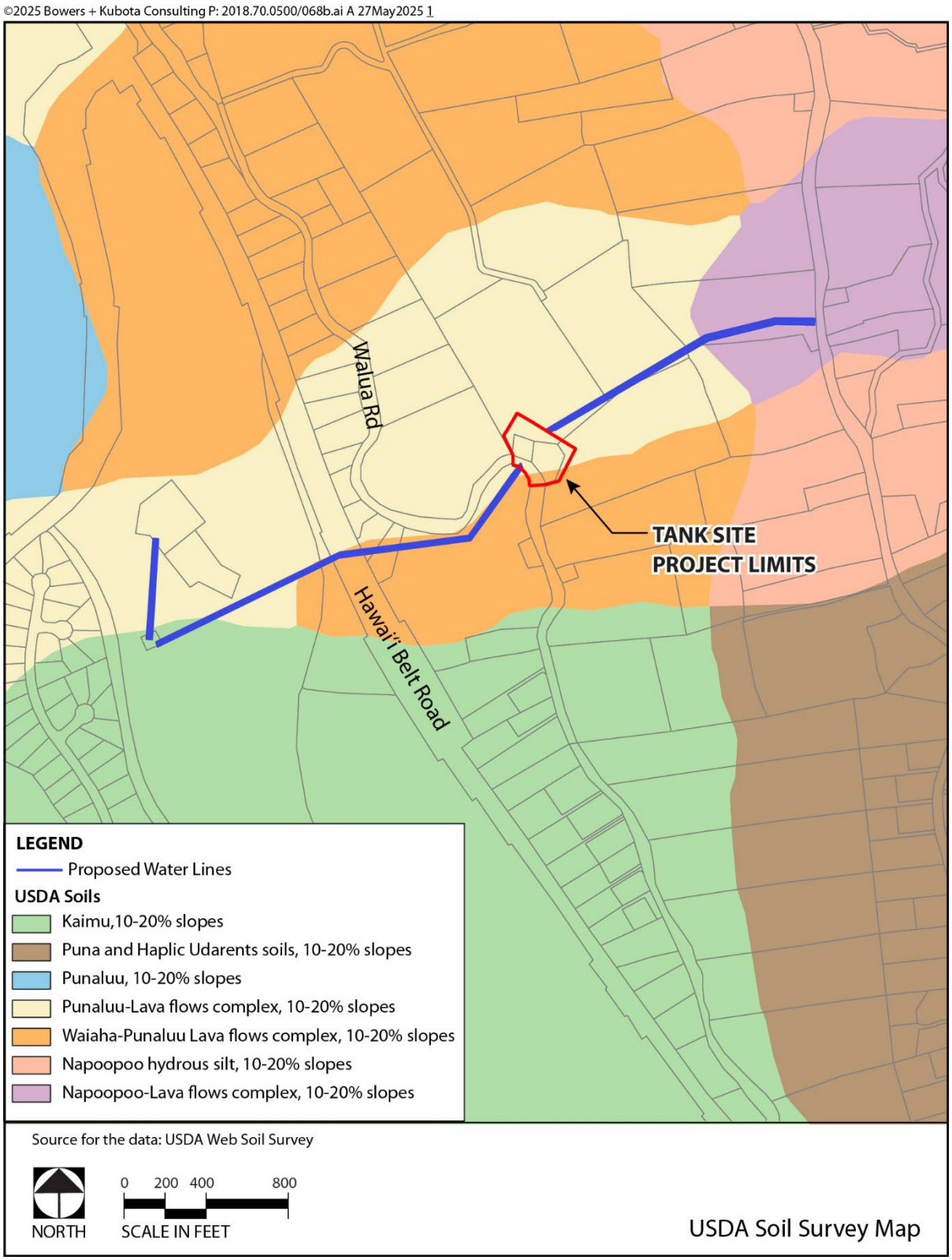
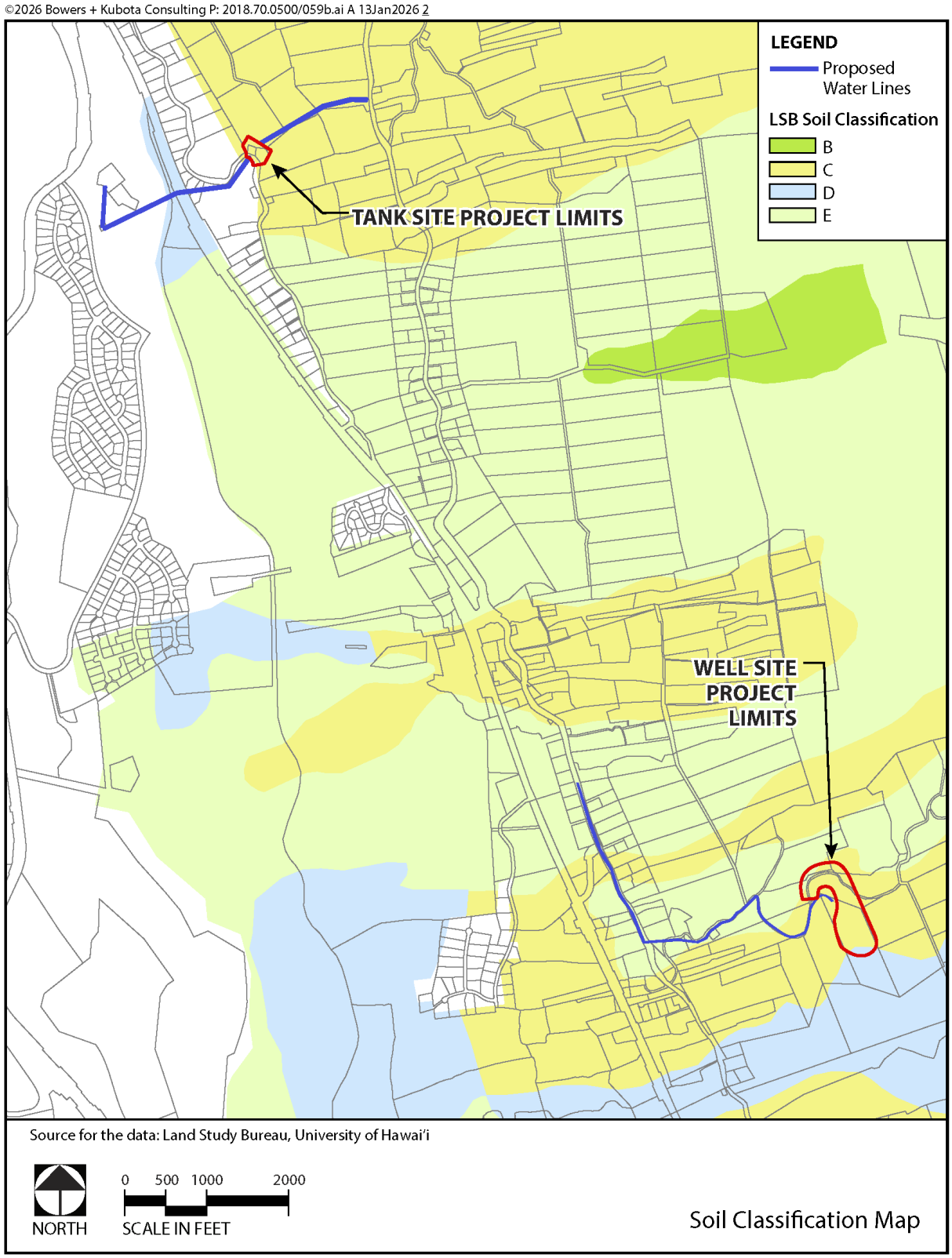


Figure 3.9: LSB Soils Map – Both Sites



3.4 HYDROLOGIC RESOURCES

3.4.1 Rainfall

On the North Kona coast, rainfall is generally between 20 inches at lower elevations and over 80 inches per year at higher elevations as shown in Figure 3.10. Mean annual rainfall near the Project Site is approximately 49 inches with rainfall typically highest in July and September and lowest in February (SWCA Environmental Consultants, 2019).

3.4.2 Watershed, Surface Waters and Floodplain

The Project Site is located within the Waiʻaha watershed, which covers an area of 15.8 square miles, as shown in Figure 3.11.

Surface water in the North Kona region is extremely limited and Waiʻaha Stream is the only perennial surface water in the watershed, due to its high permeability of basaltic lava flows from Mauna Loa and Hualālai Volcanos (County of Hawaiʻi, Department of Water Supply, 2017). Waiʻaha Stream is located north of the project area. No perennial or non-perennial surface waters are present at either the Tank or Well Sites. Thus, no floodplains are present.

Waiʻaha Stream is 16.2 miles long ending one mile inland from the coast with most of its length within the stream's headwaters (County of Hawaiʻi, Department of Water Supply, 2017). The stream is classified as a Class 2 Inland Water per HAR §11-54 Water Quality Standards. Class 2 Inland Waters are "for recreational purposes, the support and propagation of aquatic life, agricultural and industrial water supplies". According to the Atlas of Hawaiian Watershed and their Aquatic Resources, of the five assessments conducted on the stream's aquatic life, none deemed it worthy of protection (Hawaiʻi Division of Aquatic Resources, 2008). There are eight declared diversions along the stream for agricultural or industrial purposes; none are in the vicinity of the Project Site (County of Hawaiʻi, Department of Water Supply, 2017).

3.4.3 Wetlands

According to the U.S. Fish and Wildlife Service, National Wetlands Inventory Online Wetland Mapper, no wetland features occur within or adjacent to the Project Site. The closest wetland-like features are between approximately 0.8 to 0.9 miles from the Well and Tank Sites, respectively as shown in Figure 3.12.

3.4.4 Coastal Waters

The Project Site is located between approximately 1 to 2 miles inland from the nearest coastline at an elevation of approximately 550 feet to 1,650 feet amsl. As no surface waters are present, the Proposed Action has no direct connection to coastal waters.

Figure 3.10: Rainfall on Hawai'i Island

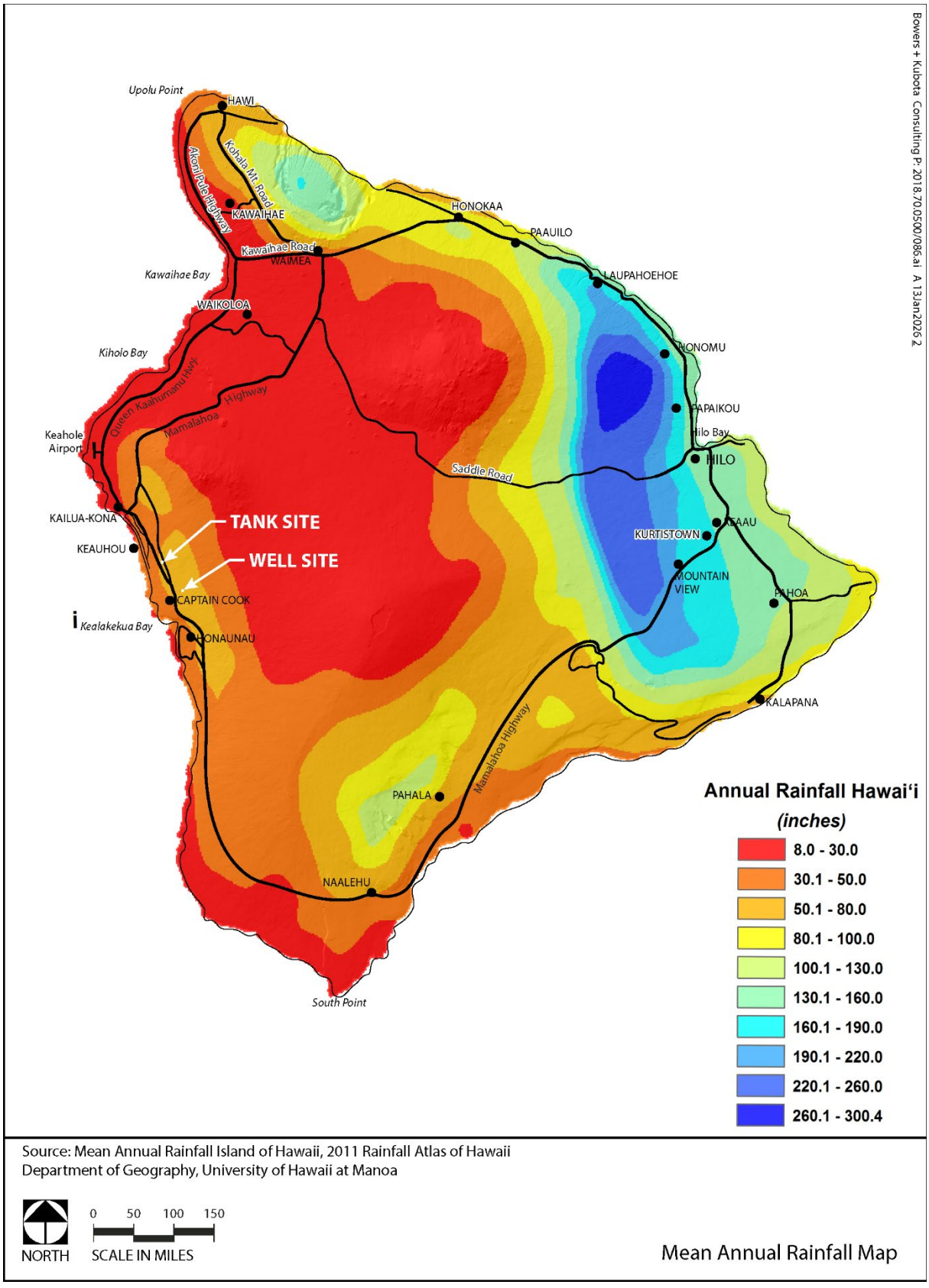


Figure 3.11: Watershed and Project Location Map

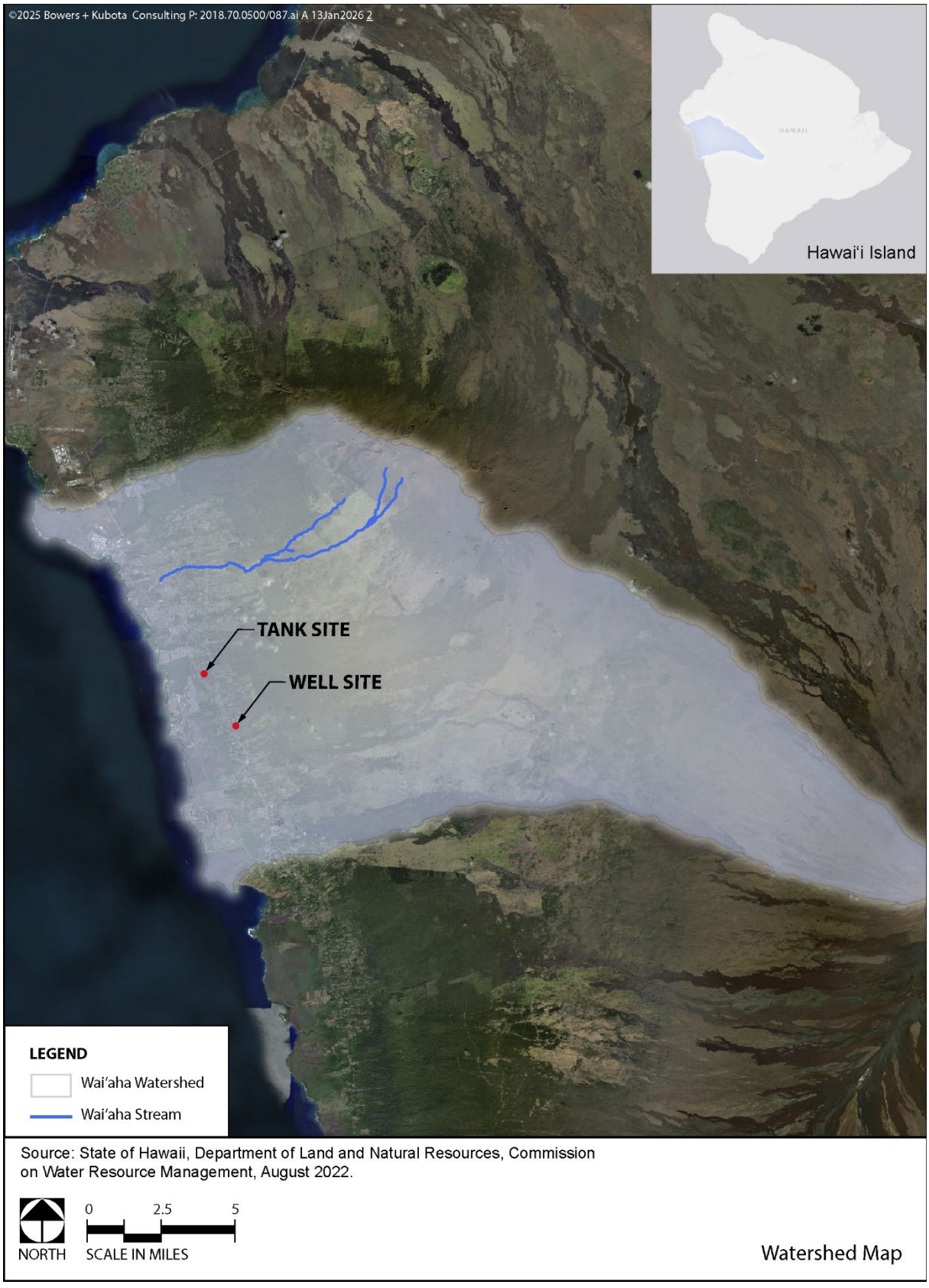


Figure 3.12: Wetlands Map

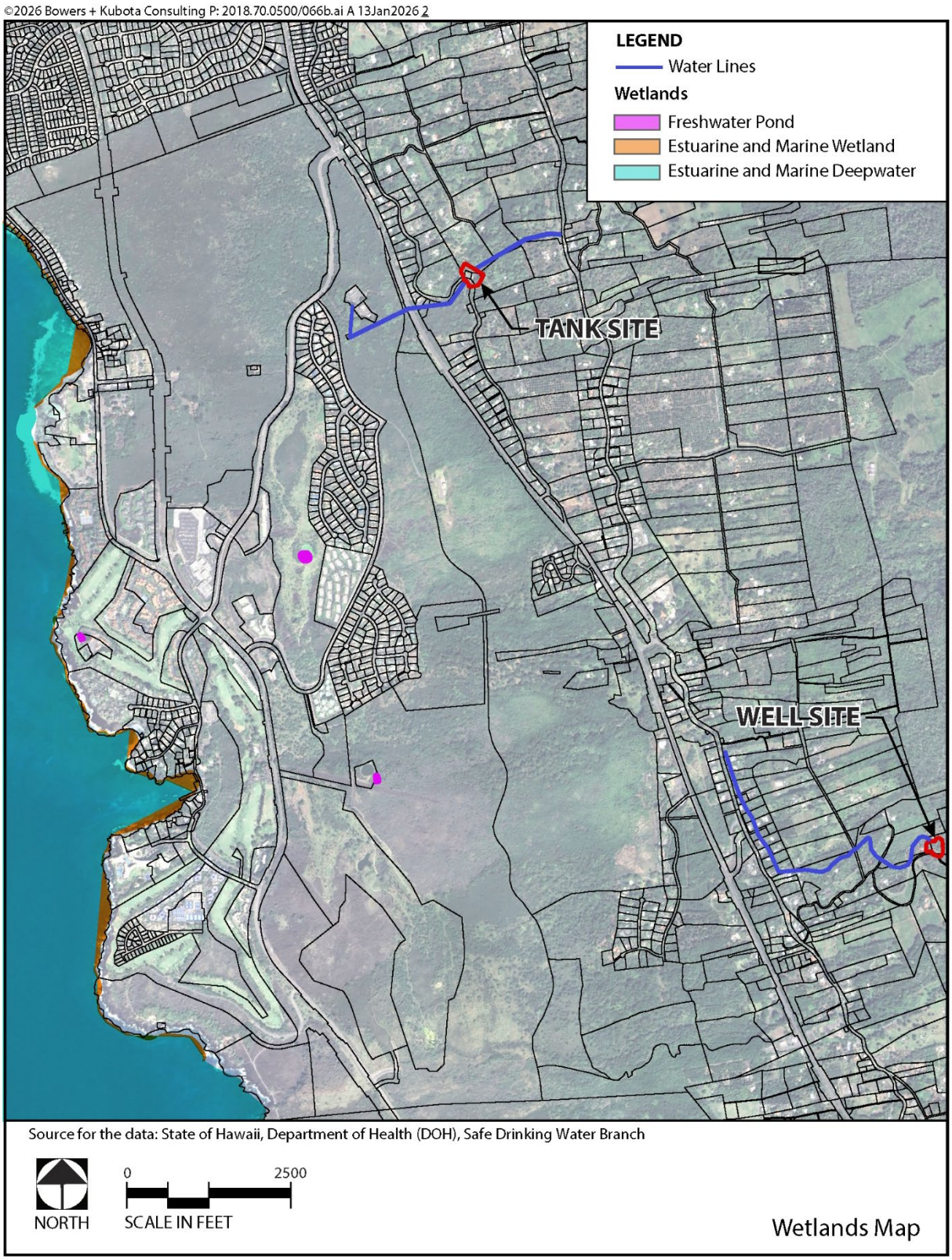
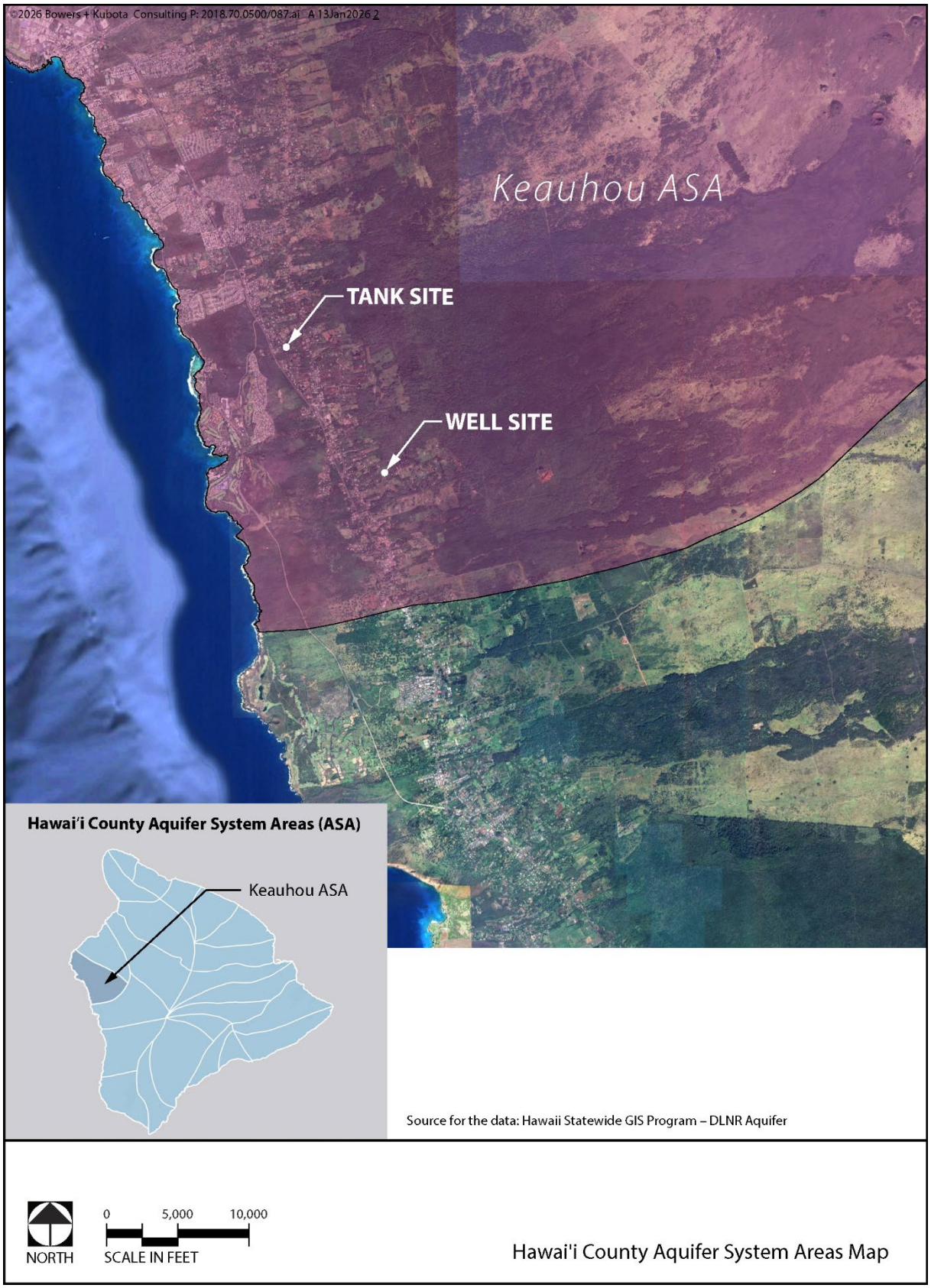


Figure 3.13: Hawai'i County Aquifer System Areas



3.4.5 Aquifer System

The Project Site is located within the Hualālai Aquifer Sector - Keauhou Aquifer System Area (KASA) as shown in Figure 3.13. The KASA extends over the western and southwestern flank of Hualālai Volcano and along the entire coastline from Mahaiʻula to Keikiwaha point.

According to *The Rainfall Atlas of Hawaiʻi*, rainfall on the western slopes of Hualālai Volcano is the principal source of groundwater recharge in the area and in Hawaiʻi County groundwater is the primary source of drinking water. Within the KASA, two types of groundwater are present: basal and high-level groundwater. Basal groundwater is freshwater that "floats" on top of deeper seawater. High-level groundwater is a freshwater source that is contained in the island's volcanic rock layers by relatively impermeable geologic structures, like clay soils or less permeable volcanic rock (Giambelluca et. al., 2016). Basal groundwater extends 1.5 to 4.5 miles inland from the coast, while high-level groundwater is restricted to mauka of Māmalahoa Highway from Lalaoa to Keʻei (Natural Energy Laboratory of Hawaiʻi Authority, 2018). High-level groundwater is considered pristine in quality, largely from the lack of saltwater intrusion like basal sources, with a chloride content ranging between 3 and 10 milligrams per liter. Chloride content is a measurement of freshness of Hawaiʻi's groundwater and this range is similar the chloride content of high elevation rainfall.

Following the discovery of high-level groundwater during the 1990's, DWS has shifted their priority to developing wells that use this groundwater type. Placement of wells utilizing high-level groundwater in the region range from 730 to 1,760 feet amsl with depths from approximately 1,000 to 1,780 feet, suggesting compartmentalization of this water source throughout the KASA area (Natural Energy Laboratory of Hawaiʻi Authority, 2018). DWS encourages development of future high-level wells in areas generally between 1,500 and 1,800 feet mauka of Māmalahoa Highway with a minimum of 0.25 miles between well sites. This reduces drawdown and interference between wells, creating greater water sustainability within the KASA region.

During the development of the *Hawaiʻi County Water Use and Development Plan* update, the National Park Service noted concerns regarding lower groundwater levels and increased pond salinity resulting from wells in the area intercepting groundwater and reducing flow through Kaloko-Honokōhau National Historic Park (County of Hawaiʻi, Department of Water Supply, 2017). The Kaloko-Honokōhau National Historic Park is an important natural and cultural resource located approximately six miles northwest of the Project Site.

According to the Commission on Water Resource Management's (CWRM) *Water Resource Protection Plan 2019 Update*, the KASA has a sustainable yield of 38 mgd (State of Hawaiʻi, Commission on Water Resource Management, 2019). Sustainable yield is the limit established by the CWRM for groundwater withdrawal from an aquifer without negatively impacting its long-term sustainability from the source. The CWRM adopted reservations of 3.398 mgd of water from the KASA for DHHL per its authority under HRS 174C-101. The water reservations may be used for various purposes in the planned development of DHHL's 1.51 acres of land occurring in the KASA, including the development of homesteads like Laʻi ʻŌpua under Section 221 of the Hawaiian Homes Commission Act. DHHL will receive two thirds of the water developed by the Proposed Action. Thus, even if the wells are pumped at

the daily maximum rate of 2 mgd DHHL would receive approximately 1.3 mgd which is within their reservation amount.

At the time of this EA, CWRM is developing a first-generation Adaptive Management Plan (AMP) for groundwater in the Keauhou Aquifer System Area to guide future groundwater use while protecting public trust resources. The AMP is intended to serve as an updatable management framework that articulates current assumptions about aquifer behavior, establishes baseline monitoring indicators, identifies sentinel sites, and sets ecological and cultural thresholds that may trigger management responses (Hawaiʻi Commission on Water Resource Management, 2025).

EXISTING WELLS

The Proposed Action occurs within the DWS North Kona Water System, which depends heavily on groundwater wells as a water source. According *to Hawaiʻi Water Use and Development Plan*, *Keauhou Aquifer System*, the KASA has 47 production wells in the system area including 16 for municipal purposes, 12 for irrigation, one industrial, five agricultural and 13 drilled but unused (County of Hawaiʻi, Department of Water Supply, 2017). The wells use both groundwater types and current pumping rates are approximately 15 mgd. The Proposed Action is anticipated to have a maximum daily demand of 1.1 mgd with the capacity to pump up to 2.0 mgd (Department of Hawaiian Homelands, 2006).

Table 3-2 lists the municipal production wells supplying potable water within five miles of the Project Site. Figure 3.14 shows the locations of the existing wells within the KASA. The Kahaluʻu Wells A-D cluster, which are present at the Tank Site, are the closest operating wells located within 2 miles of the Well Site. Kahaluʻu Well A and Kahaluʻu Well C are the two production wells onsite, each capable of pumping approximately 1 mgd.

Table 3.2: Existing Groundwater Wells*

Well No.	Well Name	Approx. Distance to the Project Site (miles)
3557-01 to 05	Kahaluʻu Wells A-D+	2
3557-05	DWS Kahaluu Shaft	2.5
3657-01	DWS Holualoa	5

*Source: County of Hawaiʻi, Department of Water Supply. *Hawaiʻi County Water Use and Development Plan Update, Hawaiʻi Water Plan, Keauhou Aquifer System*. March 2017.

FUTURE WELLS

There are three future production wells planned within the KASA, including the Proposed Action. The KASA has a sustainable yield of 38 mgd and projected future water demands for the KASA indicate that by 2035 pumping rates will reach approximately 23 mgd, or around 60 percent of the aquifer's sustainable yield. With the addition of the Proposed Action and other future wells, this value could increase up to 27 mgd. Table 3-3 lists the future planned municipal wells within the vicinity of the Proposed Action. The closest of these wells, Waiʻaha Well B, is over 6 miles from the Project Site.

Table 3.3: Proposed Potable Wells

Well Name	Estimated Pump Capacity (mgd)	Distance to Project (miles)
Proposed Action	2	N/A
Waiʻaha Well B	1	1.35
Ota Well	1	2.31

3.4.6 Groundwater Contamination

Potential sources for groundwater contamination include untreated stormwater runoff and wastewater. Stormwater runoff can occur anywhere within the watershed and is a source of water pollution. Wastewater is often generated as a byproduct of agricultural or industrial activities or from Individual Wastewater Systems and Underground Injection Control sites.

Impacts from ground water contamination are not anticipated at the Tank Site as this location currently has two safely operating production wells. The Proposed Action will not affect these wells and is intended to modify the water storage tanks at this location. The tanks and associated water transmission pipelines will be constructed according to HAR §11-20-29 Rules Relating to Public Water Systems, as applicable, to avoid potential contamination.

Potential for groundwater contamination affecting the Proposed Action at the Well Site is low. Groundwater recharge of the KASA occurs primarily on the slopes of Hualālai Volcano, mauka of the Well Site, and the area consists predominately of undeveloped land covered with shrub and forest vegetation.

Directly mauka of the Well Site are four small-scale coffee farms and mostly rural residential homes, small-scale agriculture and vacant land surround the site. Within the Well Site footprint, land uses include coffee cultivation and undeveloped mixed non-native forest. None of these land uses produce measurable amounts of potential contaminants that would be picked up by stormwater runoff. No large-scale commercial agricultural or livestock operations, which may use substantial quantities of pesticides and herbicides that can be picked up in stormwater runoff, occur mauka of the Well Site.

The County of Hawaiʻi does not have a sanitary wastewater collection system in the uplands of North Kona or along Māmalahoa Highway. As a result, wastewater disposal near the Well Site is primarily within Individual Wastewater Systems which have historically been cesspools. There is one cesspool present within the Well Site boundaries and approximately 20 in the vicinity mauka of the site. In 2017, Act 125 was passed by the Hawaiʻi State Legislature requiring all cesspools to be upgraded, converted, or connected to a sewer system by 2050.

The Project Site is located approximately 1.25 miles mauka of the Underground Injection Control line established by the DOH. The Injection Control line marks areas of the island where there are limits on the types of injection wells that can be installed, and the Project Site's location mauka of the line indicates no new injection wells can be installed nearby. Injection wells are typically used by individual wastewater treatment facilities to dispose of treated wastewater effluent into ground pits.

Figure 3.14: Groundwater Wells Map

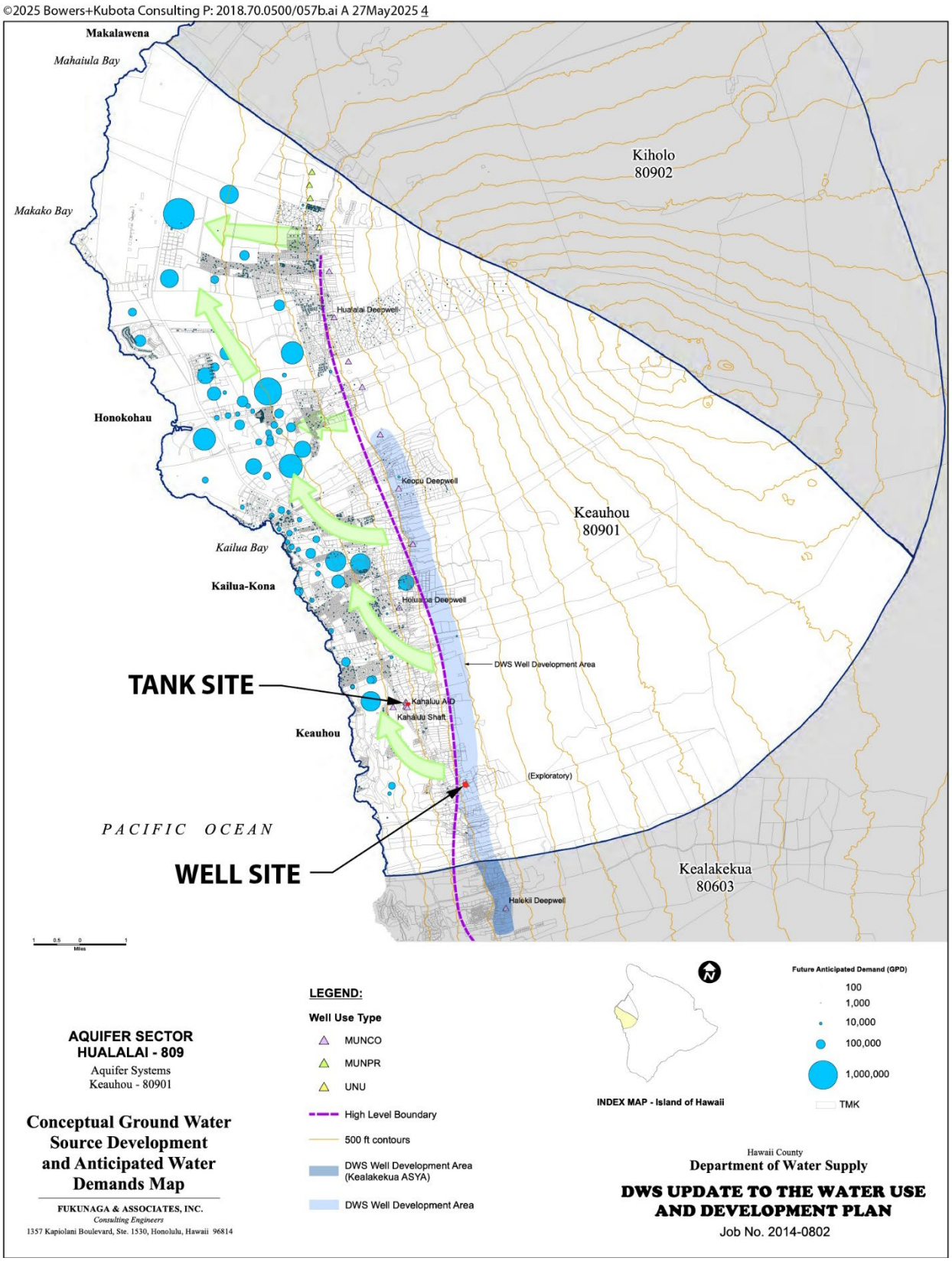


Figure 3.15: NPDES Contamination Injection Map

Impacts and Mitigation Measures

The Proposed Action would not change the Project Site's potential exposure to rainfall or impact rainfall levels in the area. The Proposed Action would have no impacts on wetland features, as none occur in the Project Site. Those in the vicinity are nearly 1 mile away from each location of the Project Site and would not be affected by the Proposed Action.

No surface waters are present in or near the Project Site. However, to ensure no downstream impacts on coastal waters BMPs like those described in Section 3.3.3 would be used during excavation and grading activities to minimize soil loss and erosion preserving existing coastal water conditions. Permanent sediment control measures will be used once construction is complete if applicable. Since the total area disturbed will exceed one acre, and a National Pollutant Discharge Elimination System (NPDES) permit will be obtained for the Proposed Action.

Prior to Phase I, Well Construction and Pump Installation Permits will be obtained for the Proposed Action. During Phase I testing, if the water quality or quantity is insufficient or there is interference with nearby production wells the Proposed Action would not continue to Phase II.

Upon installation and operation of Phase II, pumping by the Proposed Action will result in lowering groundwater levels in the project area. The Proposed Action is anticipated to withdraw a maximum of 2 mgd. This is within CWRM's approximately 3.4 mgd DHHL groundwater reservation amount and is approximately 5 percent of the KASA's 38 mgd sustainable yield. If the Proposed Action and other additional proposed wells are developed, the future and existing wells would require an approximate total of 27 mgd. This is about 71 percent of the KASA's sustainable yield as determined by the CWRM, which is within the 90 percent sustainable yield limit. Thus, the Proposed Action would have minimal impact on the KASA or its long-term sustainability. However, the project may be subject to future conditions imposed by the Keauhou Aquifer System Area Groundwater Adaptive Management Plan (AMP). The first generation AMP is being developed now and will be updated in future years as more is learned.

The DOH has strict requirements for new public drinking water sources. As such, the Proposed Action will comply with HAR §11-20-29 Rules Relating to Public Water Systems. An engineering report will be submitted to the DOH and approved before placing the Proposed Action online within the DWS's North Kona Water System. The report will identify all potential sources of contamination, evaluate alternative controls which could be implemented to reduce or eliminate contamination potential, and include a water quality analysis for all regulated contaminants.

With the passing of Act 125, it is anticipated the single cesspool onsite and nearby cesspools will be converted, upgraded or connected to a sewer system by 2050. To avoid any impacts from possible contamination, the Proposed Action will be developed in compliance with HAR §11-20-29.

Therefore, no short- or long-term adverse impacts to wetlands, surface waters, coastal waters, groundwater use, or groundwater contamination are anticipated during construction or operation of the Proposed Action and no additional mitigation measures are required.

3.5 BIOLOGICAL RESOURCES

A flora and fauna survey was conducted for the Proposed Action with field work completed on December 1, 2021, by SWCA Environmental Consultants. The Flora Fauna Report is attached as **Appendix B**. The following is a summary of the findings.

3.5.1 Flora

The Project Site is an altered landscape composed primarily of three vegetation types: mixed non-native forest, landscaped vegetation, and cultivated fields. A total of 84 plant species were identified. None of the species are native to the Hawaiian Islands nor were the vegetation types and species identified considered unique. No federally and/or state-listed threatened, endangered, or candidate plant species or rare Native Hawaiian plants were observed during the survey effort.

Mixed non-native forest consists of a variety of tree species like opiuma (*Pithecellobium dulce*), Christmas berry (*Schinus terebinthifolius*) and koa haole (*Leucaena leucocephala*) with occasional monkeypod (*Samanea saman*) and breadfruit (*Artocarpus altilis*). This vegetation type contains an understory of non-native grasses like elephant grass (*Cenchrus purpureus*) and woody species like coral berry (*Rivina humilis*). This vegetation type was most common along the water transmission pipelines mauka and makai of the Tank Site but was present within the other vegetation types throughout the entire Project Site.

Landscaped vegetation includes common cultivated species like mango (*Mangifera indica*) and avocado (*Persea americana*) mixed with ornamental species like firecracker plant (*Russelia equisetiformis*) and agave (*Agave attenuate*). This vegetation type was most common near the Well Site and associated water transmission pipelines.

Cultivated fields cover most of the Well Site and consist of cultivated Arabian coffee (*Coffee arabica*) with an understory of low-growing herbaceous species. Portions of the site are also used for growing other fruit trees like papaya (*Carica papaya*), lychee (*Litchi chinensis*) and rambutan (*Nephelium lappaceum*).

3.5.2 Fauna

Fauna observed during the survey consisted entirely of non-native, introduced species that tend to be generalists and occupy a range of habitat types. In total, 11 avian species were observed in the Project Site. Three of these species, the cattle egret (*Bubulcus ibis*), house finch (*Haemorhous mexicanus*) and northern cardinal (*Cardinalis cardinalis*) are protected by the Migratory Bird Treaty Act. While not detected during the survey effort, there is suitable foraging and nesting habitat for the federally threatened and state-listed endangered nēnē, or Hawaiian goose (*Branta sandvicensis*) within the Project Site.

The Asian mongoose (*Herpestes javanicus*) was the only mammal detected however, the feral pig (*Sus scrofa*), rat (*Rattus spp.)* and mouse (*Mus musculus*) are expected to occur. While not detected during the survey effort, there is suitable foraging and roosting habitat for the federally and state-listed endangered ʻopeʻapeʻa, or Hawaiian hoary bat (*Lasiurus cinereus semotus*). Suitable habitat indicates the potential presence of this species onsite. No native invertebrates were observed.

The Project Site does not contain any designated or proposed critical habitat for any threatened or endangered fauna species and is not expected to support any other listed species beyond those previously discussed.

Impacts and Mitigation Measures

The Proposed Action will adhere to BMPs during construction and operation to minimize impacts to flora and fauna resources found at the Project Site. Construction will be implemented in phases to control erosion.

Due to the prevalence of weedy, non-native plant species within the Project Site the following mitigation measures would be implemented as applicable to prevent the unintentional spread or introduction of new invasive species to the site:

- All construction equipment and vehicles would be washed and inspected before first entering the Project Site;
- Regularly washing and inspection of all construction equipment, vehicles and materials at a designated location for the presence of invasive or harmful non-native species by a qualified botanist or entomologist prior to entering the Project Site;
- Regularly clearing equipment, materials and personnel of excess soils and debris;
- Purchasing raw construction materials (e.g. fill) from on-island suppliers to avoid introducing non-native species;
- Maximizing use of native plant species or non-invasive species for landscaping and erosion control; and
- Sterilizing gear such as work boots, cutting tools, and vehicle tires to prevent the spread of fungal pathogens.

Potential impacts to fauna species are anticipated to be short-term and limited to the construction phases of the Proposed Action, which could temporarily displace individuals from the Project Site. However, suitable foraging, nesting and roosting habitat is directly adjacent to the Project and could be used by displaced individuals until construction is completed. To reduce any potential impacts to biological resources, the following avoidance and mitigation measures would be used during the construction and operation of the Proposed Action:

- Conduct biological resource training for regular on-site project personnel to identify special-status species and measures to be taken by crews if found during construction or operation;
- Appropriate speed limits would be posted and implemented within the Project Site where nēnē are known to occur;
- Any nēnē found onsite during construction or operation would be avoided;
- Nesting bird surveys of the Project Site and areas directly adjacent would be conducted by a qualified biologist within 72 hours prior to initiating construction, tree trimming or tree removal activities or after three (3) or more consecutive days of inactivity. If nēnē are observed foraging or loafing onsite during their breeding

season (September through April) a qualified biologist would survey the Project Site for nests;

- If a nēnē nest is found within a 150-foot radius of the Proposed Action, or a previously undiscovered nest is located within said radius after construction has started, all work would cease immediately, and the U.S. Fish and Wildlife Service would be contacted for further guidance;
- While not anticipated to occur in or near the Project Site, no vegetation clearing or construction activities would occur within 1,600 feet of any active ʻIo nests until the nest is determined inactive by a qualified biologist;
- Trees containing confirmed active or inactive ʻIo nests would not be trimmed or removed, as nests may be re-used for consecutive breeding seasons;
- Active nesting sites of other species protected by the Migratory Bird Treaty Act would be avoided until the nest is determined inactive by a qualified biologist;
- While not anticipated to occur near the Project Site, no temporary or permanent standing water will be left onsite to prevent attracting Hawaiian waterbirds;
- Trimming and removal of vegetation greater than 15 feet tall would be avoided during ʻopeʻapeʻa birthing and pupping season (June 1 and September 15); and
- Barbless materials would be used for any construction or operation fencing to avoid entanglement of ʻopeʻapeʻa.
- Outdoor lights will be shielded so the bulb can only be seen from below.
- Automatic motion sensor switches and controls will be considered for all outdoor lights, or lights will be turned off when human activity is not occurring in the lighted area, pending security needs.
- Nighttime construction will be avoided during seabird fledgling period, September 15 through December 15.

No additional short- or long-term impacts are anticipated. Therefore, no additional mitigation measures are required.

3.6 ARCHAEOLOGICAL RESOURCES AND HISTORIC PROPERTIES

An Archaeological Literature Review and Field Inspection (LRFI) report was completed to identify and evaluate the potential of any historic, cultural, or archaeological resources being found onsite. The LRFI consisted of historical, cultural, and archaeological background research and a field inspection was conducted by Cultural Surveys Hawaiʻi (CSH) on December 17, 2020, to determine the likelihood of archaeological historic properties being affected by the Proposed Action. The LRFI's field investigations were started prior to finalizing the Project Site footprint and water transmission pipeline locations. Once finalized, additional fieldwork was conducted by CSH on April 19, 2022, in the expanded site area. The following is a summary of the LRFI's findings (see **Appendix C**).

The region of Kahaluʻu and Keauhou is one of the most studied areas in Polynesia because of land uses during the pre-European Contact, Historic and post-European Contact periods.

Multiple archaeological studies have been conducted near the Project Site documenting the presence of archaeological historic properties consistent with the region's agricultural and politically prominent past.

The traditional importance of the Kahaluʻu—Keauhou region is illustrated by containing several sites listed on the National and State Registers of Historic Places, including the Kahaluʻu Historic District (NRHP #74000713; SIHP #50-10-37-04150). Extensive agricultural complexes located in the inland portions of Kahaluʻu—Keauhou, including the Project Site, are part of the Kona Field System (SIHP #50-10-37-06601). The proximity of these resources, past studies and their evidence of historic agricultural and settlement use indicate there is potential for subsurface archaeological deposits to be present within the Project Site.

Well Site

A total of four previous archaeological studies have been conducted in the vicinity of the Well Site, as listed in Table 3.4. Of these previous studies, none overlap the project boundaries as shown in Figure 3.17.

Table 3.4: Summary of Previous Archaeological Studies

Reference	Type of Study	Location	Results (SIHP # 50-10-37**** unless otherwise noted)
Hammat 1980	Archaeological reconnaissance	2.8 acres in Keauhou 2, TMK: [3] 7-8- 050:042	No archaeological features encountered; noted some areas of prior bulldozer disturbance
McGerty et al. 1996	AIS	1.5 acres in Keauhou 1, TMK: [3] 7-8- 007:053	No historic properties documented
Moore et al. 2005	AIS	Keauhou 1, TMK: [3] 7-8- 050:047	Documented three historic properties: a short, low wall (SIHP # -24332), and two agricultural complexes (SIHP #s -24333 and -24334); subsurface testing conducted at three features, which yielded kukui nut in one unit and no other cultural materials
Corbin 2008	AIS	8.5 acres in Keauhou 2, TMK: [3] 7-8- 007:005 por. 052	Documented a site complex consisting of three historic ranching/boundary walls, and 60+ terraces; personal communication with Mr. James Sugai confirmed he constructed numerous terraces prior 1958, effectively making these features historic properties; Mr. Sugai built numerous additional features after 1958 such as mounds, modified outcrops, low walls, etc. and as such were not considered historic properties at time of study

Background research indicated no previously recorded historic properties are present, although the Project Site is located within the known limits of the Kona Field System (SIHP # 50-10-32-06601) – See Figure 3.23. The field inspection confirmed the Well Site footprint has been completely altered by the development of the existing coffee plantation and associated driveway. Bulldozer push mixed with scrap metal and other trash, agricultural uses and cleared land were observed.

Most of the actions proposed at the Well Site are along existing roadways, including approximately 0.52 miles of the proposed alignment along Old Māmalahoa Highway (SIHP # -30187) and portions of Bishop Road. The right-of-way of the original Hawaiʻi Belt Road (i.e. Old Māmalahoa Highway) sometimes contains historic rock walls, culverts, and other historic features associated with the road. While the Well Site and surrounding area has been heavily impacted, two potential historic properties were identified within the site footprint as shown in Figure 3.18.

- Potential feature CSH-4 is a linear, dry stacked stone wall measuring approximately 64 meters long running north to south with an approximate 6-meter-wide break near the midpoint. It is 1.5 meters high and 60-90 centimeters wide. It is located northeast of the proposed Well Site. The wall is constructed of five to eight courses of neatly stacked and faced basalt cobbles and small boulders with core fill of smaller basalt stones. The southern end appears to have been impacted by previous bulldozing activity. No artifacts or other resources were observed on or around the wall.

- Potential feature CSH-5 is a linear, low wall measuring approximately 7 meters long running north to south, 40-75 centimeters high and 50-70 centimeters wide. It is located approximately 13 meters east of CSH-4 within dense vegetation. The wall is constructed of two to five courses of stacked basalt cobbles and small boulders, and appears to be intact and undisturbed. No artifacts or other resources were observed on or around the wall.

Figure 3.16: Potential Historic Features near the Well Site

Left: Photo showing a portion of CSH-4, rock wall; Right: Photo showing CSH-5, rock wall

Figure 3.17: Locations of Previous Archaeological Studies Map – Well Site

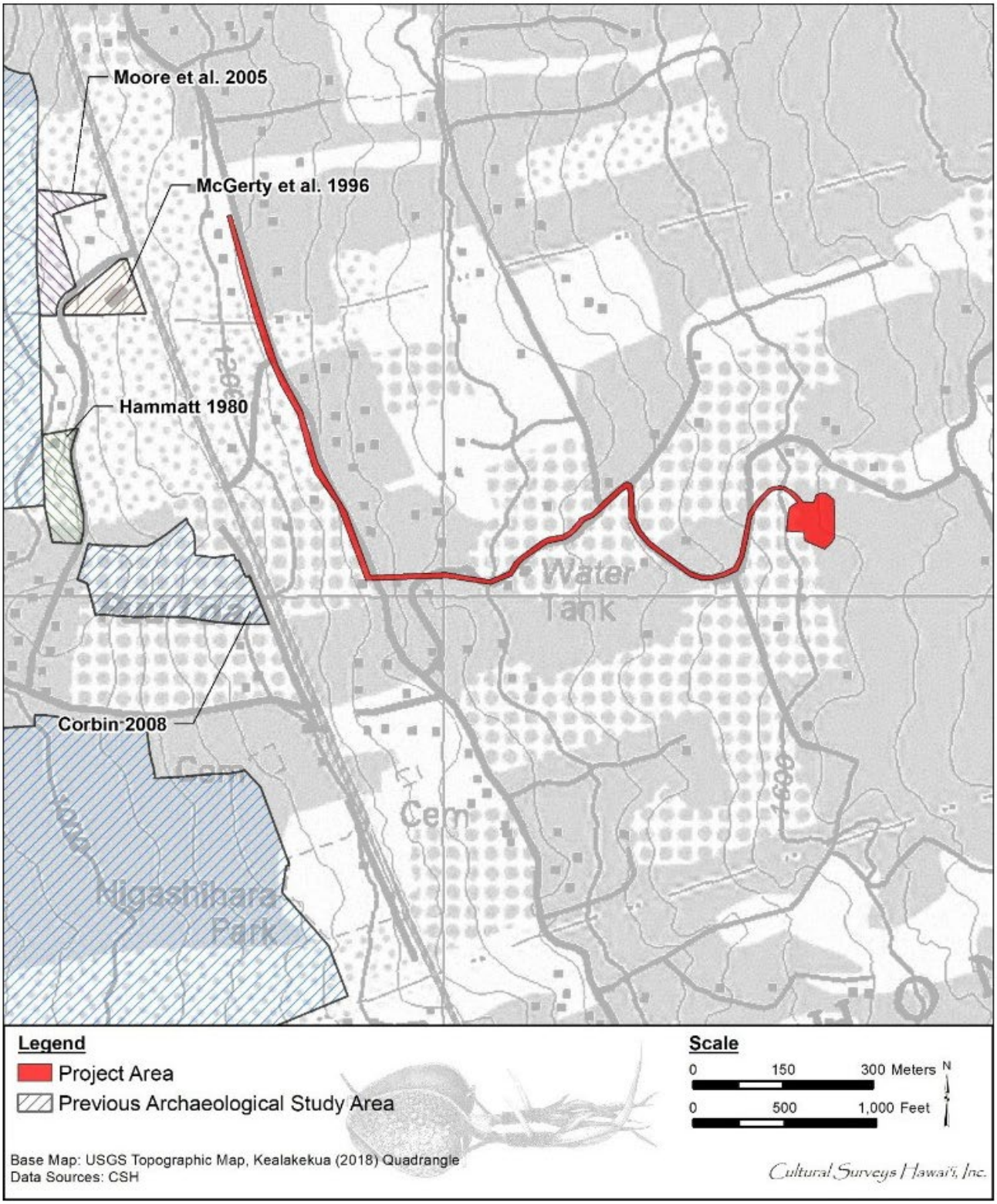
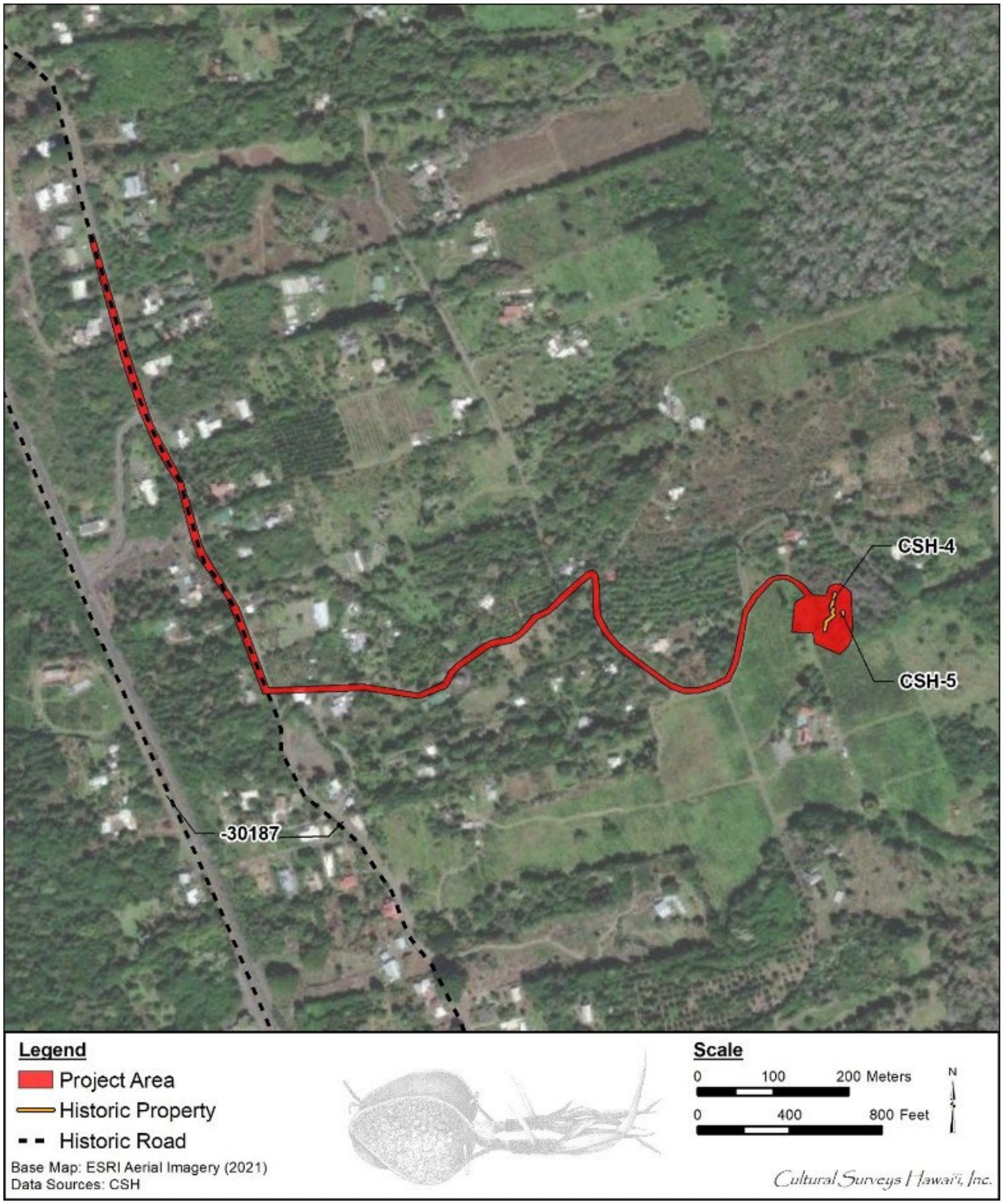


Figure 3.18: Archaeological Sites Encountered in Well Site Area



Tank Site

A total of 15 previous archaeological studies have been conducted in the vicinity of the Tank Site, as listed in Table 3.5. Of these previous studies, six overlap the project boundaries as shown in Figure 3.20.

Table 3.5: Summary of Previous Archaeological Studies

Reference	Type of Study	Location	Results (SIHP # 50-10-37**** unless otherwise noted)
Crozier 1971	Archaeological survey	Kamehameha III Rd, Kahaluʻu and Keauhou 1	Documented six historic properties comprising 366 features; sites not assigned SIHP numbers at the time; documented sites include ʻŌhiʻa cave (later assigned SIHP # -07962); one excavated unit contained late 19th century ceramics
Hammatt and Folk 1980*	Archaeological Inventory Survey (AIS)	751 acres in Kahaluʻu and Keauhou	Documented 320 historic properties comprising thousands of individual features; documented sites include five heiau (SIHP #s -03823, -04621, -04673, -07865, -07807), habitation complexes including possible former village sites (SIHP #s -07829, -07835, -07838), high status residences (SIHP #s -07864 and -07901), lava tubes, burial sites, trails, cart roads, animal enclosures and agricultural feaures.
Bath and Rosendahl 1984*	AIS	HELCO substation, Kahaluʻu TMK [3] 7-8-010: por. 027	Documented six habitation/agricultural sites, including a C-shape, terraces, mounds and walls; testing yielded two C14 dates (AD 885-1790; 1400-1515) and one volcanic rind date (AD 1742-1778).
Rosendahl and Rosendahl 1984	Archaeological Reconnaissance Survey	HELCO substation cooridor, Kahaluʻu TMK [3] 7-8-010: por. 027	Documented seven habitation/agricultural sites, not assigned SIHP numbers; noted presense of historic railroad bed (SIHP # -07214) but did not document it

Reference	Type of Study	Location	Results (SIHP # 50-10-37**** unless otherwise noted)
Hammatt and Brothwick 1985	Archaeological Reconnaissance Survey	28.6 acres in Kahalu'u, TMK [3] 7-8-010:050	Documented 10 sites including a complex of walls, agricultural terraces, modified outcrops, mounds, and enclosure, and a walled platform; sites not assigned SIHP numbers; noted presence of historic railroad bed (SIHP # -07214) but did not document it
Rosendahl 1986	Archaeological Reconnaissance Survey	14.9 acres in Kahalu'u, TMK [3] 7-8-010: por. 050	Documented 14 previously recorded sites and five newly recorded sites, not assigned SIHP numbers; sites consisted of agriculture and habitation complexes
Athens 1990a*	Archeological Reconnaissance Survey	22 acres in Kahalu'u	Documented four newly recorded archaeological site complexes not assigned SIHP numbers, and previously recorded SIHP # -07412 (railroad berm)
Athens 1990b	Archeological Reconnaissance Survey	20 acres in Kahalu'u	Documented eight previously unrecorded site complexes, not assigned SIHP numbers, and previously recorded SIHP #-07214 (railroad berm); newly recorded sites included agricultural complexes and walls
Lufty and Athens 1991a*	Archeological Reconnaissance Survey	22 acres in Kahalu'u	Documented one previously recorded historic property (SIHP # -07214, railroad berm) and four newly recorded sites comprising 39 features (SIHP #s -15151, unmodified lava tub; -15152, ranching complex; and -5153 and -15154, agricultural complexes)
Lufty and Athens 1991b*	Archeological Reconnaissance Survey	20 acres in Kahalu'u	Documented two previously recorded historic properties (SIHP #s -07214, railroad berm, and -15154, agricultural complex), and four newly recorded historic properties (SIHP #s -15155, -15156, -15157, and -15158; agricultural and ranching sites)

Reference	Type of Study	Location	Results (SIHP # 50-10-37**** unless otherwise noted)
Burchard 1992*	Archaeological mapping	Kahalu'u	Documented lava tube burial cave SIHP # -16045
Burchard et al. 1994*	Archaeological survey and data recovery	24.4 acres Kahalu'u	Included data recovery at previously recorded SIHP # -15154 (agricultural and limited habitation complex), and AIS-level documentation of new features at previously recorded SIHP # -16045 (agricultural and burial complex) and newly recorded SIHP # -16046 (agricultural complex)
Walker and Rosendahl 1994	AIS	275 acres in Kahalu'u, TMK [3] 7-8-010:002, por. 004	Documented 251 sites comprising 532 individual features, of which 121 were previously recorded; 29 formal feature types present representing 14 general functional categories
Walker and Rosendahl 2002	AIS	275 acres in Kahalu'u, TMK [3] 7-8-010:002, por. 004	Update of Walker and Rosendahl (1994) study; notes presence of 254 sites comprising 532 component features
Garrett et al. 2011	AIS	31 acres in Kahalu'u, TMK [3] 7-8-010:0050 por.	Documented 23 historic properties comprising 204 individual features; one site previously recorded (SIHP #s -07214, -24920 through -24941); 15 historic properties previously recorded (SIHP # -0214 railroad berm and 14 sites with newly assigned SIHP numbers); remaining eight historic properties newly recorded; a wide variety of formal feature types documented, associated with Pre-Contact and historic land use for habitation, agriculture, transportation and ceremony

* indicates the study area overlaps the Tank Site

Background research indicated no previously recorded historic properties are present within the Tank Site footprint. The field inspection confirmed the Tank Site has been completely altered by the development of the existing DWS Kahalu'u Reservoir and Well Site. The area immediately surrounding the facility is also disturbed. Large deposits of bulldozer push and cleared areas were observed.

Portions of the associated water transmission pipeline makai of the Project Site are within the Kahaluʻu Historic District boundary. No features of this district would be impacted by the Proposed Action as shown in Figure 3.21. However, the associated water transmission pipeline crosses a section of the previously documented railroad causeway/berm (SIHP # 50-10-37-07214) and Hawaiʻi Belt Road (Route 11)/ Old Māmalahoa Highway (SIHP # 50-10-46-30187) makai of the Tank Site.

While the Tank Site and surrounding area has been heavily impacted, three potential historic properties were identified within the Tank Site footprint as shown in Figure 3.22.

- Potential feature CSH-1 is a linear, dry stacked stone wall measuring approximately 15 meters long running north to south, 1 meter high and 60-70 centimeters wide. It is located approximately 1.5 meters upslope of the northwestern corner of the DWS facility fence. The wall is constructed of five to six courses of neatly stacked and faced basalt cobbles and small boulders with core fill of smaller basalt stones. The makai portion of the wall is undisturbed, whereas the mauka portion appears to have been impacted by previous bulldozing activity. No artifacts or other resources were observed on or around the wall.

- Potential feature CSH-2 is a site complex comprised of three individual dry stacked walls intersected by cross-slope walls, which are typical features of the Kona Field System. The complex is in the easternmost half of the associated transmission alignment in an area planted with coffee and shows evidence of other previous disturbances. Some PVC pipes were found on and around the features. It is common for pre-Contact agricultural walls to have been repurposed by post-European Contact coffee plantations, and additional features may be present along the water transmission line route closer to the DWS facility. Additional surveys were recommended to determine the exact boundaries of the feature.

- Potential feature CSH-3 is a linear, dry stacked stone wall measuring approximately 10 meters long running north to south, 1.25 meter high and 60-70 centimeters wide. It is located approximately 5 meters east of the DWS facility fence. The wall is constructed of four to seven courses of neatly stacked and faced basalt cobbles and small boulders with core fill of smaller basalt stones. The wall is mostly intact and undisturbed but obscured by the dense vegetation in the area. No artifacts or other resources were observed on or around the wall.

Photos of these features are included in Figure 3.19.

Figure 3.19: Potential Historic Features near the Tank Site

Top Left: Photo of CSH-1, rock wall, view to northeast
Top Right: Photo of CSH-1, rock wall; note DWS facility in background left
Middle Left: Photo showing a portion of a dry-stacked *mauka-makai* wall at CSH-2, view to west
Middle Right: Photo showing a portion of a dry-stacked *mauka-makai* wall at CSH-2; view to Southwest
Bottom left: Photo

Figure 3.20: Locations of Previous Archaeological Studies Map – Tank Site

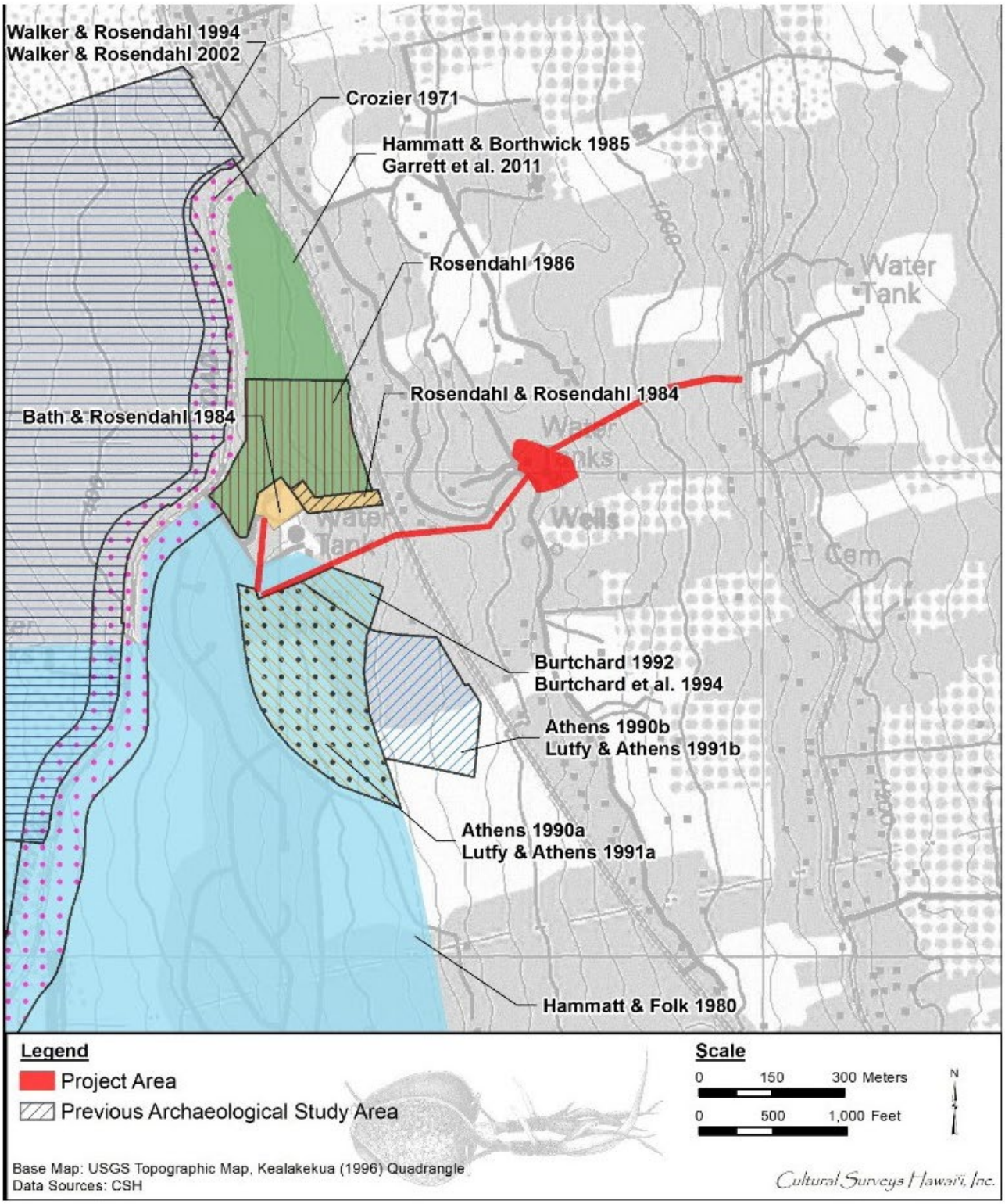


Figure 3.21: Kahalu'u Historic District in Relation to the Project Area

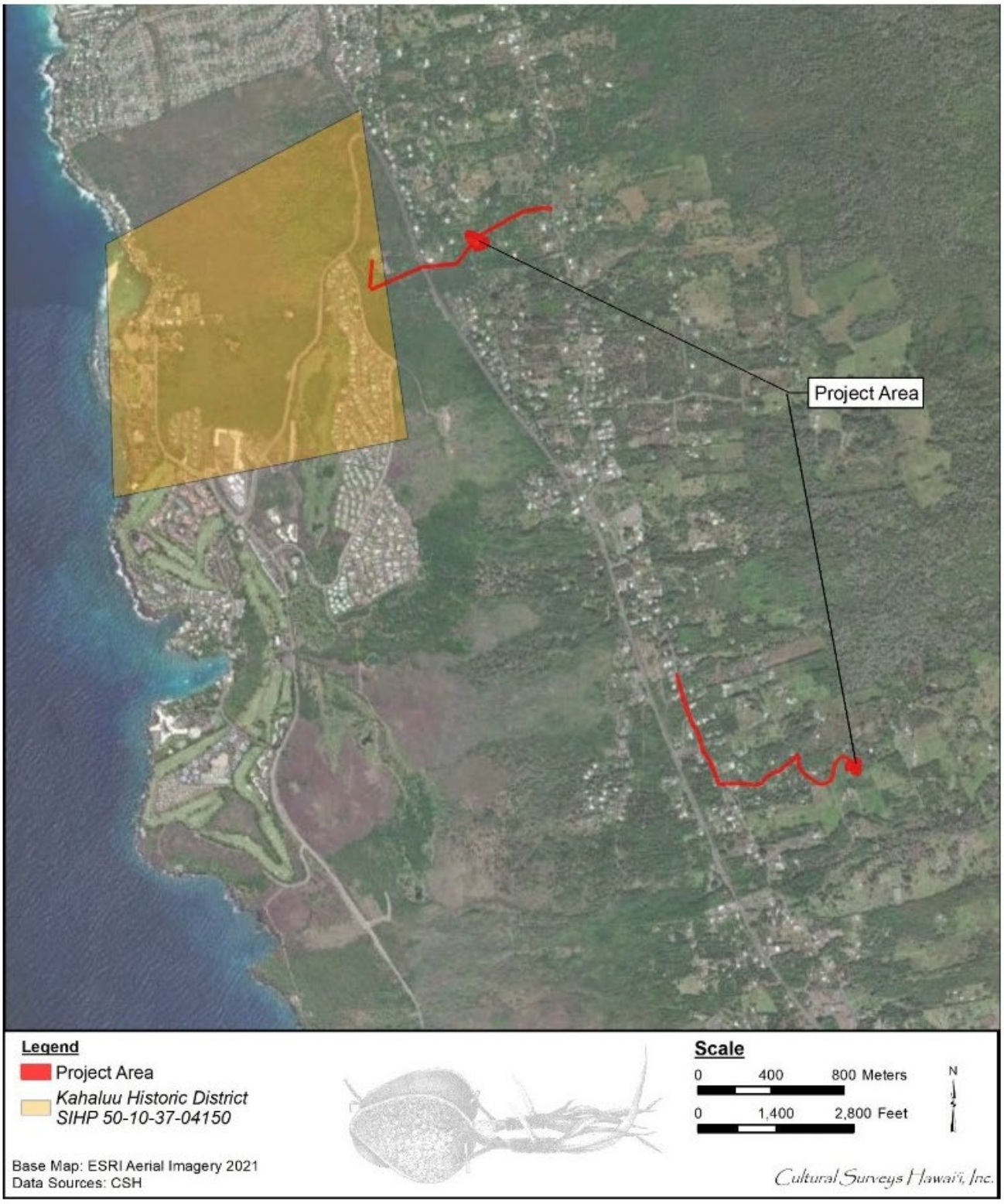


Figure 3.22: Archaeological Sites Encountered in Tank Site Area

Impacts and Mitigation Measures

Five potential historic properties were identified within the Project Site during the LRFI – three within the Tank Site and two within the Well Site. DHHL has initiated consultation with the Department of Land and Natural Resources, State Historic Preservation Division (SHPD) regarding historic preservation and mitigation requirements. Based on the outcome of this consultation, appropriate preservation and mitigation measures will be implemented to avoid or minimize impacts on the identified historic properties.

The Proposed Action will adhere to BMPs during construction and operation to minimize impacts to the historic property resources found at the Project Site. The following mitigation measures would be implemented to prevent or minimize potential impacts on historic, cultural or archaeological resources:

- Conduct cultural resource training as a component of safety training for project personnel before working onsite. Training should include informing crews of the potential for inadvertent cultural finds including archaeological deposits and iwi kūpuna, or human remains.
- Conduct archaeological monitoring during ground disturbance activities during construction phase.
- If any cultural or historic resources are identified during construction activities, all work will cease in that area and the SHPD will be notified pursuant to HAR §13-280-3. A cultural preservation plan for proper cultural protocol, curation and long-term maintenance should be developed as appropriate.
- If iwi kūpuna are identified during construction activities, all work will cease immediately in that area and be cordoned off while the SHPD, coroner and the police department are notified pursuant to HAR §13-300-40. A reinternment plan should be developed as appropriate. As DHHL lands are recognized as tribal lands under the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, any discovery iwi kūpuna must also follow NAGPRA protocols and statutory requirements.

Any additional mitigation measures established during the Ka Paʻakai Analysis consultation process discussed in Section 3.7, or other consultations would be implemented to further avoid or minimize potential impacts on any historic, cultural or archaeological resources that occur or may potentially be found within the Project Site. No additional short- or long-term impacts are anticipated. Therefore, no additional mitigation measures are required.

3.7 CULTURAL RESOURCES AND PRACTICES

An investigation into cultural resources and practices was conducted in order to comply with HRS §343 and HAR §11-200.1 as well as Article VII, Section 7 of Hawaiʻi's State Constitution which "places an affirmative duty on the State and its agencies to preserve and protect traditional and customary native Hawaiian rights and confers upon the State and its agencies the power to protect these rights and to prevent any interference with the exercise of these rights" (Ka Paʻakai O Ka ʻĀina v. Land Use Commission, 2000). As such, a Ka Paʻakai Framework Analysis was conducted to fulfill the statutory and constitutional obligations of DHHL in considering the Proposed Action.

HISTORIC OVERVIEW

The Project Site is located within the moku (district) of North Kona. The ahupuaʻa of Keauhou and Kahaluʻu have typically been thought of as a unit, both in traditional Hawaiian times and by subsequent researchers. During the pre-European Contact and early post-European Contact periods, Kona was known to support a relatively large population, was the residence of chiefs, and the center of political consolidations. The traditional Hawaiian political authority was centered in the Kailua-Keauhou area from at least the 15th century until the reign of Kamehameha I. This is consistent with many traditional moʻolelo, mele and kaʻao associating great Hawaiian chiefs with the region.

Archaeological evidence suggests settlement in Kona began around AD 900, initially focused on marine resources near Keauhou and Kahaluʻu Bay. By AD 1300, agriculture expanded inland, giving rise to the Kona Field System. This development was driven by population growth and political shifts that emphasized Kona's importance.

In the early 1500s, Chief ʻUmi-a-Līloa established his court in Kona, building the Pā-o-ʻUmi heiau above Kahaluʻu. His grandson, Lono-i-ka-makahiki, resided in a fortified coastal complex in Kahaluʻu. During this time, lava tubes like ʻŌhiʻa Cave were adapted for refuge, and high-status habitation clustered near Kahaluʻu Bay's reefs and ponds.

By the late 1700s, Chief Kalaniʻōpuʻu and later Kamehameha I resided in the area, engaging in cultural practices like hula and surfing. The region's many heiau were rededicated to secure divine favor. Kamehameha's court remained in Kahaluʻu for about a year after returning to Kona in 1813.

Following Western contact, Keauhou's population declined due to disease and migration to Kailua and Kaʻawaloa. The kapu system's abolition in 1819 further reduced activity at local heiau. That same year, Kekuaokalani opposed Liholiho's reforms and was defeated in the Battle of Kuamoʻo at Lekeleke.

In 1823, missionary William Ellis recorded 19 heiau and 610 houses between Kailua and Keauhou, and 443 houses between Keauhou and Kaʻawaloa. Keauhou had 135 houses and hosted 150 people for a sermon. Ellis noted a steppingstone trail across lava fields and described hillside plantations. Missionaries regularly visited the area, drawing large crowds.

During the 1848 Māhele, Victoria Kamāmalu received Kahaluʻu and Keauhou 1, while Lot Kapuāiwa (later Kamehameha V) received Keauhou 2. Numerous kuleana claims were made, especially near the bays and along the upper ala loa. Some awards overlapped the project

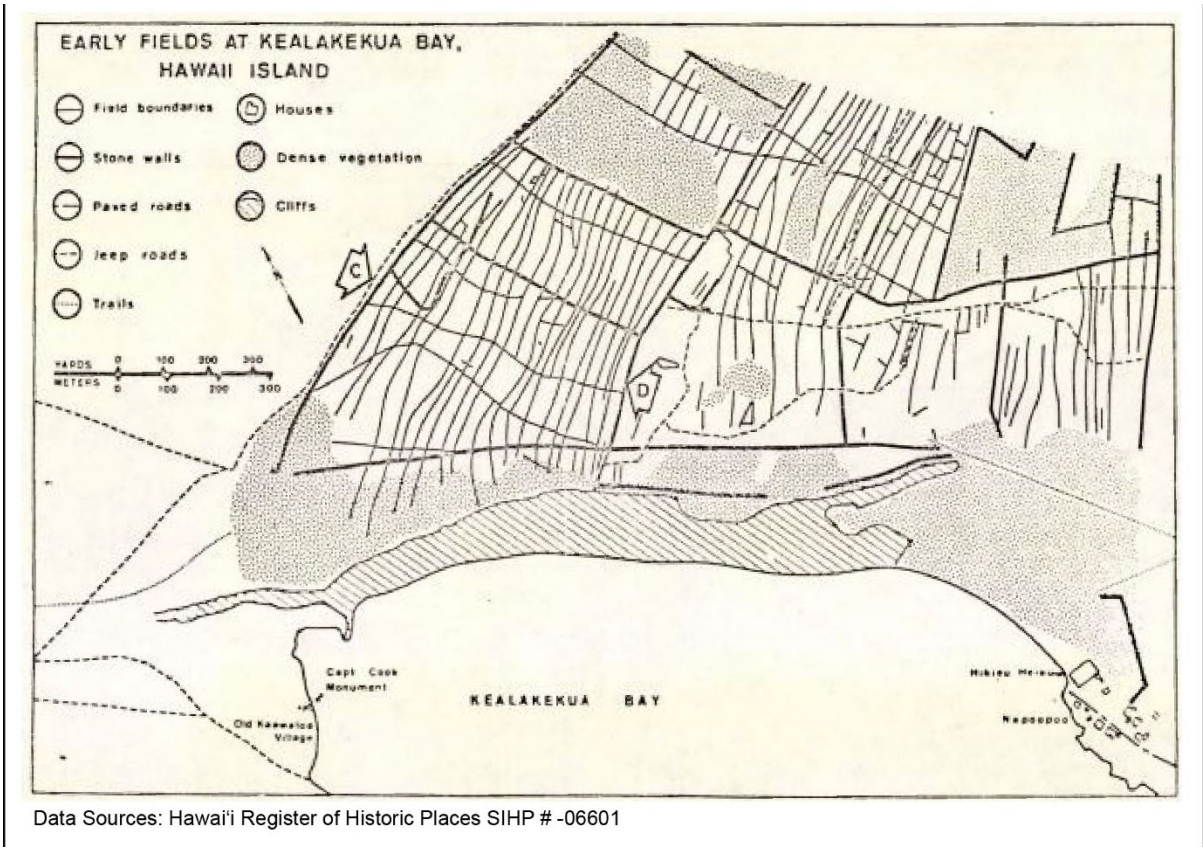
area and were used for agriculture and habitation, including citrus cultivation and native tree growth.

In the late 1800s, coffee cultivation expanded in upland areas, often replacing kuleana plots. Chinese and Japanese immigrants became key growers. Keauhou's population dropped from 72 in 1857 to 24 in 1881. Despite this, Keauhou's relative importance grew as Kealakekua Bay declined. The Bishop Estate inherited the lands in 1889.

By the early 1900s, Keauhou was considered remote, with limited infrastructure. Sugar cultivation was briefly attempted in Kahalu'u and Keauhou. During this time, 11 miles of narrow-gauge railroad were installed, extending south from the mill in Kailua-Kona and through the project area environs, however plans to extend the railway throughout the region fell through. The early 20th century saw a boom in the coffee industry in the Kona uploads, with small towns springing up along Māmalahoa Highway. Coffee and cattle continued to dominate the economy in Kahalu'u and Keauhou until the late 1960's when tourism began to flourish.

Today, coffee farming and commercial agriculture continues in upland areas, while Keauhou Bay and the surrounding resort properties remain a significant tourist draw, an effort is being made by Kamehameha Schools to return Bishop Estate lands to culturally appropriate educational venues.

Figure 3.23: Kona Field Diagram



Data Sources: Hawai'i Register of Historic Places SIHP # -06601

TRADITIONAL OR CUSTOMARY PRACTICES AND TRADITIONAL CULTURAL PROPERTIES

Hawaiian oral traditions are passed down through word of mouth from one generation next and record details of Hawaiian history such as the people's connection to the land, their lifestyle, and traditional land tenure. These traditions can come in the form of songs, proverbs, sayings, stories, genealogies, or historic newspaper articles. The following moʻolelo, or stories, reference the area's water features and cultural practices.

The Ka Paʻakai Analysis Framework highlights the traditional and customary practices noted to occur within the project area ahupuaʻa and the larger landscape of Kona Akau that have originated from the select moʻolelo and kaʻao detailed in the report. The summary is framed by the last stanza of the ancient Hawaiian mele (chant), He Mele no Kāne, which is about the Hawaiian God Kāne, who shape shifts into water as one of his forms – "he wai e ola! Water is life. From this framing, the traditional and customary practices and traditional cultural properties are discussed and organized by the many manifestations of water sources that surfaced when analyzing the select moʻolelo and kaʻao presented in the report (See **Appendix D** for the full stories and context). A brief summary is included below:

- Cloud Formations – From the moʻolelo and ʻōlelo noʻeau reviewed, several practices are revealed to occur in the study area: of nānā ao (observing clouds) or kilokilo (to observe and forecast), ʻuala cultivation, and specifically, makawela method of cultivation.
- Forest and Streams – From the moʻolelo and ʻōlelo noʻeau reviewed, water in the form of streams, as well as drinking water derived from the niu grove of Helani come to surface. Practices associated with these accounts convey that the practice of gathering freshwater, agricultural practices, maiʻa cultivation, and kalo cultivation occurred in the study areas.
- Rains - The recollection of inoa ua (rain names) detail that the Palahī Puaʻa, Kēhau, Nāulu, ʻAwa, ʻAwaʻawa, Kualau, Nahunahu, and Noe rains sources of wai ua that belong to the study areas and broader Kona Moku, each with various characteristics and qualities. In the account detailed by Malo, the Nāulu rain is associated with agricultural practices of ʻuala cultivation (Malo in Akana and Gonzales 2015:206; Kamakau 1869:1 from Nohopapa, 2024).
- Springs – From the moʻolelo reviewed, it is recorded that freshwater springs are significant features associated with the study area–the pūnāwai found in the uplands of Kahului, the spring associated with Helani in Kahaluʻu, the Waikuʻi spring at Kahaluʻu, and the Waiakekea spring near Waiʻaha and Kahului.
- Additional Practices: Agriculture and Fishing – Moʻolelo and historical accounts demonstrate that agricultural practices and religious ceremonies associated with agriculture were significant traditions that occurred in Kona. Regarding fishing practices, ʻEka is a named wind of Kona whose presence is an environmental indicator telling of signs optimal for fishing.
- Additional Practices: Recreation - Ka-Miki's moʻolelo tells a story of a game known by the name Hinakahua, and is said to be located in the Kahelo plains of Puapuaʻa Ahupuaʻa. The games associated with Hinakahua and therefore the broader ahupuaʻa

of Puapuaʻa are maika (bowling), mokomoko (wrestling and boxing), leʻaleʻa (pleasurable pastimes), and hoʻopāpā (contest of wit and strength), (Maly 1999:11 from Nohopapa, 2024).

- Additional Resources – Moʻolelo reveals that several were available in the area, which is telling of the potential of associated practices that may have occurred in the study area. The resources mentioned include: ʻalā stones, loulu palms, and kauila trees.

The Ka Paʻakai Framework Analysis incorporates testimony from the State Boundary Commission representing all ahupuaʻa that intersect the project area, along with references to Land Commission Awards (LCAs) granted within those ahupuaʻa. While no LCAs were issued directly within or adjacent to the Project Site, traditional and customary practices suggest that the area's resources may have been accessed and utilized historically. To support this, the analysis includes selected excerpts from the Māhele Award Books, featuring Native Testimony, entries from the Native Register, and relevant Land Commission Awards, offering insight into historical land use and cultural connections.

COMMUNITY CONSULTATION

On April 18, 2024, a kick-off meeting was held at the Kamehameha Schools Kahaluʻu Manowai (Ma Kai) site to share information about the Ka Paʻakai Framework Analysis for the proposed DHHL water source development project. Twenty-five individuals attended the public meeting and shared their contact information for future project updates. Between July and October 2024, individual consultation efforts were conducted to gather and summarize community manaʻo and data regarding local resources and customary practices. For this individual consultation effort, thirty-four individuals were contacted with thirteen committing to an interview. Interview format options included in-person, phone calls, or online interviews. Eleven individuals were unable to participate in the consultation process. Findings from the community consultation process have been anonymized and it is important to note that intellectual property shared through the process cannot and should not be reproduced, applied to other projects or studies, or utilized without free, prior, and informed consent are included in **Appendix D** and summarized in the Ka Paʻakai Framework Analysis section below.

Interview participants were prompted with three questions to fit the Ka Paʻakai Framework. The questions are as follows:

1) What are the valued cultural, historical, or natural resources in the project area and the extent to which traditional and customary native Hawaiian rights are exercised in the area?
2) What is the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action?
3) What feasible action(s), if any, to be taken to reasonably protect any identified cultural, historical, or natural resources, and exercise of traditional and customary native Hawaiian rights in the affected area?

The framing of community consultation in alignment with the Ka Paʻakai Framework allowed for the manaʻo documented, including potential impacts and mitigation recommendations, to be integrated into the analysis below.

3.7.1 Ka Paʻakai Framework Analysis

The court case *Ka Paʻakai o Ka ʻĀina v. State of Hawaiʻi Land Use Commission (2000)* established the fiduciary responsibility of state agencies to preserve and protect traditional and customary native Hawaiian rights pursuant to Article VII, Section 7 of the State of Hawaiʻi Constitution. The case upheld that the state and its agencies are obligated to protect the reasonable exercise of customary and traditional native Hawaiian rights to the extent feasible and are obligated to make an assessment of the impacts of these practices. The assessment must be independent of the developer or applicant and must include the following three factors, known as the 'Ka Paʻakai' framework:

1) What are the valued cultural, historical, or natural resources in the project area and the extent to which traditional and customary native Hawaiian rights are exercised in the area?
2) What is the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action?
3) What feasible action(s), if any, to be taken to reasonably protect any identified cultural, historical, or natural resources, and exercise of traditional and customary native Hawaiian rights in the affected area?

In 2024, a Ka Paʻakai Framework Analysis was conducted by Nohopapa Hawaiʻi, LLC for the Proposed Action. This analysis is summarized below and the full report is included as **Appendix D**.

1) WHAT ARE THE VALUED CULTURAL, HISTORICAL, OR NATURAL RESOURCES IN THE PROJECT AREA AND THE EXTENT TO WHICH TRADITIONAL AND CUSTOMARY NATIVE HAWAIIAN RIGHTS ARE EXERCISED IN THE AREA?

The Ka Paʻakai Analysis acknowledges that it is unreasonable to assume it is possible to inventory all traditional and customary native Hawaiian rights being exercised in a single area. To address the challenges of assembling an inventory of customs and valued resources in an area, and to relieve the burden from the community to come forward in a tight timeframe and under the assumption of un-requited knowledge sharing, the analysis, approaches the inventory through: (1) early and meaningful consultation; (2) primary source research; (3) the understanding that if a resource exists or can be restored then the right or practice exists; (4) consultation is an ongoing process that agencies compiling with Ka Paʻakai will continue to engage in.

The inventory findings with respect to the practices and associated resources in and around the Gianulias study area are organized under the following themes:

- Bird Catching
- Forestry and Hana Waʻa
- Mahi ʻai ʻana – Cultivation

- Trails and Connectivity
- Lawaiʻa & Waʻa (Paddling, Sailing, Voyaging)
- Kilo and Weather – Environmental Indicators
- Mea Wai - Water Resources and Collection
- Other Practices, including Hana Noʻeau, Beliefs, and Spirituality (not already included above)

The full inventory is included in **Appendix D.**

2) WHAT IS THE EXTENT TO WHICH THOSE RESOURCES – INCLUDING TRADITIONAL AND CUSTOMARY NATIVE HAWAIIAN RIGHTS – WILL BE AFFECTED OR IMPAIRED BY THE PROPOSED ACTION?

Hawaiian culture and traditional practices are rooted in an understanding that ʻohana (family) encompasses the natural world and there is no separation between the people and the land (Nohopapa, 2024). Because the land is part of the ohana, traditional Hawaiian customs and practices emphasize respect and care the ʻāina (land) and surrounding resources (Forman and Serrano, 2012 from Nohopapa, 2024). As such, traditional and customary practices often rely on resources – whether cultural, historical or natural – and it is important to understand that impacts these resources may also result in cultural impacts. Overall, interview participants feel that the current methods for water development do not allow for the continued care of resources, the traditional and customary Native Hawaiian practice of caring for wai (water) and Mālama ʻĀina.

Bird catching was extensively referenced in and above the study areas, caves, trails, springs and even specific forests, woods, and aʻa areas were discussed. Bird catching was for food and for hulu used in many hana noʻeau. Although bird catching is not viable now as a practice because of the scarcity of native bird species, the practice of Mālama ʻĀina so that resources are there when needed could be impacted.

Many springs, waterholes, and caves were referenced in consultation, and many were named in archival research through land testimonies and some moʻolelo. It is likely that some of these resources are located in the study areas and water source development may impact the downslope water features near the coast or offshore. Ma uka to ma kai connectivity of water was also a common theme in the analysis. Impacts could also include access for kanaka to gather wai from the study area or the uplands above for hoʻokupu and other traditional uses.

Historic records from the Boundary Commission also identified a burial cave in the uplands. Because one was named, there is a potential that more burials exist in the vicinity. It is a traditional practice not to speak of one's ancestors with strangers and many burial locations have been forgotten in ʻohana or intentionally un-shared. No burials were identified through the LRFI for this project, however access to caves above the study area may be impacted.

General concerns were shared over the sustainability of Kona's freshwater aquifer, which is under pressure from new water wells supporting expanding neighborhoods, resorts, golf courses, and cesspools. Consultation emphasized that new water distribution infrastructure must be done with extreme care to avoid disturbing significant cultural resources in the area. Drilling without a full understanding of the cultural and environmental context could negatively impact the ahupuaʻa system, the ocean, and the aquifer itself. Some noted that changes in water levels are already visible, particularly in Kaloko-Honokōhau, where water

is leaking into Honokōhau Harbor. This environmental stress is also reflected in the declining presence of native plants, animals, and fish.

3) WHAT FEASIBLE ACTION(S), IF ANY, TO BE TAKEN TO REASONABLY PROTECT ANY IDENTIFIED CULTURAL, HISTORICAL, OR NATURAL RESOURCES, AND EXERCISE OF TRADITIONAL AND CUSTOMARY NATIVE HAWAIIAN RIGHTS IN THE AFFECTED AREA?

Feasible actions by DHHL to protect Native Hawaiian rights include the following:

- DHHL will uphold its mandates as prescribed by law.
- DHHL will site water source development within the same ahupua'a as it will be consumed whenever possible.
- DHHL and its beneficiaries want to support other Kona communities in their water independence. Efficiency and conservation measures in areas that are importing water are critical in appropriately valuing the resource and respecting the communities that are exporting water.
    - Conservation & efficiency measures for transportation, storage and consumption.
    - Water recycling.
    - Water conservation collaboration/partnership in public awareness campaign.
- Research, studies and monitoring should be planned for and funded that will be used to inform mitigation. Research and studies should be culturally informed. Appropriate thresholds should be identified and upheld.
    - Regional monitoring program with benchmarks and actions tied to those benchmarks.
    - The design of monitoring plans and the identification of benchmarks and actions should be culturally and community informed.
    - Propose management options if the trend is towards detrimental effects.
- Frequent, meaningful, and accessible updates regarding research, studies and monitoring practices should be available to stakeholders. DHHL will consider the formation of a hui open to stakeholders to advise water-related decision-making and aid in outreach to stakeholders at large.
- DHHL will make efforts to encourage more beneficiaries and members of the native Hawaiian community to be involved in the Boards of Water Supply meetings and to be members on the Boards of Water Supply so these important stakeholders are able to have more authority over water use.
- DHHL should commit financially and administratively to supporting community-managed water resource management.

- DHHL will advocate for and participate in the update of the Water Use and Development Plan for Hawaiʻi County.
- DHHL will support and advocate for Commission on Water Resource Management (CWRM) analysis of water availability and revised sustainable yields, including a process that has substantial opportunity for public input.
- DHHL will advocate for CWRM to share more rigorous summaries of existing state of knowledge as published.
- DHHL will advocate for and participate in the update of the Statewide Framework for Updating the Hawaii Water Plan (Framework). The Framework was developed to provide guidance in the integration of the various components of the Hawaii Water Plan and to give additional direction to the various agencies responsible for the preparation of its constituent parts. This Framework was created in 2000 and is in need of update and revision.
- DHHL will aid in funding mālama ʻāina/watershed management efforts in affected ahupuaʻa to increase water recharge and to allow for mālama of places and areas critical for the continuation of native practices.
- DHHL will create a clear pathway for long-term access for native rights and customary practices on DHHL's lands and will look into its current ROE/land disposition process for activities such as mālama ʻāina and stewardship.
- DHHL will collaborate with stakeholders in the creation of a preservation plan for Kealakowaa, the protection of cultural, historical and natural resources associated with the Kona field system, and stewardship of the Kona upland forests. These efforts include contributions or resources in other areas or in the project parcel itself, towards the restoration of these valued resources in collaboration with cultural practitioners, lineal descendants, native tenants, beneficiaries, etc.

With consideration of the Ka Paʻakai Framework Analysis and by implementing mitigation measures to ensure the protection of traditional and cultural rights and practices, the Proposed Action is not anticipated to have a significant impact on cultural resources and practices.

3.8 SCENIC AND AESTHETIC RESOURCES

3.8.1 Existing Conditions

The Project Site is not in or near visually sensitive areas or areas of high scenic values.

Well Site

When standing along Bishop Road and looking mauka, the predominate view consists of rows of cultivated coffee trees forming the backdrop. The makai view consists of scattered landscaping and cultivated agriculture.

Tank Site

When standing along Walua Road and looking mauka, the predominate view consists of rows of mixed non-native forest and the existing DWS water storage tanks and associated infrastructure. Looking makai, the views continue to be of mixed non-native forest.

Impacts and Mitigation Measures

The Proposed Action would not have substantial adverse impacts on visual resources. The proposed water storage tanks are the tallest proposed structures at each location, with maximum heights of less than 40 feet. The storage tanks will require cutting into the site's slope and some grading, which will limit their visibility from viewing positions makai of their location. The Well Site tank would be surrounded by remaining rows of coffee trees consistent with the existing conditions to further minimize any potential visual impacts. The Tank Site currently contains three existing water storage tanks, so the Proposed Action would be consistent with the site's existing views. Therefore, no short- or long-term impacts are anticipated, and no additional mitigation measures are required.

3.9 AIR QUALITY

3.9.1 Existing Conditions

During volcanic eruptions, volcanic fog or "vog" may appear over the Kona coast. Vog produces emissions that include carbon dioxide, particulate matter and sulfur dioxide which can cause health related problems. The last volcanic eruption ended in 2018. Generally, the effects of vog are noticeable but do not generally exceed state and federal air quality standards near the Project Site. The nearest air quality monitoring station to the Project Site is in Kailua-Kona and air quality in the region is generally good (State of Hawai'i, Department of Health, n.d.).

Well Site

The current land use at the Well Site is a coffee farm and small-scale agriculture surrounds the area. The use of vehicles and agricultural equipment emit dust and other air pollutants. There are generally not more than a few vehicles operating at any given time, therefore air pollution generated by the current conditions is minor.

Tank Site

The current land use at the Tank Site is the DWS Kahalu'u Reservoir and Well Site and residential surrounds the area. There are generally not more than a few vehicles or other water system equipment operating at any given time, therefore air pollution generated by the current conditions is minor.

Impacts and Mitigation Measures

The Proposed Action is not expected to have adverse effects on air quality or impact potential for volcanic eruptions. During the construction phase, vehicles, machinery, and earthwork may emit fugitive dust and air pollutants. Emissions generated during construction would be short-term, temporary, and confined to the Project Site as applicable. To minimize any

potential impacts, construction activities will implement BMPs to contain fugitive dust to the Project Site per HAR §11-60.1 *Air Pollution Control*. BMPs may include:

- Watering of exposed soils or stockpiles;
- Rapid covering or landscaping of bare areas, including slopes; and
- Using dust mats or constructing dust barriers or fencing.

No noxious odors are anticipated during the construction of the Proposed Action. If any were inadvertently produced, they would be consistent with the operation of construction vehicles and machinery.

At the end of construction, air quality would revert to baseline conditions as the operation of wells and pumps will be powered by electricity which does not directly produce air pollutants. In the event of a power outage, an on-site diesel-powered generator will supply electricity. The use of backup generators would lead to limited and short-term air pollution, confined to the Project Site. Use of diesel-powered generators in this capacity is anticipated to be infrequent and for a short duration of time only. Following the completion of the Proposed Action, no adverse effects are anticipated. Therefore, no additional mitigation measures are required.

3.10 SOCIOECONOMIC CHARACTERISTICS

As described in Sections 3.2 and 3.6, the Project Site and surrounding lands have historically been used for residential purposes and small-scale agriculture. Table 3-6 presents detailed demographic and socioeconomic data for the Kealakehe and Hualālai Census Tracts—encompassing Laʻi ʻŌpua and the Project Site, respectively—as well as for Hawaiʻi County overall, as illustrated in Figure 3.24.

Kealakehe Census Tract 215.04, which includes Laʻi ʻŌpua and other Department of Hawaiian Home Lands (DHHL) properties, is characterized by a significantly higher proportion of Native Hawaiian and Pacific Islander residents compared to both the Hualālai Tract and the County. This tract also has a notably younger population, with a larger share of residents under the age of 18. These demographic patterns may help explain the lower percentage of residents with a bachelor's degree or higher. Additionally, Kealakehe reports lower median household incomes and higher unemployment rates than the other two areas.

In contrast, Hualālai Census Tract 215.02 has a higher proportion of white residents, an older median age, and a higher median household income. It also exhibits lower unemployment and poverty rates compared to Kealakehe and the County. Both census tracts, however, report lower poverty rates than the County average.

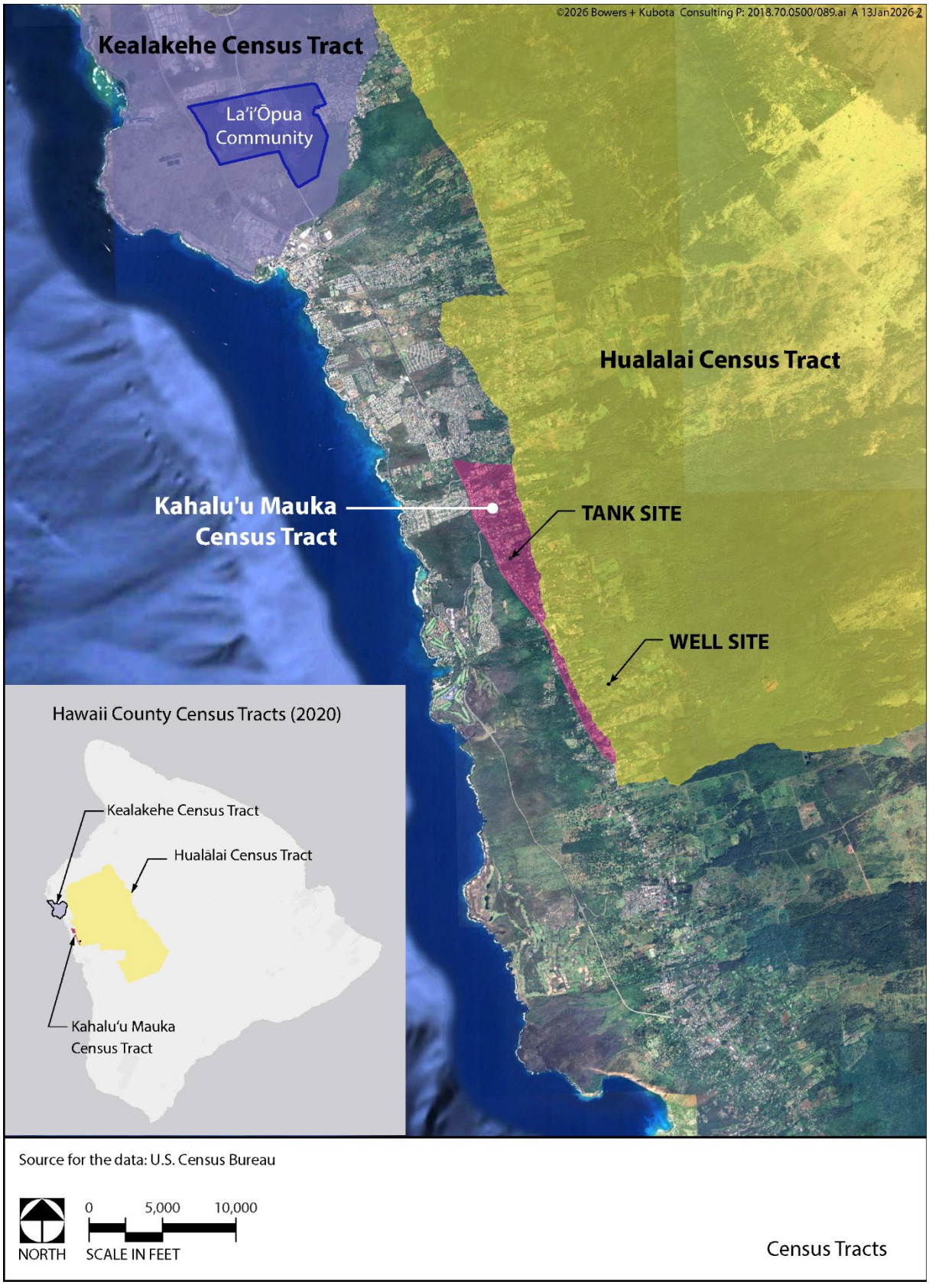
Currently, the Project Site is operated as a coffee farm. The nearest concentration of retail businesses is located approximately half a mile south along Māmalahoa Highway. Economic activity within Laʻi ʻŌpua remains limited, with only the Community Center and one residential phase completed; the remainder of the community is still under development. A few small farms and vacation rentals are located about two miles north of the community. The primary commercial hub for the region is Kailua-Kona Town, situated roughly four miles west of the Project Site and Laʻi ʻŌpua.

Table 3.6: Socio-Economic Profiles at Kealakehe and Hualālai Census Tracts

	Census Designation			
	Kealakehe Census Tract (215.04) Laʻi ʻŌpua	Hualālai Census Tract (215.02) Well Site	Kahaluʻu Mauka Census Tract (215.11) Tank Site	Hawaiʻi County
Resident Population	6,013	4,815	2,266	201,350
Median age (years)	32.5	46.9	42.6	42.8
Population under 18	30.90%	19.60%	19.50%	21.40%
Population over 65	10.10%	20.40%	25.10%	20.90%
White+	29.50%	71.40%	54.90%	55.60%
Native Hawaiians and Pacific Islanders+	59.80%	38.60%	7.32%	33.50%
Asian+	35.60%	35.50%	46.80%	43.80%
Civilian unemployment rate	10.90%	3.50%	4.70%	6.30%
People below the poverty level	15.60%	10.30%	4.50%	10.30%
Language other than English	36.00%	19.00%	20.30%	26.90%
Speaks English less than very well	9.80%	4.80%	8.30%	8.80%
Median household income	$68,125	$74,714	$76,159	$65,401
Housing units	1767	1938	730	88624
Owner occupied	51.70%	61.40%	72.30%	69.30%
Average household size (persons)	3.4	2.9	3.25	2.76
Median value of owner-occupied unit	$405,100	$748,300	$545,800	$364,100
Bachelor's degree or higher	15.30%	27.60%	32.60%	29.50%

Source: US Census Bureau (2023). Hawaiʻi Demographic Profiles and DHC Data, 2020 Decennial Census; Hawaiʻi 2019-2023 ACS 5-Year Estimates by Census Tracts (US Census); US Census Bureau Hawaiʻi Population Characteristics 2019; + alone or in combination

Figure 3.24: Census Tracts and Project Site/ La'i 'Ōpua Map



Impacts and Mitigation Measures

The Proposed Action will not have a direct impact on population change at the Project Site, however, the water credits produced may impact population change in the Kealakehe Census Tract. North Kona has been designated within the County of Hawaiʻi's General Plan as an area that can accommodate additional population growth and Laʻi ʻŌpua's proposed residential, community and commercial lots are consistent with the General Plan's Urban Expansion and Low-Density Urban designations.

The Proposed Action is an allowable land use (see Section 3.2) and is unlikely to alter the socioeconomic profiles in or around the Project Site, aside from temporary and relatively minor construction employment and expenditures. Up to three (3) acres of the Well Site will be converted for the Proposed Action; the remainder of the Well Site will continue to operate as a coffee farm during construction and operation and the Tank Site will continue to operate as a water storage and production location for the North Kona Water System.

3.11 ACOUSTIC ENVIRONMENT

3.11.1 Existing Conditions

The DOH requires contractors engaged in construction activities to comply with HAR §11-46 Community Noise Control, which defines the maximum permissible sound levels that can be produced during construction depending on the surrounding land use as shown in Table 3-7. The Project Site falls within Class C and acceptable stationary noise levels are 70 dBA. This is comparable to the sound levels produced by a residential vacuum cleaner.

Table 3.7: Hawaiʻi Administration Rules §11-46 Noise Limits

Zoning District	*Noise Limit (in dBA)**	
	Daytime (07:00-22:00)	***Nighttime (22:00-07:00)***
Class A: Areas equivalent to lands zoned residential, conservation, preservation, public space, open space, or similar type.	55	45
Class B: All areas equivalent to lands zoned for multifamily dwellings, apartment, business, commercial, hotel, resort, or similar type.	60	50
Class C: All areas equivalent to lands zoned agriculture, country, industrial, or similar type.	70	70

* dBA stands for A-weighted sound levels. This measures the frequencies of sound a human ear can hear, not the level of volume from a sound.

Impacts and Mitigation Measures

The Proposed Action would have short-term impacts on the acoustic environment of the Project Site. Noise created would vary according to the action type (e.g. well drilling, accessory structure construction, grading and grubbing, excavation for water transmission lines, well operations, etc.) and project phase and is expected to exceed the property line noise limits. Impacts from noise at the Tank Site would be less than those of the Well Site, as there is no drilling proposed at this location.

To minimize impacts from noise, a Community Noise Permit would be obtained for the Proposed Action prior to initiating construction activities. The contractor would work with the DOH Indoor and Radiological Health Branch in accordance with the provisions of HAR §11-46 to develop and implement mitigation measures to reduce noise generated during the Proposed Action as part of the permit process. Possible mitigation measures may include:

- Noise-attenuating equipment, such as mufflers or silencing equipment;
- Insulating or enclosing motors during use;
- Installing portable noise barriers;
- Restricting hours of operation;
- Activity restrictions during night work; and/or
- Using the smallest size power equipment practicable during construction.

Well drilling may require at times a 24-hour operation schedule, and this may exceed nighttime sound levels set by HAR §11-46. A public informational meeting would be held for the affected residents and property owners near the Well Site, and a noise variance will be sought from the DOH following consultation with neighboring residents if necessary.

Periodic inspections and maintenance work are expected to occur during operation of the Proposed Action, however any noise generated from this would be consistent with the existing conditions on-site at both locations. Noise generated by the pumps is expected to be minimal as they are electrically operated and located at the bottom of the encased production wells and the water storage tanks do no generate noise above ambient levels. The other accessory structures are expected to emit little to no additional noise. Therefore, no long-term impacts to the acoustic environment are anticipated after completion of the Proposed Action and no additional mitigation measures are required.

3.12 TRANSPORTATION AND TRAFFIC

3.12.1 Existing Conditions

Well Site

Access to the Well Site would be from an existing dirt roadway off Bishop Road. Bishop Road is a narrow two-way roadway connecting the farms and residences in the area to Māmalahoa Highway that terminates at a farm approximately 1 mile mauka of the site. Traffic volumes on Bishop Road are low with no pedestrian lanes or crossings are present. No fixed bus routes are present. Access within the Well Site will be via an existing dirt road that may be further developed for the Proposed Action.

Tank Site

Access to the Tank Site would be from the existing access road off of Walua Road used to access the Kahaluʻu Reservoir and Well Site. Walua Road is a narrow two-way roadway that parallels Hawaiʻi Belt Road (Route 11). The maximum traveling speed on Walua Road is 20 miles per hour (mph) and traffic volumes on the road near the Tank Site consists predominately of residential traffic and is considered low. There are no pedestrian lanes or

crossings and no fixed bus routes along Walua Road. Access within the Project Site will be via the existing access road that may be expanded for the Proposed Action.

Impacts and Mitigation Measures

During construction activities, there would be a short-term increase in traffic on Wailua and Bishop Roads created by 1) construction workers commuting to/from the project site, 2) delivery of materials and equipment, and 3) removal of construction equipment, waste or debris. During construction, the number of vehicle trips associated with the Proposed Action are anticipated to be low and likely spread throughout the day to avoid crews entering or exiting the site during peak traffic hours. During operation of the Proposed Action, traffic would return to the existing conditions as only a monitoring technician may make daily inspections to the Project Site and a maintenance crew would visit periodically to make repairs or manage landscaping at each location.

During construction, intermittent delivery or removal of large equipment and materials may result in traffic delays along Wailua and Bishop Roads. These kinds of deliveries and removals would be infrequent, and delays are anticipated to be brief. Adequate space exists within the Well and Tank Sites so vehicle parking associated with the Proposed Action would not impact traffic on Wailua or Bishop Roads during construction or operation activities. Therefore, neither construction or operation of the Proposed Action would result in adverse effects on traffic and no additional mitigation measures are required.

3.13 NATURAL HAZARDS

3.13.1 Flooding

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) as shown in Figure 3.25, the Tank and Well Sites are designated as Flood Zone X, which is defined as having a minimal risk of flooding. The Tank Site is located approximately 1.1 miles inland and the Well Site is 2 miles inland, and there are no surface waters present near either location. Both locations are outside the 3.2-foot and 6-foot sea level rise exposure areas.

3.13.2 Earthquakes and Volcanoes

Hawaiʻi Island is home to five volcanoes and is associated with volcanic eruptions and earthquakes. The Project Site is located on the western slope of the Hualālai Volcano, which last erupted between 1800-1801 and is now considered dormant (UHM SOEST, 2013). The U.S. Geological Survey has developed a Lava-Flow Hazard Zones map and divided the island into zones based on the probability of coverage from future lava flows, with Zone 1 having the greatest risk and Zone 9 the least. The Project Site is located within Zone 4. While Hualālai Volcano is now considered dormant, its historic flows have typically covered large areas including the Project site. Section 3.3 provides additional information relating to risk from earthquakes and volcanoes and applicable mitigation measures.

3.13.3 Tsunami

Both locations of the Project Site are located between 1 and 2 miles inland, outside the Tsunami Evacuation Zone.

3.13.4 Hurricanes and Tropical Storms

Records of hurricanes affecting the Hawaiian Islands show that these events are relatively rare. Since the 1950s, only one hurricane has affected Hawaiʻi County while storms with strong winds that are not classified as a hurricane or tropical storm are more common (Businger, S., 1998). Due to prevailing weather patterns in the region, most impacts from these storms have been on the leeward, or eastern, side of Hawaiʻi island and the Project Site is located on the windward, or western side.

3.13.5 Climate Change

According to the Intergovernmental Panel on Climate Change (IPCC), climate change impacts are affecting every region on earth in a variety of ways. This includes rising temperatures, intensification of the water cycle and changing rainfall patterns (IPCC, 2021). These changes are already being seen in Hawaiʻi. Statewide temperatures have been rising and 2019 was the hottest summer in recorded history. Additionally, rainfall has decreased over the past 35 years and may decrease an additional 10 percent by the end of the century (Frazier, A.G., et al., 2016). The IPCC have confirmed that climate change impacts are the result of human produced greenhouse gas (GHG) emissions, which include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and sulfur oxides (Frazier, A.G., et al., 2016).

Modern water infrastructure systems are interdependent with energy systems, forming a water-energy nexus. Energy is required to extract, convey, and deliver water for agricultural, residential, commercial and wastewater use. According to the U.S. Environmental Protection Agency (EPA), drinking water and wastewater systems collectively account for approximately 2 percent of energy use across the country, contributing up to over 45 million tons of greenhouse gasses annually (EPA, 2025). However, there is significant regional variability in water and energy systems and their interactions.

Well Site

Current land uses at the Well Site include a single-family home and small-scale coffee farming operation; neither land use generates substantial amounts of GHG emissions. According to the EPA, the amount of energy used by single-family home in the U.S. generates on average 7.5 metric tons of CO_2 annually. A study on coffee production at the farm level found coffee farming produces less than one pound of CO_2 equivalents per acre with lower levels of production producing higher levels of GHG emissions due to carbon sequestration of the coffee and soils. Thus, coffee farming at the Well Site could potentially generate between 0 to 0.07 pounds of CO_2 annually.

Tank Site

The Tank Site currently operates as the DWS Kahaluʻu Reservoir and Well Site. Existing water infrastructure features include three water storage tanks ranging from 0.1 to 0.3 million gallons capacity, Kahaluʻu Well A and Kahaluʻu Well C production wells and associated pumps, four booster pumps , and two small, single-story buildings used as the chlorination and control buildings. Kahaluʻu Well A and Kahaluʻu Well C production wells each pump approximately 1 mgd.

Depending on the depth and pumping efficiency, an average groundwater production well may require between 537 and 2,270 kilowatt hours (kWh) per million gallons pumped but this number may vary depending on a variety of factors. Therefore, Kahaluʻu Well A and Kahaluʻu Well C could potentially require between 1,074 and 4,540 kWh of energy per day. An average 100 horsepower (hp) booster pump requires approximately 83kW of energy for each hour used, which at the Tank Site averages around 16 hours per day. This means the four booster pumps could collectively require approximately 5,305 kWh of energy per day of operation. Thus, all operations at the Tank Site could potentially require between 6,379 and 9,845 kWh per day which is roughly the same daily energy requirements of between 350 to 550 single family homes. This amount of energy could produce between 1.5 to 4.1 metric tons of C02 daily depending on the energy source type.

Impacts and Mitigation Measures

Impacts and mitigation measures relating to natural hazards like earthquakes and volcanoes are discussed in Sections 3.3. The Project Site's inland location is outside the tsunami evacuation and impact zones, and the associated control building and storage tanks will be constructed in compliance with Hawaiʻi County Chapter 5A—Building Code to withstand wind speeds associated with hurricanes or tropical storms. Both locations of the Project Site are outside the FEMA special flood hazard zones.

Climate change may result in water supplies becoming less reliable or resilient in the future. One of the guiding principles of Laʻi ʻŌpua is to create a self-sustainable homestead community, including renewable energy and water conservation initiatives. If the Proposed Action and other additional proposed wells are developed, the future and existing wells would require an approximate total of 28 mgd or about 71 percent of the KASA's sustainable yield. If rainfall is reduced by 10 percent, the future total need would be approximately 81 percent of the KASA's sustainable yield. Thus, the Proposed Action would have minimal impact on the KASA or its long-term sustainability even with rainfall reductions created by climate change.

The Proposed Action will not directly release any GHG emissions, however, its construction and operation will generate GHG emissions. GHG emissions generated during construction of the Proposed Action are anticipated to be relatively minor. Emission sources from construction would primarily be from equipment during the site clearing, transmission pipeline installation, and well drilling actions.

During the operation of the Proposed Action, electricity will be required to pump water from the wells and storage tanks into the North Kona Water System. The amount of GHG emissions generated by electricity varies by the energy source type. In Hawaiʻi County, oil and renewables (e.g. geothermal, solar, wind, hydroelectric, and biomass) are the primary energy

sources. According to Hawaiian Electric, within Hawaiʻi County 58.7% percent of electricity is currently generated from renewable sources which produce zero or very small amounts of GHG emissions (HECO, 2025). The remaining 42 percent is generated from oil, which produces an average of 2.13 pounds of $C0_2$ per kilowatt hour (lbs $C0_2$/kWh).

Presently, the Tank Site requires between 6,379 and 9,845 kWh per day. This amount of energy could produce between 1.5 to 4 metric tons of $C0_2$ daily depending on the energy source type. The Proposed Action includes the addition of a water storage tank at the Well Site uphill from the DWS North Kona Water System mainline along Māmalahoa Highway. Adding a storage tank uphill that directly feeds via gravity transmission lines into the North Kona Water System may potentially reduce the volume of water stored at the Tank Site. This would decrease the volume of water pumped by the booster pumps thus reducing the amount of energy required to operate them and lowering the amount of $C0_2$ generated daily.

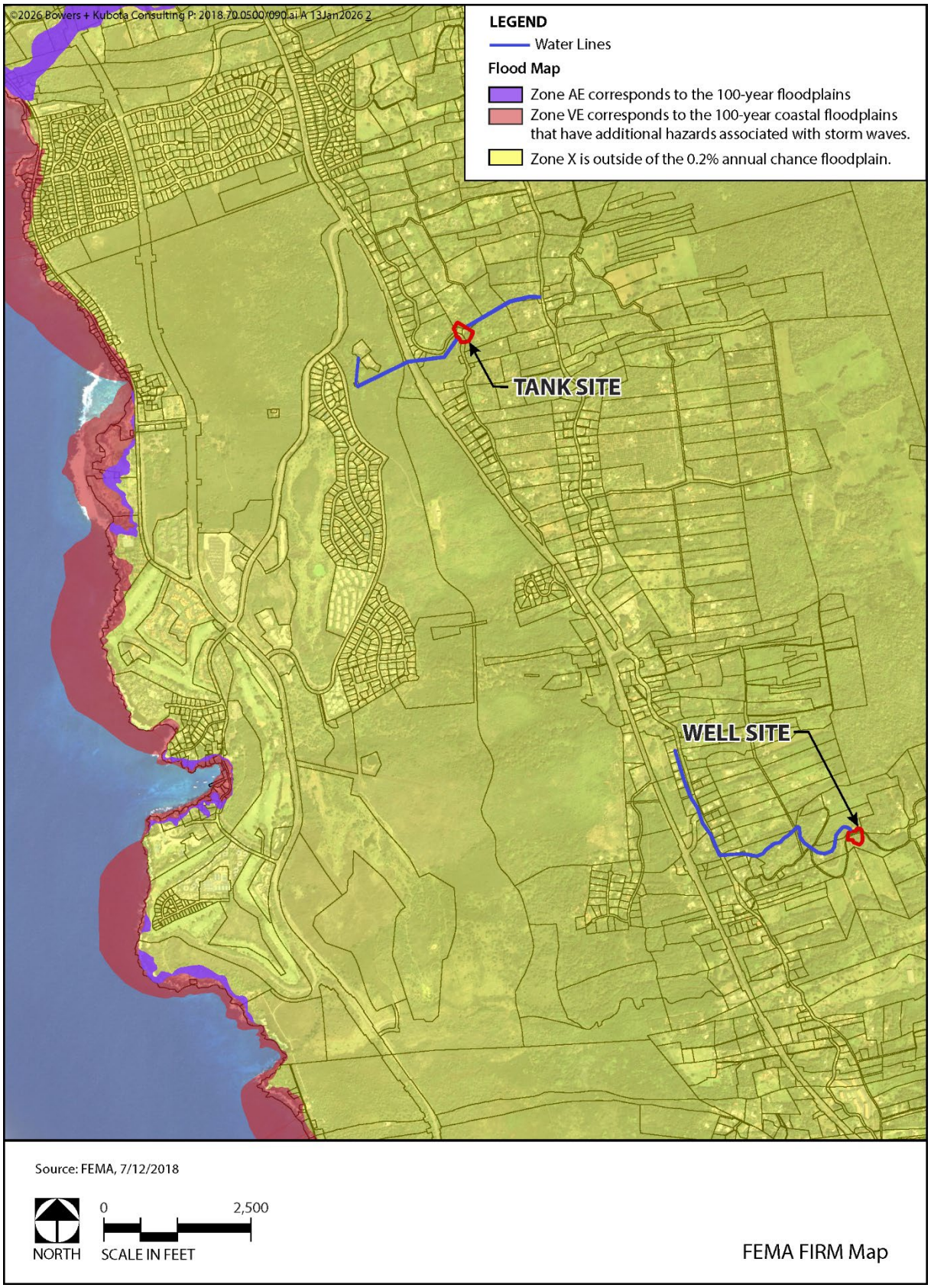
The Proposed Action is expected to pump 1.1 mgd with a maximum capacity of 2.0 mgd per day. It could therefore potentially require between 537 and 4,540 kWh per day of operation. Assuming 43 percent of this energy requirement is provided by renewable sources, the Proposed Action could potentially generate between 107 and 908 metric tons of $C0_2$ per year. This is roughly the same amount of $C0_2$ generated by powering between 14 and 121 single-family homes for one year.

GHG emissions generated by the Proposed Action's operation will be reduced over time as the county continues transitioning to a renewable energy resource portfolio standard. The State of Hawaiʻi Act 15 (2018) set the goal of making the state carbon "net-negative" by 2045, and HRS §269-91 requires electric utilities to meet 100 percent of net sales through renewable sources also by 2045. There are currently seven renewable energy projects under development for Hawaiʻi County that will assist in reaching this goal, and therefore operation of the Proposed Action may generate little to no $C0_2$ within the project's lifespan.

The Proposed Action will use gravity fed transmission lines at the Well Site that do not require additional energy to pump the water to Laʻi ʻŌpua. Because high-level groundwater is considered pristine in quality, little to no water treatment is anticipated further reducing the amount of indirect GHG emissions produced by the Proposed Action.

Therefore, neither construction nor operation of the Proposed Action would result in adverse effects contributing to climate change impacts or impacts from other natural hazards and no additional mitigation measures are required.

Figure 3.25: FEMA FIRM Map



3.14 PUBLIC FACILITIES AND INFRASTRUCTURE

3.14.1 Water Transmission

The Project Site is located within the North Kona Water System that consists of high, mid, and shaft-level groundwater wells; storage tanks; and an integrated transmission system that services DWS customers from Keāhole to Keauhou. As part of the Proposed Action, approximately 0.7 miles of new 16-inch transmission line will be installed to connect the Tank Site to the DWS North Kona Water System and 1.25 miles will be installed to connect the Well Site.

3.14.2 Sanitary Wastewater

The County of Hawaiʻi does not have a wastewater collection system in the uplands of North Kona or along Māmalahoa Highway. As a result, wastewater disposal near the Project Site is primarily within Individual Wastewater Systems which have historically been cesspools. There is one cesspool present within the Project Site.

3.14.3 Police, Fire Protection, Medical and Educational Facilities

The Project Site is located within the Hawaiʻi County Police Department's Kona District. The Kona Police Station is the nearest substation and is located approximately 10 miles northwest from the Well Site and 7.5 miles northwest of the Tank Site.

Hawaiʻi County Fire Department provides fire protection services throughout the county. Keauhou Fire Station (Engine 12) is the closest station located less than 2 miles from either the Tank or Well Sites. The station provides fire, emergency medical services (EMS), and rescue capabilities. Additionally, there are full-time fire stations with EMS services located in Makalei, Captain Cook and Kona and on-call volunteer services operated out of Kalaoa.

Kona Community Hospital is the closest hospital, located within approximately five miles of the Tank and Well Sites. The hospital is full-service, with 24-hour emergency services and an intensive care unit.

The Project Site is in the Hawaiʻi State Department of Education's Honokaʻa-Kealakehe-Kohala-Konawaena Complex. The project vicinity includes the Konawaena, Kahakai, and Hōlualoa school districts. The Konawaena area includes Konawaena Elementary, Konawaena Middle, Konawaena High Schol. The Kahakai area includes Kahakai Elementary School and the Hōlualoa area includes Holualoa Elementary School. There are also three Public Charter Schools in the project region: Kona Pacific Public Charter School, West Hawaiʻi Explorations and Innovations Public Charter School. Additionally, there are two private schools in the vicinity of the Project Site, Makau Lani Christian Academy and Kuleana Education Academy. Makau Lani Christian Academy provides educational services for elementary through high school students and Kuleana Education Academy serves elementary through middle school students.

3.14.4 Solid Waste

Solid waste services are provided by Hawaiʻi County Department of Environmental Management in some urban areas of the county. The closest facility to accept residential, commercial, government, and construction and demolition generated solid waste is the Puʻuanahulu (West Hawaiʻi) Landfill, which is located between approximately 29 and 31 miles from the Project Site. Where collection services are not provided by the County, waste may be self-hauled or collected by private companies and taken to Puʻuanahulu Landfill. Self-hauled waste is generally residential and can be taken to County operated transfer stations in Kailua, Keauhou, Keʻei, Wailea and Miloliʻi.

3.14.5 Electricity

Hawaiʻi Electric (HELCO) Keahuolu Substation provides electricity through 12.5-volt overhead lines along Bishop Road and distribution lines to portions of the Well Site. Overhead Walua Road, distribution lines and two electric transformers service the Tank Site.

Impacts and Mitigation Measures

The Proposed Action is not anticipated to substantially impact the demand for public facilities or infrastructure. The Proposed Action is intended to develop additional potable water supply sources from within the North Kona region to allow for the continued development of Laʻi ʻŌpua. Water from the Proposed Action will connect to the North Kona Water System via the proposed 16-inch transmission lines associated with each location, which are sufficient to accommodate the potential daily maximum withdrawal of 2.0 mgd. This amount combined with the other DHHL production well discussed in Section 3.4.5 would be sufficient for future proposed residential, commercial and community uses within Laʻi ʻŌpua. Completion of the Proposed Action will positively impact the resiliency of the North Kona Water System by creating a redundant source of water in the case of pump failures at other nearby wells.

Act 268, Session Laws of Hawaiʻi 2025, amended Hawaiʻi Revised Statutes Chapter 302A relating to school impact fees. Among other changes, Act 268 exempts housing developed by DHHL from school impact fees. Accordingly, the Proposed Action, which would enable DHHL to development additional beneficiary housing in Laʻi ʻŌpua, would be exempt from school impact fees and would not be subject to payment of school impact fees under current State law.

3.14.6 Secondary and Cumulative Impacts

During construction of the Proposed Action, a portable sanitary toilet will be located onsite at each location with secondary containment measures and serviced per provider recommendations. During operation, the control building and pumps at both the Tank and Well Sites will be unmanned and not require a permanent or temporary sanitary waste disposal system. Mitigation measures discussed in Section 3.4.6 would also be used to prevent impacts from the single cesspool onsite at the Well Site.

Use of BMPs and Occupational Safety and Health Administration (OSHA) worksite safety requirements will be used during construction of the Proposed Action to minimize any potential impacts on local fire, police and medical facilities.

Solid waste generated by the Proposed Action is anticipated to be minimal. The Well Site has no buildings that would need to be demolished, and any excess soil produced from excavation activities will remain onsite. The primary source of waste would be the demolition and removal of the three existing water storage tanks located at the Tank Site. Any solid waste generated during construction of the Proposed Action would be taken to Puʻuanahulu Landfill. As the control building and pumps will be unmanned during operation, no solid waste services or trash receptacles are required to operate the Proposed Action.

During Phase I of the Proposed Action, electric needs will be provided by generators onsite at the Well Site location. During Phase II, permanent electrical features to supply power to the pumps, control buildings and other accessory structures would be provided by tying into the existing distribution lines onsite or via new distribution lines connected to the existing overheads along Bishop and/or Walua Road depending on site specific power needs. Power demands created by the Proposed Action would exceed the existing conditions at both locations, however they are anticipated to be within HELCO's capacity without adversely affecting service to other customers. Therefore, the Proposed Action would have no short or long-term adverse impacts on public infrastructure or utilities, and no additional mitigation measures are required.

HAR §11-200 defines secondary or indirect impacts as "Effects which are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable," while it defines cumulative impacts as "The impact on the environment which results from incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." The context for analyzing these impact types is defined by actions within the "reasonably foreseeable future"; in this case developments seeking entitlements within the previous five years that would be constructed in the same timeframe as Laʻi ʻŌpua. The following section is a discussion of the potential secondary and cumulative impacts resulting from the Proposed Action and other planned development in the area.

3.14.7 Secondary Impacts

SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

The Proposed Action would facilitate the development of Laʻi ʻŌpua and approximately 1,000 single family homes and 300 multi-family units for DHHL beneficiaries, supporting the agency's vision of creating vibrant and self-sufficient homestead communities by developing and delivering lands and homes to more native Hawaiian families. Kealakehe Census Tract, which contains Laʻi ʻŌpua, has a nearly 20 percent higher rate of Native Hawaiian and Pacific Islander residents compared to the entire County who could positively benefit from its development through access to more housing options and economic opportunities.

The Proposed Action could positively alter the socio-economic profile of Kealakehe Census Tract. Laʻi ʻŌpua is one of two communities within DHHL's landholdings with lands designated for community and commercial uses, which include community-based economic development and other public amenities. Laʻi ʻŌpua has a combined total of 83 acres designated for community and commercial purposes. Creating economic development opportunities alongside residential uses would support the community's vision for self-sufficiency and provide them a chance to work close to home as Hawaiʻi County's average commute time is longer than the national average (County of Hawaiʻi Draft General Plan, 2023).

Therefore, the Proposed Action is anticipated to have positive impacts on the socioeconomics of the region and environmental justice by assisting DHHL beneficiaries in achieving home ownership and providing them economic opportunities. While this amount of land would assist the community in establishing economic self-sufficiency, it is not substantial enough to have a direct effect on the level of commerce in Kailua-Kona, the primary commerce center for the region.

HYDROLOGIC RESOURCES

The Proposed Action is anticipated to withdrawal a maximum of 2.0 mgd of high-level groundwater, which is approximately five percent of the KASA's 38 mgd sustainable yield. If the Proposed Action and other additional proposed wells are developed, the future and existing wells would require an approximate total of 28 mgd (County of Hawaiʻi, Department of Water Supply, 2017). This is about 73 percent of the KASA's sustainable yield as determined by the CWRM, which is within the 90 percent sustainable yield limit. If the sustainable yield is greater based on the USGS recharge rates, future and existing well use would be even less of the KASA's sustainable yield. Thus, the Proposed Action would have minimal impact on the KASA or its long-term sustainability.

TRANSPORTATION AND TRAFFIC

Traffic generation resulting from Laʻi ʻŌpua would be gradual and increase in response to each phase of development. During the environmental review process for each of the subsequent phases of development, traffic patterns and generation would be analyzed and mitigated at that time as necessary.

PUBLIC FACILITIES AND INFRASTRUCTURE

Hawaiʻi County's sewer system is currently in place within Laʻi ʻŌpua, with County operated gravity main lines present under existing roadways in the community as shown in Figure 3.26. Lateral lines from future development would be connected to the gravity main lines at that time and sanitary wastewater would be pumped to Kealakehe Wastewater Treatment Plant (the "Plant") for treatment. As of February 2021, the Plant has the capacity to treat up to 5.3 million gallons of wastewater per day and receives an average of 1.8 million gallons per day with approximately 1,700 active connections (County of Hawaiʻi, Department of Water Supply, 2017).

Upon full buildout of Laʻi ʻŌpua, approximately 1,000 single family homes and 300 multi-family units for DHHL beneficiaries would be connected to the sewer system. These new

connections could potentially generate a maximum of 0.68 million gallons of residential wastewater per day (County of Hawaiʻi Planning Department, Final Environmental Assessment, Makalapua Project District, 2019). This would bring the daily total of wastewater produced throughout the region to around 2.5 million gallons per day, which is within the operational capacity of the Kealakehe Wastewater Treatment Plant.

Development of Laʻi ʻŌpua will result in additional individuals and families living in the community, which could potentially increase the number of school-aged children within the Kealakehe public school system complex and impact local fire, police and medical facilities. As noted previously, DHHL housing projects are exempt from school impact fees under current State law.

Most of the land designated for residential use occurs within Villages 1 through 6 and Village 10. To date, only Village 3 has been completed and Villages 4 and 5 are scheduled for the next phase of development. Thus, continued development of Laʻi ʻŌpua will occur in phases over time and a substantial increase in the number school-aged children in the short-term because of the Proposed Action is not anticipated.

An increase in the number of school-aged children in the future is possible, however the County's population is expected to increase by 50 percent by 2040 with or without the development of Laʻi ʻŌpua (County of Hawaiʻi Planning Department, Final Environmental Assessment, Makalapua Project District, 2019). It is likely that the public school system would expand during that timeframe and could accommodate an increase in school-aged children associated with Laʻi ʻŌpua as the community is developed. This expansion could be achieved through school impact fees which the State of Hawaiʻi, Department of Education (DOE) has the authority to collect via Act 245. In 2010, a West Hawaiʻi School Impact Fee District was adopted and while efforts to implement fee collection were suspended that same year, the DOE may resume efforts to collect these fees in the future.[2] It is assumed services provided by other the public utilities would also be expanded by 2040 in response to the expected future population growth. Phasing development of Laʻi ʻŌpua over time would reduce the potential impacts on these other facilities.

Development of Laʻi ʻŌpua will result in additional individuals and families living in the community, but these may include residents already residing within other areas of Hawaiʻi County. With the closure of Hilo Landfill in 2019, all solid waste generated within the County is now taken to Puʻuanahulu Landfill. As of January 2020, Puʻuanahulu Landfill is anticipated to have 50 to 100 more years of operational capacity based on existing solid waste generation of roughly 600 tons per day and onsite conditions (Hawaiʻi Public Radio, 2020). Thus, development of Laʻi ʻŌpua would have minimal impact on the Landfill.

[2] Act 268, Session Laws of Hawaiʻi 2025, made significant changes to the school impact fee statute, including exempting housing developed by DHHL from school impact fees.

The full development of La'i 'Ōpua will likely require around 23 Megawatts (MW) per day to power all the new residential development.[3] Currently, HELCO produces around 370 MW of energy per day using a variety of traditional and renewable energy sources and is working towards fully renewable energy production as discussed in Section 3.14.7 (Hawaiian Electric Company, 2021). Full buildout of the community would require approximately six percent of the existing power produced daily by HELCO, and approximately seven percent using only renewable energy sources currently operating and those approved for development to meet the 2045 renewable energy mandate (Hawaiian Electric Company, 2021). This would not adversely affect HELCO's ability to serve other customers.

These requirement percentages are assuming no renewable energy initiatives are implemented within the community or additional renewable projects are pursued by HELCO over the course of the community's full development. As part of their vision and values, La'i 'Ōpua outlined their desire to incorporate renewable energy sources to ensure their self-sufficiency. HRS §196-7 permits the installation of residential photovoltaic systems. Thus, the energy requirements from La'i 'Ōpua would likely be lower as the community would not be fully reliant on HELCO for power.

3.14.8 Cumulative Impacts

There are two housing projects proposed for development in the reasonably foreseeable future and one under construction within the North Kona District in vicinity of the Project Site: Makalapua Project District, Kaloko Heights and Kamakana Villages at Keahuolū.

The proposed Makalapua Project District is a an approximately 67-acre site located in Kailua-Kona approximately three miles south of the La'i 'Ōpua. The project is intended to be a mixed-use development including residential, hotel, commercial, and civic/community uses, creating approximately 300 residential units and 220 hotel rooms developed over the next 15 years. Kaloko Heights is a proposed affordable housing project intended to develop up to 111 residential units and a community center located approximately three miles north of the La'i 'Ōpua. Phase I of the project, which includes construction of roughly 80 units, is anticipated to be completed within the next two years.

Kamakana Villages at Keahuolū is a mixed-use, master planned community across 272-acres that includes development of up to 2,330 homes, school facilities and a neighborhood center. Kamakana Villages is located within one mile of La'i 'Ōpua and its development is planned to occur over the next 20 years. The first homes were made available to the public in 2018, and presently 170 apartments have been completed with approximately 250 residents occupying the site. The housing and surrounding infrastructure are all Silver LEED certified.

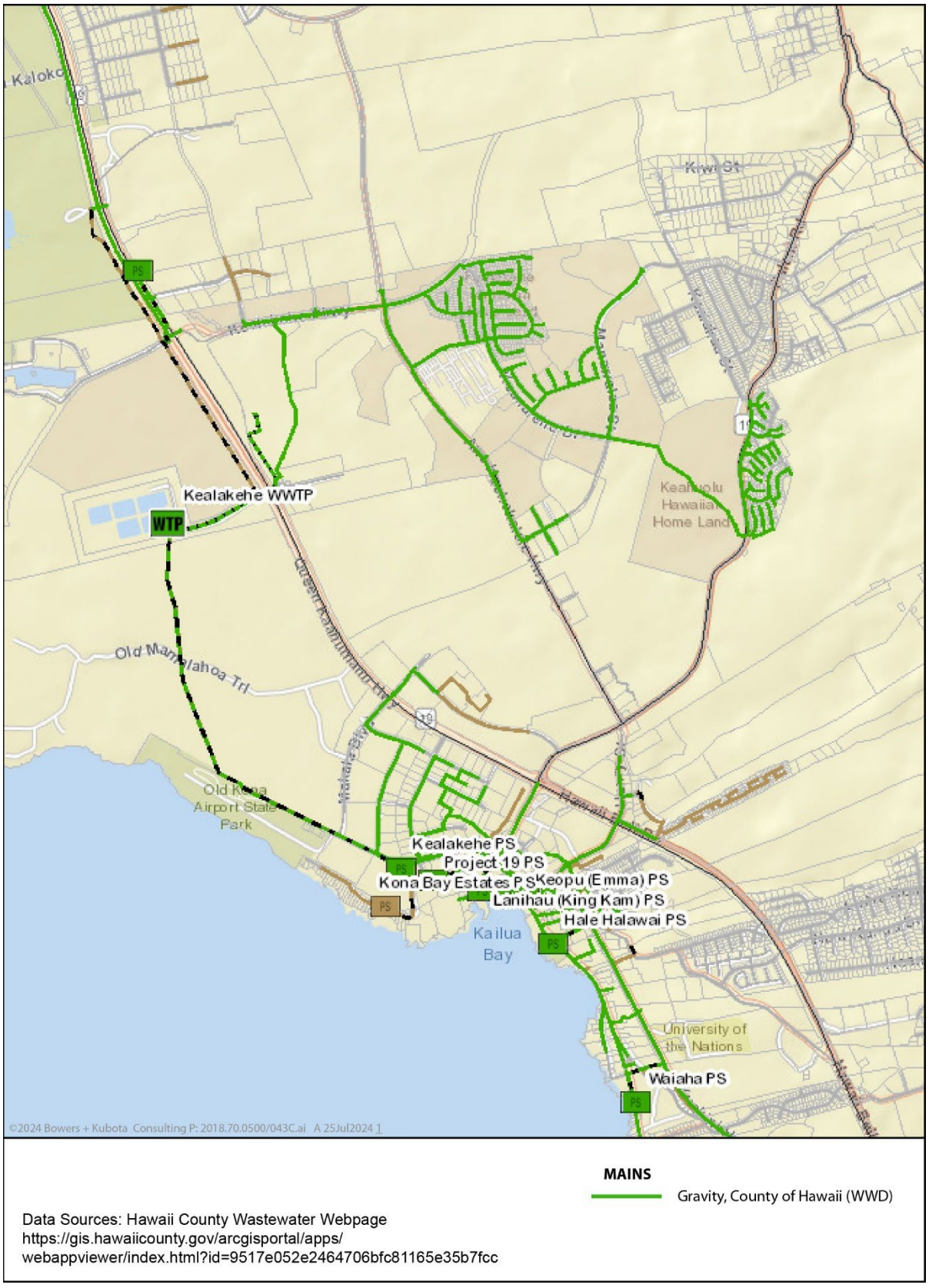
Cumulative impacts from developing La'i 'Ōpua, facilitated by the Proposed Action, and the other housing projects are potential increases in the demand on the KASA aquifer and public

[3] Based on HELCO evaluation that their average residential utility consumer used 518kWh per month, times the number of units and converted from kWh to MW. Accessed September 20201. https://view.hawaiianelectric.com/2019-2020-sustainability-report/page/4-5

facilities and infrastructure through increased population. The Proposed Action and additional housing developments and their water use demands have been accounted for in the Hawaiʻi County Water Use and Development Plan Update, Hawaiʻi Water Plan, Keauhou Aquifer System and are within the estimated 28 mgd future demand total. This future demand total is about 73 percent of the KASA's sustainable yield as determined by the CWRM, which is within the 90 percent sustainable yield limit. Therefore, they would not adversely affect the KASA aquifer if all were fully developed.

Existing infrastructure, improvements and mitigations associated with the proposed projects would support the potential increase in population and the corresponding increase in demand on public facilities and infrastructure like roads, schools, medical facilities, and fire and police departments. Further, tax revenues generated from the housing developments would support improving and potentially expanding these County resources to better serve an increased population. Therefore, full development of the Laʻi ʻŌpua and the other projects would not adversely affect these resources.

Figure 3.26: County Sewer Line Map



4.0 RELATIONSHIP TO STATE AND COUNTY PLANS AND POLICIES

As a requirement of HAR §11-200.1-24 (2019), this chapter provides a description of the relationship and compatibility of the Proposed Action to other land use plans and policies. This chapter discusses the proposed project's conformance with pertinent State and County land use plans and policies, which include the State Land Use District regulations, State Environmental Policy (Chapter 344, HRS), and the regulations, policies, and goals set forth by the County's General Plan, and Special Management Area (Chapter 205A, HRS).
State of Hawai'i Plans and Policies

4.1 THE STATE LAND USE LAW (HRS §205)

The Hawai'i State Legislature adopted the State Land Use Law in 1961 to protect Hawai'i's valuable lands from development that resulted in short-term gains for a few and long-term losses to the income and growth potential of the State's economy. Accordingly, the Legislature established an overall framework of land use management. HRS §205 placed all lands within the State in one of four land use districts: Urban, Agricultural, Conservation, or Rural (the Rural District was added in 1963) and established the State Land Use Commission to administer the designated land use districts.

Discussion:

The Project Site is located within the Agriculture District. As discussed in Section 3.2, the Proposed Action is permitted within the State Agricultural District and by the Hawai'i County Code Chapter 25—Zoning, so long as it does not pose a hazard or danger to the surrounding area and is approved by the Director of the Hawai'i County Planning Department. The Proposed Action will be installed in compliance with all relevant building codes to prevent any hazards to the surrounding area and construction would not begin prior to plan approval. Thus, the Proposed Action is compliant with HRS §205.

4.2 THE STATE COASTAL ZONE MANAGEMENT PROGRAM (HRS §205A)

The Coastal Zone Management (CZM) Act of 1972 authorizes states to develop and operate their own coastal management programs. In 1973, the State of Hawai'i Legislature passed Act 164 and in 1977 enacted HRS §205A, the Hawai'i CZM Program. The regulatory reach of HRS §205A is the entire state, including coastal waters out to the limit of the State's police and regulatory authority.

Unique to Hawai'i, each county has regulatory authority over Special Management Areas (SMAs) which are designated areas of concern that represent the most sensitive area of the coastal zone. The Hawai'i Coastal Zone Management Act focuses on ten policy objectives including recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection and marine resources.

Discussion:

The Project Site is located between approximately 1 to 2 miles inland from the nearest coastline at an elevation of approximately 550 feet to 1,650 feet amsl. As discussed in Section 3.4, the Proposed Action would not involve coastal waters, shoreline areas, or coastal ecosystems, and no surface waters are present onsite. The Proposed Action is consistent with CZM objectives as discussed below:

(1) Recreational Resources – The Project Site is not located along the coastline and would not affect shoreline access, coastal recreational resources, or coastal recreational activities.

(2) Historic Resources – The Proposed Action is not expected to result in significant impacts to historic resources, as discussed in Section 3.7.

(3) Scenic and Open Space Resources – The Project Site is not located along the coastline and is not within an area identified as a valued coastal scenic resource.

(4) Coastal Ecosystems – The Project Site is not located near surface waters or coastal ecosystems. Best management practices would be implemented during construction to minimize soil erosion and sediment transport and to maintain water quality during operation in compliance with State water quality standards, thereby protecting downstream and coastal waters.

(5) Economic Uses – The Proposed Action does not involve coastal-dependent or coastal-related development and would not affect coastal economic uses.

(6) Coastal Hazards – The Project Site is located away from areas exposed to coastal hazards such as flooding, erosion, storm surge, or sea level rise. The Proposed Action would be designed in accordance with the International Building Code (2018 Edition) to address potential natural hazards.

(7) Managing Development – The Proposed Action does not involve development within the coastal zone and would not induce or facilitate additional coastal development.

(8) Public Participation – The environmental review process conducted pursuant to HRS Chapter 343 includes public notification and opportunities for agencies and the public to review and comment on the Proposed Action.

(9) Beach Protection – The Proposed Action does not involve shoreline hardening, beach alteration, or activities that would interfere with natural shoreline processes.

(10) Marine and Coastal Resources – The Proposed Action would not involve the use of marine or coastal resources and is not expected to directly or indirectly impact coastal resources

4.3 HAWAI'I STATE PLAN (HRS §226)

The Hawai'i State Plan, HRS Chapter 226, as amended, is a broad policy document that guides all activities, programs and decisions made by State and local agencies by establishing a set of themes, goals, objectives, and policies meant to guide the State's long-term growth and development. The purpose of the plan is to: (1) improve the planning process; (2) increase

the effectiveness of government and private actions; (3) improve coordination among agencies and levels of government; (4) provide for the use of Hawai'i's resources; and (5) guide the future development of the state.

Part I of the Plan references Overall Theme, Goals, Objectives and Policies and Part III references the Priority Guidelines; because Part II pertains primarily to internal government affairs it is not applicable to the Proposed Action and was not addressed. Of the 107 sections that comprise the HRS §226, six are directly applicable to the Proposed Action and discussed in the table below.

Table 4.1
Hawai'i State Plan Objectives and Policies

HAWAI'I STATE PLAN, CHAPTER 226, HRS (Key: C = Consistent, I = Inconsistent, N/A = Not Applicable)	C	I	N/A
PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES			
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 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 fulfillment of the needs and expectations of Hawai'i's present and future generations.	**X**		
(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.	**X**		
(3) Physical, social and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring and of participation in community life.	**X**		
Discussion: The Proposed Action provides the potable water resources required to enable the development of DHHL's Villages of La'i 'Ōpua. The Proposed Action will provide necessary resources to help create a community that provides native Hawaiian beneficiaries housing and homestead leases that may be passed on to future generations. The Proposed Action will also provide the water resource necessary to develop a master planned community that will create opportunities for individuals and groups to improve their economic, social and physical well-being.			
HRS § 226-5: Objectives and policies for population.			
§226-6 Objectives and policies for the economy--in general.			
§226-7 Objectives and policies for the economy--agriculture.			
§226-8 Objective and policies for the economy--visitor industry.			
§226-9 Objective and policies for the economy--federal expenditures.			
§226-10 Objective and policies for the economy--potential growth and innovative activities.			
§226-10.5 Objectives and policies for the economy--information industry.			
§226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources.			
§226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources.			
§226-13 Objectives and policies for the physical environment--land, air, and water quality.			
(a) Objectives: Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:			

Table 4.1
Hawai'i State Plan Objectives and Policies

HAWAI'I STATE PLAN, CHAPTER 226, HRS (Key: C = Consistent, I = Inconsistent, N/A = Not Applicable)	C	I	N/A
(1) Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.	X		
(2) Greater public awareness and appreciation of Hawai'i's environmental resources.	X		
(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:			
(1) Foster educational activities that promote a better understanding of Hawai'i's limited environmental resources.			X
(2) Promote the proper management of Hawai'i's land and water resources.	X		
(3) Promote effective measures to achieve desired quality in Hawai'i'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 Hawai'i'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 Hawai'i'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 Hawai'i's people, their cultures and visitors.	X		
Discussion: The Proposed Action is intended to develop a new potable water source for the development of La'i 'Ōpua. The Proposed Action has been included in the Hawai'i County Water Use and Development Plan update and would be within the sustainable yield of the area's underlying aquifer system, supporting proper management of Hawai'i's land and water resources. During construction, any potential impacts to air and water quality will be minimized using BMPs and project phasing.			
§226-14 Objective and policies for facility systems--in general.			
(a) Objective: 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.			
(b) To achieve the general facility systems objective, it shall be the policy of this State to:			
(1) Accommodate the needs of Hawai'i'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

Table 4.1
Hawaiʻi State Plan Objectives and Policies

HAWAIʻI STATE PLAN, CHAPTER 226, HRS (Key: C = Consistent, I = Inconsistent, N/A = Not Applicable)	C	I	N/A
Discussion: The Proposed Action fully supports the objectives and policies of HRS §226-14. The Proposed Action is intended to develop a new potable water source for the development of Laʻi ʻŌpua, which will allow DHHL to accommodate the needs of their beneficiaries. It is designed to promote prudent use of groundwater resources and its operation is within the region's aquifer's long-term sustainable capacity.			
§226-15 Objectives and policies for facility systems--solid and liquid wastes.			
§226-16 Objective and policies for facility systems--water.			
(a) Objective: 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.			
(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
Discussion: The Proposed Action is intended to develop a new potable water source for the development of Laʻi ʻŌpua. The Proposed Action has been included in the Hawaiʻi County Water Use and Development Plan update and would be within the sustainable yield of the area's underlying aquifer system. In August 2015, CWRM approved the water reservation for 3.398 MGD in the Keauhou Aquifer System Area (ASYA) that services the North Kona region. The water request amount should meet the water demands needed for the full build-out of Laʻi ʻŌpua.			
§226-17 Objectives and policies for facility systems--transportation.			
§226-18 Objectives and policies for facility systems--energy.			
§226-18.5 Objectives and policies for facility systems--telecommunications.			
§226-19 Objectives and policies for socio-cultural advancement--housing.			
(a) Objective: Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:			
(1) Greater opportunities for Hawaiʻi'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 extremely low-, very low-, lower-, moderate-, and above moderate-income segments of Hawaiʻi's population.	X		
(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 Hawaiʻi's people.	X		
(b) o achieve the housing objectives, it shall be the policy of this State to:			
(1) Effectively accommodate the housing needs of Hawaiʻi's people.	X		

Table 4.1
Hawaiʻi State Plan Objectives and Policies

HAWAIʻI STATE PLAN, CHAPTER 226, HRS (Key: C = Consistent, I = Inconsistent, N/A = Not Applicable)	C	I	N/A
(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 Hawaiʻi 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 Hawaiʻi.			X
Discussion: Without the Proposed Action, DHHL will not have enough water credits available from DWS for future homestead or commercial development at Laʻi ʻŌpua from now into the foreseeable future. Therefore, DHHL needs to establish an additional water source to receive water credits from DWS. This would allow DHHL to provide over 1,000 single family homes, 300 multi-family units, multiple park spaces, a hospital, and commercial centers at Laʻi ʻŌpua. Laʻi ʻŌpua will provide housing for native Hawaiian residents ranging from low-, very low-, lower-, moderate- and above moderate-income segments and the community is planned to reflect the culture and values traditional to Hawaiʻi.			
§226-20 Objectives and policies for socio-cultural advancement--health.			
§226-21 Objective and policies for socio-cultural advancement--education.			
§226-22 Objective and policies for socio-cultural advancement--social services.			
§226-23 Objective and policies for socio-cultural advancement--leisure.			
§226-24 Objective and policies for socio-cultural advancement--individual rights and personal well-being.			
§226-25 Objective and policies for socio-cultural advancement--culture.			
§226-26 Objectives and policies for socio-cultural advancement--public safety.			
§226-27 Objectives and policies for socio-cultural advancement--government.			
§226-101 Purpose. The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.			
§226-102 Overall direction. The State shall strive to improve the quality of life for Hawaiʻi'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.			
§226-103 Economic priority guidelines.			
§226-104 Population growth and land resources priority guidelines.			
§226-105 Crime and criminal justice.			
§226-106 Affordable housing.			
§226-107 Quality education.			
§226-108 Sustainability.			

Table 4.1 Hawai'i State Plan Objectives and Policies			
HAWAI'I STATE PLAN, CHAPTER 226, HRS (Key: C = Consistent, I = Inconsistent, N/A = Not Applicable)	**C**	**I**	**N/A**
Priority guidelines and principles to promote sustainability shall include:			
(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 ahupua'a system; and	**X**		
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai'i	**X**		
Discussion: The Proposed Action is intended to develop a new potable water source for the development of La'i 'Ōpua. La'i 'Ōpua values the natural resources of the area and one of the community's visions includes self-sufficiency and increasing and conserving water resources is considered pivotal for the community's continued success. Further, the Proposed Action is a long-planned initiative intended to sustainably balance the needs of La'i 'Ōpua and the greater Kona District within the limits of the region's water resources. Thus, the Proposed Action is consistent with the provisions of the Hawai'i State Plan.			

4.3.1 The State Environmental Policy (HRS §344)

HRS §344 establishes an environmental policy that (1) encourages productive and enjoyable harmony between people and their environment, (2) promotes efforts that will prevent or eliminate damage to the environment and biosphere, (3) stimulates the health and welfare of humanity, and (4) enriches the understanding of the ecological systems and natural resources important to the people of Hawai'i.

HRS §344-3(1) states it shall be the policy of the State, through its programs, authorities, and resources to:

> *Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawai'i.*

Discussion:

The Proposed Action would require a maximum daily limit of 2 mgd of groundwater, which is within the long-term sustainable yield for the region's aquifer system. Thus, it would not

detrimentally effect water resources in the North Kona District. Further, the Proposed Action is intended to develop a new potable water source for the development of La‘i ‘Ōpua, which would allow DHHL to develop and deliver more lands and homes to native Hawaiian families fulfilling the social, economic and other requirements of the people of Hawai‘i. Mitigation measures discussed throughout Chapter 3 would be implemented to avoid or eliminate impacts to the resources affected. Therefore, the Proposed Action is consistent with the purpose and objectives established by HRS §344.

4.3.2 The Hawai‘i State Water Code (HRS §174C)

The State Water Code, HRS §174C, was enacted to protect Hawai‘i’s water resources. It is intended to address problems of water supply and conservation and establishes the Hawai‘i Water Plan as the guide for implementing this policy. The Hawai‘i Water Plan consists of five constituent parts:

1. Water Resource Protection Plan: The plan is prepared by the CWRM and serves to protect and sustain statewide ground-and surface-water resources, watersheds, and natural stream environments.
2. State Water Projects Plan: The plan is prepared by the DLNR Engineering Division and provides a framework for planning and implementing water development programs to meet projected water demands for state projects.
3. Water Quality Plan: The plan is prepared by the DOH and serves to protect public health and sensitive ecological systems by preserving, protecting, restoring and enhancing the quality of ground and surface waters throughout the state.
4. Agricultural Water Use and Development Plan: The plan is prepared by the State Department of Agriculture and develops a long-range management plan that assesses state and private agricultural water use, supply and irrigation systems.
5. County Water Use and Development Plans: These plans are prepared separately by each county. They set forth the allocation of water based on proposed land uses to meet projected county-specific demands.

Discussion:

The most relevant of the Hawai‘i Water Plan’s five constituent plans to the Proposed Action are the Water Resource Protection Plan Update (2019), State Water Projects Plan Update (2020), and the Hawai‘i Water Use and Development Plan Update—Keauhou Aquifer System (2017).

The Water Resource Protection Plan Update (2019) inventoried water resources of the State to determine their sustainable yields based on available data and recommend means of conserving and augmenting these resources. The Proposed Action is anticipated to require a maximum daily limit of 2 mgd. This is within the long-term sustainable yield for the Keauhou Aquifer System, which is not classified as a Groundwater Management Area. Further, mitigation measures discussed in Section 3.4.7 would be implemented to ensure the Proposed Action does not create any adverse impacts on water resources.

The Proposed Action is intended to develop a new potable water source for the development of Laʻi ʻŌpua and the projected requirements are accounted for within the State Water Projects Plan Update (2020). The Proposed Action does not directly or indirectly impact other proposed State projects, but it would positively impact the resiliency of the North Kona Water System by creating a redundant source of water in case of pump failures at other nearby wells.

The County of Hawaiʻi, Water Use and Development Plan Update (2010) implemented a broad, uniform island-wide approach to evaluate conservatively the County's land use policies set forth in the County General Plan and Zoning Code. The plan provides scenarios for low, medium and high growth rates and estimated public water needs for the island for years in the future. The update identified two aquifer sectors to be considered for further evaluation and detailed assessment. One of the sectors identified was the Hualālai Aquifer Sector, Keauhou Aquifer System which would be directly impacted by the Proposed Action.

Per CWRM, the update consisted of two phases. Phase I refined the plan's water demand scenarios and projections. Phase II created source development strategies and scenarios; addressed how proposed source strategies may impact cultural uses and rights or other public trust purposes; and identified appropriate mitigation measures for potential impacts or alternative strategies. The Hawaiʻi Water Use and Development Plan Update—Keauhou Aquifer System (2017) combines the findings of the two phases into a single plan.

As discussed in Section 3.4, the Proposed Action is consistent with the Hawaiʻi Water Use and Development Plan Update—Keauhou Aquifer System (2017) plan. The maximum daily amount is accounted for in the plan's refined water demand scenarios and projections and would not adversely impact groundwater resources within the Keauhou Aquifer System. Nor would it adversely affect in any way cultural uses and rights or other public trust purposes. Instead, it would help facilitate the development of Laʻi ʻŌpua, which is designed to promote cultural education, self-sufficiency, and provide additional homesteading opportunities for more native Hawaiian families. Thus, the Proposed Action is consistent with the Hawaiʻi Water Plan and HRS §174C.

4.4 DEPARTMENT OF HAWAIIAN HOME LANDS (DHHL) PLANS

DHHL's planning system includes three tiers. The first tier (Tier 1) is the General Plan, which identifies statewide goals and policies to guide land management and programs. Tier 2 includes Strategic Program Plans, which focus on statewide programs and policies, as well as Island Plans with longer-term, island-specific land use goals based on the General Plan. Tier 3 includes Regional Plans and Area Development Plans, which identify and address issues and opportunities relative to existing homestead communities and future development in that region.

4.4.1 DHHL General Plan

The DHHL General Plan Update was adopted in 2022 as an update of the DHHL General Plan, which was initially adopted in 2002. The DHHL General Plan sets the vision and establishes goals and policies to guide the discussions and decision-making of the Hawaiian Homes Commission and the DHHL plans, programs, and policies for the next 20 years, taking the

Trust to the planning horizon of 2040. The DHHL General Plan Update includes seven (7) priority topic areas under which goals, policies and monitoring and evaluation metrics are identified. The priority topic areas include:

- Land Use and Water Resources
- Infrastructure
- Housing
- Food Production
- Healthy Communities
- Natural and Cultural Resource Management
- Revenue Generation and Economic Development

The following section includes discussion of the Proposed Action's consistency with applicable goals and policies in the DHHL General Plan Update:

Goal WR-1: *Implement water planning and management strategies that meet current needs and protect water resources for the future.*

Policy:

- ***WR-1A:*** *Implement the goals and policies from the DHHL Water Policy Plan.*
- ***WR-1B:*** *Incorporate watershed protection, water conservation, and recharge considerations in the use of groundwater and other water resources.*

Goal IN-1: *Provide and maintain infrastructure for homestead communities within resource limitations.*

Policy:

- ***IN-1A:*** *Design infrastructure to County standards and transfer systems to the Counties whenever possible for development within Residential, Commercial, and Industrial areas.*
- ***IN-1B:*** *Establish agreements with the Counties around infrastructure standards and licensing processes on Trust lands.*

Discussion:

As discussed in Section 1.3 the Proposed Action is based on the need for additional water sources to service DHHL's planned future homestead development at La'i 'Ōpua. The Proposed Action would develop the additional water sources needed, while falling within the approved water reservations in the Keauhou Aquifer System Area in alignment with the goals and policies of the DHHL General Plan and HHC Water Policy Plan. DHHL will also be developing the wells and transmission lines up to County standards in order to dedicate the infrastructure to the County and obtain additional water credits from the County of Hawai'i.

4.4.2 Hawaiian Homes Commission Water Policy Plan

Program Plans fall under the second tier of DHHL's planning system and are statewide plans that inform or carry out general plan policies and priorities for specific functional areas, including water resource management. In 2014, the Hawaiian Homes Commission adopted

the first policy on managing the water kuleana of DHHL since the passage of the Hawaiian Homes Commission Act. The Water Policy Plan's includes the following vision:

Our vision is that there will be adequate amounts of water and supporting infrastructure so that homestead lands will always be usable and accessible, to enable us to return to our lands to fully support our self-sufficiency and self-determination in the administration of the Hawaiian Homes Commission Act (HHCA), and the preservation of our values, traditions, and culture.

To achieve this, the Water Policy Plan establishes four priority goals:

1. *Affirmatively communicate with beneficiaries regarding water decisions, performance, and water rights on a regional and annual basis.*
2. *Aggressively, proactively, consistently, and comprehensively advocate for the kuleana of the beneficiaries, DHHL, and HHC to water before all relevant agencies and entities.*
3. *Develop and manage a Water Assets Inventory (WAI).*
4. *Support watershed protection and restoration on DHHL lands and source areas for DHHL water.*

Discussion:

The Proposed Action aligns with the vision and priority goals of the HHC Water Policy Plan. Primarily, the Proposed Action supports the vision of providing adequate water and supporting infrastructure to enable native Hawaiian beneficiaries to return to Hawaiian home lands in Laʻi ʻŌpua. Furthermore, by securing additional water supply sources and water credits needed for future residential, community and commercial uses, the Proposed Action is demonstrating DHHL's commitment to advocating for beneficiaries, DHHL and HHC water rights in coordination with CWRM and the County of Hawaiʻi Department of Water. The Proposed Action is included in the Hawaiʻi County Water Use and Development Plan update (2017) and within the sustainable yield of the area's underlying the Keauhou Aquifer System Area as approved by CWRM. Without the Proposed Action, DHHL will not have any water credits available from the County DWS to develop additional homesteading in the North Kona region.

4.4.3 Hawaiʻi Island Plan

Island Plans also are included under the second tier of DHHL's planning system. The Hawaiʻi Island Plan was last updated in 2002 and provides DHHL with a comprehensive assessment of its lands on Hawaiʻi Island and aims to assess and recommend future uses for Hawaiian home lands on Hawaiʻi Island. The plan is organized by regions and identifies DHHL land tracts within those regions for priority development. The Proposed Action is located in the West Hawaiʻi Region and would provide water service to the high priority residential development of Kealakehe.

DISCUSSION

The DHHL Hawaiʻi Island Plan designated development of the residential land holdings within the Villages of Laʻi ʻŌpua as a priority and the Proposed Action will support this by

developing the water resources and connect to infrastructure necessary to develop homesteads and other DHHL lands in the region.

4.4.4 Kealakehe- Laʻi ʻŌpua Regional Plan

The third tier of the DHHL planning system includes Regional Plans, which assess land use development factors, identify issues and opportunities, and identify the region's top priority projects slated for implementation within the next five years. The Kealakehe-Laʻi ʻŌpua Regional Plan update was approved by HHC in 2020, which updates the previous 2009 Regional Plan. The *North Kona Water Source Development and Storage* priority project is included in the 2020 Regional Plan Update and includes four objectives:

- Develop additional water supply from sources within the region. In order to meet the various needs of the community, additional water credits must be secured for the desired expansion of the region. DHHL currently has enough water credits to complete its on-going development projects in the area (Village 4 ʻĀkau and Hema). In order to achieve the community's vision for the region, DHHL will need to secure additional water credits to support these development projects.
- Support Community Economic Development Projects. DHHL has identified lands that would be suitable for commercial uses in order to increase the economic self-sufficiency of the homesteads within the region. In order for these lands to be utilized for economic development projects, there must be appropriate allocation of water credits for these projects. As DHHL currently does not have any additional water credits available for development projects within this region, it is important that DHHL pursue actions to secure additional water credits to support these potential development projects.
- Build more homes for beneficiaries. DHHL has enough water credits to complete the Village 4 ʻĀkau and Hema developments. The remaining Villages illustrated in the Villages of Laʻi ʻŌpua Master Plan do not currently have water credits available for development. The community identifies providing additional homesteading opportunities for more native Hawaiian families in the Kealakehe-La´i ´Ōpua region as a priority in the vision for the region. In order for DHHL and the community to reach this vision, DHHL must secure additional water credits to support these developments.
- Develop Community Facilities to support the homesteads. Recent community input has identified a concern that a vibrant and thriving community requires more than just homes and infrastructure. The community wants to ensure that areas for parks and recreation are included in the desired expansion of the region. In order to provide appropriate recreational spaces for the community, DHHL must secure additional water credits to support these needs. The Implementation Action Steps identified below concentrate on actions needed to develop wells on the property of the two private landowners.

Discussion:

The Proposed Action is consistent with the Kealakehe-Laʻi ʻŌpua Regional Plan. The Proposed Action is included as a priority project and as such implementation of the project directly aligns with the vision and objectives of the Regional Plan.

4.5 COUNTY OF HAWAIʻI PLANS AND POLICIES

4.5.1 County of Hawaiʻi General Plan

The County of Hawaiʻi General Plan (General Plan) is the County's long-range comprehensive plan that guides the pattern of future developments for the island. It provides a sound growth strategy that directs future opportunities related to land use, zoning amendments and capital expenditures. The General Plan was last updated and adopted by ordinance in 2005, and is organized into 13 elements, with policies, objectives, standards and principles for each element. The County of Hawaiʻi is in the process of updating the General Plan through 2045, and the revised version the Draft General Plan 2045 was released for public comment in September 2023. The Final Revised General Plan Update is still pending final approval from the County Council. As such, the Proposed Action must address its consistency with the current 2005 amended version of the County of Hawaiʻi General Plan. Table 4-2 assesses the Proposed Action's consistency with relevant goals and policies of the presently adopted General Plan.

Table 4.2: Proposed Action's Conformance to the General Plan

Policy Description	
Economic	
Goal (b)	Economic development and improvement shall be in balance with the physical, social, and cultural environments of the island of Hawaiʻi.
Goal (c)	Strive for diversity and stability in the economic system.
Environmental Quality	
Goal (b)	Maintain and, if feasible, improve the existing environmental quality of the island.
Goal (c)	Control pollution.
Policy (a)	Take positive action to further maintain the quality of the environment.
Policy (c)	Advise the public of environmental conditions and research undertaken on the island's environment.
Flooding and Other Natural Hazards	
Goal (e)	Reduce surface water and sediment runoff.
Policy (q)	Consider natural hazards in all land use planning and permitting.
Historic Sites	

Policy Description	
Policy (c)	Require both public and private developers of land to provide historical and archaeological surveys and cultural assessments, where appropriate, prior to the clearing or development of land when there are indications that the land under consideration has historical significance.
Policy (g)	Collect and distribute historic sites information of public interest and keep an inventory of sites.
Policy (h)	Aid in the development of a program of public education concerning historic sites.
	Public Utilities – Water
Policy (a)	Water system improvements shall correlate with the County's desired land use development pattern.
Policy (b)	All water systems shall be designed and built to Department of Water Supply standards.
Policy (c)	Improve and replace inadequate systems.
Policy (d)	Water sources shall be adequately protected to prevent depletion and contamination from natural and man-made occurrences or events.
Policy (e)	Water system improvements should be first installed in areas that have established needs and characteristics, such as occupied dwellings, agricultural operations and other uses, or in areas adjacent to them if there is need for urban expansion.
Policy (f)	A coordinated effort by County, State and private interests shall be developed to identify sources of additional water supply and be implemented to ensure the development of sufficient quantities of water for existing and future needs of high growth areas and agricultural production.
Policy (k)	Promote the use of ground water sources to meet State Department of Health water quality standards.
	Land Use – Agriculture
Policy (i)	Designate, protect and maintain important agricultural lands from urban encroachment.
Policy (j)	Ensure that development of important agricultural land be primarily for agricultural use.

The General Plan identifies actions to implement these policies in the North Kona District and specifically directs DWS to:

- Continue to pursue groundwater source investigation, exploration, and development in areas that would provide for anticipated growth and that would provide for an efficient and economic system operation.

Discussion:

As discussed in Section 1.5, the Proposed Action will construct two new potable water wells and ancillary improvements that will provide the DWS North Kona Water System with a new source of drinking water. The construction of the wells will have little direct impact on the General Plan's goals and policies, however, the secondary impacts from creating a new water source may provide new opportunities for economic development for the County, specifically in the Laʻi ʻŌpua development, where the native Hawaiian population may stand to benefit.

Prior to the construction of the Proposed Action, BMPs will be implemented to protect the environment from drainage, runoff, and noise, which includes applying for NPDES, noise, and grading, grubbing and stockpiling permits. An LRFI, Ka Paʻakai Framework Analysis, flora and fauna surveys were conducted in addition to the Division of Forestry and Wildlife (DOFAW) and SHPD being consulted with in preparation of this EA. Thus, the Proposed Action is consistent with the General Plan.

4.5.2 The Kona Community Development Plan – Amended 2019

The Kona Community Development Plan (CDP) was adopted by the County in September 2008 and amended in 2019. It expands on the broad development patterns set out in the General Plan and provides goals and actions for public facilities, infrastructure, and community services. The vision of the CDP is "a more sustainable Kona characterized by a deep respect for the culture and the environment and residents that responsively and responsibly accommodate change through an active and collaborative community."

Discussion:

The Proposed Action will be incorporated into the North Kona Water System and as a utility will support the planned growth of Kona as provided in the County's General Plan Land Use Allocation Pattern Guide and the Kona CDP's Official Kona Land Use Map. The Proposed Action is intended to develop a water source for the future development of Laʻi ʻŌpua, which is located within the Kona Urban Area where the CDP directs Kona's future development. Therefore, the Proposed Action is consistent and actively supports the CDP.

5.0 FINDINGS AND DETERMINATION

5.1 DETERMINATION

The purpose of this Final EA is to identify and consider the significance of primary, secondary, cumulative, and short and long-term effects of the Proposed Action on the environment. HAR §11-200.1-2 defines "significant effect" as the sum of effects on the quality of the environment. The Proposing Agency's review and evaluation of the proposed action's effect on the environment would result in a determination whether: 1.) the action would have a significant impact on the environment and an Environmental Impact Statement Preparation Notice should be issued, or 2.) the action would not have a significant impact on the environment warranting a Finding of No Significant Impact (FONSI).

Based on the criteria set forth in HAR §11-200.1-13 and discussed in Section 5.2, the Proposed Action would not have a significant effect on the environment. Therefore, through its review of every phase of the action, and evaluation of the overall impacts and proposed mitigation measures, DHHL is filing a FONSI for the Proposed Action.

5.2 SIGNIFICANCE CRITERIA FINDINGS

The Proposed Action was assessed in accordance with the 13 Significance Criteria set forth in HAR §11-200.1-13. The Proposed Action's relationship to each criterion is discussed below:

(1) Irrevocably commits a natural, cultural, or historic resource.

The Proposed Action would commit high-level groundwater resources for residential and other development-related uses in the North Kona region. As described in Section 3.4.7, groundwater withdrawals associated with Phase II would be within the Commission on Water Resource Management's allocations and well below the Keauhou Aquifer System Area's sustainable yield, even when considered cumulatively with existing and reasonably foreseeable future wells. Accordingly, the Proposed Action would be consistent with existing conditions and would have minimal impacts on the KASA or its long-term sustainability. Contractors would adhere to the mitigation measures identified in Section 3.5.3 to avoid potential impacts to federal- or state-listed species should such species occur at the Project Site.

HRS §6E consultation with SHPD will be completed prior to the start of construction. Mitigation measures discussed in Section 3.6.4 and any proposed by SHPD would be implemented to avoid or minimize impacts to any cultural resources or historic properties identified in the Project Site.

(2) Curtail the range of beneficial uses of the environment.

The Proposed Action would not curtail the range of beneficial uses of the environment. The wells will be sited in an area within the Project Site that produces the least amount of impacts on the site's environment. While it will result in reducing the amount of groundwater available within the KASA, the extraction rate would not cause the aquifer to exceed its

sustainable yield as discussed in Sections 3.4.7. Nor would the Proposed Action contribute cumulatively to long-term adverse impacts on the KASA, as discussed in Section 3.14.2.

(3) Conflict with the State's environmental policies or long-term environmental goals established by law.

The Proposed Action would not conflict with the State's environmental policies or long-term environmental goals established by law as discussed in Chapter 5. BMPs and other mitigation measures discussed throughout Chapter 3 would be implemented to avoid or minimize potential impacts associated with the Proposed Action during its construction and operation.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.

The Proposed Action would not have direct substantial adverse effects on the economic welfare, social welfare or cultural practices of the community and State. It would create secondary positive impacts on the State's social and economic welfare by establishing a new potable water source for the development of Laʻi ʻŌpua. This would allow DHHL to provide over 1,000 single family homes, 300 multi-family units, multiple park spaces, a hospital, and commercial centers for native Hawaiian families. Thus, creating a long-term positive effect on the economic and social welfare of the community and State. However, these positive impacts would not be substantial enough to have a direct effect on the level of commerce in Kailua-Kona, the primary commerce center for the region.

The Proposed Action would not substantially impact traditional cultural practices. As discussed in Section 3.7, there are no traditional cultural properties onsite but there are cultural practices and associated resources in the vicinity of the Project Site. Mitigation measures discussed in Section 3.7.1 would be implemented to avoid or reduce any potential impacts to cultural or historic resources that may occur and protect the exercise of traditional and customary native Hawaiian rights in the Project Site.

(5) Have a substantial adverse effect on public health.

The Proposed Action would not have a substantial adverse effect on public health. A Well Construction and Pump Implementation Permit will be obtained for the Proposed Action prior to construction. An engineering report will be submitted to and approved by the DOH CWB before placing the Proposed Action online within the DWS's North Kona Water System. The report will identify all potential sources of contamination, evaluate alternative controls which could be implemented to reduce or eliminate contamination potential, and include a water quality analysis for all regulated contaminants.

Short-term impacts on noise levels and air quality would be minimized by phasing construction of the wells and implementing BMPs to maintain compliance with applicable County and State policies and regulations as discussed in Sections 3.9 and 3.11.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities.

The Proposed Action would not result in adverse secondary impacts to the social environment or on public facilities. The Proposed Action would facilitate the development of Laʻi ʻŌpua with approximately 1,000 single family homes and 300 multi-family units for

DHHL beneficiaries. This would result in secondary impacts such as increasing the population within the Kealakehe Census Tract, which contains Laʻi ʻŌpua.

As discussed within the *DHHL Kealakehe-Laʻi ʻŌpua Regional Plan*, the areas proposed for Laʻi ʻŌpua are consistent with the State Land Use Districts, County General Plan designations, and County Zoning Code. Where there may be land use inconsistencies, DHHL may preempt these pursuant to Hawaiian Homes Commission Act Section 204. Further, the areas are located within the North Kona CDP's Urban Area, where the CDP directs Kona's future growth. Therefore, secondary population change associated with the Proposed Action would be the result of planned and orderly development consistent with land use planning policies and ordinances.

The Proposed Action would positively affect the North Kona Water System by creating a redundant water source in case of pump failures at other nearby wells and would not impact other public facilities. As discussed in Section 3.14, the future development of Laʻi ʻŌpua would not adversely affect public facilities and infrastructure.

(7) Involve a substantial degradation of environmental quality.

The Proposed Action would not degrade environmental quality at the Project Site or surrounding area. The wells will be sited within the Project Site in an area that produces the least amount of impacts. Mitigation measures proposed throughout Chapter 3 would be implemented to avoid or minimize impacts on the site's environment.

While the Proposed Action will result in reducing the amount of groundwater available within the KASA, the extraction rate would not cause the aquifer to exceed its sustainable yield as discussed in Section 3.4 Nor would it contribute cumulatively to long-term adverse impacts on the KASA as discussed in Section 3.14.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions.

The Proposed Action will not contribute cumulatively to substantial adverse effects upon the environment, as discussed in Section 3.14. While the Proposed Action is intended to develop a new water source that would result in the future development of Laʻi ʻŌpua, one third of the resulting groundwater would be used by the DWS for municipal uses in the North Kona Water System. Additionally, water use within Laʻi ʻŌpua has been accounted for in the Hawaiʻi Water Plan as discussed in Section 3.4. Thus, the Proposed Action would facilitate but does not involve a commitment for larger actions.

(9) Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat.

The Proposed Action would not have a substantial adverse effect on rare, threatened, or endangered species or their habitats. No critical habitat occurs within the Project Site, and mitigation measures and BMPs discussed in Section 3.5 would be implemented during construction and operation of the Proposed Action to minimize impacts to species observed or with the potential to occur at the Project Site.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels.

The Proposed Action would not have a substantial adverse effect on air or water quality or ambient noise levels. The Proposed Action will be constructed over two phases and a Well Construction and Pump Installation Permit will be obtained prior to construction. During Phase I, a single exploratory well will be drilled and then tested to ensure its water quality meets HAR §11-20-29 Rules Relating to Public Water Systems standards. If the quality and quantity of sampled water are satisfactory, then the Proposed Action will proceed to Phase II. Additional mitigation measures discussed in Section 3.4would be implemented to avoid impacts on water quality during construction and operation of the Proposed Action.

Short-term impacts to noise levels and air quality would be minimized by phasing construction of the wells, implementing BMPs and obtaining a Community Noise Permit and Noise Variant Permit, if applicable, to maintain compliance with relevant County and State policies and regulations as discussed in Sections 3.9 and 3.11.

(11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

As discussed in Sections 3.3, 3.4 and 3.12, the Proposed Action will not have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive or naturally hazardous area. The Project Site is located between approximately 1 to 2 miles inland, outside the coastal zone, sea level rise exposure area, tsunami zone and erosion-prone areas. No surface water features are present within the Project Site, thus there is no risk for flooding under normal conditions.

The entire island of Hawaiʻi, including the Project Site, is located within the International Building Code (IBC) Seismic Zone 4 which have the highest potential for seismic induced ground movement. Therefore, the Proposed Action will comply with IBC Seismic Zone 4 building standards to reduce potential impacts created by earthquakes or seismic induced ground disturbances.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in County or State plans or studies.

The Proposed Action would not have a substantial adverse effect on scenic vistas or viewplanes surrounding the Project Site. As discussed in Section 3.7, the Project Site is not in or near visually sensitive areas or areas of high scenic value. The tallest feature of the Proposed Action is less than 40 feet in height and would be surrounded by rows of coffee trees limiting its visibility mauka of the Project Site

(13) Require substantial energy consumption or emit substantial greenhouse gases.

The Proposed Action will not require substantial amounts of energy during construction or operation, nor will it emit substantial amounts of greenhouse gases. As discussed in Section 3.13.5 the Proposed Action may require between 537 and 4,540 kWh per day of operation which is anticipated to be within HELCO's capacity without adversely affecting service to other customers. Assuming 43 percent of this energy requirement is provided by renewable sources, the Proposed Action could potentially generate between 107 and 908 metric tons of C02 per year. This is close to the same amount as powering between 14 and 121 single-

family homes during that same timeframe. However, this amount of C02 per year will likely be reduced over time as the county continues transitioning to a renewable energy resource portfolio standard to reach "net-negative" by 2045. Thus, the Proposed Action may generate little to no C02 within the project's lifespan.

6.0 AGENCIES AND ORGANIZATIONS CONSULTED

As a requirement of HAR §11-200.1-18, this chapter identifies agencies, citizen groups, and individuals solicited in the preparation of the Draft and Final EA. Consultation with various government agencies, officials, and community members were undertaken to obtain information on agency requirements and comments about potential community issues so that they could be addressed in this Final EA. The consultation involved distributing a pre-assessment consultation letter and notice of availability of the Draft EA in the State Office of Planning and Sustainable Development, Environmental Review Program's (ERP) *The Environmental Notice* for public comment. These consultations are summarized in this chapter.

6.1 PRE-ASESSMENT CONSULTATION

Consultation involved distributing a pre-assessment consultation letter with supporting documentation to various parties requesting their written comments. A listing of those parties consulted is below and those providing written responses have been identified with an "✓" symbol.

Copies of written comments received and responses to these comments are included in **Appendix A**.

Federal Agencies
U.S. Fish and Wildlife Service
National Parks Service
✓ United States Department of Agriculture – Rural Development

State Legislature
State Senate District 3, Senator Dru Mamo
State House District 7, Representative Nicole E. Lowen

State Agencies
Department of Agriculture
Department of Business, Economic Development & Tourism – Office of Planning and Sustainable Development (OPSD)
Office of the Hawaiian Affairs
Office of the Governor – West Hawai'i Representative
Department of Health (DOH)
DOH Office of Environmental Quality Control
Department of Transportation
Department of Land and Natural Resources (DLNR) – Board of Land and Natural Resources

State Agencies (cont.)
✓ DLNR Commission on Water Resource Management
DLNR State Historic Preservation Division – Administrator
DLNR State Historic Preservation Division – Hawai'i Island Burial Council
DLNR Po'o o Moku Keawe
DLNR Division of Forestry and Wildlife

County Agencies
Hawai'i County Fire Department
County of Hawai'i Council
Planning Department
Department of Public Works
✓ Department of Water Supply
✓ Hawai'i County Police Department

Other Interested Parties
La'i 'Ōpua Community Association
✓ Hawaiian Electric Company
✓ Hawaiian Telecom
Spectrum / Charter Communications
Hawai'i Gas

6.2 DRAFT EA COMMENTS

Consultations with agencies and other interest parties were conducted to obtain comments on the Draft EA. Notice of availability of the Draft EA for the project was published in the December 8, 2025 issue of the State Office of Planning and Sustainable Development, ERP's *The Environmental Notice* for public comment. The publication of the Draft EA initiated a 30-day public comment period that ended on January 7, 2026.

Notice of availability of the EA was also distributed via email to the agencies and other interested parties listed below. The notice contained a weblink to access the electronic version of the Draft EA hosted on the ERP website. Hardcopies of the EA along with a copy of the notice were also delivered to the Kailua-Kona Public Library and Hawai'i State Library to be made available to the public and recorded by the Hawai'i Documents Center.

A listing of those parties consulted is below and those providing written responses have been identified with an "✓" symbol.

A summary table and copies of written comments received are included in **Appendix A.**

Federal Agencies
- ✓ U.S. Fish and Wildlife Service
- National Parks Service
- United States Department of Agriculture – Rural Development

State Legislature
- State Senate District 3, Senator Dru Mamo
- State House District 7, Representative Nicole E. Lowen

State Agencies
- Department of Agriculture
- ✓ State Office of Planning and Sustainable Development (OPSD)
- ✓ Office of the Hawaiian Affairs
- Office of the Governor – West Hawai'i Representative
- ✓ Department of Health (DOH), Clean Air Branch
- DOH Office of Environmental Quality Control
- ✓ Department of Transportation, Highways
- Department of Land and Natural Resources (DLNR) – Board of Land and Natural Resources
- ✓ DLNR Commission on Water Resource Management

State Agencies (cont.)
- ✓ DLNR Engineering Division
- DLNR State Historic Preservation Division
- DLNR State Historic Preservation Division – Hawai'i Island Burial Council
- DLNR Po'o o Moku Keawe
- DLNR Division of Forestry and Wildlife

County Agencies
- Hawai'i County Fire Department
- County of Hawai'i Council
- ✓ Planning Department
- Department of Public Works
- Department of Water Supply
- Hawai'i County Police Department

Other Interested Parties
- La'i 'Ōpua Community Association
- ✓ Hawaiian Electric Company
- Hawaiian Telecom
- Spectrum / Charter Communications
- Hawai'i Gas
- ✓ Cory Harden

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8.0 LIST OF PREPARERS

The following is a list of Bowers + Kubota Consulting staff who contributed in the development of this EA.

Name	Role	Years of Experience	Still With Company
Jared Chang	Planning Group Manager	19	Yes
Malachi Krishok	Planning Project Manager	10	Yes
Allen Kam	Planning Department Senior Manager	24	No
Matthew Kodama	Assistant Project Manager—Secondary Author	11	No
Sarah Harris	Senior Planner –Primary Author	9	No
Umeyo Momotaro	Planner—Support Staff	4	No
Veronica Leon	Assistant Planner—Support Staff	2	No
Ryan Andersen	Assistant Planner—Support Staff	1	No

APPENDIX A

Pre-Assessment Consultation & DEA Comments

BOWERS + KUBOTA

June 10, 2025

1807005.00 / 25P-038

[ADDRESS]

Subject: Pre-Assessment Consultation for Environmental Assessment, HRS Chapter 343 Proposed DHHL Kona Wells Project – Kamehameha Schools Sites Tax Map Keys: TMKs: [3] 7-8-004:013, 7-8-004:014, 7-8-004:015 & [3] 7-8-009:054, 7-8-009:077, 7-8-009:014, 7-8-009:032 Hōlualoa, Hawai‘i Island, Hawai‘i

Pursuant to Chapter 343, Hawai‘i Revised Statutes (HRS), the State of Hawai‘i, the Department of Hawaiian Home Lands (DHHL) is preparing an Environmental Assessment (EA) for the development of a new potable water source in Hōlualoa, Hawai‘i Island. The purpose of this project is to provide a sufficient water source for future homestead development and community uses on DHHL's lands in the Kealakehe-La‘i‘ Ōpua region located approximately six miles to the north of the Tank Site on DHHL land in Kealakehe. This letter is being provided for the purpose of conducting pre-assessment consultation to solicit comments on the project that will be considered in the preparation of a Draft EA. We appreciate receiving comments you may have regarding the subject project or areas of concern that the Draft EA should address.

The project site is divided into two locations. At the first location, a new potable water well and two-million-gallon storage tank are proposed on portions of 78-1136 Bishop Road, Hōlualoa, HI 96725, Keauhou Ahupua‘a (TMKs 7-8-004:013, 014 & 015 (por.)) (hereafter the "Well Site"). At the second location, two existing water storage tanks will be upgraded with a two-million-gallon storage tank and a .5-million-gallon storage tank at 78-6891 and 78-6887 Walua Road, Kahalu‘u-Keauhou, HI 96740, Kahalu‘u Ahupua‘a (TMKs 7-8-009:054, 077, 014 (por.) & 032 (por)) (hereafter the "Tank Site").

Water transmission pipeline improvements are proposed to be installed to connect the Well Site to the municipal water main under Māmalahoa Highway. A second water transmission pipeline is proposed to connect the Tank Site to the Māmalahoa Highway water main. The water transmission pipelines will be 16" in diameter and between the two

sites, roughly one mile of new transmission pipelines will be installed. Efforts will be made to install all new pipeline in existing utility easements and the Māmalahoa Highway right-of-way parallel to existing pipeline, where applicable.

If you wish to provide preliminary input on the project at this time or be a consulted party while the EA is being prepared, please review the attached maps and submit your written comments to the address below within 30 days of receipt of this letter.
Thank you for participating in the process. If you have any questions, please contact me at (808) 836-7787 ext 340 or via email at mkrishok@bowersandkubota.com.

Bowers + Kubota Consulting Attn: Malachi Krishok
2153 N King Street, Suite 200
Honolulu, HI 96819-4554
Email: mkrishok@bowersandkubota.com

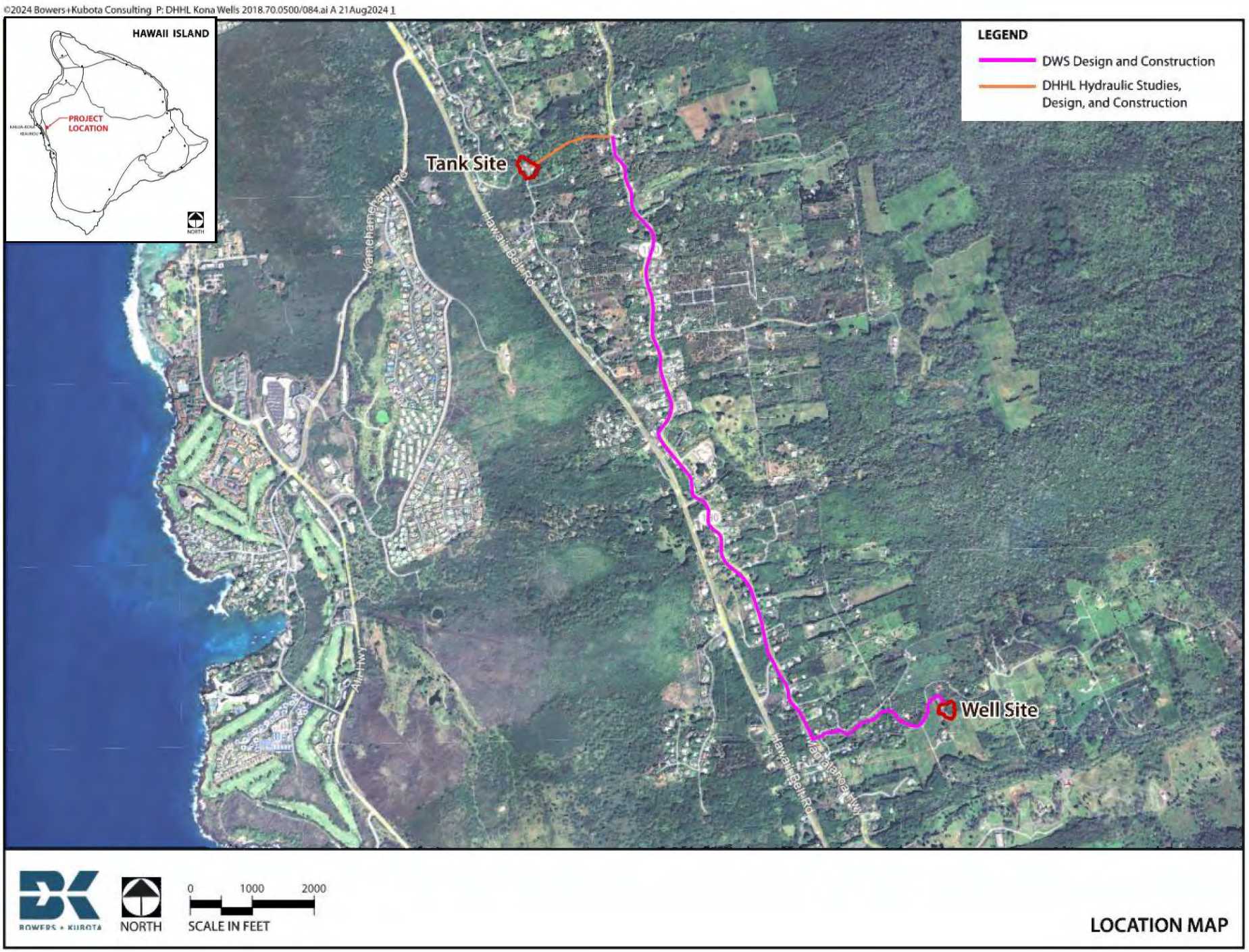
Sincerely yours,
Bowers + Kubota Consulting, Inc.

Malachi Krishok
Planner

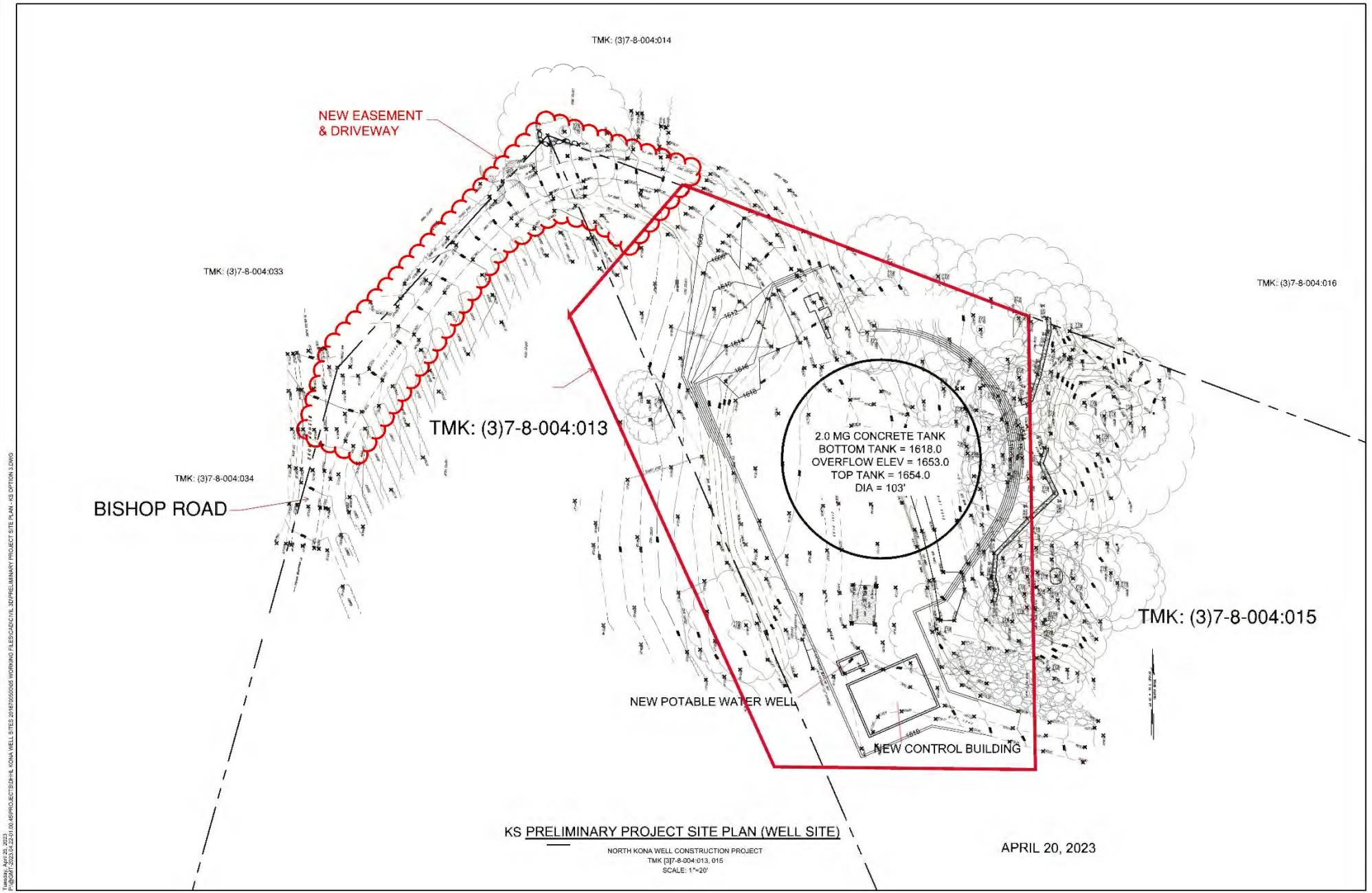
MK:kn

Enclosures:
Location Map
Well Site Plan
Tank Site Plan

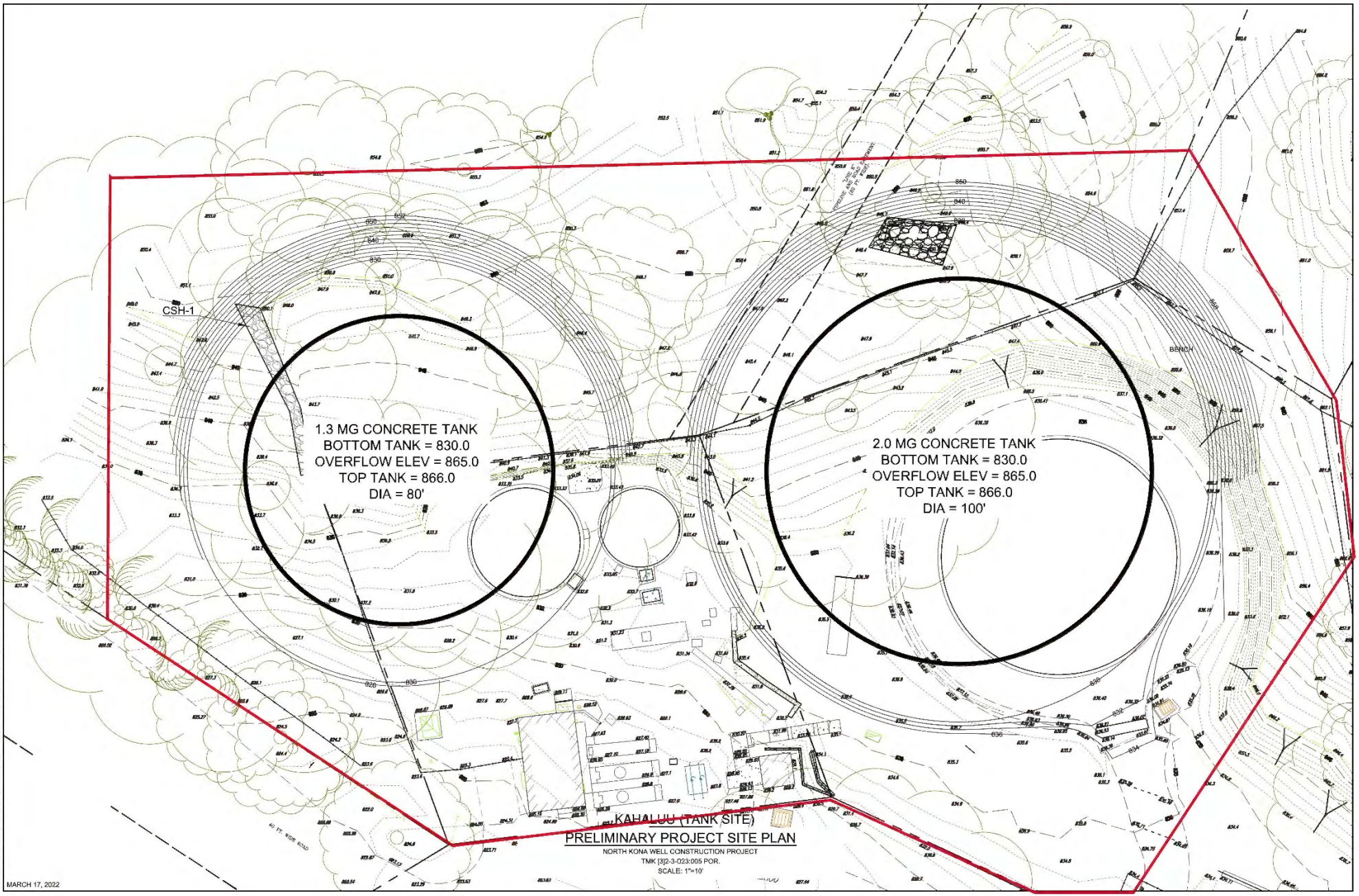
ITEM G-3 EXHIBIT A



ITEM G-3 EXHIBIT A



ITEM G-3 EXHIBIT A



Thursday, March 17, 2022
P:\PROJECTS\2018_KONA WELL SITES 2018\70060\05 WORKING FILES\CAD\CIVIL 3D\PRELIMINARY PROJECT SITE PLAN - KAHALUU OPTION 4.DWG

USDA
United States Department of Agriculture

June 24, 2025 **VIA EMAIL: mkrishok@bowersandkubota.com**

Mr. Malachi Krishok
Planner, Bowers + Kubota Consulting, Inc.
2153 N King Street, Ste. 200
Honolulu, HI 96819-4554

RE: Pre-Assessment consultation for Environmental Assessment
Porposed DHHL Kona Wells Project
Kamehameha Schools TMKs: (3)7-8-004:013, :014, :015
& (3)7-8-009:054, :077, :014, :032
Holualoa, Hawaii Island, Hawaii

Dear Mr. Krishok,

This letter is in response to your invitation to provide preliminary input or be a consulted party from the United States Department of Agriculture, Rural Development (Agency). Shall the owner of the facility decide to apply for financial assistance from any of our Agency's programs, the applicant/owner and the project will need to comply with environmental requirements set forth in 7 CFR Part 1970 – Environmental Policies and Procedures.

Thank you for the opportunity to comment on your project. Please do not hesitate to contact me by phone at (808) 933-8310 or by email at brandon.ando@usda.gov if you have any questions or need further information.

Sincerely,

Brandon Ando
Environmental Protection Specialist
Hawaii State Office

Rural Development
154 Waianuenue Avenue, Rm 311, Hilo, Hawaii 96720
Voice (808) 933-8380 • Fax 1-855-878-2460

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If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form (PDF), found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program.intake@usda.gov.

ITEM G-3 EXHIBIT A

C. Kimo Alameda, Ph.D.
Mayor

William V. Brilhante Jr.
Managing Director

Benjamin T. Moszkowicz
Police Chief

Reed K. Mahuna
Deputy Police Chief

County of Hawai`i

POLICE DEPARTMENT

349 Kapi'olani Street • Hilo, Hawai'i 96720-3998
(808) 935-3311 • Fax (808) 961-2389

July 3, 2025

Bowers + Kubota Consulting, Inc.
Attn: Malachi Krishok
2153 N King Street, Suite 200
Honolulu, HI 96819-4554
Email: mkrishok@bowersandkubota.com

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR ENVIRONMENTAL ASSESSMENT, HRS CHAPTER 343 PROPOSED DHHL KONA WELLS PROJECT – KAMEHAMEHA SCHOOLS SITES TAX MAP KEYS: TMKS: [3] 7-8-004:013, 7-8-004:014, 7-8-004:015 & [3] 7-8-009:054, 7-8-009:077, 7-8-009:014, 7-8-009:032 HŌLUALOA, HAWAI'I ISLAND, HAWAI'I

Aloha Malachi Krishok:

This is in response to your letter dated June 10, 2025, regarding a Pre-Assessment Consultation for Environmental Assessment, HRS Chapter 343 Proposed DHHL Kona Wells Project in Hōlualoa, Hawai'i.

Our staff has reviewed your letter and has no comments or objections to offer at this time.

If you have any questions, or would like to provide us with more information, please contact Captain Calvin Delaries, Jr., Commander of the Kona District, at calvin.delaries@hawaiicounty.gov or via phone at (808) 326-4646, Extension 299.

Sincerely,

BENJAMIN T. MOSZKOWICZ
POLICE CHIEF

#4

CHAD BASQUE
ASSISTANT POLICE CHIEF
AREA II OPERATIONS

CD/jaj
25HQ0551

ITEM G-3 EXHIBIT A

DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

July 10, 2025

Malachi Krishok
Bowers + Kuboita Consulting
2153 N King Street, Suite 200
Honolulu, HI 96819

Dear Mr. Krishok:

Subject: Hawai'i Revised Statues, Chapter 343, Environmental Assessment
Pre-Assessment for DHHL Kona Wells Project
Kamehameha Schools Sites
Tax Map Key 7-8-004:013, 7-8-004:014, 7-8-004:015, 7-8-009:014, 7-8-009:032, 7-8-009:054, & 7-8-009:077

This is to confirm that the Department of Water Supply has been in discussions with DHHL regarding the scope of this project.

Should there be any questions, please contact Ms. Robyn Matsumoto of our Water Resources and Planning Branch at (808) 961-8070, extension 255.

Sincerely yours,

Keith K. Okamoto, P.E.
Manager-Chief Engineer

RM:klcm

ITEM G-3 EXHIBIT A

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

June 19, 2025

MEMORANDUM

FROM: ~~TO:~~

DLNR Agencies:
___Div. of Aquatic Resources (kendall.l.tucker@hawaii.gov)
___Div. of Boating & Ocean Recreation richard.t.howard@hawaii.gov)
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks (curt.a.cottrell@hawaii.gov)
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
__Office of Conservation & Coastal Lands (sharleen.k.kuba@hawaii.gov)
_X_ Land Division – Hawaii District (candace.m.martin@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: ~~FROM:~~ Ian C. Hirokawa, Acting Land Administrator

SUBJECT: Pre-assessment consultation for EA for Water Tank and Water Well Improvements in Holualoa, Kona, Hawaii

LOCATION: Holualoa, Kona, Hawaii; Tank Site TMK: (3) 7-8-009:014, - :032, - :054, - :077; (3) 7-8-004:013, - :014, - :015 (por.)

APPLICANT: Malachi Krishok, Planner, Bowers + Kubota, Consultants on Behalf of DHHL, applicants

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **July 11, 2025.** If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Raymond Severn at raymond.severn@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(✓) Comments are included/attached.

Signed:
Print Name: Dina U. Lau, Acting Chief Engineer
Division: Engineering Division
Date: Jul 11, 2025

Attachments
cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Ian C. Hirokawa

Ref: Pre-assessment consultation for EA for Water Tank and Water Well Improvements in Holualoa, Kona, Hawaii
Location: Holualoa, Kona, Hawaii
TMK(s): (3) 7-8-009:014, - :032, - :054, - :077;(3) 7-8-004:013, - :014, - :015 (por.)
Applicant: Malachi Krishok, Planner, Bowers + Kubota, Consultants on Behalf of DHHL, applicants

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). Be advised that 44CFR, Chapter 1, Subchapter B, Part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible for researching the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (fhat.hawaii.gov) could also be used to research flood hazard information.

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4849.

Signed: _____
DINA U. LAU, ACTING CHIEF ENGINEER

Date: Jul 11, 2025

ITEM G-3 EXHIBIT A

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

June 19, 2025

MEMORANDUM

TO: **DLNR Agencies:**
___Div. of Aquatic Resources (kendall.l.tucker@hawaii.gov)
___Div. of Boating & Ocean Recreation richard.t.howard@hawaii.gov)
_X_Engineering Division (DLNR.ENGR@hawaii.gov)
_X_Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks (curt.a.cottrell@hawaii.gov)
_X_Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
__Office of Conservation & Coastal Lands (sharleen.k.kuba@hawaii.gov)
_X_Land Division – Hawaii District (candace.m.martin@hawaii.gov)
_X_Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

FROM: Ian C. Hirokawa, Acting Land Administrator

SUBJECT: Pre-assessment consultation for EA for Water Tank and Water Well Improvements in Holualoa, Kona, Hawaii

LOCATION: Holualoa, Kona, Hawaii; Tank Site TMK. (3) 7-8-009:014, - :032, - :054, - :077; (3) 7-8-004:013, - :014, - :015 (por.)

APPLICANT: Malachi Krishok, Planner, Bowers + Kubota, Consultants on Behalf of DHHL, applicants

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **July 11, 2025**. If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Raymond Severn at raymond.severn@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
(X) We have no comments.
( ) We have no additional comments.
( ) Comments are included/attached.

Signed:
Print Name: Candace Martin
Division: Land-HDLO
Date: July 8, 2025

Attachments
cc: Central Files

ITEM G-3 EXHIBIT A

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

July 11, 2025

Malachi Krishok, Planner
Bowers + Kubota Consulting
2153 N King Street Suite 200
Honolulu Hawai'i 96819-4554

via email: mkrishok@bowersandkubota.com

SUBJECT: Pre-Assessment Consultation for Environmental Assessment, HRS Chapter 343 Proposed DHHL Kona Wells Project: TMKs: (3) 7-8-004:013, 7-8-004:14, 7-8-004:015 & (3) 7-8-009:054, 7-8-009:077, 7-8-009:014, 7-8-009:032 Holualoa, Hawaii

Dear Mr. Krishok:

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request to the DLNR Divisions for their review and comments.

Currently, we have received two responses: 1) from the Land Division – Hawaii District dated July 8, 2025; and 2) from the Engineering Division dated July 11, 2025.

If you have any questions, please contact Raymond Severn at (808) 587-0554 or email raymond.severn@hawaii.gov.

Sincerely,

Ian C. Hirokawa
Acting Land Administrator

Enclosures
cc: Central Files

ITEM G-3 EXHIBIT A

From: HT-Plan Reviews
To: Malachi Krishok
Cc: HT-Plan Reviews; Greg Kawachi; Jesse Nagatori
Subject: RE: [External] Pre-Assessment EA - DHHL Kona Wells Project_HT-PR-25062304MA.
Date: Monday, June 23, 2025 8:38:26 PM
Attachments: image001.png

[CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe]

Hi Malachi,

Thank you for your email. This has been assigned for review. Please let us know if you have any further questions.

Please refer the HT APP ID# HT-PR-25062304MA. any future correspondence or inquiries directed to HT regarding this plan review.

Thanks,
MONISHKUMAR T A
Drafter II
email : monishkumar.ashok@hawaiiantel.com

From: Greg Kawachi <Greg.Kawachi@hawaiiantel.com>
Sent: Monday, June 23, 2025 4:50 PM
To: mkrishok@bowersandkubota.com
Cc: HT-Plan Reviews <HT-PlanReviews@hawaiiantel.com>
Subject: RE: Pre-Assessment EA - DHHL Kona Wells Project

From: Greg Kawachi <Greg.Kawachi@hawaiiantel.com>
Sent: Monday, June 23, 2025 4:35 PM
To: mkrishok@bowersandkubot.com
Cc: HT-Plan Reviews <HT-PlanReviews@hawaiiantel.com>
Subject: Pre-Assessment EA - DHHL Kona Wells Project

Hi Malachi,

We are reaching out to confirm receipt of your letter. For future requests, are you able to advise Bowers + Kubota to email any requests to HT-PlanReviews@hawaiiantel.com? Also, you can update the POC to me. Please let me know if you have any further questions. Thank you!

Greg Kawachi
Manager II – Network OSP
O: 808.546.7666
C: 808.779.8324

NOTICE: This message is intended only for the person or entity to which it is addressed and may contain confidential and/or

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ITEM G-3 EXHIBIT A

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
1	State of Hawai‘i Department of Health, Clean Air Branch	12/8/2025	Thank you for the opportunity to review the DHHL North Kona Wells- Keauhou Well Site and Kahaluu storage Tank project – Draft EA (AFNSI) published in the December 08, 2025 edition of The Environmental Notice. Please visit the Clean Air Branch (CAB) website to download and reference our Standard Comments for Land Use Reviews. The link is provided below. https://health.hawaii.gov/cab/clean-air-branch/standard-comments-for-land-use-reviews/	Thank you for your response on behalf of DOH-CAB. The standard comments regarding potential for construction to generate fugitive dust are addressed in section 3.9 of the Final EA, and best management practices will be implemented per HAR §11-60.1-33.
2	HDOT Highways Land Use Permits Review	12/10/2025	HDOT Highways has no comments.	Thank you for your response. Acknowledging that HDOT Highways has no comments.
3	U.S. Fish and Wildlife Services	12/11/2025	After reviewing the draft environmental assessment, I'd like to recommend that the potentials impacts to Hawaiian seabirds are considered. Since the project may at times require 24 hour drilling, night lighting during the seabird fledging season could have adverse impacts to the birds. Additionally, outdoor lighting at any of the facilities could also have adverse impacts. Please consider incorporating the following conservation measures into the project design: • Fully shield all outdoor lights so the bulb can only be seen from below. • Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area. • Avoid nighttime construction during the seabird fledging period, September 15 through December 15. Please feel free to reach out if you have any questions.	Thank you for your email acknowledging receipt of the Draft Environmental Assessment (DEA) for the Department of Hawaiian Home Lands North Kona Wells - Keauhou Well Site & Kahalu‘u Water Storage Tanks project. If you have any further questions or comments, please contact me by email at mkrishok@bowersandkubota.com, or by phone at (808) 521-5361.
4	Hawaiian Electric	12/12/2025		

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
			Thank you for the opportunity to review and comment on the subject project. Hawaiian Electric Company has no objections to its advancement. Please note that if Hawaiian Electric has existing infrastructure on the subject property, continued access will be necessary for the maintenance of our infrastructure. We greatly appreciate your efforts to keep us informed throughout the planning process. As the proposed DHHL North Kona Wells project progresses, we kindly ask that you continue to keep us informed. Please do not hesitate to contact us should you have any questions or require further clarification.	Thank you for your review and comments on behalf of Hawaiian Electric regarding the Draft Environmental Assessment (DEA) for the Department of Hawaiian Home Lands North Kona Wells - Keauhou Well Site & Kahaluʻu Water Storage Tanks project. We acknowledge that HECO has no objections to the project. Existing access for monitoring and maintenance of HECO's infrastructure will be preserved. We will keep you informed and notify you when the Final EA is available. If you have any further questions or comments, please contact me by email at mkrishok@bowersandkubota.com, or by phone at (808) 521-5361. Take care, Malachi
5	Office of Hawaiian Affairs	12/18/2025	The Office of Hawaiian Affairs (OHA) is in receipt of your letter dated December 5, 2025 regarding the Draft Environmental Assessment (DEA) for the Keauhou Well and Kahaluʻu Storage Tank project for the Department of Hawaiian Homelands (DHHL). At this time, we ask that some form of summary of concerns and proposed mitigations be provided to address the section of the Ka Paʻakai Analysis (KPA) that is redacted to protect consultee's intellectual property rights. OHA notes that we are not asking for any proprietary or personal information to	Mahalo for your response and comments regarding the Ka Paʻakai Analysis in the Draft EA for the DHHL Keauhou Well and Kahaluʻu Storage Tank project. Please refer to Section 3.7.1 of the Draft Environmental Assessment (EA), which begins on page 54. This section provides a comprehensive summary of input from interview participants regarding

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
			be shared, but we would like to review identified impacts and proposed mitigations through the KPA to ensure compliance with State of Hawai'i Article XII, Section 7, requirements. Additionally, OHA supports the suggestion in the Archaeological Literature Review and Field Inspection (ALRFI) to conduct archaeological monitoring for all ground disturbing activities. Mahalo for your time. We look forward to receiving the requested information. If you have any questions, please feel free to contact me.	potential impacts on resources, including traditional and customary Native Hawaiian rights. It also outlines feasible actions the Department of Hawaiian Homelands (DHHL) can take to protect identified cultural, historical, and natural resources, as well as to preserve the exercise of traditional and customary Native Hawaiian rights in the affected area. This section of the EA provides a general summary of the information that was redacted from the full appended report. In addition, we appreciate and acknowledge OHA's support of archaeological monitoring for all ground disturbing activities. We hope these responses address the information needed for OHA to complete its review of the Draft EA. Should you require any additional clarification or details, please feel free to contact us.
6	County of Hawai'i Planning Department	12/23/2025	Thank you for your letter dated December 5, 2025, allowing us to participate in the review and comment period for the Draft Environmental Assessment (DEA) for the Department of Hawaiian Home Lands (DHHL) North Kona Wells Project — Keauhou Well Site and Kahalu'u Storage Tanks. The Proposed Action includes the development of a new potable water well source, three concrete water storage tanks, transmission	Mahalo for your December 23, 2025 letter providing the Hawai'i County Planning Department's comments on the Draft Environmental Assessment (DEA) for the Department of Hawaiian Home Lands North Kona Wells Project

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
			piping, pumps, control and chlorination buildings, generator, transformer, electrical upgrades, fencing, and access roads. The proposed improvements will deliver water to residents of the Villages of Laʻi ʻOpua, a DHHL master-planned community, and support ongoing development consistent with the 2020 DHHL Kealakehe — Laʻi ʻOpua Regional Plan. The proposed project footprint extends over multiple parcels. The Well Site is located on portions of Tax Map Key (TMK) (3) 7-8-004: 013, 014, and 015. The Tank Site is located on portions of TMK(s) (3) 7-8-009: 014, 032, 054, and 077. Both the well and tank sites are designated Agricultural by the State Land Use Commission and zoned Agricultural 5 acres (A-5a) by the County of Hawaiʻi. Under the 2005 Hawaiʻi County General Plan Land Use Pattern Allocation Guide (LUPAG), the Well Site is designated as Important Agricultural Land, while the Tank Site is designated as Low Density Urban. The Tank Site is situated within the Kona Urban Area as defined by the 2008 Kona Community Development Plan (KCDP), as amended in September 2019. The KCDP emphasizes the importance of water infrastructure in supporting growth within designated Transit-Oriented Developments (TODs). Specifically, Policy PUB-4.1 states: "To encourage and direct development to the TODs, a priority should be to provide an appropriately sized water transmission line within the Keohokalole Highway Corridor, and to flexibly enable water allocation policies to support the Kona CDP land use policy to concentrate growth within the TODs, in lieu of sprawl." The KCDP envisions a sustainable Kona that respects cultural and environmental resources while accommodating growth	– Keauhou Well Site and Kahaluʻu Storage Tanks. We appreciate the Planning Department's confirmation that the proposed well and tank facilities are consistent with the County of Hawaiʻi General Plan Land Use Pattern Allocation Guide and the Kona Community Development Plan (KCDP), including policies supporting water infrastructure within the Kona Urban Area and designated Transit-Oriented Development areas. The acknowledgment that the Proposed Action would support planned growth and infrastructure objectives within the North Kona Water System is noted and appreciated. Based on the Planning Department's correspondence indicating that no further comments are offered at this time, no revisions to the DEA are necessary in response to your letter. Should you have any questions or require additional information as the environmental review process proceeds, please feel free to contact us.

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
			through compact, well-served development. The Proposed Action would become part of the North Kona Water System and, as a public utility, would support planned growth in Kona as identified in the County General Plan LUPAG and the KCDP Official Land Use Map. By providing a future water source for Laʻi ʻOpua, located within the Kona Urban Area where the KCDP directs growth, the project supports the KCDP Growth Management Objective PUB-4 to prioritize infrastructure that serves TODs and infill development while minimizing environmental impacts. We have no further comments to offer at this time.	
7	DLNR – Engineering Division	12/10/2026	We have no additional comments.	Thank you for your response. Acknowledging that DLNR-Engineering Divisions has no comments.
8	DLNR – CWRM	1/7/2026	Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://dlnr.hawaii.gov/cwrm.	Mahalo for your January 7, 2026 letter providing the Commission on Water Resource Management's (CWRM) review and comments on the Draft Environmental Assessment (DEA) for the Department of Hawaiian Home Lands North Kona Wells Project – Keauhou Well Site and Kahaluʻu Storage Tanks. We acknowledge CWRM's role in administering the State Water Code (Chapter 174C, Hawaiʻi Revised Statutes) and appreciate the recommendations provided regarding water conservation, stormwater management, alternative water sources, coordination with State and

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
			Our comments related to water resources are checked off below. 2. We recommend coordination with the Engineering Division of the State of Hawai'i, Department of Land and Natural Resources (DLNR) to incorporate this project into the next update of the State Water Projects Plan (SWPP). 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project on the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/. 6. We recommend the use of alternative water sources, wherever practicable. 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health (HDOH) and the acceptance of any resulting requirements related to water quality. 12. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work. 13. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.	County agencies, and applicable permitting requirements. The proposed project has been planned to comply with the State Water Code and all applicable Hawai'i Administrative Rules. Final design, construction, and operation of the proposed well and water storage facilities will be subject to review, approval, and permitting by CWRM and other applicable agencies, including but not limited to Well Construction Permits, Pump Installation Permits, Water Use Permits (if required), and monthly groundwater use reporting. Coordination with the County of Hawai'i Planning Department and Department of Water Supply, as well as relevant State agencies, will continue as the project proceeds, including consideration of incorporation into future updates of the County Water Use and Development Plan and the State Water Projects Plan, as appropriate. Agricultural land use designations and water use considerations will continue to be evaluated in coordination with the Department of Hawaiian Home Lands and relevant State agencies.

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
			14. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained. OTHER: Planning - The construction of new water storage infrastructure will help to improve water resiliency. Please note the project may be subject to future conditions imposed by the Keauhou Aquifer System Area Groundwater Adaptive Management Plan ("Keauhou AMP"). More information about this initiative can be found here: https://dlnr.hawaii.gov/cwrm/planning/keauhou-amp/. Groundwater - The Commission requires each owner or operator of a pumping well to report their monthly water use. Impacts to ground water dependent ecosystems are becoming an emerging issue as impacts to these are related to impacts to traditional & customary practices of sustenance from these ecosystems. We recommend consultation with the region's (moku) Aha Moku Council on whether a land use conversion or project that uses water will impact any traditional & customary practices. If you have any questions, please contact Ryan Imata of the Groundwater Regulation Branch at (808) 587-0225 or Katie Roth of the Planning Branch (808) 587-0216.	Water-efficient fixtures, conservation practices, and stormwater best management practices will be incorporated into project design and construction where practicable, consistent with regulatory requirements. Thank for the information regarding the Keauhou Aquifer System Area Groundwater Adaptive Management Plan. The discussion in Section 3.4 of the Final EA has been updated to note that the project may be subject to future conditions imposed by the plan. Section 3.7.1 of the EA includes a Ka Pa'akai Analysis to ensure compliance with State of Hawai'i Article XII, Section 7, requirements. The Ka Pa'akai Framework included extensive consultation and documentation regarding potential impacts to traditional and customary practices within the North Kona region. The full draft Ka Pa'akai Framework is also included as an appendix to the Final EA.
9	State of Hawai'i Office of Planning &	1/12/2026	OPSD offers the following comments for consideration in the preparation of the Final Environmental Assessment (FEA).	We appreciate OPSD's review and the comments provided. The Final Environmental Assessment (FEA) has

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
	Sustainable Development		1. Chapter 4, Relationship to Plans and Policies, Hawai'i Coastal Zone Management (CZM) The DEA cites Hawai'i Revised Statutes (HRS) § 205A with respect to the Special Management Area. However, there is no disclosure of the project's consistency with the policies of the Hawai'i CZM Program, HRS § 205A-2, as amended. The CZM area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" (HRS § 205A-1). While DHHL is exempt from state land use controls, it is subject to the HRS Chapter 343 requirement for disclosure of environmental impacts. OPSD suggests inclusion of disclosure of consistency with CZM policies in the FEA. 2. Chapter 3, Public Facilities and Infrastructure, page 73, relating to school impact fees Act 268, Session Laws of Hawai'i 2025, made significant changes to the school impact fee statute, including exempting housing developed by DHHL from school impact fees. The discussion on page 73 may need to be revised to reflect the changes enacted by Act 268. 3. Chapter 5, Findings and Determination 5.2 Significance Criteria Findings a. Irrevocably commits a natural, cultural, or historic resource. OPSD notes that the permitted action would commit high-level groundwater resources for residential and other development-related use in the North Kona region. For this reason, we suggest the FEA disclose the commitment of water resources including—as stated in the DEA—the finding that it would not adversely affect the Keauhou Aquifer System Area that serves the North Kona region.	been revised to address OPSD's comments as summarized below: 1. Hawai'i Coastal Zone Management Act (HRS Chapter 205A) - OPSD's comment regarding disclosure of the project's consistency with the Hawai'i Coastal Zone Management Program policies has been addressed. Section 4.2 of the FEA now includes discussion of HRS Chapter 205A and the project's consistency with applicable Coastal Zone Management objectives and policies. 2. School Impact Fees - OPSD's comment regarding recent amendments to the school impact fee statute enacted by Act 268 has been addressed. The FEA includes a footnote on page 85 noting the statutory changes exempting DHHL housing from school impact fees. 3. Significance Criteria Findings - OPSD's comments on the significance criteria findings have been incorporated into the FEA. Revisions clarify the commitment of groundwater resources and refine the discussion of secondary impacts associated with population growth and public facilities, consistent with OPSD's recommendations. 4. Miscellaneous Comments -OPSD's miscellaneous comments, including those related to figures, map

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
			b. Involve adverse secondary impacts, such as population changes or effects on public facilities. As the permitted action will support residential and other development in the North Kona area, we suggest deletion of "potentially" in the statement that the project would result in "…secondary impacts such as [potentially] increasing the population within the Kealakehe census tract…". 4. Miscellaneous Comments a. Lava flow hazard map. Insertion of a lava flow hazard zone map to support the discussion might be useful to the reader. b. Correction of map labels for well and tank sites. Several map figures have the tank site and well site label pointers misplaced, which could confuse the reader; see Figure 3.12 for an example of this. c. Figure 3.23 Kona Field Diagram. A reference on page 37 to Figure 3.23 might be helpful here; alternatively, insertion of Figure 3.23 in this section might be helpful. d. Reference to Figure 3-23, page 72. This reference should be to Figure 3.26. e. Reference to Figure 3-25, page 74. It is unclear which map this references. f. Figure 3-24, page 61. Kealakehe is misspelled on the color map.	labels, figure references, and typographical corrections, have been addressed to the extent practicable in the FEA to improve clarity and accuracy. Thank you again for your careful review and constructive input. We appreciate OPSD's coordination throughout the environmental review process. Should you have any questions or require additional information, please feel free to contact us.
10	Cory Harden	1/5/2026	See page 157	Your comments raise a number of questions related to water availability, climate change and drought conditions, groundwater well design and operation, potential contamination sources, wastewater

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
				infrastructure capacity, and long-term regional resource planning. Please find responses to the comments below: 1. Topic: Water reservation, climate change, and drought conditions: Groundwater withdrawals associated with the project are regulated under the State Water Code and remain subject to Commission on Water Resource Management permitting, conditions, monitoring, and reporting requirements. The Keauhou Aquifer System Area water reservation remains in effect, and climate variability and drought conditions are addressed through ongoing State and County water planning and aquifer-level management processes rather than project-specific environmental review. 2. Deep well costs, maintenance, pump requirements, and local well history: The Final EA evaluates potential environmental impacts at a programmatic level. Detailed well design, maintenance requirements, pump specifications, and operational contingencies will be addressed through subsequent engineering design and permitting. Advancement beyond test well development will

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
				only occur if groundwater quality and quantity meet applicable regulatory standards. 3. Performance standards and actions if standards are not met: The project includes a phased approach under which groundwater quality and quantity must meet applicable Hawai'i Department of Health drinking water standards and Commission on Water Resource Management requirements. If standards are not met, the well would not be placed into service and would be properly abandoned in accordance with applicable regulatory requirements. 4. Groundwater contamination and cesspool conversion timeline Implementation schedules and funding for cesspool conversion are governed by State and County programs and are outside the control of the proposed project, which does not involve construction or operation of cesspools. 5. Wastewater treatment capacity, consent decree, and future development The Final EA relies on capacity information provided by the County of

Draft Environmental Assessment Comments and Responses

#	Agency/Organization/ Individual	Date Received	Comments Received	Response
				Hawai‘i regarding the Kealakehe Wastewater Treatment Plant. Compliance with consent decrees, litigation, facility upgrades, and accommodation of future development are managed by the County and State regulatory agencies and are outside the scope of the proposed water supply project. 6. Secondary impacts and infrastructure capacity The Final EA evaluates secondary impacts consistent with Chapter 343 requirements and acknowledges that future development and infrastructure connections are subject to separate review and approval by the appropriate State and County agencies at the time of development.

ITEM G-3 EXHIBIT A

From:	DOH.CABPASS
To:	Malachi Krishok
Subject:	[External] Comment: DHHL North Kona Wells - Keauhou Well Site and Kahaluu Storage Tanks Project (DEA-AFNSI)
Date:	Monday, December 8, 2025 1:17:06 PM

[CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe]

Aloha Malachi Krishok,

Bowers + Kubota Consulting Inc.,

Thank you for the opportunity to review the DHHL North Kona Wells- Keauhou Well Site and Kahaluu storage Tank project – Draft EA (AFNSI) published in the December 08, 2025 edition of The Environmental Notice. Please visit the Clean Air Branch (CAB) website to download and reference our Standard Comments for Land Use Reviews. The link is provided below.

https://health.hawaii.gov/cab/clean-air-branch/standard-comments-for-land-use-reviews/

Mahalo,

Lisa

This email has been scanned for spam and viruses by Proofpoint Essentials. Click here to report this email as spam.

ITEM G-3 EXHIBIT A

From: Thirugnanam, Jeyan
To: Malachi Krishok
Cc: Nikaido, Blayne H
Subject: [External] DHHL North Kona Wells Project DEA
Date: Wednesday, December 10, 2025 8:58:13 AM

[CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe]

Hi Malachi,

HDOT Highways has no comments.

Thanks,
Jeyan Thirugnanam
HDOT Highways Land Use Permits Review

This email has been scanned for spam and viruses by Proofpoint Essentials. Click here to report this email as spam.

ITEM G-3 EXHIBIT A

From: Gary, Deena T
To: Malachi Krishok
Cc: Javar-Salas, Chelsie
Subject: [External] DHHL North Kona Wells Project DEA comments
Date: Thursday, December 11, 2025 1:58:10 PM

[CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe]

Hello Mr. Krishok,

After reviewing the draft environmental assessment, I'd like to recommend that the potentials impacts to Hawaiian seabirds are considered. Since the project may at times require 24 hour drilling, night lighting during the seabird fledging season could have adverse impacts to the birds. Additionally, outdoor lighting at any of the facilities could also have adverse impacts. Please consider incorporating the following conservation measures into the project design:

- Fully shield all outdoor lights so the bulb can only be seen from below.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

Please feel free to reach out if you have any questions.

Deena Gary
Fish and Wildlife Biologist
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai‘i 96850
Phone: 808-460-7709
Email: Deena_Gary@fws.gov

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ITEM G-3 EXHIBIT A

From:	Bungcayao, Michael
To:	Malachi Krishok
Cc:	Liu, Rouen; Kakazu, Lisa; Kuwaye, Kristen
Subject:	RE: [External] Draft EA Publication Notice - DHHL North Kona Wells Project, Hawaii
Date:	Thursday, December 11, 2025 10:53:09 AM
Attachments:	image001.jpg image002.png image003.png image004.png image005.png image006.png image007.png image008.png image009.png

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Aloha Malachi Krishok,

Thank you for the opportunity to review and comment on the subject project.

Hawaiian Electric Company has no objections to its advancement. Please note that if Hawaiian Electric has existing infrastructure on the subject property, continued access will be necessary for the maintenance of our infrastructure.

We greatly appreciate your efforts to keep us informed throughout the planning process. As the proposed DHHL North Kona Wells project progresses, we kindly ask that you continue to keep us informed.

Please do not hesitate to contact us should you have any questions or require further clarification.

MICHAEL JAY BUNGCAYAO

O: 808.543.7075 | **M:** 808.970-4681
michael.bungcayao@hawaiianelectric.com

Hawaiian Electric
PO Box 2750, Honolulu, HI 96840

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ITEM G-3 EXHIBIT A

From:	Kaweni Ibarra
To:	Malachi Krishok
Cc:	Kamakana Ferreira
Subject:	[External] OHA Comment Re: DEA DHHL North Kona Wells Project, Keahuou Well and Kahalu'u Storage Tanks, North Kona, Hawaii island
Date:	Thursday, December 18, 2025 1:04:40 PM
Attachments:	Outlook-ztwdw3ol.png

[CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe]

Aloha e Malachi,

The Office of Hawaiian Affairs (OHA) is in receipt of your letter dated December 5, 2025 regarding the Draft Environmental Assessment (DEA) for the Keauhou Well and Kahalu'u Storage Tank project for the Department of Hawaiian Homelands (DHHL).

At this time, we ask that some form of summary of concerns and proposed mitigations be provided to address the section of the Ka Pa'akai Analysis (KPA) that is redacted to protect consultee's intellectual property rights. OHA notes that we are not asking for any proprietary or personal information to be shared, but we would like to review identified impacts and proposed mitigations through the KPA to ensure compliance with State of Hawai'i Article XII, Section 7, requirements.

Additionally, OHA supports the suggestion in the Archaeological Literature Review and Field Inspection (ALRFI) to conduct archaeological monitoring for all ground disturbing activities.

Mahalo for your time. We look forward to receiving the requested information. If you have any questions, please feel free to contact me.

Mahalo,

Kaweni Ibarra

Kaweni Ibarra
Compliance Advocate
Office of Hawaiian Affairs

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ITEM G-3 EXHIBIT A

C. Kimo Alameda, Ph.D.
Mayor

William V. Brilhante, Jr.
Managing Director

Jeffrey W. Darrow
Director

Michelle S. Ahn
Deputy Director

West Hawai'i Office
74-5044 Ane Keohokālole Hwy
Kailua-Kona, Hawai'i 96740
Phone (808) 323-4770
Fax (808) 327-3563

County of Hawai'i
PLANNING DEPARTMENT

East Hawai'i Office
101 Pauahi Street, Suite 3
Hilo, Hawai'i 96720
Phone (808) 961-8288
Fax (808) 961-8742

December 23, 2025

Mr. Malachi Krishok
Bowers and Kubota Consulting, Inc.
94-408 Akoki Street, Suite 201-A
Waipahu, Hawai'i 96797
Email: mkrishok@bowersandkubota.com

Dear Mr. Krishok:

SUBJECT: Consultation for Draft Environmental Assessment
Project: Department of Hawaiian Home Lands North Kona Wells Project – Keauhou Well Site and Kahalu'u Storage Tanks (PL-INT-2025-012016)
TMK(s): Portions of (3) 7-8-004:013, 014, and 015; & portions of (3) 7-8-009:014, 032, 054, and 077, North Kona, Hawai'i

Thank you for your letter dated December 5, 2025, allowing us to participate in the review and comment period for the Draft Environmental Assessment (DEA) for the Department of Hawaiian Home Lands (DHHL) North Kona Wells Project – Keauhou Well Site and Kahalu'u Storage Tanks. The Proposed Action includes the development of a new potable water well source, three concrete water storage tanks, transmission piping, pumps, control and chlorination buildings, generator, transformer, electrical upgrades, fencing, and access roads. The proposed improvements will deliver water to residents of the Villages of La'i 'Ōpua, a DHHL master-planned community, and support ongoing development consistent with the 2020 DHHL Kealakehe – La'i 'Ōpua Regional Plan.

The proposed project footprint extends over multiple parcels. The Well Site is located on portions of Tax Map Key (TMK) (3) 7-8-004:013, 014, & 015. The Tank Site is located on portions of TMK(s) (3) 7-8-009:014, 032, 054, & 077. Both the well and tank sites are designated Agricultural by the State Land Use Commission and zoned Agricultural 5-acres (A-5a) by the County of Hawai'i. Under the 2005 Hawai'i County General Plan Land Use Pattern Allocation Guide (LUPAG), the Well Site is designated as Important Agricultural Land, while the Tank Site is designated as Low Density Urban.

The Tank Site is situated within the Kona Urban Area as defined by the 2008 Kona Community Development Plan (KCDP), as amended in September 2019. The KCDP emphasizes the importance of water infrastructure in supporting growth within designated Transit-Oriented Developments (TODs). Specifically, Policy PUB-4.1 states:

> *"To encourage and direct development to the TODs, a priority should be to provide an appropriately sized water transmission line within the Keohokālole Highway Corridor, and to flexibly enable water allocation policies to support the Kona CDP land use policy to concentrate growth within the TODs, in lieu of sprawl."*

The KCDP envisions a sustainable Kona that respects cultural and environmental resources while accommodating growth through compact, well-served development. The Proposed Action would become part of the North Kona Water System and, as a public utility, would support planned growth in Kona as identified in the County General Plan LUPAG and the KCDP Official Land Use Map. By providing a future water source for La'i 'Ōpua – located within the Kona Urban Area where the KCDP directs growth – the project supports the KCDP Growth Management Objective PUB-4 to prioritize infrastructure that serves TODs and infill development while minimizing environmental impacts.

We have no further comments to offer at this time. If you have any questions or need further assistance, please feel free to contact Janice Hata of this office at (808) 961-8854 or email janice.hata@hawaiicounty.gov.

Sincerely,

Jeffrey W. Darrow
Jeffrey W. Darrow (Dec 23, 2025 18:04:48 HST)

JEFFREY W. DARROW
Planning Director

JH:ad
\\hawaiicounty.gov\depts\PL\PL\planning\public\wpwin60\Janice\Letters

ITEM G-3 EXHIBIT A

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

January 9, 2026

Malachi Krishok, Planner
Bowers and Kubota Consulting, Inc.
94-408 Akoki Street, Suite 201-A
Waipahu, Hawai'i 96797

via email: mkrishok@bowersandkubota.com

SUBJECT: Chapter 343, HRS Draft Environmental Assessment (DEA) publication and Anticipated Finding of No Significant Impact (AFONSI) for the Department of Hawaiian Homelands North Kona Water Wells and Storage Tanks Project North Kona, Hawai'i

Dear Mr. Krishok:

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comments.

Currently we have received two responses: 1) from the Engineering Division dated December 31, 2026; and, 2) from the Commission on Water Resource Management dated January 7, 2026.

If you have any questions, please contact Raymond Severn at (808) 587-0554 or email raymond.severn@hawaii.gov.

Sincerely,

L. Yasaka

Lauren E. Yasaka,
Acting Administrator

Enclosure(s)

ITEM G-3 EXHIBIT A

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RYAN K.P. KANAKA'OLE
FIRST DEPUTY

CIARA W.K. KAHAHANE
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

December 10, 2025

MEMORANDUM

FROM: ~~TO~~:

DLNR Agencies:
___Div. of Aquatic Resources (kendall.l.tucker@hawaii.gov)
___Div. of Boating & Ocean Recreation richard.t.howard@hawaii.gov)
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks (curt.a.cottrell@hawaii.gov)
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
_X_ Office of Conservation & Coastal Lands (sharleen.k.kuba@hawaii.gov)
_X_ Land Division – Hawaii District (candace.m.martin@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: ~~FROM~~: Ryan K.P. Kanaka'ole, First Deputy

SUBJECT: Chapter 343, HRS Draft Environmental Assessment (DEA) publication and Anticipated Finding of No Significant Impact (AFONSI) for the North Kona Water Wells and Storage Tanks Project

LOCATION: TMK: (3) 7-8-004:013 (por.); (3) 7-8-004:014 (por.); (3) 7-8-004:015; (3) 7-8-009:014 (por.); (3) 7-8-009:032 (por.); (3) 7-8-009:054 (por.); (3) 7-8-009:077 (por.) North Kona, Hawai'i

APPLICANT: State of Hawaii Department of Hawaiian Home Lands, applicant

Transmitted for your review and comment is information on the above-referenced subject matter. The DEA Preparation Notice has been published on December 8, 2025, in the periodic bulletin, The Environmental Notice, and is available at the following link:

https://files.hawaii.gov/debedt/erp/The_Environmental_Notice/2025-12-08-TEN.pdf

Please submit comments by **January 7, 2025.** If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Raymond Severn at raymond.severn@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
(✓) We have no additional comments.
( ) Comments are included/attached.

Signed:
Print Name: Dina U. Lau, Acting Chief Engineer
Division: Engineering Division
Date: 12/31/2025

Attachments
cc: Central Files

ITEM G-3 EXHIBIT A

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

DAWN N.S. CHANG
CHAIRPERSON

KENNETH S. FINK, M.D., MGA, MPH
MOSES K.N. HAIA, III, J.D.
WAYNE K. KATAYAMA
LAWRENCE H. MIIKE, M.D., J.D.
JUANITA N. REYHER-COLON
HANNAH KIHALANI SPRINGER

CIARA W.K. KAHAHANE
DEPUTY DIRECTOR

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES | KA 'OIHANA KUMUWAIWAI 'ĀINA
COMMISSION ON WATER RESOURCE MANAGEMENT | KE KAHUWAI PONO
P.O. BOX 621
HONOLULU, HAWAII 96809

Jan 7, 2026

REF: RFD.6593.8

TO: Mr. Malachi Krishok
Bowers and Kubota Consulting, Inc

FROM: Ciara W.K. Kahahane, Deputy Director
Commission on Water Resource Management

SUBJECT: North Kona Wells Project – Keauhou Well Site and Kahalu'u Storage Tanks

FILE NO.: RFD.6593.8
TMK NO.: (3) 7-8-004:013, (3) 7-8-004:014, (3) 7-8-004:015, (3) 7-8-009:014, (3) 7-8-009:032, (3) 7-8-009:054, (3) 7-8-009:077

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://dlnr.hawaii.gov/cwrm.

Our comments related to water resources are checked off below.

- ☐ 1. We recommend coordination with the county to incorporate this project into the next update of the county's Water Use and Development Plan (WUDP). Please contact the respective Planning Department and/or Department of Water Supply for further information.
- ☒ 2. We recommend coordination with the Engineering Division of the State of Hawai'i, Department of Land and Natural Resources (DLNR) to incorporate this project into the next update of the State Water Projects Plan (SWPP).
- ☐ 3. We recommend coordination with the State of Hawai'i, Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the associated agricultural water demands into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information at https://hdoa.hawaii.gov/contact/.
- ☐ 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the project to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EAP as having high water efficiency can be found at http://www.epa.gov/watersense.
- ☒ 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project on the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/.
- ☒ 6. We recommend the use of alternative water sources, wherever practicable.
- ☐ 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at http://energy.hawaii.gov/green-business-program.
- ☐ 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the

Landscape Industry Council of Hawai'i. These practices can be found online at https://hawaiiscape.com/index.php. Additional information can be found at https://dlnr.hawaii.gov/cwrm/planning/conservation/.

[X] 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health (HDOH) and the acceptance of any resulting requirements related to water quality.

[ ] 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.

[ ] 11. The Hawai'i Water Plan is directed toward the achievement of the utilization of reclaimed water for uses other than drinking and for potable water needs in one hundred per cent of State and County facilities by December 31, 2045 (§174C-31(g)(6), Hawaii Revised Statutes). We strongly recommend that this project consider using reclaimed water for its non-potable water needs, such as irrigation. Reclaimed water may include, but is not limited to, recycled wastewater, gray water, and captured rainwater/stormwater. Please contact the Hawai'i Department of Health, Wastewater Branch, for more information on their reuse guidelines and the availability of reclaimed water in the project area. Contact information can be found at https://health.hawaii.gov/about/contact/.

[X] 12. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.

[X] 13. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

[X] 14. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.

[ ] 15. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

[ ] 16. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.

[ ] 17. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.

[ ] 18. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.

[ ] 19. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required by CWRM, or whether there are potential impacts to water resources.

[ ] 20. The proposed water source(s) and projected water demands for the project, both potable and non-potable, should be identified. If the project will be provided water by a local water system we recommend consultation with them to ensure that system capacity is available to supply water for this project.

[X] OTHER: Planning -

The construction of new water storage infrastructure will help to improve water resiliency. Please note the project may be subject to future conditions imposed by the Keauhou Aquifer System Area Groundwater Adaptive Management Plan ("Keauhou AMP"). More information about this initiative can be found here: https://dlnr.hawaii.gov/cwrm/planning/keauhou-amp/.

Groundwater -

The Commission requires each owner or operator of a pumping well to report their monthly water use. Impacts to ground water dependent ecosystems are becoming an emerging issue as impacts to these are related to impacts to traditional & customary practices of sustenance from these ecosystems. We recommend consultation with the region's (moku) Aha Moku Council on whether a land use conversion or project that uses water will impact any traditional & customary practices.

If you have any questions, please contact Ryan Imata of the Groundwater Regulation Branch at (808) 587-0225 or Katie Roth of the Planning Branch (808) 587-0216.

ITEM G-3 EXHIBIT A

STATE OF HAWAIʻI
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Coastal Zone Management Program

Environmental Review Program

Land Use Commission

Land Use Division

Special Plans Branch

State Transit-Oriented Development

Statewide Geographic Information System

Statewide Sustainability Branch

DTS 202512091508NA
Transmitted via email

January 12, 2026

Mr. Malachi Krishok, Planning Project Manager
Bowers and Kubota Consulting, Inc.
94-408 Akoki Street, Suite 201-A
Waipahu, Hawaiʻi 96797

Dear Mr. Krishok:

Subject: Draft Environmental Assessment
Department of Hawaiian Home Lands North Kona Wells Project—Keauhou Well Site and Kahaluʻu Storage Tanks, North Kona, Hawaiʻi
Tax Map Key Nos: (3) 7-8-004: portions of 013, 014, and 015, (3) 7-8-009: portions of 014, 032, 054, and 077

The Office of Planning and Sustainable Development (OPSD) has reviewed the Draft Environmental Assessment (DEA) prepared for the subject project.

The project entails the development of a new potable water well source, three concrete water storage tanks, and other appurtenant improvements that are expected to have a total maximum pump capacity of approximately 2.0 million gallons per day (mgd). The water will be conveyed to the existing County of Hawaiʻi North Kona water system to support the buildout of the Department of Hawaiian Home Lands' (DHHL) Villages of Laʻi ʻŌpua in North Kona.

The DEA states that the Commission on Water Resource Management (CWRM) approved a water reservation for DHHL of 3.398 mgd in the Keauhou Aquifer System Area, which serves the North Kona region. In addition, the DEA states that the Villages of Laʻi ʻŌpua project water needs are incorporated in the Department of Land and Natural Resources' 2020 State Water Project Plan Update.

OPSD offers the following comments for consideration in the preparation of the Final Environmental Assessment (FEA).

1. <u>Chapter 4, Relationship to Plans and Policies, Hawaiʻi Coastal Zone Management (CZM)</u>
The DEA cites Hawaiʻi Revised Statutes (HRS) § 205A with respect to the Special Management Area. However, there is no disclosure of

the project's consistency with the policies of the Hawai'i CZM Program, HRS § 205A-2, as amended. The CZM area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" (HRS § 205A-1). While DHHL is exempt from state land use controls, it is subject to the HRS Chapter 343 requirement for disclosure of environmental impacts. OPSD suggests inclusion of disclosure of consistency with CZM policies in the FEA.

2. Chapter 3, Public Facilities and Infrastructure, page 73, relating to school impact fees
Act 268, Session Laws of Hawai'i 2025, made significant changes to the school impact fee statute, including exempting housing developed by DHHL from school impact fees. The discussion on page 73 may need to be revised to reflect the changes enacted by Act 268.

3. Chapter 5, Findings and Determination, 5.2 Significance Criteria Findings

   a. (1) Irrevocably commits a natural, cultural, or historic resource.
   OPSD notes that the permitted action would commit high-level groundwater resources for residential and other development-related use in the North Kona region. For this reason, we suggest the FEA disclose the commitment of water resources including—as stated in the DEA—the finding that it would not adversely affect the Keauhou Aquifer System Area that serves the North Kona region.

   b. (6) Involve adverse secondary impacts, such as population changes or effects on public facilities.
   As the permitted action will support residential and other development in the North Kona area, we suggest deletion of "potentially" in the statement that the project would result in "…secondary impacts such as [potentially] increasing the population within the Kealakehe census tract…".

4. Miscellaneous Comments

   a. Lava flow hazard map. Insertion of a lava flow hazard zone map to support the discussion might be useful to the reader.

   b. Correction of map labels for well and tank sites. Several map figures have the tank site and well site label pointers misplaced, which could confuse the reader; see Figure 3.12 for an example of this.

   c. Figure 3.23 Kona Field Diagram. A reference on page 37 to Figure 3.23 might be helpful here; alternatively, insertion of Figure 3.23 in this section might be helpful.

d. Reference to Figure 3-23, page 72. This reference should be to Figure 3.26.

e. Reference to Figure 3-25, page 74. It is unclear which map this references.

f. Figure 3-24, page 61. Kealakehe is misspelled on the color map.

Thank you for the opportunity to provide input to the draft EA. If you have any questions, please contact Ruby Edwards, ruby.m.edwards@hawaii.gov, (808) 587-2817. If you wish to respond to this comment letter, please include DTS 202512091508NA in the subject line.

Mahalo,

Mary Alice Evans

Mary Alice Evans
Director

c: Lilliane Makaila, Department of Hawaiian Home Lands

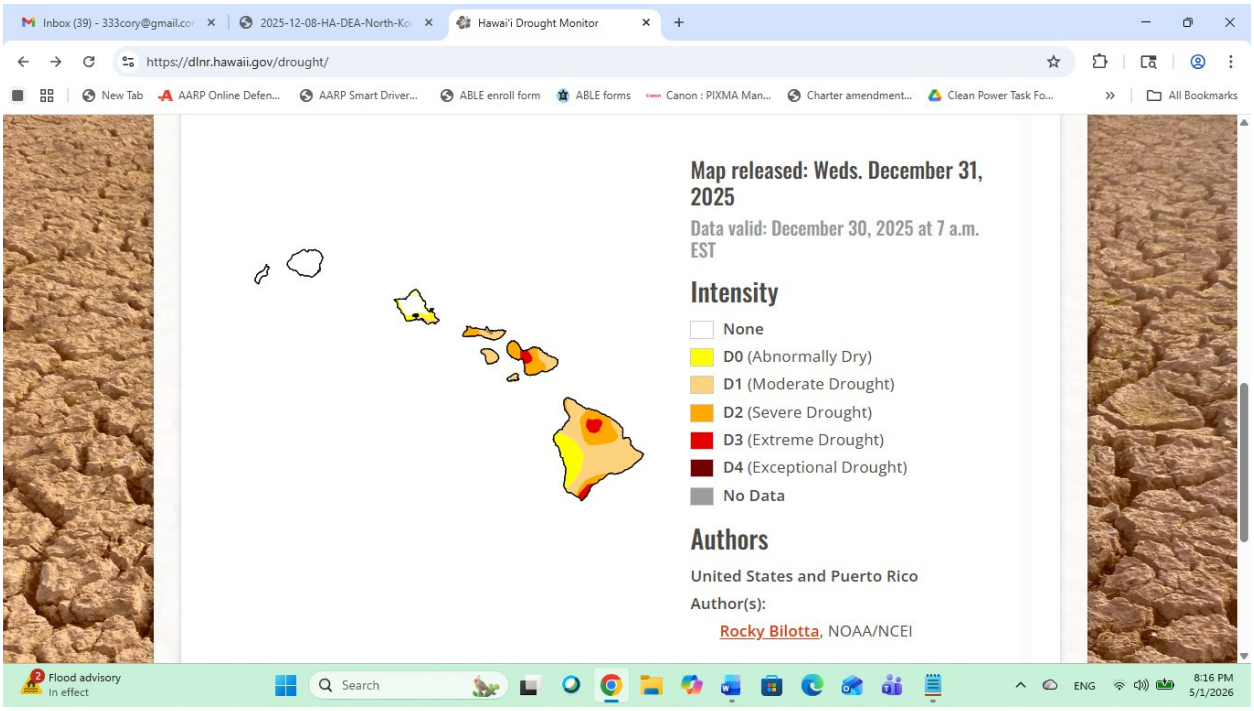
ITEM G-3 EXHIBIT A

comments on
North Kona Wells- Keauhou Well Site and Kahalu'u Water Storage Tanks Project DEA FONSI
https://files.hawaii.gov/dbedt/erp/Doc_Library/2025-12-08-HA-DEA-North-Kona-Keauhou-Well-Site-and-Kahaluu-Storage-Tanks.pdf
from Cory Harden 333cory@gmail.com
comments due January 7, 2026 to mkrishok@bowersandkubota.com

1.0 PROJECT DESCRIPTION
1.3 PROJECT PURPOSE AND NEED
In August 2015, CWRM approved the water reservation for 3.398 mgd in the Keauhou Aquifer System Area (ASYA) that services the North Kona region….*PDF p 22*

Describe how climate change and recent drought conditions affect the appropriateness of this 10-year- old water reservation.

> *...most of Kona is listed as "abnormally dry" — the lowest level of drought.*
>
> *That includes Puuanahulu in upslope North Kona, with 1.21 inches, 76% of its November norm, Kaloko-Honokohau National Historical Park, at 0.63 inches, 57% of its November average, and Kaupulehu, with just 0.18 inches, a mere 14% of its usual paltry precipitation for the month.*
>
> *The same goes for Ellison Onizuka Kona International Airport in Keauhou, where just 0.55 inches of rain, 66% of norm, dampened the tarmac before rapidly evaporating in the sunlight...*
>
> *All four of the coffee belt's official rain gauges tallied above-average totals. Kainaliu led the way with 5.05 inches, 162% of norm. Kealakekua, with 4.85 inches, had 150% of its average November rainfall. Honaunau, at 3.96 inches, was 127% wetter than its usual November.*
>
> *And even Waiaha, at just under 3 inches for the month, was still at 111% of average...*
>
> *Both Stall [Tina Stall, a National Weather Service hydrologist in Honolulu] and Myers [Bill Myers, CEO emeritus at Heavenly Hawaiian Farms, a Honalo coffee farm] added, however, that as of late rainfall totals in Kona's coffee belt have receded.*
>
> > *Islandwide drought lingers despite some rain, Hawai'i Tribune-Herald, December 14, 2025, https://www.hawaiitribune-herald.com/2025/12/14/hawaii-news/islandwide-drought-lingers-despite-some-rain/*



1.3 PROJECT PURPOSE AND NEED

In establishing a suitable location to install the wells, DHHL had to locate areas at high enough elevations a minimum of 0.25 miles away from existing DWS well sites to reduce pressure on groundwater resources and interference between wells. Further, the DWS prefers areas containing "high-level" groundwater that meets federal and state drinking water standards and is not subject to saltwater intrusion. *PDF p 22*

1.4.2 The Tank Site

The Tank Site is located on portions of TMKs [3] 7-8-009:014, 032, 054 & 077. The Tank Site is around 5500 feet above mean sea level (amsl) and is approximately one mile inland within the upland Keauhou ahupua'a. *PDF p 24*

Explain how the following common issues with deep wells will be addressed. Include information on issues with deep wells within five miles of the proposed project, including the number of repairs in the past five years. If there are problems with the project well, how will people obtain water?

Higher Installation Costs: Drilling a deep well requires more labor, specialized equipment, and materials, making it more expensive upfront.

Complex Maintenance: Deep wells are harder to access for repairs and maintenance, often requiring specialized equipment.

Pump Requirements: Deep wells require submersible pumps, which are more expensive and harder to maintain than the pumps used for shallow wells.

https://blairnorris.com/deep-well-vs-shallow-well-key-differences-explained/#:~:text=Higher%20Installation%20Costs%3A%20Drilling%20a,maintenance%2C%20often%20requiring%20specialized%20equipment.

1.5.1 Well Site
If both water quality and quantity meet the required standards, the Proposed Action will advance to Phase II. *PDF p 25-26*

> *Specify the standards to be met and describe what actions will be taken if they are not met. If standards are not met, specify how the well will be decommissioned and what government agency will provide oversight to ensure that it is done properly.*

3.4.6 Groundwater Contamination
There is one cesspool present within the Well Site boundaries and approximately 20 in the vicinity mauka of the site. *PDF p 60*
Impacts and Mitigation Measures
With the passing of Act 125, it is anticipated the single cesspool onsite and nearby cesspools will be converted, upgraded or connected to a sewer system by 2050. *PDF p 63*

> *Explain how realistic this timeline is, in light of the following:*
>
> *By law (Act 125 of 2017), all cesspools must be upgraded by 2050. We are currently converting less than 300 cesspools each year, but that rate will have to go up ten times to over 3,000 per year to meet the mandate of converting all cesspools by 2050.*
>
> > *Hawaii Still Has A Serious Cesspool Problem, by Ted Bohlen, Stuart Coleman, Civil Beat Opinion, March 29, 2024, https://www.civilbeat.org/2024/03/hawaii-still-has-a-serious-cesspool-problem/*
>
> *WHEREAS, according to the Cesspool Conversion Working Group Final Report to the 2023 Regular Session Legislature, the cost of conversions to most private and residential property owners is significant, ranging from an estimated collective total of $880,000,000 to more than $5,300,000,000, with only three percent of all residents unburdened by the cost to convert; and WHEREAS, many properties in rural areas, especially on the neighbor islands, may not have existing county infrastructure that allows for easy upgrade, conversion, or connection...*
>
> > *House of Representatives, Thirty-Second Legislature, 2023 H.D. I, State of Hawaii, House Concurrent Resolution Requesting Each County to Develop a Comprehensive Integrated Wastewater Management Plan and Financial Strategy to Upgrade, Convert, or Connect Cesspools Located Within its Respective Jurisdiction by 2050... https://records.hawaiicounty.gov/weblink/1/edoc/127714/24-01-24%20Directors%20Report.pdf*

3.15.1 Secondary Impacts
PUBLIC FACILITIES AND INFRASTRUCTURE
Lateral lines from future development would be connected to the gravity main lines at that time and sanitary wastewater would be pumped to Kealakehe Wastewater Treatment Plant (the “Plant”) for treatment.
...new connections could potentially generate a maximum of 0.68 million gallons of residential wastewater per day (County of Hawai‘i Planning Department, Final Environmental Assessment, Makalapua Project District, 2019). This would bring the daily total of wastewater produced throughout the region to

around 2.5 million gallons per day, which is within the operational capacity of the Kealakehe Wastewater Treatment Plant. *PDF p 102*

> *Explain how Kealakehe Wastewater Treatment Plant will comply with the Environmental Protection Agency Consent Decree and Earthjustice lawsuit, service this project, and also service the proposed new hospital and other proposed development.*
>
> > *The Queen's Health Systems (Queen's) and Hawaii Health Systems Corporation (HHSC) have signed a Memorandum of Understanding to jointly develop an Outpatient Care Center in Kona that will house clinical services...Queen's will donate approximately three to five acres of land to HHSC's West Hawaii Region as the future site of a 50,000+-square-foot medical facility adjacent to the new hospital that Queen's has already announced it is building.*
> >
> > > *THE QUEEN'S HEALTH SYSTEMS AND HAWAII HEALTH SYSTEMS CORPORATION JOIN FORCES TO SIGNIFICANTLY EXPAND HEALTH CARE ACCESS ON HAWAI'I ISLAND, Kona Community Hospital website, December 3, 2025, https://kch.hhsc.org/news/*

APPENDIX B

Flora and Fauna Survey Report

ITEM G-3 EXHIBIT A

Kailua-Kona Well Flora and Fauna Survey Report

FEBRUARY 2022

PREPARED FOR

Bowers and Kubota Consulting

PREPARED BY

SWCA Environmental Consultants

ITEM G-3 EXHIBIT A

ITEM G-3 EXHIBIT A

KAILUA-KONA WELL
FLORA AND FAUNA SURVEY REPORT

Prepared for

Bowers and Kubota Consulting
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(808) 548-7899
www.swca.com

SWCA Project No. 049756.00

February 2022

ITEM G-3 EXHIBIT A

EXECUTIVE SUMMARY

Bowers and Kubota Consulting requested that SWCA Environmental Consultants (SWCA) conduct a terrestrial flora and fauna biological resources survey for the proposed Kailua-Kona property well site which includes two proposed sites and three water lines on the island of Hawai‘i in North Kona.

This report summarizes the findings of the biological resources survey conducted for the project by SWCA Biologist Danielle Frohlich on December 1, 2021.The vegetation types and plant species identified during the survey are not considered unique. In total, 84 plant species were recorded in the survey area, none of which are native to the Hawaiian Islands. Four of the species found—kukui (*Aleurites moluccana*), breadfruit (*Artocarpus altilis*), ti (*Cordyline fruticosa*), and coconut (*Cocos nucifera*) — were introduced by Polynesians prior to European contact (Wagner et al. 1999). (Wagner et al. 1999). These species are not considered rare and are not federally listed or state-listed as threatened or endangered species, species proposed for listing, or candidate species. No federally listed or state-listed endangered plant species were observed in or near the survey area. Therefore, the proposed project is not expected to have a significant, adverse effect on terrestrial vegetation.

No federally listed or state-listed endangered birds were observed in the survey area. In total, 11 bird species were observed in the survey area, all of which are common, non-native introduced species. Three of the species—cattle egret (*Bubulcus ibis*), house finch (*Haemorhous mexicanus*), and northern cardinal (*Cardinalis cardinalis*)—are protected under the Migratory Bird Treaty Act. No federally listed or state-listed endangered wildlife species were observed in or near the survey area; however, forage and nest habitat for the Hawaiian goose, or nēnē, (*Branta sandvicensis*) and potential roosting trees for the Hawaiian hoary bat (*Lasiurus cinereus semotus*), a federally listed and state-listed endangered mammal, exist in the survey area. The federally listed and state-listed species are discussed in more detail in Section 5.2. Mitigation recommendations to address potential roosting habitat are outlined in the report. The survey area does not overlap critical habitat of any listed terrestrial faunal species. For these reasons, the proposed project is not expected to have a significant, adverse effect on terrestrial wildlife.

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CONTENTS

Executive Summary ..... **i**

1 Introduction **1**

2 Description of the Survey Area **1**

3 Regulatory Environment **4**

3.1 Endangered Species Act 4

3.2 Migratory Bird Treaty Act 4

3.3 Hawai‘i Revised Statutes Chapter 195D 5

4 Methods **5**

4.1 Flora 5

4.2 Fauna 6

5 Results **6**

5.1 Flora 6

5.1.1 Mixed Non-native Forest 6

5.1.2 Landscaped Vegetation 6

5.1.3 Cultivated Fields 8

5.2 Fauna 8

5.2.1 Avifauna 8

5.2.2 Mammals 9

5.2.3 Terrestrial Reptiles and Amphibians 9

5.2.4 Insects and Other Invertebrates 9

5.2.5 Special-Status Fauna 10

6 Potential Impacts **11**

6.1 Hawaiian Hawk 11

6.2 Hawaiian Goose 11

6.3 Hawaiian Hoary Bat 11

6.4 Hawaiian Waterbirds 11

7 Avoidance and Minimization Measures **12**

7.1 Flora 12

7.2 Fauna 12

7.2.1 Hawaiian Hawk 12

7.2.2 Hawaiian Goose 13

7.2.3 Hawaiian Hoary Bat 13

7.2.4 Hawaiian Waterbirds 13

8 Literature Cited **15**

Appendices

Appendix A. Survey Plant List

Figures

Figure 1. Survey area, northern portion. 2
Figure 2. Survey area, southern portion. 3
Figure 3. Mixed Non-native Forest along Water Line 2 on December 1, 2021. 7
Figure 4. Landscaped Vegetation along Mamalahoa Highway (Water Line 1) on December 1, 2021. 7
Figure 5. Cultivated coffee fields near the proposed Well 2A site. 8

Tables

Table 1. Birds Observed by SWCA in and near the Survey Area 9

1 INTRODUCTION

Bowers and Kubota Consulting requested that SWCA Environmental Consultants (SWCA) conduct a terrestrial flora and fauna biological resources survey for two proposed sites and three water lines in North Kona on the island of Hawai‘i.

This report summarizes the findings of the flora and fauna survey conducted for the project by SWCA Biologist Danielle Frohlich on December 1, 2021.

2 DESCRIPTION OF THE SURVEY AREA

The survey area is on the west side of the island of Hawaii, above the town of Keauhou off the Kuakini and Mamalahoa Highways (Figures 1 and 2). The flora and fauna survey followed three water lines to two proposed well sites. The water lines crossed several TMK boundaries, some of which were private property. These areas were surveyed using binoculars in an effort to avoid disturbing the landowners. All the sites were located on land currently or previously used for agriculture and residential use. Total area covered during the surveys was 6.43 acres.

Mean annual rainfall for the survey area is approximately 49 inches (1,257 millimeters [mm]). Rainfall is typically highest in July and September and lowest in February (Giambelluca et al. 2013).

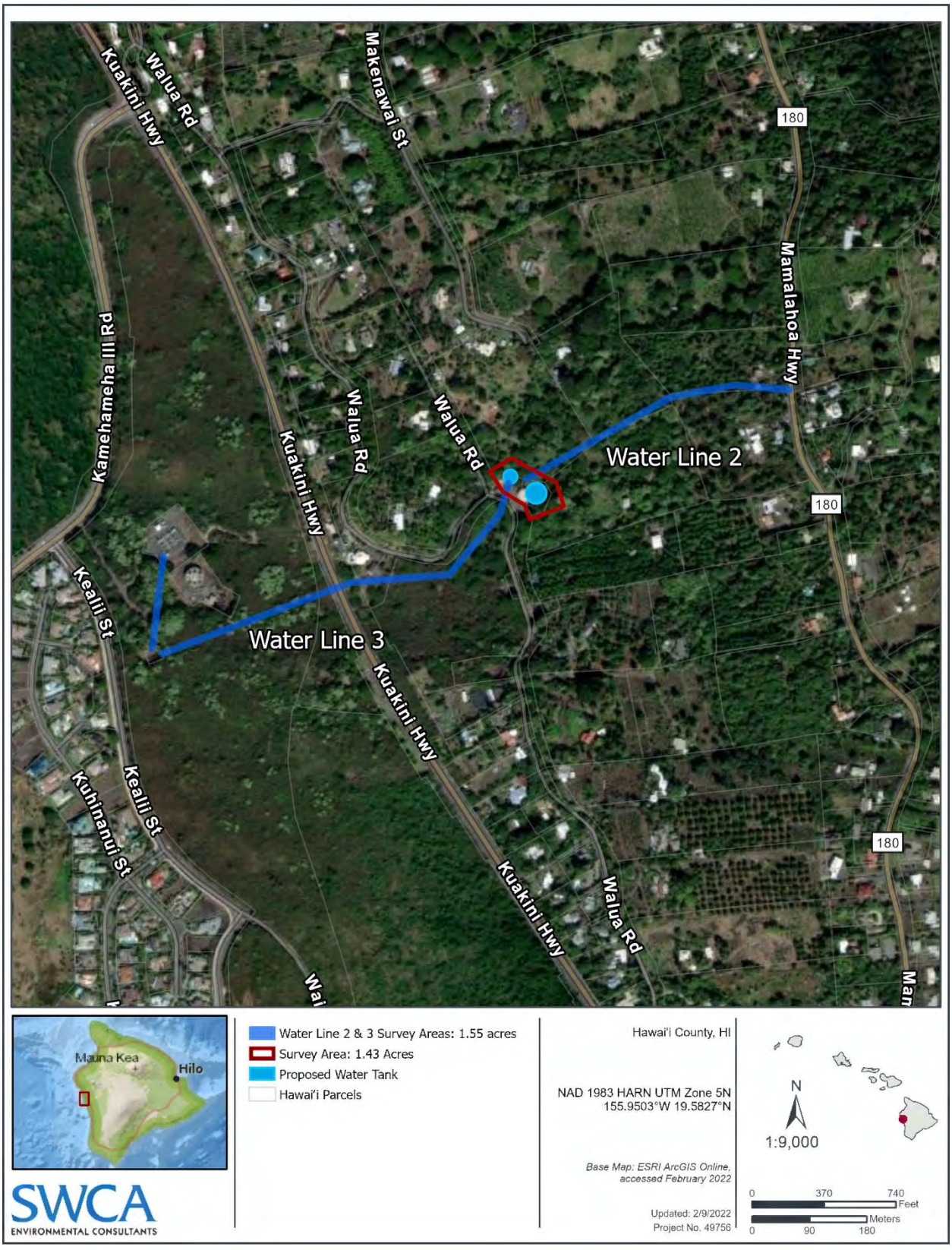

Figure 1. Survey area, northern portion.

Figure 2. Survey area, southern portion.

3 REGULATORY ENVIRONMENT

This section describes laws and regulations applicable to terrestrial flora and fauna in the context of the project.

3.1 Endangered Species Act

The federal Endangered Species Act (ESA) of 1973, as amended, is regulated by the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration National Marine Fisheries Service and protects wildlife and plant species that have been listed as threatened or endangered. It is designed to conserve the ecosystem on which species depend. Candidate species, which may be listed in the near future, are not afforded protection under the ESA until they are formally listed as endangered or threatened. Section 9 of the ESA and rules promulgated under Section 4(d) of the ESA prohibit the unauthorized take of any endangered or threatened species of wildlife listed under the ESA. Under the ESA, the term *take* means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect species listed as endangered or threatened, or to attempt to engage in any such conduct." As defined in regulations, the term *harm* means "an act that actually kills or injures wildlife; it may include significant habitat modification or degradation, which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering" (50 Code of Federal Regulations [CFR] 17.3). The rules define *harass* to mean "an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent, as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering" (50 CFR 17.3).

The ESA affords maximum legal protections to species listed as threatened or endangered under the law and also provides authorization for incidental take permits for take that occurs incidental to otherwise legal operations. To comply with federal laws, additional measures must be taken to ensure that take of ESA-listed species does not occur. Any fatality of a listed species should be reported to the USFWS and the Hawai‘i Division of Forestry and Wildlife as soon as possible, and an incident report should be filed within 24 hours of detection of the fatality.

3.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, is regulated by the USFWS and prohibits the take of migratory birds. A list of birds protected under MBTA-implementing regulations is published under 50 CFR 10.13. Unless permitted by regulations, under the MBTA, "it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product" (16 United States Code 703–712). The MBTA provides no process for authorizing incidental take of MBTA-protected birds. As a result, birds that are not covered under the ESA that may be adversely affected by the proposed project cannot be covered by take authorizations. However, the direction of Executive Order 13112 allows for the take of cattle egret (*Bubulcus ibis*) and barn owl (*Tyto alba*) by agencies that have functional and/or jurisdictional responsibility for controlling invasive species and protecting native species in Hawai‘i Furthermore, a recent memorandum from the U.S. Department of the Interior concluded that the MBTA does not prohibit the incidental taking of migratory birds. Regardless, incidental take of individual MBTA-protected species is unlikely to adversely affect the species as a whole; however, any take of MBTA-protected species should be documented and reported in a similar manner to that of any endangered or threatened species of wildlife listed under the ESA.

3.3 Hawai‘i Revised Statutes Chapter 195D

The purpose of Hawai‘i Revised Statutes (HRS) Chapter 195D is “to insure the continued perpetuation of indigenous aquatic life, wildlife, and land plants, and their habitats for human enjoyment, for scientific purposes, and as members of ecosystems.” Section 195D-4 states that any endangered or threatened species of fish or wildlife recognized by the ESA shall be so deemed by the state statute. Like the ESA, under the State of Hawai‘i Division of Forestry and Wildlife the unauthorized take of such endangered or threatened species is prohibited (HRS 195-D-4[e]), but incidental take licenses can be obtained (HRS Section 195D-21). In addition to species protected under the ESA, rules adopted under HRS Section 195D-4 allow for the listing of indigenous species as threatened or endangered due to the following reasons:

- Habitat destruction or alteration (current or predicted)
- Overexploitation
- Disease or predation
- Lack of regulatory mechanisms
- Other factors threatening the species’ continued existence

Determinations are made based on any and all available sources of data (scientific, commercial, and other) and consultation with appropriate agencies (federal, state, and county) and interested organizations and parties.

4 METHODS

SWCA reviewed available scientific and technical literature regarding natural resources in and near the survey area. This literature review encompassed a thorough search of referenced scientific journals, technical journals and reports, environmental assessments, environmental impact statements, relevant government documents, USFWS online data, and unpublished data that provide insight into the area’s natural history and ecology. SWCA also reviewed available geospatial data, aerial photographs, and topographic maps of the survey area. Field surveys were conducted by SWCA biologist Danielle Frohlich on December 1, 2021.

4.1 Flora

SWCA conducted ground (automotive and pedestrian) surveys to document all vascular plant species and vegetation types present in the survey area. Areas more likely to support native plants (e.g., rocky outcrops, gulches, and shady areas) were more intensively examined.

Plants recorded during the survey are indicative of the season (rainy versus dry) and the environmental conditions at the time of the survey. It is likely that additional surveys conducted at a different time of the year would result in minor variations in the species and abundances of plants observed.

The taxonomy and nomenclature of the flowering plants are in accordance with Wagner et al. (1999), Wagner and Herbst (2003), and Staples and Herbst (2005). Recent name changes are those recorded in Wagner et al. (2012).

4.2 Fauna

Fauna surveys consisted of a combination of ground (automotive and pedestrian) surveys of the survey areas. Ground surveys consisted of visual observations (aided by 10 × 42–mm binoculars) and auditory vocalization identifications. All birds, mammals, reptiles, amphibians, and invertebrate macrofauna species that were seen or heard were noted. Any signs, such as scat or tracks, were also noted. Field surveys for special-status fauna were conducted by noting areas of suitable foraging and roosting habitat as indicators of its potential presence; acoustic surveys were not conducted for the federally listed and state-listed Hawaiian hoary bat, or ʻopeʻapeʻa, (*Lasiurus cinereus semotus*).

5 RESULTS

5.1 Flora

No federally listed or and state-listed threatened, endangered, or candidate plant species or rare native Hawaiian plant species were observed in the survey area. In all, 84 plant species were recorded in the survey area, none of which are native to the Hawaiian Islands. Four of the species found—kukui *(Aleurites moluccana),* breadfruit *(Artocarpus altilis),* ti (*Cordyline fruticosa*), and coconut (*Cocos nucifera*) — were introduced by Polynesians prior to European contact (Wagner et al. 1999). Appendix A provides a list of all plant species observed by the SWCA biologist during the December 1, 2021, survey.

The vegetation in the survey area consisted of three main vegetation types: mixed non-native forest, landscaped vegetation, and cultivated fields.

5.1.1 Mixed Non-native Forest

This vegetation type typically consisted of a heterogeneous mix of non-native trees forming the canopy level, from about 3 to 10 meters (m) tall. Canopy species varied depending on location and included opiuma *(Pithecellobium dulce),* kukui, Christmas berry *(Schinus terebinthifolius),* koa haole *(Leucaena leucocephala),* and occasional monkeypod *(Samanea saman),* African tulip tree *(Spathodea campanulata),* and breadfruit. The understory was typically made up of a mix of non-native grasses such as Guinea grass *(Urochloa maxima)* and elephant grass *(Cenchrus purpureus).* Woody non-native understory species included Arabian coffee *(Coffea arabica),* coral berry *(Rivina humilis),* and lantana *(Lantana camara)* (Figure 3). This vegetation type is common along Water Lines 2 and 3 and mixed in among other vegetation types in almost all portions of the survey area.

5.1.2 Landscaped Vegetation

Landscaped areas were primarily located in yards along Bishop Road and Mamalahoa Highway and consisted of a wide variety of cultivated species. Mango *(Mangifera indica)* and avocado *(Persea americana)* were commonly featured, in addition to ornamental species such as agave *(Agave attenuata),* firecracker plant *(Russelia equisetiformis),* and snowbush *(Breynia disticha)* (Figure 4).

Figure 3. Mixed non-native Forest along Water Line 2 on December 1, 2021.

Figure 4. Landscaped vegetation along Mamalahoa Highway (Water Line 1) on December 1, 2021.

5.1.3 Cultivated Fields

Cultivated Arabian coffee (*Coffea arabica*) was found in the Proposed Well 2A footprint at the eastern end of Bishop Road. Most of the coffee plants were between 5 and 12 feet tall and were maintained in rows. Portions of the site are also used for growing fruit trees such as papaya (*Carica papaya*), lychee *(Litchi chinensis),* and rambutan *(Nephelium lappaceum).* The canopy in these areas consists almost entirely of Arabian coffee with a low-growing understory of diverse herbaceous weeds (Figure 5).

Figure 5. Cultivated coffee fields near the proposed Well 2A site.

5.2 Fauna

The fauna observed in the survey area consisted entirely of non-native introductions that tend to be generalist and often occupy a broad range of habitats.

5.2.1 Avifauna

The birds observed in the survey area are species commonly found in disturbed areas on the island of Hawai‘i. In all, 11 bird species were documented, three of which are protected by the MBTA (Table 1). MBTA 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. These protections apply to the species indicated below even though they have been introduced to the Hawaiian Islands. None of these species are native to the Hawaiian Islands (see Table 1). Forage and nest habitat for the Hawaiian goose, or nēnē, (*Branta sandvicensis*) is present in the survey area. The federally listed and state-listed species are discussed in more detail in Section 5.2.5.

Table 1. Birds Observed by SWCA in and near the Survey Area

Common Name	Scientific Name	Status*	MBTA-Protected
Cattle egret	*Bubulcus ibis*	NN	X
Common myna	*Acridotheres tristis*	NN	
Feral chicken	*Gallus gallus*	NN	
House finch	*Haemorhous mexicanus*	NN	X
Japanese white-eye	*Zosterops japonicus*	NN	
Kalij pheasant	*Lophura leucomelanos*	NN	
Northern cardinal	*Cardinalis cardinalis*	NN	X
Saffron finch	*Sicalis flaveola*	NN	
Spotted dove	*Spilopelia chinensis*	NN	
Yellow-fronted canary	*Crithagra mozambica*	NN	
Zebra dove	*Geopelia striata*	NN	
Total species		**11**	**3**

* Status: NN = non-native permanent resident.

5.2.2 Mammals

Asian mongoose (*Herpestes javanicus*) was the only mammal detected during the surveys. No other mammals were observed during the ground surveys, although feral pig (*Sus scrofa*), small rat (*Rattus* spp.), and mouse (*Mus musculus*) are expected to occur.

The potential for the presence of Hawaiian hoary bat was assessed based on the presence of suitable habitat and vegetation types; an acoustic survey was not conducted. Hawaiian hoary bats forage and roost in pastures, croplands, orchards, forests, and developed lands such as golf courses, urban areas, and suburban yards. Hawaiian hoary bats are solitary and roost in exotic and native woody vegetation. They could forage throughout the survey area and roost in the trees in the survey area. The birthing and pup-rearing season typically occurs between June 1 and September 15. It is common for adult females to leave flightless young unattended in "nursery" trees and shrubs while foraging.

5.2.3 Terrestrial Reptiles and Amphibians

No terrestrial reptiles or amphibians are native to Hawai'i; one brown anole *(Anolis sagrei)* was detected during the ground surveys.

5.2.4 Insects and Other Invertebrates

Ten invertebrate individuals were observed during the survey, eight of which were identified to the genus or species level. All invertebrates observed are non-native introductions. The species observed include yellow crazy ant (*Anoplolepis gracilipes*), an unidentified grasshopper, a leaf katydid (Tettigoniidae), honeybee (*Apis mellifera),* passion butterfly (*Agraulis vanillae*), monarch butterfly (*Danaus plexippus*), aedes mosquito (*Aedes* sp.), rosy wolfsnail (*Euglandina rosea*), an unidentified fly (*Musca* sp.), and Hawaiian garden spider (*Argiope appensa*). All are common on the island of Hawai'i.

5.2.5 Special-Status Fauna

Special-status fauna are wildlife species listed by the USFWS and the State of Hawai‘i as threatened, endangered, or candidate. The survey area does not encompass any designated or proposed critical habitat for threatened or endangered fauna species. This section discusses the special-status species observed in the survey area and the special-status species that have the potential to occur in the survey area based on historical records and available habitat.

5.2.5.1 HAWAIIAN HAWK

The Hawaiian hawk is the only broad-winged hawk that breeds on the Big Island of Hawai‘i (USFWS 2012). They can be found from sea level to above 8,990 feet (2,740 m) (Pyle and Pyle 2009). Surveys in 2007 indicated that approximately 3,085 Hawaiian hawks inhabited the Big Island (Gorressen et al. 2008). These hawks construct their nests approximately 2 months before laying eggs, and the nests may be used for several years as the hawks add new material. Nest trees are typically 32.81 to 78.74 feet (10.0–24.0 m) in height, and the nests are typically located 11.48 to 59.06 feet (3.5–18.0 m) above the ground. Nest trees have a diameter at breast height averaging 19.68 inches (50 centimeters [cm]), although some trees with a diameter at breast height of 4.02 inches (10.2 cm) are used. Nests are constructed on stable platforms such as on top of birds-nest ferns (*Asplenium nidus*), in the crotches of tree trunks, on branches 7.87 to 19.67 inches (20–50 cm) in diameter, and at the intersections of the trunks and branches smaller than 7.87 inches (20 cm) in diameter (Griffin et al. 1998).

5.2.5.2 HAWAIIAN GOOSE

The Hawaiian goose is known to occupy various habitat types ranging from beach strand, shrubland, and grassland to lava rock at elevations ranging from coastal lowlands to alpine areas (Banko 1988; Banko et al. 1999). The Hawaiian goose has an extended breeding season, with eggs reported from all months except May, June, and July, although most of the birds in the wild nest during the rainy (winter) season between October and March (Banko et al. 1999; Kear and Berger 1980). Hawaiian geese nest on the ground in a shallow scrape in the dense shade of a shrub or other vegetation. During molt, adults are flightless for a period of 4 to 6 weeks. Molt occurs after hatching of eggs, such that the adults generally attain their flight feathers at about the same time as their offspring. When flightless, goslings and adults are extremely vulnerable to predators such as dogs, cats, and mongoose. From June to September, family groups join others in post-breeding aggregations (flocks), often far from nesting areas.

5.2.5.3 HAWAIIAN HOARY BAT

Hawaiian hoary bats are known to occur in native, non-native, agricultural, and developed landscapes (U.S. Department of Agriculture 2009; USFWS 1998). Hawaiian hoary bats forage in open, wooded, and linear habitats with a wide range of vegetation types. These animals are insectivores and are regularly observed foraging over streams, reservoirs, and wetlands up to 300 feet (100 m) offshore (U.S. Department of Agriculture 2009). Hawaiian hoary bats typically roost in trees greater than 16 feet (5 m) with dense canopy foliage or in subcanopy when canopy is sparse, with open access for launching into flight (Gorressen et al. 2013; U.S. Department of Agriculture 2009). Hawaiian hoary bats have been documented roosting in avocado (*Persea americana*) and Chinese banyan (*Ficus microcarpa*) trees. These and trees similar in structure provide suitable Hawaiian hoary bat roost habitat in the landscaped vegetation and cultivated fields vegetation types within the survey area. Suitable Hawaiian hoary bat forage habitat is present, and foraging may occur over the landscaped vegetation and cultivated field vegetation types within the survey area.

5.2.5.4 HAWAIIAN WATERBIRDS

Listed Hawaiian waterbirds, which include Hawaiian stilt, aeʻo *(Himantopus mexicanus knudseni),* Hawaiian coot, ʻalea kea *(Fulica alai),* and Hawaiian duck, or koloa, *(Anas wyvilliana)* are found in freshwater and brackish-water marshes and natural or man-made ponds. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur.

6 POTENTIAL IMPACTS

6.1 Hawaiian Hawk

Because no Hawaiian hawk nests were seen and their presence is unlikely in the survey area, impacts to nesting individuals, chicks, and eggs are unlikely. Foraging hawks may be temporarily displaced from the survey area during construction because of the presence of human noise and activity. However, because the area is largely residential, it is likely that local hawks are habituated to human noise and may not be greatly affected. The surrounding area provides a relatively large area of homogeneous habitat suitable for Hawaiian hawk foraging. Because of this, it is likely that sufficient prey would be available nearby until construction is completed. After construction, birds are expected to return to the survey area to forage.

6.2 Hawaiian Goose

Direct impacts to the Hawaiian goose could occur during vegetation removal if a nest is damaged or goslings are separated from adults. However, direct impacts are unlikely to occur because conservation measures would be implemented as described in Section 7.2.2.

In the short term, the human noise and disturbance associated with construction activities could temporarily displace the Hawaiian goose from nesting and/or foraging habitats. Displacement from available nesting and/or foraging habitat could impact the health of these individuals; however, because a small amount of foraging habitat would be removed, it would not likely affect nest success or population growth. Furthermore, foraging and nesting habitat is available adjacent to the survey area, into which the Hawaiian goose could move.

6.3 Hawaiian Hoary Bat

Direct effects to bats would occur only if a juvenile bat that is too small to fly but too large to be carried by a parent is present in a tree that is cut down. However, direct impacts are unlikely to occur if conservation measures would be implemented as described in Section 7.2.3.

6.4 Hawaiian Waterbirds

If the project will create, either purposefully or inadvertently, any kind of temporary or permanent standing water, including excavation or grading for construction or roadwork, it may attract Hawaiian waterbirds to the site. In particular, the Hawaiian stilt is known to nest in sub-optimal locations if water is present. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts, such as predation and reduced reproductive success, and thus the project may create an attractive nuisance. However, direct impacts are unlikely to occur because conservation measures would be implemented as described in Section 7.2.4

7 AVOIDANCE AND MINIMIZATION MEASURES

7.1 Flora

Overall, the vegetation in the survey area has been disturbed from previous and current land use activities. The vegetation types and species identified are not considered unique. No plants listed as threatened or endangered were found during the survey, and no designated plant critical habitat occurs in the area. Therefore, the proposed project is not expected to have a significant adverse effect on flora (botanical) resources.

Weedy, non-native plant species are common in the survey area. Most of these weedy species are widespread in Hawai‘i, and their control is not expected to result in a significant decrease in their number or distribution. However, construction activities are known to spread invasive species to new areas through the movement of vehicles and materials. For this reason, SWCA recommends the following invasive species minimization measures to avoid the unintentional introduction or transport of new invasive plant species to Hawai‘i Island and/or the survey area:

- All construction equipment and vehicles should be washed and inspected before entering the survey area.
- Construction materials should also be washed and/or visually inspected (as appropriate) for excessive debris, plant materials, and invasive or harmful non-native species (plants, amphibians, reptiles, and insects).
- Inspection and cleaning activities should be conducted at a designated location. The inspector should be a qualified botanist and/or entomologist who is able to identify invasive species that are of concern relevant to the point of origin of the equipment, vehicle, or material.
- When possible, raw materials (e.g., fill and construction materials) should be purchased from a local supplier to avoid introducing non-native species not yet present on the island.

If landscaping occurs as part of the project, native Hawaiian plants or non-invasive plants should be used to the maximum extent possible. If native plants do not meet landscaping objectives, plants with a low risk of becoming invasive could be substituted. Additional information on selecting appropriate plants for landscaping can be obtained from the following online sources:

- Plant Pono: http://www.plantpono.org/
- Native Plants Hawai‘i: http://nativeplants.hawaii.edu/

7.2 Fauna

Regular on-site staff should be trained to identify special-status species that have the potential to occur on-site and should know the appropriate measures to be taken if they are present. To minimize potential impacts to fauna, measures should be followed, as detailed in the following sections. The measures can also be found at https://www.fws.gov/pacificislands//articles.cfm?id=1494897.

7.2.1 Hawaiian Hawk

- If work must be conducted during the March 1 through September 30 Hawaiian hawk breeding season, have a qualified biologist conduct a nest search of the survey area and surrounding areas immediately prior to the start of construction activities.

- Pre-construction surveys for Hawaiian hawk are valid for 14 days. If disturbance for the survey area does not occur within 14 days of the survey, an additional survey is required.
- No vegetation clearing or construction activities should occur within 1,600 feet of any active Hawaiian hawk nest until the chicks have fledged.
- No trimming or cutting trees containing an active or inactive Hawaiian hawk nest is allowed, as nests may be re-used for consecutive breeding seasons.

7.2.2 Hawaiian Goose

- Hawaiian geese should not be approached, fed, and/or disturbed.
- If Hawaiian geese are observed loafing or foraging within the survey area during the Hawaiian geese breeding season (September through April), a qualified biologist should survey for nests in and around the survey area prior to the resumption of any work. Surveys should be repeated after any subsequent delay of work of 3 or more days.
- If a nest is found within a 150-foot (46-m) radius of proposed work, or if a previously undiscovered nest is found within said radius after work begins, all work should cease immediately and the USFWS should be contacted for further guidance.
- In areas where Hawaiian geese are known to occur, speed limits should be posted and implemented, and project personnel should be notified of their presence.

7.2.3 Hawaiian Hoary Bat

- If felling of standing trees occurs during the bat breeding season, direct impacts could occur to juvenile bats that are too small to fly but too large to be carried by a parent. To minimize this impact, no trees taller than 15 feet (4.6 m) should be trimmed or removed between June 1 and September 15.
- The use of barbless wire is recommended for all fence construction to avoid entanglement of Hawaiian hoary bats.

7.2.4 Hawaiian Waterbirds

- In areas where waterbirds are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site or nearby.
- If water resources are located within or adjacent to the project site, incorporate the applicable best management practices regarding work in aquatic environments into the project design.
- Have a biological monitor that is familiar with the species' biology conduct Hawaiian waterbird nest surveys where appropriate habitat occurs within the vicinity of the proposed project site prior to project initiation. Repeat surveys again within 3 days of project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).

If a nest or active brood is found:

- Contact the Service within 24 hours for further guidance.
- Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.

- Have a biological monitor that is familiar with the species' biology present on the project site during all construction or earth-moving activities until the chicks/ducklings fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

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APPENDIX A

Survey Plant List

ITEM G-3 EXHIBIT A

Table A-1 provides an inventory checklist of plant species observed by SWCA on December 1, 2021, in the survey area for the Kailua-Kona Well flora and fauna survey. The plant names are arranged alphabetically by family and then by species into four groups: dicots, monocots, gymnosperms, and pteridophytes. The taxonomy and nomenclature are in accordance with Wagner et al. (1999), Wagner and Herbst (2003), and Staples and Herbst (2005). Recent name changes are those recorded in Wagner et al. (2012).

Table A-1. Checklist of Native Plants Observed in the Survey Area of the Kailua-Kona Property Proposed Well and Water Line Sites on December 1, 2021.

Family	Scientific Name and Authorship	Hawaiian and/or Common Name	Status
DICOTS			
Acanthaceae	*Barleria repens* Nees	small bush violet	X
Acanthaceae	*Justicia betonica* L.	white shrimp plant, squirrel's-tail	X
Acanthaceae	*Odontonema cuspidatum* (Nees) Kuntze	firespike	X
Anacardiaceae	*Mangifera indica* L.	mango, manakō	X
Anacardiaceae	*Schinus terebinthifolius* Raddi	Christmas berry, wilelaiki	X
Araliaceae	*Schefflera actinophylla* (Endl.) Harms	octopus tree, umbrella tree	X
Araliaceae	*Schefflera arboricola* (Hayata) Merr.	dwarf umbrella tree	X
Asteraceae	*Ageratum conyzoides* L.	maile hohono, maile honohono, maile kula	X
Asteraceae	*Bidens pilosa* L.	Spanish needle, beggartick	X
Asteraceae	*Elephantopus mollis* Kunth	elephant's-foot	X
Asteraceae	*Montanoa hibiscifolia* (Benth.) Standl.	tree daisy	X
Bignoniaceae	*Jacaranda mimosifolia* D.Don	jacaranda	X
Bignoniaceae	*Spathodea campanulata* P.Beauv.	African tulip tree, fountain tree	X
Cactaceae	*Hylocereus undatus* (Haw.) Britton & Rose	night-blooming cereus	X
Caricaceae	*Carica papaya* L.	papaya, mīkana, hē'ī, milikana, papaia, pawpaw	X
Clusiaceae	*Clusia rosea* Jacq.	autograph tree, copey, Scotch attorney	X
Convolvulaceae	*Ipomoea obscura* (L.) Ker Gawl.	morning glory	X
Cucurbitaceae	*Momordica charantia* L.	balsam pear, bitter melon	X
Cucurbitaceae	*Sechium edule* (Jacq.) Sw.	pipinella, chayote, choko	X
Euphorbiaceae	*Aleurites moluccana* (L.) Willd.	kukui, kuikui, candlenut	P
Euphorbiaceae	*Breynia disticha cv.* 'Roseo-picta'	snowbush, laukalakoa	X
Euphorbiaceae	*Codiaeum variegatum* (L.) Blume	croton	X*
Euphorbiaceae	*Euphorbia heterophylla* L.	kaliko, spurge	X
Euphorbiaceae	*Jatropha curcas* L.	physic nut	X
Euphorbiaceae	*Macaranga mappa* (L.) Müll.Arg.	bingabing	X
Euphorbiaceae	*Macaranga tanarius* (L.) Müll.Arg.		X
Fabaceae	*Canavalia cathartica* Thouars	maunaloa	X
Fabaceae	*Desmodium tortuosum* (Sw.) DC.	Florida beggarweed	X
Fabaceae	*Desmodium triflorum* (L.) DC.	tick trefoil, tick clover	X
Fabaceae	*Leucaena leucocephala* (Lam.) de Wit	koa haole	X

Family	Scientific Name and Authorship	Hawaiian and/or Common Name	Status
Fabaceae	*Neonotonia wightii* (Wight & Arn.) Lackey	perennial soybean	X
Fabaceae	*Pithecellobium dulce* (Roxb.) Benth.	ʻopiuma	X
Fabaceae	*Samanea saman* (Jacq.) Merr.	monkeypod, rain tree	X
Fabaceae	*Senna surattensis* (Burm.f.) H.S.Irwin & Barneby	kolomona, kalamona	X
Lamiaceae	*Hyptis pectinata* (L.) Poit.	comb hyptis	X
Lauraceae	*Persea americana* Mill.	avocado, alligator pear	X
Malvaceae	*Hibiscus rosa-sinensis* L.	hibiscus	X*
Malvaceae	*Malvaviscus penduliflorus* DC.	Turk's cap, aloalo pahūpahū	X
Malvaceae	*Pachira aquatica* Aubl.	Malabar chestnut	X*
Malvaceae	*Sida spinosa* L.	prickly sida	X
Melastomataceae	*Arthrostemma ciliatum* Pav. ex D.Don	pinkfringe	X
Moraceae	*Artocarpus altilis* (Parkinson ex Z) Fosberg	breadfruit	P
Moraceae	*Ficus microcarpa* L.f.	Chinese banyan, Malayan banyan	X
Myrtaceae	*Eugenia uniflora* L.	Surinam cherry, pitanga	X
Myrtaceae	*Psidium guajava* L.	common guava, kuawa	X
Nyctaginaceae	*Bougainvillea spectabilis* Willd.	bougainvillea	X*
Oleaceae	*Noronhia emarginata* (Lam.) Poir.	Madagascar olive	X
Oleaceae	*Olea europaea* subsp. *cuspidata* (Wall. ex G.Don) Cif.	olive, ʻoliwa, ʻoliwa haole	X
Passifloraceae	*Passiflora edulis* Sims	passion fruit, purple granadilla, purple water lemon, liliko‘i	X
Passifloraceae	*Passiflora suberosa* L.	huehue haole	X
Phytolaccaceae	*Rivina humilis* L.	coral berry, rouge plant	X
Plantaginaceae	*Russelia equisetiformis* Schltdl. & Cham.	firecracker plant	X*
Plumbaginaceae	*Plumbago auriculata* Lam.		X
Proteaceae	*Macadamia integrifolia* Maiden & Betche	macadamia	X
Rosaceae	*Rubus rosifolius* Sm.	thimbleberry, Mauritius raspberry, ōlaʻa, ʻākala, ʻākalakala	X
Rubiaceae	*Coffea arabica* L.	Arabian coffee	X
Rutaceae	*Murraya paniculata* (L.) Jack	mock orange	X
Sapindaceae	*Litchi chinensis* Sonn.	lychee	X*
Sapindaceae	*Nephelium lappaceum* L.	rambutan	X*
Tiliaceae	*Triumfetta semitriloba* Jacq.	Sacramento bur	X
Verbenaceae	*Lantana camara* L.	lākana, lantana	X
MONOCOTS			
Agavaceae	*Agave attenuata* Salm-Dyke	agave	X*
Agavaceae	*Cordyline fruticosa* (L.) A.Chev.	kī, ti	P
Agavaceae	*Dracaena marginata* Lamarck	dragon tree	X*
Agavaceae	*Dracaena reflexa* Lamarck	song of India	X*
Agavaceae	*Sansevieria trifasciata* Prain	snake plant	X

Family	Scientific Name and Authorship	Hawaiian and/or Common Name	Status
Araceae	*Epipremnum pinnatum* (L.) Engl.	pothos, golden pothos	X
Araceae	*Monstera deliciosa* Liebm.	monstera	X*
Arecaceae	*Cocos nucifera* L.	niu, ololani, coconut	P
Arecaceae	*Dypsis lutescens* (H.Wendl.) Beentje & J.Dransf.	areca palm	X*
Arecaceae	*Roystonea regia* (Kunth) O.F.Cook	royal palm	X
Commelinaceae	*Commelina diffusa* Burm.f.	honohono, honohono wai, mākolokolo, dayflower	X
Costaceae	*Cheilocostus speciosus* (J.Kōnig) C.Specht	crepe ginger, Malay ginger, spiral flag	X
Liliaceae	*Asparagus plumosus* Baker	asparagus fern	X
Musaceae	*Musa* hybrid	banana, apple banana	X*
Poaceae	*Cenchrus purpureus* (Schumach.) Morrone	elephant grass, Napier grass	X
Poaceae	*Echinochloa crus-galli* (L.) P. Beauv.	barnyard grass	X
Poaceae	*Melinis minutiflora* P.Beauv.	molasses grass	X
Poaceae	*Urochloa maxima* (Jacq.) R.D.Webster	Guinea grass	X
GYMNOSPERMS			
Araucariaceae	*Araucaria columnaris* (G.Forst.) Hook.	Cook pine	X
PTERIDOPHYTES			
Nephrolepidaceae	*Nephrolepis brownii* (Desv.) Hovenkamp & Miyam.	Asian sword fern	X
Polypodiaceae	*Phlebodium aureum* (L.) J.Sm.	laua'e haole, rabbit's-foot fern, golden polypody	X
Pteridaceae	*Pityrogramma calomelanos* (L.) Link	silverfern, silverback fern	X
Pteridaceae	*Pteris vittata* L.	ladder brake, cliff brake, Chinese brake	X
Thelypteridaceae	*Cyclosorus parasiticus* (L.) Farw.	parasitic maiden fern	X

Notes: P = Polynesian introduced; P? = probably Polynesian introduced but possibly introduced in historic times; I = indigenous; I? = probably indigenous but possibly naturalized; E= endemic; E? = probably endemic but possibly naturalized (Wagner et al. 1999:126-127); X = non-native; X* = non-native cultivated.

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APPENDIX C

Archaeological Literature Review and Field Inspection Report

Draft
Archaeological Literature Review and Field Inspection for the DHHL 2.0 MG Water Storage Tank and Transmission Lines Construction Project, Kahaluʻu and Keauhou 1-2 Ahupuaʻa, North Kona District, Hawaiʻi Island, TMKs: [3] 7-8-004:010, 013, 014, 015, 019, 039, 072, 999; 7-8-009:014, 029, 032, 054, 068, 069, 070, 077, 078, 999; 7-8-010:020, 050, 999

Prepared for
Bowers + Kubota Consulting
on behalf of
Department of Hawaiian Home Lands

Prepared by
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Reference	Archaeological Literature Review and Field Inspection for the DHHL 2.0 MG Water Storage Tank and Transmission Lines Construction Project, Kahalu‘u and Keauhou 1-2 Ahupua‘a, North Kona District, Hawai‘i Island, TMKs: [3] 7-8-004:010, 013, 014, 015, 019, 039, 072, 999; 7-8-009:014, 029, 032, 054, 068, 069, 070, 077, 078, 999; 7-8-010:020, 050, 999 (Bautista et al. 2022)
Date	May 2022
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: KEAUHOU 22
Investigation Permit Number	CSH completed the field inspection under archaeological fieldwork permit numbers 20-17 and 22-02, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-13-282.
Agencies	Department of Hawaiian Home Lands (DHHL); Hawai‘i County Water Department; United States Department of Agriculture (USDA), SHPD
Land Jurisdiction	State of Hawai‘i, County of Hawai‘i, private; see Appendix A for a breakdown of land jurisdiction by parcel.
Project Proponent	DHHL Andrew H. Choy Acting Planning Program Manager Department of Hawaiian Home Lands 91-5420 Kapolei Parkway, Kapolei, HI 96707 P.O. Box 1879, Honolulu, HI 96805 Phone: (808) 620-9279 Fax: (808) 620-9559 Email: Andrew.H.Choy@hawaii.gov
DHHL Planning and Engineering Consultant for the Project	Matthew Kodama Bowers + Kubota Consulting Bowers + Kubota Management 94-408 Akoki Street, Suite 201-A Waipahu, Hawai‘i 96797 Phone: (808) 521-5361 Fax: (808) 538-7819 Email: mkodama@bowersandkubota.com
Project Location	The project area is located within the adjoining *ahupua‘a* (traditional land division) of Kahalu‘u and Keauhou in the North Kona district of Hawai‘i Island. It comprises two discrete portions, one situated fully within upland Kahalu‘u Ahupua‘a to the north, and the other fully within upland Keauhou to the south. The project area is depicted on portions of the Kailua (1996) and Kealakekua (1996) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles on Hawai‘i Island (Figure 1), tax map plats (Figure 2 through Figure 4), and a

	2018 aerial photograph (Figure 5 through Figure 7).
Project Description and Related Disturbance	The project involves drilling a potentially 24-inch diameter hole for a new well and construction of a 2-million-gallon water storage tank and associated control building. Surface laid pipelines will transport water between the tank and existing infrastructure via existing and/or proposed pipeline routes (Figure 8 through Figure 11). Ground disturbance would involve drilling for the new well, grading of the tank facility site and an associated access road, and excavation for installation of underground utilities.
Project Area Geographic Extent	The project area comprises approximately 4.3672 acres in Kahalu‘u and 3.4546 acres in Keauhou, with an overall total of 7.8218 acres (3.1654 hectares). The project area includes portions of numerous land parcels; a breakdown of project acreage by parcel is provided in Appendix A
Historic Preservation Regulatory Context	As a state (DHHL) project located on public and private lands, this project is subject to Hawai‘i State historic preservation review legislation (Hawai‘i Revised Statutes [HRS] §6E-8 and HAR §13-275).
Document Purpose	This investigation was conducted—through historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that archaeological historic properties may be affected by the project. This document is intended to facilitate the project’s planning and support the project’s historic preservation review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey (AIS) investigation, per HAR §13-276. This information also supports DHHL’s consultation with the SHPD regarding the project’s necessary historic preservation review steps pursuant to HAR §13-275.
Built Environment	The project area is situated on the outskirts of Kailua-Kona, amongst residential and agricultural plots above the community of Keauhou. It is within the limits of the traditional Kona Field System, a large agricultural belt spanning the western slopes of Mauna Loa and Hualālai. The Kona Field System is characterized by a pattern of low earthen and/or rock walls bounding open planting fields. The lands of the project area are accessed primarily via the Hawai‘i Belt Road (Route 11) and the Old Māmalahoa Highway (Route 180), and portions of the project area are along other secondary roadways. The northern portion of the project area in Kahalu‘u extends *makai* (seaward) from the Old Māmalahoa Highway through agricultural lots and disturbed forested areas, connecting to an existing fenced County Department of Water Supply (DWS) tank facility on Wailua

	Road. The proposed pipeline route in this area is within an existing, 20-ft-wide pipeline easement. From the BWS tank the project route continues *makai*, crossing Hawai‘i Belt Road into a largely undeveloped area containing an old railroad berm. The project area terminates at an existing graded water tank site and electrical substation accessed from Kamehameha III Road. The southern portion of the project area in Keauhou extends *makai* from a proposed tank site situated along the edge of a coffee farm. The proposed pipeline route extends from the tank site along Bishop Road, cutting across a private property near the bottom to intersect Old Māmalahoa Highway. The proposed pipeline runs north along Old Māmalahoa Highway approximately 0.6 miles.
Natural Environment	The project area is situated along the western slope of Hualālai Volcano on the leeward side of Hawai‘i Island. The westernmost extremities of the project area are between approximately 0.75 miles (in Kahalu‘u) and 1.0 mile (in Keauhou) back from the coast. The natural topography in the vicinity is moderately sloping to the west. Elevations within the project area extend from approximately 550–1,650 feet (ft) above mean sea level (amsl). This area receives mean annual rainfall of approximately 50 inches (Giambelluca et al. 2013). The vegetation encountered within the project area consists of primarily introduced species including Christmas berry (*Schinus terebinthifolius*), *haole koa* (*Leucaena leucocephala*), cecropia (*Cecropia obtusifolia*), autograph tree (*Clusia rosea*), strawberry guava (*Psidium cattleianum*), various vines and grasses, and cultivars such as macadamia nut (*Macadamia* spp.), coffee (*Coffea* spp.), breadfruit (*Artocarpus altilis*), banana (*Musa* spp.), avocado (*Persea americana*), papaya (*Carica papaya*), and mango (*Mangifera indica*). Occasional *kukui* (*Aleurites moluccana*) and *tī* (*Cordyline fruticosa*) were also observed. Soil survey data indicates the project area is underlain by five distinct soil types (Figure 12). The Kahalu‘u portion of the project area is predominately underlain by Punaluu extremely rocky peat, 6-20% slopes (rPYD), with some areas of Kaimu extremely stony peat, 7-25% slopes (rKED) along the pipeline corridors (see Figure 12). The Punaluu series soils consist of well-drained, thin organic soils that developed over *pāhoehoe* lava, used primarily for pasture (Sato et al. 1973:48). The Kaimu series soils consist of well-drained, thin organic soils that developed over *‘a‘ā* lava; mostly in native woodland, small areas are also used for pasture, macadamia nuts, papaya, and citrus fruits (Sato et al. 1973:21–22). The Keauhou portion of the project area overlies an area of Punaluu extremely

	rocky peat, 6-20% slopes (rPYD) at it northern extremity; it also crosses through areas of Puna extremely stony muck, 3-25% slopes (rPXE); Kona extremely rocky muck, 6-20% slopes (rKYD); and Honaunau extremely rocky silty clay loam, 6-20% slopes (HRD) (see Figure 12). The Puna series consists of well-drained, thin, extremely stony organic soils over fragmented *‘a‘ā* lava, used for woodland, pasture, and orchards (Sato et al. 1973:48). The Kona series consists of well drained, thin organic soil over *pāhoehoe* lava bedrock, used mostly for pasture and watershed with small areas of coffee and macadamia nuts (Sato et al. 1973:32). The Honaunau series soils consist of moderately well drained silt loams that formed in volcanic ash, used for pasture, woodland, and wildlife habitat (Sato et al. 1973:18).
Background Research Methods	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 Hawaiian Mission Children’s Society Library and Archives, 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 database (Waihona ‘Aina 2021). This research provided the environmental, cultural, historic, and archaeological background for the project area.
Background Research Summary	**<u>Traditional Background</u>** The *ahupua‘a* of Keauhou and Kahalu‘u have typically been thought of as a unit, both in traditional Hawaiian times and by subsequent researchers. Based on radiocarbon data, Burtchard et al. (1996:54) suggest the earliest settlement in Kona began around AD 900. Early settlement is suggested to be marine resource oriented, with habitation probably focused around Keauhou and Kahalu‘u Bay. Kin-based social and economic ties linked coastal areas in the vicinities of the bay. By AD 1300, upland areas at least 4,000 ft inland were cultivated; Burtchard (1996:83) cites a calibrated date of AD 1350 from a midden next to a habitation platform in Keauhou *mauka* (inland, toward the mountain). This pattern is suggested to be the origin of the Kona Field System (State Inventory of Historic Places [SIHP] # 50-10-37-06601), which developed from lower elevations farther inland after this time (Tuggle 1989:18). Expansion and intensification of agriculture into higher elevations and more formalized planting fields took place in response to population

growth and a shift of political power to the Kona Region (Tomonari-Tuggle 1985:15–19).

During the early sixteenth century the ruling chief ‘Umi-a-Līloa moved his court to Kona, stopping for a time at the Ahu-A-‘Umi in the uplands of Keauhou 2 (Baker 1917:63; see also Fornander 1917:4[2]:232). While ‘Umi’s place of residence in Kona is usually tied to the Kailua area, the *heiau* (pre-Contact place of worship) Pā-o-‘Umi (SIHP # 50-10-37-03823), reportedly a *heiau ho‘ouluulu ‘ai* (a temple dedicated to the abundance of agricultural crops), was built by ‘Umi-a-Līloa above Kahalu‘u Village (Maly and Maly 2004:8; Stokes and Dye 1991:80–81). Furthermore, the ruling chief, Lono-i-ka-makahiki, a grandson of ‘Umi-a-Līloa, is said to have resided in coastal Kahalu‘u Ahupua‘a at an impressive high-walled complex (the Lono-i-ka-makahiki Residence; Fornander 1917:4[2]:356).

Tomonari-Tuggle (1985) suggests the creation of refuge-type openings at major lava tubes like ‘Ōhi‘a Cave in Kahalu‘u was undertaken for purposes of concealment during the wars and political instability of this period. Habitation, particularly high-status habitation, appears to have focused on the lands along the back of Kahalu‘u Bay, proximate to extensive inshore reefs and brackish and freshwater ponds. Other habitation areas extended to the south, to He‘eia and Keauhou bays, and were scattered among the agricultural fields.

When Captain Cook died in 1779, it is said that the ruling chief Kalani‘ōpu‘u resided for some time around Kahalu‘u and Keauhou, occupying his time with hula (dance) and surfing (Kamakau 1992:105). Kalani‘ōpu‘u moved to Keauhou “where he could surf in the waves of Kahalu‘u and Hōlualoa” (Kamakau 1992:105). Both Kalani‘ōpu‘u and Kamehameha attempted to gain the support of the deities by constructing or rededicating the many *heiau* of Kahalu‘u. Kamehameha and his court are said to have resided at Kahalu‘u for about a year following his return to Kona in 1813 (‘Ī‘ī 1959:113).

Early Historic Period

By 1794, there was a foreigner in residence at Keauhou engaged in the manufacture of charcoal to supply visiting western ships (Menzies 1920:149). While this operation played a part in keeping the port there viable, it seems probable that the population of Keauhou overall declined rapidly in the early historic period. This would have been due not only to introduced diseases but also to demographic shifts to Kailua and Ka‘awaloa (at Kealakekua Bay). The abolition of the *kapu* system in 1819 would have also exacerbated this population loss in Keauhou, as people suddenly

stopped visiting the many *heiau* there with their hogs and other offerings (Mann et al. 2003:9).

Kamehameha 1 died in May 1819 and was succeeded by his son Liholiho. At the urging of his father's widows Keōpūolani and Ka‘ahumanu, Liholiho abolished the traditional *kapu* system that had governed life throughout Hawai‘i for centuries (Tomonari-Tuggle 1985:24). Some did not agree with this change, including Kamehameha's second heir Kekuaokalani, who chose to fight against Liholiho's Royal Army along the southern coast of Keauhou in December 1819, in an area also known as Lekeleke. This event is known as the battle of Kuamo‘o, in which 300 warriors were slain and the opposition army defeated. The Kuamo‘o battlefield has come to be known as the Lekeleke Burial Ground.

In 1823 the missionary William Ellis reported 19 *heiau* and 610 houses between Kailua and Keauhou, and eight *heiau* and 443 houses between Keauhou and Ka‘awaloa. At Keauhou, Ellis noted 135 houses, and about 150 people assembled to hear him and his companions preach. Ellis remarked on the steppingstone trail across a mile-wide stretch of *‘a‘ā* between the Kahalu‘u and Keauhou villages. Ellis (1969:121) noted the houses of "those who live among the plantations on the sides of the hills." Keauhou was an outlier for the Kailua Mission Station. Missionaries from the American Board of Commissioners for Foreign Missions (ABCFM) would periodically take sermonizing trips down the coast, often on their way to the Ka‘awaloa Mission. Artemis Bishop (1892:18) noted (ca. 1825) that the Hawaiian communities at Hōlualoa, Kahalu‘u, Keauhou, and Kainaliu routinely marshaled 500 or more people to meet him.

Māhele

In the division of lands, or Māhele ‘Āina, of 1848, Victoria Kamāmalu received the *ahupua‘a* of Kahalu‘u and the northern portion of Keauhou known as Keauhou 1 under Land Commission Award (LCA) 7713. Her brother, Lot Kapuāiwa (later Kamehameha V) received the southern portion of coastal Keauhou and a vast interior area known as Keauhou 2, as LCA 7715. The fact that these lands were retained by the Kamehameha dynasty reflects their perceived value. Tomonari-Tuggle (1985:27) suggests the division of Keauhou into these two parts dates from this time (ca. 1848). She notes that the Keauhou 1-2 division cuts through many *kuleana* (commoner) awards, which suggests the division post-dates the occupation of those areas.

Numerous *kuleana* (commoner) claims were made in Kahalu‘u and Keauhou 1-2. While claims were awarded predominately in the areas

around Kahalu‘u and Keauhou bays, some awards were also clustered along the upper *ala loa* (in the vicinity of the present Old Māmalahoa Highway). Figure 13 depicts LCA awarded within 250 m of the project area; these awards are listed in Table 1. In Kahalu‘u, *‘āpana* or lots associated with three awarded claims (LCAs 5690:1, 5966:2, and 6032:2) are in the vicinity of the project area but do not overlap it (see Figure 13). Of the dozens of awards in Keauhou 1-2, 16 fall within 250 m of the project area (see Figure 13). One award (LCA 11047:3) is near the small portion of the project area in Keauhou 1, and the remaining 15 are in Keauhou 2. The awards in the vicinity of the project area are 6 acres or less in total, consisting of one to three geographically discrete *‘āpana* generally situated at variable elevations within the *ahupua‘a* (see Table 1). Two awards, both in Keauhou 2, overlap the project area along the Māmalahoa Highway corridor: 7319:1 and 10734[5903]:1 (see Figure 13 and Table 2). Land use information for these overlapping awards is somewhat limited but does indicate enclosed lots used for agricultural activity including citrus cultivation, presence of native *hala* (*Pandanus tectorius*) and *loulu* (*Pritchardia* spp.) trees, and habitation in a house at LCA 10734 (see Table 2).

Late Nineteenth Century

Concurrent with the Māhele ‘Āina, business interests in the region were expanding, necessitating improved road systems to facilitate the use of horses and wagons (Maly and Maly 2004:67). Two lateral, cross-*ahupua‘a* trails or *ala loa* were utilized and connected by various *mauka-makai* trails; the upper *ala loa* known as “Kealaehu” was in the vicinity of the old Māmalahoa Highway (Maly and Maly 2004:67).

Lacking sufficient water and easily convertible land, the Kona Coast was largely spared the changes associated with plantation agriculture that affected so much of Hawai‘i. Economic opportunities created by this commercial agriculture elsewhere was another pull for relocation away from Kahalu‘u and Keauhou. Tomonari-Tuggle (1985:31) notes that according to Kingdom of Hawai‘i tax ledgers, the population of Keauhou dropped from 72 in 1857 to 24 in 1881. While the overall importance of the Kona Coast diminished, the *relative* importance of Keauhou on that coast may have increased, as Kealakekua Bay (Ka‘awaloa and Nāpō‘opo‘o) became less important as an entry point. The importance of Keauhou Bay is borne out in the LCA data for Keauhou and Kahalu‘u and the presence of homes, churches, a few stores, and schoolhouses (Tomonori-Tuggle 1985:31), some of which are depicted on an 1891 map of North Kona

(Figure 14).

The uplands of Kahalu‘u and Keauhou became more important as the century drew to a close with the growth of coffee cultivation. Coffee was grown as an early commercial enterprise in small individual plots formerly occupied by the *kuleana* agricultural plots. Chinese and Japanese immigrants who had fulfilled their labor contracts to sugar plantations eventually became the dominant coffee growers, typically living at the farms. The coffee industry went through a number of booms and depressions through the late 1800s, due to introduced diseases and price fluctuations.

The trustees of Victoria Kamāmalu leased large portions of her award in Kahalu‘u coffee cultivation and for grazing land (Maly and Maly 2004:98–100). Commercial livestock within Keauhou 2 commenced with goat and sheep ranching in the Saddle region, under the control of Charles Wall. Though both goats and sheep were on his ranch, sheep eventually became the dominant livestock. Charles Wall eventually sold the lease to H.N. Greenwell who continued to run sheep until the late 1800s.

In 1889, the *ahupua‘a* of Kahalu‘u and Keauhou 1-2 became part of the Bernice Pauahi Bishop Estate as inherited lands from Ruth Ke‘elikōlani, who had inherited them after the deaths of Victoria Kamāmalu (Kahalu‘u and Keauhou 1) and Lot Kapuāiwa (Keauhou 2).

Twentieth Century

The early 1900s continued the pattern of population movement from the coastal areas to the uplands. During this period, Keauhou was known as the “end of the road” in the Kona region (Walker and Rosendahl 1989:11). A 1906 map (Figure 15) indicates the project area within grazing lands and depicts little aside from a post office at Keauhou Bay and a school along the upper road in Keauhou 1.

Sugar cultivation was briefly attempted in Kahalu‘u and Keauhou, with little success. In 1908 holdings of the short-lived Kona Sugar Company (1898–1904) were incorporated as the Kona Development Company by James B. Castle (Dorrance and Morgan 2000:112). During this time 11 miles of narrow-gauge railroad were installed, extending south from the mill in Kailua-Kona and through the project area environs. Plans to expand the railway throughout North and South Kona fell through. Burtchard et al. (1996) described the construction of the railroad:

> The rail route was built as a cut and fill feature across Hualālai’s western slope. Rock outcrops and ridges were

	removed to create a level rail bed. At least some of this rock was reused to span ravines and other depressions in the irregular lava flow surface. Additional rock was quarried from nearby flows. [Burtchard et. al. 1996:294] The early twentieth century saw a boom in the coffee industry in the Kona uplands, with a continued shift in settlement to small towns that were springing up along the upland Māmalahoa Highway, which had been constructed as an improvement to the earlier Kealaehu *ala loa*. The 1924 USGS topographic map (Figure 16) and a 1930 Treasury Department map (see Figure 13) depict the railroad (SIHP # 50-10-37-07214) extending through the Kahalu‘u portion of the project area, schools, numerous trails throughout the area, and structures clustered along the highway. Also shown on the 1924 map is a route extending northwest from the Māmalahoa Highway in Kahalu‘u to Kailua-Kona; this route would some years later become a portion of the Hawai‘i Belt Road (Route 11), also known as the “Belt Highway.” Coffee and cattle dominated the economy in Kahalu‘u and Keauhou until the late 1960s and early 1970s, when tourism began to flourish. The 1960 USGS topographic map illustrates a significant population along the Māmalahoa Highway (Figure 17), served by the development of additional roadways, wells and water tanks, an electric substation, and commercial rock quarries. Less occupation is indicated along the lower Belt Highway in Kahalu‘u. Later in the 1960s, a golf course, hotels, condos and single-family residences were constructed along the coastal portion of these *ahupua‘a*. A 1977 aerial photograph (Figure 18) illustrates the extent of development in the 1960s and 1970s as a response to the growing tourism industry. Most notable is the extensive coastal resort development located *makai* of the project area. **<u>Twentieth-First Century</u>** Presently some of the prime agricultural lands of Kahalu‘u and Keauhou remain under coffee cultivation or other commercial crops. The Hawai‘i Belt Road and Old Māmalahoa Highway continue to be a focal point of the local community development. At the coast in Kahalu‘u, an effort is being made by Kamehameha Schools to return Bishop Estate lands to culturally appropriate educational venues. Keauhou Bay and surrounding resort properties remain a significant tourist draw. While the Kona Country Club Mountain Course closed in 2013, the Kona Country Club Ocean Course has recently undergone renovations and resumed operation.
Prior Archaeological	The region of Kahalu‘u and Keauhou is one of the most studied areas

Studies Summary	in Polynesia. A large majority of past studies, especially archaeological surveys of the large habitation and *heiau* complexes, are near the coast and/or within development parcels belonging to Kamehameha Investment Corporation (KIC). The traditional importance of the Kahalu‘u-Keauhou area is underscored by the listing of several sites in the vicinity on the National Register of Historic Places (NRHP). Eighteen sites in coastal Kahalu‘u comprise the Kahalu‘u Historic District (SIHP # 50-10-37-04150), which was listed on the NRHP in 1974. The *mauka* boundary for this historic district very minimally overlaps the western extremity of the project area in Kahalu‘u (Figure 19); while no known sites belonging to the historic district are within the current project area, the *mauka* known extent of ‘Ōhi‘a cave (SIHP # 50-10-37-07962) is located within the district bounds approximately 550 m to the southwest (Figure 20). Other nearby sites on the NRHP (not within the current project area) include the Keauhou Hōlua Slide (SIHP # 50-10-37-01669), listed on 29 December 1962 and designated as a National Historic Landmark that same year; the Kuamo‘o Complex (SIHP # 50-10-37-01745), recognized primarily a burial ground from the 1819 battle of the same name, was listed in the NRHP on 13 August 1974; and Kamehameha III’s birthplace (Kauikeaouli Stone; SIHP # 50-10-37-04383) was listed in the NRHP on 24 July 1978. Furthermore, the extensive agricultural complexes in the inland portions of Kahalu‘u and Keauhou, encompassing the lands of the current project area, are part of the Kona Field System (SIHP # 50-10-37-06601). An Archaeological Cover Sheet for the Hawai‘i Register of Historic Places was completed (Appendix B) but does not indicate any submission to the Review Board nor any action. The Feature Description Form associated with the Cover Sheet is signed by T. Stell Newman and dated 15 May 1974. Background research indicates 15 previous archaeological studies in the vicinity of the northern/Kahalu‘u portion of the current project area, and four previous studies in the vicinity of the southern/ Keauhou portion of the current project area. These previous studies are presented in Figure 21 and Figure 22 and summarized in Table 3 and Table 4. Of the previous studies in the vicinity, six overlap or bound the current project area, all within Kahalu‘u: Hammatt and Folk (1980), Bath and Rosendahl (1984), Athens (1990a), Lufty and Athens (1991a), Burchard (1992), and Burchard et al. (1994). Historic properties documented in proximity to the current project area during these previous studies (n=11) are depicted on Figure 20 and summarized in Table 5; of note, no previously documented sites are indicated in proximity to the southern/Keauhou portion of the

	project area. In 1980 Archaeological Research Center Hawai‘i, Inc. (ARCH) conducted an archaeological inventory survey (AIS) of 751 acres within Kahalu‘u and Keauhou, minimally overlapping the western portion of the current project area in Kahalu‘u (Hammatt and Folk 1980; see Figure 21). Despite areas of prior disturbance, 320 historic properties comprising “thousands” of individual features were documented, with highest site concentrations in the coastal Kahalu‘u area. Sites included five *heiau*, temporary and permanent habitation complexes (some of which likely represented villages and high chief residences), burials, agricultural complexes, steppingstone trails, cart roads, and caves containing evidence of human habitation. The railroad berm (SIHP # 50-10-37-07214) was noted along the *mauka* study area boundary, but not documented or assigned an SIHP number. The fieldwork was completed at what is now considered a reconnaissance level; not all the historic properties identified were fully documented. Hammatt and Folk (1980:12–17) recommended salvage excavation, preservation, and burial site relocation for sites that would be potentially affected by proposed development activities, as well as oral history research. Sites documented in proximity to but well outside the current project area include SIHP #s 50-10-37-04643 (agricultural complex), -07954 (possible burial platform), and -07962 (‘Ōhi‘a Cave) (see Figure 20 and Table 5). In 1983-84 Paul H. Rosendahl, Inc. (PHRI) undertook intensive survey and testing for a HELCO substation bounding the western terminus of the current project area in Kahalu‘u (Bath and Rosendahl 1984; see Figure 21). The study documented six sites, not assigned SIHP numbers, comprising 27 individual agricultural features; none of these features are in direct proximity to the current project area. Feature types included terraces, mounds, walls, and a C-shape enclosure. Samples collected during testing yielded dates indicated occupation in the area between AD 1400 and 1800. No further work was recommended for any of the documented sites. In 1990 International Archaeological Research Institute, Inc. (IARII) conducted an archaeological reconnaissance of 22 acres in Kahalu‘u, minimally overlapping the western portion of the current project area (Athens 1990a; see Figure 21). The survey identified four previously unrecorded site complexes, which were not assigned SIHP numbers, and a portion of previously recorded SIHP # 50-10-37-07214 (railroad berm; we have been unable to ascertain when the SIHP designation was assigned). The newly documented sites were extensive agricultural complexes; further documentation was

	recommended. The following year, IARII returned to conduct an intensive survey of the Athens (1990a) project area, minimally overlapping the current project area in Kahalu‘u (Lufty and Athens 1991a; see Figure 21). The AIS identified and documented one previously recorded historic property (SIHP # 50-10-37-07214, railroad berm) and four newly recorded historic properties comprising 39 individual features: SIHP #s 50-10-37-15151, unmodified lava tube; -15152, ranching complex; and -15153 and -15154, agricultural complexes (see Figure 20 and Table 5). In 1992 IARII was contracted to map and provide a summary description of lava tube burial cave site SIHP # 50-10-37-16045 in Kahalu‘u (Burtchard 1992); while the study area is shown to slightly overlap the current project area, the lava tube itself is well to the south (see Figure 20 and Figure 21). Two incomplete sets of human remains were documented within the tube. A mound located near the entrance to the cave was tested and found to contain an abundance of nonhuman mammal bone, but no human remains. In 1994 IARI undertook an archaeological survey and data recovery within and expanding on the Burtchard (1992) study area in Kahalu‘u (Burtchard et al. 1994; see Figure 21 and Figure 23). Data recovery was undertaken at SIHP # 50-10-37-15154 (agricultural and limited habitation complex, located south of the current project area; see Figure 20). Traditional and historic cultural materials were identified during data recovery excavations, consistent with radiocarbon results. During the data recovery work new features at previously recorded SIHP # -16045 (burial lava tube with surface agricultural features) were encountered and documented (see Table 5 and Figure 23). Within the expanded part of the study area another agricultural complex comprising 22 features was documented (SIHP # -16046); the northern extent of this site is situated approximately 50 south of the current proposed pipeline corridor (see Figure 20, Figure 23 and Figure 24). Feature 21 at SIHP # -16046 may have served as a support for the adjacent railroad berm (Burtchard et al. 1994:49). Bulldozer disturbance was noted along the northern study area boundary, between SIHP # -16046 and the current proposed pipeline corridor (see Figure 24).
Fieldwork Effort and Findings	The field inspection for the DHHL 2.0 MG Water Storage Tank and Transmission Lines Construction project was conducted initially on 17 December 2020 by CSH Project Director Olivier M. Bautista and Archaeologist Samantha Purdy. This initial field inspection included the proposed tank sites and pipeline routes, as well as some alternate

	tank site and pipeline routes. Subsequently changes to the project were made and the alternate tanks sites and pipeline routes were removed from the project; this report has been updated to reflect these changes. Furthermore, topographic surveys conducted for the proposed tank sites in both Kahalu‘u and Keauhou identified some potential archaeological features not observed during the December 2020 fieldwork. Therefore, the project area was expanded around these tank sites and CSH was asked to conduct additional fieldwork to examine the features documented in the topographic survey. The additional fieldwork was conducted on 19 April 2022 by CSH Project Director Olivier M. Bautista and Archaeologist Samantha Purdy. Sites documented within the updated project area during the December 2020 and April 2022 field inspections are illustrated on Figure 25 and Figure 26. <u>Kahalu‘u Section</u> The western terminus of the Kahalu‘u portion of the project area is at a chain link fence surrounding a small water tank (Figure 27). Vegetation in this portion of the project area consists of dense *haole koa* and guinea grass (Figure 28). Moving *mauka* (upslope) from the small water tank, a section of the previously documented SIHP # 50-10-37-07214 railroad causeway crosses through the proposed pipeline route (see Figure 25 and Figure 29). The pipeline route continues upslope to the Hawai‘i Belt Road/Route 11 (Figure 30); under previous studies elsewhere on Hawai‘i Island the former and present alignments of this roadway have been assigned as SIHP # 50-10-46-30187 (see Figure 25). The existing Department of Water Supply (DWS) facility located *mauka* of the highway comprises an open graded area containing large tank, two smaller tanks, and a control building situated within a chain link fence (Figure 31 and Figure 32). The area immediately surrounding the facility exhibits evidence of some prior disturbance, as indicated by the presence of cleared areas, non-native vegetation, and deposits of mechanically deposited/pushed rock material (Figure 33). One substantial rock deposit was documented approximately 6 m (20 ft) north of the facility fence line in the topographic survey, appearing as a roughly platform-shaped feature. This feature was investigated by CSH and determined to be a loose, mechanically deposited pile of basalt rock associated with clearing and planting of an adjacent breadfruit tree (see Figure 33 and Figure 34). Soil, chipped basalt rock, and chunks of concrete were observed within the rock deposit. The topographic survey identified two rock wall features in the

vegetated area above the fenced DWS facility; following inspection by CSH these features were determined to be potential historic properties (CSH-1 and CSH-3). CSH-1 is located near the northwest corner of the DWS facility and CSH-3 is located to the east (see Figure 25). These features are described as follows:

- CSH-1 is a linear, dry stacked stone wall situated approximately 1.5 m upslope of the northwestern corner of the DWS facility fence. CSH-1 is constructed of 5 to 6 courses of neatly stacked and faced basalt cobbles and small boulders with a core fill of smaller basalt stones (Figure 35 and Figure 36). The wall measures approximately 15 m long (north-south), 1 m high, and 60–70 cm wide. The *makai* portion of the wall closest to the fence is intact and undisturbed; the *mauka* portion appears to have been impacted by bulldozing at some point in time. CSH-1 is historic in age as evidenced by the core filled construction technique. No artifacts were observed on or around the feature.
- CSH-3 is also a dry stacked stone wall. The wall is located approximately 5 m east of the DWS facility fence. is constructed of 4 to 7 courses of neatly stacked and faced basalt cobbles and small boulders with a core fill of smaller basalt stones (Figure 37). The wall measures approximately 10 m long (north-south), 1.25 m high, and 60–70 cm wide. The wall is mostly intact and undisturbed though it is obscured in the dense vegetation present in this area. CSH-3 is historic in age as evidenced by the core filled construction technique. No artifacts were observed on or around the feature.

Another potential historic property comprising three individual features (CSH-2) was identified along the proposed pipeline route between the DWS facility and the Old Māmalahoa Highway, which is also considered a portion of the SIHP #50-10-46-30187 Belt Road site (see Figure 25). CSH-2 is described as follows:

- CSH-2 is a site complex situated in the easternmost half of the proposed alignment in Kahalu‘u, in an area planted with coffee (see Figure 25). The site was accessed off the Old Māmalahoa Highway (SIHP # 50-10-46-30187) near a water meter box with numerous PVC pipes leading down slope (Figure 38). These PVC pipes traversed downslope along portions of *mauka-makai* dry-stacked stone walls intersected by cross-slope walls (Features A, B, and C; see Figure 25 and

Figure 39 through Figure 41). These walls are typical features of the Kona Field System. It is common in this area of Kona for pre-Contact agricultural walls to have been repurposed by historic coffee plantations rather than destroyed. Some PVC pipes were found on and around these features, possibly used for irrigation of the surrounding coffee. Additional features may be present along the portion of the proposed pipeline route closer to the DWS facility. This area shows some signs of previous disturbance but is not currently planted in coffee. The grasses and invasive trees in this area made for poorer ground visibility than within the coffee orchard above. A more intensive survey is needed to determine the boundary of CSH-2.

Keauhou Section

In Keauhou the majority of the project area is along existing roadways, including but not limited to Old Māmalahoa Highway (SIHP # 50-10-46-30187) and Bishop Road (see Figure 26 and Figure 42 through Figure 46). Approximately 835 m (0.52 miles) of the proposed pipeline route is along SIHP # 50-10-46-30187. The proposed pipeline route extends along Bishop Road through coffee orchards (Figure 47) to the proposed tank site, which comprises a clearing located between an orchard and an area of dense non-native vegetation (Figure 48). During the topographic survey some rock features were identified within the vegetated area east and southeast of the proposed tank location. Within the vegetation to the southeast of the proposed tank site a large area of basalt rock deposit was identified. This deposit was inspected by CSH and found to comprise scattered bulldozer rubble mixed with scrap metal and other trash (Figure 49). The topographic survey also identified two rock wall segments north of this disturbed area, which were assigned collectively as CSH-4 during the CSH inspection. Another shorter wall was documented by CSH just *mauka* of CSH-4 and assigned as CSH-5 (see Figure 26). CSH-4 and CSH-5 are described as follows:

- CSH-4 is a somewhat linear dry stacked stone wall situated within the dense vegetation east of the proposed tank site. The wall is constructed of 5 to 8 courses of neatly stacked and faced basalt cobbles and small boulders with a core fill of smaller basalt stones (Figure 50 and Figure 51). The wall measures approximately 64 m long overall (north-south), with an approximately 6-m-wide break near its midpoint. The southern end of the wall appears to have been impacted by the prior bulldozing activity to the south (Figure 52). The wall is 1.5 m high and 60–90cm wide. CSH-4 is historic in age as

	evidenced by the core filled construction technique. No artifacts were observed on or around the feature. • CSH-5 is a low rock wall located approximately 13 m east of CSH-4 within dense vegetation. CSH-5 is constructed of 2 to 5 courses of stacked basalt cobbles and small boulders (Figure 53 and Figure 54). The wall measures approximately 7 m long (north-south), 40–75cm high, and 50–70 cm wide, exhibiting greater heights along its downslope side. The wall appears intact and undisturbed. CSH-5 may represent a remnant of the Kona field system, perhaps functioning as an agricultural terrace. No artifacts were observed on or around the feature. <u>SIHP # 50-10-47-30187 (Hawai‘i Belt Road / Old Māmalahoa Highway)</u> As noted above both the Kahalu‘u and Keauhou portions of the project area come into contact with former and present alignments of the Hawai‘i Belt Road and Old Māmalahoa Highway (variably State Routes 11, 19, 180, and 190), which have been assigned in prior studies as SIHP # 50-10-46-30187. The portion of the Belt Road in Kahalu‘u is clearly a newer road than the more *mauka* alignment. The right-of-way of the original Belt Road alignment (i.e., the Old Māmalahoa Highway) can sometimes contain historic rock walls, culverts, or other historic features associated with the road. The field inspection did observe some rock wall sections near or along the project area alignments in both Kahalu‘u and Keauhou (see Figure 44), but these features would need closer inspection to determine their location in relation to the right-of-way and likely age and association.
Potential for Project Effect on Historic Properties	Three previously documented historic properties and five newly recorded archaeological sites representing potential historic properties are identified within the project area. The project may impact some or all of these sites to some degree, depending on the final tank and pipeline design. <u>Previously Recorded Historic Properties:</u> • The project area is located within the known limits of the Kona Field System (SIHP # 50-10-32-06601). Many of the pre-Contact portions of the Kona Field System in this area of Kona were repurposed for historic coffee cultivation. Some features originally associated with the Kona Field System may be present within the project area but require further investigation (see CSH-2). • A portion of the SIHP # 50-10-37-07214 railroad causeway

	crosses through the proposed pipeline route in Kahalu‘u. • Portions of the project area in both Kahalu‘u and Keauhou cross or overlap SIHP # 50-10-47-30187, representing the former and present alignments of the Hawai‘i Belt Road and Old Māmalahoa Highway. Newly Recorded Archaeological Sites: • CSH-1 is a historic-era rock wall located upslope of the DWS facility in Kahalu‘u. • CSH-2 is a complex of three cross-slope wall features located within the proposed alignment in a coffee farm Kahalu‘u; these features may be associated with the Kona Field System. • CSH-3 is a historic-era rock wall located upslope of the DWS facility in Kahalu‘u. • CSH-4 is a historic-era rock wall located upslope of the proposed tank site in Keauhou. • CSH-5 is a low rock wall/possible terrace that may be associated with the Kona Field System.
Recommendations	Consultation with SHPD is recommended regarding project historic preservation requirements. This consultation effort would confirm whether an AIS is needed and aid in development of an SHPD-informed AIS fieldwork strategy.

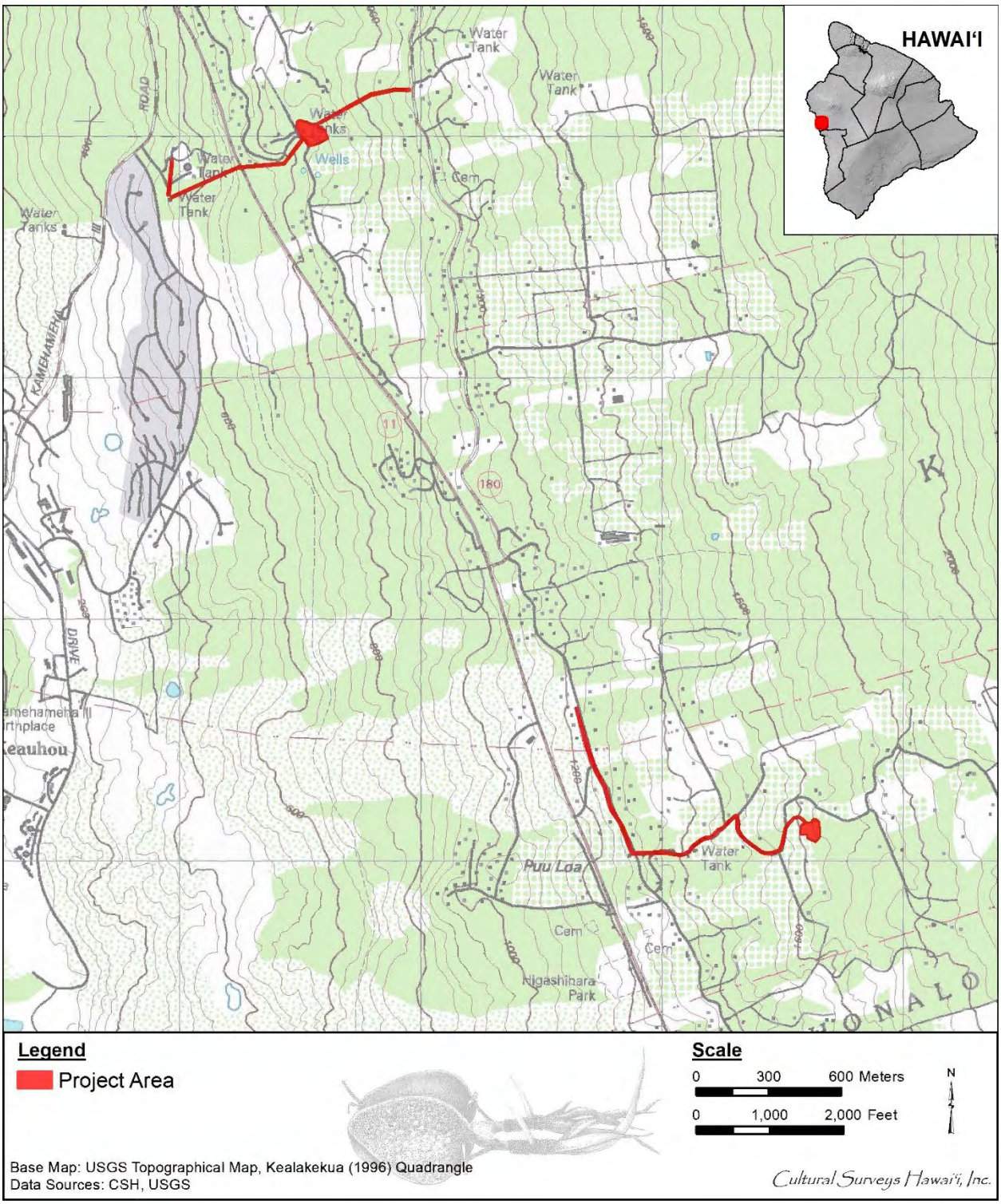

Figure 1. Portion of the 1996 Kealakekua USGS 7.5-minute topographic quadrangle, showing the location of the project area

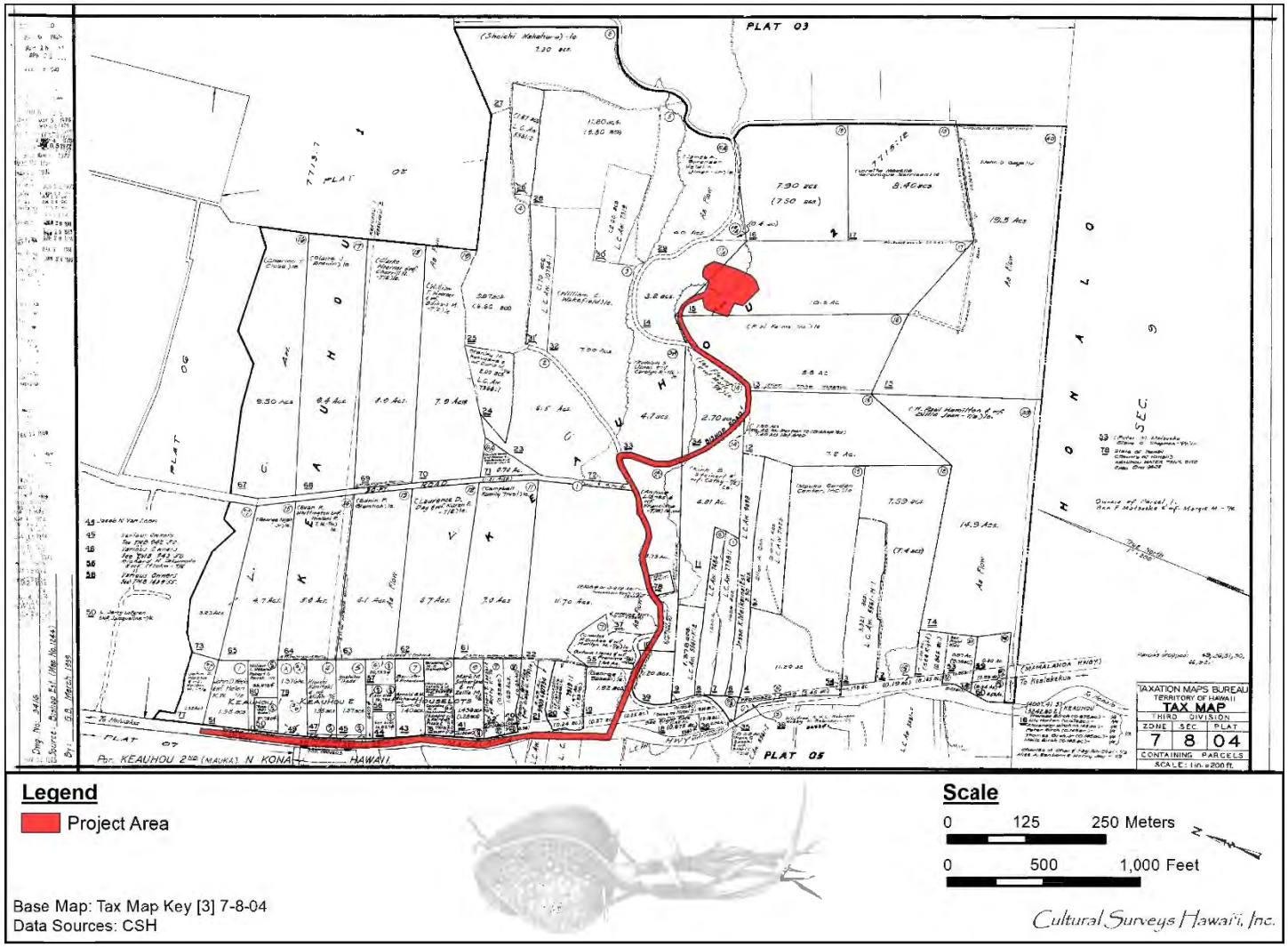

Figure 2. Tax Map Key (TMK) [3] 7-8-04 showing the southern portion of the project area in Keauhou 1-2 (Hawai‘i TMK Service 2010)

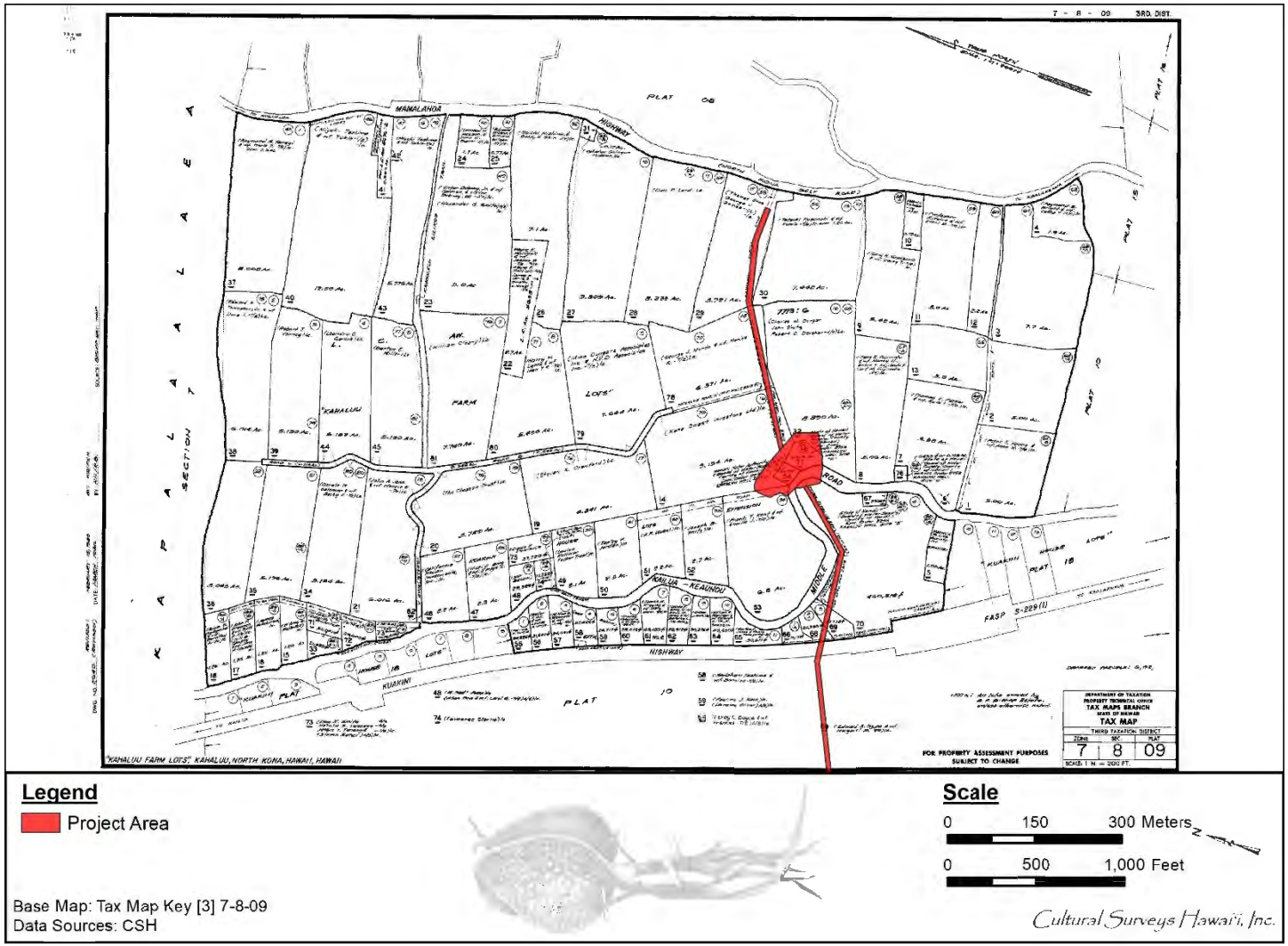

Figure 3. TMK: [3] 7-8-09 showing a part of the northern portion of the project area in Kahalu‘u (Hawai‘i TMK Service 2010)

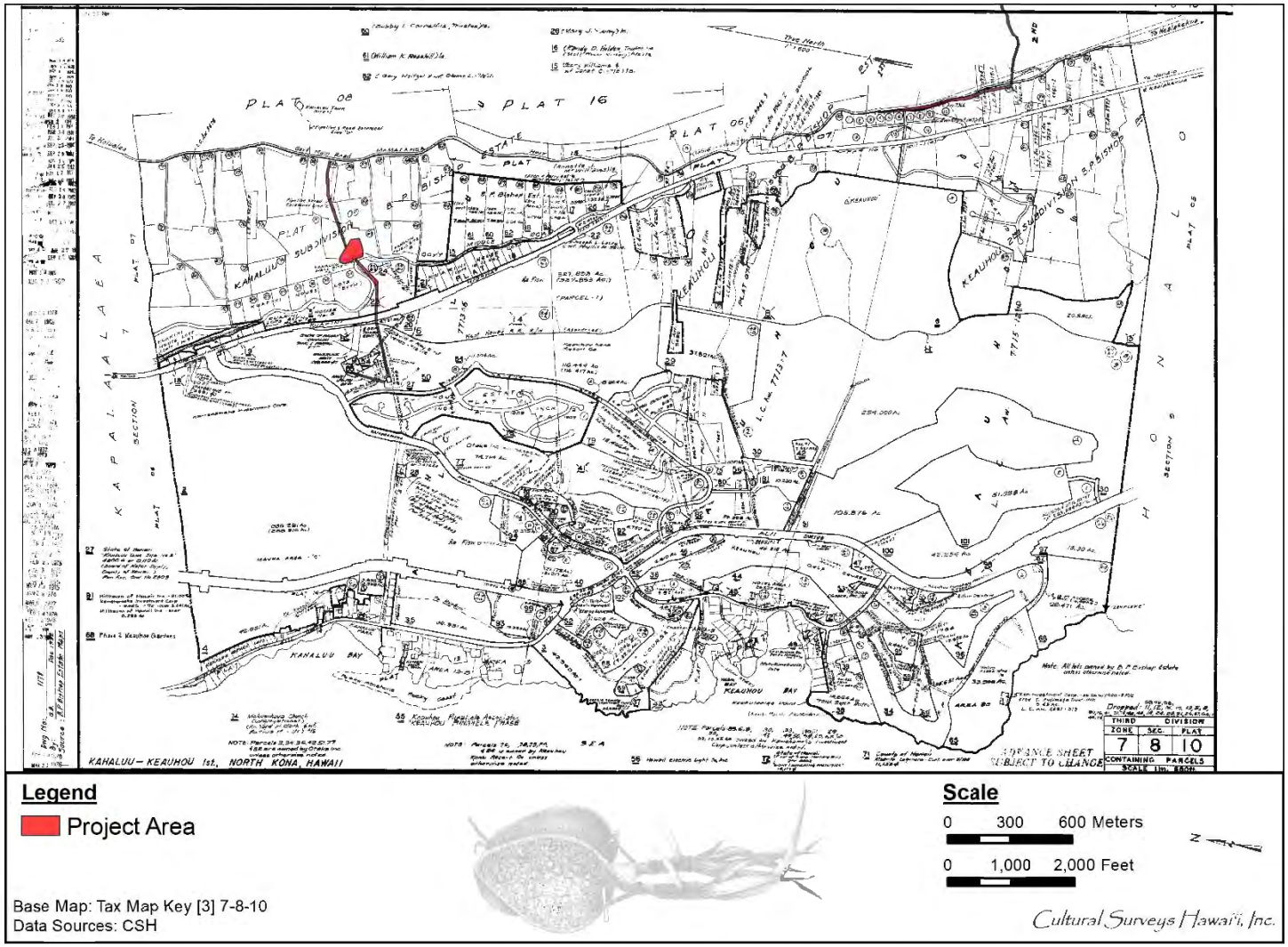

Figure 4. TMK: [3] 7-8-10 showing the northern portion of the project area in Kahalu‘u (Hawai‘i TMK Service 2010)

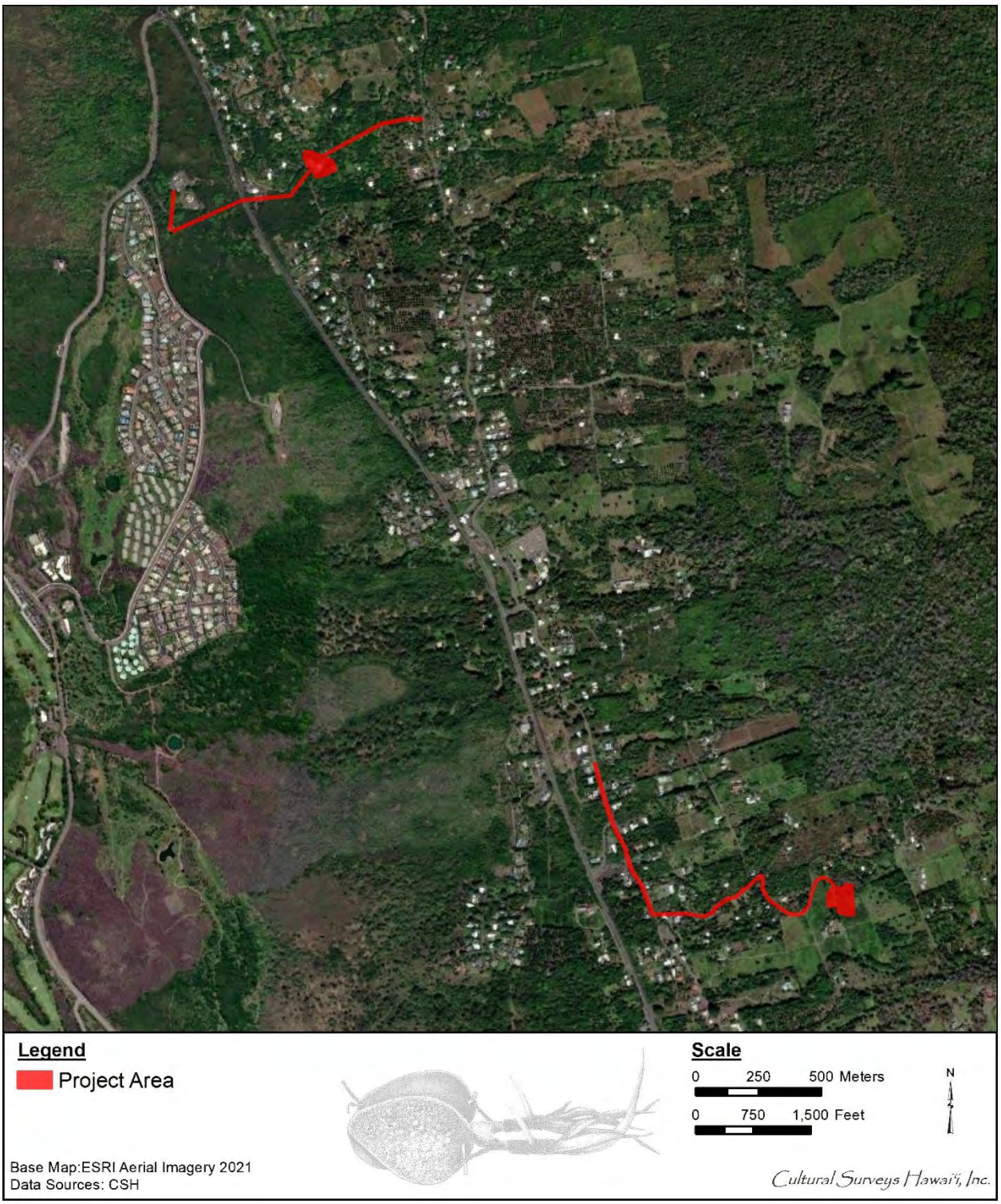

Figure 5. Aerial photograph showing the overall project area (ESRI 2018)

Figure 6. Aerial photograph of the northern portion of the project area in Kahalu‘u (ESRI 2018)

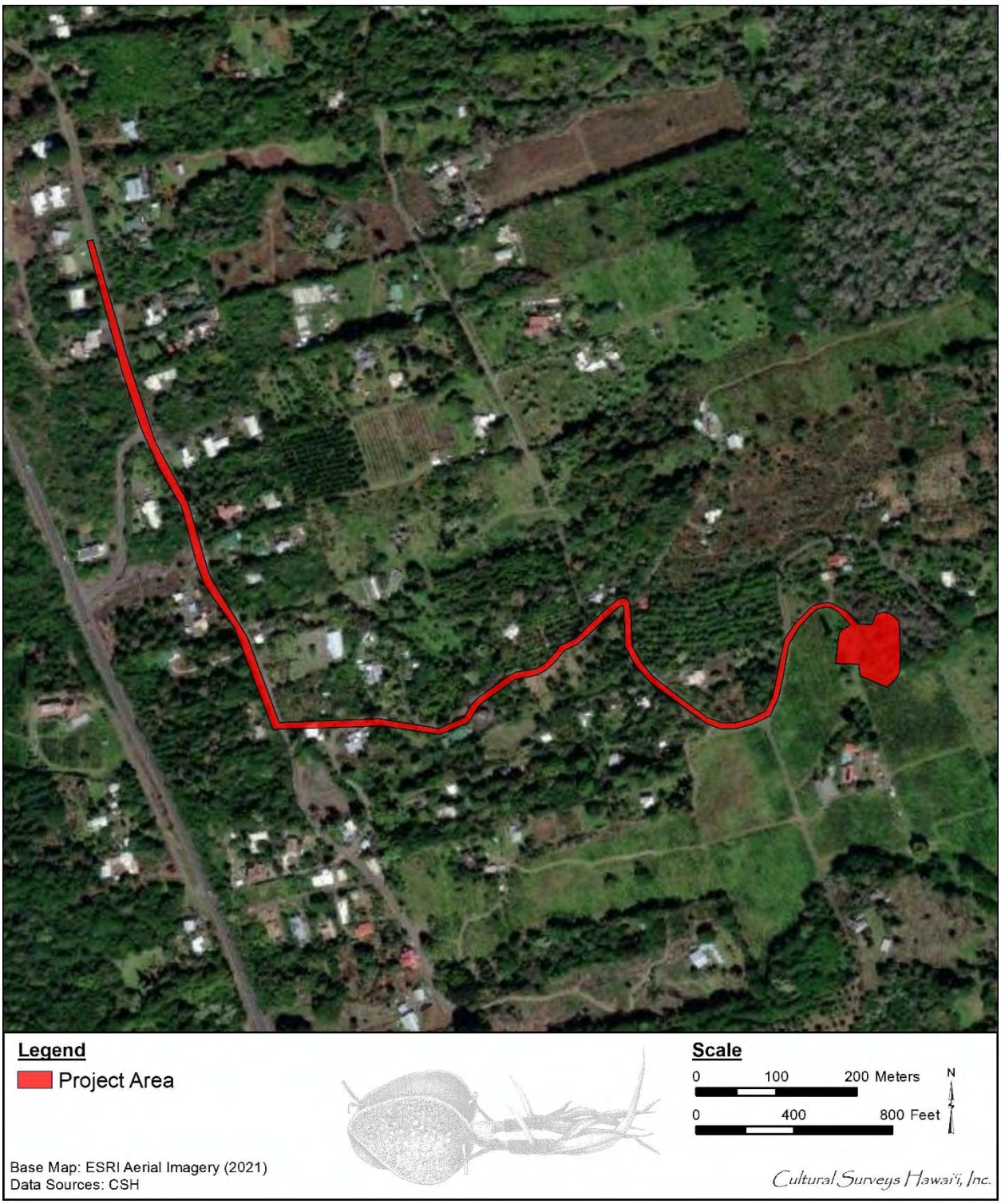

Figure 7. Aerial photograph of the southern portion of the project area in Keauhou 1-2 (ESRI 2018)

Figure 8. Project location map (courtesy of client) showing the configuration of water lines and tank sites

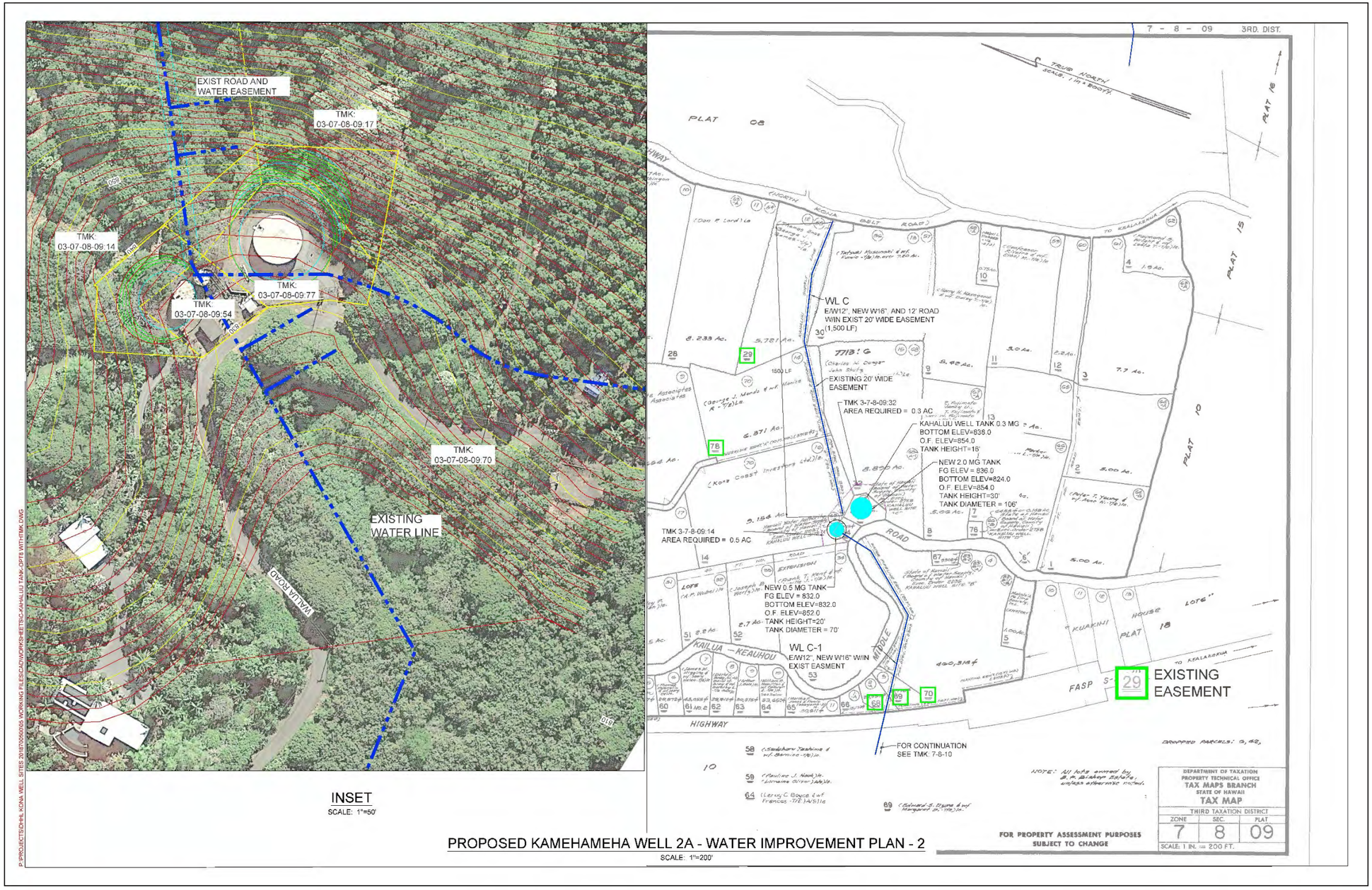

Figure 9. Proposed water improvement plan (courtesy of client) showing improvements at the tank site in Kahalu‘u

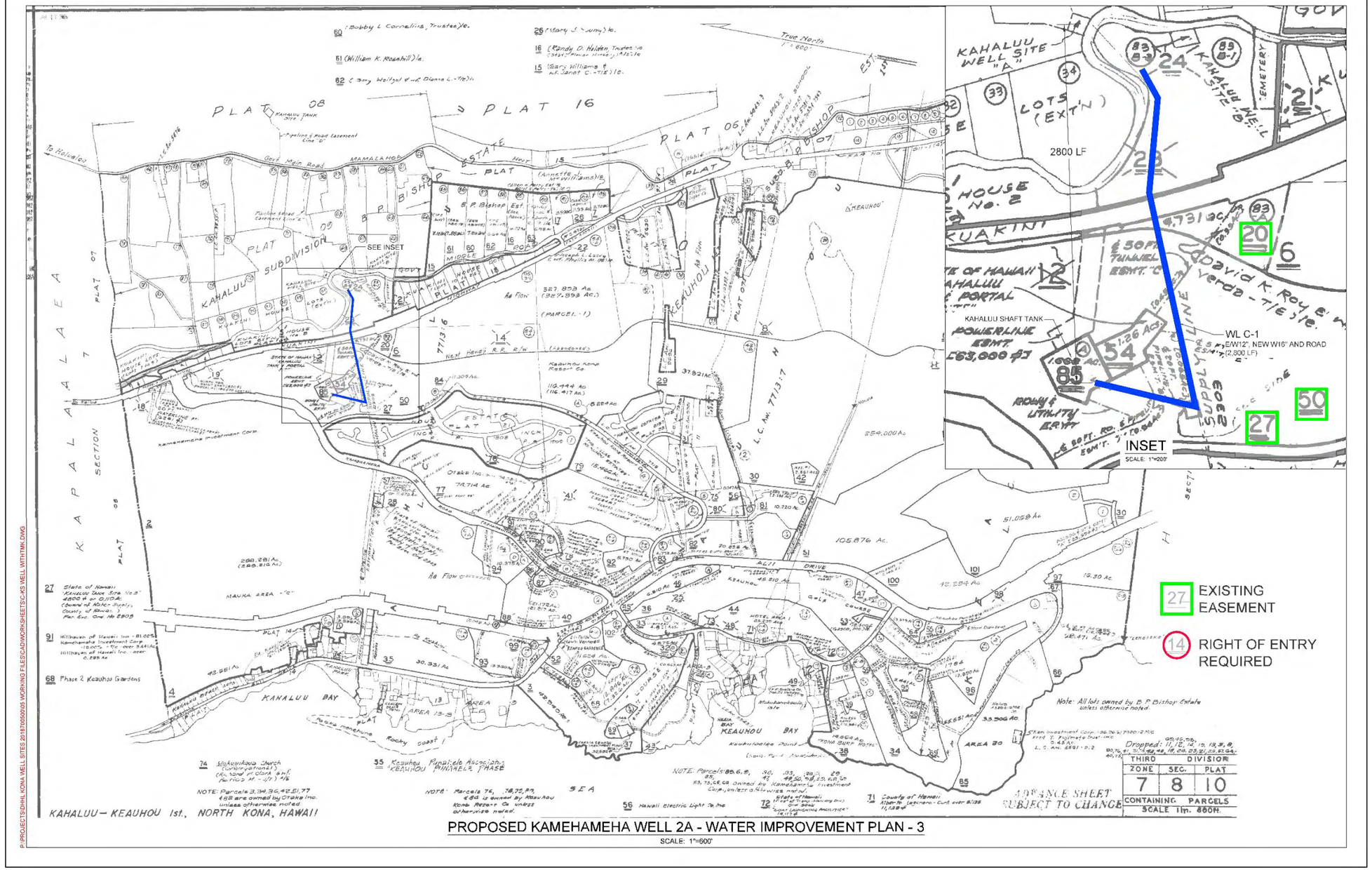

Figure 10. Proposed water improvement plan (courtesy of client) showing the *makai* portion of the water line in Kahalu‘u

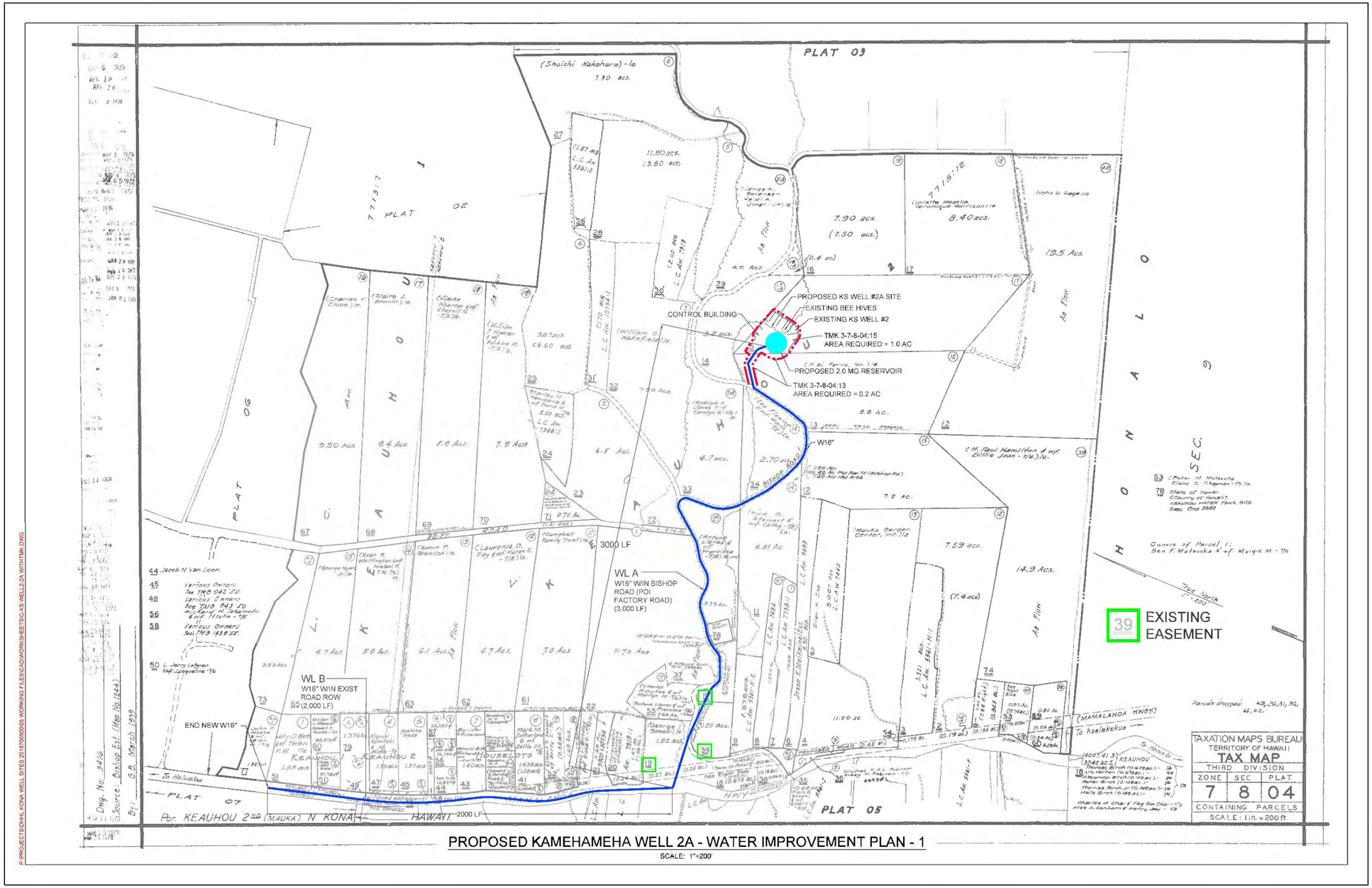

Figure 11. Proposed water improvement plan (courtesy of client) showing improvements in Keauhou

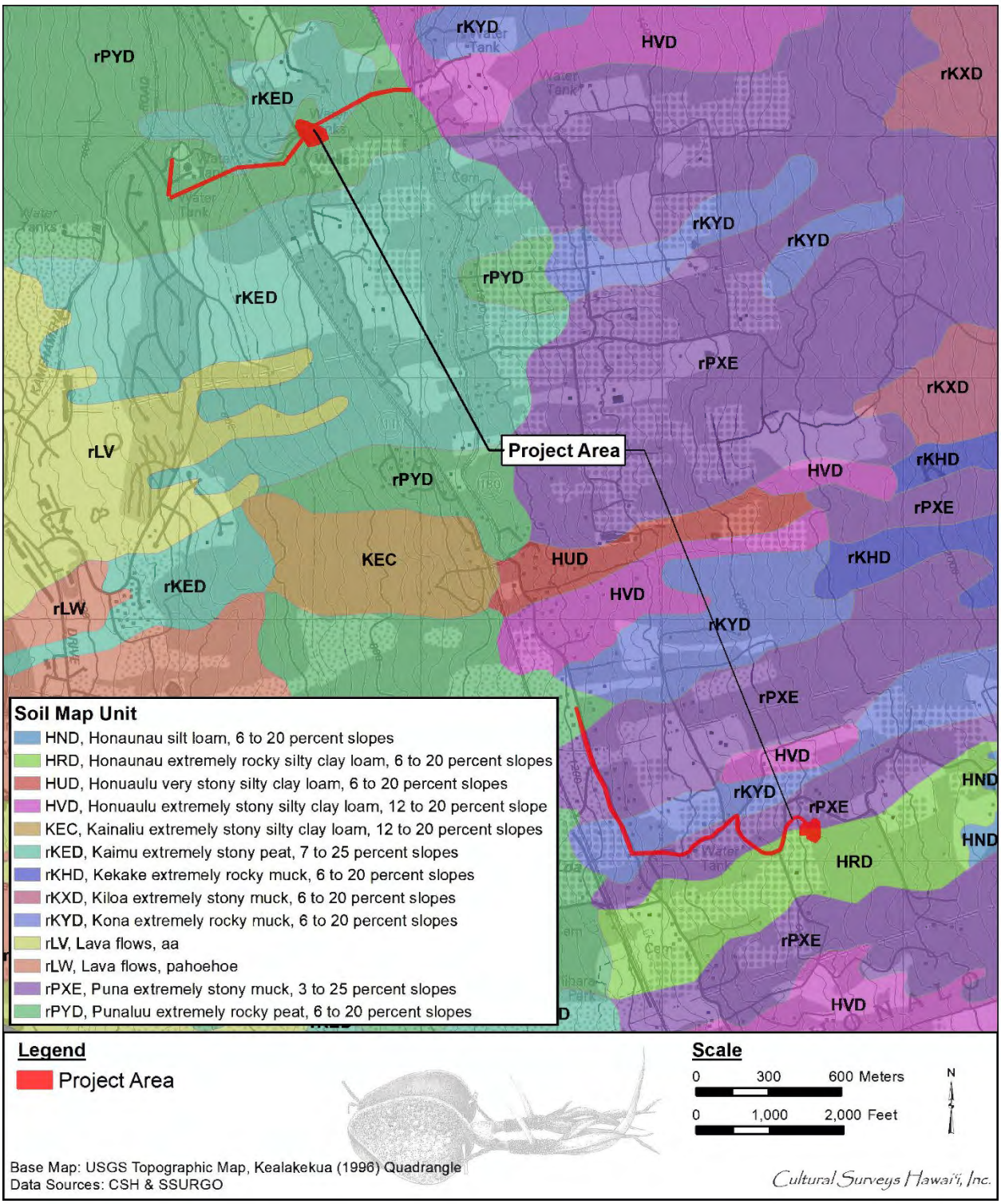

Figure 12. Overlay of *Soil Survey of the State of Hawaii* (Sato et al. 1972), indicating soil types within and surrounding the project area (USDA SSURGO 2001)

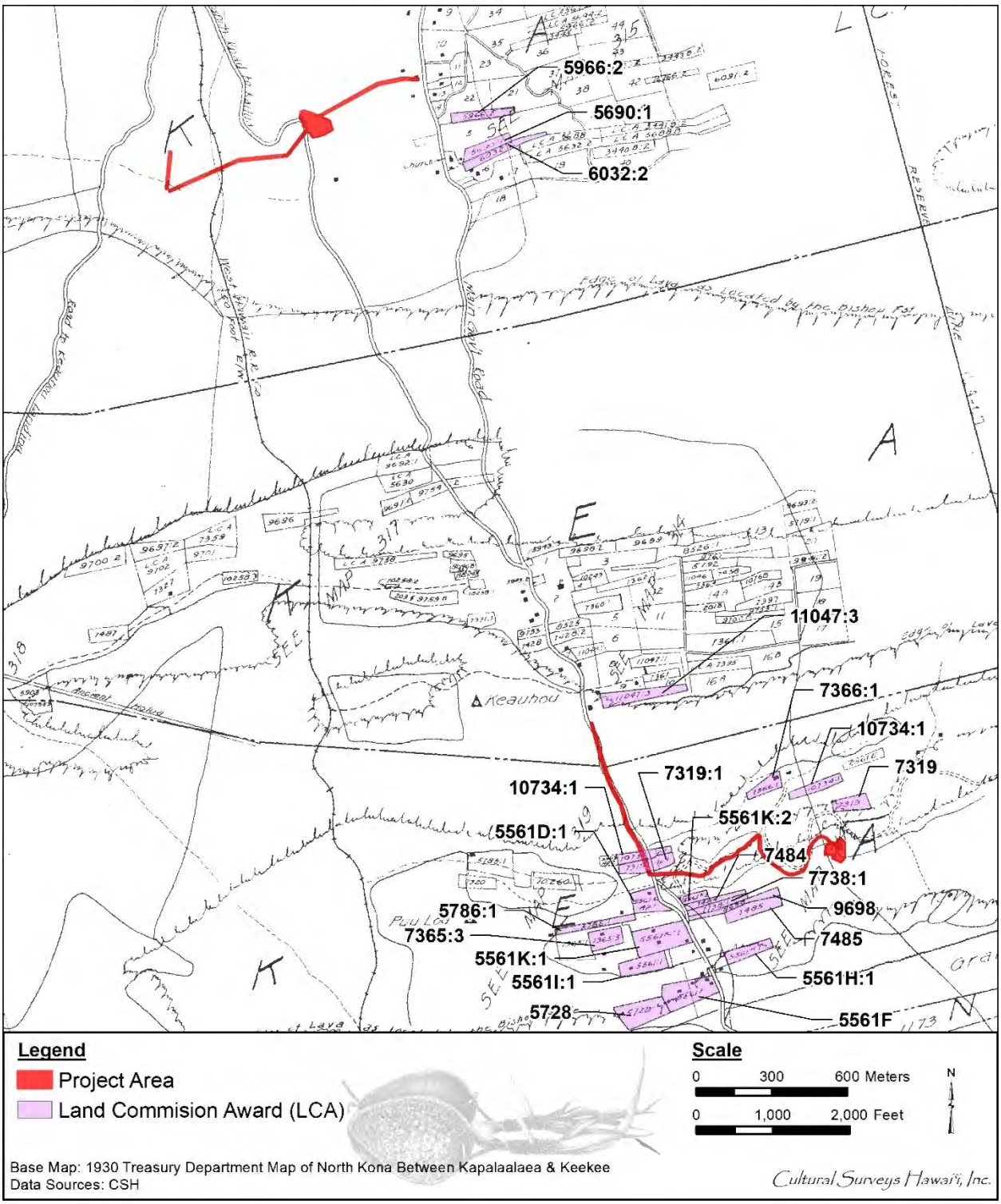

Figure 13. Portion of the 1930 Treasury Department map, showing the location of the project area in relation to nearby and overlapping LCA parcels

Table 1. LCAs in the immediate vicinity of the project area; entries in **bold** font overlap the project area

LCA/Āpana #	Awardee	Royal Patent #	Total # *‘Āpana* Awarded in LCA	Total LCA Acreage
Kahalu‘u Awards				
5690:1	Kanakaole	4456	2	1.97
5966:2	Maheu	4359	2	2.05
6032:2	Napio	6807	2	2.54
Keauhou 1 Awards				
11047:3	Poopoopuu	6391	3	5.8
Keauhou 2 Awards				
5561D:1	Kanihana/Kauihana	3680	2	2.88
5561F	Kewalo, MC	3681	1	4.7
5561H:1	Kahilo	7757	2	3.07
5561I:1	Ki	–	2	5.0
5561K:1 and 2	Kalalakoa	3741	2	4.86
5728	Kaukanehola	8097	1	4.45
5786:1	Kapela	7032	2	2.11
7319:1	**Naholowaa**	**–**	**3**	**4.9**
7365:3	Keohoaeae	7019	3	6.28
7366:1	Kukahi	7044	3	2.51
7484	Keao	–	1	1.5
7485	Kapahu	5466	1	3.0
7738:1	Aoao	7387	2	3.0
9698	Kapela 1	6816	1	2.3
10734[5903]:1	**Paiki**	**6842**	**3**	**5.53**

Table 2. Land use within *kuleana* awards overlapping the project area

LCA #	Awardee	Land Use
7319:1	Naholowaa	Enclosed lot (no house), orange tree
10734[5903]:1	Paiki	One enclosed house lot, one *hala* tree, 12 *loulu* (*Pritchardia* spp.) palm trees

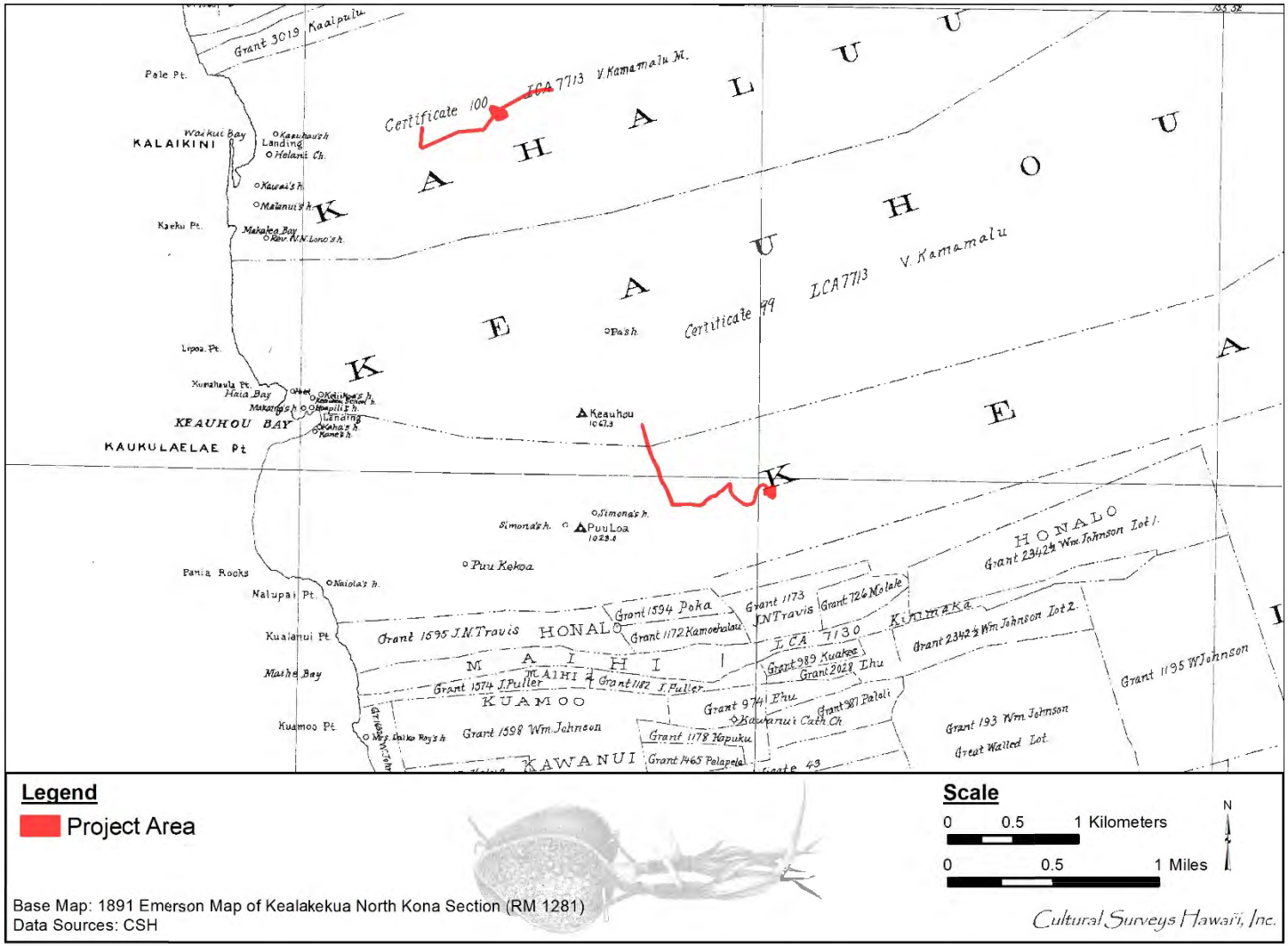

Figure 14. Portion of 1891 Emerson map of North Kona showing the project area; the map depicts the project area in LCA 7713 awarded to V. Kamamalu (Victoria Kamāmalu Ka‘ahumanu IV was Kuhina Nui of Hawaii); map shows there are no signs of any development within the project area (RM 1281)

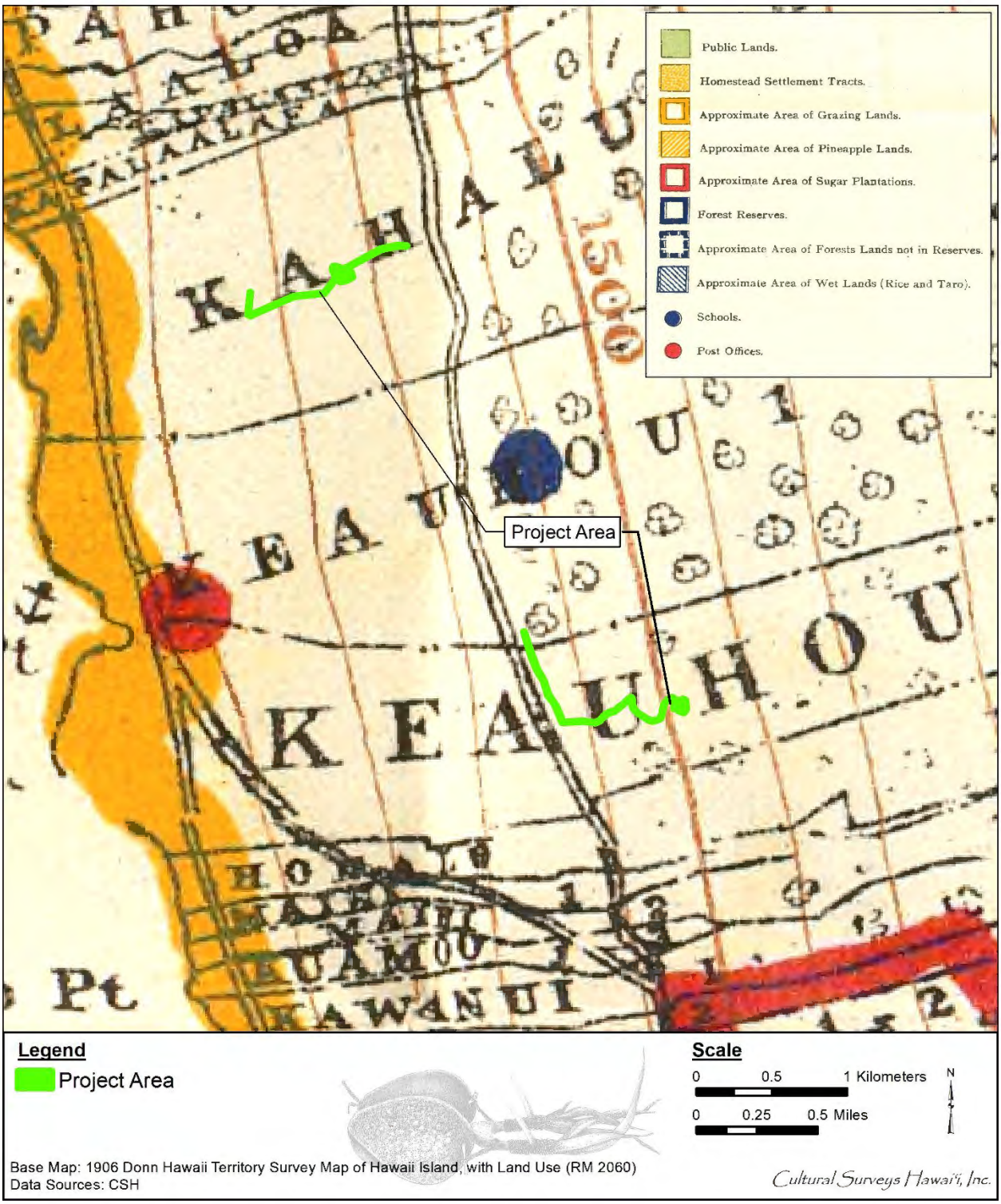

Figure 15. Portion of 1906 Donn Hawaii Territory Survey map of Hawaii Island showing location of project area in relation to the Old Māmalahoa Highway, schools, post offices, Homestead Settlement Tracts, and the bounds of sugar plantation lands to the south

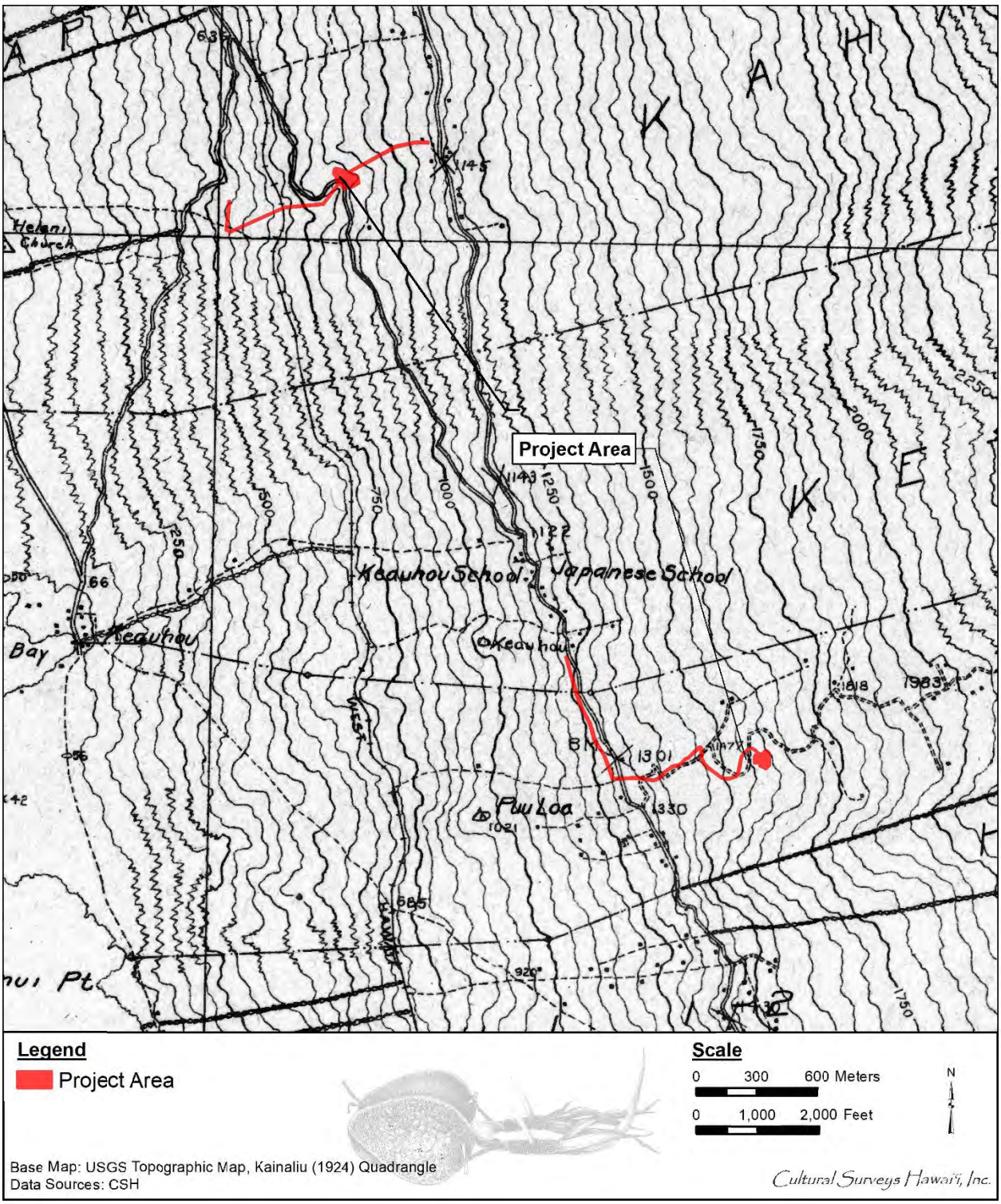

Figure 16. Portion of the 1924 Kainaliu USGS 7.5-minute topographic quadrangle showing the location of project area in proximity to developments including schools, trails, the Hawaii Railroad, and numerous structures (possibly residences) clustered along the Old Māmalahoa Highway

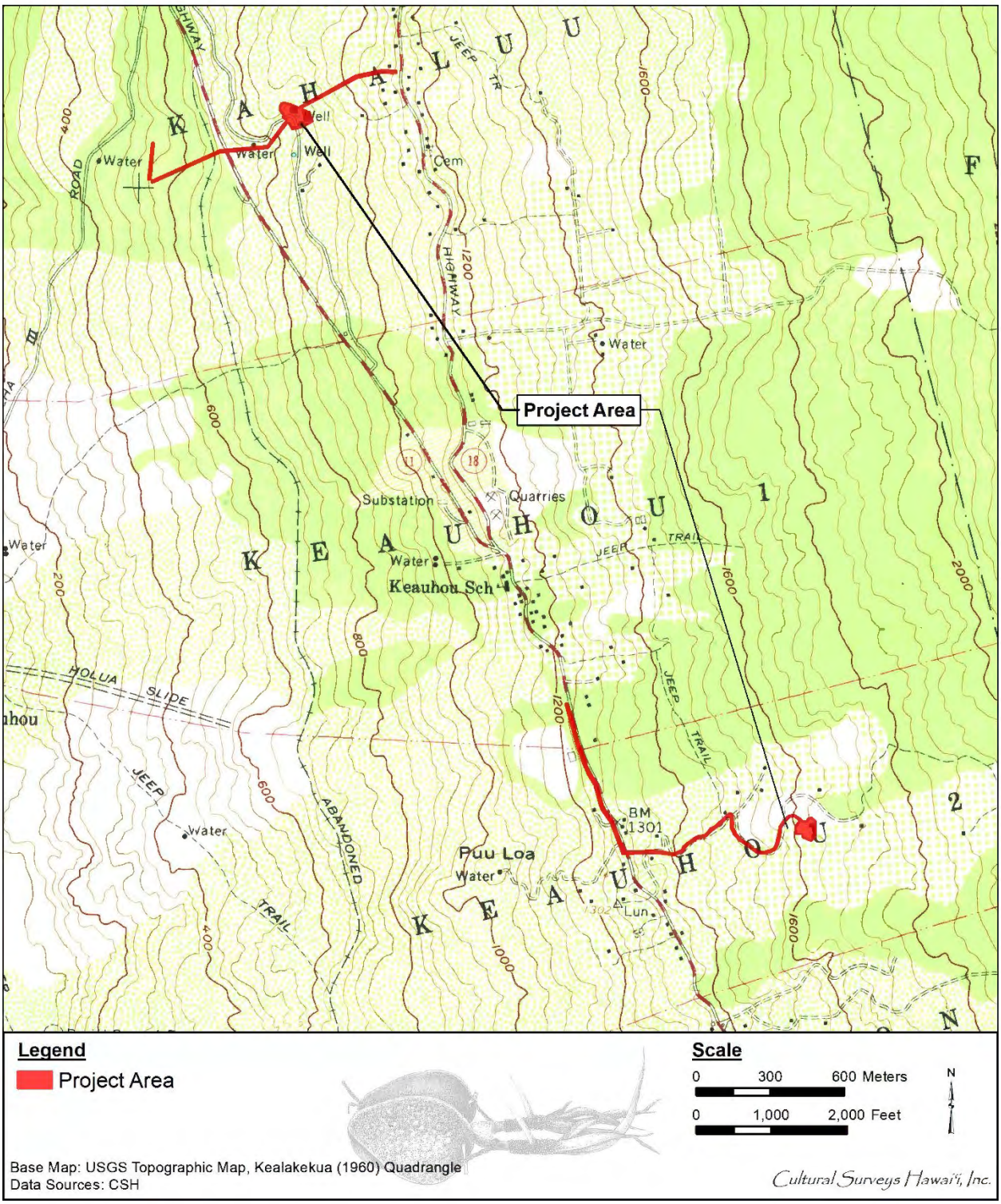

Figure 17. Portions of the 1960 Kealakekua USGS 7.5-minute topographic quadrangle showing the location of project area in relation to area development; note the “abandoned” Hawaii Railroad alignment

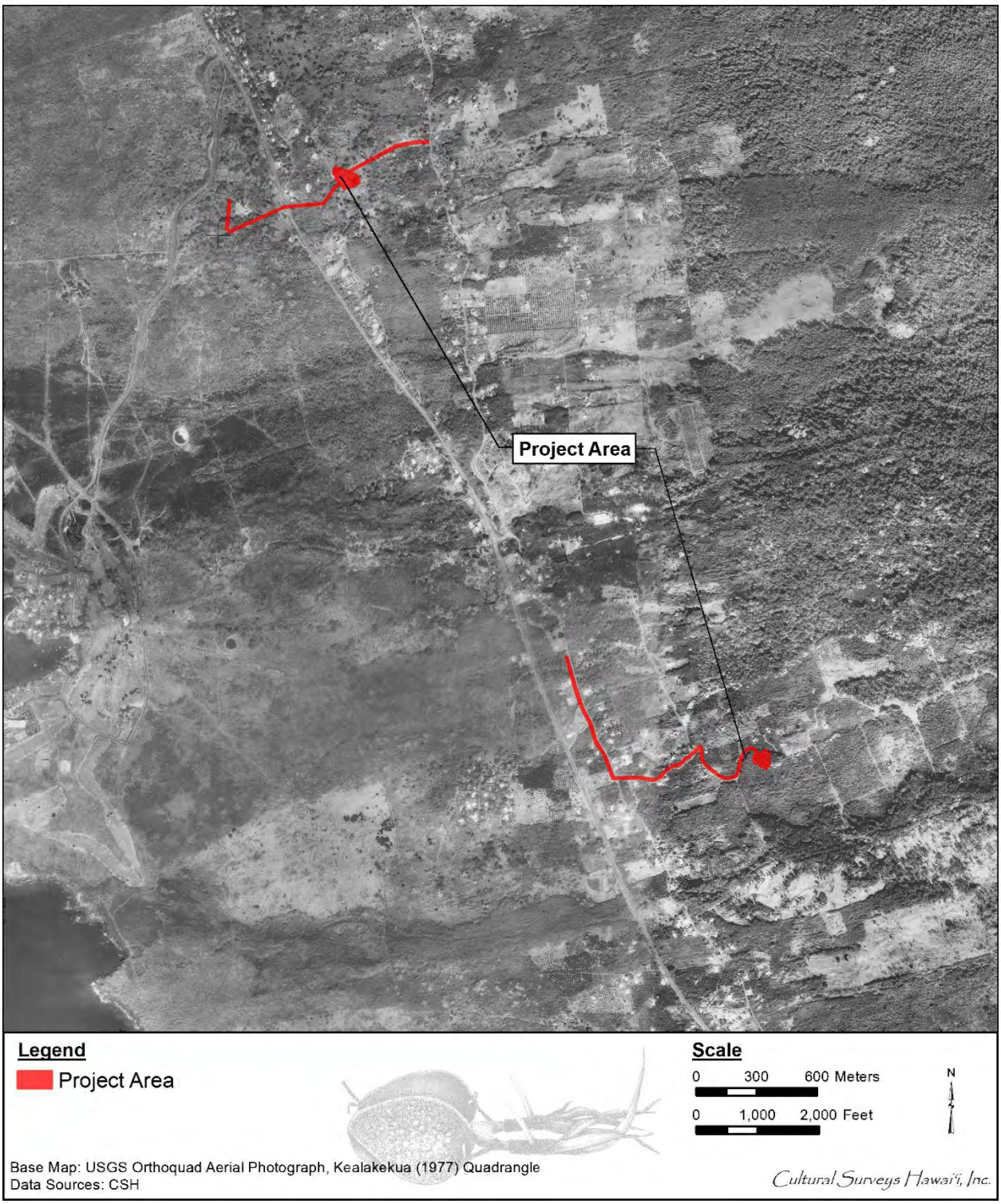

Figure 18. 1977 USGS Orthophoto, showing the continued use of the surrounding area for agriculture and ranching

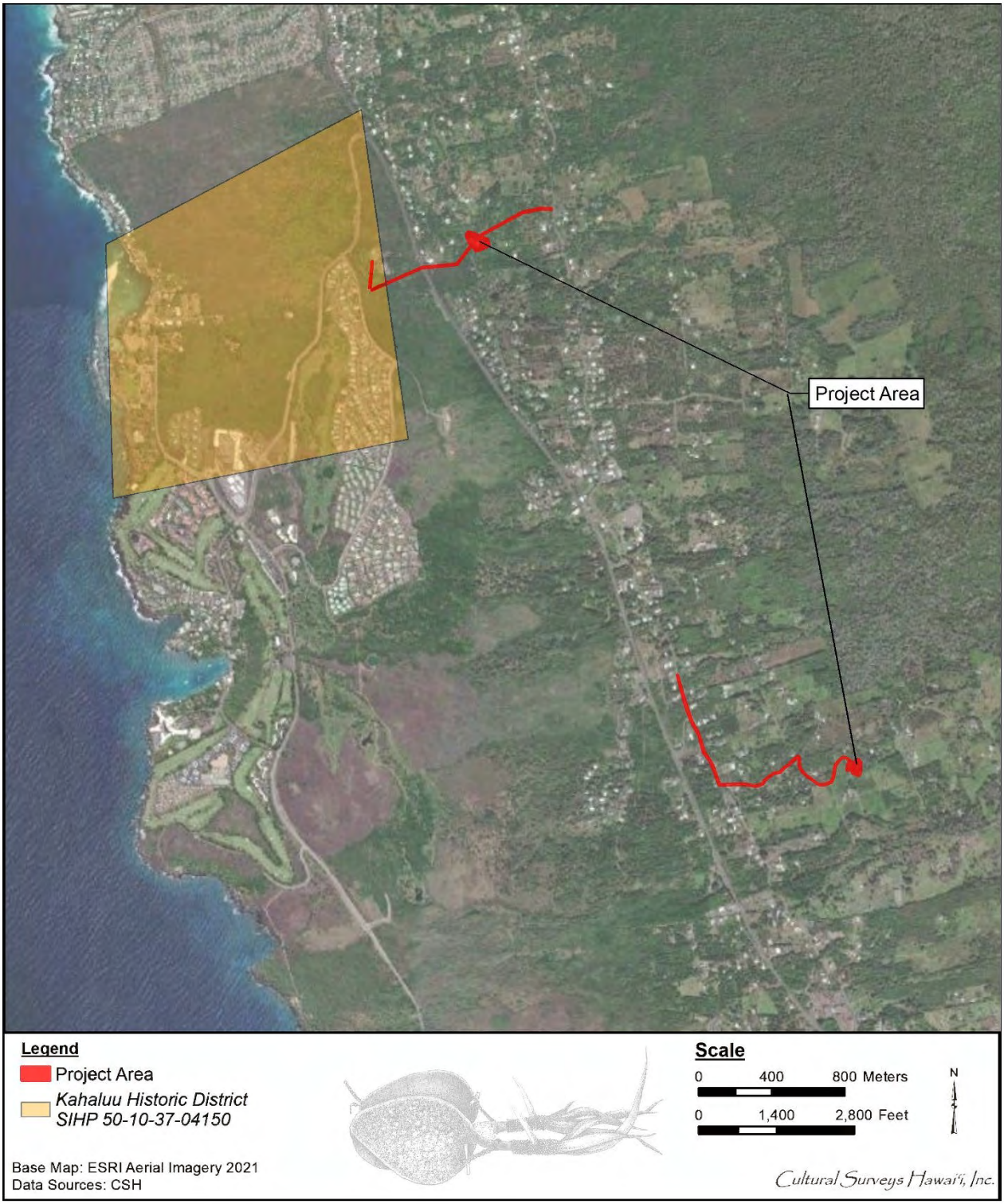

Figure 19. Aerial photograph (ESRI 2018) showing the Kahalu‘u Historic District (SIHP # 50-10-37-04150) in relation to the project area

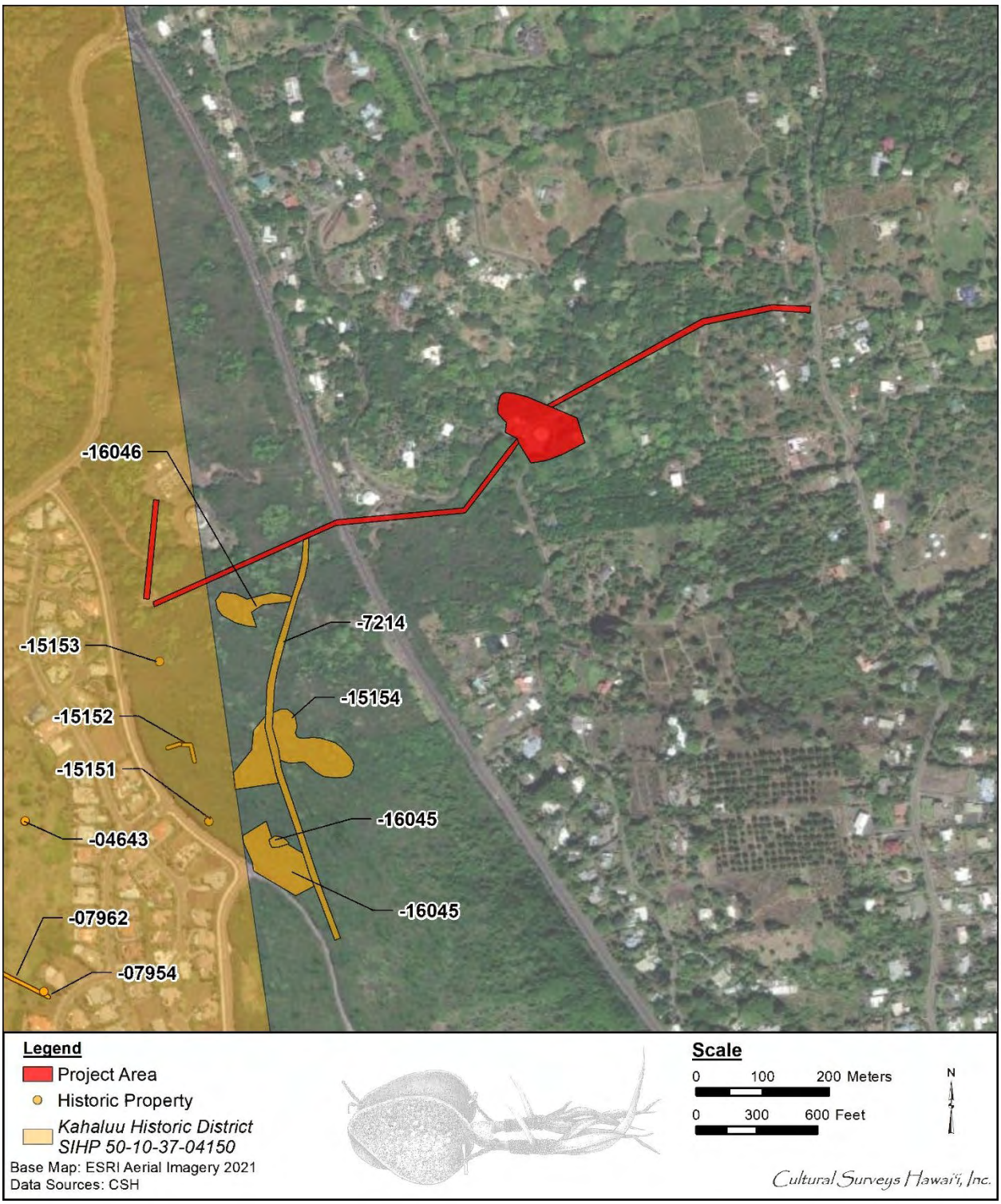

Figure 20. Aerial photograph (ESRI 2018) showing the locations of previously identified historic properties in the vicinity of the northern portion of the project area in Kahalu‘u

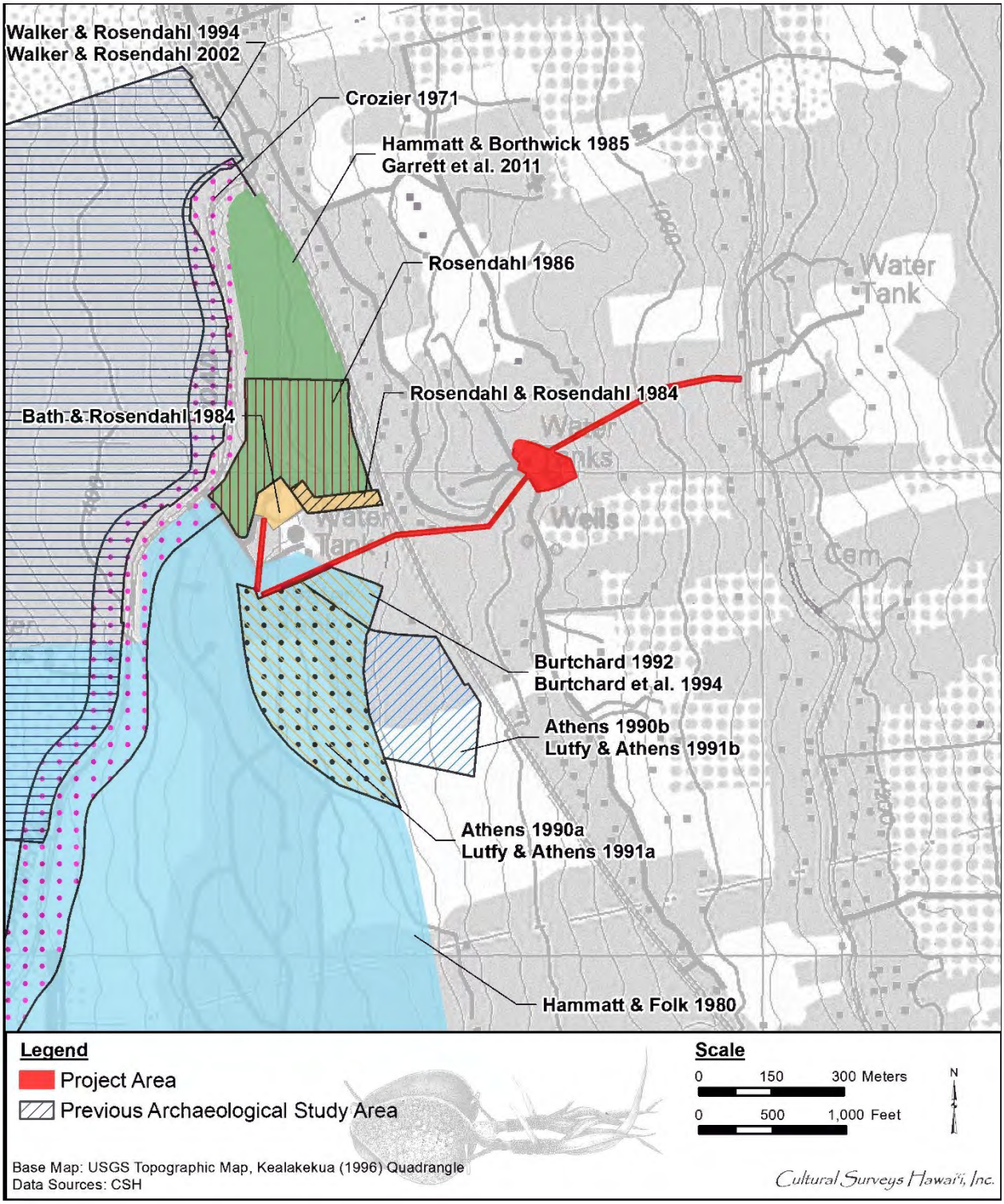

Figure 21. Portion of the 1996 Kealakekua USGS 7.5-minute topographic quadrangle, showing the location of previous archaeological studies in the vicinity of the northern portion of the project area in Kahalu‘u

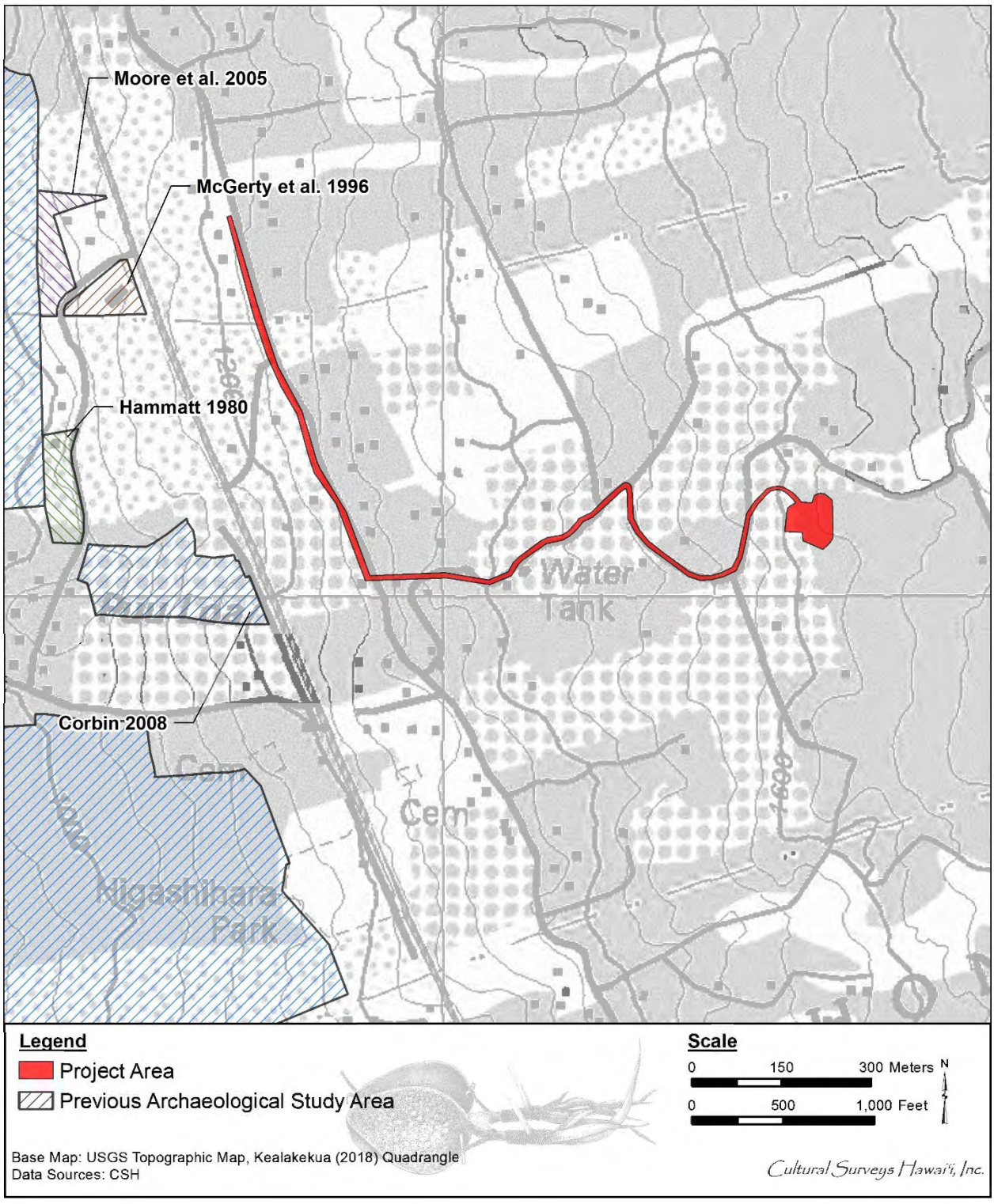

Figure 22. Portion of the 1996 Kealakekua USGS 7.5-minute topographic quadrangle, showing the location of previous archaeological studies in the vicinity of the southern portion of the project area in Keauhou 1-2

Table 3. Previous archaeological studies in the northern portion of the project area in Kahalu‘u (studies overlapping or bounding the current project area indicated in bold font)

Reference	Type of Study	Location	Findings (all SIHP site numbers prefixed 50-10-37 unless otherwise noted)
Crozier 1971	Archaeological survey	Kamehameha III Rd, Kahalu‘u and Keauhou 1	Documented six historic properties comprising 366 features; sites not assigned SIHP numbers; documented sites include ‘Ōhi‘a cave (later assigned SIHP # -07962); one excavated unit contained late nineteenth century ceramics
Hammatt and Folk 1980	**Archaeological inventory survey**	**751 acres in Keauhou and Kahalu‘u**	**Documented 320 historic properties comprising thousands of individual features; documented sites included five *heiau* (SIHP #s -03823, -04621, -04673, -07865, -07807), habitation complexes (including possible former villages sites at SIHP #s -07829, -07835, and -07838; and high-status residences at SIHP #s -07864 and -07901), lava tubes, burial sites, trails, cart roads, animal enclosures, and agricultural features**
Bath and Rosendahl 1984	**Archaeological inventory survey**	**HELCO substation, Kahalu‘u, TMK: [3] 7-8-010:por. 027**	**Documented six habitation/agricultural sites, including a C-shape, terraces, mounds, and walls; testing yielded two C14 dates (AD 1400-1515; 885-1790) and one volcanic rind date (AD 1742-1778)**
Rosendahl and Rosendahl 1984	Archaeological reconnaissance survey	HELCO substation corridor, Kahalu‘u, TMK: [3] 7-8-010: por. 027	Documented seven habitation/agricultural sites, not assigned SIHP numbers; noted presence of historic railroad bed (SIHP # -07214), but did not document it
Hammatt and Borthwick 1985	Archaeological reconnaissance survey	28.6 acres in Kahalu‘u, TMK: [3] 7-8-010:050	Documented ten sites including a complex of walls, agricultural terraces, modified outcrops, mounds, an enclosure, and a walled platform; sites not assigned SIHP numbers; noted presence of historic railroad bed (SIHP # -07214), but did not document it
Rosendahl 1986	Archaeological reconnaissance survey	14.9 acres in Kahalu‘u, TMK: [3] 7-8-010: por. 050	Documented 14 previously recorded sites and five newly recorded sites, not assigned SIHP numbers; sites consisted of agriculture and habitation complexes

Reference	Type of Study	Location	Findings (all SIHP site numbers prefixed 50-10-37 unless otherwise noted)
Athens 1990a	**Archaeological reconnaissance**	**22 acres in Kahalu‘u**	**Documented four newly recorded archaeological site complexes not assigned SIHP numbers, and previously recorded SIHP # -07412 (railroad berm)**
Athens 1990b	Archaeological reconnaissance survey	20 acres in Kahalu‘u	Documented eight previously unrecorded site complexes, not assigned SIHP numbers, and previously recorded SIHP # -07214 (railroad berm); newly recorded sies included agricultural complexes and walls
Lufty and Athens 1991a	**Archaeological inventory survey**	**22 acres in Kahalu‘u**	**Documented one previously recorded historic property (SIHP # -07214, railroad berm) and four newly recorded sites comprising 39 features (SIHP #s -15151, unmodified lava tube; -15152, ranching complex; and -15153 and -15154, agricultural complexes)**
Lufty and Athens 1991b	Archaeological inventory survey	20 acres in Kahalu‘u	Documented two previously recorded historic properties (SIHP #s -07214, railroad berm, and -15154, agricultural complex), and four newly recorded historic properties (SIHP #s -15155, -15156, -15157, and -15158; agricultural and ranching sites)
Burchard 1992	**Archaeological mapping**	**Kahalu‘u**	**Documented lava tube burial cave SIHP # -16045**
Burchard et al. 1994	**Archaeological survey and data recovery**	**24.4 acres in Kahalu‘u**	**Included data recovery at previously recorded SIHP # -15154 (agricultural and limited habitation complex), and AIS-level documentation of new features at previously recorded SIHP # -16045 (agricultural and burial complex) and newly recorded SIHP # -16046 (agricultural complex)**
Walker and Rosendahl 1994	Archaeological inventory survey	275 acres in Kahalu‘u, TMKs: [3] 7-8-010:002, 004 por.	Documented 251 sites comprising 532 individual features, of which 121 previously recorded; 29 formal feature types present, representing 14 general functional categories

Reference	Type of Study	Location	Findings (all SIHP site numbers prefixed 50-10-37 unless otherwise noted)
Walker and Rosendahl 2002	Archaeological inventory survey	275 acres in Kahalu‘u, TMKs: [3] 7-8-010:002, 004 por.	Update of Walker and Rosendahl (1994) study; notes presence of 254 sites comprising 532 component features
Garrett et al. 2011	Archaeological inventory survey	31 acres in Kahalu‘u Ahupua‘a, TMK: [3] 7-8-010:050 por.	Documented 23 historic properties comprising 204 individual features; one site previously recorded (SIHP #s 50-10-37-07214 and -24920 through -24941); 15 historic properties previously recorded (SIHP # -07214 railroad berm and 14 sites with newly assigned SIHP numbers); remaining eight historic properties newly recorded; a wide variety of formal feature types documented, associated with pre-Contact and historic land use for habitation, agriculture, transportation, and ceremony

Table 4. Previous archaeological studies in the southern portion of the project area in Keauhou 1-2 (no studies overlap or bound current project area)

Reference	Type of Study	Location	Results
Hammatt 1980	Archaeological reconnaissance	2.8 acres in Keauhou 2, TMK: [3] 7-8-050:042	No archaeological features encountered; noted some areas of prior bulldozer disturbance
McGerty et al. 1996	Archaeological inventory survey	1.5 acres in Keauhou 1, TMK: [3] 7-8-007:053	No historic properties documented
Moore et al. 2005	Archaeological inventory survey	Keauhou 1 Ahupua‘a, North Kona District, Island of Hawai‘i, TMK: [3] 7-8-007:047	Documented three historic properties: a short, low wall (SIHP # 50-10-37-24332), and two agricultural complexes (SIHP #s 50-10-37-24333 and -24334); subsurface testing conducted at three features, which yielded *kukui* nut in one unit, and no other cultural materials
Corbin 2008	Archaeological inventory survey	8.5 acres in Keauhou 2, TMK: [3] 7-8-005:por. 052	Documented a site complex consisting of three historic ranching/boundary walls, and 60+ terraces; personal communication with Mr. James Sugai confirmed he constructed numerous terraces prior to 1958, effectively making these features historic properties; Mr. Sugai built numerous additional features after 1958; such as mounds, modified outcrops, low walls, etc. (Corbin 2008:ii), meaning these features were not considered historic properties at time of study

Table 5. Historic properties previously documented in the vicinity of the current project area, with field inspection results

SIHP # 50-10-37	Project Ahupua‘a	Previous Study Reference(s)	Site Type	# of Fea.	Site Function	Site Age	Results of Field Inspection
-04643	Kahalu‘u	Hammatt and Folk (1980)	Planting area/complex	Not given	Agriculture	Not given	Well outside project area
-07214	Kahalu‘u	Athens (1990a and b), Lufty and Athens (1991a and b), Garrett et al. (2011)	Railroad berm		Transportation	Historic (early 1900s)	Located crossing through proposed alignment in western portion of project area/*makai* of Hawai‘i Belt Rd
-07954	Kahalu‘u	Hammatt and Folk (1980)	Platform	1	Possible burial	Not given	Well outside project area
-07962	Kahalu‘u	Hammatt and Folk (1980)	Cave complex (‘Ōhi‘a cave)	Not given	Habitation, burial	Pre-contact	Well outside project area
-15151	Kahalu‘u	Lufthy and Athens (1991a)	Lava tube	–	Unmodified/ likely natural	N/A	Well outside project area
-15152	Kahalu‘u	Lufthy and Athens (1991a)	Cattle wall complex	3	Ranching	Historic	Well outside project area
-15153	Kahalu‘u	Lufthy and Athens (1991a)	Complex	2	Agriculture	Pre-Contact	Well outside project area
-15154	Kahalu‘u	Lufthy and Athens (1991a and b), Burtchard et al. (1994)	Complex	60	Agriculture, limited habitation	Late pre-Contact to early historic	Well outside project area
-16045	Kahalu‘u	Butchard (1992), Burtchard et al. (1994)	Complex with lava tube and surface features	Lava tube + 29 surface features	Burial (within lava tube) and agriculture (surface features)	Late pre-contact to early historic	Well outside project area
-16046	Kahalu‘u	Burtchard et al. (1994)	Complex	22	Agriculture	Likely pre-Contact	Approximately 50 m south of project area; no component features observed during field inspection

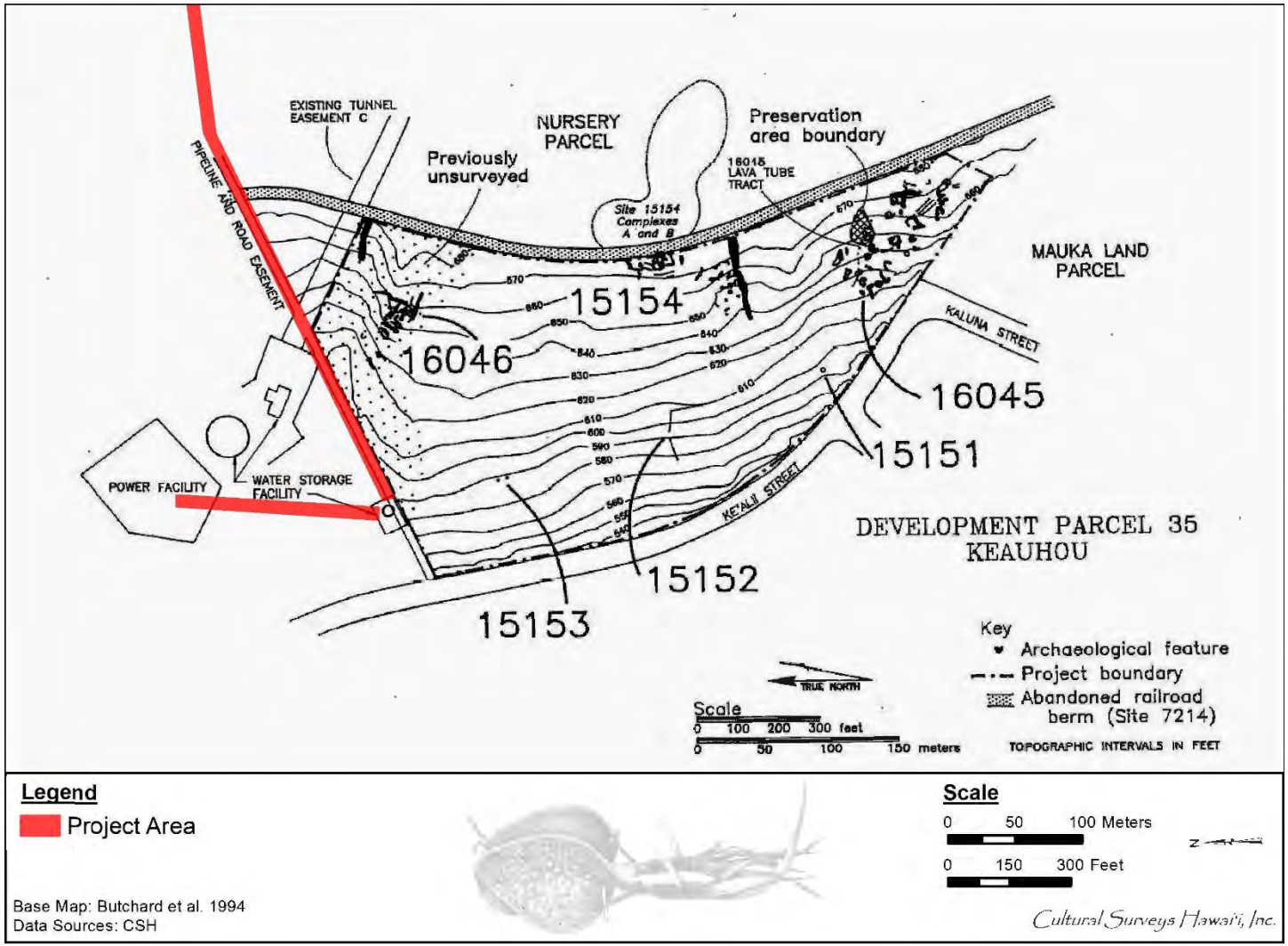

Figure 23. Map of KIC Development Parcel 35 adapted from Burchard et al. (1994:4) showing the location of previously documented sites in relation to transmission line corridors in the northern portion of the project area

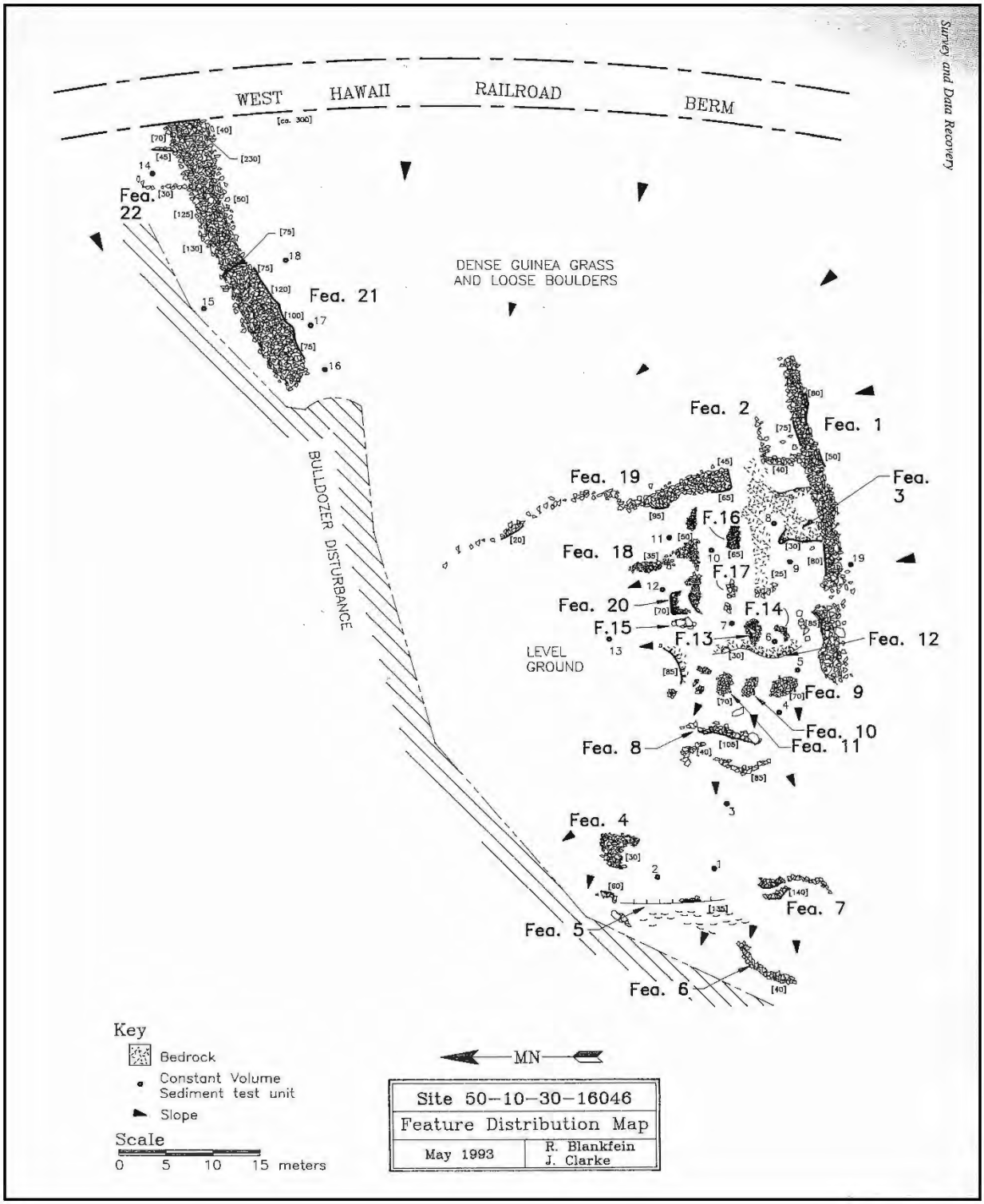

Figure 24. Plan map of SIHP # 50-10-37-16046 (Burtchard et al. 1994:47) showing feature distribution and bulldozer disturbance in the vicinity

Figure 25. Aerial photo (ESRI 2018) showing archaeological sites encountered in the northern portion of the project area in Kahalu‘u

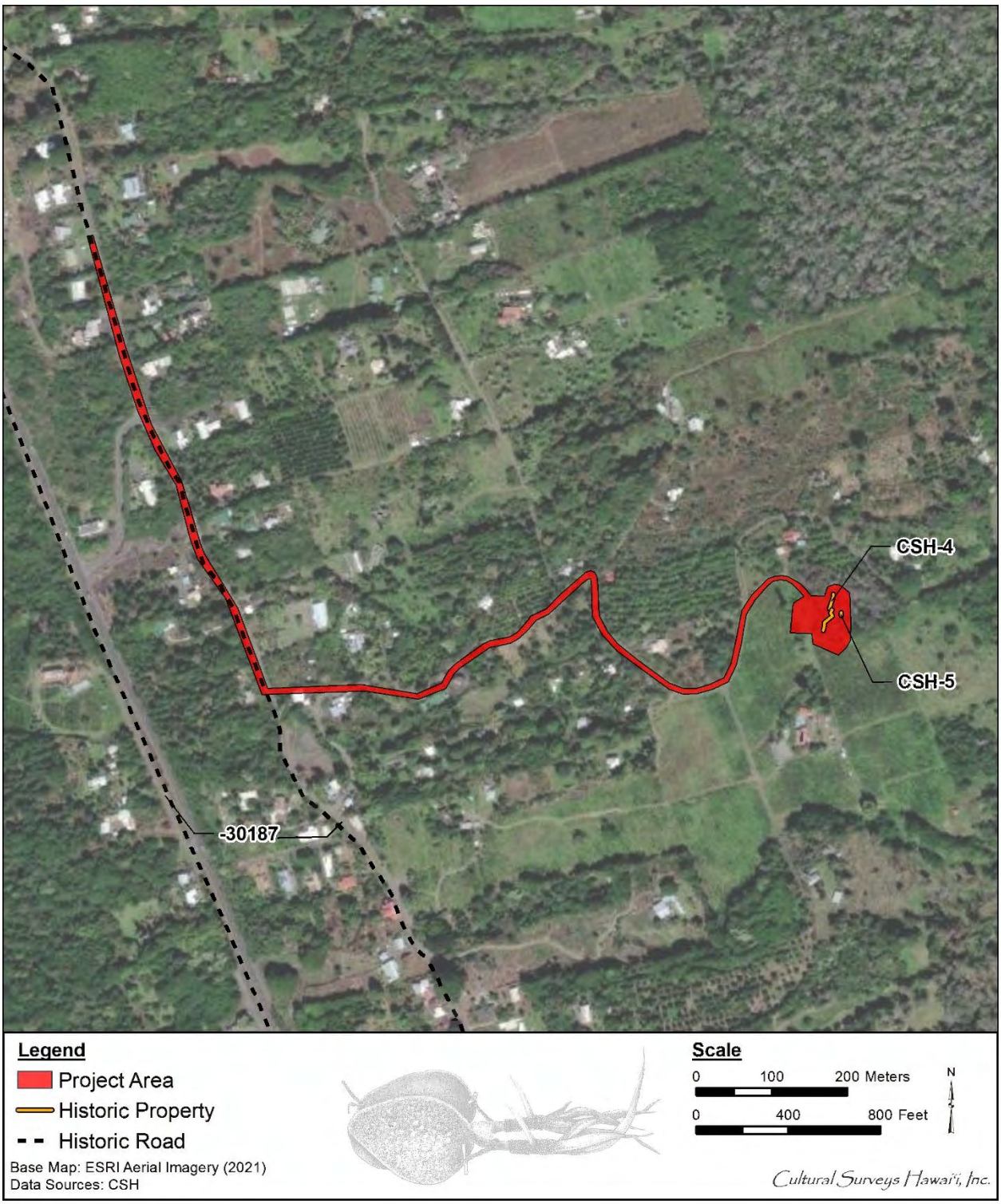

Figure 26. Aerial photo (ESRI 2018) showing archaeological sites encountered in the eastern portion of the project area in Keauhou 1-2

Figure 27. Photo of existing water tank at the western end of the proposed and alternative routes in the Kahalu‘u portion of the project area; view to north

Figure 28. Photo of the dense vegetation in the Kahalu‘u portion of the project area between the existing small tank and the Belt Road (Route 11); view to southeast

Figure 29. Photo showing the *makai* side of a section of the SIHP # 50-10-37-07214 railroad berm; view to northeast

Figure 30. Google Earth (2021) Street View image showing the portion of the Belt Road (Route 11) crossed by the proposed and alternate alignments in Kahalu‘u; view to south

Figure 31. Photo overlooking the Department of Water Supply (DWS) facility in the Kahalu‘u portion of the project area; view to northwest

Figure 32. Photo overlooking the eastern side of the DWS facility in the Kahalu‘u portion of the project area; note dense vegetation outside the fence; view to northeast

Figure 33. Photo showing typical terrain and vegetation in the area north of the DWS facility fence line; archaeologist is standing at the location of a bulldozer push pile adjacent to a breadfruit tree; view to southwest

Figure 34. Photo showing close-up of bulldozer push pile near breadfruit tree north of the DWS facility fence line; note bulldozer scarring visible on some of the rocks; view to north

Figure 35. Photo of CSH-1, rock wall; view to northeast

Figure 36. Photo of CSH-1, rock wall; note DWS facility in background left; view to south

Figure 37. Photo of CSH-2, rock wall; view to east

Figure 38. Photo of the eastern terminus of the proposed alignment at Old Māmalahoa Highway (SIHP # 50-80-47-31087) in Kahalu‘u (note water utility box in front left of photo); view to west

Figure 39. Photo of a portion of a dry-stacked cross-slope wall at CSH-2; view to west

Figure 40. Photo showing a portion of a dry-stacked *mauka-makai* wall at CSH-2; view to west

Figure 41. Photo showing a portion of a dry-stacked *mauka-makai* wall at CSH-2; view to southwest

Figure 42. Photo showing the Keauhou Store along a section of SIHP # -30187 along project area in Keauhou; view to south

Figure 43. Photo showing an entry gate along a section of SIHP # -30187 along project area in Keauhou; view to northwest

Figure 44. Photo showing a typical section of SIHP # 50-80-47-30187 along project area in Keauhou; note rock wall along shoulder by telephone pole in foreground; view to northwest

Figure 45. Photo of a portion of Bishop Road along the proposed pipeline route in Keauhou; view to northeast

Figure 46. Photo of a portion of Bishop Road along the proposed pipeline route in Keauhou; view to west

Figure 47. Photo overlooking a coffee orchard along the proposed pipeline route/Bishop Road in Keauhou; view to northeast

Figure 48. Photo overlooking the proposed tank site area at the *mauka* end of the proposed pipeline route in Keauhou; view to north

Figure 49. Photo showing evidence of bulldozer disturbance and trash in the southeastern portion of the Keauhou tank site project area; view to north

Figure 50. Photo showing a portion of CSH-4, rock wall; view to east

Figure 51. Photo showing typical construction along a portion of CSH-4, rock wall; view to northeast

Figure 52. Photo showing bulldozer disturbance along the southern portion of CSH-4, rock wall; view to west

Figure 53. Photo of CSH-5, rock wall; view to west

Figure 54. Photo of CSH-5, rock wall, showing how wall may have served as a terrace; view to south

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Appendix A Project Area Land Jurisdiction

Project TMK:	Owner	Parcel Acreage*	Acreage Portion in Project Area*
7-8-004:010	KAMEHAMEHA SCHOOLS	3.73	0.137961
7-8-004:013	KAMEHAMEHA SCHOOLS	8.8	0.1222
7-8-004:014	KAMEHAMEHA SCHOOLS	9.154	0.205
7-8-004:015	KAMEHAMEHA SCHOOLS	10.5	0.96
7-8-004:019	KAMEHAMEHA SCHOOLS	1.92	0.0696
7-8-004:039	KAMEHAMEHA SCHOOLS	1.2	0.0827
7-8-004:072	KAMEHAMEHA SCHOOLS	4.7	0.835
7-8-004:999	ROAD	-	0.51
7-8-009:014	KAMEHAMEHA SCHOOLS	9.154	0.7276
7-8-009:029	KAMEHAMEHA SCHOOLS	5.721	0.6292
7-8-009:032	KAMEHAMEHA SCHOOLS	8.89	0.3528
7-8-009:054	COUNTY OF HAWAII	0.208	0.2320
7-8-009:068	HAWAII COMMUNITY FEDERAL CREDIT UNION	0.481	0.0385
7-8-009:069	DURAN,MARGARET D	0.6377	0.0716
7-8-009:070	KAMEHAMEHA SCHOOLS	10.5674	0.5261
7-8-009:077	STATE OF HAWAII	0.519	0.5171
7-8-009:078	KAMEHAMEHA SCHOOLS	6.371	0.3002
7-8-009:999	ROAD	-	0.52
7-8-010:020	KAMEHAMEHA INVESTMENT CORP.	4.731	0.0324
7-8-010:050	KAMEHAMEHA INVESTMENT CORP.	115.444	0.8549
7-8-010:999	ROAD	-	0.097
		Total Project Acreage	7.8218 acres (3.1654 hectares)

*County Tax Acreages are listed in the Parcel Acreage column, while GIS was used to calculate the totals listed in the Acreage Portion in Project Area column; these differing data sources account for occasional discrepancies in the listed totals

Appendix B Kona Field System (SIHP # 50-10-37-06601) Archaeological Cover Sheet

ARCHAEOLOGICAL COVER SHEET 7-7-04:20 Dillingham

HAWAII REGISTER OF HISTORIC PLACES

50 - 10 - 37 - 6601 (1 2 3 4 5 6 7 8 9)
SITE IDENTIFICATION NUMBER

SITE NAME/TYPE: KONA Field System
DISTRICT: North and South KONA
AREA: 1,392 square Kilometers
CATEGORY: ___Single Feature X Complex ___Places
OWNERSHIP: X Public X Private
PHOTOGRAPHS: X Yes ___No (Temp/Tech)
KNOWN PRESSURES ON SITE: URBANIZATION

2 1 (10 11) CARD No.
PRE-1778 (12 13 14 15 16 17 18 19 20) DATE/PERIOD
PRESENT LAND USES: MULTIPLE

DESTRUCTION: ___No Known Future Danger X Possible Future Danger ___Future Danger Certain ___Present Danger ___Presently Being Destroyed
STATUS: ✓Occupied ✓Unoccupied CONDITION: ___Excellent ✓Good ___Fair ___Deteriorated
INTEGRITY: ✓Unaltered, Orig Loc ___Unaltered, Moved ___Altered, Orig Loc ___Altered, Moved
ACCESSIBILITY: ___Unrestricted ✓Restricted ___Inaccessible

LEGENDARY MATERIALS KNOWN: ___Yes ✓No WRITTEN HISTORICAL MATERIALS: ✓Yes ___No
IMPORTANCE AS EXAMPLE OF TYPE SITE: ✓Good ___Moderate ___Poor
SUSCEPTABILITY TO INTERPRETATION: ✓Good ___Moderate ___Poor
RESEARCH POTENTIAL: ✓Good ___Moderate ___Poor
LOCAL ATTITUDES ABOUT SITE: ___Valuable ___Moderate Value ___Low Value ___Ambivalent ✓Unknown
BRIEF DESCRIPTION (Columns 21-80): MASSIVE ANCIENT HAWAIIAN FIELD System MEASURING 3 by 18 miles

STAFF EVALUATION: X High Value ___Valuable ___Reserve ___Marginal
SUGGESTED THEMES: Polynesian Hawaii, AGRICULTURE, SETTLEMENT PATTERNS, Habitation
DATE SUBMITTED TO REVIEW BOARD: ___

REVIEWER'S RECORD AND EVALUATION

NAME: ___ DATE REVIEWED ___
CATEGORY: ___High Value ___Valuable ___Reserve ___Marginal
SIGNIFICANCE: ___National ___State ___Local
RECOMMENDED DISPOSITION: ___Nominate National Register ___State Register ___Staff Files
RECOMMENDED THEMES: ___
REVIEWER'S COMMENTS: ___

REVIEW BOARD EVALUATION RECORD

DATE REVIEWED: ___ RECORDER: ___
OFFICIAL CATEGORY: ___High Value ___Valuable ___Reserve ___Marginal
OFFICIAL SIGNIFICANCE: ___National ___State ___Local
OFFICIAL THEMES: ___
OFFICIAL DISPOSITION: ___National Register Nomination ___State Register ___Staff Files
REVIEW BOARD COMMENTS: ___

VOTING RECORD: Daws ___ Hormann ___ Jackson ___ Kikuchi ___
Lind ___ Mark ___ Nagata ___ Paglinawan ___
Roche ___ Tuggle ___

DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE PARKS DIVISION

HAWAII REGISTER OF HISTORIC PLACES
ARCHAEOLOGICAL FORMS

FORM 01: FIELD SURVEY

4 CORNER: 1

SINGLE POINT COORDINATE LOCATION: 2 ____ ____ ____ . ____ ____ N. / ____ ____ ____ . ____ ____ E.

DISTRICT	LOC	FACTOR	AREA SQUARE	CATEGORY	SIG 1	SIG 2
17	1	1	999.	3	10	41

DESTR	LAND CLASS	PHOTOS	INITIALS	INSTITUTION	MONTH	YEAR
2	___	1	TSN	01	04	74

HISTORICAL OR COMMON NAME: KONA FIELD SYSTEM

FEATURE CLASSIFICATION CODE: 5114 ____ ____ ____ 20

COND	INTG	PERIOD
2	3	1

CLASS: Nominated ____ Accepted ____ NRHP

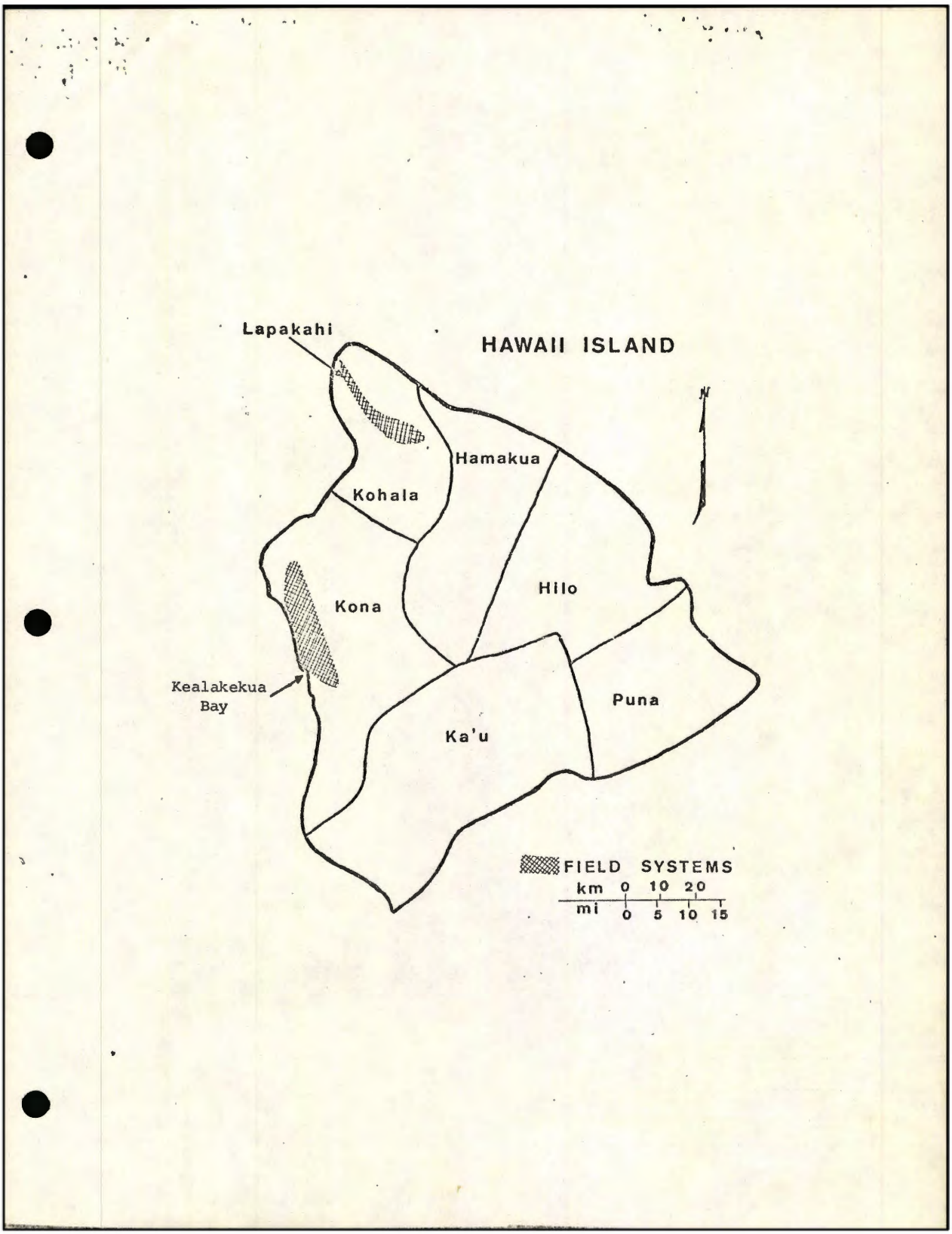
Category A ____ B ____ C ____ HRHP

Keypunched

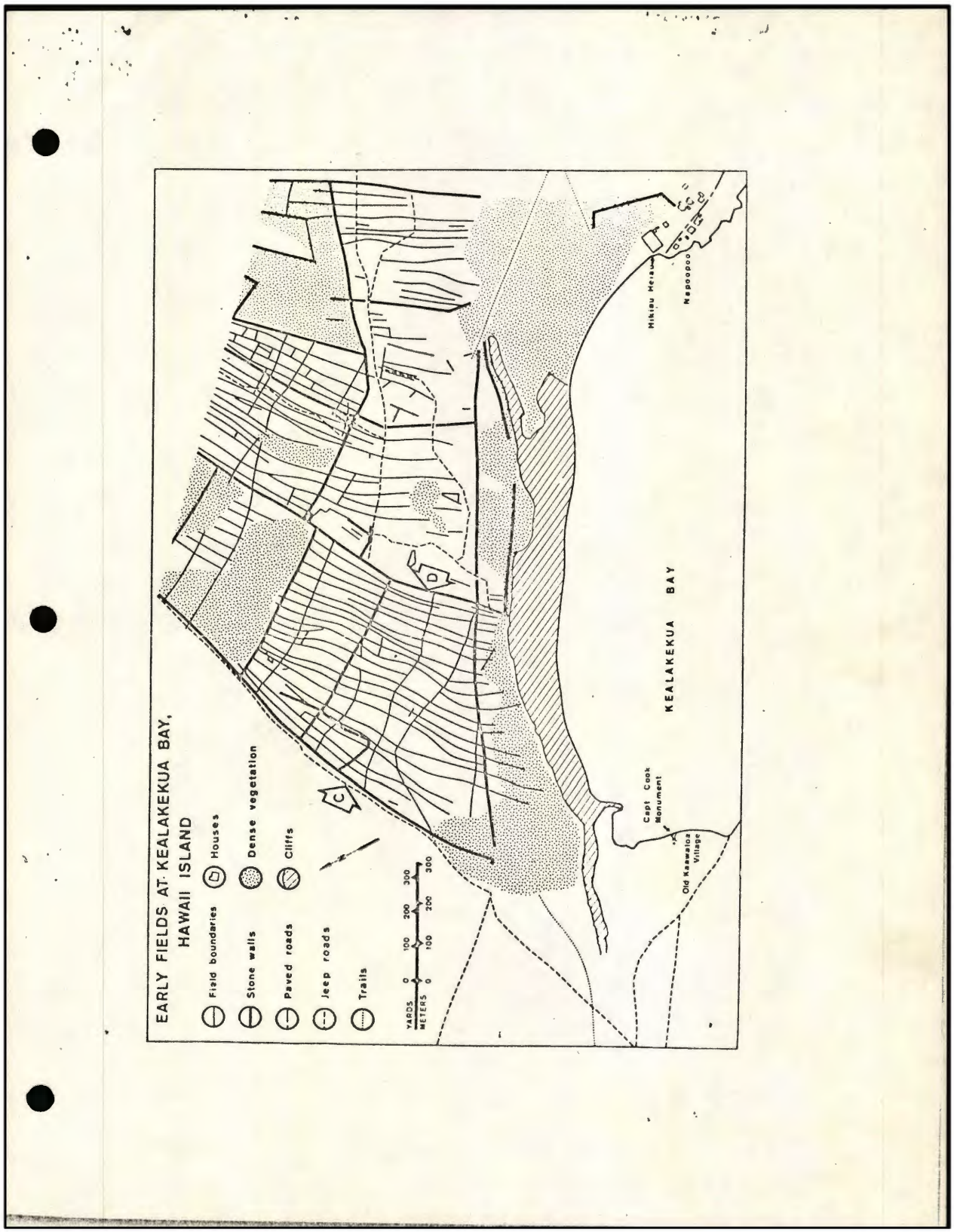
FORM 11: FOUR CORNER LOCATION

	QUAD	NORTH GRID COORDINATE	EAST GRID COORDINATE
NW CORNER:	27	2181 . 55 N.	183 . 71 E.
NE CORNER:	28	2181 . 41 N.	191 . 67 E.
SE CORNER:	57	2144 . 50 N.	202 . 07 E.
SW CORNER:	56	2143 . 00 N.	194 . 81 E.

50 - 10 - 37 - 7646 01
ISLAND QUAD IDENTIFICATION NO.


Lapakahi
HAWAII ISLAND
N
Hamakua
Kohala
Kona
Hilo
Kealakekua
Bay
Puna
Ka'u
FIELD SYSTEMS
km 0 10 20
mi 0 5 10 15

ITEM G-3 EXHIBIT A



FEATURE DESCRIPTION FORM

50 - 10 - 37 - 6601
ISLAND QUAD IDENTIFICATION NO.

VERBAL DESCRIPTION MUST INCLUDE: bearings and sources used to locate feature; size; shape; construction technique; materials used; terrain features; condition; surface artifacts; midden. SIGNIFICANCE STATEMENT MUST INCLUDE: research potential; interpretive potential; unusual or important characteristics; probable function; importance as representative of its class; recommendation of Register status.

DESCRIPTION:
The most extensive and monumental work of ancient Hawaii is the Kona Field System, lying along the western side of Hawaii Island. This field system is so extensive that it can only be appreciated from an airplane or by air photos, for it is an integrated complex of remains three by eighteen miles in size. The fields form a patterned network of elongated rectangles lying as a band parallel to the sea.

Ground inspections in the Kealakekua Bay area have shown that the patterning is caused by earthen and rock ridges which enclose rectangular field areas, generally oriented with their long axis perpendicular to the sea. This places the long sides of each rectangular field perpendicular to the topographic contours and parallel to the terrain slope. Individual fields vary in size from 9 meters (30 feet) wide by 15 meters (50 feet) long to fields measuring 50 by 300 meters (150 by 1,000 feet). The field dimensions appear related to local topography. A field may widen to take in a feature, such as an outcropping, or it may narrow to go around one, for example.

Some field boundaries are well constructed of stacked stone while others are merely piles of rock lining the field borders. These walls vary in height from about 0.5 to 1.0 meters (1.5 to 3 feet). The earthen mounds vary from about 0.5 to 1 meters (1.5 to 3 feet) in height and are quite rounded. The width of these field boundaries ranges from about 1 meter (3 feet) for well constructed stone walls to about 3 meters (9 feet) for the rounded earthen mounds.

There was no evidence of irrigation as shown by traces of water diversion or by terracing; the mounds and walls apparently were for rainfall retention, boundary markers and depositories for field rocks. In addition, the upslope orientation of the fields rules against their use for holding surface water, indicating that water was limited to rainfall.

The general symmetry of the Kealakekua fields, and of the whole Kona System, is well designed to take advantage of the western Hawaii Island environment. The orientation maximizes the available sunlight and exposure to periodic rain showers. The alignment would have made the crops susceptible to high velocity trade winds were it not for the protection of Mauna Loa. On-shore winds are generally light so physical damage or excessive plant evapo-transpiration would not have been a crucial factor in field alignment, contrary to the situation in Kohala.

FEATURE DESCRIPTION FORM

50 - 1 0 - 3 7 - 6 6 0 1
ISLAND QUAD IDENTIFICATION NO.

VERBAL DESCRIPTION MUST INCLUDE PERTINENT DATA ON: bearings and sources used to locate feature; terrain and vegetation; size; shape; construction technique; materials used; condition; surface artifacts or midden visible. SIGNIFICANCE STATEMENT MUST INCLUDE: unusual or important characteristics; accessibility; interpretive and research potential; evaluation of the site's importance as a representative of its class; recommendations for register category.

(Page Two)

Excellent historical documentation exists for the Kona Field System, primarily through the journal of Archibald Menzies, the surgeon and naturalist with Captain George Vancouver, who visited periodically between A.D. 1792 and 1794. He made two trips inland through portions of the Kona Field System, from the coast to its upper elevations. In his walk through the northern portion of the Kona Field System, Menzies left Kailua to ascend Hualalai, noting:

> "We commenced our march with a slow pace, exposed to the scorching heat of the meridian sun, over a dreary barren track of a gradual ascent, consisting of little else than rugged porous lava and volcanic dregs, for about three miles, when we entered the breadfruit plantations whose spreading trees with beautiful foliage were scattered about that distance from the shore along the side of the mountain as far as we could see on both sides. Here the country began to assume a pleasant and fertile appearance, through which we continued our ascent for about two miles further, surrounded by plantations of the esculent roots and vegetables of the country, industriously cultivated, till we came to the uppermost village consisting of a few scattered huts ... [p. 154].

After reaching the summit of Hualalai, Menzies and his group angled south directly toward Kaawaloa at Kealakekua Bay instead of returning to Kailua. Descending out of the forest, he noted:

> "... we found the lower edge of it [the forest] as in other places, adorned with rich plantations of plantains and bananas [p. 167]."

The most extensive description of the Kona Field System comes from a similar trip by Menzies at Kealakekua Bay, near the southern end of the field system. After leaving Kaawaloa, Menzies observed:

> The forenoon was far spent in arranging and equipping the party before we left the village [Kaawaloa], and as our route lay directly back from it, over a dry barren rocky country, up a steep ascent, in the scorching heat of the day, the first part of our journey was rather fatiguing, before we gained the summit of the eminence over the bay, where we met a refreshing breeze, and had

SIGNED: DATE:

FEATURE DESCRIPTION FORM

50 - 1 0 - 3 7 - 6 6 0 1
ISLAND QUAD IDENTIFICATION NO.

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(Page Three)

an extensive prospect of the country and villages to the southward of us. The tract which extended along shore, if we might judge from its appearance and our knowledge of that which we had already traveled over, we were ready to pronounce a dreary naked barren waste, if we except a few groves of cocoa palms here and there near the villages. But that which stretched higher up along the verge of the woods from the manner it was industriously laid out in little fields exhibited a more pleasing and fertile appearance.

On leaving this station, we soon lost sight of the vessels, and entered their bread-fruit plantations, the trees of which were a good distance apart, so as to give room to their boughs to spread out vigorously on all sides, which was not the case in the crowded groves of Tahiti, where we found them always planted on the low plains along the sea side. But here the size of the trees, the luxuriancy of their crop and foliage, sufficiently show that they thrive equally well on an elevated situation. The space between these trees did not lay idle. It was chiefly planted with sweet potatoes and rows of cloth plant /wauke/. As we advanced beyond the bread-fruit plantations, the country became more and more fertile, being in a high state of cultivation. For several miles round us there was not a spot that would admit of it but what was with great labor and industry cleared of the loose stones and planted with esculent roots or some useful vegetables or other. In clearing the ground, the stones are heaped up in ridges between the little fields and planted on each side, either with a row of sugar cane or the sweet root of these islands (Dracena ferrea, Linn) /ti/ where they afterwards continue to grow in a wild state, so that even these stony, uncultivated banks are by this means made useful to the proprietors, as well as ornamental to the fields they intersect.

The produce of these plantations, besides the above mentioned, are the cloth plant (Morus papyriferus, Linn.) /wauke/, taro, and sweet potatoes. The latter are here planted three or four feet apart and earthed up around their stems much in the same manner as the common

SIGNED: DATE:

FEATURE DESCRIPTION FORM

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(Page Four)

potatoes are treated in England. When they dig up any, we remarked that, after stripping off the potatoes, they carefully put the old plant back again in the ground for the ensuing crop. But the taro, being naturally an aquatic plant, required in this dry soil a very different treatment. There were generally two or three of them planted together in a hole about nine inches below the surface of the ground. These holes were about four feet apart, and as the plants grew up, the earth is gathered round their stems in the form of a basin to retain the water, either from rain or otherwise, about their roots. The whole field is generally covered with a thick layer of hay, made from long, coarse grass or the tops of sugar cane, which continually preserves a certain degree of moisture in the soil that would otherwise be parched up by the scorching heat of the solar rays. In this way they rear up these roots to very great perfection even on a dry elevated situation.

The land here is divided into plantations, called ili, which take their rise at the sea side and proceed up the country, preserving a certain breadth without any limitations, or as far as the owner chooses to cultivate them, and without the protection either of high walls or gates. (p. 77)

After breakfast, we pursued our course onward with a fair prospect of a fine day and soon after entered the wood by a well trodden path, on both sides of which were luxuriant groves of plantains and bananas reared up with great industry in the neatest order of cultivation. These being tender vegetables, required a sheltered situation and good soil to bring them to perfection. (p. 80)

Menzies continued inland above the field sytem and returned to the coast at Honaunau, just south of Kealakekua Bay.

SIGNED: DATE:

FEATURE DESCRIPTION FORM

50 - ____ - ____ - ____ ____ ____ ____ ____
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(Page Five)

The routes of Menzies and other early observers were plotted, observations matched to specific land areas, and the observations and the areas were analyzed according to modern environmental data to determine the characteristics controlling the agriculture. The following subzones for the Kona Field System were developed:

Sweet Potato/Wauke Zone

Elevation: Sea level to about 500 feet (0 to 150 meters)

Annual Rainfall: Seasonal; 30 to 50 inches (.8 to 1.2 meters)

Crops: Sweet potatoes and wauke grown in very rocky areas.

Breadfruit/Sweet Potato/Wauke Zone

Elevation: 500 to 1,000 feet (150 to 300 meters)

Annual Rainfall: 30 to 60 inches (.8 to 1.5 meters)

Crops: breadfruit trees, with sweet potatoes and wauke planted between them.

Sweet Potato/Dry Land Taro Zone

Elevation: 1,000 to 2,500 feet (300 to 750 meters)

Annual Rainfall: 60 to 80 inches (1.5 to 2.0 meters)

Crops: no breadfruit trees; sweet potatoes in the lower part, dry land taro in the upper part. Field boundaries planted with ti and sugar cane.

DATE:

FEATURE DESCRIPTION FORM

50 - 1 0 - 3 7 - 6 6 0 1
ISLAND QUAD IDENTIFICATION NO.

VERBAL DESCRIPTION MUST INCLUDE PERTINENT DATA ON: bearings and sources used to locate feature; terrain and vegetation; size; shape; construction technique; materials used; condition; surface artifacts or midden visible. SIGNIFICANCE STATEMENT MUST INCLUDE: unusual or important characteristics; accessibility; interpretive and research potential; evaluation of the site's importance as a representative of its class; recommendations for register category.

(Page Six)

Plantains and Banana Zone

Elevation: 2,000 to 3,000 feet (600 to 900 meters)

Annual Rainfall: 80 to 100 inches (2.0 to 2.5 meters)

Crops: bananas and plantains planted just below and within the forest.

All environmental variables are relatively constant for the sub-zones except those of elevation and rainfall, demonstrating the regulating effect of these two variables on agriculture in the Kona Field System. These divisions are not to be construed as clear-cut but rather show a gradual change from one sub-zone to the next, correlated with steady increases in elevation and rainfall.

SIGNIFICANCE

The Kona Field System is without equal in Hawaii, and probably in the nation in terms of the extensiveness of a prehistoric modification of the land. It is quite comparable in terms of complexity and size with the well known field systems of Central and South America, although differing in specific characteristics. It is a physical demonstration of the highly developed farming economy of ancient Hawaii and illustrates the complexity and advanced state of aboriginal Hawaiian culture. The system is so extensive that it cannot be seen in its entirety except from extremely high altitudes, but the physical remains are sufficiently well preserved and in such generally good condition that they may still be detected on the ground, although it is difficult to realize what is viewed is part of such a massive system. In all, it is a magnificent monument to the exhaustive labors and industry of the ancient Hawaiians.

The study of environmental and crop factors shows the ancient Hawaiians were knowledgeable and adept in molding their needs in consonance with environmental restraints. Historical records show a strong appreciation of good conservation measures, such as fallowing, and mulching. This illustrates the close partnership with nature which was so much a characteristic of ancient Hawaii.

SIGNED: DATE:

FEATURE DESCRIPTION FORM

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(Page Seven)

The vastness and complexity of the system show the excellent practical engineering and environmental knowledge of the ancient Hawaiians, as well as the highly evolved social organization which could coordinate the labors of a multitude of people to create and maintain such a system. Yet, within the overall system, it is possible to see the role of the 'ohana, the basic Hawaiian kinship and land-controlling grouping, for the boundaries of the traditional 'ili and ahupua'a land divisions are clear. This gives an unparallel opportunity for research into the organization and interrelationships of ancient Hawaiian society.

The innumerable habitation remains, as well as the remains of complete assemblages of other physical remains, such as burial areas, religious structures (heiau), cave shelters, refuge caves, animal enclosures, and work platforms all contribute to the research importance of this system.

Finally, the Kona Field System is a dramatic illustration of the dependence of ancient Hawaii upon the production of land foods, their primary subsistence source. Truly, this is worthy of entry into the Hawaii and National Registers of Historic Places as a district of high value.

Urban development and modern agriculture has caused moderate damage to the system, but ample remains are still in existence to delimit the system and to warrant a high value evaluation.

N.B. Quotations are from:
Menzies, Archibald
1920 Hawaii Nei 128 Years Ago.... Honolulu.

N.B. The Quad number in the site identification was arbitrarily chosen since the district extends through multiple quads.

	LAT.	LONG.
NW	19°42'15"N	156°00'27"W
NE	19°42'16"N	155°56'27"W
SE	19°22'20"N	155°50'10"W
SW	19°21'32"N	155°54°18"W

SIGNED: J. Stell Mason DATE: May 05, 1974

FORM 3 1: PROPERTY OWNERSHIP

50 - 10 - 37 - 6601
ISLAND QUAD IDENTIFICATION NO.

USE 1	USE 2	STAT	OWNR	ATTD	ACCS	zone	sect	plat	parcel
21	11	1	3	2	2				
						TAX	MAP	KEY	

PROPERTY OWNER: MULTIPLE

STREET ADDRESS:

TOWN OR CITY: STATE ZIP CODE

FORM 4 1: BACKGROUND DATA

50 - 10 - 37 - 6601
ISLAND QUAD IDENTIFICATION NO.

AHUPUA'A: MULTIPLE

PREVIOUS SURVEYS: NONE

PREVIOUS SITE DESIGNATION(S): NONE

LAST NAME OF SURVEYOR:

INSTITUTION YEAR FILED AT

APPENDIX D

Ka Pa‘akai Framework Analysis

ITEM G-3 EXHIBIT A

February 2025 Draft

Excerpts from Nohopapa Hawai'i's DRAFT Ka Pa'akai Analysis for DHHL Water Development Project in Waiaha, Kahului and Puapua'a Ahupua'a at the Gianulias Property (TMK: [3] 7-5-014:001) and Keauhou Ahupua'a at the Kamehameha Schools Well Site (TMK: [3] 7-8-004:013 and -015)

*Included in Final Environmental Assessment (FEA) at DHHLs request in acknowledgment of the concurrent Kona Ka Pa'akai Analysis consultation being completed alongside the EA.

**For inclusion in the FEA, consultation sections are redacted per Nohopapa's informed consent obligation to honor and respect consultees' Intellectual Property Rights.

Prepared by

NOHO PAPA HAWAI'I

Prepared for

DEPARTMENT OF HAWAIIAN HOME LANDS

© 2024 NOHOPAPA HAWAIʻI, LLC
This report was prepared by Nohopapa Hawaiʻi, LLC, for the Department of Hawaiian Homelands

CITATION
Nohopapa Hawaiʻi, LLC with contributions from Kumupono Associates, LLC
2024 Excerpts from Nohopapa Hawaiʻi's DRAFT Ka Paʻakai Analysis for DHHL Water Development Project in Waiaha, Kahului and Puapuaʻa Ahupuaʻa at the Gianulias Property (TMK: [3] 7-5-014:001) and Keauhou Ahupuaʻa at the Kamehameha Schools Well Site (TMK: [3] 7-8-004:013 and -015)

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FOR MORE INFORMATION VISIT
www.nohopapa.com

Cover photo credits: Nohopapa Hawaiʻi, LLC 2023
Kahaluʻu Manowai muliwai with the heiau Keʻekū and Hāpaialiʻi in background

Table of Contents

Table of Contents 2

List of Figures 4

List of Tables 5

Introduction 7

He Leo Mahalo 7

He Mele No Kane 7

Project Description 9

Purpose 9

Ka Paʻakai Legal Overview 24

What is the agency's obligation under Ka Paʻakai? 24

Foundational Truths About Hawaiian Culture and Traditional and Customary Practices 24

Ka Paʻakai as an Outgrowth of Ancient Hawaiian Cultural Practices and Customs 25

Ka Paʻakai's Roots in the Legal History of the Sovereign Hawaiian Kingdom 28

Hawaiian Rights Enshrined in Hawaiʻi Constitutional and State Law Underpinning Ka Paʻakai 31

Ka Paʻakai o Ka ʻĀina v. State of Hawaiʻi Land Use Commission 35

How are Hawaiian Customs Determined? 36

The DHHL's Fiduciary Responsibilities Under Ka Paʻakai 37

Ka Paʻakai in Global and Federal Legal Contexts and Dialogues 37

Methods 41

Ethnohistorical Research 41

Community Consultation 42

Ka Paʻakai Analysis 43

Ka Nohona Hawaiʻi – Cultural Resources, Practices, and Beliefs 44

Moʻolelo and Kaʻao - Oral Traditions 44

He Kaʻao no ka Manu ʻElepaio 44

Puʻu o Kaloa 53

Ke Puhi a Kaleikini 57

Kaʻao Hoʻoniua Puʻuwai no Ka-Miki 58

ʻŌlelo Noʻeau - Hawaiian Proverbs and Poetical Sayings 62

No ka Ua - Regarding Rain 69

Nā Hana a ke Kupa ʻĀina – Summary of Traditional and Customary Practices 78

Cloud Formations 78

Forests and Streams 81

Rains 84

Springs 85

Additional Practices 86

Boundary Commission Proceedings Of The Boundary Commission Lands Of: Keahuolū, Puaʻa, Waiʻaha, Kahului, Puapuaʻa and Keauhou – by Kumu Pono Associates 91

Excerpts from the Boundary Commission for ahupuaʻa in and around study parcels – by Nohopapa Hawaiʻi 94

Kamehameha Schools Parcel Boundary Commission Testimony Discussion 94

Gianulias Parcel Boundary Commission Testimony Discussion 120

DHHL Kona Parcels Boundary Commission Testimony Discussion 135

The Māhele ʻĀina and Issuance Of Kuleana To Hoa ʻĀina - By Kumu Pono Associates 143

1848-1855: The Māhele ʻĀina (Land Division) 143

ʻĀina of the Crown and Government 146

Hoaʻāina (Native Tenants) Allowed To Make Claims For ʻĀina They Resided on and Actively Cultivated *147*
ʻĀina Kuleana: Summary of Claims For Kuleana Made by the Hoaʻāina *149*

Excerpts from Kuleana Claims in the Ahupuaʻa of Keauhou 1 & 2, Kahaluʻu, Waiʻaha-Kahului, Keahuolū-Kealakehe – by Kumu Pono Associates 157
Background *157*

Māhele Discussion: Land Use Model in Kona 161
Kamehameha School Parcel - Keauhou Ahupuaʻa *161*
Keauhou 2 Ahupuaʻa and Environs *161*
Summary in Brief: Kamehameha School Parcel - Keauhou Ahupuaʻa *174*
The Gianulias Parcel – Ahupuaʻa of Puaa, Waiʻaha, Kahului, and Puapuaʻa *177*
Puaa 3 Ahupuaʻa *177*
Waiʻaha Ahupuaʻa *181*
Waiʻaha 1 Ahupuaʻa *181*
Waiʻaha 2 Ahupuaʻa *182*
Kahului Ahupuaʻa *185*
Kahului 1 Ahupuaʻa *185*
Kahului 2 Ahupuaʻa *191*
Puapuaa Ahupuaʻa *199*
Puapuaa 1 Ahupuaʻa *199*
Puapuaʻa 2 Ahupuaʻa *204*
Summary in Brief: The Gianulias Parcel – Ahupuaʻa of Puaʻa, Waiʻaha, Kahului, and Puapuaʻa *205*
Māhele & Wahi Inoa *213*

Community Consultation 233

Ka Paʻakai Framework Analysis Application 234

Ka Paʻakai Framework Analysis Questions: 234

1) What are the valued cultural, historical, or natural resources in the project area and the extent to which traditional and customary native Hawaiian rights are exercised in the area? 234
Inventory of Practices & Resources *235*

2) What is the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action? 260

3) What feasible action(s), if any, should be taken to reasonably protect any identified cultural, historical, or natural resources, and exercise of traditional and customary native Hawaiian rights in the affected area 261

References 262

List of Figures

Figure 1. Aerial image illustrating the two proposed water development locations (pink and blue) as well as the existing DHHL parcels in Kona (green). 11
Figure 2. Contour and DEM map illustrating the two proposed water development locations (pink and blue) as well as the existing DHHL parcels in Kona (green). 12
Figure 3. Aerial image illustrating the study are ahupuaʻa from north to south: Kealakehe, Keahuolū, Puaʻa, Waiʻaha, Kahului, Puapuaʻa, Keauhou 1, and Keauhou 2 13
Figure 4. Close up aerial image of Puaʻa, Waiʻaha, Kahului, and Puapuaʻa Ahupuaʻa in relation to DHHL parcels 14
Figure 5. Further zoom in of the ahupuaʻa that the Gianulias parcels is located in 15
Figure 6. USGS map showing the DHHL TMK parcels (green) and the Gianulias potential well site TMK (pink) 16
Figure 7. Aerial image showing the Gianulias TMK located within Waiʻaha, Kahului, and Puapuaʻa Ahupuaʻa, which also includes a portion of Waiʻaha Stream 17
Figure 8. Zoom in aerial image of the Gianulias parcel boundaries. 18
Figure 9. USGS map of the BPBE Kamehameha Schools existing well site in blue. 19
Figure 10. Aerial image showing the location of the Kamehameha Schools well site in Keauhou 2 Ahupuaʻa and the surrounding ahupuaʻa 20
Figure 11. Aerial image of the KS BPBE parcel in Keauhou 2 Ahupuaʻa 21
Figure 12. Zoom in aerial image of the KS BPBE well site in Keauhou 1 Ahupuaʻa 22
Figure 13. Water well locations from the Commission on Water Resource Management Well Index 23
Figure 14. Wai (water) resources within and surrounding the Gianulias parcel 83
Figure 15. GIS map depicting ahupuaʻa with Boundary Commission Certificates 93
Figure 16. Keauhou 2 Land Commission Award GIS map showing the KS parcel in blue 163
Figure 17. Keauhou 1 and 2 Land Commission Awards and Apana colored in yellow with the KS well site location in blue 164
Figure 18. Close up GIS map showing the LCAs around the KS parcel in Keauhou 2 Ahupuaʻa 165
Figure 19. Land Commission Awards located in Keauhou 1 and 2 makai, downslope of the KS well site location. 166
Figure 20. Land Commission Awards located around the Gianulias Parcel 178
Figure 21. Close up of LCAs in and around the Gianulias Parcel 179
Figure 22. Traditional land use as noted in the Kuleana LCAs in and around the Gianulias Parcel. 211
Figure 23. Close up of traditional land use as noted in the Kuleana LCAs in and around the Gianulias Parcel 212
Figure 24. circa 1885 map of Keauhou 2nd, Kona Hawaii. Surveyed by J.M. Alexander and J.S. Emerson, map by J.M. Alexander, copy by W. A Wall, 1886. Hawaiian Government Survey. Hawaiʻi State Register Map No.1264 214
Figure 25. circa 1886 map of North Kona showing the locations of the Gianulias and KS parcels. Register Map 1296 215
Figure 26. 1952 (trace) map of North Kona, surveyed by T. Y. Awana, Register Map No.1280 .216

List of Tables

Table 1. Table of rain names associated with the Kona Moku of Hawai‘i. 70
Table 2. Select Ahupua‘a with named localities and kama‘āina cited in Boundary Commission proceedings in Keauhou Ahupua‘a, location of the Kamehameha Schools subject parcel. 94
Table 3. Keauhou Ahupua‘a Inventory of Inoa ‘Āina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies. 110
Table 4. Select Ahupua‘a with Named Localities and Kama‘āina cited in Boundary Commission proceedings in the area of the Gianulias Subject Parcel 120
Table 5. Pua‘a Ahupua‘a Inventory of Inoa ‘Āina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies. 123
Table 6. Wai‘aha Ahupua‘a Inventory of Inoa ‘Āina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies. 127
Table 7. Puapua‘a Ahupua‘a Inventory of Inoa ‘Āina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies. 129
Table 8. Kahului Ahupua‘a Inventory of Inoa ‘Āina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies. 132
Table 9. Ahupua‘a of Keahuolū with named localities and kama‘āina cited in Boundary Commission proceedings in Keauhou Ahupua‘a, location of the Kamehameha Schools subject parcel. 135
Table 10. Keahuolū Ahupua‘a Inventory of Inoa ‘Āina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies. 138
Table 11. Kaloko to Keauhou 2nd: Disposition of ‘Āina in the Māhele — ‘Āina Lei Ali‘i (Crown Lands), Konohiki Lands, and ‘Āina Aupuni (Government Lands) 143
Table 12. Summary of Crops Identified in Māhele/Kuleana Claims 150
Table 13. Glossary of Selected Hawaiian Terms Cited in Kuleana Claims 153
Table 14. Inoa ‘Āina (Place Names) 158
Table 15. Cultural Resources Recorded in Māhele Records for Keauhou 2 Ahupua‘a* 174
Table 16. Cultural Practices Recorded in Māhele Records for Keauhou 2 Ahupua‘a* 174
Table 17. Cultural Resources Recorded in Māhele Records for Keauhou 1 Ahupua‘a* 175
Table 18. Cultural Practices Recorded in Māhele Records for Keauhou 1 Ahupua‘a 175
Table 19. Cultural Resources Recorded in Māhele Records for Keauhou Ahupua‘a* 175
Table 20. Cultural Practices Recorded in Māhele Records for Keauhou Ahupua‘a* 176
Table 21. Cultural Resources Recorded in Māhele Records for Puaa 3 Ahupua‘a* 206
Table 22. Cultural Practices Recorded in Māhele Records for Puaa 3 Ahupua‘a* 206
Table 23. Cultural Resources Recorded in Māhele Records for Wai‘aha 1 Ahupua‘a* 206
Table 24. Cultural Practices Recorded in Māhele Records for Wai‘aha 1 Ahupua‘a* 206
Table 25. Cultural Resources Recorded in Māhele Records for Wai‘aha 2 Ahupua‘a* 207
Table 26. Cultural Practices Recorded in Māhele Records for Wai‘aha 2 Ahupua‘a* 207
Table 27. Cultural Resources Recorded in Māhele Records for Kahului 1 Ahupua‘a* 207
Table 28. Cultural Practices Recorded in Māhele Records for Kahului 1 Ahupua‘a* 208
Table 29. Cultural Resources Recorded in Māhele Records for Kahului 2 Ahupua‘a* 208
Table 30. Cultural Practices Recorded in Māhele Records for Kahului 2 Ahupua‘a* 208
Table 31. Cultural Resources Recorded in Māhele Records for Puapua‘a 1 Ahupua‘a* 209
Table 32. Cultural Practices Recorded in Māhele Records for Puapua‘a 1 Ahupua‘a* 209
Table 33. Cultural Resources Recorded in Māhele Records for Puapua‘a 2 Ahupua‘a* 210
Table 34. Cultural Practices Recorded in Māhele Records for Puapua‘a 2 Ahupua‘a* 210
Table 35. Inventory of Wahi Inoa Documented in Māhele Records Associated with the Study Area Ahupua‘a of Keauhou, Puaa, Wai‘ahu, Kahului, and Puapua‘a. 217
Table 36. Table of Practices and associated resources in and around the study area tied to **Wai** 236
Table 37. Table of Practices and associated resources in and around the study area tied to **Lawai‘a and Wa‘a** 241
Table 38. Table of Practices and associated resources in and around the study area tied to **Forestry and Hana Wa‘a.** 244

Table 39. Table of Practices and associated resources in and around the study area tied to **Bird Catching** 247
Table 40. Table of Practices and associated resources in and around the study area tied to **Mahi ʻai ʻana - Cultivation.** 249
Table 41. Table of Practices and associated resources in and around the study area tied to **Trails and Connectivity** 253
Table 42. Table of Practices and associated resources in and around the study area tied to environmental indicators through **Kilo – Keen Observation.** 255
Table 43. Table of Practices and associated resources in and around the study area tied to **Mālama ʻĀina and the long-term care and stewardship of people, resources, and place.** 257
Table 44. Table of Practices and associated resources in and around the study area tied to **Other Practices** 258

Introduction

He Leo Mahalo

Nohopapa would like to mahalo the individuals who shared their precious time, memories, and manaʻo for this study. This important project would not have been possible without their willingness to share personal recollections and stories. The manaʻo that was shared will help us all better understand, appreciate, and protect the precious resources of Kona Akau. We also mahalo Kaleo Manuel for providing invaluable manaʻo to help our hui better understand wai in its cultural, environmental, and political dimensions, specifically for Kona. Kaleo also challenged Nohopapa to shape and present the cultural, historical, and contemporary community manaʻo regarding wai within the framework of He Mele No Kāne. We accepted this challenge to ground our approach in ʻike kupuna. Lastly, mahalo to the Department of Hawaiian Homelands (Andrew Choy, Lilliane Makaila, Kuʻupua Mossman, and Cherie Kaʻanana) as well as their consultant, Jonathan Scheuer for being true partners in this effort to complete a Ka Paʻakai Analysis that meets its true purpose and intent.

He Mele No Kane

He ui, he nīnau:	*A query, a question,*
E ui aku ana au iā ʻoe,	*I put to you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i ka hikina a ka Lā,	*At the Eastern Gate*
Puka i Haʻehaʻe,	*Where the Sun comes in at Haʻehaʻe,*
Aia i laila ka Wai a Kāne.	*There is the water of Kāne.*
E ui aku ana au iā ʻoe,	*A question I ask of you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i Kaulana a ka lā,	*Out there with the floating Sun,*
I ka pae ʻōpua i ke kai,	*Where the cloud-forms rest on Ocean's breast,*
Ea mai ana ma Nihoa,	*Uplifting their forms of Nihoa,*
Ma ka mole mai o Lehua;	*This side the base of Lehua;*
Aia i laila ka Wai a Kāne.	*There is the water of Kāne.*
E ui aku ana au iā ʻoe,	*A question I ask of you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i ke kuahiwi, i ke kualono,	*Yonder on mountain peak, on the ridges steep,*
I ke awāwa, i ke kahawai;	*In the valleys deep, where the rivers sweep;*
Aia i laila ka Wai a Kāne.	*There is the water of Kāne.*
E ui aku ana au iā ʻoe,	*A question I ask of you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i kai, i ka moana,	*Yonder at the sea, on the ocean,*
I ke kualau, i ke ānuenue,	*In the driving rain, in the heavenly bow,*
I ka pūnohu, i ka uakoko,	*In the piled-up mist wraith, in the blood-red rainfall,*
I ka ʻālewalewa;	*In the ghost-place cloud from;*
Aia i laila ka Wai a Kāne.	*There is the water of Kāne.*
E ui aku ana au iā ʻoe,	*A question I ask of you*

Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i luna ka Wai a Kāne,	*Up on high is the water of Kāne,*
I ke ao uli, i ke ao ʻeleʻele,	*In the heavenly blue, in the black piled cloud,*
I ke ao panopano,	*In the black black cloud,*
I ke ao pōpolo hua mea a Kāne lā, ē!	*In the black mottled sacred cloud of the gods;*
Aia i laila ka Wai a Kāne.	*There is the water of Kāne.*
E ui aku ana au iā ʻoe,	*A question I ask of you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i lalo, i ka honua, i ka wai hū,	*Deep in the ground, in the gushing spring,*
I ka wai kau a Kāne me Kanaloa	*In the ducts of Kāne and Kanaloa,*
He wai puna, he wai e inu,	*A well spring of water, to quaff,*
He wai e mana, he wai e ola.	*A water of magic power - the water of life!*
E ola nō ʻeā!	*Life! O give us this life!*

Found in Emerson's *Unwritten Literature of Hawaii: The Sacred Songs of the Hula* (1909:257-259). Collected from Kauaʻi, Author Unknown.

As the most isolated island chain in the world, Hawaiʻi is surrounded by ocean. It is understood that wai, or fresh water, is precious for modern use as well as for the traditional customary practices, identity, and spiritual beliefs of Native Hawaiians. In 2014 the DHHL finalized the *Hawaiian Homes Commission Water Policy Plan*. This plan defines water as including:

> ...mists, fog, rain, and other precipitation; water as it flows above or below ground, and into the ocean; water used for homesteading; alternative sources including waste, brackish, and saltwater; water used in the exercise of traditional and customary practices; infrastructure used to produce, store and transmit water; and water we use as well as water to which we have rights.

Nohopapa Hawaiʻi LLC (Nohopapa) approached this project through the lens of *He Mele No Kāne: The Waters of Kāne*[1]. With the project research and outreach framed around the components of the use of wai as described throughout the mele and summarized in its last few lines,

He wai puna, he wai e inu, he wai e mana, he wai e ola
wellspring of water, water to quaff, water of magic power, the water of life.

Approaching the research and consultation for the Ka Paʻakai Framework Analysis within the context of *The Waters of Kāne* allowed Nohopapa to explore what is unique about the Native Hawaiian worldview around wai.

[1] Mahalo nui to Kaleo Manuel for gifting the idea to ground this Ka Paʻakai Analysis of wai through Kāne and this foundational mele.

Project Description

On behalf of the DHHL, Nohopapa completed a Ka Paʻakai Framework Analysis for a proposed DHHL water development project at:

1. Waiʻaha, Kahului and Puapuaʻa Ahupuaʻa at the Gianulias property (TMK: [3] 7-5-014:001) (see Figure 1-Figure 7)
2. Keauhou Ahupuaʻa at a Kamehameha Schools well site (TMK: [3] 7-8-004:013 and -015) (see Figure 1-Figure 10).

Once construction on Laʻi ʻŌpua Village 4 Hema is completed, DHHL will have exhausted all of its water credits for homestead and community development in Kona. DHHL will need to seek additional water credits from the County in order to continue with the planned development of its homestead and community lands in Kealakehe. The County of Hawaiʻi Department of Water Supply (DWS) has asked that in order for DHHL to gain additional water credits, DHHL must add new water sources to the County system in Kona. This means the development of well sites and transmission lines to connect each well site to the nearest existing water lines in the DWS system. No long-distance transmission pipelines from the proposed groundwater well sites to DHHL lands in Kealakehe are being proposed by this project, just the water transmission lines from the well sites to the nearest DWS interconnection point in their existing system.

Nohopapa's specific scope of work entails analysis within the "Ka Paʻakai" legal framework, a seminal case that operationalizes the State of Hawaiʻi's constitutional mandate to "affirmatively protect" Native Hawaiian rights and practices.[2] Hawaiʻi's constitution requires government agencies to "conserve and protect Hawaiʻi's natural beauty" as a public trust on behalf of and "[f]or the benefit of present and future generations ..."[3] Co-extensive with State public trust protections are also federal requirements to protect the public trust with respect to lands that were ceded from the Hawaiian Kingdom from both the Main Hawaiian Islands ("MHI") and the Northwest Hawaiian Islands ("NWHI")/Papahānaumokuākea during the transition of Hawaiʻi as a U.S. territory to America's 50th State per the Admissions Act in 1959.[4]" (Akutagawa 2023:14-15)

Purpose

The purpose of the Ka Paʻakai Framework Analysis is to ensure the DHHL is in compliance with Article VII, Section 7 of Hawaiʻi's Constitution, which "places an affirmative duty on the State and its agencies to preserve and protect traditional and customary native Hawaiian rights and confers upon the State and its agencies the power to protect these rights and to prevent any interference with the exercise of these rights."[5] In order to fulfill its constitutional obligations agencies, like the DHHL, must consider the following three considerations regarding possible impacts of their proposed actions

[2] Ka Paʻakai O Ka ʻAina v. Land Use Comm'n, 94 Haw. 31, 7 P.3d 1068, 1083-84 (2000).
[3] HAW. CONST. art. XI, § 1 (1978)
[4] Hawaii Admission Act, Pub.L. No. 8603, 73 Stat. 5 (1959).
[5] Ka Paʻakai o Ka ʻĀina v. State of Hawaiʻi Land Use Com'n [*Ka Paʻakai*], 94 Haw. 31, 47, 7 P.3d 1068, 1084 (2000).

(1) 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;

(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 [State and/or its political subdivisions] to reasonably protect native Hawaiian rights if they are found to exist.[6]

[6] Ibid

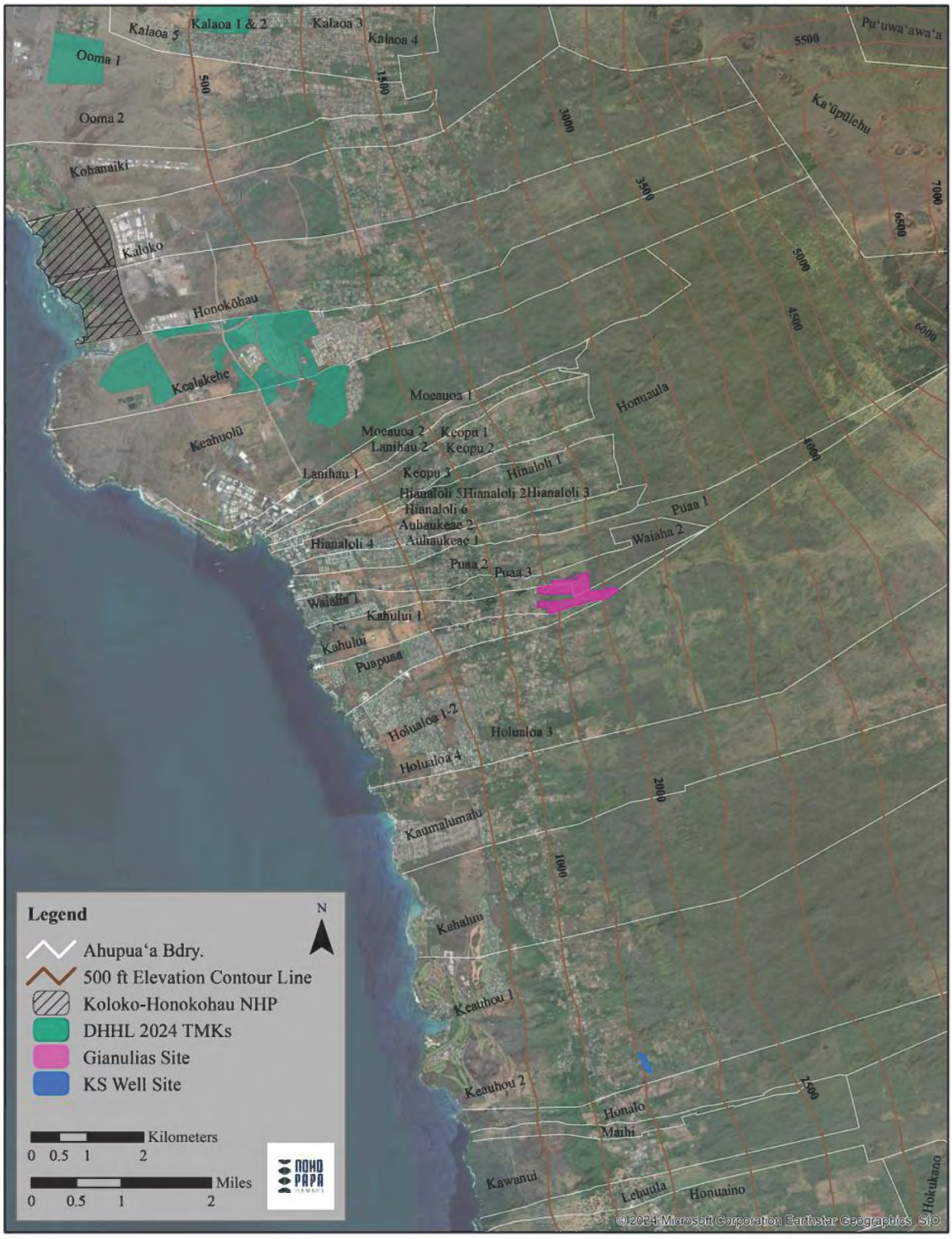

Figure 1. Aerial image illustrating the two proposed water development locations (pink and blue) as well as the existing DHHL parcels in Kona (green).

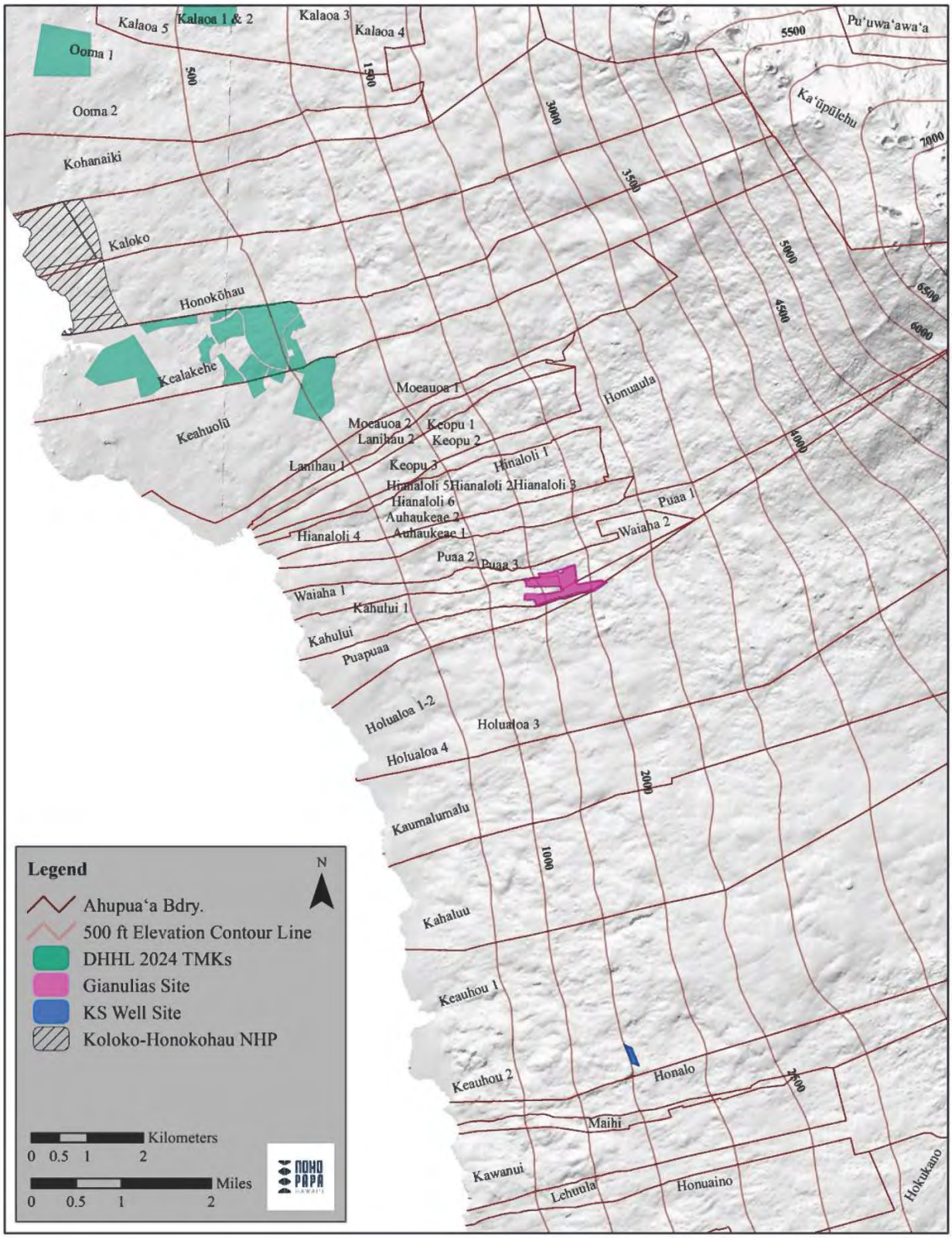

Figure 2. Contour and DEM map illustrating the two proposed water development locations (pink and blue) as well as the existing DHHL parcels in Kona (green).

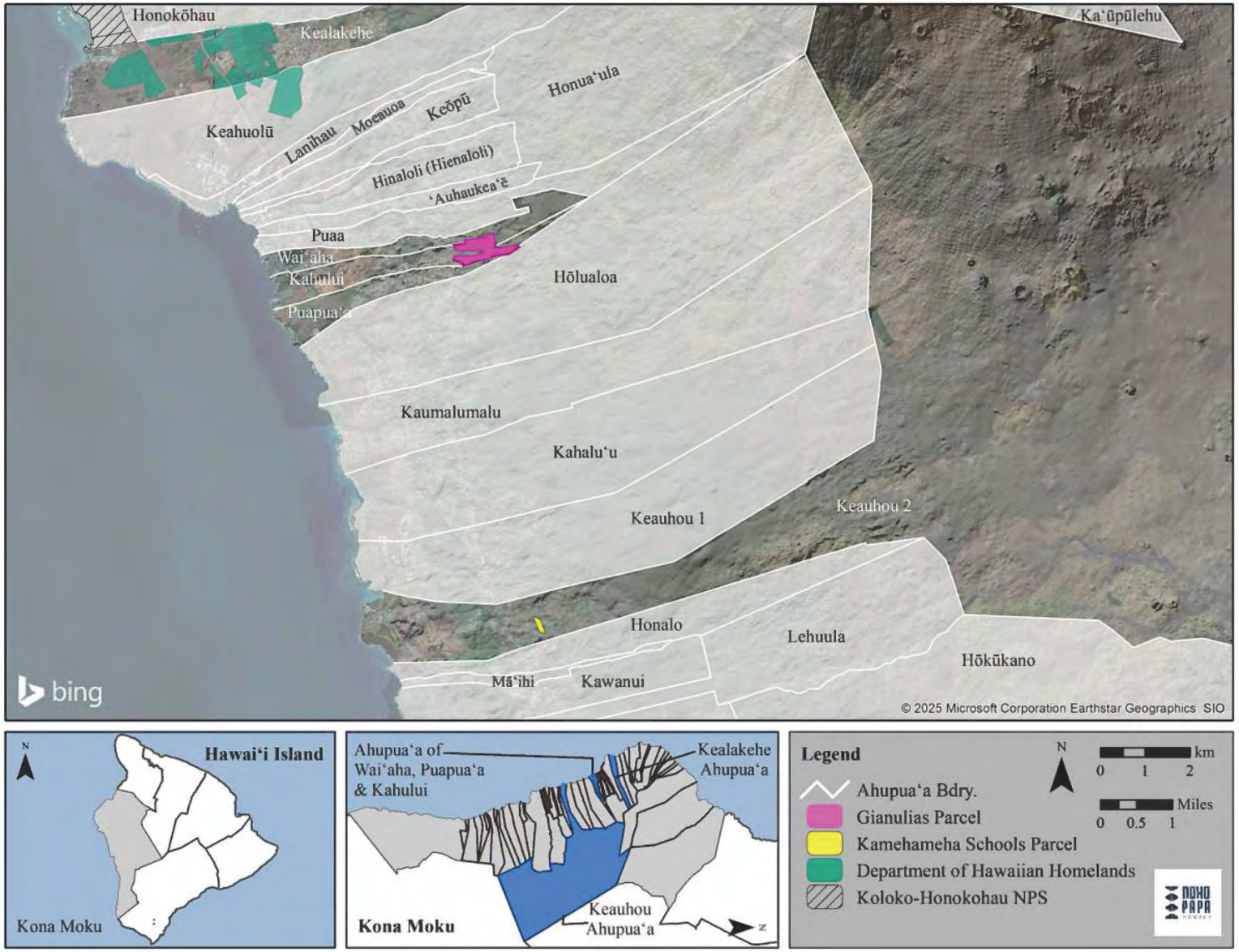

Figure 3. Aerial image illustrating the study are ahupua'a from north to south: Kealakehe, Keahuolū, Pua'a, Wai'aha, Kahului, Puapua'a, Keauhou 1, and Keauhou 2

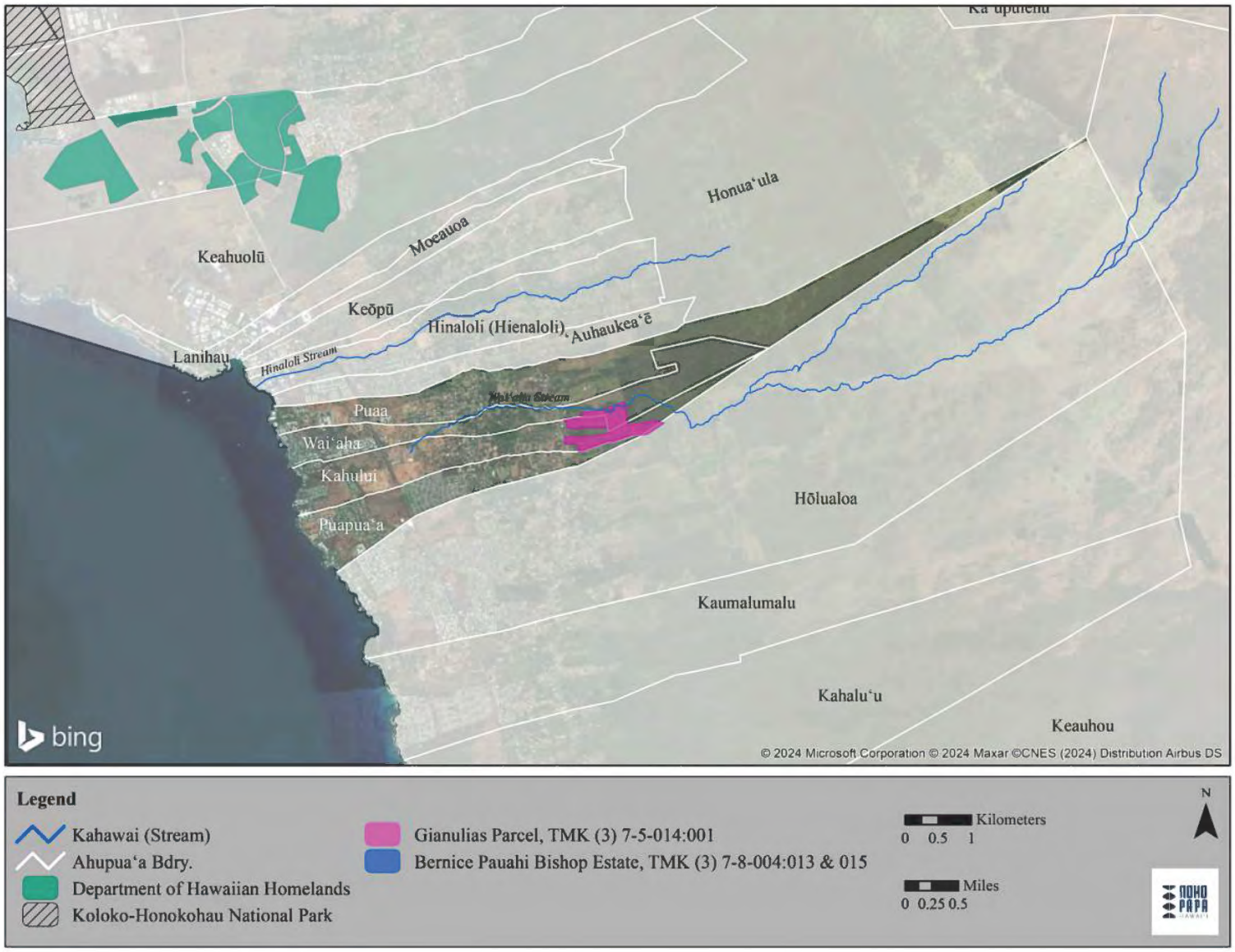

Figure 4. Close up aerial image of Pua'a, Wai'aha, Kahului, and Puapua'a Ahupua'a in relation to DHHL parcels

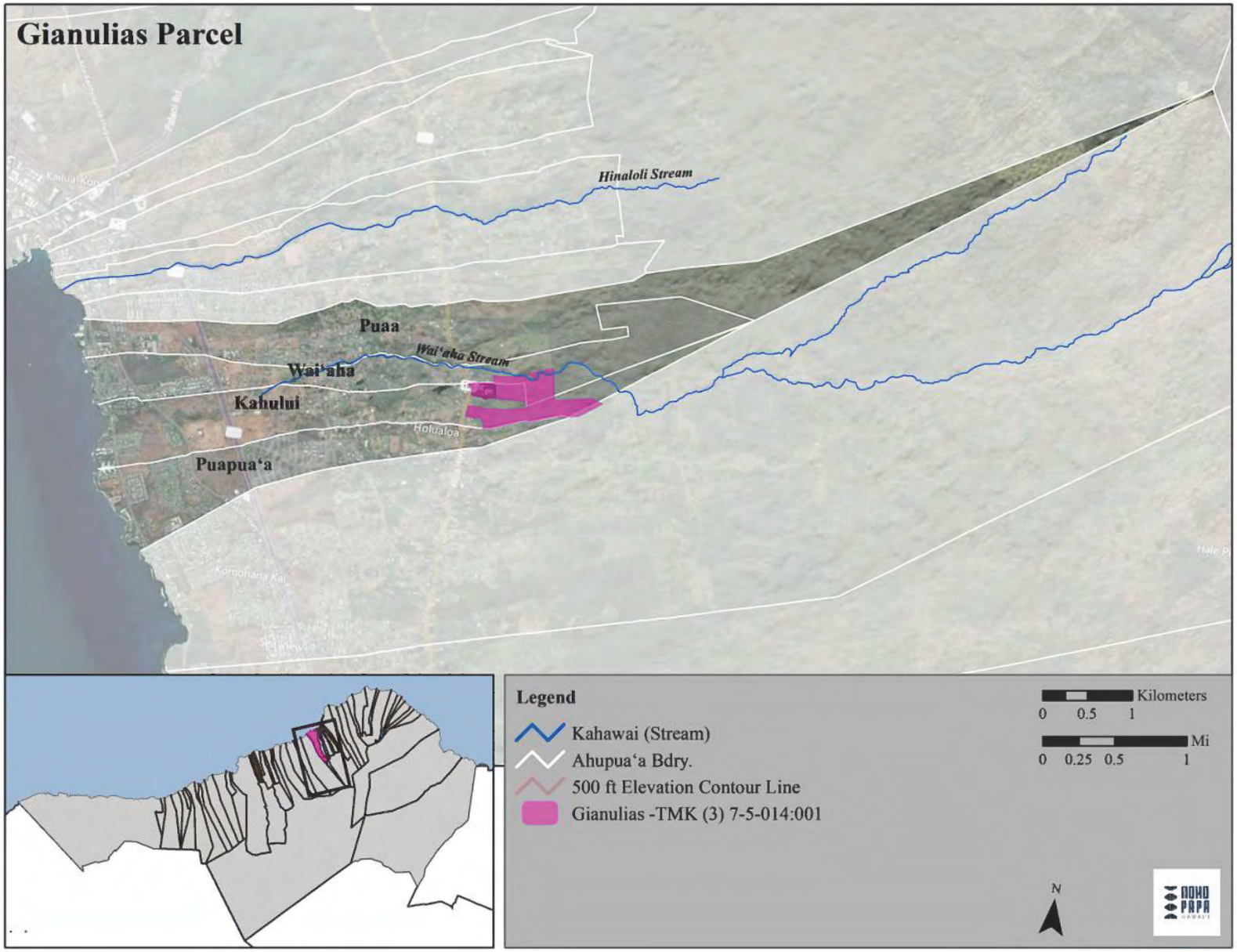

Figure 5. Further zoom in of the ahupua'a that the Gianulias parcels is located in

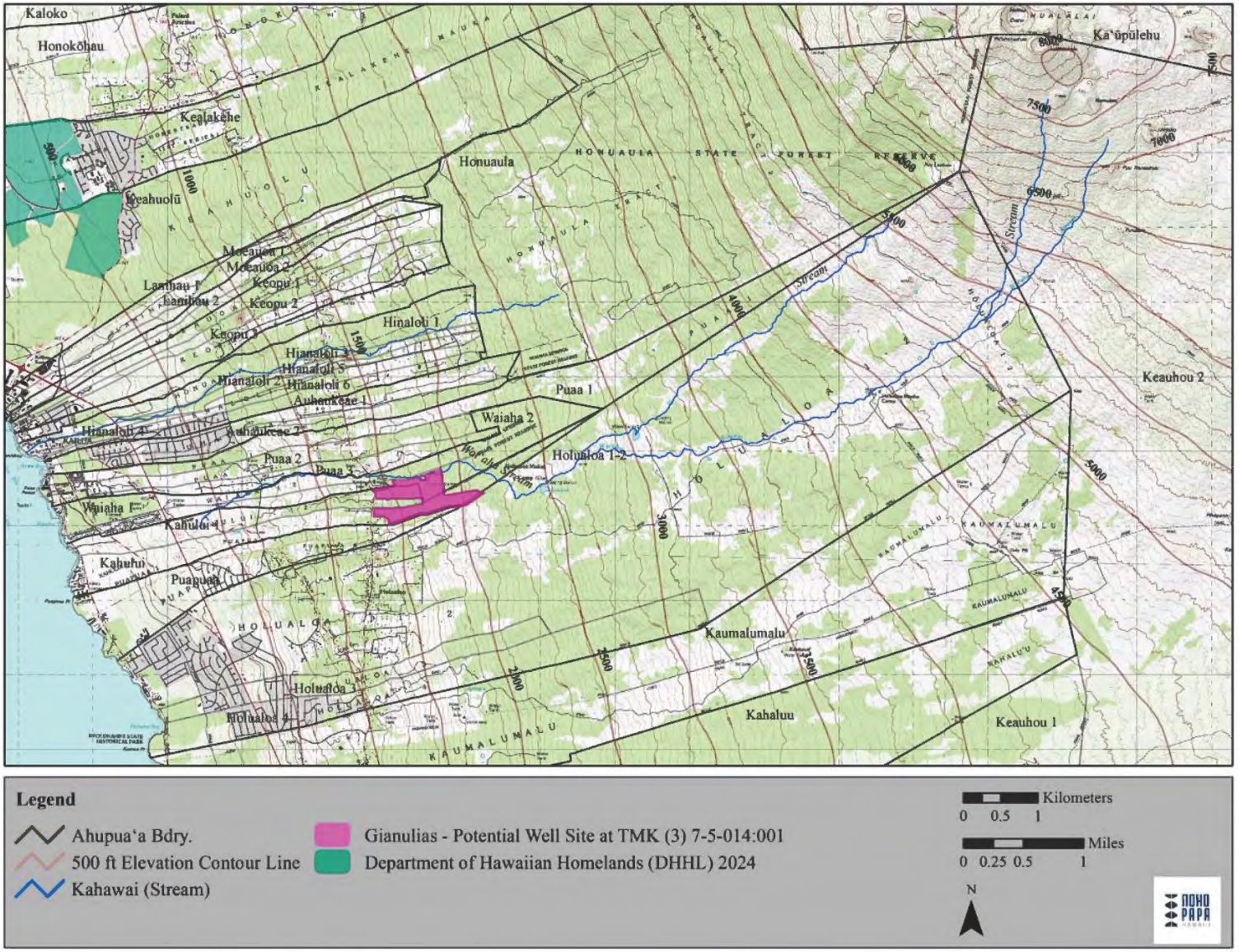

Figure 6. USGS map showing the DHHL TMK parcels (green) and the Gianulias potential well site TMK (pink)

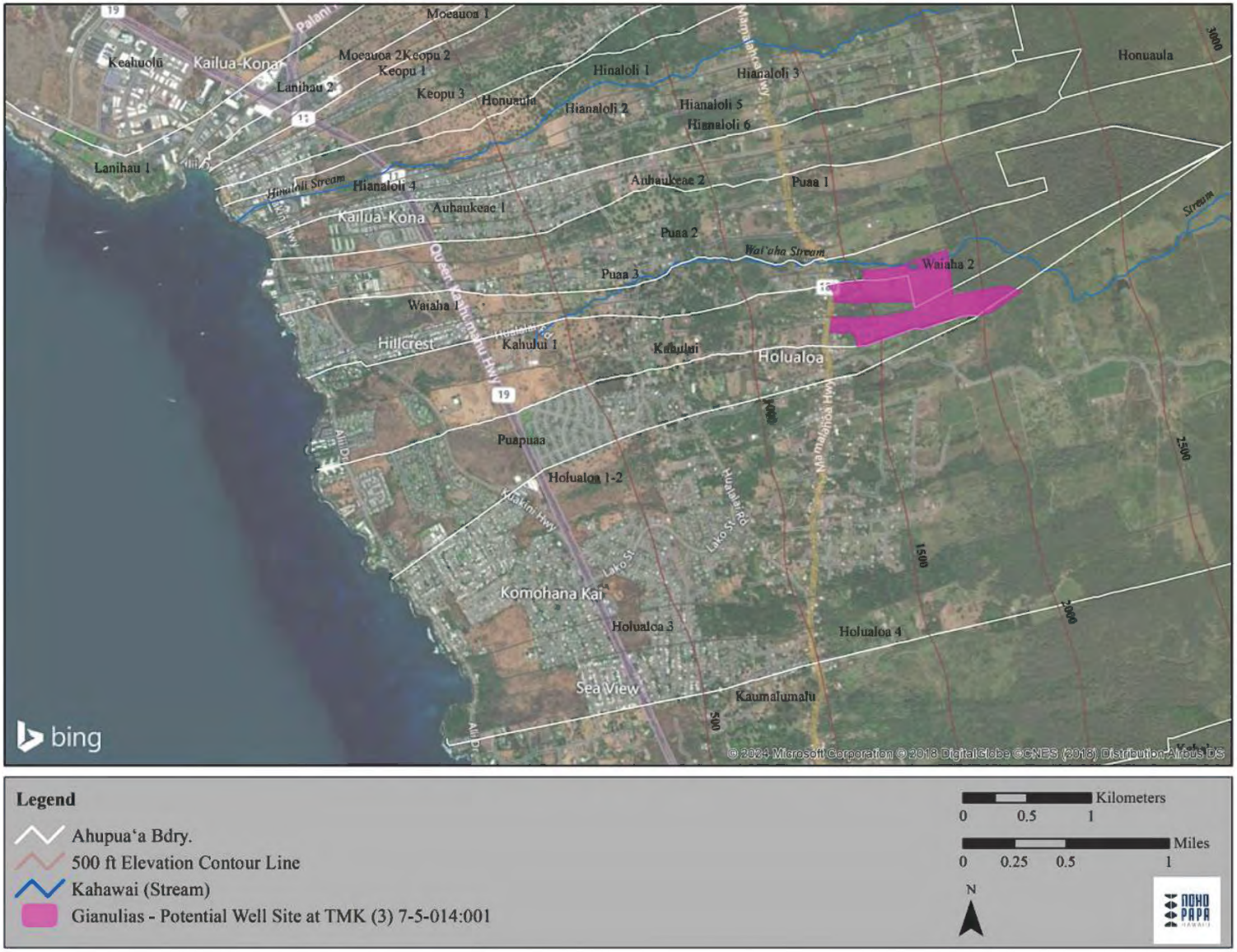

Figure 7. Aerial image showing the Gianulias TMK located within Wai'aha, Kahului, and Puapua'a Ahupua'a, which also includes a portion of Wai'aha Stream

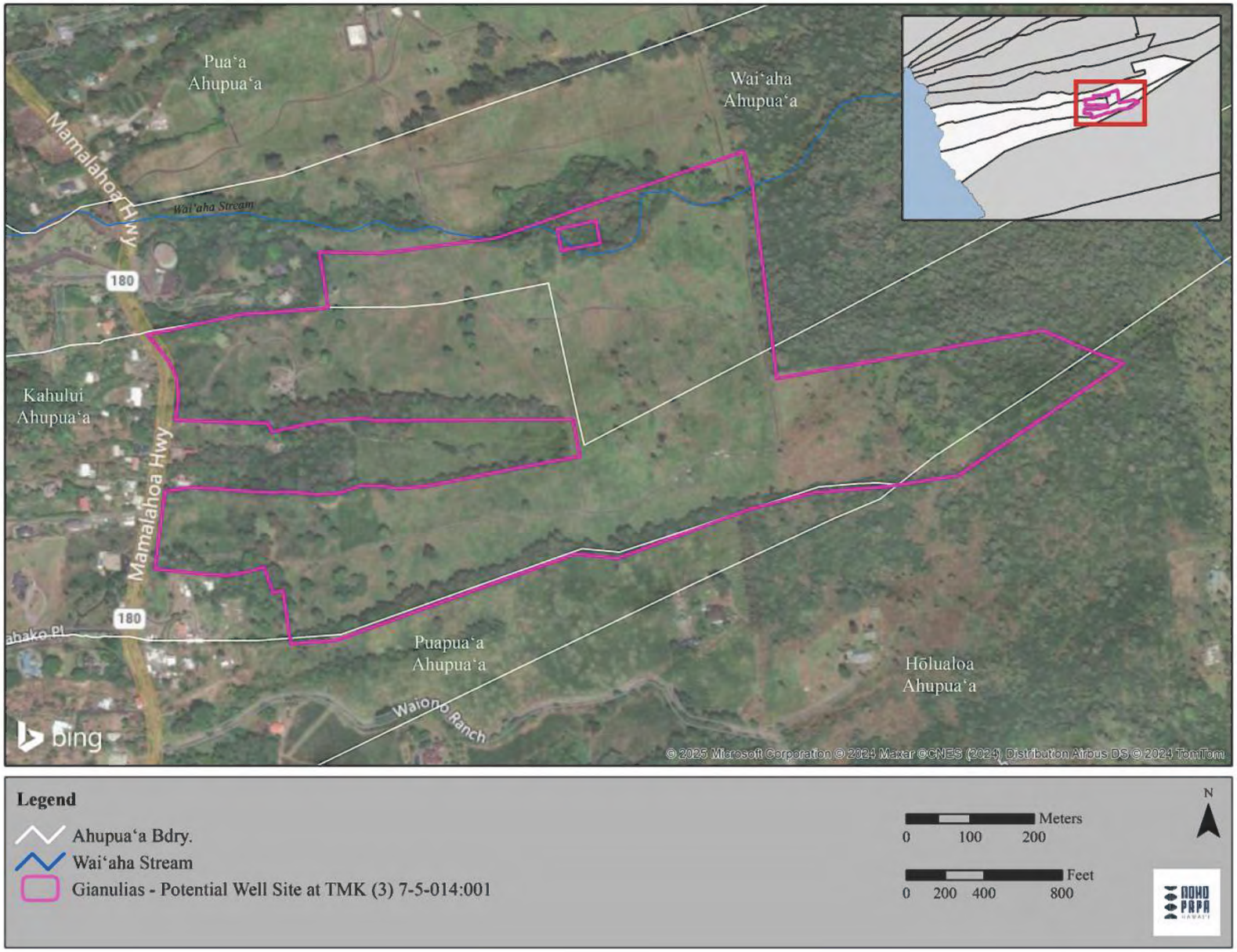

Figure 8. Zoom in aerial image of the Gianulias parcel boundaries.

Figure 9. USGS map of the BPBE Kamehameha Schools existing well site in blue.

Figure 10. Aerial image showing the location of the Kamehameha Schools well site in Keauhou 2 Ahupua'a and the surrounding ahupua'a

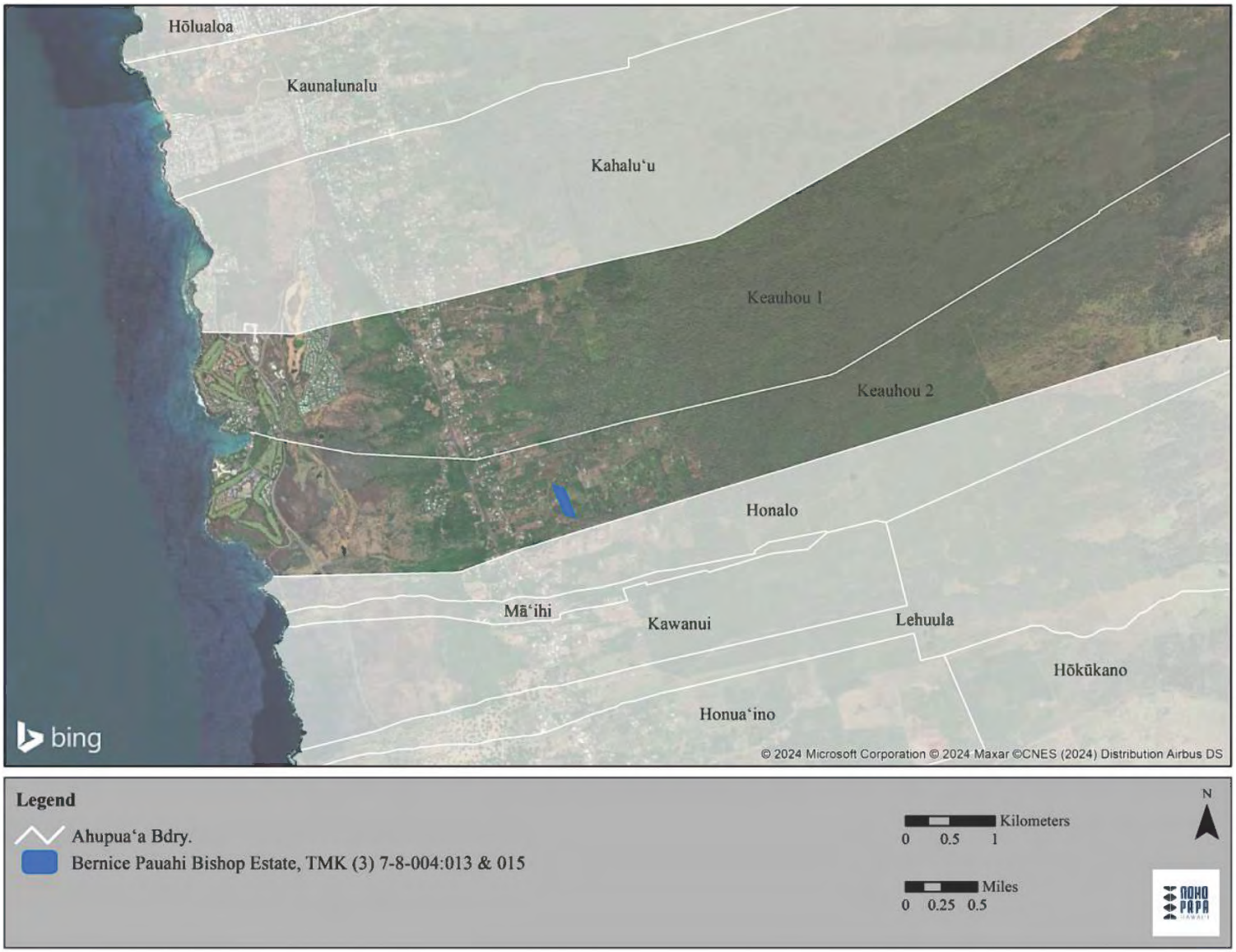

Figure 11. Aerial image of the KS BPBE parcel in Keauhou 2 Ahupuaʻa

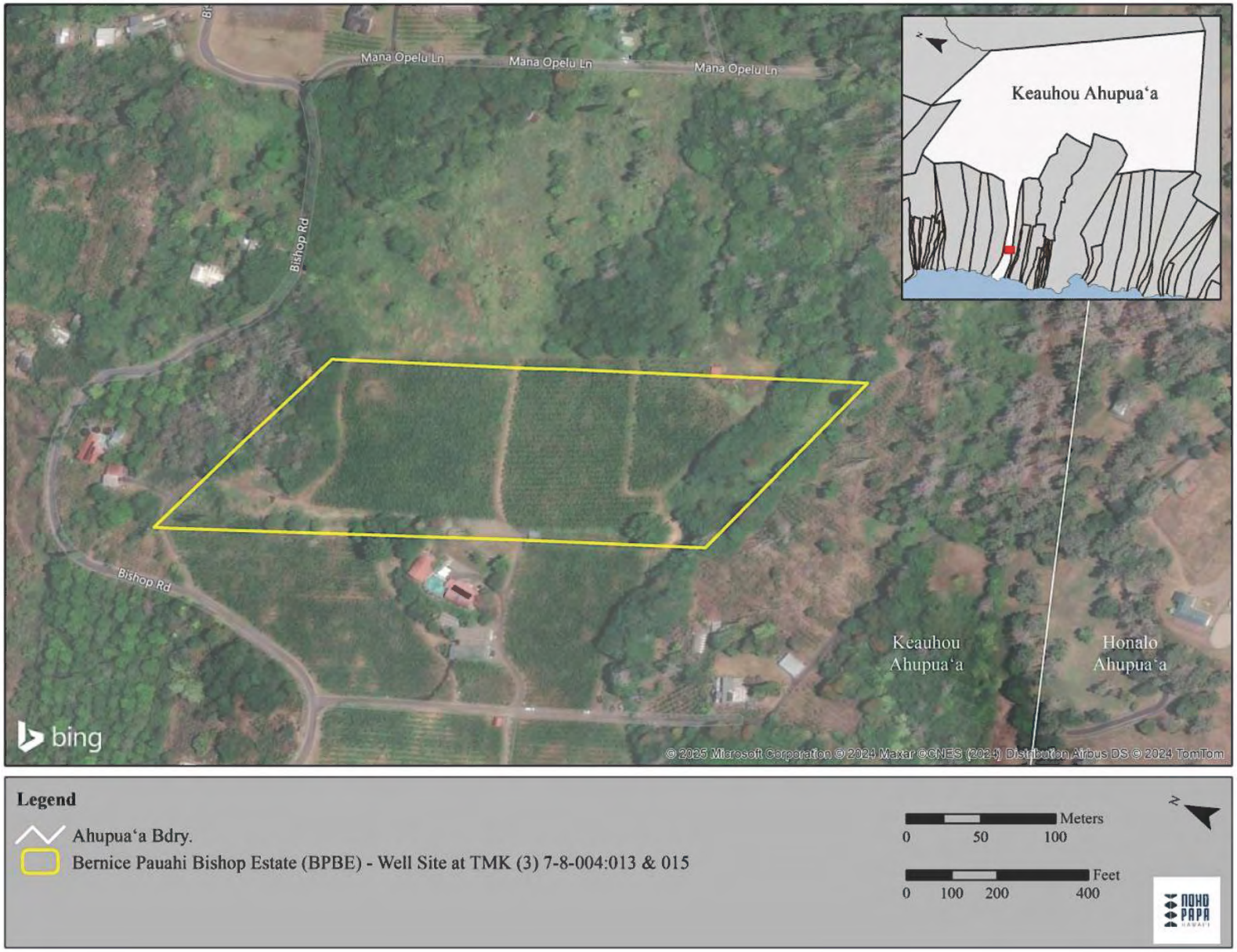

Figure 12. Zoom in aerial image of the KS BPBE well site in Keauhou 1 Ahupua'a

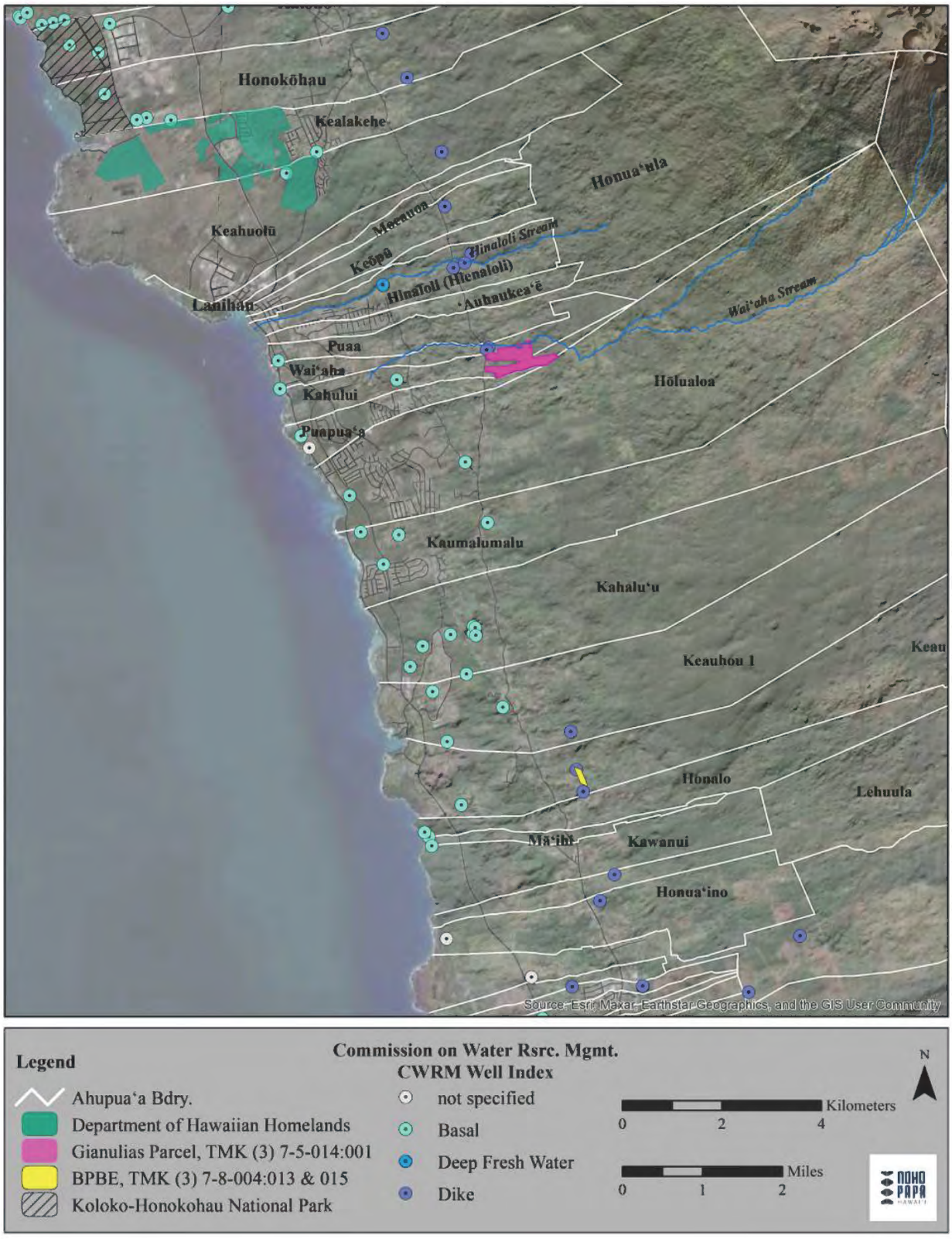

Figure 13. Water well locations from the Commission on Water Resource Management Well Index

Ka Paʻakai Legal Overview

What is the agency's obligation under Ka Paʻakai?

An understanding of the DHHL's responsibilities and obligations under the *Ka Paʻakai* Analysis framework must be rooted in the legal history of the sovereign Hawaiian Kingdom, and an overview of the unique jurisprudence contained in Hawaiʻi's Constitution and a constellation of state laws. Concurrently, it must be contextualized in an ecosystem and broader dialogue of federal and global policies and declarations concerning the rights of Indigenous peoples and the responsibilities of entities and agencies asserting agency and authority in Indigenous spaces.

Accordingly, the review and discussion below begins with an exposition on foundational understandings. It then explains why the Hawaiʻi State constitution and Hawaiʻi State laws require the protection of Hawaiian traditional and customary practices and related cultural resources - primary amongst them rights to freshwater, gathering, access to places and spaces, and the continued right to exercise an array of traditional and customary practices. These topics are followed by an overview of the DHHL's unique fiduciary obligations this *Ka Paʻakai* Framework Analysis is designed to satisfy. The section concludes with a discussion of how the purposes and goals of the Ka Paʻakai Framework Analysis are reflected and upheld by federal and global jurisprudence regarding the rights of indigenous peoples.

Foundational Truths About Hawaiian Culture and Traditional and Customary Practices

It is important to acknowledge a series of foundational, intertwined truths and realities that are frequently ignored and sidelined:

- **Hawaiian culture is living and dynamic**;
- **Traditional and customary practices, as aspects of a living, dynamic human cultural system, are an expansive spectrum**. They have the potential to be revealed and layered with ancestral knowledge and additional information through pathways that include but are not limited to: intentional revelation or sharing by knowledge carriers, cultural practitioners, and ʻohana, research, discovery, and new translations. **Therefore, the changing and emergent nature of *some* traditional and customary practices does not invalidate them**;
- **Hawaiian oral traditions and testimony are valid lines of empirical evidence that require no external validation[7];**

---

[7]*See* Ashford, 50 Haw. 314, 316, 440 P.2d 76, 77 (1968); Malia Akutagawa & Amanda Lerma, *Legal & Ka Paʻakai Analysis for the Nomination of the Papahānaumokuākea National Monument as a National Marine Sanctuary*, 49-50, 2023; Advisory Council on Historic Preservation, *Traditional Knowledge and the Section 106 Process: Information for Federal Agencies and Other Participants* (2021), https://www.achp.gov/sites/default/files/2021-05/TraditionalKnowledgePaper5-3-21.pdf; Council on Environmental Quality, Offices of Science and Technology Policy, the White House, *Guidance for Federal Departments and Agencies on Indigenous Knowledge*, (Nov. 30, 2022), https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf; Advisory Council on Historic Preservation,

- ***Ka Paʻakai* mandates the respect and protection of traditional and customary practices by State agencies; it does not require their understanding by outsiders, nor their defense or justification by cultural practitioners[8]**. Failure to grasp their essence is a lack of knowledge and understanding as well as an inability (or unwillingness) of agencies and their representatives to uphold and fulfill their fiduciary obligations.

Ka Paʻakai as an Outgrowth of Ancient Hawaiian Cultural Practices and Customs

In their recent *Ka Paʻakai* Analysis for the National Marine Sanctuary designation for Papahānaumokuākea, Professor of Hawaiian Studies and Hawaiian Legal Expert Malia Akutagawa, Esq., and co-author Amanda Lerma, J.D., write that the "The Kumulipo[9] and Hawaiian cosmogenic origins determined cultural practices and native customary norms," (Akutagawa and Lerma 2023: 18). The authors write:

> Much of the law around Native Hawaiian rights are grounded in the understanding of the ʻohana. The late kumu hula John Kaʻimikaua stated that "the whole culture of our ancestors was based upon the ʻohana" in the manner that the land was cared for.[10] He adds that this truth can be found "from the beginning of time in our moʻolelo that tells of the creation of our islands … with the union of earth and sky."[11]

The remainder of their discussion is featured below, inclusive of their footnotes for informational sources:

> Kumu John Kaʻimikaua describes lōkahi as "balance between the land, the people that lived upon the land, and the akua," which results in "pono, the spiritual balance in all things."[12] From these relationships stem kuleana, the responsibility to advance spiritually with the akua, to engage meaningfully with our fellow kānaka, and to foster right relationship with ʻāina, the land and sea which the "kūpuna [knew to be] living beings."[13]

Notice of Approval of Exemption for Indigenous-Knowledge Informed Activities by Native Hawaiian Organizations, Federal Register (Nov. 08, 2024), https://www.federalregister.gov/documents/2024/11/08/2024-25984/notice-of-approval-of-exemption-for-indigenous-knowledge-informed-activities-by-native-hawaiian.

[8] *See* Ka Paʻakai o Ka ʻĀina v. State of Hawaiʻi Land Use Comʼn (*Ka Paʻakai*), 94 Haw. 31, 47, 7 P.3d 1068, 1084 (2000); See also discussion below of the court case below.

[9] Described by Queen Liliʻuokalani as "an Hawaiian creation myth," and "[a]n ancient prayer for the dedication of the high chief Lonoikamakahiki to the gods soon after his birth,..." (see Queen Liliʻuokalani 1897/2021: cover and introduction).

[10] *A Mau A Mau (To Continue Forever): Cultural and Spiritual Traditions of Molokaʻi,* (Nālani Minton and Nā Maka O Ka ʻĀina 2000).

[11] *Id.*

[12] *Id.*

[13] Video interview of Dean Wilhelm, Hoʻokuaʻāina, see website: https://hookuaaina.org/find-a-program/resources/hawaiian-values-based-lessons/

Inherent in this understanding is the ʻōlelo noʻeau, "He Aliʻi Ka ʻĀina, He Kauwā Ke Kanaka" – the land is chief, the people are its servants.[14] The moʻokūʻauhau of Kānaka ʻŌiwi teaches that ʻohana encompasses the natural world, that there is no separation between the people and the land. From this comes kuleana, of which the highest responsibility fell to the aliʻi, who served as intermediaries facilitating the "destructive-reproductive forces of the unseen divinities of the cosmos."[15] When aliʻi failed to follow proper religious protocols and mistreated the people, the makaʻāinana were justified in abandoning their aliʻi as poor leaders and unfit conduits of the gods' favor.[16] The makaʻāinana were free to move and make another ʻāina momona if they were unhappy with their aliʻi. This provided an incentive for aliʻi to treat the people fairly and generously.[17] More importantly, as Danielle Espiritu, former Program Specialist with the cultural program Hoʻokuaʻāina, expressed:

> Embedded within [the ʻōlelo noʻeau, he aliʻi ka ʻāina, he kauwā ke kanaka is] the idea that [the aliʻi] were not going to be oppressive to [the] people, [nor] domineering. [They] were going to steward that authority, that kuleana in a way that protected [the] people and provided for their needs. So really, that's what it meant to be an aliʻi that was pono, an aliʻi that was good and righteous. We see this in our ʻāina. If ʻāina is honored and stewarded well, it can provide abundantly for Kānaka, and it can allow the rest of the world to thrive. When we see that second part of the ʻōlelo noʻeau, *he kauwā ke kanaka*, that people are the servants, it is important for us to pause and ask ourselves, how is the health and well-being of our ʻāina directly tied to how well we as kānaka steward it? And so, what is our kuleana, what is our responsibility, what is our privilege as Kānaka to really steward ʻāina? What is our relationship to ʻāina? We can all ask ourselves this … And if we notice that our relationship [with ʻāina] is not healthy, then we can think about, "Okay what can we do to improve that? What can we do to make our relationship with ʻāina healthier? [What can we do] to really care for and to really mālama ʻāina in the way that it deserves, so that ʻāina can return to being ʻāina?" Embedded in the word ʻāina is ai which means to feed and to eat. How can we care for our relationship with ʻāina so that ʻāina can be thriving and can be a land of abundance?[18]

All of Hawaiian society was responsible to take on this kuleana of mālama ʻāina. The makaʻāinana, however, by cultivating the land, enjoyed the greatest intimacy

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[14] Mary Kawena Pukui, ʻŌlelo Noʻeau: Hawaiian Proverbs & Poetical Sayings 531 (1983).
[15] Lilikalā Kameʻeleihiwa, Native Lands & Foreign Desires: Pehea Lā e Pono Ai?, 36 - 37 (1992).
[16] *Id.* at 39 .
[17] *Id.* at 26; Marion Kelly, Changes in Land Tenure in Hawaii, 1778-1850 (June 1956) (unpublished thesis, University of Hawaiʻi at Mānoa) (on file with author).
[18] Danielle Espiritu video interview, Program Specialist with Hoʻokuaʻāina. See website: https://hookuaaina.org/he-alii-ka-aina-he-kauwa-ke-kanaka/.

> with ʻāina. Mary Kawena Pukui emphasized that "the fundamental unit in the social organization [of Hawaiian society is the] ʻohana … tied by ancestry, birth and sentiment to a particular locality which was termed ʻāina."[19] These practices stem from the pre-contact era when ka poʻe kahiko lived under a communal land tenure system. The makaʻāinana tended to raise generations upon generations within the same ahupuaʻa, with extended ʻohana sharing provisions from the land and sea with each other.[20]
>
> The long-standing presence of the makaʻāinana on their ʻāina hānau and their rights of occupation, access, and gathering survived as a hallmark within Hawaiʻi's laws from the Kingdom period into the present day, despite a shifting at the Māhele from a communal land system to a private property regime. This is evidenced by the fact that all the crown, government, and chiefs' lands remained subject to the rights of native tenants, with the clause "koe nae na kuleana o na kanaka" affixed to all royal patents and land commission awards.[21] To this day, all property in Hawaiʻi (both public and private) are encumbered with this reservation.[22] [Akutagawa and Lerma 2023: 20, 21]

In the Office of Hawaiian Affairs-sponsored *Hoʻohana Aku, a Hoʻōla Aku: A Legal Primer for Traditional and Customary Rights in Hawaiʻi*, legal scholars David M. Forman and Susan K. Serrano synthesize the ancient cultural basis for the respect and protection of Hawaiian customs and practices. The authors specifically emphasize gathering, access, and their holistic connections to Hawaiian resource stewardship, health, and abundance:

> The cultural and spiritual identity of the Hawaiian people derives from their relationship with the ʻāina; because the land is part of their ʻohana, traditional Hawaiian customs and practices emphasize respect and care for the ʻāina and surrounding resources. Accordingly, the traditional and customary practices of the Hawaiian people include gathering, hunting, and fishing in a manner that allows natural resources to reproduce and replenish themselves. [Forman and Serrano 2012:3]

They describe "[a] system of trails and access" that veined every island in the archipelago and was open for access and utilization by everyone from commoners to chiefs (Forman and Serrano 2012:4). The authors also note:

> Access along the shore, between adjacent ahupuaʻa (loosely defined as watersheds), to the mountains and the sea, and to small areas of land cultivated or harvested by native tenants, were all necessary parts of early Hawaiian life. Gathering activities supplemented everyday food and medicinal supplies, while

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[19] E.S. Craighill Handy & Mary Kawena Pukuʻi, The Polynesian Family System In Kaʻu, Hawaiʻi (1998).
[20] *Id.*
[21] Lorenz Gonschor & Kamanamaikalani Beamer, *Toward an Inventory of Ahupuaʻa in the Hawaiian Kingdom: A Survey of Nineteenth- and Early Twentieth-Century Cartographic and Archival Records of the Island of Hawaiʻi.* 48 Haw'n J. Hist. 62 (2014).
[22] David M. Forman & Susan K. Serrano, Hoʻohana Aku, a Hoʻola Aku: A Legal Primer for Traditional and Customary Rights in Hawaiʻi 9 (2012).

> cultural and religious practices sustained the people in a variety of ways. [Forman and Serrano 2012:3]

Regarding cultural gathering practices, the authors state:

> Although early Hawaiians may have cultivated only small areas compared to the total acreage on each major island, they were able to utilize much greater land areas through gathering. Tenant farmers supplemented their subsistence lifestyle with plants and animals that either did not grow or could not be supported on or near the tenant's house lot or cultivated plot of land. They also gathered items for medicinal and religious purposes. During times of famine, gathering helped the people to survive. When crops or sea life had diminished significantly due to drought or other adverse climate conditions, gathering or foraging for food became the primary means of survival. When called upon by the resident chief, ahupuaʻa tenants would retrieve large products from the land for communal purposes, such as a tree for a canoe or rafters for a hālau (meeting house).
>
> Restrictions on gathering practices were also an extension of the kapu system, which not only held religious significance, but also served as an efficient means of conserving resources. For instance, with regard to makai gathering practices, there was a kapu placed during spawning season on deep-water fishes such as aku (ocean bonito) and ʻōpelu (mackerel). Because these fish bear their young in the open ocean, they were susceptible to overfishing—as compared with the manini (tang), uhu (parrotfish), palani (surgeonfish), and kala (unicornfish) in protected tidal pool areas. The resident chiefs could impose kapu regulating the size, type, and number of items gathered, as well as the manner in which they were gathered—subject to being overruled by a higher-ranking chief. [Forman and Serrano 2012:4]

Ka Paʻakai's Roots in the Legal History of the Sovereign Hawaiian Kingdom

Hawaiian Kingdom-era laws and jurisprudence recognized, privileged, and upheld Hawaiian cultural systems of resource management, especially those concerning water and traditional customary rights like gathering and access. King Kamehameha III (Kauikeaouli) was the first to enshrine protections for Hawaiian customs and practices into the legal system. Tenants' rights codified in 1839 retained elements of the kapu system described in the preceding section(Forman and Serrano 2012:4). The Constitution of 1840 and Kingdom judiciary of 1847 integrated elements of English common law and American civil law "...so far as they are deemed to be founded in justice, and not in conflict with the laws and usages of this kingdom," a legal structure that persisted for over a century through statehood (Akutagawa and Lerma 2023:23).

Akutagawa and Lerma (2023) write:

> In the post-contact era when the Hawaiian archipelago became united under one rule, the early monarchs began to codify these ancient understandings. The 1840 constitution of the Hawaiian Kingdom makes clear the stature of ʻāina as paramount over Kānaka ʻŌiwi, with a trusteeship held by the mōʻī to care for the chiefs and people through sound management of the land:
>
> > Kamehameha I, was the founder of the kingdom, and to him belonged all the land from one end of the Islands to the other,

> though it was not his own private property. It belonged to the chiefs and people in common, of whom Kamehameha I was the head, and had the management of the landed property.[23]

The constitution reflected the ancient understanding that the aliʻi possessed the kuleana to govern the people wisely and to observe religious and ceremonial protocols that ensured the protection of the land and people.[24] The makaʻāinana farmed the land and made it productive. While the aliʻi's tenure on the land was impermanent due to acts of conquest among them, the makaʻāinana, for the most part (especially when they were treated well), remained a permanent fixture upon the land and devoted their endeavors to making ʻāina momona (fat, abundant land).[25]

The constitution also laid the groundwork for the Māhele, the privatization and division of the lands among the king, chiefs, and makaʻāinana. The Māhele (1848) introduced a hybridized system of private property that adopted some western constructs while protecting the vested rights of makaʻāinana – rights inherent to them via Hawaiian cosmology and grounded in custom and practice through the ancient land tenure system.[26] The Māhele sought to divide the formerly undivided interests in land shared in common between the King, chiefs, and makaʻāinana. The first stages of the Māhele involved the King and 252 chiefs quit-claiming their interests between each other. The lands, now considered freehold, were converted into allodial titles. The chiefs were then awarded royal patents for konohiki lands once they paid a commutation fee.[27] The King dedicated the bulk of his landholdings to the government, while keeping the remainder as crown lands for himself and his heirs.[28]
As the Kingdom was evolving towards a private property regime, it did not wholly adopt a western framework.[29]

All of the Crown, government, and chiefs' lands remained subject to the rights of native tenants. The clause "koe nae na kuleana o na kanaka" is affixed to all LCAs, Royal Patents issued to konohiki, private citizens, Crown and government lands. This clause reaffirms that all lands throughout Hawaiʻi to the present-day are

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[23] *Nā Kumukānāwai O Ka Makahiki 1839 A Me Ka 1840*, 1.1 Ka Hoʻoilina: Journal of Hawaiian Language Sources, Luna Hoʻoponopono et al., eds., Jason Kāpena Achiu trans., Mar. 2002 [hereinafter L.1840], at 41, *available at* http://hooilina.org/collect/journal/index/assoc/HASH0166.dir/1.pdf (last visited Feb. 11, 2023).
[24] Lilikalā Kameʻeleihiwa, Native Lands & Foreign Desires: Pehea Lā e Pono Ai?, 36-39 (1992).
[25] Kamanamaikalani Beamer, No Mākou Ka Mana: Liberating The Nation, 45 (2014); E.S. Craighill Handy & Mary Kawena Pukuʻi, The Polynesian Family System In Kaʻu, HAWAIʻI 2 (1998).
[26] Kamanamaikalani Beamer, No Mākou Ka Mana: Liberating The Nation, 144 (2014).
[27] Lorenz Gonschor & Kamanamaikalani Beamer, *Toward an Inventory of Ahupuaʻa in the Hawaiian Kingdom: A Survey of Nineteenth- and Early Twentieth-Century Cartographic and Archival Records of the Island of Hawaiʻi*. 48 Haw'n J. Hist. 59 (2014).
[28] *Id.* at 58.
[29] *Pub. Access Shoreline Haw. v. Haw. Cnty. Planning Comm'n* (*PASH*), 79 Hawaiʻi 425, 447, 903 P.2d 1246, 1268 (1995) (concluding that the "western concept of exclusivity [in private property law] is not universally applicable in Hawaiʻi" and that "the issuance of [ ] Hawaiian land patent[s]" at the time of the Māhele conveyed "a limited property interest.").

encumbered by "reserved rights of native tenants."[30] The courts to this present day recognize a kuleana reservation attaches to private property holdings in Hawai'i.[31]

Hoa'āina were able to acquire small land-holdings, or kuleana, for themselves through the 1850 Kuleana Act as well as acquire government lands through purchase.[32] The Kuleana Act and the kuleana reservations attached to landholdings reflect traditional and customary understandings that pre-date Statehood and even the time of Kamehameha and his monarchy. These legal provisions represent hoa'āina relationships to their ahupua'a and recognize their rights to access lands from mauka to makai to gather materials for their basic needs (e.g., thatch and aho cordage for making rope and building hale, firewood for imu, ti leaf for wrapping food items, lei-making, and to serve spiritual and ceremonial purposes). Today, the Kuleana Act is memorialized in state law as Hawai'i Revised Statutes, Section 7-1

Hawai'i Revised Statutes, Section 1-1 is another source of law that was enacted in 1892 as part of the civil code[33] of the Hawaiian Kingdom and has survived into Statehood. H.R.S. § 1-1 instructs Hawai'i's courts to look to English and American common law decisions for guidance, except where they conflict with "Hawaiian judicial precedent, or … Hawaiian [custom and] usage" pre-dating 1892.[34] The origins of this law can be traced even further back to the early period of the Hawaiian Kingdom prior to 1838, when it was acknowledged that the islands were "governed … without other system than [Hawaiian custom and] usage, and with a few trifling exceptions, without legal enactments."[35] Under Kamehameha III, the constitutional monarchy took shape with the establishment of an Executive Department comprised of a Privy Council and Ministers to the King. This was followed by the creation of a Judiciary in 1847 authorized to "cite and adopt '[t]he reasonings and analysis of the common law, and of the civil law [of other countries] … so far as they are deemed to be founded in justice, and not in conflict with the laws and usages of this kingdom.'"[36] (emphasis added). This law also encompasses

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[30] Lorenz Gonschor & Kamanamaikalani Beamer, *Toward an Inventory of Ahupua'a in the Hawaiian Kingdom: A Survey of Nineteenth- and Early Twentieth-Century Cartographic and Archival Records of the Island of Hawai'i.* 48 Haw'n J. Hist. 61 (2014).

[31] David M. Forman & Susan K. Serrano, *Ho'ohana Aku, a Ho'ola Aku: A Legal Primer for Traditional and Customary Rights in Hawai'i,* 9 (2012).

[32] Lorenz Gonschor & Kamanamaikalani Beamer, *Toward an Inventory of Ahupua'a in the Hawaiian Kingdom: A Survey of Nineteenth- and Early Twentieth-Century Cartographic and Archival Records of the Island of Hawai'i,* 48 Haw'n J. Hist. 61 (2014).

[33] L.1892, c. 57, s 5, approved on November 25, 1892 which states, "Section 5. The common law of England, as ascertained by English and American decisions, is hereby declared to be the common law of the Hawaiian Islands in all cases, except as otherwise expressly provided by the Hawaiian Constitution or laws, or fixed by Hawaiian judicial precedent, or established by Hawaiian national usage, provided however, that no person shall be subject to criminal proceedings except as provided by the Hawaiian laws."

[34] State v. Zimring, 52 Haw. 472, 475 (1970) (citing De Freitas v. Trustees of Campbell Estate, 46 Haw. 425, 380 P.2d 762 (1963)).

[35] *PASH*, 79 Haw. at 437, 903 P.2d at 1246 (note 21, citing 1 *Statute Laws of His Majesty Kamehameha III, King of the Hawaiian Islands* 3 (1845-46)).

[36] *Id.* (note 21, citing Act of September 7, 1847, ch. I, § IV; 2 *Statute Laws of His Majesty Kamehameha III, King of the Hawaiian Islands* (1847) (emphasis added)).

> the entire spectrum of Hawaiian traditional and customary practices beyond the specific items listed in H.R.S. § 7-1. [Akutagawa and Lerma 2023:21—23]

Especially relevant in Kona, the 1859 Hawai'i Revised Statutes (HRS) § 7-1, as amended, entitled "Miscellaneous Rights of the People – Building materials, water, etc.; landlords' titles subject to tenants' use," protects the right to gather for personal, non-commercial use, and a right to "drinking water, and running water, and the right of way." It states:

> Where the landlords have obtained, or may hereafter obtain, allodial titles to their lands, the people on each of their lands shall not be deprived of the right to take firewood, house-timber, aho cord, thatch, or ki leaf, from the land on which they live, for their own private use, but they shall not have a right to take such articles to sell for profit. The people shall also have a right to drinking water, and running water, and the right of way. The springs of water, running water, and roads shall be free to all, on all lands granted in fee simple; provided that this shall not be applicable to wells and watercourses, which individuals have made for their own use. [HRS Hawaii Revised Statutes (HRS) § 7-1]

Hawaiian Rights Enshrined in Hawai'i Constitutional and State Law Underpinning Ka Pa'akai

Akutagawa and Lerma offer a discussion of the pivotal modern events and legal history underpinning *Ka Pa'akai*. They write:

> During the Hawaiian Renaissance period when Kānaka Maoli began to fight for native access and gathering rights, resist evictions from ancestral lands, and organize against the Navy's bombing of Kaho'olawe, a State constitutional convention was held. This rare opportunity prompted Kānaka and local environmentalists to strategically position themselves as delegates in these proceedings. It was at the 1978 constitutional convention that certain key amendments were adopted. With respect to native rights, the delegates adopted a new amendment, Article XII, Section 7, which reads as follows:
>
> > The State reaffirms and shall protect all rights, customarily and traditionally 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, subject to the right of the State to regulate such rights.[37]
>
> This provision solidifies and enhances H.R.S., §§ 1-1 and 7-1, by making it a constitutional mandate for the State and its political subdivisions to "protect the reasonable exercise of customar[y] and traditional[] rights of Hawaiians to the extent feasible."[38] Over the next forty years, a body of jurisprudence developed around these statutory and constitutional provisions which addressed issues of where Hawaiian rights are protected and to what extent.

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[37] HAW. CONST. art. XII, § 7 (1978).
[38] *PASH*, 79 Hawai'i 425 at437, 903 P.2d at 1246.

> The first landmark Native Hawaiian rights case emerged in 1982 with William "Billy" Kalipi, Sr. asserting his kuleana rights.[39] The Hawai'i Supreme Court strictly interpreted H.R.S., § 7-1 in *Kalipi v. Hawaiian Trust Co.* ("*Kalipi*") as protective only of access and gathering rights of native tenants actually residing within the ahupua'a and that these practices may occur only on undeveloped lands.[40] However, as more cases have been litigated since *Kalipi*, the Hawai'i Supreme Court has revisited the notion of whether traditional and customary practices are viable only on undeveloped lands. The court's decision in *Public Access Shoreline Hawaii v. Hawai'i County Planning Commission* ("*PASH*") acknowledged that these traditions exercised on "less than fully developed" lands may also warrant protection.[41]
>
> In *Pele Defense Fund v. Paty* ("*Pele I*"), the Hawai'i Supreme Court expanded its ruling in *Kalipi* and acknowledged that gathering rights may extend to other ahupua'a without benefit of tenancy if it can be demonstrated that this was the accepted custom and long-standing practice.[42] The court gave great weight to kama'āina evidence and acknowledged that "traditional and customary rights associated with tenancy in an ahupua'a [may] extend[ ] beyond the boundaries of the ahupua'a."[43]
>
> These cases tend to reflect the practices of hoa'āina[44] in the terrestrial realms, particularly the wao nahele (upper rainforests with permanent cloud cover), the wao lā'au (lower forests of characterized by traditional hardwoods utilized for building materials and permanent fruiting trees where human interactions and gathering practices were more pronounced), and the wao kanaka (where human settlements existed and the land was actively farmed). The wao kanaka also extended into the sea to include estuarine environments where loko i'a (fishponds) were constructed and where the nearshore reefs existed. [Akutagawa and Lerma 2023: 24, 25]

The authors go on to discuss water and other gathering rights, and the public trust:

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[39] Kalipi v. Hawaiian Trust Co., 66 Haw. 1, 656 P.2d 745 (1982).

[40] FORMAN & SUSAN K. SERRANO, HO'OHANA AKU, A HO'OLA AKU at 9 (citing Kalipi, 66 Haw. at 9, 656 P.2d at 750).

[41] *See PASH*, 79 Hawai'i at 451.

[42] Pele Def. Fund v. Paty (*Pele I*), 73 Haw. 578, 620, 837 P.2d 1247, 1272 (1992). *See* FORMAN & SUSAN K. SERRANO, HO'OHANA AKU, A HO'OLA AKU, at 13 (citing *Pele I*, 73 Haw. at 620, 837 P.2d at 1272). In *Pele I*, the plaintiffs, the Pele Defense Fund ("PDF") challenged the state's decision to exchange specific ceded lands for privately owned land on Hawai'i Island. PDF claimed that after the land swap, its Native Hawaiian members seeking to exercise traditional subsistence, cultural, and religious practices were denied access to the undeveloped and now privately owned land. PDF provided testimony and affidavits attesting to the actual practices of Native Hawaiians living in in the Puna region as traditionally gathering outside of their ahupua'a of residence onto the lands subject in this litigation. This evidence formed the basis for the court's decision to affirm these practices as rights protected by law.

[43] FORMAN & SUSAN K. SERRANO, HO'OHANA AKU, A HO'OLA AKU, at 13-14 (citing *Pele I*, 73 Haw. at 620-21, 837 P.2d at 1272; citing also Pele Def. Fund v. Estate of James Campbell, Civ. No. 89-089, 2002 WL 34205861 (Haw. 3d Cir. Aug. 26, 2002)).

[44] Hoa'āina can be translated as "tenant, caretaker" (Pukui and Elbert 1986)

In a post-Territory Hawai'i, the Hawai'i Supreme Court, in a series of groundbreaking cases, began a decolonize the law and reinvigorate the sources of law protecting native rights. Some of those cases have been described above in the section above. In 1973, the Court in *McBryde Sugar Co. v. Robinson* rejected the notion of prescriptive rights and private ownership of water, stating that from the time Hawai'i became a kingdom, the King maintained certain "sovereign prerogatives" which included "encourag[ing] and even ... enforc[ing] the usufruct of lands for the common good[,]" water being one of them.[45] Applied to the State of Hawai'i as the new "sovereign" this court decision had the effect of returning water as a public trust. The Court further reinforced this understanding in *Robinson v. Ariyoshi* (1982):

> [W]e believe that by [the sovereign reservation], a public trust was imposed upon all the waters of the kingdom. That is, we find the public interest in the waters of the kingdom was understood to necessitate a retention of authority and the imposition of a concomitant duty to maintain the purity and flow of our waters for future generations and to assure that the water of our land are put to reasonable and beneficial uses. This is not ownership in the corporeal sense where the State may do with the property as it pleases; rather, we comprehend the nature of the State's ownership as a retention of such authority to assure the continued existence and beneficial application of the resource for the common good.[46]

Reflecting on the implications of *McBryde* and *Robinson v. Ariyoshi* necessitates a deeper acknowledgement that the public trust as understood from the Kingdom's perspective encapsulates the understanding of the ali'i, through divine right and mo'okū'auhau tracing to origins in the Kumulipo, having kuleana to care for the 'āina and their people for the common good. Indeed, the Court has acknowledged of the kuleana the chiefs had to the maka'āinana where the "public trust [comprises] a dual concept of sovereign right and responsibility[,]" a hallmark of "the ancient Hawaiian system."[47]

Subsequent to the landmark decision in *McBryde*, the delegates to the 1978 constitutional convention solidified this case by adopting Article XI. Section 7 specifically refers to water and affirms the State's "obligation to protect, control and regulate the use of Hawaii's water resources for the benefit of its people."[48] Section 1 provides the State's and Counties' responsibilities under the Public Trust:

> For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawai'i's natural

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[45] McBryde Sugar Co. v. Robinson, 54 Haw. 174, 186 (1973); McBryde Sugar Co. v. Robinson, 55 Haw. 260, 270 (1973).
[46] Robinson v. Ariyoshi, 65 Haw. 641,674, 658 P.2d 287, 310 (1982)
[47] *In re* Waiāhole Combined Contested Case Hearing, 94 Haw. 97, 135, 9 P.3d 409, 447 (2000) (citing Reppun v. Board of Water Supply, 65 Haw.531, 547-48 and n. 14, 656 P.2d 57, 68-69, and n. 14 (1982)).
[48] Haw. Const. art. XI, § 7 (1978).

> beauty and all natural resources, including land, water, air, minerals, and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State. All public natural resources are held in trust by the State for the benefit of the people.[49]

The Hawai'i Supreme Court recognizes both Article XI, section 1 and article XI, section 7 as the public trust doctrine and "a fundamental principle of constitutional law in Hawai'i."[50] These constitutional provisions have had profound effects on our jurisprudence, one that is unmatched in any other jurisdiction throughout the United States. A survey of the cases arising out of the public trust include strong language from the Hawai'i Supreme Court rejecting arguments from private commercial interests that they are protected under this doctrine and that to return water back to the stream would constitute "waste."[51] Rather, the Court has made clear that resource protection is an important underlying public trust responsibility. The public trust also extends to ocean and fisheries health.[52]

Native Hawaiian traditional and customary rights are also deemed a public trust purpose as Hawai'i's indigenous people are inextricably tied to the natural environment.[53] The Court traces this public trust responsibility to Native Hawaiians as derivative of protections afforded under the Kuleana Act/H.R.S., § 7-1 which recognized the rights of hoa'āina to traverse freely within their ahupua'a, to access traditional trails, and to gather specific items that were critical to their daily survival, including water.[54] Thus, native rights are not only protected by Article XII, § 7 of the constitution, but doubly so under the public trust.

More recently, the Court has further expanded its understanding of native rights and the public trust to include a "duty to mālama 'āina" or "to care for the land[,]"[55] and that the State must exercise its fiduciary obligations as a trustee for lands it holds and manages.[56] The Court in *Ching v. Case* (2019), which centered on the State's obligation to properly manage ceded lands it had leased to the federal government for military training exercises, made clear also that:

> [P]ublic lands ceded to the United States following the overthrow of the Hawaiian Monarchy and returned to Hawai'i upon its admission to the Union hold a special status under our law. These

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[49] Haw. Const. art. XI, §1 (1978).
[50] *In re* Waiāhole Combined Contested Case Hearing, 94 Haw. 97, 132, 9 P.3d 409, 444 (2000).
[51] *Id.* at 137-138, 9 P.3d 409, 449-450 (2000).
[52] *See generally,* Kelly v. 1250 Oceanside Partners, 111 Hawai'i 205, 140 P.3d 985 (2006).
[53] *In re* Waiāhole Combined Contested Case Hearing, 94 Haw. 97, 137, 9 P.3d 409, 449 (2000).
[54] HAW. REV. STAT. § 7-1 (1994) (ensuring hoa'āina "right[s] to take firewood, house-timber, aho cord, thatch, or ki leaf ... [and] a right to drinking water, and running water, and the right of way. ...").
[55] Ching v. Case, 145 Haw. 148, n. 26, 449 P.3d 1146, n. 26 (2019).
[56] *Id.* at 1168, 170, (citing In re Conservation Dist. Use Application HA-3568 (In re TMT), 143 Haw. 379, 400, 431 P.3d 752, 773 (2018); State ex rel. Kobayashi v. Zimring, 58 Haw. 106, 121, 566 P.2d 725, 735) (1977)).

> lands are held by the State in trust for the benefit of Native Hawaiians and the general public. Accordingly, our constitution places upon the State duties with respect to these trusts much lie those of a common law trustee, including an obligation to protect and preserve the resources however they are utilized."[57]

The ceded lands, and thus the trusts currently managed by the State of Hawaii for the betterment of the conditions of native Hawaiians, are comprised of land originally set aside in 1848 by the laws and customs of the Kingdom of Hawaii. In 1848, the lands set aside as crown lands and government lands were made subject to a trust inspired by Native Hawaiian tradition. In 1893, the Kingdom was overthrown, and the Crown and Government lands subsequently were stolen by the Republic of Hawaii. When these land groupings were ceded to the United States by the Republic in 1898, federal law made them subject to a special trust,[58] and at statehood they were placed in what is known as the ceded lands trust. In the 1959 Hawai'i Admission Act, provisions explicitly protected lands and resources for "native Hawaiian" beneficiaries as defined in the Hawaiian Homes Commission Act.[59] As a condition of statehood, section 5(f) of the Admission Act mandated that the State of Hawai'i manage certain ceded lands for any number of the five trust purposes, including the "betterment of the conditions of native Hawaiians.[60] Section 5(b) of the Admissions Act officially conveyed to the new State of Hawai'i title to 1,400,000 of the 1,800,000 of Kingdom crown and government lands.[61] The OHA was the State's vehicle for fulfilling its duty to Native Hawaiians under section 5(f). It was established at the 1978 constitutional convention for that purpose. [Akutagawa and Lerma 2023:46—49]

Ka Pa'akai o Ka 'Āina v. State of Hawai'i Land Use Commission

The court case *Ka Pa'akai o Ka 'Āina v. State of Hawai'i Land Use Commission (Ka Pa'akai)* established state agencies have an onus to fulfill their fiduciary duties to uphold Hawaiian rights enshrined in the State Constitution and state law. The Supreme Court of the State of Hawai'i determined Article VII, Section 7 of Hawai'i's Constitution "...places an affirmative duty on the State and its agencies to preserve and protect traditional and customary native Hawaiian rights and confers upon the State and its agencies the power to protect these rights and to prevent any interference with the exercise of these rights."[62] The court asserted:

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[57] *Id.* at 152, 449 P.3d at 1150.
[58] D. Kapua'ala Sproat & MJ Palau-McDonald, *The Duty to Aloha 'Āina: Indigenous Values as a Legal Foundation for Hawai'i's Public Trust*, 57 Harvard Civil Rights-Civil Liberties L. Rev. 525 (2022) (stating that, "Both the Joint Resolution of Annexation and Hawai'i's Organic Act, which established a U.S. territorial government, recognized the special trust status of the Crown and Government Lands and also stipulated that revenue from the lands must be used to benefit residents of the islands." Joint Resolution to Provide for Annexing the Hawaiian Islands to the United States, July 7, 1898, 30 Stat. 750; Hawaiian Organic Act, § 91, April 30, 1900, ch. 339, 31 Stat. 141 (1900).
[59] Hawaii Admission Act, Pub. L. No. 86-3, §§ 4-5, 73 State. 5, 5-6 (1959).
[60] *Id.* § 5(f).
[61] *Id.* § 5(b).
[62] *Ka Pa'akai*, 94 Haw. at 47, 7 P.3d at 1084.

> (1) The state and its agencies are obligated to protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians to the extent feasible;
> (2) Agencies are obligated to make an assessment, independent of the developer or applicant, of the impacts on customary and traditional practices of Native Hawaiians; and
> (3) The independent assessment must include three factors known as the '*Ka Pa'akai*' framework.[63]

The case also "...established a three-pronged framework for assessing Native-Hawaiian constitutionally protected rights and further held that the state has an obligation to protect those rights and may not transfer its duties to a third party." [Palacat-Nelsen 2023]
The opinion resulting from *Ka Pa'akai* stated that in order to fulfill its legal obligations, state agencies, like the DHHL, must measure the potential impacts of proposed projects against the following considerations:

(1) 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;

(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 [State and/or its political subdivisions] to reasonably protect native Hawaiian rights if they are found to exist.[64]

How are Hawaiian Customs Determined?

Akutagawa and Lerma (2023) also detail the legal precedent for determining Hawaiian customs:

> ...HRS §1-1 instructs Hawai'i's courts to look to English and American common law decisions for guidance, except where they conflict with "Hawaiian judicial precedent, or ... Hawaiian [custom and] usage."[65] One of the threshold issues in determining whether or not the law governing Native Hawaiian rights, then, is determining whether or not a purported practice is actually a Hawaiian custom.
>
> Courts look to kama'āina expert testimony as the foundation for authenticating Hawaiian custom and usage. This was first discussed in *Application of Ashford*[66] which relied on "reputation evidence" of a kama'āina over a shoreline boundary dispute rather than accept the conclusions of a certified land surveyor. The Court has recognized the definition of "kama'āina" to mean as stated in the Hawaiian

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[63] *See id.*
[64] *Id.*
[65] State v. Zimring, 52 Haw. 472, 475 (1970) (citing De Freitas v. Trustees of Campbell Estate, 46 Haw. 425, 380 P.2d 762 (1963)).
[66] *In re* Ashford, 50 Haw. 314, 440 P.2d 76 (1968).

dictionary as one who is "[n]ative born, one born in a place, host[.][67] The *Ashford* court stated:

> Kamaʻāina witnesses may testify to the location of seashore boundaries dividing private land and public beaches according to reputation and ancient Hawaiian tradition, custom and usage. The method of locating the seaward boundaries was by reputation evidence from kamaʻāinas and by the custom and practice of the government's survey office. It is not solely a question for a modern-day surveyor to determine the boundaries in a manner completely oblivious to the knowledge and the intention of the king and old-time kamaʻāinas who knew the history and names of various lands and the monuments thereof.[68] [Akutagawa and Lerma 2023:49, 50]

The DHHL's Fiduciary Responsibilities Under Ka Paʻakai

Per the discussion above, the DHHL's fiduciary obligations under *Ka Paʻakai o Ka ʻĀina v. State of Hawaiʻi Land Use Commission* include obligations to: 1) "…to protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians to the extent feasible;" 2) Assess the potential impacts of a proposed project on customary and traditional practices of Native Hawaiians; and 3) Ensure an independent assessment is performed that employs the '*Ka Paʻakai*' framework.[69]

From our place of expertise in Hawaiian culture and consultation, the authors offer additional cornerstones of best practices in the execution of a *Ka Paʻakai* Analysis framework. These include:

- project-specific consultation as well as the avoidance of repurposing and recycling consultation from one project for another;
- consultation processes that recognize and uphold the intellectual property rights of consultees, including but not limited to *continued* free, prior, and informed consent;
- ensuring consultation participants are provided a clear and accurate understanding of how consultation will be used;
- and, the good faith realization of desired mitigations and meaningful integration of perspectives shared during consultation into project planning and impact avoidance.

Ka Paʻakai in Global and Federal Legal Contexts and Dialogues

Global and federal policies, best practices, and guidelines for working in indigenous spaces, with indigenous communities and knowledge, align with the purpose and goals of *Ka Paʻakai* Framework analysis. Reviewed chronologically below, they offer a breadth and depth of critical considerations and pathways for state agencies to uphold their fiduciary responsibilities to Hawaiians, alongside, of course, the good faith realization of the mitigations and best practices identified by Hawaiian stakeholders for impacts to their rights and resources.

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[67] *Ka Paʻakai*, 94 Hawaiʻi at 31, 7 P.3d at 1068.
[68] *In re* Ashford, 50 Haw. 314, 316, 440 P.2d 76, 77 (1968).
[69] *Id.*

The 2007 *United Nations Declaration on the Rights of Indigenous People* (United Nations 2007) articulates the unique human rights belonging to indigenous people, and "...the minimum standards for the survival, dignity and well-being of the indigenous peoples of the world," (United Nations 2007:28). It acknowledges:

> ...that indigenous peoples have suffered from historic injustices as a result of, inter alia, their colonization and dispossession of their lands, territories and resources, thus preventing them from exercising, in particular, their right to development in accordance with their own needs and interests... [United Nations 2007:3]

The entire document upholds the purpose and goals of the Ka Paʻakai Framework analysis. It recognizes a holistic array of indigenous human rights, including around traditional and customary practices that include gathering, access to places and spaces, and the right to the health and continuity of cultural resources and practices. The following tenets are especially relevant and underscore how the state's fiduciary responsibility to protect Hawaiian rights is part of a broader global dialogue regarding the rights of indigenous peoples:

> ...[the] urgent need to respect and promote the inherent rights of indigenous peoples which derive from their political, economic and social structures and from their cultures, spiritual traditions, histories and philosophies, especially their rights to their lands, territories and resources,...[United Nations 2007:3]
>
> ...that control by indigenous peoples over developments affecting them and their lands, territories and resources will enable them to maintain and strengthen their institutions, cultures and traditions, and to promote their development in accordance with their aspirations and needs,...[United Nations 2007:4]
>
> ...respect for indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and proper management of the environment,...[United Nations 2007:4]

Elements of the United Nations' "standard of achievement to be pursued in a spirit of partnership and mutual respect," are important to emphasize. The underlined text below, specifically, articulates with and reflects the purpose and goals of the Ka Paʻakai Framework analysis:

> Article 2: Indigenous peoples and individuals are free and equal to all other peoples and individuals and have the right to be free from any kind of discrimination, in the exercise of their rights, in particular that based on their indigenous origin or identity.[United Nations 2007:2]
>
> Article 8.1. Indigenous peoples and individuals have the right not to be subjected to forced assimilation or destruction of their culture.[United Nations 2007:10]
>
> Article 11.1. Indigenous peoples have the right to practise and revitalize their cultural traditions and customs. This includes the right to maintain, protect and develop the past, present and future manifestations of their cultures, such as archaeological and historical sites, artefacts, designs, ceremonies, technologies and visual and performing arts and literature. [United Nations 2007:11]
>
> Article 11.2. States shall provide redress through effective mechanisms, which may include restitution, developed in conjunction with indigenous peoples, with

respect to their cultural, intellectual, religious and spiritual property taken without their free, prior and informed consent or in violation of their laws, traditions and customs. [United Nations 2007:12]

Article 12.1. Indigenous peoples have the right to manifest, practise, develop and teach their spiritual and religious traditions, customs and ceremonies; the right to maintain, protect, and have access in privacy to their religious and cultural sites; the right to the use and control of their ceremonial objects; and the right to the repatriation of their human remains. [United Nations 2007:12]

Article 15.1. Indigenous peoples have the right to the dignity and diversity of their cultures, traditions, histories and aspirations which shall be appropriately reflected in education and public information. [United Nations 2007:14]

Article 20.1. Indigenous peoples have the right to maintain and develop their political, economic and social systems or institutions, to be secure in the enjoyment of their own means of subsistence and development, and to engage freely in all their traditional and other economic activities. [United Nations 2007:16]

Article 20.2. Indigenous peoples deprived of their means of subsistence and development are entitled to just and fair redress. [United Nations 2007:16]

Article 24.1. Indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals… [United Nations 2007:18]

Article 25. Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard. [United Nations 2007:18]

Article 26.1. Indigenous peoples have the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired. [United Nations 2007:19]

Article 26.2. Indigenous peoples have the right to own, use, develop and control the lands, territories and resources that they possess by reason of traditional ownership or other traditional occupation or use, as well as those which they have otherwise acquired. [United Nations 2007:19]

Article 26.3. States shall give legal recognition and protection to these lands, territories and resources. Such recognition shall be conducted with due respect to the customs, traditions and land tenure systems of the indigenous peoples concerned. [United Nations 2007:19]

Article 27. States shall establish and implement, in conjunction with indigenous peoples concerned, a fair, independent, impartial, open and transparent process, giving due recognition to indigenous peoples' laws, traditions, customs and land tenure systems, to recognize and adjudicate the rights of indigenous peoples pertaining to their lands, territories and resources, including those which were

traditionally owned or otherwise occupied or used. Indigenous peoples shall have the right to participate in this process. [United Nations 2007:20]

Article 29. Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. States shall establish and implement assistance programmes for indigenous peoples for such conservation and protection, without discrimination. [United Nations 2007:21]

Article 31.1. Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions. [United Nations 2007:22,23]

Article 31.2. In conjunction with indigenous peoples, States shall take effective measures to recognize and protect the exercise of these rights.[United Nations 2007:23]

Article 32.1. Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources. [United Nations 2007:23]

Article 32.2. States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources. [United Nations 2007:23]

Article 32.3. States shall provide effective mechanisms for just and fair redress for any such activities, and 24 appropriate measures shall be taken to mitigate adverse environmental, economic, social, cultural or spiritual impact. [United Nations 2007:23]

Article 34. Indigenous peoples have the right to promote, develop and maintain their institutional structures and their distinctive customs, spirituality, traditions, procedures, practices and, in the cases where they exist, juridical systems or customs, in accordance with international human rights standards.

A series of recent memorandums intended for Federal agencies and application in Federal regulatory contexts recognize the validity and importance of Indigenous Knowledge. In 2021, the White House Office of Science and Technology Policy (OSTP) and Council on Environmental Quality (CEQ) recognized "…Indigenous Knowledge as one of the many important bodies of knowledge that contributes to the scientific, technical, social, and economic advancements of the United States, and to our collective understanding of the natural world," (Prabhakar and Mallory 2022:3). They also called for "…the recognition and inclusion of Indigenous Knowledge," that is

"...founded on the understanding that multiple lines of evidence or ways of knowing can lead to better-informed decision making," (Prabhakar and Mallory 2022:3). The Advisory Council on Historic Preservation (ACHP) issued similar guidance mandating culturally-appropriate use of Indigenous Knowledge only with "free, prior, and informed consent," in Federal implementation of Section 106 of the National Historic Preservation Act (ACHP 2021:4). In 2024, the ACHP "...approved an exemption that would relieve Federal agencies from the historic preservation review requirements under Section 106 of the National Historic Preservation Act regarding the effects of various undertakings in Hawaii that are proposed or directed by a Native Hawaiian Organization (NHO), or substantially led, designed, or managed by an NHO, informed by Indigenous Knowledge of that NHO, and related to traditional cultural practices of Native Hawaiians," (ACHP 2024).

Methods

Conducting this Ka Paʻakai Framework Analysis consisted of three primary tasks: (1) ethnohistorical research, synthesis, and analysis; (2) community outreach and consultation, and (3) Ka Paʻakai analysis and report preparation.

Nohopapa conducted research and outreach to identify 'valued cultural, historical, or natural resources' to better understand if and how groundwater development may impact traditional customary Native Hawaiian practices and rights in the area of North Kona spanning from the ahupuaʻa of Kāloko to Keauhou. Additionally, the Ka Paʻakai Framework Analysis requires the identification of appropriate mitigation measures (feasible actions) that can be implemented to protect identified impacted resources and Native Hawaiian rights and practices associated with those resources.

While conducting this work, Nohopapa's research team incorporated a set of living values and beliefs to help guide our research, analysis, behavior, perspective, and overall frame of reference. These values represent the underlying foundation, spirit, and structure for this study:

- ***Aloha ʻĀina****- to have a deep and cherished love for the land which created and sustains us*
- ***Haʻahaʻa****- to be humble, modest, unassuming, unobtrusive, and maintain humility*
- ***Hoʻomau****- to recognize, appreciate, and encourage the preservation, perpetuation, and continuity of our wahi pana and kaiāulu*
- ***ʻImi Naʻauao****- to seek knowledge or education; be ambitious to learn*
- ***Kuleana****- to view our work as both a privilege and responsibility*

Ethnohistorical Research

Ethnohistorical information lays the foundation for understanding a place's natural, cultural, and historical background. To provide a more comprehensive understanding of the project areas, Nohopapa researched cultural and historical sources for Kona Akau, including historical maps, place and ua (rain) names, moʻolelo (stories), ʻōlelo noʻeau (proverbs), and historical land use documents. Inoa ʻāina, moʻolelo, and ʻōlelo noʻeau were compiled from Hawaiian language and English sources in books, newspapers, and online databases and archives. Historical land use accounts were derived from land documents, such as Boundary Commission Certificates and Testimonies, the Buke Mahele and Awards Books, Native & Foreign Testimonies and Registers, Government Land Grants, Crown lands, and Government Surveys.

To assist with the historical land use research for this project, Nohopapa was fortunate to contract and collaborate with Kumu Pono Associates, LLC. Kumu Pono provided an extensive compilation, Hawaiian language translations, and summaries of Boundary Commission testimony and Māhele claims (Native Testimony and Native Register) across North Kona. In addition, Kumu Pono associates shared their compiled works of the moʻolelo *Kaao Hooniua Puuwai no Ka-Miki*, by John Wise and J. W. H. I. Kihe, which ran in the nūpepa "Ka Hoku o Hawaii" in a series from Jan. 8, 1914 to Dec. 6, 1917. While the 1917 portion of the series can be found on online nūpepa collections, Kumu Pono associates painstakingly located, compiled and translated Ka-Miki, a labor over many years.

In this report, Kumu Pono also authored the following three sections:

- Boundary Commission Proceedings Of The Boundary Commission Lands Of: Keahuolū, Puaʻa, Waiʻaha, Kahului, Puapuaʻa and Keauhou
- The Māhele ʻĀina and Issuance of Kuleana to Hoa ʻĀina
- Excerpts from Kuleana Claims in the Ahupuaʻa of Keauhou 1 & 2, Kahaluʻu, Waiʻaha-Kahului, Keahuolū-Kealakehe

Their authorship of important sections and primary resource contributions greatly increased the waiwai of the inventory of resources and practices in, around and potentially impacted by proposed actions at the study area.

Community Consultation

Community Outreach

Prior to Nohopapa's individual consultation efforts, the Department of Hawaiian Home Lands (DHHL) with support from Nohopapa, held a kick-off meeting at the Kamehameha Schools Kahaluʻu Manowai (Ma Kai) site on April 18, 2024 to share information about the DHHL Kona Ka Paʻakai Framework Analysis project for water source development related to the proposed water improvement sites at Waiʻaha and Keauhou and larger project area (Kaloko to Keauhou) Kona, Hawaiʻi. Twenty-five individuals attended the public meeting and shared their contact information with DHHL and Nohopapa to follow-up with them about future project updates.

Individual Consultation

One-on-one community consultation efforts were conducted from July to October 2024. As a multi-phase study, the consultation process consisted of identifying appropriate and knowledgeable individuals, reaching out to them to participate, conducting in-person, phone, or online interviews, summarizing the community manaʻo, analyzing the data, and preparing a summary of findings for the Analysis. In particular, information was gathered relating to the many manifestations of Kāne and the resources, traditional customary practices, and rights that rely on them. Thirty-four individuals were contacted to participate in this study. Of the thirty-four individuals, twenty-four responded, and thirteen committed to an interview. Eleven individuals were unable to participate for various reasons.

Nohopapa engaged with individuals, ʻohana, and/or organizations with relationships to study area. In particular, we focused on gathering information relating to the many manifestations of Kāne and the resources, traditional customary practices, and rights that rely on them; as related to the proposed water improvement sites (at Waiʻaha and Keauhou) and larger project area (Kāloko to Keauhou):

- Biocultural forms of water in the study area, including, rainfall, fog, mist, seeps, catches, springs, flowing water, where water enters the sea, algae blooms, anchialine ponds, loko, clouds, storm patterns, etc.
- Observation of *changes* over time to the area's water resources, as well as to the birds, plants, and animals, marine or terrestrial, that rely on those waters.
- Moʻolelo, kaʻao, inoa ʻāina, mele, oli, ʻōlelo noʻeau, and hula and other stories related to the knowledge of wahi pana, wahi kapu, and wahi kūpuna and cultural practices and resources associated with these wahi
- Traditional and historical land use and specific use or larger area models relate to water
- Coastal to upland traditional and local relationships, especially regarding water
- Recommended traditional & local strategies for resource management and conservation in Kona
- Traditional practices you or those you know engage with or have engaged with in the past
- Potential short and long-term impacts of the proposed project on Hawaiian cultural resources, rights, and traditional customary practices
- Recommended mitigations for the proposed project
- Referrals of kūpuna and kamaʻāina who are knowledgeable of the project area and might be willing to participate in this study

Data Integration

After the interviews were conducted, the recorded interviews were transcribed then sent to the participants for review, an accuracy check, and to confirm they were comfortable with the thoughts, information, and comments being shared. Nohopapa worked hard to ensure that the voices of the community were honored, respected, correctly heard, and properly conveyed.

Ethics

Throughout the project, it was explained to all participants that their involvement was strictly voluntary. An informed consent process was initiated and completed, including providing ample project background information explaining the project focus and the purpose of the plan. Verbal or written informed consent was gathered from all contributors to this study (see Appendix C).

In alignment with professional best practices committed to doing no harm and protecting the best interests and intellectual property of participants, all contributions to this document have been anonymized. Additionally, per consultation professional standards, ethics, and all applicable laws and regulations, the intellectual property generously shared by consultation participants and featured in this study **cannot and should not** be reproduced, applied to other projects or studies, or utilized without free, prior, and informed consent.

Ka Paʻakai Analysis

The Analysis looked at the information compiled from both the ethnohistorical research and community consultation in order to:

(1) identify cultural resources, practices, beliefs, and features associated with the project area and vicinity
(2) identify impacts the proposed project will have on any identified cultural resources and practices, and
(3) identify appropriate mitigation commitments and recommendations for best practices.

Ka Nohona Hawai‘i – Cultural Resources, Practices, and Beliefs

This section of the report draws from a variety of oral and documented resources to present an overview of the cultural resources and practices associated with the current study areas focused primarily on **Kealakehe, Keahuolū, Pua‘a, Wai‘aha, Kahului, Puapua‘a, and Keauhou Ahupua‘a** of Kona. The goal of this broad overview is to contextualize the study areas, as well as the greater landscape of Kona, through the compilation of mo‘olelo and ka‘ao, ‘ōlelo no‘eau, mele, and historical accounts. As it is said in the ‘ōlelo no‘eau–*Kona, kai ‘ōpua i ka la‘i–Kona, where the horizon clouds rest in the calm,* (Pukui 1983:199, #1844)–a rich reservoir of stories and traditions also rests beneath the calm of these Kona clouds. Presented here is a selection of mo‘olelo that conveys some of the valued resources and significant practices associated with the study areas.

Mo‘olelo and Ka‘ao - Oral Traditions

Hawaiian oral traditions have been passed down by word of mouth from one generation to the next and recorded in more contemporary times. Hawaiian oral traditions are important; they convey a general sense of Kanaka ‘Ōiwi (Native Hawaiian) history, people’s connection to land, how they lived, and their traditional land tenure. Hawaiian oral traditions are relayed in the form of mele (songs), ‘ōlelo no‘eau (proverbs), pana no‘eau (sayings), mo‘olelo (stories), mo‘okūauhau (genealogies), and accounts in nūpepa (historic newspaper articles). These forms of oral traditions can be woven into each other. For instance, a mo‘olelo may present a mele about a mo‘okū‘auhau. Hawaiian oral traditions are vehicles for the intergenerational transmission of knowledge. They serve as a timeless bridge to cultural insights and beliefs that have guided Hawaiians across centuries and generations.

Today, through written form and English translations, these cultural traditions persist as sources of ancestral wisdom. Hawaiian oral traditions tell of the resources of the land, akua (gods), kupua (supernatural deities), ‘aumākua (familial guardians), ali‘i (chiefs), and ka po‘e kānaka (the Hawaiian people) whose stories weave a unique and treasured history of this ‘āina. Though many more mo‘olelo connected to the study areas may likely exist, the selected mo‘olelo presented in this section relay specific information regarding water features connected to the area and/or cultural practices associated with the place.

He Ka‘ao no ka Manu ‘Elepaio

“He Kaao no ka Manu Elepaio” appeared in the Hawaiian language newspaper, *Ka Hoku o ka Pakipika*, in 1862.[70] This mo‘olelo was written by an individual whose initials read; “S. W. K.” Little is known of the author aside from the individual's connection to Honolulu having had signed and dated his/her initials at the end of the publication with, “Kamakela, Honolulu, Mei 12, 1862.” Though the author appears to have written this mo‘olelo from the island of O‘ahu, the story itself takes place on the mokupuni of Hawai‘i, Kona Moku, Kahului Ahupua‘a. “He Kaao no ka Manu

[70] This mo‘olelo has been more recently adapted into a widely circulated bilingual children‘s book. *No Ka ‘Elepaio Kolohe: the Naughty ‘Elepaio* (Kruger, Furchgott, Andrews, & Akana-Gooch: 2008)

Elepaio" is a tale that describes the kolohe (mischievous) deeds of an ʻelepaio–a native flycatcher bird who dwells in the forests. Various subspecies of ʻelepaio exist that are particular to the island they are found. Hawaiʻi Mokupuni subspecies of ʻelepaio are identified as *Chasiempis sandwichensis sandwichensis* (Pukui and Elbert 1986:41). What is of significance to this study is the setting that this moʻolelo takes place and the water resource that is recounted in the story.

A kanaka named Piʻiwai set off on a journey into the mountains of Kahului, Kona in search of water. There in the uplands, he reached a freshwater spring and filled his huewai or water gourd with water from the pūnāwai (freshwater spring). With his huewai filled with the needed water, Piʻiwai readied himself for his return home. While descending the uplands, Piʻiwai set his huewai down in order to prepare a place for him to rest for a moment. While he was gone a manu ʻelepaio, referred to by the name, ʻElepaio, flew and settled on top of Piʻiwai's water gourd. ʻElepaio pecked at the gourd until all the water emptied from the hole that was made by his pecking. When Piʻiwai returned to the spot where he had left his huewai, he picked it up for a drink only to find it empty. Wondering how this could have happened, Piʻiwai looked up and saw ʻElepaio perched up on a tree branch. Realizing this bird was what caused his water to be wasted, Piʻiwai exclaimed that he would kill ʻElepaio. He picked up a stone and chucked it at ʻElepaio's head. Fortunately for ʻElepaio, he was not killed by the stone and instead was able to escape. Thus begins the start of where this story unfolds. "He Kaao no ka Manu ʻElepaio" begins:

> I kekahi la, pii aku la kekahi kanaka o Piiwai kona inoa, i ke kuahiwi i ka wai e inu, no ka mea, aia no ka wai oia wahi i ke kuahiwi, oia hoi o Kahului, i Kona, Hawaii. Mai o a o oia wahi o Kona, he wai no o kai, he wai kai nae, he awaawa ke inu, o ka wai huihui ono loa i ka inu ana, o ko uka o ke kuahiwi, oia mau mai no a hiki i keia manawa, ke kii o ka wai i ke kuahiwi.
>
> Ia pii ana aia nei, a hiki keia i ka punawai, ukuhi ilo la oia i kana huewai a piha ka huewai i ka wai, o ka hoi mai la no ia a ke ahua, hoomaha iho la ia. Kuu iho la, keia i kana huewai, a kukulu iho la, a hele aku la oia ma kahi e aku.
>
> Ia manawa, lele mai la kekahi manu, oia hoi ka Elepaio, a kau iho la ia i ka nuku o ka huewai a ua kanaka nui, ke kikokiko iho la no ia o ua wahi manu nei i ka huewai a na kanaka nei, a pau ka wai i ke kahe, hoi mai la ua kanaka nei a kahi o kana huewai i kukulu ai, lele aku la ua wahi manu nei a ma kahi e aku, kau iho la.
>
> Ike aku la no nae ua kanaka nei i ka lele ana aku a ua wahi manu nei, aole nae oia i manao ua kikokiko ia kana huewai e ua wahi manu nei. Ka lalau iho la no ia i ka huewai, i kaikai ae ka hana, mama ana, i nana iho ka hana o ua kanaka nei, ua puka ka huewai, o ka manao ae la no ia o ia nei, na ka manu no i kikokiko a puka, o ka pii mai a no ia o ka manao huhu o ua kanaka nei i ka manu; i iho la iloko ona, ka! He wahi manu kolohe maoli ka hoi oe, e maka ana oe ia'u.
>
> O ka lalau iho la no ia o ua kanaka nei i ka pohaku, o ka pehu aku la no ia i ua wahi manu nei a pa io no; aole nae i make. O ka lele aku la no ia o ua wahi manu nei; o ke kumu o keia lele ana o ua wahi manu nei, e lele ana e hookolo i ka hui manu o lakou, no keia pa ana ona i ka pohaku a ke kanaka.
> [S. W. K. 1862:1]

Provided below is the English translation of the moʻolelo interpreted by ethnographer Kepā Maly:

One day, a certain man named Piʻiwai, climbed up the mountainside to get water to drink, this was because there was a place on the mountainside that fresh water was found. It was at Kahului, in Kona, Hawaiʻi. Indeed, all around this place of Kona, the water in the lowlands was salty, it was brackish and bitter to drink. The cool sweet water for drinking came from the uplands on the mountain. It is still the same to this day, the fresh water is fetched from the mountain.

Now when he climbed up, he reached the spring and dipped his water gourd into it, filling the gourd with water. Now as he returned, he reached a hillock and stopped there to rest. He set his water gourd down, building an area to set it, and then went over to the side to rest.

At that time, a certain bird flew by, it was the ʻElepaio, and it perched itself on the spout of the man's water gourd. The bird then began pecking at the man's water gourd, and all the water was lost as it poured out. When the man returned to the place where he had left his water gourd, the bird flew a little ways off and set down.

Now the man saw this bird fly away, but he did not think that the bird had pecked at his water gourd. He bent down to pick up the water gourd, and as he lifted it, it was light. Looking for the reason, the man saw that there was a hole in the water gourd. It was then that he understood that the bird had pecked out the hole, and the man's anger at the bird welled up. He said within himself, "So that's it! You are a truly mischievous bird, and you are going to be killed by me."

The man then picked up a stone and threw it at the bird, striking it, but, it was not killed, and the bird flew away. Now the reason the bird flew off was because it was going to inquire of the other birds what they felt about his having been hit by the man's stone.
[Translated by Maly in Maly 1997:5-7]

Recounted in this excerpt of the moʻolelo, and of particular importance to this study, is the description of a **pūnāwai** located in the uplands of **Kahului, Kona**. What is gleaned from this account is both the presence of a freshwater spring in Kahului, as well as the **practice of kānaka gathering water** from its source. People were not always living where fresh water was available and the access to the uplands, connectivity and travel, was important for subsistence and traditions around gathering and caring for that distribution of resources.

The remainder of the moʻolelo continues with ʻElepaio's effort to seek empathy from the other manu of the forest for having been struck by Piʻiwai. After fleeing from Piʻiwai, ʻElepaio flies in search of other birds to tell them of what Piʻiwai has done. ʻElepaio seeks pity from the other manu he encounters and asks them their opinion as to who they believe is to blame in the hopes that they will fault Piʻiwai for the wrongdoing he felt has happened. However, each time ʻElepaio inquires with a new manu and retells the story of how he caused Piʻiwai's water gourd to empty which angered him, each time ʻElepaio is told that he, himself is in fact the one at fault. Tired and saddened by having had no empathy from the birds he spoke to, ʻElepaio was forced to self-reflect and realize that he was at fault and repented for it. The remainder of the story of ʻElepaio is recounted below:

Ia lele ana a ia nei, e nana hele ana i na manu, a liuliu ia lele ana a ia nei, ike mua aku la keia Pueo, lele aku la keia a kokoke io Pueo la, kaheea aku la keia penei;

“Pueo–e, Pueo–la.” A lohe o Pueo i keia kahea ana aku a Elepaio, ka haliu mai la no ia o Pueo a hoohai mai la me ke kolonahe, ninau mai la o Pueo, penei. “E! Elepaio, E! Elepaio, Heaha ka’u?” Hai aku la o Elepaio, i kana mea i hana ai i ka huewai a ke kanaka, hana aku la oia na ke ano olioli, penei, “Ua pa wau, i ka pohaku, a ke kanaka.”

Ninau mai la o Pueo ia Elepaio penei, “Nawai ka hala.” Olelo aku no o Elepaio, ma ke ano oli no penei, Na’u ka hala, I ka pao ana, I ka huewai, A ke kanaka. I mai la o Pueo ma ke ano oli no, penei. “Hookolo ia, i ka nui manu, o kakou.”

O ka huli aku la no ia o ua o Elepaio, o ka lele aku la no ia a liuliu, ike aku la keia ia Io, e kauaheahe ana iluna o na makani kolonahe, kahea aku la o Elepaio penei. “E Io–e, E Io–la.” Huli mai la o Ia a ninau mai la ia. “Heaha ka’u?” Hai aku la o Elepaio penei. “Ua pa wau, i ka pohaku a ke kanaka.” Ninau mai la o Io, “na wai ka hala?” I mai o Elepaio. “Na’u ka hala, i ka pao ana, i ka huewai a ke kaknaka.” I mai la o Io, ua like pu nae ka laua olelo me Pueo, penei. “Hookoloia, i ka nui manu, o kakou.”

I ka huli aku la no ia o Elepaio lele no, a ia lele ana a ia nei, ike aku la keia ia Amakihi alo, kahea aku la no o Elepaio. “Amakihi–e, Amakihe–la.” Huli mai la o Amakihi a ninau mai la, “Heaha ka’u?” Hai aku la o Elepaio penei. “Ua pa wai i ka pohaku a ke kanaka.” Ninau o Amakihi ma ano olioli penei. “Nawai ka hala?” I mai la o Elepaio. “Na’u ka hala, i ka pao ana, i ka huewai, a ke kanaka.” Ia manawa, lulilulu iho la ke poo o ua wahi Amakihi nei, a ea mai la ia iluna, a nana mai la ia Elepaio, a olelo aku ia ia ma ke olioli ana.

Elepaio–e, Elepaio–la,
Hewa ha oe,
I ka pao ana,
I ka huewai,
A ke kanaka.
A make no oe,
A e pono,
He kolohe oe.

Ia lohe ana o Elepaio i keia manao o Amakihi, o ka pii mai la no ia o kona huhu, a mele oli aku la oia, penei ia Amakihiki.

Kau pono ka ia,
Kela Amakihi,
Pupua awaawa,
He hohono pakui,
Ke pulehu aku,
He hauna e ke kai,
Io ole e ka mole,

O ka pau no ia o ko Elepaio kamailio pu ana me Amakihi, o ka lele aku la no ia, ia lele ana aku o Elepaio, nui kona kaumaha no kela ike ana a Amakihi i ko Elepaio hewa, a lele aku la ia me ke kaumaha o ka manao. Aka, aole i pau loa kona manao e hele e huli i ka nui manu e like me kona manao paa. Lele aku la no ia a ike aku la o Elepaio ia Iiwimakapolena, kahea aku la ia e like me kona hai ana i na manu mua.

I mai la o Iiwi e like me ka Amakihi olelo ana aku ua hewa ia. O ka pau no ia o kona hookolo ana i ka nui manu, a kaumaha ka manao o ua o Elepaio, a mihi io iho la oia, au hewa ia.
[S. W. K. 1862:1]

The excerpt is translated below:

While flying, he looked around to see other birds, and after flying a little while, the first bird he saw was Pueo (Owl). He flew close to Pueo and called out like this, "Oh Pueo, say Pueo." Pueo heard the call of ʻElepaio, and turned to Elepaio, encouraging him with a question, "Oh Elepaio, say Elepaio, what can I do for you?" Elepaio then told him what he had done to the water gourd of the man, and explained it in the form of a chant, "Ua pâ wau, i ka pôhaku, a ke kanaka" (I was struck with a stone by the man).

Pueo then asked ʻElepaio, "Whose fault is it." ʻElepaio answered in the form of a chant, "Naʻu ka hala, i ka pao ana, i ka hue wai, a ke kanaka" (The fault is mine for pecking at the water gourd of the man). Pueo then responded in the form of a chant, "Hoʻokolo ia, i ka nui manu, o kâkou" (Go inquire of other birds of our kind).

ʻElepaio then went in search of others. In a little while, he saw ʻIo soaring above in the gentle winds. ʻElepaio called out, "O ʻIo, hail ʻIo." ʻIo turned and asked, "What do you want of me?" ʻElepaio said, "I have been struck with a stone by the man." ʻIo asked "Whose fault was it?" Elepaio answered, "The fault is mine for pecking at the water gourd of the man.." ʻIo then answered with the same words as those of Pueo, "Go inquire of other birds of our kind."

ʻElepaio then turned, flying away, he flew and came in the presence of ʻAmakihi. ʻElepaio called, "O ʻAmakihi, hail ʻAmakihi." ʻAmakihi turned and asked, "What do you want of me?" ʻElepaio said, "I have been hit with a stone thrown by the man." ʻAmakihi then asked in a chant, "Who's fault is it?" ʻElepaio answered, "The fault is mine for pecking at the water gourd of the man.." This time, ʻAmakihi shook his head, and rising above, he looked at ʻElepaio, and spoke in a chant:

O ʻElepaio, ʻElepaio,
Indeed you have erred
By digging
Into the water gourd
Of the man.
It is right
That you should die,
You are so mischievous.

When ʻElepaio heard what ʻAmakihi thought, his anger rose and he chanted to Amakihi:

This is what is just
For that ʻAmakihi,
That he be made into a condiment to go with the ʻawa.
The scent is unpleasant,

And when it is broiled,
The gravy is foul,
There is no meat within.

This was the end of ʻElepaio's conversation with ʻAmakihi; he then flew away. As ʻElepaio was flying, he was greatly saddened because ʻAmakihi knew ʻElepaio's fault. So he flew with heavy thoughts. But he had not given up his thoughts of inquiring of the other birds about this. As he was flying, ʻElepaio saw ʻIʻiwimakapôlena and he called out as he had to the other birds. ʻIʻiwi spoke the same words as ʻAmakihi had, "The fault was with ʻElepaio." This was the end of his inquiring of the birds, and ʻElepaio's thoughts were truly sad. He repented within himself, saying "I was indeed at fault."
[Translated by Maly in Maly 1997:5-7]

Through this moʻolelo we learn about several resources and traditional cultural practices within and around the study area in Kahului Ahupuaʻa; a traditional value of aloha i kekahi, several manu are identified in the uplands of Kahului, and specifically that ʻāmakihi was broiled and a pūpū eaten while drinking ʻawa, and most importantly the importance of wai, and the work it took to collect it, and the fact that people traveled to the uplands regularly, possibly daily based on the moʻolelo, for potable water.

He Moʻolelo Kaʻao no Kepakaʻiliʻula

The moʻolelo of Kepakaʻiliʻula is a tale of a young boy who was born prematurely, traditionally referred to by the term "ʻeʻepa;" a birth of this nature is associated with being born possessing "miraculous powers," (Pukui and Elbert 1986:37). The version of the story that will be referenced in this section is attributed to David Malo and originates from the Hawaiian language newspaper, *Ka Hoku o Hawaii*. The articles appeared weekly in *Ka Hoku o Hawaii* and was published in the newspaper from March 19, 1919 through December 9, 1920, totaling 79 printed articles. Maly introduces "He Moʻolelo Kaʻao no Kepakaʻiliʻula" as follows:

Like Ka-Miki, the story of Kepakaʻiliʻula is about a youth who was born in an ʻeʻepa (premature - mysterious) form, who was given up for dead by his parents. Kepakaʻiliʻula's father was Maka-o-Kū, and his mother was Hina-ai-ka-malama, both of whom were descended from Kūahailo and Hina the akua - aliʻi (god-chiefs) who came from Kahiki and established the highest chiefly bloodlines of Hawaiʻi. At the time of Kepakaʻiliʻula's birth, Makaokū and Hina dwelt near Moku-ola (now called Coconut Island) and ruled the district of Hilo.

Kepakaʻiliʻula's birth was accompanied by numerous displays of natural phenomena including fragmented rainbows that rested upon the ocean, rains that poured upon the land, and rivers that overflowed upon the land. His maternal uncles, Kiʻinoho and Kiʻihele, took these signs as omens of Kepakaʻiliʻula's supernatural nature. Without the knowledge of Makaokū or Hina, Kiʻinoho and Kiʻihele rescued Kepakaʻiliʻula and raised him while instructing him in all manner of fighting techniques, and in the uses of his supernatural powers. When Kepakaʻiliʻula came of age, his uncles went in search of a suitably beautiful and highly ranked chiefess to whom Kepakaʻiliʻula could be married. The journey took them around Hawaiʻi, where they met with sacred chiefesses of the island's districts. In Kona, the uncles met with the chief Keolonāhihi and his wife Kahaluʻu, who were parents of the sacred chiefess Mākoleʻā. Mākoleʻā was found to be the

> most suitable chiefess for Kepakaʻiliʻula, and a wedding was arranged. When the uncles departed, Keolonāhihi was approached by Kaikipaʻananea, a chief from Maui, and he broke the betrothal between Kepakaʻiliʻula and Mākoleʻā. This action set in motion the events of the legend's narratives. By association with other figures identified in the legend, the time period seems to be set in the 16th century, immediately before the time of Lono-i-ka-Makahiki.
> [Malo 1919-1920 in Maly 1997:24-25]

The relevancy of this kaʻao in regards to a study whose focus is Kona, lies in the recollection of the numerous place names, natural features, and practices of Hawaiʻi that are revealed in the telling of this story. As detailed in the summary above, Kepakaʻiliʻula's uncle, Kiʻihele went in search for a suitable wahine for his nephew. Traveling through Hilo, Puna, and Kaʻū, he eventually arrived in Kona and was taken aback by the beauty of Mākoleʻā, the young aliʻi wahine (chiefess) of Kona. Thus, Kiʻihele returned to Hilo to retrieve Kiʻinoho and their nephew, Kepakaʻiliʻula so that he could take Mākoleʻā as his wahine. Maly provides a summary Kepakaʻiliʻula's journey and the moʻolelo that unfolds:

> Once in Kona, Kepakaʻiliʻula waited in the uplands of Kahaluʻu at the great banana plantation of the chief Kahoʻoaliʻi, which extended from Kaumalumalu-Kāpalaʻalaea to Keʻei, while preparations were made for his meeting with Mākoleʻā. When all things were made ready, Kepakaʻiliʻula and his guardians descended to the shore of Kahaluʻu, where they stood not far from the royal house of Mākoleʻā.
>
> Standing before them was the priest of Kahaluʻu who was named Hāliʻikolomea. Through the priest's divining skills he had seen the true dual nature of Kepakaʻiliʻula, and understood that he was descended from the aliʻi-akua of antiquity. Hāliʻikolomea presented offerings to Kepakaʻiliʻula, and when the observances were completed, Kepakaʻiliʻula responded with a mele kānaenae (chant offering) to Mākoleʻā and those gathered with her:
>
> Kau iluna ka wai a ka Nāulu
> ʻAlohi ʻula i ka pali o Koholālele e
> Lehulehu i ka luna o Koaʻekea a
> Paʻa pono mai Kona i ka ehu a ke kai a
> Kīpū lua i ke one o Kaiakeakua
> He akua ka hoa he ʻike ʻole mai e
> ʻAuwe ka mea aloha oia la e hoʻi a!
>
> *The Nāulu showers which are placed above*
> *Appear to glow red in the light on the cliff of Koholālele*
> *Indeed, the multitudes are gathered at the heights of Koaʻekea*
> *But Kona is firmly embraced by the sea mists*
> *And there is two-fold calm upon the shore of Kaiakeakua*
> *A god [-chief] is the companion which is not seen*
> *But here is one that can indeed be cherished!*
>
> Hāliʻikolomea then called Kepakaʻiliʻula within the compound telling him that he was indeed welcome to know the famous waters of Kahaluʻu. Because Mākoleʻā desired to be near Kepakaʻiliʻula, she beckoned him to join her upon her sacred platform (nuʻu kapu) calling to him with her own chant of affection…

> All things having been fulfilled, the chiefess Kahaluʻu could not deny the value of this relationship, thus Kahaluʻu the chiefess—i ka ʻāina kaulana i ka wai puka iki o Helani (of the land famous for the small flowing spring of Helani) gave her blessings to Mākoleʻā and Kepakaʻiliʻula… (June 19-26, 1919).
>
> Unknown to Kahaluʻu, Mākoleʻā and the others, Keolonāhihi had broken his agreement allowing Mākoleʻā to marry Kepakaʻiliʻula, and had instead promised to take the young chiefess to Maui nui a Kama (Maui great island of the chief Kama) where she would wed the high chief Kaikipaʻananea (Kaiki). Having prepared the canoes, Keolonāhihi forced Kahaluʻu and Mākoleʻā to travel to Maui.
>
> This turn of events greatly angered Kepakaʻiliʻula and he challenged Keolonāhihi to a fight. Frightened, Keolonāhihi fled to Maui as well, thus Keolonāhihi left behind those he loved and his favorite places. Among the favorite places of the Kona chiefs was the spring of Wai-kuʻi at Kahaluʻu, where the aliʻi gathered to relax and play the game of kōnane (July 3-17, 1919).
> [Malo 1919-1920 in Maly 1997:25-26]

Revealed in this section of Kepakaʻiliʻiula's story are a number of water resources and agricultural features associated with Kona. Kepakaʻiliʻula is said to have waited in the **uplands of Kahaluʻu** where a great **plantation of bananas** is located. This cultivated area of banana is noted to belong to the aliʻi, Kahoʻoaliʻi and stretches from **Kaumalumalu-Kāpalaʻalaea to Keʻei** (Malo 1919-1920 in Maly 1997:25). When Kepakaʻiliʻula meets the beauty of Mākoleʻā, he offers a chant whose first lines recite: *Kau iluna ka wai a ka Nāulu*, (Malo 1919-1920). The opening of this chant translates to, *The Nāulu showers which are placed above*, poetically identifying the **Nāulu rain** as the rain of the area and the source of water placed above. Mākoleʻā's mother, Kahaluʻu gives the approval to Kepakaʻiliʻula to take her daughter as his wife. The author of this moʻolelo references Kahaluʻu as, "i ka ʻāina kaulana i ka wai puka iki o Helani," which Maly translates as, "of the land famous for the small flowing spring of Helani;" thus revealing a **spring associated with Helani and the ʻāina of Kahaluʻu** (Malo 1919-1920 in Maly 1997:26). When Mākoleʻā's father, Keolonāhihi, is challenged by Kepakaʻiliʻula for having broken his promise to wed his daughter to him, the author writes that Keolonāhihi flees Kona leaving behind a favored **spring named Waikuʻi located at Kahaluʻu**. This spring was favored by the chiefs of Kona and was also the area aliʻi took pleasure in relaxing and playing **kōnane** (ancient game resembling checkers), (Malo 1919-1920 in Maly 1997:26)

The valuable information that is gathered from this portion of Kepakaʻiliʻula's moʻolelo is the acknowledgement of two named springs associated with the Kahaluʻu ahupuaʻa–one of which is noted to be favored by the chiefs of Kona; the Nāulu rainfall of Kahaluʻu; great cultivated areas of bananas located in the uplands of Kahaluʻu which also holds chiefly associations having belonged to the aliʻi, Kahoʻoaliʻi; as well as the acknowledgement of aliʻi passing time by playing kōnane.

Though much has been revealed of Kona, and specifically of the Kahaluʻu Ahupuaʻa in but a small chapter of Kepakaʻiliʻula's tale, the moʻolelo continues. Maly summarizes the events that unfold after Keolonāhihi is challenged by Kepakaʻiliʻula:

> Because many of the aliʻi of Kona were related to Kahaluʻu, Keolonāhihi, and Mākoleʻā, they rallied to challenge Kepakaʻiliʻula in battle. These chiefs included Kahoʻoaliʻi (k) who controlled the upland plantation called Kaumalumalu which extended from Kaumalumalu-Kāpalaʻalaea to Kaʻawaloa and Kealakekua, Kuapehu (k), Kāināliu (k), Hōlualoa (k), Onouli-ākea (k), Hōkūkano (k), and

Kailua (k). When the chief Hōlualoa took up the challenge against Kepakaʻiliʻula on behalf of the Kona chiefs, Hōlualoa called upon his god **Kālaipāhoa** to assist him in his battle. Hōlualoa was the first chief to call upon the god Kālaipāhoa, and this was the beginning of this gods' use by the chiefs of Hawaiʻi. All of the chiefs were related, and all associated with the lands which now bear their names.

Calling upon his god **Kāʻili**, Kepakaʻiliʻula defeated each of the chiefs in battle, and came to control all of Kona from Kekaha wai ʻole in the north, to Keʻei in the south. At this time the land was greatly populated, and because Kepakaʻiliʻula was found to be a just chief, the people of the land were satisfied with his benevolence, and they accepted him as the aliʻi ʻai moku (chief who consumes - controls the district). Following the people's acceptance of Kepakaʻiliʻula as their chief, tribute from all Kona was presented to Kepakaʻiliʻula. All of the offerings of the wealth of the land were gathered at one site and presented to Kepakaʻiliʻula. The mound of offerings was so great that it looked as if a hill had been formed. To this day, the site where the offerings were gathered is called Puʻu which is above the place named for Keolonāhihi.

Kepakaʻiliʻula divided the wealth, offering the first portion to his god, he then provided a portion to the families of his trusted supporters, and returned the rest to the people of the land. To Kepakaʻiliʻula is attributed the saying:

> ʻO ke aliʻi mālama kānaka a hoʻomanaʻo mau i ka mōhai i nā akua, ʻoia ana no ke aliʻi e kū i ka moku — The chief who cares for his people and remembers to pay tribute to his gods, is the chief who will stand upon [be supported by] the island (July 24-November 13, 1919).

…Seeing that there was peace in Kona, Kepakaʻiliʻula then departed from the lands of the Kahaluʻu area… Kepakaʻiliʻula traveled to Kohala to test the Chief Kukuipahu, Mākoleʻā's uncle. Kukuipahu was a just chief, who saw that Keolonāhihi had acted inappropriately, and Kukuipahu joined Kepakaʻiliʻula in mounting an attack on Maui.

Kukuipahu went to the compound of Kaikipaʻananea at Olowalu, Maui and told Mākoleʻā about the events that had occurred on Hawaiʻi, and informed her of her father's treachery, and told her that Kepakaʻiliʻula still desired her as his wife (November 20, 1919).

Upon hearing these things from her uncle Kukuipahu, Mākoleʻā chanted to him asking that he would give her message to Kepakaʻiliʻula. In the chant she spoke of the beauty of Helani at Kahaluʻu and the pleasant time which she had spent with Kepakaʻiliʻula:

> Kuʻu hoa o ka malu niu o Helani
> E hea puaʻi nei iaʻu e hoʻi aku wau
> Kuʻu hoa i ka peʻa huli luna e Kona e
> He ʻEka ka makani o kāua e ʻolu ai…
>
> *My companion sheltered there by the coconut palms of Helani*
> *My call flows forth to you, I will return*

You are my companion of the upper reaches of Kona
Where the ʻEka breezes refresh us two…

While Kukuipahu was on Maui, Kiʻihele journeyed to Hilo and revealed Kepakaʻiliʻula's identity to his parents Makaokū and Hina, who joined him, along with over 30,000 warriors of Hawaiʻi, in the quest of reclaiming Mākoleʻā (November 27, 1919–February 26, 1920).

When the battle preparations were completed, the canoe fleet set sail, and it stretched from Kohala, Hawaiʻi to Kahikinui, Maui. Landing at Puʻunoa, final battle preparations were made, and the people of Lānaʻi and Molokaʻi joined together in supporting Kepakaʻiliʻula against Kaikipaʻananea, as well (March 4, 1920). The battle took place upon the kahua (battle field) of Waineʻe, a short distance above the Waineʻe Church. It was there that Kaikipaʻananea was killed by Kepakaʻiliʻula, and Keolonāhihi was killed by Makaokū. So it was in this way that Mākoleʻā the beautiful chiefess of Kahaluʻu came to marry Kepakaʻiliʻula (March 11-April 1, 1920).

As a result of the battle on Maui, Kahaluʻu was killed, and Kepakaʻiliʻula and Mākoleʻā were reunited. Kepakaʻiliʻula mā lived in Lāhaina for one year, and then Kepakaʻiliʻula desired to visit Oʻahu, Kauaʻi, Niʻihau, and journey on to Kahiki, the land of his ancestors. Following numerous events, Kepakaʻiliʻula returned to Hawaiʻi and with Mākoleʻā, he settled in his compound which was a short distance from the heiau of Pākaʻalana at Waipiʻo. Thus they lived out the rest of their lives in peace (April 8-December 9, 1920).
[Malo 1919-1920 in Maly 1997:#27]

The moʻolelo of Kepakaʻiliʻula ends happily with him and Mākoleʻā finally being able to live their lives out together. During the portion of the story where Mākoleʻā chants out to Kepakaʻiliʻula, she describes several significant resources specific to Kahaluʻu. The first line of her chant recites: *Kuʻu hoa o ka malu niu o Helani*, which Maly translates as, *My companion sheltered there by the coconut palms of Helani* (Malo 1919-1920 in Maly 1997:27). Mākoleʻā ends her chant with the line, *He ʻEka ka makani o kāua e ʻolu ai…*, translated by Maly as, *Where the ʻEka breezes refresh us two…* (Malo 1919-1920 in Maly 1997:27). What is conveyed in Mākoleʻā's chant to Kepakaʻiliʻula is the imagery of the natural resources and elements associated with Kahaluʻu, Kona. A **niu (coconut or *Cocos nucifera*) grove** associated with Helani is described, as well as the **ʻEka wind** known affectionately for belonging to Kona. It is significant to note that the Helani that is identified here with the niu grove was mentioned previously in the description of the spring in Kahaluʻu, "i ka ʻāina kaulana i ka wai puka iki o Helani," (Malo 1919-1920 in Maly 1997:26). Lastly, note the constant travel that is ongoing in this moʻolelo, which indicates there was voyaging between islands and across the sea to Kahiki at this time. In later sections we describe connections between the uplands of Kona, in the study area, and the koa trees prized for kaʻele (canoe hulls).

Puʻu o Kaloa

From 1923 through 1924 an article series entitled "Na Hoonanea o ka Manawa," meaning, "Pleasurable Pastimes," was published in the Hawaiian language newspaper, *Ka Hoku o Hawaii*. The series was written by Isaac W. H. Kihe, a kupa of Kona, who wrote to the newspaper under the pen name "Ka Ohu Haʻaheo i na Kuahiwi Ekolu" (The Proud Mist of the Three Mountains). "Na Hoonanea o ka Manawa" celebrates the many storied places and traditions of Kona. One of the moʻolelo included in this series concerns a certain puʻu or hill and the clouds patterns that the

people of Kona observed as an indicator of rain. This landmark known as Puʻu o Kaloa, is a significant feature of this region.

Kihe's segment regarding Puʻu o Kaloa was printed in the newspaper in September of 1923. The section below shares the moʻolelo as it was printed in its original Hawaiian text, followed by an English translation interpreted by Hawaiian language translators and scholars of the Institute of Hawaiian Language Research and Translation, Emmanuel Kilikia Bennett and Puakea Nogelmeier. Regarding Puʻu o Kaloa, Kihe writes:

> He wahi puu keia aia mawaena o Kealakehe a me Keahuolu, e kokoke ana i ke puhi a Kahikini i kahakai. O ka moolelo o keia wahi puu.
>
> I ka wa kahiko, oiai, ua maloo a papaala ka aina mai o a o aohe ua, ua neeia e ka La a pikaʻo aohe wai o na punawai.
>
> Maloo na huli kalo, kalina uala maloo, aohe mea kanu ulu. Aia i kekahi manawa, e ike ia aku ana he kilihune ua e koʻiaweawe iho ana iluna pono o ua wahi puu nei.
>
> Ae o ka poe mahiai i noho a kamaaina, a ike lakou i kela wahi hoailona ua lu iho ana iluna o ua wahi puu nei o Puu o Kaloa, oiai no ka la nee ana. Olelo ae la lakou, akahi a ola ka aina, ke hehi mai la na manamana o ka ua iluna o Puu o Kaloa.
> [Kihe 1923:2]
>
> *This is a small hill between Kealakehe and Keahuolū near the blowhole of Kahikini on the shore. The story of this little hill.*
>
> *In ancient times, there were times that the land was dry and parched everywhere, lacking rain, traversed by the sun, with no water in the springs.*
>
> *The taro cuttings dried, so did the slips of sweet potato, and no plant grew. Sometimes light drizzle could be seen moving directly above that hill.*
>
> *The resident farmers there, when they saw this sign of rain over this hill of Puʻuokaloa, even though the sun was still moving along, would say, "The land shall finally prosper, for the fingers of rain tread over Puʻuokaloa."*
> [Translated by Bennet and Nogelmeier 2017]

The account relays that though the lands of Kona were dry, when clouds could be seen carrying a light drizzle over Puʻuokaloa, the people knew that rain would come and the land would flourish. This puʻu rests between **Kealakehe** and **Keahuolū** and is an **indicator of rain** for those of Kona. Anticipating the coming of rain, kamaʻāina of the area readied their lands to take advantage of this precious resource. Kihe continues to write:

> Ke ike ia keia hoailona e na poe kahiko, o ka hoomaka no ia e puhi makawela, a pau waiho, a huli kahi e loaa ai ka lau uala.
>
> Nana aku o ka ike hou ia o ka hoailona ua, a ina e ike hou alaila, makakau e kanu meia nui no o ka la, aohe maopopo o ka ua.
>
> I ke kanu ana a paa ka makawela (mala i puhi la i ke ahi) i ka lau, alaila ike hou ia ka ua iluna o Puu o Kaloa, a oia ka wa e ike ia ai ka ua e kaʻi lalani ana ma ke kula,

a ike na poe e no i keia ka'i hele o ka ua ma ke kula, hoomaka e waele ke pulu a kali aku la o ka ua mai alaila kanu aku la ka lau uala.

O ka mea nana ka maka wela mua loa i kinohi, ua kapuapua kana lau, a ke olohio ala, a ke apoapo mai la a pau i ka pue.

Haule hou i ke kuaua o ka hu noia o ka lau a pau i ka wili a moku mai la ka naaupua, oia ka lala, (oia ka uala e kaka ana i ke ka o ka lau i moku mai i ka pue ana, a oi a uala ke kahukahu mua).
[Kihe 1923:2]

When this sign was seen by the people of old, they would immediately go and scorch the land, and once finished, leave it and search for a place to get sweet potato vines.

They would watch to see the sign of rain again, and if it was seen, then they would prepare to plant, even though the sun still beat down, with no visible sign of rain.

When the patch burned for cultivation was sowed with the sweet potato slips, the rain could be seen again atop Pu'uokaloa. It is at that time that the rain could be seen proceeding in a line along the plains, and when others saw the procession of clouds, they would begin to clear the mulch and wait for the rain, and whereupon they would plant the sweet potato slips.

For the one who first scorched the land at the outset, his sweet potato slips would have flourished, and he would be cultivating them, and hilling them all into mounds.

When the showers fell again, the slips would all rise to the surface, and the na'aupua would become twisted and severed, that being the branch. (This is the sweet potato clustered on the vine of the slip severed in the hilling of the mound, and this sweet potato would be the first offering of the season).
[Translated by Bennet and Nogelmeier 2017]

The natives of Kona were attentive to the natural cycles and seasons of their environment. The cloud movement over Pu'u o Kaloa was an indicator of rain, so thus, began the preparations of the 'uala patches. Specifically, the mo'olelo describes a **makawela style of 'uala cultivation** which Pukui describes is a method of land cultivation that involves slashing and burning the cultivated area (Pukui and Elbert 1986:228).

Hala ae la elua a ekolu malama hoomaka mai la ka ua mai o a o o ka aina, a o ka mea mua loa hana ka makawela i kanu mua o ua puunui kana uala, a ke uhai aia ka uala a kalua i ka imu me ka puaa.

A ike aku la ka mea nohoaihalale a hele aku la malaila e noho ai e ake o ka loaa mai o ka uala, a manao ke ola o ka la pololi.

Oiai e huai ana ka inu uala, a ohi aku mahai o ka imu, a ike i ikeai ai halale e noho ana, a ninau mai la i keia nimau; "Ua ka na i Puu o Kaloa ihea oe?" A ina e pane aku, I Kona nei no au, alaila aole e loaa ka uala iaia. Ina hoi e pane aku, I Kohala au, ai ole i Kau paha, alaila e loaa ana ka uala iaia.

No keia wahi Puu kela olelo kaulana o ka paanaau o ka poina ole a hiki i keia la, “Ua ka ua i Puu o Kaloa–I hea oe?” I Kohala au-loaa ka uala. I Kona nei no au-aole loaa ka uala.

Ua hala keia poe kahiko, ko kakou mau kupuna i ka po, a eia no keia wahi puu ke ku nei no he kiahoomanao poina ole no na manao e ola ana i keia la.

He hoailona olalo loa no kela a ke ike ia nei no ia hoailona, a ke ike ia no i ka wa la keia wahi ua kamahao a kupanaha alaila, he hoike maopopo loa ia o ka ua e hoea mai ana.

Ina he wa papaala ia o ka aina a ike ia keia wahi hoailina ua ilina o keia wahi hoailoa ua iluna o keia wahi puu kuanea hoomaopopo ole ia aia he mea ano nui loa ke hoea mai ana. Aole i Pau.
[Kihe 1923:2]

After the passing of two or three months, that rain would begin to fall all over the land, so that first person who had the burned patch and who planted first, his sweet potato would have grown large and the sweet potato would be carried off to be cooked in the oven with pork.

Gluttons would see and go to stay there, wanting to get some sweet potato, hoping to satisfy their hunger.

As the underground oven was uncovered and collected near the underground oven, and the glutton was seen sitting, the question would be asked “The rain fell atop Puʻuokaloa, where were you?” And if the answer was [“]I was here in Kona[”] then he would not get any sweet potato. If he were to say [“]I was in Kohala” or perhaps “Kaʻū[”], then he would get sweet potato.

For that hill was this famous memorized saying unforgotten until this day, “The rain fell at Puʻuokaloa–Where were you?” [“]I was in Kohala[”]–one would receive sweet potato. [“]I was in Kona[”]–one would not get sweet potato.

Those people of old, our ancestors, have passed over into the night, and here the hill still stands as an unforgettable memorial for the descendants living today.

That is a very real sign, and is still being seen. When this strange and remarkable rain is seen during the day, it is a clear sign of coming rain.

If it is a parched period of the land and this symbol is seen atop this desolate hill, you never know, there may be something big coming your way. To be continued.
[Translated by Bennet and Nogelmeier 2017]

This account informs its readers that after two to three months of the initial rainfall, those who prepared and cultivated their lands first would have yielded ʻuala ready to be harvested and cooked in the imu (underground oven). Understanding the biocultural indicators such as the cloud patterns above Puʻu o Kaloa and dedicating the effort to make the necessary preparations in order to take advantage of the window of rain, paid off greatly with prosperous lands and large yields.

Ke Puhi a Kaleikini

Similar to the moʻolelo shared above, "Ke Puhi a Kaleikini," is a story that appeared in the article series "Na Hoonanea o ka Manawa" regarding Kona that was written by Kihe. This particular story was published in *Ka Hoku o Hawaii* in 1923 and describes a blowhole named Hiʻiaka-noho-lae. In Place Names of Hawaiʻi, Pukui, Elbert and Mookini describe the location of Hiʻiaka-noho-lae to be situated in the ahupuaʻa of Keahuolū "between Kona Inn and the end of the wall at Kailua Village, Kona, Hawaiʻi," (Pukui et al: 1974:45). They interpret the literal translation of this site as, "Hiʻiaka living [at] point," and also remarks that "One of Pele's Hiʻiaka sisters lived here. In one legend the stone is the shark form of a priest turned to stone in response to an enemy's prayer to Pele," (Pukui et al: 1974:45). Regarding the blowhole Hiʻiaka-noho-lae, Kihe shares a story which includes an individual named Kaleikini. The moʻolelo as found in Ka Hoku o Hawaii is as follows:

> Aia keia Puhi ma ma kahi i kapaia o Hiiaka-Noho-Lae. Ka moolelo o keia "Puhi."
>
> I ka wa kahiko ke puhi keia "Puhi," pu-ko ke kai a pii iluna o ka lewa a o ke ohu kai aoia puhi ana uhi aku la iluna o ka aina a maloo na mea kanu o uka o ke kula a hiki i kaluulu.
>
> I ka wa o Kaleikini i kaahele ai a ike i keia Puhi e pii ana ke kai iluna oia kona wa i kii ai e pani i ke kauila, a oia paa a hiki i keia la, aohe hiki hou i ke ehu kai ke hoomaloo hou ma mea kanu o uka.
>
> He aiwawao Kaleikini, na olelo ia he ikaika papalua ko keia kanaka a he ano kupua hoi, he nui na "Puhi" ana i pani ai, a ke waiho nei ia Puhi a hiki i keia la, he mau kia hoomanao poina ole no na hana aiwaiwa pookela a ku i ka hookala kupua a kela kupueu o na la i hala o Hawaii nei, a keia hanauna hou e nana aku nei me ka paha'oha'o no keia mau hana, me he kaao aia no kekahi kupua.
> [Kihe 1923:2]

Presented below is an English translation of the account interpreted by The Institute of Hawaiian Language Research Team of ʻIke Wai.

> *This blowhole is located at a place called Hiʻiakanoholae. This story of this blowhole.*
>
> *In ancient times, when this "blowhole" would blow, the sea would crash and the sea spray would rise up into the air, then that spray would cover the land until the plants on the field all the way up to the brush line dried out.*
>
> *When Kaleikini traveled, and saw this blowhole, with the sea spray rising up, that is when he fetched and laid a grid of kauila tree branches over the hole, completely shutting it. It remains shut until this day; the sea spray could no longer dry out the vegetation on shore.*
>
> *Kaleikini was mysterious, and it was said that he also had supernatural strength, and was a supernatural being. There are several blowholes that he shut and that remain until this day; unforgettable monuments of outstandingly wonderful and magical feats of this hero of Hawaiʻi's past; monuments for this new generation to look to with wonder because of these feats like a heroic tale.*

[translated by The Institute of Hawaiian Language Research Team,ʻIke Wai]

As the story recalls, Hiʻiakanoholae is the blowhole that is located in the ahupuaʻa of **Keahuolū**. The ʻehukai or sea spray that the blowhole would shoot was problematic for the fact that the salt of the spray that blew over the ʻāina caused the land to dry so that no vegetation could grow. In order to solve this problem, the author shares that Kaleikini covers the Hiʻiakanoholae with kauila tree branches. In regards to the type of resources known of this area, from this account we learn that the native **kauila (*Alphitonia ponderosa*)** tree was present at Keahuolū.

Kaʻao Hoʻoniua Puʻuwai no Ka-Miki

Another celebrated moʻolelo that has been preserved and documented in the Hawaiian language newspaper is the epic saga, "Kaʻao Hoʻoniua Puʻuwai no Ka-Miki," (The Heart Stirring Story of Ka-Miki). This moʻolelo was published serially in *Ka Hoku o Hawaii* beginning in 1914. The saga ran for four years ending its final publication in 1917. The primary authors noted to have contributed to the publication of this moʻolelo are Hawaiian historians John Wise and J.W.H.I. Kihe. The story of Ka-Miki takes place in the 1300s at the time when the aliʻi, Pili-a-Kaʻaiea, was the district chief of Kona (Maly 1997:10). Maly, who is credited for his synopsis of Ka-Miki summarizes the moʻolelo:

> This legend is an account of two supernatural brothers, Ka-Miki (The quick, or adept, one) and Maka-ʻiole (Rat [squinting] eyes], who traveled around the island of Hawaiʻi along the ancient ala loa and ala hele (trails and paths) that encircled the island. During their journey, the brothers Ka-Miki and Maka-ʻiole competed alongside the trails they traveled, and in famed kahua (contest arenas) and royal courts, against ʻōlohe (experts skilled in fighting or in other competitions, such as running, fishing, debating, or solving riddles, that were practiced by the ancient Hawaiians). They also challenged priests whose dishonorable conduct offended the gods of ancient Hawaiʻi. Ka-Miki and Maka-ʻiole were empowered by their ancestress Ka-uluhe-nui-hihi-kolo-i-uka (The great entangled growth of uluhe fern which spreads across the uplands), a reincarnate form of the goddess Haumea (the creative force of nature; also called Papa or Hina; who was also a goddess of priests and competitors).
> [Maly 1997:10]

Included in this section are Maly's translated summary of select excerpts of "Kaʻao Hoʻoniua Puʻuwai no Ka-Miki" in which he paraphrases the important events that occurred during Ka Miki's journey. The story begins with the birth of Ka-Miki:

> Born in ʻeʻepa (mysterious – premature) forms, Ka-Miki and Maka-ʻiole were the children of Pōhaku-o-Kāne (k) and Kapaʻihilani (w), the aliʻi of the lands of Kohana-iki and Kaloko. Maka-ʻiole was the first born child and Ka-Miki was the second. Following their birth, Ka-Miki was given up for dead and placed in the cave of Pōnahanaha. Ka-uluhe retrieved Ka-Miki from the cave and reared him at Kalamaʻula on the heights of Hualālai. It was there that Ka-uluhe began instructing Ka-Miki in the uses of his supernatural powers, and when Maka-ʻiole joined his young brother, together, they learned various techniques of contest skills, in preparation for their journey around Hawaiʻi Island.
> [Maly 1997:12]

> After a period of training and tests, the brothers joined their ancestress in an ʻawa ceremony. When Ka-uluhe-nui-hihi-kolo-i-uka (Ka-uluhe) fell asleep, the brothers ventured from their residence at Kalamaʻula to visit some of the places of Kona. Their journey took them as far as the cliffs of Kealakekua, and upon returning to Kalamaʻula, Ka-uluhe inquired about what the brothers had seen. As they described the places visited, Ka-uluhe explained to the brothers the nature of the lands, features and people which they had seen.
> [Maly 1997:12]

> Departing from Kalamaʻula, Ka-Miki and Maka-ʻiole set out on their quest. The journey took the brothers first through the lands of Kona — O Kona i ka pohu nāʻū ke keiki e kāohi ala i ke kukuna o ka lā, O Kona ia (Kona in the calm where children take in their breath and then chant, claiming the rays of the sun as their own, Indeed it is Kona). Their path took them first to the kahua (contest site) at Ahuʻena in Lanihau, where the brothers met with Kauakāhiahāola one of the contest champions of Puapuaʻa…
> [Maly 1997:14]

Recounted in this segment of the moʻoleo is a kahua, translated by Maly as a "contest site." Maly described that the kahua is located at Ahuʻena, Lanihau and is referred to as a **kahua mokomoko leʻaleʻa** or contest and game. This field was known by the name **Hinakahua** and is located in the **Kahelo plains of Puapuaʻa Ahupuaʻa** (Maly 1999:10). In the moʻolelo of Ka-Miki, Kauakahiakahaola is identified as the champion of Puapuaʻa and Keiki-puʻi-puʻi is noted as the champion of Kailua. Maly relays that the moʻoleo compares them to "*Ke kumu ʻulu-pū-loa o noe ʻokana ʻāina o Puapuaʻa*" (The well-formed, oval-fruited breadfruit of the lands of Puapuaʻa [said in praise of strength and handsome features]), (Maly 1999:12). These champions of Puapuaʻa and Kailua are memorialized in two heiau that bear their names. According to Maly, **Kauakahiakahaola heiau** is located in Puapuaʻa and Keiki-puʻi-puʻi rests in the boundary between Keōpū and Honuaʻula (Maly 1997:15). Ka-Miki challenged Kauakahiakahaola on the contest grounds in Puapuaʻa and quickly defeated him. From there, Ka-Miki and his brother journey onward to another kahua at Hōlualoa (Wise and Kihe 1914-1917 in Maly 1999:12).

In another chapter of this saga, Ka-Miki travels along the coast of Kona to a place called **Niumalu**. Regarding the location of this wahi, Maly notes that it is described as being situated in the ahupuaʻa of Puaʻa, (Maly 1997:22). It is also noted that there is a māla ʻuala, or a sweet potato garden that stretches between Niumalu and Puapuaʻa Ahupuaʻa (Wise and Kihe 1914-1917 in Maly 1999:12). This māla ʻuala is described as the place where the opponents of Ka-Miki go to recover and sleep after being defeated by the young boy (Wise and Kihe 1914-1917 in Maly 1999:12). Ka-Miki meets Pili-nui-kapu-kuʻi-a-ka-lani-kua-liholiho-i-ke-kapu ("Pili bound in great sacredness, the chief with the burning back *kapu*" — a restriction that forbade approaching the chief from behind, and which carried a penalty of death by fire), who was an aliʻi of this wahi. Referred to by the shortened name, Pili, this aliʻi enjoyed the games of competitions. The games played at this wahi were:

> The contests and events held at Hinakahua included *maika, mokomoko, leʻaleʻa, a me hoʻopāpā* (bowling or tripping stones, wrestling and boxing, pleasurable pastimes, and contests of wit and strength). It was while the chief and his *ʻōlohe* champions were at Hinakahua, that Ka-Miki presented himself to some of Pili's stewards, claiming the right to care for the chief's possessions and foods. Word of this claim was carried to Pili, who in-turn called his key counselors and champions to Niumalu discuss the claims made by Ka-Miki…

(April 5, 1917)
[Wise and Kihe 1914-1917 in Maly 1999:11]

Here in this account, specifics of the type of traditional games played at Hinakahua are described. The games associated with Hinakahua and therefore the broader **ahupuaʻa of Puapuaʻa** are **maika** (bowling), **mokomoko** (wrestling and boxing), **leʻaleʻa** (pleasurable pastimes), and **hoʻopāpā** (contest of wit and strength), (Maly 1999:11). When Ka-Miki arrived at Hinakahua and made the claim that he would come to care for the aliʻi's possessions, Pili, the aliʻi of the ʻāina questioned Ka-Miki as to why he thought himself able to boast such statements. Ka-Miki responded that it was the chief that said anyone who excelled in lua and possessed unmatched ʻōlohe skills would be able to gain the privileges to the favorite of the aliʻi. Being that Pili had no proof of Ka-Miki's skill, Pili instructed the Ka-Miki should compete and defeat all 150 of Pili's champions and secure the lū heʻe (octopus lure) from Lālāmilo. If Ka-Miki should succeed, Pili agreed to give Ka-Miki half of Kona and the privilege of being his favorite (Wise and Kihe 1914-1917 in Maly 1999:11-13). Accepting the challenge, Ka-Miki prepares for the contests by calling out to Ka-uluhe with a mele paha (spoken chant) to evoke her mana and be empowered by the gods (Wise and Kihe 1914-1917 in Maly 1999:13). The mele is offered:

E ala e Kaulu-i-ke-kihi-o-Kamalama	*Arise o Kaulu – [star] point of light [knowledge] of Kamalama*
E ala e kīkoʻokoʻo ka lani	*Arise expanse of the heavens*
E ala e kīkoʻokoʻo ka honua	*Arise expanse of the earth*
E ala e kīkoʻokoʻo ka mauna	*Arise expanse of the mountain*
E ala e kīkoʻokoʻo ka moana…	*Arise expanse of the ocean…*

[Wise and Kihei 1914-1917 in Maly 1999:13]

No competitor could match the skill of Ka-Miki. Every champion Ka-Miki faced was defeated. Following through with their arrangements, Ka-Miki was named the favorite of Pili and given the power of the kingdom of Kona (Wise and Kihe 1914-1917 in Maly 1999:13). Ka-Miki ordered Pili's **ʻeleʻele** or messengers to spread the word of his victories to Kalamaʻula (Wise and Kihe 1914-1917 in Maly 1999:13). Pili sent other messengers throughout all the districts of Kona to inform the people and chiefs that Ka-Miki possessed the rights of the aliʻi over these lands(Wise and Kihe 1914-1917 in Maly 1999:13).

Having won the competitions, Ka-Miki also won the lūheʻe of Lālāmilo which he presented to Pili. Regarding the lū heʻe, Maly summarizes this section of the moʻolelo:

> Now this leho (octopus lure) was a favorite of Pili's, and filled his eyes with pleasure. Pili's canoes were prepared to go octopus fishing – lawaiʻa lūheʻe as Pili wanted to see how the lure worked. The lure was made by securing the kākala (hook), and a sinker stone (ʻōahi) near the cowrie (on a wooden shaft) with three ply olonā (Touchardia latifolia) rope. When Pili mā arrived at the octopus fishing site, he removed the lure from a gourd container and set it in the water. The chief and all those with him were startled to see unlimited numbers of heʻe (octopus) rise up to the lure, and even lobsters were attached to some of the octopus (July 26, 1917)…
> [Wise and Kihe 1914-1917 in Maly 1997:22]
>
> As the lure was drawn up to the canoe, the heʻe followed it right into the canoe, and the moment the lure was covered, the heʻe stopped rising to the canoe. Pili returned to the shore of Niumalu at Oneō, and had the heʻe divided among all of the people.

> So the fame of the lure went about the island and many chiefs, fishermen, and people traveled to see the lure as well. It was in this way that Lālāmilo learned his lure was in Kona (August 2, 1917)...
> [Wise and Kihe 1914-1917 in Maly 1997:22]

Relayed in this excerpt is information regarding waʻa off shore **fishing practices** that occurred in Puaʻa, Kona. Specifically, it is recounted that the lūheʻe method for gathering octopus was used at the shore of Niumalu at a place called Oneō (Wise and Kihe 1914-1917 in Maly 1997:22), which was near a known heʻe spot, that was also rich in lobster.

Regarding the **Waiʻaha and Kahului Ahupuaʻa** of Kona, Maly shares an excerpt from the moʻolelo of Ka-Miki that describes **Waiʻaha stream**, one of only two perennially flowing surface streams in Kona, which connects the two ahupuaʻa which is said to feed **puʻepuʻe**, a mounded style of upland farming, indicating kalo cultivation to have occurred in this area. The excerpt also recounts that a paved spring named Wai-a-Kekea is located in the same area. The account as translated by Maly reads:

> ...the stream of Waiʻaha joins with the lands of Kahului. The waters filled the upland taro mounds of the sacred prostration chiefs Kaleiʻeha, Kapahu (or Kapahu-a-Loʻi), and Kaʻalaea, who possessed the kapu (restrictions) of Lono-Makahiki... There too, you see — ka luawai ua kīpapa ʻia i ka pōhaku ʻalā e ulu pōhai ʻia e nā lāʻau loulu, o ka punawai i ka oʻioʻina pali o Waiakekea — a spring paved with dense [ʻalā] stones and surrounded by loulu palms, this is the spring of Wai-a-Kekea, which was near the trail side resting place... (IN Ka Hōkū o Hawaiʻi, April 9, 1914; Maly translator)
> [Wise and Kihe 1914-1917 in Maly 1998:3]

Another one of the study areas that is highlighted in the moʻolelo of Ka-Miki concerns the ahupuaʻa of Keahuolū. The hill, Puʻu o Kaloa is a significant feature recorded as a puʻu of Keahuolū and Kealakehe. A summary of this segment of Ka-Miki regarding Keahuolū and Puʻu o Kaloa was translated by Maly as follows:

> Ka-noenoe (The mist, fogginess) The mound-hill called Puʻu-o-Kaloa sits upon the plain of Kanoenoe which is associated with both Keahuolu and Kealakehe. The settling of mists upon Puʻu-o-Kaloa was a sign of pending rains; thus the traditional farmers of this area would prepare their fields. This plain was referenced by Pili when he described to Ka-Miki the extent of the lands which Ka-Miki would oversee upon marrying the sacred chiefess Paehala of Honokōhau. The inheritance lands included everything from the uplands of Hikuhia above Nāpuʻu and the lands of the waterless Kekaha, which spanned from the rocky plain of Kanikū (Keahualono) to the plain of Kanoenoe at Puʻukaloa (Ka Hoku o Hawaiʻi 10/25/1917, as translated by Maly 1994:A-4).
> [Wise and Kihe 1914-1917 in Simonson 2010:8]

Echoing the previous account examined by Kihe in the article “Na Hoonanea o ka Manawa,” Puʻu o Kaloa is also described in the moʻolelo of Ka-Miki as being a landmark telling of signs of rain.

ʻŌlelo Noʻeau - Hawaiian Proverbs and Poetical Sayings

ʻŌlelo noʻeau or Hawaiian proverbs and poetical sayings are valuable in perpetuating Hawaiian cultural knowledge, presenting kaona (concealed reference), and illustrating creative expressions that incorporate observational knowledge with educational values, history, and humor. They can be reflected upon to inform an individual of the conditions or characteristics of a place, group of people, common sentiments of an era, or event in history. They can be looked towards to glean insight on the peculiarities of a given landscape or the behavior of people in general or specifically, and oftentimes provide guidance in understanding the wisdom and warnings left to us by those of the past. Today, ʻōlelo noʻeau serve as a traditional source to learn about people, places, and the environment of Hawaiʻi. As one of the many celebrated works penned by Pukui during her time, the 1983 publication of *ʻŌlelo Noʻeau: Hawaiian Proverbs and Poetical Sayings*, is one of which holds no end in its relevance and richness as it relates to an epistemological worldview that is Hawaiian.

Listed in this section are ʻōlelo noʻeau gathered from Pukui's collection of traditional sayings that reference the cultural practices, resources, and traditions related to the study areas located in the Kona Moku of Hawaiʻi. Particular emphasis is placed upon traditional sayings related to water resources associated with the study areas and vicinity. Additionally, the ʻōlelo noʻeau offered here serve to illuminate insight on various places, winds, rains, famed aliʻi, akua, and other moʻolelo and characteristics particular to the study areas and vicinity that have been preserved in the poetics of these traditional sayings.

Though the focus of this study is centralized to arrive at a deepened understanding of Kealakehe, Keahuolū, Puaʻa, Waiʻaha, Kahului, Puapuaʻa, and Keauhou Ahupuaʻa, this section of the report also offers a compilation of ʻōlelo noʻeau that pertains to the larger geographical region of Kona, Hawaiʻi. Though these set of ʻōlelo noʻeau may not always speak directly to the study area ahupuaʻa, they have been selected as relevant to the holistic understanding of the cultural and environmental landscape as a whole. Inclusion of the broader Kona Moku is paramount to fully and properly grasp the significance of the study areas as it relates to the practices, resources, and traditions unique to the district. To analyze the cultural context of the study areas isolated from the cultural significance of the region it is situated upon and has coexisted within, disconnects the wealth of history embedded within the landscape. For these reasons, this section highlights ʻōlelo noʻeau that illuminate the practices, resources, and traditions of the study areas Kealakehe, Keahuolū, Puaʻa, Waiʻaha, Kahului, Puapuaʻa, and Keauhou Ahupuaʻa, as well as the broader Kona Moku of Hawaiʻi.

The following ʻōlelo noʻeau offers insight regarding water resources associated with the moku of Kona. Recounted in several ʻōlelo noʻeau, the presence and formation of **ʻōpua**, or "cumulus clouds," and **ao ʻōpiopio** or "young clouds," are environmental indicators unique to Kona relaying that rain is expected to occur in the area (Pukui 1983:9,27,2134; ʻŌlelo Noʻeau #55, #232, #2134). Another water resource associated with Kona acknowledges a thriving **coconut grove in an area named Helani** where water is retained by gathering and drinking from coconuts (Pukui 1983:179, #1661). Though not a part of the immediate study area, the saying "Kekaha wai ʻole o na Kona," characterizes the Kekaha Ahupuaʻa of Kona as a waterless place beloved by the natives of Kehaha, despite the lack of water (Pukui 1983:185:1716). These set of ʻōlelo noʻeau which describe the natural resources of wai and the cultural traditions surrounding it are listed below:

55 **Aia ka wai i ka maka o ka ʻōpua.**
Water is in the face of the ʻōpua clouds.

In Kona, when the ʻōpua clouds appear in the morning, it's a sign that rain is to be expected.
[Pukui 1983:9, #55]

232 **Ao ʻōpiopio.**
Young cloud.
A cloud that rises from sea level or close to the cloud banks and is as white as steam. When seen in Kona, Hawaiʻi, this is a sign of rain.
[Pukui 1983:27, #232]

1661 **Ka wai puka iki o Helani.**
The water of Helani that comes from a small opening.
Refers to Helani, Kona, Hawaiʻi. Here a coconut grove thrived, and from a small opening in the shell of the nut one could get water to drink.
[Pukui 1983:179, #1661]

1716 **Kekaha wai ʻole o na Kona.**
Waterless Kekaha of the Kona district.
Kekaha in Kona, Hawaiʻi, is known for its scarcity of water but is dearly loved by its inhabitants.
[Pukui 1983:185, #1716]

2134 **Māmā Kona i ka wai kau mai i ka maka o ka ʻōpua.**
Kona is lightened in having water in the face of the clouds.
Kona is relieved, knowing that there will be no drought, when the clouds promise rain.
[Pukui 1983:232, #2134]

2154 **Me he makamaka la ka ua no Kona, ke hele la a kipa i Hanakahi.**
The rain is like a friend from Kona–it goes and calls on Hanakahi.
These are two lines from an old chant used to express a friendly visit with one who dwells in a distant place.
[Pukui 1983:234-235, #2154]

The ʻōlelo noʻeau listed below identify two named winds of Kona; **Hau**, a wind belonging to Maʻihi and is described as a breeze that does not exceed beyond the boundaries of Kainaliu and **Keauhou**, and **ʻEka**, a particular wind associated with the moku of Kona whose presence is telling of **signs optimal for fishing**. These ʻōlelo noʻeau regarding the winds of Kona are as follows:

1303 **Ka Hau o Maʻihi.**
The Hau [breeze] of Maʻihi.
Refers to Maʻihi, Kona, Hawaiʻi. Because of this locality was named for Maʻihi-ala-kapu-o-Lono, daughter of the god Lono-a-ipu, this wind was regarded as sacred and did not blow beyond Kainaliu and Keauhou.
[Pukui 1983:142, #1303]

1467 **Ka makani kūkulu peʻa nui, he ʻEka.**
The ʻEka, the wind that sets up the big sails.
When the ʻEka wind blew in Kona, Hawaiʻi, the fishermen sailed out to the fishing grounds.

[Pukui 1983:159, #1467]

1690 **Ke ʻEka, makani hoʻolale waʻa o na Kona.**
The ʻEka breeze of Kona that calls to the canoe men to sally forth to fish.
Refers to Kona, Hawaiʻi.
[Pukui 1983:182, #1690]

Several ʻōlelo noʻeau commemorate the chiefly lineage of Kona and also offer a glimpse into the political climate that took place in the region. In particular, the sayings "Kona, kai malino a Ehu"– *"Kona land of the calm sea of Ehu,"* and "Na laʻi a Ehu"– *"The calm regions of Ehu,"* honors Ehunuikaimalino and Ehunuikaumanamana as aliʻi (chief) of Kona. Ehunuikaimalino is noted as the aliʻi of Kona who reigned during the time of Liloa (Pukui 1983:199, #1843). Ehunuikaumanamana was another named chief whose domain was Kona (Pukui 1983:246, #2248). The ʻōlelo noʻeau, "E pale lauʻī i ko akua ke hiki aku i Kona," which translates to "*Place a shield of ti leaves before your god when you arrive in Kona,"* shines light upon the political climate that stirred throughout the pae ʻāina (archipelago) when the push to abolish the kapu system and traditions of old Hawaiʻi was enacted in order to facilitate a transition towards Western belief systems (Pukui 1983:45, #370). The ʻōlelo noʻeau, "Keauhou i ka ʻihi kapu," which translates to *"Keauhou, where strict kapu were observed,"* is a phrase descriptive of the area of particular interest for this study that highlights the level of prestige and sacredness associated with this wahi as it is acknowledged as the residence of many high ranking chiefs and the birth place of Kauikeaouli, Kamehameha III (Pukui 1983:181, #1682).

253 **E akahele i ka mamo a I, o kolo mai ka mole uaua.**
Beware the descendants of I, lest the tough roots crawl forth.
A warning uttered by Palena, a chief of Kohala, who saw Kuaʻana-a-I cruelly treated by the chiefs of Kona. Kuaʻana later went to see the people of his mother, Hoʻoleialiʻi, in Hāna, and to help the chiefs of Hilo in fighting those of Kona.
[Pukui 1983:31, #253]

370 **E pale lauʻī i ko akua ke hiki aku i Kona.**
Place a shield of ti leaves before your god when you arrive in Kona.
A message sent by Kaʻahumanu to Liholiho requesting him to free the *kapu* of his god Kūkāʻilimoku. Kaʻahumanu was at that time striving to abolish the *kapu* system.
[Pukui 1983:45, #370]

1682 **Keauhou i ka ʻihi kapu.**
Keauhou, where strict kapu were observed.
Keauhou, Kona. This was the place where many of the highest chiefs resided and where Kamehameha III was born.
[Pukui 1983:181, #1682]

1843 **Kona, kai malino a Ehu.**
Kona, land of the calm sea of Ehu.
Ehunuikaimalino was a chief of Kona, Hawaiʻi, under the ruler Liloa.
[Pukui 1983:199, #1843]

2248 **Na laʻi a Ehu.**
The calm regions of Ehu.

The districts of Kona, Hawai‘i, where Ehunuikaumanamana once ruled. Also, an epithet for Kalākaua, taken from a name chant.
[Pukui 1983:246, #2248]

The ‘ōlelo no‘eau listed below describe natural features and boundaries related to the Kona Moku of Hawai‘i:

1519 **Ka ‘ōwili makani ‘ino o Kāwili.**
The stormy wind of Kāwili.
Kāwili is the current that comes from Kona and goes out to sea at Kalae, Ka‘ū.
[Pukui 1983:164, #1519]

1731 **Ke kai malino o Kona.**
The calm sea of Kona.
Refers to Kona, Hawai‘i.
[Pukui 1983:186, #1731]

1839 **Kona ‘ākau, mai Keahualono a Pu‘uohau.**
North Kona, from Keahualono to Pu‘uohau.
The boundary of North Kona, Hawai‘i.
[Pukui 1983:198, #1839]

1840 **Kona hema, mai Pu‘uohau a Kaheawai.**
South Kona from Pu‘uohau to Kaheawai.
The boundaries of South Kona.
[Pukui 1983:199, #1840]

1842 **Kona i ke kai mā‘oki‘oki.**
Kona of the sea that is cut up.
From a distance one can see the smooth surface of the sea at Kona, Hawai‘i, cut by innumerable streaks of color.
[Pukui 1983:199, #1842]

1844 **Kona, kai ‘ōpua i ka la‘i.**
Kona, where the horizon clouds rest in the calm.
[Pukui 1983:199, #1844]

1846 **Kona, mauna uliuli;**
Kona mauna ulupō.
Kona, of the green mountains;
Kona of the dense forest.
North and South Kona, Hawai‘i.
[Pukui 1983:199, #1846]

Other ‘ōlelo no‘eau offer insight into some of the cultural practices occurring in Kona. “Kona, po‘o ku‘i” which translates to *“Kona of the added head,”* cleverly articulates the farming practices that occurred in Kona by describing the imagery of a farmer carrying his/her load upon their shoulders (Pukui 1983:199, #1847). The other two ‘ōlelo no‘eau regarding the named winds of Kona (‘Ōlelo No‘eau #1467 and #1690), were shared previously in an earlier discussion; however, they are revisited here as pertinent to noting the cultural practices associated with Kona. As relayed in the

ʻōlelo noʻeau that describes the winds of Kona, the arrival of the ʻEka wind meant the mobilization of fishermen in Kona who readied their canoes and headed out to their fishing grounds (Pukui 1983:159,182). Recounted in the ʻōlelo noʻeau presented below are descriptions of the **farming and fishing practices** that are associated with the Kona Moku:

1847 **Kona, poʻo kuʻi.**
Kona of the added head.
Said of farmers of Kona, Hawaiʻi, returning from the fields with a load on the shoulders and a child sitting atop the load.
[Pukui 1983:199, #1847]

1467 **Ka makani kūkulu peʻa nui, he ʻEka.**
The ʻEka, the wind that sets up the big sails.
When the ʻEka wind blew in Kona, Hawaiʻi, the fishermen sailed out to the fishing grounds.
[Pukui 1983:159, #1467]

1690 **Ke ʻEka, makani hoʻolale waʻa o na Kona.**
The ʻEka breeze of Kona that calls to the canoemen to sally forth to fish.
Refers to Kona, Hawaiʻi.
[Pukui 1983:182, #1690]

The following ʻōlelo noʻeau are traditional sayings whose origin is tied to the study area of Keauhou and are descriptive of the characteristics of this ahupuaʻa and its people. During background research, ʻōlelo noʻeau associated with the Kahului, Waiaha, and Puapuaʻa Ahupuaʻa were not found.

1411 **Ka ʻiole ʻaihue moa o Keauhou.**
The chicken-stealing rat of Keauhou.
One who steals another's sweetheart or mate. Any place name may be used, depending on where the "rat" is from.
[Pukui 1983:153, #1411]

1682 **Keauhou i ka ʻihi kapu.**
Keauhou, where strict kapu were observed.
Keauhou, Kona. This was the place where many of the highest chiefs resided and where Kamehameha III was born.
[Pukui 1983:181, #1682]

1683 **Keauhou, kai nehe i ka ʻiliʻili.**
Keauhou, where the sea murmurs to the pebbles.
Keauhou, Puna, Hawaiʻi.
[Pukui 1983:181, #1683]

The ʻōlelo noeʻau compiled below are other traditional sayings associated with and descriptive of the broader district of Kona:

48 **Aia i Kona i Honalo.**
It is in Kona, in Honalo.
A play on *nalo* (lost). You've lost it and it is gone.
[Pukui 1983:8, #48]

1072 **Hoʻokāhi no Hāwaʻe, lauhue Kona.**
Only one Hāwaʻe, and poisonous gourds grow all over Kona.
In Kona, Hawaiʻi, a priest named Hāwaʻe lived during the reign of Ehukaipo. In every important *heiau* in that district, an image named for this priest was kept. Many people were sacrificed to these evil namesakes of Hāwaʻe.
[Pukui 1983:114, #1072]

1755 **Ke kope hoʻohiaʻā maka o Kona.**
The coffee of Kona that keeps the eyes from sleeping.
This saying applies not only to coffee, but also to love. To be in love with a person of Kona is to lose much sleep.
[Pukui 1983:188, #1755]

2046 **"Mai hea mai ʻoe?"**
"Mai Kona mai."
"Pehea ka ua o Kona?"
"Palahī puaʻa ka ua o Kona."
"A pehea ke aku?"
"Hī ka pā, hī ka malau,"
"Where are you from?"
"From Kona."
"How is the rain of Kona?"
"The rain of Kona pours like the watery excreta of a hog."
"How are the aku fish?"
"They run loose from the hook and the bait carrier."
Said in fun of one suffering from loose bowels. Once, a chief was out relieving himself when his bowels were very loose. A runner came by the little-traveled path through the underbrush and seeing the chief there extended his greetings. The chief began to ask questions, which the runner answered. When the chief went home he told those of his household of the sundance of rain and the run of fish in Kona. His servant, whose curiosity was roused, asked, "What were you doing at the time?" "I was excreting, and my bowels were loose," answered the chief. "He wasn't talking about the rain and fish," said the servant, "he was talking about you." The chief was angry when he heard this, but it was too late to do anything about it.
[Pukui 1983:222, #2046]

2469 **O ko Kona mau no ia o ka laʻi.**
Calm is typical of Kona.
Said of a Kona person who is always poised and calm.
[Pukui 1983:269, #2469]

2471 **O Kona i ka paka ʻona–ke haʻu iho ʻoe kūnewanewa.**
Kona of the potent tobacco–a draw would make one stagger.
Kona is said to be a land of potent lovemaking.
[Pukui 1983:270, #2471]

2645 **Pili aloha o Kona, hoʻoipo i ka mālie.**
Love remains close to Kona, who woos the calm.

Kona is a land beloved for its calm and pleasant weather.
[Pukui 1983:290, #2645]

The remaining sayings listed below are a compilation of ʻōlelo noʻeau associated with other ahupuaʻa and wahi pana (storied places) located within the Kona Moku:

682 **He Keʻei ʻoe no lalo lilo.**
You are a person of Keʻei, from far below.
You are of no consequence. Two chiefesses peered into a pool together at Keʻei, in Kona, Hawaiʻi. The reflection of the one from Hanauma appeared above that of the one from Keʻei, so she made this remark.
[Pukui 1983:76, #682]

708 **He kukāhi au, he wauke no Kūloli.**
I stand alone, for I am a wauke plant of Kūloli.
A boast–"Like the lone *wauke* plant of Kūloli, I stand alone in my battles."
At Kūloli, in Kona, Hawaiʻi, grew a lone *wauke* plant around which none other grew.
[Pukui 1983:78-79, #708]

1636 **Kau pō Kāneiahuea.**
All night long rode Kāneiahuea.
Said of one who wastes time in useless effort. From the story of a man who started out from the inlet of Kāneiahuea, Kona, one night. Because he was unfamiliar with the place, he went back and forth all night without finding an outlet to the open sea. Similar to the saying *Naʻaupō wale o Kāneiahuea*.
[Pukui 1983:176, #1636]

1730 **Ke kai maka koholua o Keahole.**
The sea of Keahole that pierces like the point of a koholua stick.
Keahole in Kona, Hawaiʻi, is a cold place to swim.
[Pukui 1983:186, #1730]

1841 **Kona Honua-ʻino.**
Kona, [the] Bad Land.
Said in humor of Kona, Hawaiʻi, for within its boundaries is a place called Honuaʻino.
[Pukui 1983:199, #1841]

2188 **Moku ka ihu ia Hio la!**
Bitten off is the nose by Hio!
Used by adults to frighten children into staying at home. Hio was an *akua* (ghost) who wandered about peering into the doors of homes and biting off the noses of those who annoyed him. He escaped when his companions were caught in a fishnet set by the supernatural hero Kamiki at Kuʻunaakeakua (Net-let-down-for-*akua*), Makalawena, Kona.
[Pukui 1983:238, #2188]

2478 **Ola aku la ka ʻāina kaha, ua pua ka lehua i kai.**
Life has come to the kaha lands for the lehua blooms are seen at sea.

"*Kaha* lands" refers to Kekaha, Kona, Hawai'i. When the season for deep-sea fishing arrived, the canoes of the expert fishermen were seen going and coming.
[Pukui 1983:271, #2478]

2515 **O na hōkū o ka lani luna, o Pa'aiea ko lalo.**
The stars are above, Pa'aiea below.
Refers to Kamehameha's great fishpond, Pa'aiea, in Kona, Hawai'i. Its great size led to this saying–the small islets that dotted its interior were compared to the stars that dot the sky. The pond was destroyed during a volcanic eruption.
[Pukui 1983:275, #2515]

2753 **Pupuhi ka 'ulu o Ke'ei; ua koe ka 'a'aiole.**
The breadfruit of Ke'ei are gone; only those blown down by the wind are left.
Said when something mysteriously vanishes. A *konohiki* of Ke'ei in Kona, Hawai'i, was placed in charge of a fine breadfruit grove. In spite of his watchfulness, the fruit were stolen as soon as they matured. Secretly he asked all of his relatives to help him watch for the culprit. However, some were related to the thief as well, who learned about the watch and evaded capture. Long after, a slip of the tongue revealed the thief.
[Pukui 1983:301, #2753]

2939 **Wili i ke au wili o Kāwili.**
Swirled about by the swirling Kāwili.
Said of a confusing, bewildering situation. Kā-wili (Hit-and-twist) is a current at Kalae, Ka'ū, Hawai'i, that comes from the Kona side and flows out to the ocean. It is the router of the two currents that meet off Kalae.
[Pukui 1983:320, #2939]

No ka Ua - Regarding Rain

The intimacy developed by Kānaka 'Ōiwi (Native Hawaiians) in relation to the natural environment is evident in the practice of naming natural features, resources, and environmental elements. Hawaiians honored and celebrated the world around them by the careful, thoughtful, and intentionality of giving a name, and therefore, mana (authority or power) to a person, place or thing. Natural features of the landscape, oceanscape, and skyscape were observed intimately by those who were of, and frequented a place so deeply, that the particularities of the natural elements were understood and named affectionately to honor, describe, and celebrate its connection.

Hānau Ka Ua is a comprehensive publication that delves into the richness of rain names associated with various places throughout Hawai'i. The authors, Collette Leimomi Akana and Kiele Gonzalez, are Native Hawaiian scholars and teachers whose publication honors the unique rains of Hawai'i and the places they are associated with. Akana and Gonzalez further describe this intimacy specific to rain:

> Our kūpuna 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 trees, the scent it carried, and the effect it had on people. [Akana and Gonzalez 2015:xv]

The collection of rain names included in *Hānau ka Ua* is often paired with a mele, or song, that references the rain and its association to a featured place. This section of the report utilizes Akana and Gonzalez's work and the cited sources included in this publication in order to identify the rains associated with the study areas and the broader moku of Kona, Hawai'i. Rain names specific to **Kealakehe, Keahuolū, Pua'a, Wai'aha and Kahului Ahupua'a** of Kona were not identified during this background study; however, this is not to say that they do not exist. Named rains belonging to **Puapua'a Ahupua'a** and **Keauhou Ahupua'a** as well as the broader region of Kona study were found and in listed in Table 1. The discussion that follows offers a narrative that describes the characteristics of each of the rains identified in this section so as to better understand the unique qualities and cultural significance they possess.

Table 1. Table of rain names associated with the Kona Moku of Hawai'i.

Ka Ua *The Rain*	**Ka Wahi** *The Place*	**Nā Kūmole** *References*
Palahī Pua'a	Kona, Hawai'i	Described as an "intermittent rain," and translated to mean "pig diarrhea," (Akana and Gonzales 2015:218,219).
		"Mai hea mai 'oe?" "Mai Kona mai." "Pehea ka ua o Kona?" "Palahī pua'a ka ua o Kona." "A pehea ke aku?" "Hī ka pā, hī ka malau." *"Where are you from?"* *"From Kona."* *"How is the rain of Kona?"* *"The rain of Kona pours like the watery excreta of a hog [palahī pua'a]."* *"How are the aku fish?"* *"They run loose from the hook and the bait carrier."*[71] [Akana and Gonzales 2015:218]
		"Ka ua palahī pua'a–falls, stops, falls, stops, etc.," (Akana and Gonzales 2015:219).[72]

[71] Author notes: A traditional saying. Source: Pukui, *'Ōlelo 222. Note: Pukui says that this was "said in fun of one suffering from loose bowels,"* (Akana and Gonzales 2015:218).

[72] Author notes: "From a list of rain names and their descriptions. Source Kelsey, "Rains,"" (Akana and Gonzales 2015:219).

Ka Ua *The Rain*	**Ka Wahi** *The Place*	**Nā Kūmole** *References*
Kēhau	Kona, Hawai‘i	Described as a dew and mist and is noted as both the name of specific rain and wind (Akana and Gonzales 2015:73).
		Indexed as a rain associated with Kona, Hawai‘i (Akana and Gonzales 2015:316).
Nāulu	Kona, Hawai‘i	Described as a sudden shower and is noted as being also the name of a rain cloud and a wind (Akana and Gonzales 2015:187).
		‘O Kona ia o ke kai malino a ‘Ehu ē! Ke ala a ‘Ehu, ke ala a kāua i hele ai I ke ao, i ka pō, pōwehiwehi i ka ua Nāulu a weli He weliweli, he maluhia i ke aloha iā ‘oe Iā ‘oe, iā ‘oe, e Kalopelekei i ka lā ē! *Oh, Kona it is, of the tranquil sea of ‘Ehu, oh!* *The pathway of ‘Ehu, the path we two traversed* *By day, by night, made dim and threatening by the stormy Nāulu rains* *Frightful, but peaceful because of love for you* *For you, for you, O Kalopelekei of the day, oh!*[73] [Akana and Gonzales 2015:188,189]
	Puapua‘a Ahupua‘a	Indexed as a rain associated with Puapua‘a (Akana and Gonzales 2015:324).
‘Awa‘awa	Kona, Hawai‘i	Described as a “bitter, cold, dark rain, vog, or smoke of the mountains; acidic rain;” and is noted as being the same as the ‘Awa rain and also the name of a wind (Akana and Gonzales 2015:17).
		Indexed as a rain associated with Kona, Hawai‘i (Akana and Gonzales 2015:316).
	Keauhou Ahupua‘a	Indexed as a rain associated with Keauhou (Akana and Gonzales 2015:315).
‘Awa	Keauhou Ahupua‘a	Described as a “bitter, cold, dark rain, mist, fog, vog, or smoke of the mountains; acidic rain;” and is noted as being the same as the ‘Awa‘awa rain and also a name of a wind (Akana and Gonzales 2015:73).

[73] Author notes: “From a kanikau, or lament, for Kamehameha IV by his wife, ‘Emalani Kaleleonālani,” (Akana and Gonzales 2015:189).

Ka Ua *The Rain*	Ka Wahi *The Place*	Nā Kūmole *References*
		Indexed as a rain associated with Keauhou (Akana and Gonzales 2015:315).
Kualau	Keauhou Ahupua‘a	Described as a rain that showers over the seas and is accompanied by wind (Akana and Gonzales 2015:121).
		Indexed as a rain associated with Keauhou (Akana and Gonzales 2015:315).
Nahunahu	Keauhou Ahupua‘a	Described as a “pelting rain associated with Hawai‘i,” and translated to mean “to bite,” (Akana and Gonzales 2015:184).
		Indexed as a rain associated with Keauhou (Akana and Gonzales 2015:315).
Noe	Keauhou Ahupua‘a	Described as a fog and a mist that is “lighter than the uhiwai [heavy fog], but heavier than ‘ohu [mist, fog, vapor], ‘ehu [spray, foam, mist], and ‘ehu‘ehu [reduplication of ‘ehu];” and is noted as both a rain and wind, (Akana 2015:208).
		Indexed as a rain associated with Keauhou (Akana and Gonzales 2015:315).

Nāulu is the rain associated specifically with **Puapua‘a Ahupua‘a**, as well as the general region of Kona (Akana and Gonzales 2015:324, 188-189). Nāulu is defined by Pukui and Elbert as a “sudden shower,” (Pukui and Elbert 1986:263). Not only is it noted as the name of a particular rain, Nāulu is also identified as the name of a shower cloud, a sea breeze, as well as a type of wind (Pukui and Elbert 1986:263; Akana and Gonzales 2015:187).

As a cloud or as rain, records reference many different characteristics that describe the type of rainfall and patterns typical of a Nāulu rain. Kānaka ‘Ōiwi and renowned historian, David Malo wrote that the Nāulu rain is strong in intensity but short in duration. He characterized the rain as: “He ua Nāulu he ua ‘uku ia, he ikaika na‘e.” *“A Nāulu rain, a brief rain, though it is intense,”* (Malo in Akana and Gonzales 2015:206; translated by Akana and Gonzales). The short and sudden characteristic that Malo described the Nāulu rain to be is also mirrored by another one of Hawai‘i’s noted historians, Samuel Mānaiakalani Kamakau. Published in the Hawaiian language newspaper, *Ke Au Okoa* in 1869, Kamakau shared an account regarding traditional cultivation methods of ‘uala (*Ipomoea batatas* or sweet potato) in which he acknowledged the Nāulu rain:

> He ua Nāulu ka ua e loa‘a i ka Makali‘i, he ua kūhewa ia, aia ma kona wahi e hā‘ule ai, ua ulu ka laulele, ka pōpolo, a ua ola ia wahi i ka lau nāhelehele. [Kamakau 1869:1]
>
> *Sudden showers (ua Nāulu) fall during the Makali‘i season. These are rains accompanied by wind gusts, and where they fall, laulele and pōpolo plants spring up, and that place comes to life with wild growth.*
> [Translated by Akana and Gonzales 2015:206]

According to Kamakau, Nāulu is again referred to here as a shower that arrives suddenly–he ua kūhewa, (Kamakau 1869:1). What is also detailed in this account is that this particular rain is often joined by wind; and with it, entices the ʻāina the rain falls upon to sprout with vegetation such as laulele (*Asclepias curassavica* or butterfly weed), pōpolo (*Solanum nigrum*), and other wild growing flora. Other accounts offer similar depictions of the life brought with the coming of the Nāulu rain as it falls upon the earth. A mele hoʻāeae or love chant poetically references the Nāulu rain as a rain that softens the forest:

He ipo aloha naʻu ka nani o Kūkiʻi e waiho nei
I lohia ʻia mai e nā lehua o Hōpoe, ʻau i ke kai
Ke kaʻikaʻikū ʻia maila a Kalanamaihiki
Hikiwawe ka hana a ka ua i ka nahele
Ke hoʻowali ʻia maila e ka ua Nāulu
Kū helahela ke kula o Kamāʻoa, nopu i ka lā
[Pukui 1995:76 in Akana and Gonzales 2015:205]

Kukuni wela i ka ʻili o ka malihini
The beauty of Kūkiʻi, my intimate lover, lies there
Sparkling from the lehua of Hōpoe, reaching out into the sea
Carried about until arriving at Kalanamaihiki
The rain works hastily upon the forest
Softened by the Nāulu rain
The plain of Kamāʻoa is extensive, heated by the sun
That scorches the skin of newcomers
[Translated by Akana and Gonzales 2015:205]

A chant entitled, "Haui Kalani," offers the imagery of the Nāulu rain as a rain that makes the land glisten: "He ʻā, he haʻihaʻi pua, he Nāulu kaupua liko moku." *"A booby bird, a flower breaker, a Nāulu rain cloud that gathers, making the land glisten,"* (Fornander 1916-1920:381 in Akana and Gonzales 2015:205; translated by Akana and Gonzales).

A mele inoa or name chant for the chief, Kūaliʻi, describes the Nāulu rain as the rain that carries the kēhau mist:

ʻAʻole i like i ka Nāulu	*Unlike the Nāulu shower*
Ia ua hoʻohali kēhau	*The rain that bears the kēhau mist*
Me he ipu wai i ninia lā	*Like a water gourd that was poured*
Nā hau o Kūmomoku	*Upon the hau trees of Kūmomoku*

[Na Mele Aimoku 2001:94; translated by Akana and Gonzales 2015:204-205]

The accounts shared above each characterizes Nāulu as a rain that brings life to the ʻāina. As Kamakau recalled, ʻuala and other native wild flora began to sprout as a result of the Nāulu rain (Kamakau 1869:1). Pukui described it as a rain that softens the forest (Pukui 1995:76 in Akana and Gonzales 2015:205). Fornander wrote of a chant that described the Nāulu rain as a rain that makes the land glisten, while another chant described it as a rain that carries mist (Fornander 1916-1920:381 in Akana and Gonzales 2015:205; translated by Akana and Gonzales; Na Mele Aimoku 2001:94; translated by Akana and Gonzales 2015:204-205).

In the moʻolelo of Kamapuaʻa, compiled and translated by Lilikalā Kameʻeleihiwa, Nāulu is recounted as a body form of one of Hina's daughter, named Leialoha. When she is born, the body manifests into rain, which is identified as Kauanāulu, meaning, the Nāulu rain:

> Ua hāpai aʻela ʻo Hina… ʻO ka ʻehā o nā keiki i hānau mai ai, he kaikamahine, ʻo ia hoʻi ʻo Leialoha. A i ka manawa i nui ae ai ʻo ia kaikamahine, ua lele akula ʻo ia i ka lani, a lilo kona kino he kino ua, a ua kapa ʻia ʻo Kauanāulu.
> [Kameʻeleihiwa 1996 in Akana 202-203]

> *Hina was pregnant… The fourth child born was a daughter, Leialoha. And when this girl grew up, she flew into the sky, and her body took the form of rain, and it was called Kauanāulu.*
> [Translated by Akana and Gonzales 2015:202-203]

ʻAwa, ʻAwaʻawa, Kualau, Nahunahu, and Noe are rains associated with the **Keauhou Ahupuaʻa**. The rains, **ʻAwa** and **ʻAwaʻawa**, are the same type of rains that vary in its naming. Both rains are described to mean, "bitter, cold, dark rain, vog, or smoke of the mountains; acidic rain," (Akana and Gonzales 2015:17,73). Metaphorically, this type of rain is used to convey emotions of grief and tragedy and speak towards hardships of misfortune (Akana and Gonzales 2015:17; Pukui and Elbert 1986:33).

Pukui categorizes the **ʻAwa** rain as a "cold mountain rain." Similarly, Malo described the various rains of Hawaiʻi and of ʻAwa, he wrote: "He ua ʻawa, ma ka mauna ia ua." (*An ʻawa rain, this rain falls on the mountains),* (Malo 1951:14 in Akana and Gonzales 2015:15). The characterization of the ʻAwa rain as rain associated with the mountains is also seen in a 1866 newspaper article titled "Manao Wehewehe" that was written by an individual named L. Z. E. Kalaaukumuole:

> Ua ʻAwa–He ua kēia ma ka mauna, he ua ʻawa, he ua liʻiliʻi, ʻo ke ehu wale nō; ʻaʻole i loku ʻo ka ua, ʻo ke poʻo ke kuakea me he kanaka poʻo hina lā, he ua poʻo nui o ke kuahiwi, ʻo ke anu naʻe ka mea nui, no laila mai kēia inoa ua ʻAwa, he ua noe.
> [Kalaaukumuole 1866:3]

> *ʻAwa rain–This is a rain in the mountains, a bitter rain, a fine rain; it is only mist; it doesn't pour down; the head is white like a gray-haired man, a trouble-some "poʻo nui" rain in the mountains, though the cold is the main problem, and therefore this name, ua ʻAwa, a misty rain.*
> [Translated by Akana and Gonzales 2015:14]

The ʻAwa rain is also associated with possessing a station of high rank and divinity. The ʻōlelo noʻeau, "He lupe lele a pulu i ka ua ʻawa" is translated by Pukui as, *A kite that flies till it is dampened by icy cold [ʻawa] raindrops,* (Pukui 1983:85, #775). The phrase is interpreted by Pukui as being descriptive of someone "whose station has risen very high," (Pukui 1983:85). In the moʻolelo of Keaomelemele, recorded by Hawaiian historian Moses Manu, the birth of Hina's child is detailed. During the birth, many hōʻailona or signs telling of the childs' high rank and kapu (scaredness) were observed. Among them was the downpour of the ʻAwa rain:

> I ka manawa i ʻike maopopo loa ʻia aʻe ai ua hāpai ʻo Hina, ua noho aku lāua ma ia ʻano a kokoke i nā lā nahunahu hānau keiki, ua ʻike ʻia nā ʻōuli o ka lani a me nā ao polohiwa e haʻakokōhi ana i loko o ka lewa nuʻu, a ke hoʻokūkū maila nā ʻōpua i ka ʻili o ke kai, a ke ʻōkūkū maila nā ʻale kūpikipikiʻō o ka moana, a ke neʻe paʻa aʻela ka ʻohu e uhi i nā awāwa a me ka piko o nā mauna, a ke ʻaneʻane maila ʻo

> Kūlanihākoʻi e hoʻohanini iho i kona wai lani, a ʻike ʻia akula ka lalapa o ka uila i ka lewa, a ke lohe ʻia akula nā leo pohāpohā nunulu o ka hekili e nākolo ana i ka honua, aia hoʻi nā ānuenue ke haʻaheo maila i loko o nā kilihune ua ʻawa, ka ua koko hoʻi ke haʻaheo maila ma nā awāwa i luna o nā lau lāʻau, "me he ua ʻUlalena lā no Piʻiholo e kīheʻaheʻa ana i kukui o Lilikoʻi."
> [Manu 2002:8]
>
> *When it became clearly known that Hina was pregnant, the two of them waited together, and when the days of birth pangs approached, the omens were seen in the heavens: there were dark, heavy clods pressing on the skies above, and the billowing clouds were heaped upon the surface of the sea, while the wild swells of the ocean rose on high, the sea spray blanketed the valleys and the mountain tops, and Kulanihakoi was nearly read to overflow its heavenly waters when the flashes of the lighting were seen in the sky, and the rumbling roar of the thunder was shaking the earth, then the rainbows appeared proudly in the droplets of the Awa rain, and the red rainbow patches showed their glory over the tree tops of the valley, "like the Ulalena rain of Piiholo, streaking the kukui leaves of Lilikoi."*
> [Translated by Pukui in Manu 2002:100]

As noted previously, this particular rain is also noted as being a vog. Amongst the many sources compiled by Akana and Gonzales in their comprehensive inventory of rain names, the authors share a segment of an oral interview between two native speakers, Hilda Hoohila Kawelo and Clinton Kanahele in 1970 (Akana and Gonzales 2015;15-17). In their discussion, Kawelo describes ʻAwa as a fog and its association with Pele. She also shares with him an oli which references the ʻAwa fog. Their conversation is as follows:

> Kawelo: Hele mai ʻo Pele mai Kahiki. Kona manawai i hele mai ai, hele mai nō ka ua. Hele mai ka ua Noe me ka ua ʻAwa. He aha ia mea he ua ʻAwa? Maopopo anei iā ʻoe?
> *Pele came from Kahiki. When she arrived, so too came the rain. The Noe rain and the ʻAwa rain came. What is this thing known as an ʻAwa rain? Do you know?*
>
> Kanahele: ʻAʻole.
> *No.*
>
> Kawelo: ʻAe, ka ua ʻAwa, ʻo ia nō ka uahi.
> *The ʻAwa rain, it is smoke.*
>
> Kanahele: Oh.
>
> Kawelo: Ka uahi o kēlā ahi, o kēlā, no ka mea, he ahi hoʻi ʻo ia i hele maila. Kēlā uahi e pōhina nei ka ʻāina āna i hele mai nei, e ʻike ʻia aku nei i ka maka o nā keiki a kānaka, mea, inā ʻoe e honi i kēlā, ʻano, mea, pōniuniu nō ʻoe.
> *The smoke of that fire, of that, because she came as fire. That smoke that creates a haze over the land she came to, that is seen and felt by the eyes of the children of men, if you were to inhale that, you would get dizzy.*
>
> Kanahele: Ua ʻAwa kēlā?

That's the ʻAwa rain?

Kawelo: Ka ua ʻAwa hoʻi ia. Kēlā ua, ʻaʻole ʻoe pulu. ʻAʻole ʻoe pulu i kēlā ʻAwa.
The ʻAwa rain, indeed. That rain, you don't get wet. You don't get wet from that ʻAwa.

Kanahele: He hanu wale nō ʻoe i kēlā ua.
You just inhale that rain.

Kawelo: ʻAe, hanu wale nō. "Hele mai ʻo Pele mai Kahiki, hele mai ka ua ʻAwa me ka ua Noe. Uhi aʻela, paʻa nā pali paʻa o Kahiki, ʻakahi ka hikina ʻana mai o kō aloha iaʻu."
Yes, it is just inhaled. "Pele came from Kahiki; the ʻAwa rain and the Noe rain came; completely smothering the cliffs of Kahiki; your love has finally reached me."

Kanahele: He hīmeni kēlā?
Is that a song?

Kawelo: ʻAe, he olioli hoʻi paha.
Yes, an olioli chant.

Kanahele: He olioli?
An olioli?

Kawelo: ʻAe, he olioli kēlā.
Yes, it is an olioli.

Kawelo [e olioli ana]:
He mai ʻo Pele mai Kahiki
Hele mai ka ua ʻAwa me ka ua Noe
Uhi ʻia aʻela, paʻa nā pali paʻa o Kahiki
ʻAkahi ka hikina ʻana mai o kou aloha i oʻu nei
E Kalani mā ē
E iho koke mai i lalo nei
I maha aʻe au
E Kāne mā ē
ʻOki ʻia ka lili, ka inaina o lākou nei lā ē
ʻAe

Kawelo [chanting]:
Pele came from Kahiki
The ʻAwa rain and the Noe rain came
Completely smothering the cliffs of Kahiki
Your love has finally reached me
O Heavenly One and company
Come quickly down here
That I may be at ease
O Kāne and company
End their jealousy and rage
Yes

Kualau is another rain associated with the Keauhou ahupuaʻa (Akana and Gonzales 2015:121). When referring to the kualau rain, Malo wrote: "He ua kualau, ma ka moana ia ua." *A kualau rain, this rain occurs at sea.* (Malo 1951:14).

Nahunau means "to bite," and is characterized as a pleting rain associated with Keauhou (Akana and Gonzales 2015:184). **Noe**, is another rain of Keauhou that is also referred to as Noenoe (Akana and Gonzales 2015:208). Noe is the name of a specific type of rain as well as a general term for mist, fog, vapor, or rain (Pukui and Elbert 1986:268).

Palahī Puaʻa, Kēhau, Nāulu, and ʻAwaʻawa are rains associated with the general **Kona Moku** of Hawaiʻi. **Nāulu** was described previously as a rain and a cloud also associated with the Puapuaʻa Ahupuaʻa. Malo characterized it as a sudden rain of strong intensity and Kamakau provided a description of Nāulu rainfall that was associated with ʻuala cultivation and the sprouting of wild native flora (Malo in Akana and Gonzales 2015:206; Kamakau 1869:1). Several chants reviewed noted that Nāulu is a "rain that softens the forest," a "rain that makes the land glisten," and a "rain that carries the kēhau mist," (Pukui 1995:76 in Akana and Gonzales 2015:205; Fornander 1916-1920:381 in Akana and Gonzales 2015:205; Na Mele Aimoku 2001:94 in Akana and Gonzales 2015:204-205).

Similarly, the **ʻAwaʻawa** rain was previously identified and discussed as a rain associated with the Keauhou Ahupuaʻa. As noted, its overall characteristics is a dark rain or fog most commonly associated with the mountain regions. Metaphorically, it can be associated with hardships and misfortunes.

Palahī Puaʻa is a rain exclusively associated with the Kona Moku. Its name literally translates to mean "pig diarrhea" and is described as a rain that "falls and stops, falls and stops," (Akana and Gonzales 2015:218-219). **Kēhau** is another rain of Kona and is also recorded as a dew and misty and is described to be "a cold fine rain floating in the air, mostly in the mountainous regions," (Akana and Gonzales 2015:76).

Nā Hana a ke Kupa ʻĀina – Summary of Traditional and Customary Practices

This section highlights the traditional and customary practices noted to occur within the project area ahupuaʻa and the larger landscape of Kona Akau that have originated from the select moʻolelo and kaʻao presented in this report. These practices emphasize the generations of kupa ʻāina (native of the land) in Kona Akau who maintained a deep pilina with the vast natural and cultural resources of this ʻāina. The cultivation of the land and sea, and the gathering and utilization of freshwater resources that originate from the storied places of this ʻāina, have, and continue to feed Kona's community physically and spiritually. These practices are a testament to the enduring legacy of Kona Akau and reaffirm the right for Kānaka ʻŌiwi to actively maintain traditional and customary practices in these spaces today.

As is recorded in the last paukū or stanza of He Mele no Kāne–he wai e ola! Water is life. The source of all things is wai. The same is true for this report as the focal point of this study is centered around wai and the way in which the movement and presence of freshwater experienced in Kona Akau has influenced the culture, practices, and lifestyle of the community who cherish this ʻāina. Examining the influence of freshwater within Kona emphasizes the importance it imparts to the well-being of both the ʻāina it nourishes as well as the people who benefit from it. Thus, the protection of freshwater and the proper management of it is of utmost importance.

To frame this discussion, He Mele no Kāne is reflected upon to highlight the many manifestations of water sources that surface when analyzing the select moʻolelo and kaʻao presented in this report associated with Kona. The perseverance of moʻolelo captures valuable knowledge sets relaying traditional practices, resources, and cultural lessons. Each of the moʻolelo shared in this report impresses the underlying fact that Kona is not to be thought of as a place absent of water. Rather, as expressed and reiterated in He Mele no Kāne, the life-giving waters of Kāne are indeed present in all ways. *Aia i ka hikina a ka lā… A i lalo, i ka honua…* From the rising of the sun, to the aquifers that rest beneath the earth, wai is everywhere. The lessons learned in He Mele no Kāne transcends the barriers of time and resonates today as much as it did when first composed. The framing of this discussion presented in this way is intended to elevate a holistic understanding of water resources within the study areas, while also highlighting some of the traditions and practices revealed in the reflection of moʻolelo.

He ui, he nīnau:
E ui aku ana au iā ʻoe,
Aia i hea ka Wai a Kāne?

A query, a question,
I put to you
Where is the water of Kāne?

Cloud Formations

The first paukū of He Mele no Kāne establishes that freshwater can be found at the rising of the sun.

He ui, he nīnau:	*A query, a question,*
E ui aku ana au iā ʻoe,	*I put to you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*

Aia i ka hikina a ka Lā	*At the Eastern Gate*
Puka i Haʻehaʻe,	*Where the Sun comes in at Haʻehaʻe,*
Aia i laila ka Wai a Kāne.	*There is the water of Kāne.*

"Aia i ka hikina a ka lā, puka i Haʻehaʻe." *At the Eastern Gate, where the sun comes in at Haʻehaʻe.* The poetic references that introduce the sun as a source of water is an example of the deep intellect Kānaka ʻŌiwi possessed having understood the sun's role in creating water vapor–an essential step in the water cycle. The heat that radiates from the sun is the mechanism that enables liquid water to turn into water vapor, which is recognized universally as the process called evaporation. The water vapor that is created by the heat of the sun rises to the atmosphere and as it cools, the vapor condenses to eventually create clouds. The clouds then produce rain that will fall and recharge the honua–continuing the cycle of water. As is documented in the first paukū of the chant, the role the sun plays in radiating heat and creating the appropriate fluctuating temperatures for these atmospheric changes to occur is critical in the movement of water.

The second paukū of the chant describes the transition of water that began from the sun, now evolved into clouds. Thus, freshwater is found in the clouds.

E ui aku ana au iā ʻoe,	*A question I ask of you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i Kaulana a ka lā,	*Out there with the floating Sun,*
I ka pae ʻōpua i ke kai,	*Where the cloud-forms rest on ocean's breast,*
Ea mai ana ma Nihoa,	*Uplifting their forms of Nihoa,*
Ma ka mole mai o Lehua;	*This side the base of Lehua;*
Aia i laila ka Wai a Kāne.	*There is the water of Kāne.*

Specifically the chant recalls that wai is found, "I ka pae ʻōpua i ke kai." *Where the cloud-form rests on ocean's breasts.* An ʻōpua cloud is a cumulus or billow cloud that Pukui describes as "puffy clouds, as banked up near the horizon, often interpreted as omens," (Pukui and Elbert 1986:293). This particular type of cloud is associated with interpreted omens as well as its ability to carry and release freshwater in the form of rain. Several ʻōlelo noʻeau encapsulate this cultural understanding of ao ʻōpua (cumulus clouds):

7 **Aia i ka ʻōpua ke ola: he ola nui, he ola laulā, he ola hohonu, he ola kiʻekiʻe**
Life is in the clouds: great life, broad life, deep life, elevated life.
The reader of omens knows by their shape and color whether clouds promise rain and prosperity, or warn of disaster.
[Pukui 1983:7, #42]

356 **E nānā ana i ka ʻōpua o ka ʻāina.**
Observing the horizon clouds of the land.
Seeking to discover future events by observing the cloud omens.
[Pukui 1983:43, #356]

1907 **Kūkulu ka ʻike i ka ʻōpua.**
Knowledge is set up in the clouds.
Clouds are observed for signs and omens.
[Pukui 1983:205, #1907]

2328 **Noho no ke kanaka a ka lā mālie, kau ka ipu hōkea o ka lawai‘a, nānā ana i ka ‘ōpua.**
A person waits for a clear day, sets up the gourd that holds the fisherman’s paraphernalia, and observes the clouds.
To a fisherman, a clear day, his tools, and the signs and omens seen in the clouds are important.
[Pukui 1983:253, #2328]

2482 **Ola i ka wai a ka ‘ōpua.**
There is life in the water from the clouds.
Rain gives life.
[Pukui 1983:271, #2482]

2487 **Ola na ‘ilima wai ‘ole i ke ao ‘ōpua.**
Healed are the ‘ilima of waterless places by the rain cloud.
[Pukui 1983:272, #2487]

The ‘ōlelo no‘eau presented below are traditional expressions regarding ao ‘ōpua that are distinct to the Kona Moku and the study areas.

55 **Aia ka wai i ka maka o ka ‘ōpua.**
Water is in the face of the ‘ōpua clouds.
In Kona, when the ‘ōpua clouds appear in the morning, it’s a sign that rain is to be expected.
[Pukui 1983:9, #55]

232 **Ao ‘ōpiopio.**
Young cloud.
A cloud that rises from sea level or close to the cloud banks and is as white as steam. When seen in Kona, Hawai‘i, this is a sign of rain.
[Pukui 1983:27, #232]

2134 **Māmā Kona i ka wai kau mai i ka maka o ka ‘ōpua.**
Kona is lightened in having water in the face of the clouds.
Kona is relieved, knowing that there will be no drought, when the clouds promise rain.
[Pukui 1983:232, #2134]

Revealed in these ‘ōlelo no‘eau is the knowledge that one of Kona’s distinct sources of freshwater rests in the ‘ōpua clouds. For this reason, knowing that the presence of ao ‘ōpua may bring rain, the practice of **nānā ao** (observing clouds) or **kilokilo** (to observe and forecast) are significant practices carried out by the natives of Kona in order to understand the nuances of their environmental seasons and inform their work.

The mo‘olelo concerning Pu‘uokaloa described this practice and its significance to informing when other practices for the people of Kona should occur. Kihe described Pu‘uokaloa as a hill situated between Kealakehe and Keahuolū (Kihe 1923:2). When the people of Kona saw clouds over Pu‘uokaloa, the kama‘āina of the area understood it as a sign of rain and readied their lands to take advantage of the bounty the rain would bring. In this perspective, the presence of clouds over Pu‘uokaloa is an environmental indicator of rain for those of Kona. Informed by the movement of clouds observed over Pu‘uokaloa, paired with being attentive to the natural cycles

and seasons of their environment, Kihe recounts that kamaʻāina understood this as a sign to make the necessary preparations to plant ʻuala patches (Kihe 1923:2). Specifically, Kihe writes that the people of this region utilized a makawela style of ʻuala planting. This style of planting involves slashing and burning the land before planting (Pukui and Elbert 1986:228). The notion of ʻuala cultivation practices that occurred in Kona is also revealed in the moʻolelo of Ka-Miki. At a place called Niumalu in the Puapuaʻa Ahupuaʻa, a māla ʻuala is said to stretch throughout Puapuaʻa. This ʻuala garden is described as the place where Ka-Miki's opponents go to recover and sleep after being defeated by the young boy (Wise and Kihe 1914-1917 in Maly 1999:12).

From the moʻolelo and ʻōlelo noʻeau reviewed, several practices are revealed to occur in the study area: **nānā ao or kilokilo of clouds**, **ʻuala cultivation**, and specifically, **makawela method of cultivation**.

Forests and Streams

The third paukū in He Mele no Kāne describes that wai can be found in the upland areas.

E ui aka ana au iā ʻoe,	*A question I ask of you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i ke kuahiwi, i ke kualono,	*Yonder on mountain peak, on the ridges steep,*
I ke awāwa, i ke kahawai;	*In the valleys deep, where the rivers sweep;*
Aia i laila ka Wai a Kāne.	*There is the water of Kāne.*

"Aia i ke kuahiwi, i ke kualono. I ke awāwa, i ke kahawai…" *Yonder on the mountain peak, on the ridges steep, in the valleys deep, where the rivers sweep…* These lines of the chant speak to freshwater being found throughout the ʻāina and specifically in the upland forests, valleys, and streams.

In several moʻolelo shared in this report, the individuals of the stories ventured in the mountains and discovered wai. In "He Kaʻao no ka Manu ʻElepaio," which was published in *Ka Hoku o Hawaii* in 1862, the author tells the story of a man named Piʻiwai who traveled ma uka with his huewai (water calabash) in the forests of Kahului Ahupuaʻa to collect wai (S. W. K. 1862:1). The **practice of gathering freshwater** is revealed in this moʻolelo.

In the story of Kepakaʻiliʻula which appeared in *Ka Hoku o Hawaii* from 1919 through 1920, Kepakaʻiliʻula and his uncles journeyed in the uplands of Kahuluʻu and there they found water in the form of springs. During this chapter of the moʻolelo, the author noted that the great banana plantation of the aliʻi, Kahoʻoaliʻi was there as well (Malo 1919-1920 in Maly 1997:25-26). This cultivated area of maiʻa (banana) was said to stretch from Kaumalumalu-Kāpalaʻalaea to Keʻei (Malo 1919-1920 in Maly 1997:25). The mention of there being a large banana plantation dedicated to an aliʻi, indicates **agriculture practices** to occur in Kahaluʻu Ahupuaʻa, and specifically, **maiʻa cultivation**.

In the moʻolelo of Ka-Miki, while he and his brother are journeying through Kona, the author offers descriptions of the various places they travel through. Regarding the Waiʻaha and Kahului Ahupuaʻa of Kona, Ka-Miki is said to travel past a **stream** that connects the two ahupuaʻa. The translated excerpt reads:

> …the stream of Waiʻaha joins with the lands of Kahului. The waters filled the upland taro mounds of the sacred prostration chiefs Kaleiʻeha, Kapahu (or Kapahu-a-Loʻi), and Kaʻalaea, who possessed the kapu (restrictions) of Lono-

> Makahiki… There too, you see — ka luawai ua kīpapa ʻia i ka pōhaku ʻalā e ulu pōhai ʻia e nā lāʻau loulu, o ka punawai i ka oʻioʻina pali o Waiakekea — a spring paved with dense [ʻalā] stones and surrounded by loulu palms, this is the spring of Wai-a-Kekea, which was near the trail side resting place… (IN Ka Hōkū o Hawaiʻi, April 9, 1914; Maly translator)
> [Wise and Kihe 1914-1917 in Maly 1998:3]

This stream is said to feed puʻepuʻe or mounds of kalo, indicating that agriculture practices of **kalo cultivation** would have occurred in this area of Waiʻaha and Kahului.

Though not located in the upland forests, but still located on ʻāina, the moʻolelo of Kepakaʻiliʻula describes a **niu grove** of Kona associated with Helani (Malo 1919-1920). This grove is also mentioned in the ʻōlelo noʻeau, **"Ka wai puka iki o Helani."** *The water of Helani that comes from a small opening,* (Pukui 1983:179, #1661). Pukui states that this expression refers to "Helani, Kona, Hawaiʻi. Here a coconut grove thrived, and from a small opening in the shell of the nut one could get water to drink," (Pukui 1983:179). Culturally, coconuts are recognized as a source of freshwater as one could nourish their quench with water derived from the shells of coconuts. This understanding is conveyed in the ʻōlelo noʻeau, "Ka wai lewa i ka makani." *The water that sways in the breeze*, (Pukui 1983:179, #1656). Here, Pukui interprets this saying as "the coconut, which contains water and is found in clusters high up in the tree," (Pukui 1983:179). The moʻolelo of Kepakaʻiliʻula and the accompanying ʻōlelo noʻeau reveal that the **niu grove of Helani** is a resource that produces viable **drinking water**.

From the moʻolelo and ʻōlelo noʻeau reviewed, water in the form of streams, as well as drinking water derived from the niu grove of Helani come to surface. Practices associated with these accounts convey that the practice of gathering freshwater, agricultural practices, maiʻa cultivation, and kalo cultivation occurred in the study areas.

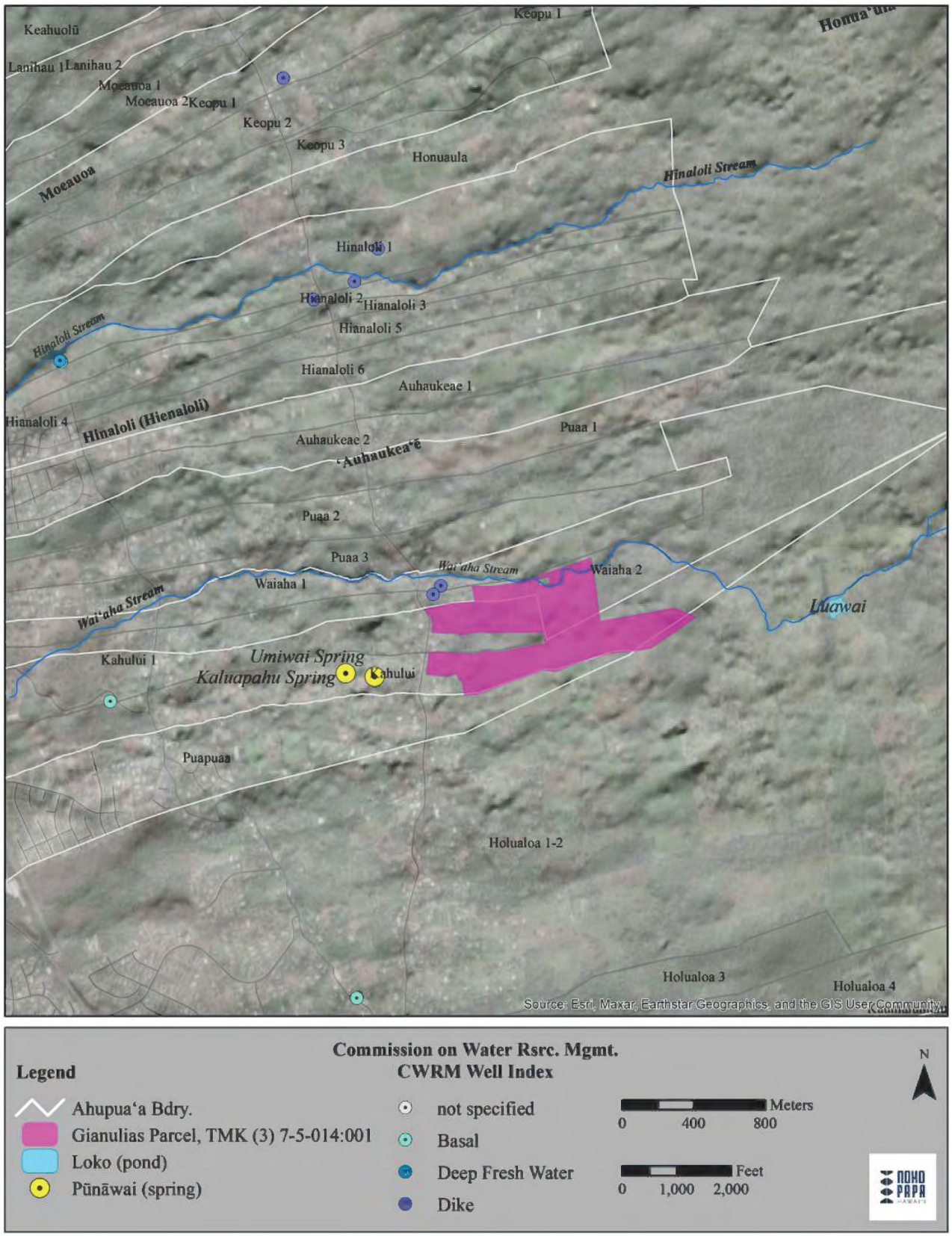

Figure 14. Wai (water) resources within and surrounding the Gianulias parcel

Rains

The fourth paukū of the chant expresses that water is found out at sea and in the rains, rainbows, and mists.

E ui aku ana au iā ʻoe,	*A question I ask of you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i kai, i ka moana,	*Yonder at the sea, on the ocean,*
I ke kualau, i ke ānuenue,	*In the driving rain, in the heavenly bow,*
I ka pūnohu,	*In the piled-up mist wraith,*
i ka uakoko,	*In the blood red rainfall*

A Kona expression conveys the pleasant feeling when rain visits the ʻāina of Kona–**"Me he makamaka la ka ua no Kona, ke hele la a kipa i Hanakahi."** *The rain is like a friend from Kona–it goes and calls on Hanakahi,* (Pukui 1983:234-235, #2154). Palahī Puaʻa, Kēhau, Nāulu, and ʻAwaʻawa are rains associated with the general Kona Moku of Hawaiʻi. ʻAwa, ʻAwaʻawa, Kualau, Nahunahu, and Noe are rains associated with the Keauhou Ahupuaʻa. Nāulu is the rain associated specifically with Puapuaʻa Ahupuaʻa.

- **Palahī Puaʻa** is a rain exclusively associated with the Kona Moku. Its name literally translates to mean "pig diarrhea" and is described as a rain that "falls and stops, falls and stops," (Akana and Gonzales 2015:218-219).
- **Kēhau** is another rain of Kona and is also recorded as a dew and misty and is described to be "a cold fine rain floating in the air, mostly in the mountainous regions," (Akana and Gonzales 2015:76).
- **Nāulu** is described as a rain and a cloud associated with the Puapuaʻa Ahupuaʻa and the general Kona Moku. Malo characterized it as a sudden rain of strong intensity and Kamakau provided a description of Nāulu rainfall that was associated with **ʻualа cultivation** and the sprouting of wild native flora (Malo in Akana and Gonzales 2015:206; Kamakau 1869:1). Several chants note that Nāulu is a "rain that softens the forest," a "rain that makes the land glisten," and a "rain that carries the kēhau mist," (Pukui 1995:76 in Akana and Gonzales 2015:205; Fornander 1916-1920:381 in Akana and Gonzales 2015:205; Na Mele Aimoku 2001:94 in Akana and Gonzales 2015:204-205). The Nāulu rain is also referred to in the moʻolelo of Kepakaʻiliʻula when he offers a mele kānaenae to Mākoleʻā:

  Kau iluna ka wai a ka Nāulu
  ʻAlohi ʻula i ka pali o Koholālele e
  Lehulehu i ka luna o Koaʻekea a
  Paʻa pono mai Kona i ka ehu a ke kai a
  Kīpū lua i ke one o Kaiakeakua
  He akua ka hoa he ʻike ʻole mai e
  ʻAuwe ka mea aloha oia la e hoʻi a!
  The Nāulu showers which are placed above
  Appear to glow red in the light on the cliff of Koholālele
  Indeed, the multitudes are gathered at the heights of Koaʻekea
  But Kona is firmly embraced by the sea mists
  And there is two-fold calm upon the shore of Kaiakeakua
  A god [-chief] is the companion which is not seen
  But here is one that can indeed be cherished!

- **Kualau** is a rain associated with the Keauhou ahupuaʻa (Akana and Gonzales 2015:121). When referring to the kualau rain, Malo wrote: "He ua kualau, ma ka moana ia ua." *A kualau rain, this rain occurs at sea.* (Malo 1951:14).
- **Nahunau** means "to bite," and is characterized as a pleting rain associated with Keauhou (Akana and Gonzales 2015:184).
- **Noe** is a rain of Keauhou that is also referred to as Noenoe (Akana and Gonzales 2015:208). Noe is the name of a specific type of rain as well as a general term for mist, fog, vapor, or rain (Pukui and Elbert 1986:268).
- **ʻAwa** is a rain of Keauhou and is described by Pukui as a cold mountain rain (Pukui and Elbert 1986:33) Malo wrote: "He ua ʻawa, ma ka mauna ia ua." (*An ʻawa rain, this rain falls on the mountains),* (Malo 1951:14 in Akana and Gonzales 2015:15). Metaphorically, this type of rain is used to convey emotions of grief and tragedy and speak towards hardships of misfortune (Akana and Gonzales 2015:17; Pukui and Elbert 1986:33). This rain is also associated with being of high rank and divinity. The ʻōlelo noʻeau, "He lupe lele a pulu i ka ua ʻawa" is translated by Pukui as, *A kite that flies till it is dampened by icy cold [ʻawa] raindrops,* (Pukui 1983:85, #775). The phrase is interpreted by Pukui as being descriptive of someone "whose station has risen very high," (Pukui 1983:85). In the moʻolelo of Keaomelemele, recorded by Hawaiian historian Moses Manu, the birth of Hina's child is detailed. During this birth, many hōʻailona telling of the childs' high rank and kapu (scaredness) were observed. Among them was the downpour of the ʻAwa rain.
- **ʻAwaʻawa** is a rain noted to be the same as the ʻAwaʻ rain. It is a rain associated with the Keauhou Ahupuaʻa. As noted, its overall characteristics is a dark rain or fog most commonly associated with the mountain regions. Metaphorically, it can be associated with hardships and misfortunes.

The recollection of inoa ua (rain names) detail that the Palahī Puaʻa, Kēhau, Nāulu, ʻAwa, ʻAwaʻawa, Kualau, Nahunahu, and Noe rains sources of wai ua that belong to the study areas and broader Kona Moku, each with various characteristics and qualities. In the account detailed by Malo, the Nāulu rain is associated with agricultural practices of ʻuala cultivation (Malo in Akana and Gonzales 2015:206; Kamakau 1869:1).

Springs

The fifth paukū of the chant details the movement of water from the ʻāina, cycling back into the atmosphere in the form of clouds. The sixth and final paukū of He Mele no Kāne speaks to the recharge of the honua when water seeps underground and is retained in aquifers, springs and estuaries. "Aia i lalo, i ka honua, i ka wai hū. I ka wai kau a Kāne me Kanaloa." *Deep in the ground, in the gushing spring. In the ducts of Kāne and Kanaloa.*

E ui aku ana au iā ʻoe,	*A question I ask of you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i luna ka Wai a Kāne,	*Up on high is the water of Kāne,*
I ke ao uli, i ke ao ʻeleʻele,	*In the heavenly blue, in the black piled cloud,*
I ke ao pōpolo hua mea a Kāne lā, ē!	*In the black mottled sacred cloud of the gods;*
Aia i laila ka Wai a Kāne.	*There is the water of Kāne.*
E ui aku ana au iā ʻoe,	*A question I ask of you*
Aia i hea ka Wai a Kāne?	*Where is the water of Kāne?*
Aia i lalo, i ka honua, i ka wai hū,	*Deep in the ground, in the gushing spring,*
I ka wai kau a Kāne me Kanaloa.	*In the ducts of Kāne and Kanaloa,*
He wai puna, he wai e inu,	*A well spring of water, to quaff,*

He wai e mana, he wai e ola.	*A water of magic power–the water of life!*
E ola nō ʻeā!	*Life! O give us this life!*

"He Kaao no ka Manu ʻElepaio" detailed a **pūnāwai located in the uplands of Kahului, Kona**. In this story, Piʻiwai journeys ma uka and is able to collect water in his huewai before the mischievous ʻElepaio had his way with the calabash, causing it to leak. From this account, both the presence of a freshwater spring in Kahului, as well as the **practice of kānaka gathering water** from its source is revealed.

"He Moolelo Kaao no Kepakaʻiliʻula" included two references of springs. When Kepakaʻiliʻula and his uncles journey through Kahaluʻu Ahupuaʻa in search of Mākoleʻā for whom he is to marry, the author refers to Kahaluʻu as, **"i ka ʻāina kaulana i ka wai puka iki o Helani,"** which Maly translates as, "of the land famous for the small flowing spring of Helani;" thus revealing a **spring associated with Helani and the ʻāina of Kahaluʻu** (Malo 1919-1920 in Maly 1997:26). In another chapter of this moʻolelo, Mākoleʻā's father is challenged by Kepakaʻiliʻula for breaking his promise to wed his daughter to him. As a result, her father flees Kahaluʻu, leaving behind a favored **spring named Waikuʻi located at Kahaluʻu**. This spring is said to have been a favorite of the chiefs of Kona (Malo 1919-1920 in Maly 1997:26).

"Kaao Hooniua Puuwai no Ka-Miki" briefly noted the **Waiakekea spring** located near the stream that joins Waiʻaha and Kahului. This pūnāwai is described as being paved with ʻalā stones (dense waterworn volcanic stones) and surrounded by loulu (fan palms or *Pritchardia*). The passage translated by Maly reads:

> There too, you see — ka luawai ua kīpapa ʻia i ka pōhaku ʻalā e ulu pōhai ʻia e nā lāʻau loulu, o ka punawai i ka oʻioʻina pali o Waiakekea — a spring paved with dense [ʻalā] stones and surrounded by loulu palms, this is the spring of Wai-a-Kekea, which was near the trail side resting place... (IN Ka Hōkū o Hawaiʻi, April 9, 1914; Maly translator)
> [Wise and Kihe 1914-1917 in Maly 1998:3]

From these moʻolelo, it is recorded that freshwater springs are significant features associated with the study area–the pūnāwai found in the uplands of Kahului, the spring associated with Helani in Kahaluʻu, the Waikuʻi spring at Kahaluʻu, and the Waiakekea spring near Waiʻaha and Kahului.

The water that surges from the pūnāwai and all the other manifestations of water discussed in this section are indeed the life-giving waters of Kāne. The moʻolelo and oral traditions examined in this discussion are a testament to the presence of water associated with the study areas and broader moku of Kona, as well as the practices and traditions that are a result of, and sustained by the gift of wai.

He wai puna, he wai e inu, He wai e mana, he wai e ola.
A water of magic power–the water of life! A well spring of water, to quaff.

E ola nō ʻeā!
Life! O give us this life!

Additional Practices

Woven into the telling of these moʻolelo are tidbits of information that describe certain resources and other practices to occur within and around the study areas.

Regarding Agricultural Practices

As discussed in the moʻolelo concerning Puʻuokaloa, Kepakaʻiliʻula, and Ka-Miki, agricultural practices of ʻuala, kalo, and maiʻa cultivation occurred in the ahupuaʻa study areas (Kihe 1923:2; Wise and Kihe 1914-1917 in Maly 1999:3,12; Malo 1919-1920 in Maly 1997:25-26). A Kona ʻōlelo noʻeau offers additional insight into understanding that agriculture practices occurred in Kona. The ʻōlelo noʻeau, **"Kona, poʻo kuʻi"** which translates to *"Kona of the added head,"* cleverly articulates the farming practices that occurred in Kona by describing the imagery of a farmer carrying his/her load upon their shoulders (Pukui 1983:199, #1847).

Supporting these moʻolelo and ʻōlelo noʻeau that describe agricultural practices, authors of *Native Planters in Old Hawaiʻi*, E.S. Craighill Handy, Elizabeth Green Handy, and Mary Kawena Pukui, describe the environment of Kona and briefly discuss the agricultural practices associated with this moku. According to Handy, Handy, and Pukui, Kona was one of the places where the **cultivation of ʻuala and ipu** (gourd) was frequent (Handy, Handy, and Pukui 1972:14). It is documented that:

> The sweet potato and gourd were suitable for cultivation in the drier areas of the islands. The cult of Lono was important in those areas, particularly in Kona on Hawaii and ʻUlupalakua on Maui. At both of these places there were temples dedicated to Lono. The sweet potato was particularly the food of the common people. The festival of Lono, preceding and during the rainy season, was essentially a festival for the whole people, in contrast to the war rite in honor of Ku which was a ritual identified with Ku as god of battle.
> [Handy, Handy, and Pukui 1972:14]

Because of the specific crops and agricultural practices associated with Kona, Handy, Handy, and Pukui share that the akua Lono is associated with Kona; and therefore the **religious practices and ceremonies** such as **makahiki** are tied to this place:

> …he is plainly identified with Kona, Hawaii and is said to have introduced the main food plants, taro, sweet potato, yams, sugar cane, and bananas to Hawaii, and also *ʻawa*. Hogs were likewise identified with Lono, but there is no mention of his having brought them to Hawaii. The fact that the *Makahiki* festival and the rituals for inducing rainfall and fertility centered in Kona comes out clearly in the description of the *Makahiki*.
> [Handy, Handy, and Pukui 1972:523]

These traditional moʻolelo and historical accounts demonstrate that **agricultural practices and religious ceremonies associated with agricultur**e were significant traditions that occurred in Kona.

Regarding Fishing Practices

In the chapter of "Kaao Hooniua Puuwai no Ka-Miki," after defeating all of his opponents, Ka-Miki is gifted the **lūheʻe of Lālāmilo** (Wise and Kihe 1914-1917 in Maly 1997:13). He presents the lūheʻe to the aliʻi, Pili-nui-kapu-kuʻi-a-ka-lani-kua-liholiho-i-ke-kapu, and the moʻolelo recounts that the chief and his entourage excitedly ready their canoes to **lawaiʻa lūheʻe**–the method of fishing for gathering heʻe (octopus) with a lure. The passage details the following regarding the favored lūheʻe and the fishing practice associated with it:

> Now this leho (octopus lure) was a favorite of Pili's, and filled his eyes with pleasure. Pili's canoes were prepared to go octopus fishing – lawaiʻa lūheʻe as Pili wanted to see how the lure worked. The lure was made by securing the kākala (hook), and a sinker stone (ʻōahi) near the cowrie (on a wooden shaft) with three ply olonā (Touchardia latifolia) rope. When Pili mā arrived at the octopus fishing site, he removed the lure from a gourd container and set it in the water. The chief and all those with him were startled to see unlimited numbers of heʻe (octopus) rise up to the lure, and even lobsters were attached to some of the octopus (July 26, 1917)...
> [Wise and Kihe 1914-1917 in Maly 1997:22]
>
> As the lure was drawn up to the canoe, the heʻe followed it right into the canoe, and the moment the lure was covered, the heʻe stopped rising to the canoe. Pili returned to the shore of Niumalu at Oneō, and had the heʻe divided among all of the people. So the fame of the lure went about the island and many chiefs, fishermen, and people traveled to see the lure as well. It was in this way that Lālāmilo learned his lure was in Kona (August 2, 1917)...
> [Wise and Kihe 1914-1917 in Maly 1997:22]

Relayed in this account is information regarding the **lawaiʻa lūheʻe** practice to have occurred in Puaʻa, Kona at the shore of Niumalu at a place called Oneō (Wise and Kihe 1914-1917 in Maly 1997:22). Additional ʻōlelo noʻeau provide information regarding fishing practices occurring in the Kona Moku. ʻEka is a named wind of Kona whose presence is an environmental indicator telling of **signs optimal for fishing**. These ʻōlelo noʻeau regarding the makani ʻEka of Kona and fishing are as follows:

1467 **Ka makani kūkulu peʻa nui, he ʻEka.**
The ʻEka, the wind that sets up the big sails.
When the ʻEka wind blew in Kona, Hawaiʻi, the fishermen sailed out to the fishing grounds.
[Pukui 1983:159, #1467]

1690 **Ke ʻEka, makani hoʻolale waʻa o na Kona.**
The ʻEka breeze of Kona that calls to the canoemen to sally forth to fish.
Refers to Kona, Hawaiʻi.
[Pukui 1983:182, #1690]

As relayed in the ʻōlelo noʻeau that describes the winds of Kona, the arrival of the ʻEka wind meant the mobilization of fishermen in Kona who readied their canoes and headed out to their fishing grounds (Pukui 1983:159,182).

Regarding Recreations

The premise of Ka-Miki's moʻolelo is his journey to become the most skillful champion and defeat any challenger he is met with. Throughout this saga, Ka-Miki battles on a **kahua mokomoko leʻaleʻa** or contest and game known by the name **Hinakahua**, and is said to be located in the Kahelo plains of Puapuaʻa Ahupuaʻa (Maly 1999:10). Ka-Miki challenged his opponent, Kauakahiakahaola on the contest grounds in Puapuaʻa and quickly defeated him. From there, Ka-Miki and his brother journeyed onward to another **kahua** at Hōlualoa (Wise and Kihe 1914-1917 in Maly 1999:12). The author of this account names the different types of traditional games played at Hinakahua. The games associated with Hinakahua and therefore the broader ahupuaʻa of

Puapuaʻa are **maika** (bowling), **mokomoko** (wrestling and boxing), **leʻaleʻa** (pleasurable pastimes), and **hoʻopāpā** (contest of wit and strength), (Maly 1999:11).

Another type of recreation past time is kōnane, which is often likened to Hawaiian checkers. In the moʻolelo of Kepakaʻiliʻula, Malo references Waikuʻi spring. This pūnāwai is described as a favored spring of the chiefs of Kona. Included in the description of this place, Malo writes that this was also the area where aliʻi took pleasure in relaxing and enjoying a game of **kōnane** (Malo 1919-1920 in Maly 1997:26).

Additional Resources

Mention of resources included in the details of the selected moʻolelo of this report are significant to note in this discussion as the presence of resources is telling of the potential of particular practices to have occurred in the study areas.

The moʻolelo of Kepakaʻiliʻula describes Waikuʻi spring in Kahaluʻu as the favored pūnāwai of the Kona chiefs. The description of where Waikuʻi is located highlighted that the spring was paved with **ʻalā stones** and that the native **loulu** palm grew surrounding the pūnāwai (Wise and Kihe 1914-1917 in Maly 1998:3). The details of these resources existing in this area provides information that other practices associated with these resources could have occurred.

A spring paved with ʻalā stones indicates that ʻalā was available in this area. Pukui describes that ʻalā is a type of stone that could be used for pōhaku kuʻi ʻai (poi pounders), adzes, and hula (Pukui and Elbert 1986:16).

Loulu is an endemic fan palm of Hawaiʻi. Botanist, teacher, and historian, Beatrice H. Krauss, author of *Plants in Hawaiian Cultural*, offers a description of loulu:

> Loulu is a name applied to several native Hawaiian fan palms. The leaves are borne in a cluster at the top of a ringed trunk, the rings being the scars of once-attached leaf stems. The leaves are very large, most are rigid, ordinarily broadly wedge-shaped and shallowly cut with numerous bifid segments (twice-divided clefts). The underside of the leaves, the strong spineless leaf stems, and the flower stems may have a waxy or feltlike covering. The numerous flowers occur in clusters; they are perfect, having a three-toothed calyx and a tubular corolla with three segments, the segments falling off upon the opening of the flower. There are six stamens, and a three-lobed and three-celled ovary, one cell only of color ranging from green to yellow to brown or black at maturity. It is externally smooth, with a fleshy or fibrous later covering a thin woody shell, which, in turn, covers a hard seed.
> [Krauss 1993:216]

The characteristics of this plant, and specifically its leaves, presents itself as being pliable. Krauss also notes that the loulu leaves were used in **weaving practices** (Krauss 1993:31). Kānaka ʻŌiwi scientist, mānaleo (fluent Hawaiian language speaker), and educator Dr. Isabella Abbott published *Lāʻau Hawaiʻi: Traditional Hawaiian Uses of Plants* in which she discusses the various uses and cultural significance of Hawaiʻi's plants. Regarding loulu, Abbott notes that "*Loulu* palm (*Pritchardia* species), used to construct *heiau loulu*, where gods of fishing were seasonally propriatied," (Abbott 1992:17). The insight that Abbott provides deepens an understanding of loulu with association to constructing a type of temple referred to as **heiau loulu**. According to Abbott, this heiau is associated with the fishing gods and therefore, **fishing practices**.

Ke Puhi a Kaleikini is one of the moʻolelo that appeared in the article series "Na Hoonanea o ka Manawa" regarding Kona that was written by Kihe. This particular story was published in *Ka Hoku o Hawaii* in 1923 and described a blowhole named Hiʻiaka-noho-lae. As the story recalls, Hiʻiakanoholae is the blowhole that is located in the ahupuaʻa of Keahuolū. The ʻehukai or sea spray that the blowhole would shoot was problematic for the fact that the salt of the spray that blew over the ʻāina caused the land to dry so that no vegetation could grow. In order to solve this problem, the author shares that a man named Kaleikini covered Hiʻiakanoholae with branches of kauila. In regards to the type of resources known of this area, from this account we learn that the native **kauila** (*Alphitonia ponderosa*) tree was present at Keahuolū.

Kauila, also seen spelt as "kauwila" is a plant endemic to Hawaiʻi. Krauss writes that:

> The name *kauila* or *kauwila* is given to two different native Hawaiian trees, both members of the buckthorn family: *Alphitonia ponderosa* and *Colubrina oppositifolia*. The former is found on all six of the main Hawaiian islands. It has alternate, thin, oblong to narrow leaves that are grayish or rusty-woolly on the underside; petioles are up to an inch long. The wood is hard and red-and-black streaked. The latter species has opposite, thin, pale green, ovate or oblong leaves that may be up to seven inches long; petioles are up to two inches long. A conspicuous gland is found at the base of each vein on the underside of the leaves. The wood is hard (even harder than the first-mentioned *kauila*), heavy and dark red. *Colubrina oppositifolia* is only found on Oʻahu and Hawaiʻi.
> [Krauss 1993:182]

The characteristic of kauila is that it is a hard wood. Abbott shares that ʻōʻō (digging sticks) used for farming and other **agricultural practices** were made of kauila (Abbott 1992;11-12). In a discussion regarding featherwork and **ceremonial regalia**, Abbott writes that the poles in which kāhili (feather standard) which were symbolic of royalty were suspended and carried were primarily made out of koa *(Acacia koa*) and kauila (Abbott 1992:107-108). Kauila was also used in creating **hula implements** and was the wood of choice for making kālaʻau (stick dancing), (Abbott 1992:120). Kauila was used in **religious ceremonies** and in **carving** sacred images (Abbott 1992:20,114). Particularly, the wood of kauila was used in ***makahiki ceremonies*** as the staff of the akua Lono was made of kauila (Abbott 1992:20-21). Abbott writes that it is likely that kauila was used in these types of religious ceremonies dedicated to Lono because the word kauila means lightning, which is one of the kinolau or manifestations of Lono (Abbott 1992:21). Another usage of kauila was seen in the making of **weaponry**. Kauila was the hardwood used in making pāhoa or daggers (Abbott 1992:111).

Boundary Commission Proceedings Of The Boundary Commission Lands Of: Keahuolū, Puaʻa, Waiʻaha, Kahului, Puapuaʻa and Keauhou – by Kumu Pono Associates

The Māhele and Land Grant program of the Kingdom of Hawaiʻi saw a rapid growth of business interests. In an address before the Annual Meeting of the Royal Hawaiian Agricultural Society (1857), J. F. B. Marshall spoke of the growing business ventures in the islands which included —the cultivation of sugar and coffee; harvesting pulu for mattresses and pillows, and kukui for oil; ranching and export of hides, tallow and wool; farming for trade and export, and salt manufacture (see *Pacific Commercial Advertiser*; November 5, 1857). As a part of growing business interests, large land owners pursued the establishment of formal boundaries on their land holding, in order to protect their private property "rights."

In 1862, a Commission of Boundaries (the Boundary Commission) was established in the Kingdom of Hawaiʻi to legally set the boundaries of all the ahupuaʻa that had been awarded as a part of the Māhele. Subsequently, in 1874, the Commissioners of Boundaries were authorized to certify the boundaries for lands brought before them (cf. W. D. Alexander in Thrum 1891:117-118). Rufus A. Lyman served as the Commissioner of Boundaries for the Third Judicial Circuit (J. C.)—the island of Hawaiʻi. The primary informants for the boundary descriptions were old native residents of the area being discussed. Some of the native witnesses were born as early as the 1770s, and the youngest (for the early proceedings, born at least by ca, 1840.

Most of the witnesses were either born on in the ahupuaʻa under consideration, or they had lived there for extended periods of time. All of the witnesses had learned of the boundaries from their elders, and described the landscape by the nature of the terrain, presence of resources, land use, and features which were of significance to the residents of the land. Their testimonies demonstrate the relationship of lands, residency, practices and access to resources that span the biocultural landscape from the ocean to the mountain lands and top of ahupuaʻa being described. Some of the testimonies also describe the relationships shared between ahupuaʻa in management of the natural resources. These records describe many resources which are in traditional lifeways.

The native witnesses spoke in Hawaiian, and their testimony was usually translated into English and transcribed as the proceedings occurred. Readers here will note in the verbatim transcript prepared from the original handwritten documents that there are often inconsistencies in spelling of particular words such as place names, people names and natural or man-made features (see Appendix D). Furthermore, it will be noted that there are often multiple spellings of the same name or word. Examples of this include, but are not limited to Honokōhau, written as "Honokahau," and Hienaloli, written as "Hinaloli, Hianaloli, Hiananaloli, and Hianalole," and pūhala, written as "puuhala" etc.

Over several years of researching the Boundary Commission testimonies, we have also observed that often, when two of the same vowels were written by the original translator/transcriber, it indicated that he heard a lengthened pronunciation of a particular vowel. This emphasis of pronunciation is now indicated by a macron mark—for example, the place name "Kahiihiia" (where the two Honokōhau and Kealakehe meet one another) would now be written "Kahīhīa."

The narratives include the testimonies, surveys and proceedings for the ahupuaʻa cited at the top of this section—several of the ahupuaʻa were further identified by "nui" (big/large), "iki" (little or small), and by numbers such as "1, 2, 3," etc. The narratives also cover some details from the

adjoining lands which were not part of the Commission proceedings. We have used underlining and square brackets in selected narratives to emphasize references of importance—those which identify noted practices, resources and other interesting descriptions that identify valued cultural assets.

As a part of the certification of title and boundaries, surveyors produced a series of maps covering the ahupua‘a. Some of those maps have survived that passing of time, and help us place given locations and resources (natural and manmade). When available, reductions of the maps are cited as figures in their respective Boundary Commission proceedings.

Readers, please note that the date sequence of the applications, witness testimony and issuance of certificates are not always recorded in chronological sequence. Sometimes the testimony is cited (by date) previous to the title holder’s application of survey and certification.

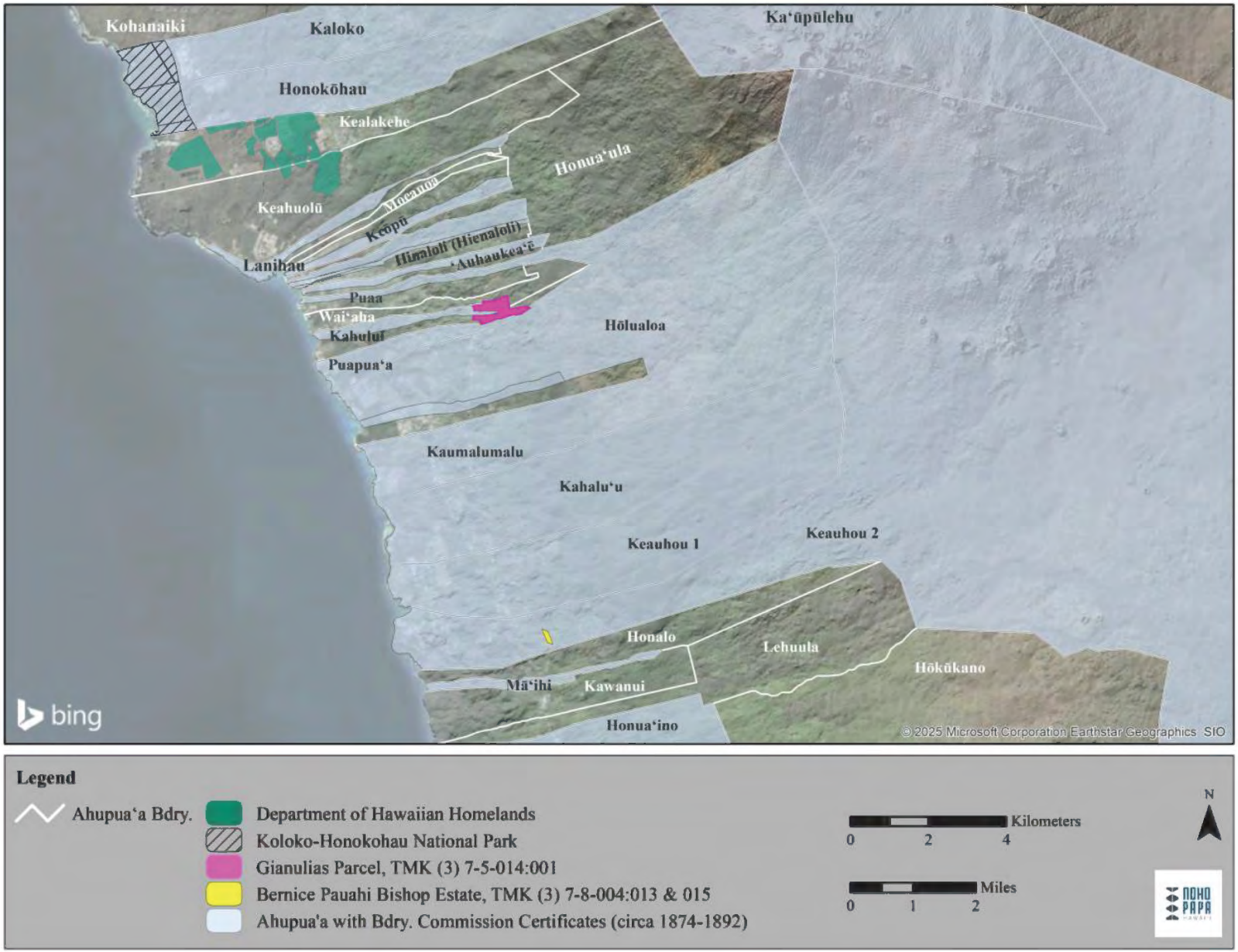

Figure 15. GIS map depicting ahupuaʻa with Boundary Commission Certificates

Excerpts from the Boundary Commission for ahupua‘a in and around study parcels – by Nohopapa Hawai‘i

Kamehameha Schools Parcel Boundary Commission Testimony Discussion

Kahului Ahupua‘a was the subject of a Boundary Certificate, it includes the Kamehameha Schools well site subject parcel (See Table 2). The following disussion details the kanaka who lived in these ahupua‘a and gave testimony, as well as excerpts from the testimony and certificate tied to places, practices and resources in the subject ahupua‘a. Also see full Keauhou testimonies in Appendix D.

Keauhou Ahupua‘a

Table 2. Select Ahupua‘a with named localities and kama‘āina cited in Boundary Commission proceedings in Keauhou Ahupua‘a, location of the Kamehameha Schools subject parcel.

Ahupua‘a	Place Names	Kama‘āina Residents
Keauhou 1st	Halelaau Kamauae (Kamauai Heiau) Kanakaliikapu Kewa Nanunuakalupe [?] Napueuala Ohiki Paaniau (Paniau) Pohakunahaha Puainako Waikui Waikulukulu	Kakio Keakaikawai Kuluahi Lono
Keauhou 2nd	Aahuwela (Ahuwela) Ahua Um Anakolekolea Haalulu (Ana Halulu) Haliilaukoa (storied place of Umi) Hapukaa (Hapuukaa) Honuaula Hill (Puu Honuaula) Hopea Huaikaumauma [74] Hualalai Judd road (Boundary also called Nahuina) Ka Hale o Umi Kaalapuali (Kealapuali) Kaawa Kaekuakapuaa Kahooplu	Aalona Hukikee Kahilo Kahueai Kahulialo (w.) Kakio Kamakainai Kanahuna Kaoiwi Kapohakaimokumahe [?] Kauluahi (Kuluahi) Keaka (w.) Keakaokawai (Keakaikawai) Kealoha Maui

74 Huaikaumauma – “junction of Kaumalumalu, Kahaluu and Keauhou. it is an ahua in the koa woods, where the canoe makers used to have a heiau.”

Ahupua‘a	Place Names	Kama‘āina Residents
	Kahulinanui Kaimuhapu (Kaimuhapuu) Kakai a lae Kalalakoukolo Kalalua Kaluamakani Kalulu Kamakaulaula Kamoike Kamomoku Kaneeneenui Kanekii Kanohoana o Umi Kanupa Kaonohi Waiau Kapapakauheana Kapukaiki Kauhi Kauhikahua Kaukahoku Kawahapele Keahialoa Keahou Keakui Kealaehu Keanaaipu Keanaakala (where canoe makers used to live) Keanakiha (Keana o Kiha) Keanaokalehuna Keanapaki Keikinanahu	Keeaumoku Kehepo Kekai Keliikanakaole Keohi Komaka Kupakoa Makaike Mauna Nauwe Niihoa (Nihoa) Palauolelo Palea Papa Puhi Uluhiwa

Keauhou is divided into two ahupua‘a, Keauhou 1 and Keauhou 2. Listed below in this section are selections from Boundary Commission testimonies recorded for Keauhou 1 and Keauhou 2 Ahupua‘a.

Kakio, kama‘āina of Keauhou, mentions **Ohiki**, an old cultivating site, **Waikulukulu** and **Waikui**, which are both caves with water inside.

> Kakio, K., Sworn
> I have lived on Keauhou until I am an old man and know the boundaries of the land. Kahaluu bounds Keauhou on the North side. The boundary at seashore is a pali called Paaniau [Paniau] and a long wall from Kewa to road; thence mauka to Puuainako, an oioina on old trail; said trail being made for the ohia trees, which in the time of Governor Adams were drawn down to Kailua for a church [Mokuaikaua]. Said church was burnt some years ago.
>
> From Puainako to Kanihinihula [Kahinihiniula], at the mauka Government road where there are two ahua pohaku, on the boundary; thence to the North side of Awapuhi, in the woods; thence to Ohiki, an old cultivating ground on the boundary; thence mauka to Napueuala, an oioina; the boundary being on the

North side of it and Keauhou in the middle of it; thence to Waikulukulu, a cave with water in it; thence to Halelaau; these places are all on the boundary of Keauhou, they're on Keauhou 1st; between [page 318] Napueuala and Nanunuakalupe [?]. I do not know the boundaries on the mountain of Mauka and of lands. Waikui is a large cave of water; the boundary half way between said cave and Ohiki.

I cannot point out boundaries in the woods. Keakaiwai is a kamaaina, and used to go into the mountain with his father, Kuluahi.
[Boundary Commission Testimony: Keauhou 2 Ahupua'a, Kakio 1873:v.A 1, p270]

Lono, kama'āina of Keauhou, mentions a fishing heiau named **Kamauai (Kamauae)** and expands upon Ohiki mentioning that it was a spring as well as an old mahi'ai place in the woods.

Lono, K., Sworn
I was born at Keauhou at the time of Kaoku [Mai Okuu, 1804-1805] and have lived here most of my life; Lived in Kau a few years; am a kamaaina of the boundaries of Keauhou as far mauka as the Government road. The boundary at the shore between Keauhou 1st and Keauhou 2nd is at Kamauae [Kamauai], a heiau for fishermen situated above the beach, on the hill where the houses stand; thence mauka to a breadfruit tree; thence to the head of Holua; thence mauka to Kanakaliikapu, an ahua pohaku at the Government road; this is as far as I know the boundaries. Have heard that the boundaries of the two Keauhous run through the woods to Palahinui, where koa trees grow on Keauhou 2nd. Keauhou is bounded by the sea and the land has ancient fishing rights extending out to sea.

Kahaluu bounds Keauhou 1st on the North side, the boundary at seashore is Paaniau, a large stone wall reaching from shore a short distance mauka. There is a pali at seashore by the same name; thence mauka to the Government road; thence straight mauka on aa to two piles of stones at government road. Kahinihiniula is on the high ground, just before you decend [sic] into the hollow; going from Kealakekua to Ohiki, a spring and old mahiai place in the woods. I do not know boundaries above this place. Have not heard where the land ends.
[Boundary Commission Testimony: Keauhou 1 Ahupua'a, Lono 1873:v.A1, p318-320]

Keakaokawai, a kama'āina of Kona, mentions a plethora of place names and mentions six different watering holes and also **Kalulu** and **Kilohana**, which were places that he and his father would catch birds.

Keakaokawai[75] K., Sworn
I was born at Kealakekua a few years before the death of Kamehameha 1st [in ca. 1810] (Note; this is the same witness that was on Kahuku boundaries). I moved at time of Kaua o Kekuaokalani (1820) to Lehuula (was grown at that time); I now live at Hookukano [Hokukano], North Kona and am a kamaaina of Kona.

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75 "Keakaokawai" is usually written as "Keakaikawai." He was a notable kama'āina witness across a number Kona lands.

I used to go on the mountain with my Father collecting sandalwood and catching birds; his name was Kauluahi, and old bird catcher and kamaaina now dead; Honalo bounds Keauhou 2 at sea shore on South side; A pali aa called Lekeleke is the boundary at sea shore between these lands; thence the boundary runs mauka along lands on Honalo sold to different parties on Honalo, to a place called Nohomoanahoaiku, in the woods on the makai side of pali; Thence along the Government portion of Honalo to **Kapapakauheana, a round water hole** in the woods in the centre of Honalo. Thence the boundary runs mauka to **Kaimuhapu [Kaimuhapuu], a water hole**; thence to Kipukauki, most of this place is on Keauhou, and a small portion on Honalo [page 256]; said land being now overgrown in aa; thence to Komomoku, a pali which is the boundary between Keauhou and Honalo.

There Keauhou turns south and cuts Honalo off, nearly through the woods; thence to Kaukahoku, junction of Lehuula nui; said place is an Ahuapohaku, a small hill of pahoehoe covered with scrub ohia and mamani; thence along Lehuula nui to **Keanakiha, a small cave** where natives used to sleep; Thence to an ahu pohaku, mauka of the ana, built in olden times and now knocked down by the goats; this is an open spot with scrub ohia and mamani growing all around; thence along Lehuulanui to a place called Kepuhi at Governor Adams road through the woods, scrub koa and other trees growing there.

The land of Hookukano cuts of Lehuulanui at Governor Adams road; thence along the land of Hookukano. This land runs mauka. In olden times, Keaumokunui [Keeaumokunui], the Alii nui of Keauhou claimed all the **geese** on Hookukano, Kealakekua and other lands and used to divide the geese. The **uwao [uwau or ‘uao]** were left for konohiki of these lands. The land was not the property of the Keauhou chief when my Father and I divided the geese with the Keauhou konohiki; but the Uwau we had to divide with the Konohiki of Hookukano and not with the konohiki of Keauhou, unless we took the uwao on Keauhou; thence mauka from Kepulu to Kamoike along Hookukano, the aa on Keauhou, and from thence the boundary runs to Keanaakala, a small cave, thence to Kikikiaeae, a long hill (puu lepo) at mauka corner of Hookukano, trees of all kinds growing all around; thence South again to Kamakaulaula, pahoehoe along mauka end of Hookukano in woods; thence up aa called Kainapahoa; thence down on to pahoehoe to a **cave called Aahuwela**, corner of Kealakekua and Hookukano, said **cave used to have water** in it; thence along Kealakekua, running mauka about one half of a mile to Umi’s road. Kanohoana o Umi; aa with mamani trees growing both sides of the road. When I used to go up with my father, these were only a few mamani trees growing makai of the road, now there are a great many, both sides of the road.

[Thence] turn south again across aa to **Haliilaukoa [page 257] (where Umi sat and they spread Koa leaves for him; old tradition)**. Few koa and ohia trees grow there; they are mostly mamani; thence the boundary runs up an Ahua to Kanekii, a small water hole which dries up in dry weather. Keauhou mauka and Kealakekua makai; thence to Kalulu; Keauhou mauka and Kealakekua makai (pahoehoe); which is where we used to catch birds in olden times; the Uwao [uawau] belonging to both lands. At Kanekii, the boundary leaves Umi’s road and goes makai of it; From Kalulu to a place called Kakai a lae Koa (Koa grove on Pahoehoe, the South East corner[)]; thence turn makai along Kealakekua, to a large

mawae called Kawahapele; thence down along said mawae to Puuloa, a pali on the mauka corner of land of Honaunau. The woods extend there now; In olden times there were hardly any trees there. I have forgotten the names of the places beyond here on boundary of Keauhou and other lands along there. I have not been along there often. Kanupa is the place where Keauhou joins Kaulanamauna, a Kipapale ana, junction of Keauhou, Manuka and Kaulanamauna. All kinds of trees grow there, also small spots of pahoehoe in the aa. I have only been there once when I went with my father before I was fully grown. Do not know as I could find it now; thence mauka to Kilohana, on an aa flow where we used to catch birds and where Kahuku joins Keauhou.

Thence along Kahuku to Kulauala, on Umi's road; From Puuloa to Kanupa Keauhou used to take the pahoehoe above the woods and the Kona lands reached to the mauka edge of the woods from Kilohana along Kapapala to Pohakuhanalei, a hill on the top of the mountain [Mauna Loa]; thence the boundary runs down to Kolekole, a hill where Humuula joins Keauhou and cuts Kapapala off; thence down the side of the mountain to Kaaawa, along Humuula, there Puanahulu [Puu Anahulu] joins Keauhou and Humuula stops. Kaaawa is pahoehoe with small ohia trees, and also other kinds of trees growing there; thence the boundary runs to a hill called Kalalua, along the land of Puanahulu. A large hill can be seen from Ahua Umi, which is at Hualalai.

Thence the boundary runs down to pili land, to Palahinui, along Puanahulu; thence to Hapukaa, on Umi's road to Waimea [page 258] on the pahoehoe; thence Kanupa 2, a cave in pili land, now covered with the lava flow of 1859 to Kiholo; thence to Kanupa 3, a cave hear the base of Hualalai, where the land of Puuawaa [Puu Waawaa] joins Keauhou; thence the boundary runs up the mountain to a cave on the side of the mountain, above the woods called Waikulukulu, thence to Puuakawai, an old water hole now filed up by cattle tramping around it; this place is the junction of the land Kaopulehu [Kaupulehu] with Keauhou.

Thence the boundary runs to the mauka side of a hill called Haalulu in a hollow between the hill and an Ahua; Thence along to Kaluamakani, a large hole or crater; there Kapulehu [Kaupulehu] ends and Honuaula joins Keauhou; thence along this land to Puulalaau [Puu Laalaau], a hill where the land of Puuaa [Puaa 1st] is on the makai side, Honuaula is very narrow at the mauka end. The boundary of Keauhou runs along the mauka edge of woods above Puulalaau, and along to Mawae, there the land of Kaomalumalu [Kaumalumalu] joins Keauhou; thence along to Kamomoku to Judd road, on the mauka edge of the woods; thence along what used to be the edge of the woods (the trees are now all grown along Kaumalumalu) to aa where Kahaluu joins Keauhou.

I do not know the boundaries between the land of Kahaluu and Keauhou, or between the two Keauhous.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256]

Kahilo, is a kamaʻāina of Keauhou, mentions several important features including a crack in the rock that they would place the dead called Lekeleke, and a spring called Waio.

Kahilo K., Sworn

I was born at Keauhou at the time of the building of the first Kiholo [ca. 1810-1812], and have always lived there, in Kona, Hawaii.

Honalo bounds it on the South side, an awaawa and ilina kupapau (a crack in the rock where the natives used to put their dead) called Lekeleke is the boundary.

Thence the boundary between these lands runs mauka, the Kualapa on Honalo and Awaawa on Keauhou to Mawawae Nuuanu at the Government road mauka; thence follow up Kualapa an awaawa to Kamomoku, a pali surrounded by small trees, koa, ohia, mamani, naio, &c. The tall woods are makai of this place; there is an ancient pile of stones here at the mauka corner of Honalo. There the boundary turns towards Kau to lae aa, along Honalo, to another Ahu built in olden times, which is at the corner of Honalo and Lehuulanui, called Kukaiaina. The mamani mostly growing mauka of this place. Thence along Lehuulanui to Palihoomana on Honuainonui; thence along Honuaino (called Kamomona) (J. G. Hoapili says it is Makaike's land, Honuaino III); thence to a small pali, along Honuaino, in scraggy woods to Waio, Governor Adams road crossing the boundary at the Pali Hoomana [illegible] where Honuaino ends, and where Hookukano joins Keauhou. Thence along Hookukano to Waio, which place is on Hookukano and Kanauweuwe [Kanaueue]. I do not know which side of the spring the boundaries are; pili and trees are growing around there; the mamani trees extend makai of this point.

Thence along Kanauweuwe the boundary turning directly mauka to a hill called Kikikiaeae. I do not know the names of the lands that join Keauhou here. From Kikikiaeae, which place is on Keauhou, I do not know the boundaries beyond Waio.

I have heard that Kealakekua joins Keauhou and other Kona lands run up to the mamani and to the poha; Pahoehoe that breaks through when trod upon. My Parents and Grandparents used to go bird catching for feathers as far as Waiea, and they said that there were only pu-keawe [pukiawe] trees on Keauhou. I have heard that Kahuku of Kau joins Keauhou on Mauna Loa, but I have not heard where. Kamauae [Kamauai], a cave at the sea shore is the boundary between Keauhou 1st and Keauhou 2nd; thence the boundary between these two lands runs mauka to the Poo Hoohia, above Keauhou; thence into groves of ohia trees, below the Government road, to a cave called Kaekuakapuaa; thence to a place called Kanokaliikapu [?], which is on the Government road. An Ahu used to stand at this place, but was knocked down when the road was built. Thence the boundary runs to Laaunui, a large ohia tree; said tree is in the woods about the end of where people work.

Running from the Government road mauka, there is a kualapa, and Keauhou 2d is on the low ground, this side, and Keauhou 1st on high ground. From Laaunui the boundary runs to a pali called Paakai; Keauhou 2d at the foot and Keauhou 1st on top of the pali. Thence along the pali till you come into koa woods and aa, there the pali ends. Thence out of the woods to Piipaa, a cave on Keauhou 1st; the boundary being on the Kau side of the cave. Thence turning toward Kohala the boundary runs to Kawaha o Pele, a hill with a crater; here Keauhou 1st ends and Kahaluu; There are a great many hills with craters there, tall woods on lands makai and mamani on Keauhou; Thence to Kawaha; Pele 2d. I do not know what lands join Keauhou there; thence to the Government road; thence to Hoikekanaka.

(Kahua hoike kanaka o Umi); thence to Pohakuloa, a large rock by a water hole, on the Kau slope of Ahuaumi, above Hualalai. Thence along aa to Waiakapee, a small water hole on the aa; Keauhou does not extend to the top of Hualalai, but runs along the Kau slope of the mountain; Honualua [Honuaula] takes in the top of Hualalai, [page 262] and joins Keauhou at a hill called Kaumoku which is on Honuaula at Hoikekanaka. From Waiakapee, I have been told the boundary runs to Ka-amoku, but I have not been further than Waiakapee. Have heard that Waikoloa, Kaohe, and Humuula bound Keauhou on the further side.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261]

Palea, a kamaʻāina of Kalahiki, mentions some information regarding bird catching in Keauhou as well as a spring named Lumia.

Palea K., Sworn
I was born at Kalahiki, South kona, Hawaii and have always lived there; was born at the time of Kuewai o ka Lae [Kui wai o Kalae, ca. 1782]. Know the land of Keauhou. Lekeleke is the boundary at sea shore between Honalo and Keauhou. I know the boundaries between Kalahiki and Keauhou. My Father, Kanahuna (now dead) was appointed by Keauhou konohiki to watch the bird catchers on our land and other lands, to see if they did not take the geese and uwao [uwau], which belonged to Keauhou and he told me the boundaries between these lands and Keauhou. He said that Kalahiki ran through the woods; small ohia trees, kapiopio, and mamani to the pahoehoe; then you come to Keauhou. I do not know where the boundary of Kauhako and Kalahiki on Keauhou is. Thence the boundary runs along the head of Kalahiki to lae aa, in lae aa Waiea joins Keauhou cutting off Kalahiki. Thence along above the mamani to Lumia, junction of Honokua (a punawai) water hole on a hill. I do not know the boundaries beyond this point; Have seen Umi's road, when we were on the mountain gathering sandalwood. Have heard that Kahuku joins Keauhou.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Palea K. 1873:v.A1, p263]

Kahulialo, a kamaʻāina of Kona who shares the same father as Keakaokawai, mentions similar localities as Keakaokawai as well as **Makaulaula**, a place they lived whilst bird catching, and Ahuwela, which is a cave with water in it.

Kahulialo W., Sworn
I was born at Honalo, North Kona, Hawaii on a place called Kealaehu, and at the time of the first Kiholo [1810-1812]. Know the land of Keauhou and part of its boundaries, mauka, in the woods and above the woods. My Father, Kuluahi, who was the kamaaina of Kona, on the mountain, showed them to me. Kaana o Kiha, a cave with a large pile of stones mauka of it, is the boundary between Keauhou and Lehuulanui and the corner of Honalo. I have not been with my Father along the boundary of Honalo and Keauhou. At that time this place was above the woods and you could see from Kiha to Waio, now the trees are all grown up. Thence the boundary of Keauhou runs along Lehuula to lae aa and to Kepulu, a spot where there is soil and no rocks mauka of Palihoomana; there Lehuulanui ends, and the land of Hookukano joins Keauhou. The boundary between Hookukano and Lehuula is a small stream of aa on the South side of Kepulu; from thence the boundary runs along Hookukano to Kiikiaeae, an awaawa where by husband used

to live. A large kualapa on the left side, as you face mauka, is the boundary. Thence to Makaulaula, where we used to live when bird catching. Thence to Kaonohi, a cave; thence to Ahuwela, a cave with water in it; there Hookukano ends and Kealakekua joins and bounds Keauhou; thence to Haliilaukoa (I do not remember the names of all the points along Kealakekua[)]. Keakaokawai K. is the one who knows them all. I have not seen the place called Haliilaukoa (An old tradition says Umi used to sit there because he liked [page 264] the koa). Thence to Kalulu. I have been there; there is a water hole there and it used to be a place for catching birds. Kolekole is an Ahua with koa on it in the middle of Kealakekua, and the boundary of Keauhou is just mauka of it. The place called Kukai is the further boundary of Kealakekua. I have been there with my Father and he told me it was on Kealakekua. Have heard Keauhou turns makai at this place. Honaunau ends in the mauka edge of the woods. I do not know the boundaries (perhaps Kawahapele is the boundary between Kealakekua and Keauhou going towards the woods.[)]

I have been to Pupuawai. It is on Keauhou. Honaunau does not reach there. [illegible side note] My Father also told me that Kapapala, Humuula and Kaohe reached Keauhou on the top of Mauna Loa.

Na Elemakule where the lava flow went that destroyed Kiholo [1859], is where Kaohe joins Keauhou at Uauakahoa [?] cave. Have not heard where Kahuku joins Keauhou. Uauakahoa cave is where the Kaohe Elemakule came to at the time of the settlement of lands. These are all the boundaries that I know.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahulialo 1873:v.A1, p263]

Kakio, a kamaʻāina born in the time of Kamehameha I, mentions a few place names including Holua, which was an ancient sliding place.

Kakio K., Sworn
I was born at Keauhou at the time Kamehameha I came from Hilo to Kealakekua and from there to Honolulu, at the time of Oku [Mai Okuu, 1804-1805]. I have always lived here and know the land of Keauhou 2d and its boundaries. I used to go after sandalwood on the mountain, with Kapohakaimokumahe [?] (now dead). He was a kamaaina in the mountain and used to go across to Hilo. Lekeleke is the boundary between Honalo and Keauhou. at seashore is kualapa; Keauhou being at the [page 266] foot of the ridge on this side; thence the boundary runs mauka along Honalo to Kukuikomo on the makai side of the Government road; thence along the awaawa to the mauka side of the Government road; place called Leiohapu; thence along awaawa into the woods; I do not know the boundaries. Know a place called Palahinui, a cave where people used to live. Honalo ends makai of this cave at the mauka edge of the woods. The mamani and scrub koa being on Keauhou. Have heard that Kealakekua and other lands, only run through the tall koa; have never been there.

The boundary at shore between the two Keauhous is at a place called Kamauae [Kamauai] at the beach; Thence it runs mauka to the head of Holua (an old sliding place); thence to the South side of Keahialoa, the boundary running in a hollow; thence to Mauka of the Government road to a place called Kanaokeliikapu; thence mauka in the woods to Kualapa Kahoopulu; this is as far as I know the boundary

in the woods. On the mauka side of the tall koa trees at Nanunuakalupe [?], an oioina, Keauhou 1st ends; and the boundary runs towards Kohala.

Kahaluu ends at the mauka edge of the tall koa trees. They say in the days of Keauaumoku [Keeaumoku] the Akule used to belong to Keauhou 2d and the birds to Keauhou 1st, but the Chief of Keauhou 2 married a chief of Keauhou 1st and after that all the fish were given to Keauhou 1st and the birds and land mauka to Keauhou 2nd.

Mauna Loa is called the Kuaiwi of Kau. I have been told that Keauhou joins Hilo and Hamakua on Mauna Loa, at the edge of the aa flow from the summit of the mountain, the pili is on Keauhou and the aa on Kaohe. Have heard Kaupulehu joins Keauhou, but do not know where.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A1, p266]

Papa, mentions a few names that have also been mentioned by other testimony.

Papa K., Sworn (a very old man)
I was born at Kahaluu at the time of Holuanui, and have always lived there. Kaumalumalu ends at Mawae, mauka of a hill called Hiinau; thence along Kaumalumalu. Kaupulehu joins Keauhou and takes in Hualalai. Keauhou on this side. Kahulinanee [?] is on Napu. Kau joins Keauhou at Kalulu near the top of the mountain, at grove of mamani and pukiawe. Keauhou on this side and Kau above to top of mountain. (I used to go to the mountains after sandal woos, but never went after birds.[)]

Have always heard that Kahuku cut all off. South Kona Lands, and takes the mountain. Keauhou ends at Puulehua, above Kainaliu, above the wood at the foot of the mountain. I heard this when I used to go after sandal wood. Do not remember the names of the Kamaainas, who are now all dead. Kau is on the other side of the mountain.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Papa K. 1873:v.A1, p268]

Waiau, a kamaʻāina from North Kona, mentions Kanekiʻi and Puʻulepo, as well as provides some information surrounding bird catching customs and places in which they used to fight with Kaʻū people.

Waiau K., Sworn
I was born at Kanauwaue [Kanaueue], North Kona, Hawaii at the time Kamehameha 1st returned from Honolulu; at the time of Papakee. Lived at Kainaliau [Kainaliu] until about eleven years ago when I moved to Kealia, South Kona [page 268].

Know the land of Keauhou, used to go after birds with my father, Nauwe, an old bird catcher and he pointed out the boundaries to me, as it was kapu to go after birds and not divide them with the konohiki; used to go frequently not vary far above here. Honalo bounds Keauhou 2 on the South side, as you go into the lower edge of the woods. I do not know the boundaries.

A place in Okolea, in the woods called Kaimuhapu, a water hole, is on the boundary between Honalo and Keauhou; Thence mauka to Kipupuike [Kipukaiki], a small spot of soil with scrub ohia in the toll woods; the tall ohia being on the aa each side of this place; thence mauka to Kamomoku, a small pali, at the upper edge of the woods, thence to Keikinanahu, close to scrub trees of various kinds; There Honalo ends. Thence along the head of Honalo to Kaukahoku, a large rock at the corner of the land Lehuulanui; thence along Lehuula to Keanakiha, an ahu pohaku mauka of a cave; thence to Kepulu where there is soil. When I was young there were no trees there but now the trees have grown up.

Governor Adam's road is at the end of Lehuulanui; thence along Hookukano; thence mauka along the Government road, between two aa flows to Kamoomoo; thence to Keanaakala, a cave; thence to Kikikiaeae, where we used to live. The canoe makers of Hookukano also lived there. There is a hill called Puulepo, with a crater on it. There is a water hole makai of said hill. Thence the boundary turns directly towards Kau to a place called Kamakaulaula, a pahoehoe kipuka in laau, mamani growing all around; thence to Aahuwela, a cave with water (I do not know the place called Kanapahoa) there Kealakekua cuts off Hookukano; from thence the boundary runs along Kealakekua to Haliilaukoa, a place near Umi's road; Kuluahi said it reached to Umi's road, but this place is only near it. It is on the soil across aa, where bird catchers used to live; thence to Kukai, along a grove of koa trees, small pahoehoe. I do not know the points between. We did not go beyond there in olden times. We used to fight with Kau people here. Kuluahi and Kalalahu's father were chased by Kau people a little above Pupuawai. [page 269]

I do not know boundaries above this point. Have heard that Waiakea, Humuula and Kaohe run up the mountain. Kaalaala had a road extending to the top of Mauna Loa. I do not know where Kahuku and Keauhou end. Have not heard whether Honaunau reaches to Pupuawai or not. I have not heard that they reach far above the woods. Do not know the boundaries of Keauhou and North Kona Lands.
[Boundary Commission Testimony: Keauhou 2 Ahupua'a, Waiau K. 1873:v.A1, p268-269]

Keliikanakaole, a kama'āina who also gave testimony on Holualoa, mentions various place names including the name of a road made by bird catchers named, Keakui.

Keliikanakaole K., Sworn
Niihoa [Nihoa], Uncle to my mother, is the one who went to look out boundaries of Keauhou. I saw him when I was young and heard him tell what the boundaries were on the North side.

A place called Keakui, a road across the aa made by bird catchers, a puu pahoehoe and a Mawae in the centre, is the place where Keauhou 2 turns North and cuts off Keauhou 1st. Niihoa and Kekai, the men who made the road which is the boundary between the two, told me thus. I went with Kekai after sandalwood. [page 270]

The road runs t the North at Hopea, where you come off of the aa; there Keauhou cuts across the head of Kahaluu; thence along Kahaluu through pili and mamani to an ana called Naohuleelua, North corner of Kahaluu. (I can point this place out.) Thence Keauhou turns makai along Kahaluu to Kepulu, the mauka corner of Kaumalumalu, a pulu lepo, at the edge of the forest, thence along the head of

Kaumalumalu to Kapukaike [Kapukaiki], makai of Walls house on Judd road (Nahuina is one name of this place).

Thence to Huaikaumauna, a lae koa on kualapa; thence along Holualoa to Apiipi; thence along the head of Holualoa to Puualalaau [Puu Laalaau]; thence along Honuaula to Hualalai, a hill on the North side[76] with a deep crater in it; said hill is the junction of Kaupulehu with Keauhou, and the mauka corner of Honuaula. The brow of the precipice is Honuaula and the land back is Keauhou. Kaupulehu comes to the pahoehoe at the base of Hualalai hill; Thence along the head of Kaupulehu to the hills called Napuumahoe, on makai side, the aa being on Kaupulehu, and pukeawe on Keauhou. Thence to makai side of a hill mauka of lae koa, where my makuakane lived; Kaupulehu ends at the koa grove.

I do not know whether Puawaa joins Keauhou or not. I do not know what lands join along here; thence the boundary of Keauhou runs to Kanupa, a cave near the new lava flow where the trees are dried up.

Thence mauka along the boundary of Napuu on this side of the lava flow to Kahulinanui [?], an ahua pohaku built by Hamakua men and now covered by the lava flow on boundary of Kaohe.

Thence mauka towards Mauna Loa to a place called Keanaokalehuna, where a Hamakua man was killed for stealing food at Keauhou; thence to Kolekole, a hill; a waha pele on the East side of Kolekole is the boundary; thence up pahoehoe eleele, this is as far as I have been.

CX'd.

I have heard Kahuku and Kapapala and Kaalaala join at the top of the mountain. Have not heard where Keauhou cuts off South [page 271] Kona Lands, and joins Kahuku. I know the place called Kaaawa, it is a grove of Naio and Alii [aalii], towards Kealakekua from Kolekole. Kalalua is a cave which was covered up by lava in the flow of 1859.

Know a place called Palahinui; it is a large cave on Keauhou. Hapukaa is mauka of Umi's road. Know a cave called Waikulukulu, at the base of Hualalai, towards Ahuaumi, the place called Kaluamakani or Kalalakaukolo is on the top of the mountain.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole K. 1873:v.A1, p269-270]

Kupakoa, a kamaʻāina from Holualoa, mentions that Keauhou ends where they used to cut koa for canoes, and also mentions Ohiapapaawai, a water hole among the ohiʻa trees, and that all the koa that they used to make canoes is all on makai lands and Keauhou is mauka.

Kupakoa K., Sworn

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[76] This description identifies the crater near Hainoa at summit of Hualalai.

I was born at Holualoa, North Kona, Hawaii at the time of building Kiholo [1810-1812], lived at Kona until the year 1867, when I moved to Honolulu and I still reside here. Know the land of Keauhou and a part of its boundaries. Puhi, K., a cousin of Keakaokawai's now living at Kalihi, pointed out the boundaries to me. He was a kamaaina of the mountain having been born and brought up there. (S. K. Kaai says he is old and sick). I do not know the boundaries at shore, only on the mountain.

Keauhou 2d cuts off Keauhou 1st a little mauka of a place called Nakipapaakalehuna some koa trees in the woods. Keauhou 1st does not reach mauka of the koa, but ends where they used to cut canoes. Thence the boundary of Keauhou 2d runs across the head of Keauhou 1st to Keanaaipu (a cave) at the junction of Kahaluu.

Thence along Kahaluu (in the woods) to Kanoa, a point of koa and mamani trees, the place where the fire from Kau, on the mountain went out. Thence along the land of Kaumalumalu to Huaikaumauma, koa trees and mamani, on the Kohala side of Judd road. Keauhou taking the land mauka of the woods and Kaumalumalu the woods.

Thence the boundary runs towards the mountain along Holualoa 4th to Laenaia [Laenaio] (a grove of trees). Thence along Holualoa 2d (Laenaia being on that land) along the mauka edge of the woods to a gulch called Waiaha, an awaawa where water flows when it rains, thence along the land of Puaa to a hill called Puulalaau, to land of Honuaula; thence along this land to the top of Hualalai mountain to a hill called Honuaula. This hill is on the land of Honuaula, and the boundary [page 448] of Keauhou 2nd running along at the foot of the hill. Thence along this land to Kilohana, a resting place on the pali, where the mountain slopes towards Waimea; thence down to Keanapaki, a small cave where bird catchers used to live; the mauka corner of Honuaula and junction of Kaupulehu with Keauhou and with Puaawaa; thence the boundary runs along Puaawaa mauka to Kuhaalele, a cave; thence to Ohiapapaawai, a water hole in among ohia trees. Thence to Kahulinanui, a lae aa, where Puawaa ends and Kaohe and Kapapala corner on the boundary of Keauhou (this is a place where the bird catchers used to quarrel).

Thence along around land of Kaohe (the aa being on Keauhou 2nd) up Mauna Loa to the alohi pahoehoe; thence along the land of Kapapala (pahoehoe on Kapapala) to the Keanakalehuna Akako [?], a water hole in a cave on the side of the mountain; thence up the mountain to Puumau, a hill on Keauhou near the boundary; thence to where the snow covers the mountain, where Keauhou 2d ends, so my informant told me, as there was no waiwai there, and Keauhou 2d does not reach to Mokuweoweo; thence to Pohakuhanalei, a rock on the Southern slope of the mountain. Thence down to Puulonalona, a hill along Kahuku, where Kapua joins Keauhou. I have been there. Thence towards Kona along the mauka edge of the woods, cutting off South Kona lands, to Honaunau, to a place called Ohiakuapu, a grove of koa trees that runs mauka. Honaunau takes the koa; thence along mauka edge of woods, the grove of koa mauka being on Keauhou to Keahou, an old lava flow, junction of Kealakekua; thence along Kealakekua to a place I do not remember the name of; Thence along Onouli (it runs out on old aa flow); thence along Kanauaauwe [Kanaueue], along the mauka edge of the woods to Uwaukanipo, a kualapa mauka of Waio; thence to Kaneeneenui taking in Waio; thence to Anakolekolea, a cave mauka of the boundary of Honalo. I do not know where these lands join Keauhou. the koa from which we used to make canoes, is all

on makai lands and Keauhou is mauka. All that I know about [page 449] the boundaries, is what Puhi told me.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449]

Puhi, an old kamaʻāina born in Kona, mentions Mawae, a water hole and burial cave and that Huaikaumana was a place where the canoe makers used to have a heiau.

Puhi K. Sworn (quite an old man)
I was born in Kona time of the Peleleu [ca. 1793-95], at Hokukano, Keakaokawai knows a part of the boundaries. His brother knew them. I have forgotten the names of the places on the boundary. The ones Kupakoa testified to are the right boundaries; he told me the points he testified to yesterday. I cannot remember the places.

Keauhou 1st ends in the koa woods. It is cut off by Keauhou 2d at a place called Mawae where there is a water hole, and a cave where my relations are buried. The boundary is way makai of this place. Keauhou 2d takes the land where they used to catch uwau, on the mauka side of the woods, cutting off Kahaluu and Kaumalumalu. Do not remember the names of the points Kaumalumalu reaches to Huaikaumauna, junction of Kaumalumalu, Kahaluu and Keauhou. it is an ahua in the koa woods, where the canoe makers used to have a heiau. Keauhou cuts off Holualoa 2 (do not remember names of places); thence Honuaula bounds Keauhou and runs up the mountain. I do not remember the name of the point where Honuaula joins Keauhou.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Puhi K. 1874:v.A1, p450]

Chas. Hall, a kamaʻāina of Kona, mentions Puepuewai which is a spring in the pahoehoe and Ahuaumi.

Chas. Hall K., Sworn (same witness as on Kahuku)
I have lived in Kona thirty-seven years, and know the land of Keauhou 2d; am a kamaaina of Kona and know a part of the boundaries of Keauhou. Kahilo, Kuluahi; father of Keakaikawai and Kini pointed them out to me at different times. Kahilo is still living and I hear he gave his testimony on this land last year. The other two men are dead. I do not know the makai boundaries. Kahilo went with Captain Cummins and myself and pointed out the boundaries when Cummins leased this land. Kahilo and Kaluahi pointed out boundaries at the same place on the south side of Governor Adam's road, but Kini pointed them out as being further mauka but nearly the same place. Kini pointed out the boundary as being a short distance makai of Puulehua on Governor Adam's road and running straight to Waiio, Puulehu is a hill. There is a pali on Governor Adam's road, on the boundary of Keauhou, and near the pali there is a sandal wood tree; the only one I know of that grows so far down on the road, towards Kau. They did not show me boundaries as we went to Kau way above the woods on the pahoehoe. I cannot say anything about boundaries beyond Waiio. Kuluahi and Kahilo pointed out the boundaries as being about one mile [page 253] makai of Waiiu [Waiio]. Going to Kau with Kini we went from Waiiu to Hale o Umi, since destroyed by the lava flow. I cannot give the boundaries from Waiiu to Kukuiopae as I have not been along there in the woods.

Keauhou cuts Manukaa [Manuka] off to the westward of Halepohaha. I know the boundary as I used to drive goats there. I have always heard that Keauhou cuts all South Kona lands off at the mauka edge of the woods. On the North side Kahilo pointed out the boundary as running along the base of Hualalai, passing Kohala side of Huaumi (or Ahuaumi). He is the only one who pointed this out to me. I have always heard that Keauhou joins Kaohe of Hamakua; the boundary runs to the kipuka running past Keamoku, to a point among the hills mauka of these clinkers.

CX'd.

I cannot point out the boundaries from Puulehua to Waiio. I put more confidence in what Kuluahi showed me than in what Kini showed me, as he was a much older man and had been living longer in the mountain. I know a spring called Puepuewai. It is one the pahoehoe some distance mauka of the woods. I do not know that Kaupulehu reaches to Keauhou. I have never heard that Keauhou takes to the top of Hualalai.

Evidence taken on Kahuku March 13th 1873 for boundaries of Keauhou, adjoining Kahuku as Mr. Hall states that he will give his testimony just the same as at that time.
See Folio 143 and 144, Book A.

Know the land of Keauhou in Kona. I have often gone onto the plains above the woods and have come across from Kona to Kau twice; above the woods. It was a long time ago. Came up through the woods to Hale a Umi, and looked at it, it is about eight or ten miles above the woods, but was covered up by the lava flow of 1845 or thereabouts. From there I went to Ahuaumi up above there and slept there in a crack of the pahoehoe. [page 254]

The father of Keakaikawai was my kamaaina from there we went to the Bay. I think Hale o Umi is mauka of Kipahoehoe, the distance between this and Ahua Umi is about fifteen or eighteen miles. Hale o Umi is on Keauhou. Heard that Ahua Umi on the boundary of Kau and Kona, about nine or ten miles from here. Kini was my kamaaina the second time I came across. Keakaikawai's father piloted me all over Maunaloa and Maunakea. One Ahua Umi is near Hualalai (2d Ahu a Umi); he told me Kahuku and Keauhou ran straight up Maunaloa, following a ridge all the way.

I have heard Ahu a Umi, near Hualalai is on Keauhou. Keauhou runs over to Puanahululu and meets Kaohe and Humuula; thence runs up the mountain with Humuula, on the Hilo slope to Pohakuhanalei. Different kamaaina have pointed out these different places. Kuakini of Puako and others showed me these places. The father of Keiki and Kini showed me the boundaries on this side. Keakaikawai is the son of one of my kamaaina and he himself is a kamaaina on the mountain.

CX'd.

I could talk better native when I came across from Kona to Kau than at the present day. Came down here from Ahua Umi. I have been up from Kapua to Ahu a Umi and understood that Keauhou cuts off Kapua below Ahu a Umi. Also Kaulanamauna is cut off and from there the boundary of Kau and Kona runs direct to the top of the mountain. My opinion of the direction of the line of boundary

between the Districts is based on the direction at shore. There is no land in South Kohala running side by side with Kona lands, to the top of Mauna Loa, cut off by Hamakua. Kona and Kau run to the top of the mountain. Humuula runs up a long way but not to the top. There are two places on the mountain called Pohakuhanalei, one is a rock on the Northeast slope, the other is a crater on the South slope. The latter is not pointed out as a boundary. I have only crossed the boundary they pointed out to me; a ridge running up to the top of the mountain and to the other side. [page 255]; said ridge running between the craters of Mokuweoweo and Pohakuhanalei.

Pohakuhanalei is about south of Mokuweoweo and I think that is in Kau.

Have never heard what land Mokuweoweo is on. Have always heard that Kahuku joins Keauhou mauka and that Kahuku and Kapapala join at Pohakuhanalei, on the northeast slope of Mauna Loa, but I do not know how far this way they join. Have worked in the woods and above Kahuku mauka of Waiohinu, catching goats and heard that Waiohinu cuts off all the lands of Kapapala. I can show pretty nearly the place where Hale o Umi was. Hale o Umi was built of six stones and was so close to the mountain that I could not see far towards Kau or Kohala. At Ahu a Umi on the boundary of Kona there are four or five piles of stones in a mawae or crack; there are two red hills in an easterly direction from Ahu a Umi, and a water hole near one of them. From this point it is two or three miles directly towards the sea, before you come to the thick woods.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Chas. Hall K. 1874:v.B, p253]

Kahueai mentions Umiwai, a place with water in the woods.

Kahueai K., Sworn (same as on Kaupulehu)
I know the land of Keauhou and the boundaries on this side and mauka. I do not know the boundaries between Keauhou and Kahalu [Kahaluu]. I know the boundary Kaumalumalu and Keauhou. It is at Palinui at the lae mamani beyond Hall's premises (Kekuakua ma told me boundaries.[)] Thence to a place called Kapunalei, thence [page 256] to a cave called Pihapono; thence across the head of Holualoa to the kahawai and thence to Kapukaiki, a cave. Boundary running across the head of Puuaa [Puaa]; it runs to a place where a dog that came from Waipio staid, Pupuaalenalena. Thence to Puulaalaau; thence to Umiwai, the boundary follows along mauka of Puulaalaau to mauka of Umiwai, water in the koa woods. Thence to a gulch called Pohakuloa; thence mauka along this gulch to the hill called Honuaula; thence to Hualalai, junction of Kaupulehu and Keauhou; thence along Kaupulehu to the aa, makai of Pualala.

Commencing at Hualalai, the junction of Kaupulehu with Keauhou, thence to Napuumahoe thence to Ihuano [Ihuanu]; thence to Puualala; thence to lae aa, where you see Mailihahei beyond aa. Thence along Puawaa to Keanapakii, a cave; thence to Kuhalele, a cave covered by the lava flow; thence to Ohiapapawai, in the lava flow; thence to Naohuleelua junction of Kaohe, Kapapala and Keauhou; there used to be three ahus there; perhaps they are now covered by the flow. This is as far as I know the boundaries.

CX'd.

I have heard that Uwauliilii is on the boundary between Keauhou and Kaawa.

Have heard that Waiio is on the boundary of Keauhou. Have never been to Kau. I do not know where Kahuku is; have never heard of the land. I do not know whether Keauhou extends to Mokuweoweo or not.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahueai K. 1874:v.B, p256-257]

Komaka, is listed as giving testimony prior, mentions Ulimau, a pūnāwai, and a water hole that Komaka found called Komakawai.

Balance of the testimony of Komaka

From Folio 259 of this book

From Ka Hale o Umi, junction of Keauhou and Kahuku I have always heard that Keauhou cuts off the Kona lands at the mauka edge of the woods. Do not know what lands run ~~through~~ woods. Heard Kaapuna ends at Ahinui; Opihale [Opihihale] 2d at Ulimau, a ~~punawai about~~ as far as [page 319] from here to Capt. Gates' house, above woods.

Thence along edge of koa along Opihale 1st; thence along Olelomoana 2d, along koa grove, thence along edge of woods along land of Kolo; thence along Kukuiopae, along koa grove. I pointed out the place to Keanapaakai. Thence to Kukuiopae 1st along hollow Kapai, mauka end of Kukuiopae 1st. Runs up as far as hollow extends. The Kau boundary is the Kona side of goat pen above the water hole where we got water the first night. Thence along Kaohe 5, 4, 3, 2, 1 along edge of woods. Kaohe of Kaopua ends mauka of Polewai at Kapualei, a short distance from where we ate. The lands this side of there end at the koa. Have heard Pahoehoe ends at Kamakaili, the lae mamani in awaawa; thence along Alae to Puuoluamanu; thence along Honokua 2 to Kaopapa, a cave near the koa; thence along Honokua 1st.

Have heard it ends at the koa at Puuikaiole, the goat pen mauka of Lumia, a hill. From there I do not know where Waiea ends. Have (not) (heard) from my makua that it runs to the Alohi; thence to water hole I found, named Komakawai, because I found it where we slept. Do not know what land it is on. I have always heard that Kealia and Hookena do not reach above woods. Have heard that Hookena reached to a few scattering koa trees on Kau side of Kealia trail, but not to Laemamani out on Pahoehoe. This is as far as I know the boundaries between Keauhou & shore lands. I have been around there chasing goats on this side.
[Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Komaka. 1874:v.B, p319-320]

Table 3. Keauhou Ahupuaʻa Inventory of Inoa ʻĀina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies.

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Aahuwela	Cave that used to have water in it (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).	-
Ahuwela	Cave with water in it (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahulialo 1873:v.A1, p263).	-
Anakolekolea	-	A cave mauka of the boundary of Honalo (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).
Haalulu		A hill (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Halelaau	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A 1, p270).
Haliilaukoa	-	Place where ʻUmi sat and they spread koa leaves for him (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256). An old tradition says Umi used to sit there because he liked the koa (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahulialo 1873:v.A1, p263).
Hapukaa	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Hoikekanaka	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261).
Holua	-	Name of old (hōlua) sliding place

Inoa ʻĀina	Wai Resource	Other Resources & Practices
		(Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A1, p266).
Huaikaumauna	-	A lae koa on the kualapa (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole K. 1873:v.A1, p269-270). A junction of Kaumalumalu, Kahaluu and Keauhou, and an ahua in the koa forest where canoe makers used to have a heiau (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Puhi K. 1874:v.A1, p450).
Kaaawa	-	Pahoehoe with ohiʻa and other kinds of trees growing (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256). Grove of naio and aʻaliʻi (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Kahinihiniula	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A 1, p270).
Kahulinanui	-	An ahua pohaku built by Hamakua men and now covered by lava (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole K. 1873:v.A1, p269-270). A place where the bird catchers used to quarrel (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).
Kaimuhapuu (Kaimuhapu)	Water hole (Boundary Commission Testimony: Keauhou	-

Inoa ʻĀina	Wai Resource	Other Resources & Practices
	2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256). A water hole in Okolea that is on the boundary between Honalu and Keauhou (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Waiau K. 1873:v.A1, p268-269).	
Kakai a lae Koa	-	Koa grove (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Kaluamakani / Kalalakaukolo	-	Name of place at the top of Hualalai (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole K. 1873:v.A1, p269-270).
Kalulu	Water hole and place for catching birds (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahulialo 1873:v.A1, p263).	Place where they would catch birds (Uawau) in olden times (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Kamauae [Kamauai]	-	Fishing heiau (Boundary Commission Testimony: Keauhou 1 Ahupuaʻa, Lono 1873:v.A1, p318-320).
Kamoike	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256)
Kamomoku	-	A small pali (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Waiau K. 1873:v.A1, p268-269)
Kanakaliikapu	-	An ʻāhua pōhaku (Boundary Commission Testimony: Keauhou 1 Ahupuaʻa, Lono 1873:v.A1, p318-320).
Kanauaauwe / Kanaueue	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1,

Inoa ʻĀina	Wai Resource	Other Resources & Practices
		p448-449).
Kaneeneenui	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).
Kanekii	A small water hole that dries up in dry weather (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256). A water hole on Kealakekua near the boundary (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Waiau K. 1873:v.A1, p268-269).	-
Kanoa	-	A point of koa and mamani trees, where a fire from Kaʻū went out (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).
Kanohoana o Umi	-	ʻUmiʻs road (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Kanupa	-	A cave (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole K. 1873:v.A1, p269-270)
Kaonohi	-	A cave (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahulialo 1873:v.A1, p263).
Kapapakauheana	Round water hole (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).	-
Kapapala	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Kaukahoku	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Kaumalumalu	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Kaumoku	-	A hill (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261).
Kawaha o Pele	-	A large māewa (fissure or crevice), (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256). A hill with a crater (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261).
Keahou	-	An old lava flow (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449). “Ancient fishing rights extending out to sea,” (Boundary Commission Testimony: Keauhou 1 Ahupuaʻa, Lono 1873:v.A1, p318-320).
Keakui	-	A road made by bird catchers (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole K. 1873:v.A1, p269-270).
Keanaakala	-	A cave (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Keanakiha	-	Small cave where natives used to sleep (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Keanaokalehuna	A water hole in a cave on the side of the mountain (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).	Place where a Hamakua man was killed for stealing food at Keauhou (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole K. 1873:v.A1, p269-270).
Keanapaki	-	A place where bird catchers used to live (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).
Kepuhi	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Kepulu	-	A place where there is soil and no rocks (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahulialo 1873:v.A1, p263). A “pulu lepo,” (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole K. 1873:v.A1, p269-270).
Kikikiaeae	-	Place where canoe makers used to live (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Waiau K. 1873:v.A1, p268-269).
Kilohana	-	Place for bird-catching (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Kipukauki	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Kolekole	-	An ʻāhua with koa in the middle (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahulialo 1873:v.A1, p263). Hill where Humuula joins Keauhou (Boundary Commission

Inoa ʻĀina	Wai Resource	Other Resources & Practices
		Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Komakawai	A water hole (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Komaka. 1874:v.B, p319-320).	-
Kulauala	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Laaunui	-	Name of large ohiʻa tree (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261).
Laenaio /Laenaia	-	A grove of tree (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).
Lehuulanui	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Lekeleke	-	A crack in the rock where natives used to put their dead (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261).
Lumia	Water hole and pūnāwai (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Palea K. 1873:v.A1, p263).	-
Makaulaula	-	Place to live while bird catching (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahulialo 1873:v.A1, p263).
Mawae	Water hole (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Puhi K. 1874:v.A1, p450).	A burial cave (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Puhi K. 1874:v.A1, p450).
Naohuleelua	-	A cave (Boundary Commission

Inoa ʻĀina	Wai Resource	Other Resources & Practices
		Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole K. 1873:v.A1, p269-270).
Napueuala	-	An "'oiʻoina" or point, cape, headland, (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A 1, p270).
Nohomoanahoaiku	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Ohiakuapu	-	A grove of koa trees that runs mauka (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).
Ohiapapaawai	A water hole amongst the ohiʻa trees (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).	-
Ohiki	A spring (Boundary Commission Testimony: Keauhou 1 Ahupuaʻa, Lono 1873:v.A1, p318-320)	Old cultivating ground, old mahi ʻai place in the woods.
Onouli	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa K. 1874:v.A1, p448-449).
Paaniau [Paniau]	-	A pali, a long stone wall (Boundary Commission Testimony: Keauhou 1 Ahupuaʻa, Lono 1873:v.A1, p318-320).
Palahinui	-	A koa tree forest (Boundary Commission Testimony: Keauhou 1 Ahupuaʻa, Lono 1873:v.A1, p318-320). A large cave where people used to live (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A1, p266).
Piipaa	-	A cave (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa,

Inoa ʻĀina	Wai Resource	Other Resources & Practices
		Kahilo K. 1873:v.A1, p261).
Pohakuhanalei	-	Hill on Mauna Loa (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).
Pohakuloa	-	Large rock near water hole (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261).
Poo Hoohia	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261).
Puainako	-	A place name (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A 1, p270).
Puepuewai	Spring on the pāhoehoe (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Chas. Hall K. 1874:v.B, p253).	-
Pupuewai	Water hole (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).	-
Puuakawai	Old water hole now filled up (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai K. 1873:v.A1, p256).	-
Puulaalaau	-	A place name (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Puulepo	Hill with a water hole below (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Waiau K. 1873:v.A1, p268-269).	-
Waiaha	A gulch where water flows when it rains (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa,	-

Inoa ʻĀina	Wai Resource	Other Resources & Practices
	Kupakoa K. 1874:v.A1, p448-449).	
Waiea	-	Extent of which bird feathers were gathered (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261).
Waikui	Large cave of water (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A 1, p270).	-
Waikulukulu	Cave with water in it (Boundary Commission Testimony: Keauhou 1 Ahupuaʻa, Lono 1873:v.A1, p318-320).	-
Waio	Spring (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahilo K. 1873:v.A1, p261).	-
Ulimau	Pūnāwai (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Komaka. 1874:v.B, p319-320).	-
Umiwai	Water in the koa woods (Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kahueai K. 1874:v.B, p256-257).	-

Gianulias Parcel Boundary Commission Testimony Discussion

All of the ahupuaʻa that the Gianulias subject parcel spans were also included in the Boundary Commission Certification Process. This includes the ahupuaʻa of Puaʻa, Waiʻaha, Kahului, and Puapuaʻa (See Table 4). The following discussion details the kanaka who lived in these ahupuaʻa and gave testimony, as well as excerpts from the testimony and certificate tied to places, practices, and resources in the subject ahupuaʻa.

Table 4. Select Ahupuaʻa with Named Localities and Kamaʻāina cited in Boundary Commission proceedings in the area of the Gianulias Subject Parcel

Ahupuaʻa	Place Names	Kamaʻāina Residents
Gianulias Parcel		
Puaa	AianiniHilia (punawai) Hilio Holoke (Punawai) Honu (an upland punawai) Honuaula Kaalaeia Kahawai o Holualoa Kahuku Kainakelekele (olona growth) Kanakehipahoa (?) Kanuawa Kanenehu Kanoweana Kaopapa Kapapai Kawi Keahupuaa Kekawa (Kekapa) Kiai Kipukaiki Kolioaio Kuinakihei Liuike (Luaiki) Namahana (Olona growth – canoe making site) Nakakai Nuanulapalapa (Nuuanulapalapa) Pahuaukii Pali Kookoolau Palule (water source) Pohakuloa Poholua Puakauahi Puepuelenalena Puulalalaau (Puulaalaau) Puuokaloa Puuomaio (Puu o Naio?) Umiwai Waialala Wainakelekele	Kahaunele Kahio Kahueai Kamahiai Kapana Kauwa James Kole Makahiehie Naihe Napuwailuna Pupule

Ahupua‘a	Place Names	Kama‘āina Residents
Gianulias Parcel		
Waiaha	Maiahuna (banana grove) Makaihuliwaa Papalanui Pupuula Puuokaloa Waialipi (water hole)	Kapukui Makahiehie Peahi
Kahului	Kaaipaka Kakapa Kalalii Kealaehu (also Alau a koele) Palule Papalanui Pohakuhano Popoulu Puukehoi Puukohia Puuokaloa Puuokoheo Waiakalaho spring Waiakekua spring Waiahuna (Waihuna) spring Waikee	Kapae Makuakane Niniha
Puapuaa	Kaaiau Kahananuialewa Kahiaholo Kaluaele (water hole) Kaopapa (punawai) Kauhiapapa (water hole) Kaumupoalua Keawapuapua (Keawapuapuaa) Puapae Pahoa Poomaka Puapai Puapualoa Puhanoi Puhiuhiu (awaawa) Pukahano Puukiihoe Puuopelu	Kahaunele D. Alawa Kalimapaa Kawaihoa Keawe Mahalo Piki Simeona Ukumea

Puaʻa Ahupuaʻa

Listed below in this section are the boundary commission testimonies recorded for the ahupuaʻa of Puaʻa.

Kauwa, a kamaʻāina of Puaʻa, mentions Holoke, Palule, and Honu which were all sources of water. Also mentions many place important place names.

> Kauwa W., Sworn
> I was born at Puaa, North Kona, Hawaii, at time of Keoua [ca. 1792], and have always lived there, and am acquainted with the boundaries of the land. Kahio, my father (now dead), who was a kamaaina, and bird catcher told me the boundaries.
>
> Puaa is bounded makai by the sea and the land has ancient fishing rights near the shore, but not extending out to sea. Thence commencing at a punawai by the seashore called Holoke, between the lands of Puaa and Auhaukeae and running mauka to Poholua, a huli pali near the shore and just above a house; thence along iwi aina, the boundary runs mauka to Kuinakihei, an oioina way above pa aina; or Governor Adam's wall; thence to Puukole, a breadfruit tree; thence to Nuanulapalapa [Nuuanulapalapa?], a kualapa; thence mauka to Keahupuaa, the [page 376] boundary follows the iwi aina, along all these places; thence to a kihapai by the mauka Government road; thence to an Ahupohaku; thence along the iwi aina to Kanoweana, an old kauhale, a [illegible] bushes and a Puuhala tree are at this place from thence to Kanakehipahoa [?], a banana grove at the edge of the woods, said grove is the mauka end of Ahuhaukeae. Thence the boundary runs towards Kohala; first cutting off the land of Hianaloli 1, 2, 3, 4, 5 & 6 and then Auhaukeae 1 & 2 to Luaike [Luaiki], junction with Honuaula. I have not seen this place. I have only heard about it being on the edge of the woods. Thence Puaa runs along the land of Honuaula to Mamahana wai olona [Mamahana a damp area of olona growth].
>
> (I have only heard of the boundaries in the woods, have never seen them[)].
>
> Thence mauka to Kainakelekele, wai olona, and where olona grows; thence the boundary runs mauka to the side of a gulch called Honuaula (said gulch comes out of woods on Hianaloli); thence mauka along the South side of the gulch to Kapapai, a place where two old roads used to meet on a pali above the woods, from thence the boundary turns toward Kau. Along Honuaula to Pulalalaau [Puu Laalaau], a hill; Keauhou 2d is mauka of the hill and Honualua [Honuaula] is on the North side, Puaa and Holualoa corner there.
>
> Thence makai along Holualoa to kahawai – o – Holualoa, the boundary line passing to the North side of it; thence makai along the gulch to Palule, a pahihi and Wai aoao [auau?]; thence makai leaving the gulch and running to a place called Puuokaloa; passing along Kahului 2nd, through a lae mana (sharp ferns like uluhi [uluhe]); thence cutting across Kahului 1st, Kahului 2nd, Waiaha 1st and Waiaha 2d and Puaa 3d and running mauka to a punawai at the mauka corner of Puaa 2d called Honu; at the makai edge of the forest. Thence makai to Kanenehu, an old kauhale; thence makai along the iwi aina and through the fern to Pahuaukii, a kihapai at the Government road; and in the middle of the land; This is a mistake; I should have said to Palikookoolau, a small pali on the road and thence to

> Pahuaukii; Thence to a huli pali on the North side of some houses, and thence to banana trees growing on the huli pali; thence makai to Kawi, and thence to Pailima; thence makai to Hiilia, a punawai; thence to Kekawa, at the seashore. Hiilia is mauka of [page 377] Governor Adam's wall, and Kekapa [?] is the awaawa kai, with points each side. The boundary is between the two.
>
> Puaa has ancient fishing rights extending to the squid grounds.
> [Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376]

Kahueai, a kamaʻāina of Kona that lives in Puaa, mentions Namahana, a place where they used to make canoes, Aianini, which is a water hole and few other place names within Puaʻa.

> Kahueai K., Sworn (same witness as on Keauhou 2d)
> I now live on Puaa 2d. The boundary at shore on the Kau side is Nakakai, owned by Pupule, the mauka corner of Pupule's land on Puaa 2d is at Kaopapa. There it leaves the gulch and runs toward Kau to a place called Puuokaloa cutting of[f] Puaa 2d and Puaa 3d. Waiaha 1st and Waiaha 2d and two Kahuluis to the gulch. Adjoining Holualoa, thence along the kahawai to Kipukamana, a kipuka in the woods; Thence to Palule where koa grows; thence mauka along the kahawai to Namahana, where we used to make canoes; thence along the gulch to Aianini [?], a water hole in the gulch; thence up to Kipukaiki a cave; thence along Keauhou to Puepuelenalena; to Puulaalaau; thence to mauka of Umiwai; thence to Pohakuloa, a gulch the junction of Puaa 1st with Honuaula; Thence down the gulch to Kolioaio, a kauhale kalaiwaa; thence makai to Wainakelekele, crater in gulch; thence to Waialaala, a kauhale, thence to [page 244] the lower edge of the woods, to Kahuku, a banana grove; thence the boundary leaves the gulch, and runs across the heads of the Hianalolii and Auhaukeae to Kaalaeia (the koa is on all Puaa); thence to Kunuawa, a large banana grove, thence makai along Hauiio's land and thence along Ukumea's land and then along Kole to the sea shore. Bounded makai by the sea. Ancient fishing rights extending out to sea.
>
> CX'd.
>
> Note: J.G. Hoapili states that he can find no more kamaaina of this land. Copy testimony on Keauhou 2d and Holualoa adjoining Puaa 1st, as evidence on Puaa 1st.
> [Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245]

Table 5. Puaʻa Ahupuaʻa Inventory of Inoa ʻĀina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies.

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Ahuhaukeae	-	A place name (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Aianini	A water hole (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).	-

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Auhaukeae	-	A place name (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Hianalolii	-	A place name (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Hiilia	Pūnāwai (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).	-
Holoke	Pūnāwai at the seashore (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).	-
Honu	Pūnāwai at the makai edge of the forest (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).	-
Kaalaeia	-	A place name (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Kahuku	-	A banana grove (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Kainakelekele	-	A place where olonā grows (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Kanakehiapahoa	-	A banana grove at the edge of the woods (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Kanenehu	-	An old kauhale (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Kanoweana	-	An old kauhale (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Kapapai	-	A place where two old roads used to meet (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Kipukamana	-	A kīpuka in the woods (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Kolioaio	-	A kauhale kālai waʻa (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Kole	-	A place name (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Kuinakihei	-	An ʻoiʻoina (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Kunuawa	-	A large banana grove (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Mamahana wai olona	“A damp area of olona growth,” (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).	-
Namahana	-	A place where they used to make canoes (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Nuanulapalapa	-	A kualapa (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Pahuaukii	-	A kīhāpai (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Pailima	-	A place name (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Palule	A pāhihi and wai ʻauʻau (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).	-
Poholua	-	A huli pali near the shore (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Puaʻa	-	The ahupuaʻa of Puaʻa has ancient fishing rights extending out to sea and to the squid grounds, (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Puepuelenalena	-	A place name (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Puukole	-	Name of a breadfruit tree (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kauwa K. 1873:v.A1, p376).
Waialaala	-	A kauhale (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).
Wainakelekele	-	A crater in the gulch (Boundary Commission Testimony: Puaʻa 1 Ahupuaʻa, Kahueai K. 1874:v.B, p244-245).

Waiʻaha Ahupuaʻa

Peahi, a resident of Waiʻaha for 16 years, recounts a watering hole called Waialipi and a banana grove named Maiahuna.

> Peahi K. Sworn
> I was born at Kohala at the time of Kiholo [XX 18 XX], when I was married I came here and have lived here ever since. Know the land of Waiaha. Lived there sixteen years. A water hole called Waialipi is on the boundary between the two Waiahas. Waiaha 2d is bounded by Waiaha 1st to a banana grove at the edge of the woods, called Maiahuna. Waiaha 2d is bounded on the South side by Kahului. The land is sold to Kapae K. from shore to the Government road. Thence along Kahului 2d to

Puuokaloa, where I had heard it is cut off by Holualoa. Waiaha 1st was surveyed from shore to Maiahuna and I do not think it extends far beyond there.

Waiaha 2d is bounded makai by the sea.

Ancient fishing rights extending out to sea.
[Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa, Peahi K. 1874:v.B, p269]

Makahiehie, mentions Pamakani and Makaihuliwaa, two resting places of ancient time.

Makahiehie K., Sworn
I was born at Puaa, Kona, at the time of Kumoalii [XX Kaumualii ?], so my parents told me. I know the boundaries of Waiaha; have always lived on these lands. My father told me the boundaries. Waiaha 2d is bounded on the North side by Waiaha 1st. Saw Fuller survey Waiaha 1st from the shore to Maiahuna; the mauka end of it. Kahului 1st bounds Waiaha 2d on the South side. A place called Pamakani is the mauka corner of Kapae's land. It is a resting place; thence to Papalanui, between Kahului, Aupuni, and Waiaha 2d; thence to Makaihuliwaa, an old resting place; thence to Popoula, the mauka corner of Kahului 1st from thence the boundary turns and Waiaha is cut off by Puaa to Maiahuna.
[Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa, Makahiehie K. 1874:v.B, p267]

Table 6. Waiʻaha Ahupuaʻa Inventory of Inoa ʻĀina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies.

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Maiahuna	-	Banana grove (Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa, Peahi K. 1874:v.B, p269).
Makaihuliwaa	-	An old resting place (Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa, Makahiehie K. 1874:v.B, p267).
Pamakani	-	A resting place (Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa, Makahiehie K. 1874:v.B, p267).
Papalanui	-	A place name (Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa, Makahiehie K. 1874:v.B, p267).
Popoula	-	A place name (Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa,

		Makahiehie K. 1874:v.B, p267).
Puuokaloa	-	A place name (Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa, Peahi K. 1874:v.B, p269).
Waiʻaha	-	"Ancient fishing rights extending out to sea," (Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa, Peahi K. 1874:v.B, p269).
Waialipi	A waterhole; described by Peahi as being on the boundary between the two Waiahas (Boundary Commission Testimony: Waiʻahu 2 Ahupuaʻa, Peahi K. 1874:v.B, p269).	-

Puapuaʻa Nui Ahupuaʻa

Ukumea, born in Puapuaʻa and kamaʻāina of Puapuaʻanui, mentions an iwi aina, Kaumupoalua which is a Neneleau grove, Kaluaele which is a watering hole, and Kaopapa, a pūnāwai.

> Ukumea K., Sworn
> I was born on Puapua [Puapuaa] at the time of Kauaokekuakalani [XX 18 XX]. I now live at Puapuanui [Puapuaanui]; have lived there most of my lifetime; am a kamaaina and know the boundaries. Kelinopa (now dead), my cousin, showed them to me. Bounded on the North side by Piki, the boundary at shore between these two lands is Keawapuapua [Ke-awa-Puapuaa] on the south side of the awa; thence to Puhano, aa above Governor Adams wall. There is an iwi aina from makai up. Kaumupoalua, a neneleau grove; thence along the iwi to the Government road, passing on the South side of Kaluaele, a water hole, thence mauka to Kaaiaua kihapai, the iwi is on the South side of the kihapai; thence to Kahananuialewa, a large rock at the mauka corner of the land, where Puapuanui is cut off by Holualoa. Thence turn towards the sea along Holualoa 1st to Kaopapa a punawai; thence along the iwi aina Uwaunui, an [page 260] old kauhale, the boundary runs through this place and to Puapualoa, a cave on the North side of the boundary; thence to Huloa, a resting place above Governor Adams wall; thence to seashore. I do not know the name of this makai point. Bounded makai by the sea.
>
> Ancient fishing rights extending out to sea.
> [Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261]

Mahalo, got control of land for five years, mentions a water hole named Kauhipapa.

> Mahalo K., Sworn

I was born at Holualoa. Do not know when. Have always lived there. I had charge of Puapuanui for five years, and looked at the boundaries. Keawe was the man who told them to me. Puapuaiki bounds it on the North side.

Commencing at the seashore on the Kau side of the Awaawa Puhiuhiu, the awaawa being on the Kau side of the canoe landing; thence to Pakuhano, aa mauka of the wall. The boundary runs along the iwi aina to Kaumupoalua; thence to the South side of Kaluaele following up the Government road; thence to Kaaiau, and through this place to a big stone, the name I have forgotten; there Holualoa cuts Puapuanui off.

Thence makai along his land to Puapualoa; thence to Kauhiapapa, a water hole; thence to the North side of Kauhiaholo; thence to Pahoa; thence makai to Ahuloa; thence to Puuopelu; thence to Kuapae at the seashore. Bounded makai by the sea.

Ancient fishing rights extending out to sea.

Testimony closed
[Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Mahalo K. 1874:v.B, p261-262]

Table 7. Puapuaʻa Ahupuaʻa Inventory of Inoa ʻĀina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies.

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Huloa	-	Resting place (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).
Kaaiau	-	A kīhāpai (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).
Kahananuialewa	-	"A large rock at the mauka corner of the land," (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).
Kahiaholo	-	A place name (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).
Kaluaele	Water hole (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).	-
Kaopapa	Pūnāwai (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B,	-

Inoa ʻĀina	Wai Resource	Other Resources & Practices
	p260-261).	
Kauhiapapa	Water hole (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Mahalo K. 1874:v.B, p261-262).	-
Kaumupoalua	-	Neneleau grove (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261). Lennox mentions it as being used to make "calabash and lomilomi sticks" (Lennox, C. 1967. Auwahi Forest Report; Appendix 6. Unpublished report, 3pp.).
Keawapuapua / Keawapuapuaa	-	A place name (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).
Pakuhano	-	A place name (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Mahalo K. 1874:v.B, p261-262).
Puaʻa Nui	-	"Ancient fishing rights extending out to sea," (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).
Puapai	-	A place name (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).
Puapualoa	-	A cave (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).
Puhano	-	A place name (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).
Puhiuhiu	-	An awaawa or valley (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Mahalo K. 1874:v.B, p261-262).
Puuopelu	-	A place name (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa,

Inoa ʻĀina	Wai Resource	Other Resources & Practices
		Mahalo K. 1874:v.B, p261-262).
Uwaunui	-	Iwi ʻāina and old kauhale (Boundary Commission Testimony: Puapuaʻa Nui Ahupuaʻa, Ukumea K. 1874:v.B, p260-261).

Kahului Ahupuaʻa

Kahului is divided into two ahupuaʻa, Kahului 1 (north) and Kahului 2 (south). In an initial overview of the boundary commission, no testimonies submitted for Kahului 1 Ahupuaʻa documented water resources, inoa ʻāina, or practices. Listed below in this section are the boundary commission testimonies recorded for Kahului 2 Ahupuaʻa.

Niniha, a kupa ʻāina of Kahului, Kona recounts the boundaries of Kahului and mentions several water holes referred to by the names Waiakalaho, and Waiakekua. Niniha testified the following:

> Niniha, K., Sworn
> I was born at Kahului, North Kona, Hawaii at the time of Kaoku [Mai Okuu, 1804-1805] and have always lived there. My parents (now dead) pointed out the boundaries to me.
>
> Boundary at the seashore between Kahului 2 and Puapuaaiki is at the right hand side of Kakapa, a rocky point in the sea; thence mauka along an iwi aina to Governor Adam's wall; thence to Waiakalaho, a water hole; thence mauka to Waiakekua, a water hole near the iwi aina and a little above the Government road; thence to Kaaipaka, a kulana kauhale, ahua hulipali; thence mauka a short distance to where Puapuaaike ends; thence to Puuokoheo, a high hill outside of the woods; now overgrown with koa; there Holualoa corners at Pohakuhano; thence along Holualoa to Waikee, a [page 327] kahawai; thence across said gulch and follow the gulch up to Puuokaloa, a pali in the woods on the North side of the gulch; thence to Palule where Holualoa and Puaa cut off Kahului; said place is a puu pahoehoe and kahawai; thence makai along the boundary of Puaa to Popoulu, mauka corner of Kahului 1st near the lower edge of the woods; thence along Government portion of Kahului to Papalanui, a kihapai koele, below Puukohia; thence along iwi aina, makai to Alau in the fern above the Government road. There is a pile of stones set up there. I pointed out the boundaries of Kahului 1st when it was surveyed; thence along the land sold, to Kalalii, a pulu lepo a seashore.
>
> Ancient fishing rights extending out to sea.
> [Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328]

Makuakane was a kanaka from Hāmākua who came to reside in Kahului during his younger years. He mentions the two springs of the area being Waiakalaho and Waiakekua:

> Makuakane, Kane, Sworn (rather a young man)

I was born at Hamakua, Hawaii; came to Kahului when I was young and have resided here ever since; know the boundaries of said land; Kapee [Kapae?] (now dead) former konohiki of the land with whom I lived four years told me the boundaries, and also pointed them out to me.

Commencing at seashore between Kahului and Puapuaa at a rocky point called Kakapa; thence mauka along an iwi aina to Governor Adam's wall; thence mauka, the boundary still following the iwi aina to Waiakalaho, a water spring; said spring being about three kihapai to North of the boundary of Puapuaa; thence to Waiakekua, spring mauka of the road; said spring is on Kahului near the iwi aina; thence to Kaaipaka, an Ahuapuu, kauhale kahiko, boundary at the South side of it; thence to Waikee (I do not know where Puapuaaike ends; Holualoa joins Kahului at Waikee; thence to Popoula, a kahawai with koa growing in it; thence to Puuokaloa, a pali; thence to Palule where Puaa and Holualoa cut Kahului off; thence makai along Puaa to Puuokaloa; thence to Popoulu, the land is very narrow here; thence makai to Puukehoi [?], a hill in fern; thence makai along the iwi aina to Waihuna, a water hole on the boundary between Kahului 1st [page 328] and Kahului 2nd. Kahului 1st reaches to Puuokaloa at the foot of the pali; makai of the Government road you come to Waiahuna which is the boundary of Kapai's [Kapae's] land. The mauka corner of Kapai's land is at Kealaehu, sometimes called Alau a koele. Thence the boundary runs along land sold, to the sea, and the land has ancient fishing rights extending out to sea.
[Boundary Commission Testimony: Kahului Ahupuaʻa, Makuakane Kane 1873:v.A1, p328-329]

Table 8. Kahului Ahupuaʻa Inventory of Inoa ʻĀina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies.

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Alau	-	A place name (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).
Kaaipaka	-	An ʻāhua puʻu, ʻāhua hulipali, kūlana kauhale, and kauhale kahiko, (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328; Boundary Commission Testimony: Kahului Ahupuaʻa, Makuakane Kane 1873:v.A1, p328-329).
Kahului	-	"Ancient fishing practices extending out to sea," (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).
Kakapa	-	A rocky point out at sea

Inoa ʻĀina	Wai Resource	Other Resources & Practices
		(Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).
Kalalii	kahawai: "along Holualoa to Waikee"	A "pulu lepo" at the seashore (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).
Kealaehu (also Alau a koele)	-	A place name (Boundary Commission Testimony: Kahului Ahupuaʻa, Makuakane Kane 1873:v.A1, p328-329).
Palule	A kahawai (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).	A puʻu pāhoehoe (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).
Papalanui	-	A kīhāpae kōʻele (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).
Pohakuhano		A place name (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).
Popoula	A kahawai with koa growing in it (Boundary Commission Testimony: Kahului Ahupuaʻa, Makuakane Kane 1873:v.A1, p328-329).	
Popoulu	-	A place name (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).
Puukehoi	-	A hill (Boundary Commission Testimony: Kahului Ahupuaʻa, Makuakane Kane 1873:v.A1, p328-329).
Puukohia	-	A place name (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Puuokaloa	-	A pali (Boundary Commission Testimony: Kahului Ahupuaʻa, Makuakane Kane 1873:v.A1, p328-329).
Puuokoheo	-	a high hill outside of the woods now overgrown with koa (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).
Waiakalaho	A waterhole (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).	
Waoakekua	A waterhole (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).	
Waihuna	A waterhole name (Boundary Commission Testimony: Kahului Ahupuaʻa, Makuakane Kane 1873:v.A1, p328-329).	
Waikee	A kahawai (Boundary Commission Testimony: Kahului Ahupuaʻa, Niniha K. 1873:v.A1, p327-328).	-

DHHL Kona Parcels Boundary Commission Testimony Discussion

The Department of Hawaiian Homelands has parcels in the ahupuaʻa of Kealakehe and Keahuolū. Although not the subject parcel of the proposed undertaking these lands serve to benefit from water resource development in the subject parcels, and are included here as such.

Table 9. Ahupuaʻa of Keahuolū with named localities and kamaʻāina cited in Boundary Commission proceedings in Keauhou Ahupuaʻa, location of the Kamehameha Schools subject parcel.

Ahupuaʻa	Place Names	Kamaʻāina Residents
Keauholū	Halelaau Kamauae (Kamauai Heiau) Kanakaliikapu Kewa Nanunuakalupe [?] Napueuala Ohiki Paaniau (Paniau) Pohakunahaha Puainako Waikui Waikulukulu	Kakio Keakaikawai Kuluahi Lono

Keahuolū Ahupuaʻa

Below are excerpts from the Boundary Commission Testimony for Keahuolū Ahupuaʻa. The ahupuaʻa of Keahuolū describes the southern boundary of Kealakehe Ahupuaʻa

J.Z. Waiau, a kamaʻāina from Honuaula, mentions a few water holes including, Keanawai and Waiakamalama. Also mentions a heiau named, Kalualapauila and a place called Kawauhooni, where people would rest on the way to taking their dead to rest in the crater of Hualalai.

> J. Z. Waiau K., Sworn
> I was born at Honuaula, Kona, Hawaii at the time of the fight of Keakuaokalani [Kekuaokalani in 1819]. I now live at Lanihauiki. Know the land of Keahuolu and its boundaries, have seen a part, and have heard where a part of them are from my parents and kamaaina on the land. I leased the land in former times. Kealakehe bounds it on the North side and Lanihaunui on the South side. A round rock on the sea shore called Pohakuloa is on the boundary between Lanihaunui and Keahuolu; thence the boundary between these two lands run mauka about one hundred fathoms and then turns South, to the North side of an old village, on Lanihau, called Makaeo. Thence the boundary runs straight mauka to Hoenui, a pile of stones makai of the wall of Governor Adams. If you look maikai [makai] from mauka near the Government road, it looks like a wall or iwi aina on the pahoehoe, but you cannot see it from makai. From Hoenui to Maili along [page 354] the boundary runs along an iwi aina, a wall or iwi aina from some way above Adams wall. Maili is an old village at Puuokaliu, a pali, pali ahua, where houses used to stand; thence to the mauka Government road at Kahuoli; an old kihapai koele, there are two kuleanas there, on Lanihau, adjoining Keahuolu. Said kuleanas belong to Kaawa and Luhei.

Thence mauka along the iwi aina to Puukoai, a very small ahua, of dirt and stones; thence to Keanawai, a water hole where there used to be a great many houses. Thence to Kaopapa, a place in the woods in Akolea fern a punawai, where Lanihauiki cuts of Lanihaunui. This place is a grove of young koa trees about the distance of a mile from the edge of the woods. I have heard Sleeper surveyed the line from Piilani down, that is mauka of Keanawai, on the boundary between Lanihaunui and Lanihauiki; from Kaopapa to Puulepo, a kualapa; this is above the young koa trees, in the ohia. From Puulepo the boundary runs direct mauka to Waiakamalama, a water hole where the natives get water when it fails below the woods. You have to dig to get it; have been to this place once.

Thence to Kawauhooni, a kupapau, a place where the natives used to sleep when on their way with dead bodies to throw into the crater on Hualalai; the koa woods are on Lanihauiki, and ohia on Keohuolu [Keahuolu]; thence turn North to kahawai Opilopilo, the mauka corner of Kealakehe. I do not know the boundaries in the woods between Keahuolu and Kealakehe; know where the mauka corner of Kaahui's land is, it is at a pile of stones on Kealakehe, at the junction of Kaahui's land of Kealakehe and Keahuolu; thence to an ahu pohaku called Laeaniau, at the Government road; thence makai along an iwi aina to a few fathoms on the North side of a heiau called Kalualapauila; thence to Puunahaha, a large red hill on the mauka side of the makai Government road, thence to Puuokaloa, an oioina or small hill; thence to Kaiwi a lae pohaku on the middle of point. Ancient fishing rights extending out to sea.

CX'd.
I saw the haole survey the line down the road, between the lands of Lanihau nui and Lanihauike [page 355], said road runs down an iwi between these two lands. I do not know whether he surveyed to the boundaries of Keahuolu or not.
[Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354]

Kealakai, a kamaʻāina of Keahuolu, mentions a few inoa ʻāina including Piilani, a mahina ʻai and Kalioniau which is an ʻahu.

Kealakai K., Sworn
I was born at Keahuolu, North Kona, Hawaii at the time of [name illegible] & saw building Kiholo 2nd. Have always lived there, and know the makai boundaries. My parents; makuakane hanai Kaohimahi [name is Kauhimahi] (now dead) told them to me.

The boundary at sea shore between Lanihaunui and this land is at Pohakuloa; thence towards Kailua; the sand on Lanihau and the pahoehoe on Keahuolu; Thence mauka along raised lava (flat lava being on Lanihau) passing some distance on the North side of Puuopalena; thence mauka to Hoenui, a good ways makai of Governor Adams wall; thence mauka along an iwi aina to the mauka Government road; thence mauka to Puukoae, a puuolepo; thence mauka to Piilani, a mahina ai; the boundary passing to the North side of it; thence to Puulepo. I do not know where Lanihaunui ends; as I have never been there; have only heard of these boundaries. The mauka corner of Keahuolu is an ahua called Kaohiamoekanaka; thence makai along Kealakehe, but I do not know the points on the line.

> At Government road there is an ahu, called Kalaioniau, a puu makai of said road which can be seen from the road. Thence makai along an iwi aina to Kalualapauila, a heiau; thence makai to the North side of a hill called Puuouliuli; thence to Puunahaha; the boundary passing on the North side; from thence to Puuokaloa; thence makai to Kaiwi, the kula in middle of point and lae pohaku on the point at sea shore.
>
> Ancient fishing rights extending out to sea and claiming the opelu.
> [Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kealakai K. 1873:v.A1, p356]

Kahuanui, a kamaʻāina of Kealakehe, mentions Puulaula, Puunahaha, Kaenaena and Kaeeku, all hills within Keahuolū. He also mentions Pukalua which is a water hole above in the young koa.

> Kahuanui K., Sworn
> I live at Kealakehe, and have always lived there, know the boundaries between Keahuolu and Kealakehe. I have bought a piece of the latter land, but have not received the Patent. Have seen the boundaries of adjoining. Kaiwi is the boundary at the shore between Kealakehe and Keahuolu; thence mauka to Puukaloa, thence [page 356] to Puulaula, mauka side of the Government road, thence to Puunahaha; thence to Kaenaena, a hill; thence to Kaeeku, a hill; thence to Kalualapauwila; thence to Lainiau, the iwi or the South side; thence to Keahupuaa, an ahua pohaku at the mauka Government road; thence along the iwi aina (the land below the road was surveyed by Wiltse for me); thence mauka to Ohiakaukanaka;[77] a pali in the woods where you can look down to the sea shore. It is the long pali that runs across all the lands.
>
> This is the mauka end of Keahuolu and is here cut off by Lanihauiki (in koa) and by Kaloko; thence makai along Lanihauiki to Puulepo; thence makai to Piilani, in woods, at which place Lanihaunui ends and Lanihauiki leaves Lanihaunui and Keahuolu boundary. Lanihaunui ends at Pukalua, a water hole above the young koa. Piilani is way below the woods.
> [Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kahuanui K. 1873:v.A1, p356-357]

Kapea, a resident of Moeauoa, Kona, mentions Kaopapa which is a pūnāwai.

> Kapea K., Sworn
> I live on Moeauoa, Kona, Hawaii, have lived there several years, know the land of Keahuolu, and have been up the road to the woods, after water. The mauka corner is on a pali at Koohiahoomoekanaka. The koa is on Lanihau and Kaloko; thence makai along Lanihauiki, to Puulepo; thence to Nohonoa, the mauka corner of Lanihaunui, where there is an ahua; thence down the pali to Kaopapa, a punawai; thence to Piilani outside of the woods. There is young koa growing at Kaopapa. I

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[77] Also cited as Kaohiahoomoekanaka.

have been there with the kamaaina after water. I do not know the boundaries on the other side.
[Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kapea K. 1873:v.A1, p357]

Mahu, a kamaʻāina of Keahuolū, mentions Ohiawela which is a spring, an Kauwau, a grove of large trees where they used to lay dead bodies.

Mahu K., Sworn
I was born on the land of Keahuolu at the time of the birth of Kamehameha II [ca. 1797], and my parents who were kamaainas of the land told me its boundaries. Kealakehe bounds it on the North side, the boundary at shore between the two lands is at Kaiwi; thence it runs mauka to Puuokaloa; thence to Puunahaha; thence to Kaunauhila [?], a puu aa. Thence to Kalualapapauaia [Kalualapauwila]; thence mauka to Kalaeoniau; thence to Keahupuaa at the Government road; thence to Kahuaakaulei in the woods (I have not been there) then into Ohiawela (I have not been there, but have heard that there is a spring there). Thence to Kahihiia [Kahihia], the mauka corner of Keahuolu where Lanihauiki cuts it off. I do not know whether Kaupulehu or Kaloko cuts if off on the North side.

Thence makai along Lanihauiki, all the koa except what is just on the lower edge of the woods being above the boundary of Keahuolu. Thence makai to Kauwau, a grove of large trees where they used to lay dead bodies; from thence makai to Ohiapiipa; thence to Waiakamalama. (I have been up to the mauka corner of the land on the road between Keahuolu and Lanihauiki but I have not been on the North side.)

Thence makai to Kapulehu, an oioina; thence to Nohoana o maa, an oioina, at the mauka corner of Lanihaunui, near the lower edge of the woods. My father's name was Kamaha and my mother's name was Loma.
[Boundary Commission Testimony: Keahuolū Ahupuaʻa, Mahu K. 1873:v.A1, p358]

Table 10. Keahuolū Ahupuaʻa Inventory of Inoa ʻĀina, Wai Resource, and Other Resources & Practices from Boundary Commission Testimonies.

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Makaeo	-	Name of old village in Lanihau (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Hoenui	-	Pile of stones (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Kahihiia / Kahihia	-	A place name (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Mahu K. 1873:v.A1, p358).
Kahuoli	-	An old kīhāpai kōʻele with two kuleana

Inoa ʻĀina	Wai Resource	Other Resources & Practices
		belonging to Kaawa and Luhei (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Kaiwi	-	A lae pōhaku (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Kalaioniau	-	An ahu, a puʻu (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kealakai K. 1873:v.A1, p356).
Kalualapauila	-	A heiau (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Kaohiamoekanaka	-	An ʻāhua (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kealakai K. 1873:v.A1, p356).
Kaopapa	A pūnāwai in the woods amongst the Akolea fern (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).	-
Kapulehu	-	An ʻoiʻoina (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Mahu K. 1873:v.A1, p358).
Kauwau	-	A grove of large trees where they used to lay dead bodies (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Mahu K. 1873:v.A1, p358).
Kawauhooni	-	A kupapaʻu, a place where natives used to sleep when on their way with dead bodies to throw into the crater of Hualalai (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Keahuolū	-	“Ancient fishing rights extending out to sea and claiming the ʻōpelu,” (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kealakai K. 1873:v.A1, p356)
Keanawai	A water hole where there	-

Inoa ʻĀina	Wai Resource	Other Resources & Practices
	used to be a great many houses (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).	
Laeaniau	-	Ahu pōhaku (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Lanihauiki	-	A place of young koa grove (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Maili	-	An old village at Puuokaliu where houses used to stand (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Nohoana o Maa	-	An ʻoiʻoina at the ma uka corner of Lanihaunui (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Mahu K. 1873:v.A1, p358).
Ohiakaukanaka	-	A pali in the woods, (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kahuanui K. 1873:v.A1, p356-357). *Same as Kaohiamoekanaka* (Kahuanui, Boundary Commission Testimony, 1873, Keahuolū)
Ohiapiipa	-	A place name (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Mahu K. 1873:v.A1, p358).
Ohiawela	A place where a spring is said to exist (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Mahu K. 1873:v.A1, p358)	-
Opilopilo	A kahawai (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).	-

Inoa ʻĀina	Wai Resource	Other Resources & Practices
Piilani	-	A mahina ʻai (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kealakai K. 1873:v.A1, p356).
Pohakuloa	-	A round rock on the seashore (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Pukalua	A water hole above the young koa (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kahuanui K. 1873:v.A1, p356-357).	-
Puukoai	-	a very small ʻāhua of dirt and stones (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Puulepo	-	A kualapa or ridge (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Puunahaha	-	Large red hill (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Puuokaliu	-	A pali, pali ʻāhua (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Puuokaloa	-	An ʻoiʻoina or small hill (Boundary Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).
Puuopalena	-	A place name (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kealakai K. 1873:v.A1, p356).
Puuouliuli	-	A hill (Boundary Commission Testimony: Keahuolū Ahupuaʻa, Kealakai K. 1873:v.A1, p356).
Waiakamalama	A water hole where natives get water when it fails below the woods (Boundary	-

Inoa ʻĀina	Wai Resource	Other Resources & Practices
	Commission Testimony: Keahuolū Ahupuaʻa, J.Z. Waiau K. 1873:v.A1, p354).	

The Māhele ʻĀina and Issuance Of Kuleana To Hoa ʻĀina - By Kumu Pono Associates

In pre-western contact Hawai'i, all land and natural resources were held in trust by the high chiefs (ali'i 'ai ahupua'a or ali'i 'ai moku). The use of lands and resources were given to the hoa'āina (native tenants), at the prerogative of the ali'i and their representatives or land agents (konohiki), who were generally chiefs of some standing as well. In 1848, the Hawaiian system of land tenure was radically altered by the Māhele ʻĀina. This change in land tenure was promoted by the missionaries, the growing Western population, and business interests in the island kingdom. Foreigners were hesitant to enter business deals on lease-hold lands.

The Māhele (division) defined the land interests of Kamehameha III (the King), the high-ranking chiefs, and the konohiki. As a result of the Māhele, all land in the Kingdom of Hawai'i came to be placed in one of three categories: (1) ʻĀina Lei Ali'i (Crown Lands) for the occupant of the throne, (2) ʻĀina Aupuni (Government Lands); and (3) Konohiki Lands.

1848-1855: The Māhele ʻĀina (Land Division)

Disposition of the 'āina between Keauhou 2nd to Kaloko was largely settled between the King, Kamehameha III, some 250 chiefs and a few foreigners in the 1848 "Buke Mahele" (*Land Division Book*). Most of the awardees were either closely related to the Kamehameha line and supported the rise and rule of the Kamehamehas, or had been given tracts of land in payment for services to the King. As part of the process of reaching agreements with each of the participants in the Māhele, the applicants released selected ahupua'a or land areas from their larger claims as a means of paying fees for processing their claims. These relinquished 'āina were then retained by the King as ʻĀina Lei Ali'i or given by the King to the ʻĀina Aupuni inventory. Title to the awarded lands was subsequently confirmed and assigned for ahupua'a under the provisions of the Kuleana Act. Table 11 identifies the original disposition the 'āina—north to south—from Kaloko to Keauhou 2nd.

Table 11. Kaloko to Keauhou 2nd: Disposition of ʻĀina in the Māhele — ʻĀina Lei Ali'i (Crown Lands), Konohiki Lands, and ʻĀina Aupuni (Government Lands)

Inoa ʻĀina North to South	Helu (Land Commission Award Number & Royal Patent)	Awardee and Acreage
Kaloko	7715:11 – R.P. 8214 Buke Mahele 1848:8	Kapuaiwa Lot Kamehameha V Son of Kinau and Mataio Kekuanaoa. (4230.00 Acs.)
Honokōhau Nui (1)	11216:36 – R.P. 7587 Buke Mahele 1848:28	Mikahela Kekuniahi Kekauonohi Daughter of Kinau kane and Wahinepio. (2653.00 Acs.)
Honokōhau Iki (2)	9971:9 – R.P. 6855	Wm. P. Leleiohoku Son of Kalanimoku (Paalua) and Kiliwehi. He was first married to Nahienaena, then to Ruta Keelikolani Following Nahienaena's death. (480.00 Acs.)
Kealakehe	—	Government Land Not cited in Buke Mahele. Transferred

		to Government Land Inventory by Kamehameha III.
Keahuolū	8452:12 – R.P. 6851 Buke Mahele 1848:10	Ane Keohokalole, daughter of Aikanaka and Kamaeokalani; mother of David Kalakaua and Lydia Liliuokalani mā (4071.00 Acs.)
Lanihau Nui (1)	8559 B:11 – R.P.7456	Wm. C. Lunalilo (302.00 Acs.)
Lanihau Iki (2)	— Buke Mahele 1848:157, 181	Government Land. Relinquished by Kaopua
Moeauoa	107474:3 – R.P. — Buke Mahele 1848:175	Nueku Namauu (— Acs.)
Moeauoa 2nd	9971:27 – R.P. 8126	Wm. P. Leleiohoku (130.00 Acs.)
Keōpū 1	11216:39 – R.P. 7874 Buke Mahele 1848:28	Mikahela Keahikuni Kekauonohi (7120.00 ac.)
Keōpū 2	—	Government Land
Keōpū 3	7713:5 – R.P. 4475 M. Kekuanaoa and Kinau. Sister of Moses Kekuaiwa, Lot Kapuaiwa and Alexander Liholiho. On of the grandchildren of Kamehameha I	Victoria Kamamalu, daughter of (Ahp. — Acs.)
Keōpū House Lots	9971:36 – R.P. 6690 9971:37 – R.P. 6694 9971:38 – R.P. 6690	Wm. P. Leleiohoku Wm. P. Leleiohoku Wm. P. Leleiohoku
Niumalu House Lot	9971:39 – R.P. 6690	Wm. P. Leleiohoku
Kailua House Lots	9971:41 – R.P. 6694 9971:42 – R.P. 6694 9971:45 – R.P. 6693 9971:46 – R.P. 6693 9971:47 – R.P. 6693 9971:68 – R.P. 6693	Wm. P. Leleiohoku Wm. P. Leleiohoku Wm. P. Leleiohoku Wm. P. Leleiohoku Wm. P. Leleiohoku Wm. P. Leleiohoku
Honua‘ula 1st	— Buke Mahele 1848:181	Government Land. Relinquished by Kamehameha III.
Honua‘ula		XX (Ahp. — Acs.)
Hienaloli 1	— Not cited in the Buke Mahele	Government Land
Hienaloli 2	7716:5 – R.P. —	Ruta (Ruth) Keelikolani, daughter of Pauahi-nui and M. Kekuanaoa. She was the half sister of Kamehameha IV and V, and Victoria Kamamalu. She was also married to Kuakini’s hanai, Leleiohoku. (Ahp. — Acs.)

Hienaloli 3	—	Government Land
Hienaloli 4th	387 Part 4, Section 2 No. 1	A.B.C.F.M. (Church lands)
Hienaloli 5th	8524 B:3 – R.P. — Buke Mahele 1848:167	Peke (Ahp. — Acs.)
Hienaloli 6th	—	Government Land
Auhaukeaʻe 1st	11216:37 – R.P. 7580 Buke Mahele 1848:28	Mikahela Keahikuni Kekauonohi (334.00 Acs.)
Auhaukeaʻe XX 2nd	Buke Mahele 1848:8, 179 —	Relinquished by Kapuaiwa Lot Kamehameha. Relinquished by Kamehameha III to Government Land Inventory.
Puaʻa 1st	7715:13 – R.P. 7845 Buke Mahele 1848:8	Kapuaiwa Lot Kamehameha (859.00 Acs.)
Puaʻa 2nd	—	Check Crown / Government Land
Puaʻa 3rd	Buke Mahele 1848:14, 179	Government Land. Relinquished by Moses Kekuaiwa.
Waiʻaha 1st	387 Part 4, Section 2, No. 3	A.B.C.F.M. (Mission Station land) (— Acs.)
Waiʻaha 2nd	Crown Land Crown Land	(1890, pursuant to "Act to Declare Certain lands to be a part of the Crown Lands and Royal Domain)
Kahului 1st Buke Mahele 1848:163	8516-B:3 – R.P. 1669 Kaoanaeha and John Young Sr., one of Kamehameha I's haole advisors. Sister of Kekelaokalani, Keoni Ana and Lahilahi. Kamaikui adopted her niece Emma (daughter of Kakelaokalani), who was born at Kahului 2nd, and later the wife of Alexander Liholiho, and known as Queen Emma.	Grace Kamaikui, the daughter of (Ahp. — Acs.)
Kahului 2nd	—	Government Land. (846 Acs.)
Puapuaʻa iki (1st)	4887:2 received land in return for services to	Thomas Sam, a foreigner who the Kamehameha line.
Puapuaʻa nui (2nd) Not cited in Buke Mahele	8559-B:8 – R.P. 7819 grandson of Kaleimamahu, half brother of Kamehameha I.	William C. Lunalilo, the son of Kekauluohi and Kanaina, and
Hōlualoa 1st & 2nd Buke Mahele 1848:4	7713:43 – R.P. 4475 (Ahp. 7330 Acs.)	Victoria Kamamalu
Hōlualoa 3rd	—	Government Land
Hōlualoa 4th	7228 – R.P. —	Loe, daughter of Kapiiwi and

Buke Mahele 1848:131	Kahikoloa of Holualoa and sister of Kinimaka. (638 Acs.)	
Kaumalumalu Not cited in Buke Mahele	9971:28 – R.P. — (Ahp. — Acs.)	William Pitt Leleiohoku.
Pāhoehoe 1st & 2nd Buke Mahele 1848:5	— Relinquished by Victoria Kamamalu.	Government Land.
Pāhoehoe 2nd Buke Mahele 1848:28	11216:35 (1190 ac.)	Mikahela Keahikuni Kekauonohi.
Pāhoehoe 3rd Buke Mahele 1848:163	8520-B:3 – R.P. 1668 Kaoanaeha, and John Young Sr. Mother of Queen Emma. (Ahp. — Acs.)	Gini Lahilahi. Daughter of
Pāhoehoe 4th	—	Government Land
Laʻaloa 1st Buke Mahele 1848:16	7716:4 – R.P. — (Ahp. — Acs.)	Ruth Keelikolani
Laʻaloa 2nd	Buke Mahele 1848:91, 183	Relinquished by Kaunuohua, Relinquished by Kamehameha III to Government Land Inventory.
Kāpalaʻalaea 1st Buke Mahele 1848:147	4452:2 – R.P. — Naihekukui and Kepooku. Wife of Kamehameha III. (— Acs.)	Hazaleleponi Kalama, daughter of
Kāpalaʻalaea 2nd	Buke Mahele 1848:181	Government Land
Kahaluʻu Buke Mahele 1848:6	7713:6 – R.P. 6856 (5443.00 Acs.)	Victoria Kamamalu
Keauhou 1st Buke Mahele 1848:6	7713:7 – R.P. 4475 (Ahp. 5146 Acs.)	Victoria Kamamalu
Keauhou 2nd (kahi i hanau ai o Kauikeaouli– birth place of Kamehameha III) Buke Mahele 1848:8	7715:12 – R.P. 7844	Kapuaiwa Lot Kamehameha. (109,600 Acs.)

ʻĀina of the Crown and Government

At the time of recording the "Buke Mahele," issues with the completeness of the records were already evident. On July 14, 1848, "*Ka Elele Hawaii*" the Kingdom newspaper published a list of lands which King Kamehameha III transferred to the ʻĀina Aupuni (Government Land) as a mean of providing hoaʻāina with access to lands more suited to their needs, and as a means of developing revenue for the government. The list also includes those ʻāina which the King retained for the benefit of the use and Crown. *Ka Elele Hawaii* identified the following ʻāina between Keauhou to Kaloko:

Puaa (Crown)
Kealakehe (Government)
Honuaula (Government)
Auhaukeae (Government)
Kahului (Government)
Elepaio Ili no Honokohau (Government)
Lanihau 2 (Government)
Hienaloli 1 & 2 (Government)
Puaa 2 & 3 (Government)
Laula Ili i Holualoa (Government)

Kooai Ili o Holualoa 3 (Government)
Kamakaolohe Ili i Pahoehoe (Government)
Laaloa (Government)
[*Ka Elele Hawaii*, Iulai 14, 1848:1]

Kaulehua Ili (Government)
Pahoehoe (Government)
Kapalaaea 2 (Government)...

Hoa'āina (Native Tenants) Allowed To Make Claims For 'Āina They Resided on and Actively Cultivated

As the Māhele between the King and his chiefs was underway, provisions were also being established for the hoa'āina. This was manifest in the "Enabling" or "Kuleana Act" (December 21,1849) laid out the framework by which native tenants could apply for, and be granted fee-simple interest in "Kuleana" or property rights, and also confirmed their rights of access to collection of resources necessary to their life upon the land in their given ahupua'a. The Act reads:

> August 6, 1850
> An Act confirming certain resolutions of the King and Privy Council passed on the 21st day of December 1849, granting to the common people allodial titles for their own lands and house lots, and certain other privileges.
>
> Be it enacted by the Nobles and Representatives of the People of the Hawaiian Islands in Legislative Council assembled;
>
> That the following parcels which were passed by the King in Privy Council on the 21st day of December A.D. 1849 when the Legislature was not in session, be, and are hereby confirmed, and that certain other provisions be inserted, as follows:
>
> **Section 1**. Resolved. That fee simple titles, free of commutation, be and are hereby granted to all native tenants, who occupy and improve any portion of any Government land, for the land they so occupy and improve, and whose claims to said lands shall be recognized as genuine by the Land Commission; Provided, however, that the Resolution shall not extend to Konohikis or other persons having the care of Government lands or to the house lots and other lands, in which the Government have an interest, in the Districts of Honolulu, Lahaina and Hilo.
>
> **Section 2**. By and with the consent of the King and Chiefs in Privy Council assembled, it is hereby resolved, that fee simple titles free of commutation, be and are hereby granted to all native tenants who occupy and improve any lands other than those mentioned in the preceding Resolution, held by the King or any chief or Konohiki for the land they so occupy and improve. Provided however, this Resolution shall not extend to house lots or other lands situated in the Districts of Honolulu, Lahaina and Hilo.
>
> **Section 3**. Resolved that the Board of Commissioners to quiet Land titles be, and is hereby empowered to award fee simple titles in accordance with the foregoing Resolutions; to define and separate the portions belonging to different individuals; and to provide for an equitable exchange of such different portions where it can be done, so that each man's land may be by itself.
>
> **Section 4**. Resolved that a certain portion of the Government lands in each Island shall be set apart, and placed in the hands of special agents to be disposed of in lots of from one to fifty acres in fee simple to such natives as may not be otherwise

furnished with sufficient lands at a minimum price of fifty cents per acre.

Section 5. In granting to the People, their House lots in fee simple, such as are separate and distinct from their cultivated lands, the amount of land in each of said House lots shall not exceed one quarter of an acre.

Section 6. In granting to the people their cultivated grounds, or *Kalo* lands, they shall only be entitled to what they have really cultivated, and which lie in the form of cultivated lands; and not such as the people may have cultivated in different spots, with the seeming intention of enlarging their lots; nor shall they be entitled to the waste lands.

Section 7. When the Landlords have taken allodial titles to their lands the people on each of their lands shall not be deprived of the right to take firewood, *aho* cord, thatch, or ti leaf from the land on which they live, for their own private use, should they need them, but they shall not have a right to take such articles to sell for profit. They shall also inform the Landlord or his agent, and proceed with his consent. The people shall also have a right to drinking water, and running water, and the right of way. The springs of water, and running water, and roads shall be free to all should they need them, on all lands granted in fee simple. Provided that this shall not be applicable to wells and water courses which individuals have made for their own use.

Done and passed at the Council House, Honolulu this 6th day of August 1850. [copied from original hand written "Enabling Act"[78] – DLNR 2-4]

The lands awarded to the hoa'āina (*native tenants*) became known as "*Kuleana* Lands." All of the claims and awards (the Land Commission Awards or LCA) were given a "Helu" or number, generally referred to as Land Commission Awards. These Helu (LCA) remain in use today to identify the original owners of lands in Hawai'i.[79]

The work of the Land Commission was brought to a close on March 31, 1855. The program, directed by principles adopted on August 20, 1846, met with mixed results. In its' statement to the King, the Commissioners to Quiet Land Titles (George M. Robertson, March 31, 1855) summarized events that had transpired during the life of the Commission:

> ...The first award made by the Commission was that of John Voss on the 31st March 1847... ...The time originally granted to the Board for the hearing and settlement of all the land claims in the kingdom was two years, ending the fourteenth day of February, 1848.
>
> Before the expiration of that term it became evident that a longer time would be required to perform a work... Accordingly, the Legislature on the 26th day of August

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78 See also Kanawai Hoopai Karaima no ko Hawaii Pae Aina (Penal Code) 1850.

79 While on the surface, this statement is correct, over the last 175-years, layers of transposition have been added to maps and records. Thus the Real Property Tax Maps (TMK), are often erroneous, with Helu and the names of original awardees are inacurrate.

1847, passed an Act to extend the duration of the Board to the 14th of February, 1849, adding one year to the term first prescribed, not however, for the purpose of admitting fresh claims, but for the purposes of hearing, adjudicating and surveying those claims that should be presented by the 14th February, 1848. It became apparent to the Legislature of 1848 that the labors of the Land Commission had never been fully understood, nor the magnitude of the work assigned to them properly appreciated, and that it was necessary again to extend the duration of the Board. An act was accordingly passed, wisely extending the powers of the Commissioners "for such a period of time from the 14th day of February 1849, as shall be necessary for the full and faithful examination, settlement and award upon all such claims as may have been presented to said Board." ...[T]he Board appointed a number of Sub-Commissioners in various parts of the kingdom, chiefly gentlemen connected with the American Mission, who from their intelligence, knowledge of the Hawaiian language, and well-known desire to forward any work which they believed to be for the good of the people, were better calculated than any other class of men on the islands to be useful auxiliaries to the Board at Honolulu...

...During the ten months that elapsed between the constitution of the Board and the end of the year 1846, only 371 claims were received at the office; during the year 1847 only 2,460, while 8,478 came in after the first day of January 1848. To these are to be added 2,100 claims, bearing supplementary numbers, chiefly consisting of claims which had been forwarded to the Board, but lost or destroyed on the way. In the year 1851, 105 new claims were admitted, for Kuleanas in the Fort Lands of Honolulu, by order of the Legislature. The total number of claims, therefore, amounts to 13,514, of which 209 belonged to foreigners and their descendants. The original papers, as they were received at the office, were numbered and copied into the Registers of the Commission, which highly necessary part of the work entailed no small amount of labor...

...The whole number of Awards perfected by the Board up to its dissolution is 9,337, leaving an apparent balance of claims not awarded of say 4,200. Of these, at least 1,500 may be ranked as duplicates, and of the remaining 2,700 perhaps 1,500 have been rejected as bad, while of the balance some have not been prosecuted by the parties interested; many have been relinquished and given up to the Konohikis, even after surveys were procured by the Board, and hundreds of claimants have died, leaving no legal representatives. It is probable also that on account of the dilatoriness of some claimants in prosecuting their rights before the Commission, there are even now, after the great length of time which has been afforded, some perfectly good claims on the Registers of the Board, the owners of which have never taken the trouble to prove them. If there are any such, they deserve no commiseration, for every pains has been taken by the Commissioners and their agents, by means of oft repeated public notices and renewed visits to the different districts of the Islands, to afford all and every of the claimants an opportunity of securing their rights... [Minister of Interior Report, 1856:10-17]

ʻĀina Kuleana: Summary of Claims For Kuleana Made by the Hoaʻāina

One of the requirements of the Māhele for hoaʻāina was that they produce proof of their use of the lands being claimed. A careful review of claims made by native residents of the lands between Keauhou 2nd to Kaloko reveals that in the time preceding, and during the time of registering

claims, Hawaiian use of the land was ongoing in a wider area than reflected on historic and TMK maps. Indeed, of particular importance to this current study is that the number of claims for land on the kula (open lands behind the shore in reaching to the forested zone) was greater than the number of claims for other agricultural zones of Kona.

A number of hoa'āina made verbal claims which were transcribed as spoken, and others forwarded written claims to the Land Commission in order to register their claims for land. This process created the volumes of the Native and Foreign Register of Claims. The next phase of documentation was the presentation of supporting "Testimony" by individuals who were family with the applicants and the lay of their kuleana. The record of the witnesses was recorded in the volumes of the Native or Foreign Testimony. This was followed by conducting of surveys, recorded in the "Mahele Award Books," and in many cases, further confirmed by issuance of a Palapala Sila Nui (Royal Patent on Kuleana Claims).

As a part of the present study, we reviewed thousands of records from the hoa'āina which include lands between Keauhou 2nd to Kaloko to identify residency, land use, agricultural zones and crops, and access to resources claimed by applicants. Table 12 is a summary of information recorded from the Keauhou-Kaloko region.

Table 12. Summary of Crops Identified in Māhele/Kuleana Claims

Food Plants	Number of Citations	Other Plants	Number of Citations
Kalo (taro)	54	Loulu (Pritchardia palms)	15
Uala/Uwala (sweet potatoes)	45	Kou (Cordia) trees	6
Niu (coconut trees)	15	Hala (pandanus)	5
Ipu (gourds)	3	Noni (Indian mulberry)	1
Maia (bananas or plantains)	3	Hau (hibiscus)	1
		Olonā (Touchardia latifolia)	2
Uhi (yams)	1		
Ulu (breadfruit)	3		

Introduced Crops	Number of Citations
Kope (coffee)	12
Alani (orange trees)	14
Hala kahiki (pineapple)	2
Momona (Cherimoya)	1
Pu (squash/pumpkin)	2

It should be remembered that the Māhele records are incomplete because native tenants who were living upon and working on the land were often hesitant to make personal claims for kuleana. The Hawaiian commoners had difficulty—spiritually and in practice—with the foreign notion of being able to "own" land. This naturally limited the number of tenants who came forward to apply for kuleana. Of those who did come forward, many reported that their mākua (parents) and kūpuna (grandparents or elders) had used the lands prior to their inheritance of the parcels.

Some Hoa'āina Were Reluctant to Register Claims for Kuleana

Reviewing the results of the Māhele and awarding of Kuleana, some readers might wonder, "why?" The cultural-social context in which private land title was a foreign concept was in itself a

predominant issue, but other concerns also contributed to the low response. In Kona, John Fuller was appointed land agent, and served as one of the primary surveyors of the kuleana claims. In 1853, Fuller wrote a number of letters to Land Commissioners describing difficulties he encountered in having applicants come forward. Among the problems was that some of the aliʻi, konohiki and their representatives used fear tactics to intimidate their hoaʻāina. This had implications across the region and all the Hawaiian Islands. Among the letters are the following:

The Kingdoms' policy of providing land grants to native tenants was further clarified in a communication from Interior Department Clerk, A. G. Thurston, on behalf of Keoni Ana (John Young), Minister of the Interior; to J. Fuller, Government Land Agent-Kona:

> ***February 23, 1852***
>
> …His Highness the Minister of the Interior instructs me to inform you that he has and does hereby appoint you to be Land Agent for the District of Kona, Hawaii.
>
> You will entertain no application for the purchase of any lands, without first receiving some part, say a fourth or fifth of the price; then the terms of sale being agreed upon between yourself and the applicant you will survey the land, and send the survey, with your report upon the same to this office, for the Approval of the Board of Finance, when your sales have been approved you will collect the balance due of the price; upon the receipt of which at this office, the Patent will be forwarded to you.
>
> Natives who have no claims before the Land Commission have no Legal rights in the soil. They are therefore to be allowed the first chance to purchase their homesteads. Those who neglect or refuse to do this, must remain dependent upon the mercy of whoever purchases the land: as those natives now are who having no kuleanas are living on lands already Patented, or belonging to Konohikis.
>
> Where lands have been granted, but not yet Patented, the natives living on the land are to have the option of buying their homesteads, and then the grant be located, provided this can be done so as not to interfere with them.
>
> No Fish Ponds are to be sold, neither any landing places.
>
> As a general thing you will charge the natives but 50 cents pr. acre, not exceeding 50 acres to any one individual.
>
> Whenever about to survey land adjoining that of private individuals, notice must be given them or their agents to be present and point out their boundaries… [Interior Department Letter Book 3:210-211]

On October 11, 1852, Fuller wrote to J. Smith (Secretary, Board of the Land Commission); Describing extent of survey work completed—including the consolidation of multiple ʻāpana into

a single parcel[80]— and also reported that Naheana or Kaheana, Konohiki of several lands in vicinity of Kailua has been "abusive." Fuller wrote:

> …He [Naheana] says his chiefs have given orders not to allow any Kuleana on their lands… …But I should like to know how to proceed with such a villain… …He has prevented quite a number from showing their Kuleanas and I leave them until Mr. Robertson or some other of the Commission come up…
>
> …Most of the claimants here have taken all their land in one piece, besides their pahale – and I must say their claims are very moderate, generally not more than from 1 to 3 acres, according to what they have planted… [DLNR s-1- Box 1]

J. Fuller, Kona Land Agent, Surveyor, to
J. H. Smith, Secretary to Board of Land Commissioners
August 5, 1853, Kona, Hawai'i

> … I am happy to inform you that I have completed the surveys of Kuleanas in this District so far as I have been able to find them. There are, however, quite a number scattered through the District which have not been pointed out to me, and a few in the neighborhood of Kailua which the Konohiki, Kaheana, prevented the people showing me. I am now making a tour through the whole district as Land Agent, and shall survey all the scattering claims which are pointed out to me… [HSA – Interior Department Land Files]

It should be noted here that several Native Hawaiians in the Kona District, also submitted letters regarding the character of Fuller, claiming that he was rude and impatient with them—even asking that he be replaced as the land agent.[81]

Native Terms Found in Cited Kuleana Claims

In the translated texts that follow, native terms are used. The glossary in Table 13, below, provides readers with translations of various words and terms used in the Māhele claims; and that describe plants cultivated, and garden features in the study area.

---

[80] This action resulted from the massive job of surveying claims for the Land Commission. Today, it provides us with some background in the difference between Register and Testimony claims with multiple 'āpana across several "wao" (environmental zones) which traditionally had been an important aspect of hoa'āina residency. The multiple 'āpana enabled residents to access lands and sustain themselves through the varying seasons of weather and the availability of wai (water) resources.

[81] See Kahookaumaha to Keoni Ana, Augate 21, 1854 (HSA-Int. Dept. Misc. Box 146).

Table 13. Glossary of Selected Hawaiian Terms Cited in Kuleana Claims

Ahupuaa Ahupuaʻa

An important sub-division of land (usually extending from a fishery to an area on the mountains), generally containing varied environmental zones and resources necessary to sustain a community. Such zones and resources were managed in smaller land parcels—among which are ʻili, kīhāpai, kula, lele, māla, moʻo and paukū— which were delineated within given ahupuaa.

Aina (ʻĀina)

General term for land, earth – that which sustains.

Aina waiho wale (ʻĀina waiho wale)

Idle land (that which was being rested or untended; also an unclaimed parcel.

Alaloa Long trail.

The main ancient trail used to provide access through the district and around the island, generally the trail situated near the shoreline (near the present day Aliʻi Drive). Sometimes, the mauka trail Ke-ala-ehu was also referred to as the ala loa.

Alani Orange trees.

Alanui A trail; in the early system of trails, one that was larger than the ala hele (local paths and accesses), yet smaller than the alaloa Alanui Aupuni – Government Road.

Alanui Aupuni

Government Road System established by law in 1848 and protected in the "Highways Act of 1892." In the context of the claims below, use of :Alanui Aupuni" might refer to both the coastal and mauka roads around the island. In many places, overlaid on the Alaloa and Kealaehu.

Alanui pii Ascending trail (i.e., trail leading to the uplands, the mauka-makai trail system which occurred in all ahupuaʻa.).

Amau (ʻAmaʼu or ʻĀmaʻumaʻu)

The Sadleria fern forest zone, a region of upland agricultural fields.

Anana A unit of measurement extending from tip of longest finger to longest finger, with arms stretched out.

Apaa (ʻĀpaʻa)

An arid area of dry land cultivation.

Apana (ʻĀpana)

Parcels or lots within given kuleana (i.e. Apana 1, Apana 2…). In texts below, ʻāpana identified on historical maps as being within the primary study area are identified by "ʻĀp." followed by the number of the specific ʻāpana.

Eamaia (Eʻa maiʻa)

A variety of mountain banana tree.

Ili (ʻIli) Small units of land within an ahupuaʻa, often described as long narrow parcels of land that run mauka-makai, and cross several agricultural zones.

Ipu (Gourds)

Used as containers for storing valuable items, for the collection of water, for food, in ceremonial observance (particularly those associated with Lono), and as musical instruments.

Iwi aina (Iwi ʻāina)

A boundary wall, identifying any one of several features, as an ahupuaʻa boundary wall, a boundary wall of a planting area and/or the boundary between two separately held ʻāpana of land.

Iwilei A unit of measure with arm extended out from Collar bone to tip of mid-finger.

Kahakai Beach, shoreline.

Kahuahale House site.

Kalo (Taro)

Kalo served as one of the major starch foods of Hawaiians around the islands. Kalo is used in ceremonies, is a part of the Hawaiian stories of creation and birth of kānaka, and was developed into many varieties, some of which were particularly valued in the Kona district. While often thought of as being grown in loʻi Kalo (irrigated taro pond fields), the cultural record reveals that there was more kula (dryland) Kalo grown in the islands than that grown in loʻi Kalo..

Kaluulu (Kanu-ʻulu & Ka-ulu-ʻulu)

The region of ʻulu cultivation and growth. Providing an important starch food source, wood valued in making canoes and various tools; in some accounts young ʻulu branches were harvested and used in making kama (bark cloth). The canopy of ʻulu provided shade and helped retain moisture from important under-story cultigens.

Kealaehu (Ala Ehu)

The ancient upland trail that passed through the ʻāmaʻumaʻu (fern forest agricultural zone) in the vicinity of the present day Māmalahoa (Belt) Highway. It's development is associated with the reigns of Ehu and ʻUmi.

Kealakowaa (Kealakōwaʻa)

The trail on which canoes were dragged from the uplands to the shore; crosses several ahupuaʻa including Kahului to Hōlualoa.

Kihapai (Kīhāpai)

A dry land garden; cultivated areas, or patch; generally written in cited texts as "kihapai ua mahiia" (planted garden). "Kīhāpai Kalo" and "kīhāpai ʻuala (dry land taro and sweet potato fields). in the larger Kona Field System, the planting areas are often marked by walls, clearings, stone mounds, and planting pits, etc…

Ko (Kō) Sugar cane.

Koele (Kōʻele)

A parcel of land cultivated in support of the King. These parcels were held under title of the Crown or in the Kingdom Land Inventory

Konohiki Land overseer, chief or owner of the larger land division.

Kope Coffee trees.

Kou The Cordia subcordata tree.

Kula Plain or grassy flat land; generally, an area between the shoreline and lower forest zone. In the early usage, the term describes lowland agricultural fields. In the later 1800s, usage of "kula" in describing land areas was used to describe pasture land. This usage postdates claims of the Māhele, and if taken in the latter meaning changes actual forms of land use. This is particularly problematic when a Kuleana claim text reads something like "1 kula Kalo" and the later translations state, for example, "1 one taro pasture," which is leads to inaccurate or misleading descriptions of lands use.

Kuleana In the context of the Māhele, kuleana are property rights. In larger context there are several meanings, but "responsibility" is one of the important uses of the word.

Kumu In this context, Tree as in "kumu loulu."

Kupuna Ancestor, Elder. Kūpuna (Ancestors, Elders).

Lele (and ʻili lele)

A separate or detached section of an ʻili (e.g., pieces of a land parcel separated by environmental zones, but carrying the same name); may also even be a parcel of land associated with a different ahupuaʻa, and extends across various "wao" elevational zones.

Lihi A narrow strip of arable land.

Loulu Pritchardia palm.

Maia Bananas.

Makai Towards the sea (shoreward).

Makua Parent(s), elders.

Mala (Māla)

A dryland garden, planted field, or patch; e.g., "mala uala" (sweet potato field), "mala Kalo" (taro field).

Mau or Amau (Maʻu; cf. ʻAmaʻu above)

A damp fern region of the uplands in which cultivation occurred.

Mauka Towards the mountain (upland).

Mea ana aina (Mea ana ʻāina) Surveyor.

Niu Coconut trees.

Olona (Olonā)

An endemic Hawaiian shrub (*Touchardia latifolia*), which was used to produce extremely strong fiber for cordage and ceremonial kapa.

Pa (Pā) depending on context of documentation, use of "pa" indicates a fence, wall, enclosure, lot/parcel of land, or house lot (see "Pahale").

Paahao (Paʻahao)

Prison/Jail. Parcels of land work by convicts in public service. Paʻahao parcels were held under title of the Kingdom Land Inventory.

Pa aina (Pā ʻāina)

Land division wall (see discussion about the history of the Pā Kuakini or Great Wall in this study).

Paakai (Paʻakai)

Salt (literally, hard ocean water) sometimes identified in claims.

Pahale (Pāhale)

A house lot (also hale, kahuahale, kauhale).

Pahee (Paheʻe)

A moist (shaded) area of dry land agricultural fields.

Pahulu Land that is worn out, lying fallow to restore its productivity.

Pali A cliff.

Papipi (Pā pipi)

Cattle wall or enclosure, depending on context (see the section that discusses history of the Pā Kuakini or Great Wall). Depending on context, and written "pa pipi" it describes a cattle enclosure.

Pauku (Paukū)

A segment of land, generally a long narrow cultivated section of land, described "pauku ua mahiia" (a cultivated trip of land).

Poaha (Pōʻahā)

Thursday parcel of land worked in lieu of paying taxes. These parcels were held under title of the Kingdom Land Inventory.

Poalima (Pōʻalima)

Friday parcel of land worked in support of the chiefs. These parcels were held under title of the chiefs or in the Kingdom Land Inventory.

Pu (Pū) Squash or pumpkin.

Puhala (Pūhala)

Growth of hala (pandanus) trees.

Punawai (Pūnāwai)

A freshwater spring.

Uala (ʻUala or ʻUwala)

General name of Hawaiian sweet potatoes, one of the major crops of the Kona district and associated with the ritual of Lono. Later, "ʻuala kahiki" was the native name given to introduced Irish potatoes.

Uhi Yams.

Ulu (ʻUlu) Breadfruit trees.

Wahi waiho wale Unused or untended land.

Excerpts from Kuleana Claims in the Ahupua‘a of Keauhou 1 & 2, Kahalu‘u, Wai‘aha-Kahului, Keahuolū-Kealakehe – by Kumu Pono Associates

Background

The claim and award narratives below are generally cited in order from South (Keauhou) to North (Kealakehe and adjoining lands). Some of the claims cite kuleana (property rights) across more than one ahupua‘a—particularly those of Ali‘i and foreign claimants. The claims also span a wide cross section of “wao” (traditional environmental zones), ranging from kai and kahakai” (ocean and shore lands) to the “ulu lā‘au,” or “mauka loa” (forest or distant uplands). The extensive use of lands across several wao as cultivating fields, residences, water resources and collection of natural resources such stone, birds and plants/trees—was integral to the long-term wellbeing and sustainability of hoa‘āina. This practice allowed the native tenants, to adjust their cultivation and residency practices based on weather and environmental conditions. As noted earlier in this section on development of the Māhele/Kuleana rights limited claimants’ ability to claim ‘āina, as the act required that they were actively living on their house lots (approximately one quarter acre), and the agricultural land claims were limited the ‘āina that were actively under cultivation (“Enabling Act”[82] – DLNR 2-4, August 6, 1850).

Because of the scope of this project spans multiple ahupua‘a, we focused on land use claims identified on historic maps within a portion of most ahupua‘a within the study area, generally in the region from the shore to c. 2,000-foot elevation. Kepā Maly, then prepared verbatim translations—in some instances excerpts of larger claims—of the identified Native/Foreign Register claim documents. We then looked through the Native/Foreign Testimony documents, preparing excerpts of the documents.[83] Also included in the “Testimony” documents are cited the boundary references/adjoining parcels as those provided documentation of neighboring residents, features and adjoining land uses, which demonstrate the extent of land use across the region at the time.

It is important to remember that additional documentation of kuleana claims exists in the notes of survey documented in the “Mahele Award Books” and in “Royal Patents” issued upon confirmation of the claims.[84] Where the cited claims include parcels identified on maps as being within the primary study zone—shore to c. 2,000-foot elevation. The ‘āpana (parcels) identified as “‘Āp.” (followed by a number), indicate those ‘āpana which are in the upper region of the project area. Also, the writing is at times illegible, and because the spelling of place and people names is

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82 See also Kanawai Hoopai Karaima no ko Hawaii Pae Aina (Penal Code) 1850.

83 Typically, the Register and Testimony volumes recorded the application and initial description of the kuleana claims, followed by refined descriptions and witness support of the application. Between 1848 to 1855, many of the initial applications and supporting documentation were lost in transit. As a result, some of the Kuleana cited below include only one record prior to accepting or denying the claim.

84 While it was the original intention of the Commission to issue Palapala Sila Nui (Royal Patents) on awarded claims, the monumental task of recording the Māhele and Kuleana, proved to be too much, and also extended beyond the allotted time frame for completing the commission’s work. As a result, many awards were confirmed without issuance of the Royal Patent.

inconsistent, the correct spelling may be unclear. In such cases we have used the "[?]" following the word where it is uncertain.

Regardless, a review of the claim documentation provides us with a rich and varied collection of inoa ʻāina (place names) across the landscape. Table 14 is a list of names across various ahupuaʻa which we could identify through the cited documents. Some of the names occur in multiple ahupuaʻa

Table 14. Inoa ʻĀina (Place Names)

Ahupuaʻa, ʻIli, Paukū, Moʻo, Kīhāpai Found in Cited Kuleana Claims

Inoa ʻĀina	Ahupuaʻa
Ahualoa	Honokohau
Alanaio	Lanihau
Auliilii	Lanihau
Elepaio	Honokohau
Haleamahuka	Honokohau
Haleape	Keauhou
Haleokane	Keauhou
Haleokaupaku	Keauhou
Haleolai	Keauhou
Haleolono	Moeauoa, Honokohau
Halewaawaa	Kahului
Haliipalala	Keauhou, Kahaluu
Hanamauloa	Waiaha
Hanapouli	Honokohau
Hapaipapa	Kahului
Helekamahina	Kahaluu
Hokio	Kahaluu
Hopeloa	Lanihau
Hulihee	Keopu
Hulihuli	Kealakehe
Hulilau	Kahului
Ililoa	Kahaluu, Keauhou, Puapuaa
Inaimoa	Kahului
Kaaipuaa	Kahului
Kaaipuhi	Keopu
Kaaki	Kealakehe
Kaeamaia	Kealakehe
Kaeo	Honokohau
Kahea	Moeauoa
Kahuamoa	Kahaluu
Kahuki	Kahului
Kaiakeakua	Lanihau
Kaimuloa	Kahaluu
Kalamaunu	(Kailua Vicinity)
Kaloaulu	Kahaluu
Kaluaaina	Keauhou
Kaluaolena	Kahului
Kaluaoliloa	Keopu

Kaluapaa	Keopu
Kamakahonu	Lanihau
Kamuku	Kahaluu, Lanihau
Kamumu	Kahului
Kaniohale	Kealakehe
Kanuaawa	Moeauoa
Kaohia	Keauhou, Moeauoa
Kapio	Kahaluu
Kauailoa	Kahului, Waiaha
Kaulukauheana	Keauhou
Kealaehu (Alaehu)	An ancient trail attributed to Umi-a-Liloa that crosses all of the ahupuaa in the Kona District.
Kealakowaa (Alakowaa)	Kahului
Kealakupou (Kaalakupou)	Keauhou
Kealaloa (Alaloa)	A part of the ancient trail system that crosses through Kona, encircling the island.
Kihikihi	Kahaluu
Kikiaiole	Kahului
Kionalua	Keauhou
Koaie	Kahaluu
Kohekaua	Lanihau
Kohelemu	Keauhou
Koheloa	Lanihau
Kuekaa	Keauhou
Kukuihaa	Kahaluu
Kukuiokahinu	Kahaluu
Kukuimino (Kukuiomino)	Kealakehe
Kukuiominoiki	Kealakehe
Kukuiominonui	Kealakehe
Kukuipuloa	Kahului
Kumuhawane	Kahaluu, Keauhou
Kumuniu	Keauhou
Lapalua	Kahului
Lauekieleele	Keauhou
Lauhulu	Puapuaa
Laulaulahili	Keauhou
Lehuakona	Kahaluu
Luaoiliki	Kahaluu, Lanihau
Maalo	Keauhou
Maili	Keauhou, Keahuolu
Makaihuliwaa	Waiaha
Makakaualii	Keauhou
Makakiloia	Kahaluu, Kealakehe
Makolea	Kahaluu
Malaiula	Keauhou
Moelaepuni	Lanihau 2
Mokuaikaua	Keauhou
Naalapa	Kahului
Niukini	Kahului
Niukukahi	Lanihau
Niumalu	Keopu

Nuuhiwa	Honokohau
Ohiki	Kahului, Puaa
Ohuahale	Kahului
Opukaha or Opuokaha	Keauhou
Pahauopu	Kahaluu
Pahoa	Kahaluu
Pahukauila	Waiaha
Pakii (Paki)	Keauhou, Kahaluu
Pakohe	Keauhou
Pamaki	Kahaluu
Papaakoko	Honokohau
Papaawela	Lanihau
Papala	Keauhou
Papalanui	Keauhou
Papiha	Kahului
Papipi	Localities identified as the “Great Wall” in various ahupuaa, and as cattle enclosures.
Papuaa	Kahaluu, Kahului, Moeauoa, Lanihau
Papuaaiki	Kealakehe
Papuaanui	Kealakehe
Paulu	Kahaluu
Pawaalae (wahi pana)	Puaa
Pohakupalahalaha	Honokohau
Poolani	Keopu
Puakahi	Kahaluu
Punaio	Waiaha
Puuhinahina	Kahaluu
Puukehoe	Kahului
Puuki	(not named)
Puukou	Honokohau
Puukukaeke	Waiaha
Puuloa	Keauhou, Lanihau
Puunoni	Keauhou
Puohe	Kealakehe
Puuokaa	Keauhou
Puuokaliu	Lanihau, Keahuolu
Ukakoni	Honokohau
Ulumoe	Kahaluu
Umiwai (Punawai)	Kahului
Waiapuko	Kahului
Waiha	Honokohau
Waipio	Keauhou, Kahaluu

Māhele Discussion: Land Use Model in Kona

This section highlights select excerpts from the Māhele Awards Books, including Native Testimony, Native Register, and Land Commission Awards. Transcriptions and translations from original Awards Books were completed by Kumu Pono Associates; the discussions featured below were completed by Nohopapa Hawai'i.

Kamehameha School Parcel - Keauhou Ahupua'a

Keauhou 2 Ahupua'a and Environs

Multiple 'āpana under cultivation, predominantly with taro and 'uala, although foreign-introduced oranges and even coffee were also cultivated, and one or more walled pāhale at the shoreline typify Keauhou 2 land claims. Many claims reference lands as ancestral places traditionally occupied by members of one 'ohana across multiple generations. A cluster of helu within the land division sit north of the Kamehameha Schools well site, at a similar 1,500 amsl (above mean sea level) elevation, and are described below:

Kukahi, Helu 7366

Kukahi issued a Native Register claim for "...a land claim and a pahale claim on the shore," and 20 kīhāpai in the 'ili 'āina of Puunoni (Kukahi was awarded 2 'āpana in Keauhou 2 (MA:v5, p578). Native testimony issued by Kapela on behalf of Kukahi (NT:v4, p653-654) describes mauka lands in the 'ili 'āina of Maili containing oranges and olonā[85] tended by Kukahi as well as "very old land" in the 'ili 'āina of Kohelemu inherited from his parents and planted by his wife. Kapela goes on to describe Kukahi's residence in Keauhou 2: "1 Apana Pahale, Mauka and all surrounding boundaries idle land. It was enclosed with a wall by him. 1 hale is his, and he resides there," (NT:v4, p653-654). Notably, Kapela also described the oranges and olonā as "with Kane" on February 21, 1849, evincing continuation of Hawaiian cultural beliefs and practices in Keauhou 2 during the mid-nineteenth century.

Native Register, Volume 8:430, Helu 7366 ('Āp. 1), Kukahi.
January 23, 1848

> ...Here is this, there are some planted trees, an orange tree and olona which is in another Ili aina.
>
> The Land Commissioners: Here am I, with a land claim and a pahale claim on the shore. I hereby tell you of the size of my land claim and the pahale claim. Here is the length of my land 810 long, 262 wide, from the kula to the distant uplands. Here is the length of by pahale claim, 40 long by 20 wide; Here is the name of the ili aina, Puunoni. Here is the number of my kihapai, 20.
>
> Done by Kukahi and Kinimaka 2.

---

[85] *Touchardia latifolia* – a bush with many uses cultivated primarily in wet mauka locations whose fibers were frequently crafted into cordage (Kraus 1993:27, 28).

Keauhou, Kona, Hawaii.

Native Testimony, Volume 4:653-654,
February 21, 1849

...In the ili aina of Puunoni, Keauhou 2 ahupuaa. 2 Apana aina. There in Kohelemu, 1 Apana. The boundaries are not known to me [Kapela. He [Kukahi] will make them known when the surveyor comes. They are cultivated.

Planted Apana in the ili aina of Maili. There Kukahi planted olona and oranges. He does not have them at this time, they are with Kane. I believe that he has submitted his petition for the claim, but I do not know who planted. I have seen that Kukahi is the one who cares for the oranges.

There in the ili aina of Kohelemu, 1 kumu alani, planted by his wife. This is very old land [right] from the parents in the time of Kamehameha I, and they are his at this time. No one has objected to him. There is one who opposes the planted things.

1 Apana Pahale, Mauka and all surrounding boundaries idle land. It was enclosed with a wall by him. 1 hale is his, and he resides there...[86]

Foreign Testimony, Volume 5:89-91, Kue Konohiki (In opposition to the Konohiki), 13, February. 1852, *[Note: This document is largely illegible.]*

Konohiki Petition of Kukahi to the Land Commissioners for the remainder, an orange tree outside of the claim. That orange tree was spoken of in his petition. (Kapela, Witness for Kukahi)

G.L. Kapeau: Do you swear publicly and before God concerning the truth of Kukahi's claim to the orange tree in the Ili named Maili in the Ahupuaa of Keauhou, Kona, Hawaii?

Kapela, yes; Kalona, yes; Naholowaa, yes. Kapela: Maheha[?] is the konohiki...

---

[86] Helu 7366; Keauhou 2 N. Kona. 1 ʻĀp. 0.14 Ac., Royal Patent 7044; Keauhou 2 Kona. 2 ʻĀp. 2.37 Acs.

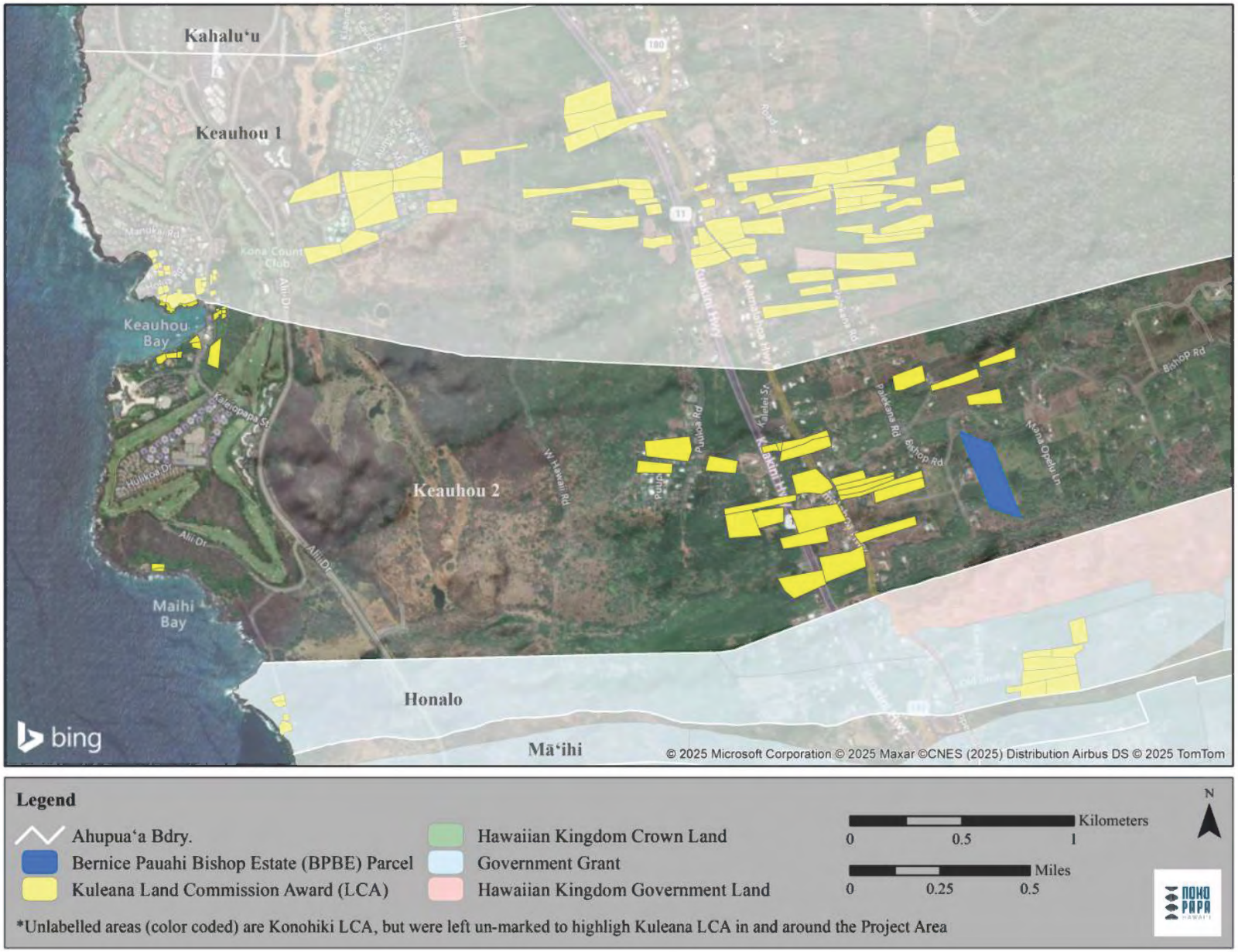

Figure 16. Keauhou 2 Land Commission Award GIS map showing the KS parcel in blue

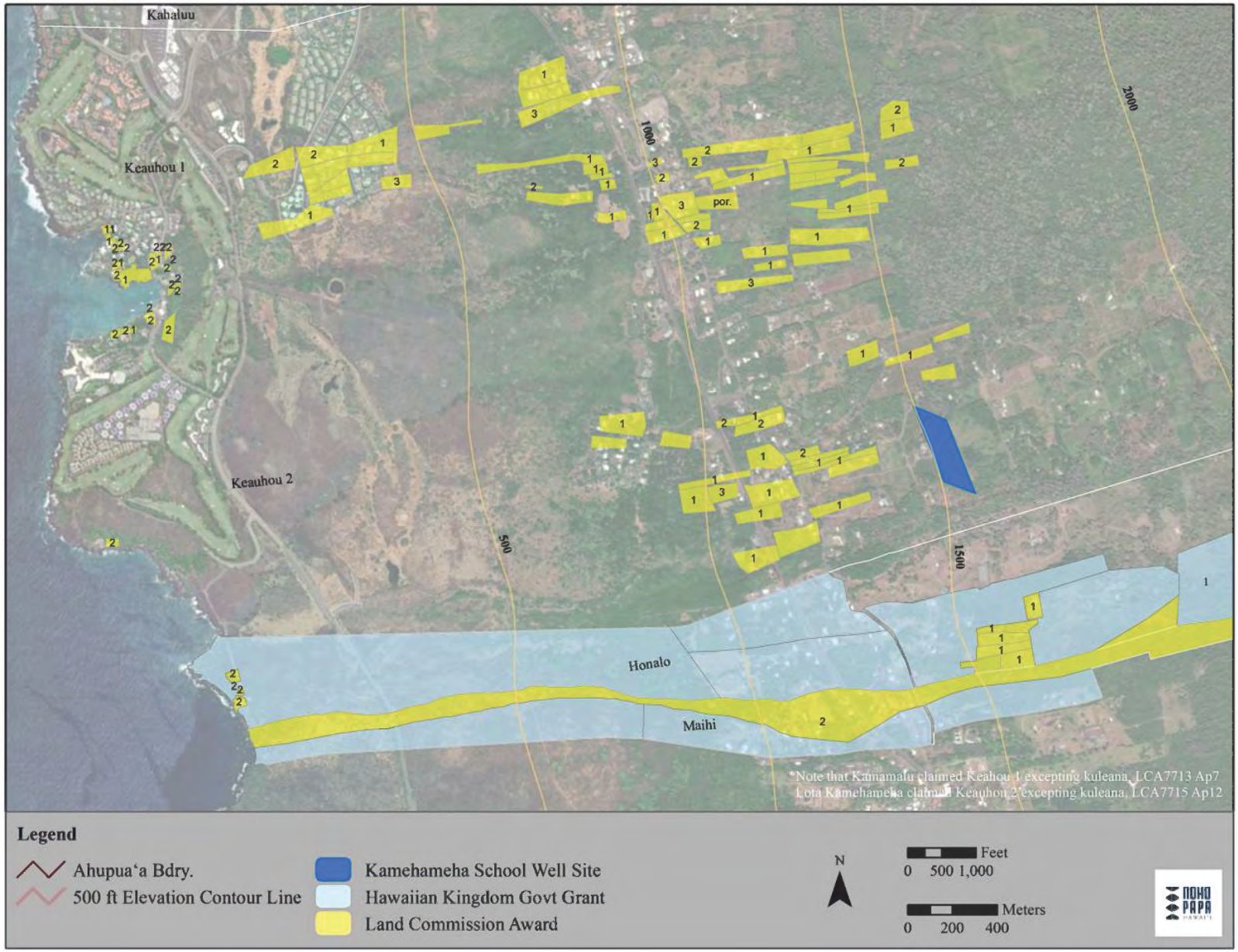

Figure 17. Keauhou 1 and 2 Land Commission Awards and Apana colored in yellow with the KS well site location in blue

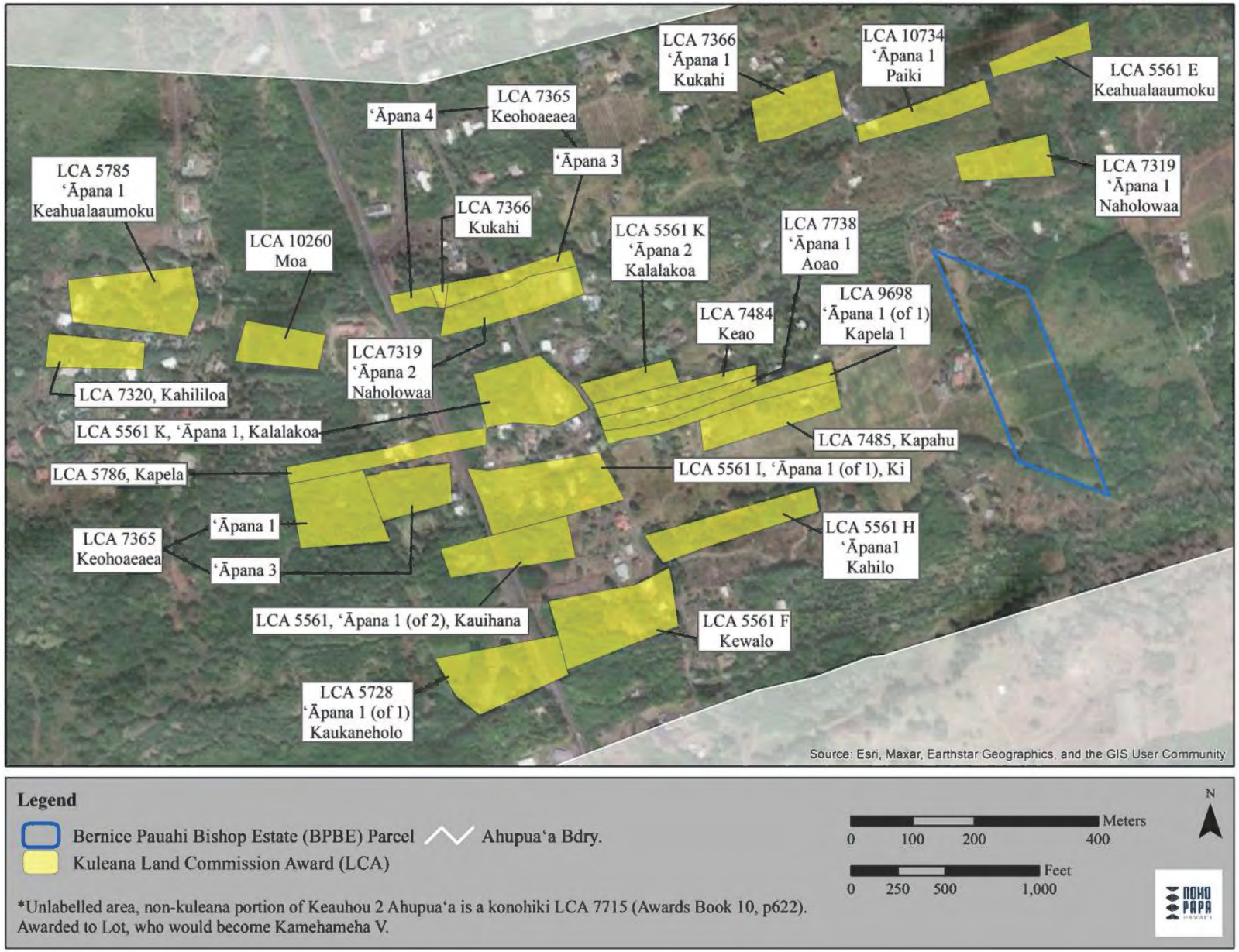

Figure 18. Close up GIS map showing the LCAs around the KS parcel in Keauhou 2 Ahupuaʻa

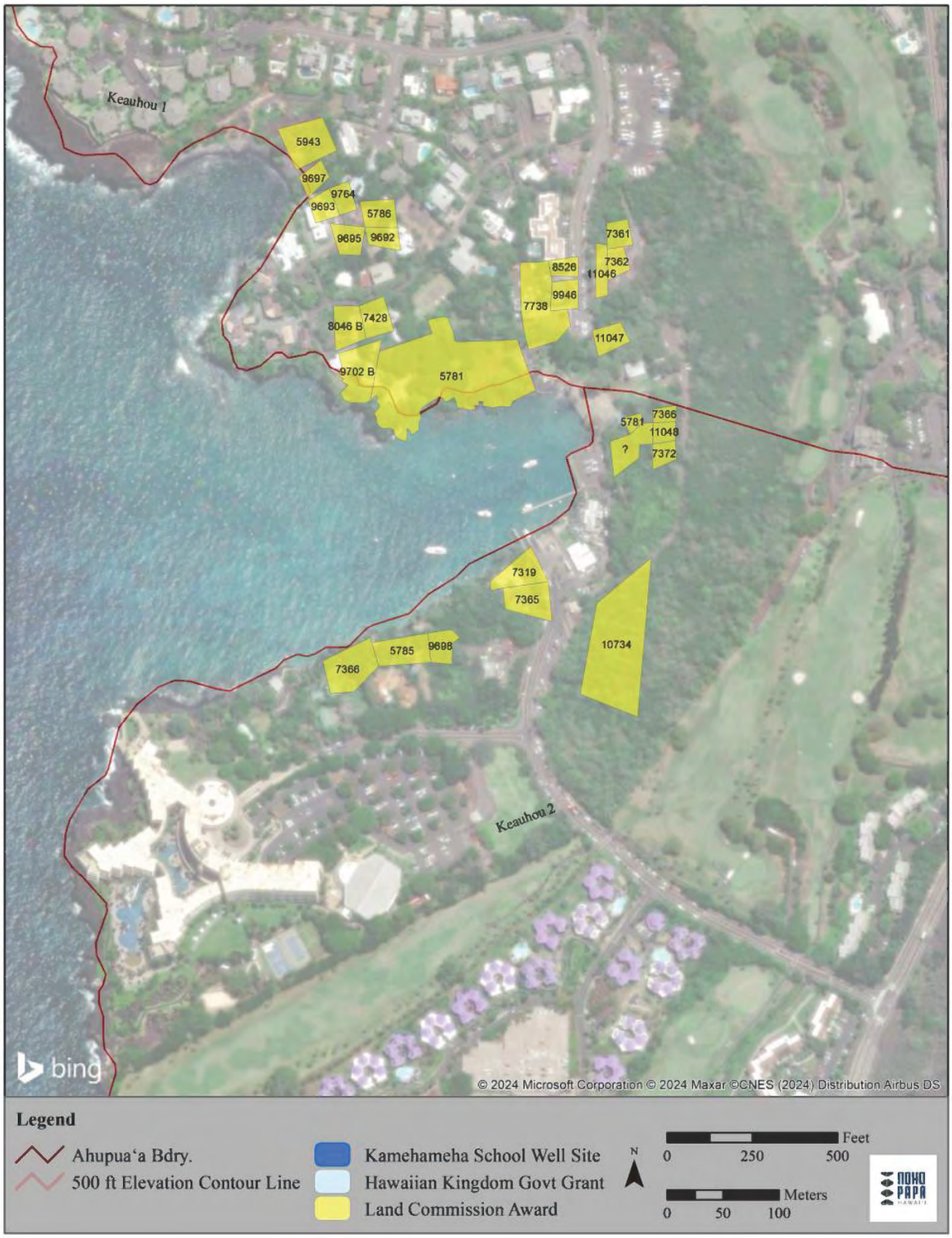

Figure 19. Land Commission Awards located in Keauhou 1 and 2 makai, downslope of the KS well site location.

KePaiki, Helu 10734

Māhele records indicate Paiki made five Native Register claims and two were awarded, including Helu 10734 in the ʻili ʻāina of Maili, Keauhou 2, in 1848. Native testimony issued by Kauhiahiwa W. (NT:v4, p653) described Paiki's land as being cultivated, and that Paiki's kuleana tract of land served as Paiki's residence.

Native Testimony, Volume 4:653, Helu 5903 & 10734,
February 21, 1849

> ...In the ili aina of Maili, Keauhou 2 Ahupuaa. 5 Apana aina; 1 Apana kahuahale; also 1 Apana pahale in the ili aina of Waipio 4, Keauhou 1 Ahupuaa. 3 Apana. The boundaries are not known to me [Kauhiahiwa W.], he will show them accurately to the surveyor when he comes. The land is cultivated.
>
> The pahale is enclosed with a wall made by him [Paiki], with 1 hale. The house is for Hoapili, and Paiki lives there. His kuleana is as a residence for him. He received the ili aina of Maili in the Yr. 1847. His interest in the ili aina of Waipio 4 was from Kanehoa in the Yr. 1848. No one has objected to him...[87]

Naholowaa, Helu 7319

In Native Register claims, Naholowaa described their ancestral land and house lot, occupied by their kūpuna and mākua (parents) before them during the time of Kamehameha I in the eighteenth century (NR:v8, p408). Naholowaa also claimed 11 kīhāpai (NR:v8, p421). In addition to their Native Register claims (NR:v8, p421), Māhele records show Naholowaa issued Native Testimony for other associates (NT:v4, p661-662).

Native Register, Volume 8:408, Helu 6029 (ʻĀp. 2), Nakea & 6030, Naholowaa,
Kahaluʻu, Hawaiʻi, January 10, 1848

> Aloha to you the Land Commissioners. We hereby tell of our house lots, and old lot from olden, in the time of Kamehameha I. Our kupuna and makua have occupied it until ourselves at present. Therefore we state the size of our lot. On two sides, the length is 360 feet; on the other two sides the width is 183 feet. The circumference of four sides is 443. That is it for you to hear.
>
> Nakea
> Naholowaa

Native Register, Volume 8:421, Helu 7319 (ʻĀp. 1), Naholowaa.
Keauhou, January 22, 1848

> Aloha to you Land Commissioners. See my kihapai which I am thinking of taking in Alodial title. Those which are mode know below. Showing the length and width

---

[87] Helu 5903; Royal Patent 6842; Keauhou 2 Kona. 3 ʻĀp. 5.53 Acs. (see also Helu 10734).

Kihapai 1. Anana, length 100, width 16

Kihapai 2. Anana, length 33, width 11

Kihapai 3. Anana, length 34, width 14

Kihapai 4. Anana, length 73, width 23

Kihapai 5. Anana, length 49, width 32

Kihapai 6. Anana, length 63, width 11

Kihapai 7. Anana, length 60, width 17

Kihapai 8. Anana, length 21, width 14

Kihapai 9. Anana, length 40, width 30

Kihapai 10. Anana, length 80, width 21

Kihapai 11. Anana, length 37, ~~width 10~~
590 99

The combined length and width is 780. Here also is this, my house lot is 63 long by 40 wide, combined being 103.

Done by me, Naholowaa

Kahualaaumoku, Helu 5561E

In 1848, Kahualaaumoku filed Native Register claim for their house lot (NR:v8, p400). Native testimony supporting Kahualaaumoku's claim was issued by Kahilo in 1849 (NT:v4, p662). Kahilo described Kahualaaumoku's house lot in the 'ili 'āina of Pakohe as being cultivated lands consisting of "2 Apana aina, and 2 Apana Pahale," which hosed Kahualaaumoku's residence and was planted with "...1 Niu and 1 Kou..." (NT:v4, p662). Kahilo noted the presence of four additional trees in another lot.

Native Register, Volume 8:400, Helu 5785, Kahualaaumoku.
Keauhou 2, January 17, 1848

Aloha to you Z. Kaauwai and all the esteemed Land Commissioners. Here is my claim the lot and my hale. That is my claim.

By Kahualaaumoku

Native Testimony, Volume 4:662, Keahualaaumoku,
February 22, 1849

...In the ili aina of Pakohe, Keauhou 2 Ahupuaa. 2 Apana aina, and 2 Apana Pahale. The boundaries are not known to me [Kahilo]. He [Keahualaaumoku] will accurately make them known to the surveyor when he comes. They are cultivated.

> The pahale in enclosed with a wall. 1 hale is for him, also 4 kumu are in another lot. 1 Niu, also 1 Kou planted by him. It is and old land right from the time of Kamehameha I. No one has objected...[88]
>
> At least twenty additional helu cluster ma kai of the Kamehameha Schools well site, at an elevation of between 750 and 1400 amsl, and are discussed below:

Keao, Helu 7484

Keao issued a land claim for 15 kīhāpai in the Keauhou 2 Ahupuaʻa of Kona in 1848 (NR:v8, p443-444).

> Native Register, Volume 8:443-444, Helu 7484, Keao,
> Kona, Hawaiʻi, January 22, 1848
>
> Hear ye, o Land Commissioners: I hereby explain to you size of my Kihapai, there are 15, here is the length 1061, that I have a total of 15 kihapai. The length is 1061, the combined width is 168. Finished. Aloha to all you Commissioners.
>
> By Keao
> Keauhou 2

Kapahu, Helu 7485

Kapahau issued a land claim for an entire ʻili in Keauhou 2 and described the boundaries of the ʻili ʻāina to extend from Kaneaa as the headlands of the ʻāina and ʻUlalena as the ma kai extent of the claimed ʻāina (NR:v8, p444).

> Native Register, Volume 8:444, Helu 7485, Kapahu.
> Kona, Hawaiʻi, January 23, 1848
>
> Hear ye, o Land Commissioners. I hereby explain my land claim for an entire ili. The head (top) of the land is from Kaneaa to Ulalena, which is the tail (bottom) of the land. Finished. Aloha to all of you.
>
> Done by me, Kapahu
> Keauhou 2

Ki, Helu 5561 I

Native testimony issued in favor of Ki's claim (NT:v8, p641) described their ʻāpana parcel in the ʻili ʻāina of Puʻuloa, and also stated that the land was given to them the year prior by Kalalakoa. The ʻāpana claimed is described to be comprised of four kīhāpai cultivated with kalo and ʻuala (NT:v8, p641).

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[88] Helu 5785: Keauhou 2 N. Kona. 2 ʻĀp. 4.42 Acs.

Native Testimony, Volume 8:641, Helu 5561 I, Ki

> An Apana parcel with 4 kihapai Kalo and uala in the ili of Puuloa, Keauhou. Given to him by Kalalakoa in the Yr. 1846. No one objected to him.[89]

Kahilo, Helu 5561 H

Māhele records show that Kahilo's pāhale, located in the 'ili 'āina of Pakohe, Keauhou 2, was given to them by their parents in 1819. They cultivated kalo and 'uala on their 'āpana parcels which are also located in Keauhou 2 Ahupua'a.

Native Testimony, Volume 8:641, Helu 5561H ('Āp. 1), Kahilo

> ...Apana 1., Ili of Haleolai, Keauhou 2 Ahup. Given by Kaikuahine in the Yr. 1846.
>
> Apana 2. 8 Kihapai Kalo & uala, at Ililoa, Keauhou 2. Gotten from Kaikuahine in Yr. 1846.
>
> Apana 3. Pahale in the ili of Pakohe, Keauhou 2. Gotten from his parents the Yr. 1819. No one has objected.[90]

Kauihana, Helu 5561 D

Kauihana claimed two 'āpana in the Keauhou Ahupua'a. 'Āpana 1 was claimed for the 'ili of Kaalakupou and 'Āpana 2 was claimed for a pāhale located on the Kaalakupou 'ili 'āina (NT:v8, p640). Kauihana testified that the 'āpana were inherited to him from his parents in 1819.

Native Testimony, Volume 8:640, Helu 5561D ('Āp. 1), Kauihana – Heir, Kumau

> ...Apana 1 – Ili of Kaalakupou ili in Keauhou 2 Ahup.
>
> Apana 2 – Pahale at Kealakupou, also at Keauhou.
>
> These Pana were from his parents in the Yr. 1819. No one objected to him.[91]

Kalalakoa, Helu 5561 K

Kalalakoa claimed five kīhāpai which were cultivated with kalo and 'uala located in the 'ili 'āina of Haleokaupaku, Keauhou 2 Ahupua'a (NT:v8, p641). It is noted that Kalalakoa received the lands from Kaikuahine in 1839 with no objections.

Native Testimony, Volume 8:641, Helu 5561 K ('Āp. 1, 2), Kalalakoa

> ...5 Kihapai Kalo & uala in the ili of Haleokaupaku, Keauhou 2 Ahupuaa.

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89 Helu 5516I; Keauhou 2 N. Kona; 1 'Āp. 0.5 Ac.; Keauhou 2. 1 'Āp. 4.85 Acs.
90 Helu 5561H; Royal Patent 7757; Keauhou Kona. 2 'Āp. 3.07 Acs.
91 Helu No. 5561D; Royal Patent 3680; Keauhou 2 Kona. 2 'Āp. 2.88 Acs.

It was from Kaikuahine in the Yr. 1839. No one objected.[92]

Kapela, Helu 5786

Kapela issued a claim for their house lot in Keauhou 2. Testimony supporting their claim (NT:v4, p662) indicates that their pāhale and additional cultivated lands were located in the ʻili ʻāina of Puʻuloa in the Keauhou 2 Ahupuaʻa.

Native Register, Volume 8:400, Helu 5786 (ʻĀp. 1), Kapela. Keauhou

Hear year ye, Kaauwai and Keoni Ii. I hereby petition you two, the Ministers of the King, for my house lot.

By Kapela

Native Testimony, Volume 4:662, Helu 5786 & 7482,
February 22, 1849

...In the ili aina of Puuloa, Keauhou 2 Ahupuaa. 3 Apana. In the ili aina of Pakohe, 1 Apana is a lele. 1 Apana pahale. The boundaries are not known to me [Kahilo]. He [Kapela] will show the correct boundaries to the surveyor when he comes. The are cultivated.

Keohoaeae, Helu 7365

Keohoaeae's land claim described a land division extending "from the kula to the distant uplands," (NR:v8, p429-430) as well as a coastal pāhale and a land claim in a flat place called "Nuuanu" in Ililoa, Keauhou 2.

Native Register, Volume 8:429-430, Helu 7365 (ʻĀp. 1, 3), Keohoaeae,
September 23, 1847

Here is my land claim. The length is 910 from the kula to the distant uplands. Here is the width, one is 5 one is 7, one is 9 one is 10, and the width is 5 in part, 7 in another part, 9 in another part, 10, 6 different places. Some are less in width. Here also is this, my pahale claim on the shore. It is 35 long, by 23 wide There is also a land claim on this papa [flat area], named Nuuanu. The moo aina is Ililoa.

Done by me, Keohoaeae
Keauhou 2, Kona, Hawaii

Kapela, Helu 9698

Land claim records indicate Kapela claimed three kīhāpai and grew kalo and oranges on their lands in Keauhou 2 (NR:v8, p467). Testified in the Native Testimony given for this claim, Kapela

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[92] Helu 5561K; Royal Patent 3741; Keauhou N. Kona. 2 ʻĀp. 4.86 Acs.

is said to have three ʻāpana in the ʻili ʻāina of Paki, Keauhou Ahupuaʻa, as well as, one ʻāpana at Haliipalala 2 and a house lot. Kapela's land is noted to have been partially cultivated and was inherited from Kupaka during the era of Kamehameha I and (NT:v4, p652).

Native Register, Volume 8:467, Helu 9698 (ʻĀp. 2), Kapela,
Keauhou, January 18, 1848

> Greetings to the Esteemed Land Commissioners. 3 kihapai Kalo, 3 kumu alani.
>
> By Kapela

Native Testimony, Volume 4:652, February 20, 1849

> ...In the ili aina at Paki 2, Ahupuaa of Keauhou, 3 apana.
>
> 1 parcel at Haliipalala 2; and 1 house lot parcel.
>
> The land is partially cultivated. It was from Kupaka in the time of Kamehameha I, no one has objected to Kapela.[93]

Moa, Helu 10260

Moa issued land claims for their coastal pāhale, ma uka lands "from the kula to the distant uplands," (NR:v8, p476) as well as 22 kīhāpai in the ʻili ʻāina of Kumuniu.

Native Register, Volume 8:476, Helu 10260, Moa.
Keauhou 2, Kona, Hawaiʻi, January 24, 1848

> Here is my land claim and my pahale claims. I tell you the size of my land, a claimant of land and a house lot at the seashore, hereby state the size of my land. The length is 100.008 [?], 263 from the kula to the distant uplands. Here is the number of my kihapai, 22. Also, the pahale. Here is the size of the pahale, 30 long, 21 wide. Here is the name of the ili aina, Kumuniu.
>
> Done by Moa.

Keahualaaumoku, Helu 5785

Keahualaaumoku claimed two pāhale, which at least one of them was walled, and claimed an additional two ʻāpana in the ʻili ʻāina of Pakohe, Keauhou 2. It is noted that four trees grew on another ʻāpana which included one niu and one kou tree (NT v4: p662).

Native Register, Volume 8:400, Helu 5785, Kahualaaumoku.
Keauhou 2, January 17, 1848

---

93 Helu 9698, Royal Patent 6816; Keauhou 2 Kona. 1 ʻĀp. 2.3 Acs.

Aloha to you Z. Kaauwai and all the esteemed Land Commissioners. Here is my claim the lot and my hale. That is my claim.

By Kahualaaumoku

Native Testimony, Volume 4:662, Keahualaaumoku,
February 22, 1849

...In the ili aina of Pakohe, Keauhou 2 Ahupuaa. 2 Apana aina, and 2 Apana Pahale. The boundaries are not known to me [Kahilo]. He [Keahualaaumoku] will accurately make them known to the surveyor when he comes. They are cultivated.

The pahale in enclosed with a wall. 1 hale is for him, also 4 kumu are in another lot. 1 Niu, also 1 Kou planted by him. It is and old land right from the time of Kamehameha I. No one has objected...[94]

Kahililoa, Helu 7320

Kahililoa claimed six kīhāpai, as well as, one pāhale in Keauhou 2 Ahupuaʻa (NR:v8, p421-422).

Native Register, Volume 8:421-422, Helu 7320, Kahililoa,
January 20, 1848

Hear ye, o Land Commissioners. That you may know about my kihapai, which I desire to have Alodial title to. They are known below, showing the length and the width

Kihapai 1. Anana length, 47, width 10

Kihapai 2. Anana length, 36, width 12

Kihapai 3. Anana length, 50, width 16

Kihapai 4. Anana length, 54, width 12

Kihapai 5. Anana length, 84, width 12

Kihapai 6. Anana length, 74, width 16

Here also is my pahale, 28 long by 8 wide, a total of 36 anana.

By Kahililoa

---

[94] Helu 5785: Keauhou 2 N. Kona. 2 ʻĀp. 4.42 Acs.

Summary in Brief: Kamehameha School Parcel - Keauhou Ahupua‘a

Hawaiian primary source historical records contained in the Native Testimony, Native Register, and Buke Māhele mention, or are indicative of cultural resources and practices associated with the ahupua‘a of Keauhou 2, site of the Kamehameha Schools well acquisition, Keauhou 1, and Keauhou (Table 15 through Table 20). Keauhou 2 contained pāhale and kīhāpai used to cultivate unspecified crops as well as kalo and ‘uala. Alongside kalo and ‘uala, Hawaiians cultivated niu, olonā, loulu, kou, ‘alani, and kope in Keauhou 2. Significantly less cultural resources are mentioned in the neighboring land division of Keauhou 1, which seemed to predominantly host kīhāpai kalo and ‘uala. Of the land divisions surveyed, the richest array of cultural resources and practices is recorded for Keauhou. Kalo, ‘uala, and foreign-introduced kope were prevalent cultivars, alongside uhi and ipu. Flowers and forest resources are also referenced.

Table 15. Cultural Resources Recorded in Māhele Records for Keauhou 2 Ahupua‘a*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous)		
Kalo (taro)	Food, medicine, spiritual	4
‘Uala/‘Uwala (sweet potatoes)	Food, medicine	5
Niu (coconut trees)	Food, medicine, utensils, cordage (see Krauss 1993:27)	1
Olonā (*Touchardia latifolia*)	Food, medicine, cordage (see Krauss 1993:27)	1
Other Plants (Indigenous and Endemic)		
Loulu (*Pritchardia spp.* palm trees)	Cordage (see Krauss 1993:27)	2
Kou (*Cordia subcordata*) trees	A dry land garden; cultivated areas, or patch	4
Foreign-introduced Crops		
Kope (coffee)	Food	1
‘Alani (orange trees)	Food	3

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 16. Cultural Practices Recorded in Māhele Records for Keauhou 2 Ahupua‘a*

Cultural Practice	Definition	Number of Citations**
Mala (Māla) kalo	A dryland garden, planted field, or patch of taro	1
Mala (Māla) ‘uala	A dryland garden, planted field, or patch of sweet potatoes	1
Pahale (Pāhale)	House lot	9
Kihapai (Kīhāpai)	A dry land garden; cultivated areas, or patch; crop unspecified	4
Kihapai (Kīhāpai) kalo	A dry land garden; cultivated areas, or patch of taro	5
Kihapai (Kīhāpai) ‘uala	A dry land garden; cultivated areas, or patch of sweet potatoes	6

ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	11

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 17. Cultural Resources Recorded in Māhele Records for Keauhou 1 Ahupuaʻa*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous)		
Kalo (taro)	Food, medicine, spiritual	1
ʻUala/ʻUwala (sweet potatoes)	Food, medicine	1
Other Plants (Indigenous and Endemic) - none		
Foreign-introduced Crops - none		

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 18. Cultural Practices Recorded in Māhele Records for Keauhou 1 Ahupuaʻa

Cultural Practice	Definition	Number of Citations*
Mala (Māla) kalo	A dryland garden, planted field, or patch of taro	1
Mala (Māla) ʻuala	A dryland garden, planted field, or patch of sweet potatoes	1
Pahale (Pāhale)	House lot	13
Kihapai (Kīhāpai)	A dry land garden; cultivated areas, or patch; crop unspecified	8
Kihapai (Kīhāpai) kalo	A dry land garden; cultivated areas, or patch of taro	1
ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	37

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 19. Cultural Resources Recorded in Māhele Records for Keauhou Ahupuaʻa*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous)		
Kalo (taro)	Food, medicine, spiritual	8
ʻUala/ʻUwala (sweet potatoes)	Food, medicine	8
Uhi (yams)	Food, medicine	1
Ipu (gourds)	Food, medicine, utensils	1
Niu (coconut trees)	Food, medicine, utensils, cordage (see Krauss 1993:27)	3
Noni (Indian mulberry)	Medicine	1
Lauhala	Arts and crafts; charcoal; sails	1
Other Plants (Indigenous and Endemic)		

Cultural Resource	Use	Number of Citations**
Loulu (*Pritchardia spp.* palm trees)	Cordage (see Krauss 1993:27)	2
Kou (*Cordia subcordata*) trees	A dry land garden; cultivated areas, or patch	4
Pū	Squash or pumpkin	2
Pūhala (hala)	Crafts, cordage (see Krauss 1993:27)	1
Flowers, generally	Arts and crafts, medicine	1
Forest zone	Array of associated cultural uses	1
Foreign-introduced Crops		
Kope (coffee)	Food	5
ʻAlani (orange trees)	Food	4
Hala kahiki (pineapple)	Food	2

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 20. Cultural Practices Recorded in Māhele Records for Keauhou Ahupuaʻa*

Cultural Practice	Definition	Number of Citations**
Mala (Māla) ʻuala	A dryland garden, planted field, or patch of sweet potatoes	8
Mala (Māla) kope	A dryland garden, planted field, or patch of coffee	5
Mala (Māla) kalo	A dryland garden, planted field, or patch of taro	6
Ma uka kalo	Mountain kalo – mauka cultivation area	4
Mala (Māla) ipu	A dryland garden, planted field, or patch of gourds	1
Mala (Māla) uhi	A dryland garden, planted field, or patch of yams	1
Mala (Māla) pū	A dryland garden, planted field, or patch of squash or pumpkin	3
Pahale (Pāhale)	House lot	17
Kihapai (Kīhāpai)	A dry land garden; cultivated areas, or patch; crop unspecified	13
Kihapai (Kīhāpai) kalo	A dry land garden; cultivated areas, or patch of taro	1
ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	23
Forest zone	Array of associated cultural practices, including gathering and access, affiliated with this place	1

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

The Gianulias Parcel – Ahupuaʻa of Puaa, Waiʻaha, Kahului, and Puapuaʻa

This section highlights select excerpts from the Māhele Awards Books, including Native Testimony, Native Register and Land Commission Awards. Transcriptions and translations from original Awards Books provided are by Kumu Pono Associates. The discussions are composed by Nohopapa Hawaiʻi. The awards presented in this section are discussed from north to south across the ahupuaʻa of Puaʻa, Waiʻaha 1 and 2, Kahului 1 and 2, and Puapuaʻa.

Puaa 3 Ahupuaʻa

Within the Puaa 3 Ahupuaʻa, at least six claimants were revealed to have made claims to kuleana ʻāina associated with the ahupuaʻa whose proximity borders near the Gianulias well parcel. The Native Registry, Native Testimonies, LCA's, and Royal Patents which were issued for the various land claims provide insight into the various resources and land uses associated with Puaa 3 Ahupuaʻa. For instance, many of the descriptions concerning the kuleana lands within the ahupuaʻa are remarked as being cultivated parcels of lands located in the uplands of Puaa 3, while others similarly described their landholdings as consisting of ma uka kīhāpai. The ʻāpana claimed and awarded throughout this ahupuaʻa are described also as having pāhale on them; which illuminates the perspective that properties associated with both residential and agricultural land use types were prevalent in Puaa 3 Ahupuaʻa. Presented below are the summarized descriptions, and in some cases, the transcriptions of the Māhele claims associated with the Puaa 3 Ahupuaʻa.

Kahuakailoa, Helu 7077

According to Māhele records, Kahuakailoa was awarded two ʻāpana in the Puaa 3 Ahupuaʻa of Kona; one of which included a pāhale (MA:v8, p641-642; NT:v4, p512-513; NR:v8, p417).

Kaiwikui, Helu 7081 (ʻĀp.1)

Kaiwikui was another claimant associated with the Puaa 3 Ahupuaʻa. Kaikikui was awarded an ʻāpana in the ahupuaʻa (MA:v4, p554). The Native Testimony submitted on behalf of this claim recounts that this kuleana ʻāina is located ma uka of a kīhāpai and that there is also a pāhale associated with the ʻāpana (NT:v4, p560).

Makai, Helu 10266 (ʻĀp. 1)

Makai issued several land claims for ʻāina in the Puaa 3 Ahupuaʻa; however, only one was awarded. According to the Native Testimony associated with Makai's claim, three ʻāpana located in the ʻili ʻāina of Opulehelehe said to have been cultivated, along with two ʻāpana in the ʻili ʻāina of Ilipahu, and a ʻāpana with a pāhale on it was claimed by Makai (NT:v4, p538-539). The one ʻāpana that was awarded to Makai was the ʻāpana described to have a pāhale on it located in the ma kai region of the Puaa 3 Ahupuaʻa in Kona (LCA 10266; NR:v8, p476).

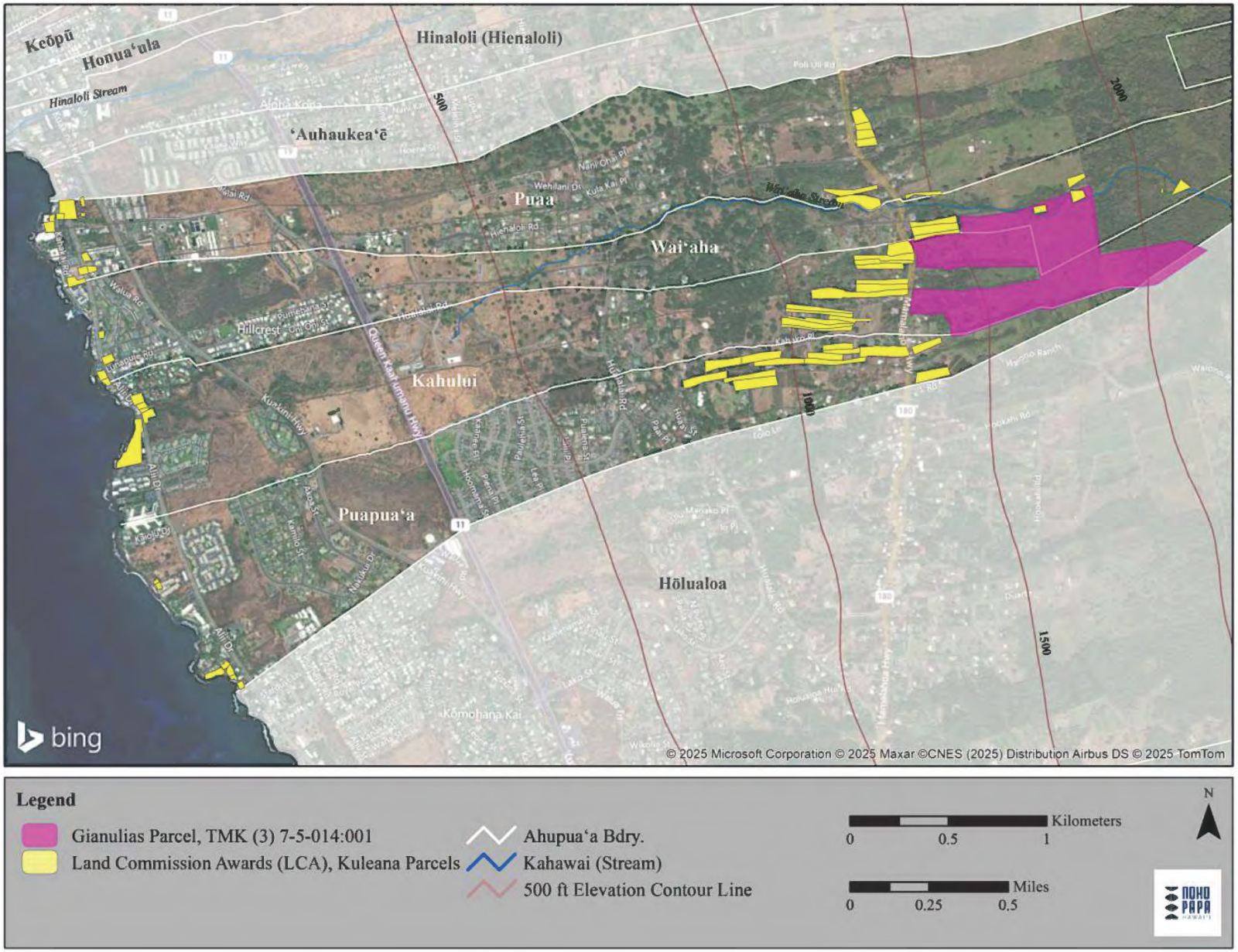

Figure 20. Land Commission Awards located around the Gianulias Parcel

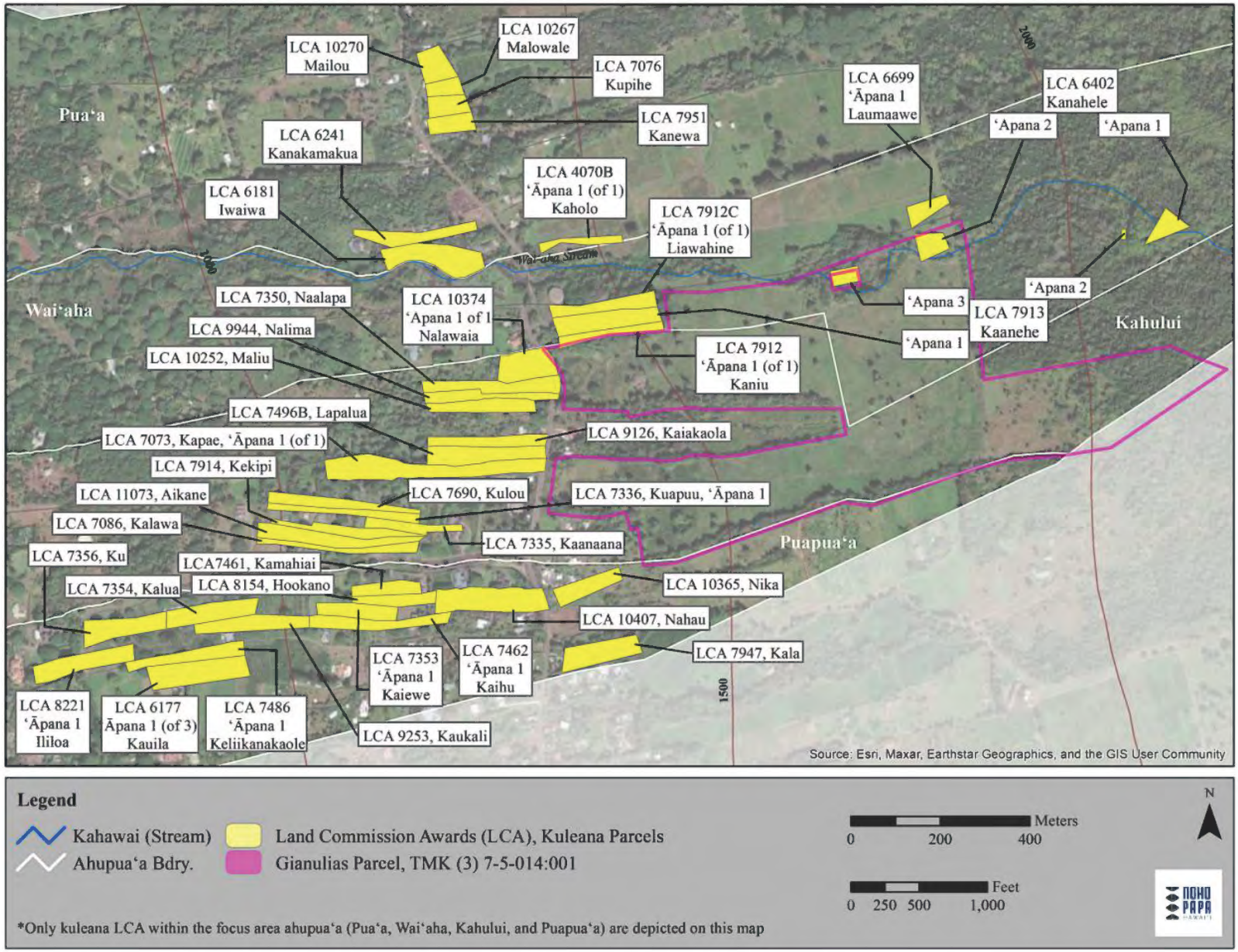

Figure 21. Close up of LCAs in and around the Gianulias Parcel

Kanakamakua, Helu 6241 (ʻĀp. 1)

Kanakamakua claimed two parcels; a pāhale that was taken by the konohiki at the coast, and an upland cultivated parcel. Kanakamakua was awarded the one ʻāpana whose location is described to be in the uplands, a paukū ʻāina. It is in the ʻili of Kamuku, an upland ʻili that spans some distance across many cultivated kuleana.

According to the Native Testimony (NT & FT:v8, p675) Kanakamakua did **not** live on his upland kuleana award. It is noted that the Konohiki Makai had taken Kanakamakua's land because of a fence built on the Labor Days. Labor days were also mentioned in Kapae's claim in Kahului 2 Ahupuaʻa (Helu 7073), where he managed labor days at the behest of the konohiki, who was most likely Makai.

Native Register, Volume 5:266,
January 25, 1848, Kailua

> Aloha to you the Land Commissioners. I have a little ili at Puaa, the land of Makai, adjoins on the North by the ili aina of Kanakaloa, and on the South it adjoins the ili aina of Nakipi.
>
> Here also is this, I have a Pahale, which taken by the konohiki and he has built his house there. That pahale is in Puaa. I lived on that lot from olden times, and my house destroyed by fire. Then the konohiki took my lot.
>
> By Kanakamakua

Native & Foreign Testimony, Volume 8:675

> ...It is an Ili called Kamuku in the Ahupuaa of Puaa 3, Kona. Clt does not live on it at present. His house lot was taken from him by Makai, a konohiki in 1849. Claimant has not cultivated any of this land since. The House Lot was taken away because the fence was built on the Labor Days.[95]

Iwaiwa, Helu 6181 (ʻĀp. 1)

Iwaiwa claimed a pāhale and cultivated lands in the uplands in the ʻili ʻāina of Kamuku (NR:v8, p188-189). Iwaiwa's claim is supported in testimony that the ʻāina was inherited through Iwaiwa's parents in 1819 (NT:v8, p649).

Native Register, Volume 8:188-189,
January 26, 1848, Kailua

> Aloha to you the Land Commissioners. I hereby state my claims, in accordance with your directions. They are in the Ahupuaa of Puaa, 3 ili aina, of Kamuku and Waiaha Ahupuaa, Kamuku I and Kamuku II. The length of the right of the Kamuku, and Waiaha is from A. Bishop, Preacher, and then it was left to Dr. Andrews and I was

---

95 Helu 6241; Royal Patent 8071; Puaa 3 N. Kona. 1 ʻĀp. 1.35 Acs.

the man who lived here. The length of this right at Kamuku Ili in Puaa Ahupuaa, it was from the time of Kahahana, mother of Kahonu.

There is also a pahale claim there, which is 13 anana long by 7 anana wide.

By Iwaiwa w.
Kauka k.

Native Testimony, Volume 8:649,
January 12, 1850

...His Apana is in the Ili of Kamuku in Puaa 3. It was from his parents in 1819, and long before then. No one has objected to him.[96]

Kaholo, Helu 4070 B (ʻĀp. 1)

Kaholo claimed and was awarded one ʻāpana in the ʻili of Kamuku, Puaa 3 Ahupuaʻa which is described as a cultivated upland ʻāpana (BM:v8, p644).

Native Testimony, Volume 8:651

Kaiwikuia, Sworn... His apana is in the Ili of Kamuku, Puaa 3 Ahupuaa. It was I who gave it to him in the Yr. 1840. No one objected to him.

Boundaries of the land are surrounded by the land of the Konohiki.[97]

Waiʻaha Ahupuaʻa

According to the Māhele ʻĀina documents examined during this study, two claims were submitted for the Waiʻaha 1 Ahupuaʻa associated with the study area, while five claims were submitted with association to the Waiʻaha 2 Ahupuaʻa of the study area. Throughout these claims, descriptions of various resources associated with Waiʻaha Ahupuaʻa were provided, such as the mention of the pūnāwai referred to as Waikiʻi, other unnamed springs, ʻili ʻāina, paukū ʻāina, pāhale, hale, pā pipi, and mountain bananas referred to as ʻeʻa maiʻa. Majority of the ʻāpana mentioned in claims and testimonies are described as being cultivated ʻāina, which evidences agricultural practices to have occurred in the Waiʻaha Ahupuaʻa and surrounding areas. However, several other ʻāpana claimed throughout this ahupuaʻa did not indicate the land use associated with the specified parcel. Provided below are the descriptions and select excerpts obtained from the Māhele Awards Books, including Native Testimony, Native Register, and Land Commission Awards for Waiʻaha 1 and 2 Ahupuaʻa of Kona whose location is associated with the study area.

Waiʻaha 1 Ahupuaʻa

Kalama, Helu 7241 B (ʻĀp. 1)

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96 Helu 6181; Royal Patent 8031 & 8034 Puaa 3 Kona. 1 ʻĀp. 1.56 Acs
97 Helu 4070B; Royal Patent 3742, XX Royal Patent 5503, Kamuku in Puaa 3 N. Kona. 1 ʻĀp. .75 Acs.

Kalama was a claimant who was only awarded a single ʻāpana, although Kalama claimed paukū ʻāina abutting the pā pipi in the uplands. Most claimants who only received one ʻāpana but claimed two, generally were granted their upland claim. Kalama's case is unusual in that he was only awarded his ma kai pāhale claim and not his cultivated upland claim. The name of the ʻili ʻāina is given in the Native Testimony (NT:v4, p514) but was illegible to make it out clearly.

Kalae, Helu 7481 (ʻĀp. 1)

Kalae was awarded two ʻāpana during the Māhele process associated with the Waiʻaha 1 Ahupuaʻa (LCA 7481). According to the Native Registry and Native Testimony associated with Kalae's claim, the ʻāpana are located in the ʻili ʻāina of Kamuku.

Waiʻaha 2 Ahupuaʻa

Kanahele, Helu 6402 (ʻĀp. 1, 2)

Kanahele claimed land that is in and ma uka of the current Gianulias subject parcel. Kanahele's pāhale, per the accompanying Native Testimony (NT:v4, p555), below, is ma uka; as are two paukū ʻāina described to have been cultivated. Kanahele claimed and was awarded these two ʻāpana. Based on Māhele claims, testimony, and awards, Kanahele did not have any ma kai parcels. This claimant lived and farmed ma uka of the ala nui and the pā pipi.

According to Kalama, Kanahele's ʻāpana was bounded to the west by Waikiʻi Spring, south by Kahului I, north by Waiahanui and east by mountain banana (ʻEʻa maiʻa). Kalama also testified for Kaulua and described one of his ma uka parcels as also being bounded ma kai by Waikiʻi Spring (Awards Books-NT:v4, p514).

Native Register, Volume 8:413

> Aloha to you the Land Commissioners. I have a pauku land far mauka, which is occupied at present, a firmly established right of residency. There is no kula, nor any middle parcel. My pauku land is only mauka. It is 400 long on the north, and the same on the south, to the east it is 40, and on the west, 40. On the north is Waiahanui, on the south is Kahului, This claim is for you to hear.
>
> Done by Kanahele
> Kona, Kailua, Waiaha.

Native Testimony, Volume 4:555,
January 9, 1849

> Kalama Sworn... There in the Ahupuaa of Waiaha, 1 pauku aina.
>
> Mauka by Maiahuna, Ea maia (mountain banana), Kau by Kahului I aina, Makai by Waikii punawai, Kohala by Waiaha nui. 1 cultivated pauku aina. 2 hale for him and he resides there.

Land from Kaanehe in the Yr. 1846. No objections to him.[98]

Liawahine, Helu 7912 C (ʻĀp. 1 of 1)

Liawahine only claimed one ʻāpana, ma uka of the uka ala nui and pā pipi that is located next to Kaanehe‘s ʻĀpana 1 and Kaniu’s ʻĀpana 1. Liawahine also did not specify what the land use for the parcel was for. However, in Kekipi’s testimony for Kaanehe’s ma kai pāhale claim (NT:v4, p533-534), Kekipi indicated that there were three houses on Kaanehe’s pāhale (LCA 7913 ʻĀp. 4), which one of them was identified as belonging to Kaliawahine. As detailed in this account, it is understood that Kaliawahine lived at the coast and the claimed parcel awarded as LCA 7912C was likely a cultivated paukū ʻāina, as was Kaanehe’s adjoining ma uka lot. It is notable to mention here that in this instance, the claimant is referred to as “Kaliawahine” as opposed to “Liawahine.”

In the Native Registry, two of Liawahine’s neighbors testified that their lands were given to them by Liawahine (also Kaliawahine); including one of the houses in Kaanehe’s pāhale claim at the coast and one of the paukū ʻāina whose location is described as being ma uka in the ʻili ʻāina of Kamuku 2 (NT:v4, p533-534). This paukū ʻāina is said to have been given to them during the time of Kuakini; while Kaniu’s only ʻāpana (LCA 7912) was said to be given to Kaniu in 1839 (Awards Book, NT:v8, p649).

Native Testimony, Volume 8:649

> Kaniu and Lumaawe, sworn... ...His Apana is in the Ili of Hanamauloa, Waiaha 2 Ahp.
>
> Kaaea gave it to him on the Yr. 1824. No one objected to him. The boundaries are surrounded by the land of the Konohiki.99

Kaanehe, Helu 7913

At Kaanehe’s ma kai parcel, three houses were identified. One hale was described as belonging to Kaanehe, one to Kaliawahine (Liawahine) who claimed a ma uka paukū ʻāina, and one house to belonging to Kaaweha. In the Native Register, Kaanehe claimed an entire ʻili ʻāina, which was explained as portions of ʻili ʻāina in the Native Testimony. Kaanehe has significant land holdings ma uka and ma kai in an area within Kona abundant with wai, including a pāhale at the coast that neighbors a pūnāwai. Kaanehe also gave ma uka lands in Waiʻaha to Kanahele (LCA 6402), in 1846 (Native Testimony by Kalama for Kanahele, NT:v4, p555). Evidenced in Kaanehe’s claims, awards, and gifting of lands to Kanahele, it is lilely that Kaanehe was an aliʻi, though not the named konohiki of the area.

Native Register, Volume 8:453,
Kailua, January 31, 1848

> Aloha to you the land commissioner. I hereby tell you about by pahale claim, it is there makai in Waiaha 2, Ahupuaa; the length and with is 91 anana. My lands claim is also in this ahupuaa mentioned above. Two ili aina, Pahukauila is one, and

98 Helu 6402; Royal Patent 5214; Waiaha 2 N. Kona. 2 ʻAp. 1.7 Acs.
99 Helu 7912C; Waiaha 2, N. Kona. 1 ʻĀp. 1.3 Acs.

Kamuku a is the other. The ili lands are not fully cultivated. The boundaries of this ili are Hanamauloa on the north, Kamuku 2 on the south, Paupuhi on the west and Makaihuliwaa on the east.

Kaanehe.

Native Testimony, Volume 4:533-534,
December 29. 1848

Kekipi Sworn... There in the ili aina of Pahukauila, Waiaha ahupuaa (There was an error by including the whole ili in claim), the place he cultivated is correct.

1. Mauka by Konohiki, Kau by ili aina of Kauailoa, Makai by the pa pipi, Kohala by the ili aina of Hanamauloa. 1 pauku aina.

2. Mauka by Konohiki, Kau by ili aina of Kamuku, Makai by Konohiki, Kohala by ili aina of Hanamauloa. 1 cultivated pauku aina

3. At Kaluulu. Mauka by konohiki, Kau by ili aina of Kamuku 1, Makai by Konohiki, Kohala by ili aina of Hanamauloa. 1 cultivated pauku aina.

4. Mauka by konohiki, Kau by Kamuku 2, Makai by konohiki, Kohala by ili aina of Hanamauloa. 1 cultivated pauku aina.

5. Mauka by konohiki, Kau by Kauailoa ili Makai by konohiki, Kohala by ili aina of Hanamauloa. 1 cultivated pauku aina.

6. In the ili aina of Kamuku 2. Mauka by konohiki, Kau by ili aina of Kauailoa, Makai by konohiki, Kohala by Kamuku 1. One cultivated pauku aina. His interest was from Kaliawahine in the time of Kuakini on Hawaii. NO one has objected to him.

7. Pahale. Mauka by the Alanui Aupuni, Kau by Kaulua's lot, Makai by kahakai, Kohala by a punawai (spring). He has enclosed it with a wall. There are 3 houses. 1 hale for Kaanehe. One house is from Kaliawahine. One hale is from Kaaweha. It is only a house claim for Kaaweha and Kaliawahine. It is a true claim for Kaanehe...[100]

Kaniu Helu 7912 (ʻĀp. 1 of 1)

Kaniu's claim and Land Commission Award do not give any clues to the land use associated with the ʻāina. Similar to Kaniu's ma uka neighbor, Kanahele, Kaniu only listed the ma uka lands in the claim submitted. Kaniu was given lands in 1839 by his neighbor to the north, Liawahine (LCA 7912C).

Native Register, Volume 8:514,

[100] Helu 7913; Royal Patent 5221; Waiaha 2 N. Kona. 1 ʻĀp. 2.1 Acs; Royal Patent 7815; Waiaha 2 N. Kona. 3 ʻĀp. 1.02 Acs; Waiaha 2 N. Kona.1 ʻĀp. 565 anana. (Note: this Kuleana includes a portion of the Waiaha, Kona Inn Water Tank parcels.)

January 31, 1848, Kailua

Aloha to you the Land Commissioners. I hereby state my land claim there in the ahupuaa of Waiaha 2. Kauwiloa is the name of the ili aina. The boundaries of this ili aina are, Pahukauila on the north; Halewaawaa on the south; Punaio on the west; and Makaihuliwaa on the east.

By Kaniu

Native Testimony, Volume 8:649

Liawahine & Lumaawe, Sworn... His Apana is in the Ili of Kauailoa in Waiaha 2 Ahupuaa.

It was given to him by Liawahine in the Yr. 1839.[101]

Laumaawe, Helu 6699 (ʻĀp. 1, 2)

Laumaawe claimed two parcels and was awarded both of the parcels; ʻĀpana 1 located in the uplands of Waiʻaha and ʻĀpana 2 on the coast described as a pāhale (NR:v8, p413-414).

Kahului Ahupuaʻa

Unlike Waiʻaha, most of the kuleana LCA awarded in Kahului are single ʻāpana that consist, per the Native Register claims, of cultivated lands, but not pāhale. It is likely that some mahiʻai lived in the uplands, and more likely, many of these makaʻāinana also had houses at the coast but were unclaimed. In several pāhale coastal claims, descriptions in the testimonies support the kuleana pāhale claim, while describing multiple houses on the claim and sometimes naming the people who lived in those hale. The same is true in the Waiʻaha Ahupuaʻa claims. It is clear that there is a strong connection ma uka to ma kai and across ahupuaʻa in the uplands. The discussion that follows are a summarized description of the Māhele claims associated with the Kahului 1 and 2 Ahupuaʻa of Kona.

Kahului 1 Ahupuaʻa

Kaulua, Helu 7083 (ʻĀp. 1 of 1)

Kaulua claimed in the Native Register (NR:v8, p418) a pāhale at the coast in the ahupuaʻa of Kahului 1 which is the sole ʻāpana Kaulua was awarded in LCA 7083 (MA:v7, p324). However, Kaulua also claimed at least seven kīhāpai in the uplands, like many claims in the neighboring Waiʻaha Ahupuaʻa, Kaulua described them as being bounded on the ma kai side by the pā pipi, which ran just north of the ala loa, or modern day Māmalahoa Hwy. Kalama testified on behalf of Kaulua's claim and elaborated on it. Kalama confirmed that in 1848 Kaulua received his pāhale, just ma kai of the coastal ala nui in Kahului (NT:v4, p513-514). Kalama went on to describe at least six kīhāpai in the uplands of Kahului that were cultivated by Kaulua (NT:v4, p514).

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[101] Helu 7912; Royal Patent 7923; Waiaha 2 Kona. 1 ʻĀp. 1.2 Acs.

Kalama described the pūnāwai of Waikiʻi as being ma kai of Kaulua's ma uka claim (NT:v4, p514). Kalama also testified for an awarded claim for Kanahele (NT:v4, p555), which described Waikiʻi spring as being to the west. It was likely that at least one kīhāpai of Kaulua's was near the Waiʻaha Ahupuaʻa border beside LCA 6402, ʻĀpana 1; unawarded, it was subsumed by the konohiki LCA 8516 B to Kamaikui (MA:v3, p63-66, Part 2).

Nalawaia, Helu 10374 (ʻĀp. 1, 2)

Nalawaia was awarded both of the ʻāpana he claimed (NR:v8, p479-480). Nalawaia was awarded a pāhale at the coast, ma kai of the "Alanui Kohala" and a large paukū ʻāina cultivated ma uka of the "Kealakowaa," or Māmalahoa Hwy. today. However, Nalawaia had claimed more cultivated lands in the uplands, though at least two additional ʻāpana were not awarded.

Maliu, gave a sworn account for the Native Testimony of Nalawaia's claim. Maliu named the ʻili ʻāina of the ma kai parcel (ʻĀp.2) as Halewaawaa (NT:v4, p529-530). Maliu also named the ma uka ala loa "Kealakowaa" which speaks to waʻa, from tree to coast, as a practice impressed on the naming of the wahi of Kahului. Maliu supported Nalawaia's ma uka and ma kai claims in some detail. Maliu explained that, like other ma kai parcels, Nalawaia's pāhale had two houses on it; one for Nalawaia and one belonging to Kalou.

Native Register, Volume 8:479-480,
January 24, 1848, Kailua

> Aloha to you the Land Commissioners. I hereby tell you of pahale claim. It is makai in the ahupuaa of Kahului 1. It is 30 anana long by 28 anana wide, and it was given me in the entirety by the one who had the lot in 1848. My land claim is in the ahupuaa as above. The pauku lands are as follows: Mauka of the Papipi, 400 anana long, and the width is 20 anana. A Pauku of land above the Kaluulu,, the length being 220 anana, and the width 15 anana. A Pauku of land mauka of Kealaloa, the length is 280 anana and the width is 17 anana. The boundaries of these pauku lands are Kauailoa on the North Naalapa on the South, the Papipi on the west, and Kaalapahu on the east.
>
> By Nalawaia

Native Testimony, Volume 4:529-530,
December 29, 1848

> ...There in the ili aina of Halewaawaa, Kahului ahupuaa.
>
> 1. Mauka by Hapaipapa, Kau by Naalapa ili aina, Makai by the pa aina, Kohala by Kauailoa ili aina. 1 cultivated pauku.
>
> 2. Kaluulu [upland agricultural field]. Mauka by the Alanui of Kealakowaa, Kau by Naalapa ili aina, Makai by Ahuakahewa land, Kohala by Kauailoa land. 1 partially cultivated pauku aina. No hale.
>
> 3. Mauka by Kaalapahee [?] land, Kau by Naalapa ili aina, Makai by the alaloa, highway Kohala by Kauailoa. 1 cultivated pauku aina.

4. Pahale. Mauka by wahi waiho wale (idle land), Kau by Kalawa's lot, Makai by the Alanui, Kohala by wahi waiho wale. It is enclosed with a wall made by Maliu. 2 hale, 1 hale for Nalawaia, and 1 hale for Kalou, It is a true kuleana for Nalawaia, and he resided there.

It is and old land (right) received from Kamehameha by Nalawaia to this time. His hale was from Maliu in the Year 1848. No one has objected.

Maliu, Sworn, He has given his kulana lot interest by me in 1848. In the nature as a younger sibling [or male cousin]... I have no intentions to object...[102]

Kialoa, 7350 ('Āp. 1)

Kialoa claimed a contiguous parcel of cultivated kīhāpai that extended from below Māmalahoa Hwy. across the highway, ma uka and beyond the "Great Wall" which was likely the pā pipi. However, Kialoa was only awarded lands below the ala loa. The ma uka unawarded portion of Kialoa's lands are part of the study area. Ipunui gave a testimony that described 15 patches partly in cultivation" (NT:v8, p671).

Native Register, Volume 8:262,
January 24, 1848

For the Land Commissioners. Here is my claim for land at Kahului akahi (1st), a kihapai. On the East, 20 anana, on the West 20 anana, on the South 130 anana, on the North 130 anana.

A kihapai in Kaapaa [the apaa zone]. East 6 anana, West and 6, the Southern boundary 60 anana, the Northern boundary, 60 anana

A kihapai in Kauluulu. East, 12 anana, West, 12 anana, Southern boundary 60 anana, Northern boundary 60 anana.

Kihapai on Kula. East, 15 anana, West, 15 anana, Southern boundary 180 anana, Northern boundary 180 anana.

Those are my kihapai that are applied for.

By Kialoa
Niumalu, Kailua, Kona, Hawaii

Native & Foreign Testimony, Volume 8:671

Ipunui, sworn says, he knows the claim of Kialoa in Kahului, Kona. It consists of 15 patches partly in cultivation. They all lie together in one piece. Claimant derived the land from the Konohiki in 1844 and has held it ever since without dispute. This piece is intersected by the Road.

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[102] Helu 10374; Kahului 1 N. Kona. 2 'Āp. 2.97 Acs.

> Clt has also 14 patches in another piece makai of the first piece. It is bounded On Kohala side by Niniha's land. On Kau side by Nalima's land. Mauka by a road.
>
> He has also a piece of Kula land near the Great Wall. It is bounded makai by the Great Wall. Kohala side by Niniha's land On Kau side by Nalima's land.[103]

Nalima (Lima), 9944 (ʻĀp. 1)

Ipunui described two ʻāpana held by Nalima; one in the ʻili ʻāina of Niukini, which based on its name, appears to be a coastal parcel, as well as a paukū ʻāina in the ʻili ʻāina of Kukuipuloa (NT:v4, p517). According to the documents associated with this claim, it appears that Nalima was only awarded the ma uka parcel.

Native Register, Volume 8:472,
January 25, 1848,

> Aloha to all of your the Land Commissioners: A kihapai at ke alaloa, E. 8, W. 20, south side 300, north side 300. A kihapai in apaa. E. 8, W. 13, south side 130, north side 130.
> Done by Nalima

Native Testimony, Volume 4:517,
December 22, 1848

> Ipunui (Konohiki), Sworn... There in the ili aina of Niukini, Ahupuaa of Kahului I. 2 Apana and a Pauku aina at Kukuipuloa 1. The boundaries are not known to not well known to me, the length by anana or the width. When the surveyor comes he [Lima] will accurately describe the boundaries when he comes.
>
> He received these lands in the time of Kuakini, and in this time they are from me [Ipunui]. No one has objected to him (Nalima).[104]

Maliu, Helu 10252 (ʻĀp. 1)

Maliu is a claimant who only claimed his cultivated lands (NR:v8, p475). Maliu is unique to other claims in that this claimant described their land similar to a mahiʻai, describing the wao of their three land claims. Of the three ʻāina claimed; one is described as being in the maʻū (moist wet area, probably the upland most claim), one in the ʻāpaʻa (dry arid area, maybe one with soil, but it could be rocky) and one in the kula area (connotating openness or a plain, kula is often described as pasture, dryland, or a fallow field).

It should be noted that Maliu offered a Native Testimony for Nalawaia's claim for LCA 10374 (NT:v4, p529-530), in which Maliu testified that he constructed the wall enclosing Nalawaia's pāhale (ʻĀp.2).

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[103] Helu 7350; Royal Patent 7059; Kahului 1 N. Kona. 1 ʻĀp. 1.65 Acs.
[104] Helu 9944; Royal Patent 6278; Kahului 1 N. Kona. XX ʻĀp., XX Acs.

Native Register, Volume 8:475,
January 26, 1848

Aloha to you the Land Commissioners. I hereby explain to you about my land claim in Kahului 1. My claim is from Kekupuohi. Here is the length of my kihapai, 58 long by 18 wide. At the head of one, the width is 6 anana. Another is far mauka in the mau, it is 8 long by 20 wide. On the kula, one is 80 long by 14 wide, at its head it is 13. I also have 3 puhala.

I have three land claims far mauka. 1 is in the mau, 1 in the apaa, and 1 on the kula. There are three kuleana of mine. That is it, for you to hear, and to see if it is right or in error.

Done by Maliu

Native Testimony, Volume 4:538,
December 29, 1848

There in the ili aina of Kamuku Kahului I ahupuaa.

1. Kula. Mauka, Kaluapahu punawai (spring of Kaluapahu), Kau by ili aina of Ililoa, Makai by Makai, Ohuahale a kihapai, Kohala Niukini. 1 cultivated pauku aina.

2.: Mauka, Laie kihapai, Kau by ili aina of Ililoa, Makai by the Alakowaa, Kohala, Niukini ili aina.

3. Mauka is Umiwai punawai (Umiwai spring), Kau, Lapalua ili aina, Makai by Puukehoe a puu (hill), Kohala, Papalanui land. 1 cultivated kihapai.

4. In the ili of Halewaawaa. Mauka, the Alaloa, Kau, by Naalapa ili aina, Makai, Kealakowaa, Kohala by Ahupuaa of Waiaha. 1 cultivated parcel land.

5. At Kamuku 2. Mauka by Alapai's land, Kau by Kukuipuloa ili aina, Makai by Kealaloa, Kohala by ili aina of Ililoa. 1 cultivated kihapai.

6. Kahuahale. Mauka by the alanui, Kau by Ililoa ili land, Makai by konohiki, Kohala by ili aina of Ohiki. It is not enclosed, there is one house and 3 cultivated kihapai.

It is an old land (right) for him from the time of Kamehameha II, and the from Ipunui at the present time. No one has objected...[105]

Kaiakaola, Helu 9126 (ʻĀp. 1)

Kaiakaola claimed several moʻo ʻāina and stated that the land was held in possession from the time of Kekupuohu. Kalama, who offered a testimony stated that Kaiakaola's ʻohana had the

[105] Helu 10252; Royal Patent 6742, Kahului Kona. 1 ʻĀp. 1.4 Acs.

parcel since the time of Kīwalaʻō before 1782, which is an unusually deep genealogy to present for land. Kalama also described in detail the crops that Kaiakaola cultivated such as kalo, coffee, and ʻuala (FT:v8, p677).

It is unclear if Kaiakaola's house was in the same area as the cultivated lands; one is not inclined to think so because Kalama described Kaiakaola's house lot as being in a separate place. The parcel is also described as having three patches of kalo, which could be an indicator of the ʻāina being located in the uplands. It is possible that Kaiakaola was not awarded all the lands he claimed, or that he was awarded them in a long contiguous parcel; considering the inequity of the Māhele. It was unfortunately likely the former.

Native Register, Volume 8:541,
January 26, 1848

> Aloha to you, Z. Kaauwai and the Land Commissioners. I hereby petition for kuleana moo land there in Kahului 1. Kukuipuloa is the name of the moo aina. It has been my land from the time of Kekupuohi, from then to the present time. Naheana is the one over Kahului 1.
>
> Here I am on my little moo aina. Here are the places that I desire. At another place it is 103 long by 12 wide, Another place is 112 long, by 12 wide. At another place 74 long by 12 wide; at another place, 210 long by 44 wide; and at another place 430 long by 20 wide. These are the places I desire. The witnesses are Maliu and Nalawaia.
>
> By Kaiakaola

Foreign Testimony, Volume 8:677, Helu 9126 & 9255

> Kalama, sworn says, he knows the kuleana of Clt. in Kahului 1, Kona. It consists of several pieces of cultivated land scattered over the ahupuaa, viz. 3 Kalo patches, 3 patches of coffee, 2 patches of potatoes.
>
> He has a house lot also and 3 patches of Kalo in another place. The house site is not enclosed.
>
> Clt. derived the land from his ancestors, who got it in the days of Kiwalao [prior to 1782], and holds it without dispute.[106]

Keaweehu, Helu 7496 B (ʻĀp. 1)

No land ma uka of Māmalahoa Hwy., and the Kealakowaa, was awarded in Kahului 1 Ahupuaʻa, although many makaʻāinana claimed land in the kula area below the highway and above the pā pipi. Keaweehu, was one such individual who claimed land in this kula region above the Kealakowaa. Instead, Keaweehu was only awarded the ma uka lands claimed that lay just seaward of Kealakowaa.

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[106] Helu 9126; Royal Patent 8059; Kahului N. Kona. 1 ʻĀp. 1.5 Acs.

Native Register, Volume 8:444-445,
January 26, 1848

Aloha to all of you the Land Commissioners. Pertaining to some kihapai in the mau [zone]. On the east it is 8 long; west, 9 wide; south side 350 long; north side, 350 long. Kihapai in the Kaluulu, 8 wide; west 6 wide; south side 150 long; north side, 150 long. Kihapai on the kula, east 10 wide; west 9 wide; on the east, 9; west side 400 long; north side 400 long
Done by me, Keaweehu

Native Testimony, Volume 4:515-516,
December 22, 1848

There in the ili aina of Lapalua, Ahupuaa of Kahului 3 Apana Aina.

1. Kula [open dryland field]. Mauka by konohiki, Kau by Ililoa land, Makai a pa pipi, Kohala by Ohiki ili aina. 1 cultivated pauku aina. [unawarded]

2. Kaluulu [upland agricultural field]. Mauka by the Alanui, Kau by Kahului 2 land, Makai by Kuaulu (Kaulana [a resting place]), and Kohala by Kukuipuloa ili aina. 1 partially cultivated pauku aina.

3. Mauka by Papuaa, land of konohiki, Kau by Kahului 2 land, Makai by Kaluaolena land, Kohala by Kukuipuloa ili aina. 1 cultivated pauku aina.

His interest was from Ipunui (Konohiki) in the Yr. 1845. No one had objected to him...[107]

Kahului 2 Ahupua‘a

Neniha, Helu 10373 (‘Āp. 1)

Interestingly, Neniha is one of the only awardees not to claim a cultivated upland parcel. Neniha’s only claim is for a pāhale that is located on the coast which was awarded (NR:v8, p479). Kalama gave a sworn testimony for Neniha’s claim (NT:v4, p533) which was based on Neniha’s wife’s family, who received the lands from Kamehameha I.

Kapae, Helu 7073 (‘Āp. 8)

Kapae claimed a good amount of land. Of those relevant to the study area, Kapae claimed one ma kai parcel and four ma uka parcels. Kapae received one of each. Kapae’s ma kai parcel at Kahului 2 included a house and cultivated land that was received in 1846 when an individual by the name of Puna, who is mentioned to be the husband of Kaoanaeha, gave Kapae “administration of the konohiki labor days for the konohiki on this land” (NR: v8, p414-415).

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107 Helu 7496B; Royal Patent 6277A; Kahului 1. 1 ‘Āp. 1.9 Acs.

If Kapae's ma kai lot was claimed because of his work, the ma uka claims for portions of the upland 'ili of Inaimoa and Kamuku were on behalf of his wife's connections, through her parents and kūpuna kāne. It is unclear how many of the four paukū claims are included in Kapae's extensive ma uka award. Kapae was awarded the parcel above the pā pipi, an extensive upland award just below Māmalahoa Hwy.

Kapae claimed residence at the coast where Kapae administered konohiki labor days. Kapae also testified that he farmed the upland parcels with his wife's family "from 1838 until today (1848, or ten years). Here, we see a clear connection between the uplands and the coast that can trace more than one generation, even for people that might have had a higher status.

Native Register, Volume 8:414-415
January 24, 1848, Kailua

Aloha to you the Land Commissioners. I hereby state my pahale, which is there makai in Auhaukeae 1, Ahupuaa, in Kona, Hawaii. It was given to me in its entirety by Unualoha and Kaikainalii. It was given me absolutely by Ulualoha and Kaikainalii at the time I became a teacher for the children, in the Year 1838.

There are some other places beside this lot which I worked again on the west and the northeast. I and some others purchased a mans house, selling his lot for $4.50 in 1846. [For which] I asked Kamanawa. On the east side is my place. it was given to me and was combined into one lot with a circumference of 196 3/6 anana; some of the border of the lot enters into Hianaloli 6.

Here is the, a pahale in the Ahupuaa of Kahului 2. It was received in this way. Puna, husband of Kaoanaeha, gave me the administration of the konohiki labor days for the konohiki on this land. The konohiki was living on that land, and the lot was from ancient times until the present. There is a pahale on the side of this lot, and cultivated place on the other side and the other in from former times. The length and width is 345 anana. This lot was gotten by me in 1846.

Here is the, the land claims as stated by Limaikaika, for us to apply to you the land Commissioners, describing the nature of our claims as explained below.

Pauku Aina 1, mauka of the papipi, the length is 187 3/6 anana, the width is 13 anana.

Pauku aina 2, in the mid kula [region], the length is 117 3/6 anana by 17 3/6 anana.

Pauku lands 3, within the Kaluulu, reaching maki to Inaimoa. The length is 362 anana by 44 3/6 anana, being the same in some places and more in other places.

Pauku 4, mauka of Kealaloa to makai of Hulilau. The length is 73 anana by 13 anana

The boundaries of these pauku aina described above are Lapalua on the north, Kahuku 1 on the south, the papipi on the West, and Hulilau on the east.

These land claims are in Kahului 2, that is the ahupuaa. There are three ili are in this claim, Inaimoa and 2 Kamuku. These land claims are from my wife's parents, and an ili from her kupunakane. This was their land which they cultivated, from

the time they occupied the land, until the present. But they gave the property to my wife and I. It is there that we have farmed t with them from 1838 until today. All the things I have planted are there now.

Here is a kihapai at Kahuku 1, acquired by me as follows. The annual tax of this ili had not been fully paid to the tax collector and I paid the remaining quarter, and I asked for some of kihapai from the one who had the ili and it was given (to me). The total of these kihapai is 61 3/6 anana long by 14 anana wide. The boundaries of the pauku aina are Kamumu 2 on the North, Kahuki 2 on the South, the Uluniu (Coconut grove) on the west, and Kaohia on the east.

I am with aloha,
Kapae.

Native Testimony, Volume 4:501-502,
December 20, 848 *[See also Helu 2415 B]*

There in the ahupuaa of Auhaukeae.

1. Pahale. Mauka by idle land, Kau by Kealoha folks lot, Makai kahakai (shore), Kohala by Kaiamakini's lot. Kapu enclosed with a wall in 1829. 1 house for Kapae, he is living there. It was given to him by Kealoha in 1838. He has lived there to the present day.

2. Pahale in Ahupuaa of Kahului. Mauka by Alanui Aupuni, Kau by idle kula land, Makai by kahakai, Kohala by idle land. It is enclosed with a wall. 1 house for Kapae. Kapae lives there. His interest was from Puna in the Yr. 1846.

3. Pauku aina. Above the pa pipi, the ili aina of Kahului. Mauka by idle land, Kau by Kahuki I, Makai by Papipi, Kohala by Lapalua ili aina. 1 pauku partially cultivated in various areas.

4. Pauku Aina on the Kula. Mauka by idle land, Kau by Kahuki ili aina, Makai by idle land, Kohala ili aina. It is cultivated.

5. At the Kaluulu. Mauka by Konohiki, Kau by Kahuki I ili aina, Makai by idle land, Kohala by Lapalua ili aina. 1 cultivated pauku aina., 1 hale for him.

6. Pauku aina. Above Kealaloa. Mauka, Hulilau a kihapai for the Konohiki, Kau by Kahuki 1 land, Makai by the Alanui, Kohala by Lapalua. Cultivated land.

7. Ili aina at Kahuki 1. Mauka by idle land, Kau by Kahuki 2, Makai by idle land, Kohala by Kamuku 2 land.

Kihapai gotten from Kalou[?] in the Yr. 1844. Apana 1 from Kealoha, Apana 2 from Puna, The Apana Aina are old lands [rights] from the kupuna of his wife. No one has objected...

Native Testimony, Volume 8:646, Helu 2415 B, Kapae
January 10, 1850

> ...Kalama and Kaili, Sworn. We know his apana, Ili of Lapalua in Kahului 2 Ahupuaa, from Kaoanaeha in the Yr. 1846. No one has objected to him. It is surrounded on all side by the land of the Konohiki, they have seen his parcel in Lapalua ili of Kahului 2 ahupuaa from Kaoanaeha in 1846. No one objected to him. Boundaries are surrounded by the land of the konohiki.[108]

Kulou, Helu 7690 (ʻĀp. 1)

Kulou, through the claim of his wife's ʻohana claimed six paukū of ma uka lands. He described them at the end of his claim (NR:v8, p445-446) as contiguous parcels. The pā pipi is a western boundary of the ʻāpana and must run between the ma kai and ma uka ala loa, rather than being above Māmalahoa Hwy. It is likely that Kulou's claim was awarded in a single parcel.

Native Register, Volume 8:445-446,
January 24, 1848, Kailua

> Aloha to you the Land Commissioners. I hereby state to you my land claim which is in Kahului 2 Ahupuaa. Thus, it is for your understanding of my places of cultivation, pursuant to the words of Limaikaika (Armstrong), I petition to you for my land claims, the cultivated places.
>
> A pauku of land, mauka of the papipi. 500 anana long by 5 anana wide.
> A pauku of land in the mid kula region 500 anana long by 5 anana wide
> A pauku of land mauka there is 300 anana long by 7 anana wide.
> A pauku mauka of Kaluulu is 90 anana long by 5 anana wide.
> A pauku o land above there that is 82 anana long by 5 anana wide.
> A pauku of lands that is mauka of the alaloa, 240 anana long by 6 anana wide.
>
> The boundary of this land is Kamuku 2 on the north, Kahuku 3[?] on the south, the papipi on the west and by , by Hulilau on the east.
>
> This land claim was from my wife, and her keiki, Kapeleaumoku, in 1843 when I /began to/ cultivate this land, until the present.
>
> By Kulou

Native Testimony, Volume 4:516,
December 22, 1848

> Kekipi (konohiki), Sworn... There in the ili aina of Kahuki, Ahupuaa of Kahului 2.
>
> It is just as it was described by him [Kulou] in his claim document, that is what I know. however, I [Kekipi] do not know the length of the boundaries. It is my thought that when the surveyor comes, he will establish the boundaries. 6 Pauku aina

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[108] Helu 7073; Royal Patent 8072; Kahului 2 N. Kona. 1 ʻĀp. 3.4 Acs. Kahului 2 N. Kona. 6 ʻĀp. 7.72 Acs. Royal Patent 8073; Kahului 2 N. Kona. 1 ʻĀp. 2.19 Acs.; Auhaukeae 2 Kona. 2 ʻĀp. 1.92 Acs.

His interest was from Kapae, to this time, but it is an old [right] for his wife, in the time of Kamehameha 1. No one has objected to him...[109]

Kuapuu, Helu 7336 (ʻĀp. 1, 2)

Kuapuu claimed six to seven ʻāpana and was awarded two of them; one ma kai pāhale at the coast and a partially cultivated kīhāpai in the uplands. It is likely that Kuapuu's ma uka award, ʻĀpana 1, included several of his claimed paukū that were contiguous.

Native Register, Volume 8:424,
January 26, 1848, Kailua

Aloha to you the Land Commissioners. I hereby state my pahale claim, there makai, Kahului 2, Ahupuaa. The length and width are 43 anana.

My land claim is in Kahului 2, and known as follows, 500 anana long by 5 anana wide.

A pauku of land mauka of this, reaching the Kaluulu, 300 anana long by 5 anana wide.

A Pauku of land from Kealakowaa to Manuwa, 400 anana long by 5 anana wide.

A pauku of land mauka of Kealaloa is 100 anana long by 5 anana wide.

These pauku are bounded by Kahuki 1 on the north, by Kikiaiole on the south, by the Papipi on the west, and by Kaaipuaa on the East.

A pauku of land at Kikiaiole 2, 500 anana long by 6 anana wide

Pauku of land that is above Pahanui to Kamakahalau, 300 anana long, by 5 anana wide. The boundaries of these lands are Kikiaiole 1 on the north, Ohia on the south, the Papipi on the west, and Kamakahalau on the east.

By Kuapuu

Native Testimony, Volume 4:500,
December 20, 1848

...There in the ili aina o Kahuki, Kahului 2 Ahupuaa. 7 Apana.

1. Pahale. Mauka by idle land, Kau by Niniha's lot, Makai by an Alanui Aupuni, Kohala by Kalawa's lot. Enclosed. 1 house for Kuapuu, he is living there.

2. Mauka of Papipi. Mauka by idle land. Kau by Kikiaiole land, Makai by a papipi,

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[109] Helu 7690; Kahului 2 N. Kona. 1 ʻĀp. 1.75 Acs.

Kohala by Kahuki land. 1 cultivated kihapai.

3. Kaluulu [Inland agricultural zone]. Mauka by idle land. Kau by Kikiaiole, Makai by idle land, Kohala by Kahuki land.

4. At Kealakowaa. Mauka by konohiki, Kau by Kikiaiole, Makai by Konohiki, Kohala by Kahuki land.

5. The Alaloa. Mauka by idle land, Kau by Kikiaiole land, Makai by Konohiki, Kohala by Kahuki land.

6. There in Kikiaiole ili aina. Mauka by Konohiki, Kau by Ohia land, Makai by Konohiki, Kohala by Kikiaiole 2. 1 partially cultivated kihapai.

7. Mauka by Konohiki, Kau by Ohia land, Makai a papipi, Kohala by Kikiaiole 2 land. 1 partially cultivated kihapai.

It is and old land (right) belonging to Kuapuu's wife, given to her by her parents in the time of Kamehameha I. No one has objected...[110]

Kaanaana, Helu 7335 (ʻĀp. 1)

Kaanaana only claimed the cultivated lands which are described as being in the uplands and having had been cultivated since 1840 (NR:v8, p423). It is documented that Kaanaana received the ʻāina from his parents who had gotten the land themselves during the time of Kamehameha I. (NT:v4, p449). Kaanaana claimed no house lot. The lands claimed where paukū ʻāina and paukū kula (NR:v8, p 423).

Native Register, Volume 8:423,
January 24, 1848, Kailua

Aloha to you the Land Commissioners. I hereby tell you of my land claim in the ahupuaa of Kahului 2.

It is described as follows. My cultivated place, as I understand it having heard from Limaikaika, "You are to petition for your land claims to the Commissioners.

A pauku of land mauka of the pa pipi, 700 anana long by 9 anana wide.

A pauku mauka of the kula, 30 anana long by 10 anana wide.

A pauku of lands above there is 46 anana long, by 12 anana wide.

A pauku of lands mauka of the Kaluulu to makai of Manuwa is 290 anana long by 9 anana wide. This boundaries of the land above described, are Kahuki 2 on the north, the papipi on the west, and Manuwa on the east.

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[110] Helu 7336; Royal Patent 3740; Kahului N. Kona. 2 ʻĀp. 1.35 Acs.

These place have all been cultivated from the time I received these ili aina. That is in the year 1840, up to this time. It is for you to hear.
I am Kaanaana 2

Native Testimony, Volume 4:499,
December 20, 1848

...There in the ili aina of Kikiaiole, 1 Apana, Kahului 2 Ahupuaa. 3 Apana Aina.

1. Mauka idle land for the Konohiki, Kau by Kikiaiole 2, Makai a pa pipi, Kohala by Kahuku [Kahuki] Aina. 1 uncultivated kihapai.

2. Kula (land). Mauka by idle land, Kau by Kikiaiole land, Makai by Konohiki, Kohala by Kahuki aina. 1 cultivated kihapai.

3. Kaluulu [regions extending to) Manuwa. Mauka by Konohiki, Kau by Kikiaiole, Makai by Konohiki, Kohala by Kahuki aina. 1 cultivated pauku.

It is an old land (right) from Kaanaana's parents to him. His parents received it in the time of Kamehameha I. No objections...[111]

Kekipi, Helu 7914 (ʻĀp. 1)

Kekipi claimed one paukū ʻāina from Kealakowaa to a wahi called Waiapuka to the east. A kīhāpai is also mentioned associated with this ʻāina.

Aikane (Aekane), Helu 11073 (ʻĀp. 1)

Aikane claimed cultivated kula lands in Kahului and a pāhale in the ahupuaʻa of Hinaloli located to the north. Aikane was only awarded the paukū ʻāina in the uplands (NR:v8, p610). An individual by the name of Kekipi presented a testimony that Aikane's ʻāpana was located in the ʻili ʻāina of Ohia and Papahia in the Kahului Ahupuaʻa and that it was Aikane's ʻāina since 1839 (NT:v8, p651).

Native Register, Volume 8:610,
Feb. 7, 1848, Kailua

Aloha to you're the Land Commissioners. I hereby describe my claim for land, a house lot and kula. The land claim is in the Ahupuaa of Kahului in Kona, Kailua. The size of the land is 296 anana long, and 31 anana wide. That is the size of the pauku of land. And my kula is 100 anana long by 20 anana wide. There is a pahale claim also, in the Ahupuaa of Hianaloli at Kailua. It is 15 anana long by 7 anana wide. They were given me by Malo and Kaohao. Those are my claims which are stated to you.
By Aekane [Aikane]

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[111] Helu 7335; Royal Patent 7066; Kahului 2 N. Kona. 1 ʻĀp. 1.2 Acs.

Native Testimony, Volume 8:651,
January 12, 1850

> Kekipi, sworn... ...His Apana is in the Ili of Ohia & Papiha, Kahului Ahupuaa. From Iino in the Yr. 1839. No one objected to him.
> Boundaries of the land are surrounded by the land of the Konohiki.[112]

Kalawa (also Kalaua), Helu 7086 (ʻĀp. 1, 2)

According to the Native Testimony (NT:v4, p557) and Native Register (NR:v8, p419) submitted for this claim, Kuapuu claimed three ʻāpana, two paukū ʻāina in the uplands, and a pāhale at the coast. Kalawa was awarded two ʻāpana which included one house site located at the shore and one in the uplands. It is unclear if one of Kalawa's ma uka cultivated claims was unawarded, or they were awarded as one large ʻāpana.

A wahine by the name of Kaili offered a testimony on behalf of this claim (NT:v4, p557). In this testimony, Kaili described the ma kai pāhale parcel as having had two houses; one which belonged to Kalaua and another which belonged to herself (NT:v4, p557). Both house sites are said to have been enclosed by a wall (NT:v4, p557).

Native Register, Volume 8:419,
January 26, 1848, Kailua

> Aloha to you the Land Commissioners. I hereby tell you of my land claim as follows. A pauku land from the papipi to Kahului-loa, being 500 anana ling by 5 anana wide.
>
> A pauku of lands Ke Alakowaa [Kealakowaa] to Waiapuko, being 500 anana long by 5 anana wide.
>
> Pahale claim the makai of Kahului 1, Ahupuaa. The length and width are 42 anana.
>
> The Pauku of land explained above are in the Ahupuaa of Kahului 2. The boundaries of these lands are Kikiaiole on the north, Papiha on the south, the Papipi on the West, and Waiapuko on the east.
>
> By Kalawa

Native Testimony, Volume 4:557,
January 10, 1849

> ...There in the ili aina of Puki, Ahupuaa of Kahului 2. 3 Apana.
>
> 1. Mauka by konohiki, Kau by Papiha ili aina, Makai by pa pipi, Kohala by Ohia ili aina. 1 kihapai not cultivated.

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[112] Helu 11073; Royal Patent 7058, Kahului 2 N. Kona. 1 ʻĀp. 1.8 Acs.

2. Mauka by konohiki, Kau by Papiha ili aina, Makai by Ohia ili aina, Kohala by Kikiaiole. 1 cultivated kihapai.

3. Pahale. Mauka by idle land, Kau by Kuapuu's lot, Makai by the Alanui Aupuni, Kohala by Nalawaia's lot. It is enclosed with a wall. 2 hale. 1 hale for Kalawa, and 1 for me (Kaili W.). It is a kuleana hale Kalawa. They are residents since Kamehameha I, to this day. No one has objected.[113]

Puapuaa Ahupuaʻa

As opposed to the other ahupuaʻa examined in this study, Puapuaʻa 1 and 2 Ahupuaʻa appears to have had the most claimants submit a claim during the Māhele process. A total of 16 claimants associated with the Puapuaa region were analyzed. According to the Native Testimonies, Native Registry, Land Commission Awards, and supporting Māhele records, this region reported many kīhāpai, malā, and other cultivated lands; thus indicating agricultural practices to have occurred in the area. Similar to the other ahupuaʻa examined, many of the claims submitted for Puapuaʻa describe majority of the cultivated lands to have been located in the ma uka or kula zone of the ahupuaʻa, while the house sites claimed were situated ma kai of the ahupuaʻa. Presented below are a summarized description of each of the claims submitted for the Puapuaʻa 1 and 2 Ahupuaʻa.

Puapuaa 1 Ahupuaʻa

Nika, Helu 10365 (ʻĀp. 1)

In the Puapuaa 1 Ahupuaʻa, Nika was awarded a single ʻāpana (LCA 10365). This ʻāpana is described as a kīhāpai that is located in the ma uka region of the ahupuaʻa (NR:v8, p479). The types of crops and vegetation cultivated in this kīhāpai is not specified in any of the Māhele documents associated with Nika's claim.

Kaiewe, Helu 7353 (ʻĀp. 1, 2)

Kaiewe claimed nine parcels, a kīhāpai ʻai (kalo garden) in the kula region, an ʻāpana in the ʻāpaʻa zone which consisted of four kīhāpai and a pāhale, an ʻāpana in the ʻāmaʻumaʻu zone, as well as other ʻāpana noted to have at least ten other cultivated kīhāpai on them. These ʻāpana are said to be located in the ʻili of Ililoa, Haliiipalala and Lauhulu (NR:v8, p427-428). Kaiewe was ultimately awarded two ʻāpana; one long parcel in the uplands, that included the claim submitted for the ʻāina in the ʻāpaʻa region of Puapuaa, as well as one ʻāpana on the coast that is located beside Kawainui's LCA 7353 ʻĀpana 2.

Native Register, Volume 8:427-428,
January 20, 1848

Hear ye, o Land Commissioners. I, Kaiewe, hereby state my claims to you by length and width.

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[113] Helu 7086; Royal Patent 5225; Kahului 1 Kona. 1 ʻĀp. .270 Ac. Kahului 2 Kona. 1 ʻĀp. 1.3 Acs.

On the N. 10 anana; to the E., adjoining the lot of Kawainui, 11 anana, and on the So. 11 anana. To the W. adjoining the lot of Nahau, 12 anana. The length is on the E. and the W. The width is on the N. and the S. There is nothing planted. This lot is finished.

Here is the claim for a kihapai ai (Kalo garden) on the kula. The length of that place worked by my own hands is 107 anana long on the E., adjoining the kihapai of Ku; that is the length on the W.; adjoining the kihapai of Kawainui it is 42 anana wide; on the N. it adjoins the kihapai of Nahau. The N. and S. are the same.

Mauka of this, it is 120 long on the E, and the same on the W. The width of this to the N. is 15 anana, at the place adjoining the Kihapai of Kalua. The N. and S. are the same. This claim is finished. It is Kula land.

Here also is this claim in the Kaluulu. To the N., 6. To the E. adjoining the kihapai of Ainoa, it is 27 anana. To the S. it is 6. To the W. adjoining kihapai of Ikeole it is 27 anana, there to the S. it is 6. to the E. adjoining the kihapai of Ainoa it is 27 anana. The length is on the W. and the with is to the N. and S. This claims is finished. Kaluulu.

Here is another claim, mauka in the Apaa, there are growing various plants. The length on the E. is 18 anana, also on the W., and to the N. adjoining Kaukali, it is 6 anana wide, and the same on S.

There on the N. W. to N. of the Kihapai is 5 anana, and the same on the E. On the E. it adjoins the kihapai of Kamahiai, 25 anana, and the same on the W.

Another is to the S. N. and E. it is 14 anana long, at the place where it bounds Kaukali's kihapai. It is the on the W. where it bounds Kauila's kihapai. N. 15 anana, to the place where it bounds the Kihapai of Nahau. On the N. and the S. the width is the same as the above anana

Other kihapai are to the N. the length is 47 anana; also the length on the E., at the place bounding Kaihu's kihapai, and being 20 anana wide, That is also on the N. and the S.; the W. is it 47 anana. This claim on the Apaa is finished.

-Here is this claim in the Amaumau [zone]. This claim is in the distant uplands, being 34 anana long, to the E. and the same on the W. The width is 15, the same on the N. and S.

By me I. Kaiewe
Puapua [Puapuaa] 1, District a. Kona, Hawaii.

Native Testimony, Volume 4:565-566,
February 2, 1849

(Nahau, Konohiki, Sworn) ...There in the ili aina of Ililoa, Puapuaa 2 Ahupuaa; in the ili aina of Haliiipalala and Lauhulu. Puapuaa 2 Ahupuaa.

1. Pahale. Mauka by Idle land, Kau by Kawainui's land, Makai by shore; Kohala my [Nahau's] lot. It has been enclosed by a wall. 2 hale with for him, and he resides there.

2. Kihapai in ili aina of Haliipalala. Mauka by my land, Kau by Ku's land, Makai by the pa aina (land boundary wall), Kohala by Kahookano's land. 2 cultivated kihapai.

3: Mauka by Kalua's land, Kau by my land, Makai by Kawainui's land Kohala by my land. 2 cultivated kihapai.

4. At the Apaa [upland agricultural zone]. Mauka by Konohiki, Kau by Kaihu's land, Makai by my land, Kohala by Konohiki. 4 cultivated kihapai. 1 house for him.

3. Ili aina of Lauhulu. Mauka by Konohiki, Kau by Kamahiai's land, Makai Konohiki, and the same towards Kohala. 1 cultivated kihapai.

6 - At ili aina in Waipio. Mauka by my land, Kau by Ainoa's land, Makai by Konohiki, Kohala by Ainoa's land. 1 cultivated kihapai.

7. In the ili aina of Ililoa. Mauka by Keliikanakaole's land, Kau by Ainoa's land, Makai by Konohiki, Kohala by Ikeole's land. 2 cultivated kihapai.

8. Mauka by Kaihu's land, Kau by Ikeole's land, Makai by Kauhi's land, Kohala by Konohiki. 1 cultivated kihapai.

9. Mauka, Konohiki, the same towards Kau and Makai, Kohala by Ahupuaa of Kahului. 1 cultivated kihapai.

His interest was from me (Nahau) in the Yr. 1844. No one has objected.[114]

Kawainui, Helu 7355 (ʻĀp. 1)

Kawainui issued a claim for five ʻāpana; however, only one of the five parcels were awarded (LCA 7355). The one ʻāpana received by Kawainui during the Māhele was an ʻāpana comprised of a pāhale. The remaining four parcels that went unawarded were three ʻāpana that consisted of at least seven cultivated kīhāpai and a kahua hale or house site (NT:v4, p564-565).

Ikeole, Helu 8221 (ʻĀp. 1)

Ikeole only claimed one ʻāpana in the ʻili ʻāina of Ililoa. This ʻāpana was the location of Ikeole's pāhale, which consisted of one house enclosed by a wall, according to Nahau (NT:v4, p569), and where Ikeole cultivated at least six kīhāpai in the ʻāpaʻa (upland dryland agricultural zone). Nahau's pāhale and goat pen is described as being nearby.

Native Register, Volume 8:460,
January 29, 1848

> Aloha to you Excellencies. I hereby tell you of my kihapai which I made with my own hands and are cultivated by me. It is 110 long by 18 wide.
> Ikeole

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[114] Helu 7353; Royal Patent 4304; Puapuaa 1 Kona. 2 ʻĀp. 1.2 Acs.

Native Testimony, Volume 4:569,
February 2, 1849

There in the ili aina of Ililoa, Ahupuaa of Puapuaa 1. 5 Apana.

1. At the Apaa [upland dry ag. zone]. Mauka by Konohiki, Kau by Puapuaa 2. Makai by Konohiki, Kohala by Kaihu's land. 6 cultivated kihapai.

2. Mauka by Konohiki, Kau by Puapuaa 2, Makai by Konohiki, Kohala by Kaiewe's land. 13 cultivated kihapai.

3. Mauka by Konohiki, Kau by Puapuaa 2, Makai by Konohiki, Kohala by my [Nahau's] land. 3 cultivated kihapai.

4. Mauka by Konohiki, Kau by Puapuaa 2, Makai by Konohiki, Kohala by my [Nahau's] land. 2 cultivated kihapai.

5. Pahale. Mauka by my [Nahau's] pa kao goat enclosure, Kau by my [Nahau's] lot, Makai by kahakai, Kohala by wahi waiho wale (Idle land). It is enclosed with a wall. 1 hale for him.

The are old residents from the time of Kamehameha, No one has objected...[115]

Ku, Helu 7356 (ʻĀp. 1)

During the Māhele, claimant, Ku, claimed four ʻāpana. The Native Register associated with Ku described that the kula lands being claimed had kīhāpai on them (NR:v8, p428). According to the Native Testimony, there are a total of six cultivated kīhāpai mentioned; one in the ʻili ʻāina of Waipio, two in the ʻili ʻāina of Ililoa, two in the ʻili ʻāina of Haliipalala, and another one mentioned associated with the ʻili ʻāina of Lauhulu in the Puapuaʻa 1 Ahupuaʻa (NT:v4, p563).

Native Register, Volume 8:428, Helu 7356, Ku

He ye o Land Commissioners. Here I am, Ku, making known to you my land claims. There are some kihapai there on the Kula lands, 120 long on the East, and the same on the West 120 anana. It is at the place adjoining Kaiewe's kihapai, being 18 wide. There to northwest one is 40 anana long on the east at the place adjoining the kihapai of Nahau. The length that place made known is 40 anana long and the 4 wide. Towards the East is another, that is 30 anana long, 11 wide; on the north of the kihapai that is 40 anana long by 14, wide.

Done by me, Ku
Puapua [Puapuaa] 1, Kona, Hawaii. January 20, 1848.

Native Testimony, Volume 4:563,

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[115] Helu 8221; Royal Patent 4263; Puapuaa 1 N. Kona. 2 ʻĀp. 1.762 Acs.

February 2, 1849

> ...There in the ili aina of Lauhulu, Ahupuaa of Puapuaa 1, Hawaii. 4 Apana
>
> 1. Mauka by Nahau's land, Kau by my [Kawainui's] and Kaiewe's land, Makai by Kaiewe's land Kohala by Hookano's land. 1 cultivated kihapai.
>
> 2. In the ili aina of Waipio. Mauka by Konohiki, the same towards Kau, Makai by pa aina, Kohala by Kaiewe's land. 1 cultivated kihapai.
>
> 3. In the ili aina of Ililoa. Mauka by konohiki, and the same towards Kaua and all around. 2 cultivated kihapai.
>
> 4. In the ili aina of Haliipalala. Mauka by Konohiki, the same towards Kau, Makai by Kalua's land, Kohala by Kamahiai's land 2 cultivated kihapai.
>
> His interest was from Nahau [Konohiki] in the year 1843. No one has objected to him..[116]

Kalua, Helu 7354 (ʻĀp. 1)

According to Kalua's Native Testimony, four ʻāpana were claimed during the Māhele, though only one was awarded a LCA. The parcel that was awarded to Kalua was a ma uka ʻāpana whose land use was not specified (LCA 7354). The three other ʻāpana that went unawarded were two parcels decribed as being ma uka ʻāpana, and one described as a kula ʻāpana. Collectively, a total of six kīhāpai were noted to have been cultivated in Kalua's three unawarded parcels (NT:v4, p561-562).

Kaukali, Helu 9253 (ʻĀp. 1)

As a result of the Māhele, Kaukali was awarded one parcel described to be in the ma uka region of the ahupuaʻa (LCA 9253). Kaukali testified a claim to for three ʻāpana; one described as a ma uka ʻāpana ʻāina, another ma uka ʻāpana that contained a total of six kīhāpai, and a final ʻāpana that had two kīhāpai (NT:v4, p584). The types of crops cultivated in the kīhāpai were not specified in the Māhele records.

Kamahiai, Helu 7461 (ʻĀp. 1)

Kamahiai received an award for a single ʻāpana in the ma uka region of the Puapuaʻa 1 Ahupuaʻa (LCA 7461). Originally, Kamahiai testified to having a total of nine ʻāpana, though only one was awarded. As described in Kamahiai's Native Testimony, this claimant had one ʻāpana in the kula region that contained one kīhāpai, a ma uka ʻāpana, another ma uka ʻāpna with one kīhāpai, four more ʻāpana—each containing two kīhāpai on each parcel, as well as two additional ʻāpana described as cultivated paukū ʻāina (NT:v4, p505-506). Māhele records indicate that Kamahiai had a total of 12 parcels in cultivation.

Kaihu, Helu 7462 (ʻĀp. 1)

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[116] Helu 7356; Royal Patent 4356; Puapuaa 1 Kona. 1 ʻĀp. 2 Acs.

Kaihu was awarded two ʻāpana in the Puapuaʻa 1 Ahupuaʻa; one listed as an ʻāpana ʻāina, and the other, a pāhale. Kaihu's Native Testimony recounts that though only two parcels were awarded as a result of the Māhele, Kaihu had claimed a total of four ʻāpana; one ʻāpana pāhale and three ʻāpana kīhāpai (NT:v4, p506). One parcel was noted to have one cultivated kīhāpai on the property, another parcel and three kīhāpai, and the third parcel was described as a cultivated paukū ʻāina. The descriptions provided in Kaihu's claims indicate cultivation practices to have occurred on these ʻāpana.

Hookano, Helu 8154 (ʻĀp. 1)

Māhele Records indicated that Hookano was award***ed*** a single ʻāpana ʻāina in Puapuaʻa 1 Ahupuaʻa (LCA 8154), though the claimant had testified to have at least seven ʻāpana (NT:v4, p566). ***Hookano attests to having a total of at least 21 cultivated kīhāpai and one cultivated paukū ʻāina across the seven ʻāpana in the ahupuaʻa.***

Nahau, Helu 10407 (ʻĀp.)

Nahau was awarded two ʻāpana in the Puapuaʻa 1 Ahupuaʻa which consisted of an ʻāpana ʻāina and a pāhale (LCA 10407). Though Nahau was awarded two ʻāpana, this individual had originally testified to have claimed a total of 11 ʻāpana. The nine ʻāpana that went unawarded were described to have had cultivated kīhāpai associated with the parcels. Nahau attested to having had a total of 20 kīhāpai (NT:v4, p562-563). The type of crops cultivated in these kīhāpai were not identified in any of the documents associated with Nahau's claim.

Puapuaʻa 2 Ahupuaʻa

Keliikanakaole, Helu 7486 (ʻĀp. 1)

During the Māhele process, Keliikanakaole described having had five ʻāpana associated within the Puapuaa 2 Ahupuaa; however, Keliikanakaole was only awarded two of the five land claims made. The two claims awarded to Keliikanakaole consisted of an ʻāpana of ʻāina and a pāhale (LCA 7486). The other three that Keliikanakaole were ma uka parcels of ʻāina (NT:v4, p570).

Kauila, Helu 6177 (ʻĀp. 1, 2, 3)

Kauila was awarded three ʻāpana in the Puapuaʻa 2 Ahupuaʻa of Kona during the Māhele. Two of the three ʻāpana awarded to Kauila are listed as house sites or pā on the ma kai region; while the other parcel is an ʻāpana ʻāina in the ma uka area (LCA 6177).

Kala, Helu 7947 (ʻĀp. 1, 2)

Kala was awarded two ʻāpana during the Māhele in the Puapuaʻa 2 Ahupuaʻa. One of the parcels awarded was an ʻāpana of ʻāina, while the second awarded was for a pāhale (LCA 7947). Though Kala was awarded two ʻāpana, this claimed had actually submitted a claim for a total of eight different parcels. The various ʻāpana described by Kala in the Native Testimony mention at least twelve kīhāpai of cultivated ʻāina to have belonged to Kala. The first ʻāpana is described as having one kīhāpai in the uplands of Puapuaʻa, the second ʻāpana is also said to have had a kīhāpai, the third ʻāpana is said to have had two, the fourth ʻāpana is said to have three kīhāpai, the fifth ʻāpana had two more kīhāpai, the sixth ʻāpana is a paukū ʻāina, the seventh ʻāpana had three kīhāpai, and the final ʻāpana is described as a being a ma uka parcels that was held since the time of Kamehameha I (NT:v4, p564).

Kalimapaa, Helu 7743 (ʻĀp. 2)

Kalimapaa had made claim to five parcels of ʻāina; however, during the Māhele process, was awarded only two of the five claims made; one of which was a pāhale (LCA 7743). The Native Registry regarding Kalimapaa's landholdings described Kalimapaa to have had many kīhāpai which grew an abundance of native crops and vegetation. The Native Registry associated with Kalimapaa recounts that there were three māla ʻuala in the kula region in the ʻili of Kapahu, two māla kalo on the ʻāpaʻa and ʻāmaʻu zones of the ahupuaʻa, ten other māla kalo in another parcel, two additional māla kalo in a kīhāpai along with another māla ʻuala, a māla in the kula lands which grew ipu, a māla of lauhala, and another māla of pahulu ʻuala or a garden of volunteer sweet potatoes (NR:v8, p446). As exemplified from the testimonies and registry associated with Kalimapaa's claim, a variety of native vegetation and crops were cultivated and cared for in the Puapuaʻa Ahupuaʻa.

Keawe, Helu 5849 (ʻĀp. 1)

Keawe claimed and was awarded an ʻāpana that included a pāhale in the Puapuaʻa 2 Ahupuaʻa. According to the Native Testimony submitted for this claim, this ʻāpana was in Keawe's possession before the time of Kamehameha I (NT:v4, p590). The Native Registry attests that there were several different plants which grew on the property. Among the plants described, there were two loulu trees, a noni grove, hala kahiki or pineapple, and coconuts trees which were said to have been planted by "ka poe kahiko," or the ancients (NR:v5, p158).

Summary in Brief: The Gianulias Parcel – Ahupuaʻa of Puaʻa, Waiʻaha, Kahului, and Puapuaʻa

Hawaiian primary source historical records contained in the Native Testimony, Native Register, and Buke Māhele mention, or are indicative of cultural resources and practices associated with the ahupuaʻa of Puaʻa 3, Waiʻaha 1 and 2, Kahului 1 and 2, and Puapuaʻa 1 and 2, site of the Gianulias Parcel well. Spanning across these focus area ahupuaʻa, the Māhele records indicate that agricultural practices were common practices that occurred in these regions when one takes into account the numerous cultivated kīhāpai, māla, and paukū ʻāina that were described. Puaa 3 Ahupuaʻa contained at least six claimants whose land use consisted of cultivated kīhāpai and residential house sites. Similarly, Waiʻaha Ahupuaʻa 1 and 2 evidenced agriculture practices and also mentioned the named pūnāwai, Waikiʻi and other resources existing in the region such as the native mountain banana patch, termed ʻeʻa maiʻa. Kahului 1 and 2 Ahupuaʻa continued the similar claims being made for ʻāina which consisted of paukū ʻāina, cultivated ma uka lands, and ma kai house lots. Puapuaʻa 1 and 2 Ahupuaʻa also reflected an abundance of kīhāpai and māla. Of the land divisions surveyed, Puapuaʻa and Kahului Ahupuaʻa appeared to host the richest array of cultural resources and practices associated with the study area scope. Collectively, cultural resources such as kalo, ʻuala, ʻuala pahulu, lauhala, loulu, niu, kope, hala kahiki, pūnāwai, wai, and the practices associated with these resources were noted to occur throughout the Puaa, Waiʻaha, Kahului and Puapuaʻa Ahupuaʻa. The tables below reflect the cultural resources and practices for each ahupuaʻa that were revealed in an analysis of the various Māhele records.

Table 21. Cultural Resources Recorded in Māhele Records for Puaa 3 Ahupuaʻa*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous) - none		
** no specific resources were noted or legible in the Māhele documents to note associated with the Puaa 3 Ahupuaʻa; however this is not to say that no cultural resources exist. Many of the ʻāpana claimed in the ahupuaʻa were cultivated tracts of parcels. Though the types of crops and plant species cultivated in these areas were not specified, it can likely be assumed that cultural resources of crops existed in these cultivated ʻāpana.*		
Other Plants (Indigenous and Endemic) - none		
Foreign-introduced Crops - none		

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 22. Cultural Practices Recorded in Māhele Records for Puaa 3 Ahupuaʻa*

Cultural Practice	Definition	Number of Citations**
Pahale (Pāhale)	House lot	5
Kihapai (Kīhāpai)	A dry land garden; cultivated areas, or patch; crop unspecified	5
ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	14

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 23. Cultural Resources Recorded in Māhele Records for Waiʻaha 1 Ahupuaʻa*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous) - none		
** no specific resources were noted or legible in the Māhele documents to note associated with the Waiʻaha 1 Ahupuaʻa; however this is not to say that no cultural resources exist. One of the three ʻāpana claimed in the ahupuaʻa were described as being cultivated. This ʻāpana was ultimately not awarded and the types of crops and plant species cultivated in this parcel was not specified.*		
Other Plants (Indigenous and Endemic) - none		
Foreign-introduced Crops - none		

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 24. Cultural Practices Recorded in Māhele Records for Waiʻaha 1 Ahupuaʻa*

Cultural Practice	Definition	Number of Citations**
Pahale (Pāhale)	House lot	1
Kihapai (Kīhāpai)	A dry land garden; cultivated areas, or patch; crop unspecified	1
ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	3
Paukū ʻĀina	A segment of land, generally a long narrow cultivated section of land	1

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 25. Cultural Resources Recorded in Māhele Records for Waiʻaha 2 Ahupuaʻa*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous)		
ʻEʻa Maiʻa (a variety of mountain bana)	Food, medicine	1
Pūnāwai (freshwater spring)	Nourishment, medicine, spiritual	2
Wai (freshwater)	Nourishment, medicine, spiritual	1
Other Plants (Indigenous and Endemic) - none		
Foreign-introduced Crops - none		

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 26. Cultural Practices Recorded in Māhele Records for Waiʻaha 2 Ahupuaʻa*

Cultural Practice	Definition	Number of Citations**
Pahale (Pāhale)	House lot	6
ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	13
Paukū ʻĀina	A segment of land, generally a long narrow cultivated section of land	2
ʻIli ʻĀina	Small units of land within an ahupuaʻa, often described as long narrow parcels of land that run mauka-makai, and cross several agricultural zones.	2

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 27. Cultural Resources Recorded in Māhele Records for Kahului 1 Ahupuaʻa*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous)		
Kalo (taro)	Food, medicine, spiritual	4
ʻUala/ʻUwala (sweet potatoes)	Food, medicine	1
Pūnāwai (freshwater spring)	Nourishment, medicine, spiritual	1
Other Plants (Indigenous and Endemic)		
Forest zone	Array of associated cultural uses	3
Foreign-introduced Crops		
Kope (coffee)	Food	1

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 28. Cultural Practices Recorded in Māhele Records for Kahului 1 Ahupuaʻa*

Cultural Practice	Definition	Number of Citations**
Mala (Māla) ʻuala	A dryland garden, planted field, or patch of sweet potatoes	1
Mala (Māla) kope	A dryland garden, planted field, or patch of coffee	1
Mala (Māla) kalo	A dryland garden, planted field, or patch of taro	4
Pahale (Pāhale)	House lot	3
Kihapai (Kīhāpai)	A dry land garden; cultivated areas, or patch; crop unspecified	29
ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	12
Paukū ʻĀina	A segment of land, generally a long narrow cultivated section of land	2
Moʻo ʻĀina	Narrow strips of land within an ʻili	1
Forest zone	Array of associated cultural practices, including gathering and access, affiliated with this place	3

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 29. Cultural Resources Recorded in Māhele Records for Kahului 2 Ahupuaʻa*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous) - none		
** no specific resources were noted or legible in the Māhele documents to note associated with the Kahului 2 Ahupuaʻa; however this is not to say that no cultural resoruces exist. At least four ʻāpana were described as being cultivated kīhāpai. Though the types of crops and plant species cultivated in these areas were not specified, it can likely be assumed that cultural resources of crops existed in these cultivated ʻāpana.*		
Other Plants (Indigenous and Endemic) - none		
Foreign-introduced Crops - none		

*Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 30. Cultural Practices Recorded in Māhele Records for Kahului 2 Ahupuaʻa*

Cultural Practice	Definition	Number of Citations**
Pahale (Pāhale)	House lot	6
Kihapai (Kīhāpai)	A dry land garden; cultivated areas, or patch; crop unspecified	4
ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	18

Cultural Practice	Definition	Number of Citations**
Paukū ʻĀina	A segment of land, generally a long narrow cultivated section of land	15
ʻIli ʻĀina	Small units of land within an ahupuaʻa, often described as long narrow parcels of land that run mauka-makai, and cross several agricultural zones.	1
Forest zone	Array of associated cultural practices, including gathering and access, affiliated with this place	2

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 31. Cultural Resources Recorded in Māhele Records for Puapuaʻa 1 Ahupuaʻa*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous)		
Kalo (taro)	Food, medicine, spiritual	1
Other Plants (Indigenous and Endemic)		
Forest zone	Array of associated cultural uses	6
Foreign-introduced Crops - none		

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 32. Cultural Practices Recorded in Māhele Records for Puapuaʻa 1 Ahupuaʻa*

Cultural Practice	Definition	Number of Citations**
Pahale (Pāhale)	House lot	3
Kahuahale	House site	1
Kihapai (Kīhāpai)	A dry land garden; cultivated areas, or patch; crop unspecified	93
Kīhāpai ʻAi (kalo)	Cultivated area for food	1
ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	58
Paukū ʻĀina	A segment of land, generally a long narrow cultivated section of land	4
Forest zone	Array of associated cultural practices, including gathering and access, affiliated with this place	6

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 33. Cultural Resources Recorded in Māhele Records for Puapuaʻa 2 Ahupuaʻa*

Cultural Resource	Use	Number of Citations**
Canoe Plants (Indigenous)		
Kalo (taro)	Food, medicine, spiritual	14
ʻUala/ʻUwala (sweet potatoes)	Food, medicine	3
Ipu (gourds)	Food, medicine, utensils	1
Niu (coconut trees)	Food, medicine, utensils, cordage (see Krauss 1993:27)	1
Noni (Indian mulberry)	Medicine	1
Lauhala	Arts and crafts; charcoal; sails	1
Other Plants (Indigenous and Endemic)		
Loulu (*Pritchardia spp.* palm trees)	Cordage (see Krauss 1993:27)	1
Foreign-introduced Crops		
Hala kahiki (pineapple)	Food	1

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

Table 34. Cultural Practices Recorded in Māhele Records for Puapuaʻa 2 Ahupuaʻa*

Cultural Practice	Definition	Number of Citations**
Mala (Māla) ʻuala	A dryland garden, planted field, or patch of sweet potatoes	2
Māla pahulu ʻuala	A dryland garden, planted field, or patch of volunteer sweet potato shoots	1
Mala (Māla) ipu	A dryland garden, planted field, or patch of gourds	1
Mala (Māla) kalo	A dryland garden, planted field, or patch of taro	14
Māla Lauhala	A dryland garden, planted field, or patch of lauhala	1
Noni Grove	Grove of noni	1
Pahale (Pāhale)	House lot	6
Kihapai (Kīhāpai)	A dry land garden; cultivated areas, or patch; crop unspecified	13
ʻĀpana ʻĀina	Parcels or lots within given kuleana tract of land	22
Forest zone	Array of associated cultural practices, including gathering and access, affiliated with this place	3

* Includes Native Testimony, Native Register, and Buke Māhele
**Denotes the mention of a resource or practice *not* amounts recorded

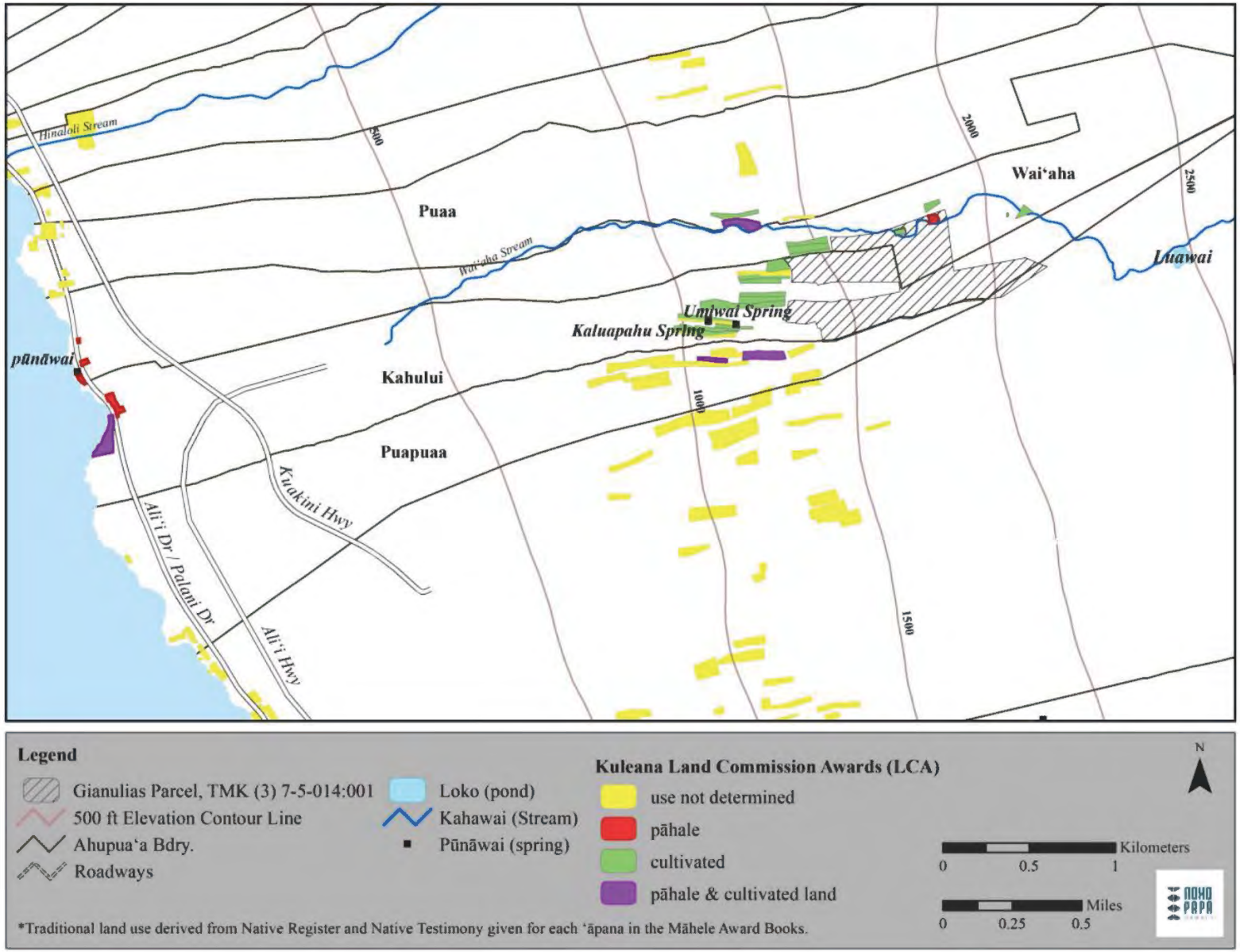

Figure 22. Traditional land use as noted in the Kuleana LCAs in and around the Gianulias Parcel.

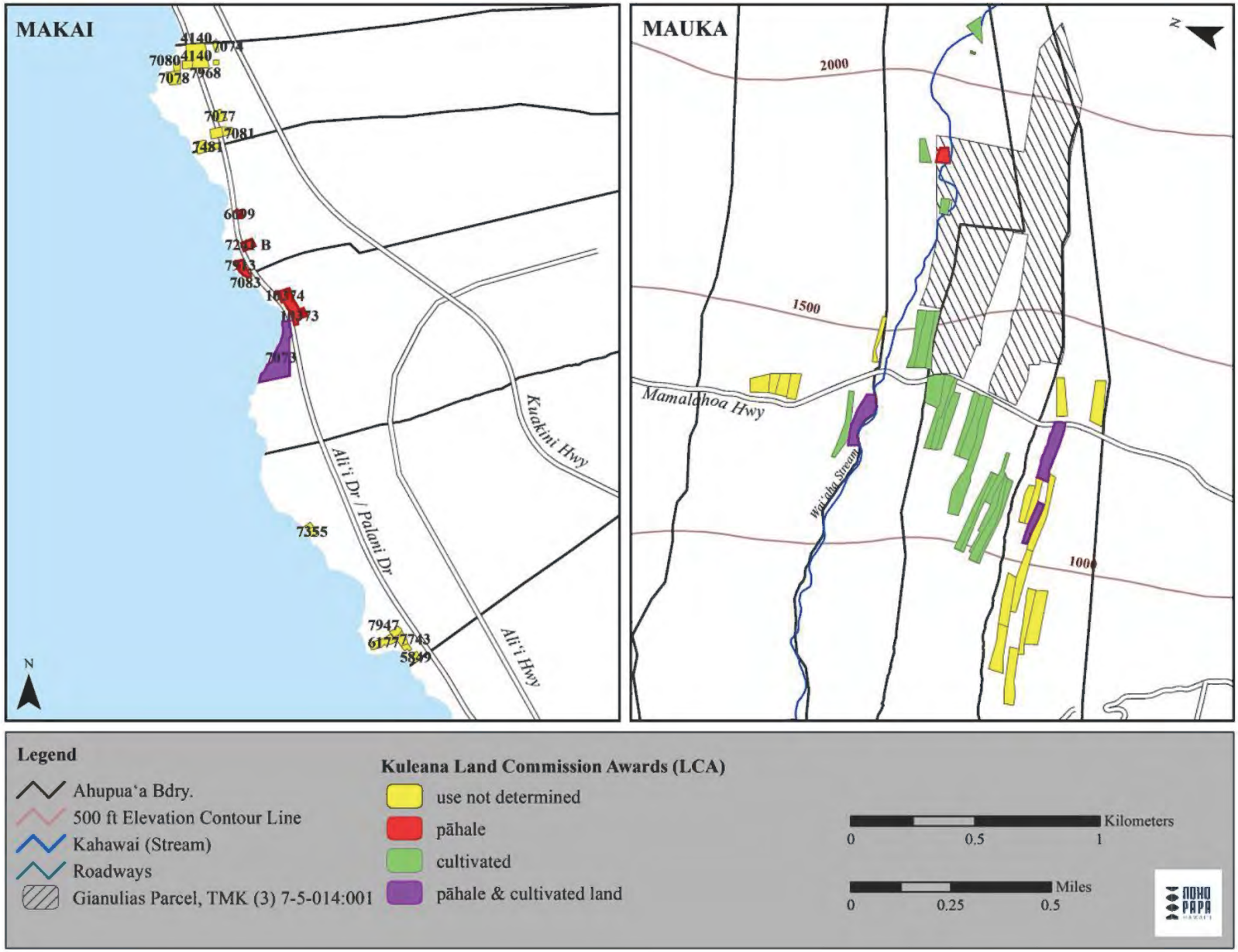

Figure 23. Close up of traditional land use as noted in the Kuleana LCAs in and around the Gianulias Parcel.

Māhele & Wahi Inoa

During the extensive analysis of the Māhele records associated with the study area ahupuaʻa; Keauhou, Puaa, Waiʻaha, Kahului, and Puapuaʻa, many wahi inoa or site names surfaced during this study. An inventory of the names, feature type, details about the wahi, as well as any cultural practices, resources, or moʻolelo connected to the area are listed in Table 35. The inclusion of a table of this nature is intended to provide a deeper understanding of the wealth of resources associated with the study area sites.

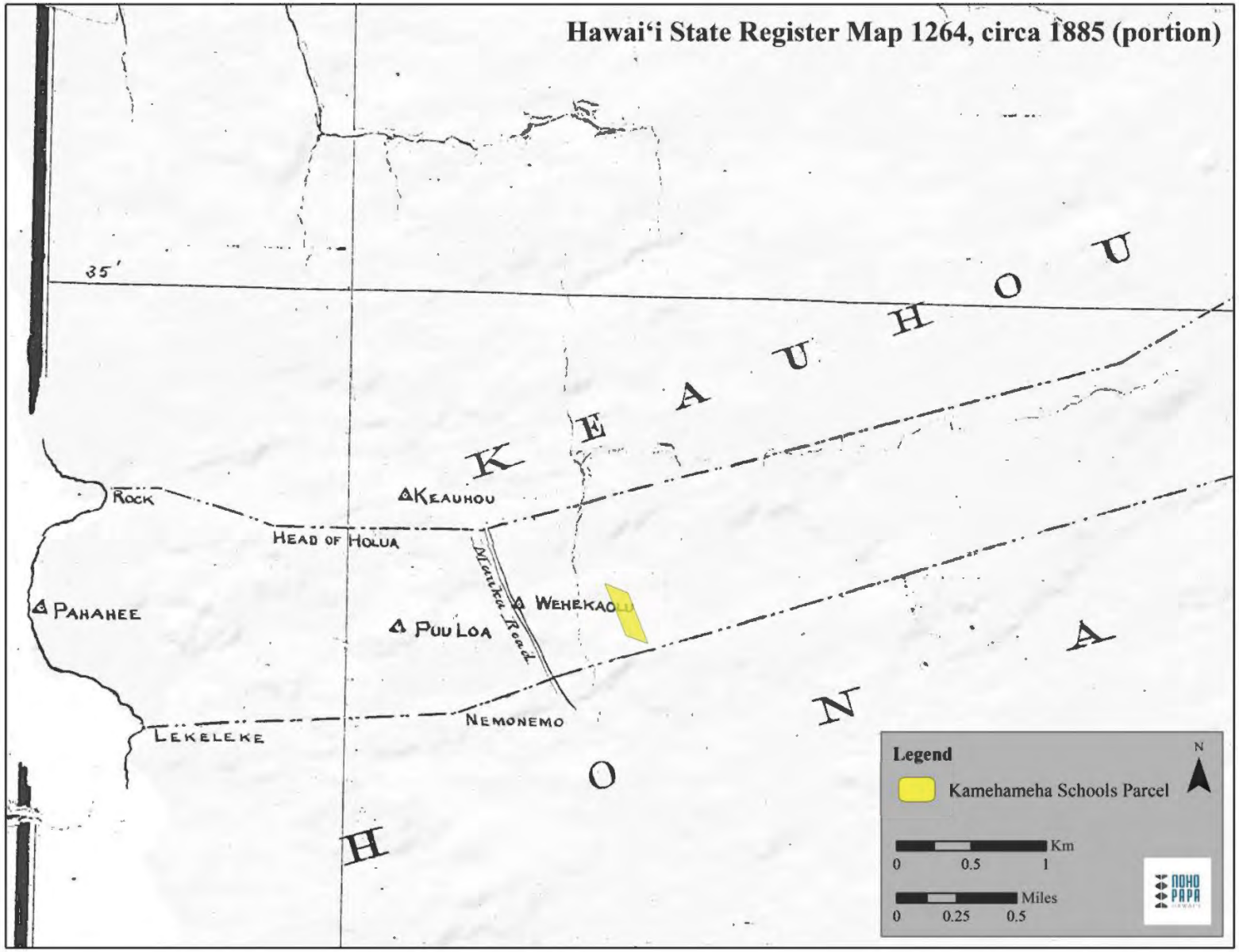

Figure 24. circa 1885 map of Keauhou 2nd, Kona Hawaii. Surveyed by J.M. Alexander and J.S. Emerson, map by J.M. Alexander, copy by W. A Wall, 1886. Hawaiian Government Survey. Hawai'i State Register Map No.1264

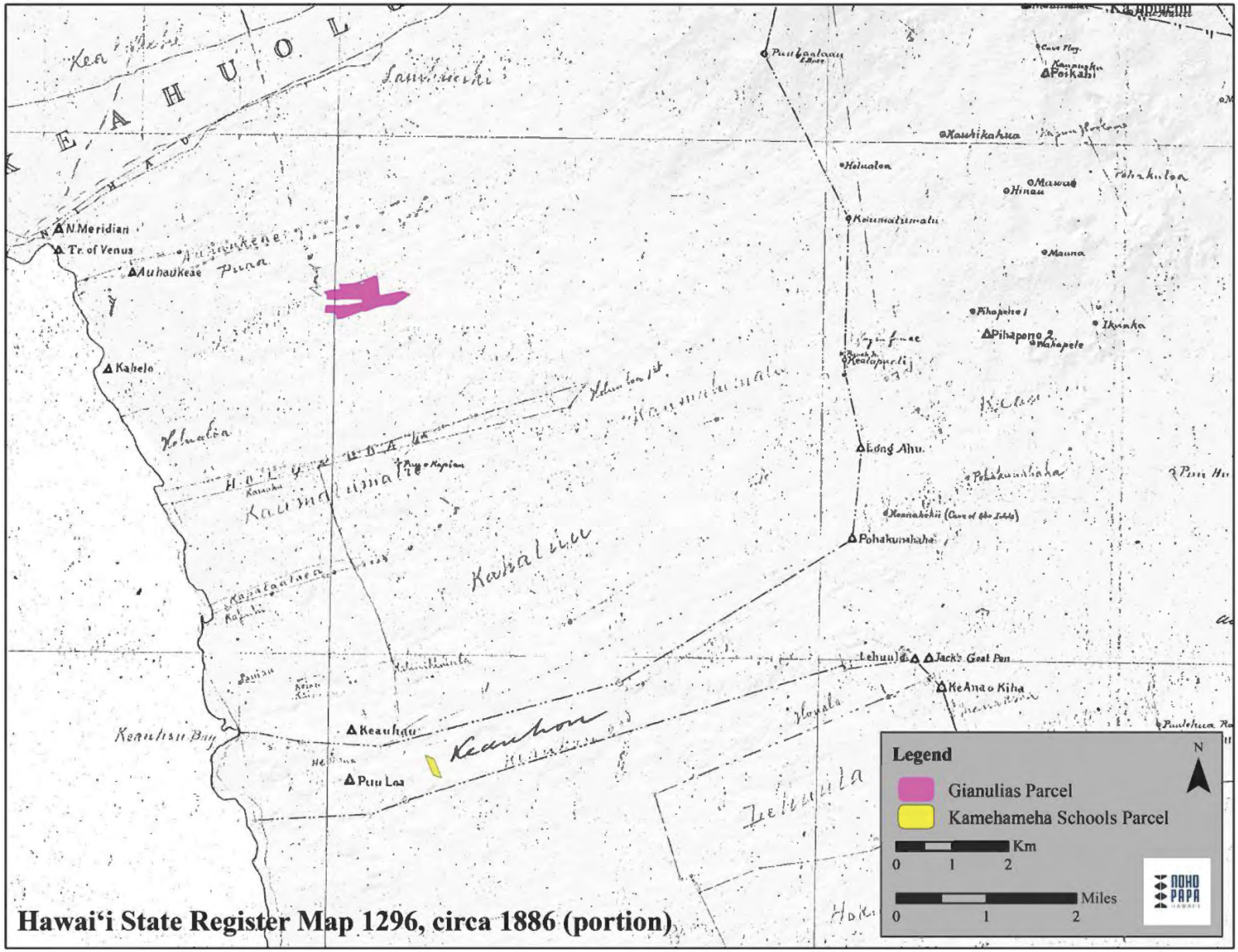

Figure 25. circa 1886 map of North Kona showing the locations of the Gianulias and KS parcels. Register Map 1296

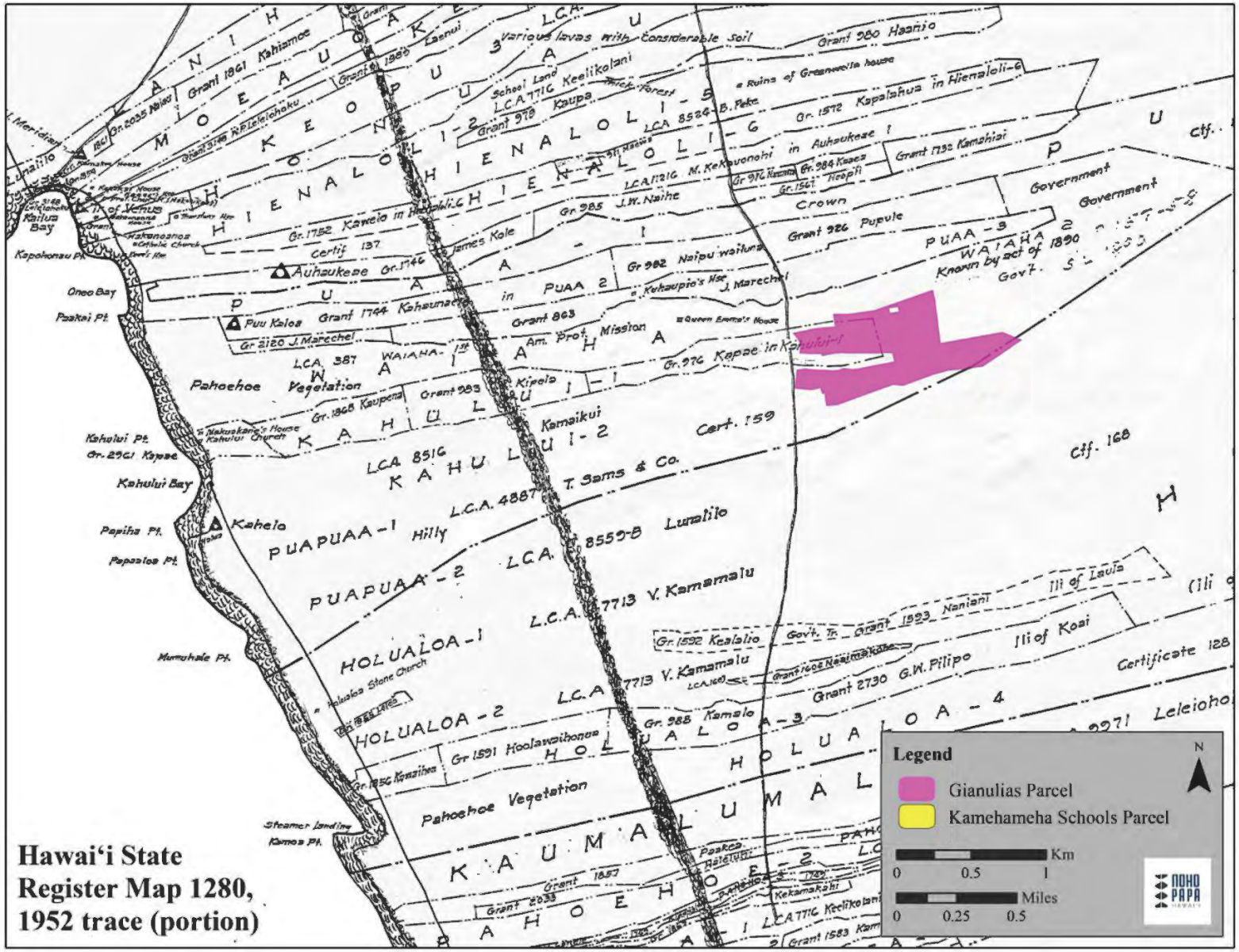
Hawai'i State
Register Map 1280,
1952 trace (portion)
Legend
Gianulias Parcel
Kamehameha Schools Parcel
N
Km
0
0.5
1
Miles
0
0.25
0.5
NOHO PAPA HAWAI'I
Kahului Bay
Kahului Pt.
Papiha Pt.
Papaalea Pt.
Kapohonau Pt.
Oneo Bay
Paakai Pt.
Kailua Bay
Mamalahoa Pk.
Steamer Landing
Kamoa Pt.
Pahoehoe Vegetation
Hilly
Stone Church
Queen Emma's House
Am. Prot. Mission
Govt. Tr. Grant 1523 Naniani
Ili of Laula
Ili of Koai
Certificate 128
Government
Crown
Grant 926 Pupule
Grant 2730 G.W. Pilipo
Grant 1732 Kamahiai
Grant 1572 Kapalahua in Hiemalelii-6
Grant 280 Haanio
Grant 1861 Kahiamoe
Grant 1744 Kahaunaele
Grant 1782 Kaweo in Hiemalelii-6
Grant 1868 Kaupena
Grant 1744
Grant 1857
Grant 2033
Grant 1583
Grant 1591 Hoolawaihonua
Grant 1592 Kealalio
Grant 2035 Nalau
Grant 1861
Grant 1868
Grant 1857
Grant 1744
Grant 1783

Table 35. Inventory of Wahi Inoa Documented in Māhele Records Associated with the Study Area Ahupuaʻa of Keauhou, Puaa, Waiʻahu, Kahului, and Puapuaʻa.

Inoa	Type	Ahupuaʻa	Information Description	Cultural Practice &/or Resource	Connections other Moʻolelo, Practices, ʻOhana, or Places	Source(s)
Kealakowaa (Alakowaa)	Heiau	Kahului	Listed as the name of a heiau said to have been built by ʻumi for the dedication of canoes. The canoes were felled and brought here for dedication and then launch by the shoreline at Puʻu spring and the surf of Puʻu. Was misnamed Hale-hau in recent times. (Kekahuna)	Ties to families of ʻumi as well as canoe carving and dedication practices. The path to drag the canoe *Kawika Translation		Henry E.P. Kekahuna Collection, MS Group 312, Map: 50-HA-D8.
Makolea	heiau	Kahaluu	"Built or restored by Lonoikamakahiki for prayers in general (Stokes). Once the dwelling place of Makole'a, a most beautiful chiefess, daughter of Kahaluu (k) and Keauhou (w) (Kekahuna), or of Kahaluu and Keolanahihi (w) (Reinecke). Also called Keekuapuaa." (Soehren)		Because of connection to Lono, could be related to water and rain.	Stokes, "Heiau of the Island of Hawaiʻi", 1991, p.80-81., Kekahuna & Kelsey, "Kamehameha in Kailua", p.20., Catalog of Hawaiian Place Names, Lloyd J. Soehren., John Reinecke, "Archaeology of West Hawaiʻi, 1929-1930, Kailua to

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
						Kalahuipuaa", (3) p. 4.
Helekamahina	‘ili ‘āina	Kahaluu	Listed in Native Register 5690:1 to Kanakaole in Kihikihi 2 ‘ili is bounded on the south by Helekamahina, 5964:6 by Hanakoekoe in Hokio 3 ‘ili (not awarded) is bounded makai by Helekamahina.			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5690:1 to Kanakaole, 5964:6 to Hanakoekoe.
Hokio	‘ili ‘āina	Kahaluu	Listed in Native Register 5673 to Kamalo is "i ka ilia aina i Hokio 2. 1 apana aina." Apana 1,2,3 and 4 are bounded on the south by Hokio 3, on the north by Hokio 1. Also written Hookio. Also, claim 5694 by Kanakoekoe is "i ka ili aina i Hokio ahupuaa Kahaluu, Hawaii, he 12 kihapai ua lelele nae." Apana 3,4,5,6 are bounded south by Hokio 4, north by Hokio 2.			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5673 to Kamalo, 5694 to Hanakoekoe.

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
Kahuamoa	‘ili ‘āina	Kahaluu	Listed in Native Register 5831B by Kanalu is "i ka ili aina o Kahuamoa ahupuaa Kahaluu. 5 apana.", 3449B to Luukia was not awarded.			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5831B to Kanalu, 3449B to Luukia.
Kaimuloa	‘ili ‘āina	Kahaluu	Listed as one of the ‘ili in the claim 9971 to W. P. Leleiōhōkū. No other information found.			Native Register 9971 to W. P. Leleiōhōkū.
Kaloaulu	‘ili ‘āina	Kahaluu	Listed in Native Register 6091 to Malaihi is "i ka ili aina i Kaloaulu ahupuaa Kahaluu...5 nae apana." (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 6091 to Malaihi.
Kapio	‘ili ‘āina	Kahaluu	Listed in Native Register 6029:1-5 to Nakoa in Paulu ‘ili are bounded on the south by "Kapio ili aina". (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 6029:1-5 to Nakoa.
Kihikihi	‘ili ‘āina	Kahaluu	Listed in Native Register 5690 to Kanakaole as "i ka ili aina o Kihikihi 2, ahupuaa Kahaluu. 5 apana." Apana 1,2 are bounded on the north by Kihikihi 1, 3445B to Kahananui is "i ka			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5690 to Kanakaole, 3445B to Kahananui.

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
			ili aina i Kihikihi [1] ahupuaa Kahaluu. Eha apana." Apana 2 is bounded on the south by Kihikihi 2. (Soehren)			
Koaie	‘ili ‘āina	Kahaluu	Claim no. 3443B by Kuia is "i Koaie 3 ahupuaa Kahaluu. 5 apana." Apana 1,2,3,4 are bounded on the north by Koaie 2. Claim no. 10766 by Pio is "i ka ili aina o Koaie 2 a me Kamuku, ahupuaa Kahaluu." Apana 3 is in Kamuku, 3444B to Kapihe is in Koaie 3. (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 3443B to Kuia, 10766 to Pio, 3444B to Kapihe
Kukuiokahinu	‘ili ‘āina	Kahaluu	Listed in Native Register 5966B to Imakakoloa is "i ka ili aina o Kukuiokahinu ahupuaa o Kahaluu. 2 apana." (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5966B to Imakakoloa.
Pahauopu	‘ili ‘āina	Kahaluu	Listed in Native Register 5672 to Kahalelahaole is "i ka ili aina o Pahauopu ahupuaa Kahaluu. 4 apana." (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5672 to Kahalelahaole.
Pahoa	‘ili ‘āina	Kahaluu	Listed in Native Register 6032:7 to			Catalog of Hawaiian Place

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
			Napio is "i ka ili aina o Pahoa.", 5690:3 to Kanakaole, 6091:1,2,3,4 to Malaihi in Kaloaulu ‘ili are bounded on the south and north by the "aina o Pahoa", and 3442B to Kaniaa in Pahoa 1 and 2 was not awarded. (Soehren)			Names, Lloyd J. Soehren., Native Register 6032:7 to Napio, 5690:3 to Kanakaole, 6091:1,2,3,4, to Malaihi, 3442B to Kaniaa.
Pamaki	‘ili ‘āina	Kahaluu	Listed in Native Register 5678 to Kauwale is "i ka ili aina i Pamaki ahupuaa Kahaluu. 8 apana." (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5678 to Kauwale.
Paulu	‘ili ‘āina	Kahaluu	Listed in Native Register 6029 to Nakea is "i ka ili aina i Paulu ahupuaa [not named]. 7 apana." (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 6029 to Nakea.
Puakahi / Puekahi	‘ili ‘āina	Kahaluu	Listed in Native Register 5673C:1 to Naauhau is "i ka ili aina Puekahi ahupuaa Kahaluu. 3 apana." Written "Puakahi" in claim no. 6094. (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5673C:1 to Naauhau.
Puu Hinahina	‘ili ‘āina	Kahaluu	Listed in Native Register 5676 to			Catalog of Hawaiian Place

Inoa	Type	Ahupuaʻa	Information Description	Cultural Practice &/or Resource	Connections other Moʻolelo, Practices, ʻOhana, or Places	Source(s)
			Keliiaihue is "i ka ili aina o Puuhinahina ahupuaa Kahaluu. 3 apana." (Soehren)			Names, Lloyd J. Soehren., Native Register 5676 to Keliiaihue.
Ulumoe	ʻili ʻāina	Kahaluu	Listed in Native Register 5688B:4 to Kameeui is "i ka ili aina o Ulumoe.", 5632:8 to Keikihookama, 6032:3 by Napio, 3440B:6 to Naaho, 5691:5,6 by Kamaui in Makolea ʻili are bounded on the south by Ulumoe. (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5688B:4 to Kameeui, 5632:8 to Keikihookama, 6032:3 to Napio, 3440B:6 to Naaho, 5691:5,6 to Kamaui.
Lehuakona	ʻili ʻāina, inoa hōkū	Kahaluu	Listed in Native Register 5688 to Kaleola is "i ka ili aina i Lehuakona ahupuaa Kahaluu. 3 apana.", 5632:5 to Keikihookama, 3440B:3 to Kaluahinenui, 3440B:9 to Naaho, and 5691:1 to Kamaui in Pakii 1 is bounded on the south by Lehuakona. (Soehren) Also listed in the Hawaiian Dictionary			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 5688 to Kaleola, 5632:5 to Keikihookama, 3440B:3 to Kaluahinenui, 3440B:9 to Naaho, 5691:1 to Pakii, "Lehuakona", Hawaiian Dictionary,

Inoa	Type	Ahupuaʻa	Information Description	Cultural Practice &/or Resource	Connections other Moʻolelo, Practices, ʻOhana, or Places	Source(s)
			as the name of a star in the Milky Way, perhaps Antares (Pukui & Elbert).			Pukuʻi and Elbert, 1986.
Kukuihaa	ʻili ʻāina, inoa wahi kahiko	Kahaluu	Listed in Native Register 6128 to Napipi is "i ka ili aina o Kukuiohaa [sic] ahupuaa Kahaluu." Apana 2 is bounded on the south by Kukuihaa 3, on the north by Kukuihaa 1, 5831 to Kaeha is "i ka ili aina o Kukuihaa 4 ahupuaa Kahaluu. 3 apana." Apana 1,2 are bounded on the south by Kukuihaa 5, on the north by Kukuihaa 3. Also, 5689 to Nahoounauna, 3446B to Kahue "i ka ili aina o Kukuihaa 1" was not awarded. Also, 3455B to Maikeiki is "i ka ili aina o Kukuihaa 3. 2 apana aina." Apana 1,2 are bounded on the south by Kukuihaa 4, on the north by Kukuihaa 2, 3447B to Palaukai is "i ka ili aina i		Name is connected to Haumea and is the name of her homeland (*Ka Naʻi Aupuni 1906).*	Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 6128 to Napipi, 5831 to Kaeha, 5689 to Nahoounauna, 3446B to Kahue, 3455B to Maikeiki, 3447B to Palaukai., "Moolelo Hawaii Kahiko", *Ka Naʻi Aupuni,* July 13, 1906, p. 1.

Inoa	Type	Ahupuaʻa	Information Description	Cultural Practice &/or Resource	Connections other Moʻolelo, Practices, ʻOhana, or Places	Source(s)
			Kukuihaa 5, ahupuaa Kahaluu. 4 apana." All 4 apana are bounded on the south by Kukuihaa 6, on the north by Kukuihaa 4. (Soehren) It is also listed in the article "Moolelo Hawaii Kahiko", where it mentions that in the Kumulipo, it mentions Kukuihaʻa as a place in Nuʻumea that Haumea comes from (*Ka Naʻi Aupuni 1906).*			
Halewaawaa	ʻili ʻāina	Kahului	Listed in Native Register 10374 by Nalawaia is "i ka ili aina o Halewaawaa, ahupuaa Kahului. (NT 10374)" Claim no. 7241B by Kalama is "i ka ili aina o Halewaawaa, ahupuaa Kahului 1. (NT 7241B)" Claim no. 10252:4 by Maliu is "i ka ili i Halewaawaa." (NT 10252:4)	House full of gulches *Kawika Translation		Native Register for LCA 10374 to Nalawaia, 7241B to Kalama, 10252:4 to Maliu.
Hapaipapa	ʻili ʻāina	Kahului	Listed in Native Register 10374:1 by Nalawaia in ʻili of			Native Register for LCA 10374:1 to Nalawaia.

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
			Halewaawaa is bounded on the mauka side by Hapaipapa.			
Kahuki	‘ili ‘āina	Kahului	Listed in Native Register 7336 to Kuapuu is "i ka ili aina o Kahuki ahupuaa o Kahului 2." Also claim no. 7690 by Kulou. Claim no. 7073:7 by Kapa in Kahuki 1 is bounded on the south by Kahuki 2. (Soehren)	The pull *Kawika Translation		Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 7336 to Kuapuu, 7690 to Kulou, 7073:7 to Kapa.
Kamuku	‘ili ‘āina	Kahului	Listed in Native Register 7083:2 to Kaulua is for a "kihapai aia i Kamuku". Claim no. 10252 by Maliu is "i ka ili aina i Kamuku ahupuaa Kahului 1." (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 7083:2 to Kaulua.
Kukuipuloa	‘ili ‘āina	Kahului	Listed in Native Register 9944 by Nalima included a "Pauku aina i Kukuipuloa 1", LCA 7496B:2 by Keaweehu in the kaluulu region of Lapalua (TMK 7516:19) is bounded "Ma Kohala o	The elongated candlenut tree *Kawika Translation		Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register for LCA 9944 to Nalima, 7496B:2 to Keaweehu, 10252:5 to Maliu.

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
			Kukuipuloa ili aina", and LCA 10252:5 by Maliu "i Kamuku 2" is bounded on the south by "Kukuipuloa ili aina." (Soehren)			
Lapalua	‘ili ‘āina	Kahului	Listed in Native Register 7496B to Keaweehu is "i ka ili aina Lapalua ahupuaa Kahului 1, 3 apana aina." (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register for LCA 7496B to Keaweehu.
Papiha	‘ili ‘āina	Kahului	Listed in Native Register 7086:1,2 by Kalawa in the ‘ili of Puki are bounded on the south by the ‘ili of Papiha. (Soehren)	Full enclosure (Parker 1992)		Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register for LCA 7086:1,2 to Kalawa., A Dictionary of the Hawaiian Language, Parker 1922.
Papuaa	‘ili ‘āina	Kahului	Listed in Native Register 7496B:3 by Keaweehu in Lapalua (TMK 7516:19) is bounded "Mauka Papuaa aina konohiki". (Soehren)	Pig-pen enclosure *Kawika Translation		Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register for LCA 7496B:3 to Keaweehu.
Waiapuko	‘ili ‘āina	Kahului	Listed in Native Register 7914 by Kekipi is "i ke			Catalog of Hawaiian Place Names, Lloyd J.

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
			ahupuaa o Kahului 2, he pauku aina. [Bounded] Mauka o Waiapuko he ili aina." (Soehren)			Soehren., Native Register for LCA 7914 to Kekipi.
Niukini	‘ili ‘āina	Kahului	Listed in Native Register 9974 to Nalima is "i ka ili aina o Niukini ahupuaa Kahului 1, 2 apana."(Soehren). Is also mentioned in the Kanikau of Kamehameha IV stating "... ma ka pae opua i Niukini..." (Nupepa Kuokoa 1864) "...at the cluster of clouds on the horizon at Niukini..." *Kawika Translation	Multitude of coconuts *Kawika Translation		Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register for LCA 9974 to Nalima., "Kanikau No Ka Moi.", Ka Nupepa Kuokoa, January 23, 1864.
Kaaipuaa	‘ili ‘āina, loko, māla	Kahului	Named in the story of Kamiki as a food patch for the chiefs, mentioned that there was a fishpond in which the mo‘o lived at the center of the pond at a place called Kapakolea (HEN 1911) Listed in Native Register 7557 to Kalapuna: "...Uka lilo kekahi, o Kaaipuaa	The eating of pig *Kawika Translation	Longer story in the mo‘olelo of Kamiki and the summary can be found in HEN Newspapers: May 3, 1911. The original mo‘olelo with full story can be found Ke Au Hou, Feb. 22, 1911 "Kamiki". This is a great resource to pull information	HEN Newspapers: May 3, 1911, "Kamiki"., Native Register 7557 to Kalapana., Ke Au Hou, Feb. 22, 1911 "Kamiki".

Inoa	Type	Ahupuaʻa	Information Description	Cultural Practice &/or Resource	Connections other Moʻolelo, Practices, ʻOhana, or Places	Source(s)
			kona inoa". "...one was lost, Kaʻaipuaʻa is itʻs name". *Kawika Translation		about wai within the region.	
Ohuahale	kīhāpai	Kahului	Listed in Native Register 10252:1 to Maliu "i ka ili aina i Kamuku ahupuaa Kahului 1" is bounded "Makai o Ohuahale he kihapai". (Soehren)	House for/of Retainers *Kawika Translation		Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register for LCA 10252:1 to Maliu.
Umiwai	pūnāwai	Kahului	Listed in Native Register 10252:3 by Maliu "i Kamuku ahupuaa Kahului 1....Mauka o Umiwai punawai." (Soehren)	To hold breath [in] water, or water [of] ʻUmi. (Soehren)	Mentioned in the story of Halemano as a place where they stopped at saying: "Holo aku la lakou a pae ma Umiwai, Kohala, i Hawaii. A ku lakou ma Umiwai ma Kohala, noho a olulo iho malaila..." (Ke Alakai o Hawaii 1928) "The sailed until they landed at Umiwai, Kohala, on Hawaiʻi. And they stopped at Umiwai in Kohala, where they lived as castaways..." *Kawika Translation	Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register for LCA 10252:3 to Maliu., "He Moolelo Kaao Hawaii no Halemano", Ke Alakai o Hawaii, May 10, 1928.
Puukehoe	puʻu	Kahului	Listed in Native Register 10252:3 by Maliu "i Kamuku			Catalog of Hawaiian Place Names, Lloyd J.

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
			ahupuaa Kahului 1.... Makai o Puukehoe [sic] he puu." (Soehren)			Soehren., Native Register for LCA 10252:3 to Maliu.
Hulilau		Kahului	N/A	Would like to see source of name, as nothing found in research.		
Inaimoa		Kahului	N/A	Would like to see source of name, as nothing found in research.		
Kaluaolena		Kahului	No information found on region, only mentions place in Wai‘ehu, Maui.			
Kamumu		Kahului	No information found.			
Kikiaiole		Kahului	No information found.			
Papipi		Kahului	Localities identified as the “Great Wall” in various ahupua‘a, and as cattle enclosures.			
Ililoa	‘ili ‘āina	Keauhou, Puapuaa, Kealakehe	Listed in Native Register 7365:1 by Keohoaeae is "i ka ili aina i Ililoa ahupuaa Keauhou. 2 apana.", 7485 by Kapahu, 5561H:2 by Kahilo. (Soehren) [Keauhou] Also listed in Native Register for LCA	The long ‘ili [land division] *Kawika Translation		Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register for LCA 7365:1 to Keohoaeae, 7485 to Kapahu, 5561H:2 to Kahilo, 8608:5

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
			8608:5 to Kaahui is "i ka ili i Ililoa." Claim no. 10671 by Pepe is for 2 kihapai in the ili of Ililoa (Soehren). [Kealakehe]			to Kaahui, 10671 to Pepe.
Papalanui	palena ‘āina, point, ‘ili ‘āina	Keauhou, Waiaha	Listed in Native Register 7360:2 to Kaaiwana is for "1 apana i Papalanui 1, ahupuaa Keauhou.", 7372:1 by Kaikuaana, 10257 to Manohili, 10768 by Palapala is "i ka ili aina o Papalanui 2 ahupuaa Keauhou. 3 apana aina.", and 5781:1 to Kanekoa is "i ka ili aina i Papala [sic] 2...ahupuaa Keauhou." (Soehren) Also listed as "a kihapai koele, below Puu Koheo" [sic: Puu Kehoi is meant]. On north boundary Kahului 2, between Alau & Popoulu. LCA 7083:7 in Waiaha 1 to Kaulua is bounded mauka by Papalanui, and LCA 10252:3 by Maliu "i Kamuku			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register for LCA 7360:2 to Kaaiwana, 7372:1 to Kaikuaana, 10257 to Manohili, 10768 to Palapala, 5781:1 to Kanekoa, 7083:7, 10252:3 to Maliu.

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
			ahupuaa Kahului 1" is bounded on the north by "Papalanui aina". (Soehren)			
Ohiki	‘ili ‘āina	Puaa	Listed in Native Register 7076 to Kupihe is "i ka ili aina i Ohiki ahupuaa Puaa 2", 10267 to Malowale is "i ka ili aina o Ohiki 2, ahupuaa Puaa 2." (Soehren)			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 7076 to Kupihe, 10267 to Malowale.
Pawaalae	wahi pana	Puaa	Listed in Native Register 10267:3 to Malowale in Ohiki 2 ‘ili is bounded "Makai o Pawaalae he wahi pana."			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 10267:3 to Malowale.
Lauhulu	‘ili ‘āina	Puapuaa	Listed in Native Register 7461 to Kamahiai is "i ka ili aina i Lauhulu, ahupuaa o Puapua[a], Hawaii. 9 apana.", 8154 to Hookano, 7356 to Ku, 7355 to Kawainui is "i ka ili aina i Lauhulu 1, i ka ili aina i Lauhulu 2, i ka ili aina i Haliipalala a me Kamuku.", 7353 to Kaiewe is "i ka ili aina o Haliipalala a			Catalog of Hawaiian Place Names, Lloyd J. Soehren., Native Register 7461 to Kamahiai, 8154 to Hookano, 7356 to Ku, 7355 to Kawainui, 7353 to Kaiewe.

Inoa	Type	Ahupua‘a	Information Description	Cultural Practice &/or Resource	Connections other Mo‘olelo, Practices, ‘Ohana, or Places	Source(s)
			me Lauhulu ahupuaa Puapuaa 2...[apana] 5 i ka ili aina o Lauhulu..." Quad uncertain. (Soehren)			

Community Consultation

For inclusion in this FEA, consultation sections were redacted per Nohopapa's informed consent obligation to honor and respect consultees' Intellectual Property Rights

Ka Paʻakai Framework Analysis Application

Ka Paʻakai Framework Analysis Questions:

1) What are the valued cultural, historical, or natural resources in the project area and the extent to which traditional and customary native Hawaiian rights are exercised in the area?
2) What is the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action?
3) What feasible action(s), if any, to be taken to reasonably protect any identified cultural, historical, or natural resources, and exercise of traditional and customary native Hawaiian rights in the affected area?[117]

1) What are the valued cultural, historical, or natural resources in the project area and the extent to which traditional and customary native Hawaiian rights are exercised in the area?

It is unreasonable to assume it is possible to inventory all the traditional and customary native Hawaiian rights being exercised in a single area. Firstly, because it is a well-known truth, embodied in an ʻŌlelo Noeʻau, that "ʻAʻohe pau ʻike i ka hālau hoʻokāhi. All knowledge is not taught in the same school" (Pukui 1989:24, #203). This can be taken to mean that one can, and should, learn from many sources and that one cannot at the same time hold all the sources of knowledge. Secondly, to place the burden on practitioners to come forward in a timeline subject to an undertaking such as this one is unreasonable and impossible for many reasons. The most important to acknowledge, is that many kumu, practitioners, and ʻohana have Native Hawaiian traditions and customs that are not for frivolous sharing. As in many hālau, knowledge must be earned and entrusted.

To address the challenges of assembling an inventory of customs and valued resources in an area, and to relieve the burden from the community to come forward in a tight timeframe and under the assumption of un-requited knowledge sharing, this study approaches the inventory through:

1) early and meaningful consultation
2) primary source research
3) the understanding that if a resource exists or can be restored then the right or practice exists
4) consultation is an ongoing process that agencies compiling with Ka Paʻakai will continue to engage in.

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[117] Ka Paʻakai o Ka ʻĀina v. State of Hawaiʻi Land Use Comʼn [*Ka Paʻakai*], 94 Haw. 31, 47, 7 P.3d 1068, 1084 (2000).

Traditional and Customary Native Hawaiian rights are exercised through practice, whether one that is continued or restored. Practice relies on resources. If a resource exists, a practice exists. If a resource existed historically and has the potential to be restored, then the practice exists. These are the premises on which Nohopapa bases its inventory of valued cultural and historical or natural resources in the project area. To fulfill the requirements of Ka Paʻakai, this inventory includes what we are calling **resources**, or cultural resources, which refer to "valued cultural, historical, or natural resources…" that stand alone or are part of a practice. For the purposes of this inventory, we will refer to "traditional and customary Native Hawaiian rights" as **practices**. Practices often require resources to be exercised, and the two go hand in hand.

Inventory of Practices & Resources

This section presents an inventory of **practices** and **resources** tied to the project area that have been collected from consultation and primary source historical and archival materials that include moʻolelo, oli, mele, ʻōlelo noʻeau, Māhele records and testimonies, Boundary Commission Certificates and testimonies. These practices emphasize the generations of kupa ʻāina (native of the land) in Kona Akau who maintained a deep pilina with the vast natural and cultural resources of this ʻāina. The cultivation of the land and sea, and the gathering and utilization of freshwater resources that originate from the storied places of this ʻāina, have and continue to feed Kona's community physically and spiritually. These practices are a testament to the enduring legacy of Kona Akau and reaffirm the right for Kānaka ʻŌiwi to actively maintain traditional and customary practices in these spaces today.

Table 36. Table of Practices and associated resources in and around the study area tied to **Wai**

Practice	Resource(s)	Location	Information	Source
Water collection	Wai pūnāwai	Kahului Ahupuaʻa	In upland Kahului, a freshwater spring journeyed to to gather wai in huewai for daily use. "It was at Kahului, in Kona, Hawaiʻi. Indeed, all around this place of Kona, the water in the lowlands was salty, it was brackish and bitter to drink. **The cool sweet water for drinking came from the uplands on the mountain. It is still the same to this day, the fresh water is fetched from the mountain**."	Mentioned in *He Kaao no ka Manu Elepaio* (S.W.K.: 1862, in the nūpepa Ka Hoku o ka Pakipika)
Water collection	Pūnāwai offshore springs cave water collection rain anchialine ponds	Kona Study Area	Kona is an arid and dry place. There were only certain ways to get water for customary use. Four ways of acquiring water for sharing: 1) Collect water with ipu from the plumes of freshwater emissions in the ocean. 2) Collect water with ipu from drips/condensation in caves. 3) Freshwater springs bubbling up i.e. Kaloko. 4) Rain. 5) Brackish water collection from ponds/wells for consumption and everyday use.	Consultation
Water collection kilo	Pūnāwai Subsurface flowing water Brackish habitat	Kailua to Keauhou Kailua to Keauhou	Deep sea fresh water present from Keauhou to Keāhole. Smooth areas on the ocean are indicative of fresh water springs.	Consultation
			Keauhou to Kailua has springs in the sand that enter into the water at many beaches along the Kona coast. Smooth areas on the ocean are indicative of fresh water springs.	Consultation
		Kona makai	Water wells in caves or down by the ocean.	Consultation
Kiaʻi loko Water collection	**Puhi Spring** Anchialine ponds	Hulihe'e, at Niumalu	Puhi Spring flowed underground from Keōpū Forest Reserve down to ponds at Hulihe'e, Niumalu.	Consultation
	ʻIlinawai Anchialine ponds	Kona Study Area	ʻIlinawai; an underground river/stream. Brackish water.	Consultation
Kilo	**Waikū**	Kona Study Area	Water in Kahaluʻu is Waikū.	Consultation

Practice	Resource(s)	Location	Information	Source
Water collection	**Waikuʻi** a spring	Kahaluʻu	a favored Kahaluʻu, Kona spring where aliʻi relaxed and played kōnane, at the coast.	From the moʻolelo of Kepakaʻiliʻula, (Malo 1919-1920, translated in Maly 1996:25)
Water collection	**Waikuʻi** a spring & a Cave **Waikulukulu** a spring	Keauhou 1 & 2 Ahupuaʻa	Kakio, kamaʻāina of Keauhou 2, mentions Ohiki, an old cultivating site, **Waikulukulu** and **Waikui**, which are both caves with water inside. "From Puainako to Kanihinihula [Kahinihiniula], at the mauka Government road where there are two ahua pohaku, on the boundary; thence to the North side of Awapuhi, in the woods; thence to Ohiki, an old cultivating ground on the boundary; thence mauka to Napueuala, an oioina; the boundary being on the North side of it and Keauhou in the middle of it; thence to **Waikulukulu**, a cave with water in it; thence to Halelaau; these places are all on the boundary of Keauhou ...I do not know the boundaries on the mountain of Mauka and of lands. Waikui is a large cave of water; the boundary half way between said cave and Ohiki." In Kakioʻs testimony for Keahou 1 he again mentions Waikui, "**Waikui is a large cave of water**; the boundary half way between said cave and Ohiki."	Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A1, p318-320
	Waikulukulu a cave		Keliikanakaole in his sworn testimony for Keauhou 2 describes Waikulukulu as large cave, but mentions no water. " Know a cave called Waikulukulu, at the base of Hualalai, towards Ahuaumi, the place called Kaluamakani or Kalalakaukolo is on the top of the mountain."	Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikanakaole 1873:v.A1, p268-272.
Water Collection	Ke ana (caves)	Kona Study Area	Water collection in caves	Consultation
Water collection	**Keanaakala** a cave	Keauhou 2 Ahupuaʻa	According to Kahulialoʻs Boundary Commission testimony "Keanaakala is on Hookukano, mauka of Waio."	Boundary Commission Testimony: Keauhou 2, Kahulialo W. 1873: v.A1 P261-265
Water collection	**Ohiki** a spring	Hianaloli Ahupuaʻa	Haleokoane, K. Says that Ohiki is "a punawai, at the corner of Kaupa's land"	Boundary Commission Testimony: Hienaloli 1 & 2 Ahupuaʻa, Haleokane 1873:v.B p281-282.

ITEM G-3 EXHIBIT A

Practice	Resource(s)	Location	Information	Source
Water Collection	**Mawae** a spring	Keauhou 2 Ahupuaʻa	Described as "quite an old man", Puhi K. Gives his sworn testimony describing a water hole in the, "Keauhou 1st ends in the koa woods. It is cut off by Keauhou 2d at a place called Mawae where there is a water hole, and a cave where my relations are buried."	Boundary Commission Testimony: Keauhou2 Ahupuaʻa, Puhi K. 1874:v.A 1, p450-451.
Water collection mahiʻai ʻana	**Kaluapahu** a spring	Kahului 1 Ahupuaʻa kula zone	In Kahului 1, Maliu was awarded 1 upland ʻāpana, LCA 10252. In the testimony supporting his claim (NT: v4, p538) two springs were described as bordering his claim. Umiwai and Kaluapahu. "1. Kula. Mauka, **Kaluapahu punawai** (spring of Kaluapahu), Kau by ili aina of Ililoa, Makai by Makai, Ohuahale a kihapai, Kohala Niukini. 1 cultivated pauku aina." Kaluapahu spring bounds his kula claim on the mauka side.	LCA 10252 to Maliu, NT: v4, p538.
Water collection mahiʻai ʻana	**Umiwai** a spring	Kahului uplands	In Kahului 1, Maliu was awarded 1 upland ʻāpana, LCA 10252. In the testimony supporting his claim (NT: v4, p538) two springs were described as bordering his claim. Umiwai and Kaluapahu. "3. Mauka is Umiwai punawai (Umiwai spring), Kau, Lapalua ili aina, Makai by Puukehoe a puu (hill), Kohala, Papalanui land. 1 cultivated kihapai." Umiwai spring is located mauka of this cultivated kihapai.	LCA 10252 to Maliu, NT: v4, p538.
	Waikii a spring	Waiʻaha 2 Ahupuaʻa Kahului 1 ahupuaʻa	According to Kalama, Kanaheleʻs ʻāpana was bounded to the west by Waikii spring, south by Kahului I, north by Waiahanui and east by mountain banana (Ea maia). Kalama also testified for Kaulua and described one of his mauka parcels as also being bounded makai by Waikii Spring	LCA 6402 to Kanahele, NT: v4, p514, Waiaha 2.
		Waiaha 2	Kekipi, who gives native testimony (NT: v4,p533-534) for Kaanaheʻs pahale in Waiaha 2 (LCA 7913, ʻĀp. At the coast) describes the houselot as being bounded on the Kohala side by a punawai. "7. Pahale. Mauka by the Alanui Aupuni, Kau by Kaulua's lot, Makai by kahakai, Kohala by a punawai (spring). He has enclosed it with a wall. There are 3 houses. 1 hale for Kaanehe. One house is from Kaliawahine. One hale is from Kaaweha. It is only a house claim for Kaaweha and Kaliawahine. It is a true claim for Kaanehe... " The spring is named as Waikii in NT: v4, p514, for LCA 6402 to Kanahele, in Waiaha 2.	LCA 7913 to Kaanehe, NT: v4,p533-534.

Practice	Resource(s)	Location	Information	Source
Kilo	Ua	Kona Moku	ʻŌlelo Noʻeau #213, "Māmā Kona i ka wai kau mai i ka maka o ka ʻōpua. Kona is lightened in having water in the face of the clouds. Kona is relieved, knowing that there will be no drought, when the clouds promise rain."	Pukui 1983:232, #213
Kilo	Ua	Kona Moku	ʻŌlelo Noʻeau #2154, "Me he makamaka la ka ua no Kona, ke hele la a kipa i Hanakahi. The rain is like a friend from Kona–it goes and calls on Hanakahi. These are two lines from an old chant used to express a friendly visit with one who dwells in a distant place."	Pukui 1983: 234-235, #2154
Mālama ʻĀina	Wai balanced ecosystem	Kona Study Area	Understanding that water has a big impact on the ecosystem.	Consultation
Mālama ʻĀina Mauli ola	Wai balanced ecosystem	Kona Study Area	The physical/tangible form of wai weaves the fabric for subsistence well-being.	Consultation
Water Collection	**Pūnāwai** wai	Kahului Ahupuaʻa Uplands	A drinking water pūnāwai in upland Kahului identified in moʻolelo. It was an upland spring one would travel to daily from the coast or lowlands to collect drinking water for the ʻohana. Whether a real spring or a representative of many the moʻolelo carries a moral of the waiwai, the value, of wai and daily travel and long term care of the resource people exerted to get it..	Mentioned in *He Kaao no ka Manu Elepaio* (S.W.K.: 1862, in the nūpepa "Ka Hoku o ka Pakipika")
Mālama ʻAina Ahupuaʻa Management	**Wai**	Kona Study Area	Conservation of water.	Consultation
Water collection	**Holoke** a spring	Puaʻa Ahupuaʻa at the coast	"Puaa is bounded makai by the sea and the land has ancient fishing rights near the shore, but not extending out to sea. Thence commencing at a punawai by the seashore called **Holoke**, between the lands of Puaa and Auhaukeae and running mauka to Poholua, a huli pali near the shore and just above a house..."	Boundary Commission Testimony: Puaa 1 Ahupuaʻa, Kauwa 1873: v.A1 p376-378

ITEM G-3 EXHIBIT A

Practice	Resource(s)	Location	Information	Source
Water collection	**Waiakalaho** a spring	Kahului 2 Ahupuaʻa	"Thence to **Waiakalaho**, a water hole; thence mauka to **Waiakekua**, a water hole near the iwi aina and a little above the Government road; thence to Kaaipaka, a kulana kauhale, ahua hulipali..." "Commencing at seashore between Kahului and Puapuaa at a rocky point called Kakapa; thence mauka along an iwi aina to Governor Adam's wall; thence mauka, the boundary still following the iwi aina to **Waiakalaho**, a water spring; said spring being about three kihapai to North of the boundary of Puapuaa; thence to **Waiakekua**, spring mauka of the road; said spring is on Kahului near the iwi aina..."	Boundary Commission Testimony: Kahului 2 Ahupuaʻa, Niniha 1873: v.A1 P327-329 Boundary Commission Testimony: Kahului 2 Ahupuaʻa, Makuakane 1873: v.A1 P327-329
	Waiakekua a spring			
Mālama ʻĀina masonry water collection	**Pūnāwai ʻalā stones loulu**	Waiʻaha Ahupuaʻa Kahului Ahupuaʻa	"There too, you see — ka luawai ua kīpapa ʻia i ka pōhaku ʻalā e ulu pōhai ʻia e nā lāʻau loulu, o ka punawai i ka oʻioʻina pali o Waiakekea — a spring paved with dense [ʻalā] stones and surrounded by loulu palms, this is the spring of Wai-a-Kekea, which was near the trail side resting place..."	Wise & Kihe 1914-1917, in the nūpepa "Ka Hōkū o Hawaiʻi," translated by and in Maly 1998:3.
Water collection	**Waihuna (Waiahuna)** a spring	Kahului 2 Ahupuaʻa	"...thence makai along the iwi aina to **Waihuna**, a water hole on the boundary between Kahului 1st [page 328] and Kahului 2nd. Kahului 1st reaches to Puuokaloa at the foot of the pali; makai of the Government road you come to **Waiahuna** which is the boundary of Kapai's [Kapae's] land."	Boundary Commission Testimony: Kahului 2 Ahupuaʻa, Makuakane 1873: v.A1 P327-329
Water collection	**Helani** a niu grove	Kahaluu, at Helani	From a chant from Mākoleʻā as a message to Kepakaʻiliʻula, she asked her uncle Kukuipahu to convey; remembering her time w/ him at Kahaluʻu. "Kuʻu hoa o ka malu niu o Helani: My companion sheltered there by the coconut palms of Helani"	From the moʻolelo of Kepakaʻiliʻula, (Malo 1919-1920, translated in Maly 1996:25)
			Another water resource associated with Kona acknowledges a thriving coconut grove in an area named Helani where water is retained by gathering and drinking from coconuts	Pukui 1983:179, ʻŌlelo Noʻeau #1661
	Niu coconuts wai niu	Kona Moku from Puaa to Keauhou	15 mentions of niu trees or groves are made in Māhele records for area spanning just north of Puaʻa to south of Keauhou.	Awards Books: Native Register and Native Testimony
	Ka wai puka iki o Helani a spring	Kahaluʻu Ahupuaʻa	Kahaluʻu, a chiefess from Kahaluʻu was referred to as "...Kahaluʻu the chiefess—i ka ʻāina kaulana i ka wai puka iki o Helani (of the land famous for the small flowing spring of Helani)" identifying a pūnāwai in Kahaluu.	From the moʻolelo of Kepakaʻiliʻula, (Malo 1919-1920, translated in Maly 1996:25)

ITEM G-3 EXHIBIT A

Table 37. Table of Practices and associated resources in and around the study area tied to **Lawaiʻa and Waʻa**

Practice	Resource(s)	Location	Information	Source
Lawaiʻa Mālama ʻĀina (stewardship) Community Managed Fisheries	ʻAnae, ʻawa, weke, ʻoama, manini, pākukui yellow tang White limu brackish water	Kona Study Area	Care and knowledge of white limu, that grows in brackish water as food for important fish species, Mullet, ʻawa, weke, ʻoama, manini, pākukui, yellow tang.	Consultation
	Fishery Squid (heʻe) grounds	Puaʻa Ahupuaʻa	"Puaa is bounded makai by the sea and the land has ancient fishing rights near the shore, but not extending out to sea." > "Puaa has ancient fishing rights extending to the squid grounds."	Boundary Commission Testimony: Puaa 1 Ahupuaʻa, Kauwa 1873: v.A1 p376-378
	Limu ʻeleʻele Nenue	Kona Study Area	Limu ʻeleʻele for bait for nenue.	Consultation
	Fishery ocean iʻa	Keahuolū Puaa Waiaha Kahului Puapuaa Kahaluʻu Keauhou Hōlualoa 1 and 4 Kaumalumalu	"Ancient fishing rights extending out to sea." Is a phrase seen again and again in the Boundary Commission by multiple Testifiers across Kona; only a select few in and around the study area are cited here.	Boundary Commission Testimony: Keahuolū Ahupuaʻa, J. Z. Waiau, 1873: v.A1 p354-357. Puaa 1 Ahupuaʻa, Kahueai 1873: v.B p244-245. Waiʻaha Ahupuaʻa, Peahi 1873: v.B p269-270 and Mahalo 1873: v.B p260-262. Puapuaa nui Ahupuaʻa, Ukumea 1873: v.B p260-262. Keauhou 2, Makuakane, 1873: v.A1 P327-329 and Niniha, 1873: v.A1 P327-329. Kahaluu, Papa, 1873: v.A1 p321-323. Keauhou, Lono, 1873: v.A1 p318-320 and Papa, 1873: v.A1 p321-323. Kaumalumalu Ahupuaʻa, Kamakahoohia, 1873: v.A1 p324-326
Lawaiʻa Waʻa ʻōpelu traditions	Ocean ʻōpelu	Kona Study Area	Waʻa, sailing and paddling for lawaiʻa, specifically ʻōpelu.	Consultation

Practice	Resource(s)	Location	Information	Source
Limu cultivation Koʻa traditions ʻŌpelu traditions	ʻŌpaeʻula ʻōpae lōlō ʻŌpelu Akule Koʻa	Kona Study Area	ʻŌpaeʻula, or ʻōpae lōlō, propagated to be used as bait for ʻōpelu fishing. Used to maintain the **fishing koʻa** to acquire ʻōpelu and akule.	Consultation
Lawaiʻa Stewardship	ʻŌpaeʻula Anchialine ponds Brackish water	Kealakehe Ahupuaʻa Lanihau Ahupuaʻa	ʻŌpaeʻula ponds present in Kealakehe, Keahuolū, and Lanihau. Part of anchialine system.	Consultation
		Kaloko to ʻAnaehoʻomalu	Anchialine system from Kaloko to ʻAnaehoʻomalu.	
ʻŌpelu traditions Community Managed Fisheries	Ahi ʻōpelu	Māʻihi Ahupuaʻa Keauhou Ahupuaʻa	"Ancient fishing rights extending out to sea, the Opelu belonged to Maihi and the Ahi to Keauhou; bounded makai by the sea."	Boundary Commission Testimony: Maihi Ahupuaʻa, Ehu 1873: v.A1 p311-312
	ʻŌpelu	Keahuolū Ahupuaʻa	"Ancient fishing rights extending out to sea and claiming the opelu."	Boundary Commission Testimony: Keahuolū Ahupuaʻa, J. Z. Waiau, 1873: v.A1 p354-357
Lawaiʻa lūheʻe Waʻa Community Managed Fisheries	Lobster heʻe grounds waʻa	Puaʻa Ahupuaʻa, at Ōneo	"Now this leho (octopus lure) was a favorite of Pili's, and filled his eyes with pleasure. Pili's canoes were prepared to go octopus fishing – lawaiʻa lūheʻe as Pili wanted to see how the lure worked. The lure was made by securing the kākala (hook), and a sinker stone (ʻōahi) near the cowrie (on a wooden shaft) with three ply olonā (Touchardia latifolia) rope. When Pili mā arrived at the octopus fishing site, he removed the lure from a gourd container and set it in the water. The chief and all those with him were startled to see unlimited numbers of heʻe (octopus) rise up to the lure, and even lobsters were attached to some of the octopus (July 26, 1917)..."	Wise and Kihe 1914-1917, the series *Kaʻao Hoʻoniua Puʻuwai no Ka-Miki*, in the nūpepa, "Ka Hoku o Hawaii." Translated by Kumu Pono Associates (Maly 1999: 22, and 11-13).
	Heʻe Leho (cowrie)		In the moʻolelo of Ka-Miki, there was a competition between ʻōlohe at Ōneo in Puaʻa Ahupuaʻa, and a renowned and favored lū heʻe was the prize.	
Lawaiʻa	Marine species springs Brackish water	Kona Study Area	Fishing by pole, throw net, diving for fish that relied on fresh/brackish water	Consultation
Lawaiʻa Beliefs & Ceremony	**Kamauai Heiau** (Kamauae) a heiau a sea cave	Keauhou 1 & 2	Lono, a kupaʻāina born at Keauhou talks about a fishing heiau near the coast at the border of Keauhou 1 and 2. "The boundary at the shore between Keauhou 1st and Keauhou 2nd is at Kamauae [Kamauai], a heiau for fishermen situated above the beach, on the hill where the houses stand..."	Boundary Commission: Keauhou 1 Ahupuaʻa, Lono 1873:v.A1 P318-320

Practice	Resource(s)	Location	Information	Source
			Kakio, Like Lono speaks of Kamauae (Kamauai) on the border of Keauhou 1 and 2, but unlike Lono, he doesnt mention a heiau, he speaks of a sea cave or shoreline cave. "The boundary at shore between the two Keauhous is at a place called Kamauae [Kamauai] at the beach; Thence it runs mauka to the head of Holua (an old sliding place)..."	Boundary Commission: Keauhou 2 Ahupuaʻa, Kakio K. 1873:v.A1 p265-268.
Voyaging Waʻa	Various (for canoe making)	Kahaluʻu Ahupuaʻa	Fleets of canoe were known to set sail from Kahaluʻu Ahupuaʻa as recorded in the moʻolelo of Kepakaʻiliʻula.	In *Kepakaʻiliʻula*, (Malo 1919-1920). Translated in Maly 1996:25)
Waʻa Canoe making	**Namahana**	Puaʻa 2 Ahupuaʻa In the uplands	Kahueai testifies for BC of a koa tree growing a waʻa place, mauka long Waiʻaha stream, this would be at the same elevation, possible within the Gianulias study area. We pick up his boundary description of the south (Kaʻū) side of Puaa, bounding Waiʻaha, heading upland. "Thence to Palule where koa grows; thence mauka along the kahawai to **Namahana**, where we used to make canoes; thence along the gulch to Aianini [?], a water hole in the gulch; thence up to Kipukaiki a cave..."	Boundary Commission Testimony: Puaa 2 Ahupuaʻa, Kahueai, 1873: v.B:244-245. *also gives testimony for Keahou 2. Olonā growth (Kumu Pono Associates BC notes)
Voyaging Waʻa kilo	Calm seas	Kona Moku	"Ke kai malino o Kona. The calm sea of Kona. Refers to Kona, Hawaiʻi." Including this one, there are four ʻŌlelo Noʻeau that talk about the calm seas of Kona Moku 1842, 1844, 1731	Pukui 1983:186, ʻŌlelo Noʻeau #1731, 1842, 1844, 1731
	Kona sailing winds **ʻEka** (a makani)		Three ʻOlelo Noʻeau speak of winds and conditions that tell it is time to launch sailing canoes for fishing in Kona. One references ʻEka, a particular wind associated with the moku of Kona whose presence is telling of signs optimal for fishing. Another talks about filling big sails, and the last calls canoe men to sally forth.	Pukui 1983:159, ʻŌlelo Noʻeau #1467 and #182, #1690
Kilo Nānā Ao Lawaiʻa	Clouds Rain Calm seas	Kona Study Area	Clouds would carry water from mountains to the ocean, bringing rain from ma uka to ma kai. Understanding cloud patterns to know when it was safe to fish, etc.	Consultation

Table 38. Table of Practices and associated resources in and around the study area tied to **Forestry and Hana Waʻa.**

Practice	Resource	Location	Information	Source
Forestry Canoe Making	**Huaikaumauna** Lae Koa Koa Forest Koa and Mamani trees **Mawae**	Keauhou 2 Ahupuaʻa Hōlualoa Ahupuaʻa Kahaluʻu Ahupuaʻa Kaumalumalu Ahupuaʻa	Mentioned by Keliikanakaole K. In his sworn testimony, "Thence to Huaikaumauna, a lae koa on kualapa."	Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keliikankaole 1873:v.A 1, p270, Folio 448
			Mentioned by Kupakoa K. In his testimony, "Thence along the land of Kaumalumalu to **Huaikaumauma**, koa trees and mamani, on the Kohala side of Judd road. Keauhou taking the land mauka of the woods and Kaumalumalu the woods."	Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa 1874:v.A 1:448-450
			Described as a "quite an old man", Puhi gives his sworn testimony and describes Huaikaumauna as more than just a koa forest, but a sacred place, where a heiau not far from a water hole and a burial cave, "Keauhou 1st ends in the koa woods. It is cut off by Keauhou 2d at a place called Mawae where there is a water hole, and a cave where my relations are buried. The boundary is way makai of this place. Keauhou 2d takes the land where they used to catch uwau, on the mauka side of the woods, cutting off Kahaluu and Kaumalumalu. Do not remember the names of the points Kaumalumalu reaches to Huaikaumauna, junction of Kaumalumalu, Kahaluu and Keauhou. it is an ahua in the koa woods, where the canoe makers used to have a heiau."	Boundary Commission Testimony: Keauhou2 Ahupuaʻa, Puhi K. 1874:v.A 1, p450-451.
Forestry	**Kanoa** Koa Forest Koa and Mamani trees	Keauhou 2 Ahupuaʻa Kahaluʻu Ahupuaʻa	Mentioned by Kupakoa K. In his testimony, "Thence along Kahaluu (in the woods) to **Kanoa**, a point of koa and mamani trees, the place where the fire from Kau [Kaʻū], on the mountain went out."	Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kupakoa 1874:v.A 1:448-450
Canoe Making	**Keanaakala**	Keauhou 2 Ahupuaʻa	where canoe makers used to live	
Forestry Canoe Making	**Huaikaumauna**	Keauhou 2 Ahupuaʻa Hōlualoa Ahupuaʻa	Keliikanakaole in his sworn testimony for Hōlualoa 1 mentions Huaikaumauna in Keauhou 2, remembering the felling of a tree. "Thence mauka along old trail to Kalaenaio where Naio trees are growing, in Koa woods; thence to Huaikaumauna, a kualapa, from which a big tree was taken, where Kaumalumalu is cut off by Keauhou 2."	Boundary Commission Testimony: Hōlualoa Ahupuaʻa, Keliikanakaole K. 1874:v.A 1, p336-339.

Practice	Resource	Location	Information	Source
Forestry	**Waikulukulu** (a forest)	Keauhou 2 Ahupuaʻa	Waikulukulu is the name of a woods or forest near Puuakawai water hold, "thence the boundary runs up the mountain to a cave on the side of the mountain, above the woods called Waikulukulu, thence to Puuakawai, an old water hole now filed up by cattle tramping around it; this place is the junction of the land Kaopulehu [Kaupulehu] with Keauhou."	Boundary Commission Testimony: Keauhou 2, Keakaokawai, K. 1873:v.A1, p256-260
Forestry Historical	**Haliilaukoa**	Keauhou 2 Ahupuaʻa	A storied place of Umi, "Haliilaukoa (where Umi sat and they spread Koa leaves for him; old tradition)"	Boundary Commission Testimony: Keauhou 2, Keakaokawai K. 1873: v.A1 p257.
Canoe Making Trails	**Kealakōwaʻa** (Kealakowaa) (Alakowaa)	Kahului Ahupuaʻa	Listed as the name of a heiau said to have been built by ʻumi for the dedication of canoes. The canoes were felled and brought here for dedication and then launch by the shoreline at Puʻu spring and the surf of Puʻu. Was misnamed Hale-hau in recent times. (n.d. Kekahuna) Ties to families of ʻumi as well as canoe carving and dedication practices. *Lit*. The path to drag the canoe, (translation Kawika Aspili, Nohopapa Hawaiʻi)	Henry E.P. Kekahuna Collection, MS Group 312, Map: 50-HA-D8.
		Kahului Ahupuaʻa ʻIli ʻāina of Puki ʻIli ʻāina of Kahuki ʻIli ʻāina of Kamuku ʻIli ʻāina of Halewaawaa	A place where logs destined to become canoes, travelled to on their journey down from the uplands to the shore Several Māhele land claims reference Kealakōwaʻa as bounding their pauku ʻāina.	LCA 7086 (NR:v8p419) LCA 7336 (NR:v8p424, NT:v4p500) LCA 10252 (NT:v4p538) LCA 10374 (NT:v4p529-530)
		Kahului Ahupuaʻa to Hōlualoa Ahupuaʻa	The trail on which canoes were dragged from the uplands to the shore; crosses several ahupuaʻa including Kahului to Hōlualoa.	From Buke Māhele records, Kumu Pono Associates in Māhele Section, Glossary
Forestry Canoe Making	**Kikikiaeae** (canoe making place)	Keauhou 2 Ahupuaʻa	In Waiau's testimony for the Keauhou 2 Boundary Commission he described **Kikikiaeae** as a canoe maker place. "Governor Adam's road is at the end of Lehuulanui; thence along Hookukano; thence mauka along the Government road, between two aa flows to Kamoomoo; thence to Keanaakala, a cave; thence to Kikikiaeae, where we used to live. The canoe makers of Hookukano also lived there. There is a hill called Puulepo, with a crater on it. There is a water hole makai of said hill. "	Boundary Commission Testimony: Keauhou 2, Waiau K., 1873: v.A1 P268-272

Practice	Resource	Location	Information	Source
Forestry	Kaimuhapu (a forest)	Keauhou 2 Ahupua‘a At Okolea	The KS study area is in Keahou 2 near its boundary with Hōnalo. Waiau testified of a forest and a waterhole at the border in a place called Okolea. "A place in Okolea, in the woods called Kaimuhapu, a water hole, is on the boundary between Honalo and Keauhou..."	Boundary Commission Testimony: Keauhou 2, Waiau K., 1873: v.A1 P268-272.

Bird Catching

Table 39. Table of Practices and associated resources in and around the study area tied to **Bird Catching**

Practice	Resource	Location	Information	Source
Bird catching	Manu	Kahului Ahupuaʻa	Several manu were referenced as living in upland Kahului, these species were important enough to mention and would have been resources tied to cultural, religious and subsistence practices. They are also biological indicators of a healthy forest system and watershed. Included area: ʻelepaio, pueo, ʻIo, and ʻamakihi	In He *Kaao no ka Manu Elepaio,* found in the nūpepa "Ka Hoku o ka Pakipika" (S.W.K.: 1862)
Bird catching	**Huaikaumauma** (Huaikamauna)	Keauhou 2 Ahupuaʻa Hōlualoa Ahupuaʻa	Ihihi testified for the Hōlualua Boundary Commission hearings, "Know the place in the woods called Kahiihiie; it is the junction of Kaumalumalu and Holualoa 1st; thence the boundary runs mauka along old trail to Kalokau; a grove of banana trees on a pali; thence to Kanoa, an old kauhale kawilimanu; thence to Kalaemaia, an ahua and kualapa; thence to Huaikaumauma, a kualapa; thence to Apiipii, where Keauhou 2 cuts these lands off, from there the boundary turns North to Puulalaau [Puulaalaau]." "Keauhou cuts Kaumalumalu off at Pukaiki and Huaikaumauma and boundary of this & Keauhou runs up in the middle to Hiinau. This is what the bird catchers say, as I hear now. Kaumalumalu runs to Pukaiki and Huaikaumauma."	Boundary Commission Testimony: Hōlualoa Ahupuaʻa, Ihihi K. 1874:v.A 1, p336-339.
Bird catching	**Keakui**	Keauhou 2 Ahupuaʻa	Mentioned by Keliikanakaole K. in his sworn testimony, "A place called Keakui, a road across the aa made by bird catchers, a puu pahoehoe and a Mawae in the center, is the place where Keauhou 2 turns North and cuts off Keauhou 1st. Niihoa and Kekai, the men who made the road which is the boundary between the two, told me thus. I went with Kekai after sandalwood."	Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A 1, p270, Folio 448
Bird catching	**Kilohana**	Keauhou 2 Ahupuaʻa	In BC testimony for Keauhou 2, Keakaokawai (Keakaikawai), a noted kamaʻāina witness in Kona, he identifies a bird catching place, notably on an ʻaʻā flow. "...thence mauka to Kilohana, on an aa flow where we used to catch birds and where Kahuku joins Keauhou. Thence along Kahuku to Kulauala, on Umi's road; From Puuloa to Kanupa Keauhou used to take the pahoehoe above the woods and the Kona lands reached to the mauka edge of the woods from Kilohana along Kapapala to Pohakuhanalei, a hill on the top of the mountain [Mauna Loa]"	Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai (Keakaikawai) 1874:v.A1, p256-260.

Practice	Resource	Location	Information	Source
Bird catching	**Makaulaula**	Keauhou 2 Ahupuaʻa	According to Kahulialo, a dwelling for bird catchers, "Thence to Makaulaula, where we used to live when bird catching. Thence to Kaonohi, a cave; thence to Ahuwela, a cave with water in it; there Hookukano ends and Kealakekua joins and bounds Keauhou..."	Boundary Commission Testimony: Keauhou 2, Kahulialo W. 1873: v.A1 p261-265
Bird catching	ʻAmakihi as a pūpū with ʻawa	Kahului Ahupuaʻa	Specifically identified as a practice occurring in the ahupuaʻa of Kahului; "broiled" ʻamakihi as "a condiment to go with ʻawa" in a chant from ʻElepaio to ʻAmakihi in *He Kaao no ka Manu Elepaio*	Mentioned in *He Kaao no ka Manu Elepaio* in the nūpepa Ka Hoku o ka Pakipika (S.W.K.: 1862).
Bird catching, konohiki	Manu	Keauhou 2 Ahupuaʻa Hōnalo Ahupuaʻa	Waiau testified for Bdry Commission of Keauhou 2, he was born at Kanaueue during Kamehameha I's reign and talked about bird catching and the konohiki take. "Know the land of Keauhou, used to go after birds with my father, Nauwe, an old bird catcher and he pointed out the boundaries to me, as it was kapu to go after birds and not divide them with the konohiki; used to go frequently not vary far above here. Honalo bounds Keauhou 2 on the South side, as you go into the lower edge of the woods. I do not know the boundaries."	Boundary Commission Testimony: Keauhou 2, Waiau K., 1873: v.A1 P268-272
Bird catching	Manu	Keauhou Ahupuaʻa Hōnalo Ahupuaʻa	"I used to go on the mountain with my Father collecting sandalwood and catching birds; his name was Kauluahi, and old bird catcher and kamaaina now dead..."	Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Keakaokawai (Keakaikawai) 1874:v.A1, p256-260.

Mahi ʻai ʻana – Cultivation

Table 40. Table of Practices and associated resources in and around the study area tied to **Mahi ʻai ʻana - Cultivation.**

Practice	Resource	Location	Information	Source
Mahi ʻai ʻana (Cultivation)	Farmable soils, wai, upland fields	Kona Study Area	Kona field system including the water systems to support it.	Consultation
	Pūnāwai, springs, cultivated upland fields		ʻUala, kalo, ʻulu and other cultivated crops fed by the rain and water wells.	Consultation
	Alani (orange tree), Hala, Hala Kahiki (pineapple), Hau, Ipu (gourd), Kalo, Kope (coffee), Kou, Loulu, Maia, Momona (Cherimoya), Niu Nonu (Indian mulberry), Olonā, Pu (squash), ʻuala (sweet potato), Uhi (yam), ʻulu (breadfruit)	Just north of Puaʻa Ahupuaʻa down to the south of Keauhou Ahupuaʻa	Crops mentioned in Māhele records as being cultivated in and around the project area as resources for the people who lived and exercised their traditional rights in this region of Kona	Māhele Awards Books, Native Testimony and Native Register
Mahi ʻai **Makawela**, a ʻuala farming practice Nānā Ao (cloud observation)	**Kanoenoe** (a plain) (a misty rain)	Kealakehe Ahupuaʻa Keahuolū Ahupuaʻa	Indicator, when mist sat upon Puʻuokaloa (Puukaloa) it was a sign rain would come and to prep the ʻuala fields of Kanoenoe plain. A rain fed plain that was under ʻuala cultivation. Rains could be seen coming from afar. Practiced **Makawela style of ʻuala cultivation** here.	Ka Hoku o Hawaiʻi 10/25/1917, as translated by Maly 1994:A-4. In Wise and Kihe 1914-1917 in Simonson 2010:8
			Makawela cultivation. A slash and burn agricultural practice, but predicated on actual kilo of predicting the iminent onset of rain	Pukui & Elbert 1986: 228, Bennet & Nogelmeier 2017
Puʻupuʻe a kalo farming practice hale building thatching water collection	**Wai-a-Kekea** a spring loulu	Waiʻaha Ahupuaʻa Kahului Ahupuaʻa	"There too, you see — ka luawai ua kīpapa ʻia i ka pōhaku ʻalā e ulu pōhai ʻia e nā lāʻau loulu, o ka punawai i ka oʻioʻina pali o Waiakekea — a spring paved with dense [ʻalā] stones and surrounded by loulu palms, this is the spring of **Wai-a-Kekea**, which was near the trail side resting place..." Located near **puʻepuʻe kalo cultivation** in the uplands at the boundary of Waiʻaha and Kahului.	Wise and Kihe 1914-1917, in the series *Ka Hōkū o Hawaiʻi* (in Maly 1998:3).
Mahi ʻai ʻana (cultivation)	**Waiʻaha Stream** Upland taro mounds	Puaʻa Ahupuaʻa Waiʻaha Ahupuaʻa Kahului Ahupuaʻa Puapuaʻa Ahupuaʻa Hōlualoa Ahupuaʻa	"...the stream of Waiʻaha joins with the lands of Kahului. The waters filled the upland taro mounds of the sacred prostration chiefs Kaleiʻeha, Kapahu (or Kapahu-a-Loʻi), and Kaʻalaea, who possessed the kapu (restrictions) of Lono-Makahiki..."	Wise and Kihe 1914-1917, translation by Kumupono Associates, (in Maly 1998:3)

Practice	Resource	Location	Information	Source
Water collection Mahi ʻai ʻana (cultivation)	Pūnāwai offshore springs cave water collection rain anchialine ponds	Kona Study Area	Kona is an arid and dry place. There were only certain ways to get water for customary use. Four ways of acquiring water for sharing: 1) Collect water with ipu from the plumes of freshwater emissions in the ocean. 2) Collect water with ipu from drips/condensation in caves. 3) Freshwater springs bubbling up i.e. Kaloko. 4) Rain. 5) Brackish water collection from ponds/wells for consumption and everyday use.	Consultation
Mahi ʻai ʻana (cultivation)	Mala ʻuala	Puapuaʻa Ahupuaʻa At the coast at **Niumalu**	there is a māla ʻuala, or a sweet potato garden that stretches between Niumalu and Puapuaʻa Ahupuaʻa (Wise and Kihe 1914-1917 in Maly 1999:12). This māla ʻuala is described as the place where the opponents of Ka-Miki go to recover and sleep after being defeated by the young boy (Wise and Kihe 1914-1917 in Maly 1999:12).	Wise and Kihe 1914-1917, translation by Kumu Pono Associates, (in Maly 1998:3)
Mahi ʻai ʻana	Banana plantation	Kahaluʻu Ahupuaʻa	located in the uplands of Kahaluʻu "Once in Kona, Kepakaʻiliʻula waited in the uplands of Kahaluʻu at the great banana plantation of the chief Kahoʻoaliʻi, which extended from Kaumalumalu-Kāpalaʻalaea to Keʻei" -Malo 1919-1920.	Discussed by Maly (1996: 24-25) and mentioned in the moʻolelo of Kepakaʻiliʻula, by David Malo, appearing in series in the nūpepa *Ka Hoku o Hawaii* (1919-1920)
Mahi ʻai ʻana Palena	**Pā pipi** (pa pipi) (papipi)	Kona Moku At and below Mamalahoa Hwy	Cattle wall or enclosure, depending on context (see the section that discusses history of the Pā Kuakini or Great Wall). Depending on context, and written “pa pipi” it describes a cattle enclosure.	Māhele Awards Books Kumu Pono Associates, Mahele Section, Glossary
Mahi ʻai ʻana	ʻUlu	Puapuaʻa Ahupuaʻa	Famous bounty of the ʻulu from Puapuaʻa Ahupuaʻa. “*Ke kumu ʻulu-pū-loa o noe ʻokana ʻāina o Puapuaʻa.* (The well-formed, oval-fruited breadfruit of the lands of Puapuaʻa [said in praise of strength and handsome features])”	Maly 1999:12, from *Kaʻao Hoʻoniua Puʻuwai no Ka-Miki* (Wise and Kihe, 1914-1917)
Mahi ʻai ʻana	Upland fields	Kona	"Kona, poʻo kuʻi. Kona of the added head. Said of farmers of Kona, Hawaiʻi, returning from the fields with a load on the shoulders and a child sitting atop the load."	Pukui 1983:199, ʻŌlelo Noʻeau #1847

Practice	Resource	Location	Information	Source
Upland cultivation zone	Kula	Upland Kona	Plain or grassy flat land. Generally, an area between the shoreline and lower forest zone. In the early usage, the term describes lowland agricultural fields. In the later 1800s, usage of "kula" in describing land areas was used to describe pasture land. "This usage postdates claims of the Māhele, and if taken in the latter meaning changes actual forms of land use. This is particularly problematic when a Kuleana claim text reads something like "1 kula Kalo" and the later translations state, for example, "1 one taro pasture," which is leads to inaccurate or misleading descriptions of lands use."	From Buke Māhele records, Kumu Pono Associates in Māhele Section, Table 3. Glossary
Upland cultivation zone	**Kaluulu** (Kanu-ʻulu) (Ka-ulu-ʻulu)	Upland Kona	"The region of ʻulu cultivation and growth. Providing an important starch food source, wood valued in making canoes and various tools; in some accounts young ʻulu branches were harvested and used in making kama (bark cloth). The canopy of ʻulu provided shade and helped retain moisture from important under-story cultigens."	From Buke Māhele records, Kumu Pono Associates in Māhele Section, Glossary
Upland cultivation zone	**Amaumau** (Amau, ʻAmaʼu) ʻĀmaʻumaʻu)	Upland Kona Kona Kuahewa	The Sadleria fern forest zone, a region of upland agricultural fields.	From Buke Māhele records, Kumu Pono Associates in Māhele Section, Glossary
Coastal cultivation	**Hiʻiaka-noho-lae** blowhole	Keahuolū Ahupuaʻa, Kailua	Dwelling place of Hi'iaka and a blowhole at Kailua that would cover fields and dry them out (salt). Kaleikini grids a cover of kauila he uses to cap this blowhole, and others, so crops can grow close to the sea.	From Kihe 1923:2, translated by The Institute of Hawaiian Language Research Team, ʻIke Wai
Mālama ʻAina cultivation Connectivity	Laʻau	Kona study area	Relationship of water to plants and plants to people and plants as trade items and economic development amongst and between families and across ahupuaʻa.	Consultation
Cultivation Hana Noʻeau Maʻawe	Hala hala groves	Coastal and upland Kona Moku	Growth of hala (pandanus) trees.	Kumu Pono Associates in Mahele Section, Glossary

Practice	Resource	Location	Information	Source
Mahi ʻai ʻana	**Ohiki** A spring A cultivation place	Uplands of Hienaloli Ahupuaʻa Keauhou Ahupuaʻa	Lono describes Ohiki, as an old cultivating site, that is also a spring, "Kahaluu bounds Keauhou 1st on the North side, the boundary at seashore is Paaniau, a large stone wall reaching from shore a short distance mauka. There is a pali at seashore by the same name; thence mauka to the Government road; thence straight mauka on aa to two piles of stones at government road. Kahinihiniula is on the high ground, just before you decend [sic] into the hollow; going from Kealakekua to Ohiki, a spring and old mahiai place in the woods. I do not know boundaries above this place. Have not heard where the land ends."	Boundary Commission Testimony: Hianaloli 1 & 2 Ahupuaʻa, Kakio 1873:v.A 1, p318, Folio 448 and Lono, K.
Mahi ʻai ʻana	Kalo wai kula lands	Kona Moku	Kalo served as one of the major starch foods of Hawaiians around the islands. Kalo is used in ceremonies, is a part of the Hawaiian stories of creation and birth of kānaka, and was developed into many varieties, some of which were particularly valued in the Kona district. While often thought of as being grown in loʻi Kalo (irrigated taro pond fields), the cultural record reveals that there was more kula (dryland) Kalo grown in the islands than that grown in loʻi kalo.	Kumu Pono Associates, Mahele Section, Glossary.

Trails and Connectivity

Table 41. Table of Practices and associated resources in and around the study area tied to **Trails and Connectivity**

Practice	Resource(s)	Location	Information	Source
Connectivity Trails Trade Reciprocity	Trails Trade Reciprocity	Kona Study Area	Trade and reciprocity ma uka and ma kai, allowing different family units to interface with each other ensuring quality of life.	Consultation
Connectivity Travel	**Ke Alaehu** (Kealaehu) (Alaehu)	Kona Moku	An ancient trail attributed to Umi-a-Liloa that crosses all of the ahupuaʻa in the Kona District. Mentioned in *Na Hunahuna no Ka Moolelo Hawaii* as, "...a hui pu me ke ala mauka, i kapaia ke Alaehu, mawaena konu o ke amaumau mai Kona Hema mai... A ua manaoia, ma keia ala no paha o Kauhiakama o ka holo kaapuni ana ia Hawaii, a puni ai i na la pokole."(Iʻi 1870) "...and connects with the upland trail, called Ke Alaehu, right between the ʻāmaʻumaʻu ferns from South Kona... and it is thought, that on this trail perhaps that Kauhiakama encircled the Hawaiʻi, and encircled in a short amount of days"	Iʻi 1870, Translated by Kawika Aspili (Nohopapa Hawaiʻi).
		Kahaluu Ahupuaʻa ʻIli ʻāina of Kamuku ʻIli ʻāina of Kukuihaa ʻIli ʻāina of Haliipalala ʻIli ʻāina of Kahuamoa ʻIli ʻāina of Paulu ʻIli ʻāina of Kukuiohaa	The ancient upland trail that passed through the ʻāmaʻumaʻu (fern forest agricultural zone) in the vicinity of the present day Māmalahoa (Belt) Highway. It's development is associated with the reigns of Ehu and ʻUmi (Kepa & Onaona Maly, Kumu Pono Associates).	LCA 3447 (NT: v4p640-641. LCA 5773 B (NT: v4p615-616 LCA 5673 B & 5673 (NT: v4p615-616). LCA 5677 (NT: v4p621) LCA 5689 (NT: v8p396) LCA 5695 (NT:v4p624-625) LCA5831B (NT: v4p637) LCA 6029 (NT:v4p627) LCA6128 (NR:v8p410-411, NT:v4p621)
		Puaʻa 2 Ahupuaʻa ʻIli ʻāina of Ohiki		LCA 7076 (NR: v8p416, NT: v4p512)
		Honokohau 1 ʻIli Haleamahuka		LCA10521 (NR:v8p596, NT:v8p602
Connectivity Trails Travel	Alanui Pii	Kona Moku	Ascending trail that connected the coast to the uplands (i.e., trail leading to the uplands, the mauka-makai trail system which occurred in all ahupuaʻa). Not always a public road.	Kepa Maly, Mahele Section, Glossary

Practice	Resource(s)	Location	Information	Source
	Ala	Keauhou 2	Mauka-makai trail used for transporting ʻōhiʻa down from the uplands, "...trail being made for ohia trees..." - Kakio.	Boundary Commission Testimony: Keauhou 2 Ahupuaʻa, Kakio 1873:v.A 1, p270, Folio 448
Connectivity Hana waʻa	**Kealakōwaʻa** (Kealakowaa)	Kahului Ahupuaʻa to Hōlualoa Ahupuaʻa	The trail on which canoes were dragged from the uplands to the shore; crosses several ahupuaʻa including Kahului to Hōlualoa.	Kumu Pono Associates in Mahele Section, Glossary
Connectivity Messengers Communication Trails	**ʻElele** (messengers)	Kona	Ka-Miki ordered Pili's ʻeleʻele or messengers to spread the word of his victories to Kalamaʻula (Wise and Kihe 1914-1917 in Maly 1999:13). Pili sent other messengers throughout all the districts of Kona to inform the people and chiefs that Ka-Miki possessed the rights of the aliʻi over these lands (Wise and Kihe 1914-1917 in Maly 1999:13).	Wise & Kihe (1914-1917), in *Kaʻao Hoʻoniua Puʻuwai no Ka-Miki*, translated by Kumu Pono Associates.
Connectivity Mālama ʻĀina	**Wai kaiāulu**	Kona Study Area	What keeps us [Hawaiians] together is our shared belief in cooperation, support, respect, and a continuous system of reciprocity when it comes to water resources.	Consultation

Kilo and Weather – Environmental Indicators

Table 42. Table of Practices and associated resources in and around the study area tied to environmental indicators through **Kilo – Keen Observation.**

Practice	Resource(s)	Location	Information	Source
Kilo	Ua	Kona Study Area	Learned to listen for the rain.	Consultation
Kilo Weather & Ocean Observation	**ʻEka** (a wind)	Kahaluʻu Ahupuaʻa at Helani	From a chant from Mākoleʻā as a message to Kepakaʻiliʻula, she asked her uncle Kukuipahu to convey; remembering her time with him at Kahaluʻu. “Kuʻu hoa i ka peʻa huli luna e Kona e He ʻEka ka makani o kāua e ʻolu ai...: You are my companion of the upper reaches of Kona Where the ʻEka breezes refresh us two...”	From the moʻolelo of Kepakaʻiliʻula, (Malo 1919-1920, translated in Maly 1996:25)
	Hau (a wind)	Kainaliu to Keauhou Ahupuaʻa	"Ka Hau o Maʻihi. The Hau [breeze] of Maʻihi. Refers to Maʻihi, Kona, Hawaiʻi. Because of this locality was named for Maʻihi-ala-kapu-o-Lono, daughter of the god Lono-a-ipu, this wind was regarded as sacred and did not blow beyond Kainaliu and Keauhou." Hau, a wind belonging to Maʻihi, described as a breeze that does not reach beyond the boundaries of Kainaliu and Keauhou	Pukui 1983:142, ʻŌlelo Noʻeau #1303
	Kāwili (wind & current)	Kona Moku to Kaʻū Moku	"Ka ʻōwili makani ʻino o Kāwili. The stormy wind of Kāwili. (Kāwili is the current that comes from Kona and goes out to sea at Kalae, Kaʻū)."	Pukui 1983:164, ʻŌlelo Noʻeau #1519
Kilo Rain & Weather Observation	**ʻAwaʻawa ʻAwa** (a rain)	Keauhou Ahupuaʻa	A “bitter, cold, dark rain, vog, or smoke of the mountains; acidic rain;” and is noted as being the same as the ʻAwa rain and also the name of a wind . Per Pukui, a cold mountain rain	Malo 1951:14 in Akana and Gonzales 2015:15
	Kēhau (a rain)	Kona Moku	A dew and mist and is noted as both the name of specific rain and wind	Akana & Gonzales 2015:73
	Kualau (a rain)	Keauhou Ahupuaʻa	A rain that showers over the seas and is accompanied by wind	Akana & Gonzales 2015:121
	Nahunahu (a rain)	Keauhou Ahupuaʻa	A “pelting rain associated with Hawaiʻi,” and translated to mean “to bite,”	Akana & Gonzales 2015:184
Kilo Rain & Weather Observation	**Noe** (a rain)	Keauhou Ahupuaʻa	Described as a fog and a mist that is “lighter than the uhiwai [heavy fog], but heavier than ʻohu [mist, fog, vapor], ʻehu [spray, foam, mist], and ʻehuʻehu [reduplication of ʻehu];” and is noted as both a rain and wind.	Akana & Gonzales 2015:208
	Palahī Puaʻa (a rain)	Kona Moku	“Ka ua palahī puaʻa–falls, stops, falls, stops, etc.,” Intermittent rain. Exclusively associated w/ Kona	Akana & Gonzales 2015:219

Practice	Resource(s)	Location	Information	Source
Kilo Rain & Weather Observation	**Nāulu** a rain	Puapuaʻa Ahupuaʻa	A sudden shower and is noted as being also the name of a rain cloud and a wind	Akana & Gonzales 2015:187
			Published in the Hawaiian language newspaper, Ke Au Okoa in 1869, Kamakau shared an account regarding traditional cultivation methods of ʻuala (Ipomoea batatas or sweet potato) in which he acknowledged the Nāulu rain: He ua Nāulu ka ua e loaʻa i ka Makaliʻi, he ua kūhewa ia, aia ma kona wahi e hāʻule ai, ua ulu ka laulele, ka pōpolo, a ua ola ia wahi i ka lau nāhelehele. [Kamakau 1869:1] Sudden showers (ua Nāulu) fall during the Makaliʻi season. These are rains accompanied by wind gusts, and where they fall, laulele and pōpolo plants spring up, and that place comes to life with wild growth. According to Kamakau, Nāulu is again referred to here as a shower that arrives suddenly–he ua kūhewa, (Kamakau 1869:1). What is also detailed in this account is that this particular rain is often joined by wind; and with it, entices the ʻāina the rain falls upon to sprout with vegetation such as laulele (Asclepias curassavica or butterfly weed), pōpolo (Solanum nigrum), and other wild growing flora.	From Kamakau 1869:1 (Akana & Gonzales 2015:206)
		Kahaluʻu Ahupuaʻa	Mentioned in a chant for the uplands of Kahaluʻu	from the moʻolelo of Kepakaʻiliʻula, (Malo 1919-1920, translated in Maly 1996:25)
Kilo Nānā Ao Weather observation	**ʻOpua** (cumulus), **ao ʻōpiopio** (young clouds), ua	Kona Moku	Recounted in several ʻōlelo noʻeau, the presence and formation of ʻōpua, or "cumulus clouds," and ao ʻōpiopio or "young clouds," are indicators unique to Kona relaying that rain is expected to occur in the area	Pukui 1983:9,27,2134; ʻŌlelo Noʻeau #55, #232, #2134

Mālama ʻĀina – Care for Resources and Place-based Stewardship (Ahupuaʻa Management)

Table 43. Table of Practices and associated resources in and around the study area tied to **Mālama ʻĀina and the long-term care and stewardship of people, resources, and place.**

Practice	Resource(s)	Location	Information	Source
Mālama ʻĀina Connectivity Kilo Ahupuaʻa Management Mahiʻaiʻana (cultivation)	Wai healthy environment laʻau	Kona Study Area	Mālama ahupuaʻa specific resources. Relationship of water to plants and plants to people and plants as trade items and economic development amongst and between families and ahupuaʻa. Wai creates a community that facilitates skilled resource managers. Malama i ka wai	Consultation
			Mālama our resources, including ourselves. People within each ahupuaʻa have a kuleana to take care of their specific resources. When diligent and responsible, we survive.	
	Wai		Conservation of water.	
	Crops wai pūnāwai ua	Kona Study Area Uplands	ʻUala, kalo, ʻulu and other cultivated crops fed by the rain and water wells. (As mentioned in previous tables above, the importance of water wells for cultivation and their re-injection of water whether from the ground or the heavens)	
Mālama iwi kūpuna	**Burial caves Mawae**	Keauhou 2 Ahupuaʻa	Described as "quite an old man", Puhi K., a cousin of Keakaokawai who lived at Kalihi at the time (BC) gives his sworn testimony describing a family burial cave in the uplands, "Keauhou 1st ends in the koa woods. It is cut off by Keauhou 2d at a place called Mawae where there is a water hole, and a cave where my relations are buried. The boundary is way makai of this place."	Boundary Commission Testimony: Keauhou2 Ahupuaʻa, Puhi K. 1874:v.A 1, p450-451.
Connectivity Ahupuaʻa Management Mālama ʻĀina	**Puhi spring** subsurface waterflow	Niumalu, ponds at Hulihe'e Keōpū Reserve	Puhi Spring flowed underground from Keōpū Forest Reserve down to ponds at Hulihe'e Palace, Niumalu.	Consultation
	var.	Kona Study Area	Responsible and accountable place based resource stewardship/management	

Other Practices, including Hana Noʻeau, Beliefs, and Spirituality (not already included above)

Table 44. Table of Practices and associated resources in and around the study area tied to **Other Practices**

Practice	Resource(s)	Location	Information	Source
Hoʻokupu water collection Spirituality Beliefs	Wai halau wai (source waters) pūnāwai	Kona Study Area	Religious/ceremonial significance and uses of freshwater (wai as a hoʻokupu, given from the place you are from or a special source of water is always an appropriate and valued form of hoʻokupu, arguably the most noa).	Consultation
Beliefs Spirituality Mālamaʻāina	Balanced ecosystem traditional cultural practices exercised	Kona Study Area	Cultural familial and religious practices of respect and an interrelationship with nature.	Consultation
Mauliola	Beliefs var. resources (integral to practices)	Kona Study Area	Need to blend regular routines with spiritual/emotional tasks for pono/balance.	Consultation
Contest site for games Makahiki grounds Beliefs Spirituality Kaiaulu Hana Noʻeau Lawaiʻa	**Hinakahua**	Puapuaʻa Ahupuaʻa the Kahelo plains at Niumalu at the coast	A kahua mokomoko leʻaleʻa, game site for competitions, Visited by La-Miki and Maka-iʻole. Games played at Hinakahua: maika (bowling), mokomoko (wrestling and boxing), leʻaleʻa (pleasurable pastimes), and hoʻopāpā (contest of wit and strength), (Maly 1999:11). Pili-nui-kapu-kuʻi-a-ka-lani-kua-liholiho-i-ke-kapu is the aliʻi at the time of Ka-Miki and presided over these ʻōlohe grounds.	(Wise & Kihe 1914-1917) *Kaʻao Hoʻoniua Puʻuwai no Ka-Miki*, in the nūpepa, "*Ka Hoku o Hawaii*." Translated by Kumu Pono Associates (Maly 1999"10, 11, 12, 13)
	Kahua mokomoko leʻaleʻa	Lanihau Ahupuaʻa	A famous kahua site for competitions (ʻōlohe) was at Ahuʻena, in Lanihau Ahupuaʻa. Visited by La-Miki and Maka-iʻole	
	Kauakahiakahaola a heiau	Puapuaʻa Ahupuaʻa	Kauakahiakahaola is a famous ʻōlohe of Puapuaʻa and Keiki-puʻi-puʻi is noted as the champion of Kailua. Also, the name of a heiau in Puapuaʻa	
	Heʻe leho (cowrie)	Puaʻa Ahupuaʻa at Ōneo	A kaulana and favored lū heʻe was an ʻōlohe prize	
Beliefs Spirituality	**Kāʻili** an akua of Kona	Kahaluʻu Ahupuaʻa	Akua invoked by the Kahaluʻu aliʻi Kepakaʻiliʻula in battle before unifying Kona Moku	From the moʻolelo of Kepakaʻiliʻula, (Malo 1919-1920, translated in Maly 1996:25)
	Kālaipāhoa an akua of Kona	Hōlualoa Ahupuaʻa	Akua invoked by the aliʻi Hōlualoa in battle	From the moʻolelo of Kepakaʻiliʻula, (Malo 1919-1920, translated in Maly 1996:25)

Practice	Resource(s)	Location	Information	Source
Beliefs Spirituality Ahupuaʻa Management	Kapu laws	Keauhou Ahupuaʻa	"**Keauhou i ka ʻihi kapu.Keauhou**, where strict kapu were observed. Keauhou, Kona. This was the place where many of the highest chiefs resided and where Kamehameha III was born."	Pukui 1983:181, ʻŌlelo Noʻeau #1682
Beliefs Hana noʻeau Forestry	Kauila	Kona Moku Kailua	In a moʻolelo discussed, Keleikini uses a cap of lashed kauila wood to plug a blowhole at the coast that is salting out valuable and scarce coastal fields and causing them to "dry out". Kauila, a Hawaiian hardwood that is difficult to cut through because of its density must have been a somewhat common resource in the uplands if Keleikini was able to use it at the coast to plug a blowhole. It is rare now.	From Kihe 1923:2, translated by The Institute of Hawaiian Language Research Team, ʻIke Wai
Hoʻokupu Wahi pana Ahupuaʻa Management	Puʻu	Kahaluʻu Ahupuaʻa	"All of the offerings of the wealth of the land were gathered at one site and presented to Kepakaʻiliʻula. The mound of offerings was so great that it looked as if a hill had been formed. To this day, the site where the offerings were gathered is called Puʻu which is above the place named for Keolonāhihi."	from the moʻolelo of Kepakaʻiliʻula, (Malo 1919-1920, translated in Maly 1996:25)

2) What is the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action?

For inclusion in this FEA, consultation sections were redacted per Nohopapa's informed consent obligation to honor and respect consultees' Intellectual Property Rights

3) What feasible action(s), if any, should be taken to reasonably protect any identified cultural, historical, or natural resources, and exercise of traditional and customary native Hawaiian rights in the affected area

For inclusion in this FEA, consultation sections were redacted per Nohopapa's informed consent obligation to honor and respect consultees' Intellectual Property Rights

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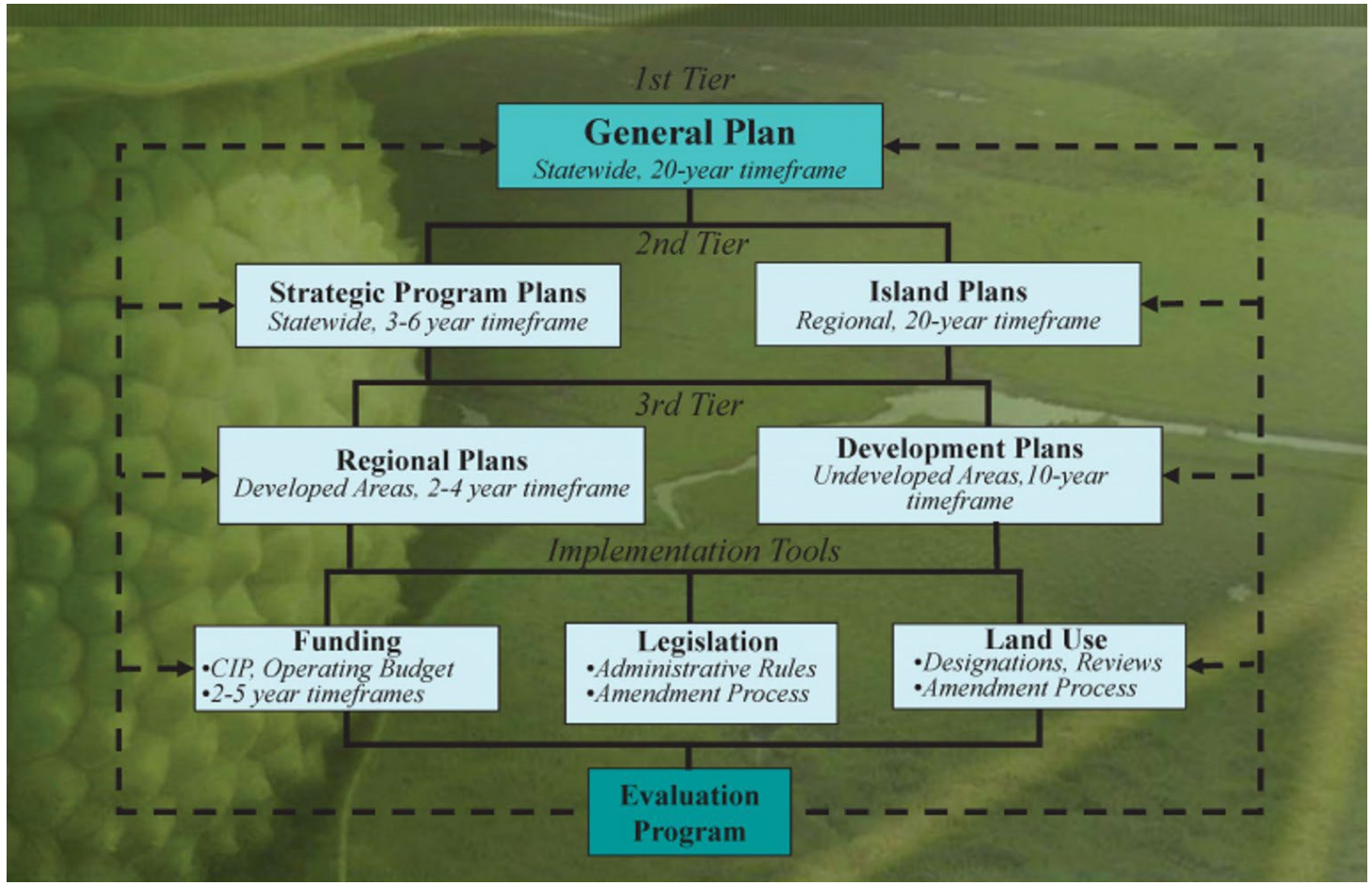
HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

Item G-4

STATUS UPDATE ON PLAN IMPLEMENTATION IN ʻEWA MOKU

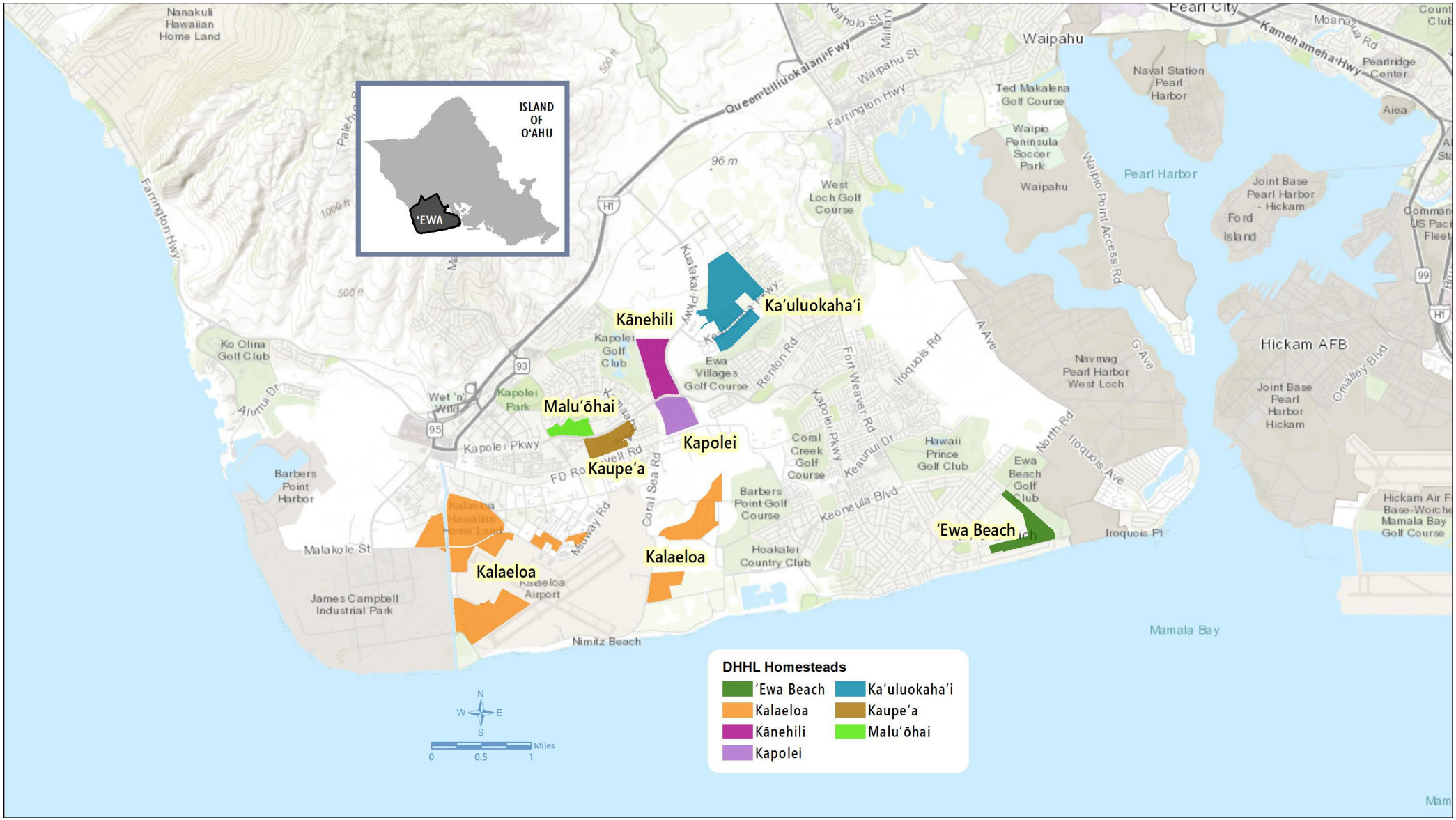
February 17-18, 2026



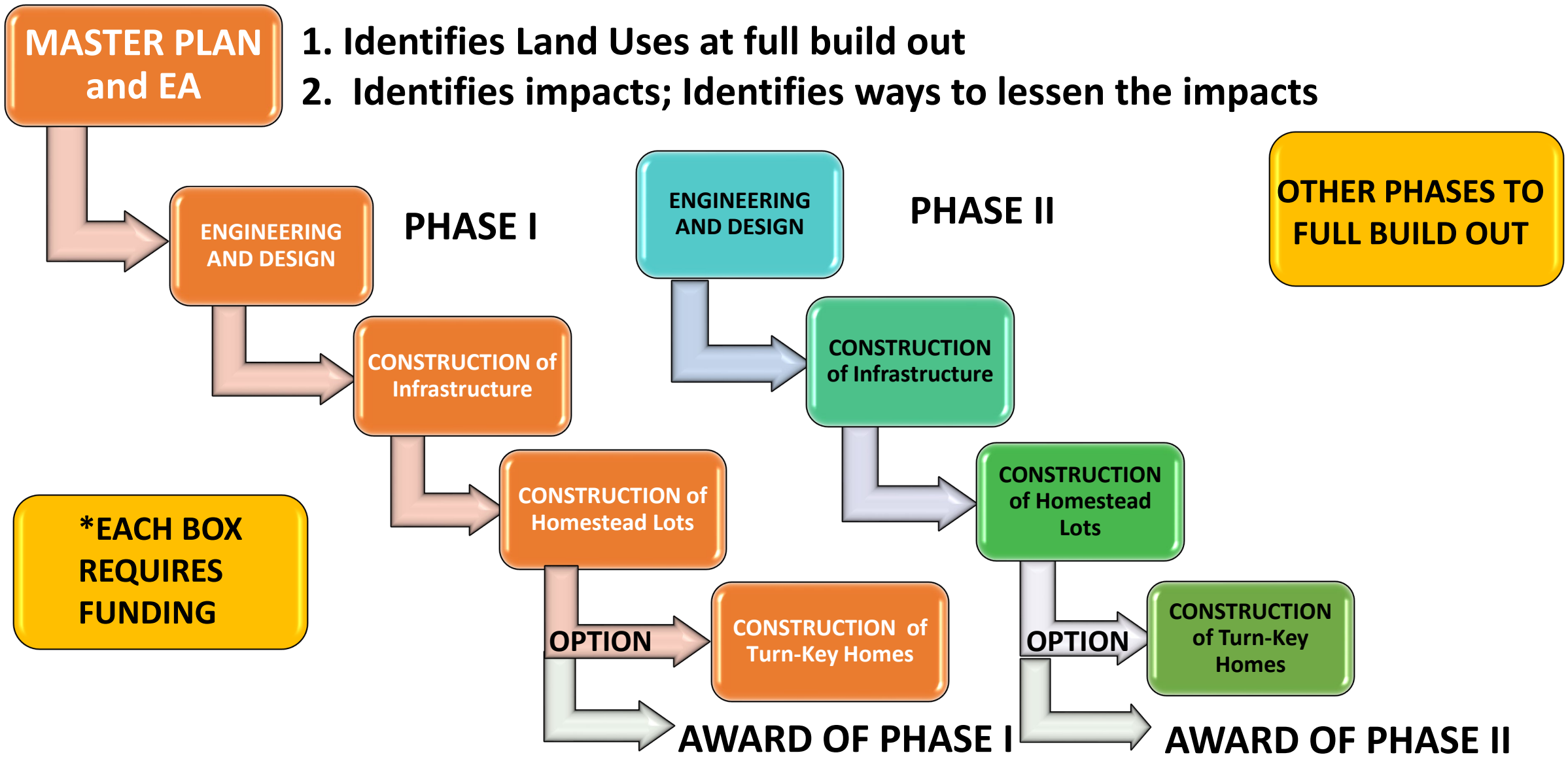
Purpose of DHHL Regional Plans:

- To enable the community to be involved in planning for their region
- To assist the community with identifying and prioritizing projects within the region
- To identify detailed action steps needed to implement the priority

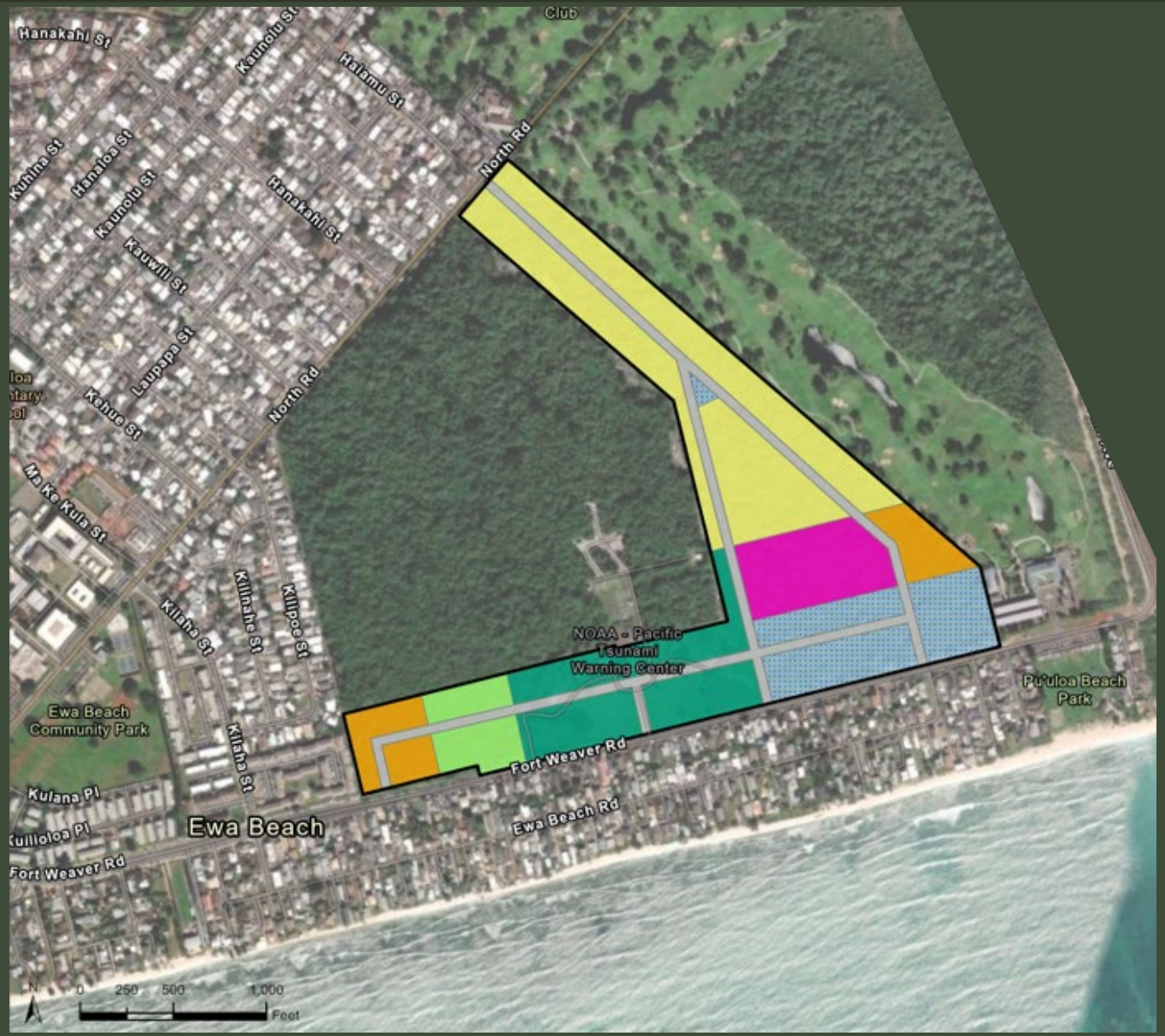
DHHL ʻEWA MOKU



Homestead Development Process



‘EWA BEACH HOMESTEAD MASTER PLAN AND EA



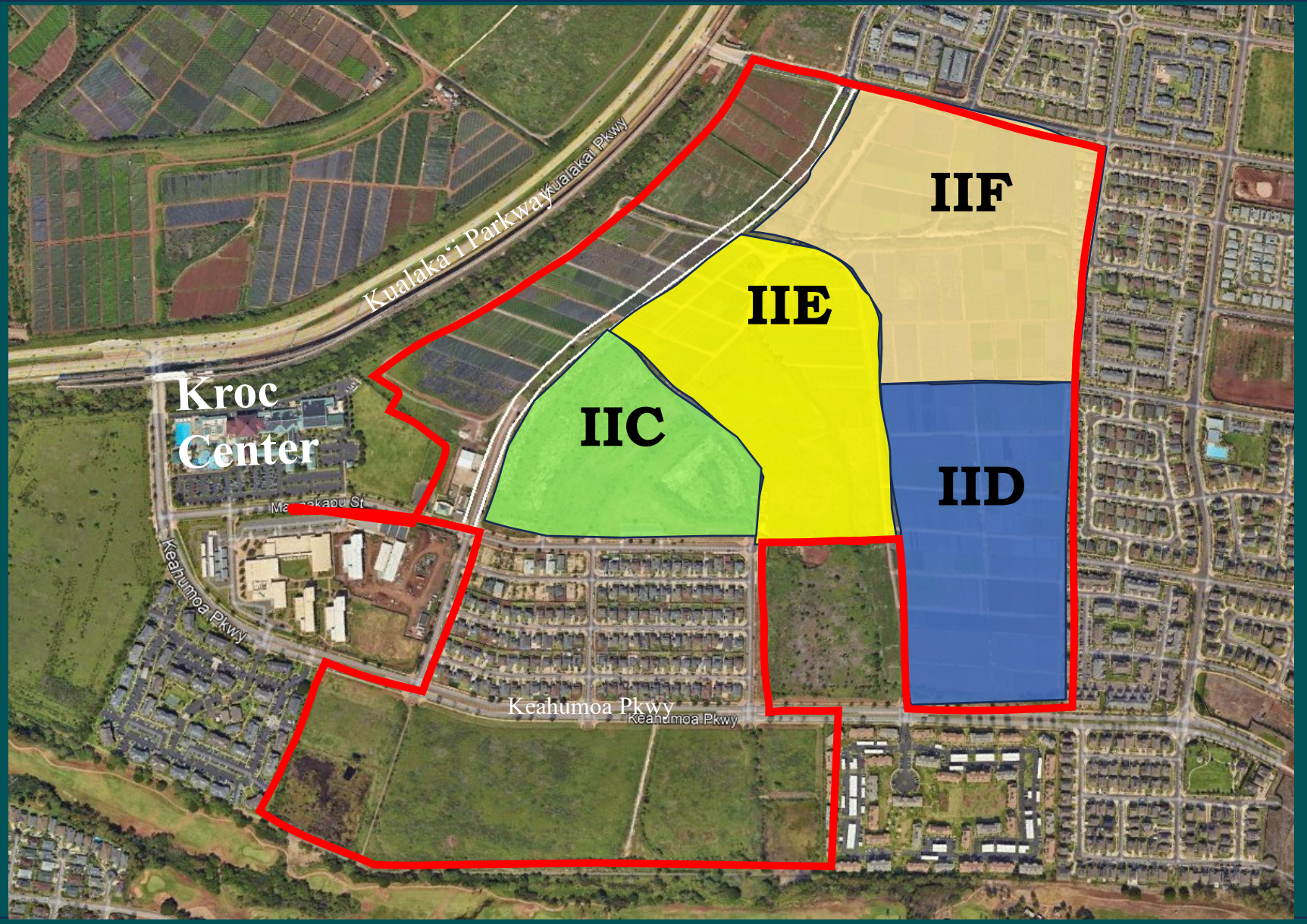
80 Acres

380 single-family & multi-family units

LEGEND

- Residential (single-family)
- Residential (multi-family)
- Community Use
- Community Agriculture
- Stewardship
- Open Space/Drainage
- Roads

KA‘ULUOKAHA‘I



PHASE I:
420 lots

PHASE II:
250 lots

EAST KAPOLEI II-A

II-A:
400-500 lots

KAUPE‘A PHASE 2

Kaupe‘a Phase 2:
9.1 acres
60 single-family lots

Upcoming meeting to discuss planned common space at Kaupe‘a Phase 2

HALE O KUMUMAMO

Formerly referred to as **Yorktown Rehabilitation Project**

- **DHHL-owned** 20-unit building, Kalaeloa
- **18-units temporary transitional housing** laundry room, shared meeting area, an office for the site's property manager, and outdoor spaces for cultural programming and community gardens
- For **native Hawaiian beneficiaries on the DHHL Waiting List**
- DHHL's **first in-house building permit signed** on September 30, 2024
- Project costs stand at nearly **$6.3 million**
- **Blessing** completed in December 2025
- **Move-ins** are anticipate for early 2026

2022 Kapolei Regional Plan Update

VISION STATEMENT

"From the Puʻu in the uplands to the shores of Kualakaʻi, Kapolei is a growing region that looks to its history, moʻolelo, ʻāina and kūpuna to build a strong foundation for our Hawaiian homestead communities. Kānaka embrace the area's rugged climate and terrain, which motivates them to be resilient and self-sufficient. The wahi pana and kīpuka of this place are celebrated and stewarded for future generations."

PRIORITY PROJECTS

PRIORITY PROJECT	ACTION STEPS	REQUIRED RESOURCES/STATUS
Provide More Options for Quality Telecommunications Service to Homesteads	➢ Document service issues ➢ Participate in meetings and consultations	➢ Assistance and coordination as needed. ➢ In January 2022, DHHL notified their lessees that current Sandwich Isles Communications customers may now choose to use their existing service or select services from other providers. ➢ Status: Complete.
Create More Open Spaces, Park Spaces, and Recreation Spaces to support the Homestead Community	➢ Community partnership with DHHL for open space/park development ➢ Request for Right of Entry permit for due diligence studies ➢ Master/Special Area Plan & HRS Chapter 343 Compliance ➢ Issuance of Finding of No Significant Impact ➢ Long-term disposition ➢ Planning & Permitting ➢ Design & Construction ➢ Operation & Maintenance	➢ Technical Assistance ➢ Funding (Planning, Design & Construction) ➢ HHC Approval ➢ Kānehili Community Association (KCA) park Phase I opened for use in July 2020. For Phase II for the park, KCA received a $100,000 DHHL grant in December 2022 ➢ Kaupeʻa Phase II development is planned to include area for a small park/open space to serve the community ➢ Status: In-progress.

PRIORITY PROJECTS (continued)

PRIORITY PROJECT	ACTION STEPS	REQUIRED RESOURCES/STATUS
Support the Heritage Center and Community Commercial Development	➢ Completion of Ho‘omaka Marketplace for revenue generation ➢ Permitting ➢ Design & Construction ➢ Monitoring & Reporting	➢ Technical Assistance ➢ Funding (Planning, Design & Construction) ➢ Ho‘omaka Marketplace Phases I-III are completed. Opening ceremonies occured in late 2023. ➢ Phase IV of Ho‘omaka Marketplace is still underway. ➢ The Kapolei Heritage Center/Kapolei Community Development Corporation (KCDC) is currently in planning & design for Phases II & III. ➢ As a part of the 2018 Puwalu $2.5M was set aside to assist with construction of the parking lot at the Kapolei Heritage Center. ➢ In 2024, KCDC received three DHHL grant awards totaling over $400,000+ to support their programs and projects. ➢ Status: In-Progress.

PRIORITY PROJECTS (continued)

PRIORITY PROJECT	ACTION STEPS	REQUIRED RESOURCES/STATUS
Create a Kūpuna Living Community	➢ Identify potential locations ➢ Due diligence studies ➢ Master/Special Area Plan & HRS Chapter 343 Compliance ➢ Issuance of Finding of No Significant Impact (FONSI) ➢ Planning & Permitting ➢ Design & Construction ➢ Operation & Maintenance	➢ Technical Assistance ➢ Funding (Planning, Design & Construction) ➢ HHC Approval ➢ Status: Not started.
Support the Development of a Hawaiian-Focus School/Hawaiian Immersion School	➢ Partner with DHHL, City & State agencies, other organizations ➢ Identify potential locations ➢ Secure site control ➢ Planning & Permitting ➢ Design & Construction ➢ Program implementation ➢ Operation & Maintenance ➢ Monitoring & Reporting	➢ Technical Assistance ➢ Funding (Planning, Design & Construction) ➢ KCDC began due diligence for a new preschool in Kapolei. DHHL provided assistance regarding the status of the Air Installations Compatible Use Zones that impact the area. ➢ Status: Not started.

Mahalo

DEPARTMENT OF HAWAIIAN HOME LANDS

www.dhhl.hawaii.gov

Hawaiian Homes Commission Meeting
Packet February 17 & 18, 2026
Hale Pono‘ī, Kapolei, Oahu

J ITEMS

HAWAIIAN HOMES COMMISSION
Wednesday, February 18, 2026
J Agenda

J-1 James Maioho – Emergency Transition Pilot Concept
J-2 Kalaniakea Wilson, John McBride, Kepa Kaeo - Koa Kiai Aina Mauna Legacy Mauna Kea Program
J-3 Germaine Toguchi – Kaupeʻa Concerns
J-4 Louis Vera Cruz – Lease Transfer
J-5 Yama Kaholoaa – Property Taxes
J-6 Annie Aea – Homestead Concerns
J-7 Kapua Keliikoa-Kamai – Waianae Homestead
J-8 Iwalani McBrayer – Kaupeʻa Homestead
J-9 Kainoa MacDonald – SCHHA Mokupuni Council
J-10 Kekoa Enomoto – Paʻupena Community Development Corporation
J-11 Homelani Schaedel – Malu'ōhai
J-12 Jojo Tanimoto – Kawaihae Homestead Issues
J-13 De Mont Manaole – Various Concerns
J-14 Hiwahiwa Kaheaku, Danelle Medeiros – Nanakuli Lease Concern
J-15 Kenna Stormogipson – Waipouli Courtyards

J-1

KIA'I IWI ALAKA'I
James J K C Maioho
Kahu of Mauna Ala | Founder, Kiai Iwi Alakai
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Emergency, Transitional, and Stewardship Homesteading on Hawaiian Home Lands

A Multi-Track Pilot Program Framework for the Department of Hawaiian Home Lands (DHHL)

Prepared for: Office of Hawaiian Affairs, Coalition Partners, and the Hawaiian Homes Commission

Prepared by: James J. K. C. Maioho

Date: January 2026

EXECUTIVE SUMMARY

The Department of Hawaiian Home Lands (DHHL) is increasingly compelled to address homelessness, unauthorized occupancy, and beneficiary destabilization through enforcement-driven and ad hoc responses. These actions occur without a formal emergency or transitional framework, exposing the Hawaiian Homes Commission to legal risk, eroding trust credibility, and diverting DHHL from its core rehabilitation mission.

Statewide policy has shifted. The Governor now publicly emphasizes “Kauhale” village initiatives as a central homelessness strategy, validating land-based, community-centered solutions. Internally, DHHL itself approved the 2024 Indigent Native Hawaiian Homesteading Pilot Project for DeMont Kalai Manaole in Lualualei, establishing precedent that limited dispositions and rights-of-entry can lawfully place indigent

beneficiaries on land for experimental homesteading.

This white paper integrates those developments and proposes a unified, multi-track response: the creation of a Commission-authorized Emergency, Transitional, and Stewardship Homesteading Pilot Program. The proposal establishes three interlocking pilot tracks—Emergency Occupancy Pilot (EOP), Transitional Homesteading Pilot (THP), and Stewardship Access Pilot (SAP)—designed to transform isolated experiments and enforcement pressures into a structured, culturally grounded, trust-based framework capable of stabilizing families, gathering data, protecting the trust, and informing permanent policy.

I. THE STRUCTURAL PROBLEM FACING DHHL

DHHL's statutory operating model emphasizes long-range subdivision development, infrastructure installation, and permanent lease awards. While essential, this pipeline cannot respond to emergency displacement, homelessness, or acute beneficiary distress. Consequently, DHHL is increasingly pushed into enforcement management, informal tolerance decisions, and crisis intervention.

These responses function as informal pilots without consistent authority, cultural governance, reporting requirements, or policy coherence. This environment reveals a structural gap: DHHL lacks an emergency or transitional homesteading framework aligned with its rehabilitation mandate under the Hawaiian Homes Commission Act (HHCA).

II. STATE KAUHALE INITIATIVES AND THE TRUST GAP

The Governor's emphasis on Kauhale villages confirms statewide recognition that land-based, community-centered solutions are now legitimate public policy tools. Kauhale initiatives demonstrate that stabilization can precede permanent housing, that collective village models are viable, and that culturally informed environments improve outcomes.

However, Kauhale initiatives operate primarily on state or municipal lands under executive authority. They are not grounded in the Hawaiian Homes Commission Act, are not governed by beneficiaries, and do not arise from trust land obligations.

This creates a trust gap. If Kauhale villages are acceptable public policy on state land, emergency and transitional homesteading must be developed as trust policy on Hawaiian Home Lands. DHHL beneficiaries remain without a comparable pathway on their own

lands.

III. THE 2024 MANAOLE PILOT AS OPERATIONAL PRECEDENT

In December 2024, the Hawaiian Homes Commission approved the Indigent Native Hawaiian Homesteading Pilot Project by granting DeMont Kalai Manaole a limited right-of-entry to steward and inhabit a two-acre parcel in Lualualei. The Commission framed the initiative as a pilot to test feasibility, procedures, and benchmarks for indigent beneficiaries unable to access traditional homesteads.

This action established key precedents: DHHL can lawfully place indigent beneficiaries on land through limited dispositions; stewardship-based occupation is feasible; and experimental homesteads can inform future policy.

However, the Manaole pilot remains site-specific, individual-based, and time-limited. It does not yet constitute a scalable program, establish eligibility standards, or create governance and reporting systems. This proposal institutionalizes those lessons into a comprehensive pilot framework.

IV. TRUST RESPONSIBILITY AND LEGAL FOUNDATIONS

The Hawaiian Homes Commission Act (1920, as amended) mandates the rehabilitation of Native Hawaiians. Rehabilitation encompasses housing, health, stability, cultural grounding, and community restoration—not solely mortgage-based homeownership.

Under the HHCA and Hawai‘i Revised Statutes Title 10, DHHL already exercises authority relevant to pilot implementation, including:
- Revocable permits and licenses
- Rights-of-entry for land management and use
- Interim land dispositions and management agreements
- Commission-directed land stewardship actions
- Rulemaking authority to establish programs and conditions

A Commission-authorized pilot program does not require new constitutional authority. It provides lawful structure to authorities DHHL already exercises, while ensuring transparency, consistency, and protection of trust assets. Legal review should reference HHCA §§202–208, HRS Chapters 171 and 26H, and existing DHHL administrative rules governing land management, dispositions, and beneficiary services.

V. WHY A FORMAL MULTI-TRACK PILOT IS REQUIRED

Without a formal pilot, DHHL faces inconsistent enforcement practices, heightened liability exposure, reputational harm, and cultural injury. A structured pilot allows the Commission to define scope, eligibility, safeguards, cultural protocols, and reporting obligations while developing data-driven policy.

A multi-track approach recognizes that homelessness and displacement are not single-condition problems. Emergency stabilization, transitional rebuilding, and long-term stewardship require different tools operating within one coordinated framework.

VI. THE THREE-PILOT STRUCTURE

A. Emergency Occupancy Pilot (EOP)

Purpose: Immediate stabilization of unhoused or imminently displaced Native Hawaiian individuals and families.

Features:
• Short-term, conditional occupancy
• Placement on designated DHHL emergency parcels
• Health, safety, and cultural compliance protocols
• Service coordination partnerships
• Strict reporting and review timelines

Legal basis: Revocable permits, emergency ROEs, Commission-directed interim use authority.

Outcome: Prevent loss of life, stabilize families, transition participants into THP or permanent pathways.

B. Transitional Homesteading Pilot (THP)

Purpose: Provide medium-term land-based rebuilding environments for beneficiaries capable of self-development, cultural stewardship, and transition planning.

Features:
• 12–36 month conditional homesteading

• Self-build, subsistence, and cultural practice integration
• On-site stewardship governance
• Formal development planning requirements
• Measurable rehabilitation benchmarks

Legal basis: Stewardship agreements, conditional dispositions, pilot homestead instruments.

Outcome: Prepare families for permanent homesteads, reduce long-term dependency, document effective models.

C. Stewardship Access Pilot (SAP)

Purpose: Establish kanaka-led stewardship zones on underutilized DHHL lands to restore cultural practice, mālama ʻāina capacity, and beneficiary presence.

Features:
• Cultural and environmental stewardship assignments
• Non-residential or limited residential access
• Training, food security, and restoration projects
• Pipeline into THP or permanent leases

Legal basis: Access permits, stewardship MOUs, land management agreements.

Outcome: Restore beneficiary relationship to land, prevent illegal occupancy, generate land readiness.

VII. GOVERNANCE AND OVERSIGHT MODEL

The pilot program shall operate under layered governance:

• Hawaiian Homes Commission: Authorization, oversight, annual evaluation.
• Permitted Interaction Group (PIG): Program design, rule recommendations, parcel vetting, and reporting architecture.
• DHHL Administration: Operational management, compliance, interagency coordination.
• On-site Stewardship Councils: Cultural governance, daily management, dispute resolution.

• Coalition Partners and OHA: Cultural oversight, beneficiary advocacy, service alignment, evaluation.

This structure ensures accountability, cultural grounding, and Commission protection.

VIII. IMPLEMENTATION TIMELINE (2–3 YEAR PILOT)

Phase 1 (0–6 months): Establish PIG, legal review, identify parcels, design pilot instruments, community consultation.

Phase 2 (6–12 months): Launch EOP sites, initiate SAP zones, begin data collection.

Phase 3 (12–24 months): Expand THP placements, refine governance protocols, interim evaluation report.

Phase 4 (24–36 months): Full evaluation, statutory and administrative recommendations, transition successful participants, Commission decision on permanent program adoption.

IX. PERFORMANCE METRICS AND REPORTING

Metrics should include:
• Number of individuals stabilized
• Length of successful occupancy
• Health and safety indicators
• Cultural participation measures
• Transition rates to permanent housing
• Land stewardship outcomes
• Cost avoidance relative to enforcement
• Community impact assessments

Quarterly reporting to the Commission is recommended.

X. RISK MANAGEMENT AND SAFEGUARDS

Safeguards shall include:
• Defined occupancy caps
• Environmental protections
• Cultural conduct standards
• Compliance monitoring

• Clear termination and appeal procedures
• Insurance and liability coverage
• Independent evaluation participation

XI. ROLE OF OHA AND COALITION PARTNERS

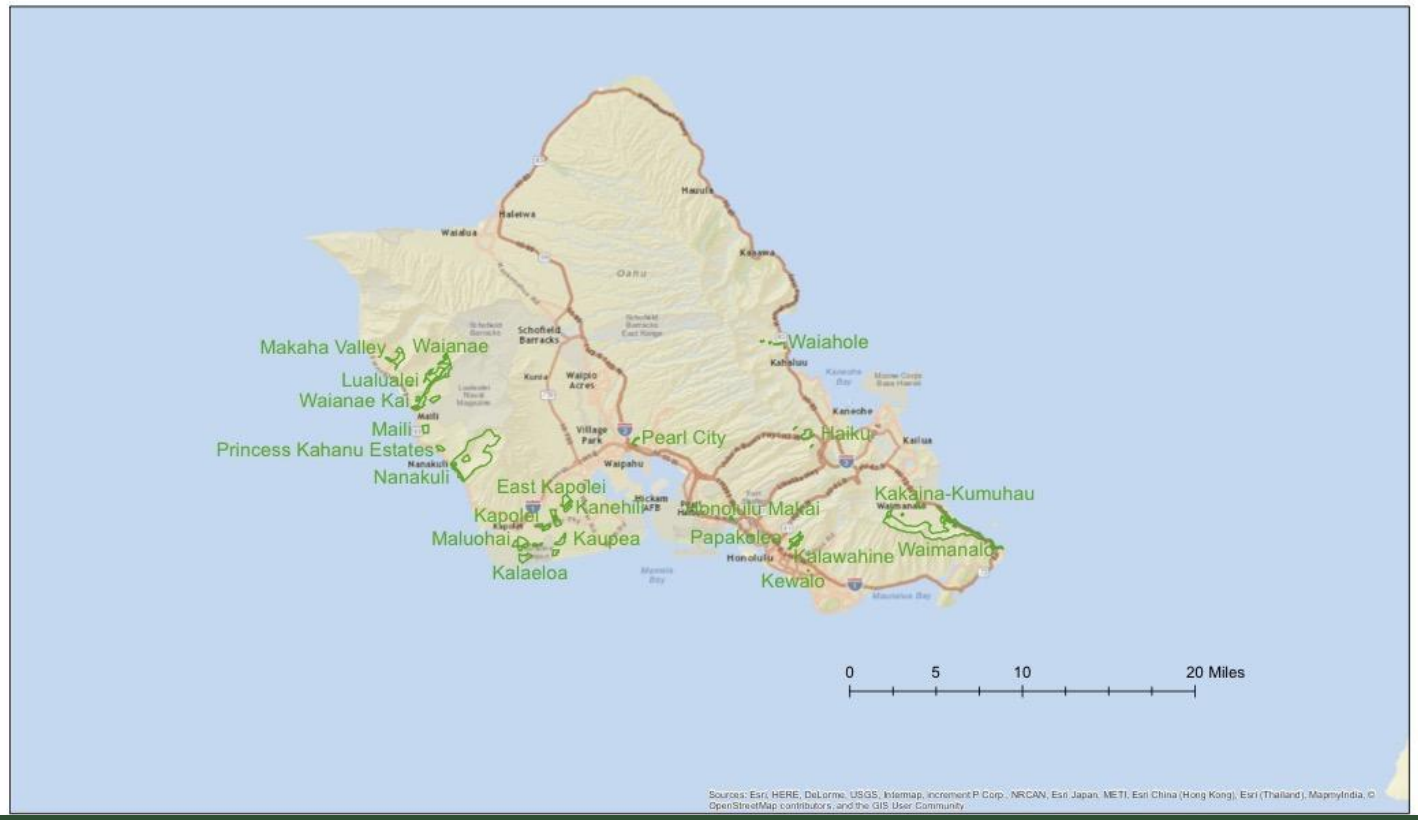
OHA and coalition partners may support cultural governance, beneficiary advocacy, supportive services, funding alignment, workforce development, and evaluation. Formal MOUs are recommended.

XII. CONCLUSION

The State's embrace of Kauhale villages and DHHL's Manaole pilot confirm that land-based solutions are viable. What remains is to transform isolated actions into structured trust policy. This multi-track pilot framework offers DHHL the opportunity to lead with cultural authority, lawful design, and strategic vision—transforming enforcement into stewardship and crisis into rehabilitation.

Kia‘i Iwi Alaka‘i
DHHL Emergency & Transitional Homesteading Initiative

DHHL Lands – Oahu Service Areas



Emergency, Transitional & Stewardship Homesteading

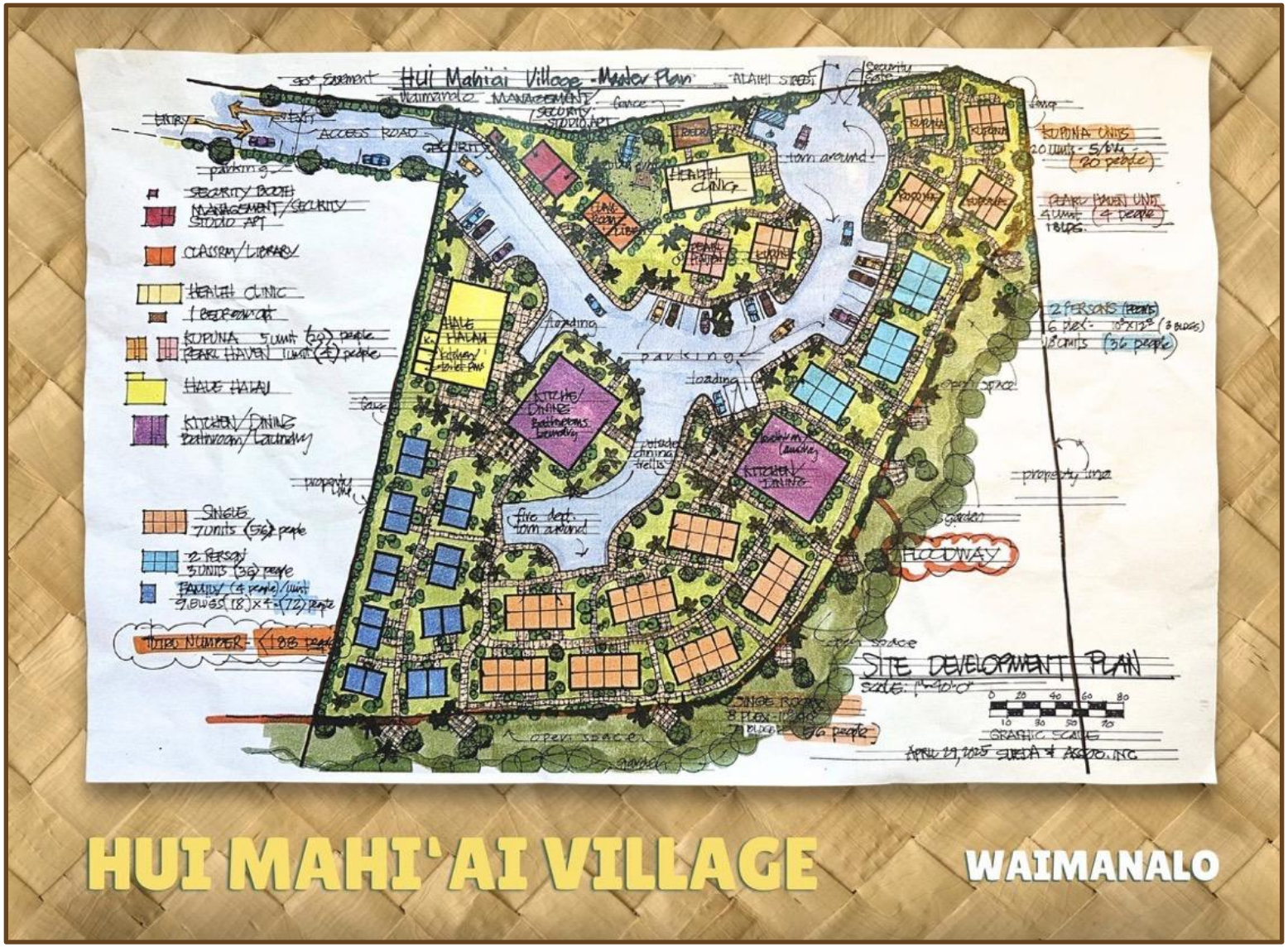
- DHHL Multi-Track Pilot Program Framework
- Presented by James J. K. C. Maioho
- Kia‘i Iwi Alaka‘i

The Structural Problem

- • Enforcement-driven responses rising
- • Unauthorized occupancy increasing
- • No emergency homesteading framework
- • Trust mission strained
- • Legal and reputational exposure

State Policy Shift – Kauhale

- • Governor prioritizing Kauhale villages
- • Land-based stabilization validated
- • Community village model working
- • Cultural environments improve outcomes


Hui Mahi'ai Village - Master Plan
SITE DEVELOPMENT PLAN
HUI MAHI'AI VILLAGE
WAIMANALO

Kauhale Village Housing Units

OHA Support – Kauhale Program Funding

The Trust Gap

- If Kauhale works on State Land —
- Emergency homesteading must exist on Hawaiian Home Lands.

Operational Precedent – Manaole Pilot

- • Commission approved Right-of-Entry
- • Indigent beneficiary placement
- • Stewardship homesteading proven
- • Legally feasible model
- • Not yet scalable

Legal Authority Already Exists

- • Revocable permits
- • Rights-of-entry
- • Interim dispositions
- • Stewardship agreements
- • Rulemaking authority

Why a Pilot is Needed

- Without structure:
- • Inconsistent enforcement
- • Liability exposure
- • Cultural harm

- With pilot:
- • Safeguards
- • Data
- • Policy pathway

Three-Track Pilot Framework

- 1. Emergency Occupancy Pilot
- 2. Transitional Homesteading Pilot
- 3. Stewardship Access Pilot

Emergency Occupancy Pilot

- • Immediate stabilization
- • Short-term placements
- • Emergency parcels
- • Service partnerships
- • Health & safety compliance

Transitional Homesteading Pilot

- • 12–36 month placements
- • Self-build opportunities
- • Subsistence living
- • Development planning
- • Rehabilitation benchmarks

Stewardship Access Pilot

- • Cultural stewardship zones
- • Restoration projects
- • Food security
- • Training pipelines
- • Land readiness

Governance Structure

- • Hawaiian Homes Commission
- • Permitted Interaction Group
- • DHHL Administration
- • Stewardship Councils
- • Coalition Partners & OHA

Implementation Timeline

- Phase 1 – Design & parcel selection
- Phase 2 – Emergency launch
- Phase 3 – Transitional expansion
- Phase 4 – Evaluation & codification

Performance Metrics

- • Individuals stabilized
- • Transition rates
- • Cultural participation
- • Stewardship outputs
- • Cost avoidance

Closing Vision

- From Enforcement → Stewardship
- From Crisis → Rehabilitation
- Commission authorization requested.

From State Kauhale to Trust Responsibility

- Kauhale villages demonstrate that village-style stabilization works.

- The policy question before the Commission:

- If emergency village housing is viable on State lands —
- shouldn't beneficiaries have the same pathway on Hawaiian Home Lands?

From: John McBride
To: Burrows-Nuuanu, Leatrice W
Cc: Kalani Kea Wilson; Kepa Kaeo; Michael Kaleikini
Subject: [EXTERNAL] Request to be placed on F-Agenda
Date: Tuesday, February 3, 2026 9:58:36 AM

Aloha Leah,

February 17, 2026. F Agenda Presentation - Koa Kiai Wait-lister Aina Mauna Legacy Maunakea Program

As a DHHL priority project Aina Mauna Legacy we are formally requesting to be placed on the F- Agenda on February 17, 2026, to present a power point for 15 minutes to the Hawaiian Homes Commission for approval to begin developing and managing C1 and P1 in the Aina Mauna Legacy.

Mahalo,

Kalani Kea Wilson
Kepa Kaeo
John McBride

Sent from my iPhone

I/we Kaʻūmana Homestead supports the Beneficiary Trust Council, Kanaka Rangers, and Koa Kiai collaboration and advocacy work for the waitlisters representing the waitlisters the past ten years at DHHL meetings. We support and have witnessed their volunteer service to protect natural and cultural resources and managment work on Maunakea this past decade. We support their proposed business plan to continue their pono managemnent practices sharing with the community of beneficiaries as a whole in C1 and P1 of the Aina Mauna Legacy. We Kaʻūmana Homestead whole heartedly support BTC, Kanaka Rangers, Koa Kiai, the waitlisters and their project initiatives at Humuula to improve management of Maunakea to move the lahui forward.

Duncan K. Seto Board Chair

Aloha, My name is Keone Kalawe

Kupuna Advisory council for the
Kanaka Ranger
waitlisters and waitlister advocacy.

Puna supports the advocacy, consultation,
and work to manage Maunakea natural
and cultural resources from Hale o Kuhio
and the Kanaka Ranger program
that began in 2014 to the present. This
letter is to support economic sustainability
for C1 and P1 located in the Aina
Mauna legacy plan.

10/19/2025 Keone Kalawe

Keone Kalawe

Maku'u Farmers Hawaiian Homestead Association
15-2131 Kea'au-Pāhoa Rd. unit A14
Pāhoa, HI 96778

I/we_Maku'u Farmers Hawaiian Homestead Association_ supports the Beneficiary Trust Council, Kanaka Rangers, and Koa Kiai collaboration and advocacy work for the waitlisters representing the waitlisters the past ten years at DHHL meetings. We support and have witnessed their volunteer service to protect natural and cultural resources and management work on Maunakea this past decade. We support their proposed business plan to continue their pono-management practices sharing with the community of beneficiaries as a whole in C1 and P1 of the Aina Mauna Legacy. We _Maku'u Farmers Hawaiian Homestead Association__ whole heartedly support BTC, Kanaka Rangers, Koa Kiai, the waitlisters and their project initiatives at Humuula to improve management of Maunakea to move the lahui forward.

No ka lā hui,

10/20/2025

Melekahana Kekahuna
Secretary of Maku'u Farmers Hawaiian Homestead Association

Aloha,

This letter is to support the efforts of the B.T.C. Koa Kiai and Kanaka Rangers work on Maunakea over the past decade.

I/we TRUSTEE DAN AHUNA supports the Beneficiary Trust Council, Kanaka Rangers, and Koa Kiai collaboration and advocacy work for the waitlisters representing the waitlisters the past ten years at DHHL meetings. We support and have witnessed their volunteer service to protect natural and cultural resources and managment work on Maunakea this past decade. We support their proposed business plan to continue their pono managemnent practices sharing with the community of beneficiaries as a whole in C1 and P1 of the Aina Mauna Legacy. We KAUA'I whole heartedly support BTC, Kanaka Rangers, Koa Kiai, the waitlisters and their project initiatives at Humuula to improve management of Maunakea to move the lahui forward.

OHA TRUSTEE KAUAI

Gmail

KepaKekoa kaeo <kepakekoa@gmail.com>

Letter of support for Koa Kia'i

1 message

Kauilani Almeida <panaewahhlca@gmail.com> Fri, Nov 7, 2025 at 8:35 PM
To: KepaKekoa kaeo <kepakekoa@gmail.com>

To: HHC Chairman Watson and Members
From: Kauilani Almeida, PHHLCA President
Re: Support letter for Koa Kia'i

As a native Hawaiian beneficiary organization our native culture, aina, and its natural resources are important to us.

The goals of this coalition align closely with ours. Concern dear to our hearts is the preservation and protection of our beloved Mauna Kea. Thus, we wholeheartedly support their endeavors.

Also, please assist the coalition to forward their plans and advocacy to the next steps to better conditions of native Hawaiian beneficiary lessees and wait listers. Imua.

Outlook

[EXTERNAL] Fwd: As the interim Ike ha'i of Komike O Kūpuna Ainahoopulapula ...a native Hawaiian Organization (NHO)

From Kalaniakea Wilson <kupaaiwialoha@gmail.com>
Date Thu 10/23/2025 10:40 AM
To Davis, Kiley M <kiley.m.davis@hawaii.gov>

Sent from my iPhone

Begin forwarded message:

> **From:** Pat Kahawaiolaa <kcaiprez@gmail.com>
> **Date:** October 22, 2025 at 5:59:03 PM HST
> **To:** Kalaniakea Wilson <kupaaiwialoha@gmail.com>
> **Subject: As the interim Ike ha'i of Komike O Kūpuna Ainahoopulapula ...a native Hawaiian Organization (NHO)**
>
> SUPPOT FOR BENEFICIARY TRUST COUNCIL
>
> As the interim Ike ha'i of Komike O Kūpuna Ainahoopulapula ...a native Hawaiian Organization (NHO) and a native Hawaiian organization representing Kupuna on the Trust lands of the HHCA, 1920 and those native Hawaiian beneficiaries ... still languishing on the DHHL WAIT LIST ... for over 45+ years...
>
> Be hereby SUPPORT THE BENEFICIARY TRUST COUNSEL (BTC).... Whom we have witnessed the volunteer work, data collection and consultation with beneficiaries on the Big Island. Their network on Maunakea of the Koa Kiai, Kanaka Rangers, Beneficiary Trust Council, for the past 10 years. We support the ongoing work and efforts of these organizations that have been serving the Big Island the past 10 years. We hereby support the Koa Kiai, Kanaka Ranger, Beneficiary Trust Council expanding rehabilitation opportunities and access to the waitlisters...
>
> Aloha, Pat Kahawaiolaa, Advocate (KOKA)

I/we Ronald Kodani, Doreen Kodani supports the Beneficiary Trust Council, Kanaka Rangers, and Koa Kiai collaboration and advocacy work for the waitlisters representing the waitlisters the past ten years at DHHL meetings. We support and have witnessed their volunteer service to protect natural and cultural resources and managment work on Maunakea this past decade. We support their proposed business plan to continue their pono managemnent practices sharing with the community of beneficiaries as a whole in C1 and P1 of the Aina Mauna Legacy. We Ronald T. Kodani, Doreen Kodani whole heartedly support BTC, Kanaka Rangers, Koa Kiai, the waitlisters and their project initiatives at Humuula to improve management of Maunakea to move the lahui forward.

Ronald Kodani
Doreen Kodani

Vice-President Piihonua Homestead Association
Former President Piihonua Homestead Association

Aloha e na Komikina (Commission)

Hope that all of you are in good health and that you please accept this as a formal communication.

Our Royal Order of Kamehameha I has four distinguished and active na moku here on Mokupuni o Keawe. On behalf of Alii Aimoku O Mamalahoa Mamane Wong, Alii Aimoku O Kona Nainoa Perry, Alii Aimoku O Kohala Pomai Brown and Alii Aimoku O Puna Miki Kelii.

We wish to extend our unwavering support for Koa Kia'i and their mission to fulfill the objectives of the Hawaiian Homes Commission Act (H.H.C.A.) of 1921. Koa Kia'i, alongside the Beneficiary Trust Council and Kanaka Rangers, is dedicated to promoting self-sustainability in service to the existing beneficiaries currently on the "wait list" of the Hawaiian Homes program, reflecting a commitment to our shared values, goals and guiding principles.

Koa Kia'i's Vision

Koa Kia'i mission is to set forth a thriving Lāhui and to ensure that the State of Hawaii is held accountable by its fiduciary responsibilities and does not continue with its historical breaches of trust. Their mission aligns closely with the principles of the Royal Order of Kamehameha I, emphasizing cultural preservation, environmental stewardship, and community empowerment.

Objectives for Development

The Beneficiary Trust Council is focused on securing a lease for the properties TMK C2 and P1 located in the Aina Mauna, Humuula Homestead area. Koa Kia'i's goals include:

1. **Visitor Management and Education**
   - Develop a parking lot and educational infrastructure to manage visitors to Mauna Kea. This initiative will educate visitors on safety issues associated with driving to the summit and offer cultural walking tours that promote understanding of our heritage. This will also allow for future regulation needs upon over use and other inappropriate activity that will or has already occurred.

2. **Funding Opportunities**
   - Create sustainable funding mechanisms to ensure the effective management of Mauna Kea, safeguarding it for future generations. This is important to implement now, before it becomes an issue that other nationwide and statewide areas have already experienced. (Example: Hawaii Volcanoes' National Park eruption)

3. **Facilities Improvement**
   - Address the current lack of restroom facilities along the access road, which has led to detrimental waste disposal practices. The proposed facilities will enhance visitor experience while protecting the environment.

I/we Keaukaha [signature] supports the Beneficiary Trust Council, Kanaka Rangers, and Koa Kiai collaboration and advocacy work for the waitlisters representing the waitlisters the past ten years at DHHL meetings. We support and have witnessed their volunteer service to protect natural and cultural resources and managment work on Maunakea this past decade. We support their proposed business plan to continue their pono managemnent practices sharing with the community of beneficiaries as a whole in C1 and P1 of the Aina Mauna Legacy. We Kaakapua [signature] whole heartedly support BTC, Kanaka Rangers, Koa Kiai, the waitlisters and their project initiatives at Humuula to improve management of Maunakea to move the lahui forward.

[signature]

Keaukaha Community Association

4. Visitor Tracking and Management
- Implement systems for tracking visitor numbers and providing wash facilities for vehicles, thereby preventing the introduction of invasive species and protecting native flora and fauna.

Alignment with the Royal Order's Principles
Koa Kia'i's mission encapsulates the core values of the Royal Order of Kamehameha I by:

Promoting Cultural and Environmental Stewardship: Their educational initiatives and environmental management reflect a shared commitment to preserving our land and culture.

Empowering the Community: By focusing on self-sustainability and support for beneficiaries, Koa Kia'i uplifts our community and champions the rights and needs of Native Hawaiians. This promotes Kanaka overseeing Kanaka and Kamaina as well.

Advocating for Accountability: Their efforts to ensure the State's fiduciary duties are met resonate with our call for transparency and responsibility in managing as well as utilizing Hawaiian resources in our current living Kanaka culture and values. By allowing Kanaka to continue cultural/spiritual use of our valued resources, the desire to protect and cultivate those resources for future generation will self-regulate, that is the Kanaka way.

We respectfully urge the Department of Hawaiian Home Lands to grant Koa Kia'i the lease for TMK C2 and P1, empowering them to bring their vision to life and positively impact our community and environment. Please feel free to contact us for further discussion or knowledge.

Thank you for your consideration of this important initiative.

Warmest regards,

Ali'i Aimoku Wallace Wong, K.G.C.K.
Moku O Mamalahoa
Royal Order of Kamehameha I

Ali'i Aimoku Nainoa Perry, K.G.C.K.
Moku O Kona
Royal Order of Kamehameha I

Ali'i Aimoku Pomai Brown, K.G.C.K.
Moku O Kohala
Royal Order of Kamehameha I

Ali'i Aimoku Miki Kelii, K.G.C.K.
Moku O Puna
Royal Order of Kamehameha I

`Āina Mauna Legacy Program

Department of Hawaiian Home Lands

Ho`okuleana LLC

... to take responsibility ...

25 Kāne`ohe Bay Drive, Suite 212
Kailua, Hawai`i 96734
(808) 254-2223 (O`ahu)
(808) 329-4447 (Big Island)
www.Hookuleana.com

December 15, 2009

`Āina Mauna Legacy Program
Department of Hawaiian Home Lands

Ola ka `āina, ola ke kanaka
(Healthy/Living Land, Healthy/Living People)

The good of the land results in the good of the people.

Table of Contents

Executive Summary i
Brief Property Description 2
`Āina Mauna: Humu`ula, Pi`ihonua, Ka`ohe 2
Genealogical Accounts and Traditional Features 2
Historic Features 4
Archaeological Investigation 4
Site Assessment 4
`Āina Mauna Legacy Program 7
Summary of Priority Issues and Focus of the `Āina Mauna Legacy Program 8
Administration 8
Initial Immediate Actions 9
Natural and Cultural Resources 9
Rare and Endangered Flora/Fauna 9
Safe Harbor Agreements 10
Invasive Species Eradication 10
Prevent New Introductions and Control/Eradicate Existing Invasive Plant Species 10
Gorse 11
Unmanaged-Ungulates 12
Initiate Unmanaged-Ungulate Eradication over Entire Property 12
Homesteading 13
First Rural-Development Homesteads within Initial Homesteading Area 14
Pasture Uses (Consistent with Fire Plan – Additional Acreage) 17
Dispositions of Homestead and Pasture Leases, Licenses and/or RPs 18
Forests and Forestry Uses on the Site 18
Native Forest Restoration 19
Gorse Eradication – Recommended Method Using Commercial Timber 21
Initiate Gorse Eradication Utilizing Commercial Timber 21
Sustainable Koa Forestry 23
Koa Reforestation – Sustainable Koa Forest 23
Self-sustaining Funding with Reinvestment into the Property 24
Use of Humu`ula Sheep Station – Commercial Activities 24
Forest Products and Biomass for alternative energy opportunities (liquid fuel and electricity) 25
Ecotourism and Recreation Use 25
Disposition of Commercial Licenses/Leases Based on Broad Request for Proposal Process 26
State and Federal Grant Opportunities 27
Education and Research Opportunities 27
Education 28
`Āina Mauna Legacy Program Implementation Advisory Council 28
`Āina Mauna Legacy Program Implementation Advisory Council Membership 28
Leader and Model 29
`Āina Mauna Legacy Program Outreach Activities 29
Acknowledgements 30

Initial Immediate Actions 31
1. Form the `Āina Mauna Legacy Program Implementation Advisory Council 35
2. Initiate the First Rural-Development Homestead Area 35
3. Initiate the Humu`ula Sheep Station Adaptive Reuse Plan 37
4. Initiate Expanded Ecotourism Opportunities 38
5. Initiate Use of Remote Accommodations 38
6. Initiate Gorse Eradication 38
7. Investigate and Implement Additional Areas for Sustainable Koa Forestry Opportunities 40
8. Initiate a Set-Aside of Portions of the Property for Restoration and Enhancement Purposes 40
9. Pasture Uses (focused on fire fuel mitigation, consistent with Fire Plan – Additional Acreage) 41
10. Initiate Unmanaged-Ungulate Eradication Over Entire Property 42
11. Initiate State, Federal and Private Grant Applications to Support Resource Restoration 42
12. Initiate a Safe Harbor Agreement for threatened/endangered species over entire site 42
Organizational Structure of DHHL 43
Homestead Services Division 43
Land Development Division 43
Land Management Division 43
Administrative Services, Fiscal, Information and Community Relations, and Planning Offices 43
Strategic Plan 2007–2011 - Department of Hawaiian Home Lands 44
DHHL Homestead, Pastoral and Agricultural Leasing 45
Hawaiian Homes Commission Settlement Concerning Pastoral Leases 48
DHHL Energy Policy 51
Homestead, Pasture and Commercial Dispositions in the `Āina Mauna Legacy Program 56
Disposition of Homestead and Pasture (non-homestead) Leases, Licenses and/or RPs 56
Disposition of Commercial Agreements - RFQ and RFP 57
On-going - Long-Term Actions 59
General Administrative Activities 59
Unmanaged-Ungulate Eradication 59
Non-native Plant Control 59
Monitoring 59
Public Education and Volunteer Support 60
Enforcement 60
Water Development 60
First Rural-Development Homestead 61
On-going Invasive Species Control/Removal 61
Reforestation 61
Site Background 63
Location 63
Climate 64
Major Geographic and Geologic Features 64
Soils 64
Vegetation 68
Vegetation Sensitivity Analysis 70
Endangered and Threatened Species 73
Biological Sensitivity Analysis 75
Safe Harbor Agreements 77

Invasive Species 79
Gorse 80
Unmanaged-Ungulates 83
Banana Poka 90
Non-native Grasses/Weeds 90
Fireweed 90
Historic and Cultural Resources 91
Surrounding Land Uses 92
Road Infrastructure 93
Trails 93
Power and Communications 93
Water 93
Drainage 94
Springs 94
Potable Water Supply 94
Water History in the Area 95
Wastewater 96
Historical Overview of Settlement, Land Uses and Travel in the `Āina Mauna 97
Sequence of Hawaiian Settlement 97
Land Use Practices 98
Na `Āina e pili `ana iā Mauna Kea 99
Travel - Na Ala Hele o ka `Āina Mauna 100
Territorial Forestry and the Civilian Conservation Corps 101
Homesteading 104
Background/Enabling Legislation/DHHL Primary Purpose 107
Prior Planning Efforts Discussing Homesteading 108
Humu`ula Rural Villages and Landscape Restoration Plan 108
Initial Concept of Rural Villages 109
Humu`ula/Pi`ihonua Master Plan 111
Humu`ula Sheep Station - Adaptive Reuse 113
Summary of Adaptive Reuse of the Humu`ula Sheep Station Component 113
Site Description 114
Site History 114
Humu`ula Sheep Station Reuse Plan 116
Alternative Land Use Plans 116
Ecotourism and Recreation Use 119
Commercial Activity 120
Incompatible Uses 121
General Design Guidelines 121
Infrastructure Needs for Sheep Station Reuse 122
Ecotourism 124
Potential for Eco-Tourism 124
Diverse Array of Regional Assets and Activities 125
Ecotourism in Conjunction with Other Land Uses 126
Summary of Ecotourism Component Background 126
What is Ecotourism? 127
Types of Activities 129

Gorse Eradication 131
Commercial Timber 137
History of Commercial Forestry 137
Current Status of Hawai`i's Commercial forests 138
Forest Products and Biomass for Alternative Energy Opportunities 139
DHHL's Existing Gorse Containment Project 146
Multiple Benefits of Commercial Timber to Control Gorse 146
Carbon Offsets - Global Warming and Climate Change 148
Hawai`i Clean Energy Initiative 148
Sustainable Koa Forestry 150
Koa Salvage 151
Restoration/Reforestation of Remnant Koa Forest 153
Restoration of the `Āina Mauna Native Forest 155
Need for Consistency with Mission, Goals and Priority Issues 155
Wailuku River Watershed 160
Conservation Corridors/Easements 161
Pi`ihonua Mauka Conservation Plan 162
Expanded Opportunities for Gathering and Cultural Practices 165
Pasture Use to Assist Wildland Fire Management 166
Fire Management Units 169
Reduce Fire-Prone Shrubs and Other Hazardous Fuels 173
Pasture Uses to Address Wildfire Mitigation 173
Educational Opportunities and Employment 178
School Education 178
Research 181
Employment Opportunities 181
Partnerships 183
Invasive Species Control – Big Island Invasive Species Committee 183
Watershed Partnership – Mauna Kea Watershed Alliance 183
University of Hawai`i, Hilo – College of Agriculture, Forestry and Natural Resource Management 183
Timber Management 184
Mauna Kea Neighbors 184
Alternative Funding Sources 185
Preliminary Operating Budget 189
`Āina Mauna Legacy Program References 196
Feedback - Waimea Consultation Meeting - 09/23/09 200
Feedback - Hilo Consultation Meeting - 09/25/09 205
Feedback - Hilo (Keaukaha) Consultation Meeting - 10/14/09 210
Feedback - Beneficiary Email and Written Comments 219
Letters of Support 234

Department of Hawaiian Home Lands
`Āina Mauna Legacy Program
Executive Summary

In 1921, the federal government of the United States set aside as Hawaiian Homelands approximately 200,000-acres in the Territory of Hawai`i as a land trust for homesteading by native Hawaiians. The avowed purpose of the Hawaiian Homes Commission Act was returning native Hawaiians to the land in order to maintain traditional ties to the land.

The Hawai`i State Legislature in 1960 created the Department of Hawaiian Home Lands (DHHL) for the purposes of administering the Hawaiian home lands program and managing the Hawaiian home lands trust. The Department provides direct benefits to native Hawaiians in the form of homestead leases for residential, agricultural, or pastoral purposes. The intent of the homesteading program is to provide for economic self-sufficiency of native Hawaiians through the provision of land.

In turn, the mission of the DHHL Hawaiian Homes Commission as stated on its website is:

> "To manage the Hawaiian Home Lands trust effectively and to develop and deliver land to native Hawaiians. We will partner with others towards developing self-sufficient and healthy communities."

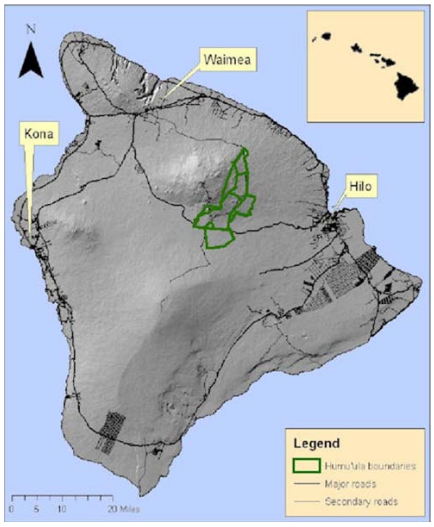
Enhancing the Legacy at Humu`ula/Pi`ihonua

DHHL is looking at its responsibility as a land manager not just to provide homes to its beneficiaries, but also to provide for the management and protection of native lands to support both cultural and resource management activities and create homesteading opportunities for the future.

DHHL seeks to restore portions of the Humu`ula/Pi`ihonua lands in perpetuity to conserve these native forests and natural habitats for future generations. In doing so the Department is looking beyond housing and into a more holistic approach for communities and land management.

DHHL believes that the Humu`ula/Pi`ihonua lands have the potential for serving as a sustainable native forest and land unit by simultaneously providing environmental, economic and social benefits to the trust and its beneficiaries, in perpetuity by linking traditional cultural knowledge and modern science.

Therefore, the `Āina Mauna Legacy Program is to be developed to take into consideration not only the immediate needs of the area, but also traditional cultural knowledge, and how best to manage the legacy for the area for future generations. By creating a sustainable plan for the area, the lands can be conserved and restored while also providing an economic resource for DHHL and its beneficiaries. The time commitment for the Legacy Program and restoration of the land is long term, essentially for the next 100-years and beyond.



`Āina Mauna Legacy Program Area

`Āina Mauna

`Āina mauna, or mountain lands, reflects a term used affectionately by elder Hawaiians to describe the upper regions of all mountain lands surrounding and including Mauna Kea.

Native Hawaiian traditions and historical accounts describe the lands of Humu`ula and neighboring Ka`ohe - those areas extending from shore to around the 6,000-foot elevation - as having once been covered with dense forests, and frequented by native practitioners who gathered forest-plant resources, birds and food. The larger `āina mauna were frequented by individuals who were traveling to the upper regions of Mauna Kea to worship, gather stone, bury family members, or deposit the piko (umbilical cords of newborn children) in sacred and safe areas; and by those who were crossing from one region of the island to another.

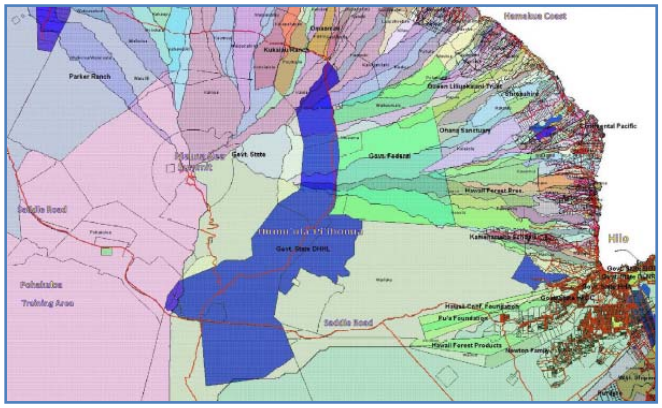
Historically, uses of the Humu`ula/Pi`ihonua lands were limited to managed sheep and cattle grazing. The introduction of cattle, sheep, goats and the proliferation of wild dogs on the `āina mauna is believed to have started as early as the 1820s. By 1850, the cultural and natural landscape had been significantly altered by roving herds of wild ungulates. Ranching interest, having become formalized, began to establish ranching stations and operations on the mountain lands. Thus, areas once forested soon became open pasture lands.

Parker Ranch held the longest ranching lease to the property, from the early 1900s to 2002, and their lease extended around Mauna Kea to the Pu`uhuluhulu vicinity. Initially, Parker Ranch invested in sheep ranching and then focused on cattle operations until the end of their lease with DHHL in 2002. Since 2002, when existing cattle leases expired, most of these lands have been inactive. Efforts to restore the land's productivity via gorse eradication/control, native bird corridors and koa forest restoration have begun in priority areas.

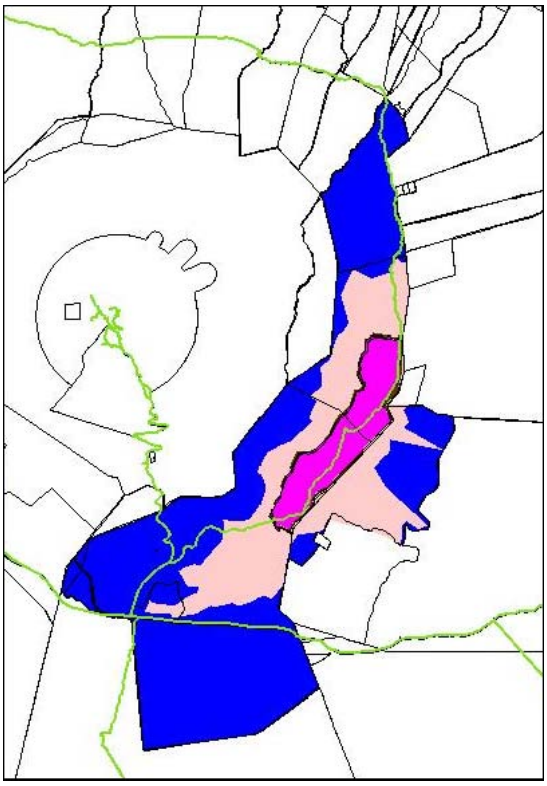
The Humu`ula/Pi`ihonua area is made up of approximately 56,200-acres owned by the Department of Hawaiian Home Lands located on the northeast slopes of Mauna Kea. The Humu`ula/Pi`ihonua lands are the largest contiguous parcel under jurisdiction of DHHL. The Humu`ula parcel is approximately 49,100-acres in size and the Pi`ihonua parcel, located adjacent to the eastern boundary of Humu`ula, is approximately 7,078-acres in size. `Āinahou, comprising approximately 11,124-acres, is the subsection of Humu`ula south of Saddle Road and is currently under license to the State of Hawai`i, Department of Land and Natural Resources.

The lands of Humu`ula are characterized by their isolation, high elevation, cool temperatures and lack of infrastructure (roads, potable water, telephone, power, etc.). The area is somewhat isolated with the closest public facilities (schools, hospitals, police and fire services) located in Hilo (25-miles and 40-minutes by car) and Waimea (30-miles and 55-minutes by car).

With elevations ranging from approximately 4,500-to 9,000-feet mean sea level, the lands experience cooler temperatures ranging from an annual mean of 58 °F at the 5,000-foot elevation to 45 °F at the 9,000-foot elevation, with frost conditions occurring during the winter months. Rainfall varies greatly over various portions from an annual mean of 45-inches in the upper elevations to 120-inches in the lower elevations near the Saddle Road.



DHHL Humu`ula-Pi`ihonua Lands in the `Āina Mauna



Map Noting Extent of Gorse Infestation
Blue – Humu`ula-Pi`ihonua Property
Salmon – Extent to gorse infestation
Pink – Gorse containment area

The vegetation is dominated by an understory of exotic pasture grasses over much of the lands with koa/`ōhi`a forest found in the lower portions of Pi`ihonua, especially in the lands adjacent to the Hakalau Forest National Wildlife Refuge. Scattered koa and māmane are found over the northern portions of Humu`ula with scattered māmane found in the upper elevations, especially adjacent to the Mauna Kea Forest Reserve. The vegetation on the `Āinahou lands generally consists of scattered scrub vegetation of `ōhi`a and native shrubs.

A significant vegetative feature on these lands is the gorse plant, a noxious weed which covers between 10,000 - 13,000-acres in the central portion of the Humu`ula lands. In high densities, this impenetrable shrub renders the land nearly useless. Because the gorse seeds remain viable in the soil for up to 70-years, the eradication strategy must be long-term and comprehensive in its approach. The need to eradicate gorse on the property cannot be overstated.

From a biological perspective the māmane forests are important in that they serve as a critical habitat for palila, an endangered native bird. Several endangered or threaten native bird species also are associated with the koa/`ōhi`a and koa/māmane forest areas. The `Āinahou lands, which serve as a public hunting and game reserve area, also serves as a refuge area for the Hawaiian goose (nēnē).

`Āina Mauna Legacy Program

The `Āina Mauna Legacy Program serves as a guide as DHHL moves forward in managing the Humu`ula/Pi`ihonua area to conserve its legacy for future generations while also serving as an economic resource. The Legacy Program is an extension of prior planning and activities at the site. Findings, recommendations, background information and other references from many of these prior documents are included and edited into this program.

The lands of Humu`ula and Pi`ihonua represent the most important native forest areas remaining in the DHHL trust. These lands provide a glimpse into the natural environment and native forests which are disappearing throughout the state. The area serves as valuable habitat to many native and endemic species. The area's proximity to Mauna Kea also makes it a valuable cultural resource. These lands have the potential for serving as a sustainable native forest and land unit by simultaneously providing environmental, economic and social benefits to the trust and its beneficiaries in perpetuity.

The `Āina Mauna Legacy Program incorporates prior planning efforts and serves as a policy framework related to the overall use and management of the property; the implementation process will occur after the Legacy Program is adopted. The following principles, areas of focus and goals serve as the foundation to the preparation and implementation of the `Āina Mauna Legacy Program.

<u>Legacy Program Mission</u>

The mission of the `Āina Mauna Legacy Program and its implementation is to protect approximately 56,000-acres of native Hawaiian forest that is ecologically, culturally and economically self-sustaining for the Hawaiian Home Lands Trust, its beneficiaries and the community.

Goals

Initial goals for the `Āina Mauna Legacy Program include:

Goal 1: Develop an economically self-sustaining improvement and preservation program for the natural and cultural resources (invasive species eradication and native ecosystem restoration) and implementation strategy.

The focus of the `Āina Mauna Legacy Program shall be on:

- Restoration and enhancement of DHHL trust resources;
- Identify immediate and future opportunities for DHHL beneficiaries;
- Removal of invasive species - gorse, etc.;
- Conserve natural and cultural resources and endangered species;
- Address reforestation and restoration of the ecosystem;
- Develop revenue generation, reinvestment in land to sustain activities;
- Provide educational and cultural opportunities;
- Identify and secure partners to sustain activities;
- Identify opportunities for alternative/renewable energy projects; and
- Be a lead and/or model for others to engage in ecosystem restoration in a culturally sensitive manner based on partnerships to develop a self-sustaining model

Goal 2: Develop an outreach program to gain interest, participation, and support from the Hawaiian Homes Commission, DHHL Staff, beneficiaries groups, cultural practitioners, natural resource scientists, and the broader community for the Legacy Program and its implementation.

Summary of Priority Issues and Focus of the `Āina Mauna Legacy Program

The ultimate long term goal for DHHL is an economically-sustainable, healthy native forest ecosystem at Humu`ula/Pi`ihonua. In achieving this goal, the `Āina Mauna Legacy Program will serve as a guide for managing existing and future activities and uses and to ensure ongoing protection of DHHL's trust property. In preparing the Legacy Program many prior studies and reports dealing with the Humu`ula/Pi`ihonua region were reviewed and incorporated into the Legacy Program.

The `Āina Mauna Legacy Program is a "living document" that is intended to be flexible and is subject to change, as times and needs change. Therefore, the program should be re-examined on a periodic basis (possibly every 5-years) to ensure that it addresses DHHL's needs in the future. The following is a list of immediate actions.

Immediate/Short Term Actions – Summary Listing

1. Form the `Āina Mauna Legacy Program Implementation Advisory Council
    a. The implementation process will include the Council, Beneficiary and community involvement and participation in advising the Department and Commission
2. Initiate the first rural-development Homestead Area (on south-eastern part of property)
3. Initiate the Humu`ula Sheep Station Adaptive Reuse Plan
4. Initiate Expanded Ecotourism Opportunities
5. Initiate Use of Remote Accommodations
6. Initiate Gorse Eradication (consider all viable gorse eradication opportunities, with commercial timber appearing to be the most viable and beneficial to the Department)
    a. The activities are combined to highlight the actual benefit of forestry to fight gorse, restore the native forest and generate revenue
    b. Incorporate Carbon Credit opportunities to DHHL
    c. Use timber license/lease as DHHL implementation of the Hawai`i Clean Energy Initiative
    d. Consider a long-term agreement to accommodate multiple planting/harvesting rotations
    e. Require periodic native forest restoration (i.e. at 5-year intervals) on or outside of leased area

7. Investigate and implement additional areas for sustainable koa forestry opportunities. Allows for opportunities for revenue generation; allows for enhanced restoration of native forest
8. Initiate a set-aside of portions of the property for restoration and enhancement purposes
9. Pasture uses (focused on fire fuel mitigation, consistent with Fire Plan – additional acreage) around Keanakolu-Mana, Saddle and Mauna Kea Access Roads
10. Initiate unmanaged-ungulate eradication over entire property. Cattle and other ungulates are vectors for the spread of invasive species (including gorse) and have a negative influence on native forest restoration. Implementing unmanaged-ungulate eradication (primarily sheep, cattle and goats) and allowing management of pigs (so long as the resources are protected) will provide food for beneficiaries, reduce the impacts to the forest resources and generate revenue for the Trust
11. Initiate state, federal and private grant applications to support resource restoration
12. Initiate a Safe Harbor Agreement for threatened/endangered plants, birds and animals over entire site

Disposition of the respective commercial licenses, leases, etc. to implement these actions would be through a broad RFQ/RFP process to select the best qualified applicants (background, experience, financial capability, business plan, etc.) to conduct the respective activities – to the extent permitted by law, preference will be given to native Hawaiians. Homestead and Pasture agreements would be under the typical DHHL disposition process for these types of uses. Any required environmental review would be conducted by the applicant/selectee, based on the details of their specific proposal.

Forests and Forestry Uses on the Site

"Forest" and "Forestry" are used in various contexts in the Legacy Program. At various places, "Native Forest Restoration", "Commercial Timber to Fight Gorse" and "Sustainable Koa Forestry" are referenced. Each references different aspects of dealing with forests and forest products. After 150-years of sheep and cattle ranching, the formerly dense forest became significantly altered by these activities and the forest landscape was converted primarily to open pasture land.

Native Forest Restoration focuses on restoration and enhancement of portions of the Humu`ula/Pi`ihonua lands in perpetuity to conserve these native forests and natural habitats for future generations. This includes the koa/`ōhi`a forest ecosystems on the makai portion of the property and the māmane forest on mauka portions of the site.

Commercial Timber to Fight Gorse focuses on eliminating this invasive weed. Gorse is shade intolerant and DHHL field trials show that shade from trees inhibit the ability for gorse to grow and spread. It is anticipated that licensed commercial-scale timber planting (using eucalyptus, sugi, or other trees) will shade the gorse sufficiently to keep it from producing seeds and that each year some portion of the seed bank will be removed. Thus, timber planting can serve both as a gorse eradication mechanism, as well as an income generator.

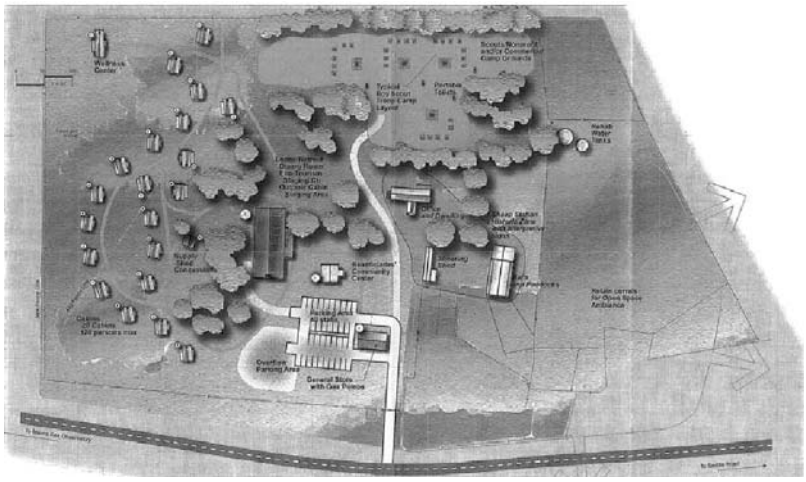
It is important to understand that all suggested crops other than koa are designed to initially eradicate and control the gorse, then support the eventual reforestation of the land back to a native koa forest. Eucalyptus and Sugi should be replaced with native koa where possible once it has been determined that the gorse, and its seed germination, is no longer a threat. Sustainable Koa Forestry approach suggests restoration of koa for future sustainable commercial sales. Koa is one of the predominant tree species found naturally in the Humu`ula/Pi`ihonua lands. It is presently the highest value timber crop in Hawai`i. It grows easily and well in this area if introduced ungulates are removed. Restoring the Humu`ula/Pi`ihonua lands to koa through carefully planned and managed reforestation is its highest and most compatible economic use.

Self-sustaining Funding with Reinvestment into the Property

One of the central focuses of the `Āina Mauna Legacy Program is that the activities and programs implemented need to be economically self-sustaining, with the goal to reinvest the revenue into the management of the property. In considering revenue generation, several opportunities exist:

- Use of Humu`ula Sheep Station – Commercial Activities

  The Humu`ula Sheep Station Adaptive Reuse Plan proposes a mix of land uses, wherein the property is divided into three principal sub-areas: Historic/ Community Center (5.5-to 6.0-acres); Open Campground (2.0-to 2.5-acres) and Commercial (7.0-to 8.0-acres), including commercial, retail, recreational, camping, cabins, lodge and restaurant activities appropriate to a transient or visitor market. Likewise, DHHL could use part of the property for its own administrative/accommodations needs.



- Forest Products and Biomass for alternative energy opportunities (liquid fuel and electricity.)

  Several forestry products and alternative energy producers have been identified as possible users of large scale areas for forestry development. Some of these have recently requested use and leasing of nearby State lands for these purposes. To fully implement this opportunity, it is important that timber operations at Humu`ula attempt to capture all possible value from planted trees, such as veneers, lumber, and/or wood chips, as well as fuels and carbon sequestration credits.

  Carbon Offsets/Credits are a key component of national and international emissions trading schemes that have been implemented to mitigate global warming. Credits can be exchanged between businesses or bought and sold in international markets at the prevailing prices.

- Ecotourism and Recreation Use

  Ecotourism and recreation related activities, a growing sector of the island's visitor industry, have great potential here due to the natural resources of these lands. Other than providing an area, such as the Humu`ula Sheep Station, to service and manage these activities, these uses and activities could be integrated and managed within other proposed economic uses. The Humu`ula Sheep Station may serve as a central site to stage and coordinate eco-tourism activities over the entire property.

  The potential uses and activities include (many of these are noted and discussed in the "Humu`ula Sheep Station Adaptive Reuse Plan"): Biking Tours, Bird Watching Tours, Lodge/Campsites, Hiking Tours, Horseback Tours, Wilderness Resort/Guest Ranch, Nature/Historical Tours, Volunteer "Service" Trips.

- State, Federal and Private Grant Opportunities

Comparison of Legacy Program Mission, Goals and Priorities with the Proposed Immediate Actions

- Restoration and enhancement of DHHL trust resources
- Preservation of Natural and Cultural Resources and Endangered Species
- Address reforestation and restoration of the ecosystem
    - Reinvest the revenue derived from property into management/restoration
    - Consider a term (i.e. 50-year) conservation encumbrance over portions of the property
    - Initiate additional areas for sustainable Koa Salvage opportunities
    - Require interim gorse-eradication timber operator to participate in native forest restoration
    - Incorporate "volun-tourism" (visitors volunteer) support into ecotourism activities
    - Pasture uses (focused on fire fuel mitigation, consistent with Fire Plan - additional acreage)
    - Initiate unmanaged-ungulate eradication over entire property
    - Initiate a Safe Harbor Agreement for threatened/endangered species over entire site
- Identify opportunities for DHHL Homesteading
    - Opportunities for homesteading across the entire landscape of Humu`ula/Pi`ihonua lands
    - Initiate the first rural-development Homestead Area
    - Forested areas also provide DHHL with an option for future homesteading
- Removal of invasive species - gorse, etc.
    - Initiate gorse eradication (consider viable options; commercial timber appears most beneficial)
        - Forestry fights gorse and restores the native forest – and, it generates revenue
        - Incorporate Carbon Credit opportunities to DHHL
        - Use timber as DHHL implementation of the Hawai`i Clean Energy Initiative
        - Consider a long-term agreement to address multiple harvesting rotations
        - Require periodic native forest restoration on or outside of leased/licensed area
    - Continue the `Ōiwi Lōkahi o ka Mokupuni o Keawe gorse to charcoal demonstration project
    - Initiate unmanaged-ungulate eradication over entire property
    - Pasture uses (focused on fire fuel mitigation, consistent with Fire Plan - additional acreage)
- Identify and secure partners to sustain activities
- Develop revenue generation with reinvestment in land to sustain activities
    - Initiate state, federal and private grant applications to support resource restoration
    - Initiate implementation of the Humu`ula Sheep Station Adaptive Reuse Plan
    - Initiate expansion of Ecotourism
    - Initiate process for Use of Remote Accommodations
    - Investigate and implement additional areas for sustainable koa forestry opportunities
    - Interim use of commercial scale timber operations (timber as tool to eradicate gorse)
    - Incorporate Carbon Credit opportunities in interim timber operation
    - Consider a term (i.e. 50-year) conservation encumbrance over portions of the property
    - Gorse-eradication timber operator native forest restoration could be "match" for grants
    - Volun-tourism efforts for native forest restoration could be "match" for grants
    - Initiate unmanaged-ungulate eradication over entire property
- Provide educational and cultural opportunities
    - Restored, healthy native forest provides a variety of opportunities for gathering, cultural practices and opportunities to see and understand native forest ecosystems
    - Humu`ula Sheep Station as gateway and staging area – campgrounds used by groups
- Identify opportunities for alternative/renewable energy projects
    - Rural-development homestead area; opportunity for photovoltaic, water catchment/reuse etc.
    - Interim use of commercial scale timber operations (biomass for alternative energy)
- Be a lead and/or model for others to engage in ecosystem restoration in a culturally sensitive manner based on partnerships to develop a self-sustaining model

In Fulfilling the Mission, Goals and Priority Issues, a Proper Balance is Required

We are reminded that the foundation of the `Āina Mauna Legacy Program is based on the HHC Mission Statement and the Legacy Program Mission, Goals and Priority Issues. The `Āina Mauna Legacy Program evaluates and balances conformance of competing uses with these overarching principles. Ultimately, and as an over-arching principle, the `Āina Mauna Legacy Program is about and for the Hawaiian Home Lands Trust, the Land and its Beneficiaries.

Homesteading for Beneficiaries

The `Āina Mauna Legacy Program incorporates several opportunities for homesteading across the entire landscape of the Humu`ula/Pi`ihonua lands. The bulk of the homestead opportunities are anticipated to be phased in once the land has been restored to productive use. This area includes the significant portions of the site that are proposed for sustainable koa restoration.

These forested areas also provide DHHL with an option for future homesteading. Once the koa restoration is accomplished, DHHL will have the opportunity to consider creation of agricultural homesteads using forestry for beneficiaries or homestead sites in the forest. The commercial koa forest management operations can continue, with the DHHL and beneficiaries benefitting directly from the commercial sale of koa.

Similar to many present-day homesteaders having ranches associated with their homesteads or area for agricultural use associated with homesteads, with the restoration and management of the forest here, future homesteaders may incorporate the management of koa forest into their agricultural homesteads.

Ultimately, decision-makers decades from now may decide whether this is appropriate or not – once the forest is restored. The suggestion is that the Legacy Program expands future options, opportunities and choices for homesteading.

A significant portion of the property (4,500-acres) is proposed for immediate homesteading, (with the first area of about 1,000-acres for 100-to 200-homesteads with consideration for alternative layouts.) Much of Humu`ula, however, is not ready to support a "self-sufficient and healthy community" of homesteaders, as the land's productivity has significantly declined over the past 150-years. 10,000 additional acres may be considered for future homesteading opportunities.

Since the property was not typically used for long term habitation, there are questions as to the demand for homesteads in this area. Humu`ula is a unique environment that historically has been minimally settled. It is important that beneficiaries are made aware and understand the advantages and disadvantages of living in this area. Given that the immediate homesteading area will be a rural development (cinder roads, catchment water, photovoltaic, septic/composting toilets, etc.) and the area is relatively isolated from employment, schools, shopping centers and other DHHL communities, it is not clear what the demand will be for these types of homesteads.

Pasture Use for Beneficiaries

Land reserved for future homesteads (1,000-acres), beyond the first area noted above, is available for interim pasture use. So, whether beneficiaries obtain a homestead or not, there is the opportunity for direct beneficiary benefit and use through additional acreage for pasture use or community pasture.

On the issue of pasture, other specific areas are also proposed for additional acreage for pasture use (consistent with the Fire Plan) – this, too, is proposed to be immediately available for beneficiary use.

This overall area is in the vicinity of 4,000-acres (these land areas are approximate references) - with about 2,000-acres designated for pasture along the Keanakolu-Mana Road and another 2,000-acres on the west side of the Mauna Kea Access Road (below the Radio Tower site and fronting Saddle Road and Mauna Kea Access Road.)

Wild bull with scattered gorse plants

Unmanaged-Ungulate Eradication

Another immediate action recommended in the Legacy Program is the eradication of the unmanaged-ungulates across the property. Cattle and other ungulates are vectors for the spread of invasive species (including gorse) and have negative impacts on the native forest ecosystems and reforestation efforts.

Allowing unmanaged-ungulate eradication (primarily sheep, cattle and goats) and management of pigs (so long as the resources are protected) have multiple benefits: (1) beneficiaries will put meat on their tables, (2) eliminating unmanaged-ungulates will reduce the impacts to the forest resources and (3) the trust will generate some income from the sale of the unmanaged-ungulates.

Forest Restoration and Management = Job Opportunities

Along with this, there are several recommendations dealing with native forest restoration and commercial koa forestry. With respect to restoring koa forests for future commercial opportunities, benefits to beneficiaries are immediate, as well as long-term.

Immediate direct and indirect opportunities are jobs related to the forest restoration, including on-the-ground work, supplying restoration needs and services (whether it is equipment, supplies or services to support the reforestation,) as well as the ongoing monitoring and research associated with the restoration efforts.

Commercial Forestry = Helping Fund Management Needs

Once the forest is restored, DHHL has several options that can directly benefit the beneficiaries and the Trust (beyond the benefit of ongoing forest management employment.)

As required in the Mission, commercial forestry will assist in proving necessary funding to help with the overall management of the property.

Reforestation Provides Beneficiary Opportunities for Gathering and Traditional Practices

The restored, healthy native forest provides a variety of benefits and opportunities to beneficiaries through gathering, cultural practices and opportunities to see and understand native forest ecosystems. Since the land is DHHL owned, beneficiaries will have significant benefit for the exercise of cultural traditions.

The site (with restoration to healthy native forest) provides beneficiaries cultural practices access as the only site of this type in the Hawaiian Home Lands Trust inventory.

Koa Wood Products for Beneficiaries

Other obvious benefits to beneficiaries are the opportunities relating to use of the koa wood products. With the restored and expanded forest, practitioners and crafters will have a wide range of (cultural and economic) opportunities for a variety of koa wood product production.

Ecotourism – Small Footprint and Limited Impact = Revenue Opportunities for Management

Other necessary components to fulfilling the Mission's mandate of economic self-sufficiency are the recommendations dealing with the adaptive reuse of the Sheep Station and eco-tourism opportunities. These items cover a small footprint on the overall landscape and have limited impact on the resources, but provide necessary funds for the self-sufficient operations of the Legacy Program. Here, too, beneficiaries have the opportunity to participate through direct and indirect jobs.

Associated with this, one beneficiary group, Hui Kako`o `Aina Ho`opulapula, has a vision for the adaptive reuse of Pu`u `Ō`ō Ranch headquarters. They have been actively involved in cleaning and clearing the area. The proposed future use of the site they suggest is consistent with the general recommendations for the "Remote Accommodations".

Gorse Eradication Critically Important – Otherwise Site is Useless

Likewise, another beneficiary group's (`Ōiwi Lōkahi o ka Mokupuni o Keawe) research project focusing on gorse to charcoal is consistent and compatible with the recommendations for gorse control.

The recommendation implementing the use of commercial-scale timber (such as eucalyptus, sugi, or other) to fight the gorse is consistent with recommendations from others (and demonstrated in DHHL's field trials) as an effective way to address gorse on a landscape scale. Other viable gorse eradication opportunities can also be considered.

Koa tree "skeletons" (evidence of former forest) engulfed by gorse

The need for eradicating gorse cannot be overstated. Until this destructive plant is removed, beneficiaries will not see or experience benefits from the property.

To date, gorse has been a nuisance and is expensive to control. The recommendations specifically target the removal of this invasive plant, while also generating revenue to the DHHL for management of the remainder of the land. Once the gorse eradication process is well underway, the recommendation is to revert the land back to koa forest and include it with the other commercial koa forest activities.

RFQ/RFP Process to Select the Best Qualified Applicants for Commercial Agreements

The suggestion of using a broad RFQ/RFP process in the procurement of services for the commercial enterprises does not in any way limit the opportunity for beneficiaries to be involved in the process. Likewise, as a State agency, DHHL is obligated to follow state procurement laws. DHHL has the responsibility to look for the best qualified applicants (background, experience, financial capability, business plan, etc.) that can fulfill the Trust's needs at a reasonable price. The RFQ/RFP process serves to produce that.

Consistent with the fundamental purposes of the Hawaiian Homes Commission Act, to the extent permitted by law, it is the goal of the `Āina Mauna Legacy Program to support economic development, maximize opportunities for beneficiaries and give preference for native Hawaiian beneficiary involvement at all stages of the program's implementation.

Disposition of Homestead and Pasture leases, licenses and/or RPs would be under the typical DHHL planning, funding, development and disposition processes for these types of uses.

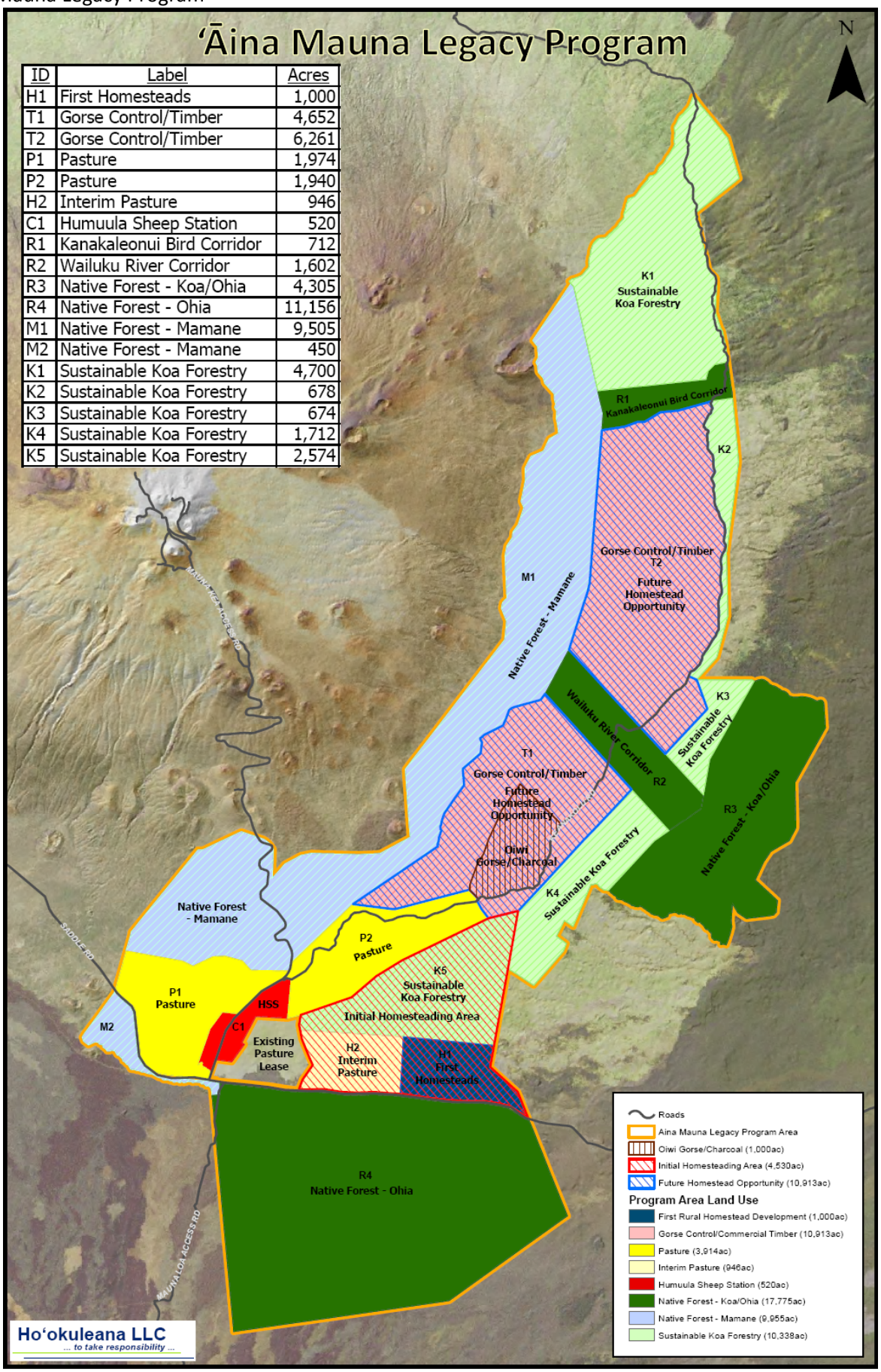
Opportunities for Beneficiaries to Participate and Benefit are Extensive and Diverse

As you can see, the opportunities for beneficiaries are extensive and diverse; and, there are opportunities for beneficiaries within each component of the recommendations, whether it is homesteading, pasture, unmanaged-ungulate eradication, native forest restoration, commercial timber, koa forestry, ecotourism or cultural practices. Some of the benefits are proposed to be relatively immediate, while others will necessarily take time for the real benefit to come to fruition. Additionally, the implementation process will include opportunities for Beneficiary and community involvement and participation at all stages of the process.

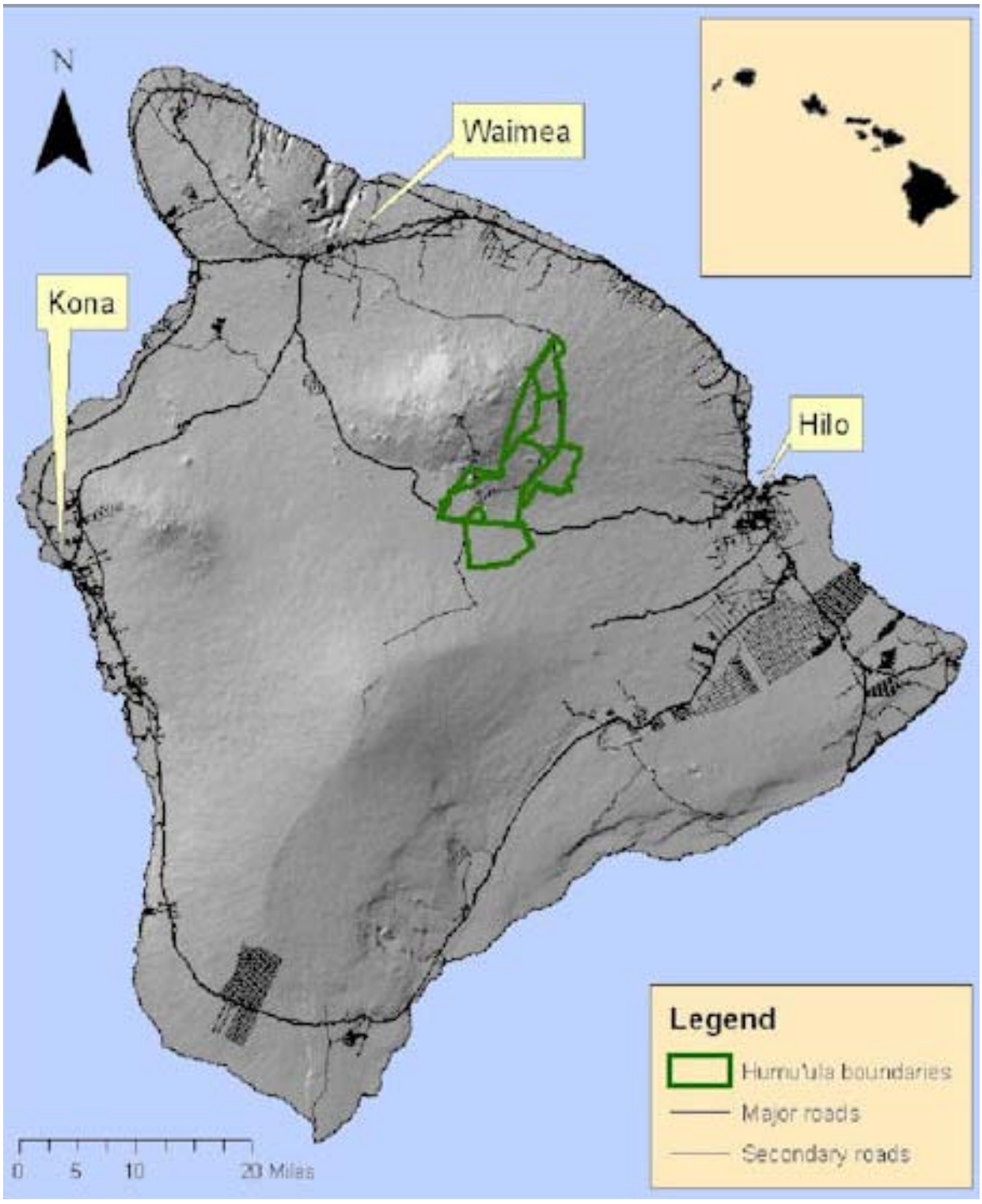
`Āina Mauna Legacy Program is All About the Trust, the Land and its Beneficiaries

Restoration of the land upon which native Hawaiians have always depended is key to the success of the beneficiaries. Over the past 150-years the land transformed away from a healthy, dense native forest. It will take generations to restore the land back to this healthy condition. Ultimately, and as an over-arching principle, the `Āina Mauna Legacy Program is about and for the Hawaiian Home Lands Trust, the Land and its Beneficiaries.

Ola ka `āina, ola ke kanaka
(Healthy/Living Land, Healthy/Living People)
The good of the land results in the good of the people.



ID	Label	Acres
H1	First Homesteads	1,000
T1	Gorse Control/Timber	4,652
T2	Gorse Control/Timber	6,261
P1	Pasture	1,974
P2	Pasture	1,940
H2	Interim Pasture	946
C1	Humuula Sheep Station	520
R1	Kanakaleonui Bird Corridor	712
R2	Wailuku River Corridor	1,602
R3	Native Forest - Koa/Ohia	4,305
R4	Native Forest - Ohia	11,156
M1	Native Forest - Mamane	9,505
M2	Native Forest - Mamane	450
K1	Sustainable Koa Forestry	4,700
K2	Sustainable Koa Forestry	678
K3	Sustainable Koa Forestry	674
K4	Sustainable Koa Forestry	1,712
K5	Sustainable Koa Forestry	2,574



Island of Hawai`i - `Āina Mauna Legacy Program Area

Brief Property Description

`Āina Mauna: Humu`ula, Pi`ihonua, Ka`ohe

The following is summarized from the "Humu`ula Rural Villages and Landscape Restoration Plan, Final Report" prepared by Townscape, Inc., for `Ōiwi Lōkahi o ka Mokupuni o Keawe, March 2005, except where noted.

The cultural and historical research conducted by Kumu Pono Associates documents descriptions of Ka`ohe, Humu`ula, and Pi`ihonua. The study provides readers with documentation pertaining to the traditional, cultural and historical setting of the `āina mauna on the Island of Hawai`i. It is concluded that the Hawaiian way of life was the product of strict land use management.

The historical record coupled with oral history interviews provide clues as to the types of sites, hence past land uses, that may be found at Humu`ula/Pi`ihonua: native trails (some overlaid by current access routes), stone mounds/land markers, altars and types of ceremonial sites, shelters and habitation caves, resource collection sites, ilina (burial features), later dated features (1800s) such as pens, walls, fence lines, stone and wooden houses, water collection and storage, bird hunting blinds, former garden plots, and support features.

`Āina mauna, or mountain lands, reflects a term used affectionately by elder Hawaiians to describe the upper regions of all mountain lands surrounding and including Mauna Kea.

Genealogical Accounts and Traditional Features

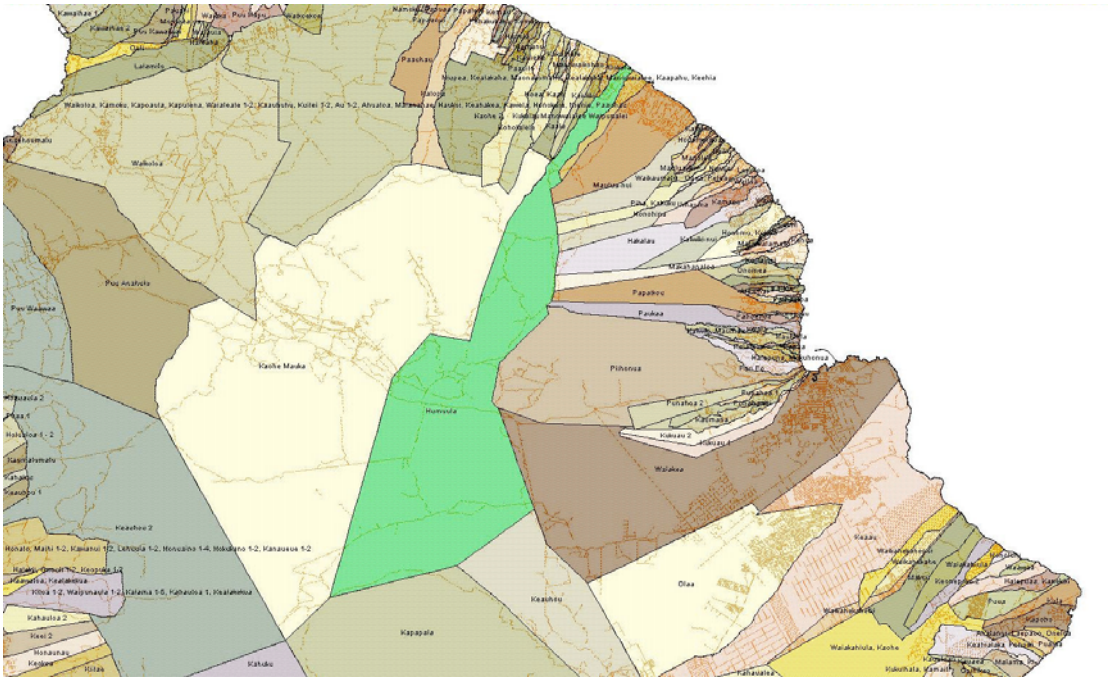
In Hawaiian culture, the natural and cultural resources are one and the same. Native traditions describe the birth of the islands and the life that exists on them in terms of genealogical accounts.

All natural forms of the environment are believed to be embodiments of gods and deities. From godly forces the Hawaiian Islands are born of Wākea (the expanse of the sky-father) and Papahānaumoku (Pāpā who gave birth to the islands). Wākea and Pāpā are credited for being the parents of the first man, Hāloa, the ancestor of all people. It is from this genealogical thread that Hawaiians address their environment and it forms the basis of the Hawaiian system of land use.

The generations that followed developed a refined system of land use and management. `Umi a Līloa, the ruler of Hawai`i, created land divisions according to a chiefly management system.

The island, or mokupuni, was divided into moku o loko, or districts. Hilo district contained Humu`ula, an ahupua`a. Subdivisions within a moku are `okana and kalana, both of these would contain several ahupua`a. Manageable parcels of land would typically run mauka to makai and would be marked with stone wall alignments. These parcels are known as: `ili, kō`ele, mahina `ai, māla and kīhāpai. Tenants cultivated smaller crops for family consumption, to supply the needs of chiefs, and provide tributes. Kapu were observed as a matter of resource and land management among other things. Access to resources was tied to residency and earned as a result of taking responsibility to steward the environment and supply the needs of ali`i. The social structure reinforced land management.

Native Hawaiian tradition and historical accounts portray the lands of Humu`ula, Pi`ihonua, and Ka`ohe as having been dense forests where native practitioners gathered forest resources, birds, and food. Humu`ula is named for a type of stone (red jasper) used to make ko`i or adze.



Map Noting Ahupua`a in the Region

The `āina mauna was also used by travelers making their way through the area. The area was frequented by native practitioners and contained a native and cultural landscape that provided among other things:

- Places to worship
- Places to gather stones
- Kanu iwi (places to bury human remains)
- Kanu piko (places to bury umbilical cords)
- Places to traverse, i.e. for those who were crossing from one region to another
- Places to gather food, and catch birds
- Sacred and safe areas

The final Environmental Assessment for the Koa Salvage-Reforestation and Gorse Containment Project prepared by DHHL in 2001, notes cultural practices and features in the area.

“Mauna Kea may be literally interpreted as “white mountain” because during the winters, the summit is covered in snow. Mauna Kea may also be translated as “Wākea’s Mountain”. Wākea, also written and pronounced as Ākea and Kea, was the god-father of the Island of Hawai`i. The island child was born by Papa or Haumea, the goddess who gave birth to islands. The proposed project area was once heavily forested. Native Hawaiians viewed the mountain areas as the heavily forested zone (waoakua, forest of gods) where koa trees were cut for canoe hulls. Other traditional uses by pre-contact native Hawaiians were gathering medicinal plants and bird feathers.” (Final Environmental Assessment, Koa Salvage-Reforestation and Gorse Containment, Page 24)

Historic Features

The introduction of cattle, sheep, goats and the proliferation of wild dogs on the `āina mauna is believed to have started as early as the 1820s. Travelers accessing the mountain trails oftentimes found themselves under attack by the wild bullocks; a Scottish naturalist, for example, was killed by a wild bullock at Keahua-ai. By 1850, the cultural and natural landscape had been significantly altered by roving herds of wild ungulates. Ranching interest, having become formalized, began to establish ranching stations and operations on the mountain lands. Thus, areas once forested soon became open pasture lands.

Parker Ranch held the longest ranching lease to the property, from 1901 to 2002, and their lease extended around Mauna Kea to the Pu`uhuluhulu vicinity. Initially, Parker Ranch invested in sheep ranching and then focused on cattle operations until the end of their lease with DHHL in 2002. As well, portions of Pi`ihonua were leased to various native hunters during the middle 1860s.

Historic features include:

- Walls, pens, fence lines
- Stone and wooden houses
- Water collection and storage facilities
- Bird hunting blinds
- Former garden plots
- Kulaka “cattle pen”, 1850, oldest-named wall feature in Humu`ula
- Stone wall extending from Pu`uhuluhulu, enclosing `Ōma`okoili paddocks marking the boundary between Humu`ula and Ka`ohe

Archaeological Investigation

Based on a field inspection conducted in June 2004 by Cultural Surveys Hawai`i, it is predicted that there is a relatively low concentration of surface sites in the project area. Areas where site densities are likely to be significant include ahupua`a borders, pu`u (cinder cones), caves or lava tubes, traditional bird feeding habitats, the paleo-forest scrub transition area, traditional resource convergence areas (water, fuel, and shelter locations), and along trails and roads. The archaeological field reconnaissance indicated that historic and prehistoric sites may be present in the parcel, including: burial sites, temporary habitation sites, markers or historic sites, trails and roads, ritual sites, and camps and processing sites (relating to bird hunting and/or adze production).

Site Assessment

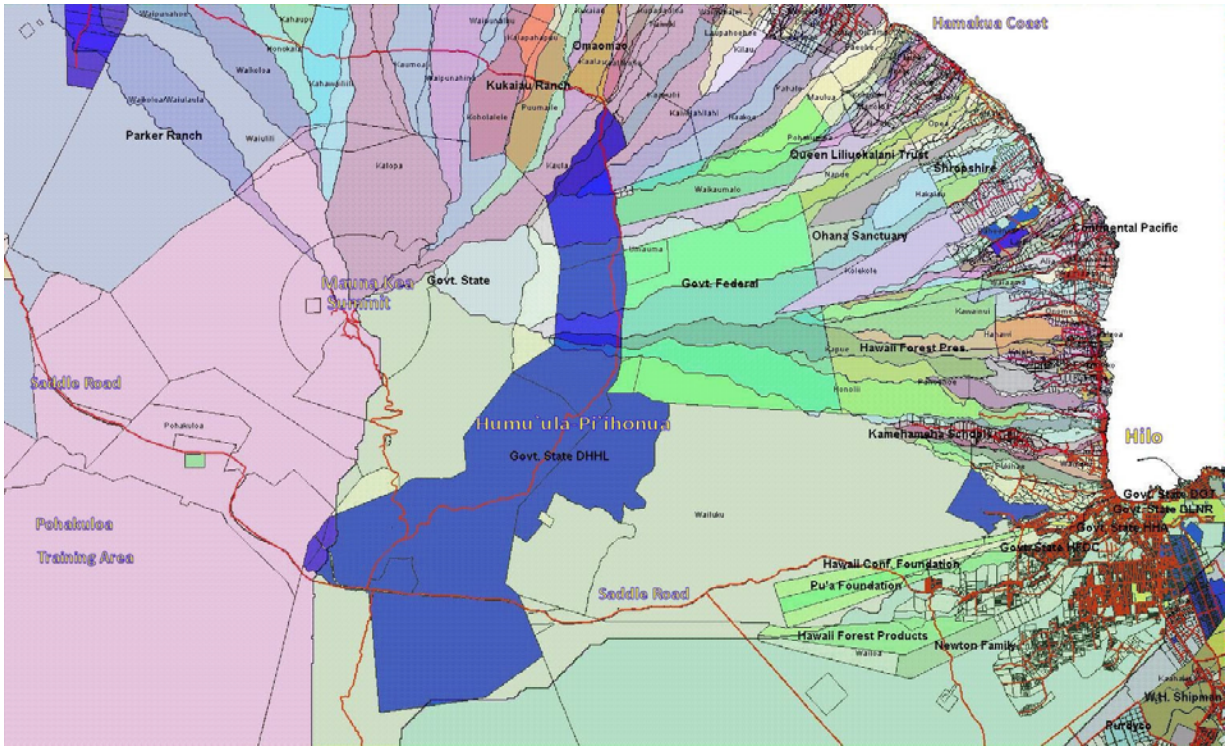
The 1997, “Humu`ula/Pi`ihonua Master Plan” developed by PBR Hawai`i for the Department of Hawaiian Home Lands gives a good assessment of the site. The following is taken from that Plan.

The Humu`ula/Pi`ihonua area is made up of approximately 56,200 acres owned by the Department of Hawaiian Home Lands located on the northeast slopes of Mauna Kea. The Humu`ula/Pi`ihonua lands are the largest contiguous parcel under jurisdiction of DHHL. The Humu`ula parcel is approximately 49,100 acres in size and the Pi`ihonua parcel, located adjacent to the eastern boundary of Humu`ula, is approximately 7,078 acres in size. `Āinahou, comprising approximately 11,124 acres, is the subsection of Humu`ula south of Saddle Road and is currently under license to the State of Hawai`i, Department of Land and Natural Resources.

The lands of Humu`ula are characterized by their isolation, high elevation, cool temperatures and lack of infrastructure (roads, potable water, telephone, power, etc.). The area is somewhat isolated with the closest public facilities (schools, hospitals, police and fire services) located in Hilo (25 miles and 40 minutes by car) and Waimea (30 miles and 55 minutes by car).

With elevations ranging from approximately 4,500 to 9,000 feet mean sea level, the lands experience cooler temperatures ranging from an annual mean of 58 °F at the 5,000 foot elevation to 45 °F at the 9,000 foot elevation, with frost conditions occurring during the winter months. Rainfall varies greatly over various portions from an annual mean of 45 inches in the upper elevations to 120 inches in the lower elevations near the Saddle Road.

The primary access to the site is from the Saddle Road, a paved highway connecting East and West Hawai`i, and the paved access road to the Mauna Kea Observatory and summit area. The Keanakolu (Mana) Road is a cinder/gravel road which extends from the Mauna Kea Summit Road through the property for approximately 19 miles. Other internal roadways leading from the Keanakolu Road are primarily 4-wheel drive dirt/cinder pasture roads used for fire breaks, gorse control, and other management activities. Other infrastructure systems (potable water, power, communication, etc.) are largely nonexistent. Power lines extend along the Saddle Road and Mauna Kea Access Road.



Map Noting Watersheds

Soil conditions are reflective of the environmental variations with sandy, rocky soils generally found in the upper and drier elevations; the better sandy loams in the mid-elevations, and poorly draining clay loams in the lower and wetter elevations, especially within Pi`ihonua. The `Āinahou lands south of the Saddle Road, are comprised almost entirely of pāhoehoe and a`ā lavas, the most recent of which includes portions of the 1935 lava flow.

The vegetation is dominated by an understory of exotic pasture grasses over much of the lands with koa/`ōhi`a forest found in the lower portions of Pi`ihonua, especially in the lands adjacent to the Hakalau Forest National Wildlife Refuge. Scattered koa and māmane are found over the northern portions of Humu`ula with scattered māmane found in the upper elevations, especially adjacent to the Mauna Kea Forest Reserve. The vegetation on the `Āinahou lands generally consists of scattered scrub vegetation of `ōhi`a and native shrubs.

A significant vegetative feature on these lands is the gorse plant, a noxious weed which covers between 10,000 -13,000 acres in the central portion of the Humu`ula lands. In high densities, this impenetrable shrub renders the land nearly useless. The area of infestation has nearly doubled since 1986. Because the gorse seeds remain viable in the soil for up to 70 years, the eradication strategy must be long-term and comprehensive in its approach.

From a biological perspective the māmane forests are important in that they serve as a critical habitat for palila, an endangered native bird. Several endangered or threaten native bird species also are associated with the koa/`ōhi`a and koa/māmane forest areas. The `Āinahou lands, which serve as a public hunting and game reserve area, also serves as a refuge area for the Hawaiian goose (nēnē).

Based on archaeological surveys conducted in the area, those known archaeological features within the parcel are predominately historical sites, and a relatively low concentration of archaeological sites are expected to be found. The gulches and pu`us, in addition to serving as possible refuge areas endangered plant species, would be among the likely areas where archaeological sites, if present, would be found.

Historically uses of the Humu`ula/Pi`ihonua lands were limited to managed sheep and cattle grazing. The majority of the subject lands had previously been occupied by, Parker Ranch, since at least 1909 when sheep grazing started. However, by 1963 the sheep operation was phased out due to a decline of wool prices caused by the depression, competition from foreign countries, and heavy losses from wild dogs and feral pigs. Parker Ranch then converted the land to a cattle operation. Gorse was used as a hedge to pen animals however, conversion from sheep to cattle gave way to the initial outbreak of gorse, which until that time had been effectively controlled by sheep grazing.

Since 2002, when existing cattle leases expired, most of these lands have been inactive. Efforts to restore the land’s productivity via gorse eradication/control, native bird corridors, and koa forest restoration have begun in priority areas.

Surrounding uses include the Hale Pōhaku Astronomical Facility, a support facility for the astronomical research on Mauna Kea, the Pōhakuloa Military Training Area, the Hakalau Forest National Wildlife Refuge and various State natural area and forest reserves.

`Āina Mauna Legacy Program

The `Āina Mauna Legacy Program serves as a guide as DHHL moves forward in managing the Humu`ula/Pi`ihonua area to conserve its legacy for future generations while also serving as an economic resource. The Legacy Program is an extension of prior planning and activities at the site. Findings, recommendations, background information and other references from many of these prior documents are included and edited into this program.

The lands of Humu`ula and Pi`ihonua represent the most important native forest areas remaining in the DHHL trust. These lands provide a glimpse into the natural environment and native forests which are disappearing throughout the state. The area serves as valuable habitat to many native and endemic species. The area's proximity to Mauna Kea also makes it a valuable cultural resource. These lands have the potential for serving as a sustainable native forest and land unit by simultaneously providing environmental, economic and social benefits to the trust and its beneficiaries in perpetuity.

The `Āina Mauna Legacy Program incorporates prior planning efforts and serves as a policy framework related to the overall use and management of the property; the implementation process will occur after the Legacy Program is adopted. The following principles, areas of focus and goals serve as the foundation to the preparation and implementation of the `Āina Mauna Legacy Program. In addition, following these are some background information and references of prior documents and activities that provide additional information about the property, its history and its opportunities.

Mission

The mission of the `Āina Mauna Legacy Program and its implementation is to protect approximately 56,000 acres of native Hawaiian forest that is ecologically, culturally and economically self-sustaining for the Hawaiian Home Lands Trust, its beneficiaries and the community.

Goals

Initial goals for the `Āina Mauna Legacy Program include:

Goal 1: Develop an economically self-sustaining improvement and preservation program for the natural and cultural resources (invasive species eradication and native ecosystem restoration) and implementation strategy.

The focus of the `Āina Mauna Legacy Program shall be on:

- Restoration and enhancement of DHHL trust resources;
- Identify immediate and future opportunities for DHHL beneficiaries;
- Removal of invasive species - gorse, etc.;
- Conserve natural and cultural resources and endangered species;
- Address reforestation and restoration of the ecosystem;
- Develop revenue generation, reinvestment in land to sustain activities;
- Provide educational and cultural opportunities;
- Identify and secure partners to sustain activities;
- Identify opportunities for alternative/renewable energy projects; and
- Be a lead and/or model for others to engage in ecosystem restoration in a culturally sensitive manner based on partnerships to develop a self-sustaining model

Goal 2: Develop an outreach program to gain interest, participation, and support from the Hawaiian Homes Commission, DHHL Staff, beneficiaries groups, cultural practitioners, natural resource scientists, and the broader community for the Legacy Program and its implementation.

The `Āina Mauna Legacy Program is a "living document" that is intended to be flexible and is subject to change, as times and needs change. Therefore, the program should be re-examined on a periodic basis (possibly every 5-years) to ensure that it addresses DHHL's needs in the future.

Summary of Priority Issues and Focus of the `Āina Mauna Legacy Program

The ultimate long term goal for DHHL is an economically-sustainable, healthy native forest ecosystem at Humu`ula/Pi`ihonua. In achieving this goal, the `Āina Mauna Legacy Program will serve as a guide for managing existing and future activities and uses, and to ensure ongoing protection of DHHL's trust property in perpetuity by linking traditional cultural knowledge and modern science.

In preparing the Legacy Program many prior studies and reports dealing with the Humu`ula/Pi`ihonua region were reviewed and incorporated into the Legacy Program. In addition, several common issues, priorities and goals were recommended. The following priority issues and areas of focus should be considered:

- Restoration and enhancement of DHHL trust resources;
- Identify immediate and future opportunities for DHHL beneficiaries;
- Removal of invasive species - gorse, etc.;
- Conserve natural and cultural resources and endangered species;
- Address reforestation and restoration of the ecosystem;
- Develop revenue generation, reinvestment in land to sustain activities;
- Provide educational and cultural opportunities;
- Identify and secure partners to sustain activities;
- Identify opportunities for alternative/renewable energy projects; and
- Be a lead and/or model for others to engage in ecosystem restoration in a culturally sensitive manner based on partnerships to develop a self-sustaining model

Following is a summary of initial recommendations to implement the `Āina Mauna Legacy Program.

Administration

- Due to scope and scale of the Legacy Program, it is recommended that respective DHHL Divisions implement the Legacy Program under their existing structure, funding and procedures
- To complement existing DHHL staff, it is recommended that three new positions be added and formed within the Land Management Division for implementation and management of the Legacy Program - Program Coordinator; Contract Management, Compliance and Grant Specialist; and Field Worker
- Consideration should be given for the extension of contract services for implementation guidance and support
- Due to limitations in Federal regulations, Na Kupa`a O Kuhio should be considered to take advantage of Federal funding opportunities
- Initiate broad solicitation process to arrange contracts to implement portions of Program (gorse eradication/timber, eco-tourism, Humu`ula Sheep Station Adaptive Reuse, etc.)
    - To the extent permitted by law, native Hawaiians will be given preference in the selection process, other items being equal.
- The implementation process will include the Implementation Advisory Council, Beneficiary and community involvement and participation in advising the Department and Commission.
- The `Āina Mauna Legacy Program Implementation Advisory Council will be advisory only; the Department will have final decision-making authority.

Initial Immediate Actions

- Form the `Āina Mauna Legacy Program Implementation Advisory Council
- Initiate the first rural-development Homestead Area (on south-eastern part of property)
- Initiate the Humu`ula Sheep Station Adaptive Reuse Plan
- Initiate expanded Ecotourism opportunities
- Initiate use of Remote Accommodations
- Initiate Gorse Eradication (consider all viable gorse eradication opportunities, with commercial timber appearing to be the most viable and beneficial to the Department)
- Investigate and implement additional areas for sustainable koa forestry opportunities
- Initiate a set-aside of portions of the property for restoration and enhancement purposes
- Pasture uses (focused on fire fuel mitigation – additional acreage) around Keanakolu-Mana, Saddle and Mauna Kea Access Roads
- Initiate unmanaged-ungulate eradication over entire property
- Initiate state, federal and private grant applications to support resource restoration
- Initiate Safe Harbor Agreement to address endangered species over the entire property

Some background information, as well as areas of interest that are considered in the preparation of the `Āina Mauna Legacy Program and its implementation, follows:

Natural and Cultural Resources

As noted, the lands at Humu`ula and Pi`ihonua represent the most important native forest areas remaining in the DHHL trust. These lands provide a glimpse into the natural environment and native forests which are disappearing throughout the state.

Because of the historic use of the site for sheep and cattle pasture, the vegetation of Humu`ula/ Pi`ihonua is dominated by an understory of exotic pasture grasses over much of the lands. The area serves as valuable habitat to many native and endemic species. The area's proximity on Mauna Kea also makes it a valuable cultural resource.

Koa and `ōhi`a forests are found in the lower portions of Pi`ihonua, especially in the lands adjacent to the Hakalau Forest National Wildlife Refuge. Scattered koa and māmane are found over the northern portions of Humu`ula with scattered māmane found in the upper elevations, especially adjacent to the Mauna Kea Forest Reserve. The māmane forests serve as critical habitat for the palila. Additionally, the koa/`ōhi`a and koa/māmane forests provide habitat for several endangered and threatened native bird species.

In the preparation of the `Āina Mauna Legacy Program, care is taken to retain the focus on the protection, restoration and enhancement of the area's natural and cultural resources.

Rare and Endangered Flora/Fauna

The area is known to have rare and/or threatened flora and fauna. The planning and implementation process considers the habitat, as well as specific species of concern. Some issues of interest include:

- `Āhinahina (Silversword found on upper slopes of Mauna Kea)
- Palila habitat (Special attention is paid to past court cases and management plans that dictate not only management for the population but also on how the bird's habitat is affected.)
- Besides the Palila, the Hawai`i `Ākepa, Hawai`i Creeper, `Akiapōlā`au, `Io, Koloa, Nēnē, and Hawaiian Dark Rumpled Petrel are all found at Humu`ula/Pi`ihonua.
- Besides bird species, the area has the Hawaiian Hoary Bat and the Amastrid land snail
- Bird and habitat corridors have been established to help with habitat conservation.

Safe Harbor Agreements

Because the activities proposed in the `Āina Mauna Legacy Program could affect habitat for threatened and/or endangered plants, birds and animals, it is recommended that a blanket Safe Harbor Agreement be developed and incorporated into the Legacy Program. Since one of the goals of the `Āina Mauna Legacy Program is the restoration of habitat, as well as planting of trees that could attract native birds and bats, the Safe Harbor Agreement can protect DHHL from future impacts to the habitat and the species.

For the `Āina Mauna Legacy Program, Safe Harbor Agreements will be crucial in restoring native forests and in turn native bird populations. In particular the commercial forestry to eradicate gorse program will create an environment friendly to certain bird and bat species. Since the program's goal is to restore the area to native koa forest after the gorse has been eradicated, it is essential that the program be allowed to take proactive management steps which in some cases may cause a temporary loss of habitat for bird species.

Invasive Species Eradication

Hawai`i is in the midst of a growing invasive species crisis affecting the islands' endangered plants and animals, overall environmental and human health, and the viability of its tourism and agriculture based economy … and, our way of life. Fighting invasive species is a critically important priority because it is the single most-effective way to protect Hawai`i's natural resources. The two most critical invasive species to address in the Humu`ula/Pi`ihonua area are gorse and unmanaged-ungulates.

Prevent New Introductions and Control/Eradicate Existing Invasive Plant Species

- Fighting Invasive Species is a critically important priority because it is the single most-effective way to protect Hawai`i's natural resources.
- The control of alien species within the `Āina Mauna region is critical to maintaining the value of forest resources.
- Besides the highly invasive gorse, the `Āina Mauna lands also have unmanaged-ungulates, banana poka, fireweed, various invasive grasses, etc.
- There are several alternatives for Invasive Species Control
    - Physical
        - Grubbing
        - Mulching
    - Chemical
        - Aerial spraying
        - Hand spraying
    - Biological

- Invasive Species Control Maintenance
    - Assessment
    - Prioritization
    - Monitoring
        - Revise management strategy, as appropriate, based on monitoring results.

Gorse

Gorse is a noxious weed species that is threatening natural habitats and agro-ecosystems around the world, including Hawai`i. Gorse has become established in extensive stands on the eastern slope of Mauna Kea and the Humu`ula area has suffered from heavy infestations of gorse. The importance of eliminating this plant cannot be overstated.

Eradication of this noxious plant, that has already rendered thousands of acres useless, is an essential component in any land use and management plan for these lands. Gorse has a life span of 30-40 years while the seed can remain viable in the soil for up to 70-years after that.

The non-profit organization, `Ōiwi Lōkahi o ka Mokupuni o Keawe, currently has a license on 1,000-acres at Humu`ula from DHHL for gorse control work. They have been working on a process in which burning harvested gorse produces carbon. Their studies and research are ongoing.

DHHL field trials and research projects have shown that shade from trees inhibit the ability for gorse to grown and spread. DHHL has planted portions of the perimeter of the Humu`ula/Pi`ihonua lands with trees to establish a boundary to limit the spread of the weed and has entered into various agreements for gorse control and management (chemical, mechanical and/or biological.)

It is anticipated that commercial-scale timber planting will shade the gorse sufficiently to keep it from producing seeds and perhaps kill it, depending on the tree species planted. With normal forestry operations, each year some portion of the seed bank will be removed. Thus, interim commercial-scale timber planting can serve both as a gorse eradication mechanism, as well as an income generator. Other viable gorse eradication opportunities can also be considered.

Eucalyptus and Sugi have been proposed because the initial development of these crops in the general area have given rise to increased investment in required infrastructure including marketing analysis and market development efforts by a number of private companies and government agencies. These market development efforts are currently on-going as is the basic supply/demand relationship for these forest crops. Planting trees to eradicate the gorse is a value-added land use - it eradicates the gorse and provides license/lease revenue in the process.

In addition to shading and eventual killing off the gorse, timber harvests can generate cash flow and open the ground for another round of gorse seed germination. Immediately after a timber harvest, gorse seedlings can be controlled with low volume herbicides, followed by another planting of timber. This cycle must be repeated until the majority of dormant gorse seed has germinated. The time estimated for gorse eradication is approximately 100 years due to the estimated 70-years gorse seed remains viable and the growth/harvest cycle of the eucalyptus and/or sugi.

Ultimately, after decades of this interim commercial forestry have effectively cleaned out the gorse and its seed bank, the property will be restored to a native forest. It is important to understand that all suggested tree crops other than koa are designed to initially eradicate and control the gorse then support the eventual reforestation of the land back to a native koa. Eucalyptus and Sugi should be replaced with koa once it has been determined that gorse seed germination is no longer a threat.

Unmanaged-Ungulates

Unmanaged-ungulates (hoofed mammals such as cattle, sheep, pigs, goats, etc.) introduced to Hawai`i are detrimental to Hawai`i's native ecosystems via the damage they inflict on both vegetation structure and composition. Unmanaged ungulates can impact native plants and ground cover, facilitating sediment run-off and the smothering of coral reefs. The soil disturbance caused by rooting ungulates also facilitates the introduction and expansion of invasive plants, and creates breeding grounds for mosquitoes that transmit avian disease to native forest birds. The invasion of non-native species poses one of the greatest threats to Hawai`i's native ecosystems and their inhabitants.

<u>Initiate Unmanaged-Ungulate Eradication over Entire Property</u>

- Unmanaged-ungulates (hoofed mammals such as cattle, sheep, pigs, goats, etc.) introduced to Hawai`i can be detrimental to Hawai`i's native ecosystems via the damage they can inflict on both vegetation structure and composition.
    - Ungulates impact native plants and ground cover, facilitating sediment run-off
    - Soil disturbance caused by rooting ungulates also facilitates the introduction and expansion of invasive plants and creates breeding grounds for mosquitoes that transmit avian disease to native forest birds.
    - Feral Ungulates can have high population growth rates.
    - Feral Ungulates are elusive and can jump or circumvent most existing fences.
- Four main components in successful unmanaged-ungulate population control (primarily sheep, cattle and goats)
    - Establishment of Barriers to Isolate Populations
    - Remove sufficient numbers of animals to prevent unacceptable damage to the land and its resources
    - Barrier Installation, Inspection and Maintenance
    - Vigilance in Monitoring of Animal Population Increase and Ingress
- Methods for Removal of Feral Cattle Populations
    - Given the various types of animals on the site, each type of cattle will need to be dealt with differently
        - New born and nursing mothers - These cattle would need to be kept together until weaned. They could be captured, held until weaned and then transferred to beneficiaries
        - Cattle suitable for ranching - These cattle could be captured and taken directly by beneficiaries for ranching
        - Elderly cattle - These cattle could be taken by beneficiaries and used for food
        - Rogue(un-capturable) cattle - These cattle may need to be shot, depending on their aggressiveness and/or threat to human harm
    - Beneficiaries Capture
    - Professional Capture
    - Professional Eradication
- Implementing unmanaged-ungulate eradication (primarily sheep, cattle and goats) and allowing management of pigs (so long as the resources are protected) will provide food for beneficiaries, reduce the impacts to the forest resources and generate revenue for the Trust
- Ultimately, additional Fencing is required to exclude ungulates from sensitive areas
- Additional Roadways will need to be added for access (also serving as beneficial fire breaks)

Feral ungulates can have high population growth rates, are elusive and can jump or circumvent most existing fences. Control and/or removal of these animals should be a high priority on all lands designated for reforestation in Hawai`i.

Native Hawaiian traditions and historical accounts describe the lands of Humu`ula and Ka`ohe-those areas extending from shore to around the 6,000 foot elevation as having once been covered with dense forests, and frequented by native practitioners who gathered forest-plant resources, birds, and food.

The larger `āina mauna were frequented by individuals who were traveling to the upper regions of Mauna Kea to worship, gather stone, bury family members, or deposit the piko (umbilical cords of new-born children) in sacred and safe areas; and by those who were crossing from one region of the island to another. Because hunting and subsequently ranching of bullocks, cattle and sheep became the primary historic activities on the mountain lands, areas once forested soon became open pasture land.

While the first formal lease of Humu`ula and Ka`ohe was issued in 1857 (Keoni Ana to F. Spencer), it was Samuel Parker and Parker Ranch that held the longest lease on the Humu`ula and Ka`ohe mountain lands.

Since cattle leases expired on these lands in 2002, about one third of the area has little or no cattle present. Important natural resources have begun to show significant recovery in these locations. This recovery is most evident in the mauka and certain makai areas of Humu`ula where feral cattle have been prevented from expanding their range. Giving this land “a rest” after more than 150 years of grazing is beneficial to the landscape by minimizing soil loss and allowing natural processes to recover the area’s productivity.

Mauka areas (7,600 - 8,000 ft elevation) are exhibiting a re-growth of the historic native Hawaiian ecosystem, including māmane, pūkiawe, and other species. Makai and gulch areas up to about the 7,000- foot elevation are seeing a resurgence of koa and natural regeneration of associated species.

Homesteading

The concept is to develop the first rural-development Homestead Area for DHHL beneficiaries in the south-eastern portion of the property. Preliminary design concepts call for a subdivision layout encompassing approximately 1,000-acres with a total of approximately 100 to 200-homesteads sites and other community uses.

<u>Layout</u>

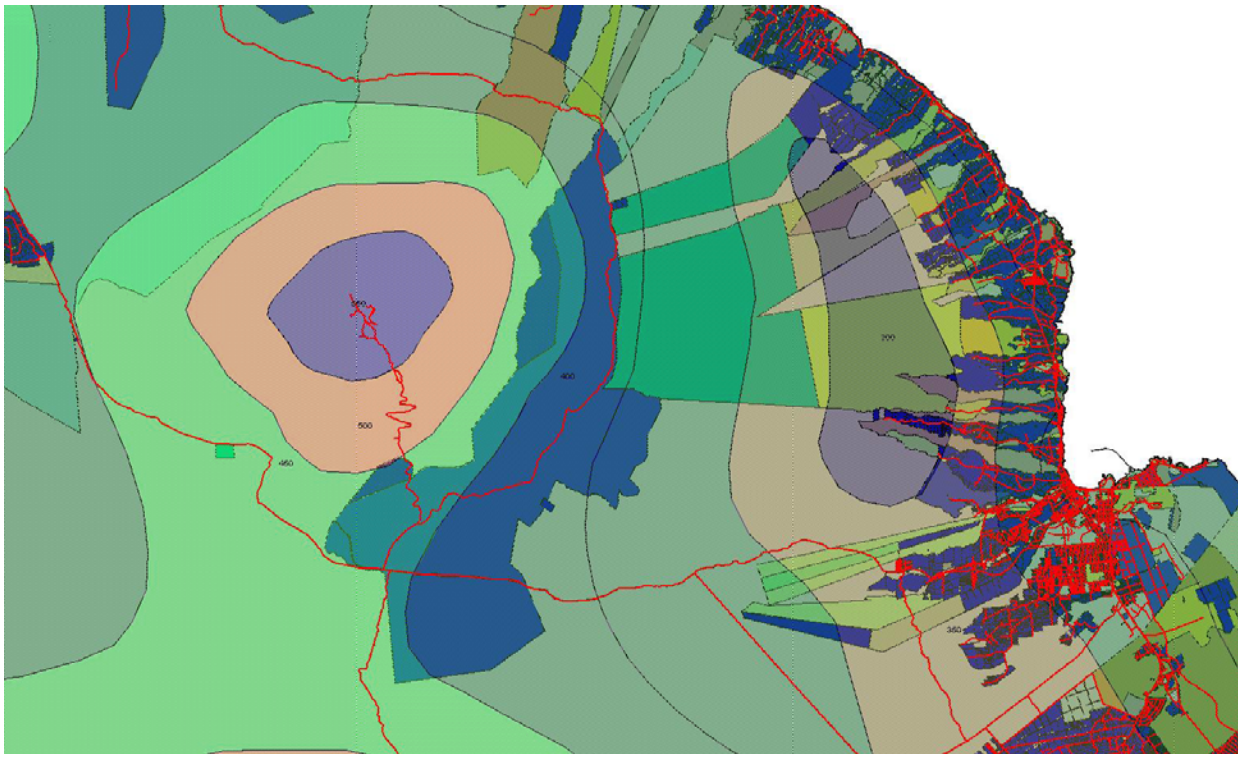
To take advantage of opportunities to further demonstrate the focus on efficient, self-sustainable communities, as well as provide for cost-effective development, the Legacy Program considers a variety of rural-development homestead layouts to address various beneficiary needs: Cluster homestead sites with separate agricultural/pasture lot, Cluster homestead sites with community agricultural/pasture, homestead lot subdivision or a Combination of alternatives.

It is envisioned that these alternatives will enable DHHL beneficiaries to have sufficient land for self-sustaining homesteading: land for a home site and related improvements/uses, including land for alternative energy for their use, pasture, agricultural uses, and land available for subsistence farming.

First Rural-Development Homesteads within Initial Homesteading Area

- The Initial Homesteading Area is situated on the south-eastern portion of property
- Approximately 4,500-acres are identified for homesteading in the Initial Homesteading Area, broken down as follows:
    - Approximately 1,000-acres are identified to be the First Rural-Development Homestead
    - An additional 1,000-acres are available for subsequent homesteading
        - This site is identified for interim pasture use prior to homesteading
    - An additional 2,500-acres are identified for subsequent homesteading
        - This site is identified for sustainable koa forestry prior to homesteading
- Characteristics of the First Rural-Development Homestead
    - A total of approximately 100 to 200-homesteads sites with a variety of possible development layouts:
        - Cluster homestead sites with separate agricultural/pasture lot
        - Cluster homestead sites with community agricultural/pasture
        - Homestead lot subdivision
        - Combination of alternatives
    - Limited overall slope on this portion of the site – it is relatively-level, compared to the balance of the property
    - The property has frontage/accessibility to Saddle Road
    - Accessibility from existing former ranch roads
    - Situated at the 80-inch mean annual rainfall contour
    - Situated within 400 – 450 Cal/cm2 solar radiation contour (4.6 – 5.2 peak sun hours)
- In order to make the development economically feasible, it is envisioned to be a rurally developed homestead area
    - Roads would remain unpaved (natural base, cinder surface)
    - Water source would be by catchment only
        - Fog drip catchment augmentation
    - Septic tanks, leach fields and/or, where appropriate, composting toilets for waste disposal
- Alternative Energy Component (Consistent with DHHL's Energy Policy)
    - Photovoltaic electrical power (with battery and generator back-up)
    - Solar hot water heating
    - Gray-water re-use
    - Water catchment
        - Fog drip catchment augmentation
    - Wind for electrical power, where appropriate
- Humu`ula is a unique environment that historically has had limited settlement. It is important that beneficiaries are made aware and understand the advantages and disadvantages of living in this area. It is not clear what the demand will be for these types of homesteads.
    - The homestead sites and area will be rurally-developed with limited infrastructure (cinder roads, catchment water, photovoltaic, septic/composting toilets, etc)
    - The area is relatively isolated from employment, schools, shopping and other DHHL communities
- Demand and interest for the first Rural-Development Homestead area and the availability of funds for needed infrastructure need to be taken into consideration.
- Subsequent homestead development may occur depending on demand, costs and policy relative to the overall use of the site.

In order to make the development economically feasible, it is envisioned to be a rurally-developed homestead area in which roads would remain unpaved (cinder), and water would be catchment only (DHHL has installed two catchments at Humu`ula and successfully tested this concept.) Septic systems and leach fields, and, where appropriate, composting toilets would be used for waste disposal. And basic electrical and telecommunications would be available.



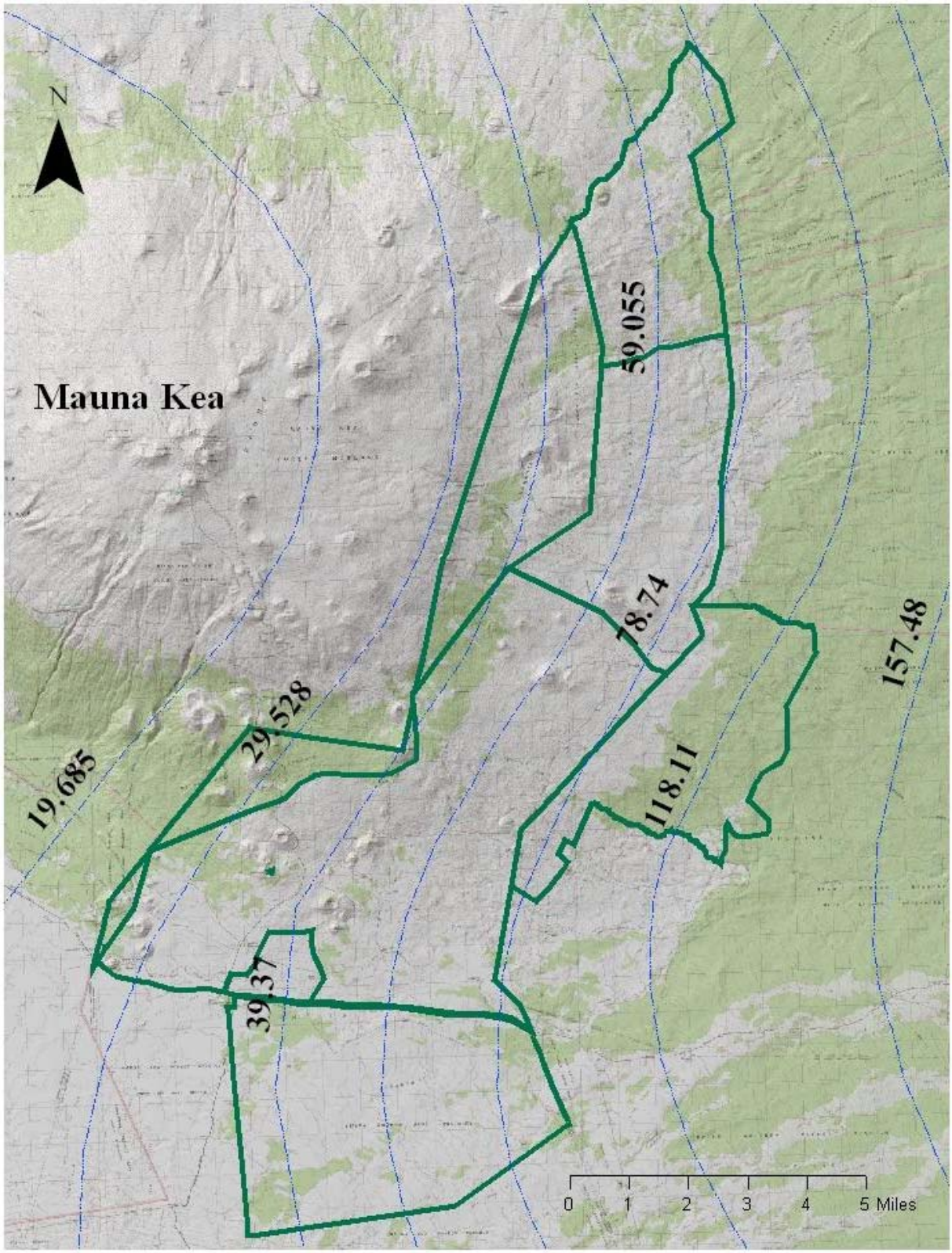
Solar Radiation Map of `Āina Mauna Region

Energy Unit Conversion Table

600	**calories per square centimeter**	**=**	**2200**	**Btu per square foot**	**=**	**7**	**peak sun hours**
550	calories per square centimeter	=	2000	Btu per square foot	=	6.4	peak sun hours
500	**calories per square centimeter**	**=**	**1800**	**Btu per square foot**	**=**	**5.8**	**peak sun hours**
450	calories per square centimeter	=	1700	Btu per square foot	=	5.2	peak sun hours
400	**calories per square centimeter**	**=**	**1500**	**Btu per square foot**	**=**	**4.6**	**peak sun hours**
350	calories per square centimeter	=	1300	Btu per square foot	=	4.1	peak sun hours
300	**calories per square centimeter**	**=**	**1100**	**Btu per square foot**	**=**	**3.5**	**peak sun hours**
250	calories per square centimeter	=	900	Btu per square foot	=	2.9	peak sun hours

Cal/cm2 times 3.688 gives Btu/ft2 . Cal/cm2 times 0.0116 gives peak sun hours.

The following map shows the property's opportunity for rainwater catchment.



Median Annual Rainfall Gradients (inches)

Although planning would begin immediately, full build out may not occur for several years. Additionally demand and interest for the agricultural homestead lots and the availability of funds for needed infrastructure would also need to be taken into consideration. Subsequent homestead development may occur depending on demand, costs and policy relative to the overall use of the site.

The `Āina Mauna Legacy Program incorporates several opportunities for homesteading across the entire landscape of the Humu`ula/Pi`ihonua lands. The bulk of the homestead opportunities are anticipated to be phased in once the land has been restored to productive use. This area includes the significant portions of the site that are proposed for sustainable koa restoration.

These forested areas also provide DHHL with an option for future agricultural homesteading. Once the koa restoration is accomplished, DHHL will have the opportunity to consider creation of agricultural homesteads using forestry for beneficiaries. The commercial koa forest management operations can continue, with the DHHL and beneficiaries benefitting directly from the commercial sale of koa or homesteads could be within the forested areas.

Similar to many present-day homesteaders having ranches associated with their homesteads or area for agricultural use associated with homesteads, with the restoration and management of the forest here, future homesteaders may incorporate the management of koa forest into their homesteads.

Ultimately, decision-makers decades from now may decide whether this is appropriate or not – once the forest is restored. The suggestion is that the Legacy Program expands future options, opportunities and choices for homesteading.

Pasture Uses (Consistent with Fire Plan – Additional Acreage)

A portion of the site could accommodate cattle; per the DHHL Fire Plan, cattle or other grazers may also be utilized as a cost effective way to reduce fuel load in approved areas and under strict management guidelines to avoid conversion from one undesirable fuel to another, e.g. tall grass to gorse.

Site evaluation indicates ideal grazing areas south of the gorse infestation and along Keanakolu Road where fuels would be reduced, gorse movement would be minimized, best animal units per year (AUY's) exist, and natural recovery of adjacent lands could continue.

Cattle can serve as beneficial tools in controlling fire fuels, particularly in areas where people frequent – primarily fronting and along roads. Recommended areas for the reintroduction of managed cattle is along the Saddle Road, Mauna Kea Access Road and Keanakolu Road.

Along these road corridors, therefore, are areas at greatest risk from heavy fuels being ignited by a careless visitor. The rest of Humu`ula/Pi`ihonua Mauka is much less at risk because of its limited access and DHHL's no hunting policy. In short, most fires are started by humans and the limited human presence at Humu`ula greatly reduces the risk.

Wildfire can quickly destroy important yet fragile assets of DHHL's lands. The Humu`ula and Pi`ihonua Mauka areas are especially vulnerable because of their remoteness, and the flammable fuel types found there. The closest public fire station is located in Hilo 25 miles away. The prevention of wildfires is of the upmost importance if homesteading is to take place in this area. Thus, one way to help control wildfire fuels is through pasturing in selected areas.

Pasture Uses around Keanakolu-Mana, Saddle and Mauna Kea Access Roads (Additional Acreage)

- Pasture Use - Interim Use
    - Interim pasture use is proposed in the Initial Homesteading Area (in the south-eastern portion of the property)
    - Approximately 1,000-acres are available for interim pasture use
    - This land is ultimately proposed for homesteading in the Initial Homesteading Area, however, while the homesteads are planned and awaiting development, in the interim, this land can be used as pasture
- Pasture Use
    - Approximately 4,000-acres are designated for additional acreage pasture use
    - Additional acreage pasture use is generally along portions of road ways (Saddle, Mauna Kea Access, Keanakolu/Mana)
    - Additional acreage pasture use could also be in the form of Community Pasture

Dispositions of Homestead and Pasture Leases, Licenses and/or RPs

- Since homesteading and pasture use are the typical and conventional disposition activities of DHHL, it is recommended that the proposed uses at Humu`ula/Pi`ihonua come under existing DHHL planning, design, development, funding, disposition and management.
- These proposed uses can fit in the "queue" for development scheduling and disposition with other Homesteading and Pasture uses
- While the Homestead lots will be rurally-developed because of the area's remote location and lack of traditional infrastructure, the cost of development is likely to be significant and beyond the scope and capacity for the remaining revenue-generating opportunities proposed on the property.

Forests and Forestry Uses on the Site

"Forest" and "Forestry" are used in various contexts in this report. At various places, "Native Forest Restoration", "Commercial Timber to Fight Gorse" and "Sustainable Koa Forestry" are referenced. Each references different aspects of dealing with forests and forest products.

The foundation of the `Āina Mauna Legacy Program is the protection and restoration of the DHHL lands at Humu`ula/Pi`ihonua for future generations. After 150-years of sheep and cattle ranching, the formerly dense forest became significantly altered by these activities and the forest landscape was converted primarily to open pasture land. In order to be consistent with the `Āina Mauna Legacy Program's Mission, Goals and Priority Issues, certain areas of the site need to be converted out of pasture and returned and restored to forest.

The forest restoration and enhancement can take on a variety of complementary focuses, including:

- Commercial non-native tree species (i.e. eucalyptus, sugi, etc.)
    - As noted previously, DHHL field trials have shown that shade from trees inhibit the ability for gorse to grow and spread. DHHL has planted portions of a gorse containment area perimeter with trees to establish a boundary for limiting the spread of gorse.
    - It is anticipated that commercial scale timber planting will shade the gorse sufficiently to keep it from producing seeds and that each year some portion of the seed bank will be

removed. Thus, timber planting can serve both as a gorse eradication mechanism, as well as an income generator.
    - The harvest of the timber in approximately 20-40 years would generate cash flow and open the ground for another round of gorse seed germination. The planting of eucalyptus/sugi seedlings immediately after harvest is recommended to reduce the possibility of a re-infestation of gorse. This cycle must be repeated until the majority of dormant gorse seed has germinated. The time estimated for gorse eradication is approximately 100 years due to the estimated 70-years gorse seed remains viable.
    - Ultimately, after decades of commercial forestry have effectively cleaned out the gorse and its seed bank, the property can be considered for restoration to a native forest.
    - It is important to understand that all suggested crops other than koa are designed to initially eradicate and control the gorse then support the eventual reforestation of the land back to a native koa. Eucalyptus and Sugi should be replaced with native koa where possible once it has been determined that gorse seed germination is no longer a threat.
    - Other viable gorse eradication opportunities can also be considered.

- Commercial and non-commercial native tree species (i.e. Koa)
    - DHHL has already implemented a koa salvage and reforestation program at Humu`ula. Likewise, DLNR has conducted a study on its neighboring land and is considering a like program. Each target dead and/or dying koa and allow contractors to enter the property and harvest the koa. The DHHL koa salvage and reforestation program seeks to:
        - Salvage koa trees before they are further reduced in value by weather, rot, and age, leaving certain trees for wildlife habitat and on-site seed production;
        - Promote forest-based economic opportunities in the community;
        - Generate income for DHHL;
        - Promote koa regeneration from existing seed present in the soil;
        - Provide a source of koa wood for Hawai`i's forest industry

The Legacy Program also considers an evaluation of the different forestry-related projects and project types which are currently interested in land at Humu`ula, as well as an evaluation method for assessing the pros and cons to each project type. Ultimately DHHL will need to evaluate which project best fits with the objectives and goals of the `Āina Mauna Legacy Program.

Native Forest Restoration

Due to the nature and condition of various portions of the property, certain areas are recommended for protection, restoration and enhancement as biodiverse, healthy native forests. The Native Forest is more than just trees; it includes the various ferns and other levels of understory, mosses, etc. making up a biodiverse ecosystem and habitat of various insects, plants and animals.

<u>Native Forest Restoration</u>

- The lands of Humu`ula and Pi`ihonua represent the most important native forest areas remaining in the DHHL trust.
- Based on soil, elevation, and rainfall characteristics, there are an estimated 17,800-acres in Humu`ula and adjacent Pi`ihonua mauka that could be restored back to a healthy, diverse native koa and `ōhi`a forest ecosystem.

- Likewise, there are approximately 10,000-acres across the mauka portions of the property that can be restored to māmane forest, a critical Palila bird habitat.
- There are strong recommendations to enhance and restore various areas in the overall property because of their importance as habitat, biodiversity and condition (and ability to restore) as native forest.
- The setting aside, protection and restoration of these areas is critical for the protection, restoration and enhancement of `Āina Mauna.
- Wildlife corridors help provide a contiguous habitat from the lower koa forest to the higher elevation māmane forest to facilitate the migration of native forest birds between these habitats.
- Additional Fencing, excluding and removing ungulates, would allow existing trees to produce and maintain root shoots and basal sprouts, thereby increasing foliage and subsequent tree processes.
- Centralized plant propagation, staging and storage facilities will be located at Kanakaleonui Bird Corridor and north of Pu`u `Ō`ō. These propagation centers will be used for both the native forest restoration and sustainable koa forests.
    - These propagation centers will be used for both the native forest restoration and sustainable koa reforestation, as well as include structures for overnight accommodations, offices, laboratories and storage for workers.
- Develop seed stock for native forest restoration activities.
    - Partner with the DLNR Tree Nursery, U.S. Fish & Wildlife Service Hakalau Forest National Wildlife Refuge, and other native plant propagation centers.
- Replanting efforts would focus on a mosaic of 'islands' using combinations of native plants grouped together (for example, pūkiawe, pilo, `a`ali`i and `ohelo may be planted together) that will grow outward until they all connect into one diverse native forest.
    - Koa (makai areas) and māmane (mauka areas) trees would then be planted around the existing shrubs so that they can utilize the beneficial traits of the 'islands.'
- Herbicides are a useful tool for controlling the spread of weed and grass populations such as banana poka, gorse, and kikuyu grass.
- Continued research is necessary to effectively evaluate the various experimental methods of out planting. Experimental plots should be established to be used for this research.
- The restored, healthy native forest provides a variety of benefits and opportunities to beneficiaries through gathering, cultural practices and opportunities to see and understand native forest ecosystems.
- The site (with restoration to healthy native forest) provides beneficiaries cultural practices access as the only site of this type in the Hawaiian Home Lands Trust inventory.

The Biological and Vegetation Sensitivity Analysis Reports (included in the 1997 Humu`ula/Pi`ihonua Master Plan Appendices) delineate areas containing endemic faunal and botanical sensitivity within the Humu`ula/Pi`ihonua area. They were used to identify priority portions of Humu`ula and Pi`ihonua for restoration. The assessments give brief descriptions of each area and outline the endemic resources that should be factored into any programming of the area.

The areas for restoration and enhancement are:

- `Āinahou Young Lava Flows - Nēnē Habitat
- West of Mauna Kea Access Road - Māmane-Naio Forest -Palila Habitat
- Upper Pi`ihonua -`Ōhi`a-Koa Forest -Biodiverse Native Forest

- Kahinahina - Māmane Forest -Palila Habitat
- Kanakaleonui Bird Corridor - Koa-Māmane Forest -Native Bird Link to Forest Areas
- Keanakolu Māmane Forest
- Wailuku River headwaters and drainage

These strong recommendations to enhance and restore various areas of the overall property to Native Forest are made because of their importance as habitat, biodiversity and condition (and ability to restore) as native forest. The setting aside of these areas is critical for the protection, restoration and enhancement of the `Āina Mauna.

It is the intent of this recommendation that the areas conserved as Native Forest are not commercially harvested and are left as biodiverse habitat, areas for gathering and opportunities for ecosystem services: provisioning, such as the production of food and water; regulating, such as the control of climate and disease; supporting, such as nutrient cycles and crop pollination; cultural, such as spiritual and recreational benefits; and preserving, which includes guarding against uncertainty through the maintenance of diversity.

As a means to assist in the funding of the restoration and enhancement of these areas, the department may negotiate long term and/or permanent conservation easements and/or leases with various entities.

Gorse Eradication – Recommended Method Using Commercial Timber

DHHL field trials have shown that shade from certain trees inhibit the ability for gorse to grow and spread and DHHL has planted portions of the perimeter of the Humu`ula/Pi`ihonua lands with trees to establish a boundary (containment area) to limit the spread of gorse.

<u>Initiate Gorse Eradication Utilizing Commercial Timber</u>

- Gorse is a noxious weed species that is threatening natural habitats and agro-ecosystems around the world, including Hawai`i
- Eradication of this noxious plant, that has already rendered thousands of acres useless, is an essential component in any land use and management plan for these lands.
- Gorse has a life span of 30 to 40-years while the seed can remain viable in the soil for up to 70-years after that.
- DHHL field trials and research projects have shown that shade from trees inhibit the ability for gorse to grown and spread.
- It is anticipated that commercial-scale timber planting will shade the gorse sufficiently to keep it from producing seeds and perhaps kill it.
- With normal forestry operations, each year some portion of the seed bank will be removed.
- Interim commercial-scale timber planting can serve both as a gorse eradication mechanism, as well as an income generator.
- Eucalyptus and Sugi have been proposed because the initial development of these crops in the general area have given rise to increased investment in required infrastructure including marketing and market development efforts by a number of public and private entities and field trials have demonstrated their effectiveness.

- The recommendation is to solicit proposals for a timber license for the planting and harvesting of commercial non-native tree species (i.e. eucalyptus, sugi or other) that will first serve to fight the gorse, but will also provide valuable wood products for a variety of uses which can include:
    - Lumber
    - Wood chips
    - Veneer
    - Forest products
    - Biomass for alternative energy opportunities (liquid fuel and electricity)
- DHHL would retain rights to any Carbon Credit opportunities
- Eucalyptus, sugi or others trees as selected to control and eradicate the gorse; once the gorse eradication process is well underway, the area is to be reforested back to a native koa.
- Other viable gorse eradication opportunities can also be considered.

It is anticipated that commercial scale timber planting will shade the gorse sufficiently to keep it from producing seeds and that each year some portion of the seed bank will be removed. Thus, timber planting can serve both as a gorse eradication mechanism, as well as an income generator.

Unfortunately, native trees (such as koa and `ōhi`a) do not have sufficient canopy to effectively shade and kill the gorse. So, the planting of eucalyptus/sugi seedlings is recommended to assist in eliminating the gorse and reducing the possibility of a gorse re-infestation. Due to the estimated 70-years gorse seed remains viable, planting/harvesting rotations must be repeated until the majority of dormant gorse seed has germinated. The time estimated for gorse eradication is approximately 100 years.

It is important to understand that all suggested crops other than koa and `ōhi`a (i.e. eucalyptus and sugi) are designed to initially control and eradicate the gorse then support the eventual reforestation of the land back to native koa. Eucalyptus and Sugi should be replaced with koa once it has been determined that gorse seed germination is no longer a threat.

<u>`Ōiwi Lōkahi o ka Mokupuni o Keawe – Gorse to Charcoal Demonstration Project</u>

In addition to the proposed Gorse Eradication Utilizing Commercial Timber called for in this `Āina Mauna Legacy Program, there is another gorse eradication effort that has been initiated by `Ōiwi Lōkahi o ka Mokupuni o Keawe. It is expected that both activities will operate on the property, as each is distinct from the other, and there is no apparent conflict in both continuing.

The site involves a portion of Laumai`a II, a portion of Tax Map Key (3) 3-8-001-007 and contains an overall land area of one thousand (1,000) acres. According to the DHHL License Agreement, the Licensee may not use the premises for any purpose other than strictly to conduct a research and development project using the invasive gorse shrub. No other uses shall be permitted, including grazing rights to demonstrate gorse controlled by livestock. However, the uses may be modified from time to time with the approval of the Chairman of the Hawaiian Homes Commission.

As envisioned, a processing facility will be installed within the 256-acre demonstration area, which is part of the 1,082-acre Laumai`a II pasture paddock. Alternate strips of gorse, on contour and approximately 15 acres each in size, will be harvested to minimize erosion while providing enough gorse to demonstrate the feasibility of the project. If successful, the remaining strips will then be harvested when the grass has grown back. It is expected that up to 3 acres per day will be harvested, requiring about 49 working days, or 2 months to complete all initial harvest blocks.

According to the `Ōiwi initial request, there is no anticipated conflict between the `Ōiwi proposed activity and DHHL's gorse control and reforestation projects. Likewise, it is not anticipated that the `Ōiwi activities will negatively conflict with the proposed Gorse Eradication Utilizing Commercial Timber proposed in this `Āina Mauna Legacy Program.

Sustainable Koa Forestry

DHHL believes that the Humu`ula/Pi`ihonua lands have the potential for serving as a sustainable native forest and land unit by simultaneously providing environmental, economic and social benefits to the trust and its beneficiaries, in perpetuity.

Most have noted that the expanding commercial forestry industry on the Big Island requires a critical mass of forest production and processing, as well as the appropriate investment for forestry management. Another recommendation is the establishment of commercially sustainable koa forest management areas.

<u>Koa Reforestation – Sustainable Koa Forest</u>

- A restored sustainable koa forest provides several opportunities and options for future decision-making by DHHL.
    - A sustainable koa forest would provide jobs and generate income to the DHHL trust.
    - Once a sustainable koa forestry operation is in place, portions of the property could be considered for future agricultural (sustainable koa forested) homestead opportunities, affording homesteaders a sustainable koa forest as a part of their homestead.
- Koa is one of the predominant tree species found naturally in the Humu`ula/Pi`ihonua lands.
    - It is presently the highest value timber crop in Hawai`i.
    - It grows easily and well in this area if introduced ungulates are removed.
    - Restoring the Humu`ula/Pi`ihonua lands to koa through carefully planned and managed reforestation is its highest and most compatible economic use.
- Based on soil, elevation, and rainfall characteristics, there are an estimated 10,000 acres in Humu`ula and adjacent Pi`ihonua mauka that could be restored and managed under a sustainable koa forest harvesting regime.
- Sustainable Koa Forestry Opportunities can take on two distinct actions.
    - The first is the salvaging of current koa trees.
    - The other is the planting and harvesting of koa as a tree crop.
- At Humu`ula, from 2003 to 2005, approximately 100-acres of koa salvage harvest created five full time jobs, supplied enough koa wood to meet the annual needs of at least 60 woodworkers and generated an average of $3,500 per acre per year in trust revenues.
- Centralized plant propagation, staging and storage facilities will be located at Kanakaleonui Bird Corridor and north of Pu`u `Ō`ō. These propagation centers will be used for both the native forest restoration and sustainable koa forests.
    - These propagation centers will be used for both the native forest restoration and sustainable koa reforestation, as well as include structures for overnight accommodations, offices, laboratories and storage for workers.
- Develop koa seed stock for koa forest restoration activities.
    - Partner with the DLNR Tree Nursery, U.S. Fish & Wildlife Service Hakalau Forest National Wildlife Refuge, and other native plant propagation centers.

- Research in Hawai`i has shown that the exclusion of ungulates from native forest areas, in combination with viable and present seed sources, can result in the natural regeneration of several native species within a few years.
- Additional Fencing, excluding and removing ungulates would allow existing trees to produce and maintain root shoots and basal sprouts, thereby increasing foliage and subsequent tree processes.
- Herbicides are a useful tool for controlling the spread of weed and grass populations such as banana poka, gorse, and kikuyu grass.
- Continued research is necessary to effectively evaluate the various experimental methods of out planting. Experimental plots should be established to be used for this research.

Koa forest restoration, with the focus on sustainable commercial forestry management practices, can be very lucrative. Management of DHHL lands as koa forests combines high quality hardwood returns from the sale of koa wood, eco-tourist opportunities as the forest is restored, and cultural uses such as gathering, and canoe logs.

DHHL has already implemented a koa salvage and reforestation program at Humu`ula. Likewise, based on soil, elevation, and rainfall characteristics, there are an estimated 15,000 to 20,000-acres on the site that could be restored and managed as koa forest. Many of these lands are currently covered in gorse and would require a long term commitment to restoration and conversion of multiple rotations of eucalyptus and/or sugi prior to conversion to koa.

A sustainable koa reforestation program will: Promote forest-based economic opportunities in the community; Generate income for DHHL; Promote koa regeneration from existing seed present in the soil; and Provide a source of koa wood for Hawai`i's forest industry.

A restored sustainable koa forest provides several opportunities and options for future decision-making by DHHL. Portions could be restored to biodiverse Native Forest, large-scale commercial koa harvesting could take place, or portions of the property could be divided into homesteads, affording homesteaders the opportunity to include sustainable koa harvest as a part of their homestead.

Self-sustaining Funding with Reinvestment into the Property

One of the central focuses of the `Āina Mauna Legacy Program is that the activities and programs implemented need to be economically self-sustaining, with the goal to reinvest the revenue into the management of the property. In considering revenue generation, several opportunities exist:

<u>Use of Humu`ula Sheep Station – Commercial Activities</u>

Three alternatives were suggested for the Humu`ula site. The alternatives consider different phases (starting with a modest effort and expanding incrementally over time,) as well as different outcomes (i.e. an operator may choose to start with a highly capitalized project, rather than taking a more gradual approach.)

The `Āina Mauna Legacy Program takes into account its historical, architectural and cultural importance. The Reuse Plan also suggested the redevelopment of the property into a Lodge. Likewise, the facility could be considered for a variety of uses and serve as a base/focal point for ecotourism, events, education, staging, retreats, gatherings, meetings, etc.

Initiate the Humu`ula Sheep Station Adaptive Reuse Plan

- The objective of initiating the Humu`ula Sheep Station Adaptive Reuse Plan is to solicit qualifications and proposals from parties interested in leasing and redeveloping the Humu`ula Sheep Station (15+/- acres).
- The adaptive reuse plan proposes a mix of land uses, wherein the property is divided into three principal sub-areas:
    - Historic/Community Center (5.5 to 6.0-acres)
    - Open Campground (2.0 to 2.5-acres)
    - Commercial (7.0 to 8.0-acres), including retail, recreational, lodgings and restaurant activities appropriate to a transient or visitor market.
- Set-aside of a Staging Area for eco-tourism activities that occur over the remainder of the Humu`ula/Pi`ihonua site
- Base facility for Legacy Program implementation staff
    - Accommodations
    - Office
    - Storage
    - Possible field worker facility and related improvements/infrastructure

<u>Forest Products and Biomass for alternative energy opportunities (liquid fuel and electricity)</u>

Several forestry products and alternative energy producers have been identified as possible users of large scale areas for forestry development. Some of these have recently requested use and leasing of nearby State lands for these purposes. To fully implement this opportunity, it is important that forestry operations at Humu`ula attempt to capture all possible value from planted trees, such as veneers, lumber, wood chips, biomass for energy and carbon off-set/credits.

Carbon Offsets/Credits are a key component of national and international emissions trading schemes that have been implemented to mitigate global warming. Credits can be exchanged between businesses or bought and sold in international markets at the prevailing prices.

<u>Ecotourism and Recreation Use</u>

Ecotourism and recreation related activities, a growing sector of the island's visitor industry, have great potential here due to the natural resources of these lands. Other than providing an area, such as the Humu`ula Sheep Station, to service and manage these activities, these uses and activities could be integrated and managed within other proposed economic uses. The Humu`ula Sheep Station may serve as a central site to coordinate eco-tourism activities over the property.

Initiate Expanded Ecotourism Opportunities

- Ecotourism and recreation related activities, a growing sector of the island's visitor industry, have great potential due to the natural resources of these lands.
- Eco-tourism uses typically have a small footprint and limited impact
    - Ecotourism can provide a valuable economic use for an area, which, until now, has not been utilized to its full potential and which do not require permanent structures or impact.

- Other than providing a staging area, such as the Sheep Station area to service and manage these activities, these uses and activities could be integrated and managed across the remainder of the landscape and within other proposed uses.
- The potential eco-tourism uses and activities include:
    - Biking Tours
    - Bird Watching Tours
    - Camping
    - Lodge
    - Hiking Tours
    - Horseback Tours
    - Wilderness Resort
    - Guest Ranch
    - Historical Tours
    - Nature Tours
    - Volunteer "Service" Trips
- In order to help assure that the activities are respectful, careful and safe, operators will have to:
    - Adhere to required procedures/equipment protocols
    - Include volunteer "service" trip components to augment the reforestation and invasive species control activities
    - Incorporate cultural, natural resources and safety briefing to guests
    - Incorporate cultural, natural resources and safety employee/volunteer training program

Initiate Use of Remote Accommodations

- The property has existing and can accommodate additional ranch houses, cabins and other Remote Accommodations
- Use of Remote Accommodations cover a small footprint on the overall landscape and have limited impact on the resources, but provide opportunities for necessary funds for the self-sufficient operations of the Legacy Program.
- The former Pu`u `Ō`ō ranch headquarters and the Kanakaleonui cabin (or others that could be constructed), can provide a series of locations for overnight accommodations, retreat, ecotourism uses, etc.
    - One option is to solicit operators to lease a package that includes a staging area at the Humu`ula Sheep Station with one or more remote sites.
        - These sites would be especially attractive if developed in conjunction with existing and new trails for hikers, bicyclists and/or horseback riders who could then travel from cabin to cabin.

Disposition of Commercial Licenses/Leases Based on Broad Request for Proposal Process

- One of the central focuses of the `Āina Mauna Legacy Program is that the activities and programs implemented need to be economically self-sustaining, with the goal to reinvest the revenue into the management of the property.
- In considering revenue generation, several opportunities exist:
    - Forest Products
    - Biomass for alternative energy opportunities (liquid fuel and electricity)
    - Sustainable koa harvest

  - Reservation of carbon offsets/credits for the benefit of DHHL
  - Use of Humu`ula Sheep Station – Commercial Activities
  - Ecotourism and Recreational Use
- Since many of the recommended activities are commercial in nature (i.e. not for the individual benefit of a particular beneficiary,) it is recommended that DHHL implement these activities through a broad Request for Qualifications (RFQ) and Request for Proposals (RFP) process.
  - DHHL has the responsibility to look for the best qualified applicants (background, experience, financial capability, business plan, etc.) that can fulfill the Trust's needs at a reasonable price.
  - Likewise, as a State agency, DHHL is obligated to follow state procurement laws.
  - The suggestion of using a broad RFQ/RFP process in the procurement of services for the commercial enterprises does not in any way limit the opportunity for beneficiaries to be involved in the process.
  - To the extent permitted by law, native Hawaiians will be given preference in the selection process, other items being equal.

State and Federal Grant Opportunities

- Initial, preliminary listing of possible options for funding:
  - Conservation Resource Enhancement Program (CREP)
  - Partners for Fish and Wildlife
  - Wildlife Habitat Incentives Program (WHIP)
  - State Forest Stewardship Program (FSP)
  - Watershed Partnership Program (Mauna Kea Watershed Alliance)
  - Army Compatible Use Buffers Program
- Due to limitations in Federal regulations, Na Kupa`a O Kuhio should be considered to take advantage of Federal funding opportunities
- Seek separate earmarked funds through State and Federal funding sources

Education and Research Opportunities

The implementation of the `Āina Mauna Legacy Program offers the opportunity for others to visit and experience the natural and cultural resources of the Humu`ula/Pi`ihonua region and provide formal and informal educational opportunities for children and adults to:

- Connect people with the world around them
- Have hand's on experiences in a healthy Hawai`i native forest
- Foster awareness, appreciation and understanding of Hawai`i and its natural and cultural environment
- Encourage wise stewardship of precious Island ecosystems
- Provide a unique and educational experience for visitors to the Islands
- Document the successes and failures of land management activities via formal research

The educational programs consider involvement and participation with native Hawaiian immersion charter schools, other organized public and private educational entities, as well as partnerships with existing private non-profit entities such as Tropical Reforestation and Ecosystems Education (TREE), The Nature Center, and Hawai`i Forest Institute (HFI).

Education

- Mandatory `Āina Mauna Cultural, Natural Resources and Safety Briefings for all guests and contractors
- Separate Employee Training on Cultural, Natural Resources and Safety concerns
- Separate Volunteer Training on Cultural, Natural Resources and Safety concerns
- Invasive Species Control Program
- Educational Materials/Outreach
- Through Extensive Outreach efforts, Generate Community Awareness and Support
- Creation and maintenance of `Āina Mauna Legacy Program Website
- Incorporate Beneficiary involvement and participation in outreach and education efforts

`Āina Mauna Legacy Program Implementation Advisory Council

As an integral part of the implementation of the `Āina Mauna Legacy Program, the Legacy Program includes the formation of an Implementation Advisory Council (`Āina Mauna Legacy Program Implementation Advisory Council) to provide advice and recommendations to the Hawaiian Homes Commission and the Department of Hawaiian Home Lands regarding the implementation of the `Āina Mauna Legacy Program.

`Āina Mauna Legacy Program Implementation Advisory Council Membership

- Thirteen Council members: (consensus discussion/decision making)
    - Three DHHL beneficiary lessees, licensees or permit holders from Hawai`i Island
    - Three native Hawaiian representatives (including at least one kupuna) with experience or knowledge regarding native Hawaiian subsistence, cultural, religious or other activities
    - One DHHL beneficiary representative presently on the applicant waiting list
    - Two representatives from the science community with experience specific to forest management, native flora and fauna, and/or any other scientific discipline
    - Two representatives from environmental and/or conservation organizations
    - One representative from the eco-tourism industry
    - One representative from the community with experience in education and outreach
- Three facilitator/commission members:
    - The Legacy Program implementation facilitator who shall also serve as the Convener and Chair of the Council
    - The East Hawai`i and West Hawai`i Commissioners on the Hawaiian Homes Commission
- The implementation process will include the Council, Beneficiary and community involvement and participation in advising the Department and Commission.
- The `Āina Mauna Legacy Program Implementation Advisory Council will be advisory only; the Department will have final decision making authority.

The Council can draw on the expertise of its members and other sources in order to provide advice. Council members shall serve as liaisons between their constituents and/or communities, keeping the Hawaiian Homes Commission and the Department of Hawaiian Home Lands informed of issues and concerns, as well as performing outreach to their respective communities on behalf of the `Āina Mauna Legacy Program.

The Council may serve as a forum for consultation and deliberation among its members and as a source of consensus advice to the Hawaiian Homes Commission and the Department of Hawaiian Home Lands. Such consensus advice shall fairly represent the collective and individual views of the Council members.

The Council does not have the authority to perform operational or management functions, or to make decisions on behalf of Hawaiian Homes Commission and/or the Department of Hawaiian Home Lands. The Council will be advisory only; the Department will have final decision making authority.

Leader and Model

The effort of preparing and implementing the `Āina Mauna Legacy Program can serve as a model to others for appropriate ecosystem restoration and enhancement, involvement of partnerships and self-sustaining approaches to land management. The lands of Humu`ula and Pi`ihonua represent the most important native forest areas remaining in the DHHL trust. These lands provide a glimpse into the natural environment and native forests which are disappearing throughout the state.

The area serves as valuable habitat to many native and endemic species. The area's proximity to Mauna Kea also makes it a valuable cultural resource. These lands have the potential for serving as a sustainable native forest and land unit by simultaneously providing environmental, economic and social benefits to the trust and its beneficiaries in perpetuity.

There is a commitment to restore the site to a natural, healthy state; it is a process that will take considerable effort, time and money to complete. Accomplishing this, the Legacy Program and its implementation may serve as a leader and model to others across the State of Hawai`i.

`Āina Mauna Legacy Program Outreach Activities

Hawaiian Homes Commission Informational Workshops (public meeting):

Kona on June 22, 2009
Waimea on September 21, 2009

Beneficiary Consultations (public meeting):

Waimea on September 23, 2009
Hilo on September 25, 2009 (Hilo High School)
Hilo on October 14, 2009 (Keaukaha Elementary School)

(Invitation letters were sent to over 5,000 Hawai`i Island beneficiaries by mail; postcards were mailed to Hilo addresses for the second Hilo meeting)

On September 14, 2009, HHC Chairperson Kaulana Park and Peter Young (Ho`okuleana LLC) participated in a statewide OHA radio program with Jonathan Scheuer and discussed the `Āina Mauna Legacy Program.

On October 28, 2009, the OHA Beneficiary Advocacy and Empowerment Committee (which includes all OHA Trustees) was given a briefing on the `Āina Mauna Legacy Program.

`Āina Mauna Legacy Program Advisory Group

The Advisory Group was formed to provide advice and recommendations in identifying the optimum land use, infrastructure patterns, best management practices and estimated financial requirements to achieve the goals of the `Āina Mauna Legacy Program.

Advisory Group members served as liaisons between their constituents and communities, as well as helped with outreach to their respective communities on behalf of the `Āina Mauna Legacy Program. An Advisory Group site visit of the area was held on June 30, 2009 and video conferences with the group were held on August 19, 2009 and November 2, 2009. Advisory Group members were e-mailed multiple drafts of portions of and the entire Legacy Program document throughout the process.

Advisory Group members include:
George Applegate, Dr. Sam Gon, Dr. Jim Jacobi, Guy Kaniho, Duke Kapuniai, Kanani Kapuniai, John Kekua, Julie Leialoha, Sheri Mann, Kapua Sproat and Ed Stevens

The `Āina Mauna Legacy Program informational documents were posted on the DHHL website and sent to numerous Hawaiian, environmental, government and non-profit agencies for comments and feedback. Responses to comments from the various beneficiary consultation meetings are posted on the DHHL website, as are the Pre-final Executive Summary and full document.

Acknowledgements

A special thanks to all who have made the `Āina Mauna Legacy Program possible. We would especially like to thank members of the Hawaiian Homes Commission: Chairperson Kaulana Park, Commissioner Alapaki Nahale-a, Commissioner Malia P. Kamaka, Commissioner Perry O. Artantes, Commissioner Donald Chang, Commissioner Stuart K. Hanchett, Commissioner Francis K. Lum, Commissioner Trisha Morikawa, and Commissioner Henry K. Tancayo.

This program would not be possible without the assistance and collaboration of Department of Hawaiian Home Lands Staff: Linda Chinn, Darrell Yagodich, Bob Freitas Jr., Bill Davis, Mike Robinson, Jim Dupont, Lani Hoomana and Kay Ahina.

The `Āina Mauna Legacy Program would not have been possible without the thoughtful insight and input from the `Āina Mauna Legacy Program Advisory Group. Advisory Group members included: George Applegate, Dr. Sam Gon, Dr. Jim Jacobi, Guy Kaniho, Duke Kapuniai, Kanani Kapuniai, John Kekua, Julie Leialoha, Sheri Mann, Kapua Sproat and Ed Stevens.

Finally, and most importantly, we want to acknowledge and thank Micah Kane, former Chairperson of the Hawaiian Homes Commission and Director of the Department of Hawaiian Home Lands, for his vision that is the foundation of the `Āina Mauna Legacy Program, motivated us throughout the development of the program and stands as the legacy of these `āina mauna lands for future generations.

Initial Immediate Actions

`Āina Mauna, or mountain lands, reflects a term used affectionately by elder Hawaiians to describe the upper regions of all mountain lands surrounding and including Mauna Kea. The following principles, areas of focus and goals serve as the foundation to the preparation and implementation of the `Āina Mauna Legacy Program.

Mission

The mission of the `Āina Mauna Legacy Program and its implementation is to protect approximately 56,000 acres of native Hawaiian forest that is ecologically, culturally and economically self-sustaining for the Hawaiian Home Lands Trust, its beneficiaries and the community.

Goals

Initial goals for the `Āina Mauna Legacy Program include:

Goal 1: Develop an economically self-sustaining improvement and preservation program for the natural and cultural resources (invasive species eradication and native ecosystem restoration) and implementation strategy.

The focus of the `Āina Mauna Legacy Program shall be on:

- Restoration and enhancement of DHHL trust resources;
- Identify immediate and future opportunities for DHHL beneficiaries;
- Removal of invasive species - gorse, etc.;
- Conserve natural and cultural resources and endangered species;
- Address reforestation and restoration of the ecosystem;
- Develop revenue generation, reinvestment in land to sustain activities;
- Provide educational and cultural opportunities;
- Identify and secure partners to sustain activities;
- Identify opportunities for alternative/renewable energy projects; and
- Be a lead and/or model for others to engage in ecosystem restoration in a culturally sensitive manner based on partnerships to develop a self-sustaining model

Goal 2: Develop an outreach program to gain interest, participation, and support from the Hawaiian Homes Commission, DHHL Staff, beneficiaries groups, cultural practitioners, natural resource scientists, and the broader community for the Legacy Program and its implementation.

The `Āina Mauna Legacy Program serves as a guide as DHHL moves forward in managing the Humu`ula/ Pi`ihonua area to conserve its legacy for future generations while also serving as an economic resource. The Legacy Program is an extension of prior planning and activities at the site. Findings, recommendations, background information and other references from many of these prior documents become part of the overall planning and implementation process.

The lands of Humu`ula and Pi`ihonua represent the most important native forest areas remaining in the DHHL trust. These lands provide a glimpse into the natural environment and native forests which are disappearing throughout the state. The area serves as valuable habitat to many native and endemic species. The area's proximity to Mauna Kea also makes it a valuable cultural resource. These lands have the potential for serving as a sustainable native forest and land unit by simultaneously providing environmental, economic and social benefits to the trust and its beneficiaries in perpetuity.

The following are immediate actions to initiate the implementation of the `Āina Mauna Legacy Program.

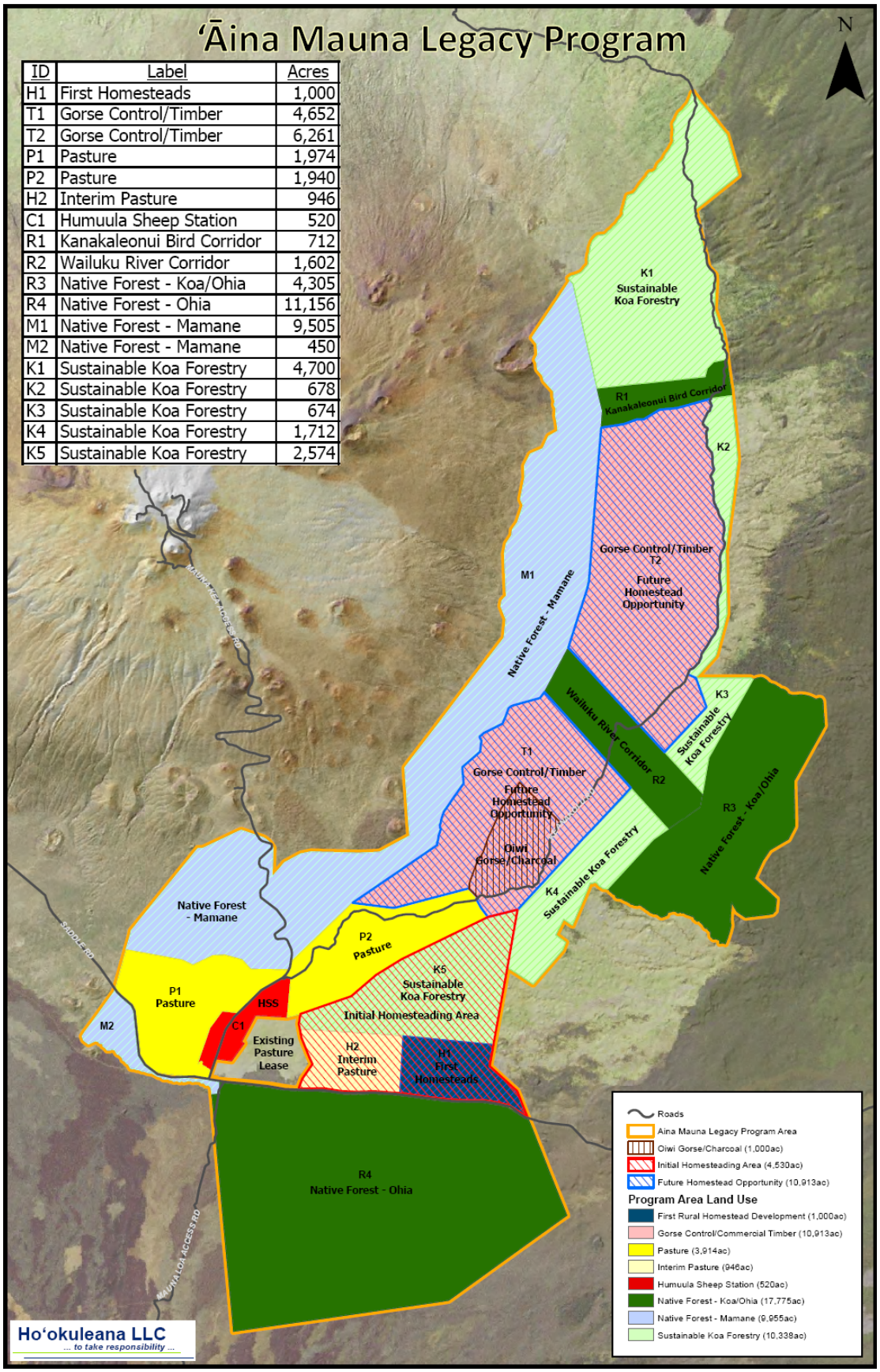
Immediate/Short Term Actions – Summary Listing

1. Form the `Āina Mauna Legacy Program Implementation Advisory Council
    a. The implementation process will include the Council, Beneficiary and community involvement and participation in advising the Department and Commission.
2. Initiate the first rural-development Homestead Area (on south-eastern part of property)
3. Initiate the Humu`ula Sheep Station Adaptive Reuse Plan
4. Initiate expanded Ecotourism opportunities
5. Initiate use of Remote Accommodations
6. Initiate Gorse Eradication (consider all viable gorse eradication opportunities, with commercial timber appearing to be the most viable and beneficial to the Department)
    a. The activities are combined to highlight the actual benefit of forestry to fight gorse, restore the native forest and generate revenue
    b. Incorporate Carbon Credit opportunities to DHHL
    c. Use timber license/lease as DHHL implementation of Hawai`i Clean Energy Initiative
    d. Consider a long-term agreement to accommodate multiple planting/harvesting rotations
    e. Require periodic native forest restoration (i.e. at 5-year intervals) on or outside of leased area
7. Investigate and implement additional areas for sustainable koa forestry opportunities. Allows for opportunities for revenue generation; allows for enhanced restoration of native forest
8. Initiate a set-aside of portions of the property for restoration and enhancement purposes
9. Pasture uses (focused on fire fuel mitigation, consistent with Fire Plan – Additional Acreage) around Keanakolu-Mana, Saddle and Mauna Kea Access Roads
10. Initiate unmanaged-ungulate eradication over entire property. Cattle and other ungulates are vectors for the spread of invasive species (including gorse) and have a negative influence on native forest restoration. Implementing unmanaged-ungulate eradication (primarily sheep, cattle and goats) and allowing management of pigs (so long as the resources are protected) will provide food for beneficiaries, reduce the impacts to the forest resources and generate revenue for the Trust
11. Initiate state, federal and private grant applications to support resource restoration
12. Initiate a Safe Harbor Agreement for threatened/endangered species over entire site

Disposition of the respective licenses, leases, etc. to implement these actions would be through a broad RFQ/RFP process to select the best qualified applicants (background, experience, financial capability, business plan, etc.) to conduct the respective activities. Homestead and Past agreements would be under the typical DHHL disposition process for these types of uses. Any required environmental review would be conducted by the applicant/selectee, based on the details of their specific proposal.

Comparison of Legacy Program Mission, Goals and Priorities with the Proposed Immediate Actions

- Restoration and enhancement of DHHL trust resources
- Preservation of Natural and Cultural Resources and Endangered Species
- Address reforestation and restoration of the ecosystem
    - Reinvest the revenue derived from property into management/restoration
    - Consider a term (i.e. 50-year) conservation encumbrance over portions of the property
    - Initiate additional areas for sustainable Koa Salvage opportunities
    - Require interim gorse-eradication timber operator to participate in native forest restoration
    - Incorporate "volun-tourism" (visitors volunteer) support into ecotourism activities
    - Pasture uses (focused on fire fuel mitigation, consistent with Fire Plan - additional acreage)
    - Initiate unmanaged-ungulate eradication over entire property
    - Initiate a Safe Harbor Agreement for threatened/endangered species over entire site
- Identify opportunities for DHHL Homesteading
    - Opportunities for homesteading across the entire landscape of Humu`ula/Pi`ihonua lands
    - Initiate the first rural-development Homestead Area
    - Forested areas also provide DHHL with an option for future homesteading
- Removal of invasive species - gorse, etc.
    - Initiate gorse removal (consider viable options; commercial timber appears most beneficial)
        - Forestry fights gorse and restores the native forest – and, it generates revenue
        - Incorporate Carbon Credit opportunities to DHHL
        - Use timber as DHHL implementation of the Hawai`i Clean Energy Initiative
        - Consider a long-term agreement to address multiple harvesting rotations
        - Require periodic native forest restoration on or outside of leased/licensed area
    - Continue the `Ōiwi Lōkahi o ka Mokupuni o Keawe gorse to charcoal demonstration project
    - Initiate unmanaged-ungulate eradication over entire property
    - Pasture uses (focused on fire fuel mitigation, consistent with Fire Plan - additional acreage)
- Identify and secure partners to sustain activities
- Develop revenue generation with reinvestment in land to sustain activities
    - Initiate state, federal and private grant applications to support resource restoration
    - Initiate implementation of the Humu`ula Sheep Station Adaptive Reuse Plan
    - Initiate expansion of Ecotourism
    - Initiate process for Use of Remote Accommodations
    - Investigate and implement additional areas for sustainable koa forestry opportunities
    - Interim use of commercial scale timber operations (timber as tool to eradicate gorse)
    - Incorporate Carbon Credit opportunities in interim timber operation
    - Consider a term (i.e. 50-year) conservation encumbrance over portions of the property
    - Gorse-eradication timber operator native forest restoration could be "match" for grants
    - Volun-tourism efforts for native forest restoration could be "match" for grants
    - Initiate unmanaged-ungulate eradication over entire property
- Provide educational and cultural opportunities
    - Restored, healthy native forest provides a variety of opportunities for gathering, cultural practices and opportunities to see and understand native forest ecosystems
    - Humu`ula Sheep Station as gateway and staging area – campgrounds used by groups
- Identify opportunities for alternative/renewable energy projects
    - Rural-development homestead; opportunity for photovoltaic, water catchment/reuse etc.
    - Interim use of commercial scale timber operations (biomass for alternative energy)
- Be a lead and/or model for others to engage in ecosystem restoration in a culturally sensitive manner based on partnerships to develop a self-sustaining model


ʻĀina Mauna Legacy Program
N
ID | Label | Acres
H1 | First Homesteads | 1,000
T1 | Gorse Control/Timber | 4,652
T2 | Gorse Control/Timber | 6,261
P1 | Pasture | 1,974
P2 | Pasture | 1,940
H2 | Interim Pasture | 946
C1 | Humuula Sheep Station | 520
R1 | Kanakaleonui Bird Corridor | 712
R2 | Wailuku River Corridor | 1,602
R3 | Native Forest - Koa/Ohia | 4,305
R4 | Native Forest - Ohia | 11,156
M1 | Native Forest - Mamane | 9,505
M2 | Native Forest - Mamane | 450
K1 | Sustainable Koa Forestry | 4,700
K2 | Sustainable Koa Forestry | 678
K3 | Sustainable Koa Forestry | 674
K4 | Sustainable Koa Forestry | 1,712
K5 | Sustainable Koa Forestry | 2,574
K1 Sustainable Koa Forestry
R1 Kanakaleonui Bird Corridor
K2
Gorse Control/Timber T2
Future Homestead Opportunity
M1 Native Forest - Mamane
Wailuku River Corridor R2
K3 Sustainable Koa Forestry
R3 Native Forest - Koa/Ohia
T1 Gorse Control/Timber
Future Homestead Opportunity
Oiwi Gorse/Charcoal
K4 Sustainable Koa Forestry
Native Forest - Mamane
P2 Pasture
K5 Sustainable Koa Forestry
Initial Homesteading Area
P1 Pasture
HSS
C1
M2
Existing Pasture Lease
H2 Interim Pasture
H1 First Homesteads
R4 Native Forest - Ohia
MAUNA KEA ACCESS RD
SADDLE RD
Roads
Aina Mauna Legacy Program Area
Oiwi Gorse/Charcoal (1,000ac)
Initial Homesteading Area (4,530ac)
Future Homestead Opportunity (10,913ac)
Program Area Land Use
First Rural Homestead Development (1,000ac)
Gorse Control/Commercial Timber (10,913ac)
Pasture (3,914ac)
Interim Pasture (946ac)
Humuula Sheep Station (520ac)
Native Forest - Koa/Ohia (17,775ac)
Native Forest - Mamane (9,955ac)
Sustainable Koa Forestry (10,338ac)
Ho'okuleana LLC
... to take responsibility ...

1. **Form the `Āina Mauna Legacy Program Implementation Advisory Council (Council)**

As an integral part of the implementation of the `Āina Mauna Legacy Program, it is suggested that the process include the formation of an advisory council (`Āina Mauna Legacy Program Implementation Advisory Council) to provide advice and recommendations to the Hawaiian Homes Commission and the Department of Hawaiian Home Lands regarding the implementation of the `Āina Mauna Legacy Program.

The Council can draw on the expertise of its members and other sources in order to provide advice. Council members shall serve as liaisons between their constituents and/or communities, keeping the Hawaiian Homes Commission and the Department of Hawaiian Home Lands informed of issues and concerns, as well as performing outreach to their respective communities on behalf of the `Āina Mauna Legacy Program.

The Council may serve as a forum for consultation and deliberation among its members and as a source of consensus advice to the Hawaiian Homes Commission and the Department of Hawaiian Home Lands. Such consensus advice shall fairly represent the collective and individual views of the Council members.

The Council does not have the authority to perform operational or management functions or to make decisions on behalf of the Hawaiian Homes Commission and/or the Department of Hawaiian Home Lands. The Council will be advisory only. The Department will have final decision making authority.

The Council should consist of consensus decision-making members who shall be appointed by the Chairperson. Members in consensus decision-making from the following representative groups:

- DHHL beneficiary lessees, licensees or permit holders from Hawai`i Island
- Native Hawaiian representatives (including at least one kupuna) with experience or knowledge regarding native Hawaiian subsistence, cultural, religious or other activities
- DHHL beneficiary representative presently on the applicant waiting list
- Science community with experience specific to forest management, native flora and fauna, and/or any other scientific discipline the Chairperson determines to be appropriate
- Environmental and/or conservation organizations
- Eco-tourism industry
- Community with experience in education and outreach

The membership is designed to be balanced in terms of points of view represented; geographic diversity and advisory functions the Council will perform.

The implementation process will include the Implementation Advisory Council, Beneficiary and community involvement and participation in advising the Department and Commission.

2. **Initiate the First Rural-Development Homestead Area (homesteads on south-eastern portion of property)**

The Department's initial enabling legislation declares the objective of Congress and the State of Hawai`i, to be to enable native Hawaiians to return to their lands. Therefore the role of the Department of Hawaiian Home Lands has been seen as providing land for native Hawaiians. It is therefore appropriate to have homesteading as one component of this `Āina Mauna Legacy Program.

The concept is to develop the first rural-development homestead area for DHHL beneficiaries in the south-eastern portion of the property. Preliminary design concepts call for a subdivision layout encompassing approximately 1,000-acres with a total of approximately 100 to 200-homesteads sites and other community uses.

To take advantage of opportunities to further demonstrate the focus on efficient, self-sustainable communities, as well as provide for cost-effective development, the Legacy Program considers a variety of homestead development layouts to address various beneficiary needs: Cluster homestead sites with separate agricultural/pasture lot, Cluster homestead sites with community agricultural/pasture, Homestead lot subdivision or a Combination of alternatives.

It is envisioned that these alternatives will enable DHHL beneficiaries to have sufficient land for self-sustaining homesteading: land for a home site and related improvements/uses, including land for alternative energy for their use, pasture, agricultural uses, and land available for subsistence farming.

However, a large scale development proposal may be too ambitious and large at this time. The intent is to start with a single cluster of homesteads, plus a system of landscape restoration and management of adjacent lands.

In order to make the development economically feasible, it is envisioned to be a rurally-developed homestead area in which roads would remain unpaved (cinder), and water would be catchment only (possible fog drip catchment augmentation). Septic tanks and leach fields, and, where appropriate, composting toilets and gray water reuse would be used for waste disposal. Solar/photovoltaic and consideration for low wind speed generators would also be made for basic electrical needs.

Although planning would begin immediately, full build out may not occur for several years. Additionally, demand and interest for the homestead lots and the availability of funds for needed infrastructure would also need to be taken into consideration. Subsequent homestead development may occur depending on demand, costs and policy relative to the overall use of the site.

For the disposition of Homesteads it is recommended that DHHL follow its typical internal disposition process, using existing staff, resources and structure to plan, fund and develop the homesteading component of the `Āina Mauna Legacy Program.

The `Āina Mauna Legacy Program incorporates several opportunities for homesteading across the entire landscape of the Humu`ula/Pi`ihonua lands. The bulk of the homestead opportunities are anticipated to be phased in once the land has been restored to productive use. This area includes the significant portions of the site that are proposed for sustainable koa restoration.

These forested areas also provide DHHL with an option for future agricultural homesteading. Once the koa restoration is accomplished, DHHL will have the opportunity to consider creation of agricultural homesteads using forestry for beneficiaries. The commercial koa forest management operations can continue, with the DHHL and beneficiaries benefitting directly from the commercial sale of koa.

Similar to many present-day homesteaders having ranches associated with their homesteads or area for agricultural use associated with homesteads, with the restoration and management of the forest here, future homesteaders may incorporate the management of koa forest into their agricultural homesteads.

Ultimately, decision-makers decades from now may decide whether this is appropriate or not – once the forest is restored. The suggestion is that the Legacy Program expands future options, opportunities and choices for homesteading.

3. Initiate the Humu`ula Sheep Station Adaptive Reuse Plan

In March 2004, Kimura International prepared the report "Humu`ula Sheep Station Adaptive Reuse Plan" for DHHL. The Humu`ula Sheep Station Adaptive Reuse Plan proposes a mix of land uses, wherein the property is divided into three principal sub-areas: Historic/Community Center (5.5 to 6.0 acres); Open Campground (2.0 to 2.5 acres) and Commercial (7.0 to 8.0 acres), including retail, recreational, lodgings and restaurant activities appropriate to a transient or visitor market.

Three alternatives were developed for the Humu`ula site. The alternatives consider different phases (starting with a modest effort and expanding incrementally over time,) as well as different outcomes (i.e. an operator may choose to start with a highly capitalized project, rather than taking a more gradual approach.)

Alternative 1: Low Intensity Development

The focal activity is a campground where users are largely self-sufficient. "Improvements" consist primarily of demolishing unused structures, removing debris and clearing overgrown landscaping, and erecting fences around the remaining historic buildings).

Low Intensity Development - Development Components: Campground; Continued use of picnic area by a private eco-tour operator; and Homesteaders association headquarters/community center.

Alternative 2: Medium Intensity Development

This alternative involves one or more businesses that have regular hours of operation, thus, requiring permanent, probably full-time, employees. However, capital investment is still relatively limited and development can occur incrementally, whether it is the number of cabins erected, types of eco-tourism activities staged on site, and/or the range of goods and services offered at the rest stop.

Medium Intensity Development - Development Components: Construction of Cabins; Eco-tourism/adventure tourism staging area; Rest stop with food concession(s) and/or handicraft sales; Campground; Existing cottage converted into the beneficiaries' community center; and Interpretive signs and walkways in the historic zone.

Alternative 3: High Intensity Development

The high intensity alternative represents a more sophisticated level of development. With a greater outlay of capital, this alternative will need sustained market demand. Alternative 3 offers the greatest variety of visitor amenities and could become a destination of potentially enormous appeal. The addition of a lodge could significantly alter the visitor experience by providing more congenial settings in which to socialize, for example, a dining room/restaurant, seminar rooms for meetings, spa/fitness facilities and/or lounge with the iconic roaring fireplace.

High Intensity Development - Development Components: Construction of cabins; Lodge with restaurant; Eco-tourism staging center; Wellness center, retreat, seminar rooms; General store (with or without gas pumps); Rest stop; Campground and Stabilization of buildings in the historic zone for long-term conservation.

The Humu`ula Sheep Station Adaptive Reuse Plan is intended to allow for entrepreneurial flexibility; however, some uses are distinctly incompatible, including: Warehousing; Baseyard for transportation or construction operations or for utility companies; Manufacturing or repair services; Residential, except in a bed-breakfast or caretaker type of situation; Commercial agriculture; and Large-scale institutional or eleemosynary use or campus.

4. Initiate Expanded Ecotourism Opportunities

Ecotourism and recreation related activities, a growing sector of the island's visitor industry, have great potential here due to the natural resources of these lands. Other than providing an area, such as the Sheep Station area, to service and manage these activities, these uses and activities could be integrated and managed within other proposed economic uses. The Humu`ula Sheep Station may serve as a central site to coordinate the eco-tourism activities over the property.

The potential uses and activities include (many of these are noted and discussed in the Humu`ula Sheep Station Adaptive Reuse Plan):

- Biking Tours
- Hiking Tours
- Bird Watching Tours
- Lodge
- Wilderness Resort
- Guest Ranch
- Horseback Tours
- Volunteer “Service” Trips
- Historical Tours
- Nature Tours
- Camping

Support facilities that may be needed could include a gas station, rest stop, convenience store, outfitters facility, eco-business incubator space and various types of lodging facilities.

Likewise, portions of the site may be used by DHHL Land Management staff for office, housing, storage, etc.

5. Initiate Use of Remote Accommodations

The former Pu`u `Ō`ō Ranch headquarters, and former cowboy huts, such as Kanakaleonui cabin (or others that could be constructed), can provide a series of locations for overnight accommodations, retreat, ecotourism uses, etc. One option is to offer a lease package that includes a staging area at the sheep station with one or more remote sites. These sites would be especially attractive if developed in conjunction with existing and new trails for hikers, bicyclists, and/or horseback riders who could then travel from cabin to cabin.

6. Initiate Gorse Eradication (consider all viable gorse eradication opportunities, with commercial timber appearing to be the most viable and beneficial to the Department)

The forest restoration and enhancement can take on a variety of complementary focuses, including:

- Commercial non-native tree species (i.e. eucalyptus, sugi, etc.)
    - As noted previously, DHHL field trials have shown that shade from trees inhibit the

ability for gorse to grow and spread. DHHL has planted portions of a gorse containment area perimeter with trees to establish a boundary for limiting the spread of gorse.

- It is anticipated that commercial scale timber planting will shade the gorse sufficiently to keep it from producing seeds and that each year some portion of the seed bank will be removed. Thus, timber planting can serve both as a gorse eradication mechanism, as well as an income generator.
- The harvest of the timber in approximately 20-40 years would generate cash flow and open the ground for another round of gorse seed germination. The planting of eucalyptus/sugi seedlings immediately after harvest is recommended to reduce the possibility of a re-infestation of gorse. This cycle must be repeated until the majority of dormant gorse seed has germinated. The time estimated for gorse eradication is approximately 100 years due to the estimated 70-years gorse seed remains viable.
- Ultimately, after decades of commercial forestry have effectively cleaned out the gorse and its seed bank, the property can be considered for restoration to a native forest.
- It is important to understand that all suggested crops other than koa are designed to initially control and eradicate the gorse then support the eventual reforestation of the land back to a native koa. Eucalyptus and Sugi should be replaced with native koa where possible once it has been determined that gorse seed germination is no longer a threat.
- Other viable gorse eradication opportunities can also be considered.

- Commercial and non-commercial native tree species (i.e. Koa)
  - DHHL has already implemented a koa salvage and reforestation program at Humu`ula. Likewise, DLNR has conducted a study on its neighboring land and is considering a like program. Each target dead and/or dying koa and allow contractors to enter the property and harvest the koa. The DHHL koa salvage and reforestation program seeks to:
    - Salvage koa trees before they are further reduced in value by weather, rot, and age, leaving certain trees for wildlife habitat and on-site seed production;
    - Promote forest-based economic opportunities in the community;
    - Generate income for DHHL;
    - Promote koa regeneration from existing seed present in the soil;
    - Provide a source of koa wood for Hawai`i's forest industry

Most have noted that the fledgling commercial forestry industry in the Big Island needs the critical mass of forest production and processing, as well as the appropriate investment for forestry management.

<u>Carbon Offsets -Global Warming and Climate Change</u>

An added opportunity to enhance revenue opportunities is to consider carbon offsets. The world mostly agrees that something needs to be done about global warming and climate change. With global warming on the increase and species and their habitats on the decrease, chances for ecosystems to adapt naturally are diminishing. Many are agreed that climate change may be one of the greatest threats facing the planet.

Carbon offset can best be described as an act of paying a third party for reducing ("offsetting") greenhouse gas emissions when one is unable or unwilling to reduce one's own emissions. Some countries (or companies) seek to trade emission rights in carbon emission markets, purchasing the unused carbon emission allowances of others.

Hawai`i Clean Energy Initiative

In addition, an opportunity exists to incorporate other state initiatives in the Legacy Program. On behalf of the State of Hawai`i, Governor Lingle and the U.S. Department of Energy (DOE) entered into a Memorandum of Understanding (MOU) to establish the Hawai`i Clean Energy Initiative, a long-term partnership designed to accelerate the transformation of Hawai`i into one of the world's first economies based primarily on clean energy resources. Opportunities may exist to include activities related to the Clean Energy Initiative with the property at Humu`ula/Pi`ihonua.

7. Investigate and Implement Additional Areas for Sustainable Koa Forestry Opportunities

DHHL has already implemented a koa salvage and reforestation program at Humu`ula. Likewise, DLNR has conducted a study on its neighboring land and is implementing a like program. Each target dead and/or dying koa and allow contractors to enter the property and harvest the koa. The koa salvage and reforestation program seeks to:

- Salvage koa trees before they are further reduced in value by weather, rot, and age, leaving certain trees for wildlife habitat and on-site seed production;
- Promote forest-based economic opportunities in the community;
- Generate income for DHHL;
- Promote koa regeneration from existing seed present in the soil;
- Provide a source of koa wood for Hawai`i's forest industry

A restored sustainable koa forest provides several opportunities and options for future decision-making by DHHL. Portions could be restored to biodiverse Native Forest, large-scale commercial koa harvesting could take place or portions of the property could be divided into homesteads, affording homesteaders the opportunity to include sustainable koa harvest as a part of their homestead.

8. Initiate a Set-Aside of Portions of the Property for Restoration and Enhancement Purposes

The foundation of the `Āina Mauna Legacy Program is the protection and restoration of the DHHL lands at Humu`ula/Pi`ihonua for future generations. After 150-years of sheep and cattle ranching, the formerly dense forest became significantly altered by these activities and the forest landscape was converted primarily to open pasture land. In order to be consistent with the `Āina Mauna Legacy Program's Mission, Goals and Priority Issues (listed above), certain areas of the site need to be converted out of pasture and returned and restored to native forest.

Simply put, the forest is critically important to everyone in Hawai`i. Virtually all our fresh water comes from the forest. Also clean air, recreation areas, habitat for native species found only in Hawai`i, plants for cultural practices, and woods for fine arts are among the thousands of forest benefits. Perhaps the most serious challenge is the lack of funds for proactive management and protection of our native Hawaiian forests. The lands of Humu`ula and Pi`ihonua provide a glimpse into the natural environment and native forests which are disappearing throughout the state.

The area serves as valuable habitat to many native and endemic species. The area's proximity to Mauna Kea also makes it a valuable cultural resource. DHHL seeks to restore and enhance portions of the Humu`ula/Pi`ihonua lands in perpetuity to conserve these native forests and natural habitats for future generations.

The Biological and Vegetation Sensitivity Analysis Reports (included in the 1997 Humu`ula/Pi`ihonua Master Plan Appendices) delineate areas containing endemic faunal and botanical sensitivity within the Humu`ula/Pi`ihonua area. They were used to identify priority portions of Humu`ula and Pi`ihonua for restoration. The assessments give brief descriptions of each area and outline the endemic resources that should be factored into any programming of the area.

The areas for restoration and enhancement are:

- `Āinahou Young Lava Flows -Nēnē Habitat
- West of Mauna Kea Access Road – Māmane-Naio Forest – Palila Habitat
- Upper Pi`ihonua -`Ōhi`a-Koa Forest – Biodiverse Native Forest
- Kahinahina - Māmane Forest – Palila Habitat
- Kanakaleonui Bird Corridor - Koa-Māmane Forest – Native Bird Link to Forest Areas
- Keanakolu - Māmane Forest
- Wailuku River headwaters and drainage

As noted in these analyses, these include strong recommendations to enhance and restore various areas in the overall property because of their importance as habitat, biodiversity and condition (and ability to restore) as native forest. The setting aside of these areas is critical for the protection, restoration and enhancement of the `Āina Mauna. As a means to assist in the funding of the restoration and enhancement of these areas, the department may negotiate long term and/or permanent conservation easements and/ or leases with various entities.

9. <u>Pasture Uses (focused on fire fuel mitigation, consistent with Fire Plan – Additional Acreage) around Keanakolu-Mana, Saddle and Mauna Kea Access Roads</u>

A portion of the site could accommodate cattle; per the DHHL Fire Plan, cattle or other grazers may also be utilized as a cost effective way to reduce fuel load in approved areas and under strict management guidelines to avoid conversion from one undesirable fuel to another, e.g. tall grass to gorse. Site evaluation indicates ideal grazing areas south of the gorse infestation and along Keanakolu Road where fuels would be reduced, gorse movement would be minimized, best AUY's exist, and natural recovery of adjacent lands could continue. Pasture lands would be in the form of additional acreage pasture with the possibility of community pasture as well.

Cattle can serve as beneficial tools in controlling fire fuels, particularly in areas where people frequent – primarily fronting and along roads. Recommended areas for the reintroduction of cattle is along the Saddle Road, Mauna Kea Access Road and Keanakolu Road.

Along these road corridors, therefore, are areas at greatest risk from heavy fuels being ignited by a careless visitor. The rest of Humu`ula/Pi`ihonua Mauka is much less at risk because of its limited access and DHHL's no hunting policy. In short, most fires are started by humans and the limited human presence at Humu`ula greatly reduces the risk.

Wildfire can quickly destroy important yet fragile assets of DHHL's lands. The Humu`ula and Pi`ihonua Mauka areas are especially vulnerable because of their remoteness, and the flammable fuel types found there. The closest public fire station is located in Hilo 25 miles away. The prevention of wildfires is of the upmost importance if homesteading is to take place in this area. Thus, one way to help control wildfire fuels is through pasturing in selected areas.

10. Initiate Unmanaged-Ungulate Eradication Over Entire Property

Cattle and other ungulates are vectors for the spread of invasive species (including gorse) and have a negative influence on native forest restoration. Implementing unmanaged-ungulate eradication (primarily sheep, cattle and goats) and allowing management of pigs (so long as the resources are protected) will provide food for beneficiaries, reduce the impacts to the forest resources and generate revenue for the Trust.

Feral ungulates can have high population growth rates, are elusive and can jump or circumvent most existing fences. Control and/or removal of these animals should be a high priority on all lands designated for reforestation in Hawai`i.

This action should begin immediately. The eradication of unmanaged-ungulates will take time and thus, the faster the program can begin, the faster unmanaged-ungulates can be removed from the area, and restoration activities begin.

Successful control of unmanaged-ungulate populations involves:

1) Removal of populations,
2) Establishment of barriers to isolate populations,
3) Barrier inspection and maintenance, and
4) Vigilance in monitoring of animal population increase and ingress

An unmanaged-ungulate eradication program could be initiated with unmanaged-ungulates being eradicated by either beneficiaries or professional contractors.

11. Initiate State, Federal and Private Grant Applications to Support Resource Restoration

The `Āina Mauna program intends to be self-sustaining. Thus, grants and other types of outside funding will be a critical part of the program. Initial applications may include (partial list): Forest Stewardship, Forest Legacy, Army Compatible Use Buffers, Clean Water Act, Watershed Partnership Program, Conservation Resource Enhancement Program (CREP), Wildlife Habitat Incentive Program (WHIP), Partners for Fish and Wildlife, Landowner Incentive Program (LIP), Western Wildland Urban Interface Grant Program, Water Resources Development Program (USACE), and Environmental Quality Incentives Program (USDA).

12. Initiate a Safe Harbor Agreement for threatened/endangered species over entire site

Because the activities proposed in the `Āina Mauna Legacy Program could affect habitat for threatened and/or endangered plants, birds and animals, it is recommended that a blanket (plants, birds and animals) Safe Harbor Agreement be developed over the entire property and incorporated into the Legacy Program. Since one of the goals of the `Āina Mauna Legacy Program is the restoration of habitat, as well as planting of trees that could attract native birds and bats, the Safe Harbor Agreement can protect DHHL from future impacts to the habitat and the species.

Organizational Structure of DHHL

DHHL is organized under the following structure:

Homestead Services Division

The Homestead Services Division is involved in the direct servicing of homestead lessees and applicants for homestead leases. Its three branches are:

(1) the District Operations Branch, which provides direct services to lessees and applicants on a statewide basis through its six district offices of East Hawai`i, West Hawai`i, Maui, Moloka`i, O`ahu, and Kaua`i, and manages the homestead areas and projects on those islands;
(2) the Homestead Applications Branch, which receives and processes applications for homesteads and maintains and updates waiting lists; and
(3) the Loan Services Branch, which provides financial services for financing for new home construction, replacement homes, home repairs, farming, and ranching; provides access to other loan sources through its loan guaranty program; and undertakes collection activities to obtain payments.

Land Development Division

The Land Development Division is responsible for developing Hawaiian home lands for homesteading and income-producing purposes. Its three branches are:

(1) Design and Construction Branch, which designs and constructs on-site and off-site improvements for the development of residential, farm, and pastoral lots for homesteading purposes;
(2) Housing Project Branch, which provides turn-key homes in in-fill project areas to applicants and assists lessees of vacant lots in arranging financing and in contracting with a builder; and
(3) Master-Planned Community Branch, which prepares plans for entire communities with homes, businesses, services, open space, and recreational and cultural amenities.

Land Management Division

The Land Management Division is responsible for management of the Department`s non-homestead land, maximizing returns from existing and potential income properties, enforcement activities, and development of a comprehensive land inventory. Its three branches are:

(1) Technical Services Branch, which provides the Division with appraisal preparations and documentation of license and easement agreements, as well as computerization of DHHL's land inventory;
(2) Land Management Branch, which manages the Department's lands that are not currently under homestead lease, maintaining those lands, and working with general lessees and licensees; and
(3) Income Property Branch, which is charged with developing some of DHHL's lands for income purposes. When completed, the lands will be turned over to the Land Management Branch for management.

Administrative Services, Fiscal, Information and Community Relations, and Planning Offices

The Administrative Services Office provides support services to the Department in the areas of personnel, budgeting, program evaluation, information and communication systems, and internal

management assistance. The Fiscal Office is responsible for providing accounting, fiscal services, and internal control systems for the Department, including collecting lease and loan payments and other activities. The Information and Community Relations Office plans, organizes, and carries out public information and community relations programs and projects. The Planning Office prepares preliminary studies required for future land development, water resource development, and the proper consideration of archaeological, historical, and environmental concerns. Functions of the Trust Resolution Project have been transferred to this Office.

Strategic Plan 2007–2011 - Department of Hawaiian Home Lands

The following highlights portions of the DHHL Strategic Plan 2007-2011. Consistent with the provisions of the HHCA, development and disposition of homestead uses are priorities for the Department and conducted by staff within the department. The recommendations for these uses are consistent with the Strategic Plan and these activities are noted as priority activities of the Department.

`Ekahi Goal 1

Provide every qualified native Hawaiian beneficiary on the waiting list with an opportunity for homeownership or land stewardship on homestead lands. Over the next five years, deliver (5,000) homestead awards through the development of various award programs.

Objective 1: Complete construction of accelerated lot and undivided interest awards and continue to offer more awards on every island.

Activities:

- *Obtain funding to construct infrastructure for existing undivided interest projects.*
- *Identify vacant unimproved lots for homestead awards.*
- *Offer awards to applicants and begin island-phased project infrastructure improvements.*
- *Complete planning, design, and construction phases.*
- *Convert awards into leases.*
- *Obtain funding to complete the remaining accelerated award projects.*
- *Develop water master plans, as needed, to facilitate development of Hawaiian home lands tracts.*

Objective 2**:** Implement rural homestead lot awards in selected areas on the neighbor islands.

Activities:

- *Create rural homestead dispositions and explore rural lands available.*
- *Develop land specifications for rural homesteads.*
- *Identify and prioritize projects by island.*
- *Complete planning, design, and construction phases.*

Objective 3**:** Continue to offer turnkey, vacant lot, and self-help housing awards.

Activities:

- *Identify and prioritize projects by island.*
- *Procure engineering and construction services.*
- *Complete planning, design, and construction phases.*

Objective 4**:** Acquire additional land through strategic public & private land acquisitions and exchanges that result in the long term awarding of 1,000 leases per annum.

Activities:

- *Partner with public and private sector to identify and explore housing stock opportunities.*
- *Identify and prioritize projects by island.*

Objective 5**:** Seek partnerships with Federal, State, County, and private agencies to share in the cost of infrastructure development and home construction.

Activities:

- *Utilize statewide regional plans as the vehicle to develop collaboration of projects within homestead areas and the surrounding community.*
- *Explore alternative housing opportunities such as multi-family housing.*
- *Utilize a non-profit organization to leverage federal funding for water system projects.*
- *Explore alternative strategies to finance the construction of infrastructure, reduce costs, and accelerate development.*

DHHL Homestead, Pastoral and Agricultural Leasing

Pursuant to provisions of the Hawaiian Homes Commission Act (HHCA), the Department provides direct benefits to native Hawaiians in the form of ninety-nine-year homestead leases at an annual rental of $1. In 1990, the Legislature authorized the Department to extend leases for an aggregate term not to exceed 199 years (Act 305, Session Laws of Hawai`i 1990; section 208, HHCA).

Homestead leases are for residential, agricultural, or pastoral purposes. Aquacultural leases are also authorized, but none has been awarded to date. The intent of the homesteading program is to provide for economic self-sufficiency of native Hawaiians through the provision of land.

Other benefits provided by the HHCA include financial assistance through direct loans or loan guarantees for home construction, replacement, or repair, and for the development of farms and ranches; technical assistance to farmers and ranchers; and the operation of water systems.

Eligibility Requirements

To be eligible to apply for a Hawaiian home lands homestead lease, you must meet two requirements:

- You must be at least 18 years of age; and
- You must be a native Hawaiian, defined as "any descendant of not less than one-half part of the blood of the races inhabiting the Hawaiian Islands previous to 1778." This means, you must have a blood quantum of at least 50 percent Hawaiian. This requirement remains unchanged since the HHCA's passage in 1921.

Types of Homestead Leases

There are three kinds of homestead leases: residential, agricultural, and pastoral.
Eligible beneficiaries may apply for one of the following:

- One residential lot;
- One agricultural lot;

- One pastoral lot;
- One residential lot and one agricultural lot; OR
- One residential lot and one pastoral lot.

Eligible beneficiaries may not apply for all three types of homestead leases. Nor may they apply for both an agricultural lot and a pastoral lot.

Although eligible beneficiaries may apply for leases on separate islands, they cannot hold leases on separate islands. Say, for example, the first lease obtained is for a residential lot on O`ahu and they also applied for agricultural land on Maui. At the time the beneficiary is offered the agricultural lot on Maui, he will have to decide which island he is going to homestead, because beneficiaries cannot have leases on two islands.

Available Residential Awards

The homestead program offers a range of residential awards that include, but are not limited to:

- Fully improved lots with new homes on them.
- Fully improved vacant lots.
- Vacant lots with minimal improvements.

DHHL recognizes that beneficiaries come from diverse financial backgrounds. As a result, DHHL has formed cooperative partnerships with several nonprofit and governmental organizations to provide beneficiaries with as many housing options as possible. For example, both self-help housing and Habitat for Humanity homes have been constructed on Hawaiian home lands.

What is the difference between residential, agricultural and pastoral leases?

- A residential lease is for the home that you live in.
- An agricultural lease is primarily for farming.
- A pastoral lease is for ranching.

Lessees may also build a house on an agricultural or pastoral lot. However, if they already have a house on a residential lot and they want to build a house on an agricultural or pastoral lot, they must surrender or transfer one of the two leases because they may only have one residence.

Benefits of a Hawaiian Home Lands Homestead Lease

The advantages of being a Hawaiian homestead lessee include, among the many benefits:

- Annual lease rent of $1.00 per year;
- 99-year lease;
- Lease term which can be extended for an additional 100 years, allowing lessees to pass their homestead from generation to generation;
- Seven-year exemption from real property tax;
- Complete exemption of tax on land;
- Minimal real property tax after the first seven years (applies only to County of Kaua`i and City and County of Honolulu, O`ahu);
- Taxing of assessed value of improvements on property (Hawai`i and Maui counties only);
- Homeowner's exemption (to be filed with respective county’s real property tax office);
- Low interest government loans (contact DHHL for more information); and
- Ability to use the equity in your property to obtain loans (contact DHHL for more information).

Leases to Hawaiians, licenses

(a) The department (DHHL) is authorized to lease to native Hawaiians the right to the use and occupancy of a tract or tracts of Hawaiian home lands within the following acreage limits per each lessee:

- not more than forty acres of agriculture lands or lands used for aquaculture purposes; or
- not more than one hundred acres of irrigated pastoral lands and not more than one thousand acres of other pastoral lands; or
- not more than one acre of any class of land to be used as a residence lot;

provided further that a lease granted to any lessee may include two detached farm lots or aquaculture lots, as the case may be, located on the same island and within a reasonable distance of each other, one of which, to be designated by the department, shall be occupied by the lessee as the lessee's home, the gross acreage of both lots not to exceed the maximum acreage of an agricultural, pastoral, or aquaculture lot, as the case may be, as provided in this section.

The method of disposition, as well as the terms, conditions, covenants, and restrictions as to the use and occupancy of such multifamily units shall be prescribed by rules adopted by the department pursuant to chapter 91.

Hawaiian Homes Commission Settlement Concerning Pastoral Leases

The following recaps the November 15, 2005, Hawaiian Homes Commission submittal concerning the settlement agreement between the "Aged Hawaiians" and the Hawaiian Homes Commission.

In 1952, the Commission withdrew 18,000-acres of pastoral land, including portions of Pu`ukapu on the Big Island of Hawai`i, from general leasing to be used for homesteading. The Commission then selected 187-out of-427 original applicants as the "best qualified" potential pastoral lessees (i.e., those with the maximum chance of success at commercial ranching) and placed them on a waiting list. Forty-eight pastoral homestead lots ranging in size from 200 to 300-acres were awarded to those at the top of that waiting list. The Commission decided not to award lots on the remaining portions of the Pu`ukapu homestead lands "until it [could] be determined whether the rainfall in the vicinity [could] support individual small ranches."

Eventually, as part of its 1987 Raw Lands Acceleration Program, the Commission adopted a policy to award pastoral lots of no more than 100-acres based on a "subsistence ranching" concept designed to enable native Hawaiian homesteaders to supplement their family needs. Although no awards were made under this subsistence ranching policy, which formally expired at the end of 1987, the Commission continued to analyze possible future pastoral awards based on this policy.

On July 25, 1988, James Akiona submitted a petition to the Commission seeking a contested case hearing. He hoped to (1) "present evidence of [his] desire and capability to engage in commercial ranching activities at Pu`ukapu" and (2) challenge the potential issuance of subsistence ranching leases because such awards would be inconsistent with HHCA -207 and 219.1.

On December 20, 1988, while Akiona's request was pending, the Commission adopted "ten premises" or guidelines for its pastoral development program. On February 21, 1989, the Commission notified Akiona that it had denied his contested case hearing request. The Commission determined that there was no basis for granting the request because (1) the Commission had not yet initiated any action on Akiona's application for a pastoral homestead lease, (2) there was no substance to support the petition, and (3) a contested case hearing would be inappropriate. Later, the Commission proposed to offer 195-lots (ranging in size from 5 to 20-acres) on 3,000-acres of Pu`ukapu lands, which were to be awarded in early summer 1989 in accordance with the Commission's "ten premises" rule.

On July 17, 1989, Akiona and the Aged Hawaiians filed a complaint for declaratory and injunctive relief in the third circuit court. On August 31, 1989, Akiona and the Aged Hawaiians moved for partial summary judgment on their claim that the "premises" were rules requiring compliance with the official notice¬and-comment provisions of HRS chapter 91. The motion was granted on October 4, 1989, and the trial court issued an order enjoining future pastoral lot awards until the Commission complied with chapter 91.

On January 30, 1990, the circuit court denied a motion by Akiona and the Aged Hawaiians dated December 26, 1989, in which they sought summary judgment and a permanent injunction with respect to their remaining claims. On the same day, the circuit court also denied their December 28, 1989 motion seeking certification as a class action on behalf of all qualified beneficiaries "who seek a pastoral homestead lot large enough to allow them to become economically self-sufficient by ranching."

On July 31, 1990, the Commission adopted its 1990 pastoral lot size plan (1990 Plan). The Commission took this action without consulting the Aged Hawaiians or Akiona. The plan modified the 1989 proposal by adding 8, 100-acre and 8, 200-acre lots at Pu`ukapu, plus 22-unimproved homestead lots at Ka`ū (17-lots at 25-acres each) and Humu`ula (5-lots at 100-acres each). The larger lots were not created as "economic units," but as "good faith responses" to the desires of those beneficiaries who sought commercial ranching opportunities.

On August 23, 1990, Akiona and the Aged Hawaiians filed two motions: (1) seeking a preliminary injunction to prevent DHHL from awarding subsistence pastoral lots under the 1990 Plan, and (2) seeking to amend their complaint. In denying the motion for preliminary injunction, the circuit court held that the Aged Hawaiians' members would not be irreparably harmed [because] their priority status [assures] that they will be offered lots and they will still be able to litigate the remaining issues in this case. The case was appealed to the Hawai`i Supreme Court.

On March 14, 1995 the Hawai`i Supreme Court decided the APPEAL FROM THE THIRD CIRCUIT COURT (CIV. NO. 89-244). It said native Hawaiian beneficiaries of the federal-state compact, which is contained in the Hawai`i Admission Act and incorporates HHCA trust obligations, may pursue claims under - 1983 based upon either the asserted violation of rights under these acts or the due process clause of the fourteenth amendment to the United States Constitution. The Court held that: (1) the circuit court's order granting summary judgment in favor of the Appellees and dismissing the Aged Hawaiians' - 1983 claims was erroneous because genuine issues of material fact remain to be decided with respect to the Aged Hawaiians' claim that the 1990 lot awards violated their rights under the HHCA; and (2) the Aged Hawaiians are entitled as a matter of law to summary judgment on their claim that the Commission violated their due process rights when it failed to adequately consider their members' acknowledged desire for land sufficient to engage in commercial ranching. Although HHCA beneficiaries on the pastoral wait list are not entitled to "economic units" per se, these individuals must be given an opportunity to seek such an award prior to the implementation of a pastoral homestead lot award plan. Accordingly, we reverse that part of the circuit court's order dismissing the Aged Hawaiians' constitutional due process claims under -1983, vacate that portion of the order concerning their breach of trust claims under -1983, and remand for further proceedings consistent with this opinion.

In 2004 DHHL and NHLC worked to reach a settlement in the case and the HHC Ratified the Settlement Agreement on February 15, 2005.

The settlement agreement required that lands in the Honokaia area be withdrawn and offered to qualified applicants on the Waimea pastoral waiting list under an undivided interest award program. On October 1, 2005 the Honokaia lands were returned to DHHL. In 2004, 74-applicants with application dates ranging from 6/11/52 to 8/8/77 were invited to select a pastoral award for the Honokaia land. Nine applicants decided to select an award and became Honokaia Lessees.

The agreement provided that additional land be offered to Pu`ukapu lessees who selected lots during the 1990 award period and the new Honokaia lessees. It was agreed that the determination of the award for additional land to expand their ranching operations would be based on a ranch plan review process conducted independently by the University of Hawai`i, College of Tropical Agriculture, Cooperative Extension Service Ranch Plan Review Panel. This panel was composed of Ranching experts who currently assist other ranchers on the Island of Hawai`i and included an expert familiar with the Hawaiian Homes Commission Act.

Starting in July 2005, 186-Pu`ukapu and Honokaia lessees were notified by mail regarding the opportunity to expand their ranching operations pursuant to the settlement agreement. They were given one month to decide whether they wanted to participate by completing a standard letter of interest response form. Seventy lessees formally confirmed their interest and agreed to participate in the Ranch plan training program and review process held during the months of August and September 2005. Participants were involved in classroom like training sessions, received personal assistance via telephone, fax and personal interviews necessary to assist them in preparing their personal ranch plans. Participants were notified that there were no guarantees that they would each receive additional acreage by participating in the settlement program.

The independent Cooperative Extension Service (CES) Ranch Plan Review Panel was composed of 5-CES agents who received the 42-ranch plans in October 2005. The plans were reviewed and scored by each agent and the group met to discuss the ranking of the plans. There were three categories considered, 1) Meets Expectation, 2) May meet expectation and 3) Needs major work. In addition a total overall points system was used based on an individual review of the applicant's personal knowledge, human and financial resources and feasibility of the ranch expansion.

The selection system was based on five points similar to an A-F system. All plans receiving 3 or higher were considered as passing and those plans receiving 1 or 2 were considered as non-passing.

Eleven of the 42-plan proposals received a 3 or better score and were recommended for consideration to select additional acreage consistent with their plan and each individual score received. Numbers were placed next to the names delineating the maximum number of acres that their plan could support. Approximately 1,700-acres were required and it was recommended that the applicants be allowed to select parcels at Honokaia that did not exceed their qualified amount. Note that all of these individuals had a primary homestead pastoral lot and these lands were awarded to expand their current ranch operations. The individual ranch plans were also used to determine the individual's compliance with their lease conditions and could be used to reassign the additional acreage if non-compliance issues arise in the future.

Thirty one of the 42-plan proposals received a 2 or lower score and were notified that their plans did not pass. They were encouraged to re-apply for additional acreage pursuant to the current regulations.

Based on preliminary data contained in the ranch plans and considering the acreage requirements of the 11-Honokaia Lessees, which includes Mr. Akiona as a relocated Honokaia homesteader approximately 300-acres will be required for the small scale ranches and 1,700 to 2,000-acres will be required for the additional acreage requirements to expand the current ranch operations.

According to DHHL Planning staff, there are 6,555-agricultural applicants and 1,778-ranch applicants waiting for land on Hawai`i Island. Currently there are 505-agricultural lessees and 303-ranch lessees already on Hawai`i Island.

DHHL Energy Policy

DHHL seeks to restore portions of the Humu`ula/Pi`ihonua lands in perpetuity to conserve these native forests and natural habitats for future generations. In doing so the Department is looking beyond housing and into a more holistic approach for communities and land management.

This section covers DHHL's Energy Policy "Ho`omaluō", which the Hawaiian Homes Commission formally adopted, on January 27, 2009.

Ho`omaluō's Policy Statement is as follows:

> "To enable native Hawaiians and the broader community working together to lead Hawai`i's effort to achieve energy self-sufficiency and sustainability"

For more than 2,000 years Hawaiians effectively managed their energy resources through the Ahupua'a system enabling the continued survival of the native Hawaiian people. Prince Kūhiō understood that self-sufficiency would insure the survival of the native Hawaiian people on Hawaiian Home Lands.

The DHHL Energy Policy is also in line with the State of Hawai`i's Energy Policy which states:

> "Hawai`i's energy policy seeks to ensure dependable, efficient, and economical energy; increased energy self-sufficiency; greater energy security; and reduction of greenhouse gas emissions"

The `Āina Mauna Legacy Program implementation is consistent with the objectives of the DHHL Energy Policy including (There are five objectives that address various components of the Department's operations that are incorporated into the policy):

Objective 1 - Mālama `āina: Respect and protect our native home lands:

- protection, restoration and enhancement of DHHL's forest lands
    - The Legacy Program seeks to restore portions of the Humu`ula/Pi`ihonua lands in perpetuity to conserve these native forests and natural habitats for future generations
- potential for carbon sequestration
    - Legacy Program incorporates several long-term forestry approaches that could be considered to implement carbon sequestration; native forest restoration, timber to fight gorse, and sustainable koa forestry
    - There will be a reservation for any opportunities for carbon credits to DHHL
- energy self-sufficiency and sustainability
    - The Legacy Program considers a variety of homestead development layouts to minimize development costs as well as incorporate a variety of alternative/renewable energy opportunities
        - Solar/photovoltaic
        - Catchment
        - Fog drip catchment augmentation
        - Gray water reuse
        - Composting toilets
        - Consideration for low wind speed generators

Objective 2 - Ko`o: Facilitate the use of diverse renewable energy resources:

- renewable energy projects

    - For commercial timber to eradicate gorse RFQ/RFP proposers will be required to incorporate some sort of bio-fuel (for electrical generation or bio-diesel)
- encourage future general lessees and licensees to design and build their facilities so that they are energy and resource efficient
    - Humu`ula Sheep Station Adaptive Reuse, Eco-tourism and other RFQ/RFPs will incorporate requirements for alternative/renewable energy components

Objective 3 - Kūkulu pono: Design and build homes and communities that are energy efficient, self-sufficient and sustainable:

- designing and building of new energy and resource efficient homes in Hawai`i
- energy efficient homes generate lower electricity and home maintenance costs
    - The Legacy Program considers a variety of homestead development layouts to minimize development costs as well as incorporate a variety of alternative/renewable energy opportunities. Homes to include:
        - Solar/photovoltaic
        - Catchment
        - Fog drip catchment augmentation
        - Gray water reuse
        - Composting toilets
        - Consideration for low wind speed generators
- cost effective approach and standard for creating healthy, affordable, and environmentally responsible homes and communities
    - The Legacy Program considers a variety of homestead development layouts to minimize development costs as well as incorporate a variety of alternative/renewable energy opportunities

Objective 4 - Kōkua nō inā kahu: Provide energy efficiency, self-sufficiency, and sustainability opportunities to existing homesteaders and their communities:

- community renewable energy projects that could also generate revenue for their respective regional plan projects
    - For commercial timber to eradicate gorse RFQ/RFP proposers will be required to incorporate some sort of bio-fuel (for electrical generation or bio-diesel)

Objective 5 - Ho`ona`auao: Prepare and equip beneficiaries to promote a green, energy efficient lifestyle in and around communities:

- live a self-sufficient and sustainable, greener lifestyle
- reduce, reuse, and recycle resources
    - The Legacy Program considers a variety of homestead development layouts to minimize development costs as well as incorporate a variety of alternative/renewable energy opportunities. Homes to include:
        - Solar/photovoltaic
        - Catchment
        - Fog drip catchment augmentation
        - Gray water reuse
        - Composting toilets
        - Consideration for low wind speed generators

Ho`omaluō's Five Objectives – Expanded Discussion of Energy Policy

Objective 1 - Mālama `āina: Respect and protect our native home lands - DHHL's land stewardship responsibilities of its sensitive environmental lands is based on the ahupua`a land management system to insure that the land will be managed on a self-sufficient and sustainable basis for future generations.

Activities:

- Develop a comprehensive strategic plan for the protection, restoration and enhancement of DHHL's forest lands. (An appropriate plan that incorporates the conservation of values, traditions, and culture of native Hawaiians that restores balance, harmony, and sustainability of the forest lands for future generations.)
- Develop a comprehensive strategic plan for the protection, restoration and enhancement of DHHL's other lands-lands other than forest lands, lands for homesteading and lands for general lease.
- Identify properties in DHHL land inventory that have potential for carbon sequestration and determine if carbon sequestration is a viable use of DHHL lands.
- Evaluate each Regional Plan to determine if energy self-sufficiency and sustainability goals and objectives should be incorporated into the regions. (The regions contained within the Regional Plans can serve as today's "ahupua`a" -the past Hawaiian land-management system of self-sufficiency for future generations.)
- Develop, implement, and maintain plans to reduce DHHL's carbon footprint (reduce greenhouse gas emission).

Objective 2 - Ko`o**:** Facilitate the use of diverse renewable energy resources - Development of renewable energy resources will insure that the Hawaiian Home Lands Trust continues to be financially self-sufficient and sustainable well into the future.

Activities:

- Identify properties in DHHL's land inventory that have potential for renewable energy projects.
- Pursue the leasing of those lands that are identified as suitable for renewable energy projects. (First priority should be given to entities that would provide "firm" renewable energy power such as garbage-to-energy (mass-burn), geothermal, pump-storage hydropower, solar-thermal and second priority to "as-available" renewable energy power such as wind, solar-photovoltaic, and wave.)
- Encourage existing and future general lessees and licensees of DHHL's properties to design and build their facilities so that they are energy and resource efficient.
- Seek partnerships for the development of renewable energy resources. In this connection, build relationships that could assist DHHL on non-energy related issues.
- Evaluate DHHL's available authorities/powers that could expedite renewable energy projects for the state of Hawai`i.
- Seek innovative processes to provide reliable electricity, by assisting electric utilities (in a world where energy is an essential but very limited resource) to reduce Hawai`i's dependency on fossil fuels.

Objective 3 - Kūkulu pono**:** Design and build homes and communities that are energy efficient, self-sufficient and sustainable - Encourage the building of new "green" homes and communities for homesteaders based on the ahupua`a concept.

Activities:

- Promote, design, and build new affordable homes (that minimize lifestyle and visual impacts) using the "Hawai`i BuiltGreen" and "ENERGY STAR" programs. (These programs ensure the designing and building of new energy and resource efficient homes in Hawai`i.)
- Strive to plan, design, and build new communities utilizing the "ahupua`a" concept and the "Green Communities" program. (The Green Communities program's criteria are designed to provide a cost effective approach and standard for creating healthy, affordable, and environmentally responsible homes and communities.)
- Assist beneficiaries to utilize energy efficiency rebates, financial assistance, tax credits and other incentives offered by utility companies and federal, state and county governments.
- Promote the benefits of hybrid electric vehicles to help reduce beneficiaries' transportation (gasoline) costs. (70% of Hawai`i's imported fossil fuel is used for transportation that must be use efficiently or conserved.)
- Assist beneficiaries to obtain mortgages under the "Energy Efficient Mortgage" program. (The program can help beneficiaries save money and, reduce their loan qualifying income requirements.)
- Seek partnerships with federal agencies like with the U.S. Department of Energy that provide access to current state-of-the-art technical advancements in energy.
- Seek partnerships that provide grants and other financial assistance for the developments of state-of the-art net zero energy homes.
- Join with electric utilities and the Public Benefits Administration as partners to advocate, communicate and educate the public on state-of-the-art energy initiatives.
- Energy efficient homes generate lower electricity and home maintenance costs that would help beneficiaries qualify for a higher home mortgage or increase their purchasing/savings power.

Objective 4 - Kōkua nō inā kahu**:** Provide energy efficiency, self-sufficiency, and sustainability opportunities to existing homesteaders and their communities - Help existing individual homesteaders to retrofit their homes to achieve energy efficiency and together the homestead community will achieve more energy self-sufficiency and sustainability.

Activities:

- Identify effective energy efficiency and conservation retrofit applications and develop a plan to assist homesteaders with the retrofitting of their homes. (Retrofit applications may include: solar hot water heating system, insulation/radiant barriers, low-flow toilet and shower head, photovoltaic system, CFL bulbs, ENERGY STAR appliances, energy efficient windows, clothes line, ventilation techniques, and roof/attic vents.)
- Assist homestead communities to achieve potential energy self-sufficiency by identifying properties near existing homesteads that could be utilized for community renewable energy projects that could also generate revenue for their respective regional plan projects.
- Seek partnerships to assist homesteaders with retrofit applications and energy self-sufficiency projects.
- Help homesteaders lower their monthly electricity and maintenance costs that would increase their purchasing/ savings power and generate revenue for their respective Regional Plan projects.

Objective 5 - Ho`ona`auao**:** Prepare and equip beneficiaries to promote a green, energy efficient lifestyle in and around communities - DHHL's energy outreach effort is like the DHHL Home Ownership Assistance Program (HOAP) for energy self-sufficiency and sustainability.

Activities:

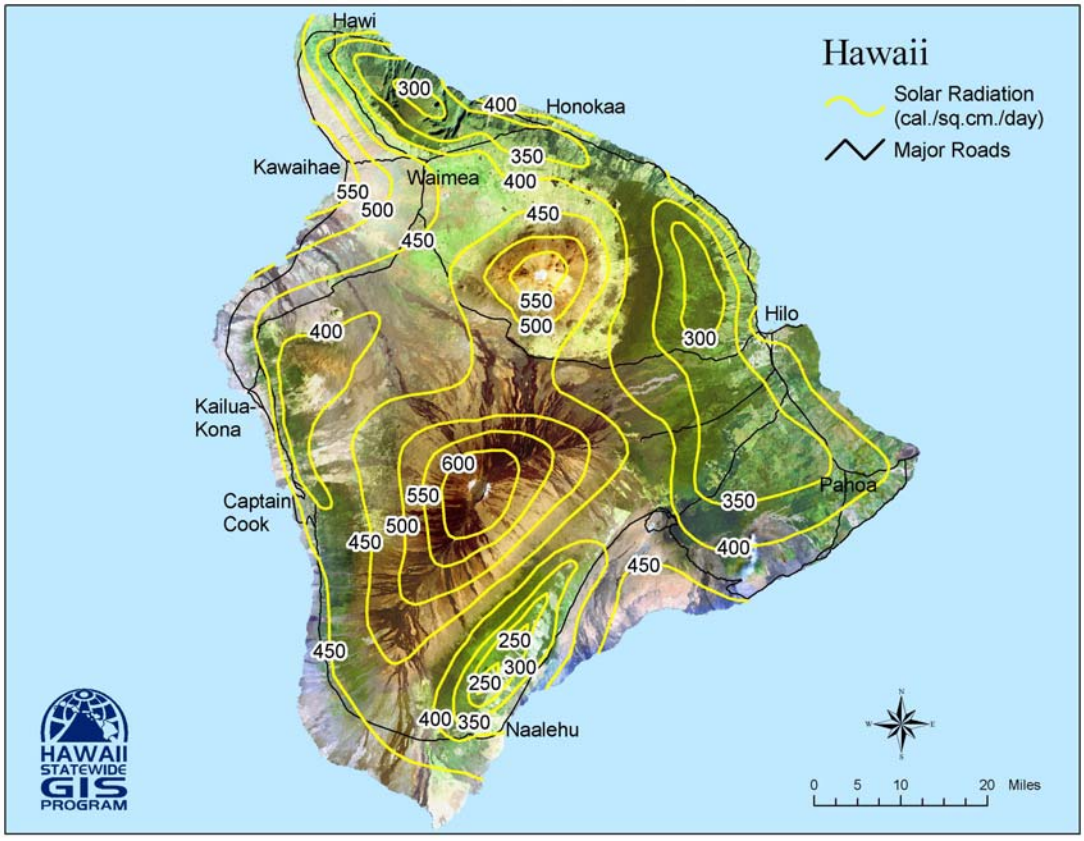
- Seek partnerships that provide opportunities to learn how to live a self-sufficient and sustainable, greener lifestyle.
- Develop and implement resource efficiency programs for beneficiaries to reduce, reuse, and recycle resources. These resources include construction and demolition materials, household items, yard waste, and other items which might be sent to landfills or incineration.
- Assist homestead communities to become more aware of their energy use and carbon footprint.

Hawai`i Clean Energy Initiative

In January 2008, Governor Lingle signed a Memorandum of Understanding with the U. S. Department of Energy to establish the Hawai`i Clean Energy Initiative to accelerate the transformation of Hawai`i into one of the world's first economies based primarily on clean energy resources. The goal of the initiative is to use renewable energy resources to supply 70% of Hawai`i's energy needs by 2030.

The Hawai`i Clean Energy Initiative will transform Hawai`i into one of the world's first economies based primarily on clean energy resources. DHHL Beneficiaries will be impacted by the Clean Energy Initiative. In the future Energy Self-Sufficient Homestead Communities utilizing alternative renewable energy sources will be developed, but they will be uniquely Hawaiian evolving out of the ahupua`a concept and extending Prince Kūhiō's vision of Energy Self-Sufficiency and Sustainability for the Hawaiian Homesteads.

The following map shows the property's opportunity to capture solar radiation (note that it has similar characteristics to the Kona Coast.)



Hawai`i Island Solar Radiation Map

Homestead, Pasture and Commercial Dispositions in the `Āina Mauna Legacy Program

There are two processes for disposition of the various agreements covering the two basic types of uses (commercial and homestead/pasture) recommended through the Legacy Program. Given the organizational structure, activities of various divisions and experience within the department, it is recommended that the disposition of various recommended activities be handled in two separate ways.

Disposition of Homestead and Pasture (non-homestead) Leases, Licenses and/or RPs

Some of the recommendations closely-follow existing practice of DHHL (i.e. homestead and pasture uses). For the disposition of Homestead and Pasture leases, licenses and/or RPs for beneficiary use, it is recommend that DHHL follow its typical internal disposition process, using existing staff and resources.

DHHL has the experience, knowledge, capacity and existing process for the homesteading and pasture lease portion of the `Āina Mauna Legacy Program which involves the disposition of homestead lots, agricultural uses and pasture uses.

The entire process of disposition of the rural-development homesteading component and the limited pasture use to mitigate fire hazards (short and long-term) as recommended in the Legacy Program will be conducted through DHHL's Land Development and Homestead Services divisions.

The department will follow their typical practices and procedures, rules and regulations in regard to the awarding of these homestead and pasture agreements. Traditionally, vacant lot homestead awards (such as proposed in the Legacy Program) give beneficiaries the opportunity to design and build their own homes, with the infrastructure provided and funded by DHHL. The steps for this process as described by DHHL are as follows:

Step 1 – Ho`omākaukau **-** *to prepare, make ready*

- DHHL notifies eligible applicants on the wait list of an upcoming vacant lot award.
- An orientation meeting is held to provide information on the lots to be awarded and the lot selection process.
- Applicants pre-qualify for a home construction loan. The amount pre-qualified for determines the overall construction price of the home.
- Applicant obtains a construction proposal

Step 2 – Ho`olālā - *to lay out, plan*

- A lot selection meeting is held. At this meeting, applicants are invited to select a homestead lot.
- Plans and specifications are provided to the lender, who then processes the applicant's loan application. The home construction loan is approved.
- The lease and loan documents are signed. The applicant is now a lessee.
- House plans and building specifications are submitted to DHHL and the County.
- Once approved, construction of the home may commence with a contractor of the lessee's choice.

Step 3 – Ho`opa`a `āina - *to occupy, become established on the land*

- The contractor completes the lessee's home.
- Home is insured.
- After final inspection, the lessee moves in.

Since homesteading and pasture use are the typical and conventional disposition activities for direct benefit to beneficiaries of DHHL, it is reasonable for the proposed uses at Humu`ula/Pi`ihonua come under existing DHHL development, disposition and management. These proposed uses can fit in the "queue" for its overall development scheduling and disposition.

While the homestead lots will be rurally-developed because of the areas remote location and lack of traditional infrastructure availability, the cost of development is likely to be significant and beyond the scope and capacity for the remaining revenue-generating opportunities proposed on the property.

Disposition of Commercial Agreements - RFQ and RFP

Because many of the recommendations in the Legacy Program represent new ventures for the department in the scale of the program, large land area and amount of resources it entails, DHHL does not have the capacity to do the restoration and enhancement work themselves. Much of the activity will need to be conducted by others.

Since many of the recommended activities are commercial in nature (i.e. not for the individual benefit of a particular beneficiary,) it is recommended that DHHL implement these activities through a broad Request for Qualifications (RFQ) and Request for Proposals (RFP) process.

DHHL has the responsibility to look for the best qualified applicants (background, experience, financial capability, business plan, etc.) that can fulfill the Trust's needs at a reasonable price. The RFQ/RFP process serves to produce that.

Likewise, as a State agency, DHHL is obligated to follow state procurement laws.

The suggestion of using a broad RFQ/RFP process in the procurement of services for the commercial enterprises does not in any way limit the opportunity for beneficiaries to be involved in the process. Presently, the RFP process is being used with success in selecting the operator for the various DHHL koa salvaging operations. The present koa salvage operator is a native Hawaiian.

Consistent with the fundamental purposes of the Hawaiian Homes Commission Act, to the extent permitted by law, it is the goal of the `Āina Mauna Legacy Program to support economic development, maximize opportunities for beneficiaries and give preference for native Hawaiian beneficiary involvement at all stages of the program's implementation.

One of the central focuses of the `Āina Mauna Legacy Program is that the activities and programs implemented need to be economically self-sustaining, with the goal to reinvest the revenue into the management of the property. In considering revenue generation, several opportunities exist:

- Use of Humu`ula Sheep Station – Commercial Activities
- Forest Products and Biomass for alternative energy opportunities (liquid fuel and electricity.)
- Carbon Offsets/Credits
- Ecotourism and Recreational Use

Disposition of the respective commercial licenses, leases, etc. to implement these actions would be through a broad RFQ/RFP process to select the best qualified applicants to conduct the respective activities.

The purpose of the RFQ/RFP process is to solicit and select a qualified private entity to enter into an agreement with DHHL to conduct the commercially-related activity. To be eligible for consideration in the RFQ/RFP process, interested parties must first complete and submit an Application and Notice of Intent. After submittal of the Application and Notice of Intent, Applicants will be allowed to participate in the RFQ/RFP process. The following is a general description of the two-step RFQ/RFP process.

> Step 1: Request for Qualifications (RFQ). The RFQ will request the submittal of Statements of Qualifications ("SOQs") from interested parties detailing their relevant experience, financial capabilities and management expertise. DHHL will review the SOQs and determine which applicants meet DHHL's qualification criteria. DHHL may, at its sole discretion, form a short list of the most qualified applicants. The qualified applicants (or short list of the most qualified applicants, if applicable) will then be invited to participate in the RFP process.
>
> Step 2: Request for Proposals (RFP). The RFP will solicit detailed proposals for the Subject Property from the invited qualified applicants. DHHL will review the proposals and will recommend to the Hawaiian Homes Commission ("Commission") the applicant whose proposal best satisfies DHHL's objectives and selection criteria. If approved by the Commission, the selected applicant and DHHL will commence exclusive negotiations of a lease agreement.

The RFQ/RFP process will state that awardees are responsible for complying with all requirements and mandates of HRS Chapter 343 as it relates to their proposed activity. Likewise, the selectee will be responsible for adhering to all County, State, and Federal laws, rules and regulations, including Best Management Practices.

Each proposal will be evaluated in relation to its conformance with the weighted criteria below (totaling 100%). The goal of the comparative proposal evaluation process is to select the "best" proposal based on a set of defined criteria. The criteria to be used in the comparative proposal evaluation process are divided into the following groups:

- Experience / Qualifications
- Management Proposal and Management Plan
- Business Plan and Economic Proposal
- Economic Benefits to DHHL
- Other Benefits to DHHL

A DHHL Evaluation Committee will make all recommendations regarding the evaluation. The Evaluation Committee may be assisted by other staff that could include officers, employees, and agents of DHHL. DHHL will select the applicants whose proposals best meet DHHL's objectives and RFP selection criteria. Evaluations will be based on the proposals overall benefit to DHHL, compatibility with other uses in the area, experience and financial capability.

Any required environmental review would be conducted by the applicant/selectee, based on the details of their specific proposal.

On-going - Long-Term Actions

In addition the above immediate actions to initiate the implementation of the `Āina Mauna Legacy Program, the management of the property includes the regular and on-going activities, such as:

General Administrative Activities

Due to the scope, scale and diversity of uses, in order to oversee the implementation of the `Āina Mauna Legacy Program, the Department will need to dedicate staff positions to the program. The day to day operations will need to be overseen by a manager. In addition, other administrative activities/positions will include:

- Fiscal management and oversight
- Contract compliance
- Other "office" duties
- Field crew and management
- Seeking additional partnerships
- Seeking additional grant funding

Unmanaged-Ungulate Eradication

Reduce the impact of unmanaged-ungulates to a level that prevents further degradation of the native ecosystems, allows the greatest possible recovery of native species and benefits for beneficiaries.

- Eradicate unmanaged-ungulates through hunting (and/or other capture techniques).
- Control unmanaged-ungulates with fences.

Non-native Plant Control

To limit the spread and, where feasible, eradicate non-native plant species that are or may become invasive weeds in the `Āina Mauna.

- Control certain priority weeds before they become widely established.
- Set up monitoring transects to locate other incipient populations of priority weed species.
- Management measures would include integrated pest management (IPM) tools, including selective use of approved herbicides or manual removal with hand tools.

Monitoring

Monitor the effectiveness of management projects and track significant ecological changes through long-term scientific monitoring.

- Establish systematic monitoring programs for unmanaged-ungulate damage, non-native weed invasion, native vegetation recovery, and status of rare species.
- Increase monitoring intensity for select problems and areas as needed.

Public Education and Volunteer Support

Build public understanding and support for the site in the local community. Educational opportunities will be provided for interested groups. Volunteer labor to help staff in management activities will be procured.

- Maintain community outreach program to give public presentations, provide informational material, and utilize concerned volunteer groups.
- Inform the general public about resources within the property and management activities through television, newspaper, and other local media outlets.
- Present PowerPoint shows and talks to community groups.

Enforcement

Enforcement will be a very important element of the `Āina Mauna Legacy Program. Enforcement for the area will be multi leveled including:

- Enforcement of rules and regulations
- Enforcement against illegal activities and inappropriate behavior

Water Development

Water is a significant and critical limiting factor for use of the site. Some of the immediate actions noted above require expanded water source and distribution improvements.

To date, catchment systems supply water to existing users and water is also hauled from outside supply sources (primarily to Pōhakuloa Military Training Area and Mauna Kea Science Reserve.) There are a few water tanks on the parcel, as well as several water reservoirs and springs.

Expanded Catchment

In addition to conventional catchment systems (involving water tanks and reservoirs,) part of the on-going activity to expand water sources and distribution will be the use of systems that are designed to capture cloud and fog drip in and around the storage systems. This could include the installation of nets and/or other devises that are designed to intercept additional moisture as the clouds/fog roll across the property. Given the location and nature of the proposed rural-development homestead area, it is anticipated that this enhanced water capturing approach would be used in the homestead development.

Alternatives are underway to investigate and test maximum capture of cloud and fog drip into catchment systems. While restoration of the forest can enhance water capture of the cloud and fog drip for the landscape, alternatives need to be explored to enhance water capture for homestead use. Alternatives will continue to be investigated.

Springs Restoration

Additional water resources may also come from springs located on the property. Historic records indicate that springs are located on the property in the vicinity of the Pu`u `Ō`ō Ranch section of the site.

Follow-up work needs to be done to verify the condition of the springs and to rehabilitate them to provide water to the overall property. The reported condition noted below are based on a review conducted 10-years ago.

The first spring is located near the ranch camp. Apparently, the spring is in need of repair and no longer is able to provide water; the spring tunnel has caved in and will need to be cleaned up and dirt material removed. The holding tanks are leaking badly; they will need to be repaired or replaced to provide water for use.

The second spring is located midway through the ranch, next to the Waiama Gulch. This spring used to be the main water source for the ranch. The water was piped to different areas for cattle to drink. Records show that even in times of drought, this water source was still providing water. The waterbox area is filled with dirt and rocks. The large water pond that this spring used to service has dried up and the bottom has grass and cracks in it; this pond needs to be restored to enable use of this paddock.

A third spring is reported to also be on the site.

Deep Well

Presently, the Army is negotiating the drilling of a well for the Pōhakuloa Training Area. Preliminary discussions with the consultant working with the Army (Don Thomas from the University of Hawai`i) notes that a similar well on DHHL property could be in the neighborhood of $3-million. The situation on well development will be monitored through ongoing discussions with the Army, Don Thomas and others.

First Rural-Development Homestead

In order to implement the first rural-development homestead, planning, design, engineering and ultimate construction of the development will be conducted in cooperation with the DHHL homestead development staff. Given the nature and scale of the development, and costs associated with it, alternative sources of funding for the development will also be explored.

On-going Invasive Species Control/Removal

Present gorse and other invasive species eradication and control are addressed from several fronts. Aerial and hand-spraying, mulching and other efforts will continue to contain, control and eradicate gorse outside of the containment area and throughout commercial timber areas of the property. Additionally, other viable gorse eradication opportunities can also be considered.

Reforestation

Another on-going program is the reforestation of remnant forest areas (including māmane, koa and `ōhi`a).

Native Hawaiian tradition and historical accounts portray the lands of Humu`ula, Pi`ihonua, and Ka`ohe as having been dense forests where native practitioners gathered forest resources, birds and food. Our quality of life, cultural, spiritual and economic survival depends on the environment.

Through active management, the Department of Hawaiian Home Lands (DHHL) intends to restore its koa, `ōhi`a and māmane forests and ecosystems, create jobs in the community, provide Hawai`i's wood products market with a source of high quality hardwood, and endow the DHHL trust fund with a long term revenue stream to support the mission to "manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians."

Restoration of primarily former pasture land to a diverse native forest will be an ongoing process. Research in Hawai`i has shown that the control of ungulates in native forest areas, in combination with viable and present seed sources, can result in the natural regeneration of native species within a few years. Koa regeneration responds well when grass covered soils are disturbed. Native species other than koa are also expected to become established following salvage operations. Implementation of the project will be conducted in a manner that complies with applicable law for activities such as site preparation and regeneration, soil erosion control, and use of fuels and chemicals.

Extensive research at Keauhou Ranch by Mueller-Dombois, et., al., provides insight as to how reforestation might occur. Mueller-Dombois describes koa as a species ready to take advantages of local disturbances in the forest. Overstory components would be retained to provide forest bird habitat and foraging opportunities for native species and to continue the process of koa seed production on site.

The program involves construction and maintenance of fences to remove and control cattle and other unmanaged-ungulates. Removing cattle would allow existing trees to produce and maintain root shoots and basal sprouts, thereby increasing foliage and subsequent tree processes. The remaining mature trees would most likely continue their current decline, but at a decelerated rate. Compaction of soil on and around surface roots from cattle would cease, allowing additional root growth and reversing current trends of root dieback.

Reforestation will be conducted through soil scarification and planting of seedlings. It is expected that a viable stand of koa saplings could become established within a few years of the project's implementation. Natural regeneration will be monitored. If forest regeneration is inadequate following overstory removal, planting from local seed sources at appropriate stocking levels may occur to assist forest recovery efforts. Herbicide treatments on invasive species and competing grasses may be used as appropriate to ensure native forest recovery.

Natural regeneration will be monitored. If forest regeneration is inadequate, planting from local seed sources at appropriate stocking levels will occur to assist forest recovery efforts.

Sustainable forest practices can bring economic diversity and employment for DHHL beneficiaries, enhance the environment, while retaining the rural character of the islands. DHHL's forested lands on the island of Hawai`i are well placed to contribute to and support the forest industry with a range of value-added opportunities.

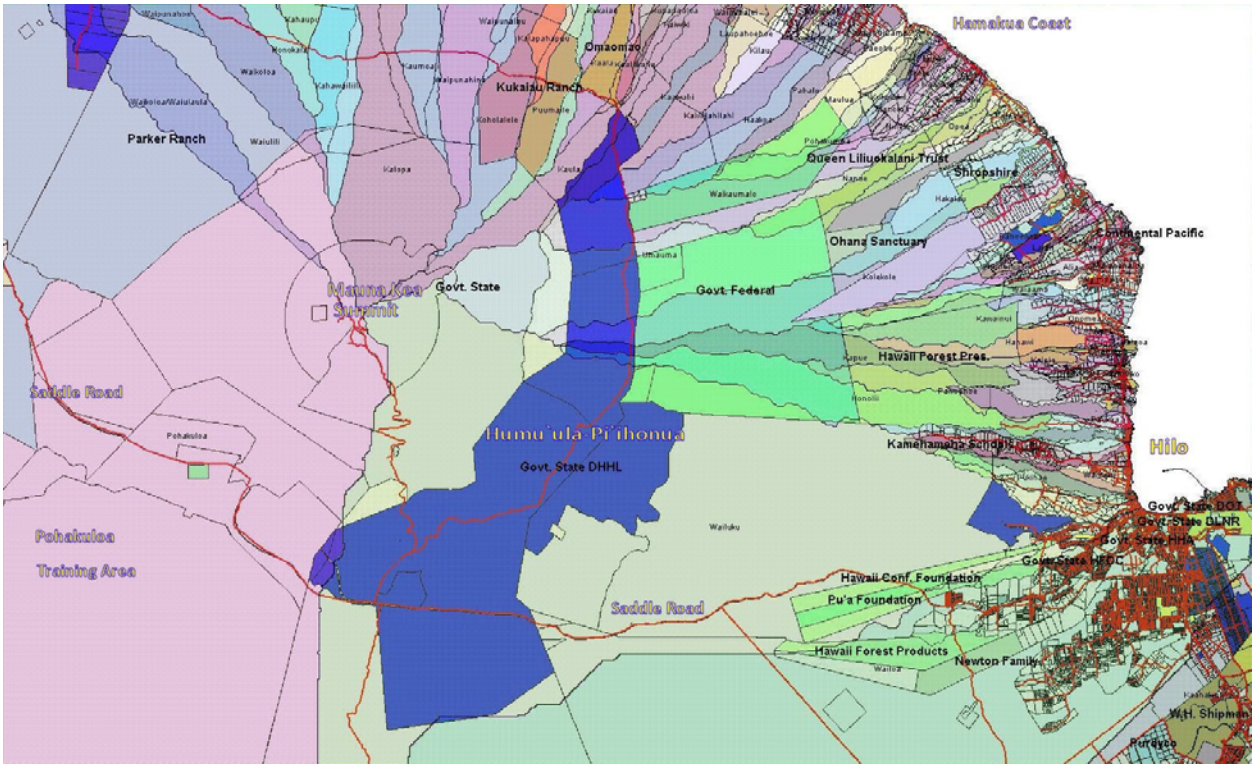
Site Background

The 1997, Humu`ula/Pi`ihonua Master Plan, developed by PBR, Hawai`i for the Department of Hawaiian Home lands gives a good historical assessment of the site. The following is taken from that Plan, except where noted.

Location

The Humu`ula/Pi`ihonua area is made up of approximately 56,200 acres owned by the Department of Hawaiian Home Lands located on the northeast slopes of Mauna Kea. The Humu`ula/Pi`ihonua lands are the largest contiguous parcel under jurisdiction of DHHL. The Humu`ula parcel is approximately 49,100 acres in size and the Pi`ihonua parcel, located adjacent to the eastern boundary of Humu`ula, is approximately 7,078 acres in size. `Āinahou, comprising approximately 11,124 acres, is the subsection of Humu`ula south of Saddle Road and is currently under license to the State of Hawai`i, Department of Land and Natural Resources.

The land parcel is further identified by its subsections. The Pi`ihonua parcel is one subsection (approximately 7,078 acres). The north Humu`ula subsection is the area north of Nauhi Gulch (approximately 5,290 acres), the middle subsection of Humu`ula encompasses the approximate area from Nauhi Gulch to the Wailuku River (approximately 7,513 acres), the south subsection of Humu`ula encompasses the approximate area from the Wailuku River to Saddle Road (approximately 20,377 acres), and `Āinahou is the subsection of Humu`ula south of Saddle Road (approximately 11,124 acres).



Map Noting Watersheds

Climate

The lands of Humu`ula are characterized by their isolation, high elevation, cool temperatures and lack of infrastructure (roads, potable water, telephone, power, etc.). The area is somewhat isolated with the closest public facilities (schools, hospitals, police and fire services) located in Hilo (25 miles and 40 minutes by car) and Waimea (30 miles and 55 minutes by car).

With elevations ranging from approximately 4,500 to 9,000 feet mean sea level, the lands experience cooler temperatures ranging from annual mean of 58 °F at the 5,000 foot elevations to 45 °F at the 9,000 foot elevations, with frost conditions occurring during the winter months.

The average rainfall varies dramatically over various areas of the parcel. In the northern portions (north of Pu`u `Ō`ō) the average annual rainfall ranges from 120 inches in the lower elevations, to 45 inches in the upper elevations. However, in the upper elevations (above 7,000 feet) high evaporation rates create extremely dry conditions during most the year, as evidenced by the sparse vegetation in these areas. In the western portions, generally southwest of Pu`u `Ō`ō, the mean annual rainfall decreases from 80 inches near Pu`u `Ō`ō to less than 40 inches near the Humu`ula Sheep Station adjacent to the Mauna Kea Access Road. The land parcel generally receives the prevailing northeasterly trade winds.

Major Geographic and Geologic Features

Lava flows of 1843, 1855, and 1880 underlie portions of this area. These areas are designated within the Volcanic Hazard Zone 2, defined as areas which generally have had 15 to 25 percent of the area covered with lava since 1800. The balance of the site is categorized in Lava Hazard Zone 7, which reflects areas where only 20 percent of the area was covered with lava over 3,500 years ago.

The land parcel has the following pu`us within its boundaries: Pu`u Nēnē, Pu`u `Ō`ō, Pu`u Loa, Pu`u Kahinahina, Pu`u Kaiwiiwi, and Pu`u Palaolelo.

The pu`u or cinder cones are probably the most characteristic feature of the project area. These pu`u add scenic value to the landscape and may offer other resources, such as cinder material or vantage points for antennas. However, these features, as well as gullies, gulches or sink holes, may be refuges for endangered or other native plants. In general, these features are somewhat protected from heavy grazing. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document G-Vegetation Sensitivity Analysis, Page G-18)

Soils

The land parcel contains several soil types. Soil conditions are reflective of the environmental variations with sandy, rocky soils generally found in the upper and drier elevations; the better sandy loams in the mid-elevations, and poorly draining clay loams in the lower and wetter elevations, especially within Pi`ihonua.

Pi`ihonua primarily consists of two soil types: PND and PUC. PND is from the Pi`ihonua soil series. This series consists of well drained silty clay loams formed in layers of volcanic ash. The PND has 6 to 20 percent slopes on elevations ranging from 4,500 to 6,500 feet and receive from 90 to 150 inches of rainfall annually. This soil dehydrates irreversibly into fine gravel size aggregates and is extremely stony in places. Permeability is rapid, runoff is slow, and the erosion hazard is slight.

LEGEND
Gorse
Natural Community/ Endangered Flora & Fauna
Soils With Highest Potential
Level/Stony Land
Soils With Poor Drainage
Paved Road
Unpaved Road
Proposed Road
Feature/Place
Puu
FIGURE 3
GENERAL SOIL CHARACTERISTICS
HUMUULA/PIIHONUA
MASTER PLAN
0 2000 4000 8000 16000
FEET
PBR HAWAII
MAUNA LOA FOREST RESERVE (STATE)
MAUNA KEA FOREST RESERVE (STATE)
PIIHA HILO FOREST RESERVE (STATE)
HILO FOREST RESERVE (STATE)
UPPER WAIAKEA FOREST RESERVE (STATE)
HILO WATERSHED RESERVATION (FEDERAL)
MAUNA KEA OBSERVATORY
MAUNA KEA STATE PARK
HALE POHAKU
PUU HUKE
PUU ODE
PUU NENE
HILO
KAUMANA
WAIAKEA
KAUMANA CAVE
KAUMANA DRIVE
HILO GOLF COURSE
HILO MUNICIPAL GOLF COURSE
HILO INTERNATIONAL AIRPORT
KEAUKAHA FOREST RESERVE (STATE)
KEAUKAHA-PUU OO FOREST RESERVE (FEDERAL)
PUU OO
PUU WAAWAA WILDLIFE SANCTUARY
PUU WAAWAA FOREST RESERVE (STATE)
PUU WAAWAA WILDLIFE REFUGE (FEDERAL)
MAUNA LOA FOREST RESERVE (STATE)
HILO FOREST RESERVE (STATE)
HILO WATERSHED RESERVATION (FEDERAL)
PROPOSED EXCHANGE AREA (1500 ACRES)
VIEW OF HILO TOWN
MAUNA LOA
MAUNA KEA
HUMUULA
PIIHONUA
MAKAHANALOA
MAKAHANALOA MUKI
MAKAHANALOA MAUKA
MAKAHANALOA MAKA

LEGEND
PAVED
UNPAVED
ROADS
Trail/4WD
FOREST RESERVE
PASTURE LEASE
BOUNDARIES
Gulch/Intermittent Stream
Perennial Stream
Rock Wall
Fence
Electrical Line
Water Line
Puu
Feature/Place
Reservoir/Water Tank
PARCEL 1
PARCEL 2
PARCEL 3
PIIHONUA
AINAHOU
FOREST RESERVE
PUU NENE
CAE
FIGURE 2
PHYSICAL AND HISTORIC FEATURES
HUMUULA/PIIHONUA MASTER PLAN
0 2000 4000 8000 16000
FEET
PBR HAWAII

PUC is from the Pu`u `Ō`ō soil series consisting of well drained silt loams formed from volcanic ash. It ranges from 6 to 12 percent slopes at elevations ranging from 5,000 to 6,500 feet and receives from 65 to 100 inches of rainfall annually. The subsoil dehydrates irreversibly into fine sand size aggregates. Permeability is moderately rapid, runoff is slow, and the erosion hazard is slight. Pu`u `Ō`ō soils are used for pasture.

The north Humu`ula subsection consists primarily of three soil types: ASD, HDD, and HCD. ASD is from the Apakuie series which consists of well-drained very fine sandy loams formed from volcanic ash, sand, and cinders. It has 12 to 20 percent slopes at elevations ranging from 5,000 to 8,000 feet and receives from 20 to 35 inches of rainfall annually. In some years it is covered by snow for a few days. Permeability is rapid, and runoff is slow. The hazard of soil blowing is moderate. This soil is used for pasture and wildlife habitat.

HDD and HCD are from the Hanipoe soil series which consist of well-drained silt loams formed from volcanic ash. They have 12 to 20 percent slopes at elevations ranging from 5,000 to 6,500 feet. They receive from 30 to 50 inches of rainfall annually, runoff is slow, and the erosion hazard is slight. In places this soil is very rocky. These soils are used for pasture, woodland, and for wildlife habitat.

The middle Humu`ula subsection consists primarily of five soil types: LAD, LUC, AFD, ASD and HDD. HDD is described above. The AFD and ASD soils are from the Apakuie series which is described above. LAC and LUC are from the Laumai`a soil series which consists of well drained silt loams formed from volcanic ash. These soils are on 6 to 20 percent slopes at an elevation ranging from 5,500 to 8,000 feet. They receive from 35 to 70 inches of rainfall annually, permeability is moderately rapid, runoff is slow to medium, and the erosion hazard is slight to moderate. The surface is extremely stony in places, covering 3 to 15 percent of the surface. Laumai`a soils are used for pasture.

The south Humu`ula subsection consists of primarily six soil types: ASD, AFD, LAD, LUC, KZD and rLV. ASD, AFD, LAD and LUC are described above. KZD is from the Kilohana soil series with somewhat excessively drained loamy fine sands formed from volcanic ash, sand, and cinders. This soil is on slopes of 12 to 20 percent at elevations ranging from 5,000 to 6,500 feet. They receive from 20 to 40 inches of rain fall annually, permeability is rapid, runoff is slow, and the erosion hazard is slight. Kilohana soils are used for pasture, wildlife habitat, and recreation areas.

rLV is from the a`ā soil series which is a lava flow. rLV is located at elevations ranging from near sea level to 13,000 feet and receives from 10 to 250 inches of rainfall annually. In areas of high rainfall, it contributes substantially to the underground water supply and is used for watershed. It has practically no soil covering.

The `Āinahou lands south of the Saddle Road, are comprised almost entirely of pāhoehoe and a`ā lavas, the most recent of which includes portions of the 1935 lava flow. `Āinahou consists primarily of two soil types, both lava flows: rLV and rLW. rLV is described above. rLW is from the Pāhoehoe soil series. The rLW is located at elevations ranging from sea level to 13,000 feet and receives from 10 to 250 inches of rainfall annually and contributes to the ground water supply. It has no soil covering.

The Humu`ula/Pi`ihonua land parcels also has several scattered areas rCL (Cinder Land) which consists of bedded cinders, pumice, and ash. Cinder land commonly supports some grass, but it is not good pasture land because of its loose consistency and poor trafficablility. This land is a source of material for surfacing roads.

Vegetation

The vegetation is dominated by an understory of exotic pasture grasses over much of the lands with koa/`ōhi`a forest found in the lower portions of Pi`ihonua, especially in the lands adjacent to the Hakalau Forest National Wildlife Refuge. Scattered koa and māmane are found over the northern portions of Humu`ula with scattered māmane found in the upper elevations, especially adjacent to the Mauna Kea Forest Reserve. The vegetation on the `Āinahou lands generally consists of scattered scrub vegetation of `ōhi`a and native shrubs.

According to the U.S. Geological Service (USGS) vegetative mapping program, entitled "The Hawai`i Forest Bird Survey (HFBS) Vegetation Classification System", 62 prominent vegetative habitats can be found on the land parcel. These vegetative habitats (referred to as vegetative types) are coded in the level 1 symbols of the HFBS Vegetation Classification System. Each level 1 type identifies six different characteristics: 1) tree canopy cover, 2) tree canopy height, 3) dominant tree species composition, 4) species association type, 5) dominant understory species composition, and 6) other information pertinent to the map unit.

Pi`ihonua contains primarily three vegetative types. The three types consist of scattered, open, and closed canopies (ranging from 5% to over 10% cover) of koa trees over 10 meters in height, in a moist habitat with `ōhi`a, scrub native trees, native shrubs, and introduced grasses, sedges, or rushes.

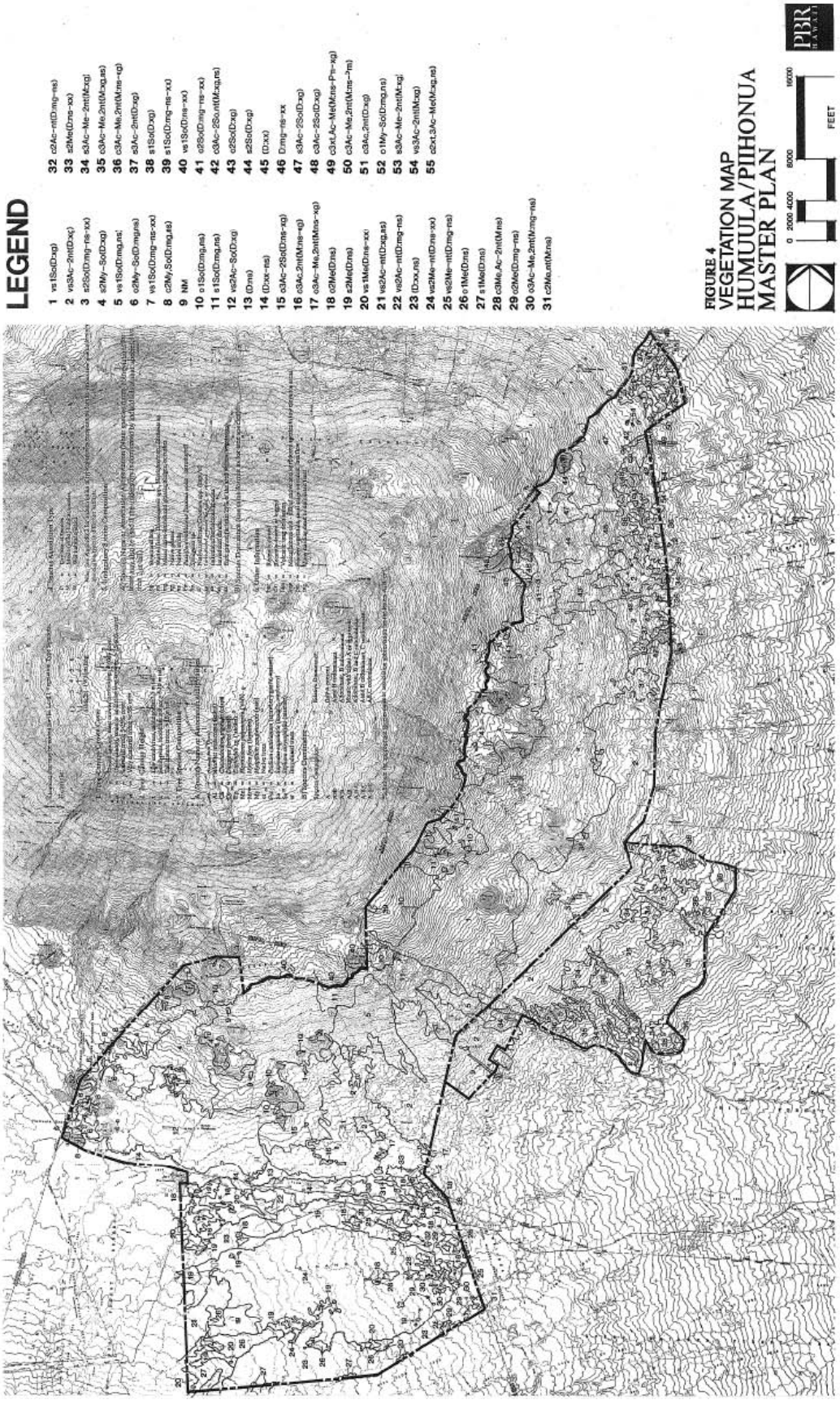
The north Humu`ula subsection contains primarily five vegetative types consisting of the following: scattered to open canopy (5 -60% cover) koa trees over 10 meters in height and māmane of moderate height (5 -10 meters), in a dry habitat with mixed native-introduced grasses, sedges, or rushes; open canopy 25 -60% māmane of moderate height in a dry habitat with mixed native introduced grasses, sedges, and rushes; and scattered scrub trees and māmane in a dry habitat with introduced grasses, sedges, or rushes.

The middle Humu`ula subsection contains primarily three vegetative types. The first type is very scattered (<5% cover) low scrub trees and māmane, in a dry habitat with introduced grasses, sedges, or rushes. The second type is very scattered koa trees over 10 meters in height and native trees of moderate height, in a dry habitat with introduced grasses, sedges, or rushes. The third type is scattered māmane of moderate height, in a dry habitat with native and introduced grasses, sedges, or rushes, as well as areas of bare ground.

The south Humu`ula subsection contains primarily seven vegetative types. Two types are the same as the first two types described for the middle subsection above. The remaining types include very scattered koa, māmane, naio, and native trees of moderate height, in a dry habitat with native shrubs and introduced grasses, sedges, or rushes.

`Āinahou contains primarily two vegetative types. The types consist of very scattered `ōhi`a and native trees of moderate height, in a dry habitat with native shrubs and areas of bare ground.

The nuisance shrub, gorse, covers about 20 percent of the entire site (11,000 acres). Patches or individual plants can be found across another 10,000 acres. Gorse (Ulex europaeus) is a member of the legume family, native to Europe and introduced to Hawai`i as a hedge plant. The shrub grows thickly to heights of 6 to 10 feet and produces sharp, three inch thorns covered with a thick, waxy substance.


LEGEND
1 vs1Sd(Dxg)
2 vs3Ac-2ntt(Dxg)
3 s2Sd(Dmg-ns-xx)
4 s2My-Sd(Dxg)
5 vs1Sd(Dmg,ns)
6 o2My-Sd(Dmg,ns)
7 vs1Sd(Dmg-ns-xx)
8 c2My,Sd(Dmg,ns)
9 NM
10 o1Sd(Dmg,ns)
11 s1Sd(Dmg,ns)
12 vs2Ac-Sd(Dxg)
13 (D,ns)
14 (D:xx-ns)
15 o3Ac-2Sd(Dms-xg)
16 o3Ac2ntt(Mns-xg)
17 o3Ac-Me,2ntt(Mns-xg)
18 o2Md(Dns)
19 s2Md(Dns)
20 vs1Md(Dns-xx)
21 vs2Ac-ntt(Dxg,as)
22 vs2Ac-ntt(Dmg-ns)
23 (Dxx,ns)
24 vs2Ac-ntt(Dns-xx)
25 vs2Ac-ntt(Dmg-ns)
26 o1Md(Dns)
27 s1Md(Dns)
28 o3Ac-2ntt(Mns)
29 o2Md(Dmg-ns)
30 o3Ac-Me,2ntt(Mmg-ns)
31 c2Ac,ntt(Mns)
32 o2Ac-ntt(Dmg-ns)
33 s2Md(Dns-xx)
34 s3Ac-Ac-2ntt(Mxg)
35 o3Ac-Me,2ntt(Mxg,as)
36 o3Ac-Me,2ntt(Mns-xg)
37 s2Ac-2ntt(Dxg)
38 s1Sd(Dxg)
39 s1Sd(Dmg-ns-xx)
40 vs1Sd(Dns-xx)
41 o2Sd(Dmg-ns-xx)
42 o3Ac-2Sd,ntt(Mxg,ns)
43 o2Sd(Dxg)
44 s2Sd(Dxg)
45 (D:xx)
46 Dmg-ns-xx
47 s3Ac-2Sd(Dxg)
48 o3Ac-2Sd(Dxg)
49 o3xtAc-Md(Mns-Pns-xg)
50 o3Ac-Me,2ntt(Mns-?ns)
51 o3Ac,2ntt(Dxg)
52 o1My-Sd(Dmg,ns)
53 s3Ac-Me-2ntt(Mxg)
54 vs3Ac-2ntt(Mxg)
55 o2xt,3Ac-Md(Mxg,ns)
FIGURE 4
VEGETATION MAP
HUMUULA/PIIHONUA
MASTER PLAN
0 2000 4000 8000 16000
FEET
PBR HAWAII

The seeds of the gorse plant can lie dormant for 50 to 70 years. Heat tends to trigger seed germination, and each plant propagates thousands of seeds. Over 25,000 acres of gorse occur on the island of Hawai`i, and over 20,000 acres of the Pi`ihonua/Humu`ula lands are infested. Gorse interferes with reforestation and is suspected of causing ecological upsets by acidifying certain types of soil. The dense wax covered thorns are flammable and even in moist conditions can support intense brush fires.

The continued dominance of gorse could potentially eliminate any productive use in areas covered by the plant and render the land unsuitable as habitat of any kind, including native birds and forests, cattle pasture, or other agricultural use.

There are several areas of significant koa growth and dying and fallen koa. Healthy koa trees play an important role in maintaining good pastures by supplying nitrogen and organic material to the soil, preventing excessive soil and water run-off, providing protection to animals during storms and allowing water from fog to trickle down to understory vegetation.

Cattle, sheep and goats feed on seedling koa and have effectively stifled reproduction except in areas that are fenced off or are inaccessible. Older koa trees could be harvested and reforestation initiated in protected areas. The prime areas for initiating salvage and reforestation are located in the Humu`ula subsection and lower portions of Pi`ihonua.

The existing koa stands support several endangered native bird species, many of which are found in the adjacent Hakalau Forest National Wildlife Refuge and Hilo Forest Reserve. Any use of the existing koa resources, therefore, will need to address the requirements of the Federal Endangered Species Act.

Vegetation Sensitivity Analysis

Based on existing vegetation maps and known information presence of listed endangered or threatened species, areas of potential botanical and biological sensitivity have been identified through preliminary sensitivity studies.

The Vegetation Sensitively Analysis, which is part of the 1997 Humu`ula/Pi`ihonua Master Plan Appendices, delineates vegetative sensitivity zones which were drawn to include core groups of vegetation units with similar scores. The zones may include smaller vegetation units with lower or higher scores. Native plant communities marked for 'Special Attention' were grouped with communities with higher scores.

The sensitivity zones were drawn primarily from the scores, with the adjustments already noted. Some deviations of zone boundaries were made to follow or include topographic features, especially pu`u (cinder cones). Slight deviations were also made to enhance compactness and integrity of the zones.
The following high, medium and low sensitivity zones were designated:

High Sensitivity Zone - `Āinahou Young Lava Flows
In most of `Āinahou plant growth is strongly controlled by the very poorly developed soils on the young Mauna Loa lava flows. The vegetation is mostly native shrub land, in places with scattered native trees. With the exception of a small area in the northeast corner, these are raw lava lands that do not support pasture grasses. Young lava flows in the Saddle Road area have been found to be resistant to invasion by alien plants, the noxious fountain grass (Pennisetum setaceum) being a possible exception.

`Āinahou is designated as a high sensitivity area because the understory is not dominated by alien grasses and the shrub land communities are strongly native in character. Many species of endangered plants grow in similar communities nearby in the Pōhakuloa Training Area. A few small kīpuka in the east support a diverse, closed `ōhi`a forest and warrant strong protection from disturbance. Although the early succession communities of `Āinahou often contain considerable areas of bare lava, this is their natural state, and they are an important part of the Humu`ula Saddle ecosystem.

High Sensitivity Zone - Humu`ula Māmane-Naio Forest
The Māmane-Naio dry forest community occurs only at high elevations on Hawai`i at Haleakalā, Maui, and is among the most endangered ecosystems in Hawai`i. In Humu`ula, It has been subjected to some grazing and alien grasses grow here, but they do not dominate the understory. The low rainfall and sandy soil combine to keep plant productivity low. This zone contains both open and closed forests of māmane and naio. Like `Āinahou, this area is similar to parts of Pōhakuloa Training Area where endangered plants are found. This zone is contiguous with part of the Mauna Kea Forest Reserve (state) that is designated critical habitat for Palila.

High Sensitivity Zone - Pi`ihonua `Ōhi`a-Koa Forest
As has already been stated, Pi`ihonua is the wettest part of the project area and can support diverse native rain forest. This vegetation, heavily impacted by grazing, is the interface between the Humu`ula pastures upslope and the forests of the neighboring Hilo Forest Reserve and Hakalau Forest National Wildlife Refuge. Several species of endangered plants, may occur here.

Medium Sensitivity Zone - Keanakolu Māmane Forest
Near Keanakolu there is some cover of native trees and shrubs. Being somewhat drier than Pi`ihonua, the dominant tree species are koa and māmane rather than `ōhi`a. `Ōhi`a does occur as a co-dominant species below 5,600 feet in part of this area. The native forest cover in this area may be indicative of bullock hunting pressure in the mid-1800s, followed by less formal grazing due to poor soils. The ground cover is alien pasture grasses, sometimes co-dominant with the occasional native shrubs. This area borders the Hilo Forest Reserve.

Medium Sensitivity Zone - North and South Mauna Kea Māmane Shrub Land
These zones are mostly high elevation with very scattered māmane trees and a dominant layer of native shrubs. Most of these zones are above the 8,000 foot contour, receiving about 40 inches or less rain annually. Sandy soils also contribute to the dryness of these areas. The western end extends nearly to the Saddle Road to incorporate a chain of cinder cone and neighboring open koa forests. Alien pasture grasses occur only in the extreme southern portions and around the cinder cones.

Low Sensitivity Zone - Humu`ula Pastures
These pastures include scattered or very scattered native trees but are dominated by the alien pasture grasses and gorse. For years, grazing has prevented or reduced tree regeneration. Native trees or shrubs only occur in rugged areas that are obstacles to cattle, such as cinder cones or gullies. Large patches of gorse also occur in this zone. The combination of rainfall and fine-texture soil have made this the most productive rangeland in the project area. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document G-Vegetation Sensitivity Analysis, Pages G-11-17)

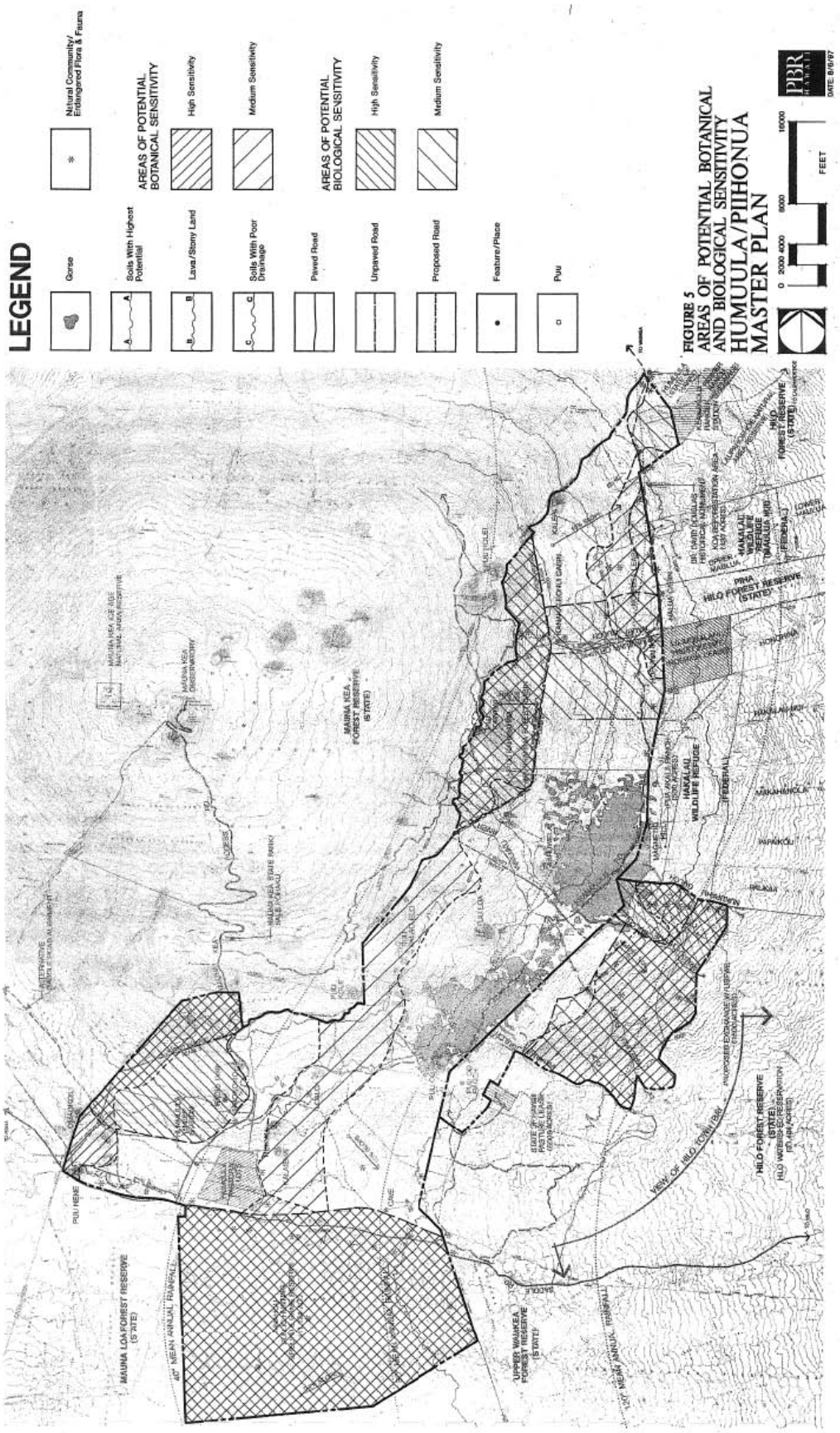


FIGURE 5
AREAS OF POTENTIAL BOTANICAL AND BIOLOGICAL SENSITIVITY
HUMUULA/PIIHONUA MASTER PLAN

Endangered and Threatened Species

The Vegetation Sensitivity Analysis contained within the Master Plan, discusses the probable occurrence of protected plant species. Although none of these lands are designated as critical habitat, data base analysis has shown that legally protected plants were found within the project area in the past and probably grow there now. Exact locations of endangered plant species cannot effectively be shown on a base map. The Vegetation Sensitivity Analysis lists four species of listed endangered plants and two species of concern reported to grow within the project area. Four of these species are reported from more than one location.

Species of listed endangered plants and species of concern reported to grow within the project area				
Common Name	**Scientific Name**	**Status**	**Area**	**Year of observation**
fern	*Asplenium fragile var insulare*	Listed Endangered	Keanakolu	1957
			Pu`u `Ō`ō	1935
`ōhā, `ōhā wai	*Clermontia lindseyana*	Listed Endangered	Pu`u `Ō`ō	1957
`ōhā, `ōhā wai	*Clermontia pyrularia*	Listed Endangered	Keanakolu	1978
			Pu`u Akala	1992
laukahi kuahiwi	*Plantago hawaiiensis*	Listed Endangered	Pu`u `Ō`ō	1979
na`ena`e	*Dubautia arborea*	Species of Concern	Pu`u `Ō`ō	1935
			Keanakolu	1935
makou	*Ranunculus hawaiiensis*	Species of Concern	Mauna Kea	1990
			Pu`u `Ō`ō	1979

Additionally, there are records of five other such species outside, but near the boundaries of the project area. Silverswords are known to grow slightly above the elevation of project area in the vicinity of the Wailuku River and Waipāhoehoe Gulch. Data base records show that in the past the silverswords grew as low as 8,000 feet elevation, well within the project area.

Species of listed endangered plants and species of concern reported to grow outside, but near the boundaries of the project area				
Common Name	**Scientific Name**	**Status**	**Area**	**Year of observation**
`āhinahina, silversword	*Argyroxiphium sandwicense*	Listed Endangered	Mauna Kea	1991
pōpolo kū mai	*Solanum incompletum*	Listed Endangered	Pu`u `Ō`ō	1949
fescue	*Festuca hawaiiensis*	Species of Concern	Pu`u `Ō`ō	1916
`ākala, `ākalakala	*Rubus macraei*	Species of Concern	Upper Pi`ihonua	1991
`ānunu	*Sicyos macrophyllus*	Species of Concern	Pu`u `Ō`ō	1985

Flora and fauna on the land parcel has been mapped from information documented by the Federal Status and Heritage Global Ranks of the official U.S. Fish & Wildlife Service Endangered Species Act. All flora and fauna identified on these lands and described below are either endangered or threatened.

The Pi`ihonua parcel contains several endangered or threatened vertebrate species: the koa-`ōhi`a forest below the 6,000 foot level is significant from both an avian and botanical perspective. It is extremely good habitat for at least four endangered avian species: Hawai`i `Ākepa, Hawai`i Creeper, `Akiapōlā`au, and Hawaiian Hawk (`Io) as well as breeding habitat for at least five other endemic species.

The north Humu`ula subsection has the following vertebrates: Hawaiian Creeper, `Io, Hawaiian Hoary Bat, Palila, `Akiapōlā`au and Hawaiian Duck (Koloa). Also found in this subsection are the na`ena`e and `ōhā wai plant species and the natural communities of māmane subalpine dry forest and koa/māmane montane dry forest. The māmane forest is an important resource for the Palila.

The middle Humu`ula subsection has the following vertebrates: `Io, Koloa, Hawaiian Creeper, Hawaiian `Ākepa, Hawaiian Goose (Nēnē), Hawaiian Hoary Bat, and Palila. Also found in this subsection is the natural communities of koa/māmane montane dry forest and māmane subalpine dry forest at the upper elevations, adjacent to the Mauna Kea Forest Reserve.

The south Humu`ula subsection has the following vertebrates: Nēnē, `Akiapōlā`au, `Io, Palila, and Hawaiian Dark Rumpled Petrel. Also found in this subsection is the na`ena`e and `ōhā wai plants and the natural communities of koa/māmane montane dry forest and the māmane subalpine dry forest.

The Māmane forest at the western boundary of the south Humu`ula subsection represents a significant resource for the endangered Palila. From recent research it appears that one of the most important resources for supporting Palila is a māmane forest with a large latitudinal range similar to that found in this area. This allows the birds to move up and down slope following the bloom and pod set of the forest which occurs over a latitudinal cline. The south Humu`ula subsection is also the only location of the land parcel that has an invertebrate species, the Amastrid Land Snail. Both Amastrid Land Snail and Dark Rumpled Petrel have been documented near Saddle Road.

`Āinahou has the following vertebrates: Hawaiian Creeper, `Io, `Akiapōlā`au, Nēnē, and Palila. Also found in the `Āinahou section is the Makou plant and the natural communities of deschampsia nubigena, subalpine mesic, and grassland. The `Āinahou subsection is unique from both a biological and botanical perspective in that it consists of shrub land community that is strongly native in character with a few small kīpuka of closed `ōhi`a forests in the eastern portion. It supports several endangered avian species, including the Nēnē. Additionally, many endangered plants and animal species are found in the adjacent west Pōhakuloa Training Area.

From a biological perspective the māmane forests are important in that they serve as a critical habitat for palila, an endangered native bird. Several endangered or threaten native bird species also are associated with the koa/`ōhi`a and koa/māmane forest areas. The `Āinahou lands, which serve as a public hunting and game reserve area, also serves as a refuge area for the nēnē.

Unlike topographic features, plants and plant populations may disappear locally or expand existing populations, or even sprout in completely new areas. This analysis can only list locations of endangered plants known at the time the data were collected. These species could spread to new locations at any time. Furthermore, the Humu`ula/Pi`ihonua project area is vast and would require an inordinate amount of time to actually search in entirety for endangered plants. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document G-Vegetation Sensitivity Analysis, Page G-12)

These difficulties make the use of vegetation analysis and maps invaluable. These tools can show where it is most probable that endangered plants may grow. Use of the Vegetation Sensitivity Map may be used to guide master planning, subject to the following considerations:

1. In general, endangered species are more likely to occur in native plant communities that have received less disturbance rather than in the more heavily grazed parts of the project area.
2. Secondarily, topographic features that make grazing difficult, such as steep pu`u, gullies, or lava tube entrances, may be plant refuges harboring remnants of native vegetation not shown on maps. Endangered species may persist in these kinds of sites.
3. Finally, although the probability is low, endangered plants may grow anywhere, even in heavily grazed pastures. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document G-Vegetation Sensitivity Analysis, Page G-12)

Biological Sensitivity Analysis

The Biological Sensitivity Analysis which is part of the Master Plan Appendix delineates areas containing endemic faunal sensitivity within the Humu`ula/Pi`ihonua area. The assessment gives a brief description of each area and outlines the endemic vertebrate resources that should be factored into any master planning of the areas delineated.

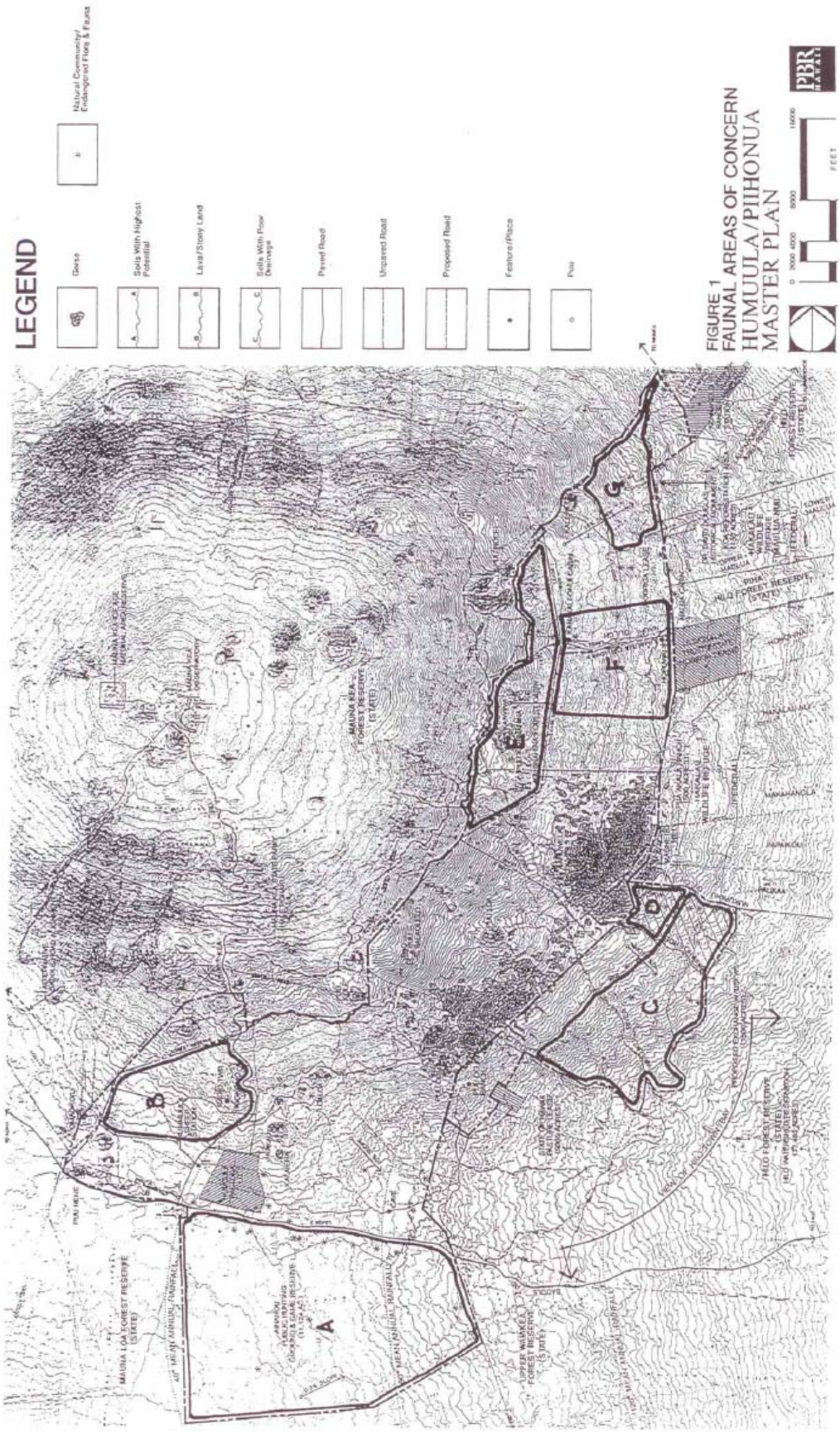
(A) `Āinahou Young Lava Flows -Nēnē Habitat:
This area probably has little commercial agribusiness potential but represents a significant area of emergent native vegetation which supports several endemic avian species, including Nēnē (Branta sandvicensis) -albeit in extremely small numbers. It is possible that there are several extremely rare and possibly a few listed botanical species.

(B) West of Mauna Kea Access Road – Māmane-Naio Forest – Palila Habitat:
This area should not be further grazed -the Māmane (Sophora chrysophylla) forest represents a significant resource for the endangered Palila (Loxioides balleui). If this area was further restored it would greatly enhance the habitat available for further restoration of this species.

From recent research it appears that one of the most important resources for supporting Palila is a māmane forest with a large altitudinal range, similar to that found in the Pu`u La`au area. This allows the birds to move up and down slope following the bloom and pod set of the forest which occurs over an altitudinal cline.

Much of the māmane forest within PTA on the other side of the HHL fence in this area has been severely impacted by the incursion of naio (Myoporum sandwicense) which has out-competed māmane due in part to the pressure from feral sheep (Ovis aries) and mouflon (Ovis musimon) which prefer māmane to naio as a foraging resource - thus, giving the naio an unfair advantage. Naio cannot support Palila, it also is extremely attractive to rats and creates a significant fuel load within the ecosystem.

(C) Pi`ihonua Mauka -`Ōhi`a-Koa Forest – Biodiverse Endangered Endemic Forest Bird Habitat:
The forest below the 6,000 foot level is significant from both an avian and botanical perspective. It is extremely good habitat for at least four endangered endemic avian species: Hawai`i `Ākepa (Loxops coccineus coccineus), Hawai`i Creeper (Oreomystis mana), `Akiapōlā`au (Hemignathus munroi), and `Io (Buteo solitarius) as well as breeding habitat for at least five other endemic species.


LEGEND
Geese
Natural Community/ Endangered Flora & Fauna
Soils With Highest Potential
Lava/Stony Land
Soils With Poor Drainage
Paved Road
Unpaved Road
Proposed Road
Feature/Place
Pua
A
B
C
D
E
F
G
MAUNA LOA FOREST RESERVE (STATE)
MAUNA KEA FOREST RESERVE (STATE)
UPPER WAIAKEA FOREST RESERVE (STATE)
HILO FOREST RESERVE (STATE)
PUHA FOREST RESERVE (STATE)
HAKALAU NWR
HAKALAU FOREST NWR
HILO WATERSHED FOREST RESERVE
PUU HINAI
PUU LAUPAHOEHOE
PUU MAKAALA
PUU MAKAALA NUI
PUU MAKAALA IKI
PUU KAHINAPOHAKU
PUU KAHINAPOHAKU IKI
PUU KAHINAPOHAKU NUI
PUU KAUMANA
PUU KAUMANA NUI
PUU KAUMANA IKI
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(D) Upper Pi`ihonua Mauka -`Ōhi`a-Koa Forest – Biodiverse Native Forest:
As mentioned in the previous account, this area contains the highest elevation rain forest left in this district if not the whole windward side of the island. It is used as both a foraging and breeding area by many of the endangered and other endemic avian species found in the Hakalau Forest National Wildlife Refuge located immediately to the north of this area.

(E) Kahinahina -Māmane Forest – Palila Habitat:
With restoration, this area can support populations of `Akiapōlā`au and Palila. The Māmane remaining in this area is significant for both species. Encouraging māmane regeneration should be one of the management objectives for this area.

(F) Kanakaleonui Bird Corridor -Koa-Māmane Forest – Native Bird Link to Forest Areas:
The 514-acre Kanakaleonui Bird Corridor (KBC) restoration project represents a collaborative multi-organizational effort to reestablish and maintain wildlife habitat for native bird populations. The Department of Hawaiian Home Lands is working with the US Forest Service, the U.S. Fish & Wildlife Service (USFWS), the University of Hawai`i campuses at Hilo and Manoa, and other organizations in an effort to create wildlife habitat connecting the down slope Piha Forest Reserve and Hakalau Forest National Wildlife Refuge with the upslope Mauna Kea Forest Reserve.

The primary goal of this project is to "help create a more viable wildlife corridor for native birds dependent on seasonal mauka to makai migration patterns on Mauna Kea." This goal would be achieved by restoring the KBC's native forest habitat to that which existed before European contact with Hawai`i.

In 2007 the USFWS provided funding to fence the 514-acre Corridor in an effort to keep feral ungulates; cattle, and pigs from causing further damage. In 2008, the first research and permanent monitoring plots were established throughout the Corridor with assistance from the U.S. Forest Service, the USFWS, UH Manoa and UH Hilo campuses, and the Hawai`i Community College.

(G) Keanakolu Māmane Forest:
This area has been degraded and has quantities of Banana Poka (PassifIora mollissima) and other pestiferous plant species. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document H-Biological Sensitivity Analysis, Pages H-1 & 2)

The remaining large un-demarcated area has by in large been severely degraded by a combination of logging, grazing, and recently the ever expanding gorse (Ulex europaeus) scourge. In general, from an avian perspective, encouraging koa and other forest building ventures adjacent to the southern boundaries of the main parcel and the northern part of Area C would be beneficial to endemic avian species.

Gorse represents a major threat to resource management. It all but chokes out any other vegetation and has minimal value from an endemic species perspective. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document H-Biological Sensitivity Analysis, Page H-2)

<u>Safe Harbor Agreements</u>

Many endangered species of plants are known from the general region that includes the slopes of Mauna Kea and the Saddle area. Some of these are found in habitats similar to those within the project area and may have once occurred, or may now occur, within the project area.

Because the activities proposed in the `Āina Mauna Legacy Program could affect habitat for threatened and/or endangered plants, birds and animals, it is recommended that a blanket Safe Harbor Agreement be developed and incorporated into the Legacy Program. Since part of the goals include restoration of habitat, as well as planting of trees that could attract native birds and bats, the Safe Harbor Agreement can protect DHHL from future impacts to the habitat and the species.

The Safe Harbor program encourages proactive natural resource management to benefit endangered and threatened species by providing regulatory assurances that future property-use restrictions will not be imposed if those efforts attract endangered or threatened species to their enrolled property or result in increased numbers or distributions of listed species already present.

Safe Harbor Agreements were forged in response to some unexpected consequences of the federal Endangered Species Act. Some of the law's provisions prevent private landowners from doing anything on their land that would damage the habitat of endangered plants, birds or animals. And in some cases, the law also discouraged landowners from doing things that would actually help the very animals the Endangered Species Act was supposed to protect.

These agreements, actually contracts incorporated in a permit from the U.S. Fish & Wildlife Service, ensure that if landowners take specific actions to encourage endangered species onto their land -- by creating wetlands or planting certain kinds of trees, for example -- they won't be hit later with new restrictions because of the wildlife that moves in.

That, in turn, allows landowners to develop their land as they wish once the Safe Harbor Agreement -- often lasting 20 years -- has expired. The agreements also include escape clauses that would let landowners make changes if they run into unexpected circumstances -- a financial emergency, for example.

The Safe Harbor Program is underlined in the Hawai`i Revised Statute (HRS Section 195D-22), and is sponsored by the State of Hawai`i Department of Land & Natural Resources - Division of Fish & Wildlife (DLNR-DOFAW).

Safe Harbor Agreements already in place in Hawai`i include the following:

Safe Harbor Agreement with Chevron Products Company, Hawai`i Refinery at James Campbell Industrial Park, O`ahu: Finalized in July, 2005, this Safe Harbor Agreement is for the management of nesting and foraging habitat for endangered Hawaiian Stilt and Hawaiian Coot at the Chevron Refinery Hawai`i at the James Campbell Industrial Park on O`ahu. The Agreement has a term of 6 years and during that period Chevron will maintain 6 acres of stilt nesting habitat and 5 acres of habitat for stilt and coot foraging. Chevron will manage the water level and vegetation in a basin known as Rowland's Pond to maximize nesting habitat and conduct predator control around Rowland's Pond and several other ponded areas within the refinery to provide additional foraging habitat. Chevron has committed to monitor the stilts and coots occurring on their property and implement adaptive management strategies should current management activities appear ineffective. In addition, Chevron will conduct an education program for its employees and contractors about the Hawaiian stilt and coot at the refinery.

**Safe Harbor Agreement for the Reintroduction of the Nēnē to Pi`iholo Ranch, Maui:** Under this Agreement, finalized in August, 2004, Pi`iholo Ranch will maintain or improve approximately 600 acres of nēnē habitat on the Ranch for a period of 10 years by continuing cattle ranching operations, thereby

maintaining open, short-grass habitat; establish and maintain a nēnē release pen; control predators around breeding and release sites; and outplant native plant species known to be nēnē food sources. DLNR will conduct the actual reintroduction of nēnē raised at the Maui Bird Conservation Center and Ranch staff will provide food and water to the nēnē while they are in the release pen and assist DLNR in monitoring the population on the Ranch.

Programmatic Safe Harbor Agreement for the Nēnē on the Island of Moloka`i, Hawai`i: Finalized in April, 2003, this is the first "programmatic" Safe Harbor Agreement in the state, such that DOFAW is the permittee and individual landowners ("Cooperators") enroll through Cooperative Agreements with DOFAW and are covered under DOFAW's Agreement and Permit. Landowners can voluntarily enroll by signing a Cooperative Agreement with the State which commits them to make appropriate habitat on their land available to nēnē for a period of 10 years, and in return the landowner receives assurances from both the state and federal agencies that they will not be held responsible if nēnē should be accidentally harmed or killed on their property for the duration of the permit, which expires in 2053.

Safe Harbor Agreement and Habitat Management Plan for Koloa (Hawaiian Duck) and Nēnē (Hawaiian Goose) on Umikoa Ranch, Island of Hawai`i: Under this Agreement, finalized in December, 2001, Umikoa Ranch will create and fence 152 acres of new wetland and associated upland habitat, improve nēnē and koloa breeding success in new habitats by controlling mammalian predators there, and maintain additional foraging and wetland habitat that is already present on the Ranch.

Safe Harbor Agreement for Nēnē Introduction to Pu`u O Hoku Ranch, Moloka`i: Under the first Safe Harbor Agreement in the State, finalized in September, 2001, Pu`u O Hoku Ranch agreed to maintain or improve significant amounts of nēnē habitat for a period of 7 years by continuing cattle ranching operations, thereby maintaining open, short grass habitat; assist DLNR to establish and maintain release sites and assist DLNR to control predators around breeding and release sites.

For the `Āina Mauna Legacy Program, Safe Harbor Agreements will be crucial in restoring native forests and in turn brining back native birds populations. A Safe Harbor Agreement will need to be done over the entire property. In particular the commercial forestry to eradicate gorse program will create an environment friendly to certain bird species. Since the program's goal is to restore the area to native koa forest after the gorse has been eradicated, it is essential that the program be allowed to take proactive management steps which in some cases may cause a temporary loss of habitat for bird species.

Invasive Species

Hawai`i is in the midst of a growing invasive species crisis affecting the islands' endangered plants and animals, overall environmental and human health, and the viability of its tourism and agriculture based economy … and, our way of life. Fighting Invasive Species is a critically important priority because it is the single most-effective way to protect Hawai`i's natural resources.

The control of alien species within these lands is critical to maintaining the value of forest resources and needs to be included as part of an overall management plan. Besides the highly invasive gorse grass, the `Āina Mauna lands also have banana poka, fireweed, various non-native invasive grasses and feral ungulates.

In Humu`ula, there are several remnant patches of high elevation native forests (koa/`ōhi`a, pūkiawe, and high elevation māmane/naio) scattered amongst primarily introduced grasses and shrubs. The introduced species in the area are the product of a long history of grazing and subsequent land conversion from high elevation native forest ecosystems to pasture lands. The dominant introduced species are non-native grasses, primarily composed of kikuyu grass, sweet vernal grass and narrow-leaved carpet grass, the invasive shrub gorse and timber trees that have been planted for research and as windbreaks. (Wildland Fire Management Plan Humu`ula/Pi`ihonua Mauka, Page 7)

Natural resources are still found in abundance at Pi`ihonua mauka in the form of extensive `ōhi`a and koa tree cover and native fauna. These resources are at risk, however, from invasive species such as gorse, banana poka, and non-native holly. Hundreds of feral cattle represent a continued impact on forest cover by preventing regeneration, damaging roots, and contributing to soil erosion. (Pi`ihonua Mauka Conservation Management Proposal, Page 1)

Gorse

Gorse is classified as a noxious weed under Hawai`i Administrative Rules Chapter 68. It forces out competing plants, shades out grasses, is inedible to cattle, can be spread easily, and is a fire hazard. The nuisance shrub is threatening natural habitats and agro-ecosystems around the world, including Hawai`i. Gorse infestations have become established in extensive stands on agriculture and conservation lands on the southeastern slope of Mauna Kea and Humu`ula area continues to suffer from heavy infestations of gorse. (Humu`ula/Pi`ihonua Master Plan, Page 4)

Gorse – Tree "Skeletons" Indicate Area was Once Forested

Gorse is native to Northwest Europe but has become a major pest species in various parts of the world, including New Zealand. There is a long history of gorse in Hawai`i. It was apparently brought to Hawai`i in the 19th century as a hedge plant by a Scottish immigrant, and possibly utilized in the previous sheep operation at Humu`ula. It was first collected wild by J. R. Rock on Maui in 1910. On the island of Hawai`i it is found in pasture and scattered forest lands on Mauna Kea at elevations between 2,000 and 7,000 feet. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document F-Gorse Assessment Report, Page 1)

The shrub grows thickly to heights of 6 to 10 feet and produces sharp, three-inch spines covered with a thick waxy cuticle. Gorse has a life span of 20 -30 years. Each plant can produce thousands of seeds, which can lie dormant for 40 or more years and remain viable in the soil. Heat will trigger seed germination. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document F-Gorse Assessment Report, Page 1)

Gorse is rapidly expanding its range throughout and beyond its original foothold. Gorse has infested thousands of acres on Mauna Kea, much of it in the DHHL Humu`ula and Pi`ihonua tracts. It appears to be spreading laterally across contours and down gulches, where it has been found as low as 2,000 feet in the rocky Wailuku banks. Land managers and agencies have become convinced that eradication of gorse is the key to successful restoration of native habitat. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document F-Gorse Assessment Report, Page 1)

Gorse control currently consists of aerial spraying, ground spraying, and burning. Spraying and burning has had limited success in controlling gorse unless repeated for several cycles. Several bio-control agents have established following release, but only recently have they begun to show signs of affecting the gorse infestation. As burning of large acreages within the gorse containment area has ceased since 2003, the gorse habitat for these biological controls has improved. Concurrently, annual increases in bio-control populations have been observed with corresponding adverse impacts on the gorse infestation.

The non-profit organization, `Ōiwi Lōkahi o ka Mokupuni o Keawe, currently has a license on 1,000-acres at Humu`ula from DHHL for gorse control work. They have been working on a process in which burning the gorse produces carbon. Their studies and research are ongoing.

A most promising tool to eradicate gorse is through shading. Gorse is shade intolerant. Therefore, reforestation can limit seed production and gorse regeneration. A tree planting on Maui has shown promising results in its ability to limit gorse growth and expansion.

Additionally, DHHL field and research trials have shown that heavy shade from trees inhibits the ability for gorse to grow and spread. Heaviest shade under a dense tree canopy such as sugi appears to have the ability to kill mature gorse.

Tree plantings and reforestation can limit seed production and gorse regeneration. Timber plantings shade the gorse sufficiently to keep it from producing seeds and thus, each year some portion of the seed bank is removed. (Final Environmental Assessment, Koa Salvage-Reforestation and Gorse Containment, Pages 2 & 3)

Thus, timber planting can serve both as an income generator and as a gorse eradication mechanism. Other viable gorse eradication opportunities can also be considered.

Aerial Image of Planting of Portion of Gorse Containment Area

DHHL has planted portions of a gorse containment perimeter within the Humu`ula/Pi`ihonua lands with trees to establish a boundary to limit the spread of the weed. However, adjacent lands outside the containment area will also require intensive efforts to control the further spread of gorse. It is likely that the long-term eradication of gorse will require significant financial resources that may need to be subsidized by other economic uses. This makes timber planting as a gorse eradication mechanism so attractive. It can serve as both a gorse eradicator and income generator.

The Humu`ula/Pi`ihonua Master Plan proposed establishment of a Gorse Management Area that could be managed with forestry. The following is taken from the Master Plan write up.

The area of gorse infestation is identified as the gorse management area and a long-term management and eradication program proposed. This program involves the combination of chemical and mechanical means to initially control the infested area. Those portions where the gorse plant is brought under control would then be planted in sugi to shade the areas. Efforts to control gorse on other islands of Hawai`i and the Pacific have found this strategy to be the most effective means of gorse eradication. (Humu`ula/Pi`ihonua Master Plan, Page v)

The eradication of gorse has been identified as one of the top priorities in the management of these lands. The proposed gorse management strategy includes; the use of mechanical and chemical means to initially contain the area of infestation, continued monitoring and treatment outside the area of infestation, and the systematic clearing of areas with the use of chemical and mechanical means to prepare areas for planting trees. The recommended tree species for this area is sugi, due to its suitability

to the site and market potential as a lumber product. Once established, the sugi trees will outgrow the gorse, shade the area, and prevent the gorse from reestablishing itself. (Humu`ula/Pi`ihonua Master Plan, Page 56)

Because gorse seeds can remain viable in the soil for up to 70 years, the ongoing monitoring and management of the surrounding lands will need to be an integral component of the long-term management program. Selective harvesting of the trees could take place once the trees reach maturity, which is estimated to take approximately 35 years. Harvesting of the trees, however, should be immediately followed with a reforestation effort to protect against the re-emersion of the gorse plants in these areas. Although long-term, once established the sugi resources can provide a significant income source to offset some of the ongoing program costs. Following several harvests, the threat of gorse re-infestation should be eliminated and alternate uses for the gorse management area could be considered. (Humu`ula/Pi`ihonua Master Plan, Page 57)

Gorse Has Taken Over the Landscape

The previously introduced and newly tested bio-controls may prove to be an important adjunct to long-term control of gorse, especially over the broader landscape beyond the gorse management area, and should be integrated as a component of the overall gorse management program.

Eradication of this noxious plant, that has already rendered approximately thousands of acres useless, is an essential component in any land use and management plan for these lands. As previously discussed, the ongoing gorse eradication and management activities must be continued and more aggressive measures need to be considered to eradicate this plant so that these lands can be returned to their natural environment. (Humu`ula/Pi`ihonua Master Plan, Page viii)

<u>Unmanaged-Ungulates</u>

Unmanaged-Ungulates (hoofed mammals such as sheep, pigs, goats, cattle, etc.) introduced to Hawai`i are detrimental to Hawai`i's native ecosystems via the damage they inflict on both vegetation structure

and composition. Ungulates impact native plants and ground cover, facilitating sediment run-off and the smothering of coral reefs.

The soil disturbance caused by rooting ungulates also facilitates the introduction and expansion of invasive plants, and creates breeding grounds for mosquitoes that transmit avian disease to native forest birds.

Unmanaged-Ungulates have high population growth rates, are elusive and can jump or circumvent most existing ungulate fences. Control and/or removal of these animals should be a high priority on all lands designated for protection of native biodiversity in Hawai`i.

To reestablish structure and composition close to a pre-disturbance landscape (including rare and ungulate sensitive species) complete unmanaged-ungulate removal is required.

Controlling Unmanaged-Ungulate Populations in Native Eco-systems in Hawai`i

The Hawai`i Conservation Alliance produced the position paper "Controlling Ungulate Populations in native ecosystems in Hawai`i". The following section on ungulate control methods is taken from that paper.

Ungulates impede the progress of conservation and restoration of native Hawaiian ecosystems. Ungulate removal, in conjunction with other management actions, is necessary to ensure the success of native Hawaiian ecosystem restoration.

It is firmly established that the conservation and restoration of native Hawaiian ecosystems is unsuccessful in the presence of ungulates. Controlling ungulate populations, specifically goat, pig, cattle, and sheep is the vital first step; dramatic and otherwise unaided ecosystem recovery has been documented when it has been accomplished.

Despite demonstrated success of eradication and in certain circumstances reduction and control of ungulates, some public groups strongly oppose ungulate population control. Clearly, there is a need to effect the control in the most efficient ecological, social, and humane manner possible. Finding the right balance between these needs is critical in preserving our ethical integrity as well as in preserving both the cultural and natural aspects of Hawai`i's rich heritage.

Hawaiian ecosystems are vulnerable to unmanaged-ungulate presence

Hawai`i's economy and the health and quality of life of Hawai`i's people depend upon the richness of Hawai`i's natural resources. Isolated for millions of years, the Hawaiian Islands harbor tremendous biological diversity and incredible life forms found nowhere else on this planet. The few species that managed to wash up onto Hawaiian shores, or that got carried over by wind or wings evolved into thousands of new species in dramatic displays of adaptive radiation. Ungulates were not among these initial colonizers, and our endemic life forms evolved without need to compete with or defend against them.

Unmanaged-Ungulates impact native plants and ground cover, facilitating sediment run-off and the smothering of coral reefs. The soil disturbance caused by rooting ungulates also facilitates the introduction and expansion of invasive plants, and creates breeding grounds for mosquitoes that

transmit avian disease to native forest birds. The invasion of non-native species poses one of the greatest threats to Hawai`i's native ecosystems and their inhabitants. Already nearly three quarters of the extinctions in the United States have occurred in Hawai`i, and nearly forty percent of the endangered species in the United States are Hawaiian species. Although many species continue to decline in number, some species are on their way to recovery as a result of habitat protection and management efforts. Continued progress toward recovery will require the application of good science to natural resource management and policy decisions.

Components of unmanaged-ungulate removal

There are several areas in Hawai`i where goat, sheep and cattle populations are successfully kept at zero population levels over large areas. In these cases successful control of ungulate populations involved: 1) establishment of barriers to isolate populations, 2) Remove sufficient numbers of animals to prevent unacceptable damage to the land and its resources, 3) Inspecting and maintaining barriers, and 4) vigilance in monitoring of animal population increase and ingress.

Four main components in successful unmanaged-ungulate population control

1) **Ungulate barriers** to isolate populations usually consist of fences, sometimes abutting against barren, inaccessible habitat to form management units. Currently 4-foot high hog-wire with no gaps at the ground is used to deal with goats, cattle, and domestic sheep. Since sheep are jumpers, 6- foot high hog wire is used (with the realization that some animals will still be able to penetrate the barrier). The size of the units in some instances are as large as 10,000 acres, but must be smaller if managers are not able to reliably remove an acceptable percent of the population each year.

2) **Remove sufficient numbers of animals to prevent unacceptable damage to the land and its resources.** This requires taking more than a third of the remaining goat (or sheep) population each year. Before 1970, management staff at Hawai`i Volcanoes National Park were removing 2,000 goats per year without any effect on the remaining goat population. With a goat population numbering about 15,000 and an annual increment capable of reaching 5,000 per year, taking just 2,000 a year from this population was meaningless. As populations are squeezed, the remaining animals become extremely wary. One hypothesis is that it requires an equal cost or energy input to cut a population from 100 down to 50 as it did to cut the 1,000 population down to 500. Careful records of number, sex, age and reproductive status of removed animals form the basis for reviewing control progress and refining strategy through adaptive management.

3) **Inspecting and maintaining barriers** such as fencing never ends. Failure to mend fences and to remove the annual increment of animals or those that leaked through will result in the negation of all previous labor, costs, and ecosystem recovery gains. Monitoring both barrier fences and animal populations are integral to controlling ungulate populations.

4) **Vigilance in monitoring** and removing any animal population increase and ingress, like fencing, never ends if an area is to be kept ungulate free. Monitoring animal populations is integral to controlling ungulate populations. To achieve a sizable area free of ungulates where they were previously numerous is so difficult, and so rarely accomplished, that it is unconscionable to neglect monitoring and thus enable populations to rebound to former levels. A tiny goat population, left undetected, can recover to 90% of its former levels in only four years. Years of ecosystem recovery can be reversed in a few short months of renewed feral ungulate

depredation. Most monitoring involves regular helicopter transect inspections, and ground transect analyses to detect 'sign' or browsing. Judas goat searches are very effective in monitoring goat-free areas.

Present Control Strategies (in sequence) by Species

Goats

- Fence management unit (4' hogwire with no gaps at ground; can be 10,000 acres)
- If not remote, public/volunteer shooters may make initial population reduction.
- Specially recruited, trained, and supervised volunteers remove initial numbers of animals.
- Release Judas goats.
- Professional shooters kill most remaining population, aided by Judas goats.
- Professional shooters from helicopter mop up remnant individuals along cliffs.
- Fences are routinely mended; Judas goats are left to help professional hunters monitor and shoot any strays or new entries.

Pigs

- Allow for management and capture of feral pigs, so long as the resources are protected.
- Fence management unit (4' hogwire with no gaps at ground; can be 2,000 acres), sometimes including one-way gates and traps.
- If not remote, public/volunteer shooters may make initial population reduction.
- Professional shooters with dogs kill most remaining population.
- Baiting with papaya helps concentrate pigs for shooting and/or snaring.
- Professional technicians set snares (ratcheted Kelly snare) to mop up pig populations.
- Snares are used to take any strays and to monitor for new entries.
- Keep fences mended.

Cattle

- Fence management unit (4' hogwire; can be 10,000 acres)
- Perform cattle drives using cowboys, dogs and helicopters.
- Install one-way gates.
- Set trap corrals, baited molasses and with water. Harvest or kill captured animals or seek cooperation from adjacent ranch to remove animals from trap.
- If not remote, public/volunteer shooters may make initial population reduction.
- Keep fences mended.

Sheep

- There is still much to be learned about removing mouflon sheep populations.
- Fence management unit (6' hogwire; can be 5,000 acres)
- If not remote, public/volunteer shooters may make initial population reduction.
- Professional shooters with dogs kill most remaining population. (Combining professional shooters with dogs, and helicopter search and shooting is effective).
- Experiment with Judas mouflon as aid to monitoring strays or new entries. (Mouflon sheep socialize in small groups and, if lucky, collared animals may help occasionally.)
- Run helicopter King Index surveys to monitor strays and new entries.
- Keep fences mended.

Tools for ungulate control in natural areas

Public acceptance is often crucial to the success of restoration plans on public lands. Ungulate population control has met with criticism regarding the economic practicality of fencing. Arguments are made that the high construction, installation and sustained maintenance costs of fence barriers to ungulate movement are prohibitively expensive. However, experience indicates that fences are the cheapest way to achieve ungulate control goals. For example, Hawai`i Volcanoes National Park removed goats (at a rate of up to 5,000/year at times) for a half century without any effect whatsoever upon the remaining goat population. After resorting to fences, the park zeroed out its goat population within a decade. Despite the daunting upfront costs incurred with fencing, this investment in natural resource conservation is key to maintaining the tourism industry upon which Hawai`i's economy relies.

Some observe that 100% ungulate removal is not the only way to improve conservation resources in certain specific degraded ecological systems. They maintain that the goal and degree of restoration needs to be taken into account. To reestablish structure and composition close to a pre-disturbance landscape (including rare and ungulate sensitive species) complete ungulate removal is required. Anecdotal observation suggests, in severely degraded native ecosystems (for example, chronically grazed forested pasture) removal of the majority of ungulates may lead to partial recovery of composition and structure.

Cattle

The following history of cattle in Hawai`i was taken from Kumu Pono Associates LLC documents and the website HawaiiHistory.org, except where noted.

Ancient Hawai`i boasted no large land mammals, but with the arrival of Western ships, new plants and animals soon found their way to the Islands. The simple-seeming gift of a few cattle given to Kamehameha I by Captain George Vancouver in 1793 made a major impact on the Hawai`i's economy and ecosystem. It also spawned a rich tradition of cowboy and ranch culture that is still visible today.

Spaniards introduced the first cattle to Veracruz, Mexico in 1521. Vancouver picked up descendents of these animals from the Spanish mission in Monterey, California when he set off across the Pacific, intending to use them as food and gifts. The first cows and bulls given the Hawaiians fared poorly, either falling ill and dying or quickly killed and eaten.

Cattle were not the only animals introduced to Hawai`i during this period. In 1778, Captain Cook had left both goats and pigs with natives. In 1803, American Richard Cleveland presented horses - a stallion and a mare - to Kamehameha. British introduced sheep in the 1790s and they soon damaged the native forests of Mauna Kea and Hualālai at the same time failing as an economic crop. When Vancouver landed additional cattle at Kealakekua in 1794, he strongly encouraged Kamehameha to place a 10-year kapu on them to allow the herd to grow.

Grow they did, into a huge problem. In the following decades - the kapu was not lifted until 1830 -cattle flourished and turned into a dangerous nuisance. By 1846, 25,000 wild cattle roamed at will and an additional 10,000 semi-domesticated cattle lived alongside humans. A wild bull or cow could weigh 1,200 to 1,500 pounds and had a six-foot horn spread. Vast herds destroyed natives' crops, ate the thatching on houses, and hurt, attacked and sometimes killed people.

In addition to causing erosion damage to the land, these animals also affected what foreign plants were brought to the Islands. While native koa, ` ōhi`a, uhiuhi, ēlama, kauila, halapepe, `aiea, māmane and `iliahi began to disappear, other non-native species were planted as cattle feed. Ranchers introduced fountain grass, native to North Africa, and mullein. After 1905, they introduced kiawe as another cattle feed, a shallow-rooted, thorny tree that is now ubiquitous.

By the time of Kamehameha III's reign (1824-1854), something had to be done. After the kapu was lifted in 1830, the hunting of wild cattle was encouraged. The king hired bullock hunters from overseas to help in the effort. Many of these were former convicts from Botany Bay in Australia.

Hunting sometimes ended in inadvertent tragedy. In 1834, the trampled dead body of Scottish botanist David Douglas, for whom the Douglas Fir is named, was discovered in a bullock pit on Mauna Kea. Though suspicious head wounds and a quantity of missing cash also implied murder, bullock traps caught unsuspecting humans with alarming frequency.

As early as the 1820s, introduced cattle, sheep, goats, and wild dogs had made their way up to the mountain lands, and were bothersome to those who traveled the `āina mauna. Hawai`i's wild cattle population needed to be controlled for safety reasons, but the arrival of bullock hunters and Mexican vaquero also happened to coincide with an economic opportunity.

In the early 1830s, trade in sandalwood slowed down as island forests became depleted. At about the same time, whaling ships hunting in the north Pacific began wintering in Hawaiian waters. Ships reprovisioning in Hawai`i ports provided a market for salt beef in addition to hides and tallow. With the economic nudge of the whaling industry, ranching became a commercial enterprise worth pursuing.

By 1850, the natural-cultural landscape of the `āina mauna was being significantly altered by the roving herds of wild bullocks, sheep and other ungulates, and ranching interests were being formalized in the region.

In 1857, the Crown and Government mountain lands of Humu`ula and Ka`ohe, including the summit of Mauna Kea, were leased to Francis Spencer and the Waimea Grazing and Agricultural Company, which established ranching stations and operations around the mountain lands. Portions of the land of Pi`ihonua were leased to native bird hunters in the middle 1860s, and subsequently to native and foreign bullock hunters. As a result, Humu`ula and the larger `āina mauna have been intensively ranched for more than 150 years.

Because hunting, and subsequently ranching of bullocks, cattle and sheep became the primary historic activities on the mountain lands, areas once forested soon became open pasture land. While the first formal lease of Humu`ula and Ka`ohe was issued in 1857 (Keoni Ana to F. Spencer), it was Samuel Parker and Parker Ranch that held the longest lease on the Humu`ula and Ka`ohe mountain lands.

Between 1900 and 2002, their leases extended around Mauna Kea to the Pu`uhuluhulu vicinity, and for a period, the leases also included portions of the `Āinahou lands. The Parker Ranch interests initially focused on sheep ranching in the Humu`ula-Kalai`eha section, but in 1964, the ranch terminated its sheep program. Cattle operations were maintained till the end of the Parker lease in August, 2002.

Since cattle leases expired on these lands in 2002, some areas have little or no cattle present and important natural resources at Humu`ula have begun to show significant recovery. This recovery is most

evident in the mauka and certain makai areas of Humu`ula where water and/or feed is limited and feral cattle have been excluded. Giving this land "a rest" after more than 150 years of grazing is beneficial to the landscape by minimizing soil loss and allowing natural processes to recover the area's productivity. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 1)

Mauka areas (7,600 – 8,000 ft elevation) are exhibiting a re-growth of the historic native Hawaiian ecosystem, including māmane, pūkiawe, and other species. Makai and gulch areas up to about the 7,000 foot elevation are seeing a resurgence of koa natural regeneration. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 1)

Cattle – Curse and Blessing

Cattle pose a curse and blessing to the DHHL Humu`ula-Pi`ihonua lands. It is reported that approximately 2,000-head of wild cattle roam the property. After 150-years of sheep and cattle ranching, the formerly dense forest became significantly altered by these activities and the forest landscape was converted primarily to open pasture land. Because of the historic use of the site for sheep and cattle pasture, the vegetation of Humu`ula/ Pi`ihonua is dominated by an understory of exotic pasture grasses over much of the lands. The area serves as valuable habitat to many native and endemic species. The area's proximity on Mauna Kea also makes it a valuable cultural resource. Reintroducing cattle to these recovering areas would be a setback for the natural resources.

Use of Cattle as Fire Mitigation, Controlling Fuels

However, cattle can serve as beneficial tools in controlling fire fuels, particularly in areas where people frequent – primarily fronting and along roads. Recommended areas for the reintroduction of cattle are along the Saddle Road, Mauna Kea Access Road and Keanakolu Road.

Along these road corridors, therefore, are areas at greatest risk from heavy fuels being ignited by a careless visitor. The rest of Humu`ula/Pi`ihonua Mauka is much less at risk because of its limited access and DHHL's no hunting policy. In short, most fires are started by humans and the limited human presence at Humu`ula greatly reduces the risk. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 1)

Control of fuels along the Keanakolu Road corridor is further complicated, however, by the presence of heavy gorse infestations in certain areas along the corridor. The presence of cattle in areas of medium to heavy gorse should be avoided as cattle easily spread gorse.

Alternatively, in areas of light gorse infestations cattle can act as a tool for revealing isolated, young gorse plants so eradication strategies can be fully employed. Careful coordination of limited ranching and gorse eradication efforts are needed.

For example, cattle should not be grazed in light gorse infestation areas while gorse plants are actively seeding. Cattle can pick up gorse seed pods in their hair and tails and move it far distances in a short period of time. If the spread of gorse is to be minimized, cattle should not be grazed in the gorse containment area or its grassed buffer as the risk of moving gorse seed outside through the sale or escape of cattle is high. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 1)

Banana Poka

Banana poka (Passiflora mollisima) is an alien vine that infests some forests in and near Humu`ula, especially near Keanokolu. This vine forms a dense canopy that shades the trees and other native vegetation, greatly degrading the forest. Cooperation with other state agencies in controlling this pest may help maintain the value of forest resources. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document G-Vegetation Sensitivity Analysis, Page G-18)

Herbicide treatments are the most wildly used treatments to manage on banana poka. Banana poka may invade the new area as cattle are withdrawn and the site disturbed. Periodic control of banana poka may be required and appropriate control strategies employed. Banana poka can easily invade a formerly grazed area within 5 years, and would jeopardize any new seedlings that were not tall enough to withstand the initial competition of banana poka. Saplings and young trees, on the other hand, while still requiring protection from banana poka to survive, would require less periodic maintenance. Banana poka treatments may be required annually. (Final Environmental Assessment, Koa Salvage-Reforestation and Gorse Containment, Page 13)

Non-native Grasses/Weeds

Non-native grasses, including kikuyu grass (Pennisetum clandestinum), velvet grass (Holcus lanatus), orchard grass (Dactylis glomerata), and sweet vernal (Anthoxanthum odoratum) are abundant in the `Āina Mauna region.

The most prevalent is the African savannah grass commonly known as kikuyu (Pennisetum clandestinum). Kikuyu grass was introduced to Mauna Kea as a source of forage for cattle and has since spread extensively.

Another major introduced grass is Yorkshire fog (Holcus lanatus). Like kikuyu grass, Yorkshire fog was introduced for ranching purposes.

Fountain grass (Pennisetum setaceum), a fire-promoting grass, is one of the most aggressive and potentially damaging introduced plants in Hawai`i. It has already become the dominant ground cover in large areas of Kona and the area between Mauna Kea, Mauna Loa, and Hualālai; colonies have also become established on the southern and western slopes of Mauna Kea. (Revised Recovery Plan for Hawaiian Forest Birds, Page 2-64)

The continuing presence of non-native grasses slows the natural restoration process of the area. Research in the late 1970s at Keauhou, for example, showed that after 3 years of excluding cattle, an average of only 4 seedlings per acre could be found in and among the dense kikuyu grass. This is in contrast to scarified sites at the same location with koa stocking densities averaging 8,000 seedlings per acre at 6 months.

Fireweed

While gorse infestation remains a problem, there is a growing concern for fireweed in areas proposed for ranching. Fireweed is infesting large portions of acreage directly above the Kaniho lease area.

Fireweed (Senecio madagascariensis), also known as the Madagascar ragwort is considered very invasive and is on the Hawai`i State Noxious Weed List. The daisy-like herb grows upright and branched, and can get up to 20 inches high. Its yellow flowers each have 13 petals and look like small daisies which mature into white thistle balls.

Native to Madagascar, its introduction history in Hawai`i unknown. It was discovered in the early 1980s in pastures in Kohala on the Big Island, and new populations have been introduced to Kaua`i and O`ahu. Each plant can produce 30,000 seeds per year that spread by wind, hiking boots, vehicles or by animals when moved from infested to non-infested areas. (Hawai`i's High Profile Invasive Species, Fireweed)

Chemical suppression is the most common control. However, resting pastures is reported to control fireweed as well as grazing by sheep and goats. However, too high a diet of fireweed will cause slow growth, illness, liver-malfunction and even death in severe cases. There are promising, potential bio-control agents of fireweed however, none have been widely used. (Hawai`i's High Profile Invasive Species, Fireweed)

DHHL provided Mr. Kaniho with a 10-year license for 1,000 acres for pasture use and a fireweed control program. He is working with funding from the University of Hawai`i, Agricultural Extension Program to try to control the weed. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 29)

Historic and Cultural Resources

Based on preliminary archaeological surveys conducted in the area, known archaeological features within the parcel are limited to predominately historical sites. These include paths, trails, roads and the Humu`ula sheep station. Additionally a variety of historic and prehistoric sites may be present in the parcel including burial sites, temporary habitation sites, markers or historical sites, communication routes (trails and roads), ritual sites, and camps and processing sites (relating to bird hunting and/or adze production).

Overall, it is predicted that a relatively low concentration of surface sites would be found throughout the parcel. Those areas where site densities are likely to be highest include: ahupua`a borders, cinder cones (pu`u) caves or lave tubes, traditional bird feeding habitats, the paleo-forest scrub transition area, traditional resource convergence area (water, fuel and shelter locations), and along communication routes (roads and trails). The gulches and pu`us, in addition to serving as possible refuge areas endangered plant species, would be among the likely areas where archaeological sites, if present, would be found.

Historically commercial uses of the Humu`ula/Pi`ihonua lands were limited to managed sheep and cattle grazing. The majority of the subject lands had previously been occupied by, Parker Ranch, since at least 1909 when sheep grazing started. However, by 1963 the sheep operation was phased out due to a decline of wool prices caused by the depression and competition from foreign countries and Parker Ranch converted the land to a cattle operation. Gorse was used a hedge to pen the animals, however, conversion from sheep to cattle gave way to the initial outbreak of gorse, which until that time had been effectively controlled by sheep grazing.

Throughout the property there are several ponds, trails, fences, and rock walls which are in various states of repair, which were put in place for ranching infrastructure. Additionally there are two cabins located on the property, the Kanakaleonui cabin and, reportedly, the Kahinahina forest cabin.

The known historic and cultural resources on the land parcel are as follows:

Keanakolu/Mana Road - This road is located in Humu`ula and was built in 1870 to connect Hilo and Waimea. It is of historical interest because it developed a more efficient route for transportation between Hilo and Waimea and opened up land for grazing and sugar cane. The road was surveyed by Mr. D. H. Hitchcock in 1870.

Humu`ula Sheep Station - The Humu`uIa Sheep Station Company chartered by the Hawaiian Government in 1883, was an operation of H. Hackfeld and Company. By 1894 the company had erected large and extensive paddocks at Kalaieha and also had a station at Keanakolu. Ownership of the station came under Parker Ranch and operations continued for years, often little know by Hawai`i residents due to its comparatively isolated location.

It has historical and architectural interest because sheep raising was one of the oldest introduced agricultural pursuits in Hawai`i and while never a major industry it was carried on until the last large flock in the Islands located at Humu`ula was phased out in 1963. Humu`ula`s relationship to Parker Ranch and to the general agricultural history of Hawai`i is significant.

The Mauna Kea-Humu`ula Trail - This trail was first plotted by Alexander in 1892, and is shown on two later maps, the U.S. Coast and Geodetic Survey 1925-1926 and U.S. Geological Survey 1956. In 1936 the Civilian Conservation Corps made improvements to what is believed to have been a section of the old Mauna Kea-Humu`ula Trail from near the Humu`ula Sheep Station at Kalaieha to the summit.

Surrounding Land Uses

Surrounding uses include the Hale Pōhaku Astronomical Facility, a support facility for the astronomical research on Mauna Kea, the Pōhakuloa Military Training Area, the Hakalau Forest National Wildlife Refuge and various State forest and natural area reserves.

Hale Pōhaku is located on the Mauna Kea Access Road west of the Humu`ula land parcel at approximately the 9,200 foot elevation. Hale Pōhaku has been used as a construction camp/astronomical research support facility to house people working on the summit for acclimatization purposes. There are several buildings and stone cabins in the area.

The Mauna Kea Science Reserve is located at the summit of Mauna Kea and includes the Mauna Kea Observatory.

Located adjacent to the westernmost boundary of the parcel within the Mauna Kea Forest Reserve, is the Pōhakuloa Military Training Area.

The Hakalau Forest National Wildlife Refuge is located east of the land parcel, the refuge permits pig hunting and is one of the last remaining places where a number of native Hawaiian forest birds are found.

Mauna Kea Ice Age Natural Area Reserve is located west of the Humu`ula land parcel between the elevations of 10,400 and 13,200 feet. The Pōhakuloa Gulch (formed by glacial melt water), Lake Waiau (one of the highest lakes in the United States), and the Keanakako`i Adze Quarry, are all features of the Reserve.

Numerous forest reserves owned and managed by DLNR are located adjacent to or near the subject parcels. The Hilo Forest Reserve is located adjacent to the eastern boundary of the land parcel. The Upper Waiākea Forest Reserve is located outside of the property boundaries, adjacent to the southeastern boundary. The Mauna Loa Forest Reserve is located adjacent to the southwestern portion of the land parcel. And the Mauna Kea Forest Reserve is located within the western portion of the property on the higher elevations.

Road Infrastructure

The primary access to the site is from the Saddle Road, a paved two-lane highway connecting East and West Hawai`i, and the paved access road to the Mauna Kea Observatories and summit area. The Keanakolu (Mana) Road is a cinder/gravel road which extends from the Mauna Kea Summit Road through the property for approximately 19 miles.

Other internal roadways leading from the Keanakolu Road are primarily 4-wheel drive dirt/cinder pasture roads used for fire management and gorse ceradication operations. Other infrastructure systems (potable water, power, communication, etc.) are largely nonexistent. Power lines extend along the Saddle Road and Mauna Kea Access Road.

Maintenance of the Keanakolu/Mana road is under dispute as varying legal opinions place the responsibility with State and the County. At present, the County is maintaining the road with appropriations from the State. Most recently Duke Kapuniai has improved and maintained the road to the `Ōiwi gorse-to-charcoal site.

Trails

A few trails are located at the northern most point of the land parcel near the Keanakolu ranger station. The Ka`ali`ali trail runs along the higher elevations near the western boundary of Humu`ula. The Kahinahina trail extends from the western boundary to a forest cabin near the Waipāhoehoe gulch and on to Laumai`a Corral near the Pi`ihonua boundary. Another trail follows the Nauhi gulch and provides access to the Kanakaleonui cabin. Several other trails exist in Humu`ula as well.

Power and Communications

There is an electronics site located on the land parcel, an electrical line along Saddle Road and the Mauna Kea Access Road, and an electrical line running east-west, north of Saddle Road. The nearest electrical substation is located approximately five miles to the west, near the Pōhakuloa Training Area.

Water

The land parcel is within the Big Island's hydrographic area that is most abundant in water supply (Area II which includes the North and South Hilo districts and portions of the Ka`ii and Puna districts). In that groundwater sources have been located on Hawai`i at the 5,000 foot level (the Waiki`i Ranch area), it is suggested that water source potential be investigated in the portion of the land parcel at the elevation of approximately 4,700 feet. Since the area has been characterized as having poor drainage, there is a possibility that a perched groundwater source could be located and developed economically.

Drainage

The entire parcel is naturally drained. There are five major gulches/streams within the land parcel, the Nauhi, Waiaama, Waipāhoehoe, Honohina and Nukupahu. The gulches run mauka-makai.

The Wailuku River runs through Humu`ula and there are several streams throughout the parcel including the `Āwehi, Hakulau, and Kapue. There is no known flood hazard in the area. Over $1 million has been spent “hardening” major stream crossings via concrete and blacktop approaches since 1990.

Springs

Historic records indicate that springs are located on the property in the vicinity of the Pu`u `Ō`ō Ranch section of the site. Follow-up work needs to be done to verify the condition of the springs and reported condition noted below are based on a review conducted 10-years ago.

The first spring is located near the ranch camp. This spring, can supply water to the camp, the coral, and surrounding paddocks. The spring is in need of repair and no longer is able to provide water; the spring tunnel has caved in and will need to be cleaned up and dirt material removed. The holding tanks are leaking badly; they will need to be repaired or replaced to provide water to the camp for use. The waterline, a 1" black rubber-hose-like pipe called a driscoll, transfers water and is disconnected in a few places. The piping is repairable.

The second spring is located midway through the ranch, next to the Waiama Gulch. This spring used to be the main water source for the ranch. The water was piped to different areas for cattle to drink. Record show that even in times of drought, this water source was still providing water. The waterbox area is filled with dirt and rocks; it will take some bulldozer work to fill in the deep ruts and erosion caused by cattle trying to get into the water box area. The large water pond that this spring used to service has dried up and the bottom has grass and cracks in it; this pond needs to be restored to enable use of this paddock. (Assessment of Pi`ihonua – Brief Assessment for Beneficiary Ranching Leases at Pu`u `Ō`ō Ranch, Page 3)

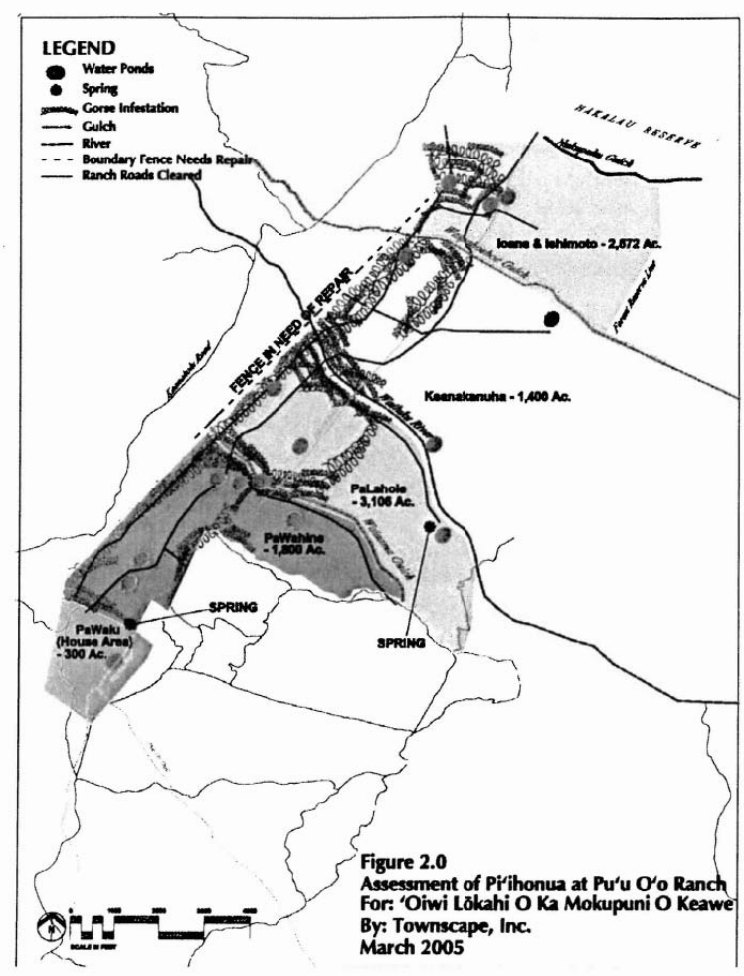
A third spring is reported to also be on the site.

Potable Water Supply

Catchment systems supply some water to the area and water is also hauled from outside supply sources. There are a few water tanks on the land parcel, two water reservoirs, and 12 to 16 dirt water ponds.

The two major water users in the area, Pōhakuloa Military Training Area and Mauna Kea Science Reserve, depend on County water hauled from Hilo in 5,000-gallon tankers. The Science Reserve has two 40,000-gallon storage tanks. 25,000 gallons of water per week are trucked to the Mid-Level Facility and an additional 15,000 gallons per week are trucked to the summit.

The Army's water contract is valued at $0.03/gallon. Water is stored in a 1.5 million gallon tank, re-chlorinated then delivered into the local area water system. (Rechlorination is needed due to higher water standards maintained by the Department of Defense. Under State health regulations, County water is usable "as delivered" if it contains "residual" chlorination.) (Humu`ula Sheep Station Adaptive Reuse Plan, Page 31)



Map Identifying Water Ponds, Springs, Gulches and Rivers

Water History in the Area

The Army attempted deep-well drilling, but halted after determining that drilling depths of 4,500 feet were required. Following this episode, the Army together with the State built a water pipeline that ran from a natural surface lake on the flanks of Mauna Kea down to the Pōhakuloa area. The pipeline served the training area and Pōhakuloa State Park until it failed to meet new health regulations for surface drinking water, leading to closure of the park. The Army then turned to a sand filtration system, but this also failed to meet State health regulations and the Army was forced to begin hauling water.

Water from the pipeline continues to be used for dip tanks in fire fighting. Meanwhile, the pipeline maintenance agreement between the State and Army has entered into hard times since the State stopped its pipeline use. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 31)

In the 1986 Water Resources Development Plan for DHHL lands, no plan for water development was established at Humu`ula because the area was considered too remote and water systems too costly to develop. Rainwater catchment systems were considered effective for residential use in the area.

A study conducted by the Army Corps of Engineers in 1996 for the Pōhakuloa Training Area analyzed various sources for domestic water, including drilling deep wells to intercept perched water source. Should army proceed with the well drilling at PTA (7,000 foot elevation,) the results of this project will provide valuable information as to the likelihood of encountering perched water at the DHHL lands and the costs involved for well development.

Wastewater

Any wastewater generated on the site would require composting toilets and/or septic tank/leaching fields for treatment. In view of the large area covered by the tract and the relative low density of the proposed development, wastewater treatment and disposal is not considered a major constraint on the land parcel.

Historical Overview of Settlement, Land Uses and Travel in the `Āina Mauna

The following historical overview is taken from "Mauna Kea – Ka Piko Kaulana O Ka `Āina" (Mauna Kea-The Famous Summit of the Lands), A Collection of Native Traditions, Historical Accounts, and Oral History Interviews for: Mauna Kea, the Lands of Ka`ohe, Humu`ula and the `Āina Mauna on the Island of Hawai`i" by Kumu Pono Associates LLC, March 30, 2005

Sequence of Hawaiian Settlement

Archaeologists and historians describe the inhabiting of these Islands in the context of settlement which resulted from voyages taken across the open ocean. For many years archaeologists have proposed that early Polynesian settlement voyages between Kahiki (the ancestral homelands of the Hawaiian gods and people) and Hawai`i were underway by AD 300, with long distance voyages occurring fairly regularly through at least the thirteenth century. It has been generally reported that the sources of the early Hawaiian population-the Hawaiian Kahiki-were the Marquesas and Society Islands (Emory in Tatar 1982:16-18).

For generations following initial settlement, communities were clustered along the watered, windward (ko`olau) shores of the Hawaiian Islands. Along the ko`olau shores, streams flowed, rainfall was abundant and agricultural production became established. The ko`olau region also offered sheltered bays from which deep sea fisheries could be easily accessed. Also, near-shore fisheries, enriched by nutrients carried in the fresh water running from the mountain streams, could be maintained in fishponds and coastal fisheries. It was around these bays such as at Hilo, that clusters of houses where families lived could be found (see McEldowney 1979). In these early times, the residents generally engaged in subsistence practices in the forms of agriculture and fishing (Handy, Handy and Pukui, 1972:287).

Over a period of several centuries, areas with the richest natural resources became populated and perhaps crowded, and by ca. 900 to 1100 AD, the population began expanding to the Kona (leeward side) and more remote regions of the island (Cordy 2000:130). Kirch (1979) reported that by ca. AD 1200, there were small coastal settlements at various areas along the western shore line of Hawai`i (Kirch 1979: 198). In this system of settlement and residency, the near-shore communities shared extended familial relations with those of the uplands.

By the 1400s, upland regions to around the 3,000 foot elevation were being developed into areas of residence and a system of agricultural fields. By the 1500s to 1600s, residency in the uplands was becoming permanent, and there was an increasing separation of royal class from commoners. During the latter part of this period, the population stabilized and a system of land management was established as a political and socio-economic factor (see Kamakau 1961; Ellis 1963: Handy. Handy & Pukui 1972: Tomonari-Tuggle 1985: and Cordy 2000).

The lowlands of Ka`ohe, Humu`ula and the other neighboring ahupua`a, extending from the shore to around the 3,000 foot elevation, supported residential, agricultural and subsistence activities, spanning the centuries of Hawaiian residency. The upper mountain lands of the Ka`ohe-Humu`ula region were frequented by travelers, collectors of natural resources, and for a wide range of cultural practices (see Kamakau, 1961; and Boundary Commission Testimonies, 1865 to 1891, in this study).

Traditions and historical records tell us that the deification and personification of the land and natural resources, and the practices of district subdividing and land use as described above, were integral to Hawaiian life, and were the product of strictly adhered to resource management planning. In this system, the people learned to live within the wealth and limitations of their natural environment, and were able to sustain themselves on the land and ocean. It is in this cultural system that we can understand the Significance of the lands of Ka`ohe, Humu`ula and the neighboring `āina mauna.

This traditional cultural knowledge will be an important part of the `Āina Mauna Legacy Program implementation process. In order to restore the `Āina Mauna to what ancient Native Hawaiians viewed the mountain lands as a heavily forested area, we recommend utilization of both traditional cultural knowledge and modern science in management efforts.

Land Use Practices

The land of Humu`ula -extending from sea level to the 9,000 foot elevation on Mauna Kea, and above the 13,000 foot elevation on Mauna Loa -is apparently named for a type of stone (Red jasper stone) that was used in making ko`i (adze). The place name of Ka`ohe -a land area extending from sea level to the summits of Mauna Kea and Mauna Loa -may be literally translated as "The-bamboo" or named for a type of kalo (taro) that may have been common In the region (ct. Pukui. et al. 1974).

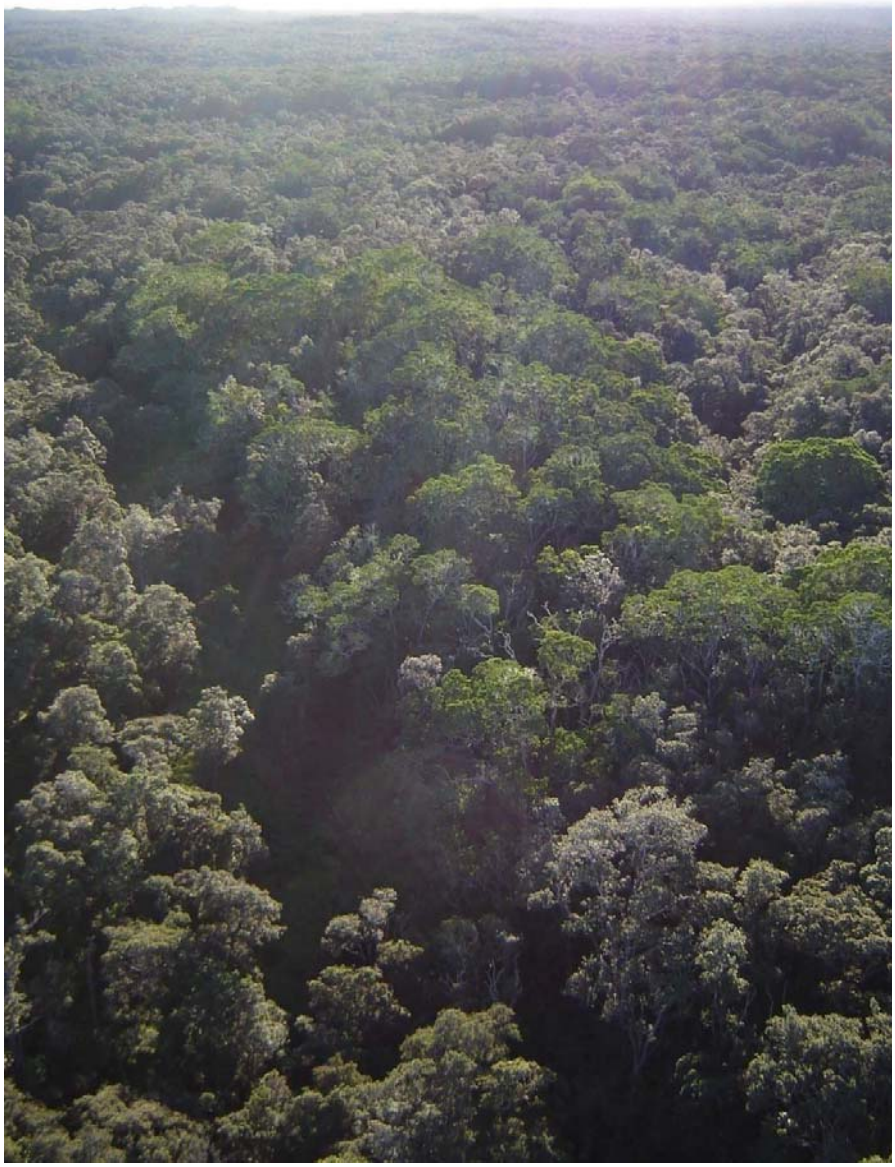
Native Hawaiian traditions and historical accounts describe the lands of Humu`ula and Ka`ohe -those areas extending from shore to around the 6,000 foot elevation -as having once been covered with dense forests, and frequented by native practitioners who gathered forest-plant resources, birds, and food. The larger `āina mauna were frequented by individuals who were traveling to the upper regions of Mauna Kea to worship, gather stone, bury family members, or deposit the piko (umbilical cords of newborn children) in sacred and safe areas; and by those who were crossing from one region of the island to another.

As early as the 1820s, introduced cattle, sheep, goats, and wild dogs had made their way up to the mountain lands and were bothersome to those who traveled the `āina mauna. In 1834, Scottish naturalist, David Douglas was gored and killed by a wild bullock near the boundary of Humu`ula and Laupāhoehoe. By 1850, the natural-cultural landscape of the `āina mauna was being significantly altered by the roving herds of wild bullocks, sheep and other ungulates, and ranching Interests were being formalized in the region. By 1857, the Crown and Government mountain lands -including Humu`ula and Ka`ohe -were leased to Francis Spencer and the Waimea Grazing and Agricultural Company, which established ranching stations and operations around the mountain lands. As a result, the `āina mauna have been intensively ranched for more than 150 years.

Humu`ula

Because hunting, and subsequently ranching of bullocks, cattle and sheep, was the primary activity on the mountain lands of Humu`ula, areas once forested, soon became open pasture land. While the first formal lease of Humu`ula was issued in 1857 (Keoni Ana to F. Spencer), it was Interests of the Parker Ranch that held the longest lease on the Humu`ula mountain lands. The lease, from 1900 to 2002, covered the area extending around Mauna Kea to the `Āina Hou-Pu`uhuluhulu vicinity. The Parker Ranch interests initially focused on sheep ranching in the Humu`ula-Kalai`eha section, but in 1964 the ranch terminated its sheep program. Cattle operations were maintained until the end of the Parker lease in August, 2002.

Today, limited ranching of cattle is continued on Humu`ula, under a permit by the Department of Hawaiian Home Lands, and leases from the State of Hawai`i. Also, some 10,000 to 13,000-acres have succumb to an infestation of the introduced gorse (first recorded on the land in 1892), which has had little maintenance since 1980.



Overlooking Koa and `Ōhi`a Forest at Humu`ula/Pi`ihonua Mauka

Na `Āina e pili `ana iā Mauna Kea

All other lands lying on the slopes of Mauna Kea -those belonging to the districts of Hilo, Hāmākua and Kohala -generally extended through the forests, where they are cut off by the traditional boundaries of Ka`ohe and Humu`ula. From the middle 1800s, those lands such as Waiākea, Pi`ihonua, Pāpa`ikou, Laupāhoehoe, `Ō`ōkala, Ka`ala, Kūka`iau, Pā`auhau, and Waikōloa, were either held in fee simple interest or leased out by the Crown and Government, for development of lumber collection, bullock hunting, cattle and sheep grazing, and in the elevations below approximately the 2,000 foot level, to development of sugar plantations.

In the early 1900s, forest lands below Humu`ula and Ka`ohe, and the Mauna Kea mountain lands from approximately the 9,000 foot elevation to the summit, were turned over to conservation in the form of forest reserves. The primary interest in the development of the reserves was the protection of water sheds to ensure that plantations would have access to water, necessary for the cultivation, harvesting, and processing of sugar. Interest in, and the value of Hawaiian forests and watersheds has since evolved as a greater awareness of the unique and fragile ecosystems of the Hawaiian mountain lands has been developed.

Travel - Na Ala Hele o ka `Āina Mauna

Travel across the `āina mauna is documented in native traditions, which describe ala hele (trails) passing from the coastal lowlands through the forest lands; along the edge of the forests; across the plateau lands of the Pōhakuloa-Ka`ohe region, and to the summit of Mauna Kea. These ala hele approached Mauna Kea from Hilo, Hāmākua, Kohala, Kona and Ka`ū, five of the major districts on the Island. Only Puna, which is cut off from direct access to the mountain lands, apparently did not have a direct trail to the `āina mauna. Thus, people traveling to Mauna Kea from Puna traveled through the lands of Waiākea, Hilo or Keauhou, Ka`ū to reach Humu`ula and the slopes of Mauna Kea.

By the early 1820s, foreign visitors, in the company of native guides, began making trips across the `āina mauna and to the summit of Mauna Kea. Based on their accounts, travel in the region through the middle 1800s basically followed the old trails, or cut across new areas-a result of dense forest growth, and new lava flows covering older routes. By the 1850s, the Kingdom of Hawai`i entered into a program of improving ancient trails and identifying new routes, by which to improve travel between various locations and facilitate commerce. The earliest recorded improvements (describing government activity on a trail around Mauna Kea) document work on the Waimea-Kula`imano trail (cutting across the lands of Ka`ohe, Hāmākua and Hilo), running above the forest line and to the coast of Hilo, date from 1854, when the Waimea-Kula`imano route was Improved to accommodate wagon travel.

In the later 1850s, as leases were given out for the lands of Humu`ula and Ka`ohe, and the sheep and bullock hunting interests grew, the 1854 route was maintained, and the upper trail between Kula`imano-Makahanaloa, was improved to the Kalai`eha vicinity. In 1862, the Kingdom again initiated a program to improve the government roads across the `āina mauna. Two routes were proposed, one between Hilo and Waimea via Kalai`eha, and the second to improve on the trail from Kalai`eha towards Kula`imano-Makahanaloa, and around through Hanaipoe-Mānā and Waimea. These trails, termed Alanui Aupuni, were appropriated and work completed by the late 1860s. The routes appear on island maps through 1901, with subsequent designations as trails on later maps.

Several ancient trails approached the summit of Mauna Kea, and were used by maka`āinana through the 1920s. Most of these trails were accessed via the improved government roads around the mountain. Primary approaches included, but were not limited to the Kalai`eha-Waiau Trail, the `Umikoa-Ka`ula Trail, and the Kemole-Pu`u Nanahu Trail. Historical accounts and oral history interviews record that these trails provided travelers with access to various sites, including areas where rituals and practices were observed, and that the trails converged at Waiau. At Waiau, travelers found a sheltered area and water for their use while on the mountain. Those who were traveling to the summit of Mauna Kea or to other locations in the summit region then followed smaller trails that provided them with the access necessary for their purposes.

By the early 1870s, the ancient trail between Kalai`eha and the summit of Mauna Kea was improved into a horse trail by the Spencers, lessees of the Mauna Kea mountain lands. Other routes, accessing outlying ranching stations, such as at Pu`u `Ō`ō and Puakala (Pua`ākala), Lahohinu, and Hānaipoe had also been improved by lessees, with routes running around the mountain, and down to Hilo or out to Waimea. In the leases of the Crown Lands and Government Lands, it was specified that improvements, including trails, reverted to the Crown or Government upon termination of the leases. Until the late 1940s, early 1950s, these trails and government roads were primarily used by lessees for transportation of goods-and cared for by the lessees. There are also numerous accounts by visitors to the `āina mauna document travel in the region. By the late 1890s, the Kohala road supervisor reported that while the mountain roads belonged to the government, they were all but private by the nature of their use.

Between the 1930s to 1940s, improvements were made to the Kalai`eha-Waipunalei section of the road to Waimea as a part of the Civilian Conservation Corps (CCC) and Territorial Forestry programs, with work also being done by the Parker Ranch. Likewise, the Kalai`eha-Waiki`i route was maintained by the ranch, and improved by the United States Army-U.S.ED., in 1942.

Apparently little work was done on the Kalai`eha-Hilo section of the road (trail), after the 1870s. The trail was accessed by ranchers, with routes diverging to Kalai`eha and Pu`u `Ō`ō, as described in survey records, journals and kama`āina testimonies. It was also periodically used by visitors to the mountain lands, usually those who were traveling to view Mauna Loa lava flows, or to make the ascent of Mauna Kea. It was not until 1942, that the route was modified as a vehicular road in what became the Saddle Road, following in areas, the native trail and historic route, while also cutting across new lands in other locations. The "Saddle Road" was formally turned over to the Territory in 1947, following which time the general public was then given an opportunity to travel to the mountain lands unhindered.

In 1963, interest in Mauna Kea as a site for a telescope, manifested itself. Hawai`i based scientists. Walter Steiger (with the University of Hawai`i) and Howard Ellis (with the National Weather Service's Mauna Loa Weather Station) facilitated trips by Dr. Gerard Kuiper and Alika Herring (both associated with the University of Arizona and NASA) to the summits of Mauna Loa and Mauna Kea. The Mauna Kea route basically followed the old foot trail from Kalai`eha, past Kalepeamoa, Keonehe`ehe`e and up to the summit. Over the years, the old trail was modified for horses and pack animals, and after World War II, for the occasional four-wheel drive vehicles that ascended the mountain. In 1964, Pu`u Poli`ahu on Mauna Kea had been chosen as the site for the first telescope, and state funds were released for grading a road to Pu`u Poli`ahu, to facilitate construction and access by the scientists. Since 1964, the primary route of access up the mountain slopes has remained generally the same, though as additional development in the summit region has occurred, new accesses and realignments of the earlier route have occurred.

Territorial Forestry and the Civilian Conservation Corps

The following history of Territorial Forestry and the Civilian Conservation Corps is taken from "Keanakolu: An Archaeological Perspective of Hawaiian Ranching and the Pacific Hide and Tallow Trade TMK 3-8-01:9" by Peter R. Mills.

In 1876, the legislature of Kamehameha III passed a law declaring all "forest lands" to be government property in an effort to conserve the forests from further encroachment on the seaward side by the plantations' need for fuel and on the mountain side from grazing animals. In 1901, approximately 30,000 acres of the upland forest were lost to a series of fires in Hāmākua. As a consequence, the Hilo Forest

Reserve was formerly established by the Territory of Hawai`i in 1905 (Tomonari-Tuggle 1996:19, 33-35). Johnny Ah San, who worked as a territorial forester, claims that in the years from 1924 to 1926 forest rangers expanded the log cabin at Keanakolu for use as a field station. Hundreds of thousands of pigs, sheep, cattle and goats were reportedly removed from Hawai`i's Territorial forests in those years (Tomich 1986:113). It was during this period that additional fruit trees were planted in an orchard below the log cabin, as well as hardwood and softwood trees in the surrounding vicinity. A group of six men periodically stayed in the cabin for maintenance purposes (e.g. orchards, trails). These men were responsible for the construction of many miles of fence to contain cattle that freely roamed the area during this time.

The Forest Reserves were established as a cooperative arrangement between the Hawai`i Sugar Planters Association and the territorial government. Plantations needed wood for fuel, but they also needed to keep the forests intact to draw mist precipitation from the trade winds, which in turn fed the irrigation systems in the cane fields below. Their own consumption of fuel had clearly been contributing to the decline of the forest at lower elevations, where flume systems transported large quantities of wood as well as cane. The first Territorial forester, Ralph S. Hosmer, suggested that the forest had been declining in the uplands as a result of fire, grazing and insects (Hosmer 1904:317, in Tomonari-Tuggle 1996:16). In order to preserve the forest, it was necessary to keep the cattle and sheep out, but the planters were also worried about hunters in the woods starting fires from their camps. The commercial ranchers were also wary of individual hunters who could also shoot cattle from the ranch, a problem that was apparently at its worst near the World War II era (Langlas et al. 1999:40). Consequently, the burden of maintaining fences and keeping cattle out of the upper forest were duties mainly shared by territorial foresters and the ranchers.

In 1934, the territorial foresters' camp at Keanakolu was expanded into a Civilian Conservation Corps (CCC) field camp. This was one of several such camps established throughout the mid-slopes of Mauna Kea in the early 1930s (Ah San 1992). The camp consisted of a bunkhouse that housed as many as 40 teenage boys, a mess hall, foreman's quarters, and other service buildings. Another foreman's quarters was added next to the *koa* cabin during this same year. All of these buildings are still standing today. In addition, the lower mess hall still contains the original kerosene stove and bunk beds. The corpsmen did not reside at Keanakolu Camp year-round due to water shortages. In an effort to conserve water, "the 'straw-boss' sat on the hill above the toilet and made sure the men were in and out of the showers quickly (Ah San 1992)." Major duties of the corpsmen included maintenance of trails that came up from the low lands, developing the Mana/Keanakolu wagon road into an auto road, construction of fences to keep cattle and sheep out of the forest, and the planting of a variety of forest and fruit trees. In all, over 20 varieties of pear, 25 varieties of plum, and 60 varieties of apple were planted. Ah San (1992) suggests that the orchard directly surrounding the log cabin complex was planted by the CCC, but a separate nearby orchard was planted earlier.

Also in 1934, the Hilo Burns Club erected a monument to David Douglas on a parcel of territorial forest land close to the location of Gurney's bullock pit. It appears that the actual pit was on ceded land, but because territorial forester L. W. Bryan was also a member of the club who sponsored the construction of the monument, its location is most likely due to it being on the parcel of territorial forest that is closest to the pit. The Club also planted about 200 Douglas fir seedlings around the monument, many of which have now grown to mature trees.

In 1935, the CCC began the monumental task of building a 60-mile long fence around the 85,000 acre Mauna Kea Forest Reserve to help keep an estimated herd of 40,000 wild sheep out of the reserve.

Seven cabins were built around the forest reserve boundaries for shelter as the project proceeded (Langlas et al. 1999:55). The CCC camps were disbanded in the 1940s, after which Keanakolu was once again used as a field station for the forest rangers. Rangers stayed alone in the mountains for long periods and continued to maintain the local natural resources. Names of some of these rangers were Ignacio, Pimental, Kahele, and Ah San (Ah San 1992). Their duties included acting as hunting guides to ensure that hunters would abide hunting regulations on leased ranchlands. Rangers who patrolled the massive jurisdictional land area rode horses that were pastured at the ranger station. Many times a year, forestry crews from Hilo would come up to work with the rangers on large fencing, trail construction, and tree planting projects (Ah San 1992). From 1945-1953 a major movement took place to control the sheep population. According to Ah San (1992), "the pasture above the fence was so overgrazed that at one time the ground was bare of vegetation and only dirt and large trees were visible."

As part of their efforts, the CCC also improved the wagon road into an auto route using rock-laid masonry:

> The cobble roadbed built by the CCC in 1935 is exposed in many places along Keanakolu Road. The cobble bed is made of basalt cobbles and small boulders set to form a relatively level surface, and it is evenly bordered with cobbles. Where both edges are preserved, the cobbled bed is 9 ft (2.8m) wide. The stones for the roadbed were quarried from various places along the road; drilled holes are visible in rock faces at several places along the road, indicating that blasting powder was used to quarry rock (Williams and O'Hare 2001:16).

By the 1940s, the CCC camp at Keanakolu was converted into a field station for territorial rangers. Johnny Ah San stated "these rugged men stayed in the mountains by themselves for long periods and continued to maintain the management of natural resources. Names of some of these hardy rangers were Ignacio, Pimental, Kahele and Ah San" (Ah San 1992). Forestry crews from Hilo would work with the rangers on occasion to work in fences, trails, and reforestation.

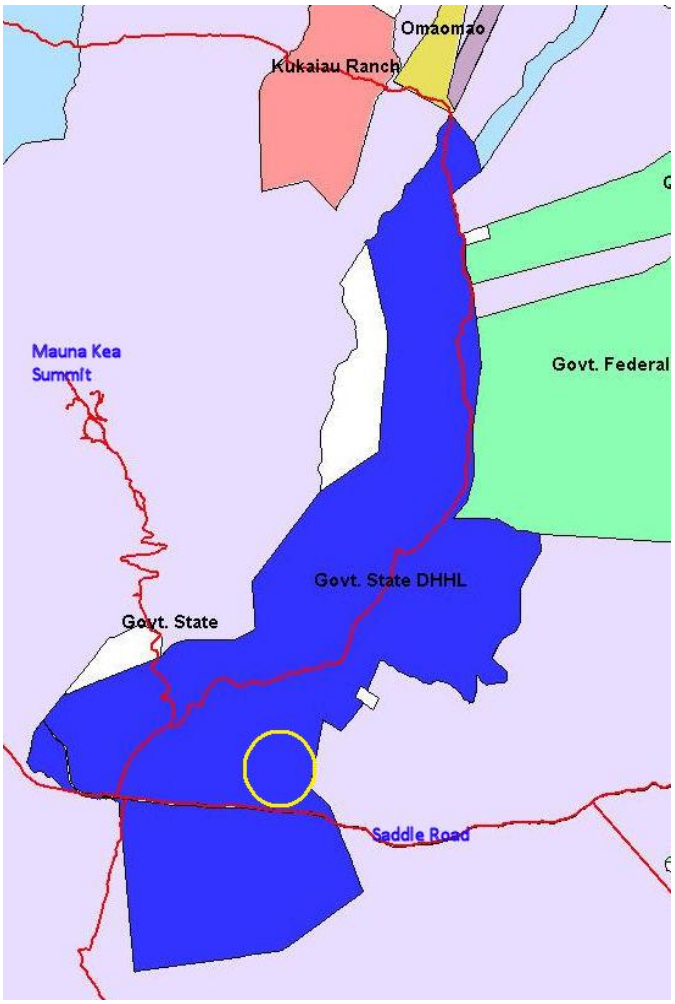
Parker Ranch lease-lands along Keanakolu Road were also used for some military training going as late at the 1980s and early 1990s (Williams and O`Hare 2001:12-14).

On October 15, 2001, an article appearing in the *Hawai`i Tribune Herald* discussed a lawsuit filed on behalf of Alfred J. "Freddy" Nobriga, a Big Island rancher who alleges that Mayor Harry Kim refused to maintain the Keanakolu/Mana Road that leads to the cattle ranch leased by Nobriga. Nobriga alleges that for the past two decades the County of Hawai`i has maintained the road, which he contends is "heavily used" by the public. Nobriga wants the county to grade the road so he can transport water to his ranch during the on-going drought. The county responded that it is the responsibility of the lessees of the Department of Hawaiian Home Lands to maintain the road (Loos 2001:1).

Homesteading

The Department of Hawaiian Home Lands' initial enabling legislation declares the objective of Congress and the State of Hawai`i, to be, to enable native Hawaiians to return to their lands. Therefore the role of the Department of Hawaiian Home Lands has been seen as providing land for native Hawaiians. It is therefore appropriate to have homesteading as one component of this `Āina Mauna Legacy Program.

The concept is to develop the first rural-development homestead area for DHHL beneficiaries in the south-eastern portion of the property. Preliminary design concepts call for a subdivision layout encompassing approximately 1,000-acres with a total of approximately 100 to 200-homesteads sites and other community uses.



General Location of Rural-Development Homestead Area Proposed in the `Āina Mauna Legacy Program

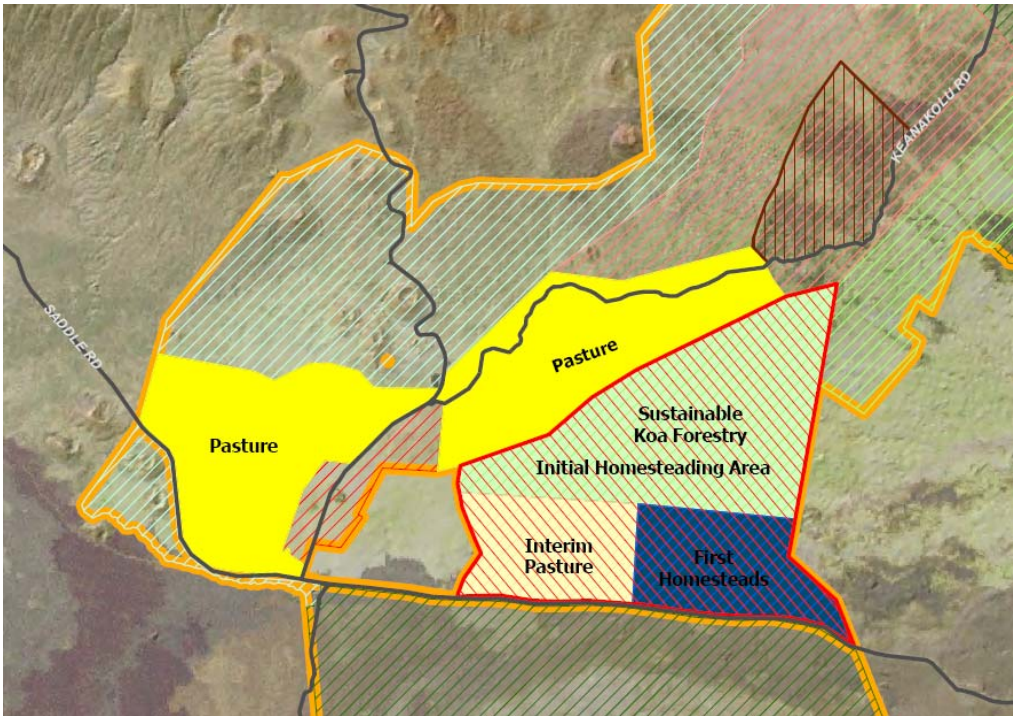
Layout

To take advantage of opportunities to further demonstrate the focus on efficient, self-sustainable communities, as well as provide for cost-effective development, the Legacy Program considers a variety of homestead development layouts to address various beneficiary needs.

Layout options include:

- Cluster homestead sites with separate agricultural/pasture lot
- Cluster homestead sites with community agricultural/pasture
- Homestead lot subdivision
- Combination of alternatives

It is envisioned that these alternatives will enable DHHL beneficiaries to have sufficient land for self-sustaining homesteading: land for a home site and related improvements/uses, including land for alternative energy for their use, pasture, agricultural uses, and land available for subsistence farming.



General Location of the First Rural-Development Homestead Area (Blue)

In order to make the development economically feasible, it is envisioned to be a rurally-developed homestead area in which roads would remain unpaved (cinder), and water would be catchment only (DHHL has installed two catchments at Humu`ula and successfully tested this concept.) Composting toilets/Septic systems and leach fields would be used for waste disposal.

The Homestead developments will also incorporate a variety of alternative/renewable energy opportunities including:

- Solar/Photovoltaic
- Catchment (With Fog drip Catchment Augmentation)
- Gray Water Reuse
- Composting Toilets
- Consideration for Low Wind Speed Generators

The `Āina Mauna Legacy Program incorporates several opportunities for homesteading across the entire landscape of the Humu`ula/Pi`ihonua lands. Much of Humu`ula, however, is not ready to support a "self-sufficient and healthy community" of homesteaders, as the land's productivity has significantly

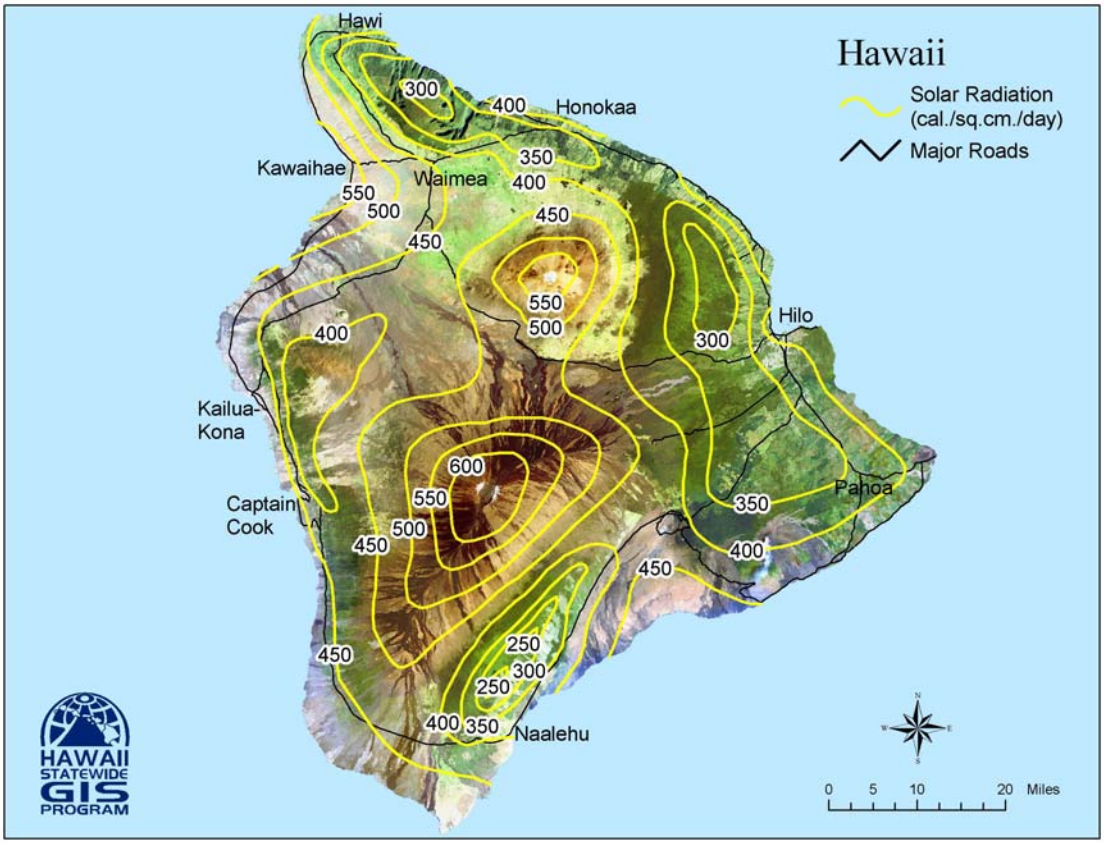
declined over the past 150 years. The bulk of the homestead opportunities are anticipated to be phased in once the land has been restored to productive use. This area includes the significant portions of the site that are proposed for sustainable koa restoration.

These forested areas also provide DHHL with an option for future homesteading. Once the koa restoration is accomplished, DHHL will have the opportunity to consider creation of forested homesteads for beneficiaries. The commercial koa forest management operations can continue, with the DHHL and beneficiaries benefitting directly from the commercial sale of koa.

Similar to many present-day homesteaders having ranches associated with their homesteads or area for agricultural use associated with homesteads, with the restoration and management of the forest here, future homesteaders may incorporate the management of koa forest into their homesteads. Ultimately, decision-makers decades from now may decide whether this is appropriate or not – once the forest is restored. The suggestion is that the Legacy Program expands future options, opportunities and choices for homesteading.

Characteristics of the First Rural-Development Homestead Area:

- Limited overall slope – relatively-level compared to balance of property
- Frontage/Accessibility to Saddle Road
- Accessibility from existing ranch roads
- Situated at the 80-inch mean annual rainfall contour
- Situated within 400 – 450 Cal/cm2 solar radiation contour (4.6 – 5.2 peak sun hours)



Hawai`i Island Solar Radiation Map

Since the property was not typically used for long term habitation, there are questions as to the demand for homesteads in this area. Humu`ula is a unique environment that historically has been minimally settled. It is important that beneficiaries are made aware and understand the advantages and disadvantages of living in this area. Given that the immediate homesteading area will be a rurally-developed (cinder roads, catchment water, photovoltaic, septic/composting toilets, etc) and the area is relatively isolated from employment, schools, shopping centers and other DHHL communities, it is not clear what the demand will be for these types of homesteads.

Although planning would begin immediately, full build out may not occur for several years. Additionally demand and interest for the homestead lots and the availability of funds for needed Infrastructure would also need to be taken into consideration. Subsequent homestead development may occur depending on demand, costs and policy relative to the overall use of the site. An in-depth look at the consistency of the recommendation with prior planning and background information related to this recommendation is below.

Background/Enabling Legislation/DHHL Primary Purpose – Homesteading

The "Humu`ula/Pi`ihonua Master Plan", developed by PBR Hawai`i in 1997 sites the Department's ability to implement a range of management programs and the flexibility to implement a broad range of policies and programs. These management programs include homesteading options (conventional and kuleana), cooperative management agreements, homestead general leases, and economic enterprise partnerships.

As noted in the initial enabling legislation, §101. Purpose of the Act, [L 1990, c 349, § 1], declares the objective of Congress and the State of Hawai`i, to be:

> "(a) ... to enable native Hawaiians to return to their lands in order to fully support self-sufficiency for native Hawaiians and the self-determination of native Hawaiians in the administration of this Act, and the preservation of the values, traditions, and culture of native Hawaiians."

The objectives of this policy on native Hawaiians is further defined under §101 (b) of the Act. They are designed to provide the essential guidelines to direct the Hawaiian Homes Commission and the Department in:

(1) Establishing a permanent land base for the benefit and use of native Hawaiians, upon which they may live, farm, ranch, and otherwise engage in commercial or industrial or any other activities as authorized in this Act;
(2) Placing native Hawaiians on the lands set aside under this Act in a prompt and efficient manner and assuring long-term tenancy to beneficiaries of this Act and their successors;
(3) Preventing alienation of the fee title to the lands set aside under this Act so that these lands will always be held in trust for continued use by native Hawaiians in perpetuity;
(4) Providing adequate amounts of water and supporting infrastructure, so that homestead lands will always be usable and accessible; and
(5) Providing financial support and technical assistance to native Hawaiian beneficiaries of this Act so that by pursuing strategies to enhance economic self-sufficiency and promote community-based development, the traditions, culture and quality of life of native Hawaiians shall be forever self-sustaining.

The objective of the Act is to provide native Hawaiians with a land base of 203,500-acres, more or less, administered through the Department of Hawaiian Home Lands. These trust lands thus, set aside serves two (2) purposes.

The primary purpose is of course the homesteading program for native Hawaiians. Homestead leases are currently awarded for residential, agricultural or pastoral purposes.

Secondarily, lands not currently awarded under homestead leases are generally available for income-producing uses by the public within certain parameters set by state law.

Prior Planning Efforts Discussing Homesteading

Humu`ula Rural Villages and Landscape Restoration Plan

`Ōiwi, with the technical assistance of Townscape, Inc., over the course of a two-year period, developed the “Land Use Concepts for Humu`ula/Pi`ihonua” (2002). This plan was presented to the Hawaiian Homes Commission as an alternative to the "Humu`ula/Pi`ihonua Master Plan," (1997) that was prepared by PBR Hawai`i on behalf of the Department of Hawaiian Home Lands (DHHL). (Humu`ula Rural Villages and Landscape Restoration Plan, Page 1)

The "Humu`ula Rural Villages and Landscape Restoration Plan" was prepared for `Ōiwi by Townscape, Inc. and proposes the development of homesteads through rural villages and community pastoral lands to be available to beneficiaries of the DHHL trust. Components of the plan are detailed below.

The “Humu`ula Rural Villages and Landscape Restoration Plan” proposes a near-and long-term development concept for 13,850-acres of Hawaiian Home Lands located in the Humu`ula ahupua`a in the North Hilo district on Hawai`i Island.

The Humu`ula Rural Villages are primarily for agricultural homesteading with common lands available for homesteaders that require additional land for raising animals, farming, or agro-forestry. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 1)

The Landscape Restoration Plan and Wahi Pana Management Plan recommend a process to focus on environmental restoration and cultural properties conservation.

This approach was discussed during the land use concept development stage of the Humu`ula/Pi`ihonua lands, in which it was recognized that 1) more favorable ranching lands were located at Pi`ihonua, and 2) the development of large pastoral awards would result in only a limited number of homesteaders settling on the land making the development less feasible. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 1)

The Humu`ula Rural Village and Landscape Restoration Plan Report was produced to continue and develop more detailed planning studies for the Humu`ula/Pi`ihonua area. The Plan proposes near and long-term development concepts for 13,850-acres of Hawaiian Home Lands located in the Humu`ula ahupua`a.

The plan outlines a development concept which includes four elements:

- Rural Village Areas - The Humu`ula "Rural Villages" would be primarily for agricultural homesteading with common lands available for homesteaders that require additional land for raising animals, farming, or agro-forestry
- Service Center (Neighborhood Store and Fire Station) - Community services would be developed within a Service Center area which would consist of a neighborhood store, park, community facilities and a fire station.
- Landscape Restoration Plan - The Landscape Restoration Plan process proposes three elements: gorse control, Māmane Reforestation, and "Kīpuka" Management.
- Wahi Pana Management Plan - The Wahi Pana Management Plan process suggests a series of steps for the development of a Cultural Properties Management Plan for the cultural resources located at Humu`ula.

Initial Concept of Rural Villages

A total of four Rural Village Areas of approximately 1,000 acres each were envisioned for 4,000 acres of the project site. Each rural village would contain a cluster of 100 homesteads on approximately 200 acres and associated common pastoral/agricultural lands of approximately 800 acres. Homesteaders within each village would organize a Village Association that would manage the common lands through a permit or other lease agreement with DHHL. Each Association would develop its own plan for use of the common pastoral lands. It is recommended that DHHL develop benchmarks to measure the Village Associations' capacities to manage common lands over time. (Humu`ula Rural Villages and Landscape Restoration Plan, Pages 1 & 2)

At full build-out, the four Village Areas would provide homesteads for a total of 400 families. The Village Areas would be developed incrementally, contingent upon applicant demand and active interest for this type of homestead development. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 2)

"Village Area A" may take ±10 years to develop and populate. Village Areas B, C, and D, the Humu`ula Park, the Neighborhood Store, the Fire Station, Potable Water Planning and Development and other infrastructure up-grades assume a long-term, 30-year or greater build-out timeframe. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 2)

The Humu`ula Rural Villages and Landscape Restoration Plan illustrates the long-term development concept for four Rural Village Areas, associated roads, a multipurpose community facility, service center, community park, and common pastoral/agricultural lands. Each Village Area is approximately 1,000-acres in size and is comprised of the following:

- An "Agricultural Homesteads Settlement" of approximately 200-acres, consisting of 100, 1-and 2-acre Agricultural Homestead Lots, associated roads, and a 15-acre community park with a multipurpose facility.
- Surrounding common pastoral/agricultural lands of approximately 800-acres for use by interested and active beneficiaries that are awarded Homestead Lots within a particular village. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 25)

Each Village will provide agricultural homesteads for approximately 100-families on 1-and 2-acre lots. At full build-out, the 4-Villages combined will thus; provide homesteads for a total of 400-families.

For each Village, a 15-acre park is located at a newly proposed access road that will connect to an interior village road. A 24-foot-wide unpaved roadway is proposed. A Multipurpose Building, estimated at 5,000 sq. ft., would provide space for community events, occasional medical clinic services, volunteer fire services, classrooms, cafetorium, and kitchen area. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 25)

The long-term development concept (30 years and beyond) also includes: 10 acres each for a neighborhood store and a fire station (located at the junction of Saddle Road and the proposed Main Access Road), electrical and telecommunications upgrades, and potable water supply development. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 25)

The `Ōiwi plan outlined guiding principles which were established by `Ōiwi in 2002 and served as a guide for the Humu`ula Rural Villages and Landscape Restoration Plan. These principals included:

- The character of homestead communities shall be rural. Homestead uses for these lands shall be agricultural and pastoral uses with their appurtenant uses.
- The first phases of homestead development shall focus on areas of Humu`ula that are closest to existing Saddle Road. Where necessary, interim uses will be allowed until final homestead plans are completed, funded and implemented. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 11)

Additionally, the Humu`ula Rural Villages and Landscape Restoration Plan, noted: The original concept of multiple rural villages may be too ambitious and large. Consider starting with one village plus a system of landscape restoration and management of adjacent lands. Additional villages could be planned and established according to need/demand.

Rural Villages Infrastructure Needs and Costs

This section reviews the infrastructure elements needed for the Rural Villages development and provides an order of magnitude cost estimate for infrastructure for Village Area A.

The overall theme of infrastructure for Village Area A should be “basic,” in order to avoid expensive road, water, electrical, and other costs. Thus, our recommendations for infrastructure include unpaved roads, water catchment systems, and the use of solar energy technology. (Humu`ula Rural Villages and Landscape Restoration Plan, Page 33)

Costs to develop infrastructure for "Village Area A" are estimated at $11,000,000. The long-term development will require additional electric and telecommunication upgrades, and water resource development, should a significant number of homesteaders settle the area. Infrastructure for the development of "Village Area A" includes the following: (Humu`ula Rural Villages and Landscape Restoration Plan, Page 3)

INFRASTRUCTURE COST SUMMARY FOR "VILLAGE A"

INFRASTRUCTURE ELEMENT	COST	
COMMUNITY INFRASTRUCTURE		
Access Road	$ 1,000,000	
Internal Roads to Lots	$ 1,000,000	
Ranch and Farm Roads	$ 500,000	
Reservoir(s)	$ 2,000,000	
Fencing	$ 500,000	
Community Park -Grading & First-Phase Facilities	$ 200,000	
Multipurpose Building	$ 300,000	
Community Infrastructure Cost:	$ 5,500,000	
(Add +/-20% for Project Management, Design, and Contingencies):	$ 6,600,000	
Cost per unit for 100 homesteads:	$ 66,000	
INFRASTRUCTURE FOR HOMES		
Water Catchment Systems	$ 15,000	per unit
Solar Electric Systems	$ 15,000	per unit
Septic Tank & Leach Field	$ 7,000	per unit
Home Infrastructure Costs:	$ 37,000	per unit
(Add +/-20% for Project Management, Design, and Construction):	$ 44,000	per unit
Cost for 100 homes:	$ 4,400,000	
Total Infrastructure Costs:	$11,000,000	
Infrastructure Costs per Unit:	$ 110,000	

Humu`ula/Pi`ihonua Master Plan

In 1996, DHHL began a master plan process for the Humu`ula and Pi`ihonua lands. The planning process included site studies, research, mapping, DHHL staff working meetings, and community meetings.

The product of this process was the December 1997, Humu`ula/Pi`ihonua Master Plan. The Humu`ula/Pi`ihonua Master Plan has a homesteading component which has some similarities to the Humu`ula Rural Villages and Landscape Restoration Plan's homesteading component.

As part of the planning process three alternative concept plans were prepared, each reflecting a particular emphasis, including: homesteading, economic development, and independent/multiple use.

In the evaluation of alternatives, various land management alternatives are identified and evaluated. The land management alternatives include:

1) Conventional Homesteading, in accordance with conventional Department leasing procedures;
2) Kuleana Homesteading, permitting homesteading on unimproved lands under a newly adopted DHHL program;
3) Cooperative Management Agreement, under which a cooperative of interested beneficiaries would take control and manage the lands and related resources;

4) Homestead General Leases, which would make parcels of land available to beneficiaries though request for proposals specifying the land management responsibilities and performance standards;
5) Economic Enterprise Partnerships, which, similar to the model used by the Maori tribes of New Zealand, would involve DHHL entering into agreements with private enterprises that would provide their expertise and capital, and beneficiaries would participate as "stock holders" or employees; and
6) Other Management Options as identified by DHHL or as variations of the above options. (Humu`ula/Pi`ihonua Master Plan, Page vii)

The alternative plans were reviewed with Advisory Task Force Committee, DHHL, and interested beneficiaries, and were evaluated against the Master Plan goals with the positive elements of each integrated and refined as part of the Preferred Concept Plan.

Major elements of the Preferred Concept Plan in regards to homesteading include the following: To provide additional opportunities to the beneficiaries on the pastoral waiting list, the Plan provides for a range of 50 to 150-pastoral homesteads which could be phased in increments to meet the desires of the beneficiaries.

Approximately 3,000-acres near the Saddle Road/Mauna Kea Access Road junction would be reserved for future homesteading if the infrastructure, primary water, can be developed economically to support a more intensive homestead settlement of several hundred lots.

Depending on the beneficiaries expressed interest to homestead these lands without infrastructure improvements, kuleana homestead awards could be made within the context of the overall Master Plan. (Humu`ula/Pi`ihonua Master Plan, Page vii)

Infrastructure Requirements

Planning estimates of the cost to make the lands habitable and useable for prospective lessees include; roadway improvements, a new storm drainage system, a new water catchments treatment and distribution system, electrical power, and sewer systems. Four planning alternatives were prepared by R. M. Towill Engineers. (Humu`ula/Pi`ihonua Master Plan, Pages 36 & 37)

Development Cost Estimates

Roadway Improvements	$6,088,439
Storm Drainage System	$3,223,150
Water System	$2,000,000
Electrical System	$2,314,500
Plus Contingency @ 15%	$2,043,913
TOTAL	$15,670,002

Humu`ula Sheep Station - Adaptive Reuse

The Humu`ula sheep station is a visible landmark along the Saddle Road and Mauna Kea Access Road. Its location presents an ideal place for a "gateway" to Mauna Kea and the `Āina Mauna lands. With the only access to Mauna Kea, cutting through the `Āina Mauna lands, the sheep station provides an opportunity for education and cultural awareness for those proceeding up the mountain.

The `Āina Mauna Legacy Program takes into account its historical, architectural and cultural importance and proposes to initiate the adaptive reuse of the Humu`ula Sheep Station, in accordance with findings and recommendations in the Humu`ula Sheep Station Adaptive Reuse Plan. The facility could be considered for a variety of uses, including redevelopment of the property into a Lodge, and serve as a focal point for events, education, staging, retreats, gatherings, meetings, etc.

In March of 2004 Kimura International prepared and published the "Humu`ula Sheep Station Adaptive Reuse Plan" (Reuse Plan) for the Department of Hawaiian Home Lands. The report was a collaborative effort between the consultants and DHHL to guide future development of the Humu`ula Sheep Station. The plan addresses potential development activities at the sheep station to generate revenue and restore the area.

In 1997, a master plan was prepared for Humu`ula/Pi`ihonua by the Department and consultant PBR Hawai`i. A separate land use concept plan was prepared in 2003 by the beneficiary group `Ōiwi Lōkahi o ka Mokupuni o Keawe and Townscape, Inc. The two plans contain differences in proposed uses for the Humu`ula/Pi`ihonua lands; however, they are consistent in recommending commercial development for the sheep station itself and adjacent properties. Both plans, as well as the Department of Hawaiian Homeland's Hawai`i Island Plan (2002), provided background and contextual information in planning future uses for the sheep station. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 23)

Summary of Adaptive Reuse of the Humu`ula Sheep Station Component

The `Āina Mauna Legacy Program proposes to initiate a broad RFQ/RFP, for the adaptive reuse of the Humu`ula Sheep Station, in accordance with findings and recommendations in the Humu`ula Sheep Station Adaptive Reuse Plan. Benefits would include; that the action implements a pre-existing plan (Adaptive Reuse Plan); is consistent with other planning efforts and allows for short- (ecotourism) and long-term (commercial, camping, lodge, etc) opportunities for revenue generation.

The site contains a mix of structures and artifacts with varying degrees of historic, architectural, and aesthetic significance. The Reuse plan proposes to establish a historic zone consisting of three historic buildings (the office and dwelling building, barn and sheering shed). The restoration of these buildings will be a required component of the lease terms.

DHHL's development objectives for the Subject Property call for a development project that:

- Will be undertaken by a qualified private sector lessee who will bear all of the costs of the redevelopment and will not be subsidized by DHHL.
- Will be developed under a lease agreement between DHHL and the selected applicant.
- Will redevelop the Subject Property taking into consideration the Reuse Plan, applicable laws, and allows for all improvements and facilities to be open to the public.
- Includes the establishment of a "historic zone", including the renovation of core buildings within the "historic zone".

- Increases the financial returns to DHHL from the Subject Property in a timely manner.
- Complies with all laws, ordinances, rules, regulations and restrictions applicable to the Subject Property including Chapter 343 Hawai`i Revised Statute.
- Is economically feasible to the developer/lessee.
- Does not include incompatible uses including Warehousing; Baseyard for transportation or construction operations or for utility companies; Manufacturing or repair services; Residential, except in a lodge, bed-breakfast or caretaker type of situation; Commercial agriculture; and Large-scale institutional or eleemosynary use or campus, as outlined in the Reuse Plan.

Various land use and management plans have called for the reuse of the Humu`ula Sheep station, with an emphasis on commercial activity. The following is a summary of that background information.

Site Description

The site is located at an elevation of approximately 6,700 feet, resulting in a cool climate year-round with frequent fog covering in the afternoon. Average annual rainfall is a moderate 40 inches. The climate presents an opportunity with heating costs offset by the novelty of a cool climate, one of the site's major selling points and no need for air conditioning. (Humu`ula Sheep Station Adaptive Reuse Plan, Pages 24 & 28)

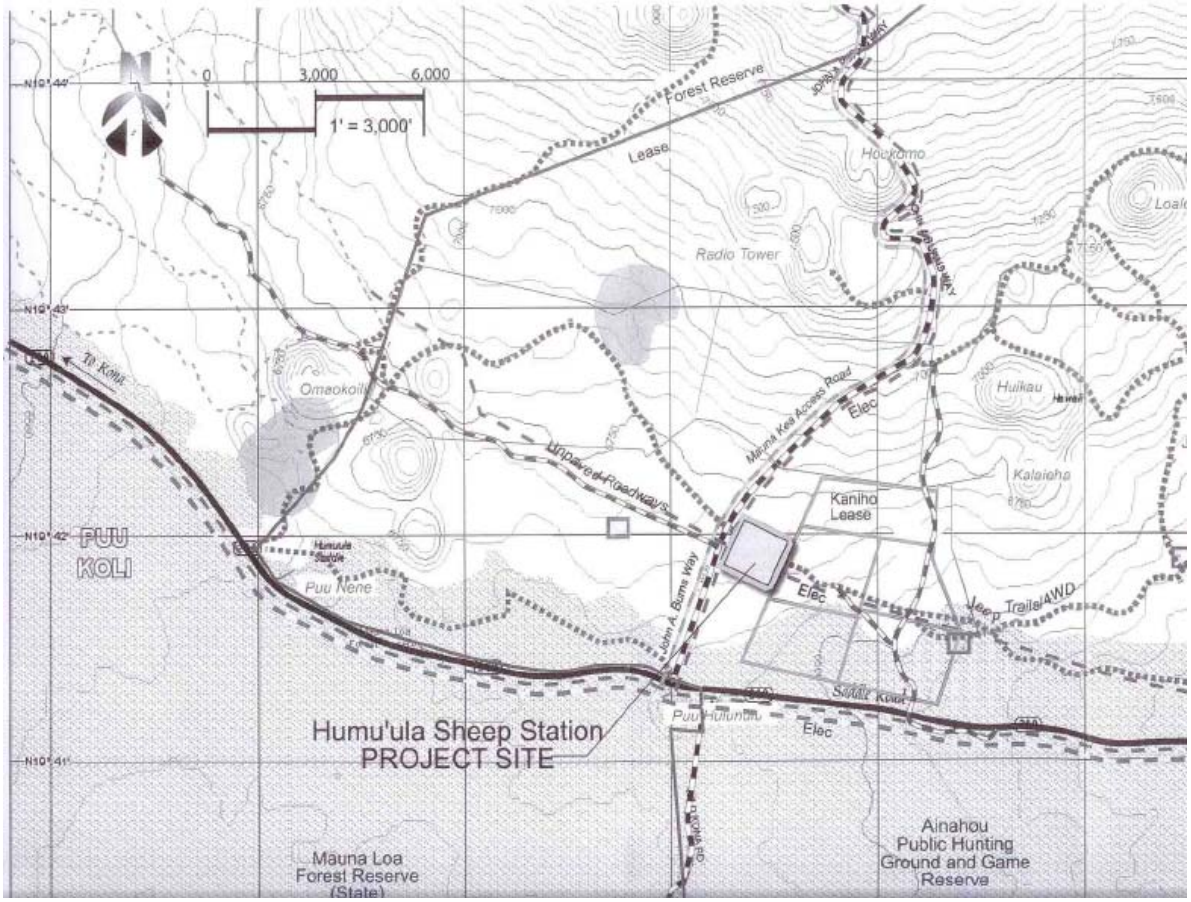
The remoteness of the area from population centers makes the Sheep station an attractive site for those seeking quiet and closeness to nature. The flora and fauna of the area present an interesting contrast between pastureland and old-growth kīpuka. There is good access to habitats supporting rare birds and native forests. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 29)

Site History

Historically, sheep raising was one of the oldest introduced agricultural pursuits in Hawai`i. Sheep were originally introduced to the Big Island by Capt. George Vancouver in 1793 when he left two ewes and a ram at Kealakekua. Sheep were being raised for export by 1809 and flourished through the early part of the 20th century. Most meat was consumed locally and wool was supplied to mainland United States buyers. Wool production reached its peak in 1875 when 565,000-pounds were sent overseas. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 24)

The Humu`ula Sheep Station has historical and architectural interest because sheep raising was one of the oldest introduced agricultural pursuits in Hawai`i and while never a major industry it was carried on until the last large flock in the Islands located at Humu`ula was phased out. Humu`ula's relationship to Parker Ranch and to the general agricultural history of Hawai`i is significant. The Humu`uIa Sheep Station Company chartered by the Hawaiian Government in 1883, was an operation of H. Hackfeld and Company. By 1894 the company had erected large and extensive paddocks at Kalaieha and also had a station at Keanakolu. Ownership of the station came under Parker Ranch and operations continued for years, often little known by Hawai`i residents due to its comparatively isolated location. (Humu`ula/Pi`ihonua Master Plan, Page 17)

Sheep raising at Humu`uIa was given-up in 1963 and although abandoned as a sheep station, ranch support activities have continued until recently. Therefore, the site contains a mix of structures and artifacts with varying degrees of historic, architectural, and aesthetic significance.



Humu`ula Sheep Station Project Site

Existing structures include offices, living facilities, outbuildings, work sheds, shearing sheds, holding pens, and catchment facilities. Buildings and artifacts tell an interesting architectural story and provide a historic backdrop for a contemporary rustic experience (Humu`ula Sheep Station Reuse Adaptive Plan, Pages 24 & 29)

The site was assessed by the State Historic Preservation Division for placement on the Hawai`i Register of Historic Places. The historian determined that the site's architectural interest and merit lie in "structures (c. 1900) [that] are typical ranch house style but are particularly interesting for their 'homemade' contrived plans and arrangements, both functional and picturesque."

The assessment concluded with a recommended "Valuable" status based primarily on its historical interest and secondarily on its architectural interest. "If possible, a restoration into an operating complex including visitor facilities would present an unusual 'outdoor museum' of great interest." (Humu`ula Sheep Station Adaptive Reuse Plan, Page 24)

The main historic building on site consists of an office and dwelling which was part of a cluster that represents the property's rustic character. It was originally built as a men's living cottage and, over time converted to office and residential use. The structure was built in stages and consists of two distinct wings, both with gable roofs. The 1973 SHPD assessment refers to the elaborate decoration of the living room with skylight, wainscoting and carved scrollwork. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 27)

Unfortunately, in the 36 years since the assessment, the building has deteriorated from neglect and lack of maintenance. A preliminary architectural inspection indicates that the building will require extensive structural rehabilitation to meet current health and safety standards for occupancy. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 27)

Humu`ula Sheep Station Reuse Plan

The Humu`ula Sheep Station reuse Plan documents the results of a collaborative effort between the consultants and DHHL to guide future development at Humu`ula. Because there is little commercial activity in the area to offer precedents of market potential, the plan's viability is based on a three-prong strategy consisting of:

- *Opportunism* - until Humu`ula becomes an established destination site, the proposed uses are intended to attract passing traffic and people participating in recreational activities in the saddle region;
- *Synergism* - assembling a compatible mix of uses that can "feed off each other"; and
- *Incrementalism* - the initial development could be modest or ambitious, but, in either case the plan provides space for expansion. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 1)

The plan embodies a course of development that is compatible with the special environmental, historic, and cultural resources that help to define the character of the site. It recognizes that raising the property's value will ultimately provide the means to underwrite long-term conservation efforts and generate further benefits for the community. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 1)

The adaptive reuse plan addresses the following objectives:

1. To establish the "character of use" – i.e., a limited range of potential uses. The character of use is sufficiently constrained so that it levels the field for bidders. On the other hand, the uses are not defined so narrowly that it hinders entrepreneurial creativity.
2. To describe a proposed action or a range of actions that can be used to prepare an environmental assessment. It is acknowledged that environmental impacts will be assessed before the property is leased.
3. To determine the size of the property to include in the initial lease.
4. To develop general design guidelines, including (but not limited to) controls on density, height limits, size of development footprints, construction materials, and architectural style. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 1)

The Reuse Plan proposes a mix of land uses, wherein the property is divided into three principal sub-areas: Historic/Community Center (5.5 to 6.0 acres); Open Campground (2.0 to 2.5 acres) and Commercial (7.0 to 8.0 acres), including retail, recreational, lodgings and restaurant activities appropriate to a transient or visitor market. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 3)

Alternative Land Use Plans

Three alternatives were developed for the Humu`ula site. The alternatives can be viewed in two ways: (1) a representation of different phases starting with a modest effort and expanding incrementally over time or (2) a representation of different outcomes. In the latter case, a developer may choose to start with a highly capitalized project, rather than taking a more gradual approach. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 3)

Humu`ula Sheep Station Site

Alternative 1: Low Intensity Development

The low-intensity alternative does not require a full-time presence on the site. The focal activity is a campground where users are largely self-sufficient. Capital investment is minimal since this development scheme does not require any permanent structures, with the possible exception of equipment storage sheds (which can be portable structures). Indeed, "improvements" consist primarily of demolishing unused structures, removing debris and clearing overgrown landscaping, and erecting fences around the remaining historic buildings (to keep people from going into hazardous structures). (Humu`ula Sheep Station Adaptive Reuse Plan, Page 3)

Development components:

- Campground. User provides tent and cooking equipment. Operator provides portable toilets and showers, fire pits, playfields, and possibly equipment (such as volleyball nets, softball gear, archery equipment, or a more elaborate ropes course)
- Continued use of picnic area by a private eco-tour operator
- Homesteaders association headquarters/community center (renovated Quonset hut)
- Infrastructure Costs $120,000
- Potential Annual Rent $53,400 (low) to $61,600 (high) (Humu`ula Sheep Station Adaptive Reuse Plan, Page 3)

Alternative 2: Medium Intensity Development

Alternative 2 involves one or more businesses that have regular hours of operation, thus, requiring permanent, probably full-time, employees. However, capital investment is still relatively limited and

development can occur incrementally, whether it is the number of cabins erected, types of eco-tourism activities staged on site, and/or the range of goods and services offered at the rest stop. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 3)

Development components:

- 10 Cabins (60 persons maximum)
- Eco-tourism/adventure tourism staging area (such as, hiking, bird watching, bicycling, horseback riding)
- Rest stop with food concession(s) and/or handicraft sales
- Campground
- Existing cottage converted into the beneficiaries' community center
- Interpretive signs and walkways in the historic zone
- Infrastructure Costs $355,000
- Potential Annual Rent $81,900 (low) to $100,100 (high) (Humu`ula Sheep Station Adaptive Reuse Plan, Page 4)

Alternative 3: High Intensity Development

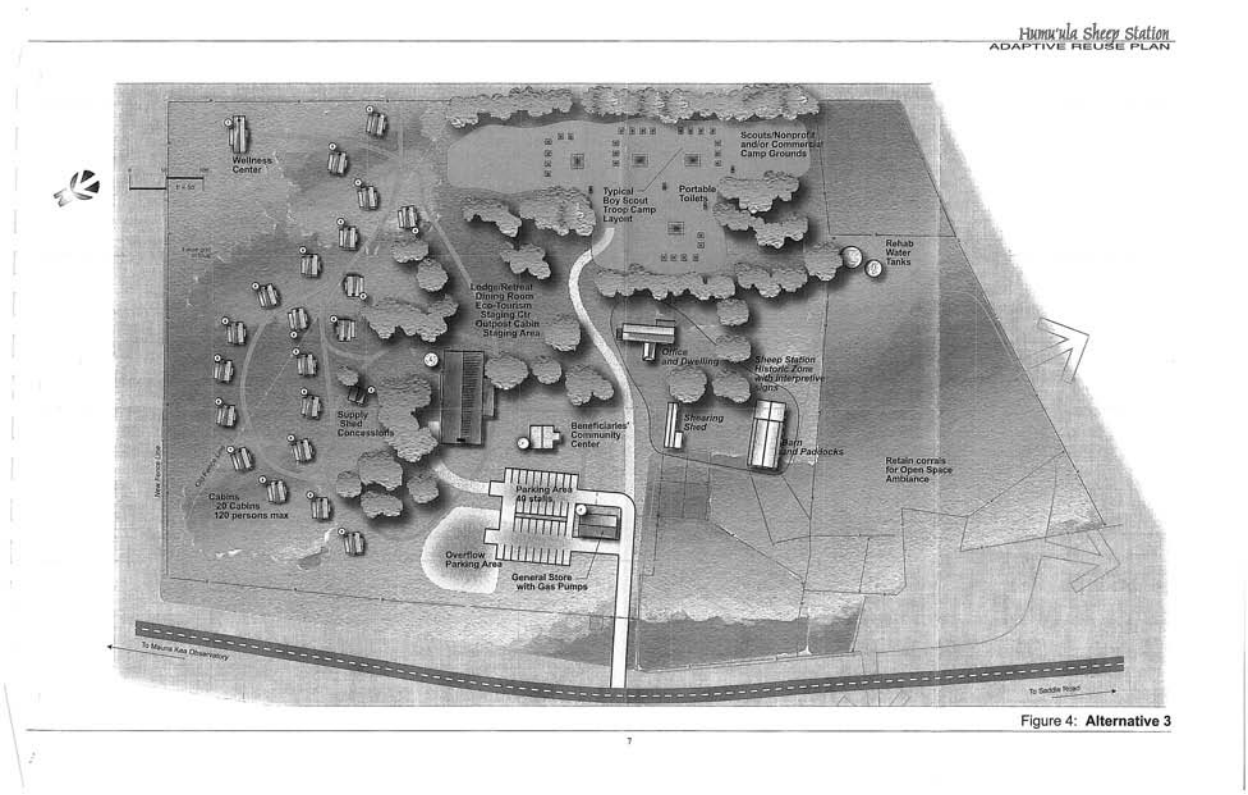
Alternative 3 represents a more sophisticated level of development. With a greater outlay of capital this alternative will need sustained market demand. On the other side of the coin, Alternative 3 offers the greatest variety of visitor amenities and could become a destination of potentially enormous appeal. The addition of a lodge could significantly alter the visitor experience by providing more congenial settings in which to socialize, for example, a dining room/restaurant, seminar rooms for meetings, spa/fitness facilities, and/or lounge with the iconic roaring fireplace. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 4)

Development components:

- 20 Cabins (120 persons maximum)
- Lodge with restaurant
- Eco-tourism staging center
- Wellness center, retreat, seminar rooms
- General store/Rest stop (with or without gas pumps)
- Campground
- Stabilize buildings in the historic zone for long-term restoration
- Infrastructure Costs $969,000
- Potential Annual Rent $241,400 (low) to $283,800 (high)
  (Humu`ula Sheep Station Adaptive Reuse Plan, Page 4)

*Note that estimated infrastructure costs are incurred during first three years and that annual rent is estimated in the tenth year of operation and assumes relatively mature, stable operations.

It will be up to the applicant to determine which of these or parts of these alternatives will be included in their development plan. The phasing of these alternatives does not have to be sequential (Alternative 1, 2, 3). The applicant may undertake any of the alternatives in any order.



Humu`ula Sheep Station Adaptive Reuse Plan – Alternative 3

Ecotourism and Recreation Use

The sheep station is located at a transportation crossroad, in a region that abounds with recreational, environmental, cultural and educational resources. There is tremendous potential to develop the Humu`ula sheep station in a way that complements and enhances the enjoyment of these resources. Examples of viable commercial and nonprofit activities are described below to provide an indication of the site's development potential. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 34)

- Biking Tours
- Bird Watching Tours
- Nature Tours
- Lodge/Camp
- Hiking Tours
- Horseback Tours
- Wilderness Resort/Guest Ranch

The Humu`ula Sheep Station provides the greatest opportunity to plan and manage multiple ecotourism and recreation activities that would capitalize on the unique resources of these lands including native flora and fauna, unique ecosystems, and observatory related activities. (Humu`ula/Pi`ihonua Master Plan, Page 57)

Commercial Activity

There are opportunities to provide service oriented businesses to serve the Saddle Road traffic. Recognizing the potentially significant increase in cross island traffic that will result from the ongoing improvements to the Saddle Road, the nearby Pōhakuloa Training Area and the growing interest in the astronomical activities on Mauna Kea, there is the opportunity and potential need for commercial service facilities to be located near the Saddle Road/Mauna Kea Access Road intersection. The Sheep Station provides an ideal location.

Commercial activity within the Sheep Station property would be best situated generally to the north of the proposed interior access road within the subject property. The Reuse Plan identifies an approximately 7.0 to 8.0 acre sub-area for commercial activity.

Commercial opportunities which could build upon the natural resources and locational advantages of these lands and/or possible activities considered appropriate for commercial activity in this subarea might include the following:

- General Store
- Convenience Store
- Gas Station
- Rest Stop
- Ecotourism Headquarters/Staging Area
- Restaurant
- Retail Activities
- Office space to support commercial activities (i.e. ecotourism)
- Other facilities that are appropriate to a transient or visitor market

Related to these activities, there would be opportunities to create commercial accommodations (i.e. Camping, Cabins and Eco-Lodge Facility) to take advantage of the surrounding environmental resources.

Additionally, an initial increment of specialty overnight accommodations in the form of a private lodge for eco-tourists is proposed as a natural component given the variety of eco-tour opportunities that the lands and Mauna Kea present. The master plan calls for 20 units. There is a provision in the Master Plan for an additional lodge at a separate site if and when the market warrants. (Humu`ula/Pi`ihonua Master Plan, Pages 36, 56 & 57)

The 1997 Humu`ula/Pi`ihonua Master Plan recognizes the Sheep Station's strategic location close to the intersection of the Saddle Road and the Mauna Kea Access Road that could contain a variety of commercial uses, as a mixed use facility.

In the plan, approximately 350-acres are reserved for these potential commercial and industrial uses near the crossroads of Saddle Road and Mauna Kea Access Road, where projected traffic increases resulting from the planned Saddle Road improvements and the on-going astronomical industry growth occurring at the Mauna Kea summit may support various business opportunities. This area would also be the logical hub for centralizing the headquarters for various ecotourism operations. The area of the Sheep Station could serve this purpose.

Incompatible Uses

The adaptive reuse plan is intended to allow for entrepreneurial flexibility; however, some uses are distinctly incompatible, including:

- Warehousing
- Baseyard for transportation or construction operations or for utility companies
- Manufacturing or repair services
- Residential, except in a bed-breakfast or caretaker type of situation
- Commercial agriculture
- Large-scale institutional or eleemosynary use or campus
  (Humu`ula Sheep Station Adaptive Reuse Plan, Page 4)

General Design Guidelines

The Reuse Plan also includes recommendations related to the general design guidelines of the sheep stations' reuse which are based on development outcomes envisioned in the adaptive reuse plan. Location Guidelines:

- Retain corrals and open fields on the south and west sides of the site so that the roadway approaches from Saddle Road and Mauna Kea Access Road convey an ambiance of wide open spaces and pastureland.
- Establish an historic zone consisting of three core buildings: the Office and Dwelling Building, Barn, and Shearing Shed. Paths linking these buildings should be constructed to define safe walking and observation areas for visitors. The area can be further improved with interpretive signs and displays of artifacts. Over the long term, the buildings will need to be stabilized against further deterioration and collapse.
- Limit long-term parking to lots near the entrance of the site. This will maintain a more natural look in the interior portions. Consider alternatives to black-top for the parking lots and obscuring expansive views of parked cars with berms and landscaping.
- Locate the rest stop or general store (with gas pumps) near the main entrance so that high volume, in-and-out traffic remains near the roadway. An alternative site for the rest stop/general store is closer to the intersection of Saddle Road and Mauna Kea Access Road. This location has the advantage of higher visibility and easier access from the highway; however, it would reduce opportunities to create market synergy with people staying at the cabins and campground.
- The northern, upslope areas are most appropriate for the cabins, offering views to adjacent open spaces.
- On-site infrastructure should incorporate sustainable technologies where possible, including rainwater catchment, solar power, and recycling. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 9)

Development Guidelines: Height, Bulk, and Density:

- Buildings should not exceed a maximum height of two stories, not including architectural or mechanical features, such as a chimneys and air shafts.
- The plan, as shown in Figures 2-4, has moved the existing fence line on the northern side and in the southeast comer, producing a developable area of about 15-acres.
- Cabin density should strike a balance between compactness (for walkability and ease of servicing) and privacy. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 9)

Design Guidelines: Architectural Styles and Materials:

- Roofing
  - Pre-finished or field painted corrugated metal: overhanging eaves; Roof angle similar to the existing office building
- Foundation
  - Post construction with an elevated ground floor
- Exterior siding
  - Wood cement board and composite battens; lava-like rock for chimneys, exterior posts, and accents
- Entrance doors
  - Wood stile Wood stile and rail, panel or true divided light (glass) doors
- Windows
  - Aluminum or vinyl clad wood, double hung or awning windows
- Coatings
  - Earth and vegetation tones and colors
- Other
  - Provide porches and verandas; incorporate lean-to type extensions (for example, to accommodate the lavatory). (Humu`ula Sheep Station Adaptive Reuse Plan, Page 10)

Criteria to Evaluate Land Use Alternatives

Land uses were evaluated on the basis of the following criteria:

1. Potential to maximize financial returns.
2. Feasibility of initiating development within five-years, with the possibility of reaching full implementation through an incremental process. (If more attractive uses are anticipated beyond a five-year period, the plan may advise DHHL to defer leasing.)
3. Compatibility with other uses, which allows risk sharing and the ability to establish synergistic markets.
4. Incorporates uses that are sympathetic to and will accentuate the site's history and culture.
5. Will serve as a possible springboard for homesteading in the surrounding area; in particular, will act as a magnet for infrastructure that could later be extended into nearby areas and/or provide community facilities for use by future homesteaders.
6. Provides opportunities for entrepreneurial development, employment, and education of native Hawaiian individuals and groups. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 23)

Infrastructure Needs for Sheep Station Reuse

Potable Water Supply - The two major water users in the area, Pōhakuloa Military Training Area and Mauna Kea Science Reserve, depend on County water hauled from Hilo in 5,000-gallon tankers. The Science Reserve has two 40,000-gallon storage tanks. 25,000-gallons of water per week are trucked to the Mid-Level Facility and an additional 15,000-gallons per week are trucked to the summit. Therefore trucking in water is the most viable solution at the present time. Because the sheep station is on the weather break, roof collection is another feasible option, depending on supply requirements. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 31)

Electricity - The existing single phase 7.2 kV line that serves the area would be adequate for smaller improvements, such as a convenience store. However, larger scale development, such as a lodge, may

require a three phase line, depending on the load. If this were the case, HELCO would design the line and back-charge a portion to the client. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 31)

Access - The most significant variable affecting market demand is the impending plan to upgrade the cross-island Saddle Road into a modem 48-mile highway connecting the tourism centers in West Hawai`i and the County seat in East Hawai`i. The expectation for economic development can be seen in the following projections:

- Increased usage associated with commuter traffic
- Residential development at both ends of the road
- Recreation and tourism
- Military operations
- Mauna Kea telescope complex
- Increasing congestion along alternative cross-island routes
  (Humu`ula Sheep Station Adaptive Reuse Plan, Page 33)

Gateway to the Mountain

The Humu`ula sheep station is a visible landmark along the Saddle Road and Mauna Kea Access Road. Its location presents an ideal place for a "gateway" to Mauna Kea and the `Āina Mauna lands. With the only access to Mauna Kea, winding through the `Āina Mauna lands, the sheep station provides an opportunity for education and cultural awareness for those proceeding up the mountain.

Ideas have circulated over the years regarding the Sheep Stations use as a staging area for educational opportunities. Its central location to the `Āina Mauna lands, make it an ideal are for groups to meet and learn about the area. Because the `Āina Mauna region is such a special and unique place, orienting and educating visitors to this is important. Much like the Sheep Station will be used as a staging area for ecotourism and other commercial endeavors, the Sheep Station could also serve as a staging area for educational opportunities.

As described in the education chapter, educational opportunities abound for this area whether they are geared toward school children, senior groups, scientists, cultural practitioners or visitors from a far.

Ecotourism

Ecotourism and recreation related activities, a growing sector of the state's visitor industry, have great potential within Humu`ula due to its unique natural and cultural resources. Ecotourism can provide a valuable economic use for an area such as Humu`ula, which, until now has not been utilized to its full potential and which can support only minimum permanent structures or impact.

Potential for Eco-Tourism

The natural resources of the project area provide an abundant attraction for eco-tourism and environmental education. Many geological and biological elements come together within Humu`ula and Pi`ihonua. Most striking may be the contrast between the stark lava lands of Mauna Loa on the south side of Saddle Road and the Pu`u-studded slope of Mauna Kea to the North. Similarly, the change in elevation and rainfall provide a range of biological communities, from tall rain forest in Pi`ihonua to pioneer shrub lands in `Āinahou. Unique or endangered birds, plants and biological communities can be viewed by visitors or students of Hawaiian natural history. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document G-Vegetation Sensitivity Analysis, Page G-17)

Although the grassy pastures and pu`u of Humu`ula provide a pleasing landscape, they are relatively uniform and common-place biologically. It appears that the widest range of natural attractions may be found near the saddle Road corridor itself. The remnant forests near Hakalau Forest National Wildlife Refuge, with endangered forest birds, may be the most significant exception to this generalization. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document G-Vegetation Sensitivity Analysis, Page G-18)

One of the key opportunity areas identified is ecotourism, a growing segment of the Hawai`i visitor industry. The unique natural resources of these and the surrounding lands provide an ideal setting for ecotourism related activities, such as biking, hiking, bird watching, camping, and horseback riding.

Related to these activities, there would be opportunities to create remote lodge facilities located in relation to the surrounding environmental resources. Also, recognizing the potentially significant increase in cross-island traffic that would result from the planned improvements to the Saddle Road, and the growing interest in the astronomical activities on Mauna Kea, the economic assessment points to the opportunity for a commercial service facility located near the Saddle Road/Mauna Kea Access Road intersection. The uses at this facility could include a gas station, rest stop, convenience store, outfitters for eco-tourists, and office space to support a variety of eco-tourism businesses. (Humu`ula/Pi`ihonua Master Plan, Page vi)

The areas remote location is appealing to growing eco-tourism market where visitors seek "off the beaten track" locations and "back to nature" experiences. The Humu`ula Sheep Station also offers a distinctive architectural and cultural history and can provide a staging area for eco-tour activities. The Economic Analysis of Proposed Alternative Development Plans for the Humu`ula Sheep Station property includes a list of possible activities considered appropriate for location in the Humu`ula area including ecotourism headquarters/staging area for tours involving site-seeing, bird watching, or horseback riding; staging area for hiking or mountain biking. (Humu`ula Sheep Station Adaptive Reuse Plan, Page iii & Appendix A, Page 2)

In the Humu`ula Sheep Station Reuse Plan all three stated alternatives call for eco-tourism related activities occurring on site:

- Alternative one: The low intensity development calls for the continuation of the existing Eco-Tourism operation at the subject property.
- Alternative two: The medium intensity development, suggests the sheep station be used as an eco-tourism/adventure tourism staging area (such as, hiking, bird watching, bicycling, horseback riding).
- Alternative three: The high intensity development calls for an eco-tourism staging center. (Humu`ula Sheep Station Adaptive Reuse Plan, Pages 3 & 4)

Diverse Array of Regional Assets and Activities

The sheep station is located at a transportation crossroad, in a region that abounds with recreational, environmental, cultural and educational resources. There is tremendous potential to develop the Humu`ula sheep station in a way that complements and enhances the enjoyment of these resources. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 34)

The location of Humu`ula can be taken advantage of by potential ecotourism operators. Its proximity to a variety of unique places can be added to its appeal. Nearby activities include:

Mauna Kea Science Reserve - With ideal natural conditions and a critical mass of world class telescope facilities, Mauna Kea has become a premier site for astronomical research. Along with the scientists have come steady streams of visitors taking part in summit tours and stargazing programs at the Visitor Information Station (VIS). Additionally, during snowfalls, the summit area can attract 200 vehicles on busy days. Vehicles park alongside roadways and visitors play (ski, snowboard, sled etc.) nearby. The Humu`ula Sheep Station Economic Analysis states that potential eco-tourism activity in the vicinity of the Mauna Kea Summit could be as substantial as, perhaps, 150 to 180 people per day. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 34 & Appendix A, Page 6)

Mauna Kea Ice Age Natural Area Reserve - The Mauna Kea Ice Age NAR is administered by the State's Division of Forestry and Wildlife. It is a rare alpine desert ecosystem with the state's only alpine lake. It also contains important cultural resources at an ancient Hawaiian adze quarry site. The area is first and foremost a refuge, but hiking and nature study are permitted. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 37)

Hakalau Forest National Wildlife Refuge - The 32,700-acre forest has some of the finest remaining stands of native rainforest, eight endangered bird species, endangered bat, and at least 6 endangered plant species. Select portions of the NWR are limitedly open to the public for hiking and photography. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 38)

Hiking, Horseback Riding, Biking - The Humu`ula-Mauna Kea Trail runs from the sheep station to Lake Waiau in the Mauna Kea Ice Age Natural Area Reserve. Horseback riding and bicycling are possible along existing jeep trails and could be further enhanced by defining and marking scenic routes with interpretive and destination signs. (Humu`ula Sheep Station Adaptive Reuse Plan, Page 41)

Ecotourism in Conjunction with Other Land Uses

Ecotourism and Service Facilities - Located near the Saddle Road/Mauna Kea Access Road junction, these facilities would support tour operations and remote lodge accommodations sited in relation to the environmental resources of these lands. For those lands with unique habitats (containing rare and endangered species), ecotourism could provide a viable economic use of these lands. The ecotourism uses could also be managed in conjunction with other land uses, such as forestry, on a seasonal or limited basis. (Humu`ula/Pi`ihonua Master Plan, Page viii)

The primary strategy is to return the land to native Koa forestry. Interim uses allow spot development of various kinds of pasture and crops to eradicate gorse in preparation to return the land to Koa Additionally, selected eco-tourism elements are proposed that will provide complementary uses to the land plan. (Humu`ula/Pi`ihonua Master Plan, Page 37)

Ecotourism and Recreation Based Enterprise and Service Facilities that would also be located in the commercial area near the Saddle Road/Mauna Kea Summit Road junction and may have some remote lodge accommodations related to the unique environmental resources of these lands.

Ecotoursim opportunity areas are shown at Pu`u `Ō`ō Ranch, where existing facilities provide an ideal setting for a lodge facility and for activities such as horseback riding, hiking, and eco-tours; and at the upper Humu`ula lands, where the diversity of resources and unique habitat provides further opportunities for a more remote camping facility as a base for hiking and other related activities. (Humu`ula/Pi`ihonua Master Plan, Page 55)

Ecotourism and recreation related activities, a growing sector of the island's visitor industry, have great potential here due to the natural resources of these lands. Other than providing an area, such as the Sheep Station area, to service and manage these activities, these uses and activities could be integrated and managed within other proposed economic uses. (Humu`ula/Pi`ihonua Master Plan, Appendix C-Alternative Concepts Considered/Evaluation of Alternatives, Page C-6)

Support facilities that may be needed would include a gas station, convenience store, outfitters facility, eco-business incubator space and various types of lodging facilities. (Humu`ula/Pi`ihonua Master Plan, Appendix C-Alternative Concepts Considered/Evaluation of Alternatives, Page C-7)

Each of the alternative plans provides the opportunity to integrate these uses into the overall utilization of these lands. As discussed further under Land Management Options, Alternative 2 provides the greatest opportunity to plan and manage multiple ecotourism and recreation activities that would capitalize on the unique resources of these lands including native flora and fauna, unique ecosystems, and observatory related activities. (Humu`ula/Pi`ihonua Master Plan, Appendix C-Alternative Concepts Considered/Evaluation of Alternatives, Page C-7)

Summary of Ecotourism Component Background

A way to solicit and select prospective operators is to issue a Request for Qualifications/Request for Proposals (“RFQ/RFP”) to solicit proposals from parties interested in providing ecotourism activities within Humu`ula. DHHL will evaluate the submitted proposals and may select multiple applicants whose proposals best satisfy DHHL`s RFQ/RFP objectives and selection criteria. The selected applicants may be granted a license from DHHL for their proposed activities.

Objectives for ecotourism activities through the issuance of licenses on the subject property call for proposals that:

- Will be undertaken by qualified applicants
    - DHHL is seeking applicants who have the experience, expertise and financial capacity to successfully undertake their proposed ecotourism activity.
- Generate income for DHHL
    - The income generated from ecotourism licenses will go towards the management of the entire Humu`ula property.
- Include a volunteering component
    - At Humu`ula, DHHL is in a program to restore the native ecosystem to the region, through activities such as native tree/plant replanting and invasive species removal. Thus, DHHL seeks ecotourism activities that incorporate regular voluntary assistance by the licensee and its customers and others as part of its ecotourism program, on site at Humu`ula.
    - Volunteer activities could be considered as “matching” in-kind and other requirements when seeking grants and other funding support for the restoration efforts.

A number of the enterprises could potentially be headquartered/staged at Humu`ula, most easily at the Humu`ula Sheep Station provided that appropriate office space and related needs are satisfied. The following background information is taken from various planning documents related to the Humu`ula/Pi`ihonua area and provides background information on ecotourism’s potential in the region.

<u>What is Ecotourism? Is It Related to Commercial Recreation?</u>

The Preliminary Market Assessment, which is included in the Humu`ula/Pi`ihonua Master Plan gives a good introduction to what Eco-tourism is and what role it can play in the economic development of Humu`ula.

Ecotourism is a very attractive and compelling concept. It reflects a growing global concern for the environment and the quality of life of communities. At the same time, however, it is very difficult to define. Definitions of ecotourism have largely reflected the many different values of specialty travel and niche market tourism. The most common of these definitions have developed out of the more traditional notions of "nature tourism," "culture tourism," and "adventure travel". Other definitions also include related sports activities such as big game fishing, parasailing, skiing, kayaking, surfing, snorkeling, scuba, and many others. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-3)

What ecotourism has added to these is a concern by tour operators for the wellbeing of the environment and local cultures where their tours take place. How this is done varies considerably, with some tour operators taking more activist roles in promoting these values, while others are more restrained in their approach. The more activist Eco-tour companies exhibit strong support for environmental and social causes. Companies employing the restrained approach may appear to differ little from traditional forms of specialty travel and are sometimes accused of expropriating the term "ecotourism" for purely financial gain. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-3)

Agreeing upon a precise definition of ecotourism has, therefore, been difficult and sometimes even been contentious. For our purposes, ecotourism is defined as:

> "Adventure Travel, Nature Travel, Cultural Tourism, Alternative Tourism, and Sustainable Tourism Development that is characterized by one or more of the following:
> (1) a strong concern by the tour operator for the environment and local cultures where the tours are operated;
> (2) a company policy of contributing to local environmental and social causes where the tours are operated; and
> (3) the education of both guides and tourists/clients to be more sensitive in the destination environment." (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-3)

Ecotourism represents a smaller and more profitable market segment than is currently attracted to Hawai`i for its natural beauty. Recognizing that ecotourism cannot replace mass tourism to Hawai`i, its potential might be viewed as one of market diversification and a possible source of market stability. Since "ecotourism is about packaging a different product, to a different audience, with vastly different results," achieving the “fit” between Hawai`i's products and this market segment depends on the range and quality of ecotourism products which can be offered and developed for the enjoyment of the visitors. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-10)

The environment is sound for the development of eco-tour, recreation/sport, and "observatory related" activities and businesses. They are well situated within the scope of the tourism industry and seem to be a product that is in demand by a growing number of visitors. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-17)

The natural resources of the Humu`ula/Pi`ihonua lands lend themselves to selected kinds of eco-tour related businesses. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-19)

Ecotourism activities can create additional revenue sources for the Department, provide a valuable economic use for an area, which cannot support permanent structures or impact, as well as, provide an opportunity for “volunteer service” oriented activities. The revenues generated from ecotourism related licenses’ will be used to support DHHL’s operations and habitat restoration of the `Āina Mauna region.

Applicants entering into a license agreement with DHHL will be required to adhere to numerous equipment and procedural requirements for the health and safety of visitors as well as protection of the area’s natural and cultural resources. A final list of required procedures and equipment will be included in the final license agreement, dependent upon the licensed activity. DHHL is seeking an applicant who addresses these requirements in detail and demonstrates an understanding of the health and safety of visitors as well as protection of the area’s natural and cultural resources. Such requirements may include:

- Minimal amount of water available per guest
- Proof of CPR and First Aid training for all employees working within the subject property
- Ability to communicate (via radio/satellite phone) with emergency services while conducting activities within the subject property

- Conducting a cultural and natural resources orientation to all guests before beginning ecotourism activities
- Provide portable toilet facilities and proper disposal of all waste
- Provide liability insurance
- Provide proof of vehicle insurance for all vehicles accessing the subject property
- Mandatory helmet use for all guests engaging in bicycle/ATV/horseback riding activities
- Provide safety briefing and demonstrations on use of all equipment used by guests before commencing an activity
- Maintain activities within approved designated areas

DHHL's objectives for ecotourism activities through the issuance of licenses on the subject property call for proposals that:

- Will be undertaken by qualified applicants: DHHL is seeking applicants who have the experience, expertise and financial capacity to successfully undertake their proposed ecotourism activity on the subject parcel.
- Generate income for DHHL: DHHL is seeking income return on its lands in Humu`ula. Currently the property produces little income and the income the property does produce is far less than the cost of maintaining the property. DHHL seeks to increase its income return on the property while also ensuring the protection of the area's natural and cultural resources. The income generated from ecotourism licenses will go towards the management of the entire Humu`ula property.
- Include a volunteering component: A relatively new segment of ecotourism, integrates volunteering activities into tourism activities. These volunteer "service" trips, allow participants the opportunity to volunteer at the site they are visiting and thus, give back to the community. At Humu`ula, DHHL is in a program to restore the native ecosystem to the region, through activities such as native tree/plant replanting and invasive species removal. Thus, DHHL encourages respondents to the RFP to consider ecotourism activities that incorporate regular voluntary assistance by the licensee and its customers and others as part of its ecotourism program, on site at Humu`ula.

DHHL will evaluate the submitted proposals and may select multiple applicants whose proposals best satisfy DHHL's RFP objectives and selection criteria. The selected applicants may be granted a license from DHHL for their proposed activities. Terms of the license are further discussed in the RFP. Applicants will be responsible for obtaining all required land use entitlements and government approvals/permits for their licensed activity.

Types of Activities

Ecotourism and recreation related activities, a growing sector of the island's visitor industry, have great potential within Humu`ula due to its unique natural and cultural resources. Ecotourism can provide a valuable economic use for an area, which, until now has not been utilized to its full potential and which cannot support permanent structures or impact. The potential uses and activities include:

- Biking Tours
- Bird Watching Tours
- Nature Tours
- Camping

- Lodge
- Hiking Tours
- Horseback Tours
- Wilderness Resort/Guest Ranch
- Historical Tours
- Nature Tours
- Volunteer “Service” Trips
- Outfitters Retail Store
- Remote Lodging at Huts, Ranches and Cabins

This is not a substantive list but rather an offering of some of the opportunities, which may be available on site.

The concept of critical mass and scale is important to discuss at this point. A number of the enterprises could potentially be headquartered at Humu`ula and possibly at the Sheep Station provided that appropriate office space and related needs are satisfied. Other businesses will use various areas of the property. If the right combination of elements could be assembled, a powerful synergy would result which could stimulate related businesses, and reinforce the strengths of all. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-19)

The lands of Humu`ula and Pi`ihonua are an important asset that can support a variety of businesses that range from eco-tourism to recreation/activities. While some of the proposed enterprises can be wholly sustained on the property themselves, others will utilize the land asset on a regular weekly basis and others on a seasonal basis. The general growth of tourism to the Big Island of Hawai`i will also sustain more eco-businesses where lease recipients may live on the land but either work at or operate businesses elsewhere. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-24)

Gorse Eradication

Gorse is a noxious weed species that is threatening natural habitats and agro-ecosystems around the world, including Hawai`i. Gorse has become established in extensive stands on agriculture and conservation lands on the eastern slope of Mauna Kea. The Humu`ula area suffers from heavy infestations of gorse.

The importance of eliminating this plant cannot be overstated.

Eradication of this noxious plant, that has already rendered thousands of acres useless, is an essential component in any land use and management plan for these lands. Gorse has a life span of 30-40 years while the seed can remain viable in the soil for up to 70-years after that.

DHHL field trials and research projects have shown that shade from trees inhibit the ability for gorse to grown and spread. DHHL has planted portions of the perimeter of the Humu`ula/Pi`ihonua lands with trees to establish a boundary to limit the spread of the weed and has entered into various agreements for gorse eradication and management (chemical, mechanical and biological.)

It is anticipated that commercial-scale timber planting will shade the gorse sufficiently to keep it from producing seeds and perhaps kill it, depending on the tree species planted. With normal forestry operations, each year some portion of the seed bank will be removed. Interim commercial-scale timber planting can serve both as a gorse eradication mechanism, as well as an income generator.

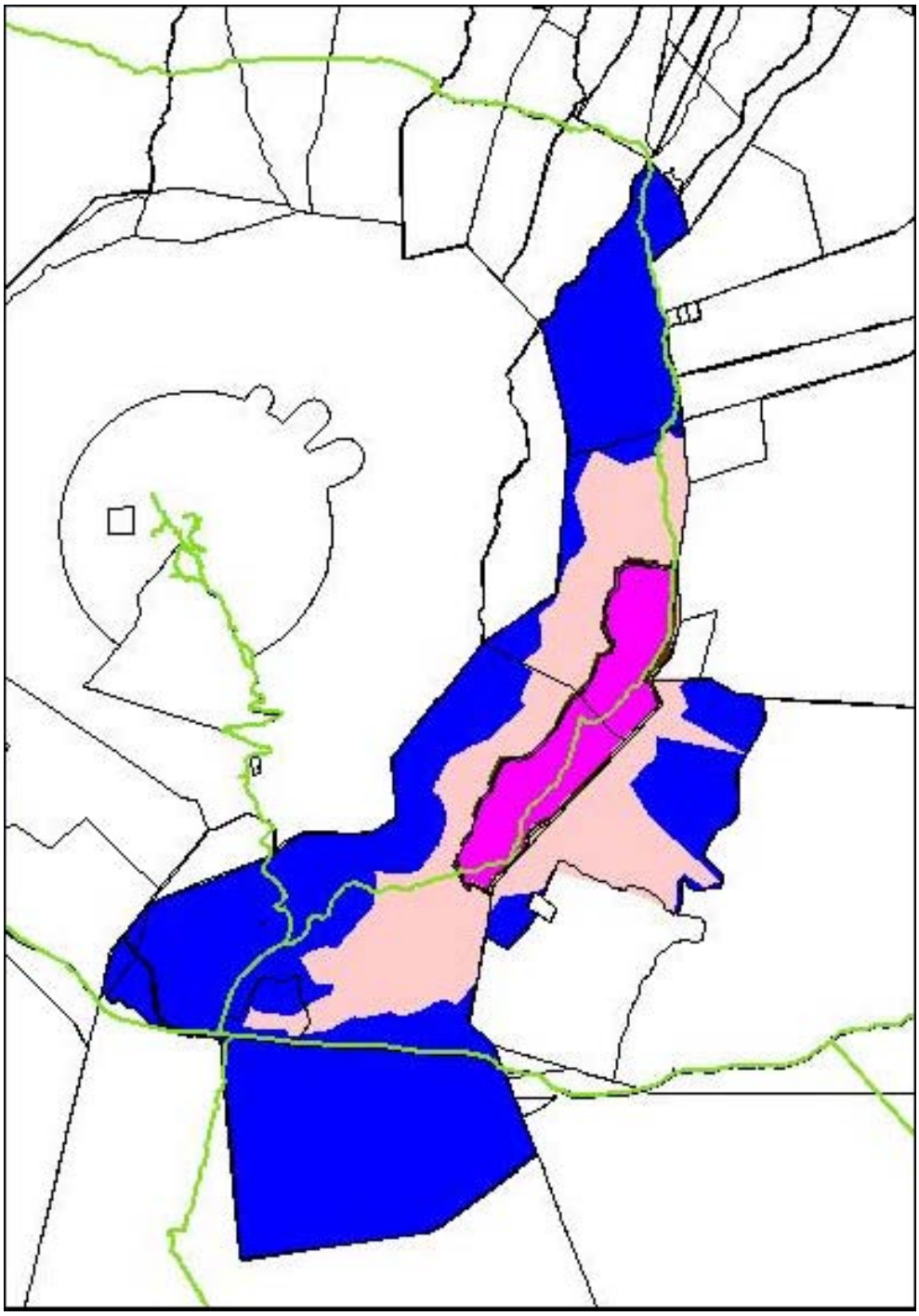
Eucalyptus and Sugi have been proposed because the initial development of these crops in the general area have given rise to increased investment in required infrastructure including marketing analysis and market development efforts by a number of private companies and government agencies. These market development efforts are currently on-going as is the basic supply/demand relationship for these forest crops. Planting trees to eradicate the gorse is a value-added land use – it eradicates the gorse and provides license/lease revenue in the process.

In addition to shading and eventual killing off the gorse, timber harvests can generate cash flow and open the ground for another round of gorse seed germination. Immediately after a timber harvest, gorse seedlings can be controlled with low volume herbicides, followed by another planting of timber. This cycle must be repeated until the majority of dormant gorse seed has germinated. The time estimated for gorse eradication is approximately 100 years due to the estimated 70-years gorse seed remains viable and the growth/harvest cycle of the eucalyptus and/or sugi.

Incorporating a commercial scale timber operation in and around the gorse infested areas provides four significant benefits:

(1) Gorse, classified as a noxious weed under Hawai`i Administrative Rules chapter 68, is shade intolerant and reforestation can limit seed production and gorse regeneration.
(2) As the commercial-scale timber operation serves to control and works to eliminate the gorse, it also provides revenue to DHHL that can be used for other management needs at the site.
(3) Implements the Governor's Clean Energy Initiative.
(4) Allows for native forest restoration.

Other viable gorse eradication opportunities can also be considered.



Map Noting Extent of Gorse Infestation on the Site

Color coding
Salmon: Overall extent of Gorse infestation (varying degrees of infestation over the coverage area)
Pink (with Brown border): Gorse Containment Area (significant infestation in this area)

A tree planting on Maui has shown promising results in its ability to limit gorse growth and expansion. Existing fences will minimize the transportation of seeds by animals. Sugi, a non-invasive and frost tolerant tree species, is suitable for this high elevation site. Studies on eucalyptus have also shown its effectiveness in controlling gorse.

The objective for this part of the implementation program is to initiate a broad RFQ/RFP for gorse eradication, native forest restoration and commercial timber (to include biomass for alternative energy) lease on approximately 10,000-acres. The activities are combined to highlight the actual benefit of forestry to eradicate gorse and restore the native forest:

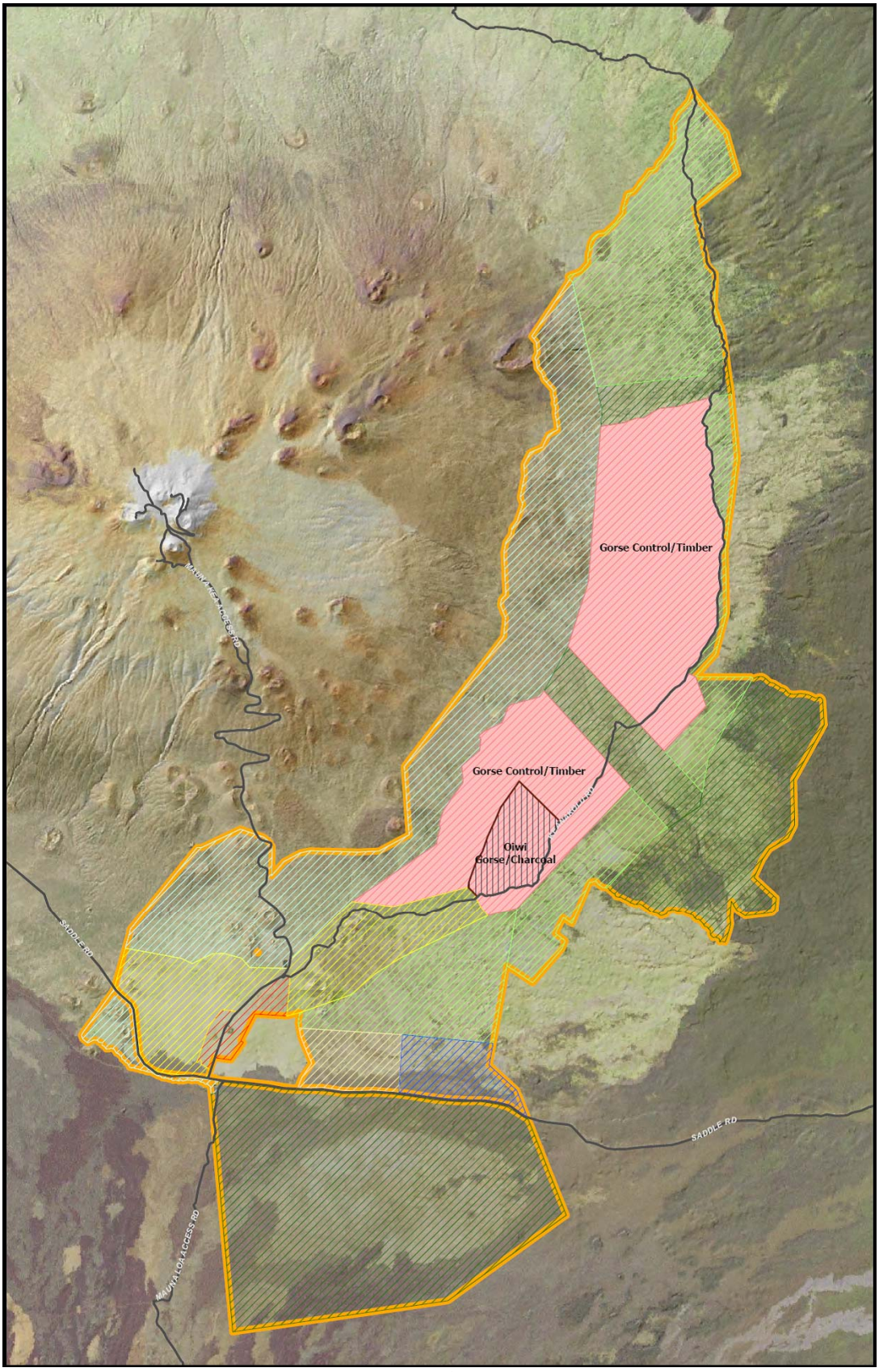
- Incorporate Carbon Credit opportunities to DHHL
- Use timber lease as DHHL implementation of Hawai`i Clean Energy Initiative
- Consider a long term agreement to accommodate multiple planting/harvesting rotations
- Require periodic native forest restoration (i.e. at 5-year intervals) on or outside of leased area

Benefits: Implements pre-existing plans (Master Plan, Agricultural Plan; referenced in various `Ōiwi Plans and Koa Salvage/Gorse Control Environmental Assessment); allows for opportunities for revenue generation; implements Governor's Clean Energy Initiative.

The economic opportunity for the land area not designated for homestead, commercial or ecotourism use is in the long term development of high quality koa. Other proposed agricultural uses are designed as either a temporary use prior to planting koa or as a solution to controlling and managing the gorse problem. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document B-Agricultural Assessment, Page B-1)

The forest restoration and enhancement can take on a variety of complementary focuses, including:

- Commercial non-native tree species (i.e. eucalyptus, sugi, etc.)
    - As noted previously, DHHL field trials have shown that shade from trees inhibit the ability for gorse to grown and spread and DHHL has planted portions of the perimeter of the Humu`ula/Pi`ihonua lands with trees to establish a boundary to limit the spread of gorse.
    - It is anticipated that commercial scale timber planting will shade the gorse sufficiently to keep it from producing seeds and that each year some portion of the seed bank will be removed. Thus, timber planting can serve both as a gorse eradication mechanism, as well as an income generator.
    - The harvest of the timber in approximately 25-years would generate cash flow and open the ground for another round of gorse seed germination. The planting of eucalyptus/sugi seedlings immediately after harvest is recommended to reduce the possibility of a re-infestation of gorse. This cycle must be repeated four to five times until the majority of dormant gorse seed has germinated. The time estimated for gorse control is approximately 100-years due to the estimated 70-years gorse seed remains viable.
    - Ultimately, after decades of commercial forestry have effectively cleaned out the gorse and its seed bank, the property can be considered for restoration to a native forest.
    - It is important to understand that all suggested crops other than koa are designed to initially address and control the gorse then support the eventual reforestation of the land back to native koa. Eucalyptus and sugi should be replaced with koa once it has been determined that gorse seed germination is no longer a threat.
    - Other viable gorse eradication opportunities can also be considered.



Gorse Control/Timber Area

60 +/-year-old Sugi planted on adjoining State Forest Reserve

Most have noted that the fledgling commercial forestry industry on the Big Island needs the critical mass of forest production and processing, as well as the appropriate investment for forestry management.

`Ōiwi Lōkahi o ka Mokupuni o Keawe – Gorse to Charcoal Demonstration Project

In addition to the proposed Gorse Eradication Utilizing Commercial Timber called for in this `Āina Mauna Legacy Program, there is another gorse eradication effort that has been initiated by `Ōiwi Lōkahi o ka Mokupuni o Keawe. It is expected that both activities will operate on the property and each is distinct from the other and thus, there is no apparent conflict in both continuing.

`Ōiwi Lōkahi o ka Mokupuni o Keawe submitted a proposal and request to DHHL that proposed a research and development project by containing, and maybe, eliminating the invasive gorse plant. The intent is to eradicate the invasive gorse shrub in hopes to restore the landscape for use by future beneficiaries.

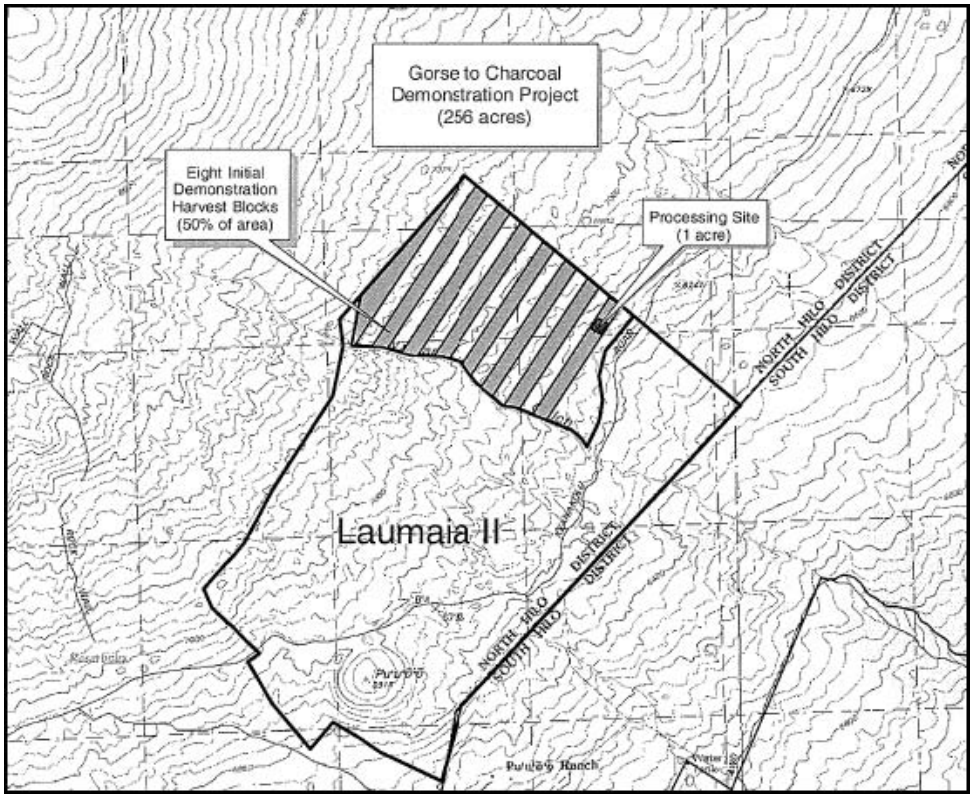
On November 28, 2006, the Department of Hawaiian Home Lands issued a license to `Ōiwi for the gorse infested lands. `Ōiwi is partnering with Carbon Diversion, Inc., a firm that owns a technology, researched and started at the University of Hawai`i, to convert green waste, even rubber tires, into an energy product and a usable bi-product.

DHHL License Agreement No. 673 is for a term of 5-years (which can be extended by mutual agreement for a total term not to exceed 25-years,) or until such time as Licensee ceases to operate the research and development project to eradicate gorse or other permitted use whichever occurs sooner, unless this License is sooner terminated.

The site involves a portion of Laumai`a II, a portion of Tax Map Key (3) 3-8-001-007 and contains an overall land area of one thousand (1,000) acres. According to the License Agreement, the Licensee may not use the premises for any purpose other than strictly to conduct a research and development project using the invasive gorse shrub. No other uses shall be permitted, including grazing rights to demonstrate gorse controlled by livestock. However, the uses may be modified from time to time with the approval of the Chairman of the Hawaiian Homes Commission.

As envisioned, a processing facility will be installed within the 256-acre demonstration area, which is part of the 1,082-acre Laumai`a II pasture paddock. Alternate strips of gorse, on contour and approximately 15 acres each in size, will be harvested to minimize erosion while providing enough gorse to demonstrate the feasibility of the project. If successful, the remaining strips will then be harvested when the grass has grown back. It is expected that up to 3 acres per day will be harvested, requiring about 49 working days, or 2 months to complete all initial harvest blocks.

According to `Ōiwi's initial request, there is no anticipated conflict between their proposed activity and DHHL's gorse control and reforestation projects. Likewise, it is not anticipated that `Ōiwi's activities will negatively conflict with the proposed Gorse Eradication Utilizing Commercial Timber proposed in this `Āina Mauna Legacy Program.



Map Noting Location of `Ōiwi Lōkahi o ka Mokupuni o Keawe Gorse to Charcoal Demonstration Project

Commercial Timber

Commercial forestry in Hawai`i had its beginning over one hundred years ago, with the sale of sandalwood by the Hawaiian ali`i. Since that time Hawai`i's trees have been harvested from the land and the land then used for other crops, such as cattle. There has not been a sustainable commercial forestry industry in Hawai`i until the present.

The demise of both the sugar and pineapple industries along with the vision of forestry minded individuals created the opportunity for a sustainable commercial forestry industry to emerge in Hawai`i. The forestry industry in Hawai`i today is viewed by both private business and government as a very viable economic crop for the state. The Hawai`i Forest Industry Association (HFIA) is the organization that represents private enterprise and is leading forestry research and market development efforts. The State of Hawai`i Department of Land and Natural Resources, Division of Forestry and Wildlife, along with the U.S. Forest Service are examples of government participation.

Because commercial forestry is a new industry for Hawai`i there are many unknowns and risks that face the entrepreneur. However, the huge scope of the international forestry business and the strong world demand for quality forestry products have convinced Hawai`i's industry leaders that forestry is our most promising crop for large acreage in Hawai`i.

History of Commercial Forestry

Commercial forestry has a long and storied history in Hawai`i. If there are any underlying positive themes of this industry since its inglorious debut in the early 1800s as Hawai`i's sandalwood trade, it must be persistence, diversity, and improvement.

For hundreds of years, native Hawaiians lived in harmony with the land. Elaborate systems of maintaining balance between the people and the land existed, and forests were recognized as a critical component of perpetuity. Forests provided both direct and indirect benefits -from canoe logs to clean water for lo`i. As western ways were introduced, however, that balance shifted. For almost 80 years, Hawai`i's forest resources were exploited to provide for changing social values.

In the late 1870s, island residents began to realize that a diminished forest cover was adversely impacting their lives. Over the next century attempts were made to "right the wrong" by setting aside tens of thousands of acres for watershed protection and by managing feral ungulate populations. On many private lands, however, forest conversion to agricultural uses continued. Hawai`i's two primary tree species, koa and `ōhi`a, were used for a variety of wood products, but management of the forest – as a forest and for a forest, seldom occurred. Wood was often a byproduct of other land uses and conversion to non-forest cover was common. Hawai`i's forest industry remained small in comparison to agriculture and pasture.

Fifty years ago, the economic sustainability of even a small wood industry in Hawai`i was questionable. In spite of Hawai`i's world class environment for growing trees, the available wood resource continued to diminish and startup businesses continued to fail. Attempts were made by the State and others to establish a commercial forest industry in Hawai`i that would create jobs, replace imports of wood products to Hawai`i, and generate income from State lands in perpetuity. Over 15,000 acres of DLNR land was cleared and planted to a variety of commercial tree species, thereby enhancing existing public land tree plantings dating back to the 1880s.

The environmental movement that began a decade later in the 1960s, however, stymied this commercial growth. New fields of science were rediscovering what native Hawaiians had learned over a millennium of experience. True sustainability is about taking care of the land in ways that can provide a living for both current and future generations.

The global forest industry of today has spent the last 35 years learning how to be profitable without destroying the land base upon which it is dependent. Technology is decreasing impacts on the land and increasing utilization of finite resources. Science is providing land managers with tools that maintain forest cover for many values. Economically, the value of forest products has risen to where many land protection practices are now affordable. Social values are changing as consumers appreciate forests in many ways, and they are willing to pay for their convictions. In combination, these developments are leading to a sustainability not seen for over 200 years in Hawai`i. (Commercial Forestry Areas for the Department of Hawaiian Home Lands, Pages 1 & 2)

Current Status of Hawai`i's Commercial forests

Today only about half of the State's tree plantations remain available and accessible to Hawai`i's commercial forest industry. In total, these state lands are not capable of supporting wood processing facilities in Hawai`i that must compete in today's global industry.

In 1995, following the significant downsizing of Hawai`i's sugar industry, thousands of acres became available for alternative uses. After careful due diligence, two large landowners on the Big Island dedicated land to growing Hawai`i's commercial forest industry. By 2005, Kamehameha Schools and Parker Ranch had combined efforts to create 32,000 acres of new plantations, resulting in an estimated 42,000 acres of accessible, available, and commercially acceptable trees.

The wood from these private and public forest lands is attracting a variety of new processing facilities to Hawai`i, including biofuels, wood chips, veneer, and lumber. An integrated industry representing all of the above processing options is essential for attracting forest industry investors to Hawai`i. The global wood products industry demands that no commercial part of a tree go to waste, since every tree contains wood with a range of values. Much like a cow produces both stew meat and steak, each tree must be processed to its full potential so that waste is minimal and investor rewards are greatest.

Although Hawai`i's current 42,000 acres of commercial forests can perpetually support a chipping or biofuels industry, much of the significant value adding of veneer and lumber would be lost at this level of production. It would be wasteful to process the entire cow into stew meat.

About 62,000 acres is needed to sustainably support each of the four types of processing now being proposed for Hawai`i. This can be accomplished if more land is dedicated to commercial forestry. An additional 20,000 acres is needed to provide enough wood for all processors to be competitive with their international peers.

A fully integrated industry at peak production on 62,000 acres could generate tens, if not hundreds, of millions of dollars in revenue and create hundreds of new jobs. As a fully renewable industry, replicable over generations, it would help Hawai`i reduce its current dependence on wood product and energy imports, create an export industry, maintain large open spaces, and enhance our environment in ways that only forests can.

As the fourth largest landowner in Hawai`i, the Department of Hawaiian Home Lands has several immediate opportunities to participate in this expanding industry, thereby generating income for the trust and providing alternative land uses for homesteaders. Growing trees for commercial purposes is the most immediate forest based opportunity.

All forestry efforts require a minimum of natural land characteristics to succeed. These include adequate rainfall (>40" per year) and good soils (>25" deep) with adequate soil nutrition. DHHL lands included in this report meet or exceed these criteria. (Commercial Forestry Areas for the Department of Hawaiian Home Lands, Pages 2 & 3)

Forest Products and Biomass for Alternative Energy Opportunities (liquid fuel and electricity)

Several forestry products and alternative energy producers have been identified as possible users of large scale areas for forestry development. Some of these have recently requested use and leasing of nearby State lands for these purposes. These, and others, may be considered as possible users of land within Humu`ula/Pi`ihonua:

SunFuels Hawai`i (Michael Saalfeld & John Ray)

SunFuels Hawai`i LLC proposes to establish a biomass-to-liquid (BtL) plant for the production of SunDiesel™ fuel on the Island of Hawai`i. Biomass for feedstock would be provided by tree and other non-food crops through long-term supply contracts.

The BtL facility would employ gasification technology licensed by CHOREN Industries and Shell Middle Distillate Synthesis (Fischer-Tropsch) technology to produce clean, renewable diesel fuel (SunDiesel™) for distribution and sale on the Big Island and other markets.

SunFuels Hawai`i has been working with Forest Solutions and others in identifying appropriate sites for forest production for the biomass-to-liquid-fuel operation. In November 2008, the BLNR approved in principle the direct leasing of up to 10,000-acres of state land in the Hāmākua area. The intent is for SunFuels Hawai`i to work with existing lessees on a compatible multi-use of the properties.

Hamakua Biomass Energy (Guy Gilliland, Allan King, Hilton Unemori & Kent Smith)

Hamakua Biomass Energy, a Maui-based bioenergy company, is planning to build a 30-megawatt biomass energy facility, which would burn eucalyptus trees for energy and supply 15 percent to 18 percent of the island's power, on a 60-plus acre tract between `Ō`ōkala and Pa`auilo.

In addition, in November 2008, Hamakua Biomass received BLNR approval in principle to lease 10,500-acres of vacant and unencumbered state land for tree cultivation. Hamakua Biomass is seeking a 50-plus year lease on the state property.

Hu Honua Bioenergy (Dan KenKnight & Guy Simmons)

Just north of Hilo, Hu Honua Bioenergy LLC, a $30-million project, is restoring the old Hilo Coast Processing Co. sugar mill at Pepe`ekeo. The company has been at work retrofitting the facility to burn biofuel, clearing the 26-acre property of old coal and preparing the land to plant leucaena, a fast-growing tree used for fuel wood and cattle feed.

The Hu Honua bioenergy facility is a 24-megawatt (MW) power station (providing 7 percent to 10 percent of the island's energy demand) consisting of a readapted existing facility that is being retrofitted with modern “green” technology to convert locally grown sustainable biomass into electricity. The goal of the clean energy project is to utilize 100 percent renewable feedstock (eucalyptus, leucaena, green waste from the county, leftover material from land clearing and other wood residue,) to generate electricity at the plant.

Eucalyptus Planted on the Hāmākua Coast

Haina Hawaiian Hardwood Mills (Bob Marr & Chuck Barker)

Haina Hawaiian Hardwood Mills proposed a timber operation on the Hāmākua coast. Recent media suggests that there may be serious financial concerns with the company however; they are included in this summary as they may ultimately move forward with their plans.

In December 2008, Haina Hawaiian Hardwood Mills requested to lease at least 10,000-acres of state forest land. The company asked that the Board of Land and Natural Resources lease "all available state agricultural forestry land on the Big Island of Hawai`i, for the present time geographically confined to the Hāmākua coast between Hilo and Waipi`o Valley."

The company would harvest lumber for wood veneer, furniture and other uses, and plant trees for carbon sequestration. A power co-generation plant would burn biomass to run the mill. Operations are scheduled to begin in early February 2009 with woods harvested from private land. The company will not only use the facility for milling woods like koa, `ōhi`a, eucalyptus, robusta, mango, mahogany and albizia, it will also use it for coffee roasting, canoe building, arts and craft, an education center, furniture building by local craftsman, picture frames and they may even have a macadamia nut dryer.

Plans are to ultimately integrate the operation to include a bio refinery which will produce power and can then be used in the existing power plant. At full production, in the plant and in field operations, the company hopes to hire up to 260 people, which will essentially be included entirely of local residents.

Tradewinds Forest Products (Don Bryan & Gary Edwards)

Tradewinds Forest Products has a license to harvest 8,000-acres of eucalyptus and maple in the state's Waiākea Timber Management Area, which is comprised of three Big Island forest reserves. Tradewinds will manufacture and market veneer made from eucalyptus logs. The company is located in the town of `Ō`ōkala on the Big Island's Hāmākua Coast.

Tradewinds Forest Products will produce veneer for use in plywood and laminated veneer lumber manufacturing. As the company matures, it may add a plywood manufacturing component, which would create plywood to sell locally. Tradewinds' facility will include a wood-fired co-generation plant which will provide power and steam for the manufacturing process and sell surplus power to HELCO.

Hawai`i Electric Light Co. has signed an agreement to buy renewable energy produced by a biomass-powered generation facility on the Big Island. The facility is a project of Tradewinds Forest Products LLC and Rockland Capital Energy Investments. Tradewinds is building a veneer mill on the Hāmākua Coast at the site of the old `Ō`ōkala Sugar Mill, which will use scrap wood as fuel to power the mill and provide excess power to the utility. Under the agreement, the utility will buy between 2 megawatts and 3.6 megawatts of electricity from Tradewinds on a scheduled basis. The mill site in `Ō`ōkala has been purchased. The air permit from the Department of Health's Clean Air Branch was obtained on October 3, 2008, and the stormwater permit is in hand.

Hawai`i Island Hardwoods (Jim Quinn & Kent Untermann)

The Board of Land and Natural Resources agreed to allow Hawai`i Island Hardwoods LLC, a startup sawmill operation, to harvest 1,100-acres of non-native timber on government land near Hilo. The five-year agreement is the second license allowing large scale harvests of state-owned timber (another company, Tradewinds Forest Products, already has a license to harvest in the Waiākea Forest Management Area.) In addition, Hawai`i Island Hardwoods has a timber supply agreement for certified species from an Hōnaunau, South Kona property, owned by Kamehameha Schools.

Hawai`i Island Hardwoods intends to be a consistent supplier of a variety of quality locally grown hardwoods, including: Acacia Koa, Lehua `Ōhi`a, Tropical Ash, Eucalyptus Saligna, Eucalyptus Robusta, Australian Red Cedar (Toona Ciliata) and Nepal Alder. Their first dry kiln began operation in June, 2008; it utilizes solar energy to heat water which is then circulated through heat exchangers to raise the air temperature in and through the drying chamber (a back up propane burner can be used, if necessary.)

In addition to the above operators, the region has also attracted international timber investment. The following illustrates the scope and scale of the forest industry on the island.

March 1996 - Prudential Timber leases 24,000-acres on the island of Hawai`i

Prudential Timber Investments Inc. (PruTimber) leased approximately 24,000-acres of land on the North Hilo-Hāmākua Coast from Kamehameha Schools Bishop Estate.

The land was planted with eucalyptus trees with the intent of export or to supply local processing facilities. Eucalyptus trees will grow very rapidly in Hāmākua's climate. Expected harvest cycle is seven to eight years. Eucalyptus is a versatile hardwood which can be manufactured into several products, including pulp, boards, veneer and panels.

Boston-based Prudential Timber Investments Inc., founded in 1990 as a subsidiary of The Prudential Insurance Co. of America, acquires and manages timber properties on behalf of pension funds and other institutional clients. PruTimber's investments aim to earn a competitive rate of return by growing and selling timber to manufacturers of pulp, paper and solid wood products. PruTimber manages nearly 150,000-acres of commercial timberland in six states.

March 2000 - Parker Ranch leases land to eucalyptus grower PruTimber

Parker Ranch has entered the forestry business, leasing 10,000-acres above the Big Island's Hāmākua Coast to Prudential Timber Investments. PruTimber already grows 15,000-acres of eucalyptus in Hāmākua and 5,000-acres in Ka`ū, and eucalyptus is the likely tree for the Parker Ranch land. The land is in Pā`auhau, at an elevation of 1,500 to 5,000 feet; the 15-year lease may be extended to 25 years. All the Parker Ranch land is above former sugar lands.

July 2005 - The Hancock Timber Resource Group (HTRG) acquires PruTimber

The Hancock Timber Resource Group (HTRG) announced that it has signed an agreement to acquire Prudential Timber Investments, Inc. (PruTimber), the timberland investment management unit of Prudential Financial, Inc.

With the acquisition, HTRG will assume management responsibility for PruTimber's approximately 450,000-acres of timberland worth approximately $660-million. The transaction will bring HTRG's total acreage and assets under management to approximately 2.5 million-acres and $3.1-billion. The assets currently managed by PruTimber include more than 20,000-acres in Hawai`i.

HTRG, a division of the Hancock Natural Resource Group, Inc., an operating company of MFC Global Investment Management, manages timberland in the Pacific Northwest and the Southeast United States as well as Canada, New Zealand and Australia. MFC Global Investment Management is the institutional asset management arm of Manulife Financial Corporation. HTRG is based in North America with investment offices in Toronto, Boston, London, Tokyo, and Hong Kong.

August 2007 - Cambium Global Timberland Ltd acquired the leasehold interest of the 6,100 leasehold acres of Big Island timber in Pāhala for $6.1 million

Cambium, which invests in forestry assets that are managed on an environmentally and socially sustainable basis, said it expects to produce timber and replant eucalypt species - a broader group of trees that includes eucalyptus - on the Big Island. Australia-based New Forests Asset Management will manage Cambium's Big Island timber land.

Cambium is an investment fund established in 2007 and is traded on the London Stock Exchange. The fund is managed by CP Cogent Asset Management LP, an affiliate of Dallas-based private equity investment bank Cogent Partners LP.

New Forests is a forestry investment management and advisory firm currently managing $200 million in assets throughout Australia, New Zealand, the U.S. and the Asia Pacific region. The company's investment philosophy is unique in seeking assets that deliver traditional timber returns as well as returns from emerging environmental markets, such as carbon, biodiversity and water quality.

New Forests endeavors to optimize timberland returns through the inherent benefits provided by forests' "ecosystem services". These ecosystem services have traditionally been externalized in market terms but are beginning to generate commercial value as environmental markets emerge.

2008 - Granthan, Mayo and Otto (GMO) Renewable Resources, a Boston based investment firm acquired the lease on approximately 13,000 eucalyptus–laden acres in Hāmākua

Kamehameha Schools has fee simple ownership of the land; while GMO owns a ground lease on the property (GMO's lease on the Kamehameha Schools' land is set to expire in 2021).

Other Complementary Forest Plantings on the Big Island:

Several large acreage commercial eucalyptus tracts have been planted in recent years. These complement the State (DLNR) tracts.

- Pāhala - Kamehameha Schools - 6,100-acres

August 2007: Cambium Global Timberland Ltd acquired the leasehold interest of the 6,100 leasehold acres of Big Island timber in Pāhala for $6.1 million. The property includes a 3,700-acre plantation to be managed for timber productions (the trees are expected to mature in 2012) and 2,400-acres of native Hawaiian forest.

- Pā`auhau - Parker Ranch - 10,000-acres

May 2008: Cambium Global Timberland Ltd acquired the leasehold interest in the land for about $7.9 million. The land is owned in fee by Parker Ranch and is in Pā`auhau. Cambium bought the leasehold interest and rights for the timber from another investor, and said it may extend its lease with Parker Ranch until 2025.

- Hāmākua-N/S Hilo - Kamehameha Schools - 24,000-acres (leased area); 15,000-acres (growing area)

Granthan, Mayo and Otto (GMO) Renewable Resources, a Boston investment firm acquired the lease on approximately 13,000 eucalyptus-laden acres in Hāmākua. Kamehameha Schools has fee simple ownership of the land; while GMO owns a ground lease on the property (GMO's lease on the Kamehameha School's land is set to expire in 2021.)

- Hōnaunau - Kamehameha Schools - 34,600-acres

In 2008, KSBE finalized an agreement with Untermann and Quinn for the Hōnaunau Management Area which is a 34,600-acre forest located on the slopes of Mauna Loa. Kamehameha Schools intends selective harvest and restoration of the native forest.

- Waiākea Timber Management Area (WTMA) - State-DLNR - 8,000-acres

Timber inventory data from 1997 indicate that the WTMA contains over 17,000,000-ft3 of timber on a gross merchantable basis on approximately 11,700-acres. Tradewinds Forest Products has the license to harvest 8,000-acres of eucalyptus and maple in the state's Waiākea Timber Management Area.

- Pepe`ekeo - State-DLNR - 1,100-acres

Hawai`i Island Hardwoods' sawmill in Pepe`ekeo will harvest 1,100-acres of non-native timber on government land near Hilo. The five-year agreement with Hawai`i Island Hardwoods LLC is just the second license allowing large scale harvests of state-owned timber (Tradewinds at Waiākea Timber Management Area being the other.)

- Hāmākua Timber Management Area (HTMA) - State-DLNR - 3,000-to 4,000-acres

The HTMA is located on the north and northeast slopes of Mauna Kea volcano along the Hāmākua coast between the 1,500-and 6,000-foot elevation within the North Hilo and Hāmākua Districts. The tree stands vary in size and are dispersed throughout the area.

The majority of trees in the planted stands are eucalyptus varieties with Eucalyptus robusta being the dominant species. Other species include Australian red cedar, tropical ash, sugi, and other minor tree species. The trees are ready for commercial harvesting.

Sometime in the future, DLNR-DOFAW intends to issue a Request for Proposals for a timber harvest license.

- Nienie Timber Management Area (NTMA) - State-DHHL - 500-acres

The NTMA is located on the northeast slope of Mauna Kea along the Hāmākua coast at approximately the 3,500 foot elevation within the Hāmākua District. The majority of trees in the planted stands are eucalyptus varieties with Eucalyptus robusta being the dominate species. Other species include Australian red cedar (Toona ciliata) and E. saligna. The trees are ready for commercial harvesting.

Sometime in the near future, DHHL intends to issue a Request for Proposals for a timber harvest license for this area.

<u>Eucalyptus</u>

Eucalyptus as a short term tree crop is recommended because it will provide a faster return on investment than koa or sugi and may provide an infusion of cash as the Humu`ula/Pi`ihonua area use is in transition. Eucalyptus has been planted in adjacent areas and is growing very well. Several species of eucalyptus have been recently tested at Humu`ula for their growth and form. These should be evaluated to ensure that they are non-invasive, economically viable, and capable of shading gorse properly.

Because thousands of acres of eucalyptus are planted in the region, the basic infrastructure and market development for this industry will be in place and can be used advantageously by the Department of Hawaiian Homes Lands.

There is flexibility in this crop as the eucalyptus can also be harvested as saw timber, veneer, and for ply board manufacturing by extending the harvest to 15 to 20 years if future conditions made it more favorable to delay the cash flow. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document B-Agricultural Assessment, Page B-9)

Sugi

Sugi, often called sugi pine (Cryptomeria japonica), is an aromatic softwood native to Japan. Cryptomeria is a genus of the conifer in the cypress family Cupressaceae; it includes only one species, Cryptomeria japonica. It is endemic to Japan, where it is known as sugi. The tree is also often called Japanese Cedar, though the tree is not related to the cedar.

Sugi is a market preferred choice. Although sugi is planned as a long range gorse control tool, it also has market potential. Harvesting of sugi occurs approximately at 25-to 35-years post plant and several rotations are needed to eradicate gorse as the gorse seed remains viable for up to 70 years.

Sugi is a higher quality wood which local sawmills and woodworkers will pay a premium. Also, there is a very limited quantity of sugi available with no plans of future plantings at this time.

The State Tree Nursery would be a resource for assistance in securing sufficient seed for planting. Seed planting and seedling care would follow commercial tree plantation guidelines.

Planting the seedling trees into the gorse area will need to be accomplished immediately following chemical/mechanical or other means for gorse elimination. If burning is utilized as a mechanical means to remove the gorse, herbiciding must follow in a timely manner to insure gorse seedling growth is controlled (burning promotes gorse seed germination). Some gorse control around the seedling trees may be necessary for the first two years or until the sugi trees are well established.

Sugi as a tree species are very hardy and have the ability to slow their metabolism down during climate stress such as prolonged droughts. This ability is very important to the success of the gorse control as these trees will be able to stand the stress of a drought, enhancing the likelihood of success.

The harvest of the sugi in approximately 25 to 35 years would generate cash flow and open the ground for another round of gorse seed germination. The planting of sugi seedlings immediately after harvest is recommended to reduce the possibility of a re-infestation of gorse. This cycle must be repeated until the majority of dormant gorse seed has germinated. The time estimated for complete gorse eradication is approximately 100 years due to the estimated 70 years gorse seed remains viable. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document B-Agricultural Assessment, Pages B-8 & 9)

Prior forestry trials throughout Hawai`i suggest that sugi is non-invasive. A small grove of sugi was planted near the Hakalau Forest National Wildlife Refuge in the 1930s as part of the Civilian Conservation Corp. In seventy years, only a few sugi trees have taken root away from the original planting site. In another nearby sugi planting of similar age however, several trees were observed a few hundred feet away. (Final Environmental Assessment, Koa Salvage-Reforestation and Gorse Containment, Page 12)

Sugi can naturalize, however, and must be periodically monitored to ensure that it does not establish itself in native forests located downstream of the gorse control areas.

The 6,000 -7,000 foot elevation is in the upper range for koa. At this elevation, koa seedlings can suffer from frost mortality until they become established. Sugi is frost tolerant and a stand of sugi may serve as a shelter belt for future koa plantings. Sugi nearby could enable koa a better chance of surviving until the koa seedlings become established. A koa perimeter will be planted along the lower elevation border with the Hakalau Forest National Wildlife Refuge. (Final Environmental Assessment, Koa Salvage-Reforestation and Gorse Containment, Page 12)

DHHL's Existing Gorse Containment Project

In 2001, DHHL finalized an Environmental Assessment for a Koa Salvage-Reforestation and Gorse Containment project at Humu`ula. The proposed project consisted of two parts, koa salvage-reforestation and gorse control. The introduction describes how the reforestation of the gorse infested area would in turn lead to the eradication of gorse in a symbiotic relationship.

Under the gorse project a 250 foot wide perimeter (buffer) of sugi trees would be planted to contain the leading edge of the gorse infestation. It is anticipated that sugi will shade the gorse sufficiently to keep it from producing seeds. Gorse control currently consists of aerial spraying, ground spraying, and mulching.

Sugi was trial planted on about 68 acres of the south and east boundaries of the gorse buffer. A 167 acres koa buffer was planted along the western border with the Hakalau Forest National Wildlife Refuge. Trial tree plantings within several ten acre fenced exclosures were also established. Koa, māmane, sugi, and douglas fir were among the species planted to test their capability of growing at the 6,000 to 7,000 foot project elevation to further abate gorse growth.

Revenues derived from timber salvaging will be used to finance site maintenance for the koa and gorse projects, promote forest-based economic opportunities, investigate sustainable forestry, and contain and abate gorse growth.

Gorse, classified as a noxious weed under Hawai`i Administrative Rules chapter 68, is shade intolerant and reforestation can limit seed production and gorse regeneration. A tree planting on Maui has shown promising results in its ability to limit gorse growth and expansion.

Multiple Benefits of Commercial Timber to Control Gorse

It is anticipated that commercial-scale timber planting (i.e. sugi and/or eucalyptus) will shade the gorse sufficiently to kill it and keep it from producing seeds and that each year some portion of the seed bank will be removed. Thus, interim commercial-scale timber planting can serve both as a gorse eradication mechanism, as well as an income generator.

Sugi and Eucalyptus have been proposed because the initial development of these crops in the general area have given rise to increased investment in required infrastructure including marketing analysis and market development efforts by a number of private companies and government agencies.

Aerial Image of Planting of Gorse Containment Area

These market development efforts and the basic supply/demand relationship for these forest crops are currently on-going. Planting trees to eradicate the gorse is a value-added land use - it eradicates the gorse and provides license/lease revenue in the process.

Planting trees to eradicate the gorse is a value-added land use. Gorse has a life span of 30 to 40 years while the seed can remain viable in the soil for many years after that. It is expected that sugi will shade the gorse sufficient to keep it from producing seeds and that each year of subsequent management some portion of the seed bank will be removed. Each year that sugi impedes gorse growth and seed production results in decreased herbicide use. (Final Environmental Assessment, Koa Salvage-Reforestation and Gorse Containment, Page 13)

It is important to understand that all suggested crops other than koa are designed to initially address and eradicate the gorse then support the eventual reforestation of the land back to native koa. Eucalyptus/Sugi should be replaced with koa once it has been determined that gorse seed germination is no longer a threat. Both eucalyptus sugi and are of lower economic value than koa.

In addition, DHHL has the opportunity to participate and benefit from other offsite programs through this commercial timber project. These include opportunities from carbon sequestration and participation in Hawai`i's Clean Energy Initiative (both programs are summarized below).

Carbon Offsets - Global Warming and Climate Change

In the early 1980s, scientists were beginning to raise concerns about global warming and climate change. The Earth is heating up because gases produced from vehicles, power plants, deforestation and other sources are building up in the atmosphere, acting like a thick blanket over our planet.

The terms global warming and climate change are often used interchangeably, but the two phenomena are different. Global warming is the rise in global temperatures due to an increase of heat-trapping carbon emissions in the atmosphere. Climate change, on the other hand, is a more general term that refers to changes in many climatic factors (such as temperature and precipitation) around the world.

The world mostly agrees that something needs to be done about global warming and climate change. With global warming on the increase and species and their habitats on the decrease, chances for ecosystems to adapt naturally are diminishing. Many are agreed that climate change may be one of the greatest threats facing the planet.

Tropical reforestation can mitigate global warming because trees sequester carbon through photosynthesis, converting carbon dioxide and water into oxygen and plant matter. Hence, forests that grow in area or density will reduce atmospheric CO2 levels. (Carbon is released if a tree or its lumber burns, but as long as the forest is able to grow back the net result is carbon neutral.)

Carbon offset can best be described as an act of paying a third party for reducing ("offsetting") greenhouse gas emissions when one is unable or unwilling to reduce one's own emissions. Some countries (or companies) seek to trade emission rights in carbon emission markets, purchasing the unused carbon emission allowances of others.

The idea of paying for emissions elsewhere instead of directly reducing your own emissions is closely related to the concept of emissions trading. However, while emissions trading is mostly in a strict formal and legal framework, carbon offsets generally refer to voluntary acts, often arranged by a commercial carbon offset provider.

Carbon credits are a key component of national and international emissions trading schemes that have been implemented to mitigate global warming. Credits can be exchanged between businesses or bought and sold in international markets at the prevailing market price. Credits can be used to finance carbon reduction schemes between trading partners and around the world.

There are also many companies that sell carbon credits to commercial and individual customers who are interested in lowering their carbon footprint on a voluntary basis. These carbon off setters purchase the credits from an investment fund or a carbon development company that has aggregated the credits from individual projects. The quality of the credits is based in part on the validation process and sophistication of the fund or development company that acted as the sponsor to the carbon project.

Hawai`i Clean Energy Initiative

On behalf of the State of Hawai`i, Governor Lingle and the U.S. Department of Energy (DOE) entered into a Memorandum of Understanding (MOU) to establish the Hawai`i Clean Energy Initiative, a long-term partnership designed to accelerate the transformation of Hawai`i into one of the world’s first economies

based primarily on clean energy resources. Opportunities may exist to include activities related to the Clean Energy Initiative with the property at Humu`ula/Pi`ihonua.

By government estimates, Hawai`i relies on imported fossil fuels, such as crude oil and coal, for more than 90 percent of its energy needs. The goal of the Hawai`i Clean Energy Initiative is to use renewable resources - such as wind, sun, ocean, geothermal, and bio-energy - to supply 70 percent or more of Hawai`i's energy needs by 2030. This will reduce the state's dependence on imported oil and help bring energy price stability to Hawai`i consumers.

The partnership will provide technical assistance and technology program support for a variety of innovative projects that draw on technologies developed through a range of DOE research and development programs. The Legacy Program may benefit from this initiative. The Hawai`i Clean Energy Initiative will also tap the expertise of other federal agencies, including the U.S. Departments of Agriculture and Defense, national research laboratories, and research and development entities, as well as the private sector. The Hawai`i Clean Energy Initiative recognizes that, while DOE and the State are providing the leadership, ultimately all of Hawai`i's citizens will need to be involved to create real and lasting change.

Sustainable Koa Forestry

Sustainable koa forestry includes koa salvage and restoration/reforestation of remnant koa forests.

The environmental and cultural benefits of forestry, e.g. clean water and air, soil augmentation, wildlife habitat, and traditional forest uses are well known if not well quantified. Economic returns from commercial forestry in Hawai`i are not well quantified either, as a fully modernized industry is still developing. In combination, however, these multiple values from forest lands will represent significant value to DHHL trust lands.

There are two types of commercial forestry that can generate revenue for DHHL. Koa forest restoration is currently the most lucrative. Management of DHHL lands as koa forests combines high quality hardwood returns from the sale of koa wood, eco-tourist opportunities as the forest is restored, and cultural uses such as gathering, and canoe logs.

Fortunately, DHHL can now adequately predict returns from koa forestry as a result of three years of koa salvaging on DHHL lands at Humu`ula. Potential tourist and cultural uses and revenues are not discussed in this review.

Koa Salvage Site

Koa Salvage

Koa Salvage creates a way to achieve both forest restoration and income generation for DHHL. DHHL has already implemented a koa salvage and reforestation program at Humu`ula. Likewise, DLNR has conducted a study on its neighboring land and is implementing a like program. Each target dead and/or dying koa and allow contractors to enter the property and harvest the koa. The koa salvage and reforestation program seeks to:

- Salvage koa trees before they are further reduced in value by weather, rot, and age, leaving certain trees for wildlife habitat and on-site seed production;
- Promote forest-based economic opportunities in the community;
- Generate income for DHHL;
- Promote koa regeneration from existing seed present in the soil;
- Provide a source of koa wood for Hawai`i's forest industry

The current koa project area is unhealthy and dying, and the ground is littered with wind thrown koa trees and broken branches. Many understory trees are dying as well, as evidenced by sparse crowns, cracked or peeling bark, or damaged tops from falling koa.

Koa Salvage Operation

Extensive research at Keauhou Ranch by Mueller-Dombois, et., al., provides insight as to how reforestation might occur. Mueller-Dombois describes two emergent species, koa and `ōhi`a, as "species ready to take advantages of local disturbances in the forest." Koa, in particular, "seems to be dependent on disturbances of the canopy."

Since the project site is degraded compared to Keauhou and management funds are limited, initial reforestation efforts would rely on soil scarification and natural succession to regenerate and restore a diverse native forest. Some over-story component would be left behind to provide forest bird habitat and insect foraging opportunities for native species and to continue the process of koa seed production on site. (Final Environmental Assessment, Koa Salvage-Reforestation and Gorse Containment, Page 10)

Removing cattle would allow existing trees to produce and maintain root shoots and basal sprouts, thereby increasing foliage and subsequent tree processes. The remaining mature trees would most likely continue its current decline, but at a decelerated rate.

Compaction of soil on and around surface roots from cattle would cease, allowing additional root growth and reversing current trends of root dieback. Compaction from logging equipment, however, would occur on skid trails and landings. Understory trees would continue to die, both from old age and from damage as a result of logging. (Final Environmental Assessment, Koa Salvage-Reforestation and Gorse Containment, Page 12)

Harvested Koa

At Humu`ula, from 2003 to 2005, approximately 100 acres of koa harvest created five full time jobs, supplied enough koa wood to meet the annual needs of at least 60 woodworkers, and generated an average of $3,500 per acre per year in trust revenues.

If some of DHHL's lands that can support koa forests were managed on a reasonable 50 year rotation between harvests, 5,000 acres would sustain this level of output indefinitely (50 years times 100 acres = 5,000 acres). These returns are from an unmanaged, dying koa forest whose primary land use was pasture, however. Improved management practices and dedicating the land as koa forest should result in at least a 30% increase in wood output.

Restoration/Reforestation of Remnant Koa Forest

In April 2006 the Land Management Division Income Property Branch of DHHL produced the document, "Commercial Forestry Areas for the Department of Hawaiian Home Lands". The document gives a good background on the history of commercial forestry in Hawai`i as well as a summary of current industry practices. The document also provides valuable information regarding what commercial timber opportunities in Humu`ula are available and insight into Koa reforestation efforts and practice.

Based on soil, elevation, and rainfall characteristics, there are an estimated 15,500-20,000 acres in Humu`ula and adjacent Pi`ihonua mauka that could be restored and managed as koa forest. Almost half of these lands are currently covered in gorse and would require a long term commitment to restoration and conversion of at least two full rotations (100 years).

Managing all potential koa lands at Humu`ula/Pi`ihonua mauka would create a harvest potential of 310 acres per year and income of $4,450 per harvested acre. Total benefits to the trust from Humu`ula koa could be $1,379,500 in annual revenues, 15 to 20 on site jobs from logging and tree maintenance, and enough wood for at least 150 woodworkers. It should be noted that Hawai`i's woodworking industry has been estimated at about 1,000 woodworkers generating approximately $30,000,000 per year in revenues.

For comparison, a 1997 appraisal of the Humu`ula parcels revealed that cattle ranching in that area would command Annual Fair Market rents that are far below the potential income from koa. Table 1 compares these results. Dedicating only 50% of the lands at Humu`ula for koa management would generate 20 times the annual income historically realized from ranching at Humu`ula and Pi`ihonua. Whether managed as unencumbered trust lands, or as homesteads, koa forested lands offer greater economic opportunity for those relying on them for income. (Commercial Forestry Areas for the Department of Hawaiian Home Lands, Pages 4 & 5)

Table 1 – Comparison of Land Uses at Humu`ula; Cattle and Koa

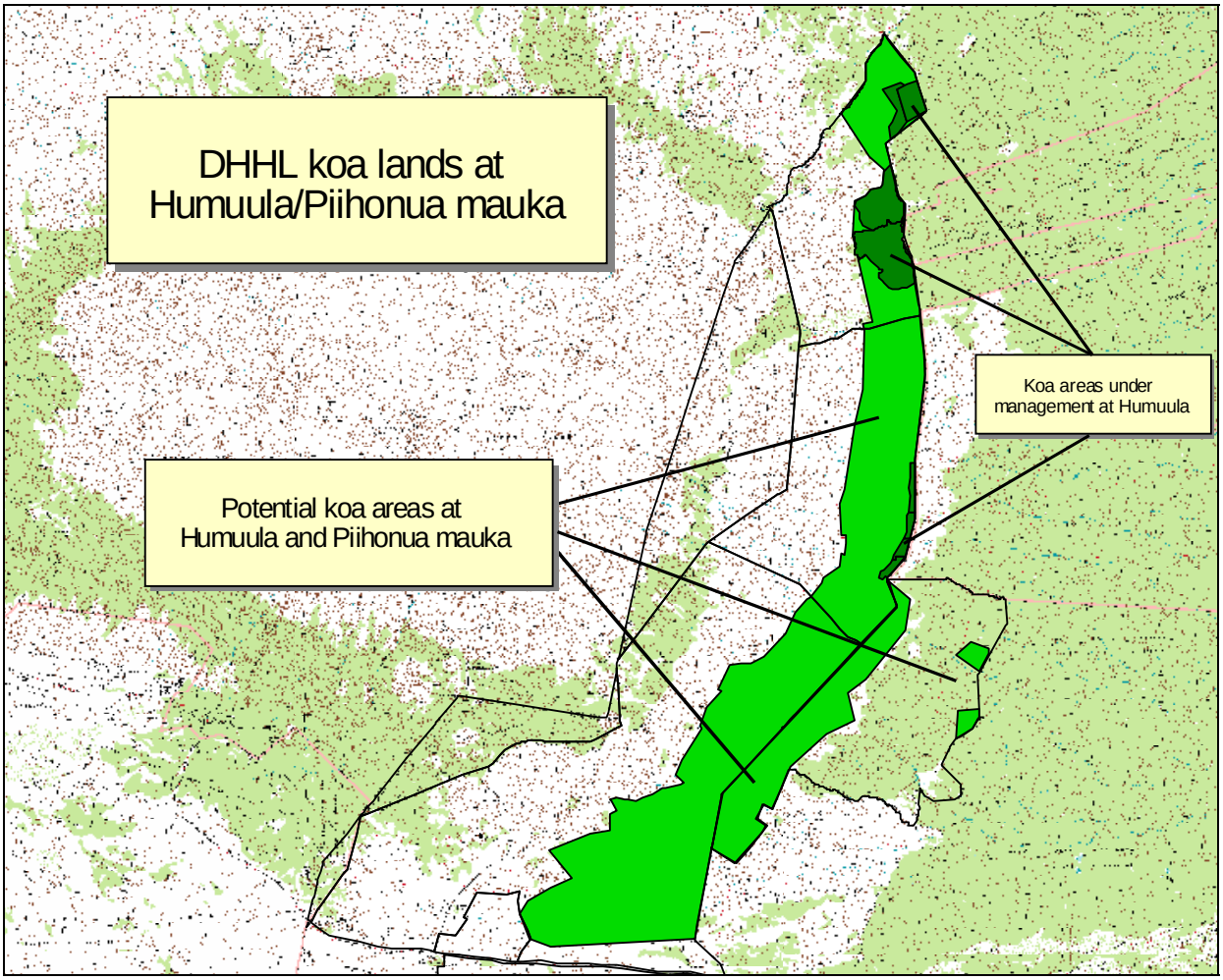
Area	Acres Dedicated	Land Use	Annual Valuation	Per Acre Annual Return, Entire Area
Humu`ula #1 (former GL 199)	5,290	ranching	$40,000	$7.56
Humu`ula #2 (former GL 200)	7,513	ranching	$40,500	$5.39
Humu`ula #3 (former GL 201)	19,828	ranching	$64,725	$3.26
Total Humu`ula Leases	32,631	ranching	$145,225	$4.45
Humu`ula/ Pi`ihonua	15,500* (13,350/2,150)	koa forest management	$1,379,500*	$89.00*

Large acreages dedicated to commercial forestry offers many logistical advantages for land managers compared to smaller, more scattered parcels. Planting, maintaining, and harvesting contiguous tracts of trees usually results in reduced costs and increased profits.

There are at least five large tracts of DHHL unencumbered lands that could be used for commercial forestry to augment the trust's long term income goals. Table 2 shows those tracts, their potential acreage, the annual harvest acreage, and the annual values that could be realized. (Commercial Forestry Areas for the Department of Hawaiian Home Lands, Pages 8 & 9)

Table 2. Potential large commercial forestry areas on DHHL lands

Island	Area	Estimated Total Acreage	Area Harvested Annually	Annual Value per Harvested Acre	Potential Annual Value
Hawai`i	Humu`ula and Pi`ihonua mauka	15,500	310	$4,450	$1,379,500



DHHL Koa Lands at Humu`ula/Pi`ihonua

Restoration of the `Āina Mauna Native Forest

DHHL is looking at its responsibility as a land manager not just to provide homes to its beneficiaries, but also to provide for the management and protection of native lands to support both cultural and resource management activities.

The lands of Humu`ula and Pi`ihonua represent the most important native forest areas remaining in the DHHL trust. These lands provide a glimpse into the natural environment and native forests which are disappearing throughout the state.

The area serves as valuable habitat to many native and endemic species. The area's proximity to Mauna Kea also makes it a valuable cultural resource. These lands have the potential for serving as a sustainable native forest and land unit by simultaneously providing environmental, economic and social benefits to the trust and its beneficiaries in perpetuity.

DHHL seeks to restore portions of the Humu`ula/Pi`ihonua lands in perpetuity to conserve these native forests and natural habitats for future generations. In doing so the Department is looking beyond housing and into a more holistic approach for communities and land management. By placing these lands in non-housing or ranching, the area can be used as a model and has the potential of serving as a sustainable land unit.

As noted in the following analysis, there are strong recommendations to enhance and restore various areas in the overall property because of their importance as habitat, biodiversity and condition (and ability to restore) as native forest. The setting aside of these areas is critical for the protection, restoration and enhancement of the `Āina Mauna.

As a means to assist in the funding of the restoration and enhancement of these areas, the department may negotiate long term and/or permanent conservation easements and/or leases with various entities.

Need for Consistency with Mission, Goals and Priority Issues

The foundation of the `Āina Mauna Legacy Program is the protection and restoration of the DHHL lands at Humu`ula/Pi`ihonua for future generations. After 150-years of sheep and cattle ranching, the formerly dense forest became significantly altered by these activities and the forest landscape was converted primarily to open pasture land.

In order to be consistent with the `Āina Mauna Legacy Program's Mission, Goals and Priority Issues (listed in the Introduction), certain areas of the site need to be converted out of pasture use and returned and restored to native forest. Previously prepared Biological and Vegetation Sensitivity Analysis reports were used to identify priority portions of Humu`ula and Pi`ihonua for restoration.

The Biological and Vegetation Sensitivity Analysis Reports (included in the 1997 Humu`ula/Pi`ihonua Master Plan Appendices) delineate areas containing endemic faunal and botanical sensitivity within the Humu`ula/Pi`ihonua area. The assessments give brief descriptions of each area and outline the endemic resources that should be factored into any programming of the area. The following summarizes areas for restoration and enhancement.

(A) `Āinahou Young Lava Flows - Nēnē Habitat

The `Āinahou Young Lava Flows are considered a high sensitivity zone both botanically and biologically. In most of `Āinahou plant growth is strongly controlled by the very poorly developed soils on the young Mauna Loa lava flows.

The vegetation is mostly native shrub land, in places with scattered native trees. With the exception of a small area in the northeast corner, these are raw lava lands that do not support pasture grasses. Young lava flows in the Saddle Road area have been found to be resistant to invasion by alien plants, the noxious fountain grass being a possible exception.

`Āinahou is designated as a high sensitivity area because the understory is not dominated by alien grasses and the shrub land communities are strongly native in character. Many species of endangered plants grow in similar communities nearby in the Pōhakuloa Training Area. A few small kīpuka in the east support a diverse closed `ōhi`a forest and warrant strong protection from disturbance. Although the early succession communities of `Āinahou often contain considerable areas of bare lava, this is their natural state, and they are an important part of the Humu`ula ecosystem.

(B) West of Mauna Kea Access Road - Māmane-Naio Forest - Palila Habitat

The Humu`ula Māmane-Naio forest is designated as a high sensitivity zone both botanically and biologically. The Māmane-Naio dry forest occurs only at high elevations on Hawai`i at Haleakalā, Maui, and is among the most endangered ecosystems in Hawai`i.

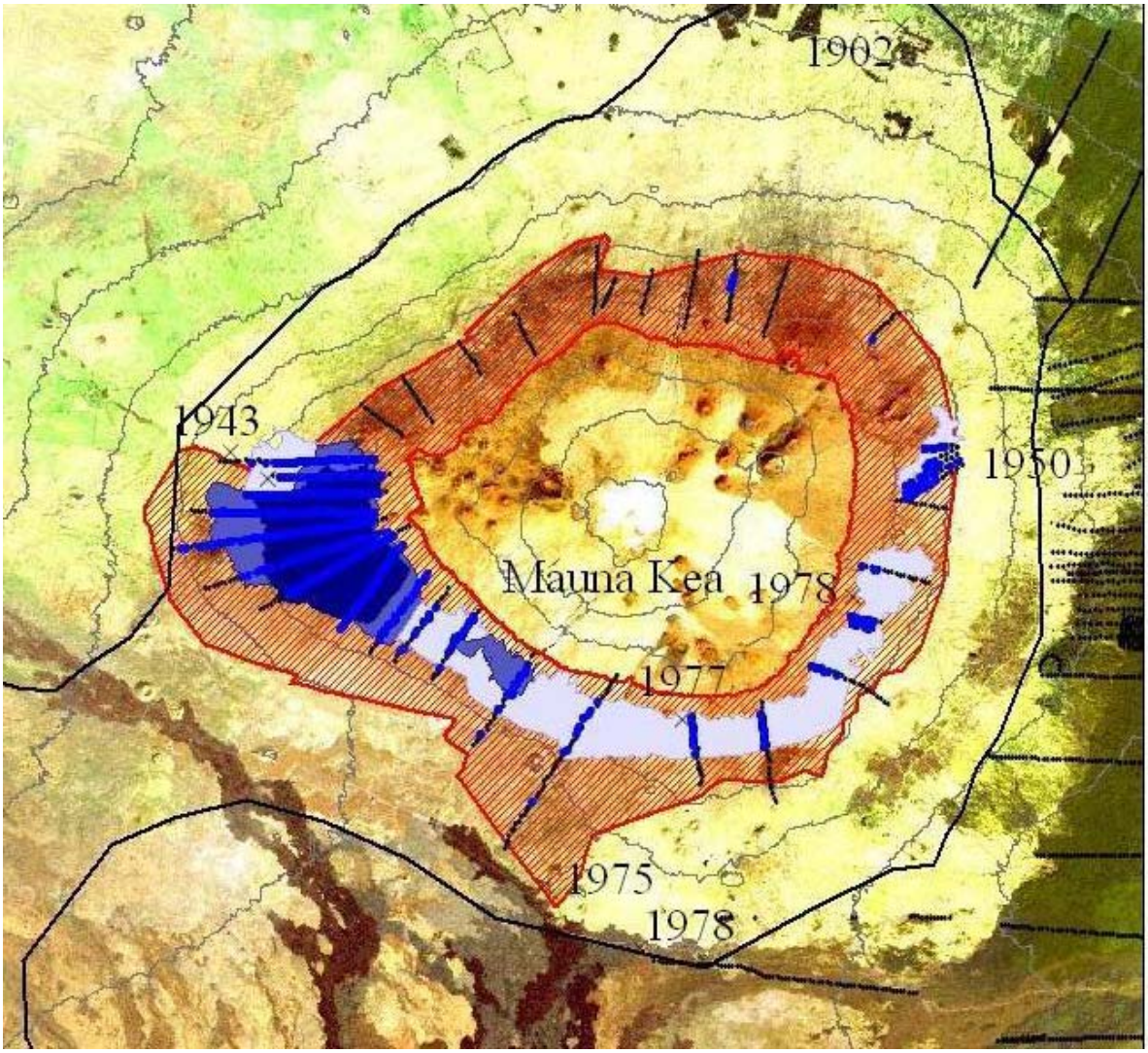
In Humu`ula, it has been subjected to some grazing and alien grasses grow here, but they do not dominate the understory. The low rainfall and sandy soil combine to keep plant productivity low. This zone contains both open and closed forests of māmane and naio. Like `Āinahou, this area is similar to neighboring areas where endangered plants are found. This zone is contiguous with part of the Mauna Kea Forest Reserve (state) that is designated critical habitat for Palila.

The upper portion of this area should not be further grazed as the Māmane forest represents a significant resource for the endangered Palila. If this area was further restored it would greatly enhance the habitat available for further restoration of this species. From recent research it appears that one of the most important resources for supporting Palila is a māmane forest with a large altitudinal range, similar to that found in the Pu`u La`au area. This allows the birds to move up and down slope following the bloom and pod set of the forest which occurs over an altitudinal cline.

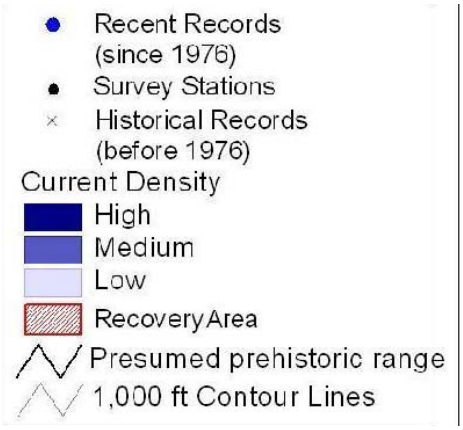
Much of the māmane forest within PTA on the other side of the HHL fence in this area has been severely impacted by the incursion of naio which has out-competed māmane due in part to the pressure from feral sheep and mouflon, which prefer māmane to naio as a foraging resource - thus, giving the naio an unfair advantage. Naio cannot support Palila; it also is extremely attractive to rats and creates a significant fuel load within the ecosystem.

(C) Pi`ihonua Mauka - `Ōhi`a-Koa Forest - Biodiverse Endangered Endemic Forest Bird Habitat

The Pi`ihonua `ōhi`a-koa forest is a high sensitivity zone both botanically and biologically. Pi`ihonua is the wettest part of the project area and can support diverse native rain forest. This vegetation, heavily impacted by grazing, is the interface between the Humu`ula pastures upslope and the forests of the neighboring Hilo Forest Reserve and Hakalau Forest National Wildlife Refuge.



Palila Habitat Map



The forest below the 6,000 foot level is significant from both an avian and botanical perspective. It is extremely good habitat for at least four endangered endemic avian species: Hawai`i `Ākepa, Hawai`i Creeper, `Akiapōlā`au, and `Io, as well as breeding habitat for at least five other endemic species.

(D) Upper Pi`ihonua Mauka - `Ōhi`a-Koa Forest - Biodiverse Native Forest

Upper Pi`ihonua `ōhi`a-koa forest are high sensitivity zones both botanically and biologically. This area contains the highest remaining rain forest on this side of the island, if not the whole windward side of the island.

There are also numerous endangered and rare plants found throughout this portion. It would be unfortunate if this area was further disturbed. It is used as both a foraging and breeding area by many of the endangered and other endemic avian species found in the Hakalau Forest National Wildlife Refuge located immediately to the north of this area.

(E) Kahinahina - Māmane Forest - Palila Habitat

Kahinahina is a high sensitivity zone biologically and a medium sensitivity zone botanically. This area can support populations of `Akiapōlā`au and Palila. The Māmane remaining in this area is significant for both species. Encouraging māmane regeneration should be one of the management objectives for this area.

(F) Kanakaleonui Bird Corridor - Koa-Māmane Forest - Native Bird Link to Forest Areas

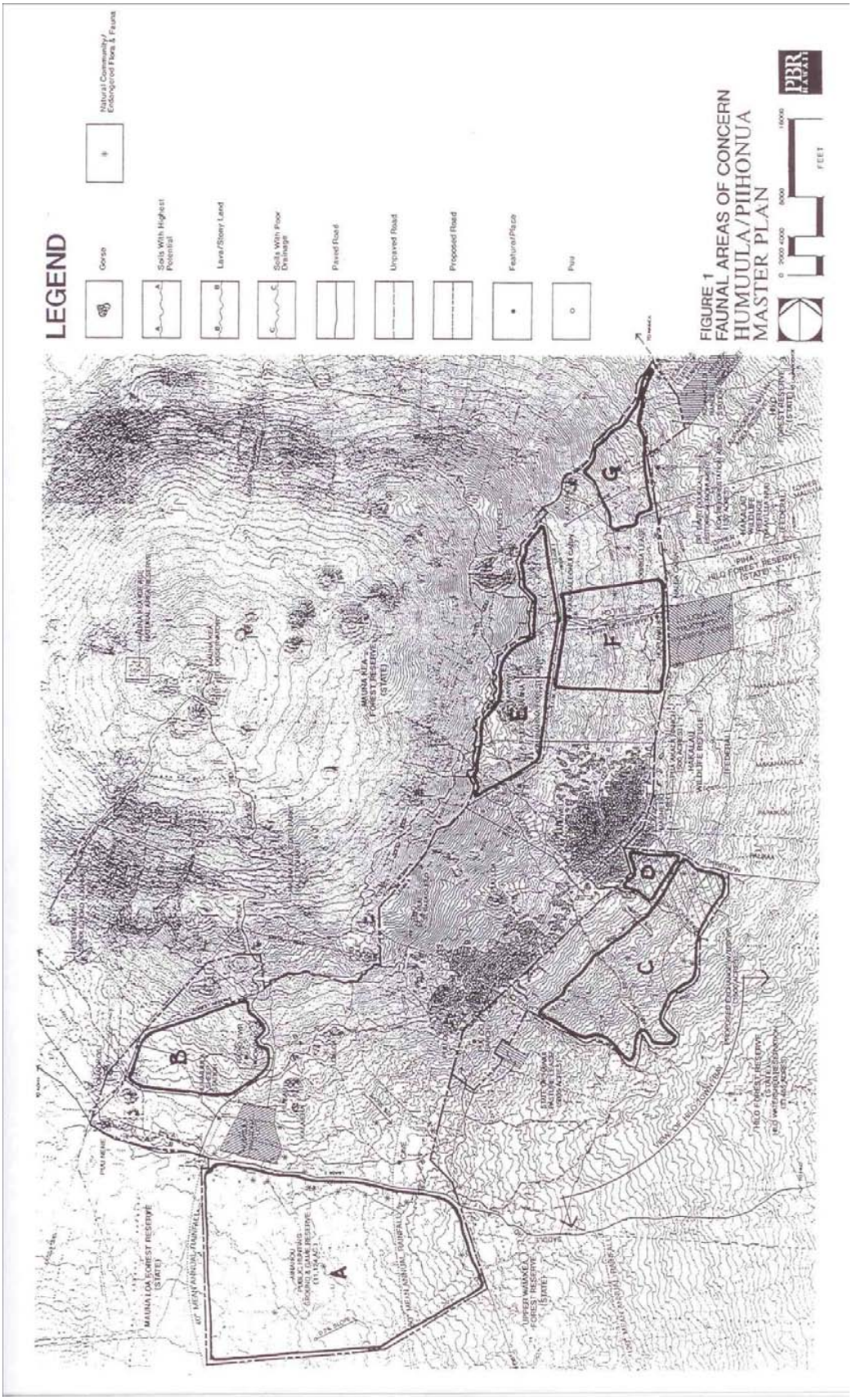
The 514-acre Kanakaleonui Bird Corridor (KBC) restoration project represents a collaborative multi-organizational effort to reestablish and maintain wildlife habitat for native bird populations. The Department of Hawaiian Home Lands is working with the U.S. Forest Service, the U.S. Fish & Wildlife Service (USFWS), the University of Hawai`i campuses at Hilo and Manoa, and other organizations in an effort to create wildlife habitat connecting the down slope Piha Forest Reserve and Hakalau Forest National Wildlife Refuge with the upslope Mauna Kea Forest Reserve.

The primary goal of this project, as expressed in the February, 2004 Piha Mauka Forest Management Plan and Environmental Assessment, is to “help create a more viable wildlife corridor for native birds dependent on seasonal mauka to makai migration patterns on Mauna Kea.” This goal would be achieved by restoring the KBC’s native forest habitat to that which existed before European contact with Hawai`i.

The KBC includes 514-acres of montane native Hawaiian forests that range in elevation from approximately 6,500-feet to 8,000-feet. Grass and scrubland vegetation dominate most of the area within the KBC. A small area is covered by koa and an even smaller area by māmane. Koa covers 55-acres and is prevalent in the lower portions of the KBC.

Koa stands are lush, with many large trees. Seedlings sprout up in groups just under the edge of the shade of larger trees. Koa stands are, as a whole, healthy, but there are large gaps between stands that are often filled with kikuyu grass.

In 2007, the USFWS provided funding to fence the 514-acre KBC in an effort to keep feral ungulates; cattle, and pigs from causing further damage. In 2008, the first research and permanent monitoring plots were established throughout the KBC with assistance from the U.S. Forest Service, the USFWS, University of Hawai`i Manoa and Hilo campuses, and the Hawai`i Community College.


LEGEND
Corps
Natural Community/ Endangered Flora & Fauna
Soils With Highest Potential
Lava/Stony Land
Soils With Poor Drainage
Paved Road
Unpaved Road
Proposed Road
Feature/Place
Puu
FIGURE 1
FAUNAL AREAS OF CONCERN
HUMUULA/PIIHONUA
MASTER PLAN
FEET
PBR HAWAII
A
B
C
D
E
F
G

(G) Keanakolu Māmane Forest

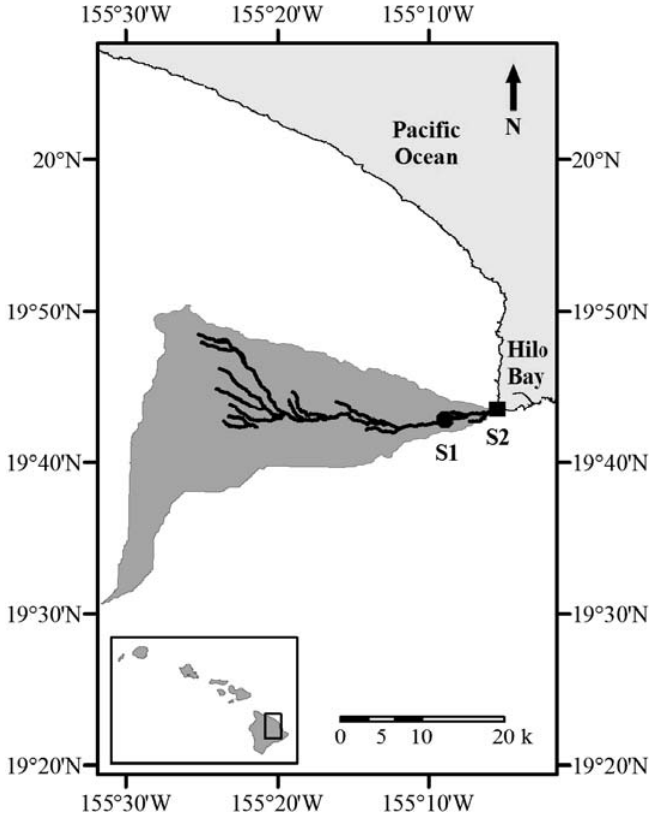
The Keanakolu Māmane Forest is considered an important sensitivity zone both botanically and biologically. Near Keanakolu, there is some cover of native trees and shrubs. Being somewhat drier than Pi`ihonua, the dominant tree species are koa and māmane, rather than `ōhi`a. `Ōhi`a does occur as a co-dominant species below 5,600 feet in parts of this area.

The native forest cover in this area may be indicative of bullock hunting pressure in the mid-1800s, followed by less formal grazing due to poor soils. The ground cover is alien pasture grasses, sometimes co-dominant with the occasional native shrubs. This area borders the Hilo Forest Reserve.

Wailuku River Watershed

The Wailuku River watershed is located on Hawai`i Island and drains both the tallest and the most massive mountains in the world, Mauna Kea and Mauna Loa, respectively. The Hawaiian meaning of the name is “water [of] destruction”. The area of the watershed is 252.2 square miles, with maximum elevation of 13,779 ft (4,200 m). The percent of the watershed in the different land use districts is as follows: 22.4% agricultural, 76.9% conservation, 0.7% urban and 0% rural.

The Wailuku River is an important landmark to geologists, because it marks the approximate boundary between the lava flows of Mauna Kea and Mauna Loa. The Wailuku River is the second longest perennial river in the state of Hawai`i (total stream length is 196.1 miles) and the largest source of surface water to Hilo Bay.



Map Illustrating Wailuku River Watershed

An average of 1-million cubic meters (275-million gallons) of water flows through the Wailuku River Watershed to Hilo daily, generating some of the electrical power used on the Big Island. During intense storms, the discharge can be more than 20-times greater. On average, the Wailuku River Watershed transports approximately 10-tons of suspended sediment into Hilo Bay each day.

Overlooking Portion of Keanakolu/Mana Road – Dip in Road, with concrete crossing, is Wailuku River

Conservation Corridors/Easements

Wildlife corridors can help provide continuous habitat for birds and may be managed in conjunction with other uses in an area. All neighboring landowners could be partners in the development of such corridors, particularly the USFWS and their Hakalau Forest National Wildlife Refuge.

There are many portions of the `Āina Mauna planning area that include unique natural resources that include native flora and fauna, some of which are listed by the State and Federal agencies as endangered. Careful land use planning and management will be necessary to conserve these resources. One area that has a high concentration of native flora and fauna is the koa forest adjacent to the Hakalau Forest National Wildlife Refuge. The USFWS has expressed an interest in acquiring or managing approximately 1,500 acres of these Pi`ihonua lands. (Humu`ula/Pi`ihonua Master Plan, Page 59)

The purpose of these corridors is to re-establish a native forest that will provide a contiguous habitat from the lower koa forest to the higher elevation māmane forest to facilitate the migration of native forest birds between these habitats. Once established, other uses, such as koa forestry could be accomplished within this are while still maintaining the habitat connections. (Humu`ula/Pi`ihonua Master Plan, Page 59)

This sub area is adjacent to the Hakalau Forest National Wildlife Refuge, which is managed by the U.S. Fish and Wildlife Service (USFWS). USFWS plans to implement some improvements to Keanakolu Road in the near future, to include some re-grading of washed out areas. USFWS has also expressed interest in entering into some form of easement agreement with DHHL to create a "conservation corridor" that would run mauka-makai through about the middle of Kanakaleonui (Kanakaleonui Bird Corridor). The objective of this conservation corridor is to provide a habitat link between the Hakalau Forest National Wildlife Refuge to the east and the upper slopes of Mauna Kea to the west. (Piha Mauka Forest Management Plan and Environmental Assessment, Pages 11-13)

A conservation easement is a legal agreement voluntarily entered into by a property owner and a qualified conservation organization such as a land trust or government agency. The easement contains permanent restrictions on the use or development of land in order to protect its conservation values. These easement restrictions vary greatly for each agency or organization. (Conservation Easements, Private Rights and Public Benefits)

Landowner motivations to acquire conservation easements are diverse. Most landowners hold a deep appreciation for wildlife, and an easement protecting habitat displays heartfelt concern for wildlife's future. There may be interests to retain limited development rights and conservation easements can be structured to address these interests. (Conservation Easements, Private Rights and Public Benefits)

Easements are flexible and can be written to meet a particular landowner's needs while protecting the property's wildlife resources. Most easements are permanent, remaining in force when the land changes hands. The easement holder ensures that the restrictions are followed. Easements are cost effective conservation. The cost of purchasing and managing a conservation easement on private land for government agencies is much less than purchasing the land. (Conservation Easements, Private Rights and Public Benefits)

Pi`ihonua Mauka Conservation Plan

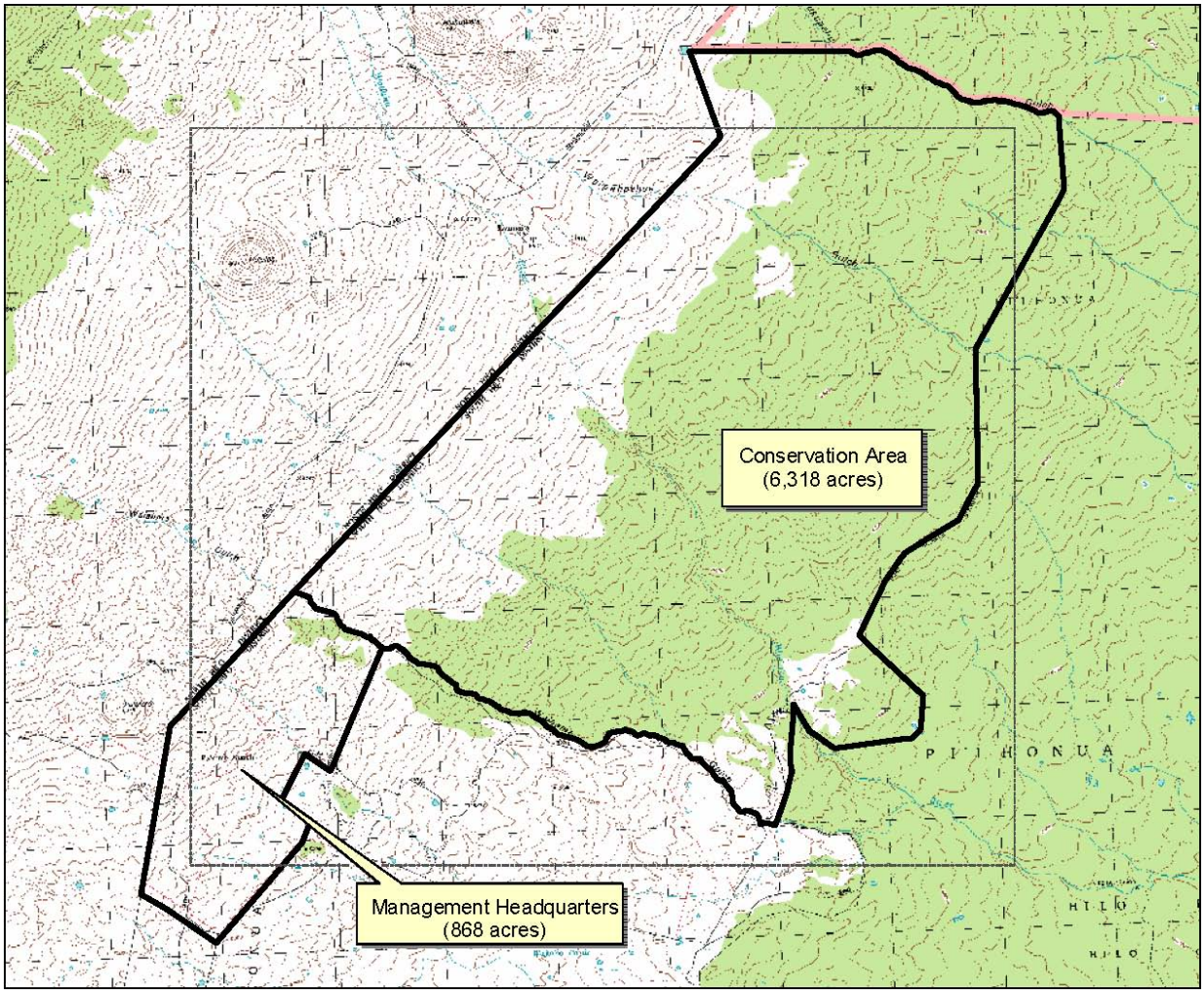
In November 2007, DHHL staff developed the "Pi`ihonua Mauka Conservation Plan" which delineates a potential solution to restoring the lands of Pi`ihonua Mauka to its full productivity over a period of at least fifty (50) years. The following references from this plan express a desired future condition that unfortunately does not currently exist at Pi`ihonua Mauka.

Pi`ihonua Mauka has been managed for natural resource production for over fifty years. Existing lower elevation `ōhi`a forests are healthy, diverse, and weed free. Native species, especially forest birds, thrive in this extensive habitat. Upper elevation former pasture land has been converted to a maturing, healthy koa forest in which commercial thinning and harvests are beginning to occur. These koa forests are also becoming more diverse as all cattle have been removed from Pi`ihonua Mauka for decades. (Pi`ihonua Mauka Conservation Management Proposal, Page 1)

The native Hawaiian community benefits economically from this managed area via conservation jobs which maintain the `ōhi`a forest, commercial jobs which reforest and harvest the koa forest, and by new visitor enterprises such as hiking, horseback riding, and bird watching. (Pi`ihonua Mauka Conservation Management Proposal, Page 1)

Cultural use of the forest is extensive as native Hawaiians use the forest in traditional ways. Scientific research focuses on solutions to perpetuate the forest and its benefits. The greater public good of East Hawai`i is equally served as erosion emanating from these headwater areas is minimized and weedy species no longer spread downstream. (Pi`ihonua Mauka Conservation Management Proposal, Page 1)

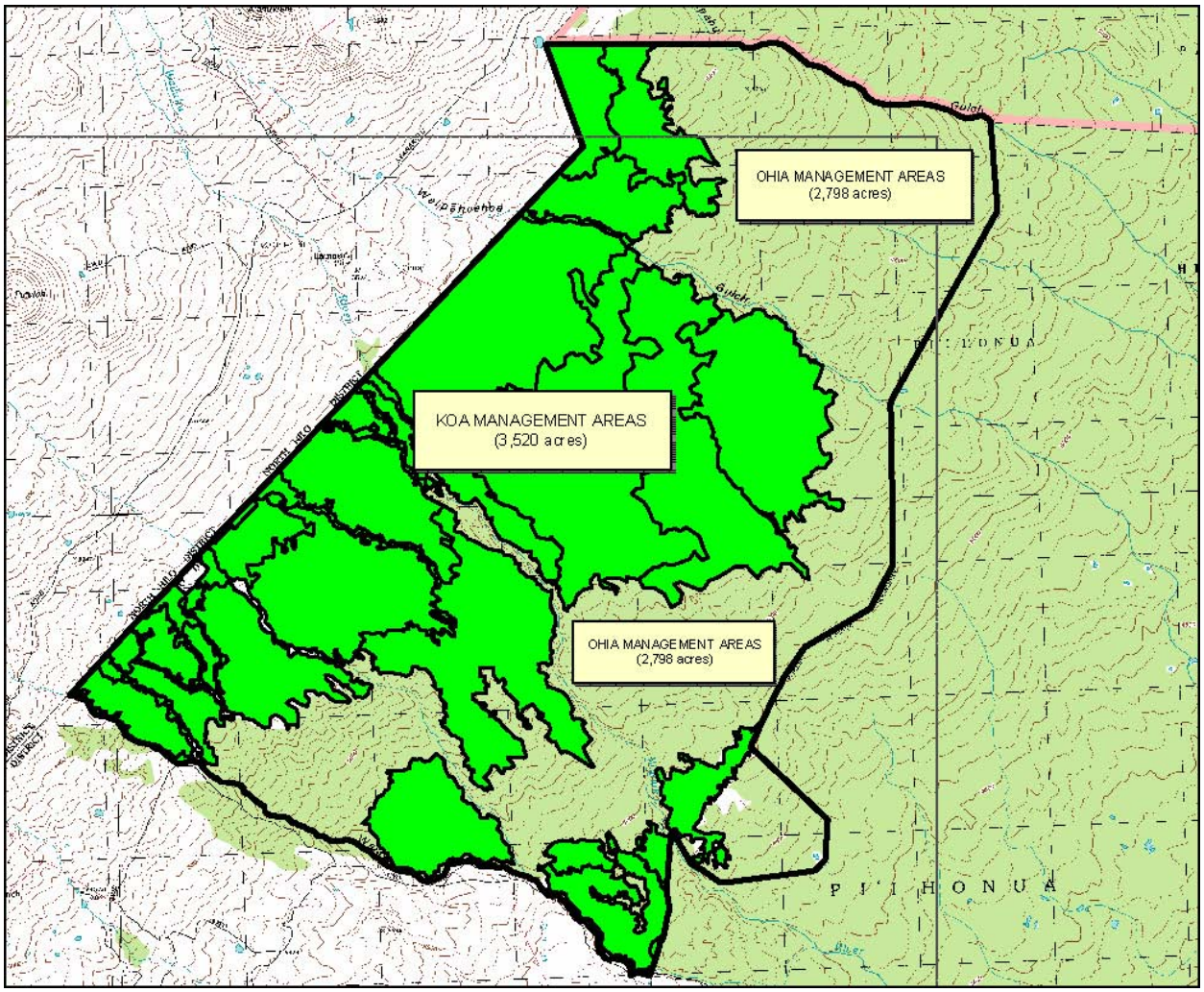
Most accurately, Pi`ihonua Mauka was most recently leased as Pu`u `Ō`ō Ranch until the early 1990s and there are still quite a few feral cattle in this area. This unit is made up mostly of introduced grasses with a significant `ōhi`a over-story. Access, especially during wet periods, is very difficult. There are sporadic patches of gorse in the mauka grasslands and gorse populations established along stream courses and gullies. The makai portion of the unit is mostly `ōhi`a forests with occasional large koa trees and stumps indicating past logging. (Wildland Fire Management Plan Humu`ula/Pi`ihonua Mauka, Page 10)



Pi`ihonua Mauka Conservation Management Area

The majority of Pi`ihonua Mauka (6,318-acres) would be withdrawn from homesteading considerations for a period of at least 50 years. The map above shows the area to be withdrawn and intensively managed for resource restoration, including weed control, cattle removal, and koa regeneration. It also shows a smaller area (868-acres) that would be developed as both a management headquarters and an area for generating additional income and use via licensing agreements for activities such as hiking, horseback riding, bird watching, cultural retreats, and camping. (Pi`ihonua Mauka Conservation Management Proposal, Page 2)

After the initial fifty year period, Pi`ihonua Mauka would be re-evaluated for its ability to contribute to the DHHL mission. The land would be managed in partnership with others to provide adequate funding and expertise to accomplish the above objectives. (Pi`ihonua Mauka Conservation Management Proposal, Page 2)



Areas Proposed for Management as `ōhi`a forest or koa forest

Pi`ihonua Mauka Conservation Budget

A fifty year conservation easement would be used as income to accomplish the goals listed above. Table 1 shows the potential sources of income and the projects that could be funded with such income. It is proposed that this income could also be used on DHHL lands adjacent to Pi`ihonua Mauka, i.e. Humu`ula, if such expenditures would benefit the management of Pi`ihonua Mauka. Examples could include weed control, koa seed collection, and administration costs for the Humu`ula/Pi`ihonua Mauka areas. (Pi`ihonua Mauka Conservation Management Proposal, Page 3)

Table 1. Potential income sources and project expenditures for managing forestry areas on DHHL lands at Humu`ula and Pi`ihonua Mauka. (Pi`ihonua Mauka Conservation Management Proposal, Page 3)

Income	Area	Annual Acreage	Revenue/ Cost/acre/yr	Total Annual Revenue/Costs	Total 50 Yr. Revenue/Costs
Easement Payments	Conservation Area	6,318	$45.00	$284,310	$14,215,500
Expenses					
Weed control	All	900	$90.00	$81,000	$4,050,000
Reforestation	All	140	$750.00	$105,000	$5,250,000
Administration	All	7,186	$14.00	$98,310	$4,915,500
		Total Costs		$284,310	$14,215,500

Expanded Opportunities for Gathering and Cultural Practices

The restored, healthy native forest provides a variety of benefits and opportunities to beneficiaries through gathering, cultural practices and opportunities to see and understand native forest ecosystems. The site (with restoration to healthy native forest) provides beneficiaries cultural practices access as the only site of this type in the Hawaiian Home Lands Trust inventory.

Pasture Use to Assist Wildland Fire Management

Cattle and sheep have been used effectively to reduce wildfire grass fuels in pastures and other grasslands on the island of Hawai`i. Use of grazing animals may also be an effective method of managing growth of invasive woody plants now or in the future. Grazing animals would be used only on pastures and other grasslands, not in the forest.

In 2007, the DHHL Land Management Division developed a Wildland Fire Management Plan for Humu`ula/Pi`ihonua Mauka. This fire plan represents the current fire management policy and strategy for the Humu`ula and Pi`ihonua Mauka lands of the Department of Hawaiian Home Lands, Hawai`i Island.

Humu`ula has many resource values to be protected, all of which are beneficial to future homestead communities. Primary concerns include the protection and augmentation of native koa (Acacia koa) forests that provide habitat for native fauna and may be utilized in sustainable forestry production. Introduced grass ecotypes provide ranching opportunities that supply food for livestock and a culturally rich paniolo (cowboy) lifestyle.

Historically, DHHL has relied on lessees or neighboring landowners for fire planning and mitigation. Due to recent lease terminations and potential uses of these Hawaiian Home Lands for homesteading, DHHL has assumed these fire planning and mitigation responsibilities.

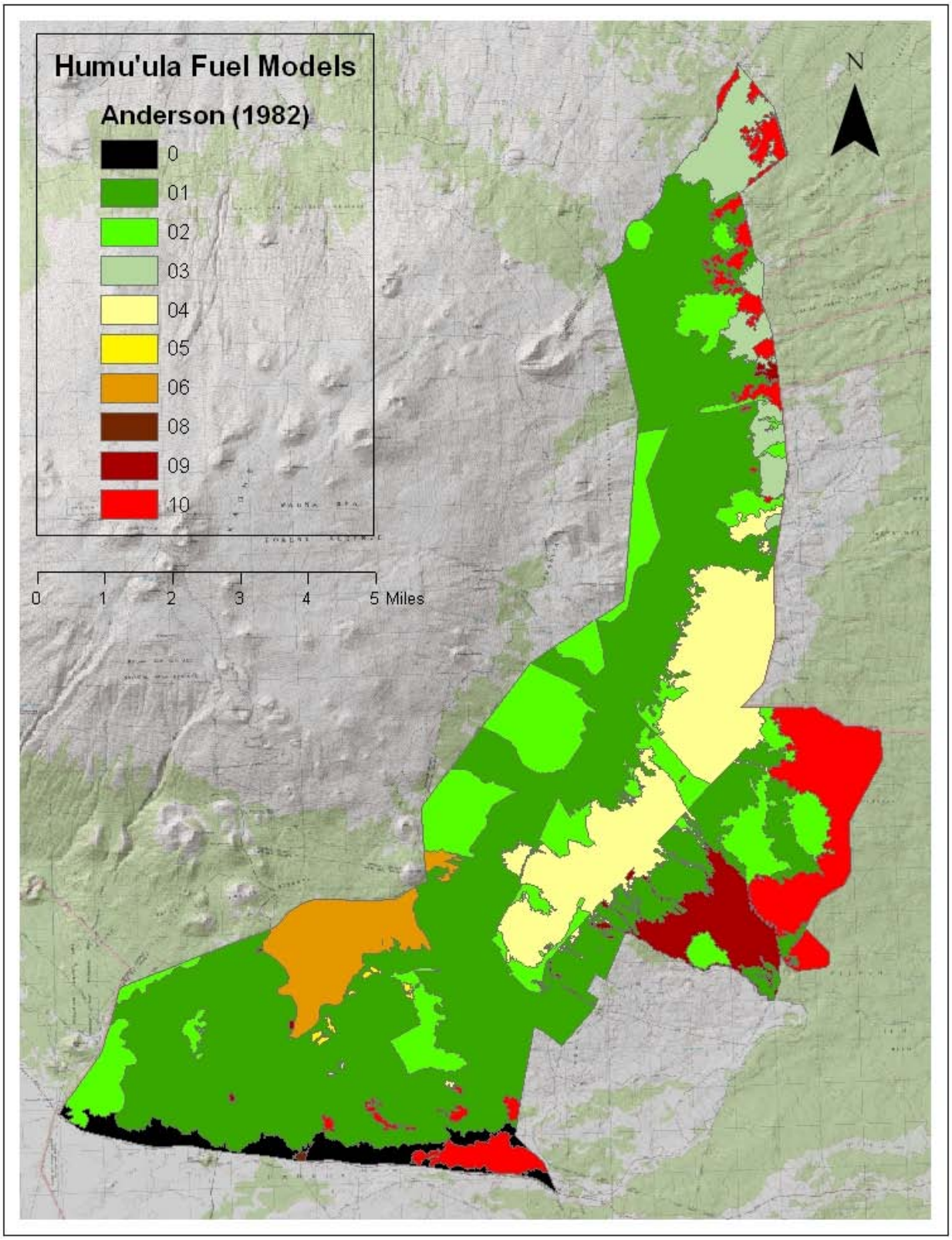
Fire appears to be a relatively infrequent, low intensity disturbance in native Hawaiian ecosystems, occasionally ignited by lava flows or lightning strikes. It is generally agreed that fire was not an important aspect of the evolution of native ecosystems. However, there are some native species that have been shown to be fire tolerant including māmane, naio, ohelo and native bunchgrass. However, none of these species require fire to regenerate and all can be killed by intense fire.

Protection of basic resources, such as soil and water, will sustain eco-processes and make available more productive and verdant lands. Proactive approaches and fire mitigation will aid in suppressing unwanted wildland fires on Hawaiian Home Lands while ensuring adjacent lands, primarily state and federal, are not adversely affected. Prevention and suppression of fires will protect existing ecosystems that are fire intolerant while managing fire fuels like gorse and most grasses at Humu`ula.

Vegetation variations are patterned by elevation, temperature, and rainfall, with some exceptions due to general topography, soils and underlying geologic substrate, and microclimate. There are several remnant patches of high elevation native forests scattered amongst primarily introduced grasses and shrubs at Humu`ula.

The introduced species in the area are the product of a long history of grazing and subsequent land conversion from high elevation native forest ecosystems to pasture lands. Remnant native forests that can still be found in the project area are koa/`ōhi`a, pūkiawe shrub complex, and high elevation māmane/naio.

The dominant introduced species are non-native grasses, primarily composed of kikuyu grass, sweet vernal grass and narrow-leaved carpet grass, the invasive shrub gorse and timber trees that have been planted for research and as windbreaks near areas of former habitation. (Wildland Fire Management Plan for Humu`ula/Pi`ihonua Mauka, Pages 2-7)



Humu`ula Fire Models

The most notable fuel type is the noxious weed gorse. In combination with grasses, gorse constitutes the greatest fire risk. (Wildland Fire Management Plan for Humu`ula/Pi`ihonua Mauka, Pages 9 & 28)

Hazard fuel reeducation strategies include treatment of hazard fuels and debris disposal including:

- Mechanical treatment can be accomplished by hand cutting or by utilizing specialized heavy equipment.
- Prescribed burning of gorse, in combination with timely herbicide applications, reduces biomass, stimulates gorse seed germination to deplete the gorse seed bank, and is very cost effective for large, inaccessible areas. Additional care must be taken during prescribed burn applications as dead biomass is more flammable.
- If bio-control release is necessary than strict guidelines and a continued monitoring program is suggested. Bio-control agents that have been released require sufficient habitat to be effective. Spraying and burning significant portions of these areas should be avoided until the bio-control's effectiveness is accurately determined.
- Cattle or other grazers may be utilized as a cost effective way to reduce fuel load in approved areas and under strict management guidelines to avoid conversion from one undesirable fuel to another, e.g. tall grass to gorse.
- Reducing forest fuel loads in strategically located areas can occur through selective manual thinning and treatment of logging slash. This reduces ladder fuels and overly dense tree canopies.
- Apply low intensity management-ignited prescribed fire to reduce surface fuels and simulate the effects of natural low intensity fire.
- Reduce hazard fuels and remove hazard trees around DHHL structures. (Wildland Fire Management Plan for Humu`ula/Pi`ihonua Mauka, Page 34)

Although koa is often killed by intense fires, seeds in the soil survive and are stimulated to germinate after fire. Healthy forest cover at Humu`ula reduces the risk of wildfire by reducing surface temperature fluctuations, increasing relative humidity, and reducing wind speeds.

In most cases, introduced species such as gorse and introduced grasses, are better adapted to fire than native plants. As a potential fuel, these introduced species represent a significant increase in fire risk at Humu`ula, especially the highly flammable shrub gorse.

The greatest wildfire threat to human life and property in Humu`ula is within the wildland-urban interface where astronomy facilities on Mauna Kea, ranch homes, state lodging facilities, and U.S. Fish & Wildlife Service lodging and structures intermingle with pasture and forested lands.

There is only one reliable access route to and from the Mauna Kea summit and it passes through Humu`ula lands.

There are two reliable exits from Humu`ula itself in the event of wildland fire but that access is limited to 4 x 4 vehicles. Terrain there is hilly with frequent ravines. The few jeep trails that are accessible by the Keanakolu/Mana road can be hazardous and are relatively impassable during the rainy season.

There are several important issues that define Humu`ula's wildland fire predicament:

- Threat of wildfire spread to or from adjacent properties/sensitive resources;
- Fire-prone shrubland and grasses;
- Limited access in the form of ingress/egress routes in the event of wildfire;
- Lack of reliable water sources for firefighting;
- Public unawareness of the threat of wildfire at Humu`ula.

Humu`ula land managers have identified several hazards and are taking steps to reduce and mitigate them to protect public health, on and off site structures, and sensitive resources using an integrated and proactive management approach that includes the following elements:

- Map Fire Management Resources (completed)
- Determine Fuel Models for Estimating Fire Behavior (completed)
- Improve and/or augment the existing Fuelbreak Network (in progress)
- Reduce fire-prone shrubs and other hazardous fuels (in progress)
- Improve and maintain access/egress throughout Humu`ula (in progress)
- Improve access to fire management resources such as water (in progress)
- Design and implement a Wildfire Awareness program for Humu`ula

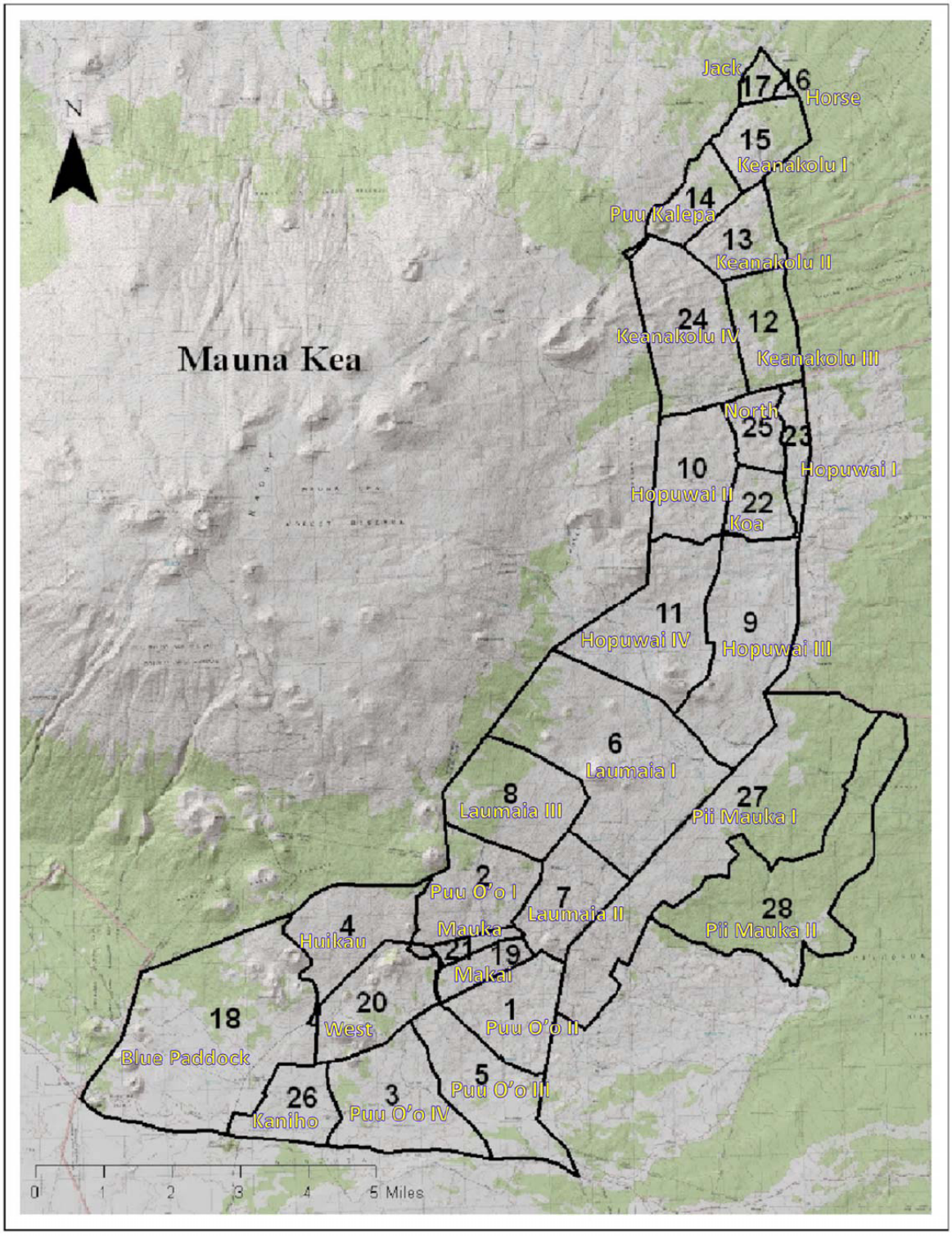
An aggressive program of reducing the presence of gorse outside of the containment area will continue to reduce the area of land at risk from intensive gorse fires. Strategies for reducing introduced pasture grasses, which are the second most dangerous fuel type at Humu`ula, may also be employed. Grazing can play a key role in managing these grass fuel types and may assist in the control of undesirable shrubs. However, it is important that close coordination is used with ongoing gorse eradication efforts because cattle and other ungulates are primary vectors of gorse. Reducing the gorse infestation while managing fire hazards from grass via grazing is a challenging yet possible solution to reducing hazardous fuels at Humu`ula. (Humu`ula/Pi`ihonua Mauka Community Wildfire Protection Plan, Pages 20 & 21)

Fire Management Units

Twenty-eight Fire Management Units (FMU's) have been created in ArcGIS using traditional and proposed ranching paddocks. These FMU's in combination with the Humu`ula Fuel models may be utilized to make informed fire management decisions. These FMU's will benefit managers and homesteaders by providing essential fire behavior information for examination to be used for a prioritized focus on specific fuel types at Humu`ula. (Wildland Fire Management Plan Humu`ula/Pi`ihonua Mauka, Page 27)

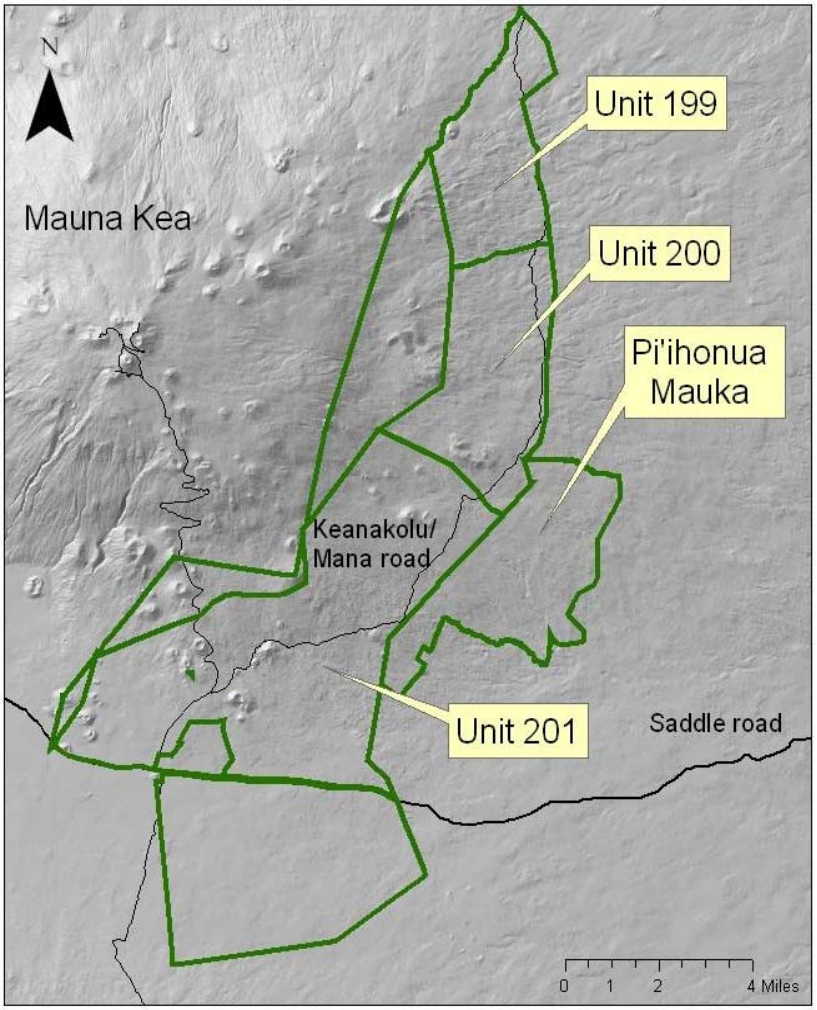
Fire Management Units

1	Pu`u `Ō`ō II	8	Laumai`a III	15	Keanakolu I	22	Koa
2	Pu`u `Ō`ō I	9	Hopuwai III	16	Horse	23	Hopuwai I
3	Pu`u `Ō`ō IV	10	Hopuwai II	17	Jack	24	Keanakolu IV
4	Huikau	11	Hopuwai IV	18	Blue Paddock	25	North
5	Pu`u `Ō`ō III	12	Keanakolu III	19	Makai	26	Kaniho
6	Laumai`a I	13	Keanakolu II	20	West	27	Pi`i Mauka I
7	Laumai`a II	14	Pu`u Kālepa	21	Mauka	28	Pi`i Mauka II



Fire Management Units Map

The Project Area was further analyzed using four data collection units: 199, 200, 201, and Pi`ihonua Mauka, that correspond to former pasture leases. Each data collection unit is slightly different and defined by its physical and biological characteristics. (Wildland Fire Management Plan Humu`ula/Pi`ihonua Mauka, Page 27)



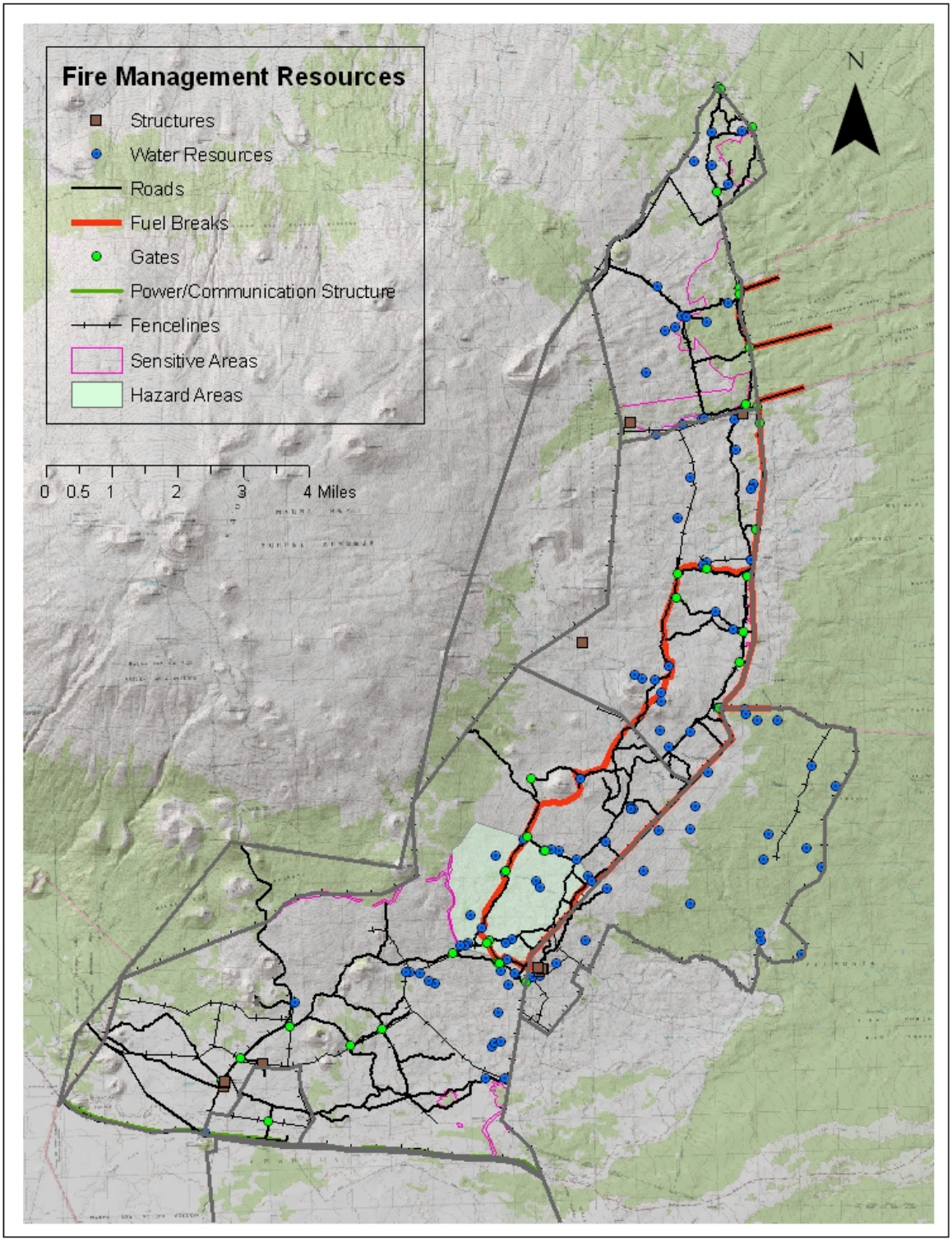
Fire Data Collection Units

Data collection unit 199 is most representative of native forests prior to the introduction of cattle with native koa/`ōhi`a forests at lower elevations and māmane/ naio at higher elevations. This unit has a heavy kikuyu grass component at lower elevations eventually thinning out to less dense open pasture grasses with increase in elevation. There are few introduced plants in this area besides pasture grasses. Introduced trees and saplings can be found along state boundaries and banana poka has been found within DHHL boundaries. Only a few individual gorse plants have been found in this area.

Data collection unit 200 is dominated by the main gorse infestation which is located along Keanakolu/Mana Road. The main gorse infestation begins near Pu`u `Ō`ō in Unit 201 and ends just north of the gated entrance to Hakalau Forest National Wildlife Refuge in unit 200.

Lands mauka (towards the mountains) of the gorse infestation are dominated by introduced grasses with pockets of small māmane/naio forests. North of the Hakalau Forest National Wildlife Refuge entrance there are small groups of remnant old growth koa forest and introduced grasses. There are pockets of native species communities that thrive in the ravines here and consist of koa, `ōhi`a, and diverse native shrub and tree understory. Remnant koa can be found interspersed within the gorse infestation.

Data collection unit 201 is composed of scattered māmane and introduced pasture grasses west of Mauna Kea access road. There are pūkiawe native mix shrub complexes south of Keanakolu/Mana road with occasional remnant koa/`ōhi`a forests interspersed throughout the area. These remnant koa/`ōhi`a forests are very diverse with many native understory species. The dominant vegetation is introduced grasses and large incipient populations of gorse. The main gorse infestation begins along the northeastern boundary of this unit near Pu`u `Ō`ō. There is a large band of high elevation native māmane/naio forests mauka of Keanakolu/Mana road upon entry from the Mauna Kea access road. These native populations are relatively intact and should be considered a valuable natural and cultural resource in the event of wildland fire.



Fire Management Resources Map

Pi`ihonua Mauka was most recently leased as Pu`u `Ō`ō Ranch until the early 1990s and there are still quite a few feral cattle in this area. This unit is made up mostly of introduced grasses with a significant `ōhi`a over-story. Access, especially during wet periods, is very difficult. There are sporadic patches of gorse in the mauka grasslands and gorse populations established along stream courses and gullies. The makai portion of the unit is mostly `ōhi`a forests with occasional large koa trees and stumps indicating past logging. (Wildland Fire Management Plan Humu`ula/Pi`ihonua Mauka, Pages 8-10)

Reduce Fire-Prone Shrubs and Other Hazardous Fuels

Areas comprised of fire-prone trees or shrubs are especially hazardous as these fires are more intense and cause more extensive damage to resources when wildfire occurs. In Humu`ula the most hazardous fuel type has been identified as gorse.

During the period between 2000 and 2002, Humu`ula was exposed to drought conditions and seven fires occurred (Table 1). The primary fuel was gorse and all seven fires were human caused. In 2006-2007, there was one fire at Humu`ula and one fire to the north of the Humu`ula boundary. Both of these fires occurred in grass fuel types. The fire at Humu`ula was human caused and lightning caused the other fire just north of the Humu`ula boundary.

Table 1. Wildland Fire History at the Hakalau Unit (2000-2002)

Name of Fire	Inclusive Dates	Approximate Acreage
`A`ahuwela	2/24/00 - 2/26/00	1400
`A`ahuwela II	3/16/00	3
Maulua	7/28/00 - 8/1/00	5
Pi`ihonua	8/16/00 - 8/18/00	200
`A`ahuwela	1/04/01 - 1/06/01	3
Gorse Fire	6/23/01	0.5
Pua Akala Gorse Fire	11/7/02 - 11/13/02	250

Pasture Uses to Address Wildfire Mitigation

Wildfire can quickly destroy important yet fragile assets of DHHL's lands. The Humu`ula and Pi`ihonua Mauka areas are especially vulnerable because of their remoteness, and the flammable fuel types found there. The closest public fire station is located in Hilo 25 miles away. Thus, the prevention of wildfires is of the upmost importance if homesteading is to take place in this area. One way to help control wildfire fuels is through pasturing in selected areas.

In 2007 DHHL produced the report "Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels". This report discuses the both harm that cattle have had on the Humu`ula landscape over the years as well as how pasturing can help reduce fire risks in the future.

Since cattle leases expired in 2002, many areas have little or no cattle present and important natural resources at Humu`ula have begun to show significant recovery. This recovery is most evident in the mauka and certain makai areas of Humu`ula where water and/or feed is limited and feral cattle have not yet congregated.

Giving this land "a rest" after more than 150 years of grazing is beneficial to the landscape by minimizing soil loss and allowing natural processes to recover the area's productivity. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 1)

Mauka areas (7,600 – 8,000 ft. elevation) are exhibiting a re-growth of the historic native Hawaiian ecosystem, including māmane, pūkiawe, and other species. Makai and gulch areas up to about 7,000 foot elevation are seeing a resurgence of koa natural regeneration. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 1)

Reintroducing cattle to these recovering areas would be a setback for the natural resources while contributing minimally to the priority reduction of fire fuels. The "Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels" report suggests areas for cattle licensing which would:

- Reduce wildfire fuels most at risk from ignition
- Avoid the spread of gorse by ungulates
- Generate income from cattle ranching
- Ranch the most suitable areas based on soils and estimated animal units per year (AUY's)
- Continue the natural recovery of most lands at Humu`ula
  (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 1)

Wildfire fuel types were mapped throughout Humu`ula and Pi`ihonua Mauka in 2007 as part of a DHHL Fire Management Plan. Using GIS technology, these fuel types were analyzed to determine where pasturing might be most beneficial to accomplish the five objectives listed above. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 1)

The Keanakolu Road is a county road open to public access. Along this road corridor, therefore, is an area at greatest risk from heavy fuels being ignited by a careless visitor. The rest of Humu`ula/Pi`ihonua Mauka is much less at risk because of its limited access and DHHL's no hunting policy. In short, most fires are started by humans and the limited human presence at Humu`ula greatly reduces the risk. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 1)

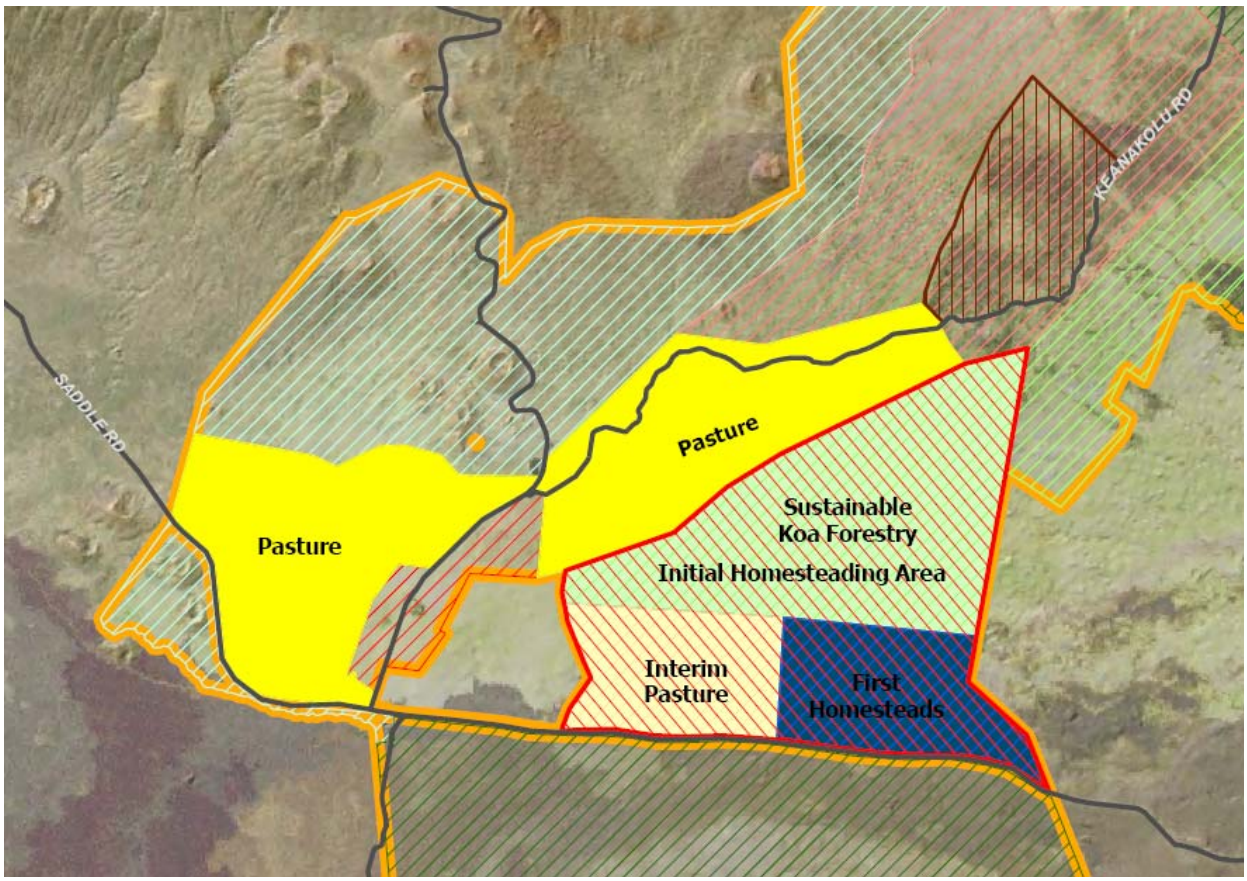
Control of fuels along the Keanakolu Road corridor is further complicated, however, by the presence of heavy gorse infestations in certain areas along the corridor. The presence of cattle in areas of medium to heavy gorse should be avoided as cattle easily spread gorse. Alternatively, in areas of light gorse infestations cattle can act as a tool for revealing isolated, young gorse plants so eradication strategies can be fully employed.

Careful coordination of ranching and gorse eradication efforts is needed. For example, cattle should not be grazed in light gorse infestation areas while gorse plants are actively seeding. Cattle can pick up gorse seed pods in their hair and tails and move it far distances in a short period of time. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 2)

The designated gorse containment area has an established grass fuel break surrounding it and is further segmented and surrounded by access roads. Eventually this entire buffer will be planted with trees, resulting in a shaded, cooler, and a wetter understory that is less susceptible to wildfire and the spread of gorse.

In the interim, wildfires originating inside the gorse containment area could be controlled by quickly "blacklining" the grassed fuel break and using backfires to determine the acceptable size of the gorse fire. If the spread of gorse is to be minimized, cattle should not be grazed in the gorse containment area or its grassed buffer as the risk of moving gorse seed outside through the sale or escape of cattle is high. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 2)

For Humu`ula South the Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels report indicates ideal grazing areas south of the gorse infestation and along Keanakolu Road where fuels would be reduced, gorse movement would be minimized, best AUY's exist, and natural recovery of adjacent lands could continue.



Humu`ula/Pi`ihonua Potential Pasture Areas for Fire Mitigation

Additional acreage pasture use is proposed for approximately 4,000-acres (these land areas are approximate references) - with about 2,000-acres designated for pasture along the Keanakolu-Mana Road and another 2,000-acres on the west side of the Mauna Kea Access Road (below the Radio Tower site and fronting Saddle Road and Mauna Kea Access Road.)

These areas proposed for additional acreage for pasture use are consistent with the Fire Plan and are proposed to be immediately available for beneficiary use. Additional acreage pasture use could also be in the form of Community Pasture.

Land reserved for future homesteads, beyond the initial area noted on the map above, is available for interim pasture use (in the south-eastern portion of the property - approximately 1,000-acres). This land is ultimately proposed for homesteading in the Initial Homesteading Area, however, while the homesteads are planned and awaiting development, in the interim, this land can be used as pasture. So, whether beneficiaries obtain a homestead or not, there is the opportunity for direct beneficiary benefit and use through additional acreage for pasture use.

Paddock Complex

Table 1 below reflects the current characteristics of this recommended South Paddock Complex, which consists of three new paddocks. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 2)

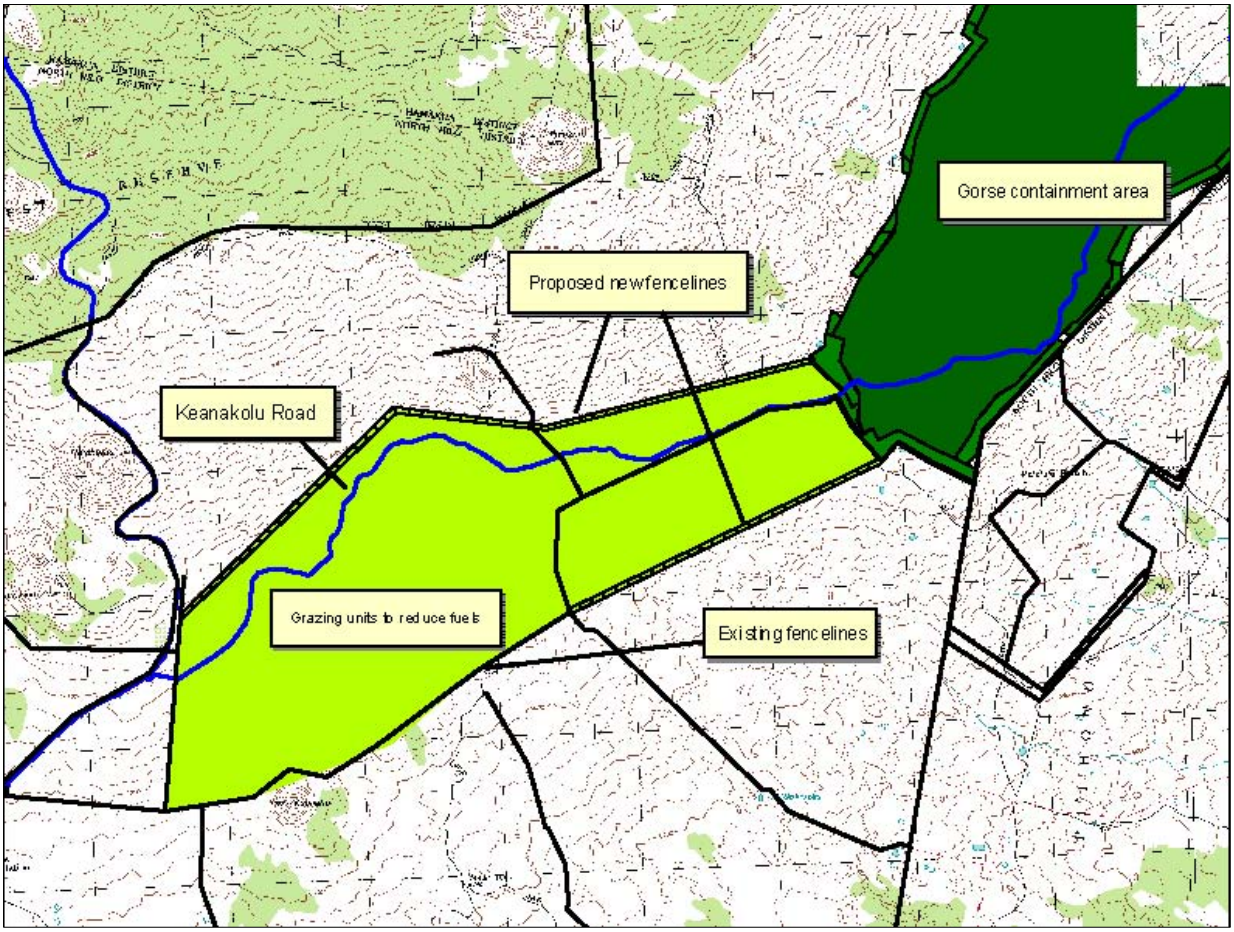
Table 1 – Characteristics of Humu`ula South Paddock Complex

Table 1 – Characteristics of Humu`ula South Paddock Complex	South Paddock Complex	West Paddock	Mauka Paddock	Makai Paddock
Total Acres	1,918	1,323	194	401
Acres in Pu`u `Ō`ō I paddock	198	37	161	0
Acres in Pu`u `Ō`ō II paddock	433	0	33	400
Acres in Huikau paddock	1,287	1,286	0	1
Fuel model 01 (light grass, scattered gorse)	1,568	1,061	185	322
Fuel model 02 (moderate grass, scattered gorse)	129	41	9	79
Fuel models 04/05 (minor grass, medium to heavy native species)	221	221	0	0
1997 appraisal AUY (based on rating of 7 AUY for area soils)	274	189	28	57
New fence lines required to manage complex (feet/cost @$5.00 per foot)	25,687/ $128,434	10,452/ $52,261	6,948/ $34,742	8,286/ $41,432
Annual Rent ($37.50 per AUY, 1997)	$10,275	$7,088	$1,039	$2,148
Estimated payback for fences (years)	12	7	33	19

Three paddocks (as described above) are suggested - West, Mauka, and Makai - using Keanakolu Road as a reference point. These paddocks use existing fence lines as much as possible, include the best grazing lands available, and have some water sources already in place. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 2)

A review of those paddocks indicates that AUY's vary greatly in these traditional paddocks, from 6 to 50 acres required per animal. This lowers the per acre value of the best areas for ranching and it is recommended that these paddocks be divided into more productive areas.

Two new fence lines would be required to create all of the new paddocks. Using a conservative AUY of 8 and a per AUY value of $37.50, the payback of fencing costs from rental fees range from a low of 7 years by developing the West Paddock to a high of 12 years for fencing all three. (Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels, Page 2)



Recommended Grazing Areas – Humu`ula South Side Complex

Educational Opportunities and Employment

The implementation of the `Āina Mauna Legacy Program offers the opportunity for others to visit and experience the natural and cultural resources of the Humu`ula/Pi`ihonua region and provide formal and informal educational opportunities for children and adults to:

- Connect with the world around them
- Have hand's on experiences in a healthy Hawai`i native forest
- Foster awareness, appreciation and understanding of Hawai`i and its natural and cultural environment
- Encourage wise stewardship of precious island ecosystems
- Participate in an unique and educational experience

The educational programs should consider involvement and participation with native Hawaiian immersion charter schools, other organized public and private educational entities, as well as partnership with existing private non-profit entities (such as Tropical Reforestation and Ecosystems Education (TREE), The Nature Center, etc.)

There is a need to manage and restore the forest resources on these lands, not only for their economic value, but also as a cultural and educational resource for future generations.

The Master Plan's "Vegetation Sensitivity Analysis" notes the educational potential of the area's natural resources. The natural resources of the project area provide abundant attraction for eco-tourism and environmental education. Many geological and biological elements come together within Humu`ula and Pi`ihonua. Most striking may be the contrast between the stark lava lands of Mauna Loa on the south side of Saddle Road and the Pu`u-studded slope of Mauna Kea to the North. Similarly, the change in elevation and rainfall provide a range of biological communities, from tall rain forest in Pi`ihonua to pioneer shrub lands in `Āinahou. Unique or endangered birds, plants and biological communities can be viewed by visitors or students of Hawaiian natural history. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document G-Vegetation Sensitivity Analysis, Page G-17)

School Education

One avenue for education is through charter Sschools. Many of the charter schools on the Island of Hawai`i have curriculum which deals with Hawaiian culture, agriculture and natural history. Humu`ula presents an excellent place for these students to learn and take part in "hands on" educational experiences.

There is also the opportunity for public school and private school students to also benefit from the educational opportunities in this region.

Mandatory `Āina Mauna Cultural, Natural Resources and Safety Briefing

One method to ensure that all visitors receive the information they need in order to better protect the `Āina Mauna's cultural and natural resources is to require everyone who visits/enters the area to participate in a mandatory `Āina Mauna cultural, natural resources and safety briefing.

The `Āina Mauna cultural, natural resources and safety briefing should include three important components.

- Cultural Briefing
- Natural Resources Briefing
- Safety Briefing

Specific contents of the `Āina Mauna cultural, natural resources and safety briefing will need to be determined. At a minimum, the briefing should include the following components:

Cultural Briefing

- History of the area
- Concerns regarding sensitivity of cultural resources
- Specific guidelines for culturally appropriate behavior
- Provide guidance and information as to what constitutes respectful and sensitive behavior

Natural Resources Briefing

- Concerns regarding sensitivity of natural resources
- Describe the status, condition and diversity of natural resources present, including biotic and physical elements
- Outline the potential and existing threats to the natural resources
- Litter and debris control
- Requirements of the Invasive Species Prevention, Control and Eradication Program
- Summarize the protection afforded the natural resources via various rules and regulations
- Provide expectations and requirements to avoid habitat damage

Safety Briefing

- Health and safety issues
- Rules and regulations
- Prohibitions
- Emergency procedures
- Restrictions on smoking and other potential fire sources
- Steps to take and consider regarding personal safety and potential hazards

There are many forms that the `Āina Mauna cultural, natural resources and safety briefing could take and DHHL staff would need to decide which will be the most appropriate for the `Āina Mauna area.

- Video
- Program (live in person)
- Brochure

There are several additional details that must be worked out before implementing a mandatory `Āina Mauna cultural, natural resources and safety briefing, including how often individuals would be required to attend the briefing (e.g., for each visit, annually, etc); location of briefing (at Sheep Station, elsewhere, commercial operator's vans, on the internet); and whether there will be any exceptions to requirements for attending a briefing.

Other details include working out how proof of attendance will be provided. Options include maintenance of a database of registered users, a colored armband or bracelet, a pin or button, etc.

The `Āina Mauna cultural, natural resources and safety briefing should be required for all who enter the property including visitors, tour operators and staff, DHHL staff, contractors, researchers and volunteers. It is recommended that, at minimum, commercial tour operators and existing and potential future staff and contractors are required to incorporate the `Āina Mauna cultural, natural resources and safety briefing into their programs. This requirement can be included in the various permit conditions and in all other contracts.

Employee/Volunteer Training Program

A separate training program for employees and volunteers should also be developed and approved by DHHL, in addition to the `Āina Mauna cultural, natural resources and safety briefing. The training will address field-personnel training, volunteer training and general staff training. General training requirements include review of applicable laws and regulations, and basic cultural and natural resources information.

Training requirements for all personnel involved in field-based management activities include general safety training, 4-wheel drive vehicle operation, briefing on working at high elevations, emergency response, CPR and first aid, and recognition of culturally significant areas and items and protected flora and fauna. All staff who access the area should receive safety briefings and basic cultural and natural resources training including basic emergency response training (including CPR and first aid).

Invasive Species Control Program

An Invasive Species Control Program would educate employees regarding the status, condition, diversity and protection afforded the natural resources present on the mountain.

Management tools to deal with invasive species include preventing new species from becoming established and controlling established species. Monitoring is a necessary component of both these tools.

Prevention and control measures for invasive species to consider include:

- Report any observation of intentional and/or accidental introductions of invasive species
- Request that everyone brush down their clothes and shoes to remove invasive plant seeds and invertebrates
- Require wash-down of all vehicles and equipment before they enter the area

Educational Materials

Educational materials in a variety of formats can be used on and off site to explain important aspects of `Āina Mauna. While printed brochures are useful for visitors on site and can be distributed from various outlets (Sheep Station, commercial tour operators etc), web-based products are more interactive and can reach a broader audience.

Types of brochures that could be developed, and distributed include educational materials, including newsletters, videos, and brochures on topics such as safety, cultural resources, natural resources, and recreational activities. Educational materials provided by commercial tour operators, should be reviewed and approved by DHHL to ensure the quality and accuracy of the information they provide to visitors.

Website Development

Web sites are an effective means of broadly distributing information. There should be consideration of developing an `Āina Mauna website. The website should be updated regularly to include information on the natural and cultural resources found in the area and on visiting the area safely and responsibly.

The website and an email list-serve can be used to distribute information pertinent to the community, to keep the public informed. Such information shall take the form of newsletters, announcing volunteer and educational opportunities.

Research

The uniqueness of the `Āina Mauna region presents an unparalleled opportunity for scientists and researchers to learn about the area. Historians as well as cultural practitioners can also benefit from the area. The `Āina Mauna region should be viewed as a place where people can come to learn about Hawai`i.

Employment Opportunities

Employment opportunities are an important component of the `Āina Mauna Legacy Program. While developing the `Āina Mauna Legacy Program the importance of job opportunities and training were emphasized by many. The `Āina Mauna Legacy Program will require a wide range of jobs and provide a wide range of job and training opportunities.

The restoration of the `Āina Mauna native forest will require a multitude of conservation oriented jobs. As noted in the DHHL Pi`ihonua Mauka Conservation Management proposal, Pi`ihonua Mauka has been managed for natural resource production for fifty years. The native Hawaiian community benefits economically from this managed area via conservation jobs which maintain the `ōhi`a forest, commercial jobs which reforest and harvest the koa forest, and by new visitor enterprises such as hiking, horseback riding, and bird watching. (Pi`ihonua Mauka Conservation Management Proposal, Page 1)

At Humu`ula, from 2003 to 2005, approximately 100-acres of koa harvest created five full time jobs. These jobs have continued with the on-going koa salvage currently taking place at Humu`ula. Not only can jobs be created through koa salvage operations, if some of DHHL's lands that can support koa forests were managed on a reasonable 50-year rotation between harvests, 5,000-acres would sustain this level of output indefinitely (50-years times 100-acres = 5,000-acres), thus, creating a permanent industry and job opportunities.

Commercial forestry can support possibly hundreds of new jobs. As a fully renewable industry, replicable over generations, it would help Hawai`i reduce its current dependence on wood product and energy imports, create an export industry, and create job opportunities for generations to come.

The adaptive reuse of the Humu`ula Sheep Station, eco-tourism opportunities, and homestead development, will also offer a variety of job and career opportunities.

Employment and economic development are key factors in considering ecotourism's business potential. One of the strongest arguments favoring ecotourism is the creation of employment opportunities for residents in rural areas. Although employment data on ecotourism is lacking in current literature, there

is evidence, particularly from nature-based tourism that ecotourism jobs are more desirable than other forms of employment in rural areas.

It has been reported that an excellent tour guide may collect an average of $100 to $300 per group and a guide working year-round can make up to $30,000 annually. There are also suggestions that nature-based tourism jobs have better advancement opportunities and a longer duration of employment. The degree of job safety is also high as compared to jobs in agriculture. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-10)

A recent DBEDT-TIM ecotourism survey indicates that for-profit nature-based operators in Hawai`i employ an estimated 5,195 full-time employees and an additional 2,000 part-time employees. As a benchmark for comparison, the hotel sector employed 38,000 workers in 1993. There are also a large number of volunteers reported on a seasonal basis. (Humu`ula/Pi`ihonua Master Plan, Technical Reference Document C-Preliminary Market Assessment, Page C-10)

Partnerships

Partnerships are an important component to any successful plan. The planning of Humu`ula is no exception. There are many partnerships available for DHHL to take advantage of especially in the areas of invasive species eradication, natural resources restoration, education, and funding.

During the creation of the Humu`ula/Pi`ihonua Master Plan, an Advisory Task Force Committee was formed to provide a broad range of expertise in planning of the Humu`ula/Pi`ihonua area. Some of the issues discussed by the Committee were in relation to partnerships and collaboration. These included partnering with Hakalau Forest National Wildlife Refuge to create wildlife corridors and buffers as well as working with the military at Pōhakuloa Training area on gorse eradication and control.

Invasive Species Control – Big Island Invasive Species Committee

The control of alien species (such as gorse and banana poka) within these lands is also critical to maintaining the value of forest resources and needs to be included as part of an overall management plan. (Humu`ula/Pi`ihonua Master Plan, Page 59)

Cooperative efforts with the State Department of Agriculture, DHHL, and individual ranches are underway to implement a program to control and eliminate the gorse problem. In February 1997, a new Gorse Steering Committee was formed that included interested Federal, State, County and private businesses to integrate all related efforts to gorse control and eradication. The military has also suggested the potential of utilizing the gorse area in training activities that would include burning and clearing of the gorse. (Humu`ula/Pi`ihonua Master Plan, Page 60)

Watershed Partnership – Mauna Kea Watershed Alliance

Watershed Partnerships are voluntary alliances of both public and private landowners committed to the common value of protecting forested watersheds for water recharge, conservation, and other ecosystem services through collaborative management. The first Watershed Partnership began in East Maui in 1991. Today, there are nine statewide on six major islands - Kaua`i (1), O`ahu (1), Lāna`i (1), Moloka`i (1), Maui (3), and Hawai`i (2).

Together, these partnerships involve over 45 private landowners and 24 public agencies that cover over 1.6 million acres of land in the state. The Hawai`i Association of Watershed Partnerships (HAWP) is comprised of nine Watershed Partnerships on six islands. HAWP seeks to increase the management and protection of such areas by raising the capacity of Watershed Partnerships, facilitating the sharing of watershed management knowledge, building public support and awareness of watershed values, and developing sustainable funding sources.

University of Hawai`i, Hilo – College of Agriculture, Forestry and Natural Resource Management

The College of Agriculture, Forestry, and Natural Resource Management (CAFNRM) provides quality education to assist individuals in acquiring the scientific knowledge, attitudes, and practical skills needed to practice environmentally sound, sustainable agriculture, forestry and natural resource management and to be productive and responsible global citizens.

The program blends comprehensive classroom instruction with practical, technology-based, hand-on education through the use of the University of Hawai`i at Hilo Agricultural Farm Laboratory and on-campus laboratory facilities.

The College is especially interested in moving agriculture and natural resources in the tropical and semitropical areas of the Pacific Basin toward more economical and self-sustaining methods. CAFNRM provides student interns through the Hawaiian Intern Program (HIPP) and the Pacific Internship Program for Exploring Science (PIPES) program to serve on natural resource projects.

Timber Management

The Humu`ula/Pi`ihonua Agricultural Master Plan notes that because new information about koa and other timber product cultivation is becoming rapidly available, management needs to utilize all resources available. Resources listed include:

- Hawai`i Agricultural Research Center (formerly HSPA)
- State of Hawai`i, Department of Land and Natural Resources, Division of Forestry and Wildlife
- University of Hawai`i, Manoa - College of Tropical Agriculture and Human Resources (CTAHR)
- University of Hawai`i, Hilo - College of Agriculture, Forestry and Natural Resource Management (CAFNRM)
- U.S. Fish & Wildlife Service (Hakalau Forest National Wildlife Refuge)
- USDA Forestry Service (Honolulu)
- USDA Natural Resources Conservation Service (Hilo)

Funds should be budgeted to provide for ongoing research in support of the proposed forestry program. Hawai`i Agricultural Research Center (formerly HSPA), the University of Hawai`i, Hilo, College of Agriculture, Forestry and Natural Resource Management and the University of Hawai`i, College of Tropical Agriculture and Human Resources have researchers with the expertise necessary to conduct the requited research. Because both the state and federal government are promoting forestry as well as many private groups and foundations, matching grants are available.

Mauna Kea Neighbors

The Mauna Kea Neighbors partnership was initiated in 2003 by the Department of Land and Natural Resources. The partnership is made up of representatives from a variety of area landowners and was formed in recognition that different landowners along the slopes of Mauna Kea share a responsibility to work together to help protect and manage the area.

A series of periodic meetings began in early 2004 with landowners taking turns hosting each meeting with the agenda focused on the activities and accomplishments of the host. Group members were able to learn more about their neighbors and have a chance to see firsthand what challenges and opportunities each face on their property.

The meetings were additionally a way for landowners to consider opportunities for partnerships. Ultimately the meetings moved all participants toward a better understanding of who their neighbors in the area are and what they are doing.

The meetings offer a chance for landowners to look toward the future of the Mauna Kea area and work together to help guide the future plans for the area in a cooperative stewardship of Mauna Kea:

- State of Hawai`i, Department of Hawaiian Home Lands
- State of Hawai`i, Department of Land & Natural Resources
- Office of Hawaiian Affairs
- U.S. Army - PTA
- Waiki`i Ranch
- Parker Ranch
- University of Hawai`i Institute for Astronomy
- U.S. Fish & Wildlife Service - Hakalau Forest National Wildlife Refuge
- Hawai`i Island Economic Development Board
- Office of Mauna Kea Management
- University of Hawai`i, Hilo - College of Agriculture, Forestry and Natural Resource Management

In addition, other entities to consider are:

- Sierra Club - Moku Loa Group
- The Nature Conservancy
- Hawaiian Heritage Program
- Hawai`i Forest Industry Association
- Alternative Energy Producers
- Eco-Tourism Industry
- Hawai`i Island Chamber of Commerce

Alternative Funding Sources

The following describes alternative funding sources including grants, partnerships, and other sources of funds for among other things, invasive species control, forest product production, alternative energy projects, forest management, cultural programs, wildlife management and protection. Initial, preliminary listing of possible options for funding include:

Conservation Resource Enhancement Program (CREP) - An offspring of the Conservation Reserve Program (CRP), CREP is a voluntary program for agricultural landowners. Unique state and federal partnerships allow you to receive incentive payments for installing specific conservation practices. Through the CREP, farmers can receive annual rental payments and cost-share assistance to establish long-term, resource-conserving covers on eligible land. CREP is a voluntary land retirement program that helps agricultural producers protect environmentally sensitive land, decrease erosion, restore wildlife habitat, and safeguard ground and surface water. This program is in the process of being activated in Hawai`i, but at the present time is not available.

Western Wildland Urban Interface Grant Program - The Western Wildland Urban Interface Grant Program awards funding through a competitive process with emphasis on hazard fuel reduction, information and education, and community and homeowner action. This portion of the National Fire Plan was developed to assist interface communities manage the unique hazards they find around them. Long-term solutions to interface challenges require informing and educating people who live in these areas about what they and their local organizations can do to mitigate these hazards. There is a 50/50 match requirement and each grant request is limited to a maximum of $300,000.

Clean Water Act Section 319 - The Nonpoint Source Management Program Section 319 is an amendment to the Clean Water Act to establish a Nonpoint Source Management Program to help focus State and local nonpoint source efforts. State, Territories, and Indian Tribes receive grant money to

support a variety of activities such as technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring. The State, Territory, or Indian Tribe may take the provided funding and contract out to local organizations to help meet the objectives of the Act.

Private Lands Initiative - The Private Lands Initiative involves a cooperative agreement between an armed service and a non-governmental organization (NGO) or a state/local agency to cost-share the purchase of land titles or conservation easements from willing land owners (at market value) to minimize incompatible use. The NGO or state/local agency purchases and manages the land titles or easements.

Army Compatible Use Buffers Program - A program of the US Army the Army Compatible Use Buffers Program is available to NGOs or state/local agencies to purchase a portion of land (titles or conservation easements). The program helps the Army meet Endangered Species Recovery Act and prevention of future threatened and endangered species listings. The program offers a possible reduction in land taxes, is permanent and the Army may use the land for low-impact training.

Partners for Fish and Wildlife - The Partners for Fish and Wildlife program is administered by the US Fish and Wildlife Service. Its purpose is to restore natural habitats and provide long-term benefits to threatened and endangered species and satisfy the needs of wildlife populations on National Wildlife Refuges. There is a 10-year minimum commitment, up to a 50% cost-share and technical assistance is also provided.

Environmental Quality Incentives Program (EQIP) - This program is a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land. Cost-Share 75/25.

Wildlife Habitat Incentives Program (WHIP) - This program is a voluntary program for people who want to develop and improve wildlife habitat primarily on private land. Through WHIP, USDA's Natural Resources Conservation Service provides both technical assistance and up to 75 percent cost-share assistance to establish and improve fish and wildlife habitat. Cost-Share 75/25.

State Forest Stewardship Program (FSP) - The purpose of this program is to assist non-industrial private forest landowners whom manage their forests and related resources to increase the economic and environmental benefits of their lands. Cost-share funding opportunities for private landowners range from $5,000 to $75,000 per year, for 10 yrs, with a following maintenance period. Cost-Share 50/50.

Urban & Community Forestry (Kaulunani) - This program promotes the creation of healthier, more livable urban environments. Kaulunani maintains, restores, and improves the health of urban trees, forests, green spaces and sustainable forest ecosystems. The Program provides educational, technical and cost-share funding to cities, counties, schools, and community groups in urban areas. Kaulunani funding is available ranging from $1000 to $10,000 for cost-share projects. Matching for this program comes primarily from public and private community, in-kind project contributions and/or labor. Cost-Share 50 Federal/50 Landowner.

Watershed Partnership Program - These programs are voluntary alliances of public and private landowners committed to the common value of protecting large watersheds for water recharge and other values. Presently eight (8) successful watershed partnerships have been established covering

thousands of acres. On the ground projects focus on alien species control, fencing, ecosystem restoration, and technical assistance.

Safe Harbor Agreements (SHA) - These agreements encourages proactive natural resource management to benefit endangered and threatened species. It provides regulatory assurances that future property-use restrictions will not be imposed if those efforts attract endangered or threatened species to their enrolled property or result in increased numbers or distributions of listed species already present.

**State of Hawai`i Legacy Land Conservation Fund** - This program provides a source for funding for the conservation of Hawai`i's unique and fragile places and resources. State, county agencies and non-profits who are seeking funding to acquire property from private entities may apply for this grant. Proposed projects may include acquisition of fee title or conservation easements. Cost-share funding is only required of nonprofit organizations. Cost-Share 75/25.

Cooperative Forest Health Protection - This program directs and implements measures to prevent, retard, or suppress unwanted, native and non-native invasive insects, pathogens, and plants affecting trees and forests. The primary goals are to minimize the spread of established invasive species and reduce damage caused by native insects and diseases. The program protects and improves America's forests using cutting-edge technology to rapidly respond to forest health threats. Funding and technical assistance is available for insect and pathogen management for private landowners through the State. This program is committed to finding innovative ways to rapidly respond to forest health threats to avoid unacceptable loss of forest resources. Cost-Share 50/50.

Watershed Forestry Assistance Program (WFAP) - The Healthy Forest Restoration Act (HFRA), contains two watershed forestry assistance programs (WFAP), State Watershed Forestry Assistance and the Tribal Watershed Forestry Assistance Programs that are to be administered by the Secretary of Agriculture through the Chief of the Forest Service. The Forest Service is working with State Forestry Agency personnel and with Indian Tribes to develop separate guidelines for the State and the Tribal Watershed Forestry Assistance Programs.

Memorandums of Agreement (MOAs) - Example, Wao Kele o Puna provides habitat for a variety of native species and serves as an important seed bank for future restoration to nearby lava flows. After the acquisition of the property by OHA, OHA and DLNR signed a MOA for the management of the area. OHA provides funding and DLNR implements the management functions. This MOA can serve as a model for developing partnerships to help DHHL gain capacity and bring together contemporary management skills with traditional practices for the best overall management of the land and forest which could be applied to Humu`ula and Pi`ihonua as well.

The following are conservation related organizations which could be partnered with and may offer assistance in development of conservation plans.

**Hawai`i Island Land Trust (HILT)** - HILT is a community-based, non-profit organization whose mission is to provide an inclusive approach to land conservation on the Island of Hawai`i. HILT works with landowners who voluntarily choose to protect their land and collaborates with individuals, other non-profits, and governmental organizations to achieve conservation objectives. HILT uses a variety of tools to protect lands such as voluntary conservation easements, land donations, or fee-simple purchases.

The Nature Conservancy - The mission of the Nature Conservancy is to preserve the plants, animals, and natural communities that represent the diversity of life on earth by protecting the land and waters they need to survive. The Nature Conservancy has developed a strategic, science-based planning process, called Conservation by Design, which helps to identify the highest-priority places, landscapes and seascapes that, if conserved, promise to ensure biodiversity over the long term. In other words, Conservation by Design allows the achievement meaningful, lasting conservation results.

The Trust for Public Lands - The Trust for Public Land (TPL) is a national, non-profit land conservation organization. TPL works with private and corporate landowners, community groups, cities and towns, and public agencies at the State and Federal levels. TPL strives to find ways that lets everyone work together, achieve our conservation goals, and see that many of America's most special places are preserved. TPL's mission statement is simple: to conserve land for people. The work, however, is complex, challenging, and rewarding. In 25 years, more than 1 million acres of land, valued in excess of $1.2 billion dollars, have been protected by TPL.

**Hawai`i Invasive Species Council (HISC)** - HISC is a government body established by the Legislature of the State of Hawai`i with the authority to provide funding for the removal of and the establishment of State policy related to invasive species. The Hawai`i Invasive Species Council's special purpose is to foster coordinated approaches that support local initiatives for the prevention and control of invasive species, such as the coordinating group on alien pest species and the island invasive species committees.

Youth Conservation Corps (YCC) - The Youth Conservation Corps is a hands-on summer learning experience educating Hawai`i's youth. Members and team leaders receive a stipend and if eligible, will receive three (3) college credits upon successful completion of the program. YCC programs are held on the islands of O`ahu, Maui, Moloka`i, Kaua`i, and the Big Island.

Preliminary Operating Budget

`Āina Mauna Legacy Program - Operating Budget

Operating Statement
(Existing and Stabilized) - stabilized operating revenue expected in 2012 after procurement

Revenue:		**Subtotals**	**2010**	**Start-up 2011**	**Phase In 2012**	**Stabilized 2013 +**
Timber license/lease						
(10,000 x $15/ac)		$150,000				
(10,000 x $5/ac) (restoration activities)		$50,000		$200,000	$200,000	$200,000
Koa Salvage						
($3,500/ac)			$300,000	$300,000	$300,000	$150,000
Sheep Station lease						
(base rent)		$50,000				
(percentage)						
Alt 1	Campground	$5,000		$55,000		
Alt 2	Campground	$5,000				
	Cabins (10)	$10,000				
	Commercial	$20,000			$85,000	
Alt 3	Campground	$5,000				
	Cabins (20)	$20,000				
	Commercial	$150,000				$225,000
Remote Accommodations lease(s)				$25,000	$25,000	$25,000
Eco-tourism licenses						
(percentage-variable)		$50,000	$40,000			
(restoration activities or match)		$5,000		$55,000	$65,000	$75,000
Conservation support (Grants/match)				$500,000	$500,000	$500,000
Total Operating Revenue			$340,000	$1,135,000	$1,175,000	$1,175,000

Expenses:		2010	Start-up 2011	Phase In 2012	Stabilized 2013 +
Start-up Costs					
Vehicle (1)	$30,000			$30,000	
Quads (2)	$20,000		$10,000	$10,000	
Office/Accommodations at Sheep Station			$250,000	$30,000	
Kanakaleonui Propagation Facility			$70,000		
Pu`u `Ō`ō Propagation Facility				$54,000	
Operating Expenses					
Personnel (salary and employment costs)					
Manager	$100,000	$100,000			
Compliance/Grants/Field Work	$75,000		$175,000		
Field Work	$50,000			$225,000	$225,000
Vehicles and equipment usage	$10,000	$4,000	$10,000	$10,000	$10,000
Office operations		$4,000	$4,000	$5,000	$5,000
Invasive Species Management		$50,000	$75,000	$100,000	$100,000
Reforestation		$150,000	$500,000	$600,000	$700,000
Road Maintenance				$30,000	$30,000
Fence Maintenance				$40,000	$45,000
Total Operating Expenses		$308,000	$1,094,000	$1,134,000	$1,115,000
Excess Revenue after Expenses		$32,000	$41,000	$41,000	$60,000

Summary Budget Information

The following are some order-of-magnitude estimated revenues and costs associated with some of the facilities and programs to be implemented in the `Āina Mauna Legacy Program. Ultimately, refinement of many of these estimates will be more defined, as details of each facility are better known.

As noted in the `Āina Mauna Legacy Program mission, a fundamental principal is that the program is economically self-sustaining. That means costs are covered by revenue generated from the property. Given the scope and scale of the needs, it may mean that certain capital and operating expense items may have to be deferred and delayed until sufficient funds are available.

These revenue and cost estimates address preferred/needed expenditures; they may need to be deferred due to availability of funds. It is the intention that during the implementation phase revenue generating items be initiated first, in order to raise funds for management and implementation.

In addition to the magnitude of the expense for construction, since homesteading and pasture use are the typical and conventional disposition activities of DHHL, it is recommended that the proposed uses at Humu`ula/Pi`ihonua come under existing DHHL planning, design, development, funding, disposition and management.

While the Homestead lots will be rurally-developed because of the area's remote location and lack of traditional infrastructure, the cost of development is significant and beyond the scope and capacity for the remaining revenue-generating opportunities proposed on the property. These proposed uses can fit in the "queue" for development scheduling and disposition with other Homesteading and Pasture uses.

Administration-Base Facility

Cost

Establish Base Facility in vicinity of Sheep Station (1st phase) $400,000
(Office, accommodations for staff, lab, restrooms, catchment, storage, etc)

Expansion of Base Facility (2nd phase) $1-million
(Dormitory, storage, restroom/shower, support facilities)

Photovoltaic system /low wind speed generators $1-million
(Base facility, water system, propagation centers/field worker facilities and Humu`ula Sheep Station - power, battery storage, generator backup)

Native Forest Reforestation

Revenue

Easement Payments (estimate) $45-per acre

Conservation Support (estimate) $500,000-per year
(Grants/match)

Cost

Kanakaleonui Propagation Center (1st phase) (Greenhouse, composting toilet, storage, catchment, etc)	$70,000
Kanakaleonui Field Worker Facility (2nd phase) (Bunkhouse 15-20 people, restroom/shower, kitchen, dining, lab, storage, catchment, etc)	$400,000
Kanakaleonui Field Worker Facilities (3rd phase) (Bunkhouse 15-20 people, restroom/shower, storage, office, catchment, etc)	$300,000
Pu`u `Ō`ō Propagation Center (1st phase) (Greenhouse, composting toilet, storage, catchment, etc)	$54,000
Pu`u `Ō`ō Field Worker Facility (2nd phase) (Bunkhouse 15-20 people, restroom/shower, kitchen, dining, lab, storage, catchment, etc)	$400,000
Pu`u `O`o Field Worker Facilities (3rd phase) (Bunkhouse 15-20 people, restroom/shower, storage, office, catchment, etc)	$300,000
Native Forest Restoration	$2,000-per acre
Some breakdown of component costs:	
Site preparation	$150-$180-per acre
Herbicide	$70-per acre
Fertilizer	$250-per acre
Ungulate Control	
New Fencing	$7 - $10-per lineal foot
Fence Replacement	$5-per lineal foot
Fence Maintenance	$5-per lineal foot

<u>Sustainable Koa Reforestation</u>

Revenue

Koa Salvage (dead and dying koa harvesting)	$3,500-per acre

Cost

Sustainable Koa Forest Reforestation	$2,000-per acre
Some breakdown of component costs:	
Site preparation	$150-$180-per acre
Herbicide	$70-per acre
Fertilizer	$250-per acre

Unmanaged-Ungulate Control

Cost

New fencing	$7 - $10-per lineal foot
Fence Replacement	$5-per lineal foot
Fence Maintenance	$5-per lineal foot

Site Development and Homestead Development

Based on actual costs and estimates in the Honokaia Homestead and Pastoral Infrastructure, Humu`ula Rural Villages Plan and the Humu`ula/Pi`ihonua Master Plan the overall site infrastructure cost and cost per home are listed below. (Infrastructure includes roadway improvements, storm drainage system, fencing, septic/leach fields, community Park, water system, electrical/solar system, plus contingency.)

Cost

Infrastructure Construction Estimate - `Ōiwi Plan (100 homesteads)		$11,000,000
Community Infrastructure	$66,000-per home (based on 100-homes)	
Individual Home Infrastructure	$44,000-per home (based on 100-homes)	
Total Infrastructure (community and home)	$110,000-per home (based on 100-homes)	
Total Infrastructure – Humu`ula Master Plan		$15,670,000
(Proposed 50 to 150 pastoral homesteads)	$105,000 - $313,400 per lot	
Infrastructure Construction Cost – Honokaia		$7,820,000
(No water, 27-pastoral lots in two phases)		
Dividing evenly regardless of lot size	$289,600-per lot	
Individual homestead power/water cost estimates		
3KW PV system and battery backup	$34,000-per home	
Rain Catchment System	$8,000-per home	

Water System

Cost

Water System (for base facility/Sheep Station area - single well)		$8-million
Drilling and finishing well development - $1,000 per foot of depth	$5-million	
Potable water storage and distribution to Base Facility/Sheep Station area	$3-million	
Stock water construction and distribution		$2-million
(Intent is to incorporate PTA military training into reservoir construction effort)		
Humu`ula Master Plan estimate for deep well water system		$11.5 to $13.3-million
50-homesteads - $11,500,000		
500-homesteads - $13,300,000		

Humu`ula Master Plan estimate for catchment water system $2.2 to $8.1-million
50-homesteads - $2,000,000
500-homesteads - $8,100,000

Timber License Lease

Revenue

License/Lease ($20 per acre) $200,000-per year
(Actual revenue will be determined by a broad-based RFQ/RFP process. Hamakua lease rents for large-scale timber operations are approximately $40-$50 per acre - the estimated lease rent from the `Āina Mauna is discounted due to the anticipated added costs for tree cultivation, differences in the areas and prior uses, and need to address the gorse during the planting stage)

Remote Accommodations

Revenue

Lease $25,000-per year
(Actual revenue will be determined by a broad-based RFQ/RFP process. Estimates noted here relate to figures presented in the Humu`ula Sheep Station Adaptive Reuse Plan.)

Eco-Tourism

Revenue

License $50,000 - $75,000-per year
(Actual revenue will be determined by a broad-based RFQ/RFP process. Estimates noted here relate to figures presented in the Humu`ula Sheep Station Adaptive Reuse Plan.)

Humu`ula Sheep Station

Revenue

Lease $55,000 - $225,000 per year
(Actual revenue will be determined by a broad-based RFQ/RFP process. Estimates noted here relate to figures presented in the Humu`ula Sheep Station Adaptive Reuse Plan.)

Cost

Humu`ula Sheep Station restoration/development $1-million
(Historic property restoration and other site development)

Gorse Eradication and Control

Revenue

Timber License ($20 per acre) $200,000-per year
From trees to shade gorse (eucalyptus, sugi etc)
(Actual revenue will be determined by a broad-based RFQ/RFP process. Hamakua lease rents for large-scale timber operations are approximately $40-$50 per acre - the estimated lease rent from the `Āina Mauna is discounted due to the anticipated added costs for tree cultivation, differences in the areas and prior uses, and need to address the gorse during the planting stage)

Cost

Aerial spraying $70+ per acre
Helicopter boom spray $30 per acre
Herbicide $41 per acre

Mulching $650-per acre
(This also equates to approximately $240-per hour)

Example of Unmanaged-Ungulate Control

Revenue

Assuming 1,100 head of marketable cattle are captured $330,000

Cost

Unmanaged Ungulate control overall cost $291,000
Fence Replacement of 38,000 lineal feet @ $5.00 per lineal foot $190,000
Fence Maintenance of 19,000 lineal feet @ $5.00 per lineal foot $95,000
Lottery Administration of 60 months @ $100 per month $6,000

Example of Cost and Timing for Sustainable Koa/Native Forest Reforestation of 500 acres

Cost

Total initial cost $1,180,000
Site prep, herbicide, planting, fertilizer, etc
500 acres @ $2,000-per acre $1,000,000
Fencing of 500 acres (18,800 lineal feet) @ $8 per lineal foot $180,000
Initial plantation-style (Sustainable Koa) or "Islands" (Native Forest) planting is proposed
Sustainable Koa - (7 x 7-foot spacing; approximately 800 – 1,000 seedlings per acre)
Native Forest – (30 x 30 spacing of islands with diversity of native plants in each "Island")
Experienced planters can plant approximately 1,000-1,500 seedlings per day
Volunteer planters can plant approximately 50-150 seedlings per day
Assume 200 seedlings planted per day x 20 planters = 4,000 seedlings planted per day
Assume team of twenty volunteer planters, 500-acres can be planted in ~6 months
Ongoing management includes weed control, fertilizer and thinning.

`Āina Mauna Legacy Program References

Kanakaleonui Bird Corridor Management Plan - Department of Hawaiian Home Lands - June 16, 2009

Mauna Kea Comprehensive Management Plan-UH Management Areas - Office of Mauna Kea Management - January 2009

Atlas of Hawaiian Watersheds & Their Aquatic Resources, Island of Hawai`i - Department of Land and Natural Resources, Division of Aquatic Resources - April 7, 2008

Introduction to Cattle - HawaiiHistory.org - http://www.hawaiihistory.org/index.cfm?fuseaction=ig.page&CategoryID=254

Hawai`i's High Profile Invasive Species, Fireweed - Hawai`i Invasive Species Partnership - http://www.hawaiiinvasivespecies.org/pests/fireweed.html

Conservation Easements, Private Rights and Public Benefits - U.S. Fish & Wildlife Service - http://www.fws.gov/mountain-prairie/pfw/r6pfw8b.htm

Kohala Mountain Watershed Management Plan, Draft - Kohala Watershed Partnership - December 2007

Pi`ihonua Mauka Conservation Management Proposal for the Department of Hawaiian Home Lands - Department of Hawaiian Home Lands - November, 2007

Humu`ula/Pi`ihonua Mauka Community Wildfire Protection Plan - Department of Hawaiian Home Lands - September 2007

Pasture Recommendations at Humu`ula for Controlling Wildfire Fuels - Department of Hawaiian Home Lands - July 16, 2007

A Survey of Koa Regeneration in Humu`ula - Department of Land and Natural Resources, Division of Forestry and Wildlife - June 2007

Pu`u `Ō`ō Ranch Adaptive Reuse Study - Kimura International - April 2007

Keanakolu: An Archaeological Perspective of Hawaiian Ranching and the Pacific Hide and Tallow Trade TMK 3-8-01:9, Draft - Peter R. Mills - Spring 2007

Technical Report No. 07-01, Review of Methods and Approach for Control of Non-Native Ungulates in Hawai`i - Department of Land and Natural Resources, Division of Forestry and Wildlife - March 1, 2007

State of Hawai`i Forest Stewardship Handbook - Department of Land and Natural Resources, Division of Forestry and Wildlife - February 2007

Wildland Fire Management Plan Humu`ula/Pi`ihonua Mauka - Department of Hawaiian Home Lands - 2007

License Agreement #673 between Department of Hawaiian Home Lands and `Ōiwi Lōkahi o ka Mokupuni o Keawe for Gorse Control - November 28, 2006

Forestry Related Assistance Programs in Hawai`i: Current Programs and Future Trends - Department of Land and Natural Resources, Division of Forestry and Wildlife - October, 2006

Revised Recovery Plan for Hawaiian Forest Birds - U.S. Fish and Wildlife Service - September 22, 2006

Commercial Forestry Areas for the Department of Hawaiian Home Lands - Department of Hawaiian Home Lands - April 2006

Controlling Ungulate Populations in native ecosystems in Hawai`i - Hawai`i Conservation Alliance - November 22, 2005

Hawaiian Homes Commission Submittal Regarding Settlement Agreement with Aged Hawaiians - November 15, 2005

Hawai`i's Comprehensive Wildlife Strategy - Department of Land and Natural Resources - October 1, 2005

Assessment of Pi`ihonua: A Brief Assessment for Beneficiary Ranching Leases at Pu`u `Ō`ō Ranch - N. Duke Kapuniai and `Ōiwi Lōkahi o ka Mokupuni o Keawe - April 2005

"Mauna Kea - Ka Piko Kaulana O Ka `Āina" (Mauna Kea-The Famous Summit of the Lands), A Collection of Native Traditions, Historical Accounts, and Oral History Interviews for: Mauna Kea, the Lands of Ka'ohe, Humu`ula and the `Āina Mauna on the Island of Hawai`i - Kumu Pono Associates LLC - March 30, 2005

"He Moolelo `Āina" A Cultural-Historical Study of the Upper Waiākea-Humu`ula Mountain Lands: The Proposed Kīpuka `Āina Mauna Natural Area Reserve District of Hilo, Island of Hawai`i - Kumu Pono Associates LLC - March 23, 2005

Assessment of Pi`ihonua: A Brief Assessment for Beneficiary Ranching Leases at Pu`u `Ō`ō Ranch - N. Duke Kapuniai and `Ōiwi Lōkahi o ka Mokupuni o Keawe - March 2005

Humu`ula Rural Villages and Landscape Restoration Plan (Final Report) - Townscape, Inc. - March 2005
Appendix A - Revised Substitute Motion -Hawaiian Homes Commission
Appendix B - Archaeological Filed Inspection Report - Todd Tulchin & Hallett H. Hammatt Ph. D, Cultural Surveys Hawai`i, Inc.
Appendix C - Humu`ula and Pi`ihonua Native Traditions, Historical Accounts and Oral Interviews Report - Kepā Maly & Onaona Maly, Kumu Pono Associates, LLC
Appendix D - Personal Interview Final Report

Land License 624 to KW Koa Co. LLC for Koa Harvest Activities - Department of Hawaiian Homes Lands - November 16, 2004

Humu`ula Rural Villages and Landscape Restoration Plan (Pre-Final Report) - Townscape, Inc. - November, 2004

Koa Salvage and Reforestation Project Humu`ula, Request for Proposals - Department of Hawaiian Home Lands - July 29, 2004

"Humu`ula A Me Pi`ihonua: He Mau `Āina Lei Ali`i Ma Ka `Āina Mauna O Hawai`i" (Humu`ula and Pi`ihonua: Lands that Adorn the Chiefs on the Mountain Lands of Hawai`i, A Collection of Native Traditions, Historical Accounts, and Oral History Interviews - Kumu Pono Associates LLC - March 15, 2004

Humu`ula Sheep Station Adaptive Reuse Plan - Kimura International - March 2004

Piha Mauka Forest Management Plan and Environmental Assessment - Department of Hawaiian Homes Lands - February 2004

Wao Akua "Sacred Source of Life" - Department of Land and Natural Resources, Division of Forestry and Wildlife - 2003

Overview: Excerpts From - "He Wahi Mo`olelo No Ka `Āina A Me Na `Ohana O Waiki`i Ma Waikōloa (Kalana O Waimea, Kohala), A Me Ka `Āina Mauna" (A Collection of Traditions and Historical Accounts of the Lands and Families of Waiki`i and Waikōloa (Waimea Region, South Kohala), and the Mountain lands, Island of Hawai`i) - Kumu Pono Associates LLC - November 12, 2002

Draft Summary Report Humu`ula/Pi`ihonua Land Use Concepts - `Ōiwi Lōkahi o ka Mokupuni o Keawe and Townscape, Inc. - October 10, 2002

Department of Hawaiian Home Lands Hawai`i Island Plan - PBR, Hawai`i - May 2002

Guidelines on Rainwater Catchment Systems for Hawai`i - Patricia S. H. Macomber, University of Hawai`i at Manoa, College of Tropical Agriculture and Human Resources - December 2001

Final Environmental Assessment, Koa Salvage-Reforestation and Gorse Containment, Humu`ula, Island of Hawai`i - Department of Hawaiian Home Lands - August 9, 2001

Malama Pono I Ka `Āina -An Overview of the Hawaiian Cultural Landscape - Kumu Pono Associates LLC - 2001

Humu`ula/Pi`ihonua Master Plan - PBR, Hawai`i - December, 1997
- Appendix - A - Planning Team members and Special Study Consultants
- Appendix - B - Planning Process/Work Plan
- Appendix - C - Alternative Concepts Considered/Evaluation of Alternatives
- Technical Reference Document - A - Community Input and Meeting Notes - PBR, Hawai`i
- Technical Reference Document - B - Agricultural Assessment - Agricon Hawai`i
- Technical Reference Document - C - Preliminary Market Assessment - RE2
- Technical Reference Document - D - Economic Assessment - RE2
- Technical Reference Document - E - Legal and Institutional Area: Overview of the Legal Context for Homestead Awards - Allen Hoe, Esq.
- Technical Reference Document - F - Gorse Assessment Report - Ron Terry, Ph. D
- Technical Reference Document - G - Vegetation Sensitivity Analysis - PBR Hawai`i & Grant Gerrish, Ph. D, Natural Sciences Division, University of Hawai`i at Hilo

Technical Reference Document - H - Biological Sensitivity Analysis - Reginald E. David, Pacific Biological Survey

Technical Reference Document - I - Archaeological Review and Predictive Model - D. Kyle Latinis, M.A., Scientific Consultant Services Inc.

Technical Reference Document - J - Infrastructure Feasibility Study - R. M. Towill Corporation

Draft Hawaiian Homes Commission Workshop Orientation Report, Humu`ula/Pi`ihonua Master Plan - PBR, Hawai`i - October 13, 1997

Hawai`i Register of Historic Places, Historic Sites Information and Review Form, Humu`ula Sheep Station - Department of Land and Natural Resources, Division of State Parks - June, 1973

J-3

From: Germaine Toguchi
To: Burrows-Nuuanu, Leatrice W
Subject: [EXTERNAL] J Agenda
Date: Wednesday, February 4, 2026 2:38:21 PM

Aloha Leah,

Can you please sign me up for February J-agenda?

This is regarding Kaupe'a concerns.

Thank you!
Germaine

Yahoo Mail: Search, Organize, Conquer

J-4

DEPT OF
HAWAIIAN HOME LANDS
WEST HAWAII OFFICE
26 JAN 16 A9:20

Louis Vera Cruz, Jr.
74-5097 Kului Way, Kailua-Kona HI 96740
Tele: (808) 937-8050

January 15, 2026

N O T I C E
REQUESTING TRANSFER OF LEASE #12817 to Ms. Gayle K. Kaio

N O T I C E
MORTGAGE LOAN #19359 (Paid in Full)

TO: Chairman Kali Watson and Honorable Commission Members, Administrator Juan Garcia, Homestead Services Division (HSD)
FROM: Mr. Louis Vera Cruz, Jr, Lessee of La'i Opua

RE: Notice requesting HHC to transfer Lease #12817; Lot 53; TMK: (3) 7-4-027-053- to Ms.Gayle K. Kaio, a native Hawaiian as defined, pursuant to the HHCA amended July 9, 1921, by the 67th Congress (42, 42 stat.108); and
RE: Notice of Mortgage Loan #19359 (Paid in Full)

Aloha and Happy New Year,

On behalf of myself as a beneficiary lessee, I extend a grateful mahalo to all the staff of DHHL Homestead Services, NAHASDAH, and Loan office for the time patience and endurance for the past year and a half. I was not aware of the enormous amount of work it took for me to own my hale, but we got through it and forever I am humbled. Now that my hale is " PAID IN FULL", my mortgage loan obligation to DHHL is fulfilled, the next reality I face is my age of 84 years. Mr. Garcia is aware of my situation, therefore I need his services to extend in assisting with this request to transfer my lease to Ms. Gayle K. Kaio as an HSD action item approved by the HHC at their meeting on February 16, 2026.

I am aware of successorship and transfer kuleana of the lease. I never married, I have no heirs (children), therefore I discussed with my siblings my choice to transfer rather than successorship. They said they have their own lives and would not oppose my decision as stated above.

It is my hope that this transfer will be handled carefully, thoughtful of my 84 year age and expeditiously with your assistance.

Me Ke aloha nui e ke Alii Jonah Kuhio a me na Commissioners ha'aha'a 2026,

Louis Jr Veracruz — Signature
Louis Jr Veracruz — Print
1/15/26 — Date

attached: Exhibits 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

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. DUCATT
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 8, 2026

Louis Vera Cruz Jr.
74-5097 Kului Way
Kailua-Kona, HI 96740

Subject: Residence Lot No. 53, Laiopua, Kailua Kona
DHHL Contract of Loan No. 19359

Aloha,

As of September 29, 2025, your financial obligation to the department has been fulfilled.

Sincerely,

Annie Aarona
Mortgage Loan Specialist
Homestead Services Division

c: Lessee file

Exhibit 1
3 pgs
Corrected letter

JAN 14 2026

RECEIVED
DHHL
HOUSING/AWARDS
2017 JUN 19 AM 9:39

THE ORIGINAL OF THE DOCUMENT
RECORDED AS FOLLOWS:
STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LAND
Received for record this 19th
day of June, A.D. 20 17
at 9:39 o'clock A M and
Record at Buke 977
on Pages 307-313

DEPT OF HAWAIIAN
HOME LANDS
LOANS SERVICES BRANCH
2025 OCT -6 AM 7:32

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

CONTRACT OF LOAN NHHBG

Loan No. 19359

THIS CONTRACT OF LOAN is made this 19th day of June, 20 17, under the authority of and subject to the provisions of Title VIII of the Native American Housing Assistance and Self-Determination Act, as amended, hereinafter called "NAHASDA" and the HAWAIIAN HOMES COMMISSION ACT, 1920, as amended, hereinafter called "HHCA", between the DEPARTMENT OF HAWAIIAN HOME LANDS (DHHL), hereinafter called "Department", and LOUIS VERA CRUZ, hereinafter called "Borrower", whose post office address is 74-509 Kaliiwa, Kailua-Kona, Hawaii 96740, hereinafter called the "Leased Premises".

PAID IN FULL
AS OF September 08, 2025

IT IS AGREED:

THAT Borrower, the holder of Department of Hawaiian Home Lands Residence Lot Lease No. 12817, executed on June 19, 2017 but commencing on JUN 19 2017, hereinafter called "Lease", in consideration of the Department's agreement to loan Borrower the principal, the total sum of -ONE HUNDRED THIRTY FIVE THOUSAND AND 00/100 DOLLARS ($135,000.00)--, ("Mortgage Loan"), under the authority of and subject to the provisions of the NAHASDA

THE ORIGINAL OF THE DOCUMENT
RECORDED AS FOLLOWS:
STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Received for record this 6
day of OCTOBER, A.D. 2025
at 7:32 o'clock A M and
Record at Buke 1221
on Pages 60

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
HOMESTEAD SERVICES DIVISION
P.O. BOX 1879
HONOLULU, HAWAII 96805

US POSTAGE PITNEY BOWES
ZIP 96707 $ 000.74⁰
02 4W
0000381884 JAN. 12 2026

Received
JAN 14 2026

Louis Vera Cruz Jr.
74-5097 Kului Way
Kailua-Kona, HI 96740

96740$3321 C009

JOSH GREEN, M.D.
GOVERNOR
STATE OF HAWAII
Ke Kiaʻāina o ka Mokuʻāina ʻo Hawaiʻi

SYLVIA J. LUKE
LT. GOVERNOR
STATE OF HAWAII
Ka Hope Kiaʻāina o ka Mokuʻāina ʻo Hawaiʻi

KALI WATSON
CHAIRPERSON, HHC
Ka Luna Hoʻokele

KATIE L. DUCATT
DEPUTY TO THE CHAIR
Ka Hope Luna Hoʻokele

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Ka ʻOihana ʻĀina Hoʻopulapula Hawaiʻi
P. O. BOX 1879
HONOLULU, HAWAII 96805

October 13, 2025

Louis Vera Cruz Jr.
74-5097 Kului Way
Kailua-Kona, HI 96740

Subject: Residence Lot No. 53, Laiopua, Oahu
DHHL Contract of Loan No. 19539

Aloha,

As of September 29, 2025, your financial obligation to the department has been fulfilled.

Sincerely,

Annie Aarona
Mortgage Loan Specialist
Homestead Services Division

c: Lessee file

Exhibit 2
3 p 32

RECEIVED
DHHL
HOUSING/AWARDS

2017 JUN 19 AM 9:39

THE ORIGINAL OF THE DOCUMENT
RECORDED AS FOLLOWS:
STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Received for record this 19th
day of June, A.D. 2017
at 9:39 o'clock A M and
Record at Buke 977
on Pages 307-313

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

CONTRACT OF LOAN NHHBG

Loan No. 19359

DEPT OF HAWAIIAN HOME LANDS LOANS SERVICES BRANCH
2025 OCT -6 AM 7:32

THIS CONTRACT OF LOAN is made this 19th day of June, 20 17, under the authority of and subject to the provisions of Title VIII of the Native American Housing Assistance and Self-Determination Act, as amended, hereinafter called "NAHASDA" and the HAWAIIAN HOMES COMMISSION ACT, 1920, as amended, hereinafter called "HHCA", between the DEPARTMENT OF HAWAIIAN HOME LANDS (DHHL), hereinafter called "Department", and LOUIS VERA CRUZ, hereinafter called "Borrower", whose post office address is 74-509 Kalai Way, Kailua-Kona, Hawaii 96[illegible], hereinafter called the "Leased Premises".

PAID IN FULL

AS OF September 08, 2025

IT IS ~~AGREED~~.

THAT Borrower, the holder of Department of Hawaiian Home Lands Residence Lot Lease No. 12817, executed on June 19, 2017 but commencing on JUN 19 2017, hereinafter called "Lease", in consideration of the Department's agreement to loan Borrower the principal, the total sum of -ONE HUNDRED THIRTY FIVE THOUSAND AND 00/100 DOLLARS ($135,000.00)--, ("Mortgage Loan"), under the authority of and subject to the provisions of the NAHASDA

THE ORIGINAL OF THE DOCUMENT
RECORDED AS FOLLOWS:
STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Received for record this 6
day of OCTOBER, A.D. 2025
at 7:32 o'clock A M and
Record at Buke 1221
on Pages 60

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
HOMESTEAD SERVICES DIVISION
P.O. BOX 1879
HONOLULU, HAWAII 96805

HONOLULU HI 967

US POSTAGE PITNEY BOWES
ZIP 96707 $ 000.74⁰
02 4W
0000381884 OCT 14 2025

Louis Vera Cruz Jr.
74-5097 Kului Way
Kailua-Kona, HI 96740

96740-332197

JOSH GREEN, M.D.
GOVERNOR
STATE OF HAWAII
Ke Kiaʻāina o ka Mokuʻāina ʻo Hawaiʻi

SYLVIA J. LUKE
LT GOVERNOR
STATE OF HAWAII
Ka Hope Kiaʻāina o ka Mokuʻāina ʻo Hawaiʻi

KALI WATSON
CHAIRPERSON HHC
Ka Luna Hoʻokele

KATIE L. LAMBERT
DEPUTY TO THE CHAIR
Ka Hope Luna Hoʻokele

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
Ka ʻOihana ʻĀina Hoʻopulapula Hawaiʻi
P O BOX 125
KAMUELA, HAWAII 96743

July 1, 2024

Louis Vera Cruz, Jr.
74-5097 Kului Way
Kailua-Kona, Hawaii 96740

Dear Mr. Vera Cruz:

Subject: Department of Hawaiian Home Lands Residential Lot
Lease No. 12817, Lot No.53, Laiopua, Hawaii

Your request for a transfer of the above lease to Gayle K. Kaio, for its remaining term has been received.

The procedures for transferring a lease involves a property description research, verifying the native Hawaiian ancestral and age requirements of Gayle and the drafting of the legal document prior to approval by the Chairman of the Hawaiian Homes Commission.

These procedures mandated by the Hawaiian Homes Commission Act and our Administrative Rules are sometimes lengthy and time consuming. Please rest assured that we will be processing your lease transfer request for final approval as rapidly as possible.

If you have any questions or need assistance, please call the West Hawaii District Office at 887-6053.

Sincerely,

James W. Du Pont, Supervisor
West Hawaii District Office

c: Gayle K. Kaio
Karen Lucero, Oahu District Office

exhibit 3
4 pgs

To: Department of Hawaiian Home Lands
From: Gayle Kaio
Date: June 27, 2024
Re: Co-Lessee Transfer

This letter is to notify the department to cancel my request to be added on as a co-lessee with Louis Vera Cruz, Jr. of 74-5097 Kului Way, Kailua-Kona, Hawai'I 96740.

The transfer was submitted in January, and February of 2022. I was informed in February of 2024 the department had approved the transfer.

Mahalo nui,
Gayle K. Kaio

Louis Jr Veracruz

HOMESTEAD LEASE TRANSFER REQUEST

This section to be completed by LESSEE(S)

Name of Lessee(s): (PRINT Last Name, First Name, Middle Initial)		
LESSEE #1: Vera Cruz, Jr. Louis		**SSN:** 576-38-8443
Mailing Address: 74-5097 Kului Way, Kailua-Kona Hawai'i 96740		**Email:** none
Telephone: Home	**Business:**	**Cell:** (808) 937-8050
LESSEE #2:		**SSN:**
Mailing Address:		**Email:**
Telephone: Home	**Business:**	**Cell:**
Lease No.: 12817		**Lease Type:** [xx] Res. [ ] Ag. [ ] Pas.
Lot No.: 53	**Area:** La'iopua	**Island:** Hawai'i
TMK: (3) 7-4-027:053	**Property Address:** 74-5097 Kului Way Kailua-Kona Hawai'i 96740	
Type of Transaction: [xx] 100% Interest	[ ] Partial Interest: (explanations in back) [ ] T/C [ ] J/T [ ] T/E	[ ] Subdivide and Transfer Portion
Mortgage/Loan Balance: $ $69,081.25	**Name of Lender:** DHHL	
List Other Debts Attached to Lease: for example – OHA loans, Grants, etc. $18,125.00, NAHASDA		
Lease being sold? [xx] Yes [ ] No **If Yes, Sale Price $**_____ **Attach copy of DROA or Sales Contract, and Name of Escrow Company. Also, Lessee/Transferor is liable to inform the United States Internal Revenue of the sale.**		
Description of Homestead (and any improvements) (i.e. no. of rooms/baths, etc.): 2-bedroom, one bath, 1 car garage w/ Septic System **Do you lease a photovoltaic system?:** [ ] Yes [xx] No **If, yes, date installed:** _____		
Reason For Transfer (check all that apply): [ ] moving off island [ ] adding relative(s) to lease [ ] giving lease to relative(s) [ ] medical reasons [ ] financial reasons [xx] Other (explain): Per Lessee, Louis Vera Cruz Jr., doesn't want to transfer lease to family members		

By signing below, I accept and agree to the following: I request to transfer the above lease for the remaining term of the lease. I take responsibility along with the transferee(s) to submit all necessary documents for the clearing of transferees' native Hawaiian blood quantum. If necessary documentation is not submitted with this request, I understand that the department will not accept this request to transfer. I understand that this request will not be final until approved by the Hawaiian Homes Commission. I declare that this request is of my own freewill and choice and I hereby certify that the above statements are true and correct to the best of my knowledge.

Louis Jr Veracruz 6/28/24
LESSEE #1 Signature Date

_____
LESSEE #2 Signature Date

FOR OFFICIAL USE ONLY
The following items must accompany this transfer request; otherwise request will not be accepted.

- [x] Genealogy documents (Birth, Death, Marriage)
- [x] RPT Clearance or Plan of Payment
- [x] Copy of Government Issued Photo ID and Copy of SS Card
- [ ] Farm/Ranch Plan [ ] Statement (Vacant Lots)

One of the Following items:

- [ ] Letter of pre-approval to assume loan.
- [x] Letter of pre-approval of mortgage loan.
- [ ] Verification of financial statements.

Acknowledgment of receipt of above items:
Staff Initial MA Date 7/1/2024

TIME STAMP IN THIS SECTION AFTER RECEIPT OF ALL ITEMS LISTED ON LEFT SIDE.

DEPT OF HAWAIIAN HOME LANDS
WEST HAWAII OFFICE
24 JUL -1 P2:40

This section to be completed by TRANSFEREE #1

Name of Transferee: (**PRINT** First Name, Middle Name, Last Name) Kaio, Gayle Kahalelana		
Mailing Address: PO Box 389 Holualoa Hawai'i 96725		**Email:** gayle.kaio@gmail.com
Social Security No.: 576-72-5240		**Date of Birth:** April 5, 1956
Relationship to Lessee(s): hanai sister		
Telephone: Home	**Business:** (808) 443-2112	**Cell:** (808) 937-8050

Are you an Applicant with DHHL? ☒ Yes ☐ No **If "Yes"** ☐ Res. ☐ Ag. ☐ Pas.

Are you a Lessee with DHHL? ☐ Yes ☒ No **If "Yes"** ☐ Res. ☐ Ag. ☐ Pas. **Lease No.** _____

Is your Spouse an Applicant with DHHL? ☐ Yes ☒ No **If "Yes"** ☐ Res. ☐ Ag. ☐ Pas.

Is your Spouse a Lessee with DHHL? ☐ Yes ☒ No **If "Yes"** ☐ Res. ☐ Ag. ☐ Pas. **Lease No.** _____

Are you purchasing the lease? ☒ Yes ☐ No **If yes, name of Escrow Company to be used.**
American Savings Bank

If Spouse is an Applicant or Lessee: (**PRINT** Last Name, First Name, M.I.)	**Social Security No.:**

By signing below, I agree that it is my responsibility to submit to the Department of Hawaiian Lands (DHHL) all necessary documentation to substantiate my native Hawaiian ancestry and I agree to comply with all other requirements imposed by the DHHL, including but not limited to a financial statements indicating cash deposits or Lender pre-approval of a mortgage loan to pay off or assume all debts attached to the lease. I understand that this request must be approved by the Hawaiian Homes Commission. I declare that this request is of my own freewill and choice and I hereby certify that the above statements are true and correct to the best of my knowledge.

TRANSFEREE Signature/Date Gayle K. Kaio 6/28/2024

This section to be completed by TRANSFEREE #2

Name of Transferee: (**PRINT** First Name, Middle Name, Last Name)		
Mailing Address:		**Email:**
Social Security No.:		**Date of Birth:**
Relationship to Lessee(s):		
Telephone: Home	**Business:**	**Cell:**

Are you an Applicant with DHHL? ☐ Yes ☐ No **If "Yes"** ☐ Res. ☐ Ag. ☐ Pas.

Are you a Lessee with DHHL? ☐ Yes ☐ No **If "Yes"** ☐ Res. ☐ Ag. ☐ Pas. **Lease No.** _____

Is your Spouse an Applicant with DHHL? ☐ Yes ☐ No **If "Yes"** ☐ Res. ☐ Ag. ☐ Pas.

Is your Spouse a Lessee with DHHL? ☐ Yes ☐ No **If "Yes"** ☐ Res. ☐ Ag. ☐ Pas. **Lease No.** _____

If Spouse is an Applicant or Lessee: (**PRINT** Last Name, First Name, M.I.)	**Social Security No.:**

By signing below, I agree that it is my responsibility to submit to the Department of Hawaiian Lands (DHHL) all necessary documentation to substantiate my native Hawaiian ancestry and I agree to comply with all other requirements imposed by the DHHL, including but not limited to a financial statements indicating cash deposits or Lender pre-approval of a mortgage loan to pay off or assume all debts attached to the lease. I understand that this request must be approved by the Hawaiian Homes Commission. I declare that this request is of my own freewill and choice and I hereby certify that the above statements are true and correct to the best of my knowledge.

TRANSFEREE Signature/Date

Note – If multiple Transferees are named – Check off ONE of the tenancy selection below

☐ **Joint Tenancy**	☐ **Tenants in Common**	☐ **Tenants By the Entirety**

Joint tenancy - A tenancy with **two or more** co-owners take identical interest simultaneously by the same instrument and with the same right of possession. A joint tenancy differs from a tenancy in common because each joint tenant has a right of survivorship to the other's share.

Tenancy in common – One of two or more tenants who hold the same land by unity of possession but by separate and distinct titles, with each person having an equal right to possess the whole property but no right of survivorship.

Tenancy by the entirety – A joint tenancy that arises between husband and wife when a single instrument conveys realty to both of them but nothing is said in the deed or will about the character of their relationship.

Sept 6, 2025

Aloha Wayne,

Re: Loan 7a359

Enclosed are two checks to pay off the DHHL loan.

1) $37,206.31 from my CPB account. #023000460.

2) $475.00 from Mr. Vera Cruz Territorial Savings Bank #1102326.

RECEIVED DHHL FISCAL OFFICE 2025 SEP 8 AM 8:14

Unfortunately, I have not received any communication from the NAHASDA dept concerning the recapture amount. It will be paid upon receipt of that information.

Upon receipt of the checks for the DHHL loan pay-off, would you please sign below and send it back to me with the paid in-full receipts at my P.O. Box 661, Kailua-Kona HI 96745 in the enclosed, self addressed, stamp envelope.

I want to thank you for your kindness and respect in communicating with me during this challenging process. You are truly an asset to the department. as well to your family

Mahalo nui
Gayle Kaio

Loan 19359
Received #37,206.31 and #475.00 payments

W. Takahashi
signature

9/F/25.
date

Wayne Takahashi

HONOLULU
FISCAL OFFICE
2025 SEP -8 AM 8:45

SENDER: COMPLETE THIS S... COMPLETE THIS S... ON DELIVERY

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

DHHL
attn: Wayne Takahashi
Fiscal office
P.O. Box 1721
Honolulu HI 96806

9590 9402 9476 5069 5086 96

2. Article Number (Transfer from service label)
7021 0950 0000 1575 0493

A. Signature
X [signature] ☐ Agent ☐ Addres

B. Received by (Printed Name)
Wayne Takahashi

C. Date of Deli
9/8/25

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

SEP - 8 2025

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- sured Mail
- sured Mail Restricted Delivery ver $500)
- ☐ Priority Mail Express(
- ☐ Registered Mail™
- ☐ Registered Mail Rest Delivery
- ☐ Signature Confirmati
- ☐ Signature Confirmati Restricted Delivery

PS Form 3811, July 2020 PSN 7530-02-000-9053 Domestic Return Rece

7021 0950 0000 1575 0493

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.
Honolulu HI 96806

OFFICIAL USE

Certified Mail Fee $5.50
$
Extra Services & Fees (check box, add fee as appropriate)
- ☐ Return Receipt (hardcopy) $ $0.00
- ☐ Return Receipt (electronic) $ $0.00
- ☐ Certified Mail Restricted Delivery $ $0.00
- ☐ Adult Signature Required $ $0.00
- ☐ Adult Signature Restricted Delivery $

Postage $1.07
$
Total Postage and Fees
$

0350
16

Postmark Here

09/06/2025

Sent To
DHHL- attn: Wayne Takahashi / Fiscal Office
Street and Apt. No., or PO Box No.
P.O. Box 1721
City, State, ZIP+4®
Honolulu HI 96806

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructio

September 29, 2025

To: Department of Hawaiian Home Lands

91-5420 Kapolei Parkway, Kapolei, HI 96707

Attn: NAHASDA Section

Re: NAHASDA Loan pay off, Loan #19359

Louis Vera Cruz, Jr

74-5097 Kului Way

Kailua Kona, HI 96740

ACKNOWLEDGMENT

Hand delivered by Gayle Kaio on this day of September 29, 2025 @ 9:10 a.m.

Check #11026340 Dated: September 22, 2025, In the Amount of $15,862.50

Issued by: Territorial Savings Bank 75-1027 Henry St. Suite 111B, Kailua Kona, HI 96740

Phone number: (808) 322-0707

Received by: Department of Hawaiian Home Lands, 91-5420 Kapolei Parkway, Kapolei, HI 96707

Signature: [signature] Print name: Wayne Takahashi

Title Accountant Date received: 9/29/25

Time received: 9:10 a.m.

Check #11026340 Dated: September 22, 2025, In the Amount of $15,862.50

Payable to Department of Hawaiian Home Lands

Received Receipt No. I 34995 (indicating balance paid in full)

Paid in Full: 9/29/25, 2025

From: Wayne Takahashi Signature

Prrint Name: Wayne Takahashi

Title: Accountant

Date: 9/29/25 Time: 9:10 a.m.

Document to be added to DHHL files

Mahalo

Gayle Kaio

PO Box 661, Kailua Kona, HI 96745

CENTRAL PACIFIC BANK

P.O. Box 3590, Honolulu, HI 96811
808-544-0500 | 800-342-8422 (Toll-Free)
Main Branch

CUSTOMER COPY

CHECK NUMBER: 023000358

Teller: Angela Villavicencio

Date: JULY 26, 2025

Applicant: GAYLE KAIO

Source of Funds: 1013568020

Pay To: ***DEPARTMENT OF HAWAIIAN HOME LANDS***

Bank Approval:

Amount of Check: **$10,200.00

Memo: NAHASDA LOAN

Fee: $ 0.00

THIS DOCUMENT HAS A TRUE WATERMARK AND HOLOGRAM. ABSENCE OF THESE FEATURES WILL INDICATE A COPY

CENTRAL PACIFIC BANK

P.O. Box 3590, Honolulu, HI 96811
808-544-0500 | 800-342-8422 (Toll-Free)
Main Branch

OFFICIAL CHECK

64-305
611

CHECK NUMBER: 023000358

PAY TO THE ORDER OF: ***DEPARTMENT OF HAWAIIAN HOME LANDS***

DATE: JULY 26, 2025

AMOUNT ***Ten Thousand Two Hundred Dollars and 00/100** **$10,200.00

MEMO: NAHASDA LOAN
GAYLE KAIO

DRAWER: CENTRAL PACIFIC BANK

RUB HERE COLOR FADES WITH HEAT

ISSUED: MONEYGRAM PAYMENT SYSTEMS INC
PO BOX 9476 MINNEAPOLIS, MN 55480
DRAWEE: WELLS FARGO BANK, N.A. | BUFORD, GA

Two signatures required for amounts exceeding $100,000

⑈023000358⑈ ⑆061103056⑆ 0160011717560⑈

✓ Cleared August 15, 2025
per CPB 8/26/2025
teller.
Maize 11:25 a.m.

10,200 me
6 Louie
16,200 me
950 Louie = August 1
17,150
950 - Sept
18,100

Exhibit 6
4 pgs

Territorial Savings Bank

PO Box 1481
Honolulu, HI 96806 USA

Member FDIC

CHECK NO. 11026293

59-7070
3213

July 25, 2025

CASHIER'S CHECK PAY **$6,000.00**

PRESENT IMMEDIATELY - NOT VALID AFTER 180 DAYS

Territorial Savings Bank

Issued by Bank of Hope, successor by merger to Territorial Savings Bank

PAY TO THE ORDER OF "DEPT OF HAWAIIAN HOME LANDS"

AUTHORIZED SIGNATURE

Re: LOUIS VEPA CRUZ JR TRUSTEE GAYLE KAHALELANA KAIO BENEFICIARY

⑈11026293⑈ ⑆321370707⑆ 03⑈2150?6⑈

8/15/25 per Agnes 11:44
✓ cleared 8/15/25
Territorial Savings

August 1, 2025

Dept of Hawaiian Home Lands

91-5420 Kapolei Pkwy

Kapolei, HI 96707

Attn: Shana Petelo, NAHASDA Section

Re: NAHASDA Loan, Loan # 19359, Current Lessee, Louis Vera Cruz Jr.

74-5097 Kului Way, Kailua Kona, HI 96740

Payoff for NAHASDA Loan

Aloha e Shana,

In our previous conversation during the week of July 14 thru July 18, 2025 , you informed me the payoff amount for the NAHASDA loan was $16,200.

Enclosed are: Cashier check #023000358, for $10, 200.00, issued by Central Pacific Bank from Gayle Kaio and cashier check #11026293, for $6,000.00 issued by Territorial Savings Bank, from Louis Vera Cruz, Jr.

Upon receipt of these checks, please sign, and date below and return a signed copy of this letter and the receipts showing this loan has been paid in full to me for my records in the enclosed self-addressed stamped envelope.

Mahalo nui

Gayle Kaio, (808) 937-8050

PO Box 661

Kailua Kona, HI 96745

Shana Petelo _____Signature _____ Date

Enclosures (2)

UNITED STATES POSTAL SERVICE.

KAILUA KONA
74-5577 PALANI RD
KAILUA KONA, HI 96740-9998
www.usps.com

08/01/2025 11:42 AM

TRACKING NUMBERS
70191640000088830823
70191640000088830847
70191640000088830816

TRACK STATUS OF ITEMS WITH THIS CODE
(UP TO 25 ITEMS)

TRACK STATUS BY TEXT MESSAGE
Send tracking number to 28777 (2USPS)
Standard message and data rates may apply

PACK STATUS ONLINE
Visit https://www.usps.com/tracking
Text and e-mail alerts available

PURCHASE DETAILS

Product	Qty	Unit Price	Price
First-Class Mail® Letter Honolulu, HI 96801 Weight: 0 lb 0.40 oz Estimated Delivery Date M 08/04/2025	1		$[illegible]
Certified Mail® Tracking #: 70191640000088830823			$5.30
Return Receipt Tracking #: 9590 9402 1873 6104 6329 84			$4.40
Affixed Postage Affixed Amount: $0.78			$0.78
Total			$9.70
First-Class Mail® Large Envelope Kapolei, HI 96707	1		$1.90

7019 1640 0000 8883 0847

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

OFFICIAL USE

Certified Mail Fee
$ 5.30

Extra Services & Fees (check box, add fee as appropriate)
- [x] Return Receipt (hardcopy) $ 4.40
- [ ] Return Receipt (electronic) $
- [ ] Certified Mail Restricted Delivery $
- [ ] Adult Signature Required $
- [ ] Adult Signature Restricted Delivery $

Postage
$ ~~[illegible]~~ 1.90

Total Postage and Fees
$ 11.60

Postmark Here

Sent To
DHAL Attn: Shane Patelo NAHASDA SECTION

Street and Apt. No., or PO Box No.
91-5420 Kapolei Pkwy

City, State, ZIP+4®
Kapolei HI 96707

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Territorial Savings Bank

PO Box 1481
Honolulu, HI 96806-USA

Member FDIC

CHECK NO. 10981111

59-7070
3213

April 10, 2024

CASHIER'S CHECK PAY **$10,000.00**

PRESENT IMMEDIATELY - NOT VALID AFTER 180 DAYS

Territorial Savings Bank

PAY TO THE ORDER OF *DEPARTMENT OF HAWAIIAN HOMELANDS*

CUSTOMER'S COPY
NOT NEGOTIABLE
AUTHORIZED SIGNATURE

14 4 Re: LOUIS VERA CRUZ JR

Territorial Savings Bank

DETACH BEFORE DEPOSITING
THE ATTACHED CHECK IS IN FULL PAYMENT OF THE FOLLOWING

10981111

DESCRIPTION	AMOUNT
04/10/2024 ******2059	$10,000.00

DRAWN BY _____ APPROVED BY _____

Exhibit 7
5 pgs

CENTRAL PACIFIC BANK

CUSTOMER COPY

P.O. Box 3590, Honolulu, HI 96811
808-544-0500 | 800-342-8422 (Toll-Free)
Kailua-Kona Branch

CHECK NUMBER: 30163729

Teller:	Lisa Aukai	Date:	April 10, 2024
Applicant:	GAYLE KAIO	Source of Funds:	1013568020
Pay To:	***DEPARTMENT OF HAWAIIAN HOME LANDS***	Amount of Check:	**$15,000.00
		Fee:	$0.00
Memo:	REF:LOAN #19359 LOUIS VERA CRUZ JR		

NOTICE TO CUSTOMER:
In the event this Official check is lost, misplaced or stolen, the completion of the Declaration of Loss form may be required before this check is replaced or refunded.

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CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.

Kapolei HI 96707

OFFICIAL USE

Certified Mail Fee	$0.00
Extra Services & Fees *(check box, add fee as appropriate)*	$0.00
☐ Return Receipt (hardcopy)	$
☐ Return Receipt (electronic)	$11.65
☐ Certified Mail Restricted Delivery	$0.00
☐ Adult Signature Required	$0.00
☐ Adult Signature Restricted Delivery	$
Postage	$1.63
Total Postage and Fees	$13.28

0350 02

Postmark Here

2024

RESTRICTED DELIVERY

Sent To: Wayne Takahashi / Dept of Hawaiian Home Lands

Street and Apt. No., or PO Box No.: 91-5420 Kapolei Parkway

City, State, ZIP+4®: KAPOLEI HAWAII 96707

PS Form 3800, April 2015 PSN 7530-02-000-9047

HOMESTEADER'S COPY

OFFICIAL RECEIPT
DEPARTMENT OF
HAWAIIAN HOME LANDS

Date 4 / 15 / 24

Received from Louis Vera Cruz Jr.

L# 19359 — Oahu LOT NO.

Ten thousand and 00/100 Dollars

Principal	$	
Interest	$	
Rent	$	
	$10,000	00
	$	
	$	
	$	
	$	
Total	10,000	00

Territorial Savings Bank

☐ CASH
☑ CHECK NO. 59-7070 109811 4/10/24

No 131344 Recv'd by K

OFFICIAL RECEIPT
DEPARTMENT OF
HAWAIIAN HOME LANDS

Received from Louis Vera Cruz Jr.
Gayle Kaio
L# 19359

Date 4 / 15 / 24

Oahu
LOT NO.

Fifteen thousand and 00/100 Dollars

Principal	$
Interest	$
Rent	$
	$15,000 00
	$
	$
	$
	$
Total	15,000 00

☐ CASH CPB
☑ CHECK NO. 49-55/3210/3729 4/10/24

No 131343

Recv'd by

NAME: LOUIS VERA CRUZ JR
STREET: 74-5097 KULUI WAY
CITY, STATE: KAILUA-KONA, HI
ZIP: 96740

SS#: ### ## 8443
ACCT-AREA: 182 122
LOT: 53
PS: 810

LOAN#: 19359
INTEREST RATE: 0.000
INSTALLMENT: 375.00
TMK: 3 7 4 027 053 0000

INSUR EXP DATE:
INSURANCE AMT: 0.00
LOAN TERM: 360 MONTHS
DEFAULT DATE: 12/29/2025

ORIGINAL LOAN AMT: 135,000.00
LOAN DATE: 06/19/2017
LOAN ENCUMB BAL: 0.00
SYSTEM DATE: 01/07/2026 09:09 AM

			CURRENT PAYMENT				BALANCES						
DATE	REFERENCE	PMT DATE	AMT PAID	PRINCIPAL	INTEREST	INSURANCE	OTHER	PRINCIPAL	INTEREST	INSURANCE	OTHER	TOTAL	INT PD/YR	PAST DUE
07/04/2017	1728 FAT LAI			0.00	0.00	0.00	0.00	135,000.00	0.00	0.00	0.00	135,000.00	0.00	0.00
07/04/2017	ADJ BAL			0.00	0.00	0.00	0.00	135,000.00	0.00	0.00	0.00	135,000.00	0.00	0.00
11/20/2017	CYCLE December			375.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11/20/2017	CYCLE BALANCE			375.00	0.00	0.00	0.00	135,000.00	0.00	0.00	0.00	135,000.00	0.00	0.00
12/16/2017	39117	12/18/2017	375.00	(375.00)	0.00	0.00	0.00	(375.00)	0.00	0.00	0.00	(375.00)	0.00	0.00
12/16/2017	CR BAL			0.00	0.00	0.00	0.00	134,625.00	0.00	0.00	0.00	134,625.00	0.00	0.00
12/19/2017	AGING			0.00	0.00	0.00	0.00	134,625.00	0.00	0.00	0.00	134,625.00	0.00	0.00
12/20/2017	CYCLE January			375.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12/20/2017	CYCLE BALANCE			375.00	0.00	0.00	0.00	134,625.00	0.00	0.00	0.00	134,625.00	0.00	0.00
12/31/2017	0-OUT INT PAID			375.00	0.00	0.00	0.00	134,625.00	0.00	0.00	0.00	134,625.00	0.00	0.00
01/08/2018	40350	01/08/2018	375.00	(375.00)	0.00	0.00	0.00	(375.00)	0.00	0.00	0.00	(375.00)	0.00	0.00
01/08/2018	CR BAL			0.00	0.00	0.00	0.00	134,250.00	0.00	0.00	0.00	134,250.00	0.00	0.00
01/19/2018	AGING			0.00	0.00	0.00	0.00	134,250.00	0.00	0.00	0.00	134,250.00	0.00	0.00
01/20/2018	CYCLE February			375.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
01/20/2018	CYCLE BALANCE			375.00	0.00	0.00	0.00	134,250.00	0.00	0.00	0.00	134,250.00	0.00	0.00
02/12/2018	41580	02/12/2018	375.00	(375.00)	0.00	0.00	0.00	(375.00)	0.00	0.00	0.00	(375.00)	0.00	0.00
02/12/2018	CR BAL			0.00	0.00	0.00	0.00	133,875.00	0.00	0.00	0.00	133,875.00	0.00	0.00
02/19/2018	AGING			0.00	0.00	0.00	0.00	133,875.00	0.00	0.00	0.00	133,875.00	0.00	0.00
02/20/2018	CYCLE March			375.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
02/20/2018	CYCLE BALANCE			375.00	0.00	0.00	0.00	133,875.00	0.00	0.00	0.00	133,875.00	0.00	0.00
03/16/2018	42804	03/16/2018	375.00	(375.00)	0.00	0.00	0.00	(375.00)	0.00	0.00	0.00	(375.00)	0.00	0.00
03/16/2018	CR BAL			0.00	0.00	0.00	0.00	133,500.00	0.00	0.00	0.00	133,500.00	0.00	0.00
03/19/2018	AGING			0.00	0.00	0.00	0.00	133,500.00	0.00	0.00	0.00	133,500.00	0.00	0.00
03/20/2018	CYCLE April			375.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
03/20/2018	CYCLE BALANCE			375.00	0.00	0.00	0.00	133,500.00	0.00	0.00	0.00	133,500.00	0.00	0.00
04/19/2018	AGING			375.00	0.00	0.00	0.00	133,500.00	0.00	0.00	0.00	133,500.00	0.00	375.00
04/20/2018	CYCLE May			375.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
04/20/2018	CYCLE BALANCE			750.00	0.00	0.00	0.00	133,500.00	0.00	0.00	0.00	133,500.00	0.00	375.00
05/02/2018	J5200 LATE			0.00	0.00	0.00	18.75	0.00	0.00	0.00	18.75	18.75	0.00	0.00
05/02/2018	ADJ BAL			750.00	0.00	0.00	18.75	133,500.00	0.00	0.00	18.75	133,518.75	0.00	375.00
05/11/2018	45409	05/11/2018	750.00	(750.00)	0.00	0.00	0.00	(750.00)	0.00	0.00	0.00	(750.00)	0.00	(375.00
05/11/2018	CR BAL			0.00	0.00	0.00	18.75	132,750.00	0.00	0.00	18.75	132,768.75	0.00	0.00
05/15/2018	J5200 REV LATE			0.00	0.00	0.00	(18.75)	0.00	0.00	0.00	(18.75)			

Exh 8

18 pgs

NAME: LOUIS VERA CRUZ JR
STREET: 74-5097 KULUI WAY
CITY, STATE: KAILUA-KONA, HI
ZIP: 96740

SS#: ### ## 8443
ACCT-AREA: 182 122
LOT: 53
PS: 810

LOAN#: 19359
INTEREST RATE: 0.000
INSTALLMENT: 375.00
TMK: 3 7 4 027 053 0000

INSUR EXP DATE:
INSURANCE AMT: 0.00
LOAN TERM: 360 MONTHS
DEFAULT DATE: 12/29/2025

ORIGINAL LOAN AMT: 135,000.00
LOAN DATE: 06/19/2017
LOAN ENCUMB BAL: 0.00
SYSTEM DATE: 01/07/2026 09:09 AM

			CURRENT PAYMENT				BALANCES						
DATE	REFERENCE	PMT DATE	AMT PAID	PRINCIPAL	INTEREST	INSURANCE	OTHER	PRINCIPAL	INTEREST	INSURANCE	OTHER	TOTAL	INT PD/YR	PAST DUE
07/14/2025	150349	07/14/2025	475.00	(475.00)	0.00	0.00	0.00	(475.00)	0.00	0.00	0.00	(475.00)	0.00	0.00
07/14/2025	CR BAL			(50,918.75)	0.00	0.00	0.00	54,831.25	0.00	0.00	0.00	54,831.25	0.00	0.00
07/19/2025	AGING			(50,918.75)	0.00	0.00	0.00	54,831.25	0.00	0.00	0.00	54,831.25	0.00	0.00
07/20/2025	CYCLE August			375.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
07/20/2025	CYCLE BALANCE			(50,543.75)	0.00	0.00	0.00	54,831.25	0.00	0.00	0.00	54,831.25	0.00	0.00
08/11/2025	151485	08/11/2025	475.00	(475.00)	0.00	0.00	0.00	(475.00)	0.00	0.00	0.00	(475.00)	0.00	0.00
08/11/2025	CR BAL			(51,018.75)	0.00	0.00	0.00	54,356.25	0.00	0.00	0.00	54,356.25	0.00	0.00
08/11/2025	151485	08/11/2025	475.00	(475.00)	0.00	0.00	0.00	(475.00)	0.00	0.00	0.00	(475.00)	0.00	0.00
08/11/2025	CR BAL			(51,493.75)	0.00	0.00	0.00	53,881.25	0.00	0.00	0.00	53,881.25	0.00	0.00
08/11/2025	182 122 53	08/11/2025	10200.00	(10,200.00)	0.00	0.00	0.00	(10,200.00)	0.00	0.00	0.00	(10,200.00)	0.00	0.00
08/11/2025	CR BAL			(61,693.75)	0.00	0.00	0.00	43,681.25	0.00	0.00	0.00	43,681.25	0.00	0.00
08/11/2025	182 122 53	08/11/2025	6000.00	(6,000.00)	0.00	0.00	0.00	(6,000.00)	0.00	0.00	0.00	(6,000.00)	0.00	0.00
08/11/2025	CR BAL			(67,693.75)	0.00	0.00	0.00	37,681.25	0.00	0.00	0.00	37,681.25	0.00	0.00
08/19/2025	AGING			(67,693.75)	0.00	0.00	0.00	37,681.25	0.00	0.00	0.00	37,681.25	0.00	0.0
08/20/2025	CYCLE September			375.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
08/20/2025	CYCLE BALANCE			(67,318.75)	0.00	0.00	0.00	37,681.25	0.00	0.00	0.00	37,681.25	0.00	0.0
09/08/2025	152617	09/08/2025	37206.31	(37,206.31)	0.00	0.00	0.00	(37,206.31)	0.00	0.00	0.00	(37,206.31)	0.00	0.0
09/08/2025	CR BAL			(104,525.06)	0.00	0.00	0.00	474.94	0.00	0.00	0.00	474.94	0.00	0.0
09/08/2025	152617	09/08/2025	475.00	(475.00)	0.00	0.00	0.00	(475.00)	0.00	0.00	0.00	(475.00)	0.00	0.0
09/08/2025	CR BAL			(105,000.06)	0.00	0.00	0.00	(0.06)	0.00	0.00	0.00	(0.06)	0.00	0.0
09/20/2025	J5047 ADJ 9/8P			0.06	0.00	0.00	0.00	0.06	0.00	0.00	0.00	0.06	0.00	0.0
09/20/2025	ADJ BAL			(105,000.00)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

November 18, 2024

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, Administrator
Homestead Services Division

FROM: Ross K. Kapeliela, ODO Supervisor
Homestead Services Division

SUBJECT: **Approval of Assignment of Leasehold Interest**

RECOMMENDED MOTION/ACTION

1. To approve the assignment of the leasehold interest, pursuant to Section 208, Hawaiian Homes Commission Act, 1920, as amended, and subject to any applicable terms and conditions of the assignment, including but not limited to the approval of a loan.

2. To approve and accept that the transferees are of no less than the required 25% or 50% Hawaiian ancestry as appropriate pursuant to Section 208, Hawaiian Homes Commission Act, 1920, as amended.

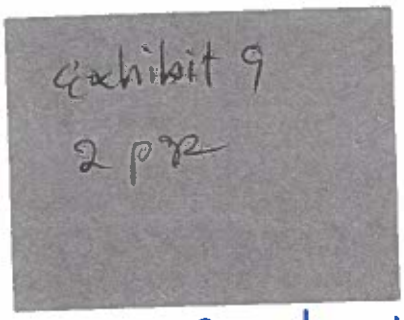
DISCUSSION

Eighteen (18) assignments of lease.

1. Lessee Name: William R. I. K. Bradley & Kuuipo P. Haili
Res. Lease No. 2845, Lot No. 187
Lease Date: 1/7/1954
Area: Kewalo, Oahu
Property Sold & Amount: No, N/A
Improvements: 4 bedroom, 2 bath dwelling

Transferee Name: Hiilani H. Finau
Relationship: Sister
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative."



See Item #13

ITEM NO. D-6

11. Lessee Name: Dennis A. Kahula
Res. Lease No. 11474, Lot No. 56
Lease Date: 11/29/2007
Area: Leialii, Maui
Property Sold & Amount: Yes, $650,000.00
Improvements: 2 bedroom, 1-1/2 bath dwelling

Transferee Name: Lyrik P. T. Kahula
Relationship: Grandson
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative." Special Condition: Transferee to obtain funds to pay purchase price.

12. Lessee Name: Christina L. P. Sarmiento
Res. Lease No. 4712, Lot No. 8
Lease Date: 10/26/1977
Area: Kapaakea, Molokai
Property Sold & Amount: No, N/A
Improvements: 3 bedroom, 2 bath dwelling

Transferee Name: Madelyn S. P. Sagario
Relationship: Sister
Loan Assumption: No
Applicant: No

Reason for Transfer: "Giving lease to relative."

13. Lessee Name: Louis Vera Cruz, Jr.
Res. Lease No. 12817, Lot No. 53
Lease Date: 06/19/2017
Area: Laiopua, Hawaii
Property Sold & Amount: Yes, $92,000.00
Improvements: 2 bedroom, 1 bath dwelling

Transferee Name: Gayle K. Kaio
Relationship: None
Loan Assumption: No
Applicant: Yes, Oahu IW Res., 9/07/2011

Reason for Transfer: "Lessee, doesn't want to transfer lease to family members." Special Conditions: Transferee to obtain funds to pay purchase price.

STATE OF HAWAI'I
DEPARTMENT OF HAWAIIAN HOME LANDS
HAWAIIAN HOMES COMMISSION MEETING/WORKSHOP AGENDA
Courtyard by Marriott Kahului Airport – Haleakala Room, 532 Keolani Place, Maui, Hawai'i 96732,
and Zoom Meeting ID: 609 754 2925
Monday, November 18, 2024, at 9:30 a.m. to be continued, if necessary,
on Tuesday, November 19, 2024, at 9:30 a.m.
Livestream available at www.dhhl.hawaii.gov/live
Note: Commission Meeting Packets will be available at dhhl.hawaii.gov by Wednesday, November 13, 2024.

I. ORDER OF BUSINESS

A. Roll Call
B. Approval of Agenda
C. Approval of Minutes:
   a. October 21 & 22, 2024 Regular Meeting
D. Public Testimony on Agendized Items – see information below

Public testimony on any item **relevant to this agenda** may be taken at this time, or a testifier may wait to testify when the agenda item is called for discussion. Pursuant to section 92-3, Hawaii Revised Statutes, and section 10-2-11(c), Hawaii Administrative Rules, the Chair of the Commission has the authority to impose reasonable conditions to ensure an orderly and efficient meeting.

II. ITEMS FOR DECISION MAKING

A. CONSENT AGENDA

Homestead Services Division
D-2 Approval of Consent to Mortgage (see exhibit)
D-3 Approval of Homestead Application Transfers / Cancellations (see exhibit)
D-4 Approval to Certify Applications of Qualified Applicants for the month of September 2024 (see exhibit)
D-5 Commission Designation of Successors to Application Rights – Public Notice 2023 (see exhibit)
D-6 Approval of Assignment of Leasehold Interest (see exhibit)
D-7 Approval of Amendment of Leasehold Interest (see exhibit)
D-8 Approval to Issue Non-Exclusive Licenses for Rooftop Photovoltaic Systems for Certain Lessees (see exhibit)
D-9 Cancellation of Lease – GINNY L. CORNELIUS, Agricultural Lease No. 6162, Lot No. 4, Puukapu, Hawaii
D-10 Cancellation of Lease – SCOTT G. K. FRIEL, Pastoral Lease No. 8069, Lot No. 95, Puukapu, Hawaii
D-11 Commission Designation of Successor – LLOYD E. REINHARDT, Residential Lease No. 5416, Lot No. 23, Paukukalo, Maui
D-12 Approval of Supplemental Dwelling Unit (SDU) for Certain Lessee (see exhibit)

B. REGULAR AGENDA

Office of the Chairman

C-1 Approval of the 2025 Hawaiian Homes Commission Meeting Schedule
C-2 Approval of Act 279 Permitted Interaction Group Report and Recommendations - Strategic Plan Update

Exhibit 10
3 p 82

NAKAPAAHU, Kaala E.A.	Oahu IW Res
NAMUO, Lance K., Jr.	Oahu IW Res
NIHIPALI, Keana K.Q.	Oahu IW Res
NIHIPALI, Keana K.Q.	Hawaii IW Agr
NOLAND, John	Nanakuli Area / Oahu IW Res
NUNES, Muriel U.	Waimanalo Area / Oahu IW Res
OGAWA, Barbara A.	Waimanalo Area / Oahu IW Res
OGAWA, David	Waimanalo Area / Oahu IW Res
OLSON, Eurless	Nanakuli Area / Oahu IW Res
PAHULEHUA, Laurie K.	Kauai IW Agr
POE, Sonelle K.K.	Oahu IW Agr
POOUAHI, Jacob L.H.	Maui IW Agr
POOUAHI, Jacob L.H.	Maui IW Res
SAMA, Marleina K.	Oahu IW Res
SILVA, Gwendolyn L.	Kauai IW Agr
SILVA, Gwendolyn L.	Kauai IW Res
YUEN, Braxton K.	Oahu IW Res
YUEN, Braxton K.	Hawaii IW Pas
	* IW = Islandwide

ITEM D-5 EXHIBIT

COMMISSION DESIGNATION OF SUCCESSORS TO APPLICATION RIGHTS PUBLIC NOTICE 2023

APPLICANT	AREA
CASPERSON, Roddy K.	Molokai IW Agr
	* IW = Islandwide

ITEM D-6 EXHIBIT

APPROVAL OF ASSIGNMENT OF LEASEHOLD INTEREST

LESSEE	LEASE NO.	AREA
BRADLEY, William R. I. K.	2845	Kewalo, Oahu
HAILI, Kuuipo P.	2845	Kewalo, Oahu
CHEELEY, Gloria A. N.	12307	Waiohuli, Maui
DEFREITAS, Kandy K.	10258	Hoolehua, Molokai
HOSINO, Brad K.	3829	Paukukalo, Maui
DEMELLO, Sheila Ann	3829	Paukukalo, Maui
KAIAOKAMALIE, Russel N.	7649	Waiohuli, Maui
KAIAOKAMALIE, Anuhea L.	7649	Waiohuli, Maui
KALANI, Lindsay W. A. K. C.	8184	Nanakuli, Oahu
HILL, April R.	8184	Nanakuli, Oahu
KANE, Frank	11474	Leialii, Maui
KAHULA, Dennis A.	11474	Leialii, Maui
SARMIENTO, Christina L. P.	4712	Kapaakea, Molokai

From: Kapua Keliikoa-Kamai
To: Burrows-Nuuanu, Leatrice W
Subject: [EXTERNAL] Feb HHC J-Agenda
Date: Wednesday, February 4, 2026 12:33:04 PM

Aloha e Leah,
Please add me to Feb 18's HHC Agenda.
Mahalo babe,
Kapua

From: Iwalani Laybon-McBrayer
To: Burrows-Nuuanu, Leatrice W
Subject: [EXTERNAL] February 2026 J Agenda
Date: Monday, January 12, 2026 9:27:26 PM

Please put Kaupe'a Homestead on for J Agenda.

Mahalo,

Iwalani Laybon-McBrayer
Kaupe'a Homestead Association
President

From:	Kekoa Enomoto
To:	Burrows-Nuuanu, Leatrice W
Cc:	Myrna Ah Hee FARMERS; Naomi Guth FARMERS; jnkaauamo@yahoo.com; Robin Leihuanani Keali'inohomoku WAIT; Alika Atay FARMERS; Andrew Nakihei HONOKOWAI
Subject:	[EXTERNAL] 2/18/26 J Agenda
Date:	Friday, January 23, 2026 3:56:50 PM

Aloha mai kāua e Leah,
Ke ʻoluʻolu, may I RSVP to advocate on behalf of Pāʻupena Community Development Inc. during the J Agenda of the 2/18/26 Hawaiian Homes Commission meeting?
I anticipate showing a six-minute Project ʻUKO HOU video on Pāʻupena's homelands archaeology-training program for ʻōpio, and discussing (1) the 4,780-acre Waiohuli Makai homelands tract and (2) my Aotearoa trip from 1/28/26 to 2/10/26.
Happy Valentines Day!
-ʻAnakē Kekoa

Kekoa Enomoto
Member of the board,
Paʻupena Community Development Inc.
(808) 276-2713

From: homeschaedel@hawaii.rr.com
To: Burrows-Nuuanu, Leatrice W
Subject: [EXTERNAL] 2-18-26 HHC J Agenda
Date: Monday, February 2, 2026 8:00:00 PM

Aloha e Leah,

Please place me on Wednesday, 2-18-26 "J" Agenda

Me ka mahalo nui,
Aunty Home

From: dhhl.icro1@hawaii.gov
To: Burrows-Nuuanu, Leatrice W
Subject: New submission from Submit J-Agenda Testimony (February 2026)
Date: Friday, January 30, 2026 8:53:55 AM

Name
Jojo Tanimoto
Email
guavaland622@gmail.vom
Message
Various issues

From: De Mont Kalai Manaole
To: Burrows-Nuuanu, Leatrice W
Subject: [EXTERNAL] J Agenda Request
Date: Thursday, January 29, 2026 10:25:15 AM

Aloha Leah!

Can you please place Ho*omana Pono, LLC on the J Agenda for February 2026.

Mahalo.

De MONT Kalai Manaole
Co-Manager
Ho'omana Pono, LLC
(a native Hawaiian Advocacy Corporation operating out of the Wai'anae Coast)
Ph: (808)726-5753
Email: hoomanaponollc96792@gmail.com

From: Kenna Stormogipson
To: Burrows-Nuuanu, Leatrice W
Subject: [EXTERNAL] February J-agenda
Date: Wednesday, February 4, 2026 7:13:08 AM

Aloha Leah,

Hope your day is going ok. Can you please sign me up for February J-agenda?

This is regarding Waipouli Courtyards.

Mahalo!
-Kenna